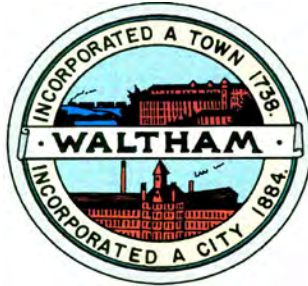


# The City of Waltham



**Invites  
Interested Parties  
To propose the best offer and or bid  
For the service or product herewith described:**

## **EMBASSY PARKING GARAGE RENOVATIONS, 2024**

**The GENERAL CONTRACTOR BID is Due: TUESDAY APRIL 16th, 2024 at 2:00PM**

**FILED SUB BIDS is Due: FRIDAY APRIL 5th, 2024 at 2:00PM**

**PRE-BID MEETING and On Site: MONDAY MARCH 25th, 2024 at 10:00AM**

***Meet at the Embassy Garage, Pine Street, Waltham, MA 02452***

**LAST DAY FOR WRITTEN QUESTIONS: WEDNESDAY MARCH 27th, 2024 at 12:00PM**

**(To [cphilpott@city.waltham.ma.us](mailto:cphilpott@city.waltham.ma.us))**

**EMBASSY PUBLIC PARKING  
 GARAGE RENOVATIONS**

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# The City of Waltham

## Purchasing Department

### REQUEST FOR BID (RFB)

Under the rules of M.G.L. Chapter 149, the Chief Procurement Officer of the City of Waltham Purchasing Department hereby requests sealed bids for:

#### EMBASSY PARKING GARAGE RENOVATIONS, 2024

Price Proposals will be received at the office of the Purchasing Agent, City Hall, 610 Main Street, Waltham MA 02452, until,

**FRIDAY APRIL 5th, 2024 @ 2:00 pm for Filed Sub-bidders**

**TUESDAY APRIL 16th, 2024 @ 2:00 pm for General Contractors**

At which time and place the bids will be publicly opened and read via ZOOM. The meeting information can be found on our City's website.

Site Inspection will be held: Monday March 25th 2024 @ 10:00 am (Meet at Embassy Garage)

Specifications and information available on line by visiting the Waltham Purchasing Department web site at [www.city.waltham.ma.us/bids](http://www.city.waltham.ma.us/bids)

**BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:**

**BID FOR: EMBASSY PARKING GARAGE RENOVATIONS**

A 5% Bid Bond or Certified Check must accompany each bid submitted and made payable to, and become the property of the City of Waltham, if the successful bidder refuses or neglects to comply with the terms of the Contract.

If the Bidder is a corporation, state your correct corporate name and State of incorporation. If Bidder is a partnership, state names and addresses of partners. If Bidder is a trust or other legal entity, state correct names and addresses of trustees or names and address of those legally authorized to bid and enter into contracts.

**EXCEPTION OR ALTERNATES TO SPECIFICATIONS, TERMS OF SALE, AND DISCOUNTS AVAILABLE, MUST BE INCLUDED IN THE BID PRIOR TO OPENING DATE.**

**AGREEMENT**

**CITY OF WALTHAM**

**ARTICLE 1.** This agreement, made this \_\_\_\_\_ day of \_\_\_\_\_, 2024 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

---

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hereinafter called the CONTRACTOR.

**ARTICLE 2.** Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the CITY OF WALTHAM for itself, and said contractor for his heirs, executors, administrators and assigns as follows:

To furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in strict conformity with the provisions of this Contract and of the Notice to Bidders, bid, Project Manual, and Drawings hereto annexed. The said Notice to Bidders, bid, Project Manual, and Drawings are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

**ARTICLE 3.** In consideration of the foregoing premises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required by not included in the items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

This Agreement entered into as of the day and year first written above.

**CITY OF WALTHAM, MASSACHUSETTS**

**FOR THE COMPANY**

**FOR THE CITY**

\_\_\_\_\_  
Jeannette A. McCarthy, MAYOR,  
City of Waltham  
Date: \_\_\_\_\_

\_\_\_\_\_  
CONTRACTOR (Signature),  
Date: \_\_\_\_\_

\_\_\_\_\_  
Company

\_\_\_\_\_  
Address

\_\_\_\_\_  
John B. Cervone, City Solicitor  
Date: \_\_\_\_\_  
APPROVED AS TO FORM ONLY

\_\_\_\_\_  
Jon Millian, Building Maintenance  
Date: \_\_\_\_\_

\_\_\_\_\_  
Crystal Philpott, Purchasing Agent  
Date: \_\_\_\_\_

\_\_\_\_\_  
Paul Centofanti, Auditor  
Date: \_\_\_\_\_

I CERTIFY THAT SUFFICIENT FUNDS  
ARE AVAILABLE FOR THIS CONTRACT

**SECTION 00 30 00  
CITY OF WALTHAM  
MASSACHUSETTS**

**NOTICE TO BIDDERS, INCLUDING SUB-BIDDERS**

**EMBASSY PARKING GARAGE RENOVATIONS  
PINE STREET, WALTHAM, MASSACHUSETTS**

The City of Waltham, Massachusetts invites sealed bids from Contractors for the Renovations at the Waltham Public Library, 735 Main Street, Waltham, Massachusetts. The work includes renovations of windows and Cupola.

**PLANS, SPECIFICATIONS** and other Contract Documents may be obtained by visiting the City's Web Site at <https://www.city.waltham.ma.us/category/tags/purchasing-bids-open-0>

Copies of Addenda will be e- mailed to the registered Bidders without charge. Addenda will also be posted on the web site above.

Sealed **SUB-BIDS** for categories of "Waterproofing and Damproofing" and "Masonry", will be accepted at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02452 until **Friday April 5th, 2024 at 2:00PM**, at which place and time they shall be publicly opened via ZOOM, read aloud and recorded for presentation to the Awarding Authority.

Sealed **GENERAL BIDS** for this project will be accepted from eligible bidders at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02452 until **Tuesday April 16th, 2024 at 2:00PM**, at which place and time they shall be publicly opened via ZOOM, read aloud and recorded for presentation to the Awarding Authority.

A **PRE-BID CONFERENCE** will be held for all interested parties at **Monday March 25th, 2024 at 10:00AM** at the site at the **Embassy Garage by the ramp, Pine Street, Waltham, MA**. Attendance at this pre-bid conference is strongly recommended, but it is not required, for parties submitting a bid.

Each general bid, and each sub-bid shall be accompanied by a bid deposit in the form of a bid bond, certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the City of Waltham in the amount of five percent (5%) of the value of the bid. Bid deposits will be dealt with as provided in Massachusetts General Laws, Chapter 149, Section 44B.

To be given consideration, all general bids and all sub-bids must be accompanied by a copy of the Bidder's DCAMM Certificate of Eligibility (DCPO Form CQ7) and a DCAMM Update Statement (DCPO Form CQ3). General Bidders must be certified by the Division of Capital Asset Management and Maintenance (DCAMM) in the following category of work, **General Building Construction**, and must submit a current DCAMM Certificate of Eligibility and signed DCAMM Prime/General Contractor Update Statement.

Bids shall be made on the basis of the Minimum Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of Chapter 149, Sections 26 to 27D inclusive of Massachusetts General Laws, a copy of which is attached to and is made a part of the Contract.

Bidders' selection procedures and contract award shall be in conformity with applicable statutes of the Commonwealth of Massachusetts.

Performance and Labor and Materials payment bonds in the full amount of the contract price will be required from the successful bidder.

The Awarding Authority reserves the right to reject any or all general bids, if it be in the public interest to do so, and to reject any sub-bid on any sub-trade if it determines that such sub-bid does not represent the sub-bid of a person competent to perform the work as specified or that less than three such sub-bids were received and that the prices are not reasonable for acceptance without further competition.

The successful bidder will be required to furnish a Certificate of Insurance, naming the City of Waltham as an Additional Named Insured with a waiver of subrogation, for General Liability and Vehicle Liability in the amount of \$500,000 per occurrence and \$1,000,000 in the aggregate and Worker's Compensation Insurance as prescribed by law.

In accordance with M.G.L.Ch 149 the undersigned certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by OSHA that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

**CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.**

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

CITY OF WALTHAM

Crystal Philpott,  
Purchasing Agent  
Purchasing Department  
City Hall, 610 Main Street  
Waltham, MA 02452



## **SECTION 00 40 00 - INSTRUCTION TO BIDDERS**

### **PART 1 - GENERAL**

#### **1.1 SCHEDULE OF DATES**

- A. Advertisement appears in Central Register, Plans and Specifications are available on the City of Waltham website after **2:00PM Wednesday March 20th, 2024**
- B. **Pre-bid** walkthrough on **Monday March 25th, 2024 at 10:00AM** at the Embassy Garage ramp side, Waltham, MA.
- C. Questions and requests for interpretations may be submitted in writing by Bidders via e-mail ONLY to [cphilpott@city.waltham.ma.us](mailto:cphilpott@city.waltham.ma.us) until: **Wednesday March 27th, 2024 at Noon, 12:00PM.**
- D. Addenda will be issued with interpretations as determined by the Purchasing Department only via e-mail and posting on the web site.
- E. File Sub-Bids Deadline: **Friday April 5th, 2024 at 2:00PM**, in the Purchasing Department, City Hall, 610 Main Street, Waltham, MA 02452, Attn: Purchasing Agent, where the bids will be publicly opened and read via ZOOM.
- F. General Bids Deadline: **Tuesday April 16th, 2024 at 2:00PM** in the Purchasing Department, City Hall, 610 Main Street, Waltham, MA 02452, Attn: Purchasing Agent, where the bids will be publicly open and read via ZOOM.

#### **1.2 BIDDING PROCEDURE**

- A. Bids for the work are subject to the provisions of General Laws, Chapter 149, Sections 44A-44L inclusive, as amended. Regulations governing the bidding procedures as set forth in the above mentioned amended General Laws must be followed.
- B. In the event of any inconsistencies between any of the provisions of these Contract Documents and of the cited statute, anything herein to the contrary notwithstanding, the provisions of the said statute shall control.
- C. No General Bid received by the Awarding Authority after the time respectively established herein for the opening of General Bids will be considered, regardless of the cause for the delay in the receipt of any such bid.

#### **1.3 WITHDRAWAL OF BIDS**

- A. Bids may be withdrawn prior to the time respectively established for the opening of General Bids only on written request to the Awarding Authority.

#### 1.4 INTERPRETATION OF CONTRACT DOCUMENTS

- A. No oral interpretation will be made to any bidder. All questions or requests for interpretations must be made in writing to the Architect.
- B. Every interpretation made to a bidder will be in the form of an Addendum to the drawings and/or specifications, which will be made available to all persons to whom Contract Documents have been issued.
- C. Failure of the Awarding Authority to send, or of any bidder to receive any such Addendum shall not relieve any bidder from obligation under his bid as submitted.
- D. All such Addenda shall become a part of the Contract Documents.

#### 1.5 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. Each bidder shall visit the site of the proposed work and fully acquaint himself with conditions as they exist, and shall also thoroughly examine the Contract Documents. Failure of any bidder to visit the site and acquaint himself with the Contract Documents shall not relieve any bidder from any obligation with respect to his bid.
- B. By submitting a bid, the bidder agrees that the Contract Documents are adequate and that the required result for a full and complete installation can be produced. The successful bidder shall furnish any and all labor, materials, insurance, permits and all other items needed to produce the required result to the satisfaction of the Awarding Authority.

#### 1.6 BID SECURITY

- A. The General Contractor's bid must be accompanied by bid security in the amount of five percent (5%) of the bid.
- B. At the option of the bidder, the security may be bid bond, certified, treasurer's or cashier's check issued by a responsible bank or trust company. No other type of bid security is acceptable.

Bid Bonds shall be issued by a Surety Company qualified to do business under the laws of the Commonwealth of Massachusetts.

- C. Certified, Treasurer's or Cashier's check shall be made payable to the City of Waltham, Massachusetts.
- D. The bid security shall secure the execution of the Contract and the furnishing of a Performance and Payment Bond by the successful General Bidder for 100% of the contract value.
- E. Should any General Bidder to whom an award is made fail to enter into a contract therefore within five (5) days, Saturdays, Sundays and Legal Holidays, excluded, after

### **INSTRUCTION TO BIDDERS**

notice of award has been mailed to him or fail within such time to furnish a Performance Bond and also a Labor and Materials or Payment Bond as required, the amount so received from such General Bidder through his Bid Bond, Certified, Treasurer's or Cashier's check as bid deposit shall become the property of the City of Waltham, Massachusetts as liquidated damages; provided that the amount of the bid deposit, which becomes the property of the City of Waltham, Massachusetts, shall not in any event exceed the difference between his bid price and the bid price of the next lowest responsible and eligible bidder; and provided further that, in case of death, disability, bona fide clerical error or mechanical error of a substantial nature, or other unforeseen circumstances affecting the General Bidder, his deposit shall be returned to him.

1.7 BID FORM

- A. General Bids shall be submitted on the "FORM FOR GENERAL BID" enclosed. Erasures or other changes must be explained or noted over the signature of the bidder.
- B. Bid forms must be completely filled in. Bids which are incomplete, conditional, or obscure, or which contain additions not called for will be rejected.
- C. General Bidders shall submit one set of executed bid forms to the Awarding Authority.

1.8 SUBMISSION OF BIDS AND BID SECURITIES

- A. Each bid submitted by a General Contractor shall be enclosed in a sealed envelope that shall be placed with the bid security in an outer envelope. The outer envelope shall be sealed and clearly marked as follows:

(Firm Name): \_\_\_\_\_  
General Bid and Bid Security for:  
Embassy Parking Garage Renovation

1.9 AWARD OF CONTRACT

- A. The Contract shall be awarded to the lowest responsible and eligible General Bidder on the basis of competitive bids in accordance with the procedure set forth in the provision of Section 44B-44L inclusive, as amended or inserted, of Chapter 149 of the General Laws of the Commonwealth of Massachusetts.
- B. If the bidder selected as the General Contractor fails to perform his agreement to execute a contract in accordance with the terms of his General Bid, and furnish a Performance Bond and also a Labor and Materials or Payment Bond, as stated in his General Bid in accordance with Section 44F, an award shall be made to the next lowest responsible and eligible bidder.
- C. The words "lowest responsible and eligible bidder" shall be the bidder whose name is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work and who shall certify that he is able to furnish labor

**INSTRUCTION TO BIDDERS**

that can work in harmony with all other elements of labor employed, or to be employed, on the work. Essential information in regard to such qualifications shall be submitted in such form as the Awarding Authority may require.

- D. Action on the award will be taken within sixty (60) days, Saturdays, Sundays and Legal Holidays excluded after the opening of the bids.

#### 1.10 SECURITY FOR FAITHFUL PERFORMANCE

- A. The successful bidder must deliver to the Awarding Authority simultaneously with his delivery of the executed contract, an executed Performance Bond, and also a Labor and materials or Payment Bond, each issued by a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of One Hundred Percent (100%) of the Contract Price, as surety for the faithful performance of his contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. Said bonds shall provide that, if the General Contractor fails or refuses to complete the Contract, the Surety Company will be obligated to do so.
- B. Premiums are to be paid by the General Contractor, and are to be included in the Contract Price.

#### 1.11 EQUAL OPPORTUNITY

- A. The City of Waltham is an Equal Opportunity employer and will require compliance with the minority business enterprise plan (MBE) on file in the Purchasing Department

#### 1.12 PRE-BID WALK-THRU

- A. A pre-bid conference will be held at the site on **Monday March 25th, 2024 at 10:00AM** at the Embassy Garage by the ramp, Pine Street, Waltham, MA. Interested parties are encouraged to attend given that this will be the only time the building is open prior to the submission of bids. Further, prior to the bid opening, potential bidders may not go onto the site any time other than the aforementioned pre-bid conference.

#### 1.13 SITE VISITS

- A. Prospective bidders are prohibited from going onto the site prior to the Bid Opening or any time other than the pre-bid walk-thru, as set forth in Section 1.12 above, unless authorized by the Architect in an Addendum to the bid documents.

#### 1.14 CONTRACT DOCUMENTS

- A. The Awarding Authority shall make available the bid documents and addenda in the City Web site at <https://www.city.waltham.ma.us/category/tags/purchasing-bids-open-0> No plans will be mailed.

## INSTRUCTION TO BIDDERS

1.15 EQUALITY

- A. Except where otherwise specifically provided to the contrary, the words “or approved equal” are hereby inserted immediately following the name or description of each article, assembly, system, or any component part thereof in the Contract Documents. It is the Contractor’s responsibility to provide all the research and documentation that would prove a product or assembly is “equal”. Failure to provide research or documentation does not alleviate the Contractor’s responsibility to meet the schedule.

1.16 TAX FREE NUMBER

- A. The City of Waltham has a tax-free number.

1.17 SCHEDULE

- A. The work of the Contract shall be Substantially Complete in **90 calendar days** after the date of the Notice-to-Proceed. Construction may commence on **July 8<sup>th</sup>, 2024**. The Public Garage will be completely closed for Construction.

1.18 LATE PENALTY FEES

- A. If the work is not Substantially Complete as specified in 1.17, the Contractor shall be charged Five Hundred Dollars (\$500.00) per day to pay for consulting and testing fees required to manage and arrange for the completion of the project. Late fees will be deducted from the Contract via Change Order.

1.19 WEEKLY JOB MEETINGS

- A. There will be a weekly job meeting at the site on the same agreed-upon day and time. Time will be provided to discuss and view the progress of the work and to answer questions. The Contractor’s job Superintendent and Project Manager shall attend each meeting. The City reserves the right to have job meetings conducted in the Planning Department at 119 School Street, Waltham.

1.20 PROJECT SUPERINTENDENT

- A. The Contractor shall provide the same person as Superintendent for the entire duration of the project. Failure to maintain the same person in this position shall result in a One Thousand Dollar (\$1,000.00) penalty per incident which shall cover the Architect’s time to re-orient new personnel.

1.21 AWARD

- A. The Awarding Authority reserves the right to reject any or all bids if it be in the public interest to do so, and to act upon the bids and make its award in any lawful manner.

## 1.22 PREVAILING WAGE SCHEDULE

- A. Bids shall be made on the basis of the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provision of Chapter 149, Section 26 to 27D inclusive, of the Massachusetts General Laws. The Prevailing wage Schedule for this project can be found in the City's web Site at:  
<https://www.city.waltham.ma.us/category/tags/purchasing-bids-open-0>

## 1.23 CONFLICT OF INTEREST

- A. A bidder filing a proposal thereby certifies that the proposal is made in good faith, without fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is competing solely on its own behalf without connection with, or obligation to, any undisclosed person or firm.

## 1.24 PROCEED ORDERS

- A. No bidder is to proceed without a proceed order as set out in the contract.

## 1.25 STAGING

- A. The General Contractor shall provide all the vertical access (which includes staging, vertical lifts, etc.) for the work of the Contract for the General Bidder and his/her non File Sub-bid subcontractor. **Exception:** ALL File Sub-Bidders shall provide ALL their own staging, vertical access, and hoisting necessary to perform their own work.

## 1.26 COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS

- A. Pursuant to Massachusetts General Laws, Chapter 62C, Section 49A, I certify under the penalty of perjury that I, to the best of my knowledge and belief have filed all state tax returns and paid all the state taxes required under law.

## 1.27 CONSTRUCTION BARRICADES

- A. The General Contractor shall provide all barricades to enclose the work area to prevent unauthorized access to the site.
1. The barricades shall provide enough room for all construction activities to be performed while separated from pedestrians, students, and staff on site.
  2. Safety is the sole responsibility of the Contractor and any barricades necessary to protect the work and the public shall be provided.
  3. Provide entrance protection.

## 1.28 INSURANCE

A. The contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.

B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:

1. Statutory Worker's Compensation and Employer's Liability

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker's Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person and \$ 1,000,000 per accident, and property damage limits of \$ 500,000 per accident and \$ 1,000,000 aggregate during any 12 month period, shall include the following:

- a. Public liability (bodily injury and property damage)
- b. X.C.U. (explosion, collapse, and underground utilities)
- c. Independent contractor's protective liability.
- d. Products and completed operations.
- e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

3. Comprehensive All Risk Motor Vehicle Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person, \$ 1,000,000 per accident, and property damage limit of \$ 1,000,000 per accident.

4. All Risk Insurance

Covering all Contractor's equipment with a provision for Waiver of Subrogation against the Owner.

## INSTRUCTION TO BIDDERS

5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of \$ 1,000,000.
6. City of Waltham is a Named Additional Insured for General Liability with a Waiver of Subrogation on the insurance policy for this project.

1.29 SITE ACCESS

- A. The General Contractor shall gain access to the site via routes approved by the Owner.
  1. The General Contractor as part of the bid price will restore all roads, curbs, driveways, walks and grassed or landscaped areas damaged during construction.

1.30 CONSTRUCTION TRAILER

- A. The General Contractor shall locate the construction trailer at locations approved by the Owner.
- B. The General Contractor shall locate all on site stored or staged materials within the enclosed area designated by the Owner.

1.31 BUILDING PERMIT FEES

- A. Building permit fees will be waived for this project. However, the general Contractor is expected to obtain all proper permits as required by City Ordinances

1.32 COMPLETE BID FORMS

- A. Please Note: Each bidder must fill in all the blanks on all the bid forms, even if the information is “zero dollars” or “not applicable”. Also, please acknowledge all Addenda even if they do not pertain to your trade.

1.321 READ ALL DOCUMENTS.

Bidders should familiarize themselves with all the documents contained herein; it is mandatory that all Bids be in compliance with all the provisions contained in said documents.

1.33. FORMS AND ATTACHMENTS.

Bids are to be completed on the forms provided ONLY and enclosed in a sealed envelope marked on the outside “BID (title)” and the name and address of bidder. Attachments submitted in addition to the Waltham Purchasing Department produced forms may not be considered.



1.34. PRINTED OR TYPED RESPONSE.

All information must be typewritten or printed in ink, including the price the bidder offers in the space as provided on the bid form.

1.35. CORRECTIONS.

Bids that are submitted containing cross outs, white outs or erasures, will be rejected. All corrections or modifications to the original bid are to be submitted in a separate envelope, properly marked on the outside, "CORRECTION/ MODIFICATION TO BID (title)" and submitted prior to the bid opening.

ALL DOCUMENTS SUBMITTED WITH YOUR RESPONSE WILL BE INCORPORATED INTO THE CONTRACT.

1.36. PRICE IS ALL INCLUSIVE.

Bid prices shall encompass everything necessary for furnishing all items, materials, supplies or services as specified, and in accordance with the specifications, including proper packing, cost of delivery, and in the case of services, completion of same, as per specifications.

1.37. PRICE DISCREPANCY.

In the event of a discrepancy between the Unit Price and the Extension, the Unit Price shall prevail.

1.38. EXPLANATIONS, EXCEPTIONS

Explanations, exceptions or other information pertinent to the specifications may be made in writing and included in the same envelope with the bid.

1.39. BID DEPOSITS.

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (10) days of the receipt of said contract, such security shall be retained by the city as liquidated damages. Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

1.40. WITHDRAW.

A Bid may be withdrawn by written request prior to the schedule for the Bid Opening. No withdrawals are permitted after the bid opening date and time. Withdrawals after the bid opening date will cause the forfeit of the bid Deposit.

1.41. AWARD.

Bids will be awarded not later than (90) ninety days after the scheduled bid opening date, unless otherwise stated, in the specifications. Unless otherwise specified, bids will be evaluated on the basis of, completeness of your RFP response, responsiveness, responsibility, best price and experience.

1.42. AWARD CRITERIA.

Qualified and responsive proposals will be evaluated based on Price, Technical, and Compliance requirements.

1.43. DISCOUNTS.

Discounts for prompt payments will be considered when making awards.

1.44. TAX EXEMPT.

Purchases by the City of Waltham are exempt from any Federal, State or Massachusetts Municipal Sales and/or Excise Taxes.

1.45. SAMPLES.

The City of Waltham may require the submission of samples either before or after the awarding of a contract. Samples are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples are required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection of Bid. All samples must be called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

1.46. ACTIVE VENDOR LIST.

Vendors who wish to remain on the Active Bid List must either submit a Bid, No Bid, or a letter requesting same, no later than the Official Bid Opening. This is applicable to those vendors who have received the Invitation to Bid.

1.47. FUNDS APPROPRIATION.

THE CONTRACT OBLIGATION ON BEHALF OF THE CITY IS SUBJECT TO PRIOR APPROPRIATION OF MONIES FROM THE GOVERNMENTAL BODY AND AUTHORIZATION BY THE MAYOR.

1.48. THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, OR ANY PART OF ANY BID, WHICH IN THE OPINION OF THE AWARDING AUTHORITY, IS IN THE BEST INTERESTS OF THE CITY OF WALTHAM.

1.49. THE TAX ATTESTATION CLAUSE, CERTIFICATION OF NON-COLLUSION AND THE CERTIFICATE OF VOTE AUTHORIZATION, are required by statute and are an integral part of the Invitation for Bid and must be completed and signed by the person submitting the Bid, or by the person/persons who are officially authorized to do so. Failure to do so may disqualify the bid.

1.50. STANDARD OF QUALITY.

Where, in the specifications, one certain kind, type, catalog number, brand or manufacturer of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal and the Bidder

may select one or the other. If the Bidder proposes to offer a substitute as an equal, he shall so indicate on the Bid Form, the kind, type, catalog number, brand, or manufacturer of material that is offered as an equal, and describe where it differs from the specifications. Substituted items must be capable of performing all the functions and/or operational features described or indicated in the specifications. Failure to indicate the description of any substitute item on the Bid will be interpreted to mean that the Bidder will furnish the item or service as specified.

1.51. MODIFICATION.

No agreement, understanding, alteration or variation of the agreement, terms or provisions herein contained shall bind the parties, hereto unless made and executed in writing by the parties hereto.

1.52. ASSIGNMENT.

The final payment for work done under this Contract shall be made only after the Contractor has signed a statement under the penalty of perjury, certifying that he has completed the work described in the final estimate. Neither party hereto shall assign this Contract or sublet it in part or as a whole without the prior written consent of the other party hereto. The Contractor shall not assign any sum or sums due or becoming due to him hereunder without the prior written consent of the City.

1.53. DELIVERIES:

a) The Contractor shall pay all freight and delivery charges. The Waltham Purchasing Department does not pay for shipping and packaging expenses. Items must be delivered as stipulated in the specifications. All deliveries must be made to the inside of city buildings. Sidewalk deliveries will not be accepted. City personnel are not required to assist in the deliveries and contractors are cautioned to notify their shippers that adequate assistance must be provided at the point of delivery, when necessary.

b) All items of furniture must be delivered inside the building, set up, in place and ready for use. Deliveries are to be made between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except on holidays.

c) All damaged items, or items which do not comply with specifications will not be accepted and title therefore will not vest to the Waltham Purchasing Department until such items are accepted and signed for, in good order, by the receiving department.

d) The contractor must replace, without further cost to the Waltham Purchasing Department, such damaged or non-complying items before payment will be made.

1.54. LABELING.

All packages cartons or other containers must be clearly marked with (a) building and room destination; (b) description of contents of item number from specifications; (c) quantity; (d) City of Waltham Purchase Order Number and (e) Vendor's name and order number.

1.56. GUARANTEES.

Unless otherwise stipulated in the specifications, furniture, equipment and similar durable items shall be guaranteed by the contractor for a period of not less than one year from the

date of delivery and acceptance by the receiving department. In addition, the manufacturer's guarantee shall be furnished. Any items provided under this contract which are or become defective during the guarantee period shall be replaced the contractor free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

1.57. CHANGE ORDERS.

Change orders are not effective until, if, as and when signed by the Mayor and no work is to commence until the change orders are fully executed.

1.58. BID OPENING INCLEMENT WEATHER

If, at the time of the originally scheduled bid opening, City Hall is closed to inclement weather or another unforeseeable event, the bid opening will be extended until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

Signature of Individual or Corporate Name

By:

\_\_\_\_\_  
(Signature of Corporate Officer if applicable)

Title: \_\_\_\_\_

Social Security Number or Federal Identification Number: \_\_\_\_\_

**END OF SECTION**

# **GENERAL CONDITIONS**

## **GENERAL CONDITIONS**

### **1. INFORMATION**

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words “or equal as approved” are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

### **2. SUITS**

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against the City and its sub-contractors arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the City, its agents, employees or any subcontractor in performing the work, under this contract.

### **3. LAWS AND REGULATIONS**

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the Commonwealth of Massachusetts, the United States of America and all agencies having jurisdiction over this contract.

### **4. PROTECTION OF PROPERTY**

The Contractor shall take all proper precautions to protect the City’s property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

### **5. PROTECTION OF PERSONS**

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

6. **CONTRACT DURATION**

This contract is for the period required to complete the project with Substantial Completions 90 days from the Notice to Proceed.

7. **INSURANCE**

A. **WORKMAN’S COMPENSATION:** The Contractor shall provide insurance for the payment of compensation and furnishing of other benefits under Chapter 152 of the General Laws of the Commonwealth of Massachusetts to all persons to be employed under this contract, the premiums for which shall be paid by the Contractor. Contractors shall provide insurance on a primary basis and the contractor’s policy shall be exhausted before resorting to other policies. The contractor’s policy is the primary one not the contributory.

B. **COMPREHENSIVE GENERAL LIABILITY**

Bodily Injury:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate
Property Damage:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate

C. **AUTOMOBILE (VEHICLE) LIABILITY**

Bodily Injury	\$2,000,000 Each Occurrence
Property Damage	\$1,000,000 Aggregate

D. **UMBRELLA POLICY**

General liability	\$1,000,000
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Your bid response must include a Certificate of Insurance with the above limits as a minimum. In addition, the Certificate of Insurance must have the following text contained in the bottom left box of the Certificate: *“The City of Waltham is a named additional insured for all insurances under the contract, excluding Automobile and Workers Compensation coverage”*. **Failure by the contractor to provide a current and updated insurance policy, during the entire duration of the contract, may result in additional legal liability.** The Certificate of Insurance must be mailed directly to:

Office of the Purchasing Agent  
Purchasing Department  
City of Waltham  
610 Main Street  
Waltham, MA 02451

**8. LABOR AND MATERIALS BOND**

The Contractor agrees to execute and deliver to the City, a Labor and Materials or Payment Bond equal to 100% of the contract value. This contract shall not be in force until said bond has been delivered and accepted by the City. Bond to be issued by a company licensed by the Commonwealth of Massachusetts.

**A LETTER FROM A SURETY COMPANY CERTIFYING THAT THE CONTRACTOR IS QUALIFIED AND CAPABLE OF OBTAINING THE ABOVE BONDS MUST BE INCLUDED WITH HIS/HERS BID.**

**9. PERSONNEL:**

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City Purchasing Agent shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior. The City Purchasing Agent may require the Contractor to submit a weekly performance record of the areas and of the work performed, on forms approved by the City Purchasing Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Purchasing Agent.

**10. PREVAILING WAGES**

The Contractor is required to pay the prevailing wages as determined under the provisions of Chapter 149, Sections 26 and 27D of the Massachusetts General Laws, including the submission of weekly payrolls to the awarding authority. The prevailing wage schedule for this project can be found at [www.city.waltham.ma.us/bids](http://www.city.waltham.ma.us/bids).

**11. MATERIALS**

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.



**12. TERMINATION OF CONTRACT**

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

**13. CONTRACT OBLIGATIONS**

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

**14. BIDDER EXPERIENCE EVALUATION**

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

**15. NOT-TO-EXCEED AMOUNT**

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the City's Purchasing Agent, City Auditor, Law Department and the Mayor prior to the commencement of the change order work. No work is to begin until the proper approvals have been obtained. A change order will be priced at the unit price. Failure to comply with this procedure will result in the cancellation of the contract and the non-payment of services provided

**16. FINANCIAL STATEMENTS.**

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

**17 BREACH OF CONTRACT/ NON PERFORMANCE**

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the

**Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.**

**18 RIGHT TO AUDIT**

**The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.**

**19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.**

**All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.**

**20. ORIGINAL SIGNATURES**

**Where a signature is required in the bid documents, the vendor is required to place an original "wet" signature. The Certificate of Vote Authorization, Certificate of Non Collusion Certificate, Tax Compliance Certificate, Debarment Certification, Notary Public Certification and the Bid Form (price form) MUST bear an original "Wet" signature by the authorized corporate officer. The Notary Public Certification must be from a notary**

permitted to practice in this country. No certifications by a foreign Notary public will be accepted.

21. **PRINTING AND ASSEMBLY BID SUBMISSION**

Bid responses shall be submitted in single page printing format. No double sided printing is accepted by the City. The response binding shall be with an appropriately sized clip binder. No staples, no metal or plastic binding is accepted.

**NOTE**

**Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.**

# Compliance

(Required Documents.)

# Compliance

The compliance documents in this section must be completed, signed and returned **with your bid package.**

## Purchasing Department

City of Waltham  
610 Main Street  
Waltham, MA 02452

Failure to submit the completed documents will cause the disqualification of the proposal.

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### Section Index

	Check when Complete
• Non-collusion form and Tax Compliance form.....	_____
• Corporation Identification Form.....	_____
• Certificate of Vote Authorization.....	_____
• Certificate of Insurance (showing all limits of WC &GL).....	_____
• Three (3) References.....	_____
• 5% Bid Bond or Certified Check.....	_____
• Debarment Certificate .....	_____
• Prevailing Wage Certificate.....	_____
• Right-to-know Law.....	_____
• OSHA 10 Certificate for all Assigned Employees (MGL ch30, §39M and Ch 149)	_____
• DCAMM CERTIFICATE.....	_____

**Before the commencement of the Job, the contractor must provide to the above office:**

- Performance Bond for 100% of the contract value and naming the City of Waltham ***(letter must be included with your response)***

Your Company's Name: \_\_\_\_\_

Service or Product Bid \_\_\_\_\_

**NOTE:** Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

**NON-COLLUSION FORM AND TAX COMPLIANCE FORM**

**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 any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

\_\_\_\_\_, \_\_\_\_\_  
(Signature of person signing bid or proposal)      Date

\_\_\_\_\_  
(Name of business)

---

**TAX COMPLIANCE CERTIFICATION**

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my 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.

\_\_\_\_\_, \_\_\_\_\_  
Signature of person submitting bid or proposal      Date

\_\_\_\_\_  
Name of business

**NOTE**

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

**CERTIFICATE OF VOTE OF AUTHORIZATION**

Date:

I \_\_\_\_\_, Clerk of \_\_\_\_\_ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the \_\_\_\_\_ day of \_\_\_\_\_ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That \_\_\_\_\_ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seal, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that \_\_\_\_\_ is duly elected/appointed \_\_\_\_\_ of said corporation

SIGNED:

(Corporate Seal)

\_\_\_\_\_  
Clerk of the Corporation:

Print Name: \_\_\_\_\_

---

**COMMONWEALTH OF MASSACHUSETTS**

County of \_\_\_\_\_

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be their free act and deed before me, \_\_\_\_\_

Notary Public;

My Commission expires: \_\_\_\_\_

**CORPORATION IDENTIFICATION**

The bidder for the information of the Awarding Authority furnishes the following information.

**If a Corporation:**

Incorporated in what state \_\_\_\_\_

President \_\_\_\_\_

Treasurer \_\_\_\_\_

Secretary \_\_\_\_\_

Federal ID Number \_\_\_\_\_

**If a foreign (out of State) Corporation – Are you registered to do business in Massachusetts?**

Yes \_\_\_\_\_, No \_\_\_\_\_

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

**If a Partnership: (Name all partners)**

Name of partner \_\_\_\_\_

Residence \_\_\_\_\_

Name of partner \_\_\_\_\_

Residence \_\_\_\_\_

**If an Individual:**

Name \_\_\_\_\_

Residence \_\_\_\_\_

**If an Individual doing business under a firm's name:**

Name of Firm \_\_\_\_\_

Name of Individual \_\_\_\_\_

Business Address \_\_\_\_\_

Residence \_\_\_\_\_

Date \_\_\_\_\_

Name of Bidder \_\_\_\_\_

By \_\_\_\_\_

Signature \_\_\_\_\_

\_\_\_\_\_

Title \_\_\_\_\_

Business Address \_\_\_\_\_ (POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City \_\_\_\_\_ State \_\_\_\_\_ Telephone Number \_\_\_\_\_ Today's Date \_\_\_\_\_



**PROVIDE THREE (3) SERVICE APPROPRIATE REFERENCES**

1. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

2. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

3. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

**NOTE**

**Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.**

**WEEKLY PAYROLL RECORDS REPORT &  
STATEMENT OF COMPLIANCE**

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided, A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

In addition, every contractor and subcontractor is required to submit, on a weekly basis, a copy of his or her weekly payroll records to the awarding authority. For every week in which an apprentice is employed, a photocopy of the apprentice's identification card must be attached to the payroll report. Once collected, the awarding authority is also required to preserve those reports for three years.

In addition, each such contractor, subcontractor, or public body shall furnish to the awarding authority directly, within fifteen days after completion of its portion of the work, a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

---

**STATEMENT OF COMPLIANCE**

\_\_\_\_\_, 200\_\_

I \_\_\_\_\_,  
(Name of signatory party) (Title)

I do hereby state that I pay or supervise the payment of the persons employed by

\_\_\_\_\_ on the \_\_\_\_\_  
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature \_\_\_\_\_, Title \_\_\_\_\_

Print \_\_\_\_\_

**WEEKLY PAYROLL REPORT FORM**

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

Project Name: \_\_\_\_\_

Awarding Auth.: \_\_\_\_\_

Work Week Ending: \_\_\_\_\_

Prime Contractor

Subcontractor

List Prime Contractor: \_\_\_\_\_

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

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

Final Report

Employee Name & Address	Work Classification	(A) Hours Worked							(B) Hourly Base Wage	(C) Employer Contributions			(F) [B+C+D+E] Hourly Total Wage (prev. wage)	(G) [A*F] Weekly Total Amount	
		S	M	T	W	T	F	S		(D) Pension	(E) Supp. Unemp.				
												(C) Health & Welfare			

NOTE: Every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority.

**RIGHT TO KNOW LAW**

Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L. c. 111F, §§8,9 and 10 and the regulations contained in 441 CMR 21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. c. 111F §7 and regulations contained in 441 CMR 21.05. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties, including bid debarment and action to prevent the vendor from selling said substances, or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 111F or M.G.L. are cautioned to obtain and read the laws, rules and regulations referenced above. Copies may be obtained from the State House Bookstore, Secretary of State, State House, Room 117, Boston, MA (617) 727-2834.

---

Authorized Signature Indicating Compliance with the Right-to-know laws:

---

Signature

Date

---

Print Name

**NOTE**

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

**DEBARMENT CERTIFICATION**

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the city of Waltham, the contract will be cancelled and the award revoked.

---

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

Address \_\_\_\_\_

City \_\_\_\_\_, State \_\_\_\_\_, Zip Code \_\_\_\_\_

Phone Number (\_\_\_\_) \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Signed by Authorized Company Representative:

\_\_\_\_\_

Print name \_\_\_\_\_,

Date \_\_\_\_\_

**10 HOURS OSHA TRAINING CONFIRMATION**

**Chapter 306 of the Acts of 2004**

**CONSTRUCTION PROJECTS**

**AN ACT RELATIVE TO THE HEALTH AND SAFETY ON PUBLIC**

The undersigned hereby certifies that all employees to be employed at a worksite for construction, reconstruction, alteration, remodeling, repair, installation, demolition, maintenance or repair of any public work or any public building estimated to cost more than \$10,000.00 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 payroll report for each employee and will comply with all laws and regulations applicable to awards of subcontracts subject to section 44F.

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

Address: \_\_\_\_\_

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

Title: \_\_\_\_\_

Print Name \_\_\_\_\_

\_\_\_\_\_  
Date

***See Chapter 306 of the Acts of 2004***

**NOTE**

**Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.**

**SECTION 00 60 01 – FORM FOR GENERAL BID**

**EMBASSY PUBLIC PARKING GARAGE RENOVATIONS**

April 16, 2024

Crystal Philpott  
Purchasing Agent  
City of Waltham  
610 Main Street  
Waltham, MA 02452

Ms. Philpott:

**BASIC PRICE**

- A. The undersigned, having visited the site of the above project and having familiarized myself with the local conditions affecting the cost of the work and with the contract documents, including Amendments and Addenda Nos. \_\_\_\_\_, hereby proposes to furnish all labor, materials, tools, equipment, insurance, permits, taxes, and to do and lawfully perform all things as provided in the specifications, all in accordance with the contract documents, for the sum of:

\_\_\_\_\_ Dollars, \$\_\_\_\_\_.

**B. FILED SUB-BIDS**

The subdivision of the proposed contract price is as follows:

Item 1. The work of the General Contractor, being all work other than that covered by Item 2.

\$\_\_\_\_\_.

Item 2. Sub-Bids are included as follows:

Sub-Trade	Name of Sub-Bidder	Amount	Bonds required indicated by "Yes" or "No"
<u>Masonry</u>	_____	_____	_____
<u>Waterproofing, Damp-proofing, and Caulking</u>	_____	_____	_____

D. UNIT PRICES

1. The payment shall be as indicated in the Contract Documents.
2. Prior to commencing removal or placement of materials set forth in the Contract Documents, the Contractor shall notify the Architect/Engineer in sufficient time to permit proper measurements to be taken on behalf of the Owner. Only quantities which have been approved in writing by the Architect/Engineer will be considered in the determination of adjustments to the Contract Sum.
3. Performance of Work which is not required under the Contract Documents or which is not authorized by Change Order, whether or not such Work item is set forth hereunder as a Unit Price item, shall not be considered cause for extra payment. The Contractor will be held fully responsible for such unauthorized work, including the performance of all corrective measures required by the Architect/Engineer.
4. The Unit Prices as requested herein shall include their pro rate share of all costs for general conditions, staging, access, demolition, disposal, insurance, permits, taxes, overhead, profit, bond, labor, materials, and equipment of every kind, for the Contractor and Subcontractors.
5. Schedule of Unit Prices

**UNIT PRICE SCHEDULE – BASE BID WORK**

#	Description	Unit	Base Bid Quantities	Reference Detail(s)	Add/Deduct price (Insert Only One Number)
1	Horizontal Concrete Patch Repair	SF	500	2/S3-01	
2	Overhead Concrete At Underside Repair	SF	300	3/S3-01	
3	Double Tee End Spall Repair	SF	25	4/S3-01	
4	Shallow Concrete Wall Repair	SF	100	5/S3-01	
5	Interior Column Haunch Spall	SF	25	6/S3-01	
6	Typical Column Spall Repair / Column Corner Spall Repair	SF	80	7,8/S3-01	
7	Concrete Stair Repair	SF	2	24/S3-02	



8	Reset Precast Cap At Railing Base	EA	12	12/S3-01	
9	Reset Precast Cap At Lower Wall	EA	5	14/S3-02	
10	Shear Connector Replacement	EA	230	10,11/S3-01	
11	Shear Connector Repair	EA	270	10,11/S3-01	
12	Bituminous Patching	SF	250	6/S1-04	
13	Area Drain Replacement	EA	3	22/S3-02	
14	Broken Pipe Replacement (8" ø)	LF	20	23/S3-02	
15	Elbow Pipe Replacement (8" ø)	EA	2	-	
16	Individual Brick Replacement (Filed Sub-Bid Masonry)	EA	150	20/S3-02	
17	Brick Pointing (Filed Sub-Bid – Masonry)	SF	850	21/S3-02	
18	Rout & Seal Top Deck Cracks (Filed Sub-Bid – Waterproofing, Damp-proofing, Caulking)	LF	100	9/S3-01	

\*Indicates that the quantity listed is in addition to all the scope areas noted on the plans.

E. The undersigned agrees that, if s/he is selected as general contractor, he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price; provided however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

F. 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 in 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 employees; and the he will comply with all laws and regulations applicable to awards made subject to section 44A.

- G. The undersigned as Bidder certifies that if this proposal is accepted, s/he will furnish to the City of Waltham with the invoice for the material or equipment supplied two copies of any and all Material Safety Data Sheets applicable to such material or equipment, as required by M.G.L. Chapter 111F, so called "Right to Know Law".
- H. 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 under in this section, the work "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.
- I. The undersigned further 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 of regulation promulgated thereunder.

J. Substantial Completion

Substantial completion to be within 90 calendar days from the date of 'Notice to Proceed'.

Sincerely,

\_\_\_\_\_  
(Bidder)

\_\_\_\_\_  
(Address of Bidder)

By:

\_\_\_\_\_  
(Title - Owner\*, Partner\*)

(Seal, if Corporation)

By:

\_\_\_\_\_  
(If Corporation - Name and Office)

\* If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.

H. BIDDER'S CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGE RATES

The undersigned bidder hereby certifies, under the 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 Industries. 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.

DATED: \_\_\_\_\_

NAME OF BIDDER: \_\_\_\_\_

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

Acknowledgment of Principal, if a Corporation

State of \_\_\_\_\_)

:SS:

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

before me personally came \_\_\_\_\_ to me known, who, being by me duly sworn, did depose and say that he/she resides

at \_\_\_\_\_, that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described herein and which executed the foregoing instrument; that he/she knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary Public)

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Acknowledgment of Principal, if a Partnership

State of \_\_\_\_\_)

:SS:

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

before me personally came \_\_\_\_\_ to me known, and known to me to be one of the members of the firm of

\_\_\_\_\_ who executed the foregoing instrument and he/she acknowledged to me that he/she executed the same as and for the act of said firm.

(Notary Public)

Acknowledgment of Principal, if an Individual

State of \_\_\_\_\_)

:SS:

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

before me personally came \_\_\_\_\_ to me known, and known to me to be the person described herein and who executed the foregoing instrument and he/she acknowledged to me that he/she executed the same.

(Notary Public)

\_\_\_\_\_  
\_\_\_\_\_  
(If bidder is a partnership, state here the name and residence of each member thereof)

Name of Partners

Residence Address

_____	_____
_____	_____
_____	_____

\_\_\_\_\_  
\_\_\_\_\_  
(If bidder is a corporation, state here the title, name, and residence of each member thereof)

Title

Name

Residence Address

_____	_____	_____
_____	_____	_____
_____	_____	_____

Organized under the laws of the state of \_\_\_\_\_

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

END OF SECTION

**PRIME/GENERAL UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND  
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)**

**TO ALL BIDDERS AND AWARDING AUTHORITIES**

A COMPLETED AND SIGNED PRIME/GENERAL CONTRACTOR UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY PRIME/GENERAL BID FOR A CONTRACT PURSUANT TO M.G.L. c.149, §44A AND M.G.L. c. 149A. ANY PRIME/GENERAL BID SUBMITTED WITHOUT AN APPROPRIATE UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

***Caution: This form is to be used for submitting Prime/General Contract bids. It is not to be used for submitting Filed Sub-Bids or Trade Sub-Bids.***

**AWARDING AUTHORITIES**

**If the Awarding Authority determines that the bidder does not demonstrably possess the skill, ability and integrity necessary to perform the work on the project, it must reject the bid.**

---

**BIDDER'S AFFIDAVIT**

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Prime/General Contractor Update Statement on behalf of the bidder named below, that I have read this Prime/General Contractor Update Statement, and that all of the information provided by the bidder in this Prime/General Contractor Update Statement is true, accurate, and complete as of the bid date.

---

Bid Date

Print Name of Prime/General Contractor

---

Project Number  
(or name if no number)

Business Address

---

Awarding Authority

Telephone Number

**SIGNATURE** ⇨

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**Bidder's Authorized Representative**

## INSTRUCTIONS

### INSTRUCTIONS TO BIDDERS

- This form must be completed and submitted by all Prime/General contractors bidding on projects pursuant to M.G.L. c. 149, §44A and M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. MAKING A MATERIALLY FALSE STATEMENT IN THIS UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.
- **This Update Statement must include all requested information that was not previously reported on the Application used for your firm's most recently issued (not extended or amended) Prime/General Contractor Certificate of Eligibility. The Update Statement must cover the entire period since the date of your Application, NOT since the date of your Certification.**
- You must use this official form of Update Statement. Copies of this form may be obtained from the awarding authority and from the Asset Management Web Site: [www.mass.gov/dcam](http://www.mass.gov/dcam) .
- If additional space is needed, please copy the appropriate page of this Update Statement and attach it as an additional sheet.
- See the section entitled "Bidding Limits" in the *Instructions to Awarding Authorities* for important information concerning your bidding limits.

### INSTRUCTIONS TO AWARDING AUTHORITIES

#### ***Determination of Bidder Qualifications***

- It is the awarding authority's responsibility to determine who is the lowest eligible and responsible bidder. You must consider all of the information in the low bidder's Update Statement in making this determination. Remember: this information was not available to the Division of Capital Asset Management and Maintenance at the time of certification.
- The bidder's performance on the projects listed in Parts 1 and 2 must be part of your review. Contact the project references.
- AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDER'S

ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT AND MAINTENANCE. Telephone (617) 727-9320 for an appointment.

#### ***Bidding Limits***

Single Project Limit: The total amount of the bid, including all alternates, may not exceed the bidder's Single Project Limit.

Aggregate Work Limit: The annual value of the work to be performed on the contract for which the bid is submitted, when added to the annual cost to complete the bidder's other currently held contracts, may not exceed the bidder's Aggregate Work Limit. Use the following procedure to determine whether the low bidder is within its Aggregate Work Limit:

Step 1 Review Update Statement Question #2 to make sure that all requested information is provided and that the bidder has accurately calculated and totaled the annualized value of all incomplete work on its currently held contracts (column 9).

Step 2 Determine the annual dollar value of the work to be performed on your project. This is done as follows:

(i) If the project is to be completed in less than 12 months, the annual dollar value of the work is equal to the full amount of the bid.

(ii) If the project will take more than 12 months to complete, calculate the number of years given to complete the project by dividing the total number of months in the project schedule by 12 (calculate to 3 decimal places), then divide the amount of the bid by the calculated number of years to find the annual dollar value of the work.

Step 3 Add the annualized value of all of the bidder's incomplete contract work (the

total of column 9 on page 5) to the annual dollar value of the work to be performed on your project. **The total may not exceed the bidder's Aggregate Work Limit.**

***Correction of Errors and Omissions in Update Statements***

Matters of Form: An awarding authority shall not reject a contractor's bid because there are mistakes or omissions of form in the Update Statement submitted with the bid, provided the contractor promptly

corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.05(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a contractor notice of defects, other than mistakes or omissions of form, in the contractor's Update Statement, and an opportunity to correct such defects, provided the correction of such defects is not prejudicial to fair competition. An awarding authority may reject a corrected Update Statement if it contains unfavorable information about the contractor that was omitted from the Update Statement filed with the contractor's bid. [810 CMR 8.05(2)].



**PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE *BUILDING* PROJECTS YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) DCAM CERTIFICATE OF ELIGIBILITY. YOU MUST REPORT ALL REQUESTED INFORMATION NOT PREVIOUSLY REPORTED ON THAT DCAM APPLICATION\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 2 - CURRENTLY HELD CONTRACTS**

LIST ALL PUBLIC AND PRIVATE BUILDING AND NON-BUILDING *CONSTRUCTION* PROJECTS YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7	8	9
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)	NO. OF YEARS REMAINING (see note below)	ANNUALIZED VALUE OF INCOMPLETE WORK (col. 7 ÷ col. 8) (divided by)

ANNUALIZED VALUE OF ALL INCOMPLETE CONTRACT WORK (Total of Column 9)

\$ \_\_\_\_\_

Column 8 • If less than one year is left in the project schedule, write 1.

- If more than 12 months are left in the project schedule, divide the number of months left in the project schedule by 12 (calculate to three decimal places).

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 3 - PROJECT PERFORMANCE**

**For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information you provide herein must supplement the Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].**

	YES	NO
1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project?		
2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?		
3. Has your firm failed or refused to complete any punch list work under any contract?		
4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy?		
5. Has your surety taken over or been asked to complete any of your work under any contract?		
6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked?		
7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?		
8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?		
9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts?		
10. Have there been any deaths of an employee or others occurring in connection with any of your projects?		
11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?		

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws**

**Please answer the following questions. Information must supplement all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) since your firm’s Application for your most recently issued (not extended or amended) Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility.**

The term “administrative proceeding” as used in this Prime/General Contractor Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

**If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.).**

	YES	NO
1. Have any civil, judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others?		
2. Have any criminal proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property?		
3. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals?		
4. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law?		

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws (continued)**

	YES	NO
5. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker's compensation?		
6. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment?		
7. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations?		
8. Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your firm or any principal or officer or anyone with a financial interest in your firm from public contracting?		
9. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of state or federal law regulating the environment?		
10. Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA's Web Site at <a href="http://www.osha.gov">www.osha.gov</a>		
11. Has your firm been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects?		
12. Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract?		
13. Are there any other issues that you are aware which may affect your firm's responsibility and integrity as a building contractor?		

**PART 5 - SUPERVISORY PERSONNEL**

List all supervisory personnel, such as project managers and superintendents, who will be assigned to the project if your firm is awarded the contract. **Attach the resume of each person listed below.**

NAME	TITLE OR FUNCTION

**PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION**

Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued?  Yes  No

**If YES, attach a separate page providing complete details.**

**PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT AND MAINTENANCE.**

**Attach here a copy of the list of completed construction projects which was submitted with your firm’s DCAM Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. The Attachment must include a complete copy of the entire Section G – “Completed Projects” and the final page – “Certification” (Section J) containing the signature and date that the Completed Projects list (Section G) was submitted to the Division of Capital Asset Management and Maintenance.**



**SECTION 00 60 02 – FORM FOR FILED SUB-BID**

**EMBASSY PUBLIC PARKING GARAGE RENOVATIONS**  
**WALTHAM, MA**

April 5, 2024

Crystal Philpott  
Purchasing Agent  
City of Waltham  
610 Main Street  
Waltham, MA 02452

Ms. Philpott,

To all General Bidders except those hereinafter expressly excluded:

- A. The undersigned proposes to furnish all labor and materials required for completing, in accordance with the hereinafter described plans, specifications and addenda, all the work specified in Section Nos. \_\_\_\_\_ of the specifications and in any plans specified in such section, prepared by SOCOTEC AE Consulting, LLC for the **Embassy Public Parking Garage Renovations, Waltham, Massachusetts**, for the contract sum of

\_\_\_\_\_ dollars (\$\_\_\_\_\_).

- B. This sub-bid includes addenda number \_\_\_\_\_.

- C. This sub-bid

May be used by any general bidder except:

\_\_\_\_\_

May only be used by the following general bidders:

\_\_\_\_\_

(To exclude general bidders, insert "X" in one box only and fill in blank following that box. Do not answer if no general bidders are excluded.)

- D. UNIT PRICES:

1. The following Unit Prices as described in the Specification are designated for items of Work on the basis of additional (or less) Contractor Work above the base quantities listed in the Schedule, below, or in each specification sections and/or drawings for the Work. These Unit Prices shall be used to add the dollar amounts shown for additional Work authorized in writing by the Consultant.

**UNIT PRICE SCHEDULE – BASE BID WORK**

#	Description	Unit	Base Bid Quantities	Reference Detail(s)	Add/Deduct price (Insert Only One Number)
1	Horizontal Concrete Patch Repair	SF	500	2/S3-01	
2	Overhead Concrete At Underside Repair	SF	300	3/S3-01	
3	Double Tee End Spall Repair	SF	25	4/S3-01	
4	Shallow Concrete Wall Repair	SF	100	5/S3-01	
5	Interior Column Haunch Spall	SF	25	6/S3-01	
6	Typical Column Spall Repair / Column Corner Spall Repair	SF	80	7,8/S3-01	
7	Concrete Stair Repair	SF	2	24/S3-02	
8	Reset Precast Cap At Railing Base	EA	12	12/S3-01	
9	Reset Precast Cap At Lower Wall	EA	5	14/S3-02	
10	Shear Connector Replacement	EA	230	10,11/S3-01	
11	Shear Connector Repair	EA	270	10,11/S3-01	
12	Bituminous Patching	SF	250	6/S1-04	
13	Area Drain Replacement	EA	3	22/S3-02	
14	Broken Pipe Replacement (8" ø)	LF	20	23/S3-02	

15	Elbow Pipe Replacement (8" ø)	EA	2	-	
16	Individual Brick Replacement (Filed Sub-Bid Masonry)	EA	150	20/S3-02	
17	Brick Pointing (Filed Sub-Bid – Masonry)	SF	850	21/S3-02	
18	Rout & Seal Top Deck Cracks (Filed Sub-Bid – Waterproofing, Damp- proofing, Caulking)	LF	100	9/S3-01	

2. The Unit Prices as requested herein shall include their prorated share of all costs for general conditions, staging, access, demolition, disposal, insurance, permits, taxes, overhead, profit, bond, labor, materials, and equipment of every kind, for the Contractor and Subcontractors.
  3. Any Unit Price proposal that contains a unit price which is unduly high or low may be rejected as unbalanced, and thereby affects the total cost proposal of this Contract.
- E. The undersigned agrees that, if he is selected as sub-bidder, he will, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general bidder selected as the General Contractor, execute with such general bidder a subcontract in accordance with the terms of this sub-bid and contingent upon the execution of the general contract, and, if requested to do so in the general bid by such general bidder, who shall pay the premiums therefore, furnish a performance and payment bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority, in the full sum of the subcontract price.
- F. The names of all persons, firms and corporations performing such class of work or part thereof for which the section of the specifications for the sub-trade require a listing in this paragraph (including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the specifications), the name of each such class of work, or part thereof, and the bid price for each such class of work or part thereof are:

<u>NAME</u>	<u>CLASS OF WORK</u>	<u>BID PRICE</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Do not give bid price for any class or part thereof furnished by undersigned.)

G. The undersigned agrees that the above list of bids to the undersigned represents a bona fide bid based on hereinbefore described plans, specifications, and addenda, and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the Awarding Authority.

H. The undersigned further agrees to be bound to the General Contractor by the terms of the hereinbefore described plans, specifications (including all general conditions stated therein), and addenda, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Owner.

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

1. Have been in business under present business name \_\_\_\_\_ years.
2. Have ever failed to complete any work awarded? \_\_\_\_\_
3. List three or more recent buildings with names of General Contractor and Architect on which you served as subcontractor for work of similar character as required for the above named buildings:

<u>BUILDING</u>	<u>ARCHITECT</u>	<u>GENERAL CONTRACTOR</u>	<u>AMOUNT OF CONTRACT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

4. Bank Reference: \_\_\_\_\_

J. 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 and that he will comply fully with the laws and regulations applicable to awards of subcontractors subject to section fourth-four F.

K. The undersigned further agrees that, if the undersigned fails to perform his agreement to execute a subcontract with the General Contractor and furnish a performance and payment bond if requested to do so in the general bid by the general bidder, the bid deposit accompanying the copy of this bid filed with the Award Authority shall become and be the property of the Awarding Authority as liquidated damages. The undersigned understands that, if he so executes a subcontract with the General Contractor and furnishes a performance and payment bond, if requested to do so, the bid deposit will be returned within five (5) days after execution of the

general contract.

- L. The undersigned represents that this proposal is made in good faith without fraud, collusion or connection of any kind with other bidder for the same work, that the undersigned is competing solely in his own behalf without connection with, or obligation to, any undisclosed person or corporation, that no other person or corporation has any interest in the profits of the contract, that the undersigned has read the form of contract attached hereto and is fully informed in regard to all provisions thereof and to the plans and specifications therein referred to, and that the undersigned has visited the premises described in said form of contract and made his own examination of the place where the work is to be done and of all conditions pertaining to the work had has made his own estimates and from such examination and estimate makes this proposal.
- M. The Federal Social Security Identification Number of the sub-bidder (the number used on Employer's Quarterly Federal Tax Return, US Treasury Department Form 941) is:

DATE \_\_\_\_\_

Sub Bidder \_\_\_\_\_  
(Company Name)

By: \_\_\_\_\_  
Signature of Authorized Representative

Title: \_\_\_\_\_  
(Affix Seal)

Business Address: \_\_\_\_\_

City and State: \_\_\_\_\_

Telephone No. \_\_\_\_\_

N. BIDDER'S CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGES

The undersigned bidder hereby certifies, under the 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 Industries. 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.

DATED: \_\_\_\_\_

NAME OF BIDDER: \_\_\_\_\_

BY: \_\_\_\_\_

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF SECTION



**SUB-BIDDERS' UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND  
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)**

## **Sub-Bidder Update Statement**

### **TO ALL SUB-BIDDERS, TRADE CONTRACTORS AND AWARDING AUTHORITIES**

A COMPLETED AND SIGNED SUB-BIDDER UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY FILED SUB-BID PURSUANT TO M.G.L. c.149, §44F AND EVERY TRADE SUB-BID PURSUANT TO M.G.L. c. 149A. ANY FILED SUB-BID OR TRADE SUB-BID SUBMITTED WITHOUT AN APPROPRIATE SUB-BIDDER UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

*Caution: This form is to be used for submitting Filed Sub-Bids and Trade Sub-Bids Only*

### **AWARDING AUTHORITIES**

**If the Awarding Authority determines that the Sub-Bidder is not competent to perform the work as specified on the project, it should reject the bid.**

---

### **SUB-BIDDER'S AFFIDAVIT**

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Sub-Bidder Update Statement on behalf of the bidder named below, that I have read this Sub-Bidder Update Statement, and that all of the information provided by the bidder in this Sub-Bidder Update Statement is true, accurate, and complete as of the bid date.

---

Bid Date

---

Print Name of Sub-Bidder or Trade Contractor

---

Project Number  
(or name if no number)

---

Business Address

---

Awarding Authority

---

Telephone Number

**SIGNATURE** ⇨

---

**Bidder's Authorized Representative**

## INSTRUCTIONS

### INSTRUCTIONS TO SUB-BIDDERS

- This form must be completed and submitted by all Filed Sub-Bidders bidding on projects and Trade Contractors bidding on projects.
- You must give complete and accurate answers to all questions and provide all of the information requested. **MAKING A MATERIALLY FALSE STATEMENT IN THIS SUB-BIDDER UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.**
- This Sub-Bidder Update Statement must include all requested information that was not previously reported on the application used for your company's most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. **The Sub-Bidder Update Statement must cover the entire period since the date of that application, NOT since the date of your Certification.**
- You must use this official form of Sub-Bidder Update Statement. Copies of this form may be obtained from the awarding authority or from the DCAMM Web Site:  
[www.mass.gov/DCAMM/certification](http://www.mass.gov/DCAMM/certification).
- If additional space is needed, please copy the appropriate page of this Sub-Bidder Update Statement and attach it as an additional sheet.
- It is acceptable to attach your projects in progress and completed projects spreadsheet for Part 7.

Division of Capital Asset Management and Maintenance  
Sub-Bidder Update Statement

### INSTRUCTIONS TO AWARDING AUTHORITIES

#### ***Determination of Sub-Bidder Qualifications***

Division of Capital Asset Management and Maintenance  
Sub-Bidder Update Statement

- It is the awarding authority's responsibility to determine each responsible bidder. You must consider all of the information in the bidder's Sub-Bidder Update Statement in making this determination. **Remember: this information was not available to the Division of Capital Asset Management and Maintenance at the time of certification.**
- The Sub-Bidder's performance on the projects listed in Parts 1 and 2 must be part of your review.
- Contact the project references.
- AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDERS CERTIFICATION FILE. WITH THE IMPLEMENTATION OF ELECTRONIC DOCUMENT MANAGEMENT FILE REVIEWS CAN BE PROVIDED ELECTRONICALLY. To discuss your request/options contact DCAMM's Contractor Certification (857) 204-1305.

#### ***Correction of Errors and Omissions in Sub-Bidder Update Statements***

Matters of Form: An awarding authority shall not reject a Sub-Bidder's bid because there are mistakes or omissions of form in the Sub-Bidder Update Statement submitted with the bid provided the Sub-Bidder promptly corrects those mistakes or omissions upon request of the awarding authority.

Correction of Other Defects: An awarding authority may, in its discretion, give a Sub-Bidder notice of minor defects and omissions as to form in the Sub-Bidder's Update Statement and provide an opportunity to correct its Sub-Bidder Update Statement. However, the Sub-Bidder shall not be allowed to make corrections to a Sub-Bidder Update Statement if material information about the Sub-Bidder was omitted from the Sub-Bidder Update Statement filed with the Sub-Bidder's bid. The Awarding Authority shall advise DCAMM of any material omissions in a Sub-Bidder's Update Statement.



**PART 1 - COMPLETED PROJECTS**

List All Public And Private Projects Of \$20,000 or more your company has completed since the date of application for your most recently issued (not extended or amended) Sub-Bidder Certificate Of Eligibility\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED

Attach additional sheets if necessary

\* If your company has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Sub-Bidder Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE		COMPANY NAME	CONTACT PERSON	TELEPHONE	EMAIL ADDRESS
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 2 – PROJECTS IN PROGRESS CONTRACTS**

List all public and private projects of \$20,000 or more your company has under contract on this date regardless of when or whether the work commenced.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES (MM/YYYY)	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE		COMPANY NAME	CONTACT PERSON	TELEPHONE	EMAIL ADDRESS
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				
	OWNER:				
	DESIGNER				
	GC:				

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 3 - GENERAL PERFORMANCE (in the prime update it's called Project Performance – can we change it?)**

**For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information you provide herein must supplement the application for your most recently issued (not extended or amended) DCAMM Sub-Bidder Certificate of Eligibility. You must report all requested information not previously reported on that application. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].**

	YES	NO
1. Has your company been terminated on any contract prior to completing a project or has any officer, partner or principal of your company been an officer, partner or principal of another company that was terminated or failed to complete a project?		
2. Has your company failed or refused either to perform or complete any of its work under any contract prior to substantial completion?		
3. Has your company failed or refused to complete any punch list work under any contract?		
4. Has your company filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current company been an officer, principal or individual with a financial interest in another company that filed for bankruptcy?		
5. Has your surety taken over or been asked to complete any of your work under any contract?		
6. Has a payment or performance bond been invoked against your current company, or has any officer, principal or individual with a financial interest in your current company been an officer, principal or individual with a financial interest in another company that had a payment or performance bond invoked?		
7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?		
8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?		
9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts?		
10. Have there been any deaths of an employee or others occurring in connection with any of your projects?		
11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?		

Division of Capital Asset Management and Maintenance  
Sub-Bidder Update Statement

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws**

Please answer the following questions. Information must supplement all judicial and administrative proceedings involving bidder’s company, which were instituted or concluded (adversely or otherwise) since your company’s Application for your most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. You must report all requested information not previously reported on that DCAMM Application.

The term “administrative proceeding” as used in this Sub-Bidder Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your company” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s company.

**If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.).**

	YES	NO
1. Have any civil, judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others?		
2. Have any criminal proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property?		
3. Have any judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals?		
4. Have any judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law?		

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws (continued)**

	YES	NO
5. Have any judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker's compensation?		
6. Have any judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment?		
7. Have any judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations?		
8. Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your company or any principal or officer or anyone with a financial interest in your company from public contracting?		
9. Have any judicial or administrative proceedings involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled relating to a violation of state or federal law regulating the environment?		
10. Has your company been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA's Web Site at <a href="http://www.osha.gov">www.osha.gov</a>		
11. Has your company been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects?		
12. Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your company or a principal or officer or anyone with a financial interest in your company been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract?		
13. Are there any other issues that you are aware which may affect your company's responsibility and integrity as a building contractor?		

**PART 5 - SUPERVISORY PERSONNEL**

List all supervisory personnel who will be assigned to the project if your company is awarded the contract.

**Attach the resume of each person listed below.**

NAME	TITLE OR FUNCTION

**PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION**

Have there been any changes in your company’s business organization, financial condition or bonding capacity since the date your current Contractor Certificate of Eligibility was issued?  Yes  No

**If YES, attach a separate page providing complete details.**

**PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT AND MAINTENANCE ALONG WITH CERTIFICATION SIGNATURE PAGE.**

Attach here a copy of the list of completed construction projects which was submitted with your company’s application for your most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. The Attachment must include a complete copy of the entire Completed Projects spreadsheet and the final page Certification Page of the online application, containing the signature and date the completed projects list was submitted to the Division of Capital Asset Management and Maintenance.



**SECTION 00 70 00**

PREVAILING WAGE SCHEDULE

Please visit the City Web Site at <https://www.city.waltham.ma.us/category/tags/purchasing-bids-open-0> for a copy of the schedules

**SECTION 00 70 10**

**PERFORMANCE BOND**

**CITY OF WALTHAM**

KNOW ALL MEN BY THESE PRESENT THAT,

\_\_\_\_\_ as

principal and \_\_\_\_\_ as surety, are held and firmly bound unto the CITY OF WALTHAM and to such persons, firms, and corporations, who may furnish materials for or perform labor on the work, construction or improvements contemplated in the Contract hereinafter mentioned, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, in the

SUM OF \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

(lawful money of the United States of America) for the payment whereof the Contractor and the Surety of Sureties bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT for the above burden (the Contractor) its

\_\_\_\_\_ heirs, executors, administrators and assigns, shall faithfully perform the Contract, on his part and during the life of any guaranty or warranty, for defective materials and workmanship required under this Contract, and satisfy all claims and demands incurred for the same; and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of failure so to do, and shall fully reimburse and repay the City all outlay and expense which the City may incur in making good any such default, and shall promptly make payment to all persons supplying labor or materials for use in the prosecution of the work provided for in said Contract; and shall indemnify and save harmless the said City, its officers and agents from any and all suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that (except as to the City) no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after two years from the day on which the final payment under the Contract falls due.

AND PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the City of any extension of time for the performance of the Contract, or any other forbearance on the part of either the City or the Contractor to the other, shall not in any way release the Contractor and the Surety of Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such alterations, assignment, transfer, subletting extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

And 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 hereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such changes, extension of time, alteration or addition to the terms of the Contract or to the work, or to the Specifications.

IN WITNESS WHEREOF, said Contractor and Surety have hereunto set their respective names this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WITNESSES:

(CONTRACTOR) (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(SIGNATURE AND TITLE)

ADDRESS \_\_\_\_\_  
(SURETY) (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(SIGNATURE AND TITLE)

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
(ATTORNEY-IN-FACT)

POWER OF ATTORNEY

Attorneys-in-fact who sign bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

**SECTION 00 70 20**

**PAYMENT BOND**

**CITY OF WALTHAM**

KNOW ALL MEN BY THESE PRESENT THAT,

\_\_\_\_\_ as

principal and \_\_\_\_\_ as  
surety, are held and firmly bound unto the CITY OF WALTHAM and to such persons, firms, and corporations, who may furnish materials for or perform labor on the work, construction or improvements contemplated in the Contract hereinafter mentioned, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, in the

SUM OF \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_ )  
(lawful money of the United States of America) for the payment whereof the Contractor and the Surety of Sureties bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT for the above burden (the Contractor) its

\_\_\_\_\_ heirs, executors, administrators and assigns, shall faithfully perform the Contract, on his part and during the life of any guaranty or warranty, for defective materials and workmanship required under this Contract, and satisfy all claims and demands incurred for the same; and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of failure so to do, and shall fully reimburse and repay the City all outlay and expense which the City may incur in making good any such default, and shall promptly make payment to all persons supplying labor or materials for use in the prosecution of the work provided for in said Contract; and shall indemnify and save harmless the said City, its officers and agents from any and all suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that (except as to the City) no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after two years from the day on which the final payment under the Contract falls due.

AND PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the City of any extension of time for the payment of the Contract, or any other forbearance on the part of either the City or the Contractor to the other, shall not in any way release the Contractor and the Surety of Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such alterations, assignment, transfer, subletting extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who

may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

And 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 hereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such changes, extension of time, alteration or addition to the terms of the Contract or to the work, or to the Specifications.

IN WITNESS WHEREOF, said Contractor and Surety have hereunto set their respective names this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

WITNESSES:

(CONTRACTOR)

(SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(SIGNATURE AND TITLE)

ADDRESS \_\_\_\_\_  
(SURETY) (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(SIGNATURE AND TITLE)

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
(ATTORNEY-IN-FACT)

POWER OF ATTORNEY

Attorneys-in-fact who sign bonds must file with each bond a certified copy of their power of attorney to sign said bonds.



# AIA<sup>®</sup> Document G715<sup>™</sup> – 2017

## Supplemental Attachment for ACORD Certificate of Insurance 25

<b>PROJECT:</b> <i>(name and address)</i>	<b>CONTRACT INFORMATION:</b> Contract For: Date:	<b>CERTIFICATE INFORMATION:</b> Producer: Insured: Date:
<b>OWNER:</b> <i>(name and address)</i>	<b>ARCHITECT:</b> <i>(name and address)</i>	<b>CONTRACTOR:</b> <i>(name and address)</i>

A. General Liability	Yes	No	N/A
1. Does this policy include coverage for:			
a Damages because of bodily injury, sickness, or disease, including occupational sickness or disease, and death of any person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Personal injury and advertising injury?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Damages because of physical damage to or destruction of tangible property, including the loss of use of such property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Bodily injury or property damage arising out of completed operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e The Contractor's indemnity obligations included in the Contract Documents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does this policy contain an exclusion or restriction of coverage for:			
a Claims by one insured against another insured, where the exclusion or restrictions is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Claims for bodily injury other than to employees of the insured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Claims for the Contractor's indemnity obligations included in the Contract Documents arising out of injury to employees of the insured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Claims for loss excluded under a prior work endorsement or other similar exclusionary language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g Claims related to residential, multi-family, or other habitational projects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h Claims related to roofing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i Claims related to exterior insulation finish systems, synthetic stucco, or similar exterior coatings or surfaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j Claims related to earth subsistence or movement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k Claims related to explosion, collapse, and underground hazards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>B. Other Insurance Coverage</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Indicate whether the Contractor has the following insurance coverages and, if so, indicate the coverage limits for each.			
a Professional liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			
b Pollution liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			
c Insurance for maritime liability risks associated with the operation of a vessel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			

- d Insurance for the use or operation of manned or unmanned aircraft     
     Coverage limits:
- e Property insurance     
     Coverage limits:
- f Railroad protective liability insurance     
     Coverage limits:
- g Asbestos abatement liability insurance     
     Coverage limits:
- h Insurance for physical damage to property while it is in storage and in transit to  
     the construction site     
     Coverage limits:
- i Other:

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*(Authorized Representative)*

---

*(Date of Issue)*

## Application and Certificate for Payment

**TO OWNER:** PROJECT: CBI Consulting, LLC  
 CBI Consulting, LLC

**FROM CONTRACTOR:** VIA ARCHITECT:

**APPLICATION NO:** 001  
**PERIOD TO:**

**CONTRACT FOR:** General Construction  
**CONTRACT DATE:** January 01, 2018  
**PROJECT NOS:** 110 / /

**Distribution to:**  
 OWNER:  ARCHITECT:   
 CONTRACTOR:  FIELD:   
 OTHER:

### CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

- 1. ORIGINAL CONTRACT SUM ..... \$0.00
- 2. NET CHANGE BY CHANGE ORDERS ..... \$0.00
- 3. CONTRACT SUM TO DATE (Line 1 ± 2) ..... \$0.00
- 4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) ..... \$0.00

- 5. RETAINAGE:
  - a. 0 % of Completed Work (Column D + E on G703) ..... \$0.00
  - b. 0 % of Stored Material (Column F on G703) ..... \$0.00

- 6. TOTAL EARNED LESS RETAINAGE ..... \$0.00  
 (Line 4 Less Line 5 Total)
- 7. LESS PREVIOUS CERTIFICATES FOR PAYMENT ..... \$0.00  
 (Line 6 from prior Certificate)

- 8. CURRENT PAYMENT DUE ..... \$0.00
- 9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6) ..... \$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this Month	\$0.00	\$0.00
<b>TOTALS</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>NET CHANGES by Change Order</b>		<b>\$0.00</b>

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

**CONTRACTOR:** By: \_\_\_\_\_ Date: \_\_\_\_\_  
 State of: \_\_\_\_\_  
 County of: \_\_\_\_\_  
 Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_  
 Notary Public: \_\_\_\_\_  
 My Commission expires: \_\_\_\_\_

### ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

**AMOUNT CERTIFIED** ..... \$0.00  
 (Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

**ARCHITECT:** By: \_\_\_\_\_ Date: \_\_\_\_\_

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.



## Continuation Sheet

AIA Document G702<sup>™</sup>-1992, Application and Certification for Payment, or G736<sup>™</sup>-2009, Project Application and Project Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.

In tabulations below, amounts are in US dollars.  
 Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO: 110

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		E THIS PERIOD	F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G		H BALANCE TO FINISH (C - G)	I RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD			TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)		
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>GRAND TOTAL</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%	\$0.00	\$0.00



# AIA<sup>®</sup> Document G701<sup>™</sup> – 2017

## Change Order

<b>PROJECT:</b> <i>(Name and address)</i>	<b>CONTRACT INFORMATION:</b> Contract For: General Construction Date:	<b>CHANGE ORDER INFORMATION:</b> Change Order Number: 001 Date:
<b>OWNER:</b> <i>(Name and address)</i>	<b>ARCHITECT:</b> <i>(Name and address)</i>	<b>CONTRACTOR:</b> <i>(Name and address)</i>

**THE CONTRACT IS CHANGED AS FOLLOWS:**  
*(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)*

The original Contract Sum was	\$	0.00
The net change by previously authorized Change Orders	\$	0.00
The Contract Sum prior to this Change Order was	\$	0.00
The Contract Sum will be increased by this Change Order in the amount of	\$	0.00
The new Contract Sum including this Change Order will be	\$	0.00

The Contract Time will be increased by Zero (0) days.  
 The new date of Substantial Completion will be

**NOTE:** This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

**NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.**

<b>ARCHITECT</b> <i>(Firm name)</i>	<b>CONTRACTOR</b> <i>(Firm name)</i>	<b>OWNER</b> <i>(Firm name)</i>
<b>SIGNATURE</b>	<b>SIGNATURE</b>	<b>SIGNATURE</b>
<b>PRINTED NAME AND TITLE</b>	<b>PRINTED NAME AND TITLE</b>	<b>PRINTED NAME AND TITLE</b>
<b>DATE</b>	<b>DATE</b>	<b>DATE</b>



# AIA<sup>®</sup> Document G704<sup>™</sup> – 2017

## Certificate of Substantial Completion

**PROJECT:** *(name and address)*

**CONTRACT INFORMATION:**

Contract For:

Date:

**CERTIFICATE INFORMATION:**

Certificate Number: 001

Date:

**OWNER:** *(name and address)*

**ARCHITECT:** *(name and address)*

**CONTRACTOR:** *(name and address)*

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.

*(Identify the Work, or portion thereof, that is substantially complete.)*

\_\_\_\_\_  
**ARCHITECT** *(Firm Name)*

\_\_\_\_\_  
**SIGNATURE**

\_\_\_\_\_  
**PRINTED NAME AND TITLE**

\_\_\_\_\_  
**DATE OF SUBSTANTIAL COMPLETION**

### WARRANTIES

The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

*(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)*

### WORK TO BE COMPLETED OR CORRECTED

A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:

*(Identify the list of Work to be completed or corrected.)*

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within ( ) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: \$

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:

*(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)*

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

\_\_\_\_\_  
**CONTRACTOR** *(Firm Name)*

\_\_\_\_\_  
**SIGNATURE**

\_\_\_\_\_  
**PRINTED NAME AND TITLE**

\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**OWNER** *(Firm Name)*

\_\_\_\_\_  
**SIGNATURE**

\_\_\_\_\_  
**PRINTED NAME AND TITLE**

\_\_\_\_\_  
**DATE**

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

**SECTION 00 75 19 – GENERAL RELEASE AND WAIVER OF LIEN**  
**(General Contractor)**

NAME: \_\_\_\_\_  
(General Contractor)

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

TO: Crystal Philpott  
Purchasing Agent  
City of Waltham  
610 Main Street  
Waltham, MA 02452

Project: Embassy Public Parking Garage Renovations  
Waltham, Massachusetts

We, the undersigned, in consideration of payments made to us, hereby waive and release all actions, debts, claims, and demands against Embassy Public Parking Garage and the City of Waltham on account of all work, services, equipment, and materials performed or furnished by us in connection with the construction of a building, improvements, and facilities on real property owned by City of Waltham and in connection with the Embassy Public Parking Garage Renovations , or pursuant to our contract, dated \_\_\_\_\_ made with the City of Waltham, and amendments and change orders thereto; and

We hereby waive and release any mechanics', materialman's, or like lien, and all rights to file any such lien in the future, against said real property on account of said work, services, equipment and materials performed or furnished by us.

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

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Seal)

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

**SECTION 00 75 20 – GENERAL RELEASE AND WAIVER OF LIEN**  
**(Subcontractor/Material Supplier)**

NAME: \_\_\_\_\_  
(Sub-Contractor)

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

To: Crystal Philpott  
Purchasing Agent  
City of Waltham  
610 Main Street  
Waltham, MA 02452

Project: Embassy Public Parking Garage Renovations  
Waltham, Massachusetts

We, the undersigned, in consideration of payments made to us, hereby waive and release all actions, debts, claims, and demands against Embassy Public Parking Garage, City of Waltham and the General Contractor \_\_\_\_\_ on account of all work, services, equipment, and materials performed or furnished by us in connection with the construction of a building, improvements, and facilities on real property owned by City of Waltham and in connection with the Embassy Public Parking Garage Renovations, or pursuant to our contract, dated \_\_\_\_\_ made with the City of Waltham, and amendments and change orders thereto; and

We hereby waive and release any mechanics', materialman's, or like lien, and all rights to file any such lien in the future, against said real property on account of said work, services, equipment and materials performed or furnished by us.

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

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Seal)

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

**SECTION 00 85 10 –DRAWING LIST**

Drawings Sheets (All drawings are 24" x 36").

**GENERAL**

G0-01 COVER SHEET

**STRUCTURAL**

S1-01 LOWER LEVEL PLAN  
S1-02 UPPER LEVEL PLAN  
S1-03 RAMP FRAMING PLANS AND ELEVATIONS  
S1-04 RAMP DETAILS  
S2-01 BUILDING ELEVATIONS  
S2-02 BUILDING ELEVATIONS  
S3-01 SECTION DETAILS  
S3-02 SECTION DETAILS

END OF SECTION

# **TECHNICAL SPECIFICATIONS**

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 11 13**

**SUMMARY OF WORK**

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROJECT

- A. Project Name: Embassy Public Parking Garage Renovations
- B. Owner's Name: City of Waltham
- C. Architect's Name: SOCOTEC AE Consulting, LLC

1.03 WORK UNDER THIS CONTRACT

- A. The work to be done under this contract consists of executing and completing all work required for the Embassy Public Parking Garage Repairs.
- B. In general, the Contractor shall supply all material, labor, equipment, insurance, temporary protection, tools and appliances necessary for the proper completion of the Work as described in the Plans and Specifications, in accordance with good construction practice, and as required by the materials manufacturers.
- C. Supply all shoring and protection necessary to protect the occupants, building site, building systems, and landscape areas. All means and methods are the responsibility of the Contractor. The Contractor is solely responsible for safety on the job site.
- D. All materials shall be new and of the best quality.



- E. General Information
1. If there is a conflict between or within any part of the plans and the specifications, the more stringent requirement shall apply at the sole discretion of the Architect.
  2. This document describes the renovations, accessibility, and other code required upgrades at the Embassy Public Parking Garage Repairs in Waltham Massachusetts. The work shall be constructed so as to meet all requirements of the Massachusetts State Building Code, current edition, and the Massachusetts Architectural Access Board (MAAB) and the Americans with Disabilities Act (ADA), in addition to all other applicable codes and regulations.
  3. The property will be unoccupied for the duration of the project. The Contractor shall maintain the entrance and egress paths at all times.
- F. The work will include all operations necessary to deliver the building and ancillary on and off-site amenities in a fully installed and operable condition including all utility and site work and obtaining all necessary licenses, permits, and certificates.
- G. A Permit Set of the drawings and project manual is to be kept at one location at the site for the duration of the project. As-built records are to be kept and coordinated by the General Contractor throughout the project. Provide As-Built drawings – by the GC and all the File Sub-Bidders – in CAD files using AutoCad, latest version.
- H. The following is the general scope of work. The Filed Sub-Bid Waterproofing and Masonry work applies to the Limit of Work areas noted on the Drawings. All work required without limiting the generality thereof includes all labor, materials, equipment, and services required to perform the work fully in the drawings and specifications and to provide a complete finished project and includes, but is not limited to, the following:
1. Contractor to remove and replace all existing sealants and backer rods at all locations shown on plans.
  2. Contractor to perform concrete repair, including horizontal repairs, vertical repairs, overhead repairs, top surface repairs and full depth slab repairs at existing cast-in-place and precast concrete elements.
  3. Contractor to perform crack repair with sealant and gravity fed epoxy.
  4. Shear connector repairs.
  5. Repair/reinforcement of exist precast double tees.
  6. Resetting of precast coping caps.
  7. Graffiti removal and installation of new coating at upper and lower walls to be performed by Filed Sub-Bid Waterproofing contractor.

8. Exterior brick sealant joint replacement to be performed by Filed Sub-Bid Waterproofing contractor.
9. Replace bituminous paving at garage ramp.
10. Miscellaneous bituminous patching.
11. Repointing of exterior brick to be performed by Filed Sub-Bid Masonry contractor.
12. Replacement of individual spalled bricks, large areas of brick, and repair of cracks in brick to be performed by Filed Sub-Bid Masonry contractor.
13. Demolition and reconstruction of existing concrete spandrels at ramp by General Contractor. Installation of new brick masonry to be completed by Filed Sub-Bid Masonry contractor.
14. Surface preparation and painting of existing handrails and snow gate.
15. Restripe entire garage. Provide new accessible parking layout with striping and symbols painted, and paint over all remaining existing line stripes.
16. Replacement of existing deck drains and drain piping.
17. Removal and replacement of expansion joint to be performed by Filed Sub-Bid Waterproofing contractor.

#### 1.04 OWNER OCCUPANCY

- A. Owner does not intend to occupy the existing building during the entire construction period.
- B. Cooperate with Owner to minimize conflict and to facilitate the operation of the adjacent apartment building.

#### 1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Arrange use of site and premises to allow:
  1. Work by Others.
  2. Work by Owner.
- B. Provide access to and from site as required by law and by Owner:
  1. Emergency Building Exits During Construction: Maintain all exits in fully-operable condition during construction period; provide temporary exit signs (inside and outside) if exit routes are temporarily altered. Submit to Owner a site utilization plan and protection procedure for review and approval.
  2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Time Restrictions:
  1. Work may be performed Monday – Friday, from 7:00AM to 5:00PM. Work

may be allowed on Saturdays with prior approval by the City of Waltham.

#### 1.06 EXAMINATION OF SITE AND DOCUMENTS

- A. A formal briefing session will be held and all interested bidders are strongly encouraged to view the ramp and location.
- B. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. The City of Waltham will not be responsible for errors, omissions, and/or charges for extra work arising from the General Contractors, Filed Sub-bid Contractors or Subcontractors failure to familiarize themselves with the contract documents, that they are familiar with the conditions and requirements of both where they require, in any part of the work a given result to be produced, that the contract documents are adequate and they will produce the required results.

#### 1.07 SUPERVISION OF WORK

- A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Contractor must make good repair, without expense to the Owner, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the Contractor's warranty period, from the date of final acceptance of the work by the Owner.
- B. The Contractor shall furnish a competent full-time Massachusetts licensed superintendent approved by the Owner and Architect. The licensed superintendent shall supervise all work under this contract and who shall remain on duty at the site throughout the Contract period while work is in progress. The same superintendent shall remain on the project for the entire duration of the job.

#### 1.08 FIELD MEASUREMENTS

- A. Although care has been taken to ensure their accuracy, the dimensions shown for existing items and structures are not guaranteed. It is the responsibility of the Contractor to verify these dimensions in the field before fabricating any construction component. No claims for extra payment due to incorrect dimensions will be considered by the Owner.

#### 1.09 DAMAGE RESPONSIBILITY

- A. The Contractor shall repair, at no cost to the Owner, any damage to building elements, site appurtenances, landscaping, utilities, etc. caused during demolition operation and work of this Contract.
- B. The Contractor shall secure the work area and equipment at the end of each workday.

#### 1.10 OWNER FURNISHED PRODUCTS

- A. Products indicated “N.I.C.” (Not in Contract), or “E. O.” (Equipment by Owner), or “O.F.O.I.” (Owner Furnished Owner Installed), or other similar acronyms as defined in the contract documents will be furnished and installed by the Owner. Coordination and provision of service lines for such products shall be included under these Construction Contract Documents, if indicated. Final connections from service lines to equipment will be by the Owner, unless otherwise indicated.

#### 1.11 INTENT OF THE PROJECT MANUAL

- A. Words in the singular shall also mean and include the plural, wherever the context so indicates, and words in the plural shall mean the singular, wherever the context so indicates.
- B. Wherever the terms "shown on drawings" are used in the specifications, they shall mean "noted", "indicated", "scheduled", "detailed", or shall refer to any other diagrammatic or written reference made on the drawings.
- C. Wherever the terms "furnish", "install" or "provide" are used in the contract documents, it shall mean to "connect", "apply", "erect", "construct", or similar terms in order to make operative, and to supply all labor and materials, including miscellaneous fittings, hardware, and accessories necessary to complete the installation of the specified item.
- D. All the work of the project is "related" in some fashion either by direct contract, sequencing, or coordination. It is the Contractor's responsibility to perform all the work and coordinate all the various trades and types of "related" work in order to meet the schedule and quality standards of the Project.
- E. Means and methods of construction as well as compliance with OSHA and all other safety laws and regulations is the exclusive responsibility of the Contractor, his Subcontractors, suppliers, consultants, and servants. The Architect does not have control of the job site.
- F. Wherever the term "material" is used in the specifications it will mean any "product", "equipment", "device", "assembly", or "item" required under the Contract, as indicated by trade or brand name, manufacturer's name, standard specifications reference or to other description.
- G. The terms "approved" or "approval" shall mean the written approval of the Owner or Architect.
- H. The term "specifications" shall mean all information contained in the bound or unbound volume, including all "Contract Documents" defined herein, except for the drawings.
- I. The terms "directed", "required", "permitted", "ordered", "designated", "prescribed", and similar words shall mean the direction, requirement, permission, order, designation or prescription of the Owner or Architect; the terms "approved", "acceptable", "satisfactory", and similar words shall mean approved by, acceptable or satisfactory to the Owner or Architect; and the terms

"necessary", "responsible", "proper", "correct", and similar words shall mean necessary, reasonable, proper or correct in the judgment of the Owner or Architect.

- J. "Concealed" means hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction or in crawl spaces.
- K. "Exposed" means not installed underground or "concealed" as defined above.
- L. "Removed" means complete removal of item, and complete disposal in an approved manner.

#### 1.12 ERRORS, OMISSIONS, AND CONFLICTS IN THE PROJECT MANUAL

- A. In the case of conflicts in the Drawings and the Specifications noticed by the Contractor, the Architect shall be notified immediately in writing of such errors and/or omissions. In no case shall the Contractor proceed without written authorization from the Architect.

#### 1.13 UNFORESEEN FIELD CONDITIONS

- A. In the case of unforeseen field conditions, the Contractor shall notify the Owner and Architect immediately in writing of such conditions. In no case shall the Contractor proceed without written authorization from the Architect. If such unforeseen conditions result in additional expense, the Contractor shall not proceed without the written approval of the Owner.

#### 1.14 INSURANCE

- A. The City of Waltham and SOCOTEC AE Consulting, LLC (SOCOTEC) shall be listed as Additional Insured with a Waiver of Subrogation on all the Contractors Insurance Policies for the project.

#### 1.15 GENERAL NOTES

- A. Contractor shall be responsible for checking and coordinating all dimensions with architectural drawings. In case of conflict, the Architect shall be notified and shall resolve the conflict.
- B. In any case of conflict between or within the drawings and the project specifications, the more stringent requirements shall govern at the sole discretion of the Architect.
- C. The contractor shall make no deviation from design drawings without prior review by the Architect.
- D. Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
- E. All work shall comply with applicable codes and local laws and regulations.
- F. General Contractor shall coordinate locations of openings, pits, boxes, sumps, trenches, sleeves, depressions, grooves, and chamfers, with mechanical, electrical and plumbing trades.
- G. The structural design of the building is based on the full interaction of all its component parts. No provisions have been made for conditions occurring during

construction. It is the sole responsibility of the contractor to make proper and adequate provisions for stability of, and all stresses to the structure due to any cause during construction.

- H. Contractor shall not scale drawings. Contractor shall request all dimensions or information required to perform the work from the architect. Work completed by the Contractor without dimensions or information shall be done at their own risk and, if deemed incorrect by the architect, shall be removed and reinstalled to the specifications of the Architect at no additional cost to the owner.
- I. CODES: The project is based on the requirements of the Massachusetts State Building Code - Ninth Edition.
- J. The plans were compiled from various sources. The Contractor is responsible for verifying all existing conditions and dimensions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 22 00**

**UNIT PRICES**

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Attention is directed to the general and supplementary conditions and Division 1 including all sub-divisions therein attached in this document and drawings, which are made a part of this section.

1.02 DESCRIPTION

- A. Scope of Work:
1. This Section covers those items for which indefinite quantities can be expected and, therefore, pre-agreed prices per unit of work are established as means to determine adjustments to the Contract Price after actual quantities are determined.
- B. Related Work Specified Elsewhere:
1. Refer to Division 1 for limitations.
  2. Examine Contract Documents for requirements that affect work of this Section.

1.03 QUANTITIES AND COST ADJUSTMENTS

- A. Refer to this Section and individual Specification Sections for methods of measurement and payment for unit prices. As soon as the work involved in each unit cost item has been completed, submit documentation to establish the actual quantities provided. Submit to the Architect for review and issuance of Change Order.
- B. Change Order amount for each unit cost item will be based on actual quantities multiplied by the unit cost. This unit cost is a total cost and includes all mark-ups applicable taxes, overhead, and profit as described below.

1.04 UNIT PRICES

- A. General Provisions
1. Materials, methods of installation and definitions of terms set forth under the various unit price items are indicated in the Schedule of Unit Prices and indicated in the Contract Documents.
  2. Performance of work which is not required under the Contract Documents or which is not authorized by Change Order, whether or not such work item is set forth hereunder as a Unit Price Item, shall not be considered cause for any

extra payment. The Contractor will be held fully responsible for such unauthorized work, including the performance of all corrective measures required by the Architect or Owner.

3. The Owner may choose not to approve any or all unit prices prior to award of the contract if it deems the unit price unreasonable. In this case, the Owner at their discretion may choose to:
    - a. Negotiate the unit costs prior to signing the contract;
    - b. Disapprove any or all of the unit prices and adjust the work on the change order process; or
    - c. Disqualify the bidder if the Owner deems the unit prices to be unreasonable.
- B. Schedule of Unit Prices: Should certain additional work be required, or should the quantities of certain classes of work be increased or decreased from those required by the Contract Documents, by authorization of the Owner, the below unit prices shall, at the option of the Owner, be the basis of payment to the Contractor or credit to the Owner, for such increase or decrease in the work. The Unit Prices shall represent the exact total cost per unit to be paid the Contractor (in the case of additions or increases) or to be refunded the Owner (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, or other direct or indirect expenses of the Contractor or Subcontractors. No additional adjustments will be allowed for additional work without the prior written approval of the Owner.
1. Provide a cubic yard unit cost to excavate and remove unsuitable soils during excavations (old rumble foundations from former buildings on the gazebo site, or unconsolidated fill material). Assume that any fill material excavated has naturally occurring arsenic content consistent w/ soils in the Worcester area, and disposals shall be per the applicable DEP requirements, and the installation of compacted structural fill. Carry in the Base Bid a quantity of 40 cubic yards.
- C. The above unit prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work. Changes shall be processed in accordance with the provisions of Division 1 governing Changes in the Work.



1.05 UNIT PRICE SCHEDULE

#	Description	Unit	Base Bid Quantities	Reference Detail(s)	Add/Deduct price (Insert Only One Number)
1	Horizontal Concrete Patch Repair	SF	500	2/S3-01	
2	Overhead Concrete At Underside Repair	SF	300	3/S3-01	
3	Double Tee End Spall Repair	SF	25	4/S3-01	
4	Shallow Concrete Wall Repair	SF	100	5/S3-01	
5	Interior Column Haunch Spall	SF	25	6/S3-01	
6	Typical Column Spall Repair / Column Corner Spall Repair	SF	80	7,8/S3-01	
7	Concrete Stair Repair	SF	2	24/S3-02	
8	Reset Precast Cap At Railing Base	EA	12	12/S3-01	
9	Reset Precast Cap At Lower Wall	EA	5	14/S3-02	
10	Shear Connector Replacement	EA	230	10,11/S3-01	
11	Shear Connector Repair	EA	270	10,11/S3-01	
12	Bituminous Patching	SF	250	6/S1-04	
13	Area Drain Replacement	EA	3	22/S3-02	
14	Broken Pipe Replacement (8" ø)	LF	20	23/S3-02	
15	Elbow Pipe Replacement (8" ø)	EA	2	-	
16	Individual Brick Replacement (Filed Sub-Bid Masonry)	EA	150	20/S3-02	

17	Brick Pointing (Filed Sub-Bid – Masonry)	SF	850	21/S3-02	
18	Rout & Seal Top Deck Cracks (Filed Sub-Bid – Waterproofing, Damp- proofing, Caulking)	LF	100	9/S3-01	

- A. All repair locations will be determined and marked in the field by the Engineer. Repairs will be located at small individual locations throughout the entire scope area. Unit Price work performed without the approval of the Engineer will not be paid for.
- B. The Owner reserves that right to increase or decrease the unit cost quantities without any adjustment in the unit costs.
- C. Unit costs include pro-rata share of Contractor’s, general conditions, staging, insurance, bond, overhead, and profit, etc.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 31 13**

**COORDINATION**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 COORDINATION AND PROCEDURES

- A. The safety and welfare of the citizens, employees of the City of Waltham and residents of the adjacent apartment building is the utmost concern of the project. All work by the Contractor, his Sub-Contractors, suppliers, and employees shall be performed in a way that will safeguard this concern. Safety is the sole responsibility of the Contractor on the jobsite. Extraordinary care must be taken throughout the project to coordinate work activities with city schedules, procedures, and activities.
- B. All construction activities and deliveries to the site are to be coordinated with the City of Waltham.
- C. A Pre-construction meeting shall be held with the City of Waltham, the Contractor, and Architect to coordinate locations for dumpsters, deliveries, worker parking, material storage, as well as to discuss safety, scheduling, procedures, and to emphasize 1.02.A, above.
- D. Contractor shall restrict hazardous items and activities to locations that will have the least impact on the daily operations of the streets and the other buildings. All

material storage, locations of cranes, dumpsters, workers access, etc. will be only in areas approved by the City.

- E. Contractor shall provide signage and other safety barriers at the site adequate to support their safety program.
- F. Contractor shall update the Construction schedule monthly. Requisitions for payment must be accompanied by an updated Critical Path Method (CPM) schedule.

#### 1.04 SCHEDULING

- A. Time is of the essence in this project.
- B. Temperature is a critical factor in the construction work. Adhere to manufacturer's specifications.
- C. Within five (5) days after the Contractor has received the Owner's Notice to Proceed, and before the commencement of any work, the Contractor shall transmit the proposed construction schedule to the Owner and Architect for review. If any change in the work will alter agreed upon schedules, the Contractor shall immediately notify the Owner and Architect in writing.
- D. The Contractor shall confine his/her apparatus, storage of materials, and operation of his/her workmen to limits as required by the Owner, and shall not unreasonably encumber the premises with these materials. He/she shall keep all access roads and walks clear of construction equipment, materials, and debris of any kind. He shall repair any and all damage to access roads, walks, the building facade and roof caused by construction operations, and leave them in at least as good condition as originally found. All operations shall be confined within the property. All delivery and construction operations shall be conducted so as to avoid all possible obstruction of the work and building operations. The Contractor shall meet regularly with the Owner to coordinate the use of the Site.
- E. The Contractor must request approval from the City of Waltham to work overnight, or on Saturdays at no additional expense to the owner. No work can be performed on Sundays.

#### 1.05 SUBCONTRACTORS

- A. Subcontractors are subject to approval by the Owner.

#### 1.06 CONSTRUCTION REVIEW

- A. All materials and workmanship shall be subject to review by the Architect and all designated representatives of the Owner. Such review may take place at any time during the construction, and wherever work relating to this project is underway. The Contractor shall notify the Architect of any approaching stage of the work likely to require his/her attention, and the Architect shall have the right to reject all defective or non-conforming workmanship and material, and to require its replacement.
- B. If any unreviewed work is covered up without approval, the Contractor shall bear the costs of uncovering it upon request.

#### 1.07 CODES

- A. Codes, standards, and publications of private and public bodies mentioned in these specifications, and other such standards and specifications, refer to the latest edition thereof at the time of taking bids unless a specific edition is designated, and shall be considered and integral part of the Contract Documents.

#### 1.08 COORDINATION OF WORK

- A. Contractor shall coordinate all construction work with Jon Millian, Maintenance Director for the City of Waltham.
- B. Contractor is responsible for all building and sidewalk permits, police details as required as well as any other requirements that may be imposed by the City of Waltham.

#### 1.09 SPECIFICATION DISTRIBUTION TO WORKMEN

- A. A complete copy of the project manual, including plans and specifications shall be kept at the construction site at all times.
- B. At the direction of the Architect, the Contractor shall photocopy various parts of pertinent Sections of the Project Manual to be handed out to each tradesman.

#### 1.10 FIELD MEASUREMENTS

- A. Before ordering any materials or performing any work, the Contractor or his/her subcontractors shall inspect all existing conditions and perform all measurements at the building. No extra charge or compensation will be allowed because of differences between the drawings and the actual dimensions. Any differences between the Project Manual and the actual conditions found shall be submitted to the Architect for his/her decision before proceeding with the work.

1.11 CUTTING AND PATCHING

- A. The work to be performed under this Contract shall include all cutting and patching necessary to accommodate new work.

1.12 PERMITS

- A. All fees and procurement of building permits shall be the responsibility of the Contractor. Requests for inspections by the Building Inspector and the obtaining of required signatures by Inspection on permits is the responsibility of the Contractor.

1.13 DUMPING

- A. The contractor shall submit an affidavit certifying legal and proper dumping and disposal (including locations) of all materials from the project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 33 00**

**SUBMITTALS**

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1- GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be provided complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually provided in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated into the work shall be new and of the best grade of their respective kinds.
- E. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

1.02 GENERAL PROCEDURES FOR SUBMITTALS

- A. Timeliness - The Contractor shall transmit each submittal to the Designer sufficiently in advance of performing related Work or other applicable activities so that the installation is not delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect in advance of the Work.
- B. Sequence - The Contractor shall transmit each submittal in a sequence which will not result in the Architect's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.

**SUBMITTALS**

- C. The Contractor's Review - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose (first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.
- D. Architect's Action - The Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:
1. Final Unrestricted Release: Where marked "Approved" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.
  2. Final-But-Restricted Release: When marked "Approved as Noted" the Work may proceed provided it complies with the Architect's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.
  3. Returned for Resubmittal: When marked "Revise and Resubmit" or "Disapproved" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay (no limit to number of resubmissions), in accordance with the Designer's notations stating the reasons for returning the submittal.
- E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.

### 1.03 OR EQUALS

- A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.
- B. In no case may an item be provided on the Work other than the item named or described, unless the Architect, with the Owner's written concurrence, shall consider the item equal to the item so named or described, as provided by M.G.L. c.30 § 39M.



- C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect, including all research and full documentation, at the expense of the Contractor submitting the substitution.
- D. The Designer and/or the Owner may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor shall bear full cost for providing, delivering, and disposal of all such samples.
- E. The Contractor shall assume full responsibility for the performance of any item submitted as an "Or-Equal" and assume the costs of any changes in any Work which may be caused by such substitution.
- F. Or Equal Approval Process - On the transmittal, or on a separate sheet attached to the submission, the Contractor shall direct attention to any deviations, including minor limitations and variations, from the Contract Documents.
  - 1. The Contractor shall submit to the Architect for consideration of any or-equal substitution a written point-by-point comparison containing the name and full particulars of the proposed product and the product named or described in the Contract Documents.
  - 2. Such submittal shall in no event be made later than ten (10) calendar days prior to the incorporation of the item into the Work. In any case in which the time period specified in the Contract Documents from the Notice to Proceed to Substantial Completion is less than 30 days, this requirement can be waived by the Architect.
  - 3. Upon receipt of a written request for approval of an or-equal substitution, the Architect shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents. Upon conclusion of the investigation, the Architect shall promptly advise the Contractor that the item is, or is not, considered acceptable as on Or-Equal substitution. Such written notice must have the concurrence of the Owner.

#### 1.04 SUBMISSION OF SHOP DRAWINGS

- A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show all adjoining Work, other work affected, and details of connection thereto, including hardware, flashing, waterproofing, and all utilities.
- B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.

- C. The Architect reserves the right to review and approve shop drawings only after approval of related product data and samples.
- D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Architect's stamp.
- E. The Contractor shall submit all submittals electronically to the Architect. Each submittal shall be accompanied by a transmittal notice and shall be approved by the GC (and shall bear their approved stamp) in advance of submission to the architect.
- F. When the submittal is returned by the Architect with the stamp "Revise and Resubmit" or "Disapproved", the Contractor shall correct the original drawing or prepare a new drawing and resubmit to the Architect for approval. This procedure shall be repeated until the Architect's approval is obtained. No limit. However, the architect shall be compensated by the contractor, via change order, for any time expended if they have to review any submittal more than twice.
- G. The Contractor shall maintain one full set of approved shop drawings at the site.
- H. Photo copies of the bid documents are not acceptable as shop drawings.
- I. Provide shop drawings for every item to be installed or repaired in the entire project, whether or not indicated in the spec section.

1.05 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES (SUBMITTALS AND DISTRIBUTION)

- A. The General Contractor, within ten (10) working days after the commencement of work shall prepare and submit for the Architect's approval a schedule of Shop Drawings, Product Data and Samples required to be submitted for the work. The schedule shall indicate by trade the date by which final approval of each item must be obtained, and shall be revised as required by conditions of the work, subject to Architect's approval. The schedule of Shop Drawings shall correspond to the Construction Schedule so that the submissions relate to the time when the products and/or systems will be required on the site. The Architect will not approve a Schedule which calls for out of sequence submittals.
- B. General Contractor shall submit Shop Drawing, product data and samples accompanied by the General Contractor's Shop Drawing, Product Data and Sample Transmittals form.

C. Preparation of Submittal Form: Fill out transmittal form in the following manner using a typewriter or word processor, and retain one copy – General Contractor’s first file:

- |     |                           |   |
|-----|---------------------------|---|
| 1.  | General Contr.<br>Job No. | General Contractor’s name and job number.   |
| 2.  | Spec. Section             | The Specification Section number where item is specified – do not submit items from more than one Specification Section on the same form. |
| 3.  | Submitted by              | Name of General Contractor’s employee responsible for the General Contractor’s review.  |
| 4.  | Project/No.               | Project name and Architect’s project number.  |
| 5.  | Transmittal No.           | Transmittal numbers shall be consecutive for the project.   |
| 6.  | Date Submitted            | Date leaving General Contractor’s office.   |
| 7.  | Subcontractor             | Name of firm preparing original documents (shop drawings or sample).  |
| 8.  | Submission No.            | 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , etc. depending on previous submission for same item (see Resubmittal procedure).    |
| 9.  | Spec. Sec. Para.          | Specific paragraph number which item as Specified.  |
| 10. | Copies & Type             | Number of copies submitted and type of material submitted (sepia, print, brochure or sample, etc.).                                       |
| 11. | Contr.’s Remarks          | Note exceptions or deviations from the Contract Documents and reasons for them.   |

D. Resubmissions: Resubmittal shall follow the same procedures as the initial submittal with the following exceptions:

1. Transmittal shall contain the same information as the first transmittal except that transmittal numbers shall run consecutively and the submission number shall indicate 2<sup>nd</sup>, 3<sup>rd</sup>, etc. submission. The drawing number/description

shall be identical to the initial submission and the date shall be the revised date for that submission.

2. Unless otherwise approved by the A, no new material shall be included on the same transmittal for a resubmission.
3. Where Resubmittal has not been required by the Architect, but corrections have been noted on a shop drawing, the drawings after the noted corrections have been made shall be submitted to the Architect by the means noted in paragraph 1.04 E above, for record purposes but not for action.

E. Submittal Procedures by General Contractor for Approval

1. General: All submittals shall be made to Architect's office.
2. Shop Drawings: submit in PDF format electronically, except as requested otherwise.

F. Architect's Review Procedures:

1. The Architect's review, including Architect's review period will not exceed fourteen (14) calendar days from the established date of each submission indicated on the Schedule of Shop Drawings, Product Data, and Samples plus the additional time, if any, for distribution by the General Contractor and receipt of submissions by the Architect. The General Contractor is required to strictly adhere to the established Schedule dates.
2. The Architect will process the submission and indicate the appropriate action on the submission and the transmittal. Incomplete or erroneous transmittals will be returned without action.
3. The Architect will fill out transmittal in the following sequence:
  - a. Date Received                      Date arriving in the Architect's office.
  - b. Date Return                         Date leaving the Architect's office to the General Contractor.
  - c. To/Date                                Name of architect to whom submission is sent for review and date leaving the Architect's office.
  - d. From/Date                             Name of architect reviewing submission and date arriving in the Architect's office.
  - e. Action                                 Indicate action taken on submission.

- |    |                     |  |
|----|---------------------|--|
| f. | Distribution        | Number of copies distributed and type of material distributed (sepia, print, brochure or samples, etc.). |
| g. | Architect's Remarks | Note major deviations from the Contract Documents.   |
4. The Architect will return two (2) of Shop Drawings, one Sample or two brochures with copies of transmittal forms to the General Contractor.
5. The Architect will keep a copy and send one copy to the Owner.

#### 1.06 SUBMISSION OF PRODUCT DATA

- A. The Contractor shall submit seven (7) copies of Product Data to the Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked in ink. Data of general nature will not be accepted.
- B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.
- C. Product Data returned by the Designer as "Disapproved" shall be resubmitted in seven (7) days until the Architect's approval is obtained.
- D. When the Product Data are acceptable, the Architect will stamp them "Approved" or "Approved as Corrected", distribute copies to the team 3 copies, and return two (2) copies to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.
- E. The Contractor shall maintain one (1) full set of approved, original, Product Data at the site.
- F. Provide product data for all items to be installed whether or not noted in the specification section.

#### 1.07 SUBMISSION OF SAMPLES

- A. Unless otherwise specified in the individual section, the Contractor shall submit three specimens of each sample.
- B. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work.

- C. Samples of items of interior finishes shall be submitted all at once to permit a coordinated selection of colors and finishes.
- D. Samples which can be conveniently mailed shall be sent directly to the Designer, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.
- E. All other samples shall be delivered at the field office of the Project Representative with sample identification tag attached and properly filled in. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed to the Architect.
- F. If a sample is rejected by the Architect, a new sample shall be resubmitted in the manner specified hereinabove. This procedure shall be repeated until the sample is approved by the Architect.
- G. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the specifications, at no additional cost to DCAM.
- H. Samples shall not be installed as part of the work.
- I. Provide color and finish samples of every item to be installed.

#### 1.08 CONSTRUCTION SCHEDULE

- A. The Proposed Construction Schedule shall be based on an orderly progression of the work, allowing adequate time for each operation, and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Proposed Construction Schedule will be reviewed by the Owner/Architect for compliance with the requirements of this Article and will be accepted or returned to the Contractor for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the Proposed Construction Schedule has been approved by the Owner/Architect.
- B. The Proposed Construction Schedule in **critical path method form** which shall include the following with such other details as Owner/Architect may require:
  - 1. Indicate complete sequence of construction by activity, with dates for beginning and completion of each element and stage of construction.
  - 2. Identify each item by major Specification Section number.
  - 3. Submittal and Approval Dates for all Shop Drawings and Samples.

4. A chart showing Critical Delivery Dates for Material and Equipment to be incorporated into the Work.
  5. Provide sub-schedules to define critical portions of entire Schedule.
  6. Coordinate content with Schedule of Values and provide the cost of each activity as identified in the Construction Schedule.
- C. During the progress of the Work, any changes in the original schedule desired by the General Contractor which affect Contract completion dates shall be approved by the Owner before being put into effect.
- D. When changes in the Work are required, the original Proposed Construction Schedule shall be revised without delay to incorporate such changes or new work and indicate the effect hereof on the Project as a whole.
- E. Provide updated critical path method (CPM) chart each month. Submit chart for review with Contractor's Application for Payment.

#### 1.09 SCHEDULE OF VALUES

- A. Prior to the first request for payment, the General Contractor shall submit to the Architect and Owner, a Schedule of Values of the various portions of the work in sufficient detail to reflect various major components of each trade, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section in accordance with Article VII of the Contract Form. The Schedule shall be prepared in such form as specified or as the Architect or Owner may approve, and it shall include data to substantial its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit in this schedule, including breakdown of values, requires the approval of the Architect and Owner and shall be used only as a basis for the Contractor's request for payment.

#### 1.10 MANUFACTURER'S INSTRUCTIONS

- A. Submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for all products.
- B. All work shall comply with the "manufacturer's recommendations".

#### 1.11 CERTIFICATES OF COMPLIANCE

- A. Submit certificates of compliance together with the associated Shop Drawings, Product Data and Samples required for the Product.

- B. Submit on 8-1/2 in. x 11 in. white paper.
- C. Submit one copy.
- D. The Architect will retain the certificates of compliance; no approval reply is intended.

#### 1.12 PATTERNS AND COLORS

- A. Submit accurate color charts and pattern charts to the Architect for his/her review and selection whenever a choice of color or pattern is available in a specified product, unless the exact color and pattern of a product are indicated in the Contract Documents. Submit actual cured samples of all materials for color approval.

#### 1.13 RECORD DRAWINGS

- A. At the completion of the project, the Contractor shall prepare a complete set of reproducible record drawings and AutoCAD Files, latest version on compact discs showing all systems as actually installed.

#### 1.14 SUBMITTAL TRANSMITTAL FORM

- A. All submittals shall be presented with the submittal transmittal form attached, completely filled out. Submittals without the attached form will be returned without review.

END OF SECTION



# SUBMITTAL TRANSMITTAL

From:

(Contractor's Company Information)

To: SOCOTEC AE Consulting, LLC  
75 Hood Park Drive, Suite 300  
Charlestown, MA 02129

Project: \_\_\_\_\_

Contractor's Project #: \_\_\_\_\_

Architect's Project #: \_\_\_\_\_

C.C.: \_\_\_\_\_

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

Submittal Number: \_\_\_\_\_

We are sending for your  Approval  Review the following items:

Specification Number:    Specification Title: \_\_\_\_\_

Subcontractor/Supplier: \_\_\_\_\_

	Copies:	Date:	Description	Size:
Product Data Sheet				
MSDS Sheets				
Shop Drawings				
Warranties				
Qualifications				
Samples				

Deviations from Contract Documents: \_\_\_\_\_

Designer's Stamp

Contractor's Stamp

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 35 13**

**SPECIAL PROJECT PROCEDURES**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 BIDDERS EXAMINATION AND INSPECTION OF EXISTING BUILDING AND SITE

- A. All bidders must inspect the existing site and make their own assessment of the work required to achieve the complete, finished conditions specified in the Contract Documents.
- B. Failure to adequately inspect the site and/or correctly assess existing conditions shall not be cause for additional payment.
- C. Every contractor will be bound by the scope of work of the Contract Documents and shall make the inspections necessary to assure that the bid price includes the complete scope.

1.03 HOURS OF WORK

- A. Work may be performed Monday – Friday, from 7:00AM to 5:00PM. Work may be allowed on Saturdays and/or Sundays with prior approval by the City of Waltham.

- B. The contractor shall be completely and fully responsible for the security and safety of the job site at all times.

#### 1.04 CONTRACTOR USE OF THE BUILDINGS, ACCESSIBILITY AND SCHEDULES FOR WORK

- A. The work of the Contractor and all Subcontractors shall be performed during the hours of operation as specified herein and in and around areas of the building. The Contractor shall execute the Work with the least possible disturbance to the use and continuous functioning of the adjacent sites and buildings. The Contractor and each Subcontractor take all necessary measures to assure the safety of the general public. The General Contractor is solely responsible for safety on the job site including securing and making safe all construction areas during construction hours as well as during non-construction hours.
- B. Schedule of Work and Site Use
  1. The Contractor shall schedule the work of this Contract so as to perform and complete the Work of the Contract according to the following schedule. The Contractor shall within seven (7) days of the Notice of Contract Award, submit a schedule to the Owner and Architect for review.
  2. Between the time period of the general bid due date and Construction Commencement, the Contractor shall take all necessary preliminary measures to complete the Work of this Contract. It is expected that the Contractor utilize the time period between the bid date and construction start date to schedule and coordinate the work and work sequence, prepare shop drawings and submittals for approval and order materials. If the work is not complete by the completion date, the Contractor will be subject to liquidated damages.
  3. The Contractor shall be responsible for providing any and all measures and/or temporary construction required to control the transmission of dust, particles, and fumes from construction activities.
  4. The Contractor shall be responsible on a daily basis for informing the designated Owner's representative of all persons on-site that day associated with the Work. The Contractor shall establish a daily reporting system of all activities which is acceptable to the Owner.
  5. The Construction schedule shall indicate the dates for start and completion of each work item or task required with all milestones using a Bar Chart subject to approval by the Architect.
  6. The Awarding Authority's review of the project construction schedule shall not extend to the accuracy or other matters dealt with in the schedule,

including but not limited to whether work is omitted, whether duration of activity is reasonable, the level of labor, materials or equipment, the Contractor's means, methods, techniques, procedures or sequence of construction, or whether the sequence and timing for work remaining are practical. The accuracy, correctness of all work, sequencing, and schedules shall remain the sole responsibility of the Contractor. Neither the Awarding Authority's review of a schedule nor a statement of resubmittal not required shall relieve the Contractor for the responsibility for complying with the contract schedule, adhering to sequences of work, or from completing any omitted work with the Contract Time.

7. The Contractor shall provide, erect and maintain barricades with any required egress, access doors, lighting, ventilation, guard rails and all other appurtenances required to protect the general public, visitors, staff, and workers while construction is in progress. Safety is the sole responsibility of the Contractor on the job site.
8. Provide 6'-0" tall min. chain link fencing around all materials, equipment, and activities on site.

#### 1.05 HOUSEKEEPING AND PROTECTION OF EXISTING CONDITIONS

- A. Maintain the premises in a safe, orderly condition at all times. Protect construction, furnishings, equipment and other items.
- B. All routes for equipment and material delivery shall be coordinated in advance with the City.
- C. Property Protection: The General Contractor shall take all measures necessary to protect the Owner's property.
- D. Security: The General Contractor shall take every possible precaution to maintain the security of the buildings and site. The Contractor shall cooperate with the Owner fully and follow the Owner's directions as issued. The Contractor shall control and restrict access to areas of work to prevent injury to persons and property.
- E. The Contractor shall properly cover, protect and maintain floor and finished surfaces to prevent damage. Replace protective coverings which become wet, torn or ineffective.
- F. Roof and Finished Surfaces Protection:
  1. The Contractor shall restrict traffic on roofs and finished surfaces to that required to perform the work of this Contract and permit traffic only required to properly complete the Work.

2. Effectively protect surfaces to prevent damages to existing substrates, new finishes, and to finished roofing work. Provide temporary walkways and work platforms as needed.
3. Load distribution: The Contractor and any Subcontractor shall not load or permit any part of the structure to be loaded in any manner that will damage the existing structure or endanger the safety of persons or property. Such loads shall include live and dead loads and all moving, vibratory, temporary and impact loads.

G. Correction by the Contractor

1. At no additional cost to the Owner, the General Contractor shall immediately correct all deficiencies, including damages to the building, site and site surfaces, damages to furnishings, damages to equipment or systems, damage to adjacent properties, and all other damage caused by the General Contractor or its Subcontractors during the execution of the Work of this Contract. Any and all damages resulting from inadequate, insufficient or defective temporary protections installed by the Contractor during the work of this Contract, shall be corrected by the General Contractor at no additional cost to the Owner.

1.06 REQUIREMENTS RELATED TO BUILDING USERS' FURNISHINGS, EQUIPMENT AND OTHER ITEMS

- A. The General Contractor is responsible for protecting all furnishings, equipment and items from damage (including construction generated dust) during the entire construction period.
- B. The General Contractor shall be responsible for moving and re-setting up all furniture, fixed and movable equipment, file and storage cabinets, recreation equipment, boxes, and all other items to accomplish the work of both the General Contractor and the Subcontractors in its entirety.

1.07 DUST, DIRT, AND FUME CONTROL

- A. The Contractor shall take all necessary precautions and provide all necessary temporary construction to effectively contain dust, dirt and fumes within the areas of work and within the work limits. Temporary construction shall be provided to effectively prevent dust and dirt from entering areas of the buildings or adjacent buildings, satisfying all City, State and Federal laws, codes, and requirements.

1.08 RUBBISH REMOVAL

- A. The Contractor shall remove all rubbish, waste, tools, equipment and appurtenances caused by and used in the execution of the Work; but this shall in

no way be construed to relieve the Contractor of his primary responsibility for maintaining the building and Project site clean and free of debris, leaving all work in a clean condition and satisfactory to the Official.

- B. Immediately after unpacking, the Contractor shall collect and remove from the building and Project site all packing materials, case lumber, excelsior, wrapping and other rubbish.
- C. Rubbish removal shall occur daily as there is no location on site for placement of a dumpster.

#### 1.09 SITE DRAINAGE AND PUMPING

- A. The Contractor shall be responsible at all times for proper and sufficient site drainage and shall maintain such drainage during the life of the Contract in a manner acceptable to the Owner and so as not to adversely affect the adjacent areas or adjacent properties.
- B. The Contractor shall provide and maintain all pumps, suction and discharge lines, and power in sufficient number and capacity to keep all excavations, pits, trenches, foundations and the entire property area free from accumulation of water from any source whatsoever at all times and under way and all circumstances and contingencies that may arise.

#### 1.10 SNOW AND ICE REMOVAL

- A. The Contractor shall promptly remove all snow and ice which may impede the work, damage the finishes or materials, be detrimental to all/any crafts or trade, or impede trucking, delivery or moving of materials at the site, or prevent adequate drainage of the site or adjoining areas.

#### 1.11 WINTER CONSTRUCTION

- A. The Contractor shall provide protection against damage to materials and work installed in freezing weather, including special heat and coverings to prevent damage by the elements. Therefore, the Contractor is completely responsible for any and all winter conditions protection, including but not limited to: The ground surface, under footings, under pipe lines, under masonry, under concrete, and other work subject to damage shall be protected against freezing or ice formations and to provide proper temperatures required for the various repair and construction activities.
- B. Refer to SECTION 01 50 00 --TEMPORARY FACILITIES, for additional requirements applicable to winter construction.

#### 1.12 BROKEN GLASS

- A. The Contractor shall be held responsible at all times prior to Substantial Completion of the Work, or occupancy by the City, whichever occurs first, for all broken or scratched glass, or glass which had been damaged as a result of the Work, or otherwise. And, when so directed by the Official, the Contractor shall replace at no increase in Contract Price or Contract Time, all such glass broken, missing, or damaged prior to Substantial Completion.

#### 1.13 CLEANING AND POLISHING

- A. The Contractor shall at all times keep the building and Project site free from accumulation of waste materials or rubbish.
- B. Immediately prior to final inspection, the entire building and surrounding Project areas shall be thoroughly cleaned by the Contractor including, without limitation:
1. All construction facilities, tools, equipment, surplus materials, debris and rubbish shall be removed from the Project site and the entire Work shall be left broom clean.
  2. All finished surfaces shall be left in perfect condition, free of stains, spots, marks, dirt, and other defects. The Contractor shall be responsible for the cleaning and polishing of the Work of all trades, whether or not cleaning by such trades is included in their respective Selection of the Specifications.
  3. All glass in the building shall be washed and polished on both sides.
  4. All metals, hardware, fixtures, and equipment shall be left in undamaged, bright, polished condition.
  5. Plenums, duct spaces and furred spaces shall be protected at all times from fumes, particles and other air-borne construction effects. These building spaces shall be left clean of debris and decayable materials.
  6. Equipment and building systems located in areas of construction shall be cleaned and tested and made perfectly operational to the satisfaction of the Owner prior to Substantial Completion or partial Substantial Completion of that area of work.
- C. In cleaning items having manufacturer's finish, or items previously finished by a Subcontractor, care shall be taken not to damage such finish. In cleaning glass and finish surfaces, care shall be taken not to use cleaning agents which may stain or damage any finish materials. Any damage to finishes caused by cleaning

operations shall be corrected and repaired by the Contractor at no increase in Contract Price.

#### 1.14 OR-EQUAL

- A. Where materials, equipment, apparatus, or other products are specified by Manufacturer, brand name, type or catalog number, such designation is to establish standards or performance, quality, type and style.
- B. If the General or Subcontractor wishes to use materials or equipment other than these specifically designated herein, as being equal to those so specifically designated, he shall submit the proposed substitution before purchasing and/or fabrication in accordance with the requirement of the General Conditions for approval.
- C. It is the responsibility of the Contractor to submit all back-up material and data needed to prove that the proposed product is an “or-equal”. The Architect will not review an alternative product without proper documentation. Alternative products and assemblies will be rejected immediately without proper documentation.
- D. The schedule of the project is not subject to the availability of products submitted as “or approved equal” or the review and approval process needed to certify an “or approved equal” product.

#### 1.15 PERMITS AND POLICE DETAILS

- A. The contractor is responsible for procuring and paying for all applicable permits and police details throughout the entire project.

#### 1.16 COORDINATION

- A. The Contractor shall coordinate locations of all items to be installed with the Architect. If an item is not dimensioned, for height or location, contact the Architect for the installation information. Installation of items without the proper dimensional information may result in reinstallation at no additional charge by the contractor.

#### 1.17 CHANGES TO THE CONTRACT

- A. All additional work (other than work that is included as a Unit Price in the Contract) shall be subject to the following requirements:
  - 1. All change orders shall be approved in advance and in writing by the Owner. All Change Order Requests shall be brought to the attention of the Owner, Owner’s Representative and Architect’s attention in a timely



manner and with sufficient notice so as to allow for the proper review, evaluation and approval.

2. Any change order work that is performed by a Contractor or Subcontractor, without prior written authorization by the Owner, shall be at the Contractor's sole risk and approval or payment of said work may be denied or withheld by the Owner at their sole discretion.
3. Subcontractors shall be allowed 10% Overhead and 5% Profit; both shall be calculated based on the subtotal of all labor, materials and equipment and Profit shall not be applied to the Overhead mark up. Subcontractors shall not be entitled to apply the costs of bonds.
4. The General Contractor shall be allowed 10% Overhead and 5% Profit; both shall be calculated based on the subtotal of all labor, materials, equipment and the Subtotal (before Overhead and Profit are applied) to the work of Subcontractors; General Contractor's Profit shall not be applied to the General Contractor's Overhead. Bond costs shall be applied to the Subtotal, including all mark ups for Overhead and Profit. All bond costs in excess of 2% shall be subject to verification by the Owner, provided by the General Contractor in a format acceptable to the Owner and may include, but not be limited to, a letter from the General Contractor's Bond Agent.
5. All costs for Labor Burden in excess of 25% shall be subject to verification by the Owner, in a format acceptable to the Owner.
6. Project Management, Supervision and General Conditions costs (including but not limited to temporary facilities, temporary site protections, utility costs, temporary toilets, etc.) shall not be applied to change orders unless the work of said change order is required to be performed outside the anticipated contract duration, normal work hours, or in special circumstances approved in advance by the Owner.
7. Overtime pay shall not be included in change orders, unless approved in writing in advance by the Owner and, in such cases, shall apply only to hours worked in excess of 40 hours per week, not 8 hours per day. All overtime rates shall be calculated at one and one half times the base rate of pay (not including fringe benefits), and shall be subject to prior written approval by the Owner. Overtime shall not be applied for Project Management or Supervision staff.
8. Change order rates of pay for workers shall be based on the, then current, prevailing wage rate for the classification of work required to complete the work of the change order, not an actual rate of pay (if higher than the then

current prevailing wage rate), unless otherwise approved in advance in writing, by the Owner.

9. The Owner reserves the right to evaluate all change order pricing utilizing the approved Schedule of Values for the project, prior billings, prior approved Change Orders, or any other method deemed appropriate by the Owner.
  10. All change order requests shall include such sufficient breakdown and back up, as determined by the Owner and Architect, to be evaluated by the Owner and Architect including, but not limited to, number of man hours, rates of pay per classification and/or trade, current quotes or invoices for materials and current quotes or invoices for equipment; this shall apply to the General Contractor and all Filed Sub-subcontractors, subcontractors and sub-subcontractors.
  11. All change order requests that include a request for additional time to the contract duration shall be accompanied by an updated Critical Path Schedule clearly indicating the impact of the work on the critical path of the overall project. A reservation of rights by the General Contractor to later request additional time will not be approved except in circumstances specifically approved by the Owner in writing. Delays in the work caused by not providing timely pricing or pricing that is not in an acceptable will not be considered as justification of a time extension request.
  12. All Time and Materials work shall be approved in advance in writing by the Owner and shall be subject to verification by the Owner, Architect or Owner's On-Site Representative. Any Time and Materials work that is concealed without the verification of the Owner, Architect or Owner's On-Site Representative, is at the Contractor's risk and, if requested by the Owner, shall be uncovered for visual observation and verification at no additional cost to the Owner.
- B. The Owner reserves the right to waive any of the above requirements, on a case by case situation; the Owner's right to waive one or more of the above requirements shall not be construed as precedent for subsequent change order requests.

#### 1.18 GENERAL NOTES

- A. Contractor shall be responsible for checking and coordinating all dimensions with architectural drawings. In case of conflict, the architect shall be notified and shall resolve the conflict.
- B. In any case of conflict between the drawings and the project specifications, the more stringent requirements shall govern.

- C. The contractor shall make no deviation from design drawings without prior review by the architect.
- D. Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
- E. All work shall comply with applicable codes and local laws and regulations.
- F. General contractor shall coordinate locations of openings, pits, boxes, sumps, trenches, sleeves, depressions, grooves, and chamfers, with mechanical, electrical and plumbing trades.
- G. The structural design of the building is based on the full interaction of all its component parts. No provisions have been made for conditions occurring during construction. It is the sole responsibility of the contractor to make proper and adequate provisions for stability of, and all stresses to the structure due to any cause during construction.
- H. Contractor shall not scale drawings. Contractor shall request all dimensions or information required to perform the work from the architect. Work completed by the contractor without dimensions or information shall be done at their own risk and, if deemed incorrect by the architect, shall be removed and reinstalled to the specifications of the architect at no additional cost to the owner.
- I. Codes: the project is based on the requirements of the Massachusetts State Building Code – Ninth Edition.
- J. The plans were compiled from various sources. The contractor is responsible for verifying all existing conditions and dimensions.

#### 1.19 INSURANCE

- A. The Contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.
- B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:
  - 1. Statutory Worker's Compensation and Employer's Liability

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker's Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

Minimum bodily injury limits of \$500,000 per person and \$1,000,000 per accident, and property damage limits of \$500,000 per accident and \$1,000,000 aggregate during any 12 month period, shall include the following:

- a. Public liability (bodily injury and property damage)
- b. X.C.U. (explosion, collapse, and underground utilities)
- c. Independent contractor's protective liability.
- d. Products and completed operations.
- e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

3. Comprehensive All Risk Motor Vehicle Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person, \$ 1,000,000 per accident, and property damage limit of \$ 1,000,000 per accident.

4. All Risk Insurance

Covering all Contractor's equipment with a provision for Waiver of Subrogation against the Owner.

5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of \$ 1,000,000.

6. City of Waltham and SOCOTEC AE Consulting, LLC. shall be listed as Additional Insured with a Waiver of Subrogation on the insurance policy for this project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 40 00**

**CONDUCT OF THE WORK**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROJECT MANAGEMENT

- A. The Contractor's attention is directed to the General Conditions.
- B. The Building will be occupied during construction. The Contractor will have complete control of the job site and is solely responsible for safety and security on the job site. The Contractor shall take all necessary precautions to ensure the public safety and convenience of the visitors during construction.
- C. The work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient personnel and adequate equipment to complete all the necessary work requirements within a minimum period of time.
- D. The Contractor is responsible for the security and stability of partially completed work until the project is accepted by the Owner.

1.03 SHUTDOWN OF SERVICES

- A. If site utility services to the neighborhood are cut by the contractor, he shall supply all labor, materials or whatever may be required to supply said temporary utility

services at no extra cost to the neighborhood and in accordance with the state and local regulations on health and safety, working around the clock, until they are reinstated. The contractor shall also repair the damaged utility immediately at no cost to the owner.

#### 1.04 COORDINATION

- A. The Contractor shall submit for approval to the Owner a detailed operational plan showing the sequence of operations prior to commencement of any work at the site. Any changes to this operational plan must be approved by the Owner.
- B. The Contractor must retain on the Work during its progress a competent full time representative, satisfactory to the Owner. This representative shall not be changed, except with the consent of the Owner. The representative shall be in full charge of the work and all instructions given to this person by the Architect shall be binding.
- C. The Contractor must supply to the Owner the cell telephone number of a responsible person who may be contacted during non-work-hours for emergencies on the Project.

#### 1.05 OWNER'S COOPERATION

- A. The Owner shall assist the Contractor to perform the Work in accordance with the approved operational plan.
- B. The Contractor shall provide:
  - 1. Notification to the Owner two (2) weeks before any work is scheduled at the site/building.
  - 2. An updated schedule monthly with the application for payment. Payments will not be authorized until the updated schedule is received and approved.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 42 00**

**DEFINITIONS & STANDARDS**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 DELIVERY AND STORAGE

- A. Materials shall be delivered dry, in their original, unopened containers, clearly labeled with manufacturer's name, brand name, and such identifying numbers as are appropriate. Materials shall be stored as required by the Manufacturer's specifications.
  - 1. All materials shall be stored flat, or in the case of rolls, standing on end, elevated from the ground or deck, and protected with approved waterproof covers to keep the materials dry and protected from sunlight and moisture, and ventilated to prevent excessive temperature.
  - 2. Flammable materials shall be stored in a cool, dry area away from sparks and open flames.
  - 3. Damaged or deteriorated materials shall not be used and shall be removed from the job site.
  - 4. All cardboard containers shall be stored in dry areas or on pallets. Packing materials shall be collected so as not to blow around the site.

5. All materials shall be stored in temperatures specified by the manufacturer. Submit proposed storage arrangements regarding temperature to the Architect and the materials manufacturer for review.

#### 1.03 JOB CONDITIONS

- A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed and replaced at no additional cost to the owner.
- B. Materials which have a temperature other than the application temperature of the manufacturer shall not be applied.
- C. All materials shall be installed according to manufacturer's specifications and shall be compatible with the existing materials used on site.
- D. Remove only as much existing roofing as can be replaced and made weathertight each day, including all flashing work.
- E. All surfaces to receive the new materials shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application.

#### 1.04 CONDITIONS, DIMENSIONS AND QUANTITIES

- A. All conditions, dimensions and quantities shall be determined or verified by the Contractor. The Plans and details have been compiled from various sources and may not reflect the actual condition at the moment of construction. The Contractor is cautioned to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.05 DEFINITION OF "CONSULTANT"

- A. Any reference to "Designer", "Engineer" or "Architect" in this Project Manual, Specification or on the drawings shall refer to SOCOTEC AE Consulting, LLC, 75 Hood Park Drive, Suite 300, Charlestown, MA 02129, Jibreel Mustafa, Structural Designer, [jibreel.mustafa@socotec.us](mailto:jibreel.mustafa@socotec.us)

#### 1.06 DEFINITION OF "OWNER"

- A. Any reference to the Owner shall be the City of Waltham.

#### 1.07 MINIMUM REQUIREMENTS



EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

- A. It is the intent of these contract documents to, in some cases, exceed the minimum requirements of the manufacturer. The new work shall be bid and installed as detailed.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 45 00**

**QUALITY CONTROL**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PULL-OUT TESTS

- A. The Contractor shall perform pull-out tests to determine the length and type of fastener required to provide adequate withdrawal resistance from every substrate.
- B. A minimum of two pull out tests shall be performed per section to be fastened. More tests shall be performed if required by the structural engineer or the material manufacturer.
- C. Submit a report from the fastener supplier and the product manufacturer describing the pull out tests, the recommend fasteners, and that they are covered under the warranty.

1.03 INSPECTION AND TESTING

- A. An independent inspector and/or testing laboratory may be engaged and paid for by the Owner to perform the inspection and testing of the new work.
- B. The Contractor shall cooperate with the inspector and/or testing laboratory, furnish materials and labor as may be required and provide for convenient access to all parts of the work for purposes of inspection and testing.

- C. The Contractor shall accept as final the results of all such inspection and testing.
- D. The inspector shall have the authority to delay the commencement of work, or to stop the work at any time, for any reason which he deems necessary.
- E. The inspector and/or testing laboratory reserves the right to require the Contractor to perform removal of materials installed by the Contractor. Make all cuts in accordance with the recognized standard practices. Remove materials only in the presence of the inspector.
  - 1. Immediately after removing each material sample identify each by number and exact location by gummed label attached to a smooth surface of the cut sample.
  - 2. Submit the cut samples directly to the inspector after applying identification.
  - 3. Replace the cut with new materials, matching those removed, immediately after each removal, and insure that the replacement is completely watertight.
- F. The removal cuts shall be subjected to various tests, including moisture content, density, thickness, compressive strength, composition, conformance with ASTM specifications where applicable, conformance with the recommendations of the manufacturers whose materials were used.
- G. Bear all costs for tests where materials or systems have been found unacceptable and all costs for replacement required due to such unacceptability.
- H. If any replacement work is required, such work will also be subject to the terms of this SPECIFICATION.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 50 00**

**TEMPORARY FACILITIES**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 GENERAL

- A. The Contractor shall be responsible for providing and maintaining all temporary facilities until Substantial Completion. Removal of such prior to Substantial Completion must be with the concurrence of the Architect. The Contractor bears full responsibility for re-providing any facility removed prior to Substantial Completion
- B. Removal of all temporary facilities shall be a condition precedent to Substantial Completion unless directed otherwise by the Architect or specifically noted in the specifications.
- C. The Contractor must comply with all safety laws and regulations of the Commonwealth of Massachusetts, the United States Government, and local government agencies applicable to Work under this contract. The Contractor's attention is directed to the Commonwealth of Massachusetts, Department of Labor and Industries Regulation 454 CMR.
- D. Safety is the sole responsibility of the contractor on the job site. Contractor is notified that the building will NOT be occupied during construction. The Architect does not have control of the job site or means and methods in any way.

### 1.03 TEMPORARY TELEPHONES

- A. No telephone service will be provided by the Owner.
- B. Provide 24-hour emergency phone numbers for the Contractor's Project Manager and Superintendent.

### 1.04 TEMPORARY TOILETS

- A. Portable, temporary toilets shall be provided by the contractor and shall be located as directed by the owner.
- B. The Contractor:
  - 1. Assumes full responsibility for the use of the temporary toilets
  - 2. Pays all costs for operation, maintenance and cleaning.
- C. The Contractor shall not have use of sanitary toilet facilities within the building and must provide portable sanitary toilets for the use of their forces for the entire duration of the work. Toilets shall be cleaned and emptied twice weekly (minimum) and as directed by the Owner.

### 1.05 TEMPORARY CONSTRUCTION FENCE

- A. The Contractor shall be responsible for providing and maintaining temporary fencing and barricades around the construction as may be necessary to assure the safety of all persons authorized or unauthorized. Such protective measures shall also be located and constructed as required by local, state, and federal ordinances, laws, codes, or regulations.

### 1.06 TEMPORARY STRUCTURES AND MATERIAL HANDLING

- A. The Contractor shall provide such secure storage sheds, temporary buildings, or trailers as required for the performance of the Contract.
- B. Materials shall be handled, stored, installed, cleaned, and protected in accordance with the best practice in the industry and, except where otherwise specified in the Contract Documents, in accordance with manufacturer's specifications and directions.
- C. The Contractor must obtain the permission of the Owner for the placement of any storage facilities on site, and the Owner assumes no responsibility for articles stored.

### 1.07 TEMPORARY STAGING, STAIRS, CHUTES

- A. The General Contractor and each File Sub-Bidder shall provide their own hoisting and staging/vertical access to perform their own work. Provide access to the Architect at any time.
- B. If the project is new construction permanent stairs shall be erected as soon as possible, for which the Contractor shall provide temporary protective treads, risers, handrails, and shaft protection.
- C. The General Contractor and each File Sub-Bidder shall furnish, install, maintain, and remove their own covered chutes from the work area. Such shall be in convenient locations and permit disposal of rubbish directly into trucks or disposal units.
- D. Debris shall not be allowed to fall freely from upper levels of the building. Materials shall not be thrown or dropped from open windows or the roof.
- E. Each individual File Sub-Bidder as well as the General Bidder shall provide any and all additional protection required to keep the building from being damaged by the staging, hoisting, or any construction work. Protect parapets and roof edges with plywood at all swing staging. Protect landscaping from mechanical lifts. Cover and protect all roof surfaces with plywood as well.

#### 1.08 HOISTING FACILITIES

- A. Except as otherwise specified, the General Contractor and each File Sub-Bidder shall provide, operate, and remove their own material hoists, cranes, and other hoisting as required for the performance of the Work.

#### 1.09 UTILITIES

- A. The contractor will be able to use without charge, available electrical power and water. It is the responsibility of the Contractor to make provisions to extend the utility from the nearest service outlet designated by the Owner to the point of use. Any misuse will be cause for discontinuance of the utility whereupon the Contractor shall provide the service at his/her own expense. Electrical energy shall not be used for temporary heating purposes. Do not include any cost for use of electric power or water that may be supplied by the Owner in the Basic Construction Proposal. All work shall comply with all applicable codes as well as OSHA requirements.

#### 1.10 TEMPORARY WATER

- A. The Contractor may make use of the available water supply at the site for construction purposes, provided the permission of the Owner is obtained beforehand and only as long as the water is not used wastefully.

- B. The Contractor shall provide all necessary piping and hoses to utilize the available sources of water.
- C. The Contractor shall provide an adequate supply of cool drinking water with individual drinking cups for personnel on the job.

#### 1.11 TEMPORARY ELECTRICITY

- A. The Contractor may make use of the electricity available at the site, metered and paid for by the Owner, provided that the Contractor shall supply proper adapters and extension cords.
  - 1. Where heavy duty electric equipment drawing current in excess of 15 amperes is involved, the Contractor shall provide temporary service to supply the power.
  - 2. The temporary electric service shall include, but not be limited to labor, materials, and equipment necessary to supply temporary power of adequate capacity for the project.
  - 3. Transformers and meters, when required by the power company, will be furnished by the power company and the contractor shall pay the costs thereof.
- B. Temporary electrical Work shall be performed under the direct supervision of at least one master electrician, who will be present on the project at all times when such work is being performed.
- C. The Contractor shall furnish, install, and maintain lamps in operating condition. The Contractor, and each Subcontractor, shall furnish their own extension cords and additional lamps as may be required for their work. Temporary work of a special nature, not otherwise specified hereunder, shall be provided, maintained, and paid for the trade requiring same.
- D. All lamps installed in permanent lighting fixtures and used as temporary lights during the construction period shall be removed and replaced shortly before Substantial Completion by the set of lamps required to be provided under the Electrical section of the specifications.
- E. All temporary work shall be provided in conformity with the National Electric Code, State laws, and requirements of the power company. Particular attention is called to Commonwealth of Massachusetts, Department of Labor and Industries Regulation, 454 CMR.

#### 1.12 WEATHER PROTECTION

- A. The Contractor shall provide temporary enclosures and heat to permit work to be

carried on during the months of November through March in compliance with MGL c.149 §44G (d). Without limitation this includes such items as excavation, pile driving, steel erection, erection of certain exterior wall panels, masonry, sealants, waterproofing, sheet metal work, roofing, and similar operations.

- B. "Weather Protection" means the temporary protection of that Work adversely affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Owner and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Documents with added regard to performance obligations of the Contractor.
- C. Within 30 calendar days after award of the Contract, the Contractor shall submit in writing, to the Architect for approval, three (3) copies of the proposed methods for "Weather Protection".
- D. The Contractor shall assume the entire responsibility for weather protection during construction (until Substantial Completion) and shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.
- E. Work damaged by frost shall be removed and replaced by and at the Contractor's expense and as directed by the Architect.
- F. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to bring the Work to Substantial Completion within the period of time set forth in the Contract Documents.

### 1.13 PROTECTION

- A. Weather protection shall be provided for; weather conditions occurring or anticipated, the extent of the existing structure exposed, or any other possible hazard. Remove only as much roofing and sealant as can be completely replaced and made watertight in one day.
- B. Dust control, pedestrian protection, and traffic control measures shall be provided during the course of the work.



- C. Schedule and execute all work without exposing the sensitive building areas to the effects of inclement weather. Protect the existing structure and its contents against all risks, and repair or replace all damage to the Owner's satisfaction. Protect all exterior building surfaces, roofing, lighting, landscape areas, and pavement from damage.
- D. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blow-off.
- E. The Contractor shall provide all necessary temporary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Also provide plywood protection for roofing adjacent to construction. Areas damaged because of inadequate protection will be repaired at no additional cost to the owner, as per these specifications and the recommendations of the Architect.
- F. Provide temporary barricades and other forms of protection as required to protect Owner's personnel, students, and general public from injury due to the work.
- G. Any deteriorated substrate which is discovered shall be promptly reported to the Architect.
- H. Safety on the job site is the sole responsibility of the contractor. The Contractor shall ensure that all Local, State, Federal, OSHA or other applicable safety requirements are strictly accorded to. All OSHA safety requirements regarding items such as scaffolding, temporary protections, lift trucks, cranes, removal of debris, dust control, cleaning solvents, and high-pressure water washing, sandblasting and equipment shall be ensured by the Contractor.

#### 1.14 DEBRIS

- A. The Contractor will be responsible for the removal of all construction debris from the job site.
- B. Upon completion of each day and each phase of the work the Contractor shall leave the premises free of all debris and waste, in broom-clean condition. Overnight storage of material on site will be as approved by the Owner. The Contractor shall be responsible for keeping the site free of rubbish and debris, and in a neat and orderly condition at all times. The Contractor shall clean up and remove all accumulated rubbish and debris daily.
- C. The Owner's representative shall inspect the site daily. If it is determined that the site has not been cleaned of construction debris on a particular day the Contractor may be assessed \$100.00 for that day to be used to have the site cleaned by in house personnel. This shall be prepared by the Architect as a deduct change order to the contract.

- D. Debris resulting from the new work shall be placed in covered containers provided by the Contractor and legally disposed of. Burning will not be permitted on site. Dumpster locations shall be approved by the Owner.

#### 1.15 TEMPORARY NOISE AND POLLUTION CONTROL

- A. All work performed under the Contract shall conform to the requirements of Chapter 111, Sections 31C and 142D of the General Laws, Commonwealth of Massachusetts, Department of Public Health, and Metropolitan Boston Air Pollution Control District regulations.

#### 1.16 CONSTRUCTION PARKING CONTROL

- A. The Contractor shall control trucks and worker's vehicles to prevent unnecessary congestion in the neighborhood of the project. See Site Plan for allowable on site parking area.
- B. The schedule and location of all deliveries of materials must be coordinated and approved by the Owner.
- C. The garage is currently unsafe for vehicular access. Therefore, parking within the garage is prohibited. All parking will be at the direction of the Owner.

#### 1.17 TEMPORARY SITE STORAGE

- A. The Owner shall designate an area for temporary site storage on the site. All materials shall be stored in locked storage trailers or container boxes.
- B. Storage of materials will be permitted within the building but the locations of which must be coordinated in advance with the City of Waltham.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 51 00**

**PROTECTION**

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROTECTION OF PERSONS & PROPERTIES

- A. The site will not be occupied during construction. The contractor shall have complete control of the job site. The Contractor shall take all necessary precautions to ensure the public safety and convenience of visitors during construction. Safety is the sole responsibility of the contractor, regardless of what is set forth in this document. The architect does not have control of the job site, or means and methods, in any way.
- B. Any damage to buildings, roads, (public and private), concrete walks, bituminous concrete areas, fences, rails, lawn areas, trees, shrubbery, poles, underground utilities, etc. shall be made good by and at the Contractor's own expense, all to the satisfaction of the Owner.
- C. The Contractor shall patch, repair and/or replace all adjacent materials and surfaces damaged after the installation of new work to the complete satisfaction and at no expense to the Owner. All repair and replacement work shall match the existing in kind and appearance.

### 1.03 TEMPORARY PROTECTION

- A. The Contractor shall:
1. Protect excavations, trenches, buildings, and materials at all times from rain water, ground water, backing-up, or leakage of sewers, drains, or other piping, or from water damage of any origin. Provide all pumps, piping, coverings, and other materials and equipment as required by job conditions to accomplish this requirement.
  2. In addition to the weather protection during the months of November to March specified elsewhere, provide temporary watertight enclosures for openings in exterior walls and in roof decks when and as required to protect the Work from damage by inclement weather. Temporary enclosures shall be provided with adequate means of ventilation to prevent accumulation of moisture in the buildings.
  3. Provide temporary wood doors for exterior entrances and elsewhere when required. Permanent door enclosures shall not be used as temporary enclosures.
  4. Protect sills, jambs, and heads of openings through which materials are handled.
  5. Protect decks and slabs to receive work by other trades from any soiling which will prevent proper adhesion of subsequent Work. Decks and slabs shall be left clean and free of blemishes at the time other trades begin the application of their work.
  6. Protect concrete slabs to remain exposed and finished floors against mechanical damage, plaster droppings, oil, grease, paint, or other material which will stain the floor finish. Install and maintain adequate strips of building paper or other protection on finished floors in rooms where future Work will be done by other trades.
  7. Protect all surfaces to receive work by other trades from any soiling which will prevent proper execution of subsequent work
  8. Protect other areas, furniture, and private property of the resident and the Owner. Any areas damaged by the Contractor shall be restored to the original condition or compensated at the Contractor's expense.
- B. Roof surfaces and waterproofed surfaces shall not be subjected to traffic nor shall they be used for storage of materials. Where some activity must take place in order to carry out the Work, adequate protection must be provided.

- C. After the installation of the Work by any Subcontractor is completed, the Contractor shall be responsible for its protection and for repairing, replacing, or cleaning any such Work which has been damaged by other trades or by any other cause, so that all Work is in first class condition at the time of Substantial Completion.

#### 1.04 ACCESS

- A. The Contractor shall, at all times, leave an unobstructed way along walks and roadways, and shall maintain barriers and lights for the protection of all persons and property in all locations where materials are stored, or work is in progress.

#### 1.05 SECURITY

- A. The Contractor shall be responsible for providing all security precautions necessary to protect the Contractor's and Owner's interests.
- B. Where excavation is involved, the Contractor shall be responsible for providing continuous watchmen service as necessary, to insure adequate protection of the general public.

#### 1.06 NOISE AND DUST CONTROL

- A. The Contractor shall take special measures to protect the residents, neighbors, and general public from noise, dust, and other disturbances by:
  - 1. Keeping common pedestrian and vehicular circulation areas clean and unobstructed;
  - 2. Insulating work area from occupied portions as far as possible; and
  - 3. Sealing dust and fumes from contaminating occupied spaces.

#### 1.07 FIRE PROTECTION

- A. The Contractor shall take necessary precautions to insure against fire during construction. The Contractor shall be responsible to insure that the area within contract limits is kept orderly and clean and that combustible rubbish and construction debris is promptly removed from the site.
- B. Installation of equipment suitable for fire protection shall be done as soon as possible after commencement of the Work. The Contractor's attention is directed to the requirements of the Commonwealth of Massachusetts, Department of Labor and Workforce Development Regulation 454 CMR.

1.08 WIND PROTECTION

- A. Should high wind warnings be issued by the U.S. Weather Bureau, the Contractor shall take every precaution to minimize danger to persons, to the Work, and to the adjacent property.

1.09 WEATHER PROTECTION

- A. The Contractor shall provide Weather Protection as required by Specification Section 015000 Temporary Facilities and any other specific requirements of the Contract Documents.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 52 00**

**CLEANING UP**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.
- E. This section supplements the General Conditions.
- F. Consult the individual sections of the specifications for cleaning of Work installed under those sections.

1.02 CLEANING DURING CONSTRUCTION

- A. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
  - 1. Do not burn or bury rubbish and waste materials on the site.
  - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - 3. Do not dispose of wastes into streams or waterways.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. Do not allow materials and rubbish to drop free or be thrown from upper floors, but remove by use of a material hoist or rubbish chutes.

- D. Maintain the Site free from accumulations of waste, debris, and rubbish.
- E. Provide on-site containers for collection of waste materials and rubbish.
- F. At the end of each day, remove and legally dispose waste materials and rubbish from site.
- G. Disposal of materials shall be in compliance with all applicable laws, ordinances, codes, and by-laws.

### 1.03 FINAL CLEANING

- A. Prior to submitting a request to the Architect to certify Substantial Completion of the Work, the Contractor shall inspect all interior and exterior spaces and verify that all waste materials, rubbish, tools, equipment, machinery, and surplus materials have been removed, and that all sight-exposed surfaces are clean. Leave the Project clean and ready for occupancy.
- B. Unless otherwise specified under other sections of the Specifications, the Contractor shall perform final cleaning operations as herein specified prior to final inspection.
- C. Cleaning shall include all surfaces, interior and exterior, which the Contractor has had access to, whether new or existing.
- D. Employ experienced workmen or professional cleaners for final cleaning.
- E. Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.
- F. Use cleaning materials which will not create a hazard to health or property and which will not damage surfaces.
- G. All broken or defective glass caused by the Contractor's Work shall be replaced at the expense of the Contractor.
- H. Remove grease, mastic, adhesive, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces. This includes cleaning of the Work of all finishing trades where needed, whether or not cleaning by such trades is included in their respective specifications.
- I. Clean and polish all new and existing glass and plastic glazing (if any) throughout the building(s), on both sides. Clean plastic glazing in accordance with the manufacturer's directions. This cleaning shall be completed by qualified window cleaners at the expense of the Contractor just prior to acceptance of the Work.
- J. Wash and polish all mirrors.



- K. Repair, patch, and touch up marred surfaces to the specified finish, to match adjacent surfaces.
- L. Polish glossy surfaces to a clear shine.
- M. Do the final cleaning of resilient floors and wood floors as specified under the respective sections of the Specifications.
- N. Leave all architectural metals, hardware, and fixtures in undamaged, polished conditions.
- O. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and decayable materials.
- P. In cleaning items with manufacturer's finish or items previously finished by a Subcontractor, care shall be taken not to damage such manufacturer's or Subcontractor's finish. In cleaning glass and finish surfaces, care shall be taken not to use detergents or other cleaning agents which may stain adjoining finish surfaces. Any damage to finishes caused by cleaning operations shall be repaired at the Contractor's expense.
- Q. Broom clean exposed concrete surfaces and paved surfaces. Rake clean other surfaces of grounds.
- R. Ventilating systems - Replace filters and clean ducts, blowers, and coils if units were operated during construction.
- S. Owner's responsibility for cleaning commences at Substantial Completion.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 70 00**

**PROJECT CLOSEOUT**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished be complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 COMPLETION OF WORK

- A. The site shall be cleaned of all debris resulting from the work and areas damaged during the course of the work restored to the satisfaction of the architect and the Owner.
- B. The Contractor shall notify the Architect and Owner that the work is completed and Project Manual requirements have been met. The Architect shall review the completed work with the Contractor within seven (7) calendar days of notification. Any deficiencies observed at the time will be conveyed directly to the Contractor with a written confirmation, after which the Contractor shall correct the stated deficiencies to the satisfaction of the Architect within fourteen (14) calendar days prior to demobilization from the site.
- C. After satisfactory completion of the above, the work shall be considered complete with notification by the Architect to the Owner.
- D. The Contractor shall submit all lien waivers and warranties at this time of final payment.

- E. All guarantees, as required in any Section of the Project Manual shall be submitted for approval prior to final payment.
- F. Contractor shall maintain and record all changes to the plans throughout the entire project and shall submit as-built drawings of the entire project prior in CAD to final payment. As-built drawings must be in electronic form on Auto-CAD – latest version.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 72 00**

**SURVEYS AND RECORD DRAWINGS**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.01 RECORD DRAWINGS

- A. Record Drawings shall consist of all the Contract Drawings.
- B. From the sets of drawings furnished by the Owner, the Contractor shall reserve one set for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Subcontractors the drawings of their portion of the Work for the same purpose.
- C. The Contractor and the above Subcontractors shall keep their marked up As Built set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their work as actually installed. This shall include the location and dimensions of underground and concealed Work, and any architectural, mechanical, or electrical variations from the Contract Drawings. All changes, including those issued by Addendum, Change Order, or instructions by the Architect shall be recorded. Marked up As Built drawings shall be prepared for the entire project and include all Work, including but not limited to:

1. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten (10) foot intervals and at all changes of direction.
2. The location of all internal utilities and appurtunces, concealed by finish materials, including but not limited to valves, coils, dampers, vents, cleanouts, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps, and maintenance devices.
  - a. The location of these, items shall be shown by offsets to structure and drawing grid lines.
  - b. The tolerance for the actual location of these items on the marked up As Built Drawings shall be plus or minus two (2) inches.
  - c. Each item shall be referenced by showing a tag number, areas served, and function on the marked up As Built drawing
- D. The Architect may periodically inspect the marked up As Built drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of the monthly applications for payment.
- E. At Substantial Completion the Contractor shall submit the complete set of marked up As Built drawings to the Architect. The Contractor shall check all marked up As-Built drawings prepared by subcontractors and certify in writing on the title sheet of the drawings that they are complete and correct, prior to submission to the Architect.
- F. The Architect shall review the marked up As Built drawings and verify by letter to the Owner that the Work is complete.
- G. The Contractor may make a written request for copies of the completed Record Drawings. The Contractor shall reimburse the Owner directly for the cost of printing of any requested Record Drawings.
- H. Contractor shall maintain and record all changes to the plans throughout the entire project and shall submit as-built drawings of the entire project prior to final payment. As-built drawings must be in electronic form in CAD on Auto-CAD - latest.

END OF SECTION

**DIVISION 02** **SUBSURFACE INVESTIGATION & DEMOLITION**

**SECTION 02 07 00** **SELECTIVE DEMOLITION**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the materials and equipment to be furnished complete in every respect, and that this Contractor shall provide all items needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the selective demolition work required to complete the work of the contract including all the selective demolition work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all hardware, finishes, and accessories. Coordinate the selective demolition work with all the other trades for the project. Provide all demolition and disposal work to complete the selective demolition work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, and each sub-contractor for the entire project so that all the work can be properly and completely performed.
- B. Work included: Provide labor materials and equipment necessary to complete the work of this section, including but not limited to the following:
  - 1. Complete removal of existing sealants and expansion joints, where indicated on the details, dirt, and contaminants that would interfere with the application of new sealants.
  - 2. Removal of existing deteriorated concrete for installation of repair material.
  - 3. Removal of deteriorated drains and piping.

4. Demolition of ramp girders.
5. Temporary protection of adjacent buildings and property.
6. Preparation of concrete walls for installation of protective coating.
7. Removal of isolated bricks.

#### 1.03 QUALITY ASSURANCE

##### A. Supervision:

1. Engage and assign supervision of shoring and bracing work to qualified personnel.

##### B. Regulations:

1. Comply with local codes and ordinances of governing authorities having jurisdiction.

#### 1.04 SUBMITTALS

##### A. Schedule:

1. Submit schedule indicating proposed methods and sequence of operations for selective demolition.
2. Include coordination for shut-off, capping, and continuation of utility services in scope area.

#### 1.05 JOB CONDITIONS

##### A. Condition of Structures:

1. Owner assumes no responsibility for actual condition of items or structures to be demolished.
2. Conditions existing at time of commencement of contract will be maintained by Owner insofar as practicable.

##### B. Protections:

1. Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition Work. Safety is the sole responsibility of the contractor.
2. Provide protective measures to provide free and safe passage of Owner's personnel and general public to and from area of selective demolition.
3. Take measures to protect against windblown dust, obtain Owner's approval of means used for dust control.
4. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.

5. Protect adjacent materials and finishes with suitable coverings when necessary including, but not limited to, automobiles in parking lot adjacent to building which will remain in use during work to be performed.
  6. Remove protections at completion of work.
- C. Damages: Promptly repair damages caused to building or property, including cars, by demolition work at no cost to owner.
- D. Traffic:
1. Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
  2. Do not close, block, or otherwise obstruct streets, walks, parking lot, or other occupied or used facilities without written permission from the authorities having jurisdiction.
  3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- E. Environmental Controls:
1. Comply with governing regulations pertaining to environmental protection.
  2. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

## PART 2 - PRODUCTS - NOT USED

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Before start of selective demolition work, inspect areas in which work will be performed.

### 3.02 PREPARATION

- A. Structure Safety:
1. Provide exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.
  2. Cease operations and notify the Owners Representative immediately if safety of structure appears to be endangered.
  3. Take precautions to support structure until determination is made for continuing operations.

### 3.03 DEMOLITION

- A. General:



1. Perform selective demolition work in a systematic manner.
  2. Use such methods as required to complete work indicated on Drawings in accordance with Demolition Schedule and governing regulations.
  3. If unanticipated mechanical, electrical, or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict with Consultant.
- B. Disposal of Demolished Materials:
1. Remove debris, rubbish, and other materials resulting from demolition operations from site.
  2. Transport and legally dispose of materials off site.
  3. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution. Present receipts from certified waste disposal firms confirming hazardous waste disposal.
- 3.04 CLEANING AND REPAIR
- A. On completion of demolition work, remove tools, equipment, and demolished materials from site. Remove debris on a daily basis.
  - B. Remove protection and leave areas broom clean.
  - C. Repair demolition performed in excess of that required.
  - D. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION

**DIVISION 03**

**CONCRETE**

**SECTION 03 30 00**

**STRUCTURAL CONCRETE**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Structural Concrete work required to complete the work of the contract including all the Structural Concrete work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Structural Concrete work with all the other trades for the project. Provide all demolition and disposal work to complete the Structural Concrete work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.
- B. Structural Concrete work includes, but is not limited to:
  - 1. New concrete slab infill and ramp girders.
  - 2. Drilling and doweling with non-shrink grout into existing, adjacent, concrete walls.
  - 3. Installation of all steel reinforcing.

1.03 RELATED WORK

- A. The following items of related work are specified and included in other Sections of the Specifications:

1. Section 02 07 00 "Selective Demolition"
2. Section 03 31 10 "Concrete Repair" for concrete repairs.
3. Section 07 91 50 "Expansion Joints"
4. Section 07 92 00 "Sealants and Caulking"
5. Section 22 00 00 "Plumbing"

#### 1.04 REFERENCE STANDARDS

- A. The work shall conform to the codes and standards of the following agencies as further cited herein:
1. ASTM: American Society for Testing Materials, 1916 Race Street, Philadelphia, PA, 19103, USA as published in "Compilation of ASTM Standards in Building Codes".
  2. ACI: American Concrete Institute, P.O. Box 19150, Redford Station, Detroit, MI 48219.
  3. CRSI: Concrete Reinforcing Steel Institute, 180 North LaSalle Street, Chicago, IL 60601.

#### 1.05 SUBMITTALS

- A. Shop Drawings:
1. Submit complete shop drawings in accordance with the GENERAL CONDITIONS for Consultant's approval. Show plans, elevations, details or job conditions, of all the new concrete work (base contract and any accepted Alternates) and their relationship to other work.
  2. Drawings shall consist of sections, plans and details clearly showing location, sizes and spacing of reinforcing that is shown on the working drawings. Include schedules and diagrams to indicate bends, sizes and lengths of reinforcing members. Indicate location of construction and control joints and show additional reinforcing required at these locations. Schedule all accessories and chair bars required to hold slab or other reinforcing in place.
  3. Shop drawings will be checked for general location, size, spacing and design details and returned either approved or marked for correction. Make revisions where required and resubmit. No work shall be fabricated for which shop drawings have not been approved.
  4. Upon final approval of shop drawings, furnish all copies needed for erection and for use of other trades.
  5. Contractor shall be responsible for furnishing and installing all materials called for in Contract Documents even though these materials may have been omitted from approved shop drawings.
- B. Architectural Concrete Samples

1. Submit two samples approximately 12 inches by 2 inches thick to illustrate quality, color, and texture of surface finishes. Approved samples shall be retained at the site for use as a "Control Sample".

#### 1.06 QUALITY ASSURANCE

- A. In addition to other standards listed below, concrete shall comply with ACI 301 "Specifications for Structural Concrete".
- B. All concrete work shall be performed to insure for the entire job homogeneous concrete having required strength, durability and weathering resistance, without planes of weakness, and other structural defects, and free of pronounced honeycombs, air pockets, voids, projections, offsets of plane, and other defacements on exposed surfaces.
- C. Manufacturer's statement attesting to compliance of each shipment of cement with standard specification shall be submitted to the Consultant upon request.

#### 1.07 STORAGE AND HANDLING

- A. Handle and store cement to protect from air, ground or other moisture; to permit ready access for inspection; and to protect from contamination by foreign materials. Cement stored longest shall be used first. Caked or hardened cement shall not be used.
- B. Aggregate Protection: Protect aggregates from foreign materials, and store each separately until placed in mixer.

#### 1.08 COORDINATION

- A. The work of this Section shall be coordinated with that of other trades affecting, or affected by, this work, as necessary to assure the steady progress of all work under the Contract.

#### 1.09 GUARANTEE

- A. In addition to the specific guarantee requirements of the GENERAL CONDITIONS and SUPPLEMENTARY GENERAL CONDITIONS, the Contractor shall obtain in the Owner's name the standard written manufacturer's guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities which the Contractor may have by law or other provisions of the Contract Documents.

### PART 2 - PRODUCTS

#### 2.01 CONCRETE MATERIALS

- A. Cement: Portland Cement Type II conforming to ASTM C150. Use only one brand and type throughout the project.

- B. Fine Aggregate: Natural sand consisting of clean, hard, durable uncoated particles conforming to ASTM C33. Organic content shall be determined according to ASTM C40, and supernatant liquid above test sample shall show color no darker than reference standard color solution prepared at same time. Grading for fine aggregate shall be uniform, and fineness modulus shall never vary more than 0.15 from that of sample used in design mixes.
- C. Coarse Aggregate: Crushed stone or gravel conforming to ASTM C33. Maximum size: 3/4 inch.
- D. Water: From approved source, potable, clean, and free from oils, salt, alkali, organic matter, and other deleterious material.
- E. Water-Reducing Agent: "WRDA" by W.R. Grace and Co., or equal conforming to ASTM C494 as approved by the Consultant. Water reducing agent shall be by same manufacturer as air entraining agent.
- F. Air Entraining Agent: "Darex" by W.R. Grace Company, or equal conforming to C260 as approved by the Consultant. Total air entrained shall be 5% of volume concrete.
- G. Architectural Concrete White Color Additive: As selected by the Architect.

## 2.02 CONCRETE MIX

- A. Concrete Mix Requirements:

<u>Compressive Strength</u>	<u>Maximum Water to Cement Ratio</u>	<u>Minimum Cement Factor</u>
5000 psi	5 gallons per sack	6.0 bags per yard

Submit proposed mix to Consultant for approval before use in work. See General Notes for detail requirements.

- B. Maximum size aggregate shall be 3/4 inches.
- C. Maximum slump shall be 4 inches.
- D. Comply with requirements of ACI 613 "Recommended Practice for Selecting Proportions for Concrete", and ASTM C94 for Ready Mixed Concrete.
- E. Concrete slabs shall be air entrained, shall have a minimum compressive strength of 5000 PSI, and shall be uniform in color and finished appearance to the satisfaction of the Consultant.
- F. Admixtures causing accelerated setting of cement in concrete such as calcium chloride shall not be used.

## 2.03 FORMWORK

- A. Formwork shall be in accordance with ACI 347 "Recommended Practice for Concrete Formwork".
- B. Formwork materials shall be exterior "Plyform" Class 1, B-B not less than 3/4 inches thick.
- C. Forms for Concealed Concrete Work: Forms for all work shall be of sound plywood or other material capable of providing finished surfaces conforming to the intent stated above. Joints shall be sufficiently tight to prevent leakage and shall be flush in the plane of the surface. Place ties in adequate quantity to prevent springing of forms, in locations which will be concealed from view in the finished work and will not interfere with other work under this Section or other Sections.
- D. Footing Forms: Forms for footings may be of common lumber or of forms as specified herein for concealed walls, but shall be so erected as to provide full bearing on undisturbed soil, parallel sides, level top surfaces, and cross sections symmetrical with respect to the supported wall, and having dimensions not less than those indicated on the Drawings. No footings shall be placed until completed form installation has been approved by the Consultant and all footings shall have side forms unless prior approval is given to use earth as side forms.
- E. Forms for Architectural Concrete: Provide forms and form facing materials of metal, plastic, wood, other acceptable material that is non-reactive with concrete and will produce required finish surfaces. Forms will be constructed without the use of internal form ties.
- F. Form Coatings: All forms shall be oiled before reinforcing is placed with a non-staining oil or liquid form coating as approved by the Consultant.

#### 2.04 REINFORCING STEEL

- A. Furnish, fabricate, and install in forms all concrete reinforcement and accessories required for the Work. Submit shop drawings for approval.
- B. All reinforcing steel shall conform to ASTM A615, Grade 60.
- C. Bar reinforcing shall be shop formed cold to dimensions indicated on drawings. Detailing, fabricating, and erecting reinforcing shall conform to ACI 315 "Manual of Standard Practice for Detailing Concrete Structures" and ACI 318 "Building Code Requirements for Reinforced Concrete".
- D. Reinforcement shall be free of paint, dirt, oil, and excessive rust and scale.
- E. Chairs, bolsters and the like shall be preformed and manufactured for the express use involved.

### PART 3 - EXECUTION

#### 3.01 PLACING REINFORCING STEEL

- A. Reinforcing shall be accurately placed as indicated on approved shop drawings and in accordance with CRSI 59 and ACI 318. Dowels shall be tied in place prior

to placing concrete. Do not install reinforcing after concrete is placed by inserting into forms.

- B. All reinforcing shall be securely tied and supported to maintain proper spacing and cover during placing operations.
- C. Install anchor bolts, steel bearing plates, angles and other items furnished under other Sections for building into concrete.
- D. All slab reinforcing shall be positioned in place and fully supported on slab bolsters.

### 3.02 PLACING CONCRETE

- A. Contractor to provide dimensioned shop drawings indicated extents, locations and details of all construction, expansion and control joints as well as reinforcing. Placement shall not occur prior to Architect / Owner approval.
- B. Deposit concrete only after removal of all water, dirt, and foreign matter from forms, and after checking of forms, sleeves, inserts and reinforcing for proper location.
- C. Place concrete only by those methods and arrangements of equipment which comply with Parts V and VI of ACI 614 "Recommended Practice for Measuring, Mixing and Placing Concrete".
- D. Vibrate concrete during deposition with internal type, high frequency mechanical vibrator having a speed of not less than 7,000 rpm. Do not use vibrators to move concrete. Supplement all vibration by wooded spade muddling between reinforcing and forms and into corners.

### 3.03 FIELD QUALITY CONTROL

- A. The Consultant may select a qualified Testing Laboratory or Materials Engineer to make inspection tests during the course of work as specified herein and as otherwise considered necessary. Costs of all tests will be paid by the Owner and are not included in the Contract Sum.
- B. All measuring, mixing, placing and curing may be subject to inspection by the Laboratory and approval by the Consultant. However, such inspection and approval shall in no way relieve Contractor of his responsibility to fulfill the requirements of this Contract.
- C. Contractor shall cooperate in making tests and shall be responsible for notifying designated laboratory in sufficient time to allow taking of cylinders at time of pour.
- D. Where test show that concrete is below specified strength, Contractor shall remove all such concrete, as directed by the Consultant. Full cost of removal of low strength concrete and its replacement with concrete of proper specified strength shall be borne by the Contractor.

### 3.04 CURING AND PROTECTION

- A. Curing shall be started as soon as the concrete has hardened sufficiently to prevent surface damage.
- B. Surfaces shall be wet cured for at least five (5) days by use of blankets, or approved curing compound. Blankets shall be thoroughly soaked at all times during this period.
- C. In hot weather, all concreting shall be done in accordance with the recommendations of ACI 605 "Recommended Practice for Hot Weather Concreting".
- D. In cold weather, all concreting shall be done in accordance with the recommendations of ACI 306 "Recommended Practice for Cold Weather Concreting". Do not place concrete when outside air temperatures are below 40 degrees F without provisions for enclosing and heating as approved by the Consultant.

### 3.05 FINISHING OF CONCRETE SURFACES

- A. Intent of Architectural Concrete Finish
  - 1. For all concrete surfaces exposed to view and to the weather, it is the intent of this Specification to require forms, mixtures of concrete, and workmanship so that concrete surfaces, when exposed, will require no patching.
  - 2. All concrete concealed from view, or which will in the opinion of the Consultant be concealed from view at any time when appearance will be a consideration, shall be free from defects affecting structural capacity but may have minor surface deficiencies which may be patched in accordance with the Specifications.
  - 3. All concrete not conforming to these requirements will be condemned by the Consultant and shall be properly and promptly removed and replaced with new work to the satisfaction of the Consultant, at no additional cost to the Owner.
- B. At other concrete that may be patched, for honeycomb concrete, stone pockets or voids, the loose concrete and loose cement shall be removed to sound hard concrete. The surface area shall be thoroughly wetted immediately prior to repair. New cement paste shall be used to fill in voids to a hard smooth surface even with adjacent concrete. For larger defects, repairs will be as directed by the Consultant.



- C. All sidewalks and plaza concrete finishes shall have tooled control joints in pattern indicated with broom finish. If not shown, provide joints 5'-0" o.c. each way, maximum. Broom direction shall alternate from section to section.

### 3.06 FORM REMOVAL

- A. Do not remove forms or shoring until concrete members have acquired sufficient strength to support their weight and subsequent construction loads without deflection or distress.
- B. Remove forms in manner to assure safety of structure.
- C. Retain forms in place for a minimum period as follows (assuming curing temperatures above 50 degrees F.)
  - 1. Sidewalks and footings      2 days
  - 2. Elevated Slabs                7 days
  - 3. Ramp Girders                 7 days

END OF SECTION

**SECTION 03**

**CONCRETE**

**SECTION 03 31 10**

**CONCRETE REPAIR**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Concrete Repair work required to complete the work of the contract including all the Concrete Repair work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Concrete Repair work with all the other trades for the project. Provide all demolition and disposal work to complete the Concrete Repair work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each sub-contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.
- B. Concrete Repair work includes, but is not limited to:
  - 1. Top surface partial depth concrete repair
  - 2. Full depth concrete repair (including drain replacement).
  - 3. Underside partial depth concrete repair.
  - 4. Vertical wall/spandrel and column repairs.
  - 5. Concrete crack epoxy injection repair.
  - 6. Shear connector repairs.

- C. All repair locations will be determined and marked in the field by the Engineer. Repairs will be located at small individual locations throughout the entire scope area. Unit Price work performed without the approval of the Engineer will not be paid for.
- D. The Owner reserves that right to increase or decrease the unit cost quantities without any adjustment in the unit costs.

#### 1.03 REFERENCE STANDARDS

- A. The work shall conform to the codes and standards of the following agencies:  
ASTM, ACI, and CRSI.

#### 1.04 SUBMITTALS

- A. Shop Drawings:
  - 1. Submit complete shop drawings for concrete repair work and reinforcing steel in accordance with the GENERAL CONDITIONS.
  - 2. Concrete mix design.
  - 3. Manufacturers' literature of all products with supporting technical performance criteria.
  - 4. Written letter describing proposed techniques and methods for repairs in each scope area.
  - 5. Prepare sample patch at each unit price scope area, including all installation techniques and products with Engineer, Owner, and Manufacturer on site to witness and approve - minimum 2' x 2' at locations directed by the Engineer.

#### 1.05 RELATED WORK

- a. Section 02 07 00 "Selective Demolition"
- b. Section 03 30 00 "Structural Concrete"
- c. Section 07 91 50 "Expansion Joints"
- d. Section 07 92 00 "Sealants and Caulking"
- e. Section 22 00 00 "Plumbing"

### PART 2 - PRODUCTS - GENERAL

#### 2.01 FORMWORK

- A. Formwork shall be in accordance with ACI 347 "Recommended Practice for Concrete Formwork."
- B. Form Coatings: All forms shall be oiled before reinforcing is placed with a non-staining oil or liquid form coating as approved by the Architect.

## 2.02 REINFORCING STEEL

- A. All reinforcing steel shall conform to ASTM A615, Grade 60.
- B. Bar reinforcing shall be shop formed cold to required dimensions indicated on drawings.

## 2.03 REPAIR CONCRETE MIX

- A. Concrete mix requirements and techniques for concrete repair shall satisfy the limiting qualities as described in the particular specification section for “cast-in-place” - see Section 2.04, “dry-pack” - see Section 2.05, or “concrete repair mortar materials” - see Section 2.06.
- B. Submit all proposed mixes (including color) and techniques to be used to Consultant for approval before use in work.
- C. Comply with requirements of ACI 613 “Recommended Practice for Selecting Proportions for Concrete”, ASTM C94 for Ready Mixed Concrete, and ACI-318-88 Building Code Requirements for Reinforced Concrete.
- D. Admixtures causing accelerated setting of cement in concrete such as calcium chloride shall not be used.
- E. Prepare test panel for approval before work begins at each scope area. Test panel shall establish approved methods as well as the proper color of the patching material which shall match the existing, adjacent material to the satisfaction of the Consultant and the owner. Test panel location shall be selected by the Consultant.

## 2.04 CAST IN PLACE - REPAIR CONCRETE

- A. Cement: Portland Cement Type I or II conforming to ASTM C150.
- B. Water-Reducing Agent: "WRDA" by W.R. Grace and Co., or equal conforming to ASTM 494 as approved by the Consultant. Water reducing agent shall be by same manufacturer as air entraining agent.
- C. Air Entraining Agent: "Daravair" by W.R. Grace Company, or equal conforming to C260 as approved by the Consultant. Total air entrained shall be 5% ( $\pm 1\%$ ) of volume concrete.

## 2.05 DRY-PACK - REPAIR CONCRETE

- A. Areas shall be repaired with dry-pack concrete as described herein. Dry-pack concrete shall satisfy the following limiting qualities:

<b><i>Class Concrete</i></b>	<b><i>5000 psi at 28 days</i></b>
Cement-to-Sand Ratio	1:1.5
Water	Potable in sufficient quantities to mix as noted in 2.05.B, below.
Min. Cement Factor	7.5 sacks/cu. yd.

Consistency, Maximum	Dry/crumblly
Entrained Air Content	5.0 to 6.0%
Color	To match exist.

- B. The consistency of the dry-pack concrete shall be zero slump, but moist enough so that when it is rodded and tamped until dense, an excess of paste will appear on the surface in the shape of a spider web. The concrete shall be of the driest possible consistency and mix composition so that it can be worked into the corners and angles of forms and around the reinforcement without permitting the materials to segregate or free water to collect on the surface - due consideration being given to the methods of placing and compacting.
- C. Dry-pack concrete for larger voids can contain a 1-1-1.5 mixture of cement, concrete sand, and pea gravel.
- D. Prepare test panel for approval before work begins. Test panel shall establish approved methods to the satisfaction of the owner and the Consultant. Location of test panel shall be selected by the Consultant.

## 2.06 CONCRETE REPAIR MORTAR MATERIALS - CONCRETE REPAIR

- A. Repair material to be a silica fume repair mortar, EMACO S88-CA as manufactured by Master Builders, Inc., 23700 Chagrin Boulevard, Cleveland, Ohio 44122-5554, Phone: (216) 831-5500, FAX: (216) 831-6910 or as manufactured by THORO, FOSROC, or approved equal. The follow specification is based on the EMACO, but may be by an "or approved equal" manufacturer.
- B. Mix EMACO S88-CA mortar with approximately 0.7 to 1.0 gallon (2.7 to 3.8 liters) of water (10.5 to 15% by weight of EMACO) per 55 pound (25 kg.). All of the mixing water should be added to an approved mixing device first, then mixer should be started and EMACO S88-CA mortar added in a continuous manner.
- C. Prepare test panel for approval before work begins. Test panel shall establish approved methods to the satisfaction of the owner, manufacturer, and the Consultant. Location of test panel shall be selected by the Consultant.

## PART 3 - EXECUTION GENERAL

### 3.01 DEFINITION OF WORK TO BE PERFORMED

- A. It is required to repair or replace all the disintegrated, cracked, delaminated, and defective concrete on the exposed areas of the concrete structure, as indicated in drawings for corrective work, or as determined during the course of the work. By exposed it is meant all concrete which is exposed to the eye.
- B. Concrete shall be considered "unsatisfactory" when it exhibits weakness due to crazing, cracking, spalling, volume change, disintegration, segregation, erosion, scaling, popping, delamination, unbonding, etc.
- C. Concrete shall be considered satisfactorily "sound" when it "rings" under the hammer blow and resist chipping in a manner equal to virgin original concrete in

the structure that has not exhibited deterioration. Removal equipment shall consist of small chipping hammers (maximum twelve (12) pounds ). Hand held hammers and cold chisels shall be used where directed by the Engineer. Note: Excessive removal due to the use of larger equipment shall be completely repaired to the satisfaction and at not cost to the Owner.

- D. Any reinforcing bars which have broken bond more than 50% around the perimeter with the concrete shall have the concrete cut away all around and behind them so that the fingers of the hand can be inserted in the peripheral space between the rod and sound concrete. This will permit placement of repair concrete around the reinforcing bar and bonding of bar and parent concrete. Temperature bars and chairs are considered to be secondary bars. When condition of existing steel is unclear or in question the Consultant shall be contacted immediately for a decision.
- E. Install any additional reinforcing as to develop the original design strength required. Repair or replace any damaged accessories or inserts in the damaged portion of the concrete.

### 3.02 REINFORCEMENT REPLACEMENT

- A. All existing reinforcement which is damaged, eroded, or oxidized to reduce the effective working area by more than 15% shall be replaced with new, rolled, deformed reinforcing bars of the same dimensions as the original steel or augmented with additional smaller bars to provide the same total working area.
- B. The replacement bars shall be anchored by welding or splicing as directed by the Consultant.
- C. Care shall be taken at the interface between exposed rebar and sound concrete. Smaller chisels shall be used to prevent unnecessary bond breakage.
- D. Reinforcement shall be cleaned by wire brushing, chisel, sandblasting or grinding as deemed appropriate by the Consultant.
- E. The steel shall be clean and free of contaminants and properly lapped or welded to provide equivalent strength with the existing continuous bars. Where reinforcement is exposed too near the surface, the Contractor shall cut out concrete behind the rods so that the reinforcing bars can be more thoroughly embedded with a minimum 1" cover. Existing reinforcement, where exposed, shall be cleaned by chisel, grinding, sandblasting or wire brushing to remove rust, scale, and loose concrete before covering. Mounding of concrete may be permitted in certain locations in order to provide proper cover. The Consultant shall review and approve the locations and extent of mounding.
- F. After the exposed reinforcing steel has been properly prepared, coat with an epoxy coating. Protect concrete from coatings. Remove any epoxy from concrete before placing new material at no additional cost to the owner.

### 3.03 SURFACE PREPARATION OF CONCRETE

- A. Perimeter of each repair location shall be saw-cut 3/4" deep minimum and the cut sloped backwards 3 to 5 degrees to key in the new concrete behind the existing concrete.
- B. The areas to be repaired shall be prepared by chipping, or by use of power and hand tools to expose a totally, sound, clean, virgin surface over every square inch. Particular attention shall be given to all extremities, such as construction joints, openings, walls, columns, etc. Weight of power tools shall not exceed twelve (12) pounds.
- C. The repair area shall be left thoroughly wet overnight (to prevent ultimate flash hardening of repair concrete and to provide a source of curing). All water collected in depressions shall be blown out with an air blast.
- D. Just prior to placing fresh concrete all detritus, loose and foreign material shall be removed from the slab by brushing with clean brooms and air jet, and flushing with a high pressure air and water blast. Special care shall be taken to clean the substrate thoroughly, including all depressions.

### PART 3A - EXECUTION CAST IN PLACE

#### 3.04 PLACING CONCRETE

- A. Deposit concrete only after removal of all water, dirt, and foreign matter from forms, and after checking of forms, sleeves, inserts and reinforcing for proper location.
- B. Submit procedures for placing and consolidating concrete for approval.
- C. Cast-in-place, pneumatically applied, and dry-pack procedures will be permitted for repair if approved before work commences. Submit sequence of construction and methods for approval.

#### 3.05 FIELD QUALITY CONTROL

- A. Costs of all tests will be paid by the Owner and are not included in the Contract Sum.
- B. Where test show that concrete is below specified strength, Contractor shall remove all such concrete, as directed by the Consultant. Full cost of removal of low strength concrete and its replacement with concrete of proper specified strength shall be borne by the Contractor. Evaluation of concrete strength and acceptance shall be in accordance with ACI-318-88 Section 4.7.

#### 3.06 CURING AND PROTECTION

- A. Curing shall be started as soon as the concrete has hardened sufficiently to prevent surface damage.

- B. Surfaces shall be wet cured for at least seven (7) days by use of blankets and a waterproofing membrane or with the use of a product such as "Burlene". Blankets shall be maintained thoroughly soaked at all times during this period.
- Newly placed concrete found to be dry within the seven (7) day moist curing process shall be rejected and shall be completely removed and replaced by the contractor at no additional cost to the owner.

## PART 3B - EXECUTION DRY-PACK

### 3.07 SURFACE PREPARATION OF CONCRETE

- A. Just prior to placing fresh concrete all detritus, and loose and foreign material shall be removed from the concrete by brushing with clean brooms and air jet, and flushing with a high pressure air and water blast. Special care shall be taken to clean the concrete thoroughly, including all depressions.
- B. The repair area shall be left thoroughly wet overnight (to prevent ultimate flash hardening of repair concrete and to provide a source of curing). All standing water collected in depressions shall be blown out with an air blast.
- C. Just prior to new concrete placement, existing surfaces shall be brushed thoroughly with a uniform coat of neat cement paste. Consistency of the paste shall be that of heavy paint. Care should be taken to cover all surfaces, especially around reinforcing bar and sawcut edges. Particular attention shall be given to all extremities of placement. Application of slurry shall be started at such locations and worked toward the center (rather than working "dead" slurry to stops). Excess and/or diluted slurry shall be removed by shovel and broom. Application of slurry shall not get ahead of concrete placement. Slurry shall not be allowed to dry or change color.

### 3.08 INSTALLATION OF DRY-PACK

- A. Ram repair concrete (dry-pack) into the voids. Rod and tamp vigorously by hand for small voids and with power tampers for large areas. Trowel smooth with heavy pressure.
- B. Transport dry-pack concrete from mixer to place of final deposit as rapidly as practical by methods which prevent separation of ingredients and displacement of reinforcement. Do not deposit any partially hardened concrete.
- C. Deposit dry-pack concrete before the bonding slurry has dried or changed color.
- D. Dry-pack concrete shall be deposited in layers of such thickness as to prevent sagging.
- E. All dry-pack concrete shall be thoroughly consolidated by hand tamping or other suitable mechanical means and trowelled dense, smooth, and level to match existing surface. Avoid premature and excessive trowelling.
- F. Protect all concrete and dry-pack work against injury from the elements and defacement of any nature during construction operations.



- G. No dry-pack concrete shall be placed against existing surfaces when the temperature of the parent surface is below 50 degrees F.
- H. All concrete and dry-pack placed at ambient temperature below 40 degrees F shall have a minimum temperature of 50 degrees F. All repairs shall be so protected that the temperature at the surface will not fall below 50 degrees F for not less than seven (7) days after placing.
- I. All concrete and dry-pack shall be treated immediately after placement or cement finishing is completed to provide continuous moist curing without change in color for at least seven (7) days, regardless of the ambient temperature. Surfaces shall be covered with damp flannel blanket or burlap and sealed with taped polyethylene or a combination product such as Burlene used. Membrane curing compounds shall not be used.  
  
Newly placed dry-pack concrete found to be dry within the seven (7) day moist cure process shall be rejected and shall be completely removed and replaced by the Contractor at no additional cost to the Owner.
- J. In installing repairs in cold weather, care shall be exercised to have the base slab concrete above 50 degrees F, and preferably between 60-70 degrees F. Repairs made in cold weather shall not contain frozen aggregates and shall be placed at a mix temperature between 60-80 degrees F.
- K. In no case shall warm and moist curing of the repairs be discontinued until test cylinders stored with the work exhibit a minimum compressive strength of 4000 psi.

### PART 3C - EXECUTION REPAIR MORTARS

#### 3.09 SURFACE PREPARATION OF CONCRETE

- A. Just prior to placing fresh concrete all detritus, and loose and foreign material shall be removed from the concrete by brushing with clean brooms and air jet, and flushing with a high pressure air and water blast. Special care shall be taken to clean the concrete thoroughly, including all depressions.
- B. The repair area shall be left thoroughly wet for a minimum of two hours (to prevent flash hardening of repair concrete and to provide a source of curing). All standing water collected in depressions shall be blown out with an air blast.

#### 3.10 INSTALLATION OF REPAIR MORTAR

- A. Applicator of EMACO S88-CA must have prior successful experience in the application of this product.
- B. Apply a scrub coat of the mortar mix just prior to applying the repair mortar.
- C. Apply EMACO S88-CA mortar by low pressure spraying or hand troweling on vertical or overhead surfaces in depths ranging from 3/8" to 2" (9.5 to 51 mm). When applying EMACO S88-CA mortar at depths over 1" (25 mm) 2 x 2" (50 x 50 mm) mesh must be firmly tied into the properly prepared substrate and

properly spaced. For depths over 2" (51 mm) consult your Master Builders representative. When applying by low pressure spraying use a "Moyno" or rotor/stator-type machine as would commonly be used for plastering.

- D. Transport EMACO from mixer to place of final deposit as rapidly as practical by methods which prevent separation of ingredients and displacement of reinforcement. Do not deposit any partially hardened mortar.
- E. EMACO S88-CA can be spray applied for vertical applications in thicknesses up to 2" (50 mm) in one lift.
- F. Unless forming is used the thickness for overhead applications should be no more than 1 to 1.5" (25 to 38 mm) per pass. For depths greater than 1.5" (38 mm) succeeding lifts of no more than 1" (25 mm) should be used.
- G. Timing between lifts is critical and will vary with several factors including mix consistency, ambient and mix temperature, humidity, and application technique. Typical timing is to allow twenty (24) hours between lifts. Moist curing is preferred in order to not interfere with adhesion between lifts.
- H. If necessary a wooden float may be used to make the surface level. The final surface may be made smooth using a wooden, plastic, or synthetic sponge trowel.
- I. Protect all repair work against injury from the elements and defacement of any nature during construction operations.
- J. No repair mortar shall be placed against existing surfaces when the temperature of the parent surface is below 50 degrees F.
- K. All repair mortar placed at ambient temperature below 40 degrees F shall have a minimum temperature of 50 degrees F. All repairs shall be so protected that the temperature at the surface will not fall below 50 degrees F for not less than seven (7) days after placing.
- L. All concrete and dry-pack shall be treated immediately after placement or cement finishing is completed to provide continuous moist curing without change in color for at least seven (7) days, regardless of the ambient temperature. Surfaces shall be covered with damp flannel blanket or burlap and sealed with taped polyethylene or a combination product such as Burlene used. Membrane curing compounds such as two (2) coats of Masterkure MB-429 or Masterkure 100W or 200W may be used for repair mortars only.  
Newly placed repair mortar found to be dry within the seven (7) day moist cure process shall be rejected and shall be completely removed and replaced by the Contractor at no additional cost to the Owner.
- M. In installing repairs in cold weather, care shall be exercised to have the base slab concrete above 50 degrees F, and preferably between 60-70 degrees F. Repairs made in cold weather shall not contain frozen aggregates and shall be placed at a mix temperature between 60-80 degrees F.

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

- N. In no case shall warm and moist curing of the repairs be discontinued until test cylinders stored with the work exhibit a minimum compressive strength of 4000 psi.

END OF SECTION

**DIVISION 03**

**CONCRETE**

**SECTION 03 91 00**

**RESIN CRACK REPAIR**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Resin Crack Repair work required to complete the work of the contract including all the Resin Crack Repair work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Resin Crack Repair work with all the other trades for the project. Provide all demolition and disposal work to complete the Resin Crack Repair work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.
- B. Resin Crack Repair work includes, but is not limited to:
  - 1. Top deck crack repairs remove existing sealant at previous routed crack repairs. New cracks are not to be routed. Contractor shall provide lump sum cost in bid form for epoxy "healer sealer" work at various locations, as per details.
  - 2. Repair locations will be determined and marked in the field by the Engineer. Repairs will be located at small individual locations throughout

the entire scope area. Unit Price work performed without the approval of the Engineer will not be paid for.

#### 1.03 QUALITY ASSURANCE

- A. Epoxy injection shall be performed by a qualified waterproofing Subcontractor.
- B. Provide sufficient workmen and supervisors to be present at all times during the execution of this work, who will be thoroughly familiar with the type of injection techniques involved and the materials specified.

#### 1.04 SUBMITTALS

- A. Product Literature: Submit four (4) copies of product data sheets and the manufacturer's installation instructions.
- B. Submit Subcontractor qualifications.

#### 1.05 PRODUCT HANDLING

- A. Delivery shall be in manufacturers original unopened container, clearly identifying each product specified, relating it to the product literature submitted.

#### 1.06 JOB CONDITIONS

- A. Workmen using chemicals are required to wear protective clothing, goggles, face shields, gloves as recommended by manufacturer. Provide every safeguard to protect workmen of every trade and the general public and their property against injury of any character and magnitude by erecting barriers well outside the limits of the resin injection process. Safety is the sole responsibility of the Contractor on the job site.
- B. Protect adjacent work, foundation plantings, lawn areas, parking areas and sidewalks from permanent damage as the result of the resin injection process.

#### 1.07 RELATED SECTIONS

- A. Section 02 07 00 "Selective Demolition"
- B. Section 03 30 00 "Structural Concrete"
- C. Section 03 31 10 "Concrete Repair" for concrete repairs.
- D. Section 07 92 00 "Joint Sealants"

### PART 2 - PRODUCTS

#### 2.01 EPOXY RESIN (Top Deck Repairs) – "I Panol Deck Seal" low-mod/low viscosity epoxy healer sealer by IPA Systems.

- A. Injection System shall be a two (2) component, epoxy material whose components conform to the following requirements:
  - 1. Component A shall be a modified epoxy resin of the Bisphenol-A-Epichlorhydrin type with an epoxide equivalent of 180-190 (ASTM D-1652).

2. Component B shall be the curing agent containing modified polyamines.
3. No unreactive dilutents, solvents or other fillers may be used in the formulation.
4. Physical Characteristics:
  - a. Viscosity: Approximately 85 cps
  - b. Compressive Properties: ASTM D-695
  - c. Modulus of Elasticity: @ 28 days
  - d. Tensile Properties: ASTM D-638 @14 days  
Tensile Strength: 1500 psi  
Elongation of Break:  
Modulus of Elasticity:
  - e. Flexural Properties: ASTM D-790  
Flexural Strength:  
Tangent Modulus of  
Elasticity in Bending:
  - f. Shear Strength: ASTM D-732 @14 days
  - g. Bond Strength: ASTM C-882  
Hardened Concrete to Hardened Concrete  
(dry cure): Bond Strength @ 2 days  
(moist cure): Bond Strength @14 days
  - h. Deflection Temperature: ASTM D-648 @14 days 122° F
  - i. Water: ASTM D-570 @ 7 days .27%

### PART 3 - EXECUTION

#### 3.01 EQUIPMENT FOR METERING, MIXING, AND INJECTION

- A. Type: The equipment used to meter and mix the two (2) adhesive components and inject the mixed adhesive into the crack shall be portable, positive displacement type pumps with interlock to provide positive ration control of exact proportions of the two (2) components at the nozzle. The pumps shall be electric or air powered and shall provide in-line mixing and metering system, and shall contain drain back plugs.
- B. Ratio Tolerance: The equipment shall have the capability of maintaining the mix ratio for the injection adhesive prescribed by the manufacturer of the adhesive within a tolerance of plus or minus 5 percent by volume.

#### 3.02 INSPECTION

- A. Resin Injection Contractor must examine the areas and conditions which crack repair will effect. Notify the Project Engineer in writing of conditions detrimental to the proper and timely completion of the Work.

### 3.03 PREPARATION

- A. Clean surfaces adjacent to cracks or other areas of application of dirt, dust, grease, oil, efflorescence or other foreign matter detrimental to application of epoxy injection surface seal system.
- B. Clean such surfaces with surface cleaner in accordance with manufacturer's recommendations and instructions.

### 3.04 METHODS

- A. Application of Surface Seal
  - 1. Seal cracks to be injected with surface sealer material in such manner that no defacing or discoloration of concrete surfaces shall result.
- B. Epoxy Grout
  - 1. Install epoxy in accordance with procedures as recommended by manufacturer or as required to obtain 100 percent penetration of cracks without inclusion of air pockets or voids in epoxy and as required to achieve structural bonding.
  - 2. Perform epoxy repair continuously until cracks are completely filled.
  - 3. Finishing Requirements:
    - a. When cracks are completely filled, cure epoxy for sufficient time to allow removal of surface seal without any draining or runback of epoxy material from cracks. Apply sand on the top surface of repair, prior to curing.

END OF SECTION

**DIVISION 04**

**MASONRY**

**SECTION 04 00 01**

**MASONRY FILED SUB BID**

PART 1 - GENERAL

1.1 GENERAL PROVISIONS – FILED SUB-BID REQUIRED AS PART OF 04 00 01  
MASONRY FILED SUB BID

- A. Work of this Section requires Filed Sub-Bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law Chapter 149, Sections 44A to 44J inclusive; and applicable Section of the MGL, Public Contract Law Chapter 30 as amended.

1.2 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 00 00 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.3 REQUIREMENTS FOR FILING SUB-BIDS

- A. Time, Manner and Requirements for Submitting Sub-Bids:
  - 1. Sub-bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope with the Public Agency at a time and place as stipulated in the “Invitation to Bid.”
  - 2. Sub-bidders must be DCAMM Certified in the listed trade and shall include a current DCAMM sub-bidder Certificate of Eligibility and Update Statement with the bid.
  - 3. Each sub-bid submitted for work under this Section shall be on forms furnished by the Awarding Authority as required by Section 44F of Chapter 149 of the General Laws, as amended.
  - 4. Sub-bids filed with the Awarding Authority shall be accompanied by Bid Bond, Cash, Certified Check, Treasurer’s Check, or Cashier’s Check issued by a



responsible bank or trust company payable to the City of Lawrence in the amount of 5 percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

- B. All File Sub-Bidders shall provide all of their own:
1. Vertical access and hoisting to perform the work of their section. Vertical access shall also be provided for the Architect to review the work at any time requested by the Architect.
  2. Provide all coring, demolition, and patching to perform the work of their section.
  3. Design and install all Firestopping associated with and required for this Trade. Submit Firestopping design for review.
  4. Coordination with the General Bidder and all the other File Sub-Bidders.
  5. Disposal of all demolition debris and trash to perform the work of their section.
  6. Provide As-Built drawings in CAD using the latest version of AutoCAD.
- C. Sub Sub-Bid requirements: Sub-bids shall include performance of the complete work of this section, including any sub-trade classes of work, with employees on the sub-bidder's own payroll unless the sub-bidder identifies in Paragraph E of the bid form, the name of a sub-trade subcontractor that will perform each class of sub-trade work and the corresponding sub-trade subcontract sum.

#### 1.4 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including the following Specification Sections, which are combined for this Filed Sub-Bid category:
1. Section 04 00 01 "Masonry Filed Sub-Bid"
  2. Section 04 21 00 "Brick Masonry"
- B. The Work of this Section is shown on the following Drawings:
- S1-01, S1-02, S1-03, S1-04, S2-01, S2-02, S3-02

The Trade Contractor shall also review all other Drawings and all other Sections of the Specifications for coordination requirements therein affecting the Work of this Section, not just those pertaining to this Sub-trade.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

**DIVISION 04**

**MASONRY**

**SECTION 04 21 00**

**BRICK MASONRY**

***FILED SUB-BID REQUIRED***

PART 1 – GENERAL

1.01 GENERAL PROVISIONS – FILED SUB-BID REQUIRED AS PART OF 04 00 01  
MASONRY FILED SUB BID

- A. Work of this section requires filed sub-bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law Chapter 149, Sections 44A to 44J inclusive; and applicable section of the MGL, Public Contract Law Chapter 30 as amended.

1.02 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the materials and equipment to be furnished complete in every respect, and that this Contractor shall provide all items needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

1.03 WORK TO BE PERFORMED

- A. Provide all the Brick Masonry Work required to complete the Work of the Contract including all the Brick Masonry Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all hardware, finishes, and accessories. Coordinate the Brick Masonry Work with all the other trades for the project. Provide all demolition and disposal Work to complete the Brick Masonry Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All Work of the Contract is related. It is the General Contractor's responsibility to review all the Work of each section,

and each Subcontractor for the entire project so that all the Work can be properly and completely performed.

- B. Work included: Provide labor materials and equipment necessary to complete the Work of this section, including but not limited to the following:
1. Repair masonry cracks by replacing cracked bricks.
  2. Repoint small areas of brick masonry joints
  3. Replace individual damaged bricks as located in the field by the Architect.
  4. All repair locations will be marked in the field by the Architect. Repairs will be located at small individual locations. Work performed without the approval of the Architect will not be paid for. See Unit Price Schedule in Section 01020 for quantities.
  5. Installation of new brick at ramp spandrels.
- A. The following Sections also include work to be incorporated in the Masonry Filed Sub Bid:
1. Section 04 00 01 "Masonry Filed Sub-Bid"
  2. Section 04 21 00 "Brick Masonry"

#### 1.04 QUALITY ASSURANCE

- A. Obtain materials from approved individual sources in sufficient quantities to complete each portion of the Work.
- B. Brick masonry units shall be of uniform quality, texture and color or a uniform blend within the ranges accepted for these characteristics to match original.
- C. Mortar ingredients shall be of uniform quality, texture and color to match original.
- D. Referenced Standards: Conform to State and Local Governing laws, Massachusetts or State Building Code, and the following standards:
1. Brick institute of America.
  2. Portland Cement Association.
  3. ASTM.

#### 1.05 SUBMITTALS

- A. Product Data:
  - 1. Submit manufacturer's product data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements.
- B. Samples: All samples shall be presented for approval by the Owner and SOCOTEC.
  - 1. Brick:
    - a. Brick shall match original in quality, texture, color and size.
    - b. Provide brick samples.
  - 2. Mortar:
    - a. Mortar shall match original texture, color, joint size and finish.
    - b. Provide fully washed, cured, and dry mortar samples in a variety of colors for decision by the Architect. Provide samples in advance of the Work so as not to adversely affect the schedule.
    - c. No limit to number of samples.
    - d. SOCOTEC shall be contacted prior to the samples being performed in order that the pointing procedures can be viewed; said procedures shall be representative of the pointing procedures for the entire project, provided they are performed per this specification section and BIA standards.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry materials in undamaged condition.
- B. Storage and Handling:
  - 1. Store and handle brick masonry units and materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes.
  - 2. Limit moisture absorption of brick masonry units and cement lime, etc., during delivery and until time of installation to the maximum percentage specified for brick for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.

3. Store cementitious materials off the ground, under weathertight covers or indoors, and kept clean and dry.
4. Store aggregates where grading and other required characteristics can be maintained.
5. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

#### 1.07 PROJECT/SITE CONDITIONS

##### A. Protection of Work:

1. During erection, cover top of masonry element with waterproof sheeting at end of each day's Work.
2. Cover partially completed structures when Work is not in progress.
3. Extend cover min. 24 in. down both sides and hold cover securely in place.
4. Do not apply loads for min. 3 days after building masonry walls.

##### B. Staining:

1. Prevent grout, mortar or soil from staining the face of masonry to be left exposed.
2. Remove immediately grout or mortar in contact with such masonry.
3. Protect base of walls from rain-splashed mud and mortar splatter by means of covering spread on ground and over wall surface.
4. Protect sills, ledges, and projections from droppings of mortar.

##### C. Cold Weather:

1. No Masonry Work will be performed in temperatures lower than 40 degrees F and no material will be allowed to freeze within 48 hours of installation.
2. Provide temporary heat and winter protection at all new masonry to maintain temperature above 40 degrees F until cured.
3. Mortar admixtures are not allowed on this project.

## 1.08 RELATED SECTIONS

- a. Section 02 07 00 "Selective Demolition"
- b. Section 07 92 00 "Joint Sealants"
- c. Section 10 14 19 "Dimensional Letter Signage"

## PART 2 – PRODUCTS

### 2.01 MATERIALS

#### A. Brick

1. New brick shall match original brick in color, size and texture. Contractor shall provide brick and provide samples to match each building.
2. Brick shall be hard burned, water struck, clay brick conforming to ASTM C216, Grade SW, Type FBS, except that compressive strength shall not be less than 6,000 psi (individual) nor 8,000 psi (average of five) nor shall water absorption exceed 10% (individual) or 8% (average of five) when subjected to 5-hour boiling test, all in accordance with testing procedures defined in ASTM C67.

#### B. Masonry Mortar

1. Mortar: Shall conform to ASTM C270, Type N, consisting of one (1) part Portland Cement (ASTM C150, Type 1, and meeting efflorescence requirements below), 1/2 to 1-1/4 parts hydrated lime (ASTM C207, Type S), and sand (ASTM C144) in quantity of not less than 2-1/2 nor more than 3 times the sum of the quantities of cement and lime, by volume.
2. New mortar at new brickwork and at all repointing locations shall match the original mortar in color, texture, aggregate and finish.
3. Tooled joint shall match original including depth of joint, shape of joint as well as amount of aggregate exposed.
4. Water shall be potable and free of injurious contaminants.
5. No admixtures of any type will be permitted.
6. Mixing:
  - a. Combine and thoroughly mix cementitious, water, and aggregates in a mechanical batch mixer.

- C. Wall Ties for Replacement Work shall be two-part, stainless steel adjustable ties by Rhoman Haas, or approved equal.
- D. Woven inserts for weephole slots shall be as manufactured by CavClear or Mortar Net, or approved equal, color to match mortar and filling opening to restrict insect access.
- E. Cleaning Agent: Detergent, solvent cleaner, non-acid solution type: as manufactured by Prosoco, Sure Klean, or equal.

### PART 3 - EXECUTION

#### 3.01 MASONRY CONSTRUCTION, GENERAL

- A. Masonry Work shall be done by skilled workmen, fully instructed as to the requirements of this specification, and adequately supervised during the Work.
- B. Cold Weather Masonry:
  - 1. Do no Masonry Work when outdoor temperatures are less than 40° F unless provisions are made to adequately protect the masonry materials and finished Work from frost by heating materials, enclosing the Work, and heating the enclosed spaces.
  - 2. Antifreeze admixtures will not be allowed in the mortar. No frozen Work shall be built upon. No masonry unit having a film of frost on its surface shall be laid in the Work. Any completed Work found to be affected by frost shall be taken down and rebuilt.
- C. Lay masonry plumb; true to line; with level courses; straight, clean, uniform joints; dry surfaces; and straight, plumb corners. Maintain vertical alignment of joints as required to match original bond patterns. Align horizontal joints with tops of openings, as indicated. Lay units in solid partitions in manner to provide same evenness of surface on each side.
- D. Adjust each masonry unit in final position while mortar is still soft and plastic. Remove any unit disturbed after mortar has stiffened and re-lay with fresh mortar.
- E. Provide all chases, slots, and recesses as required to accommodate the Work of other trades. Close only after such Work has been installed tested, and approved. As the Work progresses, set all anchors, bolts sleeves, frames, lintels, and all other items of the various trades required to be built-into the masonry. No cutting and patching of completed Masonry Work will be permitted except as approved by SOCOTEC.

- F. Do not use installed masonry Work to support or in any way receive scaffolding or other temporary supports.
- G. Provide complete protection against breakage, staining and weather damage to masonry. Masonry, when not roofed over, shall be positively protected with non-staining waterproof coverings, properly weighted, at night, during showers, and whenever masons are not working on the structure.
- H. Maintain masonry clean as the Work progresses. Exercise extreme care at exposed Work to prevent smearing or staining with mortar. Wash mortar stains immediately from exposed surfaces. At completion of Work cut out and repaint all holes and defective joints, leaving the entire Work free of blemishes.

### 3.02 BRICK MASONRY WORK

- A. Brick shall be studied for permeability before laying. Hard impervious brick shall be laid dry to assure maximum bonding. Bricks with high rate of suction (in excess of 0.025 oz. per sq. in. per min. under ASTM C67) shall be laid moist, but free of surface moisture, to permit proper moisture retention in the mortar.
- B. Brick Work shall be executed in patterns to match the original in horizontal and vertical dimension. Construct brick Work to conform to approved sample panel.
  - 1. Build in or install all special brick types and coursing called for on Drawings, such as sills, courses, decorative patterns and stone accents etc., all as indicated to match original.
- C. Shove bricks into place (do not lay) in full mortar beds, with vertical and horizontal joints completely filled when laid. Do not slush. Strike exposed joints flush with face of brick, then finish to match original. Exercise extreme care to prevent mortar from falling into cavities and from bridging across to the new internal vent spaces. Provide temporary wood or metal strips in the cavities, raised as the Work is carried up, or other suitable method to prevent clogged vent holes.
- D. When mortar at exposed joints has become partially set, and will make a thumbprint under pressure without displacement of mortar, the joints shall be tooled to match original.

### 3.03 POINTING

- A. Sawcut all joints to be pointed to a minimum depth of  $\frac{3}{4}$ ".
- B. New mortar shall match the existing masonry mortar. Point a sample area, 2' x 2' for approval. No Work shall commence without approval of sample by the



Owner and SOCOTEC. SOCOTEC shall be on site to observe the pointing procedures. Said procedures shall be representative of the procedures used throughout the project provided they are performed per this specification section and BIA standards.

C. Pointing:

1. During the tooling of joints, enlarge any voids or holes and completely fill with mortar prior to pointing.
2. Mortar shall be applied in  $\frac{3}{8}$ " lifts maximum. Additional lifts shall be applied only when the previous lift is "thumbprint" hard.
3. The use of mortar bags and/or mortar guns is prohibited. Use of such equipment will result in rejection of the work.
4. Point up all joints including corners, openings, and adjacent Work to provide a neat, uniform appearance, prepared for application of sealants.
5. The following BIA Technical Standards shall be included as part of this specification section: Technical Notes 8B; Technical Notes 46. Should there be a discrepancy between this specification and the BIA Technical Notes, the more stringent of the two shall apply.

3.04 ADJUSTING AND CLEANING

A. Damaged or Defective Masonry:

1. Remove and replace masonry units which are loose, chipped, broken, stained, or otherwise damaged or, if units do not match adjoining units as intended.
2. Provide new units to match adjoining units and install in fresh mortar pointed to eliminate evidence of replacement.

B. Final Cleaning

1. General:
  - a. After mortar is thoroughly set and cured, clean masonry.
  - b. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  - c. Test cleaning methods on sample wall panel; leave 1/2 panel unclean for comparison purposes.

- d. Obtain approval of SOCOTEC for sample cleaning before proceeding with cleaning of masonry.
  - e. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking.
2. Clean masonry to comply with masonry manufacturer's directions and BIA Technical Standards requirements.

END OF SECTION

**DIVISION 07** **THERMAL AND MOISTURE PROTECTION**

**SECTION 07 00 01** **WATERPROOFING, DAMPPROOFING AND CAULKING**

*(FILED SUB BID REQUIRED)*

PART 1 - GENERAL

1.01 GENERAL PROVISIONS – FILED SUB-BID REQUIRED AS PART OF 07  
00 01 WATERPROOFING, DAMPPROOFING AND CAULKING FILED  
SUB BID

- A. Work of this Section requires Filed Sub-Bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law Chapter 149, Sections 44A to 44J inclusive; and applicable Section of the MGL, Public Contract Law Chapter 30 as amended.

1.02 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 00 00 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.03 REQUIREMENTS FOR FILING SUB-BIDS

- A. Time, Manner and Requirements for Submitting Sub-Bids:

1. Sub-bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope with the Public Agency at a time and place as stipulated in the "Invitation to Bid."
2. Sub-bidders must be DCAMM Certified in the listed trade and shall include a current DCAMM sub-bidder Certificate of Eligibility and Update Statement with the bid.
3. Each sub-bid submitted for work under this Section shall be on forms furnished by the Awarding Authority as required by Section 44F of Chapter 149 of the General Laws, as amended.
4. Sub-bids filed with the Awarding Authority shall be accompanied by Bid Bond, Cash, Certified Check, Treasurer's Check, or Cashier's Check issued by a responsible bank or trust company payable to the Town of Hull in the amount of 5 percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

B. All File Sub-Bidders shall provide all of their own:

1. Vertical access and hoisting to perform the work of their section. Vertical access shall also be provided for the Architect to review the work at any time requested by the Architect.
2. Provide all coring, demolition, and patching to perform the work of their section.
3. Design and install all Firestopping associated with and required for this Trade. Submit Firestopping design for review.
4. Coordination with the General Bidder and all the other File Sub-Bidders.
5. Disposal of all demolition debris and trash to perform the work of their section.
6. Provide As-Built drawings in CAD using the latest version of AutoCAD.

C. Sub Sub-Bid requirements: Sub-bids shall include performance of the complete work of this section, including any sub-trade classes of work, with employees on the sub-bidder's own payroll unless the sub-bidder identifies in Paragraph E of the bid form, the name of a sub-trade subcontractor that will perform each class of sub-trade work and the corresponding sub-trade subcontract sum.

1.04 DESCRIPTION OF WORK

A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including the following Specification Sections; which are combined for this Filed Sub-Bid category:

1. Section 07 00 01 "Waterproofing, Damp-proofing and Caulking Filed Sub Bid"
2. Section 07 19 19 "Silicone Water and Graffiti- Resistant Treatments"
3. Section 07 91 50 "Expansion Joints"
4. Section 07 92 00 "Sealants and Caulking"

B. The Work of this Section is shown on the following Drawings:

S1-01, S1-02, S1-03, S1-04, S2-01, S2-02, S3-01, S3-02

The Trade Contractor shall also review all other Drawings and all other Sections of the Specifications for coordination requirements therein affecting the Work of this Section, not just those pertaining to this Sub-trade.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

**DIVISION 07** **THERMAL & MOISTURE PROTECTION**

**SECTION 07 19 19 SILICONE WATER AND GRAFFITI-RESISTANT TREATMENTS**

***FILED SUB-BID REQUIRED***

PART 1 – GENERAL

1.01 GENERAL PROVISIONS – FILED SUB-BID REQUIRED AS PART OF 07 00 01  
THERMAL AND MOISTURE PROTECTION FILED SUB BID

- A. Work of this section requires filed sub-bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law Chapter 149, Sections 44A to 44J inclusive; and applicable section of the MGL, Public Contract Law Chapter 30 as amended.

1.02 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the materials and equipment to be furnished complete in every respect, and that this Contractor shall provide all items needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

1.03 SUMMARY

- A. Section Includes:
  - 1. Water and graffiti resistant treatment applied to exterior exposed concrete walls.
- B. Related Sections:

1. Section 01 33 00 – Submittal Procedures
2. Section 03 31 10 – Concrete Repairs

#### 1.04 REFERENCES

- A. The date of the standard is that in effect as the date of receipt of bids for the project.
- B. ASTM International (ASTM):
  1. D2369- Standard Test Method for Volatile Content of Coatings.
  2. D6490- Standard Test Method for Water Vapor Transmission of Non-Film Forming Treatments Used on Cementitious Panels.
  3. D6532- Standard Test Method for Evaluation of the Effect of Clear Water Repellent Treatments on Water Absorption of Hydraulic Cement Mortar Specimens.
  4. D7089- Standard Practice for Determination of the Effectiveness of Anti-Graffiti Coating for Use on Concrete, Masonry and Natural Stone Surfaces by Pressure Washing.
  5. E96- Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.

#### 1.05 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 01 General Requirements specification sections.
- B. Submit product data including detailed test results of materials applied to surfaces similar to requirements of this Section.
- C. Submit manufacturer's instructions for methods and application procedures.
- D. Submit manufacturer's certification indicating water and graffiti-resistant treatment conforms to or exceeds requirements stated herein.

#### 1.06 QUALITY ASSURANCE

- A. The Contractors involved with work covered by this Section shall have had a minimum of five (5) years experience using specified techniques for water and graffiti-resistant treatment application.
- B. Tradesman must be competent and experienced and shall demonstrate reasonable care during performance of operations described in this Section.
- C. Tests and Approvals:
  1. Sample Area:
    - a. Contractor shall apply a test area of wall surface from four square feet in size for inspection and approval by the Owner's Representative after treatment has

- cured. Test area shall be available for comparison during the specified scope of work.
  - b. Samples of adjacent materials shall be tested for possible reaction with the water and graffiti-resistant treatment. Such samples shall be available for inspection by the Owner's Representative.
2. If any part of this work shall be found defective (because of improper preparation of surfaces or application of treatment) at any time before the final acceptance of the item, the Contractor shall, at his own expense, make good such defect to the satisfaction of the A/E.

### 1.07 PROJECT CONDITIONS

#### A. Protection:

1. Contractor shall provide, at all times, covered access to premises and necessary utilities, space for storage of material and equipment, etc.
2. All activities shall be in compliance with local and governmental regulations and codes.
3. The surface and atmospheric temperature should be at least 40 degrees Fahrenheit. and rising during application and for eight hours following. Surface and air temperatures should not exceed 90 degrees Fahrenheit.
4. Surfaces should be dry.
5. Apply only in well ventilated areas.
6. All caulking (sealants) should be applied a minimum of 24 hours prior to application, or as required by sealant manufacturer, whichever is greater, before application of water and graffiti-resistant treatment.
7. The Contractor shall require applicators to observe safety precautions as outlined on containers and labels. It is the responsibility of the Contractor to provide well ventilated areas for all workmen as well as to observe safety precautions as stipulated on labels and instructions of all materials used, and as required by governing authorities during application and drying.

### 1.08 WARRANTY

- A. Warranty: Manufacturer's warranty that water repellent will repel water and will allow water vapor out of substrate for not less than ten (10) years commencing on Date of Substantial Completion.



## PART 2 PRODUCTS

### 2.01 WATER AND GRAFFITI-RESISTANT TREATMENTS

#### A. Water and Graffiti- Resistant Treatment:

1. Use clear-drying, penetrating, water-based silicone emulsion for weatherproofing concrete materials and protecting them from graffiti attacks without altering their natural appearance.
2. Physical and Performance Properties:
  - a. Total Solids per ASTM D2369: Six (6) percent.
  - b. Comply with national, state, and district AIM VOC regulations.
  - c. Water Absorption Reduction (Brick) per ASTM C67: Greater than 98 percent.
  - d. Water Absorption Reduction (CMU) per ASTM C140: Greater than 87 percent.
  - e. Water Vapor Transmission per ASTM E96:
    - 1) Clay Brick: Greater than 99 percent.
    - 2) Concrete Block: Greater than 95 percent.
    - 3) Mortar: Greater than 88 percent.
  - f. Water Vapor Transmission WVT per ASTM D6490: Minimum 91 percent retention.
3. Approved Products:
  - a. "[Sure Klean Weather Seal Blok-Guard & Graffiti Control WB 6](#)"; [PROSOCO, Inc.](#) (800-255-4255) (Basis of Design).

#### B. Water and Graffiti- Resistant Treatment:

1. Use clear-drying, penetrating, solvent-based silicone for weatherproofing masonry materials and protecting them from graffiti attacks.
2. Physical and Performance Properties:
  - a. Total Solids per ASTM D 2369: Nine (9) percent.
  - b. Comply with national, state, and district AIM VOC regulations.
  - c. Water Vapor Transmission WVT per ASTM D 6490: Minimum 93 percent retention.
  - d. Cleanability Level 2 per ASTM D7089.
3. Approved Products:
  - a. "[Sure Klean Weather Seal Blok-Guard & Graffiti Control 9](#)"; [PROSOCO, Inc.](#) (800-255-4255) (Basis of Design).

A. Graffiti Remover:

1. Product shall be manufactured and approved for use by the water and graffiti-resistant treatment manufacturer:
2. Approved Products:
  - a. [Enviro Klean SafStrip](#); [PROSOCO, Inc.](#) (800-255-4255).
  - b. [Enviro Klean SafStrip 8](#); [PROSOCO, Inc.](#) (800-255-4255).
  - c. [Sure Klean Graffiti Remover](#)"; [PROSOCO, Inc.](#) (800-255-4255).

### PART 3 EXECUTION

#### 3.01 PREPARATION

- A. Verify surfaces to receive water and graffiti-resistant treatments are clean, free of efflorescence, oil, grease, or other foreign matter detrimental to application.
- B. Remove loose particles and foreign matter. Remove grease or oil with a solvent, effective alkaline cleaner, or detergent as recommended by water and graffiti-resistant treatment manufacturer.
- C. Allow surfaces to dry prior to application.
- D. Protect all surrounding areas as recommended by the manufacturer or as directed by the Architect.
  1. All polished stone, metal, or non-concrete surfaces shall be protected from contact with the material by masking with polyethylene.
  2. Concrete surfaces must be in good repair. All new Concrete construction surfaces must be allowed to cure for a minimum of 28 days prior to application. Surfaces must be completely dry.
- E. Verify all windows, exterior intakes and air conditioning vents are covered and air handling equipment is shut down during application and until vapors have dissipated.

#### 3.02 WATER AND GRAFFITI RESISTANT TREATMENT APPLICATION

- A. Test each surface and/or material to be treated to ensure compatibility and desired water and graffiti-resistant treatment results. The surface to be treated must be clean and free of all foreign matter and as dry as possible to ensure proper penetration of water and graffiti-resistant treatment.
- B. Do NOT dilute water and graffiti-resistant treatment.
- C. Proceed with application of water and graffiti-resistant treatment in an orderly manner once application rate has been tested; work from bottom to top of each scaffold width and from one end of each elevation to the other.

- D. Apply water and graffiti-resistant treatment to dry surfaces that comply with manufacturer's written instructions; use brush or spray application methods, at Contractor's option.
- E. Preferred method of application is with low pressure, spray equipment. Use roller or brush for small scall applications or when spray applications are not appropriate. Apply in coverage rate as recommended by manufacturer for type of material.
- F. Spray Application:
  - 1. Uniformly saturate water and graffiti-resistant treatment using the "wet-on-wet" application method from bottom up, creating a 6 to 8 inch rundown below the spray contact point. Apply in accordance with manufacturer recommendation.
  - 2. Let the first application penetrate for 2 to 3 minutes. Brush out heavy runs and drips to prevent build up. Do not spray apply at pressures exceeding 50 psi.
  - 3. Reapply a second coat of water and graffiti-resistant treatment for heavily textured and porous surfaces.
    - a. Apply once first coat is dry to touch, or within [one][two] hour[s] of first coat. Allowing more than [one][two] hour[s] between coats reduces the effectiveness of the second coat.
- G. Roller or Brush Application:
  - 1. Uniformly saturate the surface with water and graffiti-resistant treatment. Avoid excessive overlapping. Brush out heavy runs and drips to prevent build up.
  - 2. Reapply second coat of water and graffiti-resistant treatment for maximum protection.
    - a. Apply once first coat is dry to touch, or within [one][two] hour[s] of first coat. Allowing more than [one][two] hour[s] between coats reduces the effectiveness of the second coat.
- H. Vertical Wood Application:
  - 1. Uniformly saturate the surface with water and graffiti-resistant treatment to the point of rejection.
  - 2. Let the first application penetrate for 2 to 3 minutes.
  - 3. Reapply a second coat of water and graffiti-resistant treatment. Apply once the first coat is dry to touch, or within two hours of the first coat.]

### 3.03 GRAFFITI REMOVER APPLICATION

- A. At locations indicated, clean exterior masonry and concrete surfaces to comply with the manufacturer's recommendations designed to dissolve most spray paints, marking pens, and acrylic sealers from masonry.

### 3.04 PROTECTION

- A. Protect adjacent surfaces not scheduled to receive treatment. If applied on unscheduled surfaces, remove immediately, by manufacturer approved method.
- B. Protect treated surfaces from rain for at least 6 hours after application.
- C. Correct damage by cleaning, as approved by A/E.

END OF SECTION

**DIVISION 07**

**THERMAL & MOISTURE PROTECTION**

**SECTION 07 91 50**

**EXPANSION JOINTS**

***FILED SUB-BID REQUIRED***

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The GENERAL DOCUMENTS, as listed on the Table of Contents, and applicable parts of Division 1, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Repair concrete edges of expansion joint as per Section 03311.
- C. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the Work of this trade.

1.02 WORK TO BE PERFORMED

- A. Prepare concrete substrate by sawcutting a uniform width joint along the entire path of all the existing expansion joints at horizontal and vertical faces.
- B. Install a continuous preformed extruded thermoplastic rubber sealing glands with punched flanges embedded in a high strength, flexible, impact-absorbing elastomeric concrete nosing (traffic application).
- C. Install a continuous preformed expanding foam sealant impregnated with a permanent elastic high density, open cell polyurethane foam with water based, polymer modified asphalt (wall application).

1.03 SUBMITTALS

- A. Product Literature: Submit 4 copies of product data sheets and the manufacturer's installation instructions.
- B. Color Samples: Copies of manufacturers standard color charts shall be submitted. Cured samples of the chosen color shall be submitted for verification of actual color to be installed.

1.04 PRODUCT HANDLING

- A. Delivery shall be in manufacturers original unopened containers, clearly identifying each product specified, relating it to the product literature submitted.

1.05 GUARANTEES

**EXPANSION JOINTS**

- A. Expansion joints shall be guaranteed against water penetration through the joint for five (5) years.

**PART 2 - PRODUCTS**

**2.01 GENERAL**

- A. Colors: Provide full range of manufacturer's color samples for Architect's review.

**2.02 MATERIALS – TRAFFIC APPLICATION**

- A. Expansion joint shall be the Thermaflex TM 2.5 series by Emseal Joint Systems, Ltd., 23 Bridle Lane Suite 3, Westborough, MA 01581-1228, Phone: (508) 836-0280, Fax: (508) 836-0281 or approved equal. The following specification is based on the Emseal TM 2.5 System.
- B. For expansion joints, the sealant system shall comprise two components:
1. Santoprene Sealing Glands
  2. Field – Elastomeric Concrete Nosing.
- C. Submittals must include samples for each expansion joint sealant system of same materials to be used in work. Manufacturer to certify that the expanding foam material has been tested and meets the values in the table below:

<b>SANTOPRENE SEALING GLANDS</b>		
<u>Property</u>	<u>121-73 (TM Series)</u>	<u>Test Method</u>
Tensile Strength (psi/Mpa)	1200/8.3	ASTM D 412
Ultimate Elongation (%)	440	ASTM D 412
Hardness (Shore A)	73 ± 3 Shore A	ASTM D 2240
Ozone Resistance	No Cracks	ASTM D 1170
Low Temperature Recovery (%)	100	50% Deflection 22 hours @ -22°F (-29°C)
Fluid resistance – 10% Hydrochloric Acid	1% weight change	ASTM D 471
Fluid resistance – 50% Sodium Hydroxide	1% weight change	ASTM D 471
Fluid resistance – 15% Sodium Chloride	1% weight change	ASTM D 471
Fluid resistance – 50% Ethylene Glycol	1% weight change	ASTM D 471

<b>ELASTOMERIC CONCRETE NOSING</b>		
Test procedures, where modified from ASTM standards or are unique to elastomeric		
<u>Test</u>		<u>Test Data</u>
Original Properties (after conditioning at 100°F (37°C) for 7 days)	Tensile Strength, psi (MPa)	600 (4.14) Min.
	Elongation, %	25 Min.
	Hardness, Durometer D	50 Shore D Max.
Compression Properties	Compressive stress, Psi (MPa) 5% Deflection	800 (5.52) Min.
	Resilience, % 5% Deflection	95 Min.
Impact Properties	Ball Drop, ft.-lb. (Joule) @ 20°F (-29°C)	> 10 (13.56) (No cracks)
Adhesion Properties	Dry Bond Strength to Concrete, pli (KN/M)	400 (70.05) Min.
	Wet Bond Strength to Concrete, pli (KN/M)	250 (43.78) Min.
<u>Test</u>		<u>Test Data</u>
Original Properties (after conditioning at 100°F (37°C) for 7 days)	Tensile Strength, psi (MPa)	1500 (10.34) Min.
	Tensile Stress, psi (MPa)	500 (3.45) Min.
	Elongation, %	25 Min.
	Hardness, Durometer D	90 ± 3 A
Tensile Properties After Oven Aging (7 days @ 158°F (70°C))	Tensile Strength, psi (MPa)	1500 (10.34) Min.
	Tensile Stress, psi (MPa)	500 (3.45) Min.
	Elongation, %	200 Min.
	Hardness, Durometer D	90 ± 3 A

### 2.03 MATERIALS – WALL APPLICATION

- A. Expansion shall be the DSH System by Emseal Joint Systems, Ltd., 108 Milk Street, Suite 3, Westborough, MA 01581-1228, Phone: (508) 836-0280; Fax: (508) 836-0281.
- B. For expansion joints and isolation joints in decks sealant system shall be comprised of three components:
  - 1. Acrylic – modified asphalt impregnated foam compressed 5-times factory coated with highway-grade, fuel resistant silicone.
  - 2. Field – applied epoxy adhesive primer.
  - 3. Field – applied silicone corner beads.

- C. Foam shall be open cell polyurethane foam impregnated with an acrylic polymer modified water-based asphalt emulsion. Foam to have at least 90% open cell structure. Impregnation agent to have proven non-migratory characteristics. Impregnation density 9-10 lb/cuft (144-160 kg/cuM) and must not exceed 10lb/cuft (160 kg/cuM). Compression when expanded in joint
- D. Silicone coating to be highway grade, low-modulus, jet-fuel resistant silicone applied to the impregnated foam sealant at a width greater than maximum allowable joint extension and which when cured and compressed will form a convex adhesive.
- E. Depth of seal as recommended by manufacturer but shall for all product sizes exceed the width of the nominal material size. DSH foam seal to be installed into manufacturer's standard field applied epoxy adhesive.
- F. The DSH System is to be installed slightly recessed from the surface such that when the field –applied corner beads of silicone are installed the system will be essentially flush with the substrate surface.
- G. Submittals must include samples for each expansion joint sealant system of same materials to be used in work. Manufacturer to certify that the expanding foam material has been tested and meets the values in the table below:

### PART 3 - EXECUTION

#### 3.01 INSTALLATION – TRAFFIC APPLICATION

- A. The joint configuration and the joint surfaces shall be detailed in the drawings and in accordance with the contract specifications and in compliance with requirements in the current material Tech Data available from the Manufacturer. All known detrimental conditions shall be reported immediately in writing. Field measurements of the depth and width of the joint shall be supplied to the manufacturer before material is ordered.
- B. Do not proceed with the installation of expansion joint material if the joint is other than designed, until written notification of these conditions is submitted to the manufacturer and design professional, and a written acknowledgement with an order to proceed is provided.
- C. Do not proceed with the installation of expansion joint material under adverse weather conditions when joint to be sealed is damp, wet or frozen, or when temperatures are below or above the manufacturer's recommended limitations for installation. Consult manufacturer for specific instructions before proceeding.



- D. Expansion joint material to be installed in strict accordance with the manufacturer's instructions and the advice of their official representative.
- E. Surface preparation: Joint surfaces must be free from gross irregularities, loose particles, foreign matter such as dirt, dust, ice, snow, water, etc., and coatings such as grease, oil, release agents, lacquers, etc., that may be detrimental to the adhesion of the sealant. Sandblast and/or grind all surfaces to achieve suitable substrates. Substrate temperature must not drop below 45°F for at least four (4) hours after pouring of nosing material.
- F. TM should be stored indoors at room temperature.
- G. Apply primer to joint-gap faces, allowing 30 minutes to dry.
- H. Thoroughly solvent clean sealing gland and position in joint gap.
- I. Apply 1/8" foam form-tape to edge of gland to provide correct screed level for nosing material.
- J. Pour nosing material into block outs and trowel smooth.
- K. Remove all waste from the site.

### 3.02 INSTALLATION – WALL APPLICATION

- A. The joint configuration and the joint surfaces shall be detailed in the drawings and in accordance with the contract specifications and in compliance with requirements in the current material Tech Data available from the Manufacturer. All known detrimental conditions shall be reported immediately in writing. Field measurements of the depth and width of the joint shall be supplied to the manufacturer before material is ordered.
- B. Do not proceed with the installation of joint sealer if the joint is other than designed, until written notification of these conditions is submitted to the manufacturer and design professional, and a written acknowledgement with an order to proceed is provided.
- C. Do not proceed with the installation of joint sealer under adverse weather conditions when joint to be sealed is damp, wet or frozen, or when temperatures are below or above the manufacturer's recommended limitations for installation. Consult manufacturer for specific instructions before proceeding.
- D. Joint sealer/expansion joint material to be installed in strict accordance with the manufacturer's instructions and the advice of their official representative.

- E. Surface preparation: Joint surfaces must be free from gross irregularities, loose particles, foreign matter such as dirt, dust, ice, snow, water, etc., and coatings such as grease, oil, release agents, locquers, etc., that may be detrimental to the adhesion of the sealant. Sandblast or grind to achieve suitable substrates.
- F. DSH should be stored indoors at room temperature. Recovery is quicker when warm and slower when cold.
- G. Mix epoxy primer and apply to joint-gap faces.
- H. Remove DSH from protective packaging.
- I. Check supplied width against joint-gap width, then heat to open cells and expand to just larger than joint-gap width.
- J. Apply epoxy primer in light coating to lower half of DSH.
- K. Insert material into joint-gap and push down until flush with surface.
- L. Join consecutive lengths of material with a 45° miter. Cut miters with a power-miter saw.
- M. Surrounding areas shall be protected as required to ensure that no sealant contaminates these surfaces.
- N. Both temperature and dampness conditions may restrict application of these sealants. Comply with manufacturer's instructions.

END OF SECTION

**DIVISION 07**

**THERMAL & MOISTURE PROTECTION**

**SECTION 07 92 00**

**SEALANTS AND CAULKING**

***FILED SUB-BID REQUIRED***

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The GENERAL DOCUMENTS, as listed on the Table of Contents, and applicable parts of Division 1, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the Work of this trade.
- C. Related Work:
  - 1. Section 02 07 00 "Selective Demolition"
  - 2. Section 03 31 10 "Concrete Repair" for concrete repairs.

1.02 WORK TO BE PERFORMED

- A. Install sealant on pedestrian bridges, ramps and precast.
- B. Install sealant at new soft joints on tower corners.

1.03 SUBMITTALS

- A. Product Literature: Submit 4 copies of product data sheets and the manufacturers installation instructions.
- B. Color Samples: Copies of manufacturers standard color charts shall be submitted. Cured samples of each chosen color shall be submitted for verification of actual color to be installed.

1.04 PRODUCT HANDLING

- A. Delivery shall be in manufacturers original unopened container, clearly identifying each product specified, relating it to the product literature submitted.

1.05 GUARANTEES

- A. Sealant joints shall be guaranteed against cohesive and adhesive failure of the sealant and water penetration through the joint for five (5) years.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Colors: Provide full range of manufacturer's color samples for Consultant's review.

### 2.02 MATERIALS

- A. Sealants: Multi component, self leveling grade, polyurethane sealant - ASTM C-920, Type M, Grade P, Class 25 such as MasterSeal SL 2 by SIKA or approved equal.
- B. Primer: The primer shall be used in accordance with the manufacturer's instructions, with all primers being installed prior to the installation of any backer rod or bond breaker tape. Manufacturer shall be consulted for all surfaces not specifically covered in submittal application instructions. If stain type primer is used, apply material in a manner that will prevent exposed stain residue related to application procedures. Apply only with approval of the Consultant.
- C. Backer Rod: Shall be closed cell polyethylene or polyurethane as recommended by the sealant manufacturer for compatibility with sealant.
- D. Bond Breaker Tape: Any acceptable polyethylene or similar type bond breaker tape shall be used to prevent three (3) sided adhesion in locations where backer rod cannot be used.

## PART 3 - EXECUTION

### 3.01 JOINT SURFACE PREPARATION

- A. Remove all failed sealants and clean joint surfaces immediately before installation of sealant and caulking compounds. Remove dirt, insecure coatings, moisture and other substances which would interfere with the bond of sealant or caulking compounds.
- B. Apply primer in a thin uniform film. Allow sufficient drying time for primer to be tack-free before sealant installation.

### 3.02 INSTALLATION

- A. Where backer rod is required it shall be installed using only blunt instruments or rounded tools which will insure a uniform depth (+ or - 1/8") depth without

puncturing the material. Backer rod shall be a minimum of 33% oversized for the joint to be sealed.

- B. Surrounding areas shall be protected to ensure that no sealant contaminates these surfaces.
- C. Sealant shall be prepared, including proper mixing of multi-component sealants then installed in accordance with manufacturer's recommendations and instructions in order to insure proper width to depth ratio. Take all steps to prevent three (3) sided adhesion. Sealant depth shall be one half of joint width with a minimum depth of 1/4" and a maximum of 1/2" unless otherwise required by the manufacturer.
- D. Both temperature and dampness conditions may restrict application of these sealants. Comply with manufacturer's instructions.

END OF SECTION

**DIVISION 09**

**FINISHES**

**SECTION 09 91 00**

**PAINTING**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 00 00 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Painting work required to complete the work of the contract including all the Painting work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Painting work with all the other trades for the project. Provide all demolition and disposal work to complete the Painting work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section and each sub-Contractor for the entire project so that all the work can be properly and completely performed
- B. Painting work includes surface preparation and the application of paint systems on the following substrates:
  - 1. Existing decorative ramp handrails
  - 2. Existing stair handrails
  - 3. Existing snow gate

- C. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available.

### 1.03 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
  2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
  3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
  4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

### 1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
  2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
  3. Certification by the manufacturer that products supplied comply the Commonwealth of Massachusetts Ozone Transportation Commission (OTC) regulations controlling use of volatile organic compounds (VOCs).
- B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.
1. Submit Samples on rigid backing, 8 inches square.
  2. Step coats on Samples to show each coat required for system.
  3. Label each coat of each Sample.
  4. Label each Sample for location and application area.
- C. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Architects and Owners, and other information specified.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.

1.05 CLOSEOUT SUBMITTALS

A. Maintenance Data: For coatings to include in maintenance manuals. Include the following:

1. Area summary with Finish Schedule and area detail designating where each product, color, and finish is used.
2. Product data pages.
3. Material safety data sheets.
4. Care and cleaning instructions.
5. Touch-up procedures.
6. Color samples of each color and finish (gloss level) used.

B. Manual: Provide Sherwin Williams; "Custodian Project Color and Product Information" manual, or equal.

1.06 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 1 gallon of each material and color applied.

1.07 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.



2. Apply benchmark samples after permanent lighting and other environmental services have been activated.
3. Final approval of color selections will be based on benchmark samples.
  - a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.
4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
  1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

#### 1.09 PROJECT CONDITIONS

- A. Temporary Support Facilities: Furnish and install all temporary lifts, hoists, staging, scaffolding, rigging, labor and materials, and temporary support to perform all operations in connection with the installation of this Work. Remove all temporary support facilities when no longer required.
- B. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- C. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURERS

- A. Basis of Design Products: Subject to compliance with requirements, provide products indicated by the following:

1. Benjamin Moore & Co., including affiliate the following affiliate brands:
  - a. Corotech.
  - b. Lenmar Wood Finishes.

B. Equal Products: Subject to compliance with requirements, provide equal products by one of the following, or approved equal:

1. PPG Architectural Finishes, Inc.; Pittsburgh Paints.
2. Pratt & Lambert.
3. Sherwin-Williams Co.

## 2.02 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Colors: As selected by Architect from manufacturer's full range.

## 2.03 EXTERIOR PRIMERS

A. Exterior Galvanized Metal Primer: Factory-formulated galvanized metal primer for exterior application.

1. Benjamin Moore; Super Spec HP Acrylic Metal Primer No. P04: Applied at a dry film thickness of not less than 2.0 mils.

## 2.04 EXTERIOR PAINTS

A. Exterior Full-Gloss Acrylic Enamel: Factory-formulated full-gloss waterborne acrylic-latex enamel for exterior metal application.

1. Benjamin Moore; Ultra Spec HP DTM Acrylic Gloss Enamel, HP28: Applied at a dry film thickness of not less than 2.3 mils.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
  - 1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
  - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### 3.02 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Remove loose, non-intact paint, which includes peeling, flaking and alligating or otherwise not adhering, by sanding, stripping or hand scraping.
- D. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

### 3.03 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
  1. Use applicators and techniques suited for paint and substrate indicated.
  2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.04 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  1. Contractor shall touch up and restore painted surfaces damaged by testing.
  2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 3.05 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION

**DIVISION 22**

**PLUMBING**

**SECTION 22 00 00**

**PLUMBING**

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Plumbing Work required to complete the Work of the Contract including all the Plumbing Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way. Coordinate the Plumbing Work with all the other trades for the project. Provide all demolition and disposal Work to complete the Plumbing Work. Patch to match all adjacent surfaces that are disturbed left exposed, or unfinished. All Work of the Contract is related. It is the General Contractor's responsibility to review all the Work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the Work can be properly and completely performed.
- B. Plumbing Work, but is not limited to: Provide labor, materials and equipment necessary to complete the work of this Section and, without limiting the generality thereof, including:
  - 1. Removal and replacement of deteriorated floor deck drains and piping.
- C. Items to Be Installed Only: Not Applicable.

D. Items to be Furnished Only: Not applicable.

#### 1.03 RELATED WORK

A. The following items of related Work are specified and included in other Sections of the Specifications:

#### 1.04 CODES, ORDINANCES AND PERMITS

A. All work shall be installed in accordance with the laws, ordinances, rules and regulations of all local and state authorities having jurisdiction, and the rules and regulations of the Massachusetts State Plumbing and Gas Codes.

B. Apply and pay for inspection permits, certificates of inspection, and license fees in connection with this work, and deliver to the Owner at the completion of the work. All diagrams or drawings required by local or state authorities shall be supplied by This Contractor.

#### 1.05 JURISDICTIONAL DISPUTES

A. Subcontract all portions of this work as necessary to avoid jurisdictional disputes and work stoppages that could arise during the installation of this work.

#### 1.06 INTENT

A. It is the intention of these specifications and drawings to require the equipment to be furnished complete in every respect, and this Contractor shall furnish all equipment needed and usually supplied in connection with such systems. Equipment, materials and articles incorporated in the work shall be new, and of the best grade of their respective kinds for the type of work involved.

#### 1.07 DRAWINGS

A. The drawings show the extent and general arrangement of piping, and locations of the equipment. Piping, fixtures, and equipment are shown diagrammatically. This Subcontractor shall be responsible for the locations in the most practical manner, free from interferences with other piping or structural features. If any changes from the drawings are deemed advisable, details of such proposed changes shall be submitted for approval. No changes shall be made without such approval. Maintain maximum headroom or space conditions at all points. Where headroom or space conditions appear inadequate, Architect shall be notified before proceeding with the installation.

#### 1.08 SHOP DRAWINGS AND SUBMITTALS

- A. Within thirty (30) days after award of the contract, provide six copies of schedule of materials proposed to be submitted for approval, prior to submission of any detailed drawings. The Architect will review this schedule and may supplement it with additional items or eliminate some items.
- B. Supply manufacturer's drawings of all materials, equipment and apparatus remaining on the list, giving full information as to dimensions, construction, capacity and other pertinent facts, which shall be submitted to the Architect, and approval secured, before apparatus is ordered, built or installed. Samples shall be submitted, if required.
- C. Approval by the Architect of shop drawings for any materials, apparatus, devices and layouts shall not relieve the responsibility of furnishing same of proper dimensions, size, quantity, quality and all performance characteristics to efficiently perform the requirements and intent of the contract documents. Such approval shall not relieve the Contractor from responsibility of errors of any sort on the shop drawings. If the shop drawings deviate from the contract documents, advise the Architect of the deviations in writing accompanying the shop drawings, including the reasons for the deviations. Shop drawings without specific notations or without schedules as described herein, may be returned not approved. Each shop drawing for any item shall be clearly identified with codings used on the drawings complete with name and/or locations of equipment. Shop drawings covering more than one item shall be accompanied by a suitable location schedule.
- D. Shop drawings are required for:
  - 1. Pipe and fittings.
  - 2. Drains and appurtenances.
  - 3. Pipe hangers, supports and special equipment.

#### 1.09 SUBSTITUTIONS

- A. Substitutions of equipment or materials other than those shown on the drawings or named in the specifications may be made only with the written approval of the Engineer, who reserves the right to require adequate proof of the quality of the substitute before permitting its use.
- B. Where this Subcontractor proposes to use an item of equipment other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundations, piping, wiring, or of any other part of the mechanical, electrical or architectural layout, all such redesign, and all new drawings and



detailing required therefore shall, with the approval of the Architect, be prepared by this Subcontractor at his expense.

- C. Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring, conduit and equipment from that specified or indicated on the drawings, with the approval of the Architect, this Subcontractor shall furnish and install any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system, at no additional cost to the Owner.

#### 1.10 WORKMANSHIP

- A. The entire work provided in this Division shall be constructed and finished in a workmanlike and substantial manner. It is not intended that the drawings show every pipe, fitting and appliance, but this Subcontractor shall furnish and install all such parts as may be necessary to complete the systems in accordance with the best practice and to the satisfaction of the Architect.
- B. Keep other Contractors fully informed as to the shape, size and position of all openings required for apparatus and give full information to the General Contractor and other Subcontractors sufficiently in advance of the work so that all openings may be built in advance. Furnish and install all sleeves, supports, etc., specified herein, or required.
- C. In case of failure to give proper and timely information, provide cutting and patching or have same done by the General Contractor, but in any case, without extra expense to the Owner.
- D. Obtain detailed information from the manufacturers of apparatus as to the proper method of installing and connecting same. Obtain all information from the General Contractor and other subcontractors, which may be necessary to facilitate the work and the completion of the whole project.

#### 1.11 ACCESSIBILITY

- A. All work shall be installed so that all parts required are readily accessible for inspection, operation, maintenance and repair. Minor deviations from the drawings may be made to accomplish this end, but changes of magnitude shall not be made without prior written approval from the Architect.

#### 1.12 PROTECTION

- A. Be responsible for work and equipment until finally inspected, tested and accepted. Carefully store materials and equipment, which are not immediately installed after

delivery to the site. Close open ends of work with temporary covers or plugs during construction to prevent entry of obstructing material.

- B. Protect work and material of other trades from damage that might be caused by work or workmen and make good any damage thus caused.

#### 1.13 TESTS

- A. Furnish all labor, material, instruments, supplies and services, and bear all costs for the accomplishment of the tests specified herein. Correct all defects appearing under test, and repeat the tests until no defects are disclosed. Leave the equipment clean and ready for use.
- B. Perform all tests, other than specified herein, which may be required by legal authorities or by agencies to whose requirements this work is to conform.

#### 1.14 EXAMINATION OF SITE

- A. Before submitting proposal, visit the site, examine its condition, and become acquainted with the obstacles and advantages for performing the work. Study the drawings and specifications explanatory of the work to be performed and compare them with the information gathered by the examination of the site.
- B. No claim for extra compensation will be recognized if difficulties were encountered which an examination of the site conditions and contract documents prior to executing the contract would have revealed.

#### 1.15 GUARANTEE

- A. Attention is directed to the provisions of the GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS regarding guarantees and warranties for work under this contract.
- B. Manufacturers shall provide their standard guarantees for work under this section. However, such guarantees shall be in addition to, and not in lieu of, all other liabilities, which the manufacturer and contractor may have by law or by other provisions of the Contract Documents.
- C. All materials, items of equipment and workmanship furnished under this section shall carry the standard warranty against all defects in material and workmanship. Any fault due to design which may develop shall be made good by and at the expense of the Contractor, including all other damage done to areas, materials and other systems resulting from this failure.

- D. This Subcontractor shall guarantee that all elements of the systems are of sufficient capacity to meet the specified performance requirements as set forth herein or as indicated.
- E. Upon receipt of notice from the Owner of failure of any part of the systems or equipment during the guarantee period, the affected part or parts shall be replaced.
- F. Any apparatus that requires excessive service during the guarantee period will be considered defective and shall be replaced.
- G. Furnish, before the final payment is made, a written guarantee covering the above requirements.

## PART 2 – PRODUCTS

### 2.01 PIPE AND FITTINGS

- A. New piping shall be cast iron with stainless steel hubless fittings. Size to match existing.

### 2.02 HANGERS, SUPPORTS AND INSERTS

- A. Pipe: 1A band type complete with threaded rod hanger nut, lock nut and sized to encompass and pipe supported, similar to Carpenter-Patterson Fig. 1A or 122 CT or equal.
- B. Hangers and supports shall be furnished complete with all appurtenances and shall be Central Iron, Grinnell, Carpenter-Patterson, or equal. Hangers and supports shall be hot-dipped galvanized.

### 2.03 DRAIN AND GATES

- A. New drains and gates shall be heavy duty, as manufactured by Zum, and shall match existing.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. The Plumbing Contractor shall be responsible for the correct installation of his work in a manner satisfactory to the best practices of his trade and to complete the scope of this work in all respects.

- B. The location of piping as indicated on the drawings is diagrammatically only, and the exact location shall be determined in the field. The run and arrangement of all pipes shall be approximately as shown on the drawings, as directed during installation, as straight and direct as possible, forming right angles or parallel lines with building wall and other pipes, and neatly spaced. All risers shall be erected true and plumb, parallel with walls and other pipes, and neatly spaced. All horizontal runs of piping except where concealed in partitions, shall be kept as high as possible and close to walls. Wherever possible, adjacent pipe lines, both heating and plumbing, shall be grouped in the same vertical or horizontal planes. All piping shall be concealed and shall have a minimum number of fittings. Piping shall not interfere with the operation or accessibility of doors, windows, access panels, or equipment and shall not encroach on aisles or passageways. All piping shall be installed to preserve access to all valves, traps and equipment.
- C. The Contractor shall be responsible for the correctness of field dimensions and shall check for himself all grades, lines, measurements, and other data in any way affecting his work. He shall refer to the project, phasing schedule together with architectural, structural, and drawings of other trades for a full comprehension of the extent of the work to be performed and to avoid interference, and shall not be entitled to any extra compensation for any additional work or expense arising from his failure to do so. In case interference develops, the Architect shall decide which work is to be relocated, regardless of which was first installed. Work installed by the Contractor which is improperly located and/or interferes with or modifies either the phasing schedule or the architectural or structural design, shall be changes as directed by the Architect, and all costs incidental to such changes shall be paid by the Plumbing Contractor.
- D. The Plumbing Contractor shall also provide the necessary data and supervision for the provision of all openings in the structure, including bolthole templates, weights of equipment and manufacturer's recommendations for proper emplacement design. This shall be furnished to the General Contractor and other related trades.
- E. No plumbing fixtures, devices, equipment or piping shall be installed which will provide a cross or interconnection between a distributing supply for drinking or domestic hot water system and a polluted supply or drainage system. Backflow preventers and vacuum breakers shall be installed where noted on the drawings, and in conjunction with all hydrants, hose bibbs, water lines to equipment, water closets, service sinks, and where required to prevent polluted back siphonage.

### 3.02 SANITARY SYSTEM

- A. All changes in pipe size and direction on soil and waste piping shall be made with Y's and cleanouts, reducing fittings, recessed reducers. Y's and 45 degree fittings or 45 degree combination fittings shall be used wherever conditions permit.

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

### 3.03 HANGERS AND SUPPORTS

- A. Provide hangers at each hub or every 5 feet, whichever is less.

END OF SECTION

**DIVISION 31**

**EARTHWORK**

**SECTION 31 23 00**

**EXCAVATION AND FILL FOR PAVEMENT**

**PART 1 - GENERAL**

1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section (excluding earthwork for building and retaining wall construction), including but not limited to the following:
1. Excavation, backfill, and compaction for pavements, pads, utility trenches and structures, and landscaping.
  2. Preparation and protection of subgrades.
  3. Excavation of all unsuitable materials encountered below indicated subgrade elevations.
  4. Placement of subbase and base course for asphalt paving.
  5. Removal of items covered by Section 012200 - UNIT PRICES as applicable.
  6. Disposal of unsuitable or excess excavated material.
  7. Coordinate with all trades for complete building and site utility systems.
  8. Coordination with maintenance of safe path of travel for the public.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 02 07 00 "Selective Demolition"

1.03 DEFINITIONS

- A. Backfill: Soil material or Controlled Density Fill (CDF) used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Course placed between the subbase course and hot-mix asphalt paving and concrete paving.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Dewatering includes lowering the water table and intercepting seepage which would otherwise emerge from the slopes or bottom of the excavation; increasing the stability

**EXCAVATION AND FILL FOR PAVEMENT**

of excavated slopes; preventing loss of material from beneath the slopes or bottom of the excavation; reducing lateral loads on sheeting and bracing; improving the excavation and hauling characteristics of sandy soil; preventing rupture of heaving of the bottom of any excavation; and disposing of pumped water.

1. Normal dewatering is defined as using conventional pumps installed in open excavations ditches, or sumps.
- E. Drainage Course: Course supporting the pavement that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by the Owner's Representative or the Designer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
  2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
  3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by the Owner's Representative or the Designer. Unauthorized excavation, as well as remedial work directed by Designer, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- I. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- J. Unsuitable Soils: Excavated soils that are determined by the Designer to not be reusable as fill or backfill on-site due to gradation, moisture content, and/or the presence of deleterious materials.

#### 1.04 SUBMITTALS

- A. Refer to Section 01 33 00 – SUBMITTAL PROCEDURES, for submittal provisions and procedures.
- B. Product Data: For the following:
  1. Each type of plastic warning tape.
  2. Geotextile.
  3. Controlled Density Fill, including design mixture.

- C. 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 D 2487 of each on-site and borrow soil material proposed for fill and backfill.
  2. Laboratory compaction curve according to ASTM D 1557 for each onsite and borrow soil material proposed for fill and backfill.
- D. Dewatering system: Contractor shall submit, for record, drawings and design data prepared, stamped, and signed by a registered professional engineer in the Commonwealth of Massachusetts who is experienced in groundwater control system design. The submittal shall show arrangement locations, and details of wells and well points and sump pumps; locations of risers, headers, filters, pumps, power units, all treatment components, and discharge lines; and means of discharge, control of sediment, and disposal of water. The submittal of the dewatering system will not relieve the Contractor from the responsibility for the adequacy of the dewatering system to achieve the required results specified in these Specifications and all permit requirements.
1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
  2. Include a written plan for dewatering operations including control procedures to be adapted if dewatering problems arise.
  3. Include design calculations demonstrating adequacy of the proposed dewatering system and equipment.
  4. Provisions and methods of sediment removal and disposal of water.
  5. All permits required for the work.
- E. Support of Excavation: Contractor shall submit, for record, proposed excavation support systems (if required). The proposed lateral support systems shall be designed and stamped by a registered professional engineer licensed in the Commonwealth of Massachusetts. Despite the submittal of the design of excavation support and protection systems, the Contractor shall remain solely responsible for the adequacy and safety of materials and methods used in construction. Include the following as a minimum on the drawings:
1. Details, arrangements, and methods of construction of the proposed system(s).
  2. The method of installation and installation equipment.
  3. The elevation of struts, shores, and tiebacks, as applicable, and permissible depth to which excavation may be carried before such supports are installed.
  4. The excavation depths, the depth below the main excavation to which the support system will be installed, and the maximum design load to be carried by various members of the support system.
  5. Design calculations including references to design methods used, assumptions, design parameters, design soil profile, material properties, allowable stresses, and other pertinent information stamped by a Professional Engineer registered in the Commonwealth of Massachusetts.
  6. The location of existing utilities, facilities and/or structures nearby.



- F. Pre-Excavation Photographs and Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins. Maintain catalog of up-to-date photographs at the site.
- G. Plan to Maintain Safe Path of Travel: Submit plans for maintaining safe paths of travel for the general public during the entire project, including requirement for police details of necessary.

#### 1.05 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by the Owner or others unless permitted in writing by the Owner's Representative and then only after arranging to provide temporary utility services according to requirements indicated.
  - 1. Notify the Owner's Representative not less than two days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without the Owner's Representative's written permission.
  - 3. Contact utility-locator service for area where Project is located before excavating.
    - a. The Contractor shall notify "Dig Safe" at 1-888-DIG-SAFE prior to commencing any excavation work.
- B. Demolish and completely remove from site existing underground utilities and structures indicated to be removed. Coordinate with utility companies to shut off services if lines are active.
- C. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer. Neither the Owner nor the Geotechnical Engineer will be responsible for interpretations or conclusions drawn from the data.
  - 1. The geotechnical report does not represent, and shall not be construed to represent a guarantee of subsurface conditions.
  - 2. Interpretation of this data for purposes of construction is the responsibility of the Contractor. It is the Contractor's responsibility to make interpretations and draw conclusions with respect to the character of materials to be encountered and groundwater conditions at the site and their impact upon Contractor's work based on his expert knowledge of the area, construction dewatering methods, and support of excavation methods.
  - 3. Make additional test borings and conduct other exploratory operations necessary for dewatering and excavation support and protection.
  - 4. The geotechnical report is referenced elsewhere in the Project Manual.

- D. Survey Work: Contractor shall engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
  - 1. During earth moving operations, installation of excavation support and protection systems and dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Owner's Representative if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.
- E. The Contractor shall not close or obstruct any street, sidewalk, or passageway without written permission from authorities having jurisdiction unless otherwise indicated on the Contract Drawings. The Contractor shall conduct the construction operations as to minimize interference with the use of roads, driveways, or other facilities near enough to the project to be affected by the work.
- F. The Contractor shall provide police details when working in roadways as required by local jurisdictional authorities. The Contractor shall pay for any and all police details.

#### 1.06 EXCAVATION SUPPORT AND PROTECTION

- A. The Contractor shall furnish, install, monitor and maintain excavation support and protection systems (sheeting, shoring, and bracing) at locations necessary to support the sides of excavations and resist soil and hydrostatic pressure and superimposed and construction loads; to prevent danger to persons or damage to adjacent pavements, facilities, utilities, or structures; to prevent injurious caving or erosion or the loss of ground; and to maintain pedestrian and vehicular traffic as required by the Contract Documents, the Contractor's sequence of construction, and as directed by the Owner's Representative.
- B. In all sheeting, shoring and bracing operations, care shall be taken to prevent collapse of excavations, injury to persons or damage to adjacent structures, facilities, utilities, and services. Any injuries to persons shall be the responsibility of the Contractor; and any damage to the work occurring as a result of settlement, water or earth pressure, or other causes due to inadequate bracing or other construction operations of the Contractor shall be satisfactorily repaired and made good by the Contractor, at no additional cost to the Owner.
- C. The excavation support system shall be of sufficient strength and be provided with adequate bracing to support all loads to which it will be subjected. The excavation support system shall be designed to prevent any movement of earth that would diminish the width of the excavation or damage or endanger adjacent structures.
- D. Where sheeting is to be used, it shall be driven ahead of excavation operations to the extent practicable so as to avoid the loss of material from behind the sheeting; where voids occur outside of the sheeting, they shall be filled immediately with ordinary

fill, thoroughly compacted.

- E. The Contractor shall leave in place all sheeting and bracing at the locations and within the limits ordered by the Owner's Representative in writing. The Contractor shall cut off the sheeting at elevations as indicated on the Contract Drawings or to be determined with the approval of the Owner's Representative.
- F. The Contractor shall comply with all federal, state, and local safety regulations, and requirements.

#### 1.07 DEWATERING

- A. The Contractor shall provide, at his own expense, adequate pumping and drainage facilities to maintain the excavated area sufficiently dry from groundwater and/or surface runoff so as not to adversely affect construction procedures nor cause excessive disturbance of underlying natural ground. The flows of all water resulting from pumping shall be managed so as not to cause erosion, siltation of drainage systems, or damage to adjacent property.
- B. Any damage resulting from the failure of the dewatering operations of the Contractor, and any damage resulting from the failure of the Contractor to maintain all the areas of work in a suitable dry condition, shall be repaired by the Contractor, as directed by the Owner's Representative and/or the Designer, at no additional cost to the Owner. The Contractor's pumping and dewatering operations shall be carried out in such a manner as to prevent damage to the Contract work and so that no loss of ground will result from these operations. Precautions shall be taken to protect new work from flooding during storms or from other causes. Pumping shall be continuous to protect the work and/or to maintain satisfactory progress.
- C. All pipelines or structures not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected. Water from the trenches, excavations, and stormwater management operations shall be disposed of in such a manner as to avoid public nuisance, injury to public health or the environment, damage to public or private property, or damage to the work completed or in progress.
- D. The Contractor shall control the grading in the areas surrounding all excavations so that the surface of the ground will be properly sloped to prevent water from running into the excavated area. Where required, temporary ditches shall be provided to control drainage. Upon completion of the work and when directed, all areas shall be restored by the Contractor in a satisfactory manner and as directed.
- E. Remove dewatering system when no longer required for construction.
- F. The Contractor shall obtain and maintain all required local, state, and federal permits necessary for construction dewatering for the duration of dewatering activities including all chemical testing required for disposal and discharge of dewatering effluent. The Contractor shall be responsible for treatment of water, if necessary, to meet

minimum discharge criteria specified in the permits.

#### 1.08 QUALITY CONTROL

- A. Inspection and testing will be performed by the Contractor to ensure that the materials placed meet the requirements in this section. Fill materials imported from off-site sources shall be chemically and geotechnically tested once for every 2,000 tons of material.
- B. If fill soils are not obtained from a commercial gravel pit, the Contractor shall provide certified analytical testing of offsite backfill to demonstrate that the soil does not exceed the limitations for MCP reference/reportable concentrations. Analyses shall include RCRA-8 metals, Extractable and Volatile Petroleum Hydrocarbons (EPH/VPH), and Volatile Organic Compounds (by EPA Method 8260B/5035). No testing will be required of imported fill soils obtained from a commercial gravel pit, provided the soils are free of odors, discoloration, staining or other conditions indicative of contamination, in the opinion of the Geotechnical Engineer and/or the Designer.
- C. Tests and analysis of soil material will be performed in accordance with ASTM D422, ASTM D1557, ASTM D2922, ASTM D3017 and ASTM D4318.
- D. If tests indicate materials do not meet specified requirements, the Contractor shall identify an alternative borrow source, test the new material, and submit results to the Designer at no cost to Owner.

#### 1.09 LAYOUT AND GRADES

- A. The Contractor is responsible for establishing vertical and horizontal control for the work and shall establish permanent bench marks and replace as directed any that are destroyed or disturbed. The Contractor shall maintain sufficient reference points at all times during construction to properly perform site grading. The existing survey benchmark shall be protected throughout the construction project.
- B. Finished grades, contours, and elevations indicated on the Drawings describe final surface elevation for completed construction. The words "finished grade" as used herein shall mean final grade elevations indicated on the Drawings. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas shall be given uniform slope between points and existing established grades.

#### 1.010 QUALITY ASSURANCE

- A. Field inspection and testing may be performed by a Geotechnical Engineer at the Owner's expense to supplement the Contractor's Quality Control testing. Classification of all materials will be made by the Geotechnical Engineer whose decision shall be final and binding on the Contractor.

- B. The Contractor shall be responsible for managing and tracking all materials excavated and placed in stockpiles for testing.
- C. Comply with governing EPA notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. The Contractor is responsible for the adequacy of the dewatering systems.
  - 1. The dewatering systems shall be capable of effectively reducing the hydrostatic pressure and lowering the groundwater levels to a minimum of 2 feet below excavation bottom, unless otherwise directed by the Designer, so that all excavation bottoms are firm and dry.
  - 2. The dewatering system shall be capable of maintaining a dry and stable subgrade until the structures, pipes, and appurtenance to be built therein have been completed to the extent that they will not be floated or otherwise damaged.
  - 3. The dewatering system and excavation support shall be designed so that the lowering of the groundwater level outside the excavation does not adversely affect adjacent structures, utilities or other improvements.
- E. The Owner will perform in place density tests in accordance with ASTM D2922 or D3017 as the Work progresses, to determine the degree of compaction. 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 Owner. In place density testing shall be made at the Contractor's expense by a qualified geotechnical testing laboratory.
- F. The Designer's duties do not include the supervision or direction of the actual work by the Contractor, his employees or agents. Neither the presence of the Designer nor any observation and testing by the Geotechnical Engineer shall excuse the Contractor from defects discovered in his Work at that time or subsequent to the testing.
- G. Contractor shall assist the Owner's Testing Laboratory in performing in-place density testing at a minimum frequency of one test per lift but no less than one test per 200 cubic yards of material placed in any one lift. Compaction testing will be performed in accordance with ASTM D1557, D2922, and D3017.
- H. Subgrades shall be approved for compactness and material composition prior to placing subsequent lifts. If inspections indicate Work does not meet specified requirements, the work shall be removed, replaced, and compacted at no additional cost to Owner.

#### 1.011 REGULATORY REQUIREMENTS

- A. Comply with 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.). Contractors shall be familiar with the requirements of these regulations.

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1. All excavations shall comply with the requirements of OSHA excavation safety standards (29 CFR Part 1926.650 Subpart P), State, and local requirements. Where conflict between OSHA, State, and local regulations exists, the most stringent requirements shall apply.
- B. Comply with governing EPA notification regulations before, during, and upon completion of dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Comply with all rules, regulations, laws, and ordinances of the municipality, the Commonwealth of Massachusetts, and other authorities having jurisdiction over the project site or work. All labor, materials, equipment, and services necessary to make the work comply with requirements shall be provided by the Contractor without additional cost to the Owner.
- D. The Contractor shall obtain and pay for all permits and licenses required to complete the work specified herein and indicated on the Contract Drawings.

#### 1.012 EXAMINATION OF SITE AND DOCUMENTS

- A. It is hereby understood that the Contractor has carefully examined the site and all conditions affecting work under this Section. No claim for additional costs will be allowed because of a lack of knowledge of existing conditions as indicated in the Contract Documents, or obvious from observation of the site.
- B. Plans, surveys, measurements, and dimensions under which the work is to be performed are believed to be correct, but the Contractor shall have examined them for himself during the bidding period and formed his own conclusions as to the full requirements of the work involved.

### PART 2-PRODUCTS

#### 2.01 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
  1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Ordinary Borrow: Ordinary borrow shall meet the requirements of MassDOT

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M1.01.0. It 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 highly plastic clays, of all materials subject to decay, or other materials that will corrode piping or metals. Ordinary 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 ordinary borrow. Existing available fill materials from onsite excavations may be reused as ordinary borrow if it meets the above requirements. It shall be graded within the following limits:

<u>U.S. Standard Sieve Size</u>	<u>Percent Finer by Weight</u>
6 inch	100
No. 10	30-90
No. 40	10-70
No. 200	0-15

- E. Gravel Borrow: Gravel borrow shall meet the requirements of MassDOT M1.03.0, Type B. It shall be an inert, hard, durable sand and gravel or stone soil obtained from an offsite commercial source. It shall be free of ice, snow, roots, sod, rubbish, oil, hazardous material, and other deleterious or organic matter. It shall be graded within the following limits:

<u>U.S. Standard Sieve Size</u>	<u>Percent Finer by Weight</u>
3 inch	100
½ inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-10

- F. ¾" Crushed Stone: ¾" crushed stone shall meet the requirements of MassDOT M2.01.4. It shall consist of durable crushed rock or crushed gravel stone, free of ice, snow, sand, silt, clay, loam, shale, or other deleterious or organic matter. It shall be graded within the following limits:

<u>U.S. Standard Sieve Size</u>	<u>Percent Finer by Weight</u>
1 inch	100

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¾ inch	90-100
½ inch	10-50
3/8 inch	0-20
No. 4	0-5

- G. 1-1/2" Crushed Stone: 1-1/2" crushed stone shall meet the requirements of MassDOT M2.01.1. It shall consist of durable crushed rock or crushed gravel stone, free of ice, snow, sand, silt, clay, loam, shale, or other deleterious or organic matter. It shall be graded within the following limits:

<u>U.S. Standard Sieve Size</u>	<u>Percent Finer by Weight</u>
2 inch	100
1-1/2 inch	95-100
1 inch	35-70
¾ inch	0-25

- H. Dense Graded Crushed Stone: Dense graded crushed stone shall meet the requirements of MassDOT M2.01.7. It shall consist of a mixture of crusher-run aggregate of crushed stone mixed with natural sand and gravel soil obtained from an offsite commercial source. It shall be free of ice, snow, roots, sod, rubbish, soil, hazardous material, and other deleterious or organic matter. It shall be graded within the following limits:

<u>U.S. Standard Sieve Size</u>	<u>Percent Finer by Weight</u>
2 inch	100
1-½ inch	70-100
¾ inch	50-85
No. 4	30-55
No. 40	8-24
No. 200	3-10

- I. Sand: Sand shall meet the requirements of MassDOT M1.04.1. It shall consist of clean inert, hard, durable grains of quartz or other hard durable rock, free from clay, organics, surface coatings, or other deleterious or organic matter. It shall be graded within the following limits:

<u>U.S. Standard Sieve Size</u>	<u>Percent Finer by Weight</u>
½ inch	100
3/8 inch	85-100
No. 4	60-100



No. 16	35-80
No. 50	10-55
No. 100	2-10

- J. Controlled Density Fill (CDF) shall be a cement concrete backfill material that flows like a liquid, supports like a solid when cured, and levels without tamping or vibrating to reach 100 percent compaction. CDF shall meet the requirements of MassDOT Specifications M4.08.00 for Type 1E (Very Flowable, Excavatable) or type 2E (Flowable, Excavatable) CDF. The mix formulation will be submitted to the Designer for review prior to placement of the material in the project.
- K. Reuse of Excavated Rock: Excavated on-site rock materials processed by the Contractor meeting the gradation limits for ¾" Crushed Stone, 1-1/2" Crushed Stone, Dense Graded Crushed Stone, and Stone for Pipe Ends contained herein may be segregated and reused as approved by the Owner.

## 2.02 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Survivability: Class 2; AASHTO M 288.
  2. Elongation: 50% minimum; ASTM D 4632
  3. Grab Tensile Strength: 160 lbs.; ASTM D 4632.
  4. Trapezoid Tear Strength: 60 lbs.; ASTM D 4533.
  5. CBR Puncture Strength: 410 lbs.; ASTM D 6241
  6. Apparent Opening Size: No. 70 sieve maximum; ASTM D 4751.
  7. Permittivity: 1.50 sec-1 minimum; ASTM D 4491
  8. UV Stability: 70% after 500 hours' exposure; ASTM D 4355.
- B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 1; AASHTO M 288.
2. Elongation: 15% maximum; ASTM D 4632
3. Grab Tensile Strength: 315 lbs.; ASTM D 4632.
4. Trapezoidal Tear Strength: 120 lbs.; ASTM D 4533.
5. Puncture Strength: 1,000 lbs.; ASTM D 6241.
6. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
7. Permittivity: 0.05 sec-1 minimum; ASTM D 4491.
8. UV Stability: 70% after 500 hours' exposure; ASTM D 4355.

### 2.03 ACCESSORIES

- A. Detectable Underground Warning Tapes: Acid and alkali-resistant polyethylene plastic film warning tape, 6-inches wide by 4-mils minimum thickness, with continuously printed caption in black letters "CAUTION - xxxxx LINE BURIED BELOW." The text and color of the tape shall be as shown in the table below. The tape shall have a metallic core encased in a protective jacket for corrosion protection and be detectable by a metal detector when the tape is buried up to 2.5-feet deep.

Color	Utility
Safety Red	Electric
High Visibility Safety Yellow	Gas, Oil, Steam
Safety Alert Orange	Telephone, Communications, Cable Television
Safety Precaution Blue	Water System, Irrigation
Safety Green	Sanitary Sewer, Storm Sewer
White	Proposed Excavation

### 2.04 USES OF MATERIALS

- A. Fill materials listed in Paragraph 2.1 above shall be utilized as follows and as otherwise indicated on the Drawings, specified or directed.
- B. Gravel Borrow:
1. As fill and base coarse soils below cement concrete and hot-mix asphalt pavements as shown on the Contract Drawings.
  2. Trench backfill within paved areas.
  3. Bedding for ductile iron drain, water, and sewer piping.

- C. Dense Graded Crushed Stone:
  - 1. As base course soils below cement concrete and hot-mix asphalt pavement as shown on the Contract Drawings.
- D.  $\frac{3}{4}$ -inch and 1-1/2-inch Crushed Stone:
  - 1. Base for drain manholes, catch basins, sewer manholes, and utility structures.
  - 2. Bedding for drain pipe and sewer pipe.
  - 3. Around perforated drain lines.
  - 4. To stabilize wet subgrade conditions.
  - 5. Elsewhere as shown on the Drawings or specified herein.
  - 6. To aid in dewatering.
- E. Sand:
  - 1. Bedding for drain, water, sewer, and other utility piping.
  - 2. Elsewhere as shown on the Drawings or specified herein.
- F. Ordinary Borrow:
  - 1. For general site fill outside of the proposed building footprint, concrete, and bi-tuminous concrete areas.
  - 2. Trench backfill material outside of paved areas.
  - 3. Elsewhere as shown on the Drawings or specified herein.
- G. Geotextiles:
  - 1. Subsurface non-woven Drainage Geotextile shall fully wrap 3-4-inch Crushed Stone.
  - 2. Use to prevent soil intrusion into drains and/or to assist in stabilizing soil sub-grades prior to placement of fill materials.
  - 3. Subsurface woven separation geotextile as separation material between crushed stone and gravel borrow base materials below cement concrete and hot-mix asphalt pavement as shown on the Contract Drawings.
  - 4. Where indicated or shown in the Contract Drawings.
- H. Controlled Density Fill (CDF):
  - 1. CDF shall be used as shown on the Contract Drawings.
  - 2. CDF shall be used if directed by the DESIGNER as fill at the limits of the excavation areas.

### PART 3 - EXECUTION

#### 3.01 GENERAL REQUIREMENTS

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- A. The Contract Drawings indicate the proposed finish alignment, elevation, and grade of the work. Establish the line and grade in close conformity with the Contract Drawings.
- B. The Contractor is responsible for establishing construction phasing, means, and methods and interim grading and temporary conditions required to attain the finish product required by the Contract Documents. The Contractor is responsible for all construction, protection, movement, and maintenance of stockpiles. Establish and maintain suitable benchmarks and grade control to accurately perform the work.
- C. No excavation shall be deposited or stockpiled at any time to endanger portions of new or existing structures, either by direct pressure or indirectly by overloading banks contiguous to the operation. Material, if stockpiled, shall be stored so as not to interfere with the established sequence of the construction. If there is not sufficient area available for stockpiling within the limits of the project, the Contractor will be required to furnish his own area for stockpiling.
- D. When the plans require excavation in areas in close proximity to existing buildings, roads, structures and utilities it shall be the responsibility of the Contractor at his expense to use satisfactory means and methods to protect and maintain the stability of such roads, and structures located immediately adjacent to but outside the limits of excavations.

### 3.02 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Section 31 10 00 - SITE CLEARING.
- C. Protect and maintain erosion and sedimentation controls, which are specified in Section 31 25 00 – EROSION AND SEDIMENTATION CONTROLS, during earthwork operations.
- D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

### 3.03 DEWATERING

- A. Provide Dewatering as required to maintain dry excavations.

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- B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- C. Protect subgrades from softening, undermining, washout, and damage by rain or wa- ter accumulation.
  - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drain- age ditches.
  - 2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.
  - 3. Where soil has been softened or eroded by flooding, equipment, traffic or place- ment of fill or concrete during unfavorable weather or such other conditions, it shall be removed and replaced by the Contractor with suitable material and at the Contractor's expense. The necessity and extent of such removals shall be determined by the Designer.
- D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
- E. Monitor dewatering systems continuously.
- F. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
  - 1. Space well points or wells at intervals required to provide sufficient dewatering.
  - 2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.
- G. Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewater- ing is no longer required.
- H. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
  - 1. Do not permit open-sump pumping that leads to loss of fines, soil piping, sub- grade softening, and slope instability.

## EXCAVATION AND FILL FOR PAVEMENT

- I. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
  - 1. Maintain piezometric water level a minimum of 24 inches below surface of excavation.
- J. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others. Provide sumps sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.
- K. Provide standby equipment on site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to the Owner.
  - 1. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.
- L. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

### 3.04 EXCAVATION SUPPORT AND PROTECTION

- A. Work shall not be started until all materials and equipment necessary for the construction are either on the site of the work or satisfactorily available for immediate use as required.
- B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
  - 1. Shore, support and protect utilities encountered.
- C. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Owner's Representative and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- D. Locate excavation support and protection systems clear of permanent construction so that forming and finishing of concrete surfaces or installation of improvements

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is not impeded.

- E. The excavation support and protection systems shall be securely and satisfactorily braced to withstand all pressures to which it may be subjected and be sufficiently tight to minimize lowering of the groundwater level outside the excavation.
- F. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.
- G. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.
- H. Responsibility for the satisfactory construction and maintenance of the excavation support system, complete in place, shall rest with the Contractor. Any work done, including incidental construction, which is not acceptable for the intended purpose shall be either repaired or removed and reconstructed by the Contractor at his expense.
- I. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.
  - 1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlaying construction and abandon remainder.
  - 2. Fill voids immediately with approved backfill compacted to density specified herein.
  - 3. Repair or replace, as approved by Owner's Representative, adjacent work damaged or displaced by the installation, performance, and removal of the excavation support and protection systems.

### 3.05 EXCAVATION, GENERAL

- A. **Unclassified Excavation:** Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions.
  - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
  - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. 24 inches outside of concrete forms.

## EXCAVATION AND FILL FOR PAVEMENT

- b. 6 inches outside of minimum required dimensions of concrete cast against grade.
  - c. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.
- B. Provide sheeting, shoring and bracing to complete and protect all excavated areas, are required for safety and compliance with OSHA. Cost for sheeting, shoring and bracing shall be included as a part of the contract price for completing the work and Owner shall make no separate payment for this work.
- C. Perform excavation work in accordance with all applicable Federal, State, and Local regulations regarding safe excavation work.
- D. Excavation in the area of existing utilities. Expose utilities by hand or other excavation methods that will prevent damage. Required excavation near electric, gas, water lines, and fiber-optic telecommunication lines shall be hand dug within 3 feet of the lines.
- E. Do not excavate to full depths when freezing temperatures may be expected unless subgrades are protected from freezing.

### 3.06 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
- 1. Excavation for Underground Tanks, Manholes, Basins, Mechanical and/or Electrical Utility Structures, Drainage and Sewer Systems, Infiltration Systems, and Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

### 3.07 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

### 3.08 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

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- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
  - 1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
  - 1. For pipes and conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
  - 3. Excavate trenches 6 inches deeper than elevation required in rock or other un- yielding bearing material to allow for bedding course.

### 3.09 SUBGRADE INSPECTION

- A. Notify the Owner's Representative when excavations have reached required sub-grade.
- B. If the Owner's Representative, Geotechnical Engineer and/or the Designer determines that unsatisfactory soil is present, continue excavation and replace with com- pacted backfill or fill material as directed.
- C. Proof-roll granular subgrade below structures and pavements with heavy vibrating drum roller to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
  - 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
  - 2. Proof-roll with approved equipment weighing not less than 15 tons.
  - 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rut- ting, as determined by Designer, and replace with compacted backfill or fill as directed.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Geotechnical Engineer and/or the Designer, without additional compensation.
- E. Protect all subgrades from disturbance.

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1. Place Gravel Borrow or Crushed Stone wrapped in non-woven geotextile over clayey, silty or wet footing subgrades. Fill shall not be placed in standing water.
2. Grade around prepared subgrade areas to direct stormwater runoff away from the work area.
3. Protect subgrades from frost at all times during construction. Fill should not be placed over frozen soil.

### 3.010 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavations under site improvement construction or utility pipe as directed by Designer. Lean concrete fill, with 28-day compressive strength of 2500 psi may be used when approved by Designer.

### 3.011 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials (from off-site sources) and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
  2. Stockpile soil materials in a location, acceptable to the Owner's Representative, that will preclude having to relocate stockpiled soil materials that would otherwise delay or impact the Work.

### 3.012 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
  2. Surveying locations of underground utilities for Record Documents.
  3. Testing and inspecting underground utilities.
  4. Removing concrete formwork.
  5. Removing trash and debris.
  6. Removing temporary shoring and bracing, and sheeting.
  7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on previously placed and compacted fill and/or subgrades free of mud, frost, snow, or ice.
- C. Excavated on-site natural soils may be used as Ordinary Fill, provided the

## EXCAVATION AND FILL FOR PAVEMENT

material can be placed and compacted as required herein and at the approval of the Designer.

- D. The Contractor shall not commence backfilling operations without approval of the Owner's Representative and/or the Designer.
- E. The Contractor shall maintain a dry and firm subgrade throughout construction. De-watering shall be performed as needed at the Contractor's expense.
- F. The Contractor shall strip the existing subgrade of any vegetation, topsoil, organics, debris, or other unsuitable materials. The subgrade shall be proof compacted using a vibratory roller to treat any loose or disturbed areas and to provide a dense uniform surface.
- G. After the subgrade has been prepared, fill material shall be placed and built-up in successive layers until the required elevations are reached. No fill shall be placed on a frozen surface, nor shall snow, ice, or other frozen materials be included in fill. Wet materials containing moisture in excess of the amount necessary for satisfactory placement or compaction shall not be used.
- H. All fill shall be brought up in essentially level lifts and shall be placed in levels by standard methods. Layers of fill outside of utility trenches shall not exceed nine (9) inches in uncompacted thickness before compaction, unless otherwise specified, or as required for proper subgrade stabilization.
- I. Filling operations shall continue until the fill has been brought up to the finished slopes, lines, and grades making proper allowances for thickness of the overlying topsoil.
- J. The entire surface of the work shall be maintained free from ruts and in the condition that will permit construction equipment to travel over any section readily. The top surface of each layer shall be made level or slightly sloped toward the center of the filled area.
- K. Backfilling shall not be performed when weather conditions or the conditions of the materials are such that, in the opinion of the Geotechnical Engineer or the Designer, work cannot be performed satisfactorily.

### 3.013 BACKFILLING AGAINST STRUCTURES

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Backfilling against masonry or concrete shall not be done until permitted by the Owner's Representative. The Contractor shall not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion,

## EXCAVATION AND FILL FOR PAVEMENT

cracking or other damage.

- C. As soon as practicable after the structures are structurally adequate and other necessary work has been satisfactorily completed and approved, special leakage tests of the structures shall be made by the Contractor, as required by the Owner's Representative. After the satisfactory completion of leakage tests and the satisfactory completion of any other required work in connection with the structures, the backfilling around the structures shall proceed using suitable and approved excavation material.
- D. The best of the backfill material shall be used for backfilling within 2-feet of the structure. Just prior to placing backfill, the areas shall be cleaned of all excess construction material and debris and the bottom of excavations shall be in a thoroughly compacted condition.
- E. Symmetrical backfill loading shall be maintained. Special care shall be taken to prevent any wedging action or eccentric loading upon or against the structures. During backfilling operations, care shall be exercised that the equipment used will not overload the structures in passing over and compacting these fills. Except as otherwise specified or directed, backfill shall be placed in layers not more than 12 inches in loose depth and each layer of backfill shall be compacted thoroughly and evenly using approved types of mechanical equipment. Each pass of the equipment shall cover the entire area of each layer of backfill.
- F. In compacting and other operations, the Contractor shall conduct his operations in a manner to prevent damage to structures due to passage of heavy equipment over, or adjacent to, structures, and any damage thereto shall be made good by the Contractor at no additional expense to the Owner.

### 3.014 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 - CAST-IN-PLACE CONCRETE.
- D. Provide 4-inch-thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling

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or placing roadway subbase.

- E. Place and compact initial backfill of subbase material free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.
  - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- F. Backfill voids with satisfactory soil while installing and removing shoring and bracing.
- G. Backfill material shall be placed in maximum 6-inch lifts and mechanically compacted as specified herein.
- H. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- I. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.
- J. Any trenches or excavations improperly backfilled or where settlement occurs shall be reopened, to the depth required for proper compaction, then refilled and compacted with the surface restored to the required grade and condition, at no additional expense to the Owner.
- K. During filling and backfilling operations, pipelines will be checked by the Owner's Representative to determine whether any displacement of the pipe has occurred. If the observation of the pipelines shows poor alignment, displaced pipe or any other defects they shall be remedied in a manner satisfactory to the Owner's Representative at no additional cost to the Owner.

### 3.015 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
  - 1. Under grass and planted areas, use satisfactory soil material.
  - 2. Under walks and pavements, use satisfactory soil material.
- C. Place soil fills on subgrades free of mud, frost, snow, or ice.

### 3.016 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil

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layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.
3. Fill material shall not 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.

### 3.017 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:

Area	ASTM Density Degree of Compaction
Pavement and walkway base course	95%
Pavement and walkway subgrade	95%
General fill below pavement and walkway sub-base	95%
Trench backfill - below pavements - below landscaped areas - below structures	95% 92% 95%
All other areas	90%

1. Under structures and pavement, proof-compact existing subgrade. Compact each layer of backfill soil material at 95 percent of the soils' maximum dry

## EXCAVATION AND FILL FOR PAVEMENT

- den- sity (per ASTM D 1557). Fill areas within the 1H:1V influence zone of founda- tions and retaining wall footings shall also be compacted to 95 percent of the soils' maximum dry density (per ASTM D 1557).
2. Under walkways, scarify and re-compact top 6 inches below subgrade to 95 per- cent of the soils' maximum dry density (per ASTM D 1557). Fill and base course material within 2 feet of the finished asphalt or concrete pavement grade shall be compacted to 95 percent of the soils' maximum dry density (per ASTM D 1557).
  3. For utility trenches in paved areas, compact each layer of initial and final backfill soil material to at least 95 percent of the soils' maximum dry density (per ASTM D 1557).
  4. For utility trenched in lawn or unpaved areas, compact each layer of backfill soil material to at least 92 percent of the soils' maximum dry density (per ASTM D 1557).
  5. Under lawn or unpaved areas, scarify and re-compact top 6 inches below sub- grade and compact each layer of backfill or fill soil material to at least 90 percent of the soils' maximum dry density (per ASTM D 1557).
- D. In confined areas, place Crushed Stone in maximum 6-inch lifts and compact each lift with at least 4 passes of a vibratory plate compactor to a firm and unyielding surface. In open areas, place Crushed Stone in maximum 12-inch lifts and compact each lift with at least four passes of a vibratory drum roller with a minimum static weight of 10,000 pounds. Crushed stone fill shall be wrapped on all sides with non- woven filter fabric.

### 3.018 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent pond- ing. Finish subgrades to required elevations within the following tolerances:
1. Lawn or Unpaved Areas: Plus or minus 1 inch.
  2. Walks: Plus or minus 1 inch.
  3. Pavements: Plus or minus 1/2 inch.

### 3.019 SUBSURFACE DRAINAGE

- A. Subdrainage Pipe: Specified in Division 2 Section "Subdrainage."

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- B. Subsurface Drain: Place subsurface drainage geotextile around perimeter of sub-drainage trench. Place a 6-inch course of filter material on subsurface drainage geo- textile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in sub- surface drainage geotextile, overlapping sides and ends at least 6 inches.
  - 1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 1557.
- C. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick. Overlay drainage backfill with 1 layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.
  - 1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 1557.
  - 2. Place and compact impervious fill over drainage backfill in 6-inch-thick com- pacted layers to final subgrade.

### 3.020 SUBBASE AND BASE COURSES

- A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
  - 1. Install separation geotextile fabric on prepared subgrade, where indicated on the Contract Drawings, according to manufacturer's written instructions, overlap- ping sides and ends.
  - 2. Place base course material over subbase course under hot-mix asphalt pavement.
  - 3. Shape subbase and base course to required crown elevations and cross-slope grades.
  - 4. Place subbase and base course 6 inches or less in compacted thickness in a single layer.
  - 5. Place subbase and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
  - 6. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maxi- mum dry unit weight according to ASTM D 1557.
- C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of

## EXCAVATION AND FILL FOR PAVEMENT



satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

### 3.021 DRAINAGE COURSE

- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact drainage course under pavements, walkways and cast-in-place concrete slabs-on-grade as follows:
  - 1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

### 3.022 FIELD QUALITY CONTROL

- A. Independent Testing Agency: Cooperate with the Independent Testing Agency engaged by the Owner for field quality control activities for the Work of this Section. Refer also to Section 014325 - TESTING AGENCY SERVICES.
- B. Cooperate with field quality control personnel.
- C. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.
- D. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- E. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  - 1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than 3 tests.
  - 2. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 150 feet or less of trench length, but no fewer than 2 tests.
- F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is

## EXCAVATION AND FILL FOR PAVEMENT

obtained. Costs related to retesting due to unacceptable quality of work and failures discovered by the testing shall be borne by the Contractor.

- G. Notify the Independent Testing Agency a minimum of 72 hours prior to start of earth- work operations, to comply with Code requirement that a registered design profes- sional be present at all times during backfill to assure adequate compaction with no bridging effects. The services of the Testing Agency, Geotechnical Engineer, and the Designer shall include but not be limited to the following:
1. Observation during excavation, backfilling, and compaction.
  2. Laboratory testing and analysis of fill materials specified or proposed for use as required.
  3. Observation of construction and performance of water content, gradation, and compactions tests at a frequency and at locations that he/she shall selects. The results of these test will be submitted to the Owner's Representative so that the Contractor can take such action as is required to remedy any indicated deficien- cies.
  4. Observation of proof-compaction of exposed subgrades. Proof-compaction may be waived if, in the opinion of the Geotechnical Engineer, disturbance will occur and cause loss of strength of underlying soil.
- H. The Contractor shall make provisions for allowing observations and testing of Con- tractor's Work by the Testing Agency and the Geotechnical Engineer, and the De- signer. The presence of the Testing Agency, Geotechnical Engineering, and/or the Designer does not include supervision or direction of the actual work by the Contrac- tor, his/her employees, or agents. Neither the presence of the Testing Agency, Ge- otechnical Engineer, and/or the Designer nor any observations and testing performed by those entities or any notice or failure to give notice, shall excuse the Contractor from defect discovered in his/her work.

### 3.023 PROTECTION

- A. No excavation will be permitted below a line drawn downwards at 2 horizontal to 1 vertical from the underside of the closest edge of any proposed in-place footing or utility at a higher elevation without providing adequate sheeting and bracing or un- derpinning to prevent loss of support of the footing or utility.
- B. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and ero- sion. Keep free of trash and debris.
- C. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

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1. Scarify or remove and replace soil material to depth as directed by Designer; reshape and recompact.
- D. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

### 3.024 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Contractor shall remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION

**DIVISION 32**

**EXTERIOR IMPROVEMENTS**

**SECTION 32 12 16**

**ASPHALT PAVING**

**PART 1-GENERAL**

1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Hot-mix asphalt paving, including ramp and isolated patches.
  - 2. Hot-mix asphalt patching.
  - 3. Pavement-marking paint.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.

1.03 SUBMITTALS

- A. Refer to Section 01 33 00 – SUBMITTAL PROCEDURES, for submittal provisions and procedures.
- B. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
  - 1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
- C. Shop Drawings: Indicate pavement markings, lane separations, and defined parking spaces. Indicate, with international symbol of accessibility, spaces allocated for people with disabilities. Submit shop drawings for curbing items.
- D. Material Certificates: For each paving material, from manufacturer.

1.04 REFERENCE STANDARDS

- A. The following standards are applicable to the work of this Section to the extent

referenced herein:

1. Commonwealth of Massachusetts, Massachusetts Highway Department (MHD), Standard Specifications for Highways and Bridges, latest English Edition with amendments. All references to method of measurement, basis of payment and payment items in the Standard Specifications are hereby deleted. References made to particular sections or paragraphs in the Standard Specifications shall include all related articles mentioned herein.
2. ASTM: American Society for Testing and Materials
3. AASHTO: American Association of State Highway and Transportation Officials
4. ACI: American Concrete Institute
5. MUTCD: Manual on Uniform Traffic Control Devices

#### 1.05 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A paving-mix manufacturer registered with and approved by the Massachusetts Highway Department (MHD).
- B. **Regulatory Requirements:** Comply with materials, workmanship, and other applicable requirements of the Massachusetts Highway Department (MHD) for hot mix asphalt paving work.
  1. Comply with requirements of the Massachusetts Highway Department (MHD) Standard Specifications for Highways and Bridges, including supplemental specifications and special provisions.
  2. Comply with requirements of the Americans with Disabilities Act (ADA) and the Massachusetts Architectural Access Board (MAAB). If these requirements cannot be met with the grades and slopes indicated on the plans, notify the Designer immediately.
  3. Comply with requirements of the local authority having jurisdiction concerning the location and construction of accessible curb cuts.
- C. **Preinstallation Conference:** Conduct conference at Project site to comply with requirements in Division 01.
  1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
    - a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
    - b. Review condition of subgrade and preparatory work.
    - c. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction

period.

- d. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
- B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

#### 1.07 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
  1. Tack Coat: Minimum surface temperature of 60 deg F.
  2. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
  3. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.
- C. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F for water-based materials, and not exceeding 95 deg F.

#### 1.08 EXAMINATION OF SITE AND DOCUMENTS

- A. It is hereby understood that the Contractor has carefully examined the site and all conditions affecting work under this Section. No claim for additional costs will be allowed because of a lack of knowledge of existing conditions as indicated in the Construction Documents, or obvious from observation of the site.
- B. Plans, surveys, measurements, and dimensions under which the work is to be performed are believed to be correct, but the Contractor shall have examined them for himself during the bidding period and formed his own conclusions as to the full requirements of the work involved.

## 1.09 ADA AND MAAB COMPLIANCE

- A. Comply with American with Disabilities Act (ADA) and the requirements of the Massachusetts Architectural Access Board (MAAB).
  - 1. Slopes: Walkways as defined by Section 22.1 of 521 CMR, shall be graded to a maximum of 4.5%. The cross-pitch (perpendicular to travel) for walkways and paths shall be constructed at 1.5%. The slopes of ramps and side slopes on handicap curb cuts as defined by Section 21.1 of 521 CMR shall be constructed at 7% maximum. Ramps as defined in Section 24.1 of 521 CMR, shall be constructed to a maximum slope of 7%.
  - 2. The Contractor is to assume that sidewalk grades will be verified and checked with a 2-foot long electronic 'smart level'.
  - 3. A 5'-0" minimum level, 1.5% pitch, area shall be provided at entrances to buildings. Puddling or ponding of water at the entrances will not be accepted.
  - 4. Handicap parking spaces and access aisles shall be graded level with the slope not to exceed 1.8% in any direction.
  - 5. The requirements specified hereinabove shall supersede the grades indicated on the Drawings. If these requirements cannot be met with the grades indicated on the Drawings, the Designer shall be notified immediately for direction.

## PART 2-PRODUCTS

### 2.01 AGGREGATES

- A. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.
- B. Fine Aggregate: ASTM D 1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
- C. Mineral Filler: ASTM D 242 or AASHTO M 17, rock or slag dust, hydraulic cement, or other inert material.
- D. Reclaimed Asphalt Pavement (RAP): Provide material obtained from the highways or streets by crushing, milling, or planing existing hot mix asphalt pavements.
  - 1. The proportion of RAP to virgin aggregate for base course mixtures and intermediate course mixtures shall be limited to a maximum of 40% for drum mix plants and 20% for modified batch plants. The maximum amount of RAP for surface course mixtures shall be 10%.
- E. RECLAIMED BASE COURSE

## ASPHALT PAVING

1. The work under this item shall consist of scarifying and pulverizing in place the existing asphalt pavement and underlying material, mixing and blending the material, and spreading and compacting the mixture to the lines and grades shown on the Contract Drawings.
2. Equipment such as rear-mounted ripper crushers and cold planing/milling equipment will not be permitted to perform the work under this item.
3. Prior to scarifying and pulverizing the pavement, the Contractor shall locate, protect, or remove all drainage and utility structure castings. All lowered structures shall be protected and covered by a steel plate and all watergates shall be covered as well to prevent any materials from falling into the bottom sections. All materials that fall into any structures as a result of the Contractor's operations shall be removed by the Contractor at no additional cost.
4. The existing full bituminous pavement structure and underlying base materials shall be simultaneously crushed, pulverized, and blended into a homogenous material to create the following gradation:

<u>Sieve Designation</u>	<u>Percent Passing</u>
2-inch	100
1½-inch	70-100
½-inch	50-85
No. 4	30-60
No. 50	8-28
No. 200	0-10

5. The construction operation shall be performed in such a manner as to allow for continuous vehicular access as required by the project schedule. Emergency vehicular access shall be maintained at all times.

## 2.02 ASPHALT MATERIALS

- A. Asphalt Binder, Performance Graded: AASHTO M320 or AASHTO MP 1a, performance grade as required by MHD Specifications.
- B. Tack Coat: AASHTO M 140 emulsified asphalt, or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

## 2.03 AUXILIARY MATERIALS



- A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.
- B. Pavement-Marking Paint: Fast Drying White Water-borne Traffic Paint and Fast Drying Yellow Water-borne Traffic Paint as specified in the "Standard Specifications" under Sections M7.01.23 and M7.01.24, respectively.
  - 1. Color: As indicated
- C. Detectable Warning Panels shall have dome geometry in accordance with ADA Regulations for Detectable Warning on Curb Ramps. They shall be raised truncated domes with a nominal diameter of 0.9-inches, a nominal height of 0.2-inches, and a center-to-center spacing of 1.6 inches to 2.4-inches. Panels shall be 24-inches deep in the direction of travel and the full width of the proposed ramp. The panel shall be a homogeneous glass and carbon reinforced composite, which is colorfast, and UV stable. The panel is to be colored throughout and not a painted coating. The color is to be contrasting to the background sidewalk color. The panels shall have a compressive strength in excess of 10,000 psi, flexural strength in excess of 3,000 psi and a slip resistance in excess of 0.8 wet or dry.

#### 2.04 ASPHALT MIXES

- A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by MHD Specifications and designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types".

#### 2.05 GRANITE CURB AND EDGING

- A. Granite curb and edging shall be light gray in color, free of seams and other imperfections, which would affect its structural integrity. The front face of the stone shall be at right angles to the plane of the top and the ends and shall have a smooth surface. The ends of the stones shall be square with the planes of the top and front face to provide flush joints. Top surface shall be sawn cut with a split front face.
- B. Granite curb shall have a top width of 6 inches and a depth of 17 to 19 inches and a minimum length of 6 feet. Granite edging shall have a thickness of 5 to 6 inches and a depth of 11 to 13 inches with a minimum length of 4 feet.
- C. Granite curb to be set on a radius of 100 feet or less shall be cut to the required radius and shall have a minimum length of 6 feet or the length of the curb section, whichever is less. Granite edging set on a radius of 160 feet or less shall be supplied in lengths shorter than 6 feet but no less than 1 foot to provide a smooth appearance.
- D. The ends of all transition curb shall be cut with a power-driven saw to provide a

### ASPHALT PAVING

flush vertical joint with adjacent curbing.

## PART 3-EXECUTION

### 3.01 GENERAL

- A. Subbase under paving shall be compacted as described in Section 312000, EARTH MOVING. Add material meeting the requirements of ordinary borrow to bring the subgrade to the required grade as necessary before placing base course.
- B. The gravel base course shall be spread in layers upon the prepared subgrade conforming to the required line and grade. Gravel shall be placed in compacted layers not more than 4 inches thick compacted to not less than 95 percent of the maximum dry density of the material. Any stone greater than 3 inches in size shall be removed. Compaction shall continue until the surface is even and true to line and grade.
- C. Gravel base course shall be placed on backfilled and compacted trenches to proper grade before placement of pavement.
- D. The edges of existing pavement that is to remain shall be saw cut to an even, straight edge using a power-driver rotary saw; use of a jackhammer is unacceptable. This includes road, parking lot, sidewalk, and utility trench edges.
- E. Asphalt courses shall be spread and compacted to the finished thicknesses as shown on the Contract Drawings. A smooth even surface shall be produced.
- F. Any joints at junctions of old and new pavements shall be sealed with tack coat and covered with sand.

### 3.02 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- C. Proceed with paving only after unsatisfactory conditions have been corrected.

### 3.03 PATCHING

- A. Existing Hot-Mix Asphalt Pavement: Saw-cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

## ASPHALT PAVING

- B. Existing Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.
  - 1. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound- aggregate base course to form new subgrade.
- C. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot- mix asphalt paving at a minimum rate of 0.05 to 0.15 gal./sq. yd.
  - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- D. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

#### 3.04 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
- C. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd.
  - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

#### 3.05 HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
  - 1. Spread mix at minimum temperature of 250 deg F.
  - 2. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

### ASPHALT PAVING

- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

### 3.06 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
  - 1. Clean contact surfaces and apply tack coat to joints.
  - 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
  - 3. Offset transverse joints, in successive courses, a minimum of 24 inches.
  - 4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."

### 3.07 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
  - 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 1. Average Density: ASTM D 2041, per MHD Specifications.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Protection: After final rolling, do not permit vehicular traffic on pavement until it

## ASPHALT PAVING

has cooled and hardened.

- G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### 3.08 CURBING AND EDGING

- A. Construct curbing and edging of the type and at the locations shown on the Contract Drawings.
- B. Construct curbing and edging in accordance with the details shown on the Contract Drawings.
  - 1. The foundation for curb and edging shall consist of gravel spread upon the subgrade and after being thoroughly compacted shall be 6 inches in depth. The bottom of the curbstones shall be fully seated and supported on the compacted subgrade.
  - 2. The joints between curbstones shall be carefully filled with cement mortar and neatly pointed on all exposed surfaces.
  - 3. After pointing, the curbstones shall be cleaned of all excess mortar.
- C. After curbing and edging is in place at the line and grade shown on the Contract Drawings, backfill and compact equally on both sides with subbase course material, as specified in Section 312000 – EARTH MOVING. Compaction shall be by vibratory, hand-operated equipment, and shall achieve the same density as specified for subbase course in Section 312000 – EARTH MOVING.

### 3.09 INSTALLATION TOLERANCES

- A. Accessibility: Comply with requirements of Massachusetts Architectural Access Board and ADAAG requirements. Remove and replace paving that does not meet required tolerances, when measured with a 2 foot straight edge.
- B. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  - 1. Base Course: Plus or minus 1/2 inch.
  - 2. Surface Course: Plus 1/4 inch, no minus.
- C. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within MHD Specification tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas.

### 3.010 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Designer.

- B. Allow paving to age for a minimum of 30 days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

### 3.011 FIELD QUALITY CONTROL

- A. Independent Testing Agency: Cooperate with the Independent Testing Agency engaged by Owner for field quality control activities for the Work of this Section. Refer also to Section 014325 - TESTING AGENCY SERVICES.
- B. Test the plane of the finished surfaces of base, binder, and surface courses with a 16-foot straightedge, except use a 10-foot straightedge on vertical courses and on the top course of resurfaced streets which contain manhole covers, valve boxes, and the like.
- C. Carefully apply the straight edge immediately after the first compaction by rolling, and from then on as may be necessary until and after the final compaction of the material in place. Hold the straightedge in successive positions parallel to the road centerline and in contact with the road surface; check the entire area from one side of the pavement to the other.
- D. Correct irregularities which vary  $\frac{3}{8}$  inch from a true finished surface in base and binder courses, and  $\frac{1}{4}$  inch in top courses.
- E. Irregularities which may develop before the completion of rolling and while the material is still workable, may be remedied by loosening the surface mixture and removing or adding material as necessary. Should any unsatisfactory irregularities or defects remain after final compaction, the defective work shall be corrected by removing and replacing with new material to form a true and even surface.

### 3.012 OPENING TO TRAFFIC

- A. No vehicular traffic or loads shall be permitted on the newly completed pavement until all of the following conditions are met:
  - 1. Adequate stability has been attained.
  - 2. The material has cooled sufficiently to prevent distortion or loss of fines.
  - 3. The pavement has achieved a maximum temperature of 140 degrees F.
- B. If the climatic or other conditions warrant it, the period of time before opening to traffic may be extended at the discretion of the Designer.

### 3.013 DISPOSAL

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

SOCOTEC AE Consulting, LLC  
Charlestown, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

- A. Except for material indicated to be recycled, remove excavated materials from the Project site, and legally dispose of them in an EPA-approved landfill.

END OF SECTION

**DIVISION 32**

**EXTERIOR IMPROVEMENTS**

**SECTION 32 17 23**

**PAINTED PAVEMENT MARKINGS**

**PART 1 GENERAL**

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 00 00 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Painted Pavement Markings work required to complete the work of the contract including all the Painted Pavement Markings work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Painted Pavement Markings work with all the other trades for the project. Provide all demolition and disposal work to complete the Painted Pavement Markings work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each sub-Contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed
- B. Painted Pavement Markings work includes, but is not limited to:
  - 1. Parking lot markings, including parking bays, crosswalks, arrows, universal symbol of accessibility, directional text, and curb markings.
  - 2. Remove abandoned lines.
  - 3. Paint over all existing and paint new lines as shown on the plans.

1.03 REFERENCE STANDARDS

- A. FS TT-P-1952 - Paint, Traffic and Airfield Marking, Waterborne; 2015f.



- B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.
- C. FHWA MUTCD - Manual on Uniform Traffic Control Devices for Streets and Highways; U.S. Department of Transportation, Federal Highway Administration; Current Edition.

#### 1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
  - 2. Extra Paint: 2 containers, 1 gallon size, of each type and color.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver paint in containers of at least 5 gallons accompanied by batch certificate.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

#### 1.06 FIELD CONDITIONS

- A. Do not install products under environmental conditions outside manufacturer's absolute limits.

### **PART 2 PRODUCTS**

#### 2.01 MATERIALS

- A. Line and Zone Marking Paint: MPI (APL) No. 97 Latex Traffic Marking Paint; color(s) as indicated.
  - 1. Parking Lots: Yellow.
  - 2. Handicapped Symbols: Blue.
- B. Paint For Obliterating Existing Markings: FS TT-P-1952; black for bituminous pavements, gray for portland cement pavements.
- C. Temporary Marking Tape: Preformed, reflective, pressure sensitive adhesive tape in color(s) required; Contractor is responsible for selection of material of

sufficient durability as to perform satisfactorily during period for which its use is required.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### **3.02 PREPARATION**

- A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of marking materials.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Obliteration of existing markings using paint is acceptable in lieu of removal; apply the paint in as many coats as necessary to completely obliterate the existing markings.
- D. Clean surfaces thoroughly prior to installation.
  - 1. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods.
  - 2. Completely remove rubber deposits, existing paint markings, and other coatings adhering to the pavement, by scraping, wire brushing, sandblasting, mechanical abrasion, or approved chemicals.
- E. Where oil or grease are present, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application; after cleaning, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint.
- F. Establish survey control points to determine locations and dimensions of markings; provide templates to control paint application by type and color at necessary intervals.
- G. Temporary Pavement Markings: When required or directed by Architect, apply temporary markings of the color(s), width(s) and length(s) as indicated or directed.
  - 1. After temporary marking has served its purpose, remove temporary marking by carefully controlled sandblasting, approved grinding equipment, or other approved method so that surface to which the marking was applied will not be damaged.
  - 2. At Contractor's option, temporary marking tape may be used in lieu of temporary painted marking; remove unsatisfactory tape and replace with painted markings at no additional cost to Owner.

### 3.03 INSTALLATION

- A. Begin pavement marking as soon as practicable after surface has been cleaned and dried.
- B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F.
- C. Apply in accordance with manufacturer's instructions using an experienced technician that is thoroughly familiar with equipment, materials, and marking layouts.
- D. Comply with FHWA MUTCD manual (<http://mutcd.fhwa.dot.gov>) for details not shown.
- E. Apply markings in locations determined by measurement from survey control points; preserve control points until after markings have been accepted.
- F. Apply uniformly painted markings of color(s), lengths, and widths as indicated on drawings true, sharp edges and ends.
  - 1. Apply paint in one coat only.
  - 2. Wet Film Thickness: 0.015 inch, minimum.
  - 3. Width Tolerance: Plus or minus 1/8 inch.
- G. Parking Lots: Apply parking space lines, entrance and exit arrows, painted curbs, and other markings indicated on drawings.
  - 1. Mark the International Handicapped Symbol at indicated parking spaces.
  - 2. Hand application by pneumatic spray is acceptable.
- H. Symbols: Use a suitable template that will provide a pavement marking with true, sharp edges and ends, of the design and size indicated.

### 3.04 DRYING, PROTECTION, AND REPLACEMENT

- A. Protect newly painted markings so that paint is not picked up by tires, smeared, or tracked.
- B. Provide barricades, warning signs, and flags as necessary to prevent traffic crossing newly painted markings.
- C. Allow paint to dry at least the minimum time specified by the applicable paint standard and not less than that recommended by the manufacturer.
- D. Remove and replace markings that are applied at less than minimum material rates; deviate from true alignment; exceed length and width tolerances; or show light spots, smears, or other deficiencies or irregularities.
- E. Remove markings in manner to avoid damage to the surface to which the marking was applied, using carefully controlled sand blasting, approved grinding equipment, or other approved method.

EMBASSY PUBLIC PARKING GARAGE RENOVATIONS  
CITY OF WALTHAM  
WALTHAM, MASSACHUSETTS  
SOCOTEC JOB NO.: RB233476

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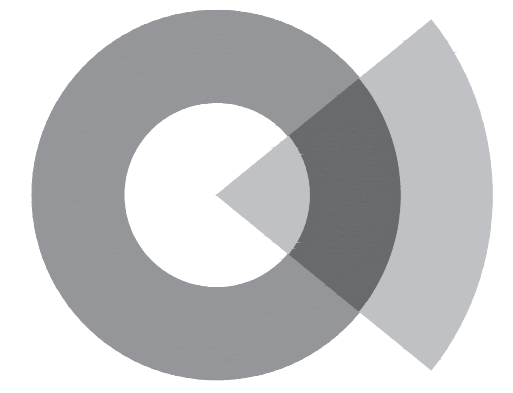
- F. Replace removed markings at no additional cost to Owner.

END OF SECTION

# **DRAWINGS**

# CITY OF WALTHAM

## EMBASSY PUBLIC PARKING GARAGE RENOVATIONS



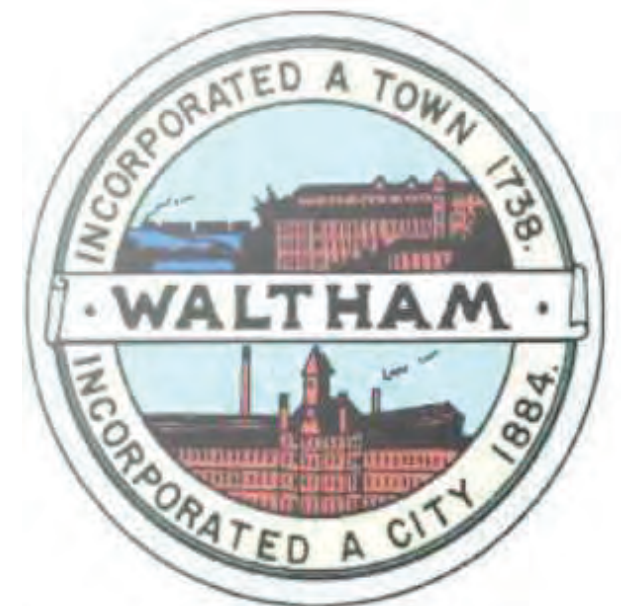
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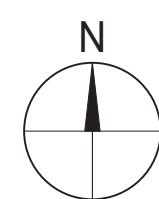
**EMBASSY PUBLIC  
PARKING  
GARAGE  
RENOVATIONS**



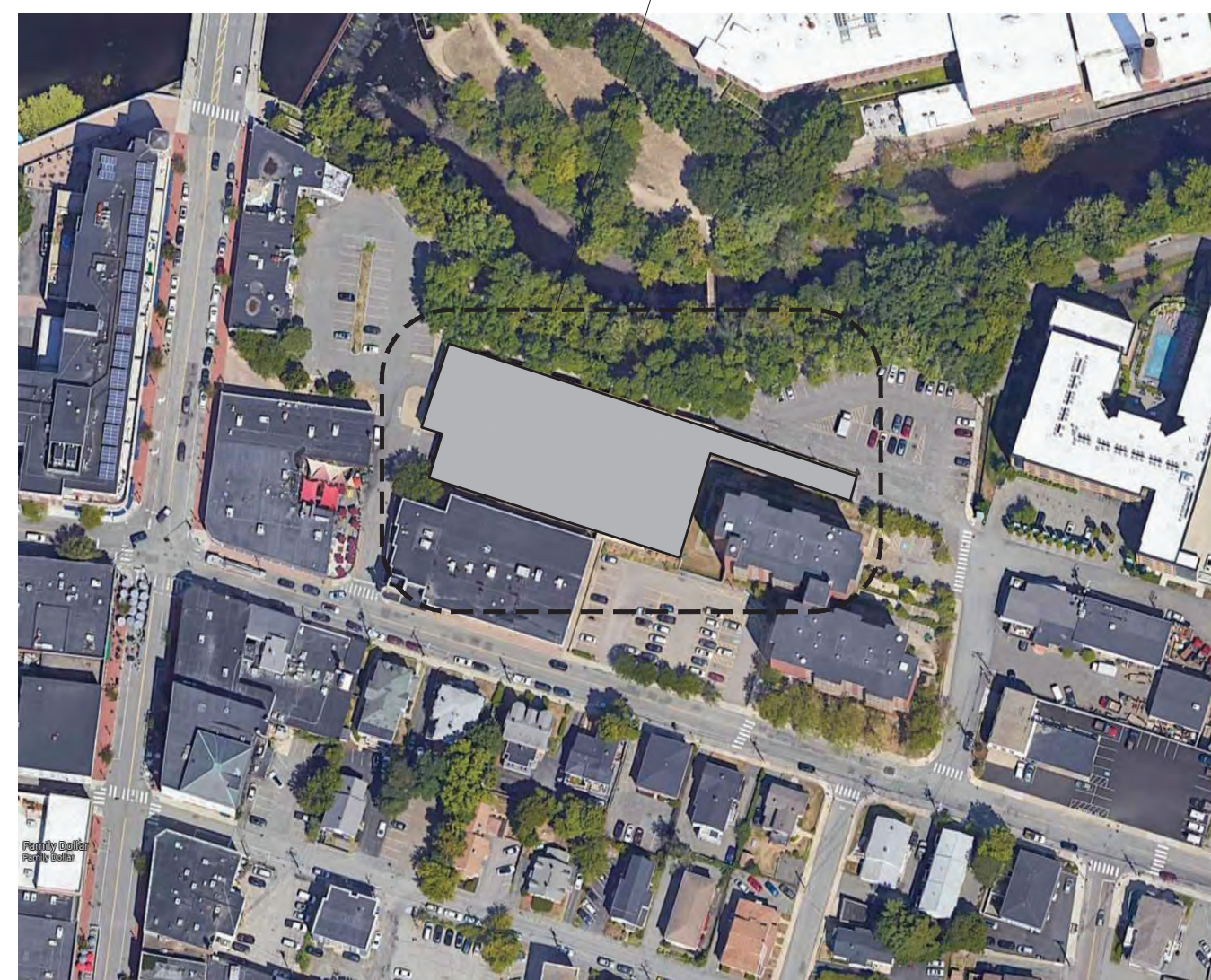
**CITY OF  
WALTHAM**  
14R PINE STREET  
WALTHAM, MA 02453

### LOCATOR MAP

NOTE:  
CONTRACTOR TO FIELD VERIFY ALL  
DIMENSIONS AND CONDITIONS.



EMBASSY PARKING GARAGE  
14R PINE STREET  
WALTHAM, MA 02453



### DRAWING SHEETS:

#### GENERAL

GO-01 COVER SHEET

#### STRUCTURAL

S1-01 LOWER LEVEL PLAN  
S1-02 UPPER LEVEL PLAN  
S1-03 RAMP FRAMING PLANS & ELEVATIONS  
S1-04 RAMP DETAILS  
S2-01 BUILDING ELEVATIONS  
S2-02 BUILDING ELEVATIONS  
S3-01 SECTION DETAILS  
S3-02 SECTION DETAILS

### GENERAL NOTES:

- G1 CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND COORDINATING ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. IN CASE OF CONFLICT, THE ARCHITECT SHALL BE NOTIFIED AND SHALL RESOLVE THE CONFLICT. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS.
- G2 IN ANY CASE OF CONFLICT BETWEEN OR WITHIN THE DRAWINGS AND THE PROJECT SPECIFICATIONS OR WITHIN THE DRAWINGS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN AT THE SOLE DISCRETION OF THE ARCHITECT.
- G3 THE CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT PRIOR REVIEW BY THE ARCHITECT.
- G4 WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE CONSTRUCTED IN A MANNER SIMILAR TO THAT OF THE TYPICAL DETAILS.
- G5 ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND LOCAL LAWS AND REGULATIONS.
- G6 GENERAL CONTRACTOR SHALL COORDINATE LOCATIONS OF OPENINGS, PITS, BOXES, SUMPS, TRENCHES, SLEEVES, DEPRESSIONS, GROOVES, AND CHAMFERS, WITH MECHANICAL, ELECTRICAL AND PLUMBING TRADES.
- G7 THE STRUCTURAL DESIGN OF THE BUILDING IS BASED ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS. NO PROVISIONS HAVE BEEN MADE FOR CONDITIONS OCCURRING DURING CONSTRUCTION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAKE PROPER AND ADEQUATE PROVISIONS FOR STABILITY OF, AND ALL STRESSES TO, THE STRUCTURE DUE TO ANY CAUSE DURING CONSTRUCTION.
- G8 CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REQUEST ALL DIMENSIONS OR INFORMATION REQUIRED TO PERFORM THE WORK FROM THE ARCHITECT. WORK COMPLETED BY THE CONTRACTOR WITHOUT DIMENSIONS OR INFORMATION SHALL BE DONE AT HIS OWN RISK AND SHALL BE REMOVED AND REINSTALLED TO THE SPECIFICATIONS OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
- G9 MEANS AND METHODS OF CONSTRUCTION AS WELL AS COMPLIANCE WITH OSHA AND OTHER SAFETY LAWS AND REGULATIONS IS EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR, HIS SUBCONTRACTOR(S), SUPPLIERS, CONSULTANTS AND SERVANTS.
- G10 FOR ALL ITEMS THAT ARE TO BE REUSED AND/OR REINSTALLED AS PART OF THE WORK:
- ALL ITEMS THAT ARE TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. IF ANY DAMAGE OCCURS THE CONTRACTOR SHALL REPAIR THE ITEM SO IT IS IN A LIKE NEW CONDITION OR REPLACE IT WITH A NEW ITEM THAT FUNCTIONS THE SAME OR BETTER THAN THE ORIGINAL ITEM.
  - ALL ITEMS THAT ARE TO BE TEMPORARILY REMOVED & REINSTALLED ARE TO BE CAREFULLY REMOVED AND MOVED TO A PROTECTED AREA ON SITE OR TO AN OFF SITE FACILITY. THE ITEM IS TO BE CLEANED AND PREPARED FOR REINSTALLATION. ALL FITTINGS AND CONNECTION POINTS ARE TO BE INSPECTED AND REPAIRED. PROVIDE NEW FASTENERS AND CAREFULLY TRANSPORT THE ITEM BACK TO ITS ORIGINAL LOCATION AND CAREFULLY REINSTALL. IF ANY DAMAGE OCCURS THE CONTRACTOR SHALL REPAIR THE ITEM SO IT IS IN A LIKE NEW CONDITION OR REPLACE IT WITH A NEW ITEM THAT FUNCTIONS THE SAME OR BETTER THAN THE ORIGINAL ITEM.

### LIST OF ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR
APPROX.	APPROXIMATE
BIT.	BITUMINOUS
BUR	BUILT UP ROOFING
CB	CATCH BASIN
CMU	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONT.	CONTINUOUS
D.S.	DOWNSPOUT
EQ	EQUAL
E.W.	EACH WAY
FD	FLOOR DRAIN
HC	HANDICAP
HT	HEIGHT
I IN	INVERT IN
I OUT	INVERT OUT
ID	INTERIOR DIAMETER
L.C.C.	LEAD COATED COPPER
MAX.	MAXIMUM
MIN.	MINIMUM
M.O.	MASONRY OPENING
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OD	OVERHEAD DOOR
O.H.	OPPOSITE HAND
PAV.	PAVERS
P.T.	PRESSURE TREATED
SIM.	SIMILAR TO
S.S.	STAINLESS STEEL
T.	TREAD
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V.I.F.	VERIFY IN FIELD
VCB	VINYL COVE BASE
W/	WITH
Z.C.C.	ZINC COATED COPPER
Ø	DIAMETER
+/-	PLUS OR MINUS

### SYMBOL LEGEND

	SEE DETAIL 88 ON SHEET AX-XX
	BREAK LINE
	DIMENSION LINE
	EXTENT
	DOOR TAG
	WINDOW TAG

### CONTACT INFORMATION:

Architect



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Email: cphilpott@city.waltham.ma.us

Drawing Title:

**COVER SHEET**

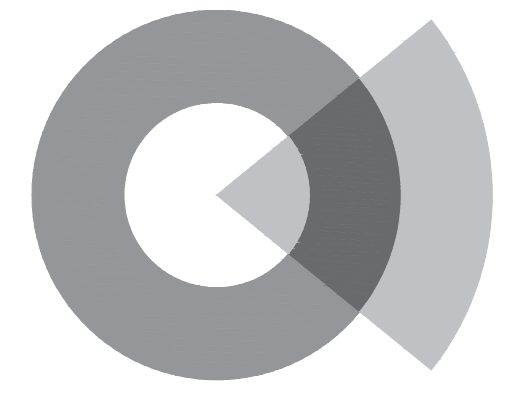
Revisions:

Submission:

**BID DOCUMENTS**

Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: N.T.S.

**GO-01**



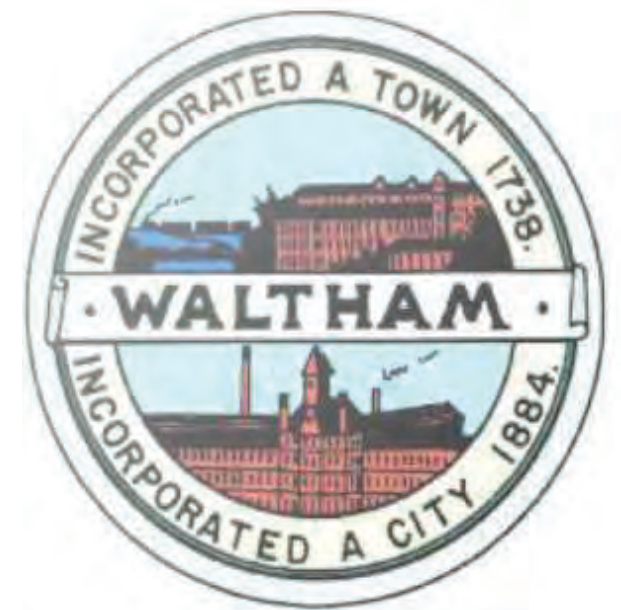
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WALTHAM, MA 02453

Drawing Title:

**LOWER LEVEL  
PLAN**

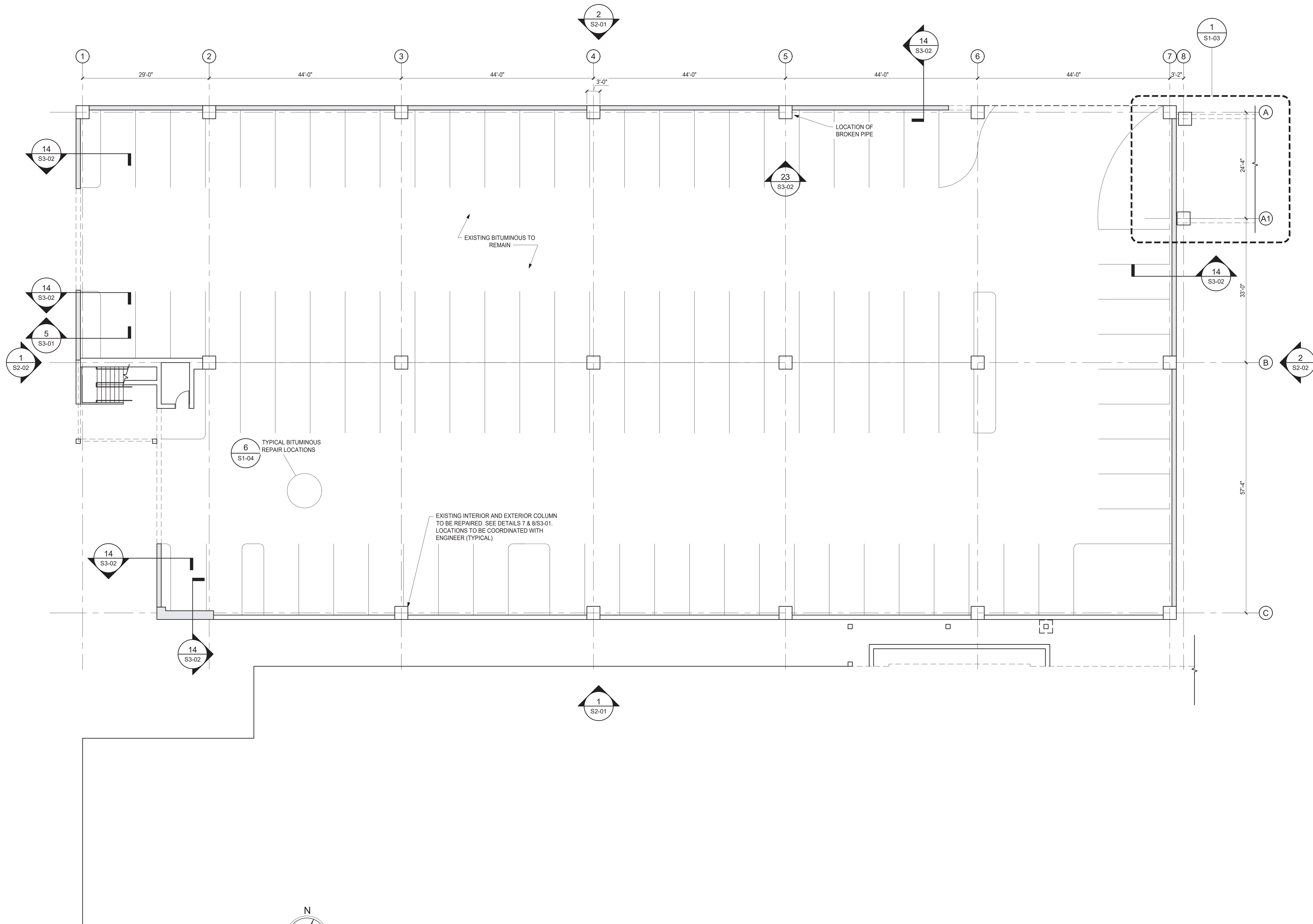
Revisions:

Submission:

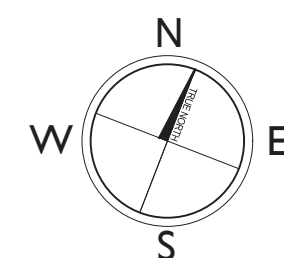
**BID DOCUMENTS**

Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

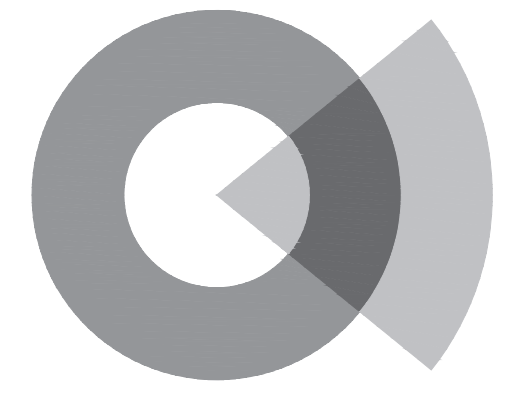
**S1-01**



**1 LOWER LEVEL PLAN**  
SCALE: 3/32" = 1'-0"



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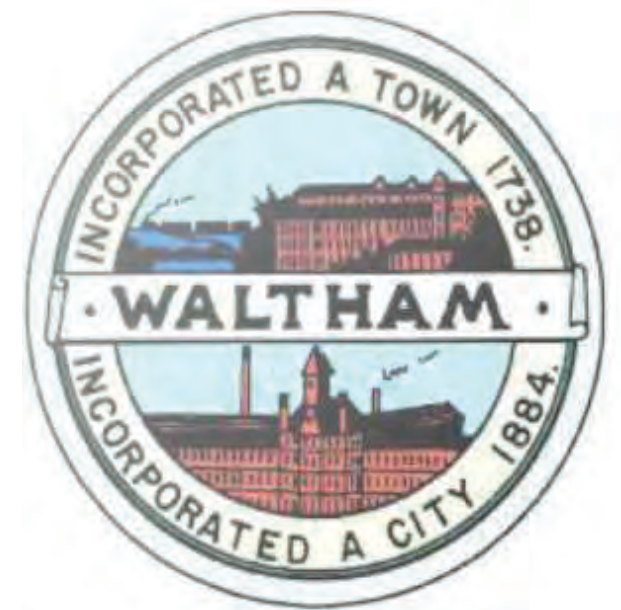
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Drawing Title:

**UPPER  
LEVEL PLAN**

Revisions:

Submission:

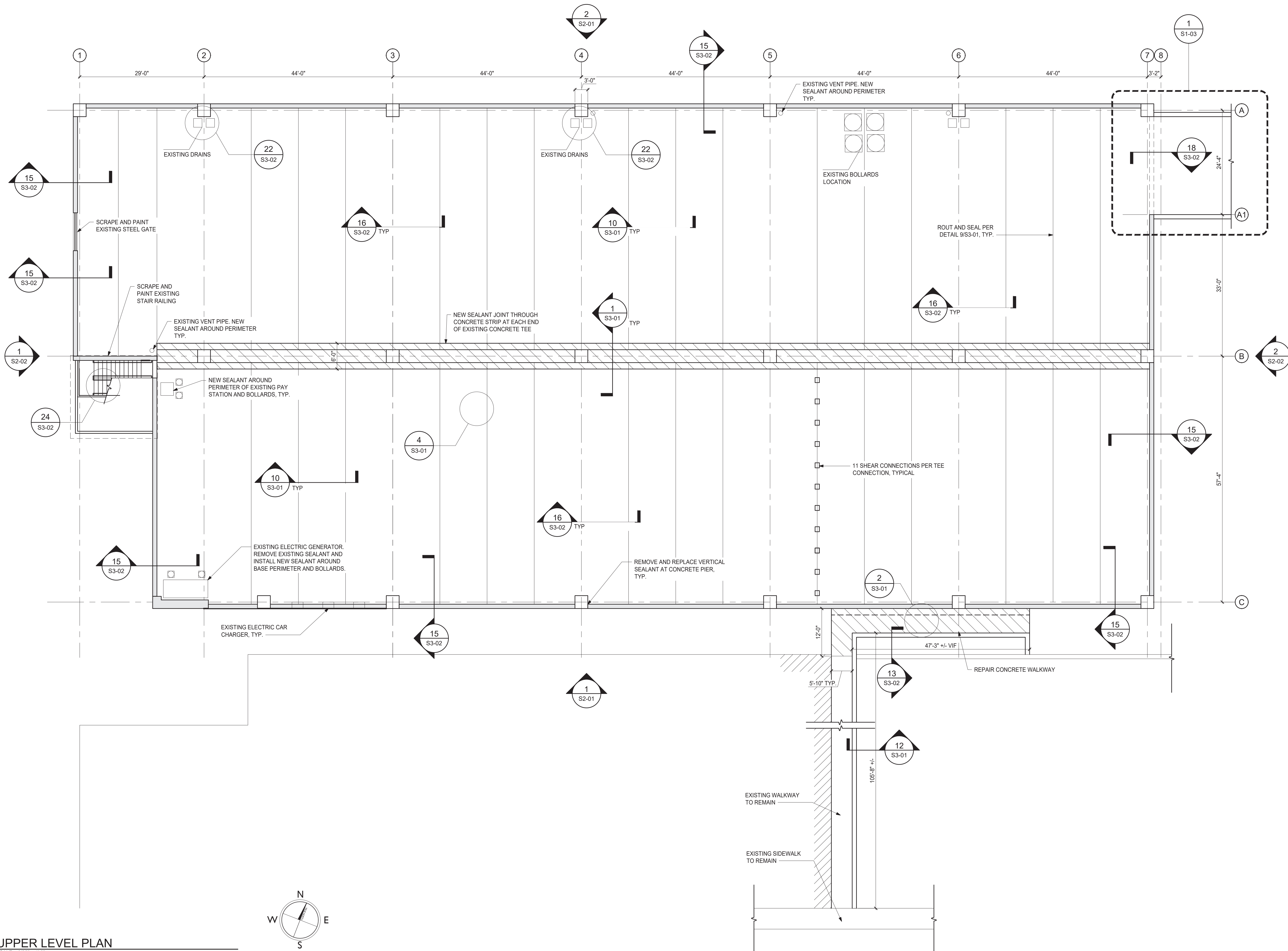
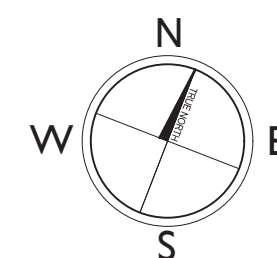
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Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

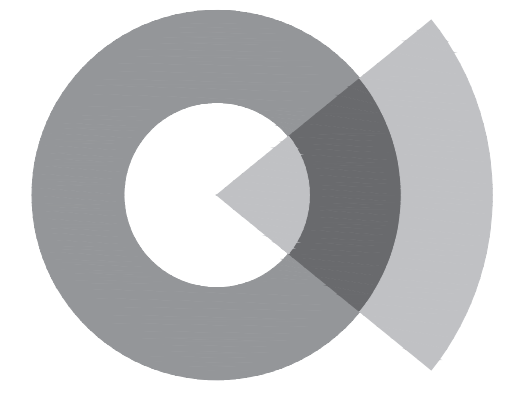
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**1 UPPER LEVEL PLAN**  
SCALE: 3/32" = 1'-0"







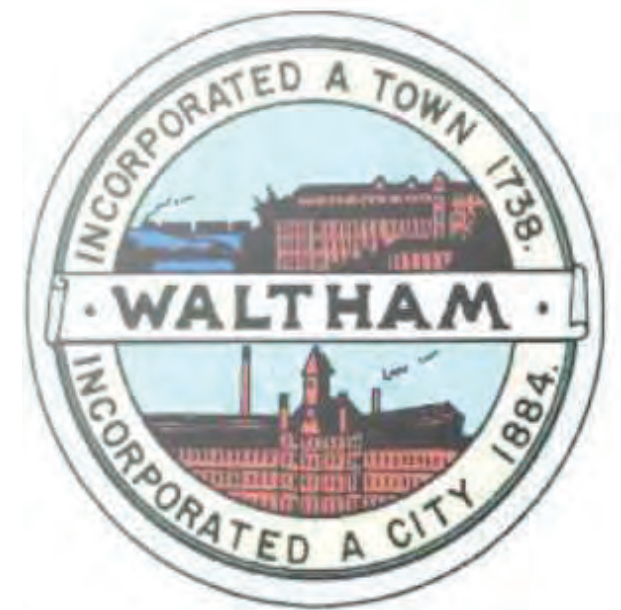
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Drawing Title:

**RAMP  
FRAMING PLANS**

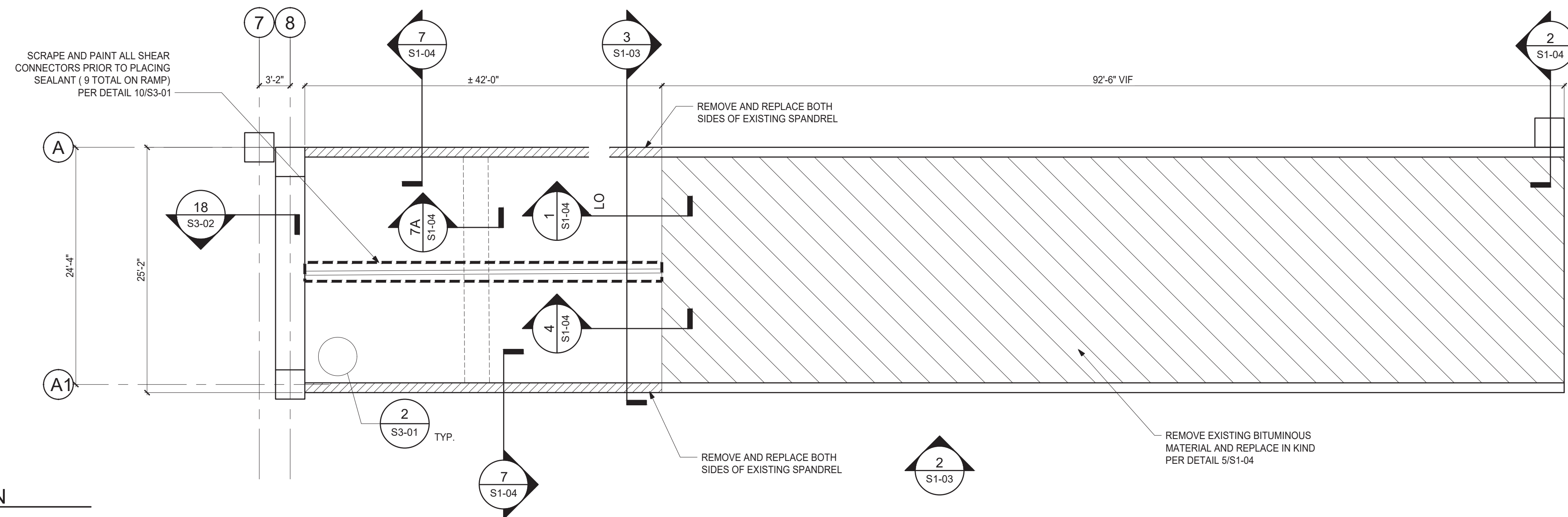
Revisions:

Submission:

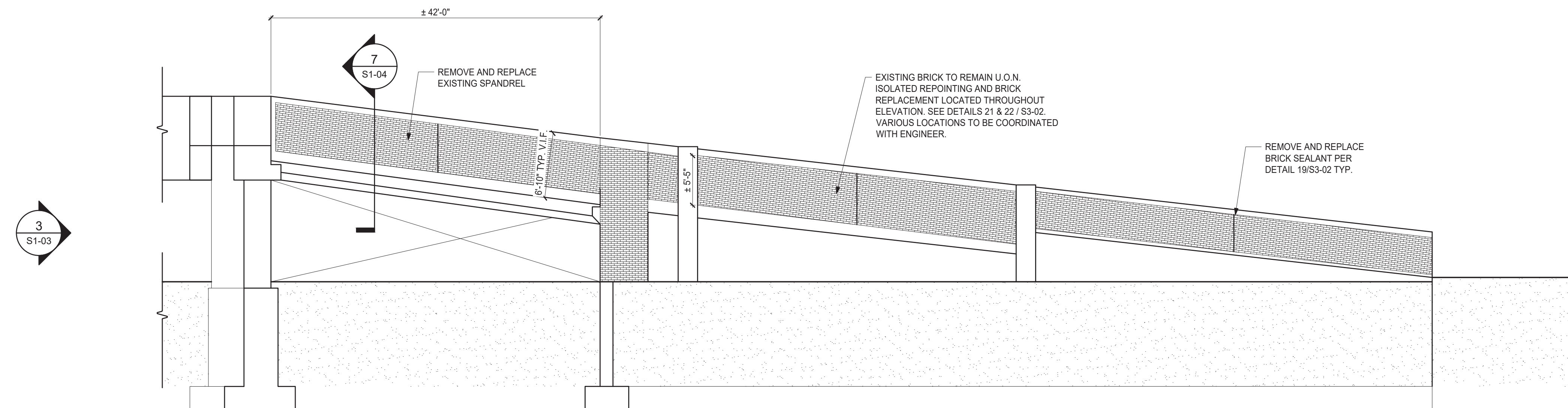
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Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

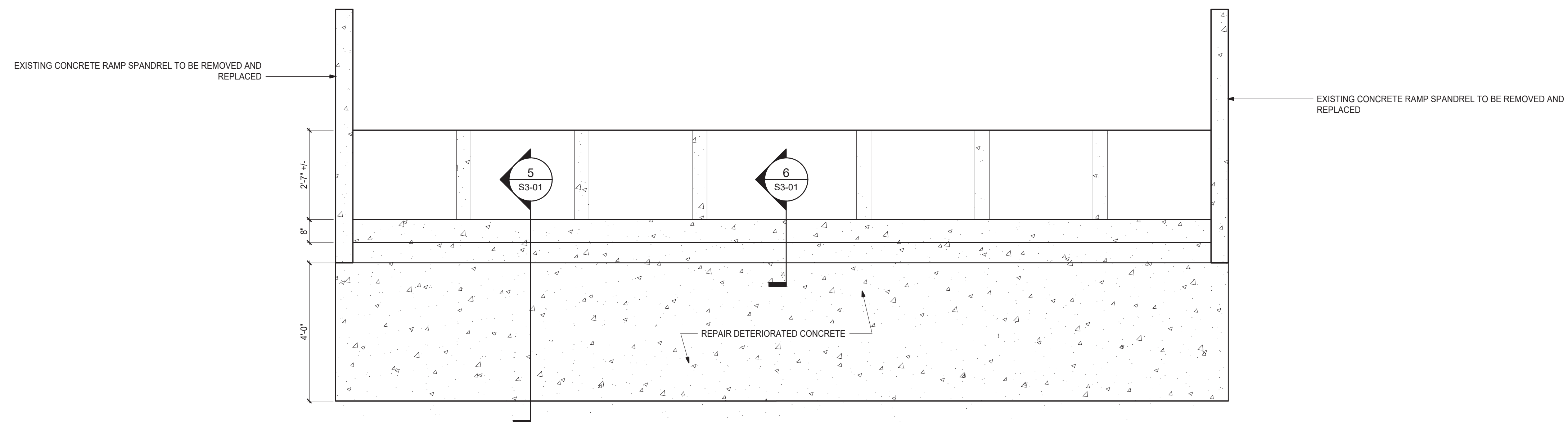
**S1-03**



**1 RAMP FRAMING PLAN**  
SCALE: 1/8" = 1'-0"



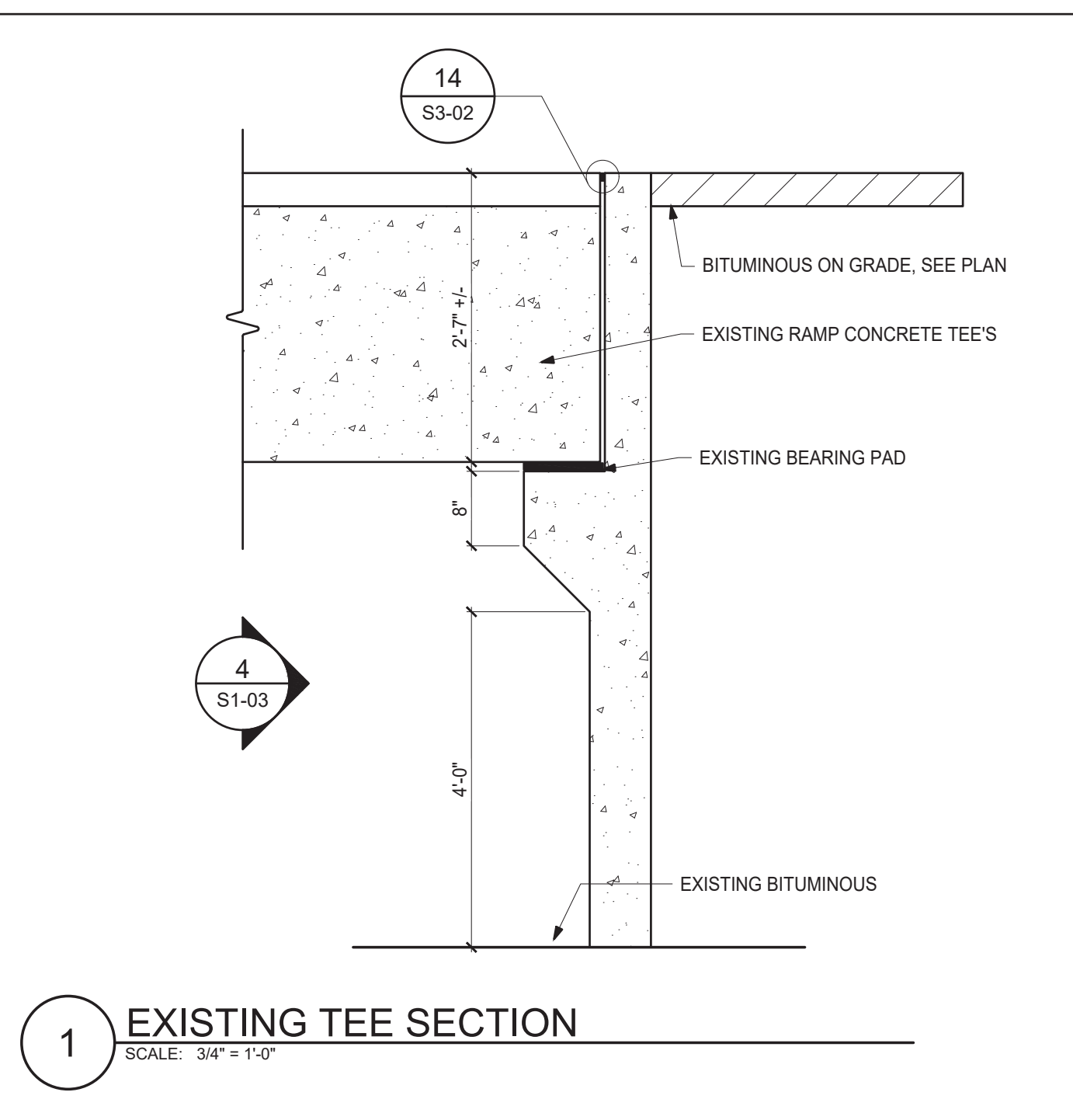
**2 RAMP FRAMING ELEVATION**  
SCALE: 1/8" = 1'-0"



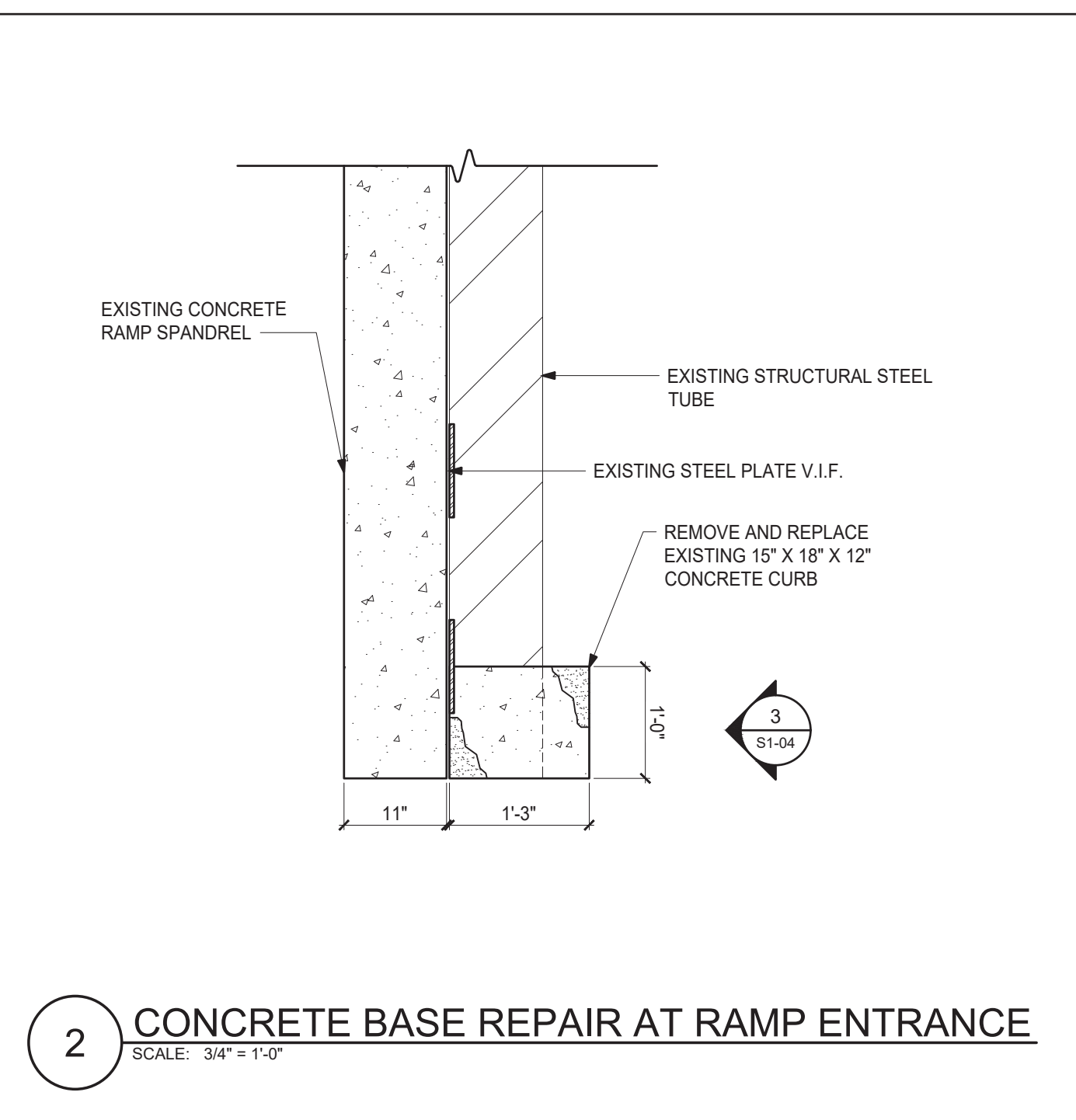
**3 RAMP FRAMING SECTION**  
SCALE: 1/2" = 1'-0"

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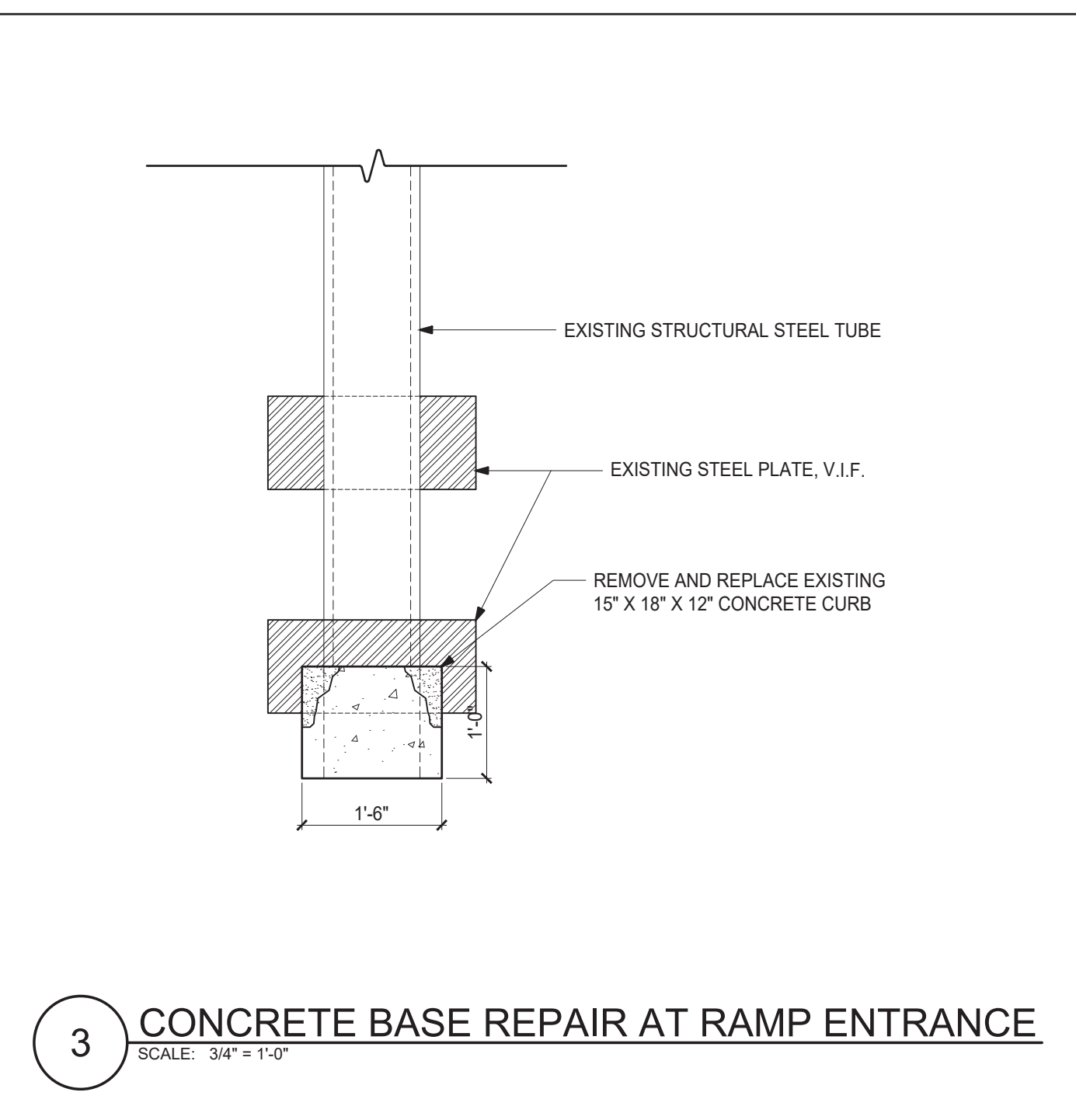
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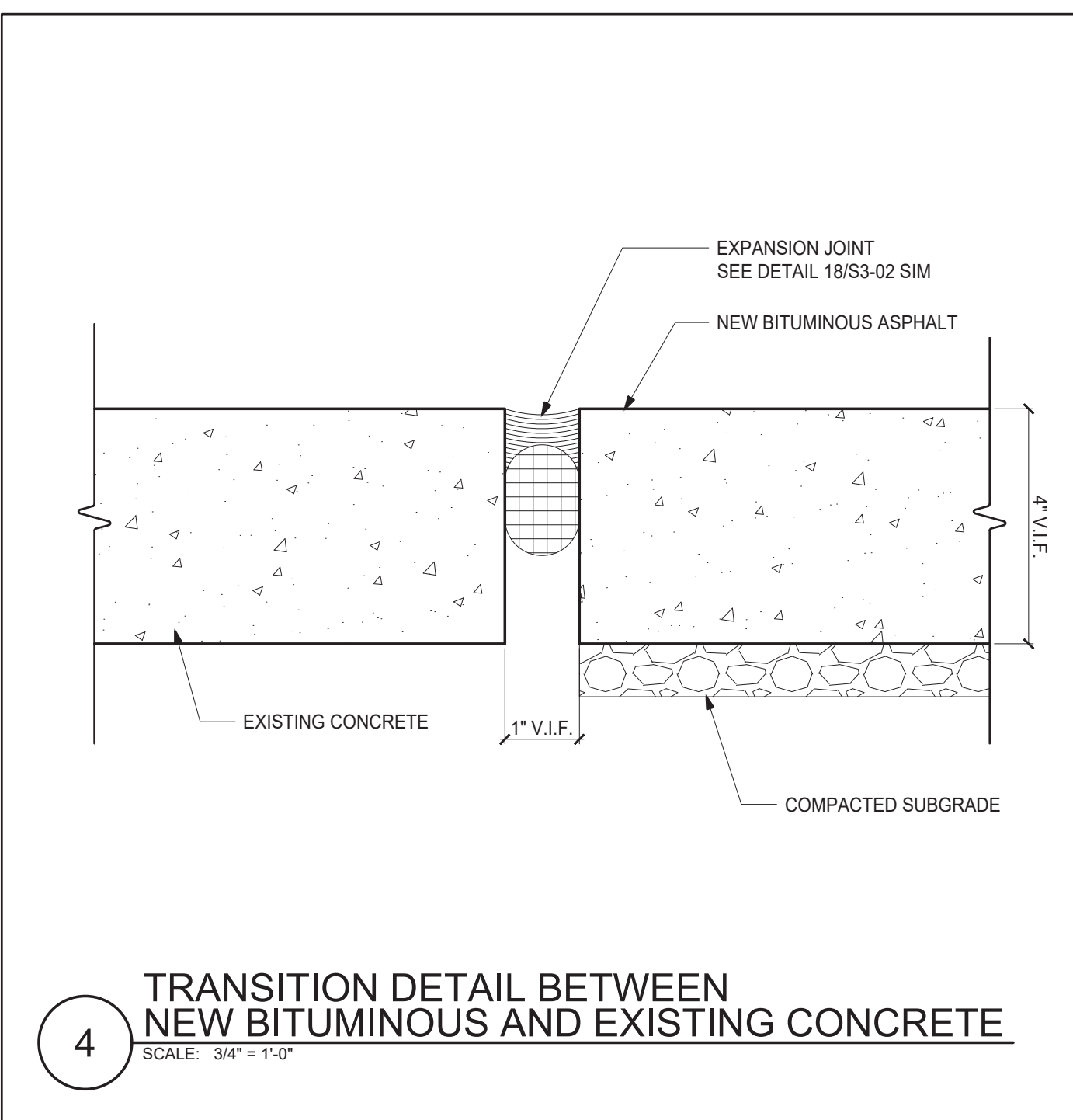
1 EXISTING TEE SECTION  
SCALE: 3/4" = 1'-0"



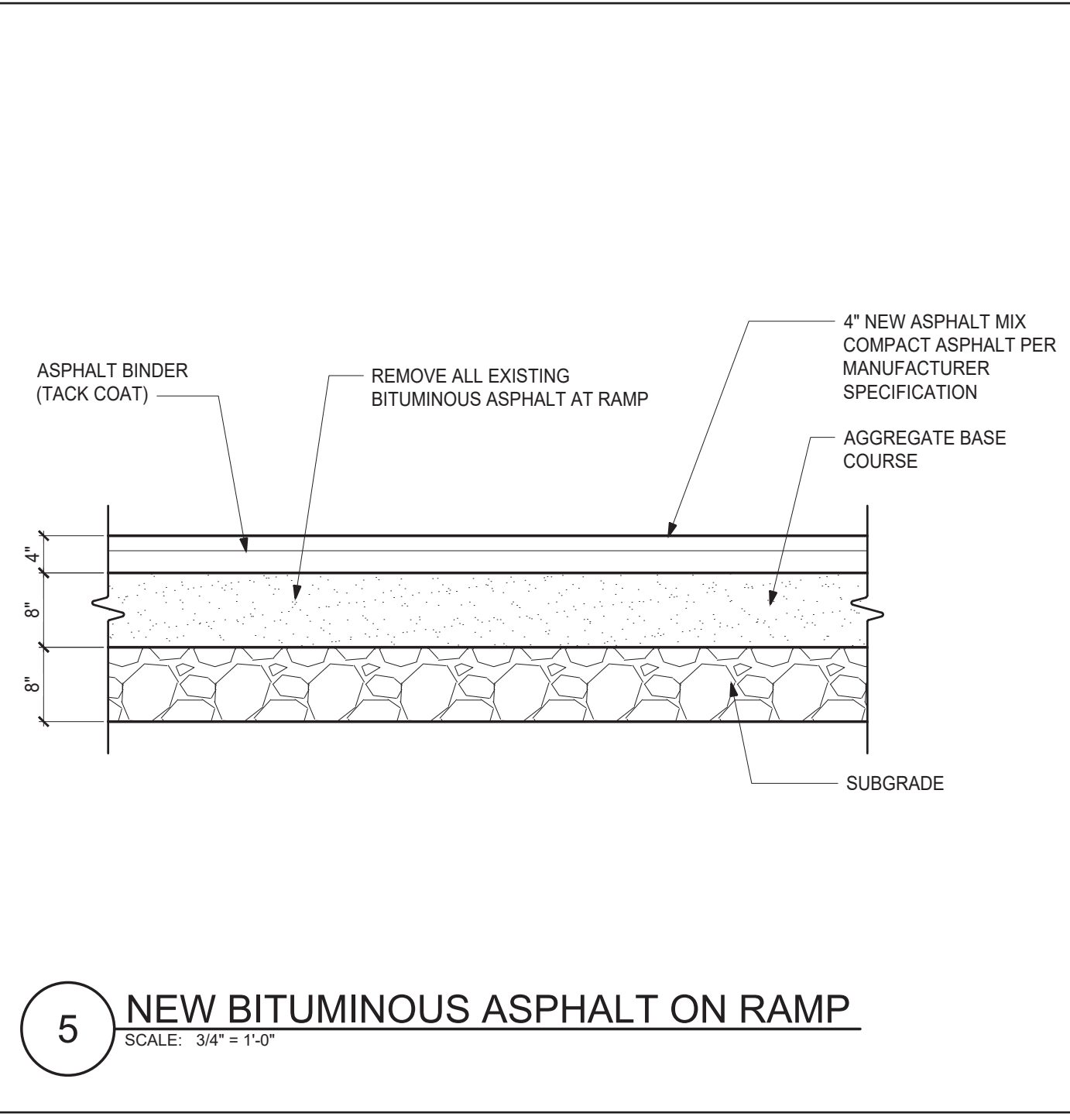
2 CONCRETE BASE REPAIR AT RAMP ENTRANCE  
SCALE: 3/4" = 1'-0"



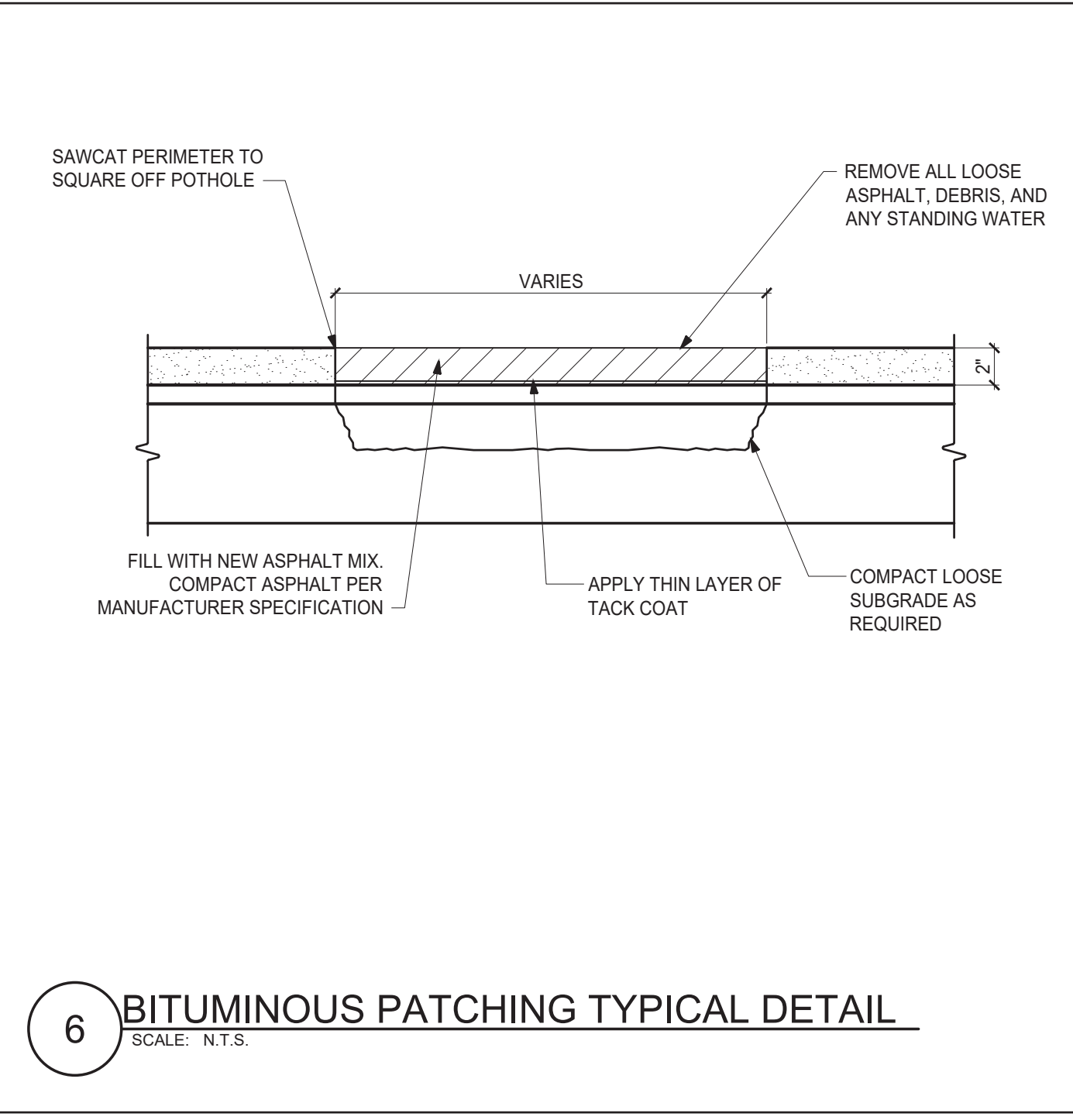
3 CONCRETE BASE REPAIR AT RAMP ENTRANCE  
SCALE: 3/4" = 1'-0"



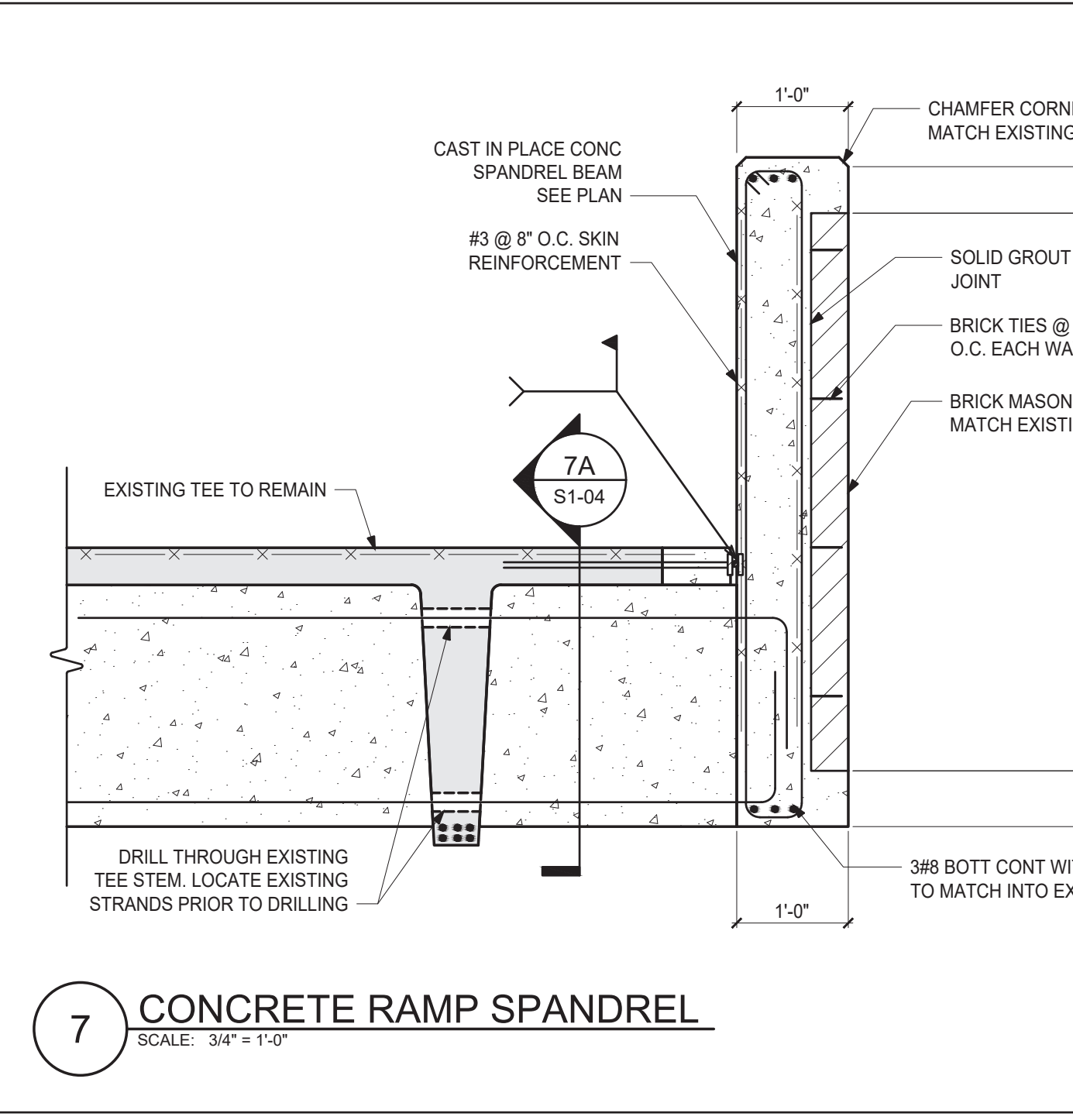
4 TRANSITION DETAIL BETWEEN NEW BITUMINOUS AND EXISTING CONCRETE  
SCALE: 3/4" = 1'-0"



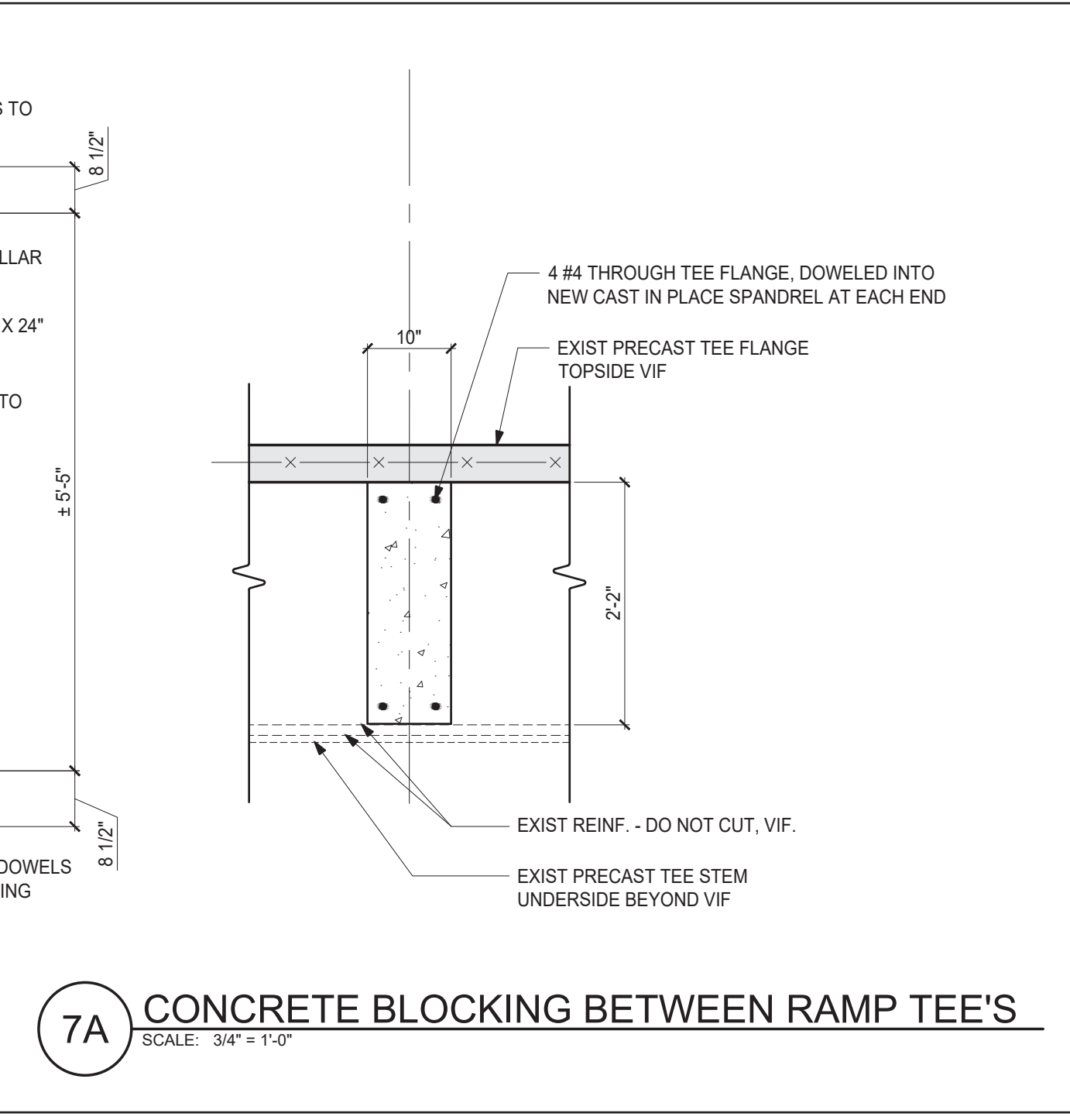
5 NEW BITUMINOUS ASPHALT ON RAMP  
SCALE: 3/4" = 1'-0"



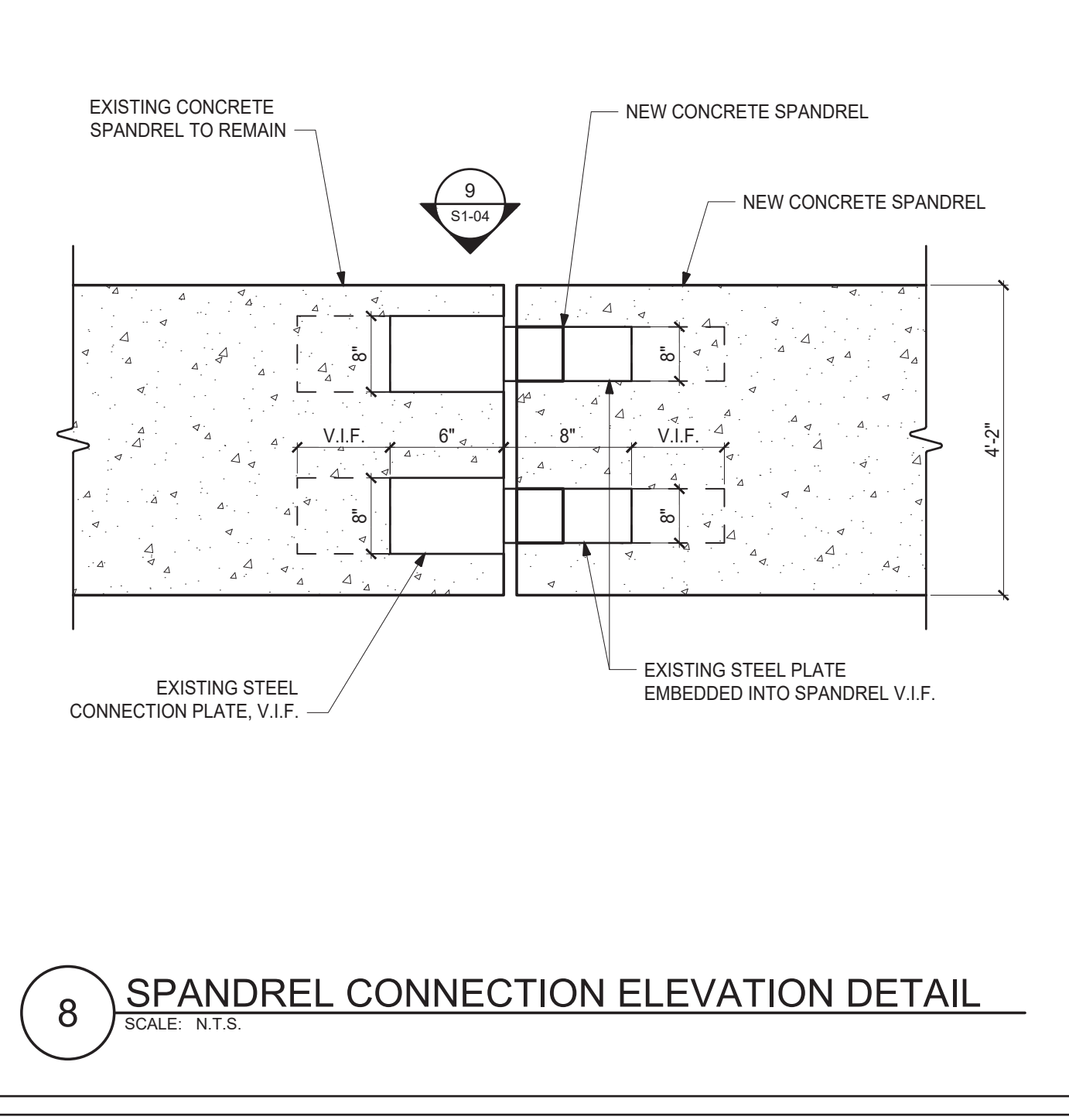
6 BITUMINOUS PATCHING TYPICAL DETAIL  
SCALE: N.T.S.



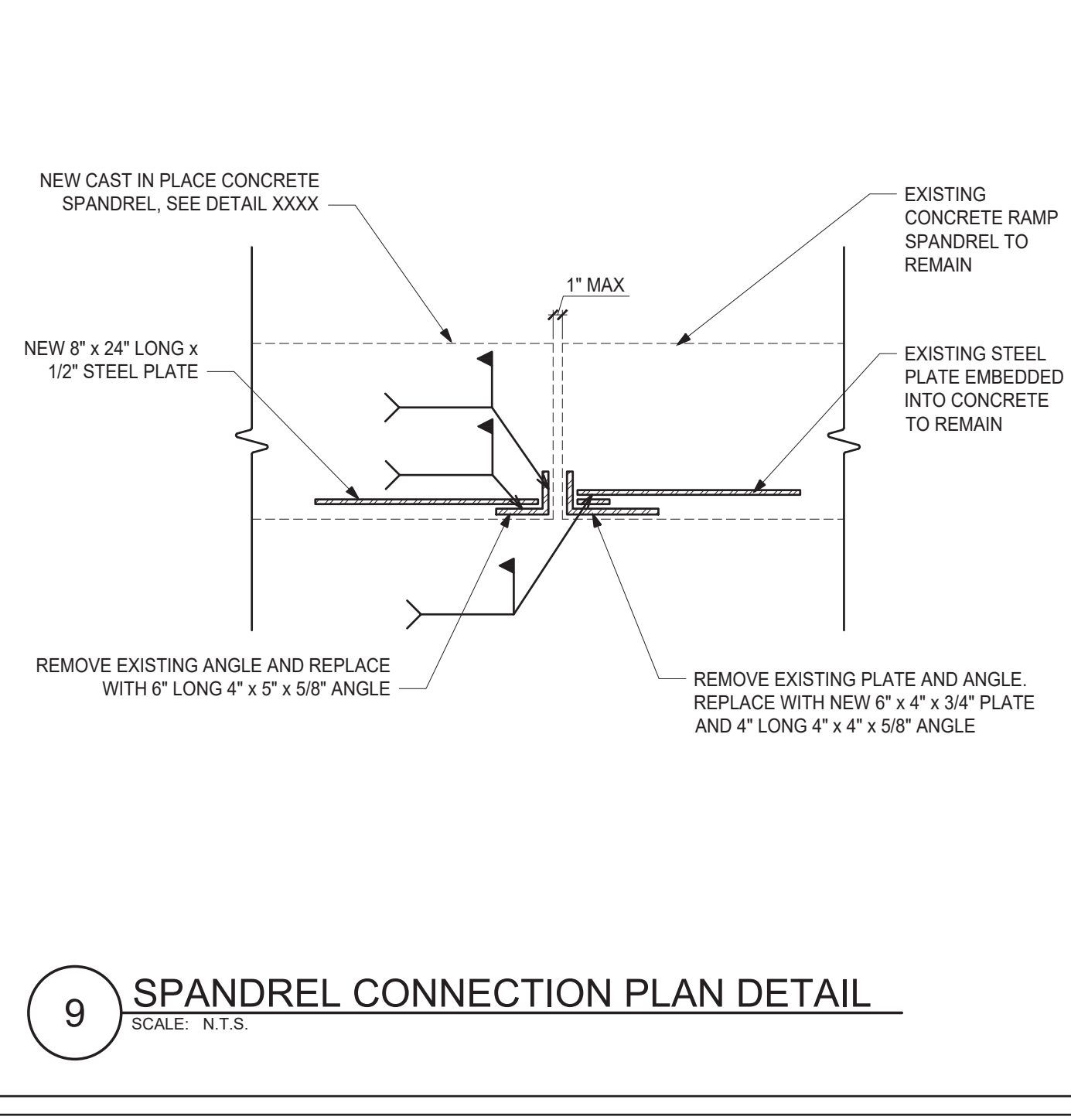
7 CONCRETE RAMP SPANDREL  
SCALE: 3/4" = 1'-0"



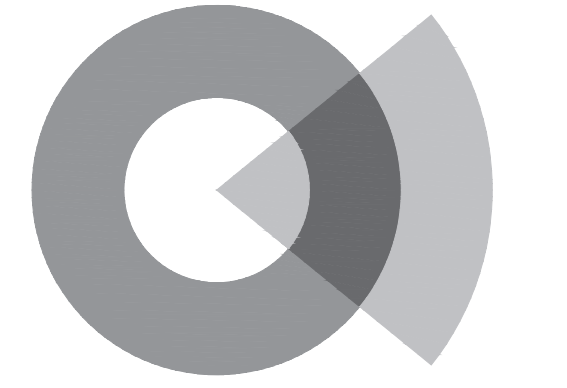
7A CONCRETE BLOCKING BETWEEN RAMP TEE'S  
SCALE: 3/4" = 1'-0"



8 SPANDREL CONNECTION ELEVATION DETAIL  
SCALE: N.T.S.



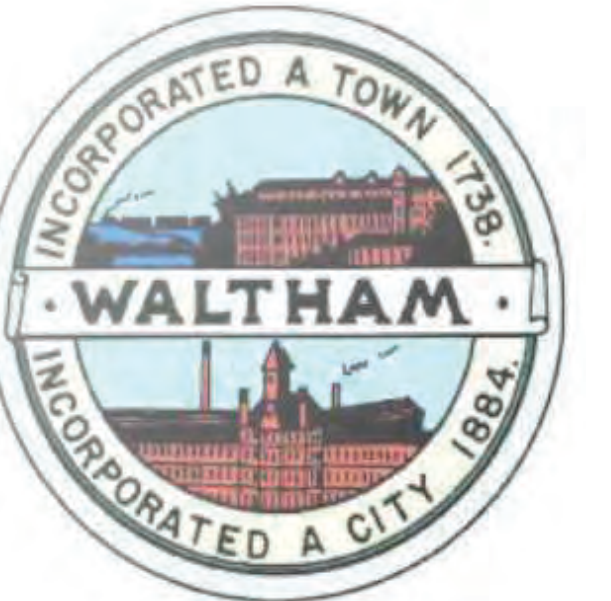
9 SPANDREL CONNECTION PLAN DETAIL  
SCALE: N.T.S.



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WALTHAM, MA 02453

Drawing Title:

**RAMP  
DETAILS**

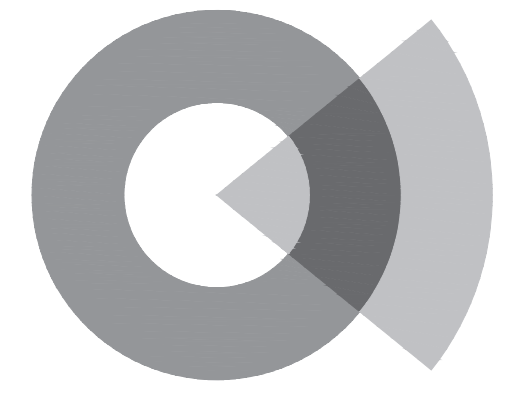
Revisions:

Submission:

**BID DOCUMENTS**

Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

**S1-04**



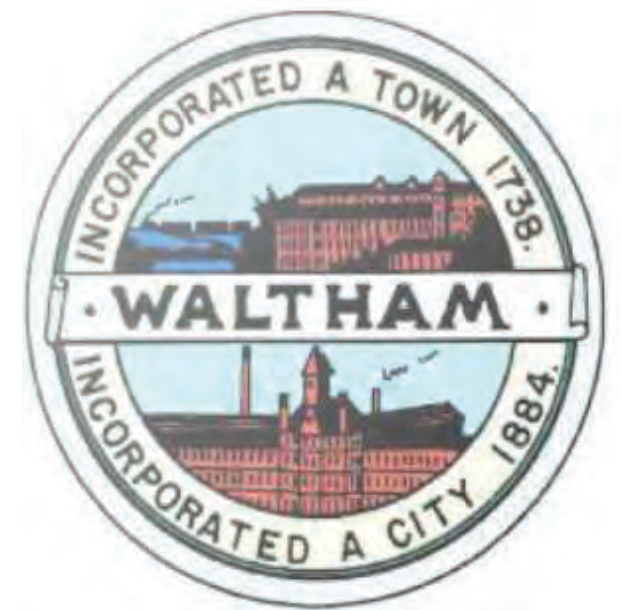
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Drawing Title:

**BUILDING  
ELEVATIONS**

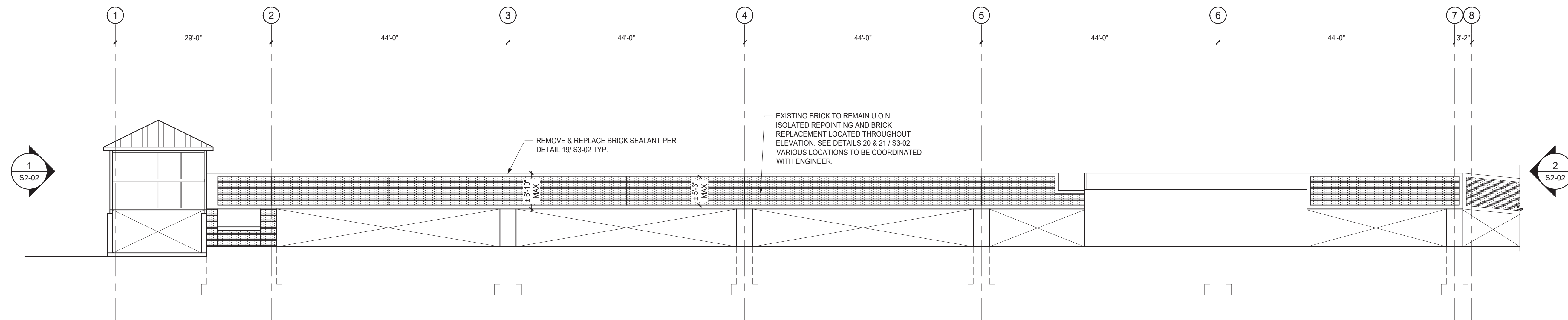
Revisions:

Submission:

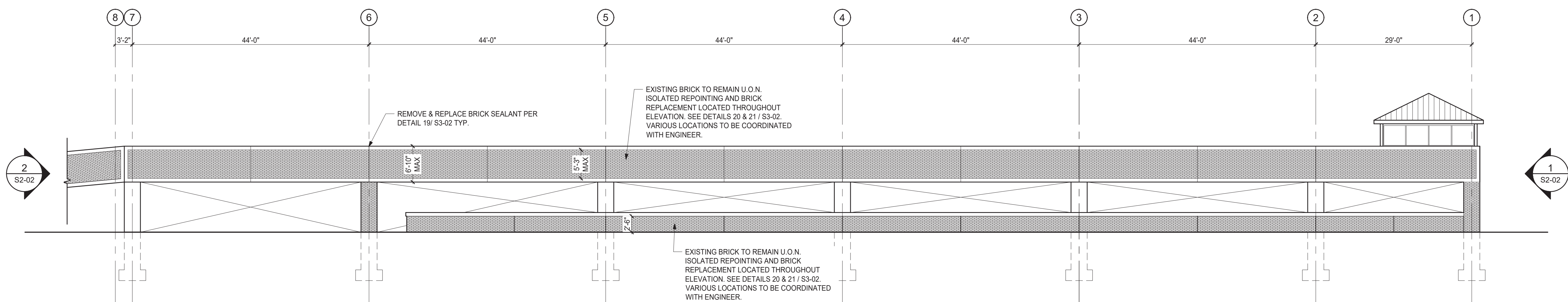
**BID DOCUMENTS**

Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

**S2-01**

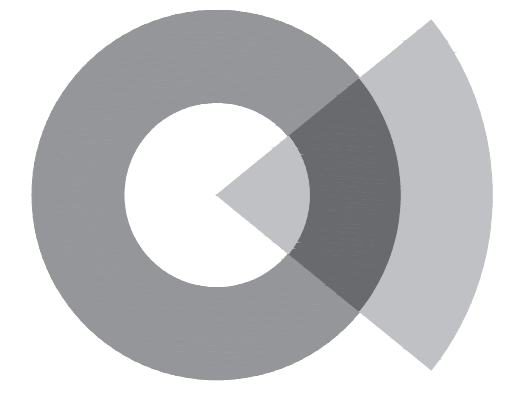


**1 SOUTH ELEVATION**  
SCALE: 3/32" = 1'-0"



**2 NORTH ELEVATION**  
SCALE: 3/32" = 1'-0"

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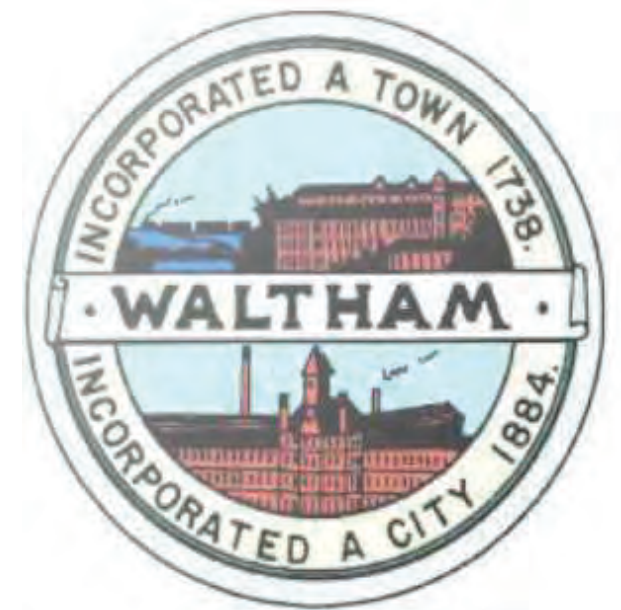
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Drawing Title:

**BUILDING  
ELEVATIONS**

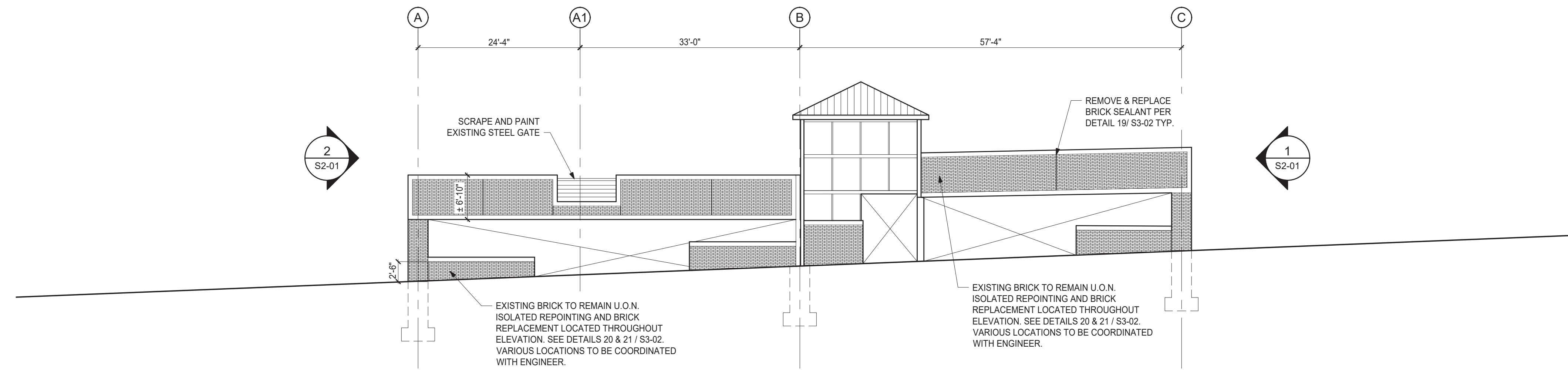
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Submission:

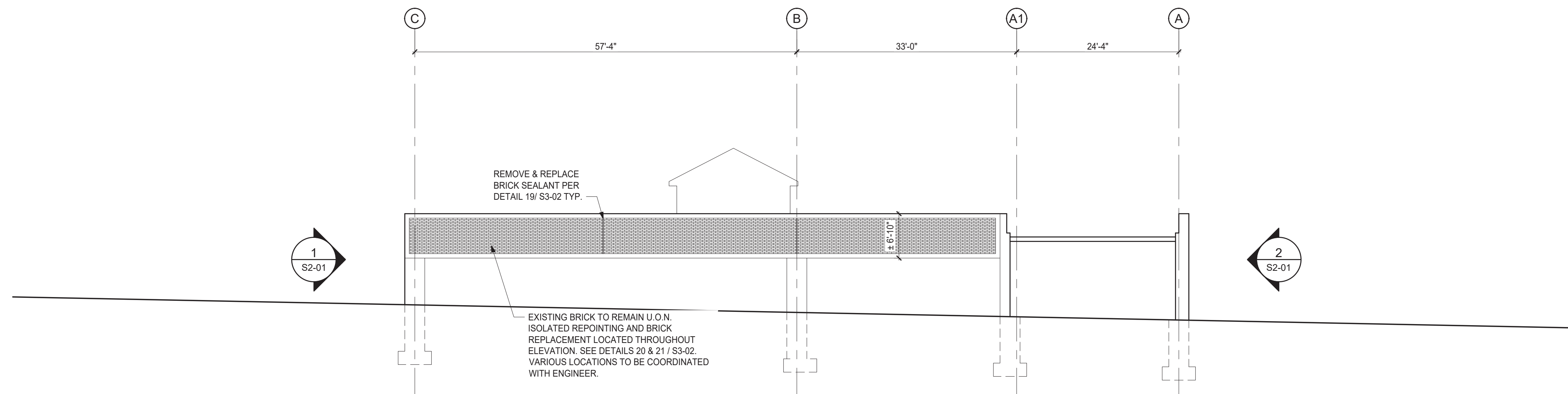
**BID DOCUMENTS**

Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

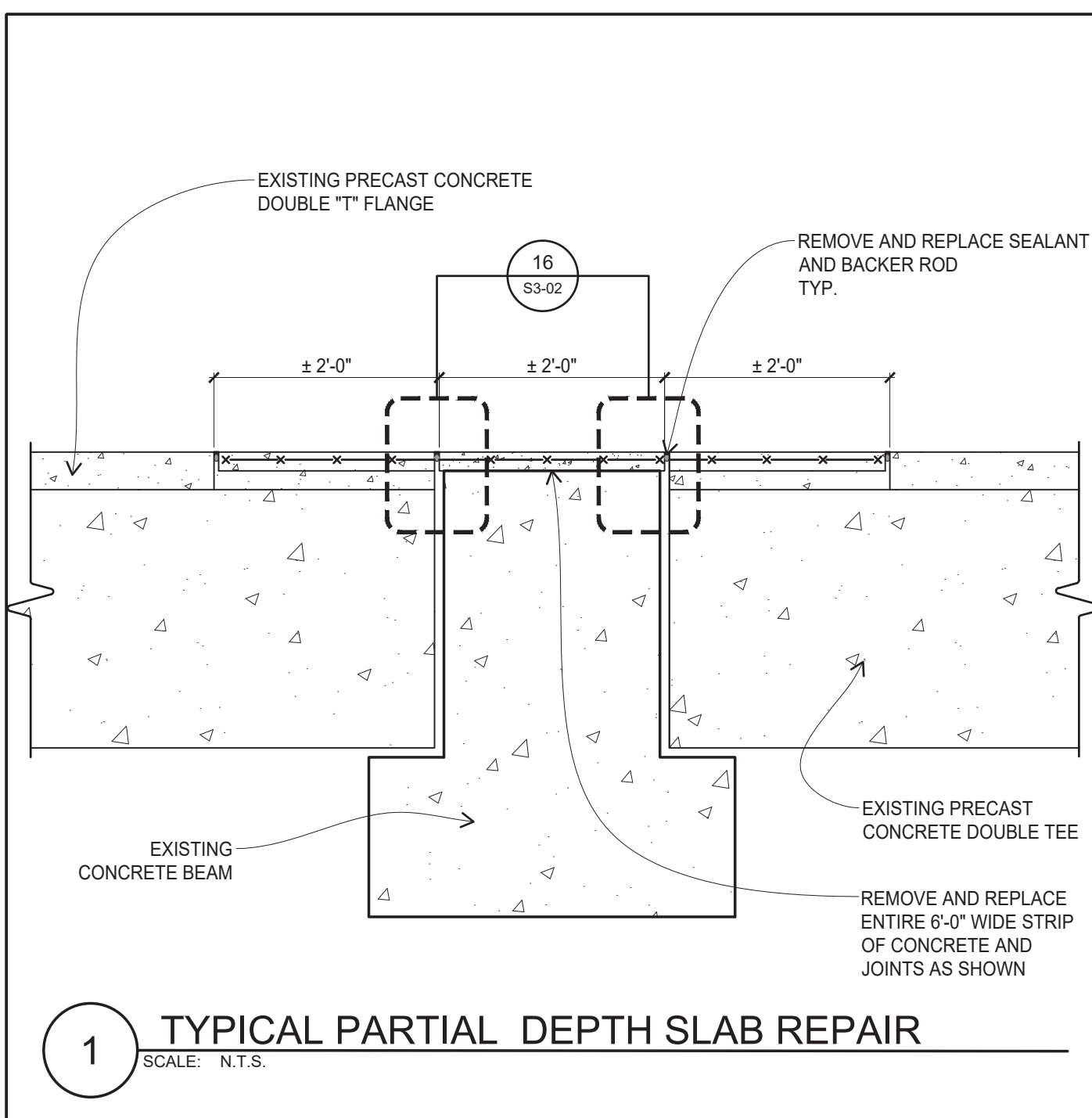
**S2-02**



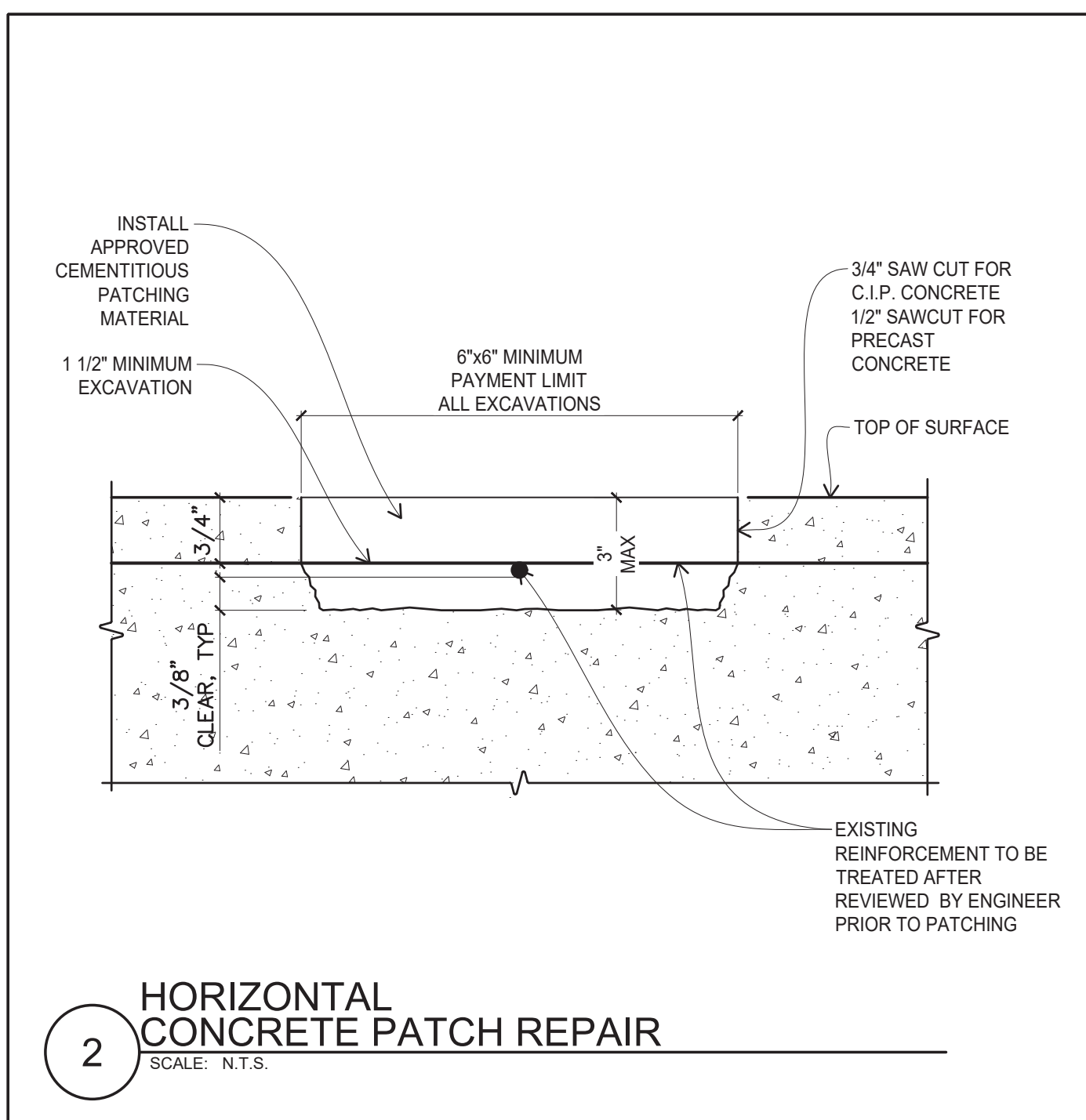
**1 WEST ELEVATION**  
SCALE: 3/32" = 1'-0"



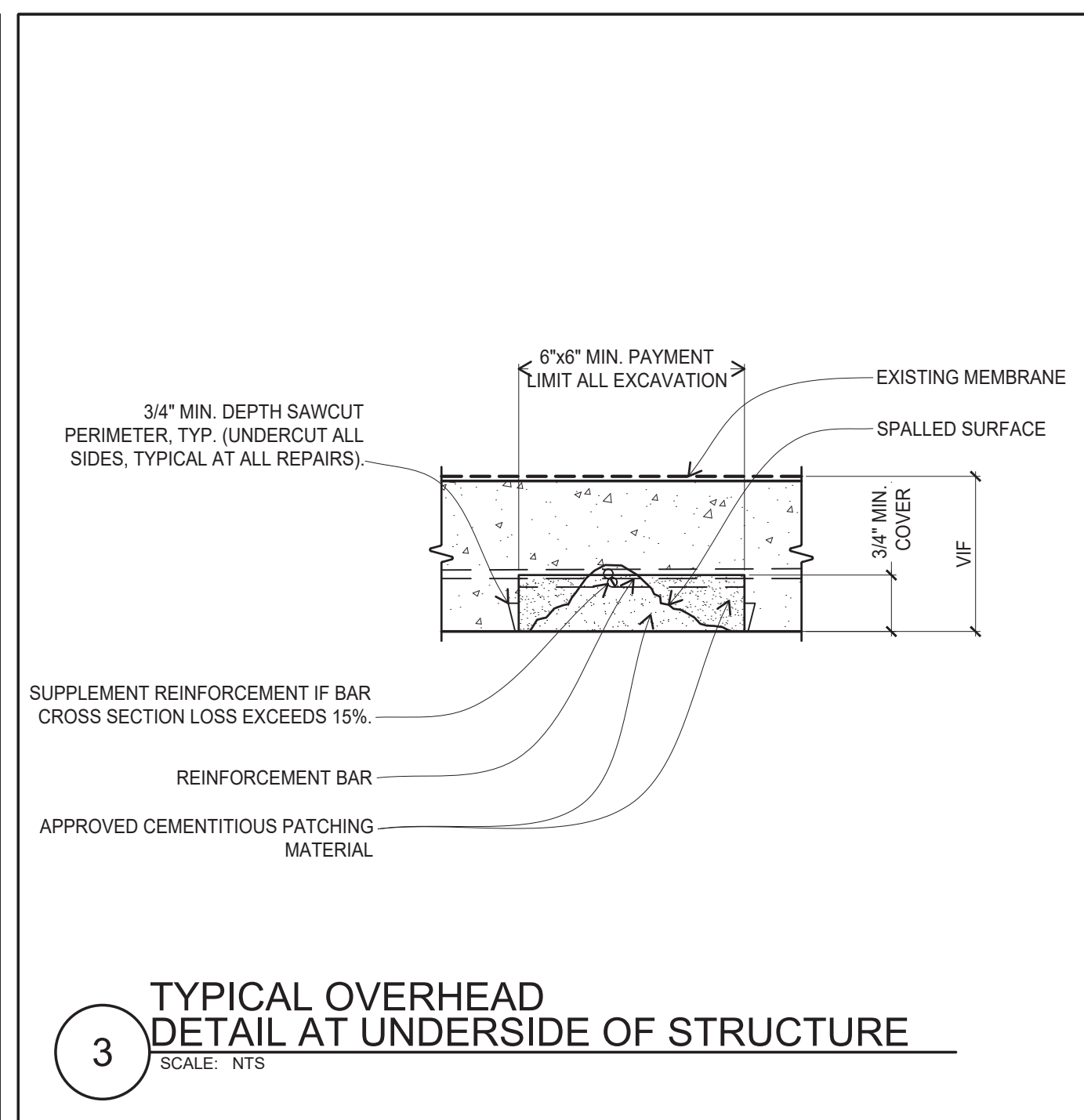
**2 EAST ELEVATION**  
SCALE: 3/32" = 1'-0"



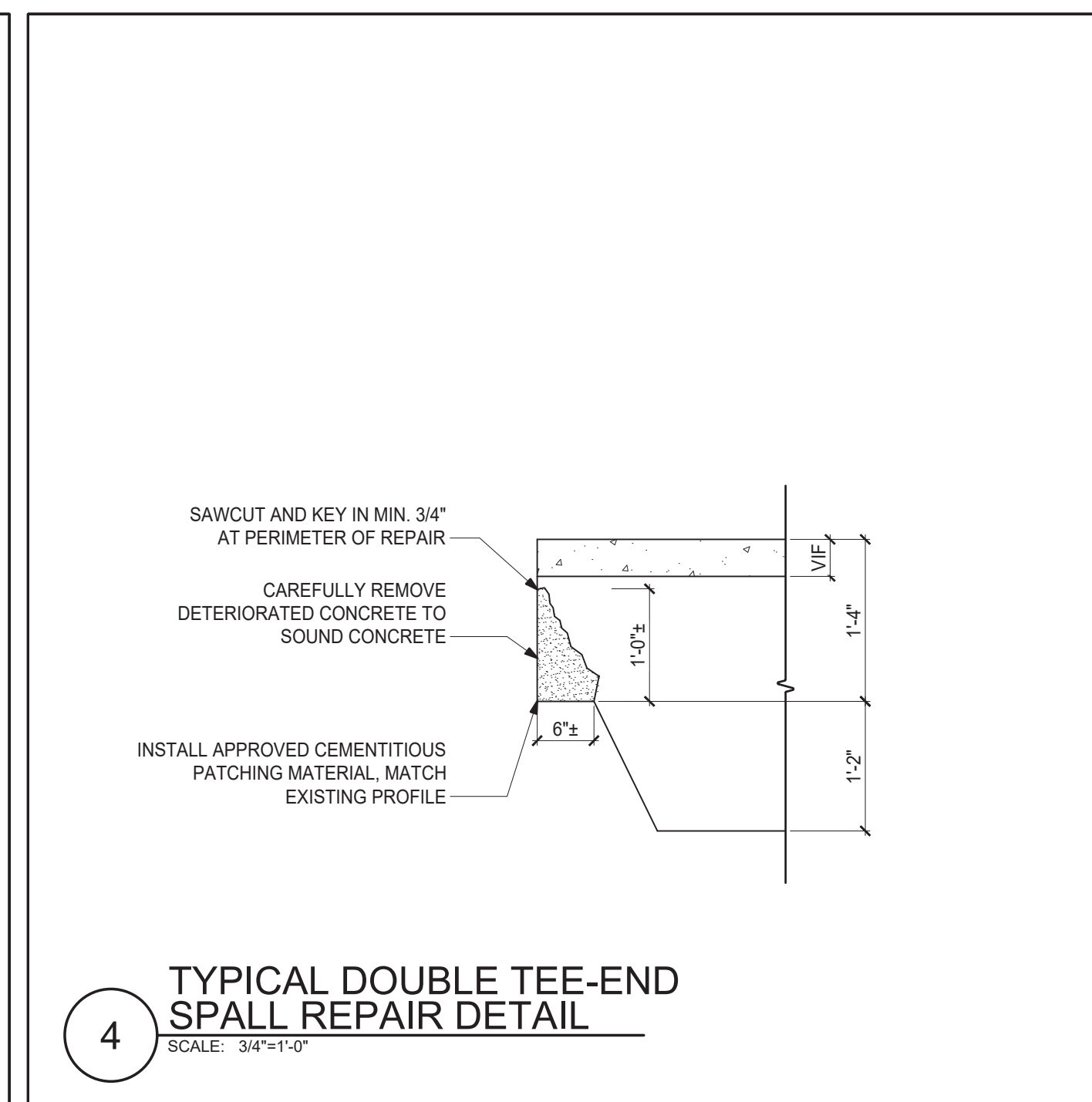
1 TYPICAL PARTIAL DEPTH SLAB REPAIR  
SCALE: N.T.S.



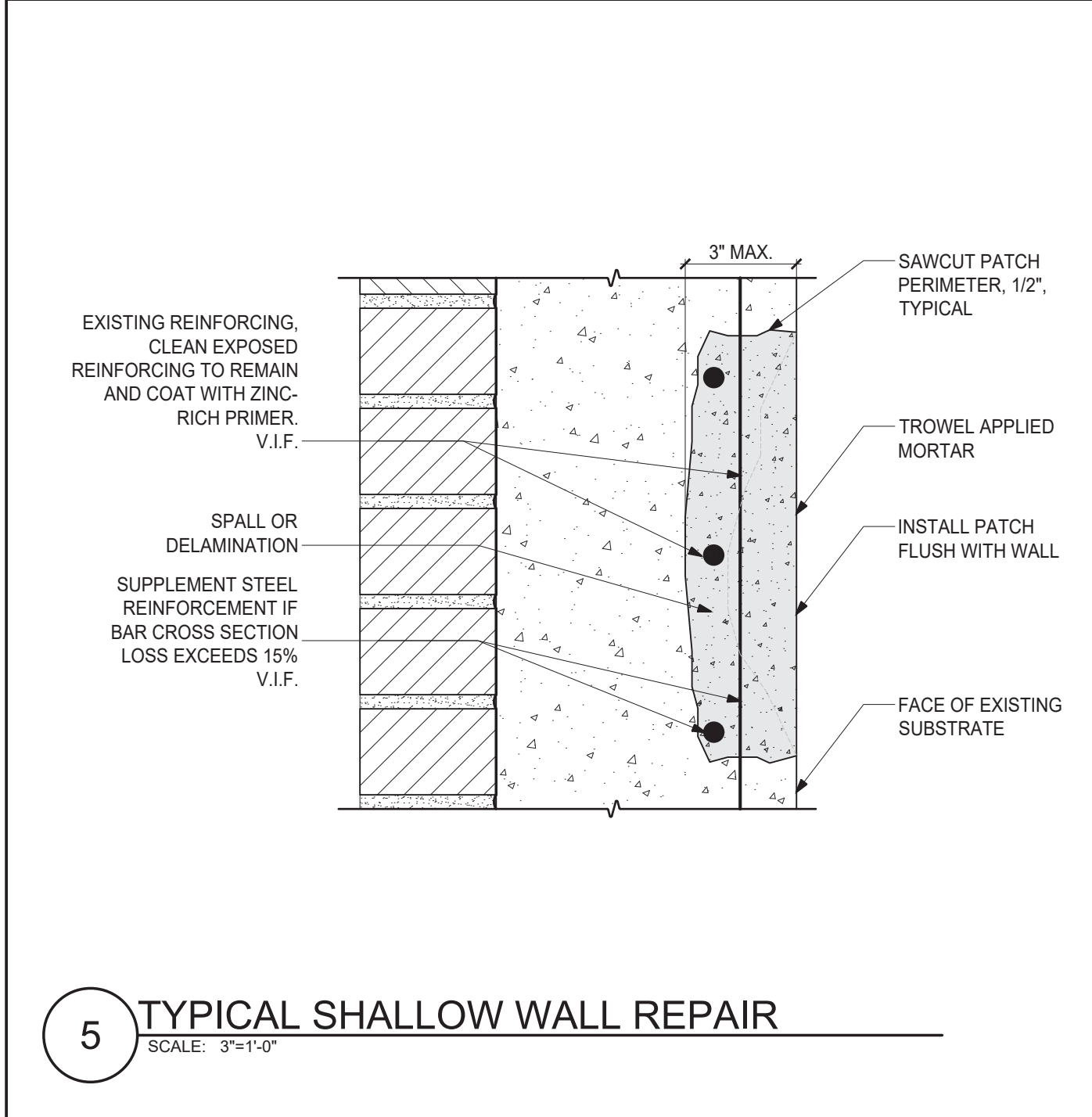
2 HORIZONTAL CONCRETE PATCH REPAIR  
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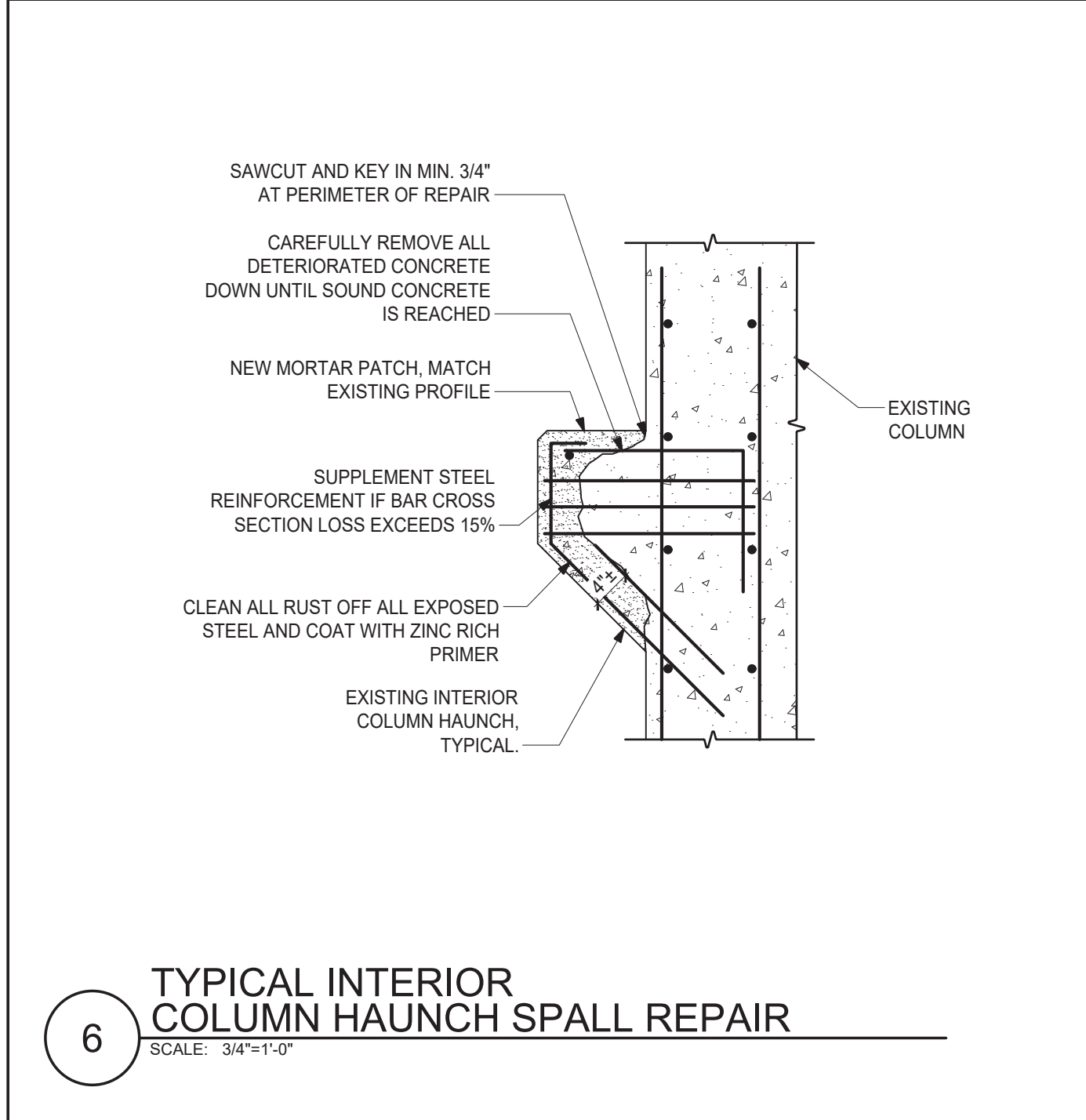
3 TYPICAL OVERHEAD DETAIL AT UNDERSIDE OF STRUCTURE  
SCALE: N.T.S.



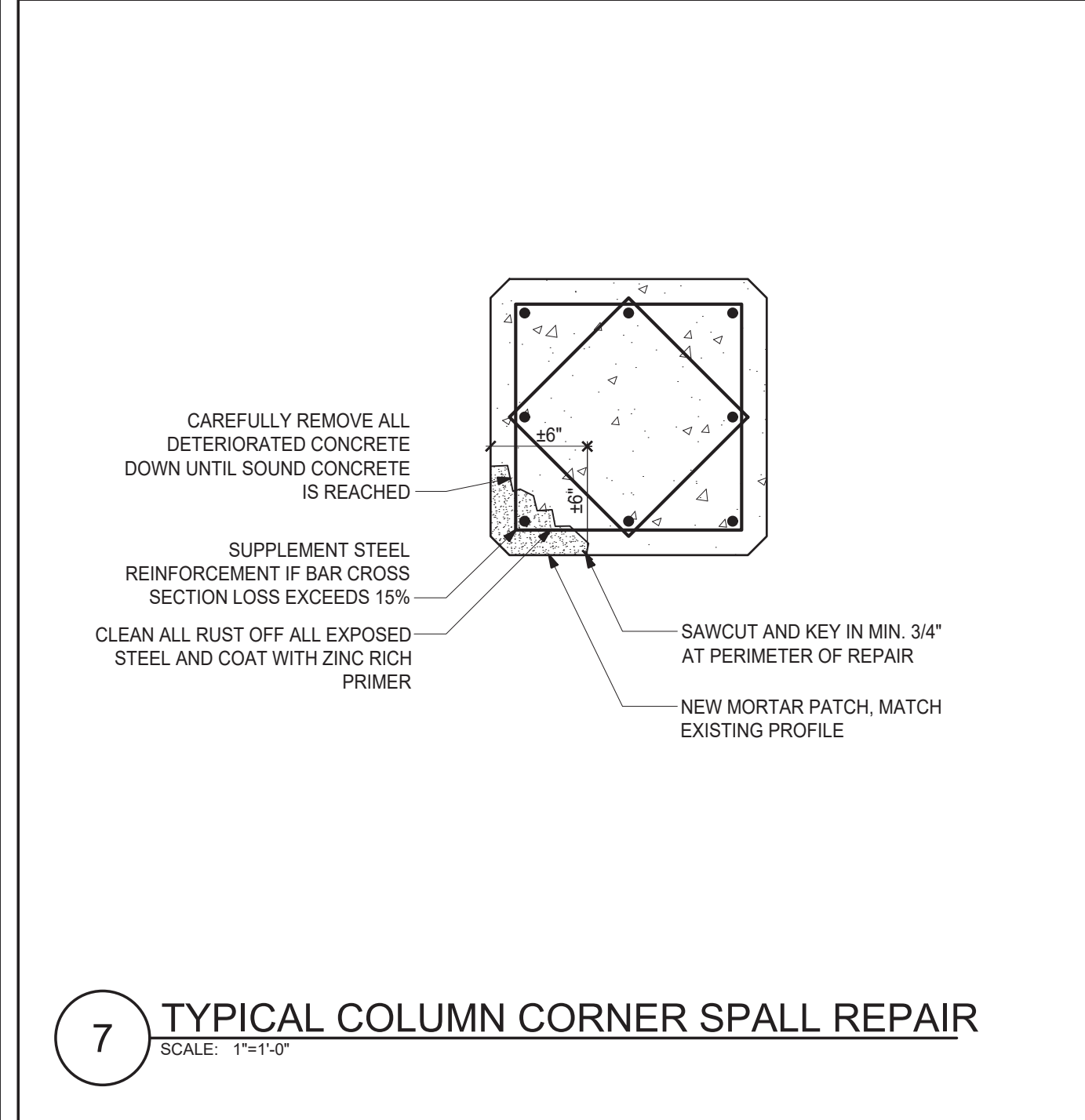
4 TYPICAL DOUBLE TEE-END SPALL REPAIR DETAIL  
SCALE: 3/4\"/>



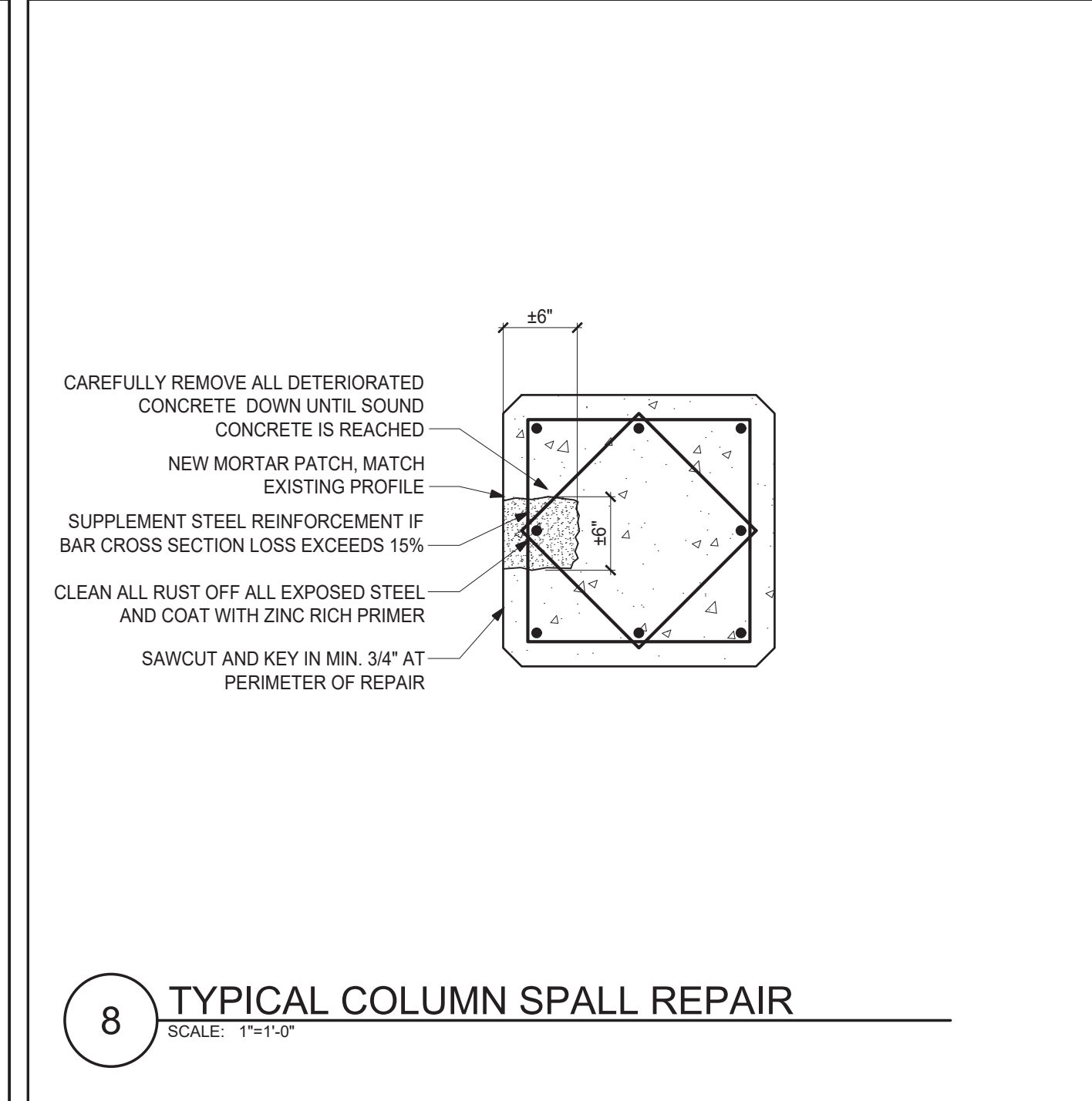
5 TYPICAL SHALLOW WALL REPAIR  
SCALE: 3/4\"/>



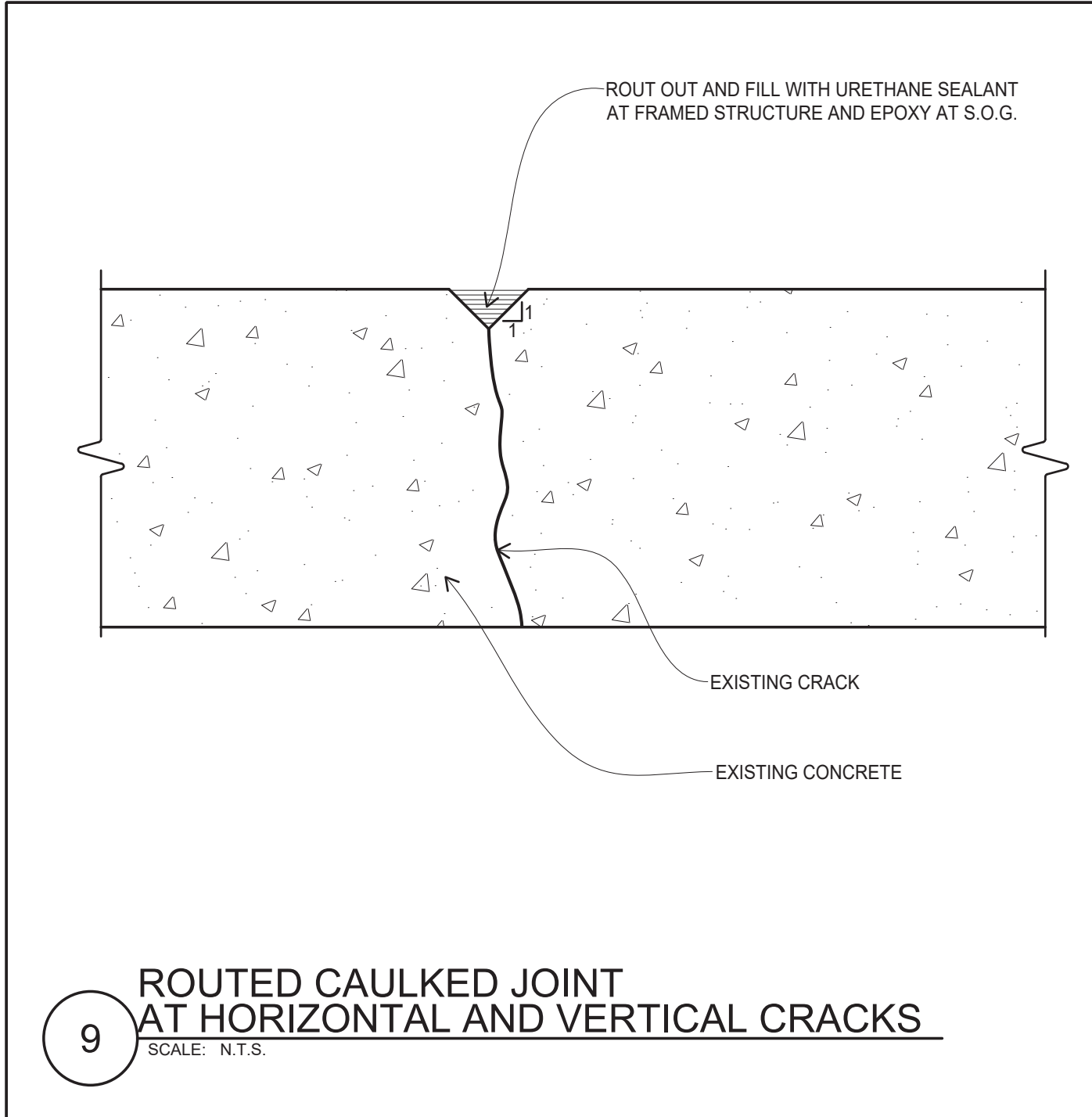
6 TYPICAL INTERIOR COLUMN HAUNCH SPALL REPAIR  
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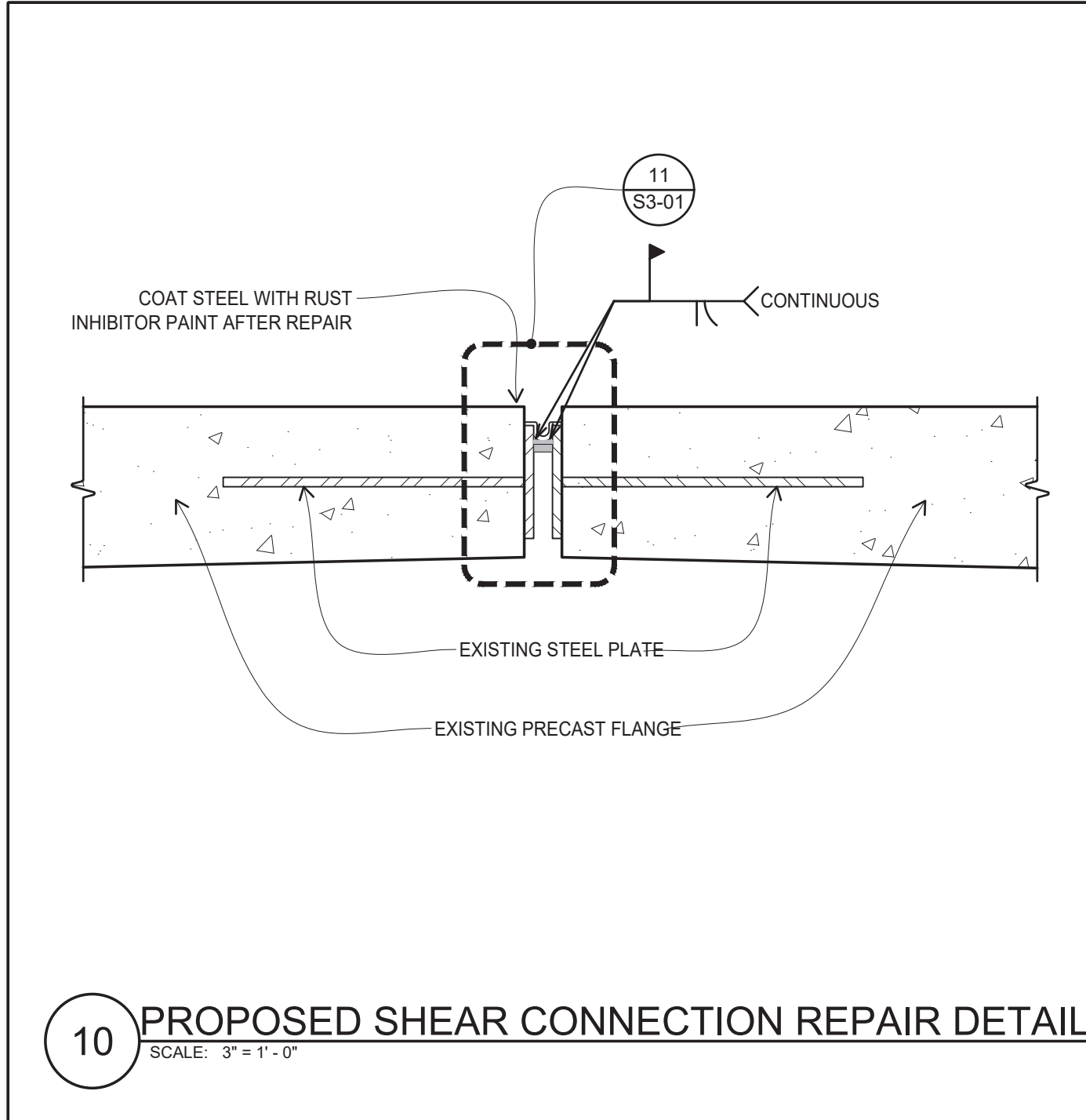
7 TYPICAL COLUMN CORNER SPALL REPAIR  
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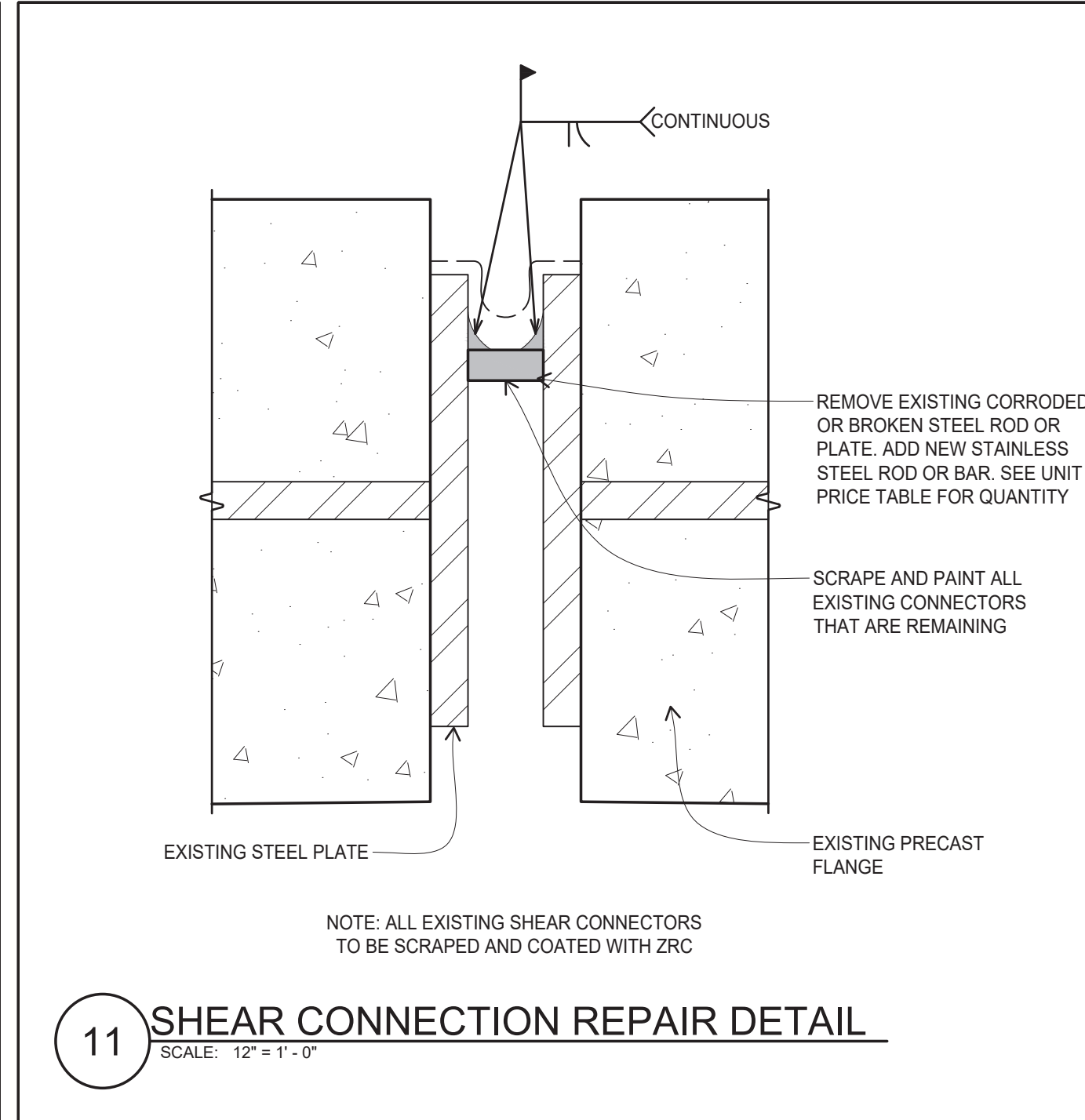
8 TYPICAL COLUMN SPALL REPAIR  
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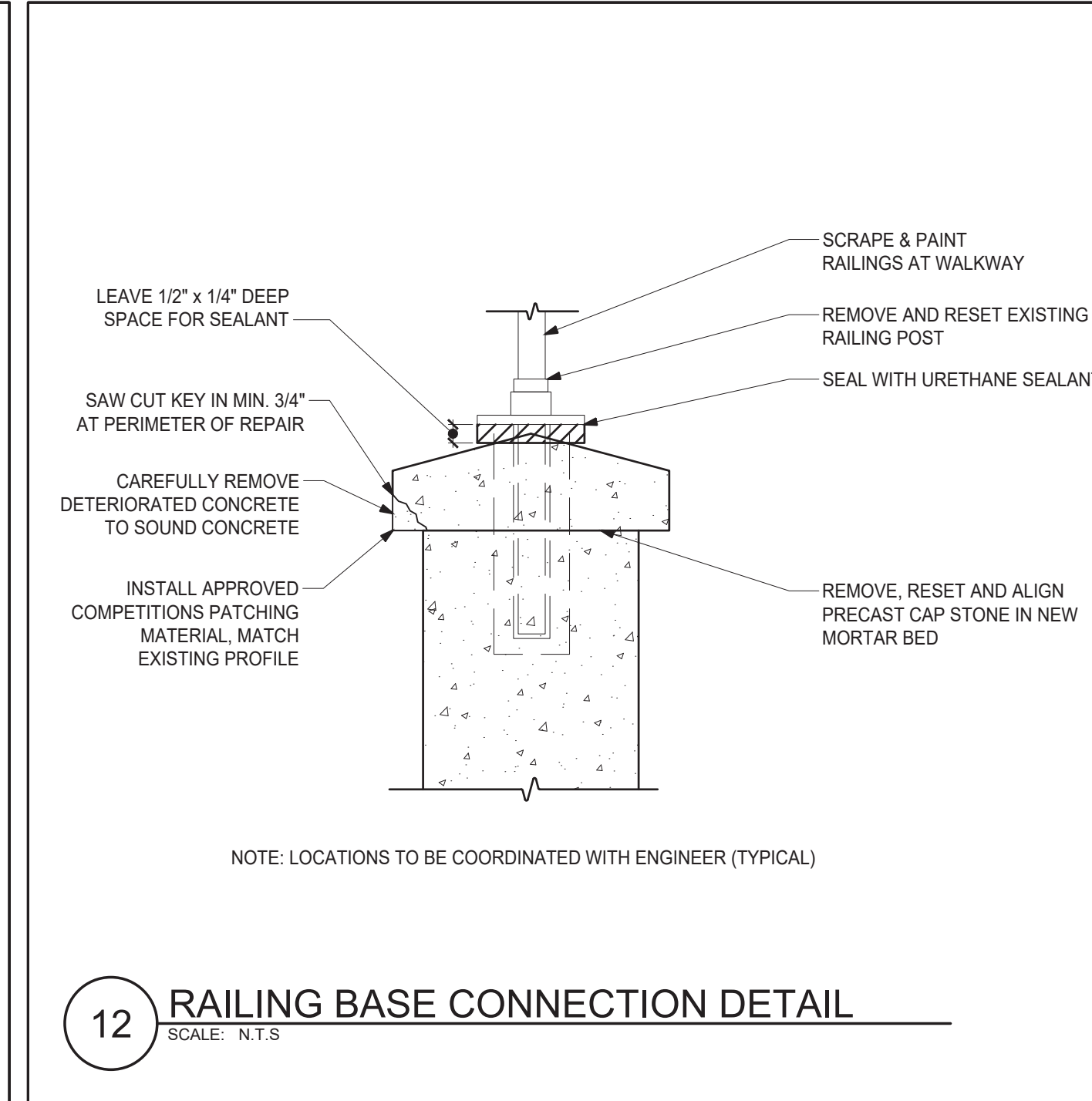
9 ROUTED CAULKED JOINT AT HORIZONTAL AND VERTICAL CRACKS  
SCALE: N.T.S.



10 PROPOSED SHEAR CONNECTION REPAIR DETAIL  
SCALE: 3\"/>



11 SHEAR CONNECTION REPAIR DETAIL  
SCALE: 12\"/>



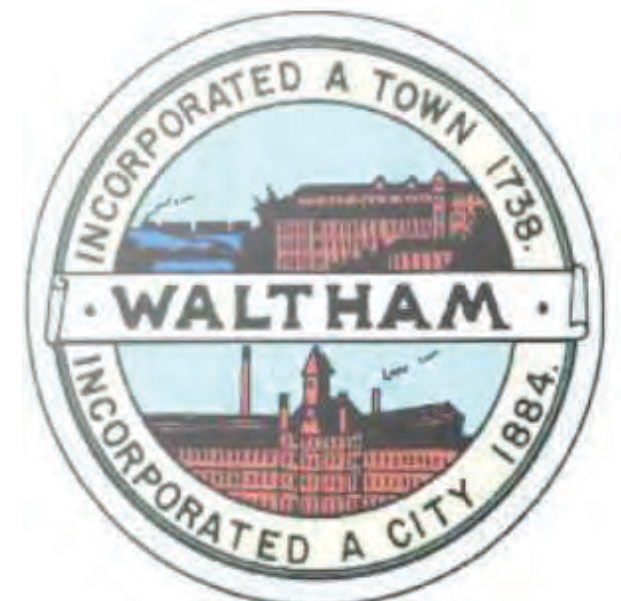
12 RAILING BASE CONNECTION DETAIL  
SCALE: N.T.S.

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Drawing Title:

**SECTION  
DETAILS**

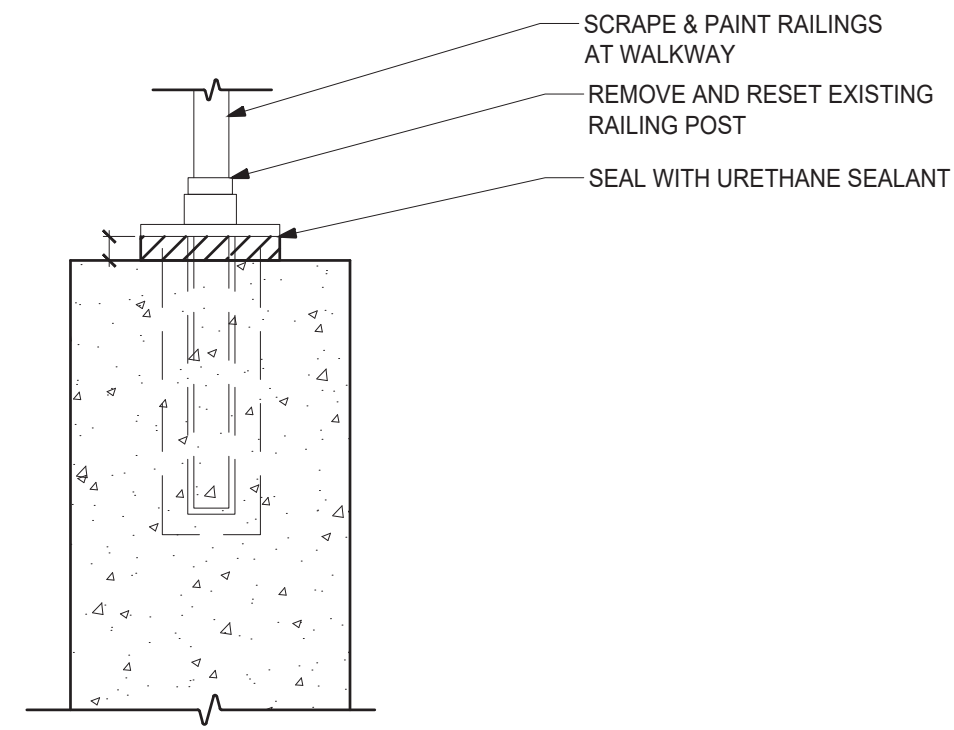
Revisions:

Submission:

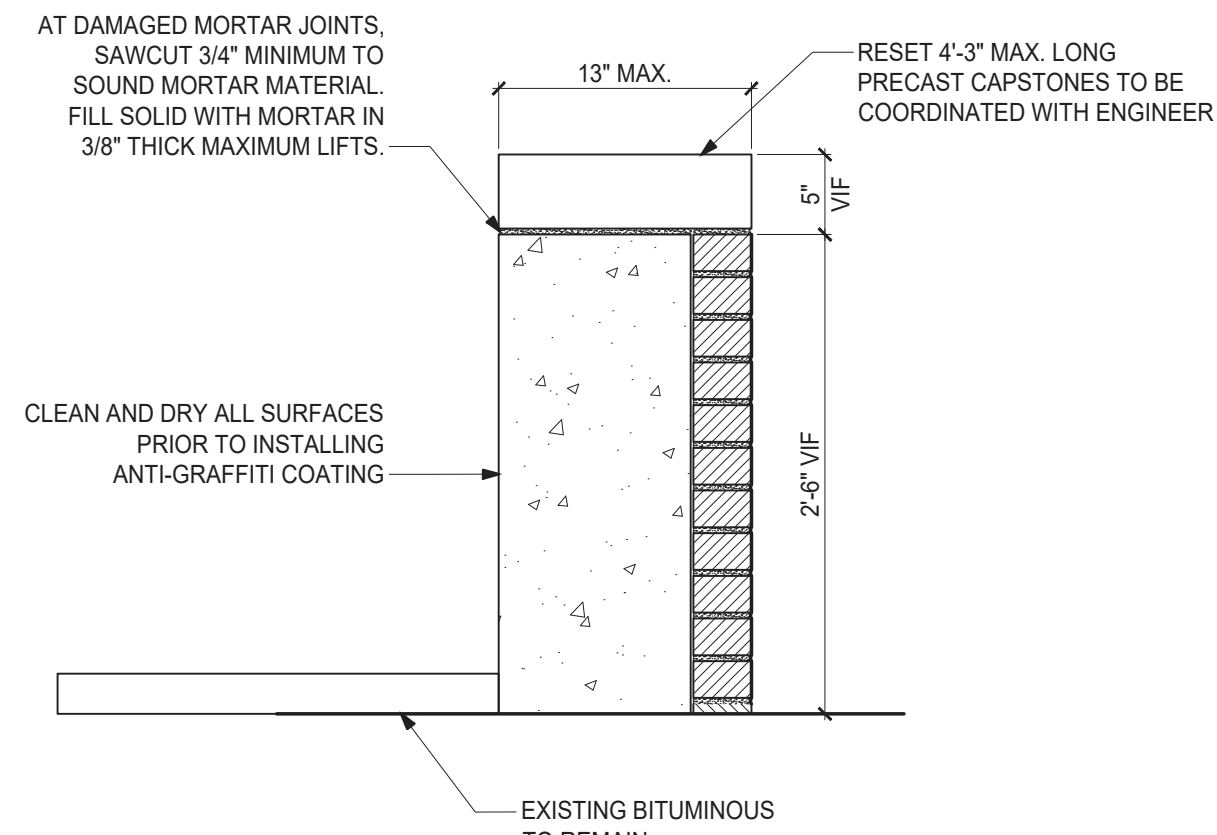
**BID DOCUMENTS**

Date: 03/20/2024  
Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

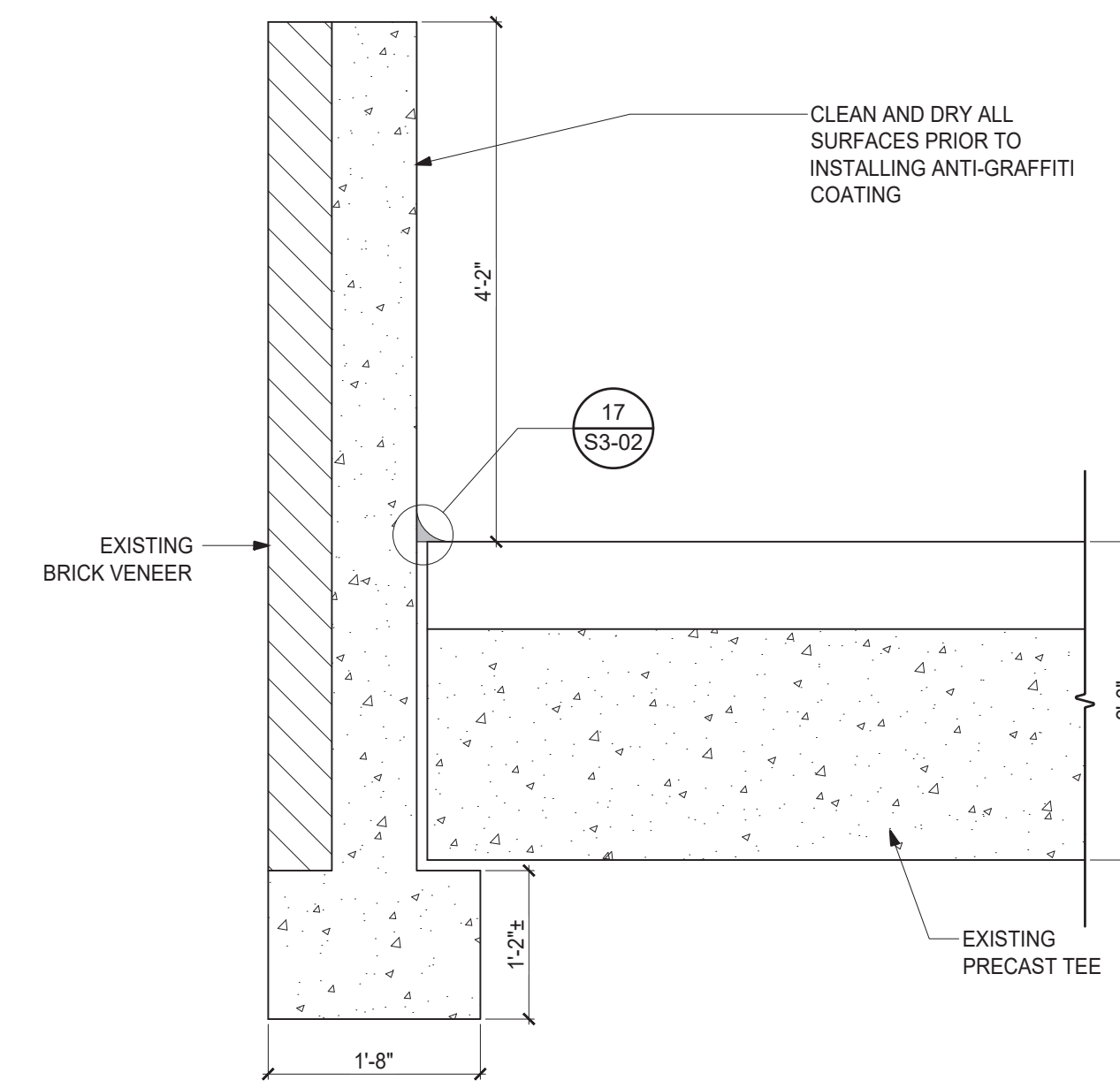
**S3-01**



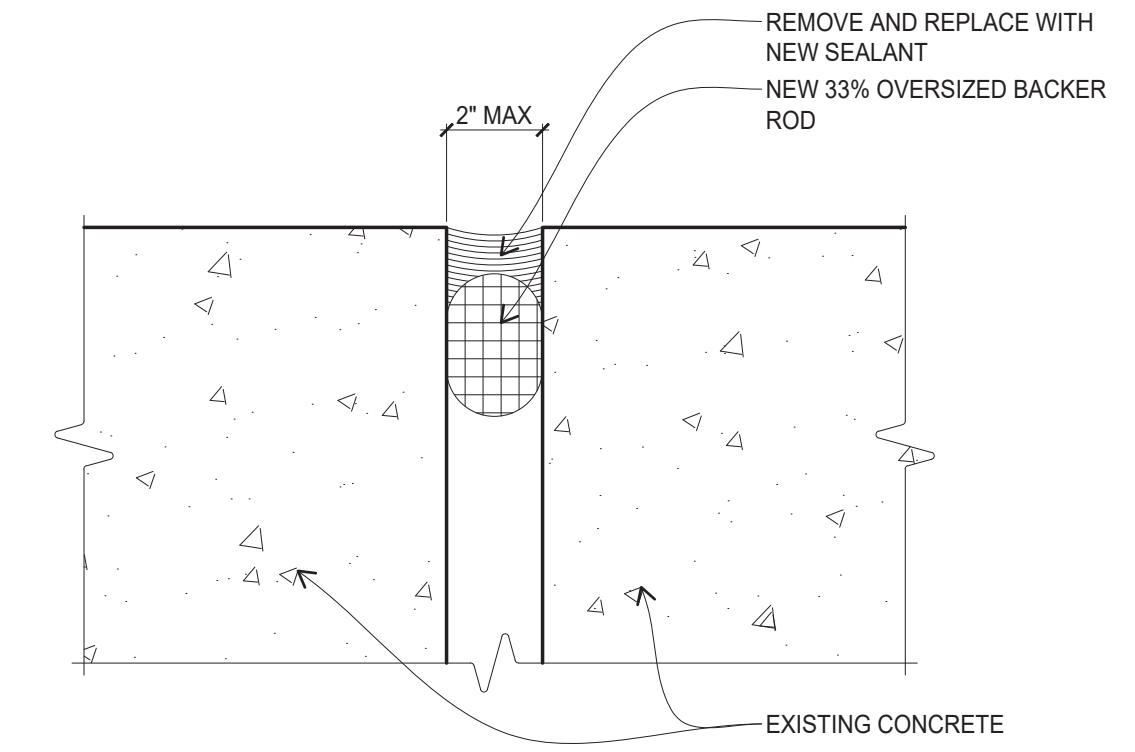
13 RAILING BASE CONNECTION DETAIL  
SCALE: 3" = 1'-0"



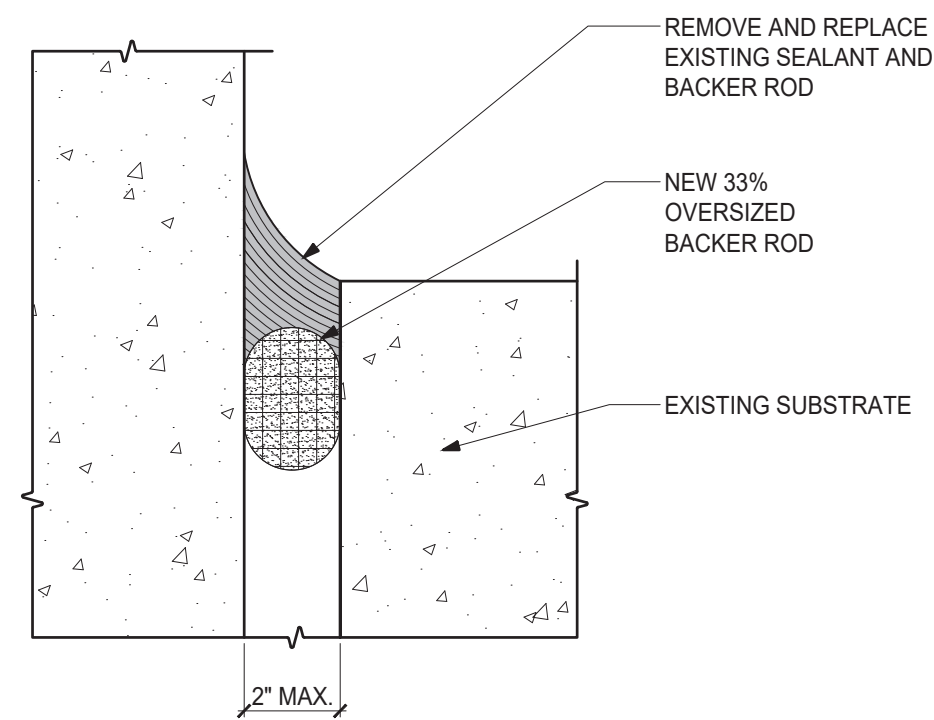
14 TYPICAL (LOWER) PERIMETER WALL SECTION  
SCALE: 1" = 1'-0"



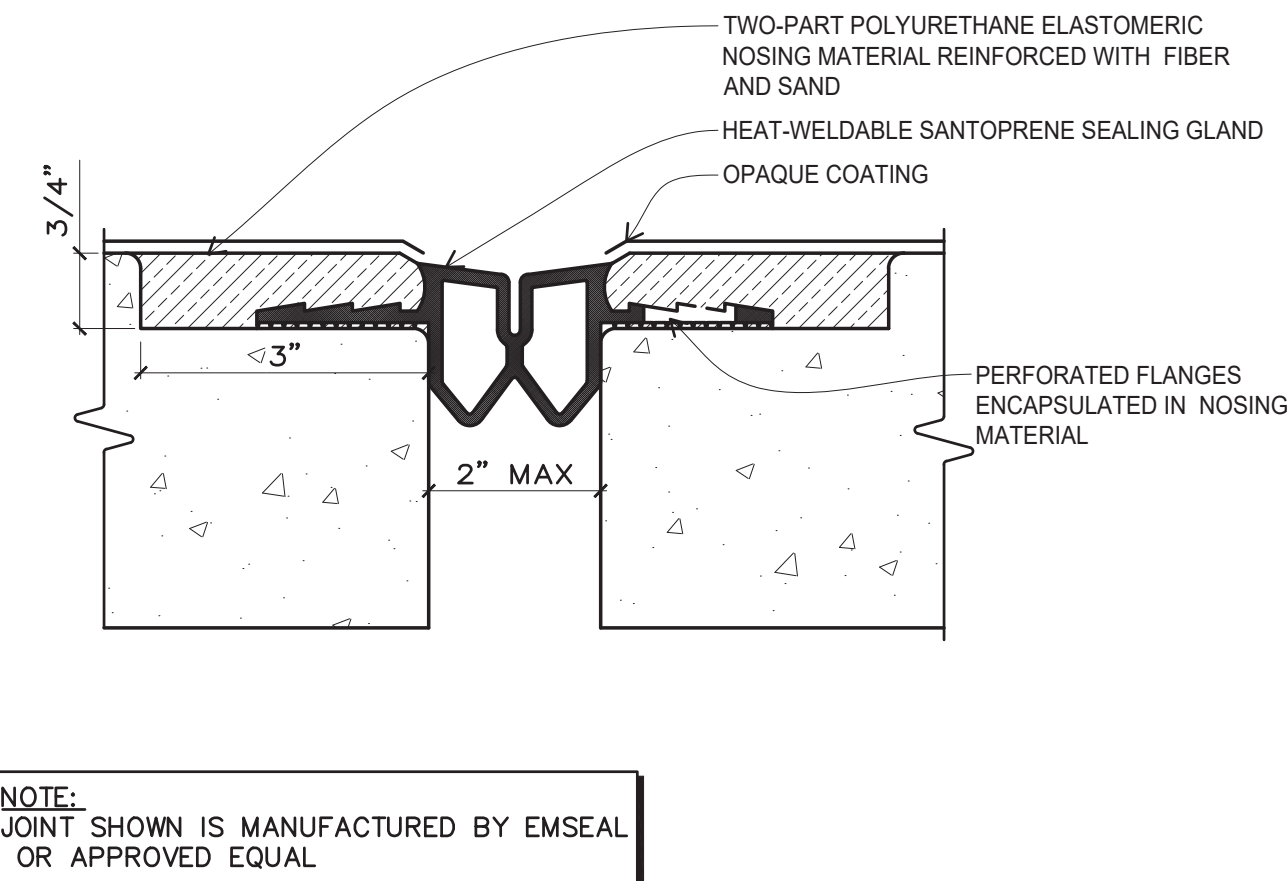
15 TYPICAL UPPER PERIMETER WALL SECTION  
SCALE: 3/4" = 1'-0"



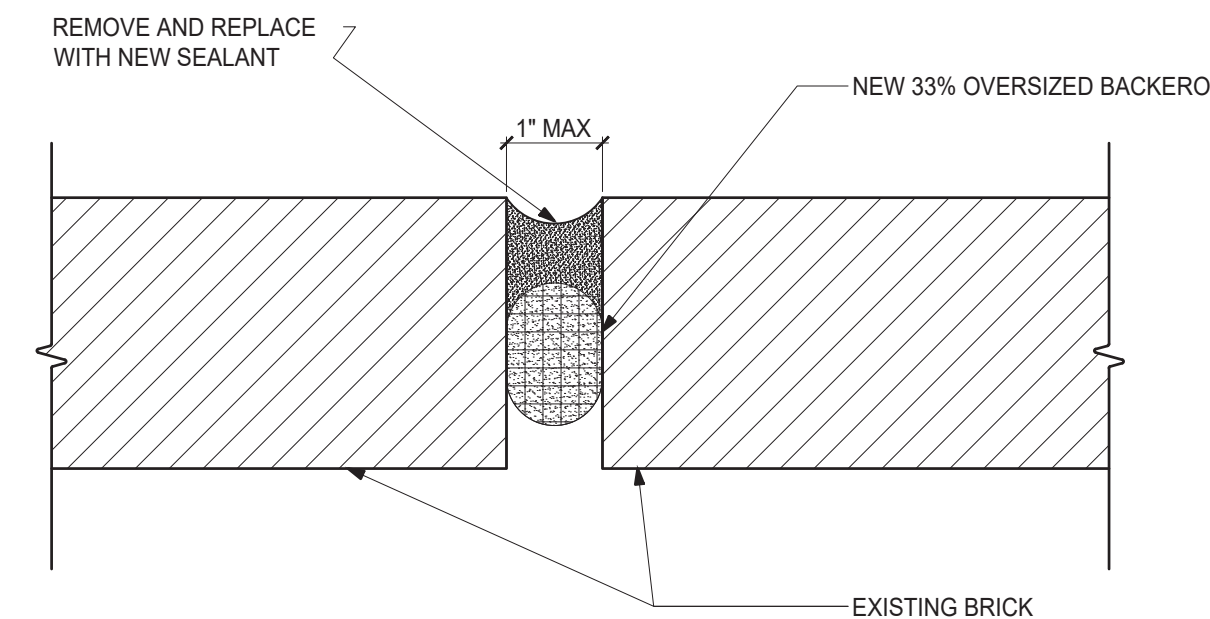
16 TYPICAL SEALANT JOINT AT PRECAST TEES  
SCALE: 1'-0" = 1'-0"



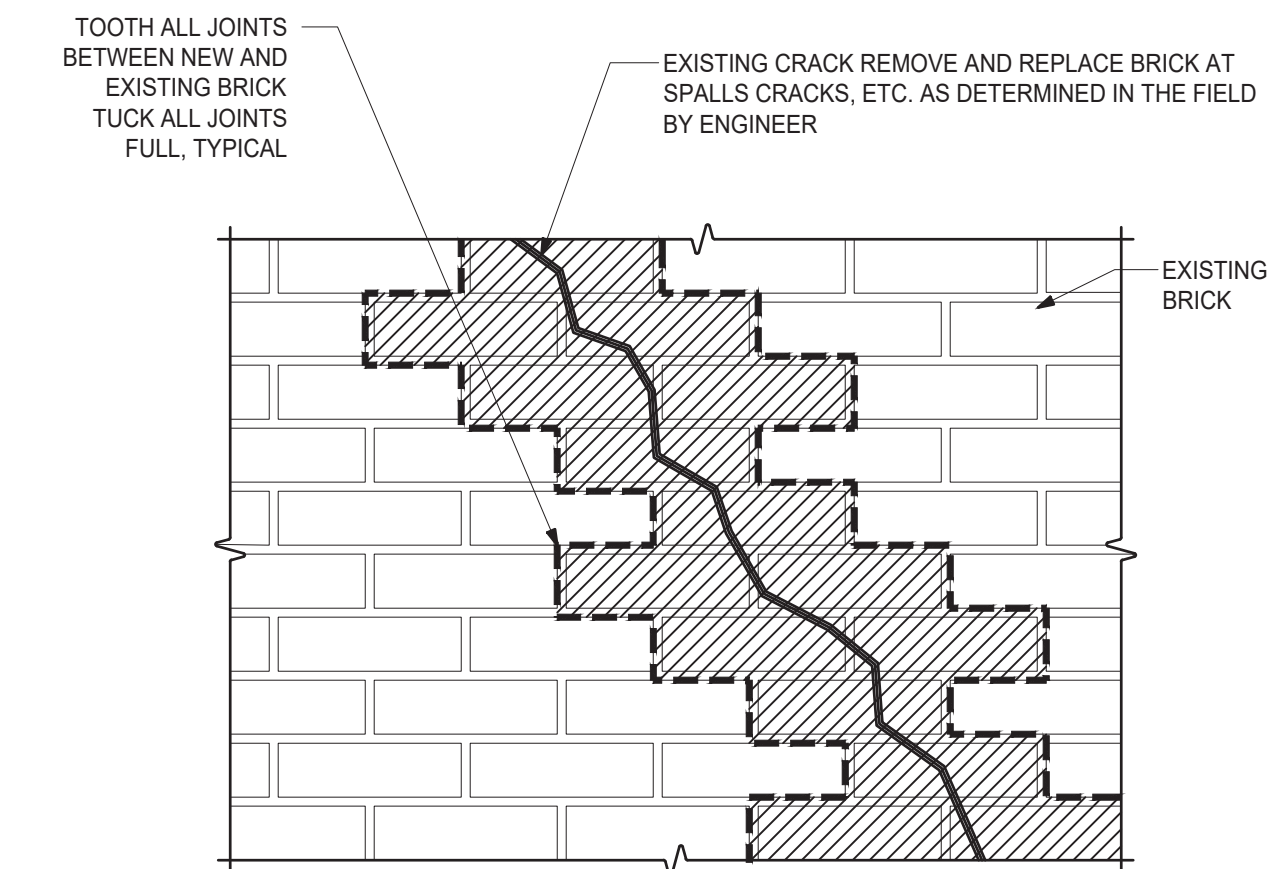
17 TYPICAL SEALANT DETAIL AT WALL OR SPANDREL  
SCALE: 12" = 1'-0"



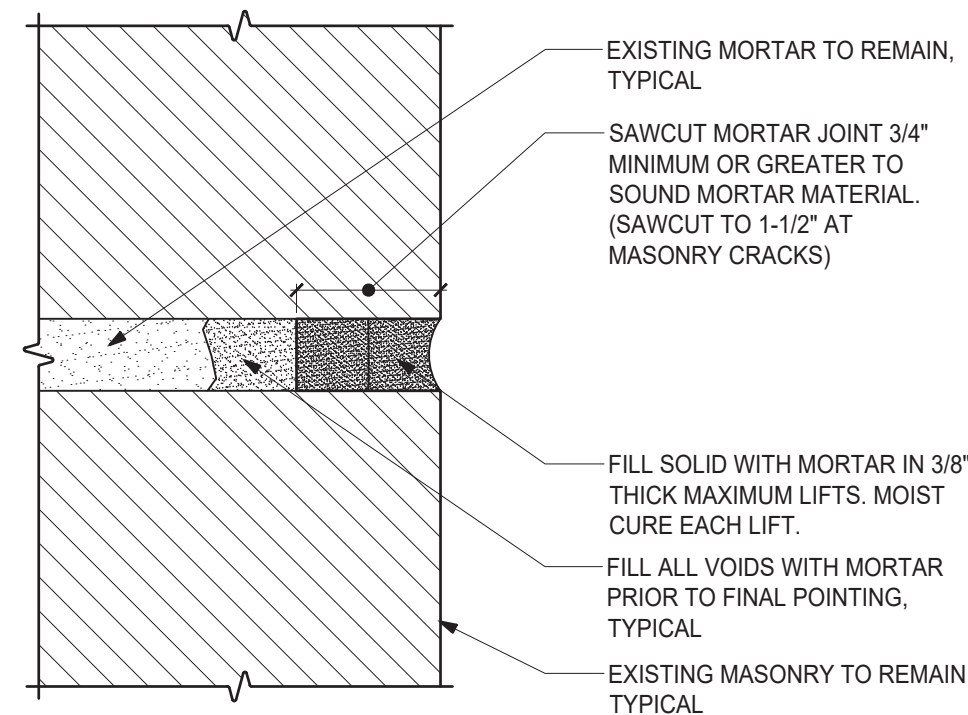
18 TRAFFIC EXPANSION JOINT  
SCALE: N.T.S.



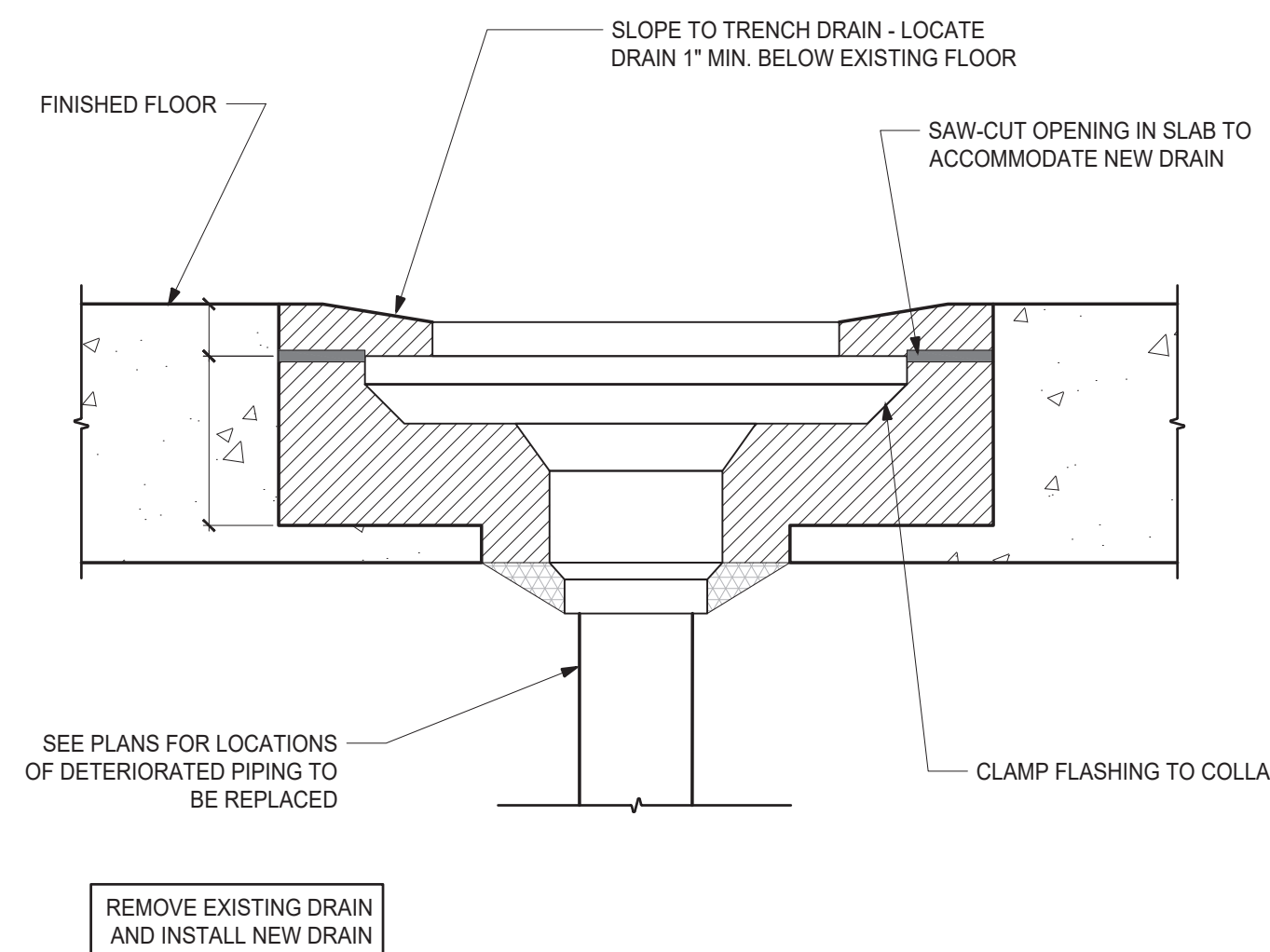
19 BRICK SEALANT DETAIL  
SCALE: 1'-0" = 1'-0"



20 TYPICAL BRICK REPLACEMENT DETAIL  
SCALE: N.T.S.



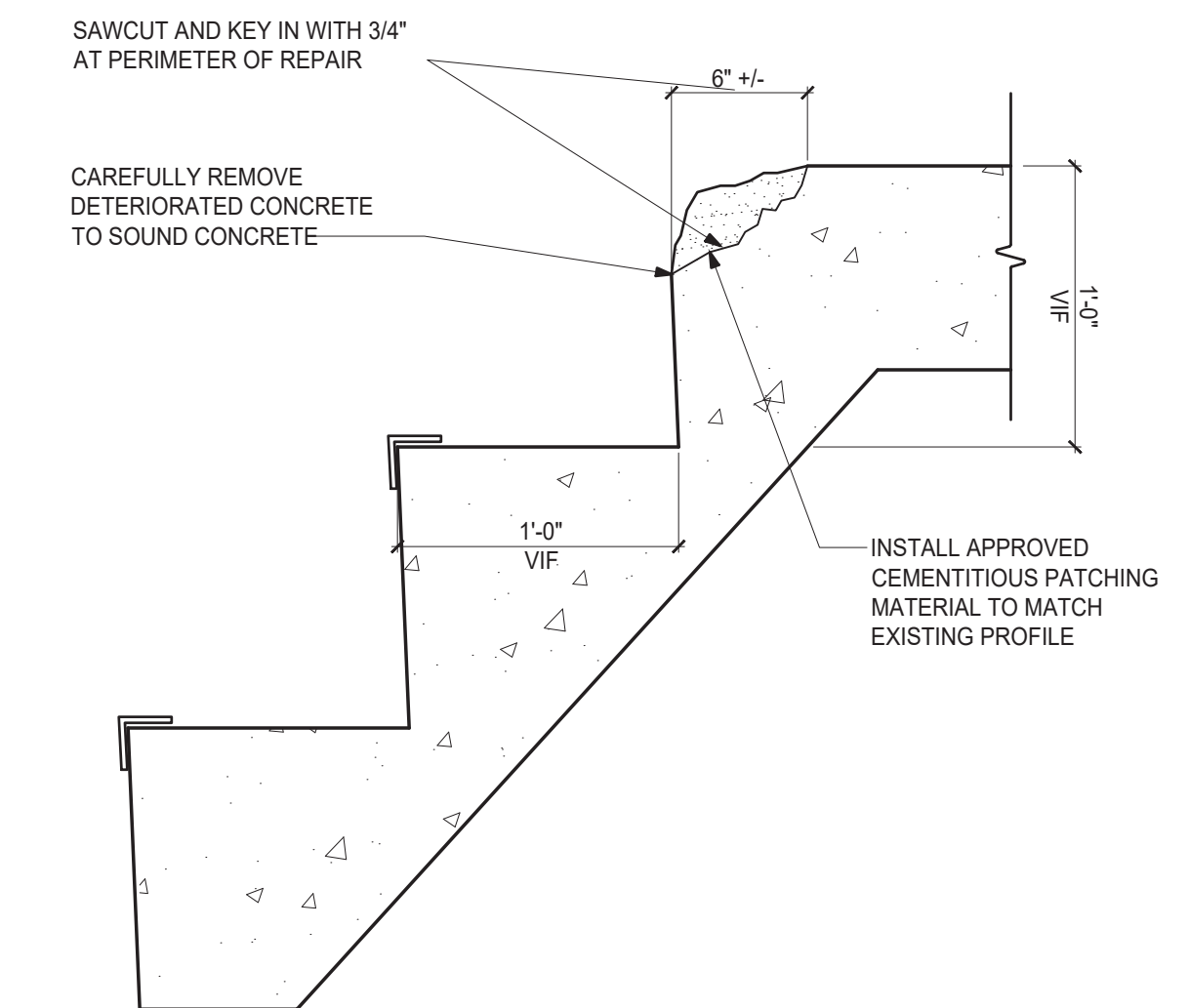
21 TYPICAL POINTING DETAIL  
SCALE: 1'-0" = 1'-0"



22 AREA DRAIN INSTALLATION DETAIL  
SCALE: 3" = 1'-0"



23 BROKEN PIPE AT LOWER LEVEL  
SCALE: N.T.S.



24 CONCRETE STAIR REPAIR  
SCALE: 1 1/2" = 1'-0"



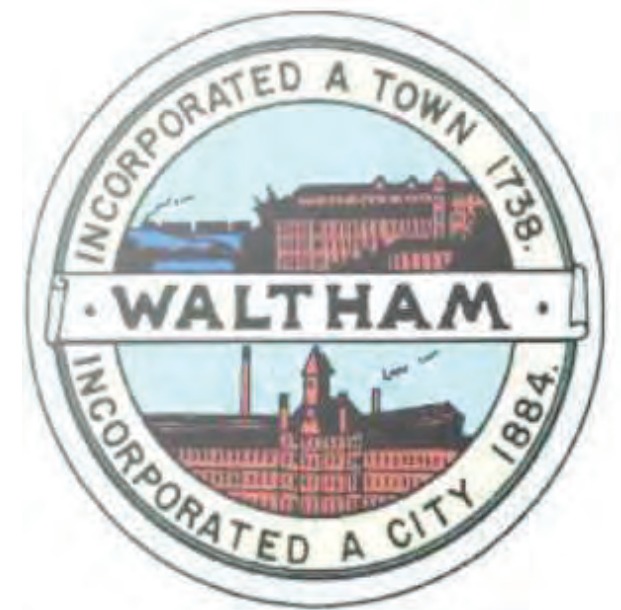
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**EMBASSY PUBLIC  
PARKING  
GARAGE  
RENOVATIONS**



**CITY OF  
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WALTHAM, MA 02453

Drawing Title:

**SECTION  
DETAILS**

Revisions:

Submission:

**BID DOCUMENTS**

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Project Number: RB233476  
Project Manager: TCM  
Drawn By: JBM  
Scale: AS SHOWN

**S3-02**