PROJECT MANUAL

For

ANN ARBOR DDA
PARKING STRUCTURES RESTORATION 2019

Owner:
Ann Arbor Downtown Development Authority
150 South Fifth Ave., Suite 301
Ann Arbor, MI 48104

Consultant:
Restore Consulting, LLC
Restore Project #: 2019-523

Date: May 6, 2019
### SECTION 000110 – TABLE OF CONTENTS

#### DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>000110</td>
<td>Table of Contents</td>
</tr>
<tr>
<td>001116</td>
<td>Invitation to Bid</td>
</tr>
<tr>
<td>004513</td>
<td>Bidder’s Qualifications</td>
</tr>
<tr>
<td>005200</td>
<td>Agreement Form</td>
</tr>
<tr>
<td>IB-1 to IB-2</td>
<td>Instructions to Bidders</td>
</tr>
<tr>
<td>P-1 to P-3</td>
<td>Proposal</td>
</tr>
<tr>
<td>BF-1 to BF-9</td>
<td>Bid Form</td>
</tr>
<tr>
<td>C-1 to C-9</td>
<td>Contract</td>
</tr>
<tr>
<td>CD-1</td>
<td>Contractor Declaration</td>
</tr>
<tr>
<td>CA-1</td>
<td>Contractor Affidavit</td>
</tr>
<tr>
<td>SS-1</td>
<td>Standard Specifications</td>
</tr>
<tr>
<td>007200</td>
<td>General Conditions</td>
</tr>
<tr>
<td>GC-1 to GC-14</td>
<td>General Conditions</td>
</tr>
<tr>
<td>007300</td>
<td>Supplementary Conditions</td>
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</tbody>
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#### DIVISION 01 – GENERAL REQUIREMENTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>011000</td>
<td>Summary</td>
</tr>
<tr>
<td>012200</td>
<td>Unit Prices</td>
</tr>
<tr>
<td>012900</td>
<td>Payment Procedures</td>
</tr>
<tr>
<td>013100</td>
<td>Project Management &amp; Coordination</td>
</tr>
<tr>
<td>013300</td>
<td>Submittal Procedures</td>
</tr>
<tr>
<td>015000</td>
<td>Temporary Facilities and Controls</td>
</tr>
<tr>
<td>016000</td>
<td>Product Requirements</td>
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<tr>
<td>017700</td>
<td>Closeout Procedures</td>
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</table>

#### DIVISION 03 – CONCRETE

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<tr>
<th>Code</th>
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<tr>
<td>030130</td>
<td>Concrete Repair</td>
</tr>
<tr>
<td>033000</td>
<td>Cast-in-Place Concrete</td>
</tr>
<tr>
<td>036400</td>
<td>Injection Grouting</td>
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</table>

#### DIVISION 07 – THERMAL AND MOISTURE PROTECTION

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>071800</td>
<td>Traffic Coatings</td>
</tr>
<tr>
<td>071900</td>
<td>Water Repellents</td>
</tr>
<tr>
<td>079200</td>
<td>Joint Sealants</td>
</tr>
<tr>
<td>079500</td>
<td>Expansion Joint Sealing Systems</td>
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</tbody>
</table>
DIVISION 09 – FINISHES

099100  Painting
099653  Elastomeric Coating

DIVISION 22 – PLUMBING

221400  Storm Drainage

DIVISION 32 – EXTERIOR IMPROVEMENTS

321723  Pavement Markings
SECTION 001116 – INVITATION TO BID

PART 1 - GENERAL

1.1 PROJECT IDENTIFICATION AND DEFINITIONS
   A. Project: Ann Arbor DDA Parking Structures Restoration 2019
   B. Owner:
      1. Ann Arbor Downtown Development Authority, 150 South Fifth Street, Suite 301, Ann Arbor, MI 48104
   C. Engineer:
      1. Restore Consulting, LLC

1.2 PROJECT DESCRIPTION
   A. The project consists of repairs to the 4th & William, Library Lane, Maynard and 4th & Washington Parking Structures.

1.3 BID SUBMISSION AND DUE DATE
   A. Bid shall be submitted in compliance with the Instructions to Bidders provided in this Project Manual.
   B. The Owner will receive bids as indicated below:
      1. Bids are due by 2:00 pm local time on May 23, 2019.
      2. Bids may be submitted electronically to Jada Hahlbrock at JHahlbrock@a2dda.org with a copy to Dan Elliott at deliott@restorecs.com
      3. Hard copies of the bids may be submitted to the following location: Ann Arbor DDA, 150 South Fifth Street, Suite 301, Ann Arbor, MI 48104, Attn: Jada Hahlbrock

1.4 DOCUMENTS
   A. Contract documents will be distributed electronically to qualified bidders.

1.5 PRE-BID CONFERENCE
   A. A mandatory pre-bid conference will be held at the Ann Arbor DDA Office (150 South Fifth Street, Suite 301, Ann Arbor, MI 48104) at 10:30 am local time on May 9, 2019.

1.6 QUALIFICATIONS
   A. Bidder shall have experience with similar work and shall meet the qualifications identified in the Contract Documents.
   B. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, Labor and Material
Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

C. Bidders shall be prepared to submit within three (3) days of the bid due date written evidence that they meet all the qualifications established in the Contract Documents.

D. Owner reserves the right to reject any bid if it is determined that the Bidder does not meet the qualifications establish in the Contract Documents.

E. Refer to Section 004513 – Bidder’s Qualifications for more information.

1.7 BID SECURITY

A. Bid security in amount of 5% of the base bid shall be submitted with each bid.

B. Bid security shall be in the form of a certified check or bid bond.

C. Bids may not be withdrawn for a period of 60 days after the bid due date.

1.8 PERFORMANCE BOND, LABOR AND MATERIAL PAYMENT BOND AND INSURANCE

A. A Performance Bond, Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

B. Premiums for Bonds and Insurance shall be included with the bid.

1.9 CONTRACT TIME

A. Anticipated start of construction is June 10, 2019.

B. Project shall be completed by November 1, 2019.

C. Project is subject to liquidated damages.

END OF SECTION
SECTION 004513 – BIDDER’S QUALIFICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 BIDDER’S QUALIFICATIONS
A. Available Manpower: Bidder shall provide, upon request, evidence of available manpower and proposed plan to complete the project on schedule.
B. Concrete Restoration: Contractor shall provide evidence that they meet the qualifications listed in Section 030130 – Concrete Repair.
C. Injection Grouting: Contractor shall provide evidence that they meet the qualifications listed in Section 036400 – Injection Grouting.
D. Traffic Coatings: Contractor shall provide evidence that they meet the qualifications listed in Section 071800 – Traffic Coatings.
E. Water Repellents: Contractor shall provide evidence that they meet the qualifications listed in Section 071900 – Water Repellents.
F. Joint Sealants: Contractor shall provide evidence that they meet the qualifications listed in Section 079200 – Joint Sealants.
G. Expansion Joint Sealing Systems: Contractor shall provide evidence that they meet the qualifications listed in Section 079500 – Expansion Joint Sealing Systems.
H. Elastomeric Coating: Contractor shall provide evidence that they meet the qualifications listed in Section 099653 – Elastomeric Coating
I. Superintendent Qualifications: Superintendent for project shall have a minimum of five (5) years of experience as a Superintendent on similar projects.

1.3 PREQUALIFICATION
A. The Owner will determine, prior to issuing documents for Bidding, from the above information and from other evidence obtained by it, whether the Bidder has satisfactorily prequalified to submit a Bid for this project. The Owner's experience with a Bidder who has previously performed work for the Owner will be considered in prequalification of such Bidder. Unsatisfactory performance on previous projects may be sufficient cause for not prequalifying a Bidder; and satisfactory performance on previous projects may be used in lieu of meeting all specific requirements of this Section. Should the Bidder be judged "not prequalified" on the basis of data submitted and/or investigation completed, they will be notified prior to issuing of contract documents.
B. Prequalification by a Bidder shall not constitute a final determination by Owner as to the responsibility of such Bidder. The Owner reserves the right to reevaluate the Bidder's qualifications and responsibility and to request additional information and substantiation at any time prior to the award of Contract.

C. Owner reserves the right to waive any informality or irregularity in the qualifications. Owner also reserves the right to waive requirements for any specific qualification.

END OF SECTION
PART 1 - GENERAL

1.1 AGREEMENT

A. A written Agreement will be executed on the City of Ann Arbor Downtown Development Contract. Included within this section are the following:

1. Instructions to Bidders IB-1 to IB-2
2. Proposal P-1 to P-3
3. Bid Form BF-1 to BF-9
4. Contract C-1 to C-9
5. Contractor Declaration CD-1
6. Contractor Affidavit CA-1
7. Standard Specifications SS-1

END OF SECTION
INSTRUCTIONS TO BIDDERS

General

Work to be done under this Contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents. All work to be done under this Contract is located in or near the City of Ann Arbor.

The DDA shall make available to all prospective Bidders, prior to receipt of the Bids, access to the area in which the work is to be performed. Advance notice should be given to the Administering Department in cases where access to the site must be arranged by the DDA.

Any proposal that does not conform fully to these instructions may be rejected.

Proposals

Proposals must be submitted on the "Proposal Forms" and "Bid Forms" provided, with each blank properly filled in. Sealed proposals will be received by the City of Ann Arbor DDA, 150 South Fifth Avenue, Suite 301, Ann Arbor, Michigan, at the time stipulated in the Advertisement. Each proposal must be enclosed in a sealed envelope, endorsed across one end:

Proposal for Ann Arbor DDA Parking Structures Restoration 2019

The DDA intends to award a Contract to the lowest responsible Bidder. The DDA may also utilize discounts offered in the Bid Forms, if any, to determine the lowest responsible Bidder, so that the lowest total cost is achieved for the DDA. For unit price bids, the contract will be awarded based upon the lump sum and unit prices stated by the bidder for the work items specified in the bid documents, with consideration given to any alternates selected by the DDA. If the DDA determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the DDA, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing proposals, the DDA will give consideration to alternate proposals for items listed in the forms, or other alternates which the Bidder may wish to submit, but preference will be given to Base Bid Proposals.

The DDA reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the DDA believes to be in its best interest.
Bid Security

Each proposal must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of days specified in the Advertisement.

Contract Time

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated in Section II of the Contract. If these time requirements cannot be met, or if schedule improvements can be provided, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

Liquidated Damages

A liquidated damages clause, as given in the Contract, provides that the Contractor shall pay the DDA as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the DDA shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Wage Requirements

Section 4, beginning at page GC-1, outlines the requirements for payment of prevailing wages or of a living wages to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and may be required to provide documentary proof of compliance.

Major Subcontractors

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over $50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor.
PROPOSAL

City of Ann Arbor DDA
150 South Fifth Avenue, Suite 301
Ann Arbor, Michigan 48104

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including Advertisement, Notice of Pre-Bid Conference, Instructions to Bidders, Proposal, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the DDA, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this proposal is one part.

In accordance with these bid documents, and Addenda numbered ______, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid
Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the DDA and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Proposal shall become due and payable to the DDA.

If the Bidder enters into the Contract in accordance with this Proposal, or if this Proposal is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the DDA to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the DDA believes to be in its best interest.

SIGNED THIS _____________ DAY OF __________, 201__.

_________________________________
Bidder’s Name

_________________________________
Official Address

_________________________________
Authorized Signature of Bidder

_________________________________
Telephone Number (Print Name of Signer Above)
LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other two.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the state of _____________, for whom ____________________________, bearing the office title of ______________, whose signature is affixed to this proposal, is authorized to execute contracts.

* A partnership, list all members and the street and mailing address of each:

_______________________________________________________________
_______________________________________________________________
_______________________________________________________________
_______________________________________________________________

Also identify the County and State where partnership papers are filed:

County of ____________, State of ______________________________

* An individual, whose signature with address, is affixed to this proposal: __________

(initial here)
## BID FORM

### Section 1 - Schedule of Prices

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<th>Work Item</th>
<th>Work Item Description</th>
<th>Units</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
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<tbody>
<tr>
<td><strong>A) 4th &amp; William Parking Structure</strong></td>
<td><strong>BID FORM</strong></td>
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<td>1A</td>
<td>Mobilization</td>
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<td>3A</td>
<td>Re-point Deteriorated Mortar Joints</td>
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<td>1,100</td>
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<td>4A</td>
<td>Remove &amp; Replace Metal-to-Brick/Metal Joint Sealant</td>
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<td>500</td>
<td>$</td>
<td>$</td>
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<td>Install Preformed Silicone Seal at Mullion Joints</td>
<td>EA</td>
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<td>$</td>
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<td>7A</td>
<td>Install Masonry Sealer</td>
<td>SF</td>
<td>8,000</td>
<td>$</td>
<td>$</td>
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<td>8A</td>
<td>Clean Exterior Spandrels and Install Elastomeric Coating</td>
<td>SF</td>
<td>1,700</td>
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<td><strong>Subtotal - Base Bid 4th &amp; William</strong></td>
<td><strong>BID FORM</strong></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
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<td><strong>B) Library Lane Parking Structure</strong></td>
<td><strong>BID FORM</strong></td>
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<tr>
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<td>3B</td>
<td>Floor Repair</td>
<td>SF</td>
<td>700</td>
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<td>4B</td>
<td>Overlay Repair</td>
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<td>Beam Repair</td>
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BF - 1
## Work Item Descriptions

<table>
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<th>Quantity</th>
<th>Unit Price</th>
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<tr>
<td>6B</td>
<td>Scaling Repair</td>
<td>SF</td>
<td>2,500</td>
<td>$</td>
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<tr>
<td>7B</td>
<td>Remove &amp; Replace Control Joint Sealant</td>
<td>LF</td>
<td>1,200</td>
<td>$</td>
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<tr>
<td>8B</td>
<td>Remove &amp; Replace Cove Joint Sealant</td>
<td>LF</td>
<td>100</td>
<td>$</td>
<td>$</td>
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<tr>
<td>9B</td>
<td>Rout &amp; Seal Cracks</td>
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<td>10B</td>
<td>Remove &amp; Replace Horizontal Isolation Joint - Silicone</td>
<td>LF</td>
<td>850</td>
<td>$</td>
<td>$</td>
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<td>11B</td>
<td>Remove &amp; Replace Vertical Isolation Joint - Silicone</td>
<td>LF</td>
<td>80</td>
<td>$</td>
<td>$</td>
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<td>12B</td>
<td>Remove &amp; Replace Vertical Expansion Joint - Precompressed Foam</td>
<td>LF</td>
<td>30</td>
<td>$</td>
<td>$</td>
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<tr>
<td>13B</td>
<td>Expansion Joint Header Repair - Winged</td>
<td>LF</td>
<td>20</td>
<td>$</td>
<td>$</td>
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<tr>
<td>14B</td>
<td>Expansion Joint Repair - Precompressed Foam</td>
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<td>5</td>
<td>$</td>
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<td>15B</td>
<td>Remove &amp; Replace Expansion Joint - Winged</td>
<td>LF</td>
<td>15</td>
<td>$</td>
<td>$</td>
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<td>16B</td>
<td>Deck Coating Recoat (Epoxy/Polyurethane System)</td>
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<td>$</td>
<td>$</td>
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<tr>
<td>17B</td>
<td>Inject Cracks with Chemical Grout</td>
<td>LF</td>
<td>330</td>
<td>$</td>
<td>$</td>
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<tr>
<td>18B</td>
<td>Pavement Markings</td>
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<td>$</td>
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<td>19B</td>
<td>Crack Repair on 5th Ave</td>
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<td>30</td>
<td>$</td>
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<td>Remove &amp; Replace Control Joint Sealant - Silicone</td>
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<td>1,600</td>
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<td>21B</td>
<td>Remove &amp; Replace Cove Joint Sealant - Silicone</td>
<td>LF</td>
<td>400</td>
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**Subtotal - Base Bid Library Lane**: $
<table>
<thead>
<tr>
<th>Work Item</th>
<th>Work Item Description</th>
<th>Units</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C</td>
<td>Mobilization</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2C</td>
<td>General Conditions</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>3C</td>
<td>Floor Repair</td>
<td>SF</td>
<td>300</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>4C</td>
<td>Ceiling Repair</td>
<td>SF</td>
<td>10</td>
<td>$</td>
<td>$</td>
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<td>5C</td>
<td>Beam Repair</td>
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<td>40</td>
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<td>$</td>
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<td>6C</td>
<td>Column Repair</td>
<td>SF</td>
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<td>Wall Repair</td>
<td>SF</td>
<td>10</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>8C</td>
<td>Remove &amp; Replace Control Joint Sealant</td>
<td>LF</td>
<td>13,500</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>9C</td>
<td>Remove &amp; Replace Cove Joint Sealant</td>
<td>LF</td>
<td>3,300</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>10C</td>
<td>Rout &amp; Seal Cracks</td>
<td>LF</td>
<td>30</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>11C</td>
<td>Expansion Joint Header Repair - Winged EJ</td>
<td>LF</td>
<td>60</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>12C</td>
<td>Expansion Joint Nosing Repair - Premold EJ</td>
<td>LF</td>
<td>50</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>13C</td>
<td>Deck Coating Recoat (Epoxy/Polyurethane System)</td>
<td>SF</td>
<td>80,000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>14C</td>
<td>Deck Coating Repair (Epoxy/Polyurethane System)</td>
<td>SF</td>
<td>1,000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>15C</td>
<td>Remove &amp; Replace Damaged Storm Pipe</td>
<td>LF</td>
<td>80</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>16C</td>
<td>Remove &amp; Replace Damaged Floor Drain Grate</td>
<td>EA</td>
<td>2</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>17C</td>
<td>Clean &amp; Paint Interior of Stair Towers</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>
### Work Item Description

<table>
<thead>
<tr>
<th>Work Item</th>
<th>Work Item Description</th>
<th>Units</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18C</td>
<td>Clean &amp; Paint Stair Railings at Maynard St. &amp; Alley Stair Towers</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>19C</td>
<td>Pavement Markings</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>20C</td>
<td>Deck Coating at Concrete Repairs</td>
<td>SF</td>
<td>400</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

**Subtotal - Base Bid Maynard** $ 

### D) 4th & Washington Parking Structure

<table>
<thead>
<tr>
<th>Work Item</th>
<th>Work Item Description</th>
<th>Units</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>Mobilization</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2D</td>
<td>General Conditions</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>3D</td>
<td>Floor Repair - Partial Depth</td>
<td>SF</td>
<td>120</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>4D</td>
<td>Shear Connector Repair</td>
<td>EA</td>
<td>50</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>5D</td>
<td>Curb Repair</td>
<td>SF</td>
<td>5</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>6D</td>
<td>Grout Pocket Repair</td>
<td>EA</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>7D</td>
<td>Remove &amp; Replace Control Joint Sealant</td>
<td>LF</td>
<td>1,800</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>8D</td>
<td>Remove &amp; Replace Cove Joint Sealant</td>
<td>LF</td>
<td>1,600</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>9D</td>
<td>Remove &amp; Replace Floor Drain</td>
<td>EA</td>
<td>3</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>10D</td>
<td>Install Supplemental Floor Drain</td>
<td>EA</td>
<td>2</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>11D</td>
<td>Install Piping for Supplemental Floor Drain</td>
<td>LF</td>
<td>10</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>12D</td>
<td>Floor Repair - Full Depth</td>
<td>SF</td>
<td>50</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>13D</td>
<td>Deck Coating Recoat at Level 7 (Polyurethane System)</td>
<td>SF</td>
<td>2,500</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Work Item</td>
<td>Work Item Description</td>
<td>Units</td>
<td>Quantity</td>
<td>Unit Price</td>
<td>Total</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------</td>
<td>-------</td>
<td>----------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>14D</td>
<td>Full System Deck Coating at Level 7 (Polyurethane System)</td>
<td>SF</td>
<td>12,500</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>15D</td>
<td>Deck Coating Repair (Polyurethane System)</td>
<td>SF</td>
<td>100</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>16D</td>
<td>Create Groove to Improve Drainage</td>
<td>EA</td>
<td>3</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>17D</td>
<td>Steel Stair Repair at SE Stair</td>
<td>EA</td>
<td>10</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>18D</td>
<td>Rout &amp; Seal Cracks</td>
<td>LF</td>
<td>50</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>19D</td>
<td>Pavement Markings</td>
<td>LS</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

Subtotal - Base Bid 4th & Washington $

1. Bidder will complete the work for the following price as outlined in these documents, complete as specified, using equipment and materials only of the type and manufacturers where specifically named:

   Base Bid – 4th & William
   $_____________________________

   Base Bid – Library Lane
   $_____________________________

   Base Bid – Maynard
   $_____________________________

   Base Bid – 4th & Washington
   $_____________________________

   Total Base Bid – All Parking Structures
   $_____________________________

_____________________________________________________________________

Dollars (use words)

BF - 5
2. Description of Abbreviations:
   a. L.F. = Lineal Feet
   b. S.F. = Square Feet
   c. L.S. = Lump Sum
   d. E.A. = Each
   e. N.A. = Not Applicable

3. Total contract price shall include the summation of lump sum items, plus the summation of unit prices multiplied by the estimated quantities listed above.

4. Lump sum and unit prices shall include all cost necessary to complete the work including, but not limited to, labor, material, equipment, supervision, dust and traffic control, cleanup, waste disposal, shoring, barricades overhead, profit, etc.

5. The quantities appearing in the preceding Schedule are approximate. Payment to the Contractor will be made only for the actual quantities of Work performed and accepted in accordance with the contract unit prices. Any item and/or section within the Work may be deleted by the Owner. Refer to Drawings and Specifications for other Work required as part of this Contract but not listed in the above schedule.
BID FORM

Section 2 - Material and Equipment Alternates

The Base Bid proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the DDA, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Add/Deduct Amount</th>
</tr>
</thead>
</table>

If the Bidder does not suggest any material or equipment alternate, the Bidder MUST complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any material or equipment alternate under the contract.

Signature of Authorized Representative of Bidder
BID FORM

Section 3 - Time Alternate

If the Bidder takes exception to the time stipulated in Article II of the Contract, Duration, page C-1, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

If the Bidder does not suggest any time alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any time alternate under the contract.

___________________________________________
Signature of Authorized Representative of Bidder
For purposes of this contract, a Subcontractor is anyone (other than the Contractor) who performs work (other than or in addition to the furnishing of materials, plans or equipment) at or about the construction site, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any individual who furnishes merely the individual’s own personal labor or services.

For the work outlined in these documents the Bidder expects to engage the following major subcontractors to perform the work identified:

<table>
<thead>
<tr>
<th>Subcontractor (Name and Address)</th>
<th>Work</th>
<th>Amount</th>
</tr>
</thead>
</table>

If the Bidder does not expect to engage any major subcontractor, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT expect to engage any major subcontractor to perform work under the contract.

__________________________________________
Signature of Authorized Representative of Bidder
CITY OF ANN ARBOR DOWNTOWN DEVELOPMENT SERVICE AGREEMENT

SERVICE AGREEMENT BETWEEN

CITY OF ANN ARBOR DOWNTOWN DEVELOPMENT AUTHORITY

The City of Ann Arbor Downtown Development Authority, a Michigan municipal corporation, having its offices at 150 S Fifth Avenue, Suite 301, Ann Arbor, Michigan 48104 (“DDA”) and , (Contractor) a (Type of Business) having its offices at (Address) (“CONTRACTOR”), agree as follows on this ___ day of_______, 2019.

The Contractor agrees to provide services to the DDA under the following terms and conditions:

I. DEFINITIONS

Ann Arbor Downtown Development Authority, also referred to as the DDA or the Owner.

Contract Administrator means the DDA representative authorized by the Ann Arbor Downtown Development Authority to act on the behalf of the Ann Arbor Downtown Development Authority.

Supervising Professional as defined in the General Conditions shall mean the Contract Administrator.

Design Professional means Restore Consulting, LLC. Restore Consulting, LLC is the lead designer, references to “Architect” or “Engineer” within the project specifications will generally refer to Restore Consulting, LLC or a consultant to Restore Consulting, LLC.


II. DURATION

This Agreement shall become effective on , 2019, and shall remain in effect until satisfactory performance of all services or , whichever occurs first, unless terminated for breach or as provided in this agreement.

A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

B. The entire work for this Contract shall be completed within the time period shown below. Shorter completion times for certain portions of the work are specified in the Detailed Specifications.

1. Anticipated Contract Notice to Proceed: May 31, 2019 (Subject to DDA Approval)
2. Construction: June 10, 2019 thru November 1, 2019
3. No construction will be allowed during the week of Art Fair (July 15 thru July 21, 2019).

C. Failure to complete all the work within the time specified above, including any extension
granted in writing by the Supervising Professional, shall obligate the Contractor to pay the DDA, as liquidated damages and not as a penalty, an amount equal to $500.00 for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the DDA shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Liquidated damages under this section are in addition to any liquidated damages due under Section 19 of the General Conditions. Liquidated damages under this section are in addition to any liquidated damages due under Sections 4 and 5 of General Conditions.

III. SERVICES

A. General Scope: The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the Project in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

   - Contract and Exhibits
   - Bid No. and Addenda (if applicable)
   - Bid Proposal of Contractor, dated ____________

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the Project. Materials or work described in words that so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

   In case of a conflict among the contract documents listed above in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

B. Quality of Services: The Contractor’s standard of service under this agreement shall be of the level of quality performed by businesses regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.

C. Compliance with Applicable Law: The Contractor shall perform its services under this Agreement in compliance with all statutory, regulatory and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement.

D. Location: The Contractor shall provide all of these services at the locations specified.

E. Reports/Surveys: The Contractor may rely upon the accuracy of reports and surveys provided to it by the DDA except when defects should have been apparent to a reasonably competent contractor or when it has actual notice of any defects in the reports and surveys.
IV. RELATIONSHIP OF PARTIES

A. The parties to this agreement agree that it is not a contract of employment but is a contract to accomplish a specific result. Contractor is an independent contractor performing services for the DDA. Nothing contained in this agreement shall be deemed to constitute any other relationship between the DDA and the Contractor.

B. The Contractor certifies that it has no personal or financial interest in the project other than the fee it is to receive under this agreement. The Contractor further certifies that it shall not acquire any such interest, direct or indirect, which would conflict in any manner with the performance of services under this agreement. Further Contractor agrees and certifies that it does not and will not employ or engage any person with a personal or financial interest in this agreement.

C. Contractor does not have any authority to execute any contract or agreement on behalf of the DDA, and is not granted any authority to assume or create any obligation or liability on the DDA’s behalf, or to bind the DDA in any way.

D. Contractor certifies that it is not, and shall not become, overdue or in default to the City of Ann Arbor for any contract, debt, or any other obligation to the City including real or personal property taxes. The DDA shall have the right to set off any such debt against compensation awarded for services under this agreement.

V. COMPENSATION OF CONTRACTOR

The Contractor shall be paid on the basis of the bid price in the manner set forth in the Bid. The total fee to be paid the Contractor for the services shall not exceed ($__________). Payment shall be made within 30 days of acceptance of the work by the Contract Administrator. It is understood and agreed between the parties that the compensation stated above is inclusive of any and all remuneration to which the Contractor may be entitled.

VI. INSURANCE; INDEMNIFICATION

A. The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself, the DDA, and the Design Professional from all claims for bodily injuries, death or property damage which may arise under this Contract; whether the acts were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. The insurance coverage afforded by the contractor to the DDA and the Design Professional shall be primary and not excess or contributory to any insurance the DDA or Design Professional may have on its own. The following insurance policies are required:

1. Worker’s Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

   - Bodily Injury by Accident - $500,000 each accident
   - Bodily Injury by Disease - $500,000 each employee
   - Bodily Injury by Disease - $500,000 each policy limit
2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor, the Ann Arbor DDA, and the Design Professional shall be named as an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further, the following minimum limits of liability are required:

- $2,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.
- $4,000,000 Per Job General Aggregate
- $2,000,000 Personal and Advertising Injury
- $4,000,000 Products and Completed Operations Aggregate

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor, the Ann Arbor DDA, and the Design Professional shall be named as an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be $1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

4. Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of $1,000,000.

B. Insurance required under VI.A.2 and A.3 of this Contract shall be considered primary as respects any other valid or collectible insurance that the DDA or the City of Ann Arbor may possess, including any self-insured retentions the DDA or City of Ann Arbor may have; and any other insurance the DDA or the City of Ann Arbor does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the DDA or the City of Ann Arbor.

C. In the case of all Contracts involving on-site work, the Contractor shall provide to the DDA before the commencement of any work under this Contract documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the DDA. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the
endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the DDA. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies to the DDA at least ten days prior to the expiration date.

D. Any insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company’s Key Rating Guide of “A-“ Overall and a minimum Financial Size Category of “V”. Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the DDA.

E. To the fullest extent permitted by law, Contractor shall indemnify, defend and hold harmless the City of Ann Arbor, the Design Professional, and the DDA its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney’s fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this contract, by the Contractor or anyone acting on the Contractor’s behalf under this contract. Contractor shall not be responsible to indemnify the DDA for losses or damages caused by or resulting from the DDA’s sole negligence.

VII. COMPLIANCE REQUIREMENTS

A. Nondiscrimination. The Consultant agrees to comply and to require its subcontractor to comply, with the nondiscrimination provisions of Section 209 of the Elliot-Larsen Civil Rights Act MCL 37.2209). The Contractor further agrees to comply with the nondiscrimination provisions of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity

B. Wages: Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section." Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

Further, to the extent that any employees of the Contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with Section 1:319 of Chapter 14 of Title I of the Code of the City of Ann Arbor, the Contractor agrees to conform to Chapter 23, Living Wage, of Title I of the Code of the City of Ann Arbor, as amended. The Contractor agrees to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code; to post a notice approved by the City of the applicability of
Chapter 23 in every location in which regular or contract employees providing services under this agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

VIII. WARRANTIES BY CONTRACTOR

A. The Contractor warrants that the quality of its services under this agreement shall conform to the level of quality performed by businesses regularly rendering this type of service. The Contractor warrants that the work performed shall be free of defects and guaranteed for a period of one year.

B. The Contractor warrants that it has all the skills and experience necessary to perform the services it is to provide pursuant to this agreement. Further that it has available, or will engage, at its own expense, sufficient trained employees or subcontractors to provide the services specified in this Agreement.

C. The Contractor warrants that it is not, and shall not become overdue or in default to the City of Ann Arbor for any contract, debt, or any other obligation to the City of Ann Arbor including real and personal property taxes.

IX. TERMINATION OF AGREEMENT: RIGHTS ON TERMINATION

A. This agreement may be terminated by either party in the case of a breach of this agreement by the other party, if the breaching party has not corrected the breach within 15 days after notice of termination is given in conformance with the terms of this agreement. Breach under this terms of this Agreement shall include but not be limited to the failure to deliver service on time, poor quality materials or workmanship, failure to follow specifications identified in Article III above, or the unauthorized substitution of articles other than those quoted and specified in the bid documents.

B. The DDA may terminate this Agreement, on at least ten (10) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to the Contractor except the obligation to pay for services actually performed under the Agreement.

C. Contractor acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the DDA to effect continued payment under this Agreement are not appropriated or otherwise made available, the DDA shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to the Contractor. The Contract Administrator shall give the Contractor written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.

D. The remedies provided in this Agreement will be cumulative, and the assertion by a party of any right or remedy will not preclude the assertion by such party of any other rights or the seeking of any other remedies.
X. OBLIGATIONS OF THE DDA

A. The DDA agrees to give the Contractor access to staff and DDA managed properties as required to perform the necessary services under the agreement.

B. The DDA shall notify the Contractor of any defects in the services of which the DDA has actual notice.

XI. ASSIGNMENT

A. The Contractor shall not subcontract or assign any portion of the services without prior written consent to such action by the DDA. Notwithstanding any consent by the DDA to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the DDA.

B. The Contractor shall retain the right to pledge payment(s) due and payable under the agreement to third parties.

XII. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated in this Agreement or such other address as either party may designate by prior written notice to the other.

Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONTRACTOR, it shall be addressed and sent to:

If Notice is sent to the DDA, it shall be addressed and sent to:

Ann Arbor DDA
150 S Fifth Avenue,
Suite 301
Ann Arbor, MI 48107-8647
Attn: Jada Hahlbrock, Manager of Parking Services

XIII. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this agreement or the application of the provision to other parties or other
XIV. **CHOICE OF LAW**

This agreement shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this agreement, the Contractor and the DDA agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

XV. **EXTENT OF AGREEMENT**

This agreement represents the entire understanding between the DDA and the Contractor and it supersedes all prior representations or agreements whether written or oral. Neither party has relied on any prior representations in entering into this agreement.

This agreement may be altered, amended or modified only by written amendment signed by the Contractor and the DDA.
FOR CONTRACTOR
By ____________________________
Authorized Representative

FOR THE CITY OF ANN ARBOR DDA

By ____________________________  Marie Klopf, DDA Board Chair

By ____________________________  Susan Pollay, DDA Board Executive Director
CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period ____________, 201__, to ____________, 201__, performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth in the Contract titled ________________, for which I shall ask, demand, sue for, or claim compensation or extension of time from the DDA, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

________________________________________  ______________________
Contractor Date

By: ____________________________________
(Signature)

Its: ____________________________________
(Title of Office)

Past due invoices, if any, are listed below.
CONTRACTOR'S AFFIDAVIT

The undersigned Contractor, ____________________________, represents that on ____________, 20__, it was awarded a contract by the Ann Arbor Downtown Development Authority, Michigan to ____________________________________ under the terms and conditions of a Contract titled ____________________________________. The Contractor represents that all work has now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by the Ann Arbor Downtown Development Authority.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by the Ann Arbor Downtown Development Authority.

This affidavit is freely and voluntarily given with full knowledge of the facts.

__________________________________
Contractor
By ________________________________
(Signature)
Its ________________________________
(Title of Office)

Subscribed and sworn to before me, on this ___ day of ________, 20___
__________________________________, ____________ County, Michigan
Notary Public
My commission expires on:
STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the City of Ann Arbor, Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Advertisement. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

A copy of the Public Services Department Standard Specifications may be purchased from the Project Management Division, (Fourth Floor, City Hall, Ann Arbor, Michigan), for $35.00 per copy. In addition, a copy of these Standard Specifications is available for public viewing at the same office, for review Monday through Friday between the hours of 8:30 a.m. and 4:00 p.m.
SECTION 007200 – GENERAL CONDITIONS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The Ann Arbor Downtown Development Authority General Conditions of the Contract for Construction GC-1 to GC-14 included within this document are hereby made a part of the Contract Documents.

END OF SECTION
GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The contract documents shall be signed in 2 copies by the DDA and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied, have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Proposal.

Section 2 - Order of Completion

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

Section 3 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the DDA upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 4 - Wage Requirements

Refer to Section VII of the Contract.
Section 5- Non-Discrimination

Refer to Section VII of the Contract.

Section 6 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the DDA harmless from loss on account of infringement except that the DDA shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the DDA has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The DDA shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.
The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to it's work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or employees of the DDA. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

Section 11 - Inspection of Work

The DDA shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the DDA shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.
Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 13 - Changes in the Work

The DDA may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

1. When work under an extra work order is added to the work under this Contract;
2. When the work is suspended as provided in Section 20;
3. When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
4. Delays in the progress of the work caused by any act or neglect of the DDA or of its employees or by other Contractors employed by the DDA;
5. Delay due to an act of Government;
6. Delay by the Supervising Professional in the furnishing of plans and necessary information;
7. Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or
conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section 13. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

(1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;

(2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;

(3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;

(4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
(5) Payments of all charges for work under this Section in any one month, shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments - Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the DDA will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The DDA will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2. Contractor’s Declaration is included as specification section CD-1
Section 17 - Deductions for Uncorrected Work

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

Section 18 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the DDA and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the DDA may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the DDA may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the DDA the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

Section 19 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the DDA under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the DDA within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the DDA:

1. The consent of the surety to payment of the final estimate;
2. The Contractor’s Affidavit in the form required by Section 44. Contractor’s Affidavit is included as specification section CA-1

In case the Affidavit or consent is not furnished, the DDA may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.
The making and acceptance of the final payment shall constitute a waiver of all claims by the DDA except those arising from:

(1) unsettled liens;
(2) faulty work appearing within 12 months after final payment;
(3) hidden defects in meeting the requirements of the plans and specifications;
(4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

Section 20 - Suspension of Work

The DDA may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the DDA to the Contractor to do so. The DDA shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the DDA does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

Section 21 - Delays and The DDA’s Right to Terminate Contract

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the DDA may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the DDA may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the DDA for any excess cost to the DDA. If the Contractor's right to proceed is terminated, the DDA may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the DDA, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The DDA may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work,
including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the DDA for any excess cost incurred. The expense incurred by the DDA, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

Section 22 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the DDA, terminate this Contract and recover from the DDA payment for all acceptable work executed plus reasonable profit.

Section 23 – DDA’s Right To Do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the DDA, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the DDA may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

Section 24 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the DDA, shall promptly remove any part or all of its equipment and supplies from the property of the DDA, failing which the DDA shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the DDA and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the DDA upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

Section 25 - Responsibility for Work and Warranties

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the DDA for damages to materials and equipment from any cause except negligence or willful act of the DDA. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the
Contractor at its expense as soon as practicable but in all cases within 60 days.

The Contractor shall assign all manufacturer or material supplier warranties to the DDA prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

Section 26 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the DDA, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the DDA may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

Section 27 - Payments Withheld Prior to Final Acceptance of Work

The DDA may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the DDA from loss on account of:

1. Defective work not remedied;
2. Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
3. Failure of the Contractor to make payments properly to subcontractors or for material or labor;
4. Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the DDA, which will protect the DDA in the amount withheld, payment shall be made for amounts withheld under this section.

Section 28 - Contractor's Insurance

A. The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself from all claims for bodily injuries, death or property damage which may arise under this Contract; whether the acts were made by the Contractor.
or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

1. Worker’s Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

   Bodily Injury by Accident - $500,000 each accident  
   Bodily Injury by Disease - $500,000 each employee  
   Bodily Injury by Disease - $500,000 each policy limit

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor and the Ann Arbor Downtown Development Authority shall be named as additional insured parties. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further, the following minimum limits of liability are required:

   $2,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.  
   $4,000,000 Per Job General Aggregate  
   $2,000,000 Personal and Advertising Injury  
   $4,000,000 Products and Completed Operations Aggregate

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor and the Ann Arbor Downtown Development Authority shall be named as additional insured parties. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be $1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

4. Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of $1,000,000.

B. Insurance required under Section A.2 and A.3 of this Contract shall be considered primary as respects any other valid or collectible insurance that the DDA may possess, including any self-insured retentions the DDA may have; and any other insurance the DDA does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the DDA.

C. In the case of all Contracts involving on-site work, the Contractor shall provide to the DDA before the commencement of any work under this Contract documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the Ann Arbor Downtown Development Authority. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy
expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the DDA, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the DDA. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Department at least ten days prior to the expiration date.

D. Any Insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company’s Key Rating Guide of “A-” Overall and a minimum Financial Size Category of “V”. Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the DDA.

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

1. A Performance Bond to the Ann Arbor Downtown Development Authority for the amount of the bid(s) accepted.
2. A Labor and Material Bond to the Ann Arbor Downtown Development Authority for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the DDA in a manner and by a Surety Company satisfactory to the DDA’s Attorney.

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the DDA or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the DDA.

Section 33 - Rights of Various Interests

Whenever work being done by the DDA/City forces or by other contractors is contiguous to work
covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the DDA. The approval will not be given until the Contractor submits to the DDA a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the DDA may require.

The Contractor shall be as fully responsible to the DDA for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the DDA may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the DDA.

Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the DDA or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the DDA unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written
permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the DDA, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the DDA’s property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain DDA property and shall be transported or stored at a location as the Supervising Professional may direct.

Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written DDA approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The DDA may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

Section 42 - Sales Taxes

Under State law the DDA is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in DDA projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

Note: Section 43 Contractor’s Declaration is included as section CD-1, and Section 44 Contractor’s Affidavit is included as section CA-1.
SECTION 007300 – SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY

A. The following supplements shall modify, change, delete from or add to and shall take precedence over the General Conditions of the Contract for Construction. Where any portion of the General Conditions of the Contract for Construction is modified or any Paragraph, Subparagraph, or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause shall remain in effect.

1.2 DEFINITIONS

A. Owner: Ann Arbor Downtown Development Authority, also referred to as the DDA or the Ann Arbor DDA.

B. Design Professional or Engineer: Restore Consulting, LLC is the lead design professional.

1. References to “Architect” or “Engineer” with the Contract Documents will generally refer to Restore Consulting, LLC or a consultant to Restore Consulting, LLC.

C. Contract Administrator means the DDA representative authorized by the Ann Arbor Downtown Development Authority to act on the behalf of the Ann Arbor Downtown Development Authority.

D. Supervising Professional as defined in the General Conditions shall mean the Contract Administrator.

E. Miscellaneous Definitions:

1. "Provide" means to furnish, fabricate, complete, deliver, install and erect, including all labor, materials, equipment, apparatus, appurtenances, and expenses necessary to complete in place, ready for operation and use.

2. "As shown," "as detailed," "as indicated" or words of similar import mean as shown, as detailed, or as indicated in the Documents.

3. "As selected," "as approved," "as accepted" or words of similar import mean as selected by, as approved by, or as accepted by the Engineer.


5. "As required" means as prescribed by the Contract Documents.

6. "As necessary" means essential to the completion of the Work.

1.3 ADMINISTRATION OF THE CONTRACT

A. The Engineer will provide administration of the Contract as described in the Contract Documents and will be an Owner’s representative during construction until the date the Engineer issues the final Certificate for Payment. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.
B. Except as otherwise provided in the Contract Documents, the Owner and Contractor shall endeavor to communicate with each other through the Engineer about matters arising out of or relating to the Contract. Communications by and with the Engineer’s consultants shall be through the Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner. Any direct communications between any of the Owner, Engineer, and Contractor that affect the performance or administration of the Contract shall be made or confirmed in writing by the Contractor. Any such communications that represent a modification to the Contract requirements shall be documented as required by the Contract Documents.

C. The Engineer will review and approve, or take other appropriate action upon, the Contractor’s submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Engineer’s action will be taken in accordance with the submittal schedule approved by the Engineer or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Engineer’s professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Engineer’s review of the Contractor’s submittals shall not relieve the Contractor of its obligations. The Engineer’s review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Engineer, of any construction means, methods, techniques, sequences or procedures. The Engineer’s approval of a specific item shall not indicate approval of an assembly of which the item is a component.

D. The Engineer will review and respond to requests for information about the Contract Documents. The Engineer’s response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Engineer will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

E. The Engineer will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work is in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor’s rights and responsibilities under the Contract Documents.

F. On the basis of the site visits, the Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Engineer will not be responsible for the Contractor’s failure to perform the Work in accordance with the requirements of the Contract Documents. The Engineer will not
have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

G. The Engineer has authority to reject Work that does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable, the Engineer will have authority to require inspection or testing of the Work. However, neither this authority of the Engineer nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

H. The Engineer will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion; receive and forward to the Owner, for the Owner’s review and records, written warranties and related documents required by the Contract and assembled by the Contractor.

I. Interpretations and decisions of the Engineer will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Engineer will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

1.4 CONTRACTOR GENERAL RESPONSIBILITIES

A. The Contractor shall supervise and direct the Work, using the Contractor’s best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract. The Contractor shall review any specified or recommended construction or installation procedure, including those recommended by manufacturers, and shall advise the Engineer: (1) if, in the Contractor’s opinion, the procedure deviates from good construction practice; or (2) if following the procedure will affect any warranties, including the Contractor’s general warranty; or (3) of any objections the Contractor may have to the procedure; or (4) if the Contractor proposes any alternative procedure which the Contractor is willing to warrant.

B. Except in the case of minor changes in the Work authorized by the Engineer, the Contractor may make substitutions only with written consent of the Owner, after evaluation by the Engineer and in accordance with a Change Order or Construction Change Directive.

C. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

D. The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.
E. Contractor’s Submittal Schedule: The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Engineer’s approval. The Engineer’s approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor’s construction schedule, and (2) allow the Engineer reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

F. Contractor’s Construction Schedule: The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner’s and Engineer’s information a Contractor’s construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals not less than monthly as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The Owner’s or Engineer’s silence with respect to a submitted construction schedule that exceeds time limits current under the Contract Documents shall not relieve the Contractor of its obligation to meet those time limits. The Owner’s or Engineer’s silence shall not make the Owner or Engineer liable for any Contractor damages incurred because of increased construction time or not meeting those time limits.

1.5 SPECIFICATIONS

A. TheSpecifications are separated into various Sections and Divisions in general accordance with the format established by the Construction Specifications Institute. No responsibility is assumed by the Owner nor the Engineer for omissions or duplications by the Contractor in the completion of the Contract due to any alleged error in the arrangement of the material in the Specifications nor shall any such segregation of portions of the Work operate to make the Engineer an arbiter in defining limits to the agreements between the Contractor and his Subcontractors or suppliers.

1. Work lists, if any, in the Specification Sections have been included as optional aids to the Contractor and not as limits or mandatory distributions of the work of the various trades involved in the Project. Because of the nature of the construction process, work may be found to be described in one Section and listed in another. All work indicated or described in the Specifications is required regardless of its distribution. When items are stated as "included," the words "but not limited to" shall be assumed as implied. The final correlation of work lists is the responsibility of the Contractor.

2. The Specifications are of the abbreviated type and may include incomplete sentences. Omissions or phrases such as “The Contractor shall” or "complying with the requirements of" are intentional. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings. Words in the singular shall include the plural wherever applicable, or the context so indicates.

1.6 SECTION 13 – CHANGES IN THE WORK

A. Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor
change in the Work, subject to the limitations stated in this Section and elsewhere in the Contract Documents.

B. A Change Order shall be based upon agreement among the Owner, Contractor and Engineer; a Construction Change Directive requires agreement by the Owner and Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Engineer alone.

C. Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

D. A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner and Engineer, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

1. A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

2. If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
   a. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. The lump sum proposal shall be itemized for the various components of the Work, segregated by labor, materials, equipment, in a detailed format identifying unit quantities and unit prices, satisfactory to Owner. The Contractor will provide its itemized lump sum proposal and similar proposals for any Subcontractors and Sub-subcontractors.
   b. Unit prices stated in the Contract Documents or subsequently agreed upon.

3. Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Engineer, in writing, of the Contractor’s agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

4. A Construction Change Directive signed by the Contractor indicates the Contractor’s agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

5. Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Engineer will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Engineer determines, in the Engineer’s professional judgment, to be reasonably justified. The Engineer’s interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order.

6. When the Owner and Contractor agree with a determination made by the Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach
agreement upon the adjustments, such agreement shall be effective immediately and the Engineer will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

E. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

1.7 SECTION 16 – PROGRESS PAYMENTS

A. Except with the Owner’s prior approval, payments to the Contractor shall be subject to retention of not less than ten percent (10%).

1.8 SECTION 28 – CONTRACTORS INSURANCE

A. Insurance requirements identified in the Contract supersede the General Conditions insurance requirements.

B. The Contractor’s insurance shall protect the Contractor and Owner from claims which may arise out of or result from the Contractor’s operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

C. The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Engineer and the Engineer’s Consultants as additional insureds for claims caused in whole or in part by the Contractor’s negligent acts or omissions during the Contractor’s operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor’s negligent acts or omissions during the Contractor’s completed operations.

D. PROPERTY INSURANCE - Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder’s risk “all-risk” or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall not include coverage of losses of property other than the Project. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Owner has an insurable interest in the property required to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

1. Property insurance shall be on an “all-risk” or equivalent policy form and shall include insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse,
earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Engineer’s and Contractor’s services and expenses required as a result of such insured loss.

2. If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor shall then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner.

3. If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles. The Contractor shall pay such deductibles to the extent such costs were caused by the Contractor or any person or entity performing or supplying any portions of the Work.

END OF SECTION
SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary
      Conditions and Division 01 Specification Sections, apply to this Section.

1.2 PROJECT DESCRIPTION
   A. Work consists of the restoration of the 4th & William, Library Lane, Maynard and 4th &
      Washington Parking Structures. Major aspects of the work include, but are not limited to:
      1. Concrete repairs
      2. Re-pointing deteriorated mortar joints
      3. Replacement of joint sealants
      4. Replacement and repair of expansion joint sealing systems
      5. Replacement of joint sealants at exterior façade
      6. Installation of traffic coating (deck coating)
      7. Crack injection
      8. Installation of supplemental floor drains
      9. Replacement of existing floor drains
     10. Replacement of damaged storm drainage piping
     11. Installation of masonry sealer
     12. Installation of elastomeric coating
     13. Miscellaneous painting
     14. Installation of pavement markings

1.3 WORK SEQUENCE
   A. Work Sequence (Phasing): Conduct the Project in phases to provide the least possible
      interference to activities of the Owner's personnel.
   B. Prior to commencement of Work, Contractor shall meet with Owner and Engineer to establish
      sequence and schedule of Work.
   C. Contractor shall notify Owner at least 24 hours prior to beginning any abrasive blasting or
      demolition operations.
   D. Contractor shall remove all demolished materials and debris from areas exposed to public view
      and dispose of same.
   E. Contractor shall remove dust from the remainder of the facility at the conclusion of demolition
      operations.
   F. Notify Owner's Representative 7 calendar days prior to scheduled date of Substantial
      Completion of each phase of the Project.
1.4 WORK UNDER OTHER CONTRACTS

A. During the Contract Time, additional construction work under separate contract may be taking place. Coordinate construction operations and cooperate with Owner and other contractors to minimize possible conflicts.

1.5 EXAMINATION OF SITE

A. Contractor shall visit the project site and compare the Contract Documents with existing conditions. Failure to visit the site shall in no way relive the Contractor from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the Contract Documents.

1.6 MEASUREMENTS AND DIMENSIONS

A. Before ordering any material or doing any work, Contractor shall verify all measurements and dimensions at the project site.

B. Contractor shall locate, mark, and measure quantity of each item and report quantities to Engineer before proceeding with work. If measured quantities exceed Engineer's estimate, Contractor shall obtain written authorization to proceed from Owner before proceeding with the work.

C. Measurement of quantities for individual Work Items will be performed by Contractor and reviewed by Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary
      Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes administrative and procedural requirements for unit prices.

1.3 DEFINITION
   A. Unit price: A unit price is an amount proposed by Bidders and stated on the Bid Form as a price
      per unit of measurement for materials or services that will be added to or deducted from the
      Contract Sum by Change Order if estimated quantities of Work required by the Contract
      Documents are increased or decreased.

1.4 PROCEDURES
   A. Unit prices include necessary material, overhead, profit and applicable taxes.
   B. Owner reserves the right to reject the Contractor's measurement of Work-in-place that involves
      the use of established unit prices, and to have this Work measured by an independent surveyor
      acceptable to the Contractor at the Owner’s expense.
   C. List of Unit Prices: A schedule of unit prices is included in the Bid Form.
   D. Contractor shall maintain plan drawings locating all unit price work performed. Submit copies
      of drawings with each payment request. Drawings shall identify location and current quantities
      of all unit price work being invoiced.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
SECTION 012900 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process applications for payment.

1.3 APPLICATIONS FOR PAYMENT

A. Use AIA Document G702 and AIA Document G703 as the form for the payment applications.

1. Complete every entry on form.
2. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor.
3. Include amount of change orders and construction change directives issued prior to the last day of construction period covered by the application.

B. Waiver of Mechanics Lien: Submit with each payment application waivers of mechanics liens from subcontractors or sub-subcontractors and suppliers for the construction period covered by the previous application.

1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit waivers of lien on forms, executed in a manner acceptable to the Owner.

C. First Payment Application: The following is a list of administrative actions and submittals that shall precede or coincide with the first payment application:

1. List of subcontractors.
2. Contractors construction schedule.
3. Submittal schedule.
4. List of Contractor’s staff assignments.
5. Copies of authorizations and licenses from governing authorities for performance of the Work.
6. Certificates of insurance and insurance policies
7. Performance and payment bonds (if required)
8. Data needed to acquire Owner’s insurance
D. Final Payment Application: The following is a list of administrative actions and submittals that shall precede or coincide with the final payment application:

1. Completion of Project closeout requirements.
2. Completion of all punch list items.
3. Proof that taxes, fees, and similar obligations were paid.
4. Removal of temporary facilities and services.
5. Warranties
6. Updated final statement, accounting for final changes to the Contract Sum.
7. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
9. AIA Document G707, "Consent of Surety to Final Payment."
10. Evidence that claims have been settled.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
SECTION 013100 – PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes administrative and procedural requirements for managing and coordinating construction activities.

1.3 COORDINATION
   A. Coordinate inspections and testing of concealed Work to occur prior to concealing that Work.
   B. Coordinate sequencing of Work to occur during conditions of temperature, humidity, exposure, forecast weather, and status of Project completion, which will ensure best possible results for each unit of Work. Isolate each unit of Work from non-compatible Work, as required to prevent deterioration.
   C. Coordinate work between trades for the most efficient sequence of installation, to prevent space conflicts, and to provide clearances required by code, Drawings, and the manufacturer.
      1. Minor dimension changes (including the need to adjust finish dimensions), difficult installations and/or the addition of off-set fittings will not be considered changes to the Contract.
      2. Obtain approval of the Owner's Representative prior to any changes or alternate configurations.

1.4 PROJECT MEETINGS
   A. Preconstruction Meeting
      1. A preconstruction meeting will be scheduled by Engineer.
      2. Owner, Engineer, Contractor and major subcontractors shall attend the preconstruction meeting.
   B. Progress Meetings
      1. Progress meetings will be held generally once every two (2) weeks during construction.
      2. Additional meetings may be scheduled as needed during construction. Contractor shall attend additional meetings when requested by Owner or Engineer.
      3. Owner, Engineer, Contractor and major subcontractors (when appropriate) shall attend the progress meetings.

1.5 CONSTRUCTION SCHEDULE
   A. Submit construction schedule within 15 days of execution of the contract.
B. Construction schedule shall be in the form of a Gantt-chart.

C. Update schedule on a monthly basis, or as requested by Owner or Engineer, to reflect actual construction progress and activities.

1.6 WEEKLY SCHEDULE

A. Contractor shall submit in writing the anticipated schedule for the upcoming week. The schedule shall be submitted to Owner and Engineer on a weekly basis by the end of the day on Thursday.

1.7 COMPLAINT/DAMAGE RESOLUTION PROCEDURES

A. Contractor shall submit their proposed plan/process for handling complaints and damage claims to the Owner prior to the start of construction. Owner will review and provide comments if needed. Contractor shall comply with Owners requests so all complaints and damage claims are handled in a manor acceptable to the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 DEFINITIONS

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS
   A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
      1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
      2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
      3. Retain subparagraph below if one submittal has an impact on another submittal. Submittals that require concurrent review should be so indicated in those Sections.
      4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
         a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
   B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer’s receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
      1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
      2. Resubmittal Review: Allow 10 business days for review of each resubmittal.
C. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form.
2. Name file with submittal number or other unique identifier, including revision identifier.
   a. File name shall use project identifier and Specification Section number followed by a brief description. Resubmittals shall include a decimal point, followed by a sequential number.
   b. Coordinate project specific file naming with Engineer prior to first submittal.
3. Transmittal Form for Electronic Submittals: Use electronic form, containing the following information:
   a. Project name and Owner's Project Number.
   b. Date.
   c. Engineer name and address.
   d. Contractor name, address and telephone number.
   e. Name of firm or entity that prepared submittal.
   f. Names of subcontractor, manufacturer, and supplier.
   g. Specification Section number and title or Drawing sheet number.
   h. Description of items included:
      1) Brief written description of each item.
      2) Indication of full or partial submittal.
      3) Action requested (eg. "for review", "for information only", or other notation).
      4) Location(s) where product is to be installed, as appropriate.

D. Options: Identify options requiring selection by Engineer.

E. Deviations and Additional Information: Clearly note on submittals all deviations from Contract Documents. Do not proceed with work related to the submittal, regardless of Architect/Engineer's action marking, without the Architect/Engineer's specific, written approval of such deviation. Refer to Standard General Conditions for additional requirements and obligations related shop drawings.

F. Resubmittals: Resubmit in same form as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.

G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, commissioning agent, Owner and others as necessary for performance of construction activities. Show distribution on transmittal forms.

H. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.
PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

B. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

C. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's catalog cuts.
   b. Manufacturer's product specifications.
   c. Standard color charts.
   d. Statement of compliance with specified referenced standards.
   e. Testing by recognized testing agency.
   f. Application of testing agency labels and seals.
   g. Notation of coordination requirements.
   h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:
   a. Wiring diagrams showing factory-installed wiring.
   b. Printed performance curves.
   c. Operational range diagrams.
   d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
5. Submit Product Data before or concurrent with Samples.

D. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Identification of products.
   b. Schedules.
   c. Compliance with specified standards.
   d. Notation of coordination requirements.
   e. Notation of dimensions established by field measurement.
   f. Relationship and attachment to adjoining construction clearly indicated.
   g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings in electronic files formatted for printing to scale on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.

E. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.
   e. Specification paragraph number and generic name of each item.

3. Provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner’s property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer’s color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer’s product line. Engineer will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected.
   a. Number of Samples: Comply with requirement of individual specification.
      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

F. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Location within building/structure.

G. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.

H. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

I. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

J. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

K. Product / Material Certificates: Submit written statements on manufacturer's letterhead certifying that product / material complies with requirements in the Contract Documents.

L. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

M. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

N. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

O. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.
B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures"

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 DELIVERY OF SAMPLES

A. Hand deliver all required physical submittals / samples to project site. Location to be coordinated with Owner's Representative at pre-construction meeting.

3.3 ENGINEER'S ACTION

A. Engineer's Action: Where action and return is required or requested, Architect/Engineer will review each submittal, mark with "Action", and whenever possible return within 2 weeks of receipt.

1. Final Unrestricted Release: Work may proceed, provided it complies with contract documents.
   a. Marking: "Approved"

2. Final But Restricted Release: Work may proceed, provided it complies with notations and corrections on submittals and with contract documents.
   a. Marking: "Approved as Noted, Resubmission Not Required"

3. Partial Release: Work may proceed on the indicated portions of the submitted item(s), provided it complies with contract documents. Do not proceed with work on items noted to be resubmitted.
   a. Marking: "Partial Approval, Resubmit as Noted."

4. Returned for Re-submittal: Do not proceed with work. Revise submittal in accordance with notations and resubmit without delay to obtain a different action marking.
   a. Marking: "Not Approved, Revise and Resubmit"
5. Returning sample or information: Submittals which were for information only and require no action.
   a. Marking: "Returning Samples / Information"

6. Submittals Not Requiring Action: Submittals which require no action, such as cleaning and maintenance information; or submittals not required and not reviewed, will be acknowledged as follows:
   a. Marking: "Action Not Required"

B. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

C. Submittals not required by the Contract Documents may be returned by the Engineer without action.

END OF SECTION
SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes minimum requirements for temporary facilities and controls including utilities, security, and protection.
   B. Contractor is solely responsible for jobsite safety precautions and programs.

1.3 UTILITIES
   A. Electricity
      1. Owner will pay for electricity used for construction operations when there is an available electrical source in the structure.
      2. If there is no electrical source available in the structure, Contractor shall provide and pay for own generator or other temporary power source for construction purposes.
   B. Water
      1. Owner will pay for water used for construction operations when there is an available water source in the structure.
      2. If there is no water source available in the structure, the Contractor shall be responsible for obtaining and paying for water used for construction purposes.

1.4 TEMPORARY TRAFFIC CONTROL
   A. Contractor is responsible for maintaining vehicle and pedestrian traffic flow throughout the parking structure for each phase of construction.
   B. Maintain all drive lanes, entrances, exits, and safeguards required or necessary to the progress of the Work, and effectively control such traffic in a manner to provide minimum hazard to the Work and all persons.
   C. Provide temporary drive lanes, entrances and exits as required.
   D. Route all construction equipment, trucks, and similar vehicles via existing public streets to and from the structure as approved by the governing authorities and the Owner.
   E. Provide and maintain for proper control of traffic and safety of all concerned, including all necessary barricades, suitable and sufficient lights, reflectors and danger signals, warning and closure signs and directional signs.
F. Vehicle and pedestrian traffic flow inside and outside of the structure shall be maintained to provide easy entry and exit from the structure and to all parking areas.

G. Maintain constant access for police, fire, and ambulance service.

1.5 SIGNAGE

A. Provide and maintain construction signage throughout the duration of the project to assist with traffic control and wayfinding during construction.

B. Provide signs as required to inform users of the facility of closings and traffic flow modifications, both inside and outside of the structure.

C. Sign wording, appearance and placement of signage shall be approved by Owner.

D. Provide additional signs as requested by Owner.

E. Do not commence work until proper signage has been installed.

1.6 BARRIERS

A. In general, provide barriers between active construction operations and completed areas of work, and between construction activity and Owner occupied areas. Provide barriers in locations indicated on drawings, or if not indicated, as required by Owner's Representative.

B. The Contractor shall provide and maintain all necessary barricades for safe conduct of his work, or as required by federal, state or local laws or ordinances and in accordance with OSHA requirements and other requirements of this Specification.

1.7 ENCLOSURES

A. Enclosures shall be sufficient to prevent entrance/exit or infiltration of rain, water, wind or other elements, and which will prevent undue heat loss from within an enclosed area.

B. Prevent hazardous accumulations of dusts, fumes, mists, vapors, or gases in areas occupied during construction.

C. Contractor shall submit to the Owner, for approval, proposed methods used to contain dust and fumes in work area.

D. Contractor shall be responsible for any damage to vehicles due to the construction.

1.8 SECURITY

A. Contractor is solely responsible for the security of the jobsite, including but not limited to, all materials and equipment left onsite.
PART 2 - PRODUCTS

2.1 MATERIALS

A. Signs shall be made from rigid materials and shall have a professional appearance.
   1. Text shall be of adequate size so it is legible from an appropriate distance to safely and
      adequately convey the intended message of the sign.

B. Materials for barriers and enclosures shall be suitable for intended purposes or as required by
   local codes and ordinances.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Signs
   1. Install signs at a height to achieve maximum visibility.
   2. Properly secure all signs.
   3. Maintain signage throughout construction.
   4. Relocate or add new signs as required as construction progresses.

B. Barriers and Enclosures
   1. Install barriers and enclosures so they are structurally adequate for intended purposes.
   2. Barriers and enclosures shall have a neat and uniform appearance.
   3. Maintain barriers and enclosures throughout construction.
   4. Relocate or install new barriers and enclosures as required as construction progresses.

3.2 REMOVAL

A. Remove all signs, barriers and enclosures when they are no longer needed.

END OF SECTION
SECTION 016000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. This Section specifies administrative and procedural requirements governing the product delivery, storage and handling and Contractor's selection of products for use in the Project.

1.3 QUALITY ASSURANCE
   A. Compatibility of Options: When Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.4 PRODUCT DELIVERY STORAGE AND HANDLING
   A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

   1. Schedule delivery to minimize storage time at site and to avoid overcrowding of construction area.
   2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
   3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
   4. Inspect products upon delivery to ensure that products are undamaged and properly protected.
   5. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION
   A. General Product Requirements: Provide products that are undamaged and, unless otherwise indicated, new at the time of installation.

   1. Provide products complete with accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
B. Proprietary Specification Requirements: Where a single product or manufacturer is named, provide only the product indicated.

C. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated.

D. Where products or manufacturers are specified by name, accompanied by the term "or equal", or "or approved equal" comply with the following for consideration of a comparable product:
   1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
   2. Evidence that proposed product provides specified warranty.
   3. Submit request for comparable product prior to bid due date.
   4. List of similar installations for completed projects with project names and addresses and contact information of Engineers and Owners, if requested.
   5. Samples, if requested.

E. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide only a product or assembly possessing the specified characteristics and that otherwise complies with Contract requirements.

F. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with indicated requirements, and are recommended by the manufacturer for the application indicated.

G. Compliance with Standards, Codes and Regulations: Where Specifications only require compliance with a code, standard or regulation, select a product that complies with the indicated standards, codes and regulations.

H. Visual Matching: Where Specifications require matching an established sample, the Owner's decision will be final on whether a proposed product matches satisfactorily.

PART 3 - EXECUTION

3.1 INSTALLATION

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to the Engineer. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in compliance with specified requirements.
1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with the Engineer for further instructions.

2. Do not proceed with work without clear instructions.

END OF SECTION
SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. This Section specifies administrative and procedural requirements for project closeout.

1.3 PUNCH LIST WORK
A. Complete all work identified during the punch list review.

1.4 RECORD DOCUMENTS
A. Contractor shall submit Record Drawings with all changes, additions or deletions to the project.
   1. Record drawings shall be neat and legible.
   2. Record drawings shall be submitted electronically in PDF format.
   3. Record drawings shall include location and size of all concrete repairs and cracks.

1.5 WARRANTIES
A. General Warranty: Contractor shall provide to the Owner a guarantee that all material, workmanship and equipment furnished as part of this project will be free from defects for a period of two (2) years from the date of project acceptance.
   1. Contractor shall repair or replace any item or portion of work that is defective or fails within this period at no additional cost to Owner.

B. Other Warranties: Contractor shall provide warranties identified in other Sections.

C. The date of project acceptance shall be used as the commencement of the warranty unless specified otherwise.

1.6 CLOSEOUT SUBMITTALS
A. Closeout submittals shall include, but not be limited to, the following:
   1. Project record documents
   2. Maintenance manuals
   3. Extra stock
   4. Warranties
PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Cleaning materials shall be recommended by Manufacturer of surface being cleaned.

B. Cleaning materials that are potentially hazardous shall not be used.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. Immediately before turning project over to Owner, wash and clean all Work areas and other areas affected by the Work. Remove tools and equipment, construction debris, rubbish, and surplus materials.

B. Clean interior and exterior surfaces of window units and glass within the limits of construction area.

END OF SECTION
SECTION 030130 – CONCRETE REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections:
1. Section 033000 Cast-in-Place Concrete
2. Section 071800 Traffic Coatings
3. Section 071900 Water Repellents
4. Section 079200 Joint Sealants
5. Section 079500 Expansion Joint Sealing Systems
6. Section 221400 Storm Drainage

1.2 SUMMARY

A. This section includes demolition of concrete, surface preparation and the installation of concrete repair materials.

1.3 SUBMITTALS

A. Comply with Section 013300 Submittal Procedures.

B. Submit manufacturer's Product Data Sheets (PDS) for each product.

C. Submit Safety Data Sheets (SDS) for each product.

1.4 QUALITY ASSURANCE

A. Qualifications:
1. Contractor shall have not less than five (5) years of experience in the field of structural concrete restoration.

B. Work shall be performed in accordance with the following reference standards, except where more stringent requirements are indicated on the drawings or specifications.
1. ACI 117 Specification for Tolerances for Concrete Construction and Materials
2. ACI 201.2R Guide to Durable Concrete
3. ACI 222R Protection of Metals in Concrete Against Corrosion
4. ACI 301 Specifications for Structural Concrete
5. ACI 318 Building Code Requirements for Structural Concrete
6. ICRI Technical Guide 310.1R Surface Preparation: Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
7. ICRI Technical Guide 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
8. ICRI Technical Guide 320.1R Selecting Application Methods for the Repair of Concrete Surfaces
9. ICRI Technical Guide 320.2R Selecting and Specifying Materials for the Repair of Concrete Surfaces

C. Hot weather concreting shall be performed in accordance with ACI 305.1 and ACI 305R.
D. Cold weather concreting shall be performed in accordance with ACI 306.1 and ACI 306R.
E. Repair areas shall be sounded after curing for 3 days. Any areas that are unsound shall be repaired by the Contractor at no additional cost.
F. If shrinkage cracks appear in the repair area within 3 days, the repair shall be removed and replaced by the Contractor at no additional cost.
G. Allow Engineer to review concrete repair cavities after demolition has been completed and prior to patching.
   1. Supplemental reinforcement shall be added where existing reinforcement has 15% or more section loss as directed by Engineer.
   2. Reinforcement damaged by Contractor’s demolition operations shall be repaired at no additional cost.
   3. Correct items identified by Engineer prior to patching.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.
B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
C. Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat, and freezing temperatures.

PART 2 - PRODUCTS

2.1 HORIZONTAL / FORM & POUR REPAIR MORTAR
A. Horizontal / Form & Pour Repair Mortar shall be polymer or silica-fume modified, shrinkage compensated and shall contain a corrosion inhibitor. Add aggregate for deep repairs as required by Manufacturer.
B. Acceptable materials for horizontal / form & pour applications are:
   1. BASF: MasterEmaco S 440CI or S 466CI
   2. Sika: Sikacrete 211 SCC Plus or SikaTop 111 Plus
   3. Euclid Chemical: EucoRepair SCC or Eucocrete Supreme
2.2 VERTICAL / OVERHEAD REPAIR MORTAR
   A. Vertical / Overhead Repair Mortar shall be polymer or silica-fume modified, shrinkage
      compensated and shall contain a corrosion inhibitor.
   B. Acceptable materials for vertical / overhead applications are:
      1. BASF: MasterEmaco N 425 or S 488Cl
      2. Sika: SikaTop 123 Plus or SikaQuick VOH
      3. Euclid Chemical: Verticoat Supreme

2.3 REINFORCEMENT / MISCELLANEOUS METAL PROTECTIVE COATING
   A. Protective coating shall be water-based cementitious epoxy material with an integral corrosion
      inhibitor.
   B. Protective coating shall be applied to all exposed metal surfaces (reinforcement & other metals
      embedded in concrete).
   C. Acceptable materials are:
      1. BASF: MasterEmaco P124
      2. Sika: Armatec 110 EpoCem
      3. Euclid Chemical: Duralprep A.C.

2.4 ADHESIVE ANCHORS
   A. Acceptable materials are:
      1. Hilti: HIT-HY 200
      2. Powers: PE 1000+
      3. Simpson: Set-XP

2.5 CURING COMPOUND
   A. Use curing compound on vertical and overhead surfaces as recommended by Manufacturer.
   B. Curing compound shall comply with ASTM C309, Type 1, Class B and ASTM C1315, Type 1, Class
      A.

PART 3 - EXECUTION

3.1 GENERAL
   A. Protect adjacent Work areas and finish surfaces from damage during repair mortar application.
   B. Locate and determine depth of all embedded conduits, reinforcement, prestressing strands,
      post-tensioning tendons and other embedded elements prior to starting demolition.
   C. Concrete may contain post-tensioning tendons. USE EXTREME CAUTION when working around
      tensioned strands which will explode with significant force if damaged.
3.2 CONCRETE REMOval AND SURFACE preparation

A. Prepare surfaces in accordance with manufacturer’s instructions.
B. Sawcut perimeter of repair to depth of at least 1/2 inch. Square off irregular patch shapes. Use caution while sawcutting to not damage existing reinforcement.
C. Remove all unsound concrete and sound concrete as required to provide 1” clear distance between any corroded reinforcing bar and the adjacent concrete.
D. Minimum depth of concrete repair cavity shall be 1” unless directed otherwise by Engineer.
E. Concrete shall be removed using 15 to 30 lb chipping hammers with chisel point bits. Chipping hammers larger than 30 lbs shall not be used. Chipping hammers less than 15 lbs may be required in some areas to prevent damage to existing sound concrete.
F. Any damage caused by Contractor shall be repaired at no additional cost.
G. Additional removal of sound concrete may be required as directed by Engineer if rust is present where reinforcement enters sound concrete.
H. Abrasive blast cavity to remove material that may inhibit the bond of concrete repair material.
I. Remove all dust and debris from cavity prior to patching.

3.3 REINFORCEMENT & MISCELLANEOUS METAL PREPARATION

A. Abrasive blast exposed reinforcing steel and miscellaneous metals to near white metal, removing all corrosion by-products.
B. Coat all exposed reinforcement and miscellaneous metal with an approved protective coating.
C. Dowel or splice additional reinforcement where existing reinforcement has been damaged or has section loss as directed by Engineer.
D. Secure all loose reinforcement.

3.4 INSTALLATION

A. Mix and install materials in strict accordance with manufacturer’s instructions.
B. Ensure that substrate surface and ambient air temperature are minimum of 40 degrees F and rising at application time and remain above 40 degrees F for at least 24 hours after application. Ensure that frost or frozen surfaces are thawed and dry.
C. Do not apply material if snow, rain, fog, and mist are anticipated within 12 hours after application. Allow surfaces to attain temperature and conditions specified before proceeding with application.
D. Ensure formwork is rigid and water tight to prevent loss of material. Properly seal faces of forms to ensure surfaces absorb no water from repair material.
E. Several hours before placing repair mortar, saturate prepared concrete substrate with clean water.
F. Remove water immediately before placement of repair mortar, leaving substrate saturated surface-dry (SSD) with no ponded water remaining.

G. Spray formwork with clean water to achieve saturated surface-dry (SSD) condition immediately before placing repair mortar.

H. Brush in scrub coat of repair material into concrete substrate.

3.5 CURING

A. Cure repair mortar in accordance with manufacturer’s instructions and ACI 308.

B. Wet cure horizontal repairs with burlap and polyethylene a minimum of 7 days.

C. Use curing compound on vertical and overhead repairs.

3.6 PROTECTION

A. Protect concrete repairs from damage during construction. Concrete repairs damaged during construction shall be repaired at no additional cost.

END OF SECTION
SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 071800 Traffic Coatings
   3. Section 071900 Water Repellents
   4. Section 079200 Joint Sealants
   5. Section 079500 Expansion Joint Sealing Systems
   6. Section 221400 Storm Drainage

1.2 SUMMARY
A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, placement procedures, and finishes.

1.3 SUBMITTALS
A. Comply with Section 013300 Submittal Procedures.
B. Submit Mix Design for each concrete mixture.
C. Submit manufacturer's Product Data Sheets and Safety Data Sheets for each product/admixture used.
D. Submit material test reports for coarse and fine aggregates.

1.4 QUALITY ASSURANCE
A. Work shall be performed in accordance with the following reference standards, except where more stringent requirements are indicated on the drawings or specifications.
   1. ACI 117 Specification for Tolerances for Concrete Construction and Materials
   2. ACI 201.2R Guide to Durable Concrete
   3. ACI 222R Protection of Metals in Concrete Against Corrosion
   4. ACI 301 Specifications for Structural Concrete
   5. ACI 318 Building Code Requirements for Structural Concrete
   6. ICRI Technical Guide 310.1R Surface Preparation: Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
   7. ICRI Technical Guide 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
   8. ICRI Technical Guide 320.1R Selecting Application Methods for the Repair of Concrete Surfaces
9. ICRI Technical Guide 320.2R Selecting and Specifying Materials for the Repair of Concrete Surfaces

B. Installer Qualifications: A qualified installer who has successfully completed concrete work similar to the work involved for this project.

C. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94 requirements for production facilities and equipment.
   1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

D. Testing Agency Qualifications: An independent agency, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Store reinforcement protected from weather.

1.6 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
   2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:
   1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water.
   2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
   1. Plywood, metal, or other approved panel materials.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, ¾” x ¾” or sized to match existing chamfer.
D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

E. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

F. Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
   1. Furnish units that leave no corrodible metal closer than 1 ½” to the plane of exposed concrete surface.
   2. Furnish ties that, when removed, leave holes no larger than 1” in diameter in concrete surface.
   3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A615, Grade 60.

B. Epoxy-Coated Reinforcing Bars: ASTM A775

C. Epoxy-Coated Welded-Wire Reinforcement: ASTM A884

2.3 REINFORCEMENT ACCESSORIES


2.4 CONCRETE MATERIALS

A. Source Limitations: Obtain each type or class of cementitious material of the same brand from same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

B. Cementitious Materials:
   1. Portland Cement: ASTM C150, Type I
   2. Fly Ash: ASTM C618, Class F or C.
   3. Slag Cement: ASTM C989, Grade 100 or higher.
   4. Silica Fume: ASTM C1240

C. Normal-Weight Aggregates: ASTM C33, Class 5S coarse aggregate
   2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Water: ASTM C1602, potable.

E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use admixtures containing intentionally-added chlorides.
   1. Air-Entraining Admixture: ASTM C260
a. Acceptable materials are:
   1) BASF: MasterAir Series
   2) Sika: Sika AEA or Sika AIR Series
   3) Euclid: Eucon AEA or Eucon Air Series
   4) GCP Applied Technologies: DARAVAIR Series

2. Water-Reducing Admixture: ASTM C494, Type A.
   a. Acceptable materials are:
      1) BASF: MasterPozzolith Series
      2) Sika: Plastocrete Series
      3) Euclid: Eucon Series
      4) GCP Applied Technologies: WRDA Series

3. Mid-Range Water-Reducing Admixture: ASTM C494, Type A.
   a. Acceptable materials are:
      1) BASF: MasterPolyheed Series
      2) Sika: SikaPlast or Sikament Series
      3) Euclid: Eucon Series
      4) GCP Applied Technologies: MIRA Series

4. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
   a. Acceptable materials are:
      1) BASF: MasterGlenium Series or MasterRheobuild 1000
      2) Sika: Sikament or Sika ViscoCrete Series
      3) Euclid: Eucon or Plastol Series
      4) GCP Applied Technologies: DARACEM or ADVA Series

5. Non-Chloride Accelerating Admixture: ASTM C494, Type C or E.
   a. Acceptable materials are:
      1) BASF: MasterSet AC 534 or MasterSet FP 20
      2) Sika: SikaSet NC or SikaSet NC-4
      3) Euclid: Accelguard Series
      4) GCP Applied Technologies: DARASET, DCI OR POLARSET

6. Retarding Admixture: ASTM C494/C494M, Type B or D.
   a. Acceptable materials are:
      1) BASF: MasterSet R or MasterSet DELVO Series
      2) Sika: Sika Plastiment Series
      3) Euclid: Eucon Series
      4) GCP Applied Technologies: Daratard 17 or RECOVER

7. Calcium Nitrite Based Corrosion-Inhibiting Admixture: Admixture shall be capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C494, Type C.
   a. Acceptable materials are:
      1) BASF: MasterLife CI 30
      2) Sika: Sika CNI
      3) Euclid: Eucon CIA or BCN
      4) GCP Applied Technologies: DCI or DCI S
2.5 FIBER REINFORCEMENT

A. Synthetic Micro-Fiber: Monofilament or fibrillated polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C1116, Type III, 3/4” minimum length.
   1. Acceptable materials are:
      a. BASF: MasterFiber Series
      b. Sika: SikaFiber Series
      c. Euclid: PSI Fiberstrand Series
      d. GCP Applied Technologies: SINTA Series

2.6 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
C. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
D. Water: Potable.
E. Curing Compound:
   1. Use curing compound on vertical and overhead concrete repairs.
   2. Curing compound shall comply with ASTM C309, Type 1, Class B and ASTM C1315, Type 1, Class A.

2.7 CONCRETE MIXTURES, GENERAL

A. Prepare mix designs for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.
   1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
B. Refer to Drawings for concrete mix design requirements.
C. Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume shall be limited by weight of cementitious materials as follows:
   1. Fly Ash: 25 percent.
   2. Slag Cement: 40 percent.
   3. Combined Fly Ash or Pozzolan and Slag Cement: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
   4. Combined Fly Ash or Pozzolans, Slag Cement, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
D. Limit water-soluble, chloride-ion content in hardened concrete to 0.08 percent by weight of cement.
E. Admixtures: Use admixtures in accordance with manufacturer's written instructions.
   1. Use water-reducing admixture(s) in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use accelerating or water-reducing and accelerating admixture when required by low temperatures, or other adverse cold weather placement conditions.
4. Use corrosion-inhibiting admixture or other admixtures as indicated on Drawings.

2.8 FABRICATING REINFORCEMENT
A. Fabricate steel reinforcement in accordance with CRSI's "Manual of Standard Practice."

2.9 CONCRETE MIXING
A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94 and ASTM C 1116.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION
A. Design, erect, shore, brace, and maintain formwork, in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
C. Construct forms tight enough to prevent loss of concrete mortar.
D. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
1. Do not use rust-stained steel form-facing material.
E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
F. Chamfer exterior corners and edges of permanently exposed concrete.
G. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
I. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

J. Coat contact surfaces of forms with form-release agent, in accordance with manufacturer’s written instructions, before placing reinforcement.

3.2 EMBEDDED ITEM INSTALLATION

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 REMOVING AND REUSING FORMS

A. General: Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained. Contractor is responsible for repairing concrete damaged by removal for formwork.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.

2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces.

3.4 SHORING AND RESHORING INSTALLATION

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring.

3.5 STEEL REINFORCEMENT INSTALLATION

A. General: Comply with CRSI’s "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.
F. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating in accordance with ASTM D3963/D3963M. Use epoxy-coated steel wire ties to fasten epoxy-coated steel reinforcement.

3.6 JOINTS
A. Install joints as indicated on Drawings or as approved by Engineer.
B. Tool joints at time of finishing.
C. Joints passing through concrete repairs shall be tooled for continuity.

3.7 CONCRETE PLACEMENT
A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
B. Do not add water to concrete during delivery, at project site, or during placement unless water is withheld at plant and approved by Engineer.
C. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
D. Maintain reinforcement in position on chairs during concrete placement.

3.8 FINISHING FORMED SURFACES
A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces not exposed to public view.
B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces exposed to public view.
C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS
A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
B. Begin bullfloating immediately after screeding, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
C. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
   1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

D. Finish all slabs to proper elevations to ensure water will adequately drain to floor drains and that no ponding water exists.

3.10 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.1 lb/sq. ft. x h before and during finishing operations. Apply in accordance with manufacturer's written instructions after placing, screeding, and bull floating concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete.

E. Cure horizontal concrete surfaces in accordance with ACI 308.1, by one or a combination of the following methods:
   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
   2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

F. Cure vertical and overhead concrete surfaces in accordance with ACI 308.1
   1. Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.11 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch or replace defective areas.
B. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

C. Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

D. Repair all cracks in supported concrete floors and curbs by routing and sealing or as approved by Engineer.

3.12 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform field tests and inspections.

B. Testing Agency: Owner will engage a qualified testing and inspecting agency to perform tests and inspections.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C172 shall be performed in accordance with the following requirements:

1. Testing Frequency: Obtain at least one composite sample for every 50 cu. yd. or fraction thereof of each concrete mixture placed each day.

2. Slump: ASTM C143, one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

4. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

5. Density: ASTM C138, fresh density of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

   a. Cast and field cure a minimum of eight (8) 6" by 12" cylinder specimens for each composite sample.

   a. Test cylinders as follows:
      1) Test (2) at 3 days
      2) Test (2) at 7 days
      3) Test (2) at 28 days
      4) 2 spares to be used as needed or as directed by Engineer.
   b. Contractor may, at their own expense, request additional cylinders to verify concrete strength.

8. Immediately report all nonconforming test results to Engineer, Contractor and Owner.

9. Test results shall be reported in writing to Engineer, Contractor and Owner within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification.
name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, specified compressive strength at 28 days, concrete mixture proportions and materials, compressive strength, and type of failure.

10. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Engineer.

11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION
SECTION 036400 – INJECTION GROUTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary
      Conditions and Division 01 Specification Sections, apply to this Section.
   B. Related Sections:
      1. Section 030130 Concrete Repair

1.2 SUMMARY
   A. Section includes installation of chemical grouts by pressure injection.

1.3 SUBMITTALS
   A. Comply with Section 013300 Submittal Procedures.
   B. Submit manufacturer's Product Data Sheets for each product.
   C. Submit manufacturer's Safety Data Sheets for each product.
   D. Upon request, submit Installer’s qualifications as indicated in the Quality Assurance section

1.4 QUALITY ASSURANCE
   A. Manufacturer shall make available a qualified Manufacturer’s representative to assist the
      Installer and Engineer.
   B. Installer Qualifications:
      1. Installer shall be approved by manufacturer.
      2. Installer shall have a minimum of five (5) years experience in application of specified
         products and system on projects of similar size and scope.
      3. Installer shall provide evidence of successful completion of a minimum of five (5) projects
         of similar size and complexity to specified Work.

1.5 DELIVERY, STORAGE, AND HANDLING
   A. Deliver products in original factory packaging bearing identification of product, manufacturer,
      and batch number.
   B. Store products in original, unopened containers in clean, dry area protected from weather, heat
      and direct sunlight.
   C. Keep lids on containers tight to prevent moisture from entering containers.
1.6 WARRANTY
   A. Provide the owner a Warranty by the Manufacturer and Installer that the cracks and/or joints
      where chemical grout was installed will be free of leaks.
   B. Warranty duration shall be five (5) years commencing with the date of project acceptance.
   C. Repairs shall be completed under this warranty at no cost to Owner.

PART 2 - PRODUCTS

2.1 POLYURETHANE INJECTION RESIN (CHEMICAL GROUT)
   A. Provide injection ports as recommended by Manufacturer.
   B. Manufacturer to provide recommend product(s) based on application.
   C. Acceptable Polyurethane Injection Resins Manufacturers are:
      1. Alchemy - Spetec
      2. Avanti
      3. Azon
      4. GCP Applied Technologies (DeNeef)

PART 3 - EXECUTION

3.1 EXAMINATION
   A. Inspect all surfaces and notify engineer immediately of any conditions that are unsuitable for
      proper execution of this work.
   B. Proceed with installation of sealants only after unsatisfactory conditions have been corrected;
      installation of sealants indicates acceptance of surfaces and conditions.

3.2 SURFACE PREPARATION
   A. Prepare surfaces in accordance with manufacturer’s instructions.
   B. Condition material as recommended by Manufacturer.

3.3 MIXING
   A. Mix components in accordance with manufacturer’s instructions.

3.4 APPLICATION
   A. Install material in accordance with manufacturer’s instructions.
   B. Drill and install injection ports in accordance with manufacturer’s instructions.
   C. Clean and flush cracks in accordance with manufacturer’s instructions.
3.5 CLEANING

A. Remove injection ports and fill holes with either a cementitious or epoxy based patching material.

B. Grind excess resin from face of concrete.

END OF SECTION
SECTION 071800 – TRAFFIC COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 033000 Cast-in-Place Concrete
   3. Section 071900 Water Repellents
   4. Section 079200 Joint Sealants
   5. Section 079500 Expansion Joint Sealing Systems
   6. Section 221400 Storm Drainage

1.2 SUMMARY

A. Section includes installation of traffic coatings, including surface preparation.

1.3 SUBMITTALS

A. Comply with Section 013300 Submittal Procedures.

B. Submit manufacturer’s Product Data Sheets for each product.

C. Submit manufacturer’s Safety Data Sheets for each product.

D. Submit manufacturer’s installation instructions for each product.

E. Submit application rates to achieve specified dry mils for each coat.

F. Submit results of slab moisture testing.

G. Submit certification from Manufacturer that coefficient of friction of finished coating system meets minimum requirements of Americans with Disabilities Act (ADA).

H. Submit results of coefficient of friction testing from field sample.

I. Submit sample warranty prior to application.

J. Upon request, submit Installer’s qualifications as indicated in the Quality Assurance section.

1.4 QUALITY ASSURANCE

A. Manufacturer shall make available a qualified Manufacturer’s representative to assist the Installer and Engineer. The Representative shall be experienced in the placement of traffic coating systems.

B. Traffic coating installer shall be responsible for surface preparation and joint sealants.
C. Installer Qualifications:
   1. Installer shall be approved by manufacturer.
   2. Installer shall have a minimum of five (5) years experience in application of specified products and system on projects of similar size and scope.
   3. Installer shall provide evidence of successful completion of a minimum of five (5) projects of similar size and complexity to specified Work.

D. Project Review:
   1. Manufacturer and installer shall review project prior to bidding. Project review shall include, but not necessarily be limited to, existing slopes and condition of surfaces. Manufacturer/Installer shall notify Engineer of any issues with the installation of the products specified. Submitting a bid constitutes acceptance of the existing conditions and that the specified system is applicable for these conditions.

E. Field Sample:
   1. Install field sample at project site at a location approved by Owner or Engineer.
   2. Provide mock-up of at least 100 square feet to include surface preparation, joint and crack detailing, and allow for evaluation of slip resistance and appearance.
   3. Apply material in accordance with manufacturer’s written application instructions.
   4. Manufacturer’s representative or designated representative will review technical aspects; surface preparation, application, and workmanship.
   5. Manufacturer’s representative to test coefficient of friction of field sample and confirm that it meets minimum requirements of Americans with Disabilities Act (ADA).
   6. Field sample will be standard for judging workmanship on remainder of the project.
   7. Maintain field sample during construction for workmanship comparison.
   8. Do not alter, move, or destroy field sample until Work is completed and approved by Engineer.
   9. Field sample may be incorporated into finished coating.
   10. Obtain Engineer’s written approval of field sample before start of material application, including approval of aesthetics, color, texture, and appearance.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.

B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Store products in original, unopened containers in clean, dry area protected from weather, heat and direct sunlight.

D. Store material in accordance with manufacturer's recommendations.
1.6  WARRANTY

A. Provide the Owner a “Joint and Several” Warranty by the Manufacturer and Installer that the installed traffic coating system will be free of defects, water penetration and chemical damage related to system design, workmanship or material deficiency, consisting of, but not limited to:
   1. Surface crazing or other weathering deficiency (including U.V. exposure).
   2. Abrasion or tear failure resulting from normal traffic use.
   3. Tear failure resulting from anticipated movement.
   4. Debonding from the substrate or delaminating between layers.
   5. Defective installation.

B. Warranty duration shall be five (5) years commencing with the date of project acceptance.

C. Repairs shall be completed under this warranty at no cost to Owner.

D. Metal edged snowplows, abrasive maintenance equipment, and vandalism are not considered normal traffic use and are exempt from this warranty.

PART 2 - PRODUCTS

2.1  GENERAL

A. A UV stable topcoat shall be used for all traffic coating systems.

B. Color to be selected by Owner. Provide standard color chart.

C. Primer is required for all traffic coating systems. Manufacturer to provide recommendation on which primer to use.

2.2  HEAVY DUTY POLYURETHANE TRAFFIC COATING

A. Full System:
   1. Full system shall consist of primer, base coat, intermediate coat, and top coat.
   2. Heavy duty full system shall have a total system thickness of 60 dry mils not including primer and aggregate. Manufacturer to provide recommendation on thickness of each coat.

B. Recoat System:
   1. Recoat system shall consist of primer, intermediate coat, and top coat.
   2. Heavy duty recoat system shall have a total system thickness of 35 dry mils not including primer and aggregate. Manufacturer to provide recommendation on thickness of each coat.
   3. Provide base coat where existing coating is damaged or worn down to concrete.

C. Acceptable heavy duty polyurethane traffic coating materials are:
   1. APT: Qualideck
   2. BASF: MasterSeal Traffic 2500
   3. Lyntal: Iso-Flex 760 U-HL HVT
   4. Neogard: Auto-Gard FC
5. Sika: Sikalastic 720/745 AL Traffic System

2.3 HEAVY DUTY EPOXY/POLYURETHANE TRAFFIC COATING

A. Full System:
1. Full system shall consist of primer, base coat (polyurethane/polyurea), intermediate coat (epoxy), and top coat (polyurethane/polyurea).
2. Heavy duty full system shall have a total system thickness of 60 dry mils not including primer and aggregate. Manufacturer to provide recommendation on thickness of each coat.

B. Recoat System:
1. Recoat system shall consist of primer, intermediate coat (epoxy), and top coat (polyurethane).
2. Heavy duty recoat system shall have a total system thickness of 35 dry mils not including primer and aggregate. Manufacturer to provide recommendation on thickness of each coat.
3. Provide base coat where existing coating is damaged or worn down to concrete.

C. Acceptable heavy duty epoxy/polyurethane traffic coating materials are:
1. APT: Qualideck system with Qualipur 552 E for intermediate coat
2. BASF: MasterSeal Traffic 2530
3. Lyntal: Iso-Flex 750 EU
4. Neogard: Auto-Gard E
5. Olin: Poly-Carb MARK 170.2, Flexodeck II

2.4 EPOXY BROADCAST SYSTEM

A. Epoxy broadcast system shall consist of a wear coat applied a 40 SF/gal and a top coat applied at 60 SF/gal.

B. Acceptable epoxy broadcast systems are:
1. APT: Qualipur 552 E
2. BASF: MasterSeal 350
3. Lyntal: Iso-Flex Epoxy 200
4. Neogard: 70714/70715-09
5. Olin: Mark 171 / Mark 170.2 Epoxy Finish Coat
6. Sika: Sikadur 22 Lo-Mod

2.5 AGGREGATE

A. Aggregate shall be clean and dry and shall be approved by traffic coating manufacturer.

B. Aggregate size shall be 12/20.
PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect surfaces to be coated. Surfaces must be free of voids, laitance, loose material, grease, oil, rust and other contaminants that will affect the bond of the coating. Conduct a base coat adhesion test to determine if surface preparation and adhesion are acceptable.

B. Inspect slab for variations in surface finish, joint offsets, and other defects that may adversely affect the performance of the coating.

C. Report immediately to the Engineer as required any deficiencies in the surface that render it unsuitable for proper execution of this work.

D. Proceed with application of coating only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 SURFACE PREPARATION

A. Prepare surface in accordance with manufacturer’s instructions.

B. Shotblast concrete to remove dirt, dust, grease, oil, coatings, laitance, and other surface contamination and to provide profile for proper adhesion.

C. Uncoated concrete to be prepared to CSP 3-4 per ICRI Guideline No. 03732, Selecting and specifying concrete surface preparation for sealers, coatings, and polymer overlays.

D. Prepare all cracks, coves and terminations in accordance with manufacturer’s recommendations.

E. Repair existing damaged or debonded coating prior to installing recoat system.

F. Clean and sensitize existing coating system in accordance with manufacturer’s recommendations (recoat system).

3.3 MIXING

A. Mix material components in accordance with manufacturer’s instructions.

B. Precondition material components as recommended by Manufacturer.

3.4 APPLICATION

A. Apply traffic coating system in accordance with manufacturer’s instructions.

B. Do not apply traffic coating system to damp, wet, or contaminated surfaces.

C. Perform slab moisture testing in accordance with ASTM D 4263 prior to installation of the system.

D. Environmental Requirements:
   1. Minimum Application Temperature: 40 degrees F.
2. Do not apply in rain or when rain is expected within 24 hours.
3. Do not apply above 90 degrees F.

E. Do not apply traffic coating until concrete has been air dried at temperatures at or above 40 degrees F for at least 28 days.
F. Contractor is responsible for odor control including consideration of timing of installation, location of air intakes, etc. Coordinate installation of traffic coating with Owner.
G. Apply a detail coat at all cracks and joints. Thickness of detail coat shall match thickness of base coat. Install detail coat in accordance with Manufacturer’s recommendations.
H. Install each coat at the proper application rate to achieve the specified dry mil thickness.
I. Follow manufacturer’s instructions for cure time between coats.
J. Immediately broadcast aggregate to refusal into wet intermediate coat.
K. Remove excess aggregate prior to installing top coat.
L. Broadcast aggregate and lightly backroll into top coat as recommended by manufacturer to achieve adequate slip resistance.
M. Provide straight edges at all terminations.
N. Extend deck coating 4” up all vertical surfaces unless indicated otherwise.
O. Installation of traffic coating system shall be completed, and the system shall be cured as recommend by manufacturer prior to installing pavement markings or allowing pedestrian/vehicular traffic on coating.

3.5 EPOXY BROADCAST SYSTEM
A. Follow surface preparation, mixing and application instructions above except as modified below.
B. Broadcast aggregate to refusal into wet epoxy for both wear coat and top coat.
C. Remove excess aggregate after each coat has cured. Follow manufacturer’s instructions.

3.6 CLEANING
A. Cleanup all excess material, including but not limited to drips, runs, spills etc.
B. Touchup terminations as required.

END OF SECTION
SECTION 071900 – WATER REPELLENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
B. Related Sections:
1. Section 030130 Concrete Repair
2. Section 033000 Cast-in-Place Concrete
3. Section 071800 Traffic Coatings
4. Section 079200 Joint Sealants
5. Section 079500 Expansion Joint Sealing Systems

1.2 SUMMARY
A. Section includes installation of water repellents, including surface preparation.

1.3 SUBMITTALS
A. Comply with Section 013300 Submittal Procedures.
B. Submit manufacturer's Product Data Sheets for each product.
C. Submit manufacturer's Safety Data Sheets for each product.
D. Submit manufacturer’s installation instructions for each product.
E. Submit sample warranty prior to application.
F. Upon request, submit Installer’s qualifications as indicated in the Quality Assurance section.

1.4 QUALITY ASSURANCE
A. Manufacturer shall make available a qualified Manufacturer’s representative to assist the Installer and Engineer. The Representative shall be experienced in the placement of water repellents.
B. Installer Qualifications:
1. Installer shall be approved by manufacturer.
2. Installer shall have a minimum of five (5) years experience in application of specified products and system on projects of similar size and scope.
3. Installer shall provide evidence of successful completion of a minimum of five (5) projects of similar size and complexity to specified Work.
C. Project Review:
1. Manufacturer and installer shall review project prior to bidding. Manufacturer/Installer shall notify Engineer of any issues with the installation of the products specified. Submitting a bid constitutes acceptance of the existing conditions and that the specified system is applicable for these conditions.

D. Field Sample:
   1. Before a sealer application the following field evaluation will be done. The cost of the field testing will be the responsibility of the Water Repellent Manufacturer.
   2. Prepare a three (3) feet by three (3) feet area to be sprayed with the water repellent. The area will be determined by the Owner. Apply the water repellent in a flooding application, from the bottom up to cause the material to run down 6 to 8 inches below the spray pattern.
   3. After allowing five (5) days for the sample to cure run a RILEM uptake test on the treated area.
   4. Place one tube on the brick and one tube on a mortar joint. Owner must be present for the application of the water repellent and the test.
   5. Acceptable minimum results are as stated in the warranty provisions. Coverage rate used to pass this test section must be used on entire project.

1.5 DELIVERY, STORAGE, AND HANDLING
   A. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.
   B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
   C. Store in unopened containers in clean, dry area protected from weather.
   D. Store material in accordance with manufacturer's recommendations.

1.6 WARRANTY
   A. Provide the Owner a “Joint and Several” Warranty by the Manufacturer and Installer that the installed water repellent will be free of defects either in workmanship or material deficiency, consisting of, but not limited to:
      1. Loss of water repellency.
      2. Loss of chloride ion screening.
      3. Defective installation.
   B. Warranty duration shall be five (5) years commencing with the date of project acceptance.

PART 2 - PRODUCTS

2.1 MASONRY SEALER
   A. Masonry sealer shall be clear and breathable, 100% silane.
   B. Sealer shall have the following minimum performance:
      1. No change in the surface appearance or texture.
2. 85% reduction in water and chloride absorption based on NHCRP #244 Series II (200 sf/gal application rate)
3. 99% reduction in chloride absorption based on NHCRP #244 Series IV (200 sf/gal application rate)
4. 100% reduction in leakage and dampness based on ASTM E 514

C. Acceptable masonry sealers are:
1. Evonik: Protectosil Chem-Trete BSM 400
2. Or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Inspect surfaces receive sealer. Report immediately to the Engineer as required any deficiencies in the surface that render it unsuitable for proper execution of this work.
B. Proceed with application of sealer only after unsatisfactory conditions have been corrected; application of water repellent indicates acceptance of surfaces and conditions.

3.2 SURFACE PREPARATION
A. Prepare surfaces in accordance with manufacturer’s instructions.
B. Follow manufacturer’s recommendations concerning protection of glass, metal and other non-porous substrates. Contractor will be responsible to clean all surfaces that are contaminated by the water repellent.
C. Follow manufacturer’s recommendation concerning protection of plants, grass and other vegetation. Contractor will be responsible for replacing all plants, grass or vegetation damaged by the water repellent.
D. Verify substrate has properly cured. Surfaces shall be clean and structurally sound. Remove dust, dirt, oil, grease, chemical films, coatings and other contaminants before application.
E. Verify cracks that exceed 1/64 inch wide have been filled with pointing mortar.
F. All repointing must be completed and allowed to cure.
G. Do not apply sealer if standing water is visible on surface to be treated.

3.3 APPLICATION
A. Environmental Requirements:
   1. Temperature shall be between 40 and 100 degrees F.
   2. Do not apply in rain or when rain is expected within 4 hours.
   3. Do not proceed with application if ice or frost is covering the substrate.
B. Apply sealer in accordance with manufacturer’s instructions.
C. Product shall be applied as supplied by the manufacturer without dilution or alteration.
D. Apply with a low-pressure (15 psi) airless spray equipment with a fan spray coarse nozzle, flooding the surface to obtain uniform coverage unless otherwise recommended by the manufacturer.

E. Apply at a rate of not less than 125 square feet/gallon unless the field tests determine that a heavier rate of application is necessary to meet the performance requirements.

F. Apply at temperature and weather conditions recommended by the manufacturer or written in this specification.

G. Brush apply water repellent only at locations where overspray would affect adjacent materials and where it is not practicable for spray application.

H. Apply even distribution of sealer.

I. Spray Test: After water repellent has dried, spray coated surfaces with water.
   1. After surfaces have adequately dried, recoat surfaces that show water absorption.

3.4 CLEANING

A. As work progresses, clean spillage and overspray from adjacent surfaces using materials and methods as recommended by manufacturer.

B. Remove protective coverings from adjacent surfaces when no longer needed.

END OF SECTION
SECTION 079200 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 033000 Cast-in-Place Concrete
   3. Section 071800 Traffic Coatings
   4. Section 071900 Water Repellents
   5. Section 079500 Expansion Joint Sealing Systems
   6. Section 221400 Storm Drainage

1.2 SUMMARY

A. Section includes installation of joint sealants, including surface preparation.

1.3 SUBMITTALS

A. Comply with Section 013300 Submittal Procedures.

B. Submit manufacturer’s Product Data Sheets for each product.

C. Submit manufacturer’s Safety Data Sheets for each product.

D. Upon request, submit Installer’s qualifications as indicated in the Quality Assurance section

E. Submit sample warranty prior to installation.

1.4 QUALITY ASSURANCE

A. Manufacturer shall make available a qualified Manufacturer’s representative to assist the Installer and Engineer.

B. Joint sealant installer shall be responsible for surface preparation and traffic coatings.

C. Installer Qualifications:
   1. Installer shall be approved by manufacturer.
   2. Installer shall have a minimum of five (5) years experience in application of specified products and system on projects of similar size and scope.
   3. Installer shall provide evidence of successful completion of a minimum of five (5) projects of similar size and complexity to specified Work.
D. Conduct adhesion pull-tests in accordance with ASTM C1521.
   1. If adhesion is adequate sealant should tear cohesively within itself or elongate to an extension value beyond the sealant’s movement capability before failing adhesively.
   2. Test areas shall be repaired at no additional cost.
   3. If testing reveals non-compliant Work or Work that was not installed in accordance with Specifications, and/or manufacturer requirements, remove adjacent Work until a location is reached where installation was performed properly. Assist in spot-checking of remainder of Work.
   4. Conduct one (1) test for every 500 lineal feet of sealant. Additional testing may be required depending on number of non-compliant tests.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number.

B. Store products in original, unopened containers in clean, dry area protected from weather, heat and direct sunlight.

1.6 WARRANTY

A. Provide the owner a “Joint and Several” Warranty by the Manufacturer and Installer that the installed sealant will be free of defects, water penetration and chemical damage related to system design, workmanship or material deficiency, consisting of, but not limited to:
   1. Surface crazing or other weathering deficiency (including U.V. exposure).
   2. Abrasion or tear failure resulting from normal traffic use.
   3. Adhesive or cohesive failures.

B. Polyurethane sealant or traffic bearing silicone sealant: Warranty duration shall be five (5) years commencing with the date of project acceptance.

C. Non-traffic bearing silicone sealant: Warranty duration shall be ten (10) years commencing with the date of project acceptance.

D. Repairs shall be completed under this warranty at no cost to Owner.

E. Metal edged snowplows, abrasive maintenance equipment, and vandalism are not considered normal traffic use and are exempt from this warranty.

PART 2 - PRODUCTS

2.1 GENERAL

A. Color of sealant shall match existing or be selected by Owner. Provide standard color chart.

B. Primer is required for all joint sealants.
2.2 POLYURETHANE JOINT SEALANTS
   A. Acceptable Polyurethane Joint Sealants for horizontal joints are:
      1. BASF: MasterSeal SL 2 or MasterSeal NP 2
      2. Lymtal: Iso-Flex 880 GB or Iso-Flex 881
      3. Sika: Sikaflex 2C NS or Sikaflex 2C SL
   B. Acceptable Polyurethane Joint Sealants for vertical and cove joints are:
      1. BASF: MasterSeal NP 2
      2. Lymtal: Iso-Flex 881
      3. Sika: Sikaflex 2C NS

2.3 SILICONE JOINT SEALANTS
   A. Acceptable Silicone Joint Sealants for horizontal traffic bearing applications are:
      1. Dow: DOWSIL NS Parking Structure Sealant
      2. Sika: Sikasil 728 NS
   B. Acceptable Silicone Joint Sealants for vertical non-traffic bearing applications are:
      1. Dow: DOWSIL 795
      2. Sika: Sikasil WS 295

2.4 PRE-FORMED SILICONE JOINT SEALANT
   A. Pre-formed silicone joint sealants to be used at mullion joints as indicated on the drawings.
   B. Acceptable Pre-formed Silicone Sealants are:
      1. Dow: DOWSIL 123 Silicone Seal

2.5 BACKER ROD
   A. Provide closed cell or bi-cellular backer rod.
   B. Acceptable backer rods are:
      1. BASF: MasterSeal 920 or 921
      2. Industrial Thermo Polymers Limited: ITP Soft Type Backer Rod or ITP Standard Backer Rod
      3. Nomaco: SOF Rod or HBR

PART 3 - EXECUTION

3.1 EXAMINATION
   A. Inspect all surfaces and notify engineer immediately of any conditions that are unsuitable for proper execution of this work.
   B. Proceed with installation of sealants only after unsatisfactory conditions have been corrected; installation of sealants indicates acceptance of surfaces and conditions.
3.2 SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer’s instructions.
B. Clean joints as required to expose sound surface free of contamination and laitance.
C. Ensure structurally sound surfaces, dry, clean, free of dirt, moisture, loose materials, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and parting compounds, membrane materials, and other foreign matter that impair adhesion of sealant.
D. Grind joint edges smooth and straight to expose sound surface free of contamination and laitance.

3.3 MIXING

A. Mix components in accordance with manufacturer’s instructions.

3.4 APPLICATION

A. Do not use products under conditions of precipitation or in inclement or freezing weather. Verify that substrates are clean, dry, and frost free. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions in accordance with manufacturer's recommendations if application during inclement weather occurs.
B. Do not apply sealant until concrete has been air dried at temperatures at or above 40 degrees F for at least 28 days.
C. Install appropriate size backer rod, larger than joint where necessary in accordance with manufacturer’s recommendations, and in manner to provide concave sealant profile.
D. Where joint depth does not permit installation of backer rod, install adhesive-backed polyethylene bond-breaker tape along entire back of joint to prevent 3-sided adhesion of joint sealant.
E. Install primer and sealant in accordance with manufacturer’s instructions.
F. Recess sealant as indicated on the drawings for horizontal joints subject to vehicular traffic.
G. Allow sealant to cure in accordance with manufacturer’s instructions.

3.5 CLEANING

A. Remove excess sealant in accordance with manufacturer’s instructions.

END OF SECTION
SECTION 079500 – EXPANSION JOINT SEALING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 033000 Cast-in-Place Concrete
   3. Section 071800 Traffic Coatings
   4. Section 071900 Water Repellents
   5. Section 079200 Joint Sealants
   6. Section 079500 Expansion Joint Sealing Systems
   7. Section 221400 Storm Drainage

1.2 SUMMARY

A. Section includes furnishing and installing waterproof expansion joints in accordance with the details shown on the plans and the requirements of the specifications.

1.3 SUBMITTALS

A. Comply with Section 013300 Submittal Procedures.

B. Submit manufacturer's Product Data Sheets for each product.

C. Submit manufacturer's Safety Data Sheets for each product.

D. Upon request, submit Installer’s qualifications as indicated in the Quality Assurance section

E. Submit sample warranty prior to installation.

1.4 QUALITY ASSURANCE

A. Manufacturer shall make available a qualified Manufacturer’s representative to assist the Installer and Engineer.

B. Installer Qualifications:
   1. Installer shall be approved by manufacturer.
   2. Installer shall have a minimum of five (5) years experience in application of specified products and system on projects of similar size and scope.
   3. Installer shall provide evidence of successful completion of a minimum of five (5) projects of similar size and complexity to specified Work.

C. All expansion joint sealing systems to accept pedestrian traffic shall comply with the requirements of Americans with Disabilities Act (ADA).
1.5 DELIVERY, STORAGE, AND HANDLING
   A. Deliver products in original factory packaging bearing identification of product, manufacturer, and lot or batch number.
   B. Store products in original, unopened containers in clean, dry area protected from weather.

1.6 WARRANTY
   A. Provide the owner a “Joint and Several” Warranty by the Manufacturer and Installer that the installed sealant will be free of defects, water penetration and chemical damage related to system design, workmanship or material deficiency, consisting of, but not limited to:
      1. Water leaks through expansion joint system.
      2. Abrasion or tear failure resulting from normal traffic use.
      3. Adhesive or cohesive failures.
   B. Warranty duration shall be five (5) years commencing with the date of project acceptance.
   C. Repairs shall be completed under this warranty at no cost to Owner.
   D. Metal edged snowplows, abrasive maintenance equipment, and vandalism are not considered normal traffic use and are exempt from this warranty.

PART 2 - PRODUCTS

2.1 GENERAL
   A. A single manufacturer shall be used for each type of expansion joint system.
   B. Review size of joint opening with Manufacturer and Engineer to determine proper size of expansion joint prior to ordering material.
   C. The Contractor must provide written confirmation; utilizing manufacturer’s product data confirming that the membrane seal selected will comply with and accommodate expansion, contraction and lateral shear throughout the full movement cycle.

2.2 MULTICELL WINGED EXPANSION JOINT SYSTEM
   A. Multicell winged expansion joint systems shall consist of a multicell gland with an elastomeric concrete header.
   B. Acceptable Multicell Winged Expansion Joint systems are:
      1. BASF/Watson Bowman Acme: WaboCrete Membrane, ME Series
      2. Emseal: Thermaflex, TCR Series
      3. Erie Metal Specialties: Winged Seal Systems, CR Series
      5. MM Systems: LockCrete Membrane System (LMS)
2.3 PRE-COMPRESSED FOAM EXPANSION JOINT SYSTEM
   A. Pre-compressed foam expansion joint systems shall consist of a self-expanding foam with factory applied silicone surface.
   B. Pre-compressed foam expansion joint shall be suitable for below grade vertical applications.
   C. Acceptable Pre-compressed Foam Expansion Joint systems are:
      1. BASF/Watson Bowman Acme: WaboSeismic WeatherSeal
      2. Emseal: DSM System
      3. Erie Metal Specialties: Foam Seal Systems, CSS Series
      4. Lymtal: Iso-Flex Precom C Type II
      5. MM Systems: Expanding Impregnated Seismic Foam System (EIS)

2.4 PRE-MOLD EXPANSION JOINT NOSING
   A. Repair pre-mold expansion joint nosings as indicated on the drawings.
   B. Provide pre-mold expansion joint nosing material from one of the following manufacturers:
      1. BASF/Watson Bowman Acme
      2. Emseal
      3. Erie Metal Specialties
      4. Lymtal
      5. MM Systems

PART 3 - EXECUTION

3.1 EXAMINATION
   A. Inspect all surfaces and blockouts and notify engineer immediately of any conditions that are unsuitable for proper execution of this work.
   B. Proceed with installation of expansion joint sealing systems only after unsatisfactory conditions have been corrected; installation of expansion joint sealing systems indicates acceptance of surfaces and conditions.
   C. Verify expansion joint systems are compatible with existing materials.
   D. Verify concrete surfaces have completed proper curing period.

3.2 SURFACE PREPARATION
   A. Prepare surfaces in accordance with manufacturer’s instructions.
   B. Abrasive blast all bonding surfaces to receive new expansion joint system.
   C. Clean the concrete blockout of all contaminants immediately prior to installation of expansion joint system. Concrete form release agents, water repellents, laitance, surface dirt, rust, old sealants and other surface treatments and protective coatings must be removed from the blockout substrate surface in order to obtain the proper bond.
D. Actual field conditions of existing expansion joint blockouts may be deeper and wider than the proposed new expansion joint system as detailed on the contract drawings. When existing blockout is larger additional elastomeric concrete material shall be used. Do not use an unapproved patching material to fill and reduce blockout depth. When blockout size is smaller it shall be made larger by saw cutting.

E. The base of the recess must be formed level and at the same elevation across the joint. The joint sidewall interfaces must be parallel, and continuously equidistant from each other. They are to be perpendicular to the base surfaces of the blockout – making the corner a perfect 90-degree angle. Any edge or area in need of repair shall utilize structural concrete repair materials.

F. Expansion joint blockout modifications shall be incidental to system cost.

G. Repair all unsound concrete along expansion joint.

H. Mask adjacent concrete surfaces with tape to provide neat, clean joint line, workmanlike appearance. (Remove tape prior to the curing process)

3.3 INSTALLATION

A. Install expansion joint systems in accordance with manufacturer’s written instructions.

B. Do not install expansion joint systems until the concrete has been air-dried at temperatures at or above 45 degrees F. for at least 28 days minimum and the concrete must have a measured moisture content that is below 4 percent. The blockout area must be completely dry prior to placement of the elastomeric concrete. Blockouts requiring the use of structural repair materials must be cured for 72 hours. Blow out the area thoroughly using compressed air.

C. Stop installation during adverse weather conditions, or when temperatures are outside of manufacturer’s recommendations.

D. The membrane seal shall be unpackaged and laid in a relaxed position to relieve any temporary coiling from shipment packaging.

E. Terminate exposed ends of expansion joint systems with field or factory applied termination devices.

3.4 PROTECTION

A. Cure and protect expansion joint systems in accordance with manufacturer’s instructions.

B. Premature exposure to vehicular traffic can cause stress on the bond line related to vertical slab deflection. For best results wait a minimum of 24 hours (depending on temperature and humidity) before allowing vehicular traffic to drive over the system (contact manufacturer if faster opening time is required).

3.5 CLEANING

A. Remove and properly dispose of all excess materials.

END OF SECTION
SECTION 099100 – PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 033000 Cast-in-Place Concrete

1.2 SUMMARY
A. Section includes installation of paint/stain, including surface preparation.

1.3 SUBMITTALS
A. Comply with Section 013300 Submittal Procedures.
B. Submit manufacturer's Product Data Sheets for each product.
C. Submit manufacturer's Safety Data Sheets for each product.
D. Upon request, submit Installer's qualifications as indicated in the Quality Assurance section

1.4 QUALITY ASSURANCE
A. Verify adequate adhesion with Manufacturer prior to starting full painting/staining operations. Perform a trial area where paint/stain is applied over an existing coating or sealer.
B. All painting/staining work shall be performed by an experienced, professional painter.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number.
B. Store products in original, unopened containers in clean, dry area protected from weather, heat and direct sunlight.

PART 2 - PRODUCTS

2.1 CONCRETE STAIN
A. Color of stain shall match existing.
B. Concrete stain to be used at concrete repairs to match existing.
C. Acceptable Concrete Stains are:
1. Sherwin-Williams: H & C COLORTOP Water-Based Solid Color Concrete Stain
2. Tnemec: Series 617 Conformal Stain WB Series 617
3. GAF: United Coatings CanyonTone Stain

2.2 METAL PAINT SYSTEM

A. Color to be selected by Owner.
B. Metal paint system shall consist of a primer at all bare metal surfaces or as recommended by
manufacturer and two (2) finish coats.
C. Manufacturer to provide recommendation for primer based on substrate conditions, including
galvanized steel, as required.
D. Acceptable finish coats for the Metal Paint System are:
   1. Sherwin-Williams: Pro Industrial Waterbased Acrolon 100 Urethane
   2. Tnemec: Series 73 Endura-Shield
   3. Carboline: Carbothane 134 HS
   4. PPG: Pitthane Ultra 95-812 Series

2.3 CONCRETE/MASONRY PAINT SYSTEM

A. Color to be selected by Owner.
B. Concrete/masonry paint system to be used in stair towers at the Maynard Parking Structure.
C. Concrete/masonry paint system shall consist of a primer/block filler at bare concrete/masonry
surfaces, or as recommended by manufacturer, finish coat at areas of primer/block filler or
where existing paint has been removed, and one (1) finish coat over entire area.
D. Manufacturer to provide recommendation for primer/block filler based on substrate conditions.
E. Acceptable finish coats for the Concrete/Masonry Paint System are:
   1. Sherwin-Williams: Pro Industrial Waterbased Acrolon 100 Urethane
   2. Tnemec: Series 73 Endura-Shield
   3. Carboline: Carbothane 134 HS
   4. PPG: Pitthane Ultra 95-812 Series

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect all surfaces and notify engineer immediately of any conditions that are unsuitable for
   proper execution of this work.
B. Proceed with application of paint/stain only after unsatisfactory conditions have been
   corrected; application of paint/stain indicates acceptance of surfaces and conditions.

3.2 SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer’s instructions.
B. Remove hardware, covers, plates, and similar items already in place that are removable and 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/staining.
   1. After completing painting/staining operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
   1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete/Masonry Surfaces:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer’s written instructions.
   2. New concrete/masonry surfaces shall cure a minimum of 28 days prior to painting/staining, or as required by Manufacturer.

E. Metal Surfaces:
   1. Remove loose paint, grease and oil residue from metal surfaces to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
   2. Corroded steel shall be abrasive blast cleaned in accordance with SSPC-SP10, Near White Metal Blast Cleaning.

F. Galvanized Metal Surfaces:
   1. Remove loose paint, grease and oil residue from galvanized metal surfaces to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
   2. As a minimum surfaces shall be cleaned in accordance with SSPC-SP1, Solvent Cleaning.

3.3 APPLICATION

A. Apply paint/stain in accordance with manufacturer’s instructions.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

C. 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.

D. Concrete Stain:
   1. Apply concrete stain in two (2) coats.

E. Metal Paint System:
   1. Apply primer at all bare metal surfaces or as recommended by manufacturer.
   2. Apply two (2) finish coats at 2-3 dry mils per coat or as recommended by manufacturer.

F. Concrete/Masonry Paint System:
1. Apply primer/block filler at all bare concrete/masonry surfaces or as recommended by manufacturer.
2. Apply finish coat at all locations of primer/block filler or at areas where existing paint has been removed.
3. Apply one (1) finish coat at 2-3 dry mils, or as recommended by manufacturer, over entire area to provide uniform appearance.

3.4 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 Engineer, 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
PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 033000 Cast-in-Place Concrete
   3. Section 071900 Water Repellents
   4. Section 079200 Joint Sealants

1.2 SUMMARY
A. Section includes installation of elastomeric coating systems, including surface preparation.

1.3 SUBMITTALS
A. Comply with Section 013300 Submittal Procedures.
B. Submit manufacturer's Product Data Sheets for each product.
C. Submit manufacturer's Safety Data Sheets for each product.
D. Submit standard color chart.
E. Upon request, submit Installer’s qualifications as indicated in the Quality Assurance section.

1.4 QUALITY ASSURANCE
A. Installer Qualifications:
   1. Installer shall be approved by manufacturer.
   2. Installer shall have a minimum of five (5) years experience in application of specified products and system on projects of similar size and scope.
   3. Installer shall provide evidence of successful completion of a minimum of five (5) projects of similar size and complexity to specified Work.
A. Verify adequate adhesion with Manufacturer prior to starting full coating operations.
B. Perform a trial area where coating system is applied over an existing coating or sealer.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.
B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

 RESTORE CONSULTING, LLC
 Elastomeric Coating
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C. Store products in original, unopened containers in clean, dry area protected from weather, heat and direct sunlight.

D. Store material in accordance with manufacturer's recommendations.

1.6 WARRANTY

A. Provide the Owner a “Joint and Several” Warranty by the Manufacturer and Installer that the installed elastomeric coating system will be free of defects, water penetration and chemical damage related to system design, workmanship or material deficiency, consisting of, but not limited to:
   1. Surface crazing or other weathering deficiency (including U.V. exposure).
   2. Tear failure resulting from anticipated movement.
   3. Debonding from the substrate or delaminating between layers.

B. Warranty duration shall be five (5) years commencing with the date of project acceptance.

C. Repairs shall be completed under this warranty at no cost to Owner.

PART 2 - PRODUCTS

2.1 ELASTOMERIC COATING

A. Color and texture to be selected by Owner.

B. Primer to be provided as recommended by Manufacturer.

C. Acceptable Elastomeric Coatings are:
   1. BASF: MasterProtect EL750
   2. Neogard: 7100 Neoflex
   3. Sika: Sikagard 550W Elastocolor
   4. Dow: DOWSIL ALLGUARD

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect surfaces to be coated. Surfaces must be free of voids, laitance, loose material, grease, oil, rust and other contaminants that will affect the bond of the coating.

B. Report immediately to the Engineer as required any deficiencies in the surface that render it unsuitable for proper execution of this work.

C. Proceed with application of coating only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer’s instructions.
B. Prepare all cracks, coves and terminations in accordance with manufacturer’s recommendations.

C. Clean surfaces to remove dust, dirt, oil, grease, release agents, curing compounds, efflorescence, and chalk or any other material that could impair bond.

D. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

E. New concrete surfaces shall cure a minimum of 28 days prior to coating, or as required by Manufacturer.

3.3 APPLICATION

A. Apply coating in accordance with manufacturer’s instructions.

B. Apply primer as recommended by Manufacturer.

C. Elastomeric coating shall be applied in two (2) coats.

D. Environmental Requirements:
   1. Minimum Application Temperature: 40 degrees F.
   2. Do not apply in rain or when rain is expected within 24 hours.
   3. Do not apply above 90 degrees F.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After application of elastomeric coating, clean spattered surfaces. Remove spattered material by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from elastomeric coating application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Engineer, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced surfaces.

END OF SECTION
SECTION 221400 – STORM DRAINAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections:
   1. Section 030130 Concrete Repair
   2. Section 033000 Cast-in-Place Concrete
   3. Section 071800 Traffic Coatings
   4. Section 079200 Joint Sealants

1.2 SUMMARY

A. Section includes installation of supplemental floor drains and replacement of existing floor drains and storm drainage piping as indicated on the drawings.

1.3 SUBMITTALS

A. Comply with Section 013300 Submittal Procedures.

B. Submit manufacturer's Product Data Sheets for each product.

1.4 QUALITY ASSURANCE

A. Comply with the following codes and standards:
   3. American National Standards Institute (ANSI)
   5. American Society for Mechanical Engineers (ASME)

B. Contractor shall perform all work in accordance with local building codes and regulations. Notify Engineer of any change in the Drawings and/or Specifications required to comply with codes and regulations.

C. Test storm drainage system per the requirements of the authorities having jurisdiction.
   1. Provide all material, equipment and labor to test system.
   2. Correct all defective material or workmanship identified during test and as required by authority having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project in good condition. Store materials off the ground and protected from weather.

B. Replace damaged materials at no additional cost.
PART 2 - PRODUCTS

2.1 FLOOR DRAINS
A. Entire drain body and grate shall be galvanized.
B. Floor drain shall have sediment bucket.
C. Acceptable heavy duty 12” Floor Drains are:
   1. Jay R. Smith: 2140
   2. Zurn: 509
   3. Wade: 1200
D. Acceptable heavy duty 15” Floor Drains are:
   1. Jay R. Smith: 2143
   2. Zurn: 503
   3. Wade: 1400

2.2 PIPE
A. PVC Schedule 80, ASTM D 1784 and ASTM D 1785, with solvent welded joints.
B. Match size of existing pipe when replacing damaged pipe.
C. Use 4” diameter pipe for new supplemental floor drains.

2.3 FITTINGS
A. PVC Schedule 80, ASTM D 2464 & ASTM D 2467
B. Provide cleanouts at all 90 degree turns or as required by local codes/regulations or as indicated on the drawings.

2.4 PIPE HANGERS AND SUPPORTS
A. All pipe hangers and supports, including hardware, shall be galvanized or stainless steel.
B. Provide clevis type hangers with adjustable threaded rods.

2.5 INTERNALLY THREADED EXPANSION ANCHORS
A. Internally threaded expansion anchors shall be galvanized or stainless steel.
B. Anchor pipe hangers and supports with internally threaded expansion anchors.
C. Acceptable manufacturers of internally threaded expansion anchors are:
   1. Hilti
   2. Powers Fasteners
   3. Simpson Strong-Tie
   4. ITW Red Head
PART 3 - EXECUTION

3.1 EXAMINATION
A. Inspect all surfaces and notify engineer immediately of any conditions that are unsuitable for proper execution of this work.
B. Proceed with work only after unsatisfactory conditions have been corrected; proceeding with work indicates acceptance of existing conditions.

3.2 DEMOLITION
A. Remove concrete as required to remove and replace existing floor drains. Refer to Specification Section 030130 Concrete Repair.
B. Remove and properly dispose of all existing floor drains, piping, hangers, etc. to be replaced.

3.3 INSTALLATION
A. Work shall be performed in accordance with applicable codes and ordinances.
B. Take out all necessary permits and arrange for all required tests and inspections. Contractor required for all costs associated with permits, testing and inspections.
C. Install floor drains as indicated on the Drawings.
D. Install piping parallel to building walls and columns lines.
E. Install pipe as close to ceiling as possible to maximize vertical clearance.
F. Vertical piping shall be plumb.
G. Support vertical piping at every level.
H. Install piping so it will drain, and vent as indicated or required.
I. Install piping free of sags.
J. Slope piping as indicated on Drawings, but not less than required by code.
K. Work pipe into place without springing.
L. Install pipe hangers and supports to properly support all piping.
M. Required strength and spacing of hangers shall be based on the total weight of piping filled with water plus insulation where required.
   1. Hangers shall be spaced at a maximum of 4 feet on center for 6” diameter or smaller pipe.
   2. Hangers shall be spaced at a maximum of 3 feet on center for 8” diameter or larger pipe.
   3. Hangers shall be located at or near concentrated loads and changes in direction of piping.
N. Connect piping to existing storm drainage system.
3.4 CLEANING

A. Remove existing discarded materials and debris from site on a regular basis.

END OF SECTION
SECTION 321723 – PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary
      Conditions and Division 01 Specification Sections, apply to this Section.
   B. Related Sections:
      1. Section 030130 Concrete Repair
      2. Section 033000 Cast-in-Place Concrete
      3. Section 071800 Traffic Coatings
      4. Section 079200 Joint Sealants

1.2 SUMMARY
   A. Section includes installation of pavement markings, including parking stall stripes, traffic arrows,
      symbols, etc.

1.3 SUBMITTALS
   A. Comply with Section 013300 Submittal Procedures.
   B. Submit manufacturer’s Product Data Sheets for each product.
   C. Submit manufacturer’s Safety Data Sheets for each product.

1.4 DELIVERY, STORAGE, AND HANDLING
   A. Deliver products in original factory packaging bearing identification of product, manufacturer,
      and batch number.
   B. Store products in original, unopened containers in clean, dry area protected from weather, heat
      and direct sunlight.

PART 2 - PRODUCTS

2.1 PAVEMENT MARKINGS
   A. Pavement markings shall match existing size and color, unless otherwise indicated on the
      Drawings.
   B. Acceptable pavement markings are:
      1. Sherwin-Williams: Setfast Solventborne Acrylic Traffic Marking Paint
      2. Or approved equal.
PART 3 - EXECUTION

3.1 EXAMINATION
A. Inspect all surfaces and notify engineer immediately of any conditions that are unsuitable for proper execution of this work.
B. Proceed with application of pavement markings only after unsatisfactory conditions have been corrected; application of pavement markings indicates acceptance of surfaces and conditions.

3.2 SURFACE PREPARATION
A. Prepare surfaces in accordance with manufacturer’s instructions.
B. Clean substrates of substances that could impair bond of pavement markings, including but not limited to, dust, dirt, oil, grease, and incompatible paints.
C. Verify compatibility with sealer, joint sealants, traffic coatings and any other surface treatment that pavement markings will be applied to.

3.3 APPLICATION
A. Apply pavement markings in accordance with manufacturer’s instructions.
B. Environmental Requirements:
   1. Minimum Application Temperature: 40 degrees F.
   2. Do not apply in rain or when rain is expected within 24 hours.
   3. Do not apply above 90 degrees F.

3.4 CLEANING AND PROTECTION
A. Clean all excess material and spills.
B. Protect pavement markings until they have cured.

END OF SECTION