City of Auburn, Maine

"Maine's City of Opportunity"

CONTRACT DOCUMENTS

FOR

Mechanics Row Parking Garage
Phase 1 Repairs

AUBURN, MAINE

August 11, 2015

Jill Eastman, *Finance Director*
Dan Goyette, P.E., *City Engineer*
Derek Boulanger, *Purchasing Agent*

TABLE OF CONTENTS

Division 0 – Contract Requirements

Introduction
Scope of Work
Conditions and Instructions to Bidders
General Conditions
Bid Form
Special Provisions
Bid Qualification Form
Bid Bond
Sample Agreement

Division 1 – General Requirements

01300 Submittals
01500 Construction Facilities and Temporary Controls
01600 Material and Equipment
01710 Cleaning

Division 2 – Demolition

02070 Selective Demolition

Division 3 – Concrete

03310 Concrete Repair
03320 Embedded Galvanic Anodes

Division 5 – Steel

05120 Structural Steel

Division 7 – Thermal and Moisture Protection

07920 Joint Sealant

Drawings

S1.1 General Notes
S1.2 Level Ground and 1 Plans
S1.3 Level 2 and 3 Plans
S1.4 Level 4 Plan
S2.1 Sections, Details and Notes

DIVISION 0

CONTRACT REQUIREMENTS

City of Auburn, Maine

"Maine's City of Opportunity"

Office of Finance

Dear Bidder:

The City of Auburn is accepting written proposals for the **Mechanics Row Parking Garage Phase 1 Repairs.** The City reserves the right to accept or reject any or all proposals in whole or in part and to waive any informality the City may determine necessary. The City also reserves to itself the exclusive right to accept any proposal when it is deemed by the City to be in its best interest. The City of Auburn is governed by Title 1 M.R.S.A. § 401-410, otherwise known as the Freedom of Information Act, which considers bid specifications as public documents. In awarding any proposal, the City may consider, but not be limited to, any of the following factors: Bidder qualifications, price, experience, financial standing with the City, warranties, references, bonding, delivery date, and service of Bidder. Vendors/Contractors shall be current on all amounts due to the City of Auburn prior to the City entering into any contract agreement. All proposals must include FOB to Auburn, Maine unless otherwise specified.

Proposals will not receive consideration unless submitted in accordance with the following instructions to bidders. Please mark sealed envelopes plainly with: **Company Name, "Mechanics Row Parking Garage Phase 1 Repairs #2016-004".**

Bid packages will be available beginning on Tuesday, August 11, 2015. A mandatory Pre-Bid Meeting will be at the Mechanics Row Parking Garage on adjacent to City Hall on Wednesday, August 19, 2015, at 10:00am. Documents can be obtained at the Finance Department on the first floor of Auburn Hall at 60 Court Street. Questions regarding this Request for Bids should be directed to Josh Martin-McNaughton, Becker Structural Engineers, Inc. at (207) 879-1838, ext. 138. jmartinmcnaughton@beckerstructural.com

Please submit your proposal to the City of Auburn by 2:00 p.m. **Thursday, August 27, 2015.** Proposals must be delivered to **Derek Boulanger, 60 Court Street, Auburn, Maine 04210** on or before the date and time appointed. No proposals will be accepted after the time and date listed above. Proposals will be opened in the Finance Department at 2:00 p.m. on that date.

Sincerely,

Derek Boulanger
Facilities Manager /Purchasing Agent

60 Court Street • Auburn, ME 04210
(207) 333-6600 Voice • (207) 333-6601 Automated • (207) 333-6620 Fax
www.auburnmaine.gov

SCOPE OF WORK

The following scope of work is being proposed for the Mechanics Row Parking Garage Phase 1 Repairs for the City of Auburn. The scope of work is a brief overview of the expected extent of work included in this contract. This is only a proposed scope with associated estimated quantities. Items may be added or deleted as work progresses or to meet the available funding for this work.

Phase 1 Repairs:

- Precast double tee shear connection repairs.
- Joint sealant replacement.
- Concrete deck repairs.

TIME FRAME: All work is to be completed by November 20, 2015.

Liquidated damages in the amount of $500/calendar day shall be imposed for work not completed beyond the project deadline.

CONDITIONS AND INSTRUCTIONS TO BIDDERS

1. Bidders shall use the enclosed bid form for quotations. Whenever, in bid forms, an article is defined by using a trade name or catalog number, the term "or approved equal", if not inserted, shall be implied.

2. Submit a separate unit price for each item unless otherwise specified in the bid request. Award will be made on a basis of each item, or as a group, whichever is in the best interest of the City. Prices stated are to be "delivered to destination".

3. Bid proposals must be completed in full, in ink and must be signed by firm official. Bid proposal **must be notarized** prior to bid being sealed and may be disqualified if not notarized. Bids may be withdrawn prior to the time set for the official opening

4. Bids will be opened publicly. Bidders or representatives may be present at bid opening.

5. Awards will be made to the lowest responsible bidder, considering the quality of the materials, date of delivery, cost which meets specification and is in the best interest to the City of Auburn.

6. All transportation charges, including expense for freight, transfer express, mail, etc. shall be prepaid and be at the expense of the vendor unless otherwise specified in the bid.

7. The terms and cash discounts shall be specified. Time, in connection with discount offered, will be computed from date of delivery at destination after final inspection and acceptance or from date of correct invoice, whichever is later.

8. The City is exempt from payment of Federal Excise Taxes on the articles not for resale, Federal Transportation Tax on all shipments and Maine Sales Tax and Use Taxes. Please quote less these taxes. Upon application, exemption certificate will be furnished with the Purchase Order when required.

9. No contract may be assigned without the written consent of the Finance Director or her designate. The contract shall not be considered valid until a purchase order has been issued to the successful bidder.

10. Please state "Mechanics Row Parking Garage Phase 1 Repairs – Bid # 2016-004", on submitted, sealed envelope.

11. The City of Auburn reserves the right to waive any formality and technicality in bids whichever is deemed best for the interest of the City of Auburn.

12. A bid bond in the amount of 5% of the total bid amount will be required with the submitted bid. This contract also requires a payment and performance bond. If project contract amount is below $100k bid and performance bond are not required.

13. Any addenda shall be signed and submitted with the bid.

14. Retainage in the amount of 10% shall be held from each payment and shall be release upon final acceptance of the project.

15. All work shall be completed by November 20, 2015. Liquidated damages of $500/calendar day will be assessed on uncompleted work.

GENERAL CONDITIONS

1. Equal Employment Opportunity

The City of Auburn is an Equal Opportunity Employer and shall not discriminate against an applicant for employment, and employee or a citizen because of race, color, sex, marital status, physical and/or mental handicap, religion, age, ancestry or natural origin, unless based upon a bona-fide occupation qualification. Vendors and contractor or their agents doing business with the City shall not violate the above clause or the Civil Rights Acts of 1964. Violations by vendors shall be reviewed on a case-by-case basis and may mean an automatic breach of contract or service to the City of Auburn.

2. Save Harmless

The Bidder agrees to protect and save harmless the owner from all costs, expenses or damages that may arise out of alleged infringement of patents of materials used.

3. Subcontracting

The Bidder shall not subcontract any part of the work or materials or assign any monies due it without first obtaining the written consent of the municipality. Neither party shall assign or transfer its interest in the contract without the written consent of the other party.

4. Warranty

The Bidder warrants that all work will be of good quality and free from faults and defects, and in conformance with the specifications. All work not so conforming to these standards may be considered defective. The Bidder agrees to be responsible for the acts and omissions of all of its employees and all subcontractors, their agents and employees, and all other persons performing any of the work under a contract with the Bidder. Provide a Warranty Period of 5 (five) years.

BID PROPOSAL FORM

Due: Thursday, August 27, 2015

To: City of Auburn
Derek Boulanger,
Facilities Manager/ Purchasing Agent
60 Court Street
Auburn, ME 04210

The undersigned individual/firm/business guarantees this price for Sixty days (60) from the bid due date. The undersigned submits this proposal without collusion with any other person, individual, or firm or agency. The undersigned ensures the authority to act on behalf of the corporation, partnership or individual they represent; and has read and agreed to all of the terms, requests, or conditions written herein by the City of Auburn, Maine. By signing this bid form, the firm listed below hereby affirms that its bid meets the minimum specifications and standards as listed above.

Signature _____Name (print) _____

Title_____Company_____

Address_____

Telephone No._____Fax No. _____

Email Address:_____ Addendum Noted:_____

STATE OF MAINE
_____, SS. Date: _____

Personally appeared and acknowledged the foregoing instrument to be his/her free act and deed in his/her capacity and the free act and deed of said company.

Notary Public_____

Print Name_____
Commission Expires_____

BID FORM

A. GENERAL CONDITONS: For all Work other than the Unit Price Work listed in sections B (Including but not limited to all mobilization/demobilization, required permits, temporary shoring, temporary enclosures and protection, ventilation, temporary traffic control, signage, heat and utilities, etc.), a Lump Sum of:

_____ $
(words) (numerals)

B. UNIT PRICE WORK (see table below)

UNIT PRICE WORK

ITEM	DESCRIPTION	UNIT	QNTY	UNIT COST	TOTAL COST
1	Concrete deck repair	sf	5		
2	Joint sealant replacement	lf	1980		
3	Precast DT shear connection repair	ea	60		
4	Grind DT joint edge (tripping hazard)	lf	300		
5	Overhead supplemental steel	ea	1		
	Unit Price Total				

C. TOTAL ESTIMATED BID AMOUNT OF (Items A + B):

_____ $
(words) (numerals)

Company Name: _____
Signed by: _____
Title: _____
Print Name: _____
Address: _____
Tel. # _____Fax # _____
Date: _____

The following unit prices are required for the Owner to evaluate additions to or deductions from the work:

ITEM	DESCRIPTION	UNIT	Addition Unit Price	Deduction Unit Price
1	Concrete deck repair	sf		
2	Joint sealant replacement	lf		
3	Precast DT shear connection repair	ea		
4	Grind DT joint edge (tripping hazard)	lf		
5	Overhead supplemental steel	ea		

SPECIAL PROVISIONS

1 Work Hours

No work shall proceed on this project prior to the hour of 7:00 A.M. or after 7:00 P.M (prevailing time) on any working day unless the City has granted prior approval. Work performed outside of this time needs to be approved by the City of Auburn. The definition of work for this specification shall include starting or moving of equipment, machinery, or materials. Any day worked for four hours or more will be considered a full working day.

2 Notifications

Notifications shall be sufficiently in advance of any construction affecting the Police Department or City Hall operations.

3 Materials

Materials shall meet the requirements specified for the various subsections of the Specifications. Equals shall be approved only prior to the bid opening.

4 Occupational Safety and Health

The Contractor is hereby advised that all work to be furnished to the City shall be performed with equipment, methods, and use of personnel in conformance with the pertinent Occupational Safety and Health Act requirements of the State of Maine and with the regulations for construction as specified by the Department of Labor and Occupational Safety and Health Administration (OSHA) as currently amended.

5 Pre-Construction Conference

A conference will be held at the Mechanics Row Parking Garage, Auburn, Maine within ten (10) days after the awarding of the contract. At this time, the contractor will be required to submit a graphically illustrated schedule and a plan showing project activities. City officials and representatives of the various utility companies involved in the project will be present at this meeting.

It is the purpose of this meeting to inform the various agencies of the proposed work schedule, and to give them the opportunity of discussing any difficulties and of offering suggestions to the Contractor concerning his proposed schedule in order that full cooperation may be reached.

6 Schedule of Operations

The above-mentioned schedule of operations shall consist of a bar chart detailing the activities included in the contract. Although a bar chart is acceptable as a minimum, more complex and

detailed schedules (i.e., flow charts, critical paths, etc.) are encouraged and will be accepted by the City. Updates will be required.

7 Traffic Control

Contractor shall provide traffic controls as required.

8 Limitation of Operations

The Contractor shall conduct the work at all times in such a manner and in such sequence as will assure the least interference with the Police Department and City Hall. The Contractor shall not open up work to the prejudice or detriment of work already started. The Engineer may require the Contractor to finish a section on which work is in progress before work is started on any additional sections, if finishing such section is essential to public convenience.

9 Questions Regarding Plans and Documents

Questions from prospective bidders relative to this Contract shall be submitted no later than five days before bid opening and directed to:

Josh Martin-McNaughton, P.E.
Becker Structural Engineers, Inc.
75 York St
Portland ME 04106
207.879.1838 ext. 138
jmartinmcnaughton@beckerstructural.com

10 Waste Materials

All waste material shall be removed from the site and the area left clean upon completion of work. Any equipment or structures damaged by the Contractor shall be repaired or replaced at no additional cost to the City.

11 Quality Assurance

The Contractor shall be responsible at all times for maintaining top quality assurance during performance of his work.

12 Bids

No bids shall be withdrawn within a period of sixty - (60) - days after the opening of the bids.

TO EXPEDITE CONTRACT AWARD CONTRACTORS SHALL FILL IN
THE FOLLOWING INFORMATION AND SUBMIT WITH THEIR BID

NAME OF SUPPLIER AND ADDRESS	PRODUCTS TO BE SUPPLIED
1.	
2.	
3.	

Name/address of Sub Contractor	Service/trade to be supplied	Anticipated $$$ amount
1.		
2.		
3.		

Bidder's Qualifications Information and Selection Criteria for:

Mechanics Row PG Phase 1 Repairs

PLEASE TYPE OR PRINT ALL INFORMATION REQUESTED

A. PROCESS

The intent of this process is to ensure that the firms who submit bid proposals have the proven capability to complete a project of this complexity, within the given schedule and operation limitations.

To provide us a similar level of information for all firms, it is a requirement of the bidder selection process that all information requested in the following Evaluation Criteria be supplied on the Project Data Form enclosed. All forms must be fully completed. Respondent's Qualification Information and other information are also to be submitted, as outlined in this section.

B. EVALUATION CRITERIA

1. Joint Sealant Replacement and Precast DT Connection Repair:

   Requirement: Bidders must have demonstrated experience working on Parking Garage properties. Provide the information as described on the attached form on three (3) previous contracts involving Parking Garages.

2. Intent: To show that the candidate has experience on projects of comparable scope.

C. RESULTS

1. Contractors which fail to demonstrate sufficient experience as submitted in the qualification form and as judged by the owner may have their bids rejected and bid deposit returned. The Owner will then proceed with review of the next low bid.

Garage Experience Informational Form

As described in the evaluation criteria bidders must have demonstrated experience working on parking garages. Provide the following information on three (3) previous contracts involving the above: (Use additional sheets as necessary)

1. Project Name: _____

   Scope of Work: _____

   Owner: _____Phone:_____

   Architect: _____Phone:_____

   Contract Amount: _____Completion Date: _____

2. Project Name: _____

   Scope of Work: _____

   Owner: _____Phone:_____

   Architect: _____Phone:_____

   Contract Amount: _____Completion Date: _____

3. Project Name: _____

   Scope of Work: _____

   Owner: _____Phone:_____

   Architect: _____Phone:_____

   Contract Amount: _____Completion Date: _____

The undersigned represents that all information provided by the bidder on the Respondent's Qualification Information is true and complete. The bidder understands that The City of Auburn may at their discretion, disqualify any bidder who has presented information that is not in conformance with selection criteria, inaccurate, untrue, or which conflicts with information received from independent sources.

SUBMITTED BY: _____
(Officer of Firm)

SIGNATURE: _____

TITLE: _____

DATE: _____

BID BOND

KNOW ALL BY THESE PRESENTS, that we, the undersigned, _____as Principal, and _____ as Surety, are hereby held and firmly bound unto _____as OWNER in the penal sum of _____for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____day of _____, 2012.

The Condition of the above obligation is such that whereas the principal has submitted to _____a certain BID,

attached hereto and hereby made a part hereof to enter into a contract in writing, for the _____

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for all and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

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

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

_____ (L.S)
Principal

Surety

By:_____

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

SAMPLE AGREEMENT

THIS AGREEMENT is made this ### day of Month Year, by and between the CITY OF AUBURN, a municipal corporation existing under the laws of the State of Maine and located in the County of Androscoggin, State of Maine (hereinafter "CITY"), Company Name, Address, EIN, (hereinafter "CONTRACTOR"),

WITNESSETH:
In consideration of the mutual covenants and conditions contained herein, the CITY and the CONTRACTOR agree as follows:

SPECIFICATIONS:

1. The CONTRACTOR shall furnish all of the material and perform all of the work shown on the drawings and described in the specifications entitled: Bid # XXXXX Bid Title which are attached hereto and made a part hereof, and the CONTRACTOR covenants that it shall do everything required by this Agreement, the Special Provisions of the Agreement, the Invitation to Bid and the Specifications in return for payment as provided herein.

COMPLETION DATE:

2. The work to be performed under this Agreement shall be commenced by Month day, year and fully completed on or before Month day, year.

CONTRACT PRICE:

3. The CITY shall pay the CONTRACTOR for the performance of the Agreement the sum of $XXX

PERFORMANCE BOND:

4. If required by the City, the CONTRACTOR shall furnish to the CITY at the time of the execution of this Agreement a performance bond and a labor and material payment bond each in the amount of $Dollar amount or N/A (whichever applies) executed by a surety company satisfactory to the CITY, guaranteeing the performance and payment by the CONTRACTOR. ❑ Yes, Required (Initials: ____) ❑ No, Waived (Initials ___)

GUARANTEE:

5.The CONTRACTOR shall guarantee his work against any defects in workmanship and materials for a period of one year from the date of the CITY's written acceptance of the project.

PERMITS AND LICENSES:

6. Permits and licenses necessary for the prosecution of the work shall be secured and paid by the CONTRACTOR.

CITY'S RIGHT TO TERMINATE CONTRACT:

7. If the CONTRACTOR should be adjudged a bankrupt, or if it should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of its insolvency, or if it should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if it should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, and ordinances, or otherwise be guilty of a substantial violation of any provision of the Agreement, then the CITY when sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the CONTRACTOR, and his surety, seven (7) days written notice, terminate the employment of the CONTRACTOR and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method it may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Agreement price shall exceed the expense of the finishing the work, including compensation for additional architectural, managerial and administrative services, such excess shall be paid to the CONTRACTOR. If such expense shall exceed such unpaid balance, the CONTRACTOR shall pay the difference to the CITY.

CONTRACTOR'S LIABILITY INSURANCE:

8.The CONTRACTOR shall not commence work under this Agreement until he has obtained all insurance required under this paragraph and such insurance has been approved by the CITY, nor shall the CONTRACTOR allow any subcontractor to commence work on his subcontract until all similar insurance required of subcontractor has been so obtained and approved. It is a requirement that the CITY be named as an Additional Insured on the General Liability and Automobile Liability policies.

Commercial General Liability to include products and completed operations, and blanket contractual. The limits of liability shall be as follows:

Bodily Injury and Property Damage	$1,000,000
Personal Injury and Advertising Injury	$1,000,000
Per Project Aggregate	$1,000,000
General Aggregate	$2,000,000
Products and Completed Operations Aggregate	$2,000,000
Medical Payments	$10,000

(b) Business Automobile Liability

The CONTRACTOR shall maintain and cause all sub-contractors and lower tier contractors to maintain business automobile liability insurance covering all owned, non-owned, leased, rented or hired automobiles (symbol 1). The limits of liability shall be as follows:

Bodily Injury and Property Damage	$1,000,000

Automobile physical damage coverage shall be at the option of the CONTRACTOR, all sub-contractors and lower tier contractors. The CITY shall not be liable for physical loss or damage to any owned, non-owned, leased, rented or hired automobile.

Workers' Compensation Insurance

The CONTRACTOR shall maintain and cause all sub-contractors and lower tier contractor's to maintain Workers' Compensation and Employers Liability in accordance with the laws and regulations of the State of Maine. The limits of liability provided shall be as follows:

Coverage A:	Statutory
Coverage B:	$100,000/$500,000/$100,000

Professional Liability

If the CONTRACTOR is an Architect, Engineer or Surveyor, they shall maintain a policy of insurance to pay on their behalf whatever amounts that may become legally required to pay on account of an error, omission or negligent act.

Limits of Liability shall be as follows:

$1,000,000 per occurrence and in the aggregate site specific.

It is a requirement that this policy be maintained for a period of three (3) years following completion of the project.

Certificates of Insurance of the types and in the amounts required shall be delivered to the CITY prior to the commencement of any work by the CONTRACTOR, subcontractor or lower tier contractor or any person or entity working at the direction or under control of the CONTRACTOR. The CONTRACTOR shall assume the obligation and responsibility to confirm insurance coverage for all sub-contractors or lower tier contractors who will participate in the project.

The Certificate of Insurance and the policies of insurance shall include a sixty (60) day notice to the CITY of cancellation, non-renewal or material change in coverage or form.

The CONTRACTOR and his surety shall indemnify and save harmless the CITY, his officers and employees from all suits, actions or claims of any character brought because of any injuries or damage received or sustained by any person, persons or property on account of the operations of the said CONTRACTOR; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in construction of the work; or because of any act or omission, neglect, or misconduct of said CONTRACTOR; or because of any claims or amounts recovered from any infringements or patent trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act" or of any other law, ordinance, order or decree; and so much of the money due to the said CONTRACTOR under and by virtue of his/her contract as shall be considered necessary by the CITY for such purpose, may be retained; or in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims, for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the CITY.

Waiver of Subrogation

Payment of any claim or suit including any expenses incurred in connection therewith by the CITY, or any insurance company on behalf of the CITY shall not constitute a waiver of subrogation against the CONTRACTOR, sub-contractors or any lower tier contractor in the event that such claim or suit was caused by or contributed to as a result of the negligent acts of the CONTRACTOR, any sub-contractors or lower tier contractors.

Construction Agreement

The CONTRACTOR shall and does hereby agree to indemnify, save harmless and defend the CITY from the payment of any sum or sums of money to any person whomsoever on account of claims or suits growing out of injuries to persons, including death, or damages to property, caused by the CONTRACTOR, his employees, agents or sub-contractors or in any way attributable to the performance and execution of the work herein contracted for, including (but without limiting the generality of the foregoing), all claims for service, labor performed, materials furnished, provisions and suppliers, injuries to persons or damage to property, liens, garnishments, attachments, claims, suits, costs, attorney's fees, costs of investigation and defense. It is the intention of this paragraph to hold the CONTRACTOR responsible for the payment of any and all claims, suits, or liens, of any nature character in any way attributable to or asserted against the CITY, or the CITY and the CONTRACTOR, which the City may be required to pay. In the event the liability of the CONTRACTOR shall arise by reason of the sole negligence of the CITY and/or the sole negligence of the CITY's agents, servants or employees, then and only then, the CONTRACTOR shall not be liable under the provisions of this paragraph.

DAMAGES:

9.The CONTRACTOR shall defend, indemnify and save harmless the CITY and all persons acting for or in behalf of it against all claims for injuries (including death), loss or damage, arising out of the performance out this contract.

LIENS:

10. Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR, if required, shall deliver to the CITY a complete release of all liens arising out of the Agreement, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as it has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the CONTRACTOR may, if any SUB-CONTRACTOR refuses to furnish a release or receipt in full, furnish a bond satisfactory to the CITY to indemnify it against any lien. If any lien remains unsatisfied after all payment are made, the CONTRACTOR shall refund to the CITY all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

ASSIGNMENT:

11. Neither party to the Agreement shall assign the Agreement or sublet it as a whole without the written consent of the other, nor shall the CONTRACTOR assign any moneys due or to become due to it hereunder, without the previous written consent of the CITY.

SUBCONTRACTS:

12. The CONTRACTOR shall not sublet any part of this Agreement without the written permission of the CITY. The CONTRACTOR agrees that it is as fully responsible to the CITY for the acts and omissions of its SUB-CONTRACTORS and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

USE OF PREMISES:

13. The CONTRACTOR shall confine its apparatus, the storage of materials and operations of its workers to limits indicated by law, ordinance and permits and shall not otherwise unreasonably encumber the premises with its materials. If any part of the project is completed and ready for use, the CITY may, by written and mutual consent, without prejudice to any of its rights or the rights of the CONTRACTOR, enter in and make use of such completed parts of the project. Such use or occupancy shall in no case be construed as an acceptance of any work or materials.

CLEANING UP:

14. The CONTRACTOR shall at all times keep the premises free from accumulation of waste materials or rubbish caused by its employees or work, and at the completion of the work it shall remove all its rubbish from and about the project, and all its tools, scaffolding and surplus materials and shall leave its work "broom-clean" or its equivalent, unless more exactly specified. In case of dispute, the CITY may remove the rubbish and charge the cost to the CONTRACTOR.
PAYMENTS:

15. Unless otherwise agreed to, the CITY shall make payments on account of the Agreement as follows:

Within 30 days, as invoices are submitted for work completed to the satisfaction of the CITY.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

BY:_____ BY:_____
Witness Finance Director

BY:_____ BY:_____
Witness Contractor

DIVISION 1

GENERAL REQUIREMENTS

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. The CONDITIONS OF THE CONTRACT, all Drawings, and all Sections of Division 1 are hereby made a part of this Section.

1.02 WORK INCLUDED

A. This Section specifies administrative and procedural requirements for submittals required for performance of work, including:

1. Product data

B. Administrative Submittals: Refer to requirements specified in other Division 1 Specification Sections, and other Contract Documents, for administrative submittals, including:

1. Permits
2. Applications for payment
3. Performance and payment bonds (where required).
4. Insurance certificates
5. List of subcontractors

1.03 RELATED REQUIREMENTS

A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:

1. Joint Sealant: SECTION 07920
2. Galvanic Anodes: SECTION 03320
3. Concrete Repair: SECTION 03310

1.04 SUBMITTAL PROCEDURES

A. Coordination of Submittals: Coordinate timing of submittals with construction activities. Transmit submittals well enough in advance of performance of work to avoid delays. Coordinate submittals of related elements of work.

   1. Engineer may reject, or withhold action on submittals requiring coordination with other submittals until related submittals are received.

B. Processing of Submittals: Allow sufficient review time to ensure installation will not be delayed because of time required to process submittals. Minimum processing times are as follows:

   1. Review by Engineer: Allow ten (10) business days for review and processing.

   2. No extension of Contract Time will be authorized due to failure to transmit submittals sufficiently in advance of scheduled performance of work.

C. Contractors Preparation of Submittals: Place permanent label or title block on each submittal for identification. Indicate Project Name, Engineer's Project Number, Specification Section number and title, date of submittal, name and address of Engineer, name and address of Contractor, name and address of subcontractor and/or supplier, name of manufacturer, Drawing number and detail reference.

   1. Contractor's Review and Action Stamp: Provide suitable space on label or title block for Contractor's review and action stamp. Stamp and sign each submittal to show Contractor's review and approval prior to transmittal to Engineer. Submittals not signed and stamped by Contractor will be returned without action.

   2. Engineer's Review and Action Stamp: Provide minimum 6 in. x 4 in. space on drawing for Engineer's review and action stamp. Deliver submittals to Engineer at address listed on cover of Project Manual.

   3. Modify and customize submittals as required to show interface with adjacent work and attachment to building.

D. Transmittal of Submittals: Transmit each item with transmittal form. Identify Project, Contractor, subcontractor, major supplier; identify pertinent Drawing sheet and detail number and Specification section number, as appropriate, on transmittal form.

   1. Source: Submittals received from sources other than Contractor will be returned without action.

2. Deviations from Contract Documents: When products, materials or systems submitted deviate from Contract Documents, record deviations clearly on transmittal form, or separate attached sheet.

3. If deviation includes design and/or material change, this shall be accompanied by design calculations stamped by a registered professional Engineer or additional time and fee (payable by Contractor) will be required for submittal review.

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

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

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

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

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

F. Each Submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review an approval of that submittal.

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

H. After Engineer reviews submittal, revise and resubmit as required. Identify recipients to promptly report inability to comply with provisions.

I. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report inability to comply with provisions.

1.05 SUBMITAL SCHEDULE

A. Not required for this project.

1.06 SHOP DRAWINGS

A. Not required for this project.

1.07 PRODUCT DATA

A. Definition: Product data includes manufacturer's standard published literature, such as installation instructions, catalog cuts and color charts. When product data must be prepared specifically because standard published data is not suitable for use, submit as shop drawing.

B. Preparation: Mark each copy of product data to show applicable choices and options. Where published product data includes information on several products and choices, mark copies to clearly indicate information applicable to this Project.

C. Do not submit product data until compliance with requirements of Contract Documents has been confirmed.

D. Submittal Quantities: Submit product data in following quantities:

1. Submit three copies for review. One copy will be returned to Contractor for printing and distribution. Multiple copies will not be marked by Engineer.

E. Installer Copy: Verify that installer of work possesses a current copy of Engineer approved product data prior to installation.

1.08 ENGINEER'S ACTION

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

B. Engineer's review and approval shall not relieve the Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with all requirements of this section, the general and supplementary conditions of the Contract and the Engineer has given approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of paragraph 1.04.

1.09 DISTRIBUTION BY CONTRACTOR

A. Distribution: When submittal is marked “APPROVED” or “APPROVED AS NOTED”, make prints and copies and distribute to subcontractors, suppliers, fabricators, and other parties requiring information from submittal for proper coordination and performance of work. Print copies of shop drawings from approved reproducible only.

END OF SECTION

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. Drawings, Contract Conditions, and other Technical Specifications Sections apply to work of this Section insofar as applicable.

1.02 WORK INCLUDED

A. This Section specifies construction facilities and temporary controls, including, but not limiting to:

1. Temporary restrictions on construction activity.
2. Temporary utilities.
3. Temporary construction and support facilities.
4. Temporary signage.
5. Security and protection facilities.

B. Contractor shall pay for all costs related to temporary facilities and utility service including but not limited to temporary heat, water and power, if required.

1.03 RELATED REQUIREMENTS

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. CONTRACT AGREEMENT.
2. Section 01300: SUBMITTALS

1.04 SUBMITTALS

A. Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen days of date established for Commencement of the Work.

1.05 QUALITY ASSURANCE

A. Comply with requirements of authorities having jurisdiction, codes, utility companies, OSHA, and industry standards including, but not limiting to:

1. NFPA 241.

2. NFPA 70.

3. ANSI A10.

4. NECA NJG-6.

B. Electric Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.

C. Inspections: Arrange for authorities having jurisdiction to inspect temporary utilities prior to use. Obtain required certifications and permits.

1.06 PROJECT CONDITIONS

A. Conditions of Use: Maintain temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload temporary facilities. Do not allow hazardous, dangerous, or unsanitary conditions to develop on site.

PART 2 PRODUCTS

2.01 MATERIALS, GENERAL

A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

B. Lumber and Plywood:

1. Signs and Directory Boards: Provide exterior grade, Medium Density Overlay (MDO) plywood, conforming to USDC PS1, of size and thickness indicated.

2. Fences, Vision Barriers, and Safety Barriers: Provide exterior grade, C-D veneered plywood.

2.02 TEMPORARY UTILITIES

A. Scope: Temporary utility work includes, but is not limited to:

1. Electric power

2. Telephone Service.

B. Temporary Electric Power and Light:

1. Power is currently available in the garage and can be used. Not all outlets are currently operational and may not provide easy access to all areas of work. Additional power maybe required and should be provided by the contractor.

2. Provide generator to run any large equipment.

C. Telephone Service: Provide cell phone contact for project superintendent and project manager for this project.

2.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES

A. Scope: Temporary construction and support facilities include, without limitation:

1. Temporary enclosures.

2. Construction aids.

3. Waste disposal services.

4. Water control.

5. Rodent and pest control.

6. Pollution and dust control.

B. Temporary Ventilation: Provide temporary ventilation required to maintain adequate environmental conditions to facilitate progress of work, to meet manufacturers' specified minimum installation conditions, and to protect materials and finishes from damage due to temperature and humidity.

1. Ventilate enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors and gases.

2. Pay costs of installation, maintenance, operation, removal, and fuel consumed.

C. Contractor's Field Offices and Sheds: Prior to installation of offices and sheds, consult with Engineer and Owner on location, access, and related facilities.

D. Sanitary Facilities: Toilet facilities within the building will be available.

1. Maintain washrooms in clean and sanitary condition.

E. Temporary Enclosures: Provide temporary weathertight enclosures of exterior walls as Work progresses. Design and construct temporary enclosures to provide acceptable working conditions, to provide weather protection for materials, to allow effective temporary heating, and to prevent entry of unauthorized persons.

1. Provide temporary exterior doors with self-closing hardware and padlocks.

2. Design enclosures to be removable to allow handling of materials.

F. Construction Aids: Provide construction aids and equipment required by personnel to facilitate execution of the work; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment.

1. Refer to respective sections for particular requirements for each trade.

2. When permanent stair framing is in lace, provide temporary treads, platforms, and railings, for use by construction personnel.

G. Waste Disposal: Maintain all areas under Contractor's control free of debris. Initiate and maintain a specific program to prevent accumulation of debris at construction area, storage and parking areas, or along access roads.

1. Provide containers for deposit of debris.

2. Schedule daily collection and weekly disposal of debris.

3. Provide additional collections and disposals of debris whenever the weekly schedule is inadequate to prevent accumulation.

H. Water Control: Provide methods to control surface water to prevent damage to Project, site, and adjoining properties.

I. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas and properties.

J. Pollution Control: Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations. Provide equipment and personnel, perform emergency measures required to contain any spillage and to remove contaminated soils or liquids.

1. Take special measures to prevent harmful substances from entering public waters.

2. Prevent disposal of wastes, effluents, chemicals, or other such substances in sanitary or storm sewers.

3. Provide systems for control of atmospheric pollutants.

4. Prevent toxic concentrations of chemicals.

5. Prevent harmful dispersal of pollutants to atmosphere.

K. Dust Control: Provide positive methods and apply dust control materials to minimize raising dust from construction/demolition operations. Provide positive means to prevent air-borne dust from dispersing into the atmosphere.

2.04 TEMPORARY SIGNAGE

A. Scope: Temporary signage includes, but is not limited to:

1. Traffic.

2. Pedestrian.

3. Means of Egress.

4. Other signage as required in the Contract Documents or required by the owner.

B. Sign Structure and Framing: New or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.

C. Rough Hardware: Galvanized steel or cadmium plated.

D. Paint: Exterior quality.

2.05 SECURITY AND PROTECTION FACILITIES

A. Scope: Security and protection facilities includes, but is not limited to:

1. Temporary fire protection.

2. Barricades, warning signs, lights.

3. Temporary access routes.

4. Security procedures.

B. Temporary Fire Protection: Provide and maintain suitable fire protection equipment and services. Establish procedures for fire protection for welding and other potentially hazardous construction operations. Ascertain and comply with requirements of Project insurance carrier, City of Auburn Fire Department and the State of Maine Fire Marshal. Permanent fire protection system may be activated to meet these requirements. Replace fusible ink heads and other expended or discharged components at time of Substantial Completion.

1. Locate temporary portable fire extinguishers in convenient locations, not less than one extinguisher per floor.

2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes.

C. Barricades, Warning Signs, and Lights: Provide and maintain barricades, warning signs, warning lights, railings, walkways, and the like. Paint signs and barricades with appropriate colors, graphics, and warnings to inform public and job-site personnel of hazards.

PART 3 EXECUTION

3.01 MAINTENANCE, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit waste and abuse.

B. Maintenance: Maintain temporary facilities in operating conditions; repair damages immediately upon discovery. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour per day basis.

C. Termination and Removal: Unless otherwise requested by Engineer, remove each temporary facilities when no longer useful, or when replaced by permanent facility. Clean and renovate permanent facilities that have been used during construction period.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. The CONTRACT AGREEMENT, all Drawings, and all Sections of Division 1 are hereby made a part of this Section.

1.02 WORK INCLUDED

A. This Section specifies administrative and procedural requirements for materials and equipment used for the Project.

1.03 RELATED REQUIREMENTS

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. CONTRACT AGREEMENT.
2. Joint Sealant: SECTION 07920
3. Galvanic Anode: SECTION 03320
4. Concrete Repair: SECTION 03310

1.04 MATERIAL AND EQUIPMENT INCORPORATED INTO THE WORK.

A. Conform to applicable specifications and standards.

B. Comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.

C. Manufactured and Fabricated Products:

1. Design, fabricate and assemble in accordance with the best engineering and shop practices.
2. Manufacture like parts of duplicate units to standard size and gages, to be interchangeable.
3. Two or more items of the same kind shall be identical, by the same manufacturer.

4. Products shall be suitable for service conditions.

D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.05 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

B. Perform work by persons qualified to produce workmanship of specified quality.

C. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.06 MANUFACTURERS' INSTRUCTIONS:

A. When work is specified to comply with manufacturers' instructions, submit copies of said instructions, as specified in Section 01300, SUBMITTALS, distribute copies to persons involved, and maintain one set in field office.

B. Perform work in accordance with details of instructions and specified requirements. Should a conflict exist between Specifications and manufacturer's instructions, consult with Engineer.

1.07 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

B. Transport Products by methods to avoid Product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.

C. Provide equipment and personnel to handle Products by methods to prevent soiling or damage.

D. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct, and products are undamaged.

1.08 STORAGE AND PROTECTION

A. Store Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

B. For exterior storage of fabricated Products, place on sloped supports above ground. Cover Products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

D. Arrange storage to provide access for inspection. Periodically inspect to assure Products are undamaged and are maintained under required conditions.

E. Note limited storage areas provided for this project.

1.09 MATERIAL SUBSTITUTIONS

A. Where products or materials are specified by manufacturer's name, trade name or catalog reference, the words "or approved equal" shall be understood to follow unless there is a statement specifically indicating that no substitution will be allowed. An item shall be considered equal to the item so named or described if in the opinion of the Engineer,

1. It is at least equal in quality, durability, appearance, strength and design; including compliance with applicable specifications and compatibility with physical space allocations provided for the item;

2. It performs at least equally the function imposed by the general design for the work;

3. It conforms substantially, even with deviations to the detailed requirements for the item as indicated by the specifications.

4. Contractor supplies a list of reference projects (2 min.) where they have successfully used this product.

B. Where two or more products or materials are specified, the choice of these shall be optional with the Contractor.

C. Material substitutions shall be listed in bid document. Material substitutions will be approved after contract has been awarded.

D. Request constitutes a representation that the Contractor:

1. Has investigated proposed Product and determined that it meets or exceeds, in all respects, specified Product;

2. Will provide the same warranty for substitution as for specified Product;

3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects; and

4. Waives claims for additional costs which may subsequently become apparent.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request on the form included at the end of this Section, or when acceptance will require substantial revision of Contract Documents.

F. The Engineer will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time.

G. Any additional costs, or any loss or damage arising from the substitution of any materials, equipment or execution of work for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Engineer, unless such substitution was made at the written request or direction of the Engineer.

1.10 EQUIPMENT

A. Contractor shall provide all necessary equipment to complete the Work.

END OF SECTION

SECTION 01710
CLEANING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section.

B. Provide waste storage containers.

C. Related work: In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Conduct inspections to verify that requirements for cleanliness are being met.

PART 2 – PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

A. Use only the cleaning materials and equipment that are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

2.03 WASTE STORAGE CONTAINER

A. The Contractor is responsible for providing a suitable waste storage container of sufficient size or numbers for the temporary storage of wastes generated by the work of this Section and other Sections of these Specifications.

B. The Contractor is responsible for the proper and timely transfer of stored wastes to a proper off-site disposal.

C. Demolition debris shall not be stored on the garage deck.

PART 3 – EXECUTION

3.01 PROGRESS CLEANING

A. General:

1. Retain stored items in an orderly arrangement, in designated areas allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.

2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this work, except in proper waste container(s).

3. Provide adequate storage for all debris and trash awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.

4. Waste containers shall be emptied, off site, a minimum of once per week.

B. Site:

1. Continuously inspect the site and pick up all scrap, debris, and waste material. Remove such items to the container(s) designated for their storage.

2. Daily and more often if necessary, inspect all arrangements of construction materials stored on the site. Restack, organize neatly, tidy or otherwise service arrangements to meet requirements of subparagraph 3.01-A-1 above.

C. Building:

1. Daily, and more often if necessary, inspect and pick up all scrap, debris, and waste material. Remove such items to the container(s) designated for their storage.

2. As required preparatory to installation of succeeding materials, clean the surfaces to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.

3.02 FINAL CLEANING

A. Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.01 above.

B. Site:

1. Broom clean paved areas used by construction.

2. Rake grass and garden areas to remove construction debris.

3. Completely remove resultant debris.

C. Building:

1. Exterior:

   a. Visually inspect exterior building surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter caused by the work.

   b. Remove all traces of splashed materials from adjacent surfaces.

2. Interior:

   a. Visually inspect interior of building and remove all traces of soil, waste material, smudges, and other foreign matter caused by the work.

   b. Remove all unused construction material.

   c. Remove all temporary protection and shoring.

   d. Wash down all decks.

END OF SECTION

DIVISION 2

DEMOLITION

SECTION 02070

SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Remove existing joint sealant, damaged concrete, deteriorated paint, and any other material as directed.

1. Removal of materials and debris includes proper site storage and off-site disposal.

B. Should contractor discover, upon removal of damaged concrete, damage or deterioration of the embedded structural steel connections or reinforcement, they shall, immediately and prior to performing any repairs to these surfaces, inform the Engineer of encountered conditions. The Engineer will promptly review these conditions. As appropriate, the Engineer will provide the contractor with recommendations for repair of these conditions as described on the plans and in the specifications.

C. Conform to all Federal, State and local safety requirements.

1.02 SUBMITTALS

A. Request for Engineer's consent:

1. Should conditions of the work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Engineer and secure their written permission and the required Change Order prior to proceeding.

PART 2 PRODUCTS

2.01 TOOLS AND EQUIPMENT

A. Provide the adequate tools and equipment necessary to carry out the work of this Section.

B. Do not use tools, products and/or equipment which could damage the portions of the building which are to remain.

C. Operations within the building are sensitive to noise and tools. Equipment should be selected based on minimizing disruptions.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Inspections:

1. Inspect existing conditions, including elements subject to movement or damage during cutting and patching.

2. After uncovering the work, inspect conditions affecting installation of new work.

3. Visually examine all areas of the project to determine actual conditions

B. Discrepancies:

1. If uncovered conditions are not as indicated, immediately notify the Engineer and secure needed directions prior to proceeding.

2. Do not proceed until written directions are obtained from the Engineer.

3.02 PREPARATION PRIOR TO CUTTING

A. Provide required protection including, but not necessarily limited to, shoring, bracing and support to maintain structural integrity of the work and existing members.

B. Contractor shall construct barriers and other methods of protecting people and property prior to demolition.

1. Barriers and other methods shall be constructed in a manner that is acceptable to the Owner and the Building Inspector.

C. Barriers and other methods shall be maintained throughout construction.

1. As a minimum, all portions of deck areas where demolition or construction is taking place shall be completely closed to public access.

3.03 PERFORMANCE

A. Perform required cutting and patching as required under other Sections of these Specifications.

1. Perform cutting and demolition by methods which will prevent damage

END OF SECTION

DIVISION 3

CONCRETE

SECTION 03310

CONCRETE REPAIR

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The drawings, the contract and other Division 1 Specification sections apply to work of this section.

B. Examine all other sections of the Specifications for requirements that affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 DESCRIPTION OF WORK:

A. Work included: Provide labor, materials, and equipment necessary to complete the work of this Section and, without limiting the generality thereof:

1. Repair of precast double tee flange.

1.03 RELATED WORK:

A. Joint Sealant: Section 07900

1.04 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of the latest edition of the following except where more stringent requirements are shown or specified:

1. ACI 362.1 “Guide for the Design of Durable Parking Structures.”

2. ACI 546 "Concrete Repair Guide."

3. ICRI Technical Guideline No. 03731 “Guide for Selecting Application Methods for the Repair of Concrete Surfaces.”

4. ICRI Technical Guideline No. 03730 “Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion”

5. ICRI Technical Guideline No. 03732 “Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.”

6. "Code of Federal Regulations, Part 1926" per the Occupational Safety and Health Administration (OSHA), Department of Labor (Latest Revision).

B. Materials and installed work may require testing and retesting, as directed by the Engineer, at any time during progress of work. Allow free access to material stockpiles and facilities. Tests not specifically indicated to be done at Owner's expense, including retesting of rejected materials and installed work, shall be done at Contractor's expense.

1.05 SUBMITTALS

A. Unless otherwise specified, submittals required in this section shall be submitted for review. Submittals shall be prepared and submitted in accordance with Division 1.

B. All submittals shall be reviewed and returned to the Contractor within 10 working days.

C. **Incomplete submittals will not be reviewed**.

D. Submittals not reviewed by the General Contractor prior to submission to the Engineer will not be reviewed. Include on the submittal statement or stamp of approval by Contractor, representing that the Contractor has seen and examined the submittal and that all requirements listed in this Section and Division 1 have been complied with.

E. Engineer will review submittals a maximum of two review cycles as part of their normal services. If submittals are incomplete or otherwise unacceptable and re-submitted, General Contractor shall compensate the owner for Engineer's for additional review(s) cycles.

F. Product Data: Submit producer's or manufacturer's specifications and installation instructions for the following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. One Component, Early Strength Gaining, Cementitious Repair Material.

2. Admixtures.

3. Primers/Bonding Agents.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in manufacturer's original unopened containers and packaging bearing labels as to type and names of products and manufacturers.

B. Deliver and store restoration material in manufacturer's original, unopened containers with the grade, batch and production data shown on the container or packaging.

C. Protect restoration material during storage and construction from rain, ground water, and other sources of moisture and from staining or intermixture with soils or other types of material.

D. Protect grout, mortar and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

E. Damaged Material: Remove any damaged or contaminated materials from job site immediately, including materials in broken packages or packages containing water marks or other evidence of damage, unless Engineer specifically authorizes correction and use on project.

1.07 PROTECTION/SITE CONDITIONS:

A. Protect pedestrians, vehicles, building site and surrounding buildings from injury resulting from concrete restoration work.

B. Clean surfaces only when air temperatures are above 40 degrees F and will remain so until concrete has cured.

C. Do not perform any repair work if precipitation is expected. In case of unexpected precipitation, work shall cease and all uncured material shall be adequately protected with an impermeable polyethylene sheet.

D. Do not perform any patching unless the air temperatures are between 40 degrees F and 86 degrees F and will remain a minimum of 40 degrees F for at least 48 hours after completion of work.

E. If the ambient or subsurface temperature is expected to rise above 86 degrees F during curing then the hot weather requirements of ACI 305R hot weather concreting shall be followed.

F. If the ambient or subsurface temperature is expected to fall below 40 degrees F during curing then the cold weather requirements of ACI 306R cold weather concreting shall be followed.

G. Prevent patching materials from staining the face of other surfaces to be exposed to view. Immediately remove all patching materials that come into contact with such surfaces.

H. Do not apply any material to frozen surfaces.

I. If materials are installed and cured in temperatures outside of the range noted above or per the manufacturer's recommendations. Written approval and modified installation instructions must be provided from the manufacturer and submitted for record to the Engineer. This installation shall not void the warranty.

PART 2 PRODUCTS

2.01 FORM MATERIALS:

A. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

B. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

2.02 REINFORCING MATERIALS:

A. Reinforcing Bars: ASTM A 615, Grade 60, deformed and ASTM A 706, Grade 60, deformed, weldable.

B. Welded Wire Fabric: ASTM A 185, welded steel wire fabric. Provide welded wire fabric in flat sheets.

C. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use plastic or wire bar type supports complying with CRSI recommendations, unless otherwise specified. **Wood, concrete block, clay brick and other unspecified devices are not acceptable.**

2.03 REPAIR MATERIALS:

A. All concrete repair materials shall be compatible with each other and with existing concrete. If possible all primers, repair material, and other products should be from the same manufacturer.

B. All materials shall be compatible with chloride contents of 1.0 lbs/cy or greater.

C. All pre-mixed concrete repair products shall be one-component cemetitious products specifically noted for use in parking structures with a corrosion inhibitor.

D. All materials shall be resistant to stresses resulting from automobile traffic and freeze/thaw cycles, de-icing salts, continuous presence of moisture, and a temperature range of –30 to 100 degrees F.

E. For small repairs areas, prepackaged bag mix is approved as follows:

1. One-component, early strength gaining cementititious repair material with the following properties:

a. Minimum 28 day compressive strength: 5000 psi.

b. **Maximum water cement ratio: 0.40**

2. Product shall be recommended for vertical application in garages in ACI Exposure Zone III. (Reference ACI 362 – latest edition).

3. Manufacturers:

a. Sika
b. BASF
c. Mapei
d. Approved equal (must be submitted with bid)

2.04 RELATED MATERIALS:

A. Moisture-Retaining Cover: One of the following, complying with ANSI/ASTM C 171.

1. Waterproof paper.

2. Polyethylene film.

3. Polyethylene-coated burlap.

B. Liquid Membrane-Forming Curing Compound: Not permitted.

C. Slab Joint Filler: Multi-component polyurethane sealant (self-leveling type). Reference Section 07920.

2.05 CONCRETE MIXING:

A. Mixing shall be in strict conformance with manufacturer's recommendations.

PART 3 EXECUTION

3.01 FORMS:

A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.

B. Design, construct, erect, maintain, and remove forms for cast-in-place concrete work in compliance with ACI 347.

C. Design formwork to be readily removable without impact, shock or damage to existing and new concrete surfaces and adjacent materials.

D. Chamfer exposed corners and edges as indicated or to match existing, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

E. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms and bracing after concrete placement as required to eliminate mortar leaks and maintain proper alignment.

3.02 PLACING REINFORCEMENT:

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

1. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

2. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.

3. Install welded wire fabric in flat sheets in as long lengths as practicable. Lap adjoining pieces at least two full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.03 PREPARATION OF FORM SURFACES

A. Prior to repairing, all surfaces must be prepared in accordance with this section of the specification and the manufacturers recommendations.

B. Sawcut perimeter of damage area to a depth of 1/2"+/- (unless note otherwise on Drawings). Do not cut reinforcement. Remove, by hand, a section to confirm depth of reinforcement and adjust depth as required. Do not overcut perimeter at corners.

C. The removal of all unsound concrete, using lightweight demolition hammers, not to exceed **15 pounds is recommended** with 30 pound max. All removals to be performed with ICRI Guidelines, which shall be a part of these specifications, with regard to removal geometry, exposure, undercutting and cleaning of embedded reinforcement, and conditioning of edges and surfaces. **Damage caused as a result of using larger hammers will be repaired at the Contractors expense.**

D. Steel reinforcement shall be thoroughly prepared by mechanical cleaning to remove all traces of rust.

E. Pressure wash all surfaces, including reinforcement using 3000 to 4000 psi water blast, as required to remove all dust and dirt. The surface shall be saturate surface dry (SSD) with no standing water during application

F. The result of this preparation shall render an exposed aggregate surface with a minimum surface profile of +/- 1/8". The surface shall be clean, meaning having complete exposure of sound original material without any deposits of contaminants, foreign matter or loose material, which could affect the bond or long term durability of the surface and the repair material.

3.04 INSPECTION:

A. Inspect all concrete surfaces prior to application of primers/adhesives to insure proper preparation and surface drying.

B. Conform to all manufacturers' preparation instructions.

C. Inspect reinforcement for section loss at locations of deterioration. If loss exceeds 25% notify Engineer prior to proceeding with the repair.

3.05 PRIMING OF REINFORCING STEEL

A. Any reinforcement exposed in the course of removing unsound materials shall be cleaned and prepared in accordance with the above specifications.

B. All exposed reinforcement shall be primed with an approved bonding agent compatible with the repair materials. Coat all exposed surfaces in accordance with the manufacturer's instructions. Care must be taken to create a continuous coating on the full surface, including the underside of the undercut reinforcement. Observe manufacturer's minimum and maximum timing window for repair after application of primer.

C. Primer shall have corrosion inhibiting properties.

3.06 CONCRETE REPAIR

A. Following preparation, as specified above, contractor shall maintain work area in a clean condition, including materials, equipment and workers' footwear, to avoid tracking in of contaminants, dirt, dust, mud or other materials which may interfere with adhesion and durability of repairs.

B. Prior to installation, all repair areas shall be kept continuously wet for at least 20 minutes prior to application of patching compound. Before placing repair material, excess water shall be blown, vacuumed or otherwise removed from the surface, leaving the surface damp or saturated/surface dry.

C. Vigorously brush apply a thin primer coat of acrylic latex bonding agent with added 10% neat Type 1 portland cement into all cavity surfaces. Unless noted otherwise in manufacturer’s installation instructions. All primers shall be compatible with repair material.

D. Within specified time frame of primer application, mix and place repair compound in accordance with manufacturer's instructions.

E. Mix the precisely measured quantity of water specified by the manufacturer with full bags of repair compound only. Mix using slow speed drill (450 rom maximum) with mud or paddle mixer. Motorized mortar mixers may be used for mixing larger quantities. Mix to a uniform consistency, free of lumps or dry material. Do not whip air into the mix. Do not overmix.

F. When placing the repair material, care shall be taken to assure that all corners and gaps under reinforcing steel and entire cavity profile is completely filled and properly compacted to prevent formation of voids or unbonded areas. "Work" the material into corners and gaps, and onto cavity sidewalls using pressure on the trowel to assure good contact between patch and substrates.

G. Patches deeper than 1" (25 mm) may be extended by coarse aggregate addition. 20 pounds of clean, washed, 3/8" pea stone suitable in composition and surface profile for use as a concrete aggregate, may be added to each 50 pound bag of patching compound.

H. Do not re-temper material which has begun to set. Discard any unused material after 20 minutes. Do not excessively wet repair surfaces after placement or as an aid to trowelling. Limit surface water addition to light misting and do not wet or rework repeatedly.

I. Observe the curing requirements for each day's working conditions, as specified herein. Do not open to traffic or expose to weather until adequate strength has been reached, as affected by working and curing conditions.

J. Finish: Provide finish to match existing or as required for membrane application.

3.07 CRACK REPAIR:

A. Preparation:

1. Remove all existing joint sealant.

2. Center routed groove on crack.

3. Remove all loose and deteriorated material.

4. All joint wall surfaces must be clean, sound, and frost free. Joint walls must be free of oils, grease, curing compound residues, and any other foreign matter that might prevent bond. This should be accomplished by blast cleaning or equivalent mechanical means.

5. Conform to all manufacturers' preparation requirements.

B. Sealant Installation:

1. Sealant shall conform to specification Section 07900; Joint Sealant.

2. Install as per manufacturer's requirements.

3. Install sealant evenly and recess 1/8" below surface. DO NOT OVERFILL JOINT.

3.08 MONOLITHIC REPAIR FINISHES:

A. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, and as otherwise indicated.

B. Trowel Finish: Apply trowel finish to monolithic slab surfaces indicated, including slab surfaces to be covered with carpet, resilient flooring, paint or other thin-film finish coating system.

C. Slab finishes for floor coverings not indicated shall be coordinated with the Engineer prior to slab placement.

3.09 CONCRETE CURING AND PROTECTION:

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with the requirements of ACI 306 as herein specified.

B. Curing Methods: Perform curing of concrete by moist curing, by moisture-retaining cover curing. **Slab repairs shall be cured by moist curing methods for a minimum of 3 days.**

C. Protection From Mechanical Injury: During the curing period, the concrete shall be protected from damaging mechanical disturbances, such as load stresses, heavy shock, and excessive vibration. All finished concrete surfaces shall be protected from damage by construction equipment, materials, or methods, by application of curing procedures, and by rain or running water. Self-supporting structures shall not be loaded in such a way as to overstress the concrete.

3.10 QUALITY CONTROL TESTING DURING CONSTRUCTION:

A. Engineer shall verify reinforcement, including slab reinforcement (WWF or reinforcing bar).

3.11 CLEANING:

A. Clean off excess material adjacent to work in progress by methods and with cleaning materials approved by manufacturer of patch materials.

END OF SECTION

DIVISION 5

STEEL

SECTION 05120

STRUCTURAL STEEL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The drawings and general conditions of the contract including General and Supplementary Conditions and other Division 1 Specification sections apply to work of this section.

B. Examine all other sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 DESCRIPTION OF WORK:

A. Extent of structural steel work is shown on drawings, including schedules, notes and details to show size and location of members, typical connections, and type of steel required.

B. Structural steel is that work defined in AISC "Code of Standard Practice" and as otherwise shown on drawings.

1.03 RELATED WORK

A. Section 05120 – Joint Sealant

B. Section 03310 – Concrete Repair

1.04 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of the following, except as otherwise indicated:

1. AISC "Code of Standard Practice for Steel Buildings and Bridges-March 7, 2000".

    a. The provisions of Section 10, "Architecturally Exposed Structural Steel", apply to the canopy elements for this project except exposed welds shall be ground to provide smooth surface.

b. Exclude the word "structural" in reference to the "Design Drawings" in section 3.1 of the Code.

2. AISC "Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design", June 1, 1989 including "Commentary" and Supplements issued thereto.

3. AISC "*Specifications for Structural Joints using ASTM A 325 or A 490 Bolts"* approved by the Research Council on Structural Connections of the Engineering Foundation.

4. AISC "*Seismic Provisions for Steel Buildings*".

5. AWS D1.1 - 2004 "Structural Welding Code" - Steel.

6. AWS D1.3 - 2004 "Structural Welding Code" - Sheet Steel.

7. ASTM A6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use."

8. "Code of Federal Regulations, Part 1926" per the Occupational Safety and Health Administration (OSHA), Department of Labor (Latest Revision).

B. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS D1.1 "Standard Qualification Procedure."

1. Provide certification that welders to be employed in work have satisfactorily passed AWS D1.1 qualification tests and maintained a current certification. Current certification and/or continuity log shall be submitted and be available in the field.

2. If re-certification of welders is required, retesting will be the Contractor's responsibility.

C. Fabricator Qualifications: Fabricator must be a member of the American Institute of Steel Construction (AISC), be certified for SBD – Conventional Steel Building Structures, STD – Standard for Steel Building Structures. Fabricator shall be certified at time of bidding and for duration of project.

1.05 SUBMITTALS

A. Unless otherwise specified, submittals required in this section shall be submitted for review. Submittals shall be prepared and submitted in accordance with this section and Division 1.

B. General Contractor shall submit a Submittal Schedule to the engineer within 30 days after they have received the Owner's Notice to Proceed.

C. All submittals shall be reviewed and returned to the Contractor within 10 working days.

D. Incomplete submittals will not be reviewed.

E. Submittals not reviewed by the General Contractor prior to submission to the Engineer will not be reviewed. Include on the submittal statement or stamp of approval by Contractor, representing that the Contractor has seen and examined the submittal and that all requirements listed in Division 1 have been complied with.

F. Engineer will review submittals a maximum of two review cycles as part of their normal services. If submittals are incomplete or otherwise unacceptable and re-submitted, General Contractor shall compensate the Owner for additional Engineer review cycles.

G. Product Data: Submit producer's or manufacturer's specifications and installation instructions for the following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. AWS D1.1 Welder certifications.

2. Expansion/Adhesive Anchors.

1.06 DELIVERY, STORAGE AND HANDLING:

A. Deliver materials to site at such intervals to insure uninterrupted progress of work.

B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place, in ample time to not delay work.

C. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from corrosion and deterioration.

D. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Steel materials shall be stored in a manner to avoid ponding of precipitation on members. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.01 MATERIALS:

A. Structural Steel Shapes, Plates and Bars (U.N.O): ASTM A 36 minimum, higher strength steel is acceptable.

B. Structural Steel Hot Rolled Wide Flange Shapes: ASTM A 992 Grade 50 (ASTM A572 Grade 50 with special requirements per AISC Technical Bulletin #3, dated March 1997)

C. Structural Stainless Steel Plates and Bars: ASTM A276, A304 stainless steel.

D. Unfinished Threaded Fasteners: ASTM A 307, Grade A, regular low-carbon steel bolts and nuts. Provide hexagonal heads and nuts for all connections.

E. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, as follows:

1. Quenched and tempered medium-carbon steel bolts, nuts and washers, complying with ASTM A325 or ASTM A490. Refer to drawings for diameter.

2. Direct tension indicator washers or bolts may be used at Contractor's option.

3. Provide hot-dipped galvanized fasteners.

F. Electrodes for Welding: Use E308 for stainless steel and comply with AWS Codes with proper rod to produce optimum weld joint considereing material, weld position and size of joint. Use E70XX for carbone steel and comply with AWS Codes with proper rod to produce optimum weld joint considering material, weld position and size of joint. All filler metal used for complete penetration groove welds shall have a minimum Charpy V Notch value of 20 ft-lbs. at 40 degrees F for enclosed and heated structures and 20 ft-lbs. at 0 degrees F for all other structures. Electrodes shall be compatible with steel of both connected elements.

G. Steel Coatings for Exterior Exposed Steel: Except where indicated to be primed and painted, Hot Dipped Galvanized per ASTM A123/A123M (latest edition). Galvanizing shall be applied in a manner to provide Class C faying surfaces for slip critical connections. See Structural Steel Coatings section for additional requirements for galvanizing and painting.

H. Drilled Anchors: Expansion and adhesive by HILTI or POWERS/RAWL as indicated on the drawings.

2.02 FABRICATION:

A. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings.

1. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

2. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs and other defects.

B. Connections: Weld or bolt shop connections, as indicated.

1. Provide field bolted connections, except where welded connections or other connections are indicated.

2. Provide high-strength threaded fasteners for principal bolted connections, except where unfinished bolts are indicated.

C. Welded Construction: Comply with AWS Codes for procedures, appearance and quality of welds, and methods used in correcting welding work.

D. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.

E. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

F. Camber, if any, is indicated on the drawings. Camber indicated is the required camber at time of erection. Contractor shall survey camber prior to placing metal deck.

2.03 STRUCTURAL STEEL COATINGS

A. To the greatest extent possible, structural steel coatings shall be shop applied.

B. Galvanizing, priming and painting for structural steel permanently exposed to view shall meet the requirements of Section 10 of the Code of Standard Practice, “Architecturally Exposed Structural Steel”.

C. Provide venting/drainage holes in sealed tubular members to be hot-dipped galvanized. Holes shall be provided in a location hidden from view in the final

condition and in a manner that will not reduce the strength of the member. Hole locations shall be clearly indicated on the Shop Drawings and are subject to review by the Architect.

D. Coatings: All exterior steel and/or steel permanently exposed to view shall receive a hot-dip galvanizing coating.

E. Field Touch-up: Touch-up all paint and galvanizing damage, including but not by limitation, damage caused during shipping, erection, construction damage, and field welded steel.

F. Application:

1. Surface Preparation: After inspection and before shipping, clean steel work to be painted or galvanized. Remove loose mill scale, splatter, slag or flux deposits. Clean steel in accordance with Steel Structures Painting Council (SSPC) SP-2 or SP-3 "Hand Tool Cleaning," for alkyd primer, and SP-6, "Commercial Blast Cleaning", for zinc rich primer or hot dipped galvanizing, unless shown otherwise on drawings.

PART 3 EXECUTION

3.01 ERECTION:

A. General: Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

B. Erection Procedures: Comply with "Code of Federal Regulations, Part 1926" per the Occupational Safety and Health Administration (OSHA), Department of Labor (Latest Revision).

C. Anchor Bolts: Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place work.

1. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

2. Welding to anchor bolts for corrective measures is <u>strictly prohibited without prior written approval from the Engineer</u>.

D. When installing expansion bolts or adhesive anchors, the contractor shall take measures to avoid drilling or cutting any existing reinforcement or damaging adjacent concrete. Holes shall be blown clean with compressed air and/or cleaned per manufacturer's recommendations prior to the installation of anchors.

E. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary members which are not under stress, as accepted by the Engineer of Record. Finish gas-cut sections equal to a sheared appearance when permitted.

F. Coating Damage: Touch up shop applied paint or galvanizing whenever damaged or bare. Clean surface and touch up with shop primer noted and top coat, as required.

G. Welders shall have current evidence of passing and maintaining the AWS D1.1 Qualifications test available in the field.

H. Welding electrodes, welding process, minimum preheat and interpass temperatures shall be in accordance with AISC and AWS specifications. Any structural steel damaged in welding shall be replaced.

3.02 QUALITY CONTROL:

A. General: Contractor is responsible for maintaining quality control in the field and for providing a structure that is in strict compliance with the Contract Documents.

B. Nonconforming Work: Contractor shall be responsible for correcting deficiencies in structural steel work which inspections laboratory test reports have indicated to be not in compliance with requirements. Additional tests and/or surveys shall be performed, at the Contractor's expense, as may be necessary to show compliance of corrected work. Any costs associated with the Engineer's review and disposition of faulty works shall be borne by the Contractor.

END OF SECTION

DIVISION 7

THERMAL AND MOISTURE PROTECTION

SECTION 07920

JOINT SEALANT

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

1. The drawings and general conditions of the contract including General and Supplementary Conditions and other Division 1 Specification sections apply to work of this section.

2. Examine all other sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

3. Coordinate work with that of all trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract

1.02 DESCRIPTION OF WORK

A. This Section includes replacement of joint sealants for the following locations:

1. Concrete repair perimeters.

2. Joint sealant replacement.

1.03 RELATED SECTIONS

A. Concrete Repair: Section 03310.

1.04 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

1.05 SUBMITTALS

A. Unless otherwise specified, submittals required in this section shall be submitted for review. Submittals shall be prepared and submitted in accordance with Division 1.

B. General Contractor shall submit a Submittal Schedule to the engineer within 10 days after they have received the Owner's Notice to Proceed.

C. All submittals shall be reviewed and returned within 10 working days.

D. Incomplete submittals will not be reviewed.

E. Submittals not reviewed by the General Contractor prior to submission to the Engineer will not be reviewed. Include on the submittal statement or stamp of approval by Contractor, representing that the Contractor has seen and examined the submittal and that all requirements listed in this Section and Division 1 have been complied with.

F. Engineer will review submittals a maximum of two review cycles as part of their normal services. If submittals are incomplete or otherwise unacceptable and re-submitted, General Contractor shall compensate the Owner for additional review cycles.

G. Product Data: Submit producer's or manufacturer's specifications and installation instructions for the following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. Joint Sealant Material.

2. Certification that joint sealant product plus the primers and cleaners required for sealant installation comply with local regulations controlling use of volatile organic compounds.

3. Warranty.

4. Applicator's qualifications.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of the most recent version, except as otherwise indicated:

1. ACI 504 "Guide to Sealing Joints in Concrete Structures."

2. SWR "Applying Liquid Sealants."

3. SWR "Sealants: The Professionals Guide."

4. "Code of Federal Regulations, Part 1926" per the Occupational Safety and Health Administration (OSHA), Department of Labor (Latest Revision).

B. Installer Qualifications: Engage an experienced Installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance for a minimum of 5 years.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver Materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.08 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer or below 40 deg. F.

2. When joint substrates are wet.

B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than or greater than that allowed by joint sealant manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.09 WARRANTY

A. System Manufacturer: Furnish Owner with written joint and several warranty that system will be free of defects, water penetration and chemical damage related to system design, workmanship or material deficiency, consisting of:

1. Any adhesive or cohesive failures.
2. Weathering.
3. Surface crazing.
4. Any damage resulting from lack of conformance of sealant thickness.

B. If material surface shows any of defects listed above, supply labor material to repair all defective areas and to repaint all damaged line stripes.

C. Warranty period shall be 5 yrs commencing with date of acceptable Work.

D. Perform any repair under this warranty at no cost to Owner.

E. Before Construction, provide Owner with sample of final warranty. Warranty shall be provided by manufacturer.

F. Vandalism and abnormally abrasive maintenance equipment are exempted from warranty.

PART 2- PRODUCTS

2.01 MATERIALS GENERAL

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another, with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience and the traffic membrane.

2.02 ELASTOMERIC JOINT SEALANTS

A. General building sealants: 2 or 3-component, Type II, **non-sag**, urethane sealant, conforming to ASTM C 920. Sealant must be approved for vehicular traffic and for use in garage atmosphere.

B. Accepted general building sealants:

1. "Sikaflex-2C NS TG (Traffic Grade)," Sika Corp., Lyndhurst, NJ.
2. Or approved equal

C. Self-leveling sealants are not acceptable.

D. Packing and backer rod: See heading, "Joint Sealant Backing."

E. Sealants used shall not stain masonry or concrete. Aluminum pigmented compounds not acceptable.

F. Color to match existing.

2.03 JOINT SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Polyethylene Backer Rod: preformed, compressible, resilient, nonstaining, nonwaxing, nonextruding strips of flexible material and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance. Backer rod size is to be 25 percent greater than joint opening, minimum.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint-surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.04 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint sealant manufacturer for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory have been corrected.

3.02 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressor.
3. Remove laitance and form release agents from concrete.
4. Clean metal, glass, porcelain, enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm surfaces, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates as noted on the detail. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond: do not allow spillage or migration onto adjoining surfaces. Remove any spillage or migration.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to

remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicted, except where more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

1. Install joint fillers to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

a. Do not leave gaps between ends of joint fillers.
b. Do not stretch, twist, puncture, or tear joint fillers.
c. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
d. Use gage to ensure uniform depth to achieve correct profile, coverage and performance.

D. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.

E. Tooling of Non sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

a. Use masking tape to protect adjacent surfaces of recessed tooled joints.

F. Allow sufficient time before allowing pedestrian and vehicular traffic to travel over the completed joint. Follow manufacturer recommend curing procedures.

3.04 WATER TESTING

A. Water test each sealant joint surface for leaks at point of substantial completion but before demobilization from the site.

B. Spray sealant joints continuously with sprinklers or other methods approved by the Engineer for a minimum of 4 hours ensuring full coverage of joint surface.

C. Notify Engineer of water testing and inspect underside of deck for leaks and repair joints as necessary. Repeat water tests and make further repairs until sealant joint is watertight.

3.05 MOCKUP

A. Contractor is to install a joint sealant mockup for Engineers inspection and testing. Mockup shall be reviewed by sealant manufacturer representative, sealant installer, engineer and owner. Contractor shall provide adhesion testing as part of mockup.

3.06 FIELD QUALITY CONTROL

A. Perform adhesion tests in accordance with manufacturer instructions and ASTM C1193, Method A, Field-applied Sealant Joint Hand-Pull Tab.

B. Perform 5 adhesion tests for the first 1000 feet and 1 test for each 1000 feet thereafter. Perform 3 additional tests for each failed test.

C. Sealants failing adhesion test shall be removed, substrates cleaned, sealants re-installed, and re-testing performed.

D. Maintain test log and submit report to Engineer indicating tests, locations, dates, results and remedial actions.

3.06 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

B. After completion of sealant joints.

3.07 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

END OF SECTION