INVITATION TO BID

NKU-34-19

Kenton Garage Restoration

March 20, 2019

Invitation to Bid
(Kenton Garage Restoration)
NKU-34-19

Proposal NO:	NKU-34-19
Issue Date:	March 20, 2019
Title:	(Kenton Garage Restoration)
Purchasing Officer:	Blaine Gilmore
Phone:	859.572.6449

RETURN ORIGINAL COPY OF PROPOSAL TO:

Northern Kentucky University
Procurement Services
1 Nunn Drive
617 Lucas Administrative Center
Highland Heights, KY 41099

IMPORTANT: BIDS MUST BE RECEIVED BY: 04/10/2019 BEFORE 2:00 P.M. HIGHLAND HEIGHTS, KY time.

NOTICE OF REQUIREMENTS

1. The University's General Terms and Conditions and Instructions to Bidders, viewable at http://procurement.nku.edu/policies/terms-and-conditions.html, apply to this Request for Proposal.
2. Contracts resulting from this RFP must be governed by and in accordance with the laws of the Commonwealth of Kentucky.
3. Any agreement or collusion among Offerors or prospective Offerors, which restrains, tends to restrain, or is reasonably calculated to restrain competition by agreement to bid at a fixed price or to refrain from offering, or otherwise, is prohibited.
4. Any person who violates any provisions of KRS 45A.325 shall be guilty of a felony and shall be punished by a fine of not less than five thousand dollars nor more than ten thousand dollars, or be imprisoned not less than one year nor more than five years, or both such fine and imprisonment. Any firm, corporation, or association who violates any of the provisions of KRS 45A.325 shall, upon conviction, may be fined not less than ten thousand dollars or more than twenty thousand dollars.

AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby swear (or affirm) under the penalty for false swearing as provided by KRS 523.040:

1. That I am the offeror (if the offeror is an individual), a partner, (if the offeror is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the offeror is a corporation);
2. That the attached proposal has been arrived at by the offeror independently and has been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other Contractor of materials, supplies, equipment or services described in the Request for Proposal, designed to limit independent bidding or competition;
3. That the contents of the proposal have not been communicated by the offeror or its employees or agents to any person not an employee or agent of the offeror or its surety on any bond furnished with the proposal and will not be communicated to any such person prior to the official closing of the RFP:
4. That the offeror is legally entitled to enter into contracts with the Northern Kentucky University and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 45A.330 to .340, 164.390, and
5. That the Offeror, and its affiliates, are duly registered with the Kentucky Department of Revenue to collect and remit the sale and use tax imposed by Chapter 139 to the extent required by Kentucky law and will remain registered for the duration of any contract award
6. That I have fully informed myself regarding the accuracy of the statement made above.

SWORN STATEMENT OF COMPLIANCE WITH FINANACE LAWS

In accordance with KRS45A.110 (2), the undersigned hereby swears under penalty of perjury that he/she has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to a bidder will not violate any provision of the campaign finance laws of the Commonwealth of Kentucky.

CONTRACTOR REPORT OF PRIOR VIOLATIONS OF KRS CHAPTERS 136, 139, 141, 337, 338, 341 & 342

The Contractor by signing and submitting a proposal agrees as required by 45A.485 to submit final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that have occurred in the previous five (5) years prior to the award of a contract and agrees to remain in continuous compliance with the provisions of the statutes during the duration of any contract that may be established. Final determinations of violations of these statutes must be provided to the University by the successful Contractor prior to the award of a contract.

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Contractor, by submitting a proposal, certifies that he/she is in compliance with the Code of Federal Regulations, No. 41 CFR 60-1.8(b) that prohibits the maintaining of segregated facilities.

RECIPROCAL PREFERENCE

(1) Prior to a contract being awarded to the lowest responsible and responsive bidder on a contract by a public agency, a resident bidder of the Commonwealth shall be given a preference against a nonresident bidder registered in any state that gives or requires a preference to bidders from that state. The preference shall be equal to the preference given or required by the state of the nonresident bidder.
(2) A resident bidder is an individual, partnership, association, corporation, or other business entity that, on the date the contract is first advertised or announced as available for bidding:
(a) Is authorized to transact business in the Commonwealth; and
(b) Has for one (1) year prior to and through the date of the advertisement, filed Kentucky corporate income taxes, made payments to the Kentucky unemployment insurance fund established in KRS 341.490, and maintained a Kentucky workers' compensation policy in effect.
(3) A nonresident bidder is an individual, partnership, association, corporation, or other business entity that does not meet the requirements of subsection (2) of this section.
(4) If a procurement determination results in a tie between a resident bidder and a nonresident bidder, preference shall be given to the resident bidder.
(5) This section shall apply to all contracts funded or controlled in whole or in part by a public agency.
(6) The Finance and Administration Cabinet shall maintain a list of states that give to or require a preference for their own resident bidders, including details of the preference given to such bidders, to be used by public agencies in determining resident bidder preferences. The cabinet shall also promulgate administrative regulations in accordance with KRS Chapter 13A establishing the procedure by which the preferences required by this section shall be given.
(7) The preference for resident bidders shall not be given if the preference conflicts with federal law.
(8) Any public agency soliciting or advertising for bids for contracts shall make KRS 45A.490 to 45A.494 part of the solicitation or advertisement for bids

DEFINITIONS

As used in KRS 45A.490 to 45A.494: (1) "Contract" means any agreement of a public agency, including grants and orders, for the purchase or disposal of supplies, services, construction, or any other item; and

(2) "Public agency" has the same meaning as in KRS 61.805.

SIGNATURE REQUIRED: This proposal cannot be considered valid unless signed and dated by an authorized agent of the offeror. Type or print the signatory's name, title, address, phone number and fax number in the spaces provided. Offers signed by an agent are to be accompanied by evidence of his/her authority unless such evidence has been previously furnished to the issuing office. Your signature is acceptance to the Terms and conditions above.

DELIVERY TIME:	**NAME OF COMPANY:**	**DUNS #**
PROPOSAL FIRM THROUGH:	**ADDRESS:**	**Phone/Fax:**
PAYMENT TERMS:	**CITY, STATE & ZIP CODE:**	**E-MAIL:**
SHIPPING TERMS: F.O.B. DESTINATION - PREPAID AND ALLOWED	**TYPED OR PRINTED NAME:**	**WEB ADDRESS:**
FEDERAL EMPLOYER ID NO.:	**SIGNATURE:**	**DATE:**

READ CAREFULLY - SIGN IN SPACE BELOW - FAILURE TO SIGN INVALIDATES BID or OFFER

AUTHORIZED SIGNATURE: _____

NAME (Please Print Legibly): _____

TITLE: _____ DATE: _____

****

State of _____)

County of _____)

The foregoing statement was sworn to me this _____ day of_____, 20 _____, by _____.

_____

(Notary Public)
My Commission expires: _____

THIS DOCUMENT MUST BE NOTORIZED

Contents

General Terms and Conditions and Instructions to Proposers:

http://procurement.nku.edu/policies/terms-and-conditions.html

NOTICE OF ADVERTISEMENT

BRIEF SCOPE OF WORK:

Northern Kentucky University is seeking a Contractor to provide all materials, labor, tools, supervision, and equipment required to: restore the Kenton Drive Parking Garage. Please see attached drawings and specifications for details.

PROJECT TIMETABLE:

Invitation for Bid Issued	March 20, 2019
Pre-Bid Meeting	March 27, 2019 at 10:00 am EST
Last Day for Questions	March 29, 2019 at 12:00 pm EST
BIDS DUE	**April 10, 2019 at 2:00 PM EST**

Pre Bid Conference:

There will be a pre-bid meeting held on March 27, 2019 at 10:00 am / pm EST in Student Union Room 109 to review the project and view the worksite. Please email Ryan Straus, Bid Specialist, strausr2@nku.edu with any questions.

SUBMITTAL OF BID:

The bidder shall submit, by the time and date specified via US Postal Service, courier or other delivery service, its bid response in a **sealed package** addressed to:

Blaine Gilmore, MPA
Director, Procurement Services
Lucas Administrative Center, Suite 617
1 Nunn Drive
Northern Kentucky University
Highland Heights, KY 41099

Both inner and outer envelopes/packages should bear respondent's name and address, and clearly marked on package(s) as follows:

ITB NKU-34-19
(Kenton Garage Restoration)

Special Conditions to Proposers

QUESTIONS AND REQUESTS FOR INFORMATION

Information relative to this project obtained from other sources, including other university administration, faculty or staff may not be accurate, will not be considered binding and could adversely affect the potential for selection of your bid. All requests for information, questions or comments relative to this project should be directed, in writing to:

Ryan Straus
Bid Specialist, Procurement Services
Lucas Administrative Center, Suite 617
Northern Kentucky University
Highland Heights, KY 41099
Strausr2@nku.edu

GENERAL TERMS AND CONDITIONS TO PROPOSERS:

The general terms and conditions linked below shall be applicable to this Bid and take precedence over any Contractor terms and conditions:

https://inside.nku.edu/content/dam/Procurement/docs/forms/General%20Terms%20%20Conditions_RS_jg11-1-18.pdf

EQUAL EMPLOYMENT OPPORTUNITY CONTRACT COMPLIANCE

Kentucky' s EEO Act, KRS 45.560A5.640 requires non-exempt parties to submit information about employment and hiring practices for any contract award which exceeds $500,000. Bidders are required to submit reports to the Contracting Agency in accordance with the requirements of the solicitation. The Contracting Agency will send copies of the reports to the Finance and Administration Cabinet, Office of EEO and Contract Compliance (EEO/CC) for review and approval. A list of REQUIRED EEO reports follows.

EE0 I. Employer Information

EEO II. Report Affidavit of Intent to Comply

EEO III. Subcontractor Report Form

The employment provisions of the EEO Act may also be met, in part, by subcontracting to a minority-owned and/ or a female-owned company (as appropriate).

EEO/CC will review and evaluate your employment data and, if applicable, the minority-owned and/ or female-owned company documentation. Thereafter, EEO/CC will determine whether your workforce reflects the percentage of available minorities and females in the area from which your employees are drawn. No award will become effective until all forms are satisfactorily submitted and EEO/CC has certified compliance. Thereafter, EEO/ CC will recertify your company at one (1) year intervals. All required forms are available at http://finance.ky.gov/services/eprocurement/Pages/vendorservices.aspx

Contracts between the Successful Bidder and Subcontractors that exceed $500,000 shall include a provision which requires the Subcontractor(s) to comply with the EEO Act and its reporting requirements. The Successful Bidder is responsible for submitting the subcontractor's forms to EEO/CC. (Note: contracts below the second tier are exempt from EEO reporting.)

BID BONDS:
A 5% bid bond is required with submission of this ITB.

PAYMENT AND PERFORMANCE BONDS: 100% Payment and Performance Bonds will be required for work arising from this ITB.

PARKING PERMITS:
Contractor must obtain parking permits for all vehicles that will be parked on campus. Permits can be obtained at the welcome center for $80.00/month.

http://parking.nku.edu/rules/guidelines.html

GOVERNING LAW:
Proposers shall conform to and observe all laws, ordinances, rules and regulations of the United States of America, Commonwealth of Kentucky, and all other local governments, public authorities, boards or offices relating to the Project Site or the improvements upon same, or the use thereof, and will not permit the same to be used for any illegal or immoral purposes, business or occupation. The resulting Contract shall be governed by Kentucky Law and any claim relating to this Contract shall only be brought in the Franklin Circuit Court in Accordance with KRS 45A-245.

TOBACCO FREE CAMPUS
Effective January 1st, 2014, NKU will be a tobacco free campus. The use of all tobacco products shall be prohibited in all campus buildings and outside areas on campus.

STATUTORY AUTHORITY
Selection of firms to provide professional services to Northern Kentucky University are governed by the provisions of the Kentucky Revised Statutes, KRS 45A.085, http://www.lrc.ky.gov/KRS/045A00/085.PDF

FOREIGN CORPORATIONS
Foreign corporations are defined as corporations that are organized under laws other than the laws of the commonwealth of Kentucky. Foreign corporations doing business within the commonwealth of Kentucky are required to be registered with the Secretary of State, New Capitol Building, Frankfort, Kentucky and must be in good standing.

The Foreign Corporate Proposer, if not registered with the Secretary of State at the time of the bid submittal, shall be required to become registered and be declared in good standing prior to the issuance or receipt of a contract.

DOMESTIC CORPORATIONS

Domestic corporations are required to be in good standing

OCCUPATIONAL LICENCSE
Northern Kentucky University was annexed by the city of Highland Heights in 2008. All contractors performing work for NKU must possess a Campbell County Occupational License and a city of Highland Heights Occupational License (administered by Campbell County) and must also pay applicable payroll taxes. For further information, call 859-572-6605.

PERMITS
The Contractor shall obtain all permits necessary for any or all parts of the work from the authorities governing such work. The Contractor shall procure building permits, when required but no fee shall be applicable on projects for the Commonwealth. Evidence that such permits have been issued shall be furnished to the Owner before beginning work.

COMPLETION DATES
It is understood and agreed that time is of the essence. The Contractor will efficiently, diligently, and expeditiously conduct the work in a manner that will satisfy compliance with approved project schedules and completion by the completion date appearing in the body of this bid.

COORDINATION OF WORK

The Vendor shall be responsible for coordinating all work with the **NKU Project Manager**. The Contractor shall cooperate completely with the Owner's security forces and measures.

DAMAGE AND REPAIRS

The Contractor shall exercise particular care to avoid damage to his own work, the Owner's property, and adjacent property of every description. He shall make good any damage resulting from or caused by the work under this contract at his sole expense in a manner satisfactory and without extra cost to the Owner including, but not limited to, finishes, furnishings, and landscaping.

HAZARDOUS MATERIALS

No asbestos containing materials, lead based paints, or other hazardous materials shall be furnished or installed in this work.

EXAMINATION OF SITE

Each vendor shall fully acquaint and familiarize themselves with the conditions as they exist and the character of the operation to be carried on under the proposed contract and has made such investigation as may be reasonably necessary so that the vendor shall fully understand the facilities, physical conditions and restrictions attending to the work under the contract. The specifications furnished represent a fair approximation of the material needed but all quotations submitted should take into account knowledge gained as a result of the above referenced visual inspection.

EXAMINATION OF CONTRACT

Each vendor shall also thoroughly examine and become familiar with the specifications and associated contract documents. By submitting a bid, the vendor agrees that they have carefully examined the specifications and have thereupon decided that from their own investigation Contractor has satisfied themselves as to the nature and location of work, the general and local conditions and all matters which may in any way affect the work or its performance and that as a result of such examination and investigation, vendor fully understands the intent and purpose of the documents and conditions of the bidding. Claims for additional compensation and/or extension of time because of the vendor's failure to follow the foregoing procedure and to familiarize themselves with the Contract Documents and all conditions which might affect work will not be allowed.

FIELD VERIFICATION

It is the Vendor's responsibility to verify all measurements.

HOURS OF WORK

Working days at Northern Kentucky University are Monday through Friday, 8:00am to 4:30pm. Deviation from these working hours must be approved by said project manager.

WARRANTY

Manufacturer shall stand behind installed system for period of 10 years from Date of Substantial Completion against all the conditions indicated below. When notified in writing from Owner, Manufacturer shall, promptly and without inconvenience and cost to Owner correct said deficiencies.

CANCELLATION

The resulting contract from this ITB may be cancelled by the University for non-compliance with the terms and conditions of any part of the agreement.

TERMINATION FOR CONVENIENCE

Northern Kentucky University reserves the right to terminate the resulting contract without cause with a 30-day written notice. Upon receipt by the Contractor of "notice of termination" the Contractor shall discontinue all services with respect to the applicable contract. The cost of any agreed upon services provided by the Contractor will be calculated at the agreed upon rate prior to "notice of termination" and a fixed fee contract will be pro-rated (as appropriate).

INSURANCE

If awarded, bidder / proposer must provide NKU with an insurance certificate listing NKU as a certificate holder and additionally insured stipulating the CG 20 10 10/01 edition for premises ops AND CG 20 37 10/01 edition for completed operations.

Northern Kentucky University
617 Lucas Administrative Center
1 Nunn Drive
Highland Heights, KY 41099

The Contractor shall furnish the University the Certificates of Insurance and guarantee the maintenance of such coverage during the term of the contract. The Contractor shall provide an original policy endorsement of its CGL insurance naming Northern Kentucky University and the directors, officers, trustees, and employees of the University as additional insured on a primary and non-contributory basis as their interest appears. Additionally, the Contractor shall provide an original policy endorsement for Waiver of subrogation in favor of the Northern Kentucky University its directors, officers, trustees, and employees as additional insured.

Our basic insurance requirements are:

A. COMMERCIAL GENERAL LIABILITY (including contractual liability covering Section 3.18 of the General Conditions)

$1,000,000 Each Occurrence
$2,000,000 General Aggregate Limit
$1,000,000 Personal and Advertising Injury
$2,000,000 Products - Completed Operations Aggregate Limit

B. AUTOMOBILE LIABILITY

Bodily Injury and Property Damage Combined: $1,000,000 Each Accident

C. EXCESS LIABILITY - Umbrella Form

Bodily Injury and Property Damage Combined:

$10,000,000 Each Occurrence
$10,000,000 Aggregate

D. WORKERS' COMPENSATION

Statuatory Requirements

CONTINUED

E. EMPLOYER'S LIABILITY

$1,000,000 Bodily Injury - Each Employee
$1,000,000 Aggregate

F. Completed Operations

Completed Operations Coverage for a period of two (2) years

G. Contractor's Pollution Coverage

H. ERRORS AND OMISSIONS INSURANCE

To the extent that the Contract Documents require the Work to be performed on a design/build basis (for example, if mechanical, electrical, or plumbing drawings are required to be stamped by a licensed engineer), Contractor agrees to require the applicable Subcontractor to (i) perform such work through licensed professionals, (ii) deliver to Owner properly-stamped drawings showing applicable calculations, and (iii) maintain professional liability insurance applicable to such design work in the amount of at least $1,000,000 per occurrence. Contractor shall have no liability to Owner for any errors or omissions in any design services performed by any Subcontractor or design professionals engaged by it except to the extent that such losses are covered by such liability insurance or are otherwise paid by the applicable Subcontractor.

SAFETY PLAN

Upon award, contractor must provide a comprehensive safety plan that is acceptable to NKU. Any questions about this safety plan can be discussed at the pre-bid meeting or through written correspondence.

REFERENCES

Bidder Qualifications: The bidder is required to submit a list of completed projects where he has performed **similar work** to that specified herein.

Organization:_____

Contact Name:_____

Phone Number:_____

Date Work Completed:_____ **Value of Contract:**_____

Project Manager assigned to this project: _____

Brief Project Description: _____

_____

_____

Organization:_____

Contact Name:_____

Phone Number:_____

Date Work Completed:_____ **Value of Contract:**_____

Project Manager assigned to this project: _____

Brief Project Description: _____

_____

_____

Organization:_____

Contact Name:_____

Phone Number:_____

Date Work Completed:_____ **Value of Contract:**_____

Project Manager assigned to this project: _____

Brief Project Description: _____

_____

_____

SUBCONTRACTORS

SUBCONTRACTORS: The following is a list of subcontractors proposed by the bidder to be used to complete the project. All subcontractors are subject to approval by Northern Kentucky University. Failure to submit this list completely filled out may invalidate bid**. SUBCONTRACTORS MAY NOT BE CHANGED AFTER CONTRACT AWARD WITHOUT APPROVAL BY NKU.**

BRANCH OF WORK	NAME, ADDRESS AND TELEPHONE OF SUBCONTRACTORS
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

List of Materials and Equipment
(Must be submitted within 24 hours after bid opening)

Every item listed under the different phases of this project must be clearly identified so that Northern Kentucky University will definitely know what the bidder proposes to furnish. Bidders be hereby advised that this list shall be required to be filled out completely by the apparent low bidder within twenty-four (24) hours from the close of the official reading of the bids.

The above requirement does not preclude any bidder from submitting this list, fully executed, at the time the bids are submitted.
The use of the manufacturers' dealer's name only, or stating "as per plans and specifications", will not be considered as sufficient identification. Where more than one "Make or Brand" is listed for any one item, the Owner has the right to select the one to be used.
Failure to submit a proper list may result in rejection of the Bidder's Proposal.

Material And / Or Equipment	Manufacturer and Brand Name

NKU GENERAL SAFETY & COORDINATION REQUIREMENTS

1. The University strives to continuously maintain both a safe and secure work environment for its students, employees, and the employees of all Contractors assigned to our campus. Therefore, it is essential the following criteria be met by all Contractors (and all their subcontractors) working at NKU.

2. **BACKGROUND CHECKS:** The Contractor shall furnish the University upon request with written documentation that verifies each of their employees working on the property of the University has cleared a background check, has no felony convictions, is not a sex offender, and has the legal right to work in the United States.

3. **DRUG-FREE WORKPLACE:** Northern Kentucky University is a drug-free and alcohol-free workplace, and all employees of Contractors and subcontractors are subject to this policy while working on University property. If there is verifiable suspicion or probable cause that an employee of the contractor or subcontractor is under the influence of drugs or alcohol, the University reserves the right to require the Contractor to have the employee tested immediately at no expense to the University. If the test results are positive the employee will be prohibited from working on University property for a period of one (1) year from the positive test, or the duration of the project, whichever is longer. The banned employee of the Contractor must pass a drug and alcohol test before working again on university property. Effective January 1st, 2014, NKU will be a tobacco free campus. The use of all tobacco products shall be prohibited in all campus buildings and outside areas on campus.

4. **CONTRACTOR PRESENCE ON CAMPUS:** All persons working for (or on behalf of) the Contractor whose duties bring them on campus shall obey the rules and regulations that are established by the University and shall comply with the reasonable directions of the University representatives. Contractor's employees shall never enter or use existing areas of campus where they are not required to be performing work. Contractors and subcontractors are always responsible for providing and maintaining portable restroom facilities for all their workers working on the project. Contractor shall be responsible for the acts of his employees and agents while on campus. Accordingly, Contractor agrees to take all necessary measures to prevent injury and loss to persons or property located on campus. Contractor shall be responsible for all damages to persons or property caused by Contractor or any of his agents or employees. Contractor shall promptly repair any damage that he, or his employees or agent may cause to the campus or to the University equipment. Contractor agrees that in event of an accident of any kind on university property, Contractor will immediately notify the University's Department of Public Safety (859) 572-5770 and furnish a full written report of the accident. All Contractor employees and subcontractors shall present a neat and clean appearance while on University property, and be able to present proper identification upon request.

5. **PROJECT WORK SITE SAFETY & SECURITY:** The University does not, and will not, assume any responsibility for any tools, materials, equipment, or property belonging to the Contractor, his employees or agents, which may be lost or stolen from University property. All contractors and subcontractors are solely responsible for properly securing and protecting their tools and equipment. When working within or on top of an existing building, the Contractor shall work with the assigned University project manager in developing a strategy for securing the project work site and protecting the campus staff and community from the project work site. When working in an open area on campus, the Contractor shall provide securable barricades/fencing around the project site to protect the campus community from the dangers within the project work site. The Contractor shall maintain this project work site 24 hour a day, 7 days a week for the duration of the project.

6. **PARKING:** All Contractors and their subcontractors are required purchase a monthly parking pass from NKU at the rate of $28.75/month, or at a daily rate of $5.00/day. Weekly passes are also available. This will entitle workers to park at all NKU campus lots and garages, EXCEPT for faculty and staff lots which are noted accordingly. This pass also allows for parking in any of the garages if your vehicles will fit. Parking within the jobsite WILL NOT BE PERMITTED. Workers who do so will be subject to immediate towing, without warning, and at their cost. Vehicles may be parked near a worksite for reasonable times for loading and unloading, providing normal access and egress to buildings is not hindered. All workers shall park their personal vehicles in the Welcome Center parking garage, which is located just north of the Power Plant across from the Bank of Kentucky Center.

7. **GENERAL PROJECT COORDINATION:** All work and information requests by the Contractor shall be coordinated through the assigned NKU Project Manager. Any direction provided by the campus Operations & Maintenance Staff and/or the project user group shall NOT be considered official direction from the University unless authorized in writing from the assigned NKU Project Manager. Contractor will NOT be compensated for work performed without written authorization from the assigned NKU Project Manager.

8. **TEMPORARY USE OF CAMPUS UTILITIES:** As a general rule, utilities required by the Contractor to perform their work can be obtained from the University. However, the University reserves the right to require the Contractor to furnish a meter to record the usage of each provided utility for the duration of the project. For projects requiring utility metering, a deduct change order will be issued at the end of the Project to reimburse the University for the Contractor utility usage. The Contractor is responsible for determining and coordinating the procurement of any utility where the University cannot reasonably provide.

9. **CAMPUS UTILITY SHUTDOWNS:** Unless noted otherwise for a specific project, at least seven (7) calendar days notice is required for any campus utility shutdowns and/or any road/parking lot closures necessary for the Contractor to perform their work. All utility shutdowns and closures shall be coordinated with the assigned NKU Project Manager, and the University reserves the right to schedule these shutdowns and closures at night and/or on weekends to minimize disruptions to the campus community. All requests for assistance from NKU's Operations & Maintenance staff in locating existing utilities shall also be submitted to the assigned NKU project manager at least (7) calendar days in advance.

Bid Bond

5% of Contract Price

KNOW ALL MEN BY THESE PRESENTS, that we (here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and (here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of Kentucky as Surety, hereinafter called Surety, are held and firmly bound unto **Northern Kentucky University** as Obligee, hereinafter called Obligee, in the sum of :

_____ Dollars ($_____),

representing 5% of the Principal's total bid price and for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for (Here insert full name, address and description of project)

NOW THEREFORE, if the Obligee shall accept the bid of the Principal within the period specified, or if no period is specified, within 45 days after its opening, and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bid or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bonds or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this day of 2019

(Principal) (Seal) _____ (Witness)

_____

(Title)

(Surety) (Seal) _____ (Witness)

_____

(Title)

THIS DOCUMENT MUST BE NOTORIZED

This is only an example. Other forms may be used.

A. **Base Bid**: (*Total Cost for all work included in the Contract Documents, inclusive of all lump sum and unit price work efforts.)*

For the sum of..... ($_____)

_____Dollars

Base Bid Itemization: (*Total must be equal to Base Bid amount listed above.)*

1. General conditions, permit fees, mobilization, signage, demobilization, barricades, etc.....($_____)
2. Membrane installation at levels 2 & 3.....($_____)
3. Water repellent at levels 2 & 3 .....($_____)
4. Expansion joint replacement (Wing seal and compression Seal at stair towers .....($_____)
5. Deck sealant replacement including new cove sealant at levels 2 and 3.....($_____)
6. Elastomeric coating at slab edges and beams including grout .....($_____)
7. Steel painting including vehicular barriers, security grills and framing in stair towers.....($_____)
8. Steel painting at pedestrian bridge from level 3.....($_____)
9. Wet seal gasket repairs and sealant installation at curtain walls ...($_____)
10. All remaining lump sum work not itemized above.....($_____)
11. Total cost for unit price work (per quoted unit prices listed in part C multiplied by Allowance quantities listed in Section 012100).....($_____)
12. Roofing allowance .....($_____)

B. **Unit Prices for Base Bid Work:** *(For addition to or deduction from the allowance quantities listed in Section 012100.)*

No. 1 – Deep concrete floor repair .....($_____)

_____ Dollars per sq. ft.

No. 2 – Joint edge repair .....($_____)

_____ Dollars per lin. ft.

No. 3 – Stair tread repair .....($_____)

_____ Dollars per lin. ft.

No. 4 – Overhead stair corner repair.....($_____)

_____ Dollars per lin. ft.

No. 5 – Expansion joint block out repair .....($_____)

_____ Dollars per lin. ft.

No. 6 – Random crack repair.....($_____)

_____ Dollars per lin. ft.

No. 7 – Tuckpointing repairs.....($_____)

_____ Dollars per lin. ft.

No. 8 – Grout pocket repairs.....($_____)

_____Dollars per loc.

This offer is for, at minimum, _____ calendar days from the date this offer is opened. In submitting the above it is expressly agreed that upon proper acceptance by Northern Kentucky University of any or all items offered, a contract shall thereby be created with respect to the items accepted.

THIS BID SUBMITTED BY:

_____

(Name and Address of Bidder)

DATE: _____ AUTHORIZED SIGNATURE:_____

NOTE: The Authentication of Bid and Statement of Non-Collusion and Non-Conflict of Interest must be properly executed for this Bid to be valid.

This Bidder, in compliance with this Request for Bid, and having carefully examined the complete contract documents, as well as the specifications for the work as prepared by Northern Kentucky University, hereby proposes to furnish all labor, supervision, materials, supplies and services required to perform the specifics of the Contract Documents, within the time set forth herein and for the final negotiated price.

The Bidder, hereby acknowledges receipt of the following Addenda:

ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATE _____

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 011000

SUMMARY OF WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Summary of Base Bid Work Efforts:

1. Barriers.
2. Concrete repairs.
3. Expansion joint replacement.
4. Concrete Water Repellant.
5. Vehicular Traffic Membrane.
6. Sealant repairs.
7. Painting.
8. Pavement markings.

1.2 CONTRACTS

A. Base and alternate bids for all the work will be received from the Contractor.

B. The Work will be performed under one General Contractor.

1.3 CONTRACTOR'S DUTIES

A. Assume all Contractor responsibilities and provide for the Work required by the Contract Documents.

B. Give required notices where and when requested.

C. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on the performance of the Work.

D. Pay all legally required taxes. Refer to Bidding Requirements, General Conditions for information relative to sales tax for which the Owner is exempt.

E. Apply, secure and pay for all required local permits, fees, licenses and approvals per the General Conditions of the Contract.

1.4 NOTES TO CONTRACTOR

A. The division of the body of the Specifications into various Parts has been arranged for clarity in the delineation of the various parts of the whole Work. It is not the intent of such division to develop any secondary responsibilities for the satisfactory completion of the Work and all of its parts as required of the Contractor by the Contract Documents, nor is the assignment of any parts of the Work to any trade or craft to be inferred from the Contract Documents.

B. Division 01 Specifications typically address items in a general nature and the Contractor must take notice that more specific requirements may be included in the Technical Sections.

1.5 PROJECT COORDINATION

A. The Contractor has full responsibility and authority regarding the scheduling and coordination of the Work within the Contract time and within the requirements of Article 1.7.

B. The Contractor also has full responsibility for the completeness and quality of the Work as outlined in the Contract Documents, and must staff the project with qualified, competent personnel to the extent required for the Work.

C. The Contractor's Project Manager and Lead Project Superintendent are subject to the review and approval of the Owner. Upon request at any portion of the project (i.e. pre-award, post-award and prior to project start, or during the project), the Contractor shall produce a detailed resume, with references, documenting the experience of the Project Manager and Lead Project Superintendent for the Owner's review and approval.

D. All subcontractors shall abide by the Project Schedule and coordination requests made by the Contractor.

E. If a subcontractor is substantially responsible for specific components of the Work (i.e. concrete repairs or new concrete placements, painting, etc.), the Contractor must have a regular, periodic site presence during those efforts, not less than two separate days per week, nor less than 20 percent of the total work week time, to provide a level of coordination and quality control consistent with that expected of a wholly self-performing Contractor labor force.

F. Unless otherwise directed or allowed, the Owner (or the Owner's representative) communicates directly with the Contractor. All dealings and decisions regarding execution of the Work shall be from the Owner, (or Owner's representative,) to the Contractor; and the reverse flow.

G. The Contractor communicates directly with the subcontractors, vendors and suppliers. At the Engineer's option, direct communications between the Engineer and subcontractor may occur, for clarification of material delivery, installation procedures, technical support, logistics and other matters. Contractor will be kept advised of any such Engineer/subcontractor communications.

H. The subcontractor shall coordinate with the Contractor who has the overall responsibility for the Work.

I. Where Work of any one Section of the Specifications affects the Work of other Sections, successive Work shall not be installed until conditions have been inspected by the Contractor and are satisfactory for successive Work. Installation of successive Work shall serve as the Contractor's acceptance and confidence with the conditions being covered by subsequent work. The performance of successive Work shall be the responsibility of the Contractor to coordinate.

J. Contractor is required to be on site to conduct regular, bi-weekly job progress meetings with the Owner. Contractor shall include Engineer via telephone for said progress meetings and shall distribute written meeting minutes as directed by Owner.

K. The Owner reserves the right to hold additional job progress and coordination meetings on an as-needed basis as determined by the Owner. The Contractor shall be given 48 hours notice (when possible) to said meeting.

L. A preconstruction project meeting shall be held by the Owner prior to the start of work.

1.6 APPLICABLE CODES

A. The Contractor shall comply with all Federal, State and Municipal laws, codes, ordinances and regulations applicable to the Work in this Contract and also with all requirements of the National Fire Protection Association and the National Electric Code.

B. If the above laws, codes or ordinances conflict with this Specification, then the laws, codes or ordinances shall govern, except in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

1.7 PROJECT SCHEDULE AND SEQUENCING

A. The Contractor shall submit to the Owner a complete itemized time schedule and detail program for construction, purchasing of critical materials, and for submission of shop drawings and samples. This schedule is required within seven calendar days after Notice of Award. The schedule shall indicate the duration of time required for the performance of all work. All construction activities and each phase of work must be clearly indicated on the schedule. The schedule must be signed by an official of the firm. It must be realistic as its faithful execution will be considered a commitment, not an estimate.

B. Normal working hours are 7:00 AM to 3:30 PM, Monday through Friday.

C. Work requested by the Contractor to be performed outside of normal working hours must be approved and coordinated through the Owner. Provide the Owner a minimum of 4 working days notice prior to the requested time to perform work outside normal working hours. Such request shall include type of work to be

performed and expected duration.

D. Odor or fume producing work performed in the vicinity of fresh air intakes (or similar occupied building access points) must be performed at night after the shutdown of fresh air intakes. At the Contractor's option, and if approved in advance by the Owner, work may begin prior to air intake shutdown. If work is elected to begin prior to intake shutdown, the Contractor shall at their expense, employ measures to draw fresh air from areas beyond the work activities that produce odors/fumes. All methods or procedures must be approved by, and meet the satisfaction of the Owner.

E. Work performed outside of normal business/working hours shall be performed at no additional cost to the Owner. Additional cost incurred for testing and inspection, including services of the Engineer or Owner's representative shall be solely borne in full by the Contractor.

F. Work Phasing:

1. Work shall be phased so that lower levels of the garage are completed first.

2. The garage can be closed in its entirety to perform work from May 13, 2019 through July 19, 2019. All Level1 and Level 2 work must be completed within this timeframe.

3. Level 3 can be closed for an additional two weeks but must be opened by August 5, 2019.

G. Site Restrictions

1. When work is performed which may create a hazard to persons or property above, below or in the proximity of the work, those areas shall be blocked or otherwise protected to eliminate the hazard.

2. All work at entry/exits is to be performed in such a manner to allow traffic flow in and out without significantly constricting the accessibility.

H. Change order work that is to be performed on a time and materials basis shall be billed as if performed during normal work hours. In the event that work is required to be performed outside normal work hours due to schedule or site restrictions, the Contractor shall be compensated at their standard overtime rate.

I. Should the Contractor fall behind the approved or adjusted schedule in the performance of his Work and, in the judgment of the Owner, it appears that the Contractor cannot complete his Work within the time established by the Contract, then the Contractor shall work overtime, additional shifts or adopt such other procedures with the Owner's approval, as may be necessary to restore adherence to the schedule while maintaining the required level of quality control, testing and inspection. The full cost of such work or procedures shall be borne by the Contractor, including the cost of additional services of the Owner or Owner's representative.

J. Work rejected by the Owner as not meeting the intent or requirements of the Contract Documents shall be replaced by the Contractor and shall not result in additional costs to the Owner. Rejected work will not be cause for an extension to the Contract Time.

K. The Contractor is responsible for securing work area for performance of the Work.

L. Project Schedule and Sequence:

1. The Contractor shall deliver submittals to the Engineer at least 7 days prior to mobilizing.

2. The Contractor shall mobilize and begin work not later than two weeks from receiving a formal Notice to Proceed or executed Contract. Work shall follow the sequence and phasing as outlined in Contract Documents.

3. Final completion of all Work shall be 28 days beyond specified Substantial Completion date. Refer to paragraph 1.9.3 for additional information.

M. Within 7 days after Notice of Award, submit a detailed plan for the project schedule implementation following the outline sequence shown above.

1.8 PROJECT CONDITIONS

A. No equipment exceeding 4000 lbs. per axle, including transportation and removal equipment shall be allowed on a supported structural level.

B. Existing emergency access routes must be maintained at all times on each level of the garage where work is being performed.

1.9 LIQUIDATED DAMAGES

A. All required work shall be completed within the specified time period. If the Work is not completed for any reason, Liquidated Damages may be charged to the Contractor per the following schedule:

1. Lump sum of $300.00 per day until substantial completion is reached.

2. At Final Completion, all punch list issues shall be fully addressed to the satisfaction of the Owner, and all required project close-out documents, including final pay requests and all warranties, as–built drawings and maintenance manuals, shall be submitted to the Owner. Liquidated Damages equal to the Engineer’s costs to administer the project beyond the Final Completion date will be assessed via a reduction in the retainage payment to the Contractor.

1.10 SAFETY

A. The Contractor is responsible for all safety issues regarding performance of the Work.

B. The Contractor must submit to the Owner a copy of the contractor's safety program prior to the start of work.

C. The Contractor shall have weekly Tool Box Safety Meetings which must be attended by all Contractor and subcontractor personnel on-site.

D. Fire extinguishers shall be provided at all contractor furnished gasoline operated equipment, contractor storage area, at membrane application areas and membrane mixing areas, and at each area of other work efforts with flammable components. Extinguishers to be 10 lb. A, B, C Class.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

`DIVISION 01 - GENERAL REQUIREMENTS

SECTION 012100

ALLOWANCES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Base Bid Quantity Allowances.

1.2 RELATED SECTIONS

A. Section 012900 - Payment Procedures.

B. Section 030100 - Concrete Repairs.

C. Section 040300 - Masonry Repairs.

D. Section 079200 - Sealants

1.3 QUANTITY ALLOWANCE

A. General:

1. Allowances include all labor, material, tools, equipment, supervision transportation, handling, storage, overhead and profit, and all other costs associated with performance of work.

2. Additions to a quantity allowance as listed in this Section will be paid by the Owner at the unit price established in Section 012900 – Payment Procedures.

3. Deletions from a quantity allowance as listed in this Section will be credited to the Owner at the unit price established in Section 012900 – Payment Procedures.

B. Base Bid Quantity Allowance Items:

1.	Deep Concrete Floor Repair	300 square feet
2.	Joint Edge Repair	50 linear feet
3.	Stair Tread Repair	15 linear feet
4.	Overhead Stair Corner Repair	10 linear feet
5.	Expansion Joint Block Out Repair	10 linear feet
6.	Random Crack Repairs	1,000 linear feet
7.	Tuckpointing Repairs	150 linear feet
8.	PT grout pocket repairs	100 locations

C. The Contractor shall include the total cost for all Base Bid Quantity Allowance items listed above in the Base Bid Lump Sum Total as reflected on the Bid Form.

1.4 CASH ALLOWANCE

A. General:

1. Cash allowances will be performed on a time and material basis. The Contractor shall furnish and certify daily detail records of all labor and materials provided.

2. If the cost to complete the work is less than the cash allowance, a deduct Change Order will be prepared by the Owner for the cost difference.

B. Cash Allowance Items:

1. A roofing allowance of $5,000 shall be included in the Base Bid to address work items identified on the drawings to be paid on a time-and-material basis.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 012600

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Change of Work Procedures.

1.2 CONTRACT MODIFICATIONS

A. Minor Changes in the Work:

1. Interpretation of Contract Documents or minor changes in the Work not involving changes in Contract Price or Time shall be issued by the Owner in writing and shall be executed promptly by the Contractor.

B. Contract Modifications:

1. Changes to the Contract that affect the cost/time shall be processed as follows:

a. Contractor shall submit a written proposal, with a complete itemized breakdown, showing quantities and unit costs of the major items of materials, labor hours, labor costs per hour, overhead and profit, and time modifications to the Owner for review and acceptance.

b. The Owner will review the proposal and respond with one of the following:
1) Reject the proposal in writing.
2) Issue a Construction Change Authorization. (Attached sample NKU Construction Change Authorization form for reference)
3) Issue a Change Order.

C. Change Orders

1. Cost for change orders shall be calculated as the sum of hourly wages, materials, overhead and profit.

2. The percentage to be used for General Contractor overhead and profit shall be 15 percent for self-performed labor, 10 percent for subcontractors and 10 percent for materials and equipment.

3. The percentages to be used for Sub-Contractor overhead and profit shall not exceed 10 percent for labor and 10 percent for materials and equipment.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

CONSTRUCTION CHANGE AUTHORIZATION

Univ. Arch't, Design & Constr. Mgmt.
Northern Kentucky University
Nunn Drive AC726
Highland Heights, KY 41099

CCA No. X

Date:_____

Project Name: NKU xxxx Project #: _____

Project Location: _____ Project -Coordinator: _____

Architect : _____ Phone: _____

Phone: _____ Phone: _____ Fax: _____

Description of Proposed Change-must be specific and with some detail: (if more space is needed attach a separate sheet)

1

2

3

OWNER TO FILL OUT REASON

REASON: circle one: A/E ERROR; A/E OMISSION; OWNER CHANGE; OWNER ADDED SCOPE; UNFORESEEN CONDITIONS; OTHER.
All reasons require an explanation. Be specific.

RFI NO: _____

CCA Requested by (circle one): OWNER, ARCHITECT, CONTRACTOR, TENANT, OTHER

Attachments (circle one): NO. YES. If Yes, Specify:

Contractor Pricing Of Proposed Change:

Actual Estimated

CHANGE IN CONTRACT SUM OF $ _____

CHANGE IN CONTRACT TIME ____ calendar days

ARCHITECT REVIEW

CONTRACTOR PRICING IS:

Recommended _____

Not Recommended _____

Reprice _____

Approved By: _____

Date: _____

Remarks: _____

_____

_____

_____

_____All A/E Services required to complete this CCA are included in Basic Services at No Additional Cost to the Owner.

_____ All A/E Services required to complete this CCA shall be charged as Additional Services, The estimated costs are $_____, lump sum.

A/E is hereby authorized to proceed with all services to complete as described above

By:_____ Date:_____

URGENT CONDITIONS: Not to Exceed $25,000

In order to expedite the work and minimize or avoid delays, the contract documents are hereby amended as described above. This is an Authorization to proceed with this work promptly. Submit final costs for this scope of work for inclusion in a subsequent Change Order. Only one signature of any of the persons listed is required for an urgent condition that does not exceed $25,000.

Not to Exceed Cost $_____

AUTHORIZED BY:

Project Manager: _____

Director, Univ. Arch.: _____

Director, Procurement.: _____

AVP Facilities: _____

SVP Admin/Finance: _____

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 012900

PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Unit Prices.

B. Measurement Procedures for Allowances.

1.2 RELATED SECTIONS

A. Section 012100 - Allowances.

B. Section 030100 - Concrete Repairs.

C. Section 040300 - Masonry Repairs.

D. Section 079200 - Sealant Repairs.

1.3 UNIT PRICES

A. General:

1. Unit prices shall apply for both additions to and deletions from the Work.

2. Unit prices shall be complete including all labor, materials, tools, equipment, supervision, transportation, handling, storage, overhead and profit, and all other costs associated with the work.

3. No monetary variance of unit prices for additive and deductive quantities will be accepted and will be cause for rejection of Bid.

4. The Owner reserves the right to accept or reject any or all unit prices.

5. All unit price items on the Bid Form must be completed. If unit price is zero, then it must be indicated as such in the space provided.

6. Failure to provide unit prices as required on the Form of Proposal may be cause for rejection of Bid.

1.4 MEASUREMENTS

A. Prior to the start of work in each work area or phase, the Contractor and the Owner will inspect the area and document locations and quantities of all allowance items. The Contractor shall notify the Owner at least 3 days in advance of required inspection. Refer to Section 012100.

B. Quantity allowance items will be recorded and the date of the inspection and the persons performing the inspections will be recorded on each item sheet.

C. The Owner's representative will measure and count the allowance items. The Contractor will record the results.

D. At the completion of each item inspection, both the Owner and Contractor will sign the record sheets.

E. The Owner will copy the sheets and provide a copy of all sheets to the Contractor within 3 working days from the date of inspection.

F. These inspection sheets will be the only basis for determining final quantities of all quantity allowance items.

G. Measurements will be recorded to the nearest inch.

1.5 PAYMENTS

A. For each application of payment submitted by the Contractor, a summation of all quantity allowance items shall be sent for verification.

B. Differences in sum totals between the Owner and Contractor will be resolved by comparing quantity sheets to determine exact final quantities. Quantities NOT measured AND confirmed per Article 1.4 shall not be approved for payment.

C. The difference between an actual quantity and a specified quantity will be multiplied by the unit cost for that item to establish a dollar value. The dollar value for quantities above the allowance quantity will be added to the contract amount. The dollar value for quantities below the allowance quantity will be subtracted from the contract amount.

D. Adjustments to the contract amount will be made by approved change order.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 013300

SUBMITTALS PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Procedural requirements for non-administrative submittals, including shop drawings, product data, samples and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.

B. Shop drawings are technical drawings and data that have been specifically prepared for this project, including but not limited to:

1. Fabrication and installation drawings.

2. Setting diagrams.

3. Shop work manufacturing instructions.

4. Coordination drawings (for use on-site).

5. Schedules.

6. Concrete Mix Designs.

C. Standard information prepared without specific reference to a project is not considered to be shop drawings.

D. Product data includes standard printed information on manufactured products that has not been specifically prepared for this project, including but not limited to the following items:

1. Manufacturer's product specifications and installation instructions.

2. Standard color charts.

3. Catalog cuts.

4. Printed performance curves, independent technical analysis of performance, or similar.

5. Operational range diagrams.

6. Standard product operating and maintenance manuals.

7. Mill reports.

8. Material safety data sheets on all material provided or used in execution of

the Work.

E. Samples are physical examples of work, including, but not limited to the following items:

1. Partial sections of manufactured or fabricated work.

2. Small cuts or containers of materials.

3. Complete units of repetitively-used materials.

4. Swatches showing color, texture and pattern.

5. Color range sets.

6. Units of work to be used for independent inspection and testing.

1.2 SUBMITTAL PROCEDURES

A. General:

1. Promptly after the Contract has been signed, the Contractor shall submit complete and detailed shop drawings to the Owner or its representative for the work of the various trades, and the Owner or its representative shall approve or reject them with reasonable promptness.

2. The Contractor prior to submitting the shop drawings shall review all shop drawings, check all conditions, check and verify all field measurements, and mark all corrections, sign and date each set.

3. No shop drawings will be reviewed without the signature of Contractor, which will signify that he has checked drawings.

4. No faxed copies to the Engineer for approval will be accepted.

B. Coordination of Submittal Times:

1. Prepare and transmit each submittal sufficiently in advance of the scheduled performance of related work and other applicable activities.

2. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the need to review submittals concurrently for coordination.

3. The Owner will endeavor to complete his review of submittals within 7 days of receipt. Submittals shall be returned noted: “No exceptions noted”, or “Exceptions noted”, or “Exceptions noted: revise and resubmit”. Fabrication of material before the receipt of shop drawings for that material noted “No exceptions noted” shall be at the Contractor’s risk.

C. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the work.

D. Submittal Preparation:

1. Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.

a. Project name.

b. Date.

c. Name and address of Owner.

d. Name and address of Contractor.

e. Name and address of subcontractor.

f. Name and address of supplier.

g. Name of manufacturer.

h. Number and title of appropriate Specification Section.

i. Drawing number and detail references, as appropriate.

j. Similar definitive information as necessary.

2. Provide a space on the label for the Contractor's review and approval markings, and a space for the Owner's "Action" marking.

1.3 SPECIFIC SUBMITTAL REQUIREMENTS

A. General:

1. Specific submittal requirements for individual units of Work are specified in the applicable Specification Section.

2. Except as otherwise indicated in the individual Specification Sections, comply with the requirements specified herein for each type of submittal.

B. Shop Drawings:

1. Information required on shop drawings shall include dimensions, identification of specific products and materials which are included in the Work, information showing compliance with specified standards, and notations of coordination requirements with other work.

2. Provide special notation of dimensions that have been established by field measurement.

3. Highlight, encircle or otherwise indicate deviations from the Contract Documents on the shop drawings.

4. Coordination Drawings:

    a. Provide coordination drawings where required for the integration of the Work, including Work first shown in detail on shop drawings or product data.

    b. Show sequencing and relationship of separate units of Work which must interface in a restricted manner to fit in the space provided or function as indicated.

    c. Coordination drawings are considered shop drawings and must be definitive in nature.

5. Do not permit shop drawings copies without an appropriate final "Action" marking to be used in connection with the Work.

6. Do not reproduce Contract Documents or copy standard printed information as the basis of shop drawings.

7. Initial Submittal:

    a. Provide four (4) prints and Electronic versions of each submittal; two prints will be returned. One of the returned prints shall be maintained by the Contractor and marked-up as a "Record Document."

8. Final Submittal:

    a. Provide four (4) prints of each revised submittal as directed by the Engineer based on Initial Submittal review. Two prints will be returned. One of the returned prints shall be maintained by the Contractor and marked-up as a "Record Document."

C. Product Data:

1. General information required specifically as product data includes manufacturer's standard printed recommendations for application and use, compliance with recognized standards of trade associations and testing agencies, and the application of their labels and seals (if any), special notation of dimensions which have been verified by way of field measurement, special coordination requirements for interfacing the material, product or system with other work, and material safety data sheets.

2. Preparation:

    a. Collect four sets of the required product data into a single submittal for each unit of Work or system.

    b. Mark each copy to show which choices and options are applicable to the project.

    c. Where product data has been printed to include information on several

similar products, some of which are not required for use on the Project or are not included in this submittal, mark the copies to show clearly that such information is not applicable.

3. Submittals:

   a. Product data submittal is required for information and record and to determine that the products, materials and systems comply with the provisions of the Contract Documents.

   b. The initial submittal is also the final submittal, except where it is observed that there is non-compliance with the provisions of the Contract Documents and the submittal promptly returned to the Contractor marked with the appropriate "Action."

4. Final Distribution:

   a. The Owner will retain two sets of the submittals.

   b. Furnish copies of product data to subcontractors, suppliers, fabricators, manufacturers, installers, governing authorities and others as required for proper performance of the Work.

   c. Show distribution on transmittal forms.

5. Installation Copy:

   a. Do not proceed with installation of materials, products and systems until a copy of product data applicable to the installation is in the possession of the installer.

   b. Do not permit the use of unmarked copies of product data in connection with the performance of the Work.

D. Samples:

1. Submit a minimum of two samples for visual review of general generic kind, color, pattern, and texture, and with other related elements of the Work.

2. Samples are also submitted for quality control comparison of these characteristics between the final sample submittal and the actual work as it is delivered and installed.

3. Refer to individual Work Sections of these Specifications for additional sample requirements which may be intended for examination or testing of additional characteristics.

4. Compliance with other required characteristics is the exclusive responsibility of the Contractor; such compliance is not considered in the Owner's review and "Action" indication on sample submittals.

5. Documentation required specifically for sample submittals includes a generic

description of the sample, the sample source or the product name or manufacturer, compliance with governing regulations and recognized standards. Indicate limitations in terms of availability, sizes, delivery time and similar limiting characteristics.

E. Miscellaneous Submittals:

1. Inspection and Test Reports:

a. Classify each inspection and test report as being either "shop drawings" or "product data," depending on whether the report is specially prepared for the project or a standard publication of workmanship control testing at the point of production.

b. Process inspection and tests reports accordingly.

c. Refer to Section 014000 - Quality Requirements for report distribution.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 014000

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General: Required inspection and testing services are intended to assist in the determination of probable compliance of the Work with requirements specified or indicated. These required services do not relieve the Contractor of responsibility for compliance with these requirements or for compliance with requirements of the Contract Documents.

B. Definitions: Quality control services include inspections, tests and related actions, including reports, performed by independent agencies and governing authorities, as well as directly by the Contractor. These services do not include Contract enforcement activities performed directly by the Owner.

C. Specific quality control requirements for individual units of Work are specified in the Sections of these Specifications that specify the individual element of the Work. These requirements, including inspections and tests, cover both production of standard products and fabrication of customized work. These requirements also cover quality control of the installation procedures.

D. Inspections, tests and related actions specified in this Section and elsewhere in the Contract Documents are not intended to limit the Contractor's own quality control procedures which facilitate overall compliance with requirements of the Contract Documents.

E. Requirements for the Contractor to provide quality control services as required by the Owner, governing authorities or other authorized entities are not limited by the provisions of this Section.

1.2 RESPONSIBILITIES

A. Contractor Responsibilities: Except where they are specifically indicated as being the Owner's responsibility, or where they are to be provided by another identified entity approved by the Owner, all inspections, tests and similar quality control services are the Contractor's responsibility - these services also include those specified to be performed by an independent agency and not directly by the Contractor. Costs for these services shall be included in the Contract Sum. The Contractor shall employ and pay an independent agency, testing laboratory or other qualified firm approved by the Owner to perform quality control services specified.

B. Owner Responsibilities: The Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Owner's responsibility. Such services shall be coordinated by the Contractor as required.

C. Retest Responsibility: Where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance of related Work with the requirements of the Contract Documents, then retests are the responsibility of the Contractor, regardless of whether the original tests were the Contractor's responsibility. Retesting of Work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original Work.

D. Responsibility for Associated Services: The Contractor is required to cooperate with the independent agencies performing required inspections, tests and similar services. Provide such auxiliary services as are reasonably requested. Notify the testing agency sufficiently in advance of operations to permit assignment of personnel. These auxiliary services include, but are not necessarily limited to the following:

1. Providing access to the Work.

2. Taking samples or assistance with taking samples.

3. Delivery of samples of test laboratories.

4. Security and protection of samples and test equipment at the Project site.

E. Limitations of Authority of Testing Service Agency: The agency is not authorized to release, revoke, alter or enlarge the Contract Documents. The agency shall not approve or accept any portion of the Work. The agency shall not perform any duties of the Contractor.

F. Coordination: The Contractor and each independent agency engaged to perform inspections, tests and similar services for the Project shall coordinate the sequence of their activities so as to accommodate required services with a minimum of delay in the progress of the Work. In addition, the Contractor and each independent testing agency shall coordinate their work so as to avoid the necessity of removing and replacing work to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections, tests, taking of samples and similar activities.

G. If the laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any work to be inspected, tested or approved, the Contractor shall give the Owner timely notice of its readiness and of the date arranged so the Owner may observe such inspection, testing or approval.

H. Special Tests: The Owner may on occasion request the Contractor to perform a special test on materials or equipment installed to verify conformance to the Specifications. The Owner will pay for all such tests if the materials or equipment meet or exceed specified requirements. However, if the items tested fail to meet these requirements, then the Contractor shall pay all costs of such tests and shall rectify at no cost to the Owner.

1.3 QUALITY ASSURANCE

A. Qualification for Service Agencies: Except as otherwise indicated, engage inspection and test service agencies, including independent testing laboratories, which are pre-qualified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which are recognized in the industry as specialized in the types of inspections and tests to be performed. Owner must approve Contractor's designated testing agency.

B. Codes and Standards: Testing, when required, shall be in accordance with all pertinent codes and regulations and with selected standards indicated in the various Sections of these Specifications under the Article entitled QUALITY ASSURANCE.

1.4 SUBMITTALS

A. General: Refer to Section 013300 – Submittal Procedures, for submittal requirements.

B. Submit a certified written report of each inspection, test or similar service performed by the Testing Laboratory directly to the parties below.

1. Contractor, 1 copy.

2. Engineer, 1 copy.

3. Owner's representative, 1 copy.

4. Owner, 1 copy

5. Submit additional copies of each written report directly to the governing authority when the authority so directs.

C. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to the following:

1. Name of testing agency or test laboratory.

2. Dates and locations of samples and tests or inspections.

3. Names of individuals making the inspection or test.

4. Designation of the Work and test method.

5. Complete inspection or test data.

6. Test results.

7. Interpretations of test results.

8. Notation of significant ambient conditions at the time of sample taking and testing.

9. Comments or professional opinion as to whether inspected or test work complies with requirements of the Contract Documents.

10. Recommendations on retesting, if applicable.

1.5 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services performed on the Work, repair damaged Work and restore substrates and finishes to eliminate deficiencies, including deficiencies in the visual qualities of exposed finishes. Protect Work exposed by or for quality control service activities, and protect repaired Work. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 014216

DEFINITIONS AND STANDARDS

PART 1 GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. General: This Section specifies procedural and administrative requirements for compliance with governing regulations and the codes and standards imposed upon the Work. These requirements include the obtaining of permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.

1. "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.

1.2 DEFINITIONS

A. Owner: Northern Kentucky University and their properly authorized agents including the Engineer and other consultants serving as Owner's Representatives reviewing work.

B. Engineer: THP Limited, Inc., Cincinnati, Ohio.

C. Owner's Representative: THP Limited, Inc., or other authorized agent as designated by the Owner.

D. General Explanation: A substantial amount of specification language consists of definitions for terms found in other Contract Documents, including the Drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in Contract Documents are defined in this Article. Definitions and explanations contained in this Section are not necessarily either complete or exclusive, but are general for the Work to the extent that they are not stated more explicitly in another element of the Contract Documents.

E. General Requirements: The provisions or requirements of Division 01 Sections apply to entire work of Contract and, where so indicated, to other elements which are included in the Project.

F. Indicated: The term "indicated" is a cross reference to graphic representations, notes or schedules on Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping reader locate cross reference, and no limitation of location is intended except as specifically noted.

G. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed", "requested", authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by Owner or Engineer", "requested by Owner or Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend the Owner's, Engineer's or Owner's representative's responsibility into the Contractor's area of construction supervision.

H. Project Site: The term "project site" is defined as the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other work as part of the project. The extent of the project site is shown on the Drawings.

I. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

J. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

K. Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

L. Installer: The term "installer" is defined as the entity (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in the operations they are engaged to perform.

M. Final Completion: The term "Final Completion" refers to the degree of completion at which time the Project as a whole is turned over for full use to the Owner and all Work is completed in compliance with the Contract Documents.

N. Entrance: The term "entrance" is defined as a pedestrian doorway, stair, walkway, passageway, landing, elevator or other type of connector which connects or allows access from one structure to another structure.

1.3 INDUSTRY STANDARDS

A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, applicable standards of the construction industry have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if public copies were bound herewith. Refer to other Contract Documents for resolution of overlapping and conflicting requirements which result from the application of several different industry standards to the same unit of work.

Refer to individual unit of work Sections for indications of which specialized codes and standards the Contractor must keep at the project site, available for reference.

1. Referenced standards (referenced directly in Contract Documents or by governing regulations) have precedence over non-referenced standards which are recognized in industry for applicability to the Work.

2. Non-referenced standards recognized in the construction industry are hereby defined, except as otherwise limited in the Contract Documents as having direct applicability to the Work, and will be so enforced for the performance of the Work. The decision as to whether an industry code or standard is applicable to the Work, or as to which of several standards are applicable, is the sole responsibility of the Engineer.

B. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

C. Copies of Standards: The Contract Documents require that each entity performing work be experienced in that part of the Work being performed. Each entity is also required to be familiar with recognized industry standards applicable to that part of the Work. Copies of applicable standards are not bound with the Contract Documents.

D. Where copies of standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.

E. In case of conflict between the published standard and Project Specifications, the more stringent shall govern.

F. References to known standard specifications shall mean the latest edition of such specifications adopted and published at date of execution of the Contract.

G. No claim by Contractor for additional compensation will be entertained on account of his failure to be fully informed as to requirements of any referenced standard.

1.4 REGULATORY REQUIREMENTS

A. Adherence to Codes and Regulations:

1. Before proceeding with the Work, the Contractor shall thoroughly review the Drawings and Specifications to assure the design to be in accordance with all laws, ordinances, rules and regulations, and he shall assume full responsibility therefore and shall bear all costs attributable thereto UNLESS notice is given to the Owner in writing of the discrepancy BEFORE proceeding with the Work.

PART 2 PRODUCTS - NOT USED.
PART 3 EXECUTIONS - NOT USED.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Administrative and procedural requirements for temporary services and facilities, including such items as temporary utility services, temporary construction and support facilities, and project security and protection.

1.2 OWNER OPERATION, MAINTENANCE OF OPERATION AND SAFETY

A. The structure is currently operated by the Owner for parking. Areas of the facility outside the limits of a particular construction area shall remain functional throughout the construction period.

B. All construction operations shall be carefully coordinated with the Owner so as to minimize the overall inconvenience to the Owner, maintain the use of the entrances at all specified times and to expedite job progress.

C. All fumes and dust arising from construction operations shall be controlled so as to not adversely affect persons using the garages.

D. The Contractor shall protect his Work and equipment from damage by the public and other entities occupying the garage during the construction period.

E. The Contractor shall take all necessary precautions during all Work Areas to prevent debris from falling and causing damage outside the work area, including damage to existing mechanical/electrical fixtures. The Contractor shall be held liable for all damage caused by excavation, patching, drilling, coring, cutting, sandblasting, dust and debris. The Contractor shall be held liable for all damage to mechanical/electrical fixtures systems due to construction related activities. Contractor shall be responsible for all injury to people and property, including motor vehicles, caused by any construction related activity. The Owner will endeavor to field complaints and forward same to Contractor. Contractor is responsible for contacting people or property owner and resolving complaints.

F. When Work is performed which may create a hazard to persons or property above, below or in the proximity of Work, affected areas shall be blocked or otherwise protected to eliminate the hazard. Coordinate this activity with the Owner a minimum of 4 working days prior to the requested time for performance of such work.

G. Access to all emergency egress routes outside the limits of an individual construction area shall be continuously and safely maintained. Emergency egress routes shall not be impaired due to construction activities.

H. Coordinate Work Areas with the Owner to minimize interference with normal operations.

1.3 WORK AREAS

A. The Work is divided into sections termed Work Areas. Work outside the closed Work Area is not allowed, except work permitted by the Construction Documents or authorized by the Owner.

B. The Construction limit lines are defined as the extent of the Work Areas designated on the Drawings. Areas outside the construction limits may not be used by the Contractor for staging, storage of materials, or any other purpose, except as indicated in the Construction Documents.

1.4 MATERIAL AND EQUIPMENT STORAGE AND DELIVERY

A. An area of the site at each Garage will be made available to the Contractor for material and equipment storage, staging and other facilities deemed necessary by the Contractor.

B. Deliveries shall not block entrance or exit to the facility by patrons or other services. Deliveries are to be coordinated with the Owner.

1.5 PROTECTION OF THE SURROUNDING AREA

A. All construction operations shall be conducted such as to protect the surrounding areas and adjacent buildings.

B. Fumes and dust shall also be controlled so as to prevent harmful or undesirable effects in the surrounding areas. All potential avenues for penetration of fumes or dust into occupied spaces adjacent to the work area must be located and sealed by the Contractor in a manner acceptable to the Owner prior to the start of the work in the affected area.

C. Areas below regions of construction activity may remain open for portions of that activity. However, the Contractor is totally responsible for damage as a result of the Work.

1.6 PROTECTION OF EXISTING CONDITIONS

A. All portions of the existing structure, all utilities and all other building contents not part of the work damaged, moved or altered in any way during construction shall be replaced or repaired to the Owner’s satisfaction at the Contractor's expense.

B. Contractor and Owner shall conduct a preconstruction inspection of all finish materials and equipment located within the Work area to record in writing existing damaged finish materials and/or equipment not directly involved with this Contract. The Contractor shall be deemed responsible for damaged finish material and/or equipment not recorded during the preconstruction inspection. Contractor shall replace or repair to the Owner's satisfaction damaged finish material and/or equipment. It is the Contractor's responsibility to schedule and coordinate this preconstruction walk-through with the Owner. Provide a minimum of 5 calendar days notice prior to the requested walk-through time.

C. Accidental interruptions caused by the Contractor to garage services outside of the work area shall be reported to the Owner at once, and immediate, emergency efforts to restore the service shall be made at the expense of the Contractor.

D. When performing work adjacent to building and structures, protect buildings and structures from dirt, dust and debris.

E. Protect drain openings during construction from construction debris entering drainage system. Provide filter cloth over openings to prevent debris from entering pipes, but still allowing water to enter. Clean debris from drains as necessary to maintain water removal. Remove drain protection during non-working hours and reinstall prior to commencing work.

1.7 TEMPORARY FACILITIES

A. Existing electric and water service shall remain at their present level of service within the garage and may be used by the Contractor. The Owner will pay for current and water used. Additional electricity and water and their service connections which may be required for construction shall be provided by the Contractor. Contractor shall verify existence and usability of listed services prior to submitting Bid. Non-listed services required by the Contractor shall be provided by the Contractor.

B. The Contractor shall provide his own job phone.

C. The Contractor shall provide temporary toilet facilities for use by its employees and subcontractors. Locate in an area approved by the Owner. Use of Owner facilities is not allowed.

D. Job signs are not allowed.

E. The Contractor shall furnish temporary lighting or heat required so that work may proceed to meet the Contract schedule.

F. The Contractor shall arrange and establish a location satisfactory to the Owner where workmen may eat; provide a rubbish container, and clean and remove all debris at the end of each work day.

G. At all times when work is being performed, the Contractor's foreman shall be on-site. Both the foreman and the superintendent shall have a mobile phone or beeper with him/her at all times while on the job site. Provide the Owner with the telephone number.

H. A job site office/trailer is not required.

1.8 PARKING

A. Contractor is required to purchase any required parking passes from the University.

1.9 USE OF FACILITY

A. Contractor employees are not permitted to use Owner and tenant facilities except as previously noted. Failure to comply with this restriction can result in the dismissal of the offending employee from the construction site.

B. Elevators may not be used by the Contractor.

C. Except for materials being used during a work shift, store all materials in approved storage area.

D. Materials being used for work shall be uniformly distributed throughout the work area so as to not overload or otherwise distress the supported structural system.

1.10 TRAFFIC CONTROL

A. Provide lighting, signage, barricades, traffic cones, signals, and traffic direction personnel required to clearly and safely re-route traffic in non-work areas. Coordinate with the Owner a minimum of 7 days in advance of when an area is scheduled to be closed.

B. Erect barricades to prevent unauthorized entry of pedestrian or vehicular traffic into, on or under the Work Area. Post appropriate signs to warn against entry. Construct barricades to prevent unauthorized entry during non-work hours.

C. Perform temporary traffic marking and striping that may be required during construction.

D. Provide signage to safely route pedestrians to the nearest stairwell.

1.11 USE OF STREETS AND WALKS

A. All use of streets and walks must be in accordance with local authorities having jurisdiction. The Contractor must coordinate such use directly with the local authorities.

B. The Contractor shall provide and maintain control device necessary for the protection of his Work, and areas which the local authorities may consider hazardous, including necessary lighting. Further, should conditions arise which necessitate the use of flagman and/or the services of the local police, the Contractor shall supply this type of control at no expense to the Owner.

C. Maintain traffic in accordance with local authority's requirements.

D. The Contractor shall provide and maintain signage, barricades, warning devices, etc. that may be necessary or required by local authorities or the Owner for the protection of pedestrians and vehicles while performing the work.

1.12 CLEANUP

A. Each Contractor or Subcontractor, upon completion of his division of the work,

shall collect and remove all rubbish, surplus material, tools and scaffolding pertaining to his work, and shall keep the work area neat and orderly by periodic removal and cleanup. Crates and cartons in which materials or equipment are received shall be removed daily. Contractor shall leave each phase of the work broom-clean upon completion of that phase.

B. Each Contractor shall be responsible for daily collection and disposal of rubbish created by his materials, men and work. If this is not done, the Owner may direct that cleanup be done and the cost of same shall be deducted from the Contractor's contract.

C. Contractor shall clean surfaces of all lights, control panels, overhead piping, duct work, etc., after construction is complete, to the same level of cleanliness as surfaces were before construction.

D. Protect from damage during subsequent construction activities all new work and existing construction cleaned upon the completion of any one phase.

E. Contractor shall legally dispose of all debris (including concrete) off the site.

1.13 FIRE PROTECTION

A. It shall be the responsibility of the Contractor to take the proper precautions to prevent fires when welding or while other fire-hazardous work is being performed.

B. Gasoline and other flammable liquids shall be kept in approved safety cans at all times.

1.14 WATCHMEN

A. The services of a watchman will not be provided by the Owner.

B. The Contractor shall assume full responsibility for protection and safety of material and equipment stored at the job site both within and outside of the work areas or storage areas.

1.15 ADDITIONAL REQUIREMENTS

A. During the term of this Contract, the employees of the Contractor shall not consume or be under the influence of alcohol while on the premises of the Owner. The use of nonprescription, over the counter drugs and medications (i.e., Contact, Actifed, etc.) is discouraged, but if used, manufacturer's guidelines must be followed. Drugs considered illegal by federal, state, and local authorities are strictly prohibited.

B. Owner reserves the right with or without cause and at its sole discretion, provided that such right is lawful, to have the Contractor temporarily or permanently remove any of the Contractor's employees from the Project.

C. Shutting down of existing apparatus and service lines shall be done only at times prescribed and approved by the Owner. Apparatus and service lines shall not be

left out of service overnight, during non-working periods or during scheduled events.

D. Notice of temporary service interruption (or potential interruption) shall be given to the Owner and his designated representative not less than (5) working days prior to required interruption to allow adequate preparation to be made.

E. Provide the Owner with emergency telephone numbers to be able to contact the Contractor's superintendent or project manager 24 hours a day.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 015600

BARRIERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Dust barriers.

B. Partial height construction barriers.

C. Sawhorse barricades.

D. Miscellaneous barriers and efforts, including construction fencing, caution tape and signage.

1.2 RELATED SECTIONS

A. Section 015000 - Temporary Facilities and Controls

B. Section 030100 - Concrete Repairs

C. Section 079000 - Expansion Joints

D. Section 079200 - Sealants

E. Section 099101 - High Performance Coatings

F. Section 321723 - Pavement Markings

1.3 SUBMITTALS

A. Submittals are not required unless Owner or Engineer raise questions or concerns regarding the quality or construction of barriers or enclosures. Potential submittals, if requested, could include the following:

1. Fire-retardant treatment for dimensional lumber and plywood.

2. Fire-resistant visqueen sheeting.

3. Plastic Safety Fencing.

4. Caution Barrier Tape.

5. Enclosure construction details.

PART 2 PRODUCTS

2.1 MATERIALS

A. Lumber:

1. Dimensional lumber:

a. Minimum 2 x 4 dimensional lumber.
b. Fire-retardant treated (non-com) with treatment stamp visible.

2. Plywood:

a. Minimum 1/2-inch thick.
b. Fire-retardant treated (non-com) with treatment stamp visible.

B. Visqueen Sheeting:

1. Approved Products:

c. Griffolin fire-retardant type 55-FR.
d. Midco vinyl fire-resistant reinforced polyfilm.

C. High Visibility Safety Fencing:

1. High density polyethylene material.

2. Diamond mesh with 1-1/2" openings.

3. Minimum 4 feet high.

4. Bright orange color.

5. Minimum 2200 lbs. break load capacity.

D. Caution Tape:

1. 3" wide.

2. Minimum 4 mil thick plastic.

3. Safety yellow tape with black "CAUTION" lettering, minimum 1-1/2" high.

PART 3 EXECUTIONS

3.1 GENERAL

A. Work shall not proceed until dust barriers, barricades, construction fencing or partial or full height barriers or enclosures are in place and secure.

B. Provide barricades to isolate areas directly under work areas for protection of persons or property.

C. Remove barricades at entrances during non-working hours which will obstruct or hinder the use of the entrance.

D. Installation and removal of barricades or barriers shall not damage existing surfaces.

E. The use of anchors which penetrate the existing surface are prohibited, unless approved in advance by Engineer.

F. Remove all evidence of barriers installation upon removal.

G. Contractor is responsible for erection, maintaining, moving and removal of barricades, fencing and barriers from the job site.

3.2 BARRICADES

A. Where barricades are required for vehicular traffic control, provide orange construction fencing to divert traffic around work area. Support orange fencing to prevent sagging along entire length of barricade. Maximum spacing of orange fencing support is ten feet. Construct and provide barricades that are permanent for the period when the barricade is required. Weight or otherwise secure the barricades to keep unauthorized personnel from moving them.

B. Use of sawhorses, barrels and yellow caution tape are permitted only with advance approval by Owner.

C. Provide signage directing vehicles to open entrances and around work areas, positioned on or next to barricades, and fixed in place. Signage to be at least 2 ft. by 3 ft. in size, painted traffic yellow, with black stenciled lettering. Owner will provide text of signage. Maintain signage for the duration of the phase or phases of the project where it is necessary.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Requirements for Close-Out of Contract.

B. Specific requirements for individual units of work may be included in the appropriate Sections.

1.2 DEFINITIONS

A. Contract Closeout is the term used to describe certain collective project requirements, indicating completion of the Work that are to be fulfilled near the end of the Contract time in preparation for final acceptance and occupancy of the Work by the Owner, as well as final payment to the Contractor and the normal termination of the Contract.

1.3 PREREQUISITES TO SUBSTANTIAL COMPLETION

A. General: Complete the following before requesting the Owner's inspection for certification of substantial completion, either for the entire Work or for portions of the Work. List known exceptions in the request.

1. In the progress payment request that coincides with, or is the first request following, the date substantial completion is claimed, show either 100% completion for the portion of the Work claimed as "substantially complete," or list incomplete items, the value of incomplete Work, and reasons for the Work being incomplete. Include supporting documentation for completion as indicated in these Contract Documents.

2. Submit a statement showing an accounting of changes to the Contract Sum.

3. Advise Owner of pending insurance change over requirements.

4. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.

5. Obtain and submit releases enabling the Owner's full, unrestricted use of the Work and access to services and utilities. Where required, include occupancy permits, operating certificates and similar releases.

6. Submit record drawings, maintenance manuals, final project photographs, damage survey and similar final record information.

7. Discontinue or change over and remove temporary facilities and services from the project site, along with construction tools and facilities, mock-ups and similar elements.

8. Complete final cleaning-up requirements, including touch-up painting of marred surfaces. Touch up and otherwise repair and restore marred exposed finishes.

B. Inspection Procedures: Upon receipt of the Contractor's request for inspection, the Owner will either proceed with inspection or advise the Contractor of unfilled prerequisites.

1. Following the initial inspection the Owner will either prepare the certificate of substantial completion or will advise the Contractor of work which must be performed before the certificate will be issued. The Owner will repeat the inspection when requested and when assured that the Work has been substantially completed.

2. Results of the completed inspection will form the initial "punch list" for final acceptance.

1.4 PREREQUISITES TO FINAL ACCEPTANCE

A. General: Complete the following before requesting the Owner's final inspection for certificate of final acceptance and final payment as required by the General Conditions. List known exceptions, if any, in the request.

1. Submit the final payment request with final releases, affidavits and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

2. Submit an updated final statement accounting for final additional changes to the Contract Sum.

3. Submit a certified copy of the Owner's final punch list of itemized Work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.

4. Submit consent of Surety.

5. Submit evidence of final, continuing insurance coverage complying with insurance requirements per General and Supplementary Conditions in these Specifications.

6. Submit a certificate clearly indicating that all outstanding bills for materials, services and labor, and all subcontractors have been paid in full.

B. Re-inspection Procedure: The Owner will re-inspect the Work upon receipt of the Contractor's notice that the Work, including punch list items resulting from earlier inspections, has been completed except for these items whose completion has been delayed because of circumstances that are acceptable to the Owner.

1. Upon completion of re-inspection, the Owner will either approve the final payment request, or will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled, but are required for final release of final payment.

2. If necessary, the re-inspection procedure will be repeated.

C. Schedule with the Owner a close-out meeting. Coordinate this meeting with the Owner. Provide a minimum of 3 working days notice prior to the requested time for the meeting.

1.5 PROJECT RECORD DOCUMENTS

A. The Contractor shall be responsible to maintain at the job site one copy of:

1. Record contract drawings.

2. Record project manual.

3. Addenda.

4. Reviewed shop drawings.

5. Change orders.

6. Other modifications to Contract.

B. Maintain documents in clean, dry, legible condition.

C. Do not use project Record Documents for construction purposes.

D. Failure to maintain documents up-to-date will be cause for withholding payments to Contractor.

E. Obtain one complete set of Contract Documents, including:

1. Project Manual with all addenda.

2. One complete set of black-line or blue-line prints of all drawings not bound in project manual.

3. One complete set of sepia prints of all drawings not bound in project manual.

F. Keep Record Documents current.

G. Contract Drawings: Contractor may, at his option, enter required information on a "working set" and then at completion of project transfer the information to final submitted "Project Record" set. All notations on the "Project Record" set shall be in red ink made in a neat and legible manner, with additional explanatory drawings or sketches as required. The Project Record Drawings shall have marked the correct location of Work items and equipment where it differs from the location shown on the drawings, and any other information pertinent or useful in nature.

H. Project Manual and Addenda: Contractor shall legibly mark up each section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

2. Changes made by change order or field order.

3. Other items not originally specified.

I. At completion of Project, deliver 3 copies of the Project Record Documents to the Owner prior to request for final payment. Accompany submittal with transmittal letter containing:

1. Date.

2. Project title and number.

3. Contractor's name and address.

4. Title and number of each Record Document.

5. Certification that each document as submitted is complete and accurate.

6. Signature of Contractor or his authorized representative.

1.6 OPERATIONS AND MAINTENANCE DATA

A. The Contractor shall deliver to the Owner at the final inspection all operations and maintenance data as required elsewhere in this Specification. This data shall be provided in loose-leaf binders.

1.7 WARRANTIES

A. The Contractor shall provide a general one year warranty for all work performed.

B. As required by individual Specification Sections, provide extended warranties on parts of the Work as specified.

C. Provide the Owner with four executed copies of all required warranties.

D. Deliver to the Owner all required warranties prior to the application for Final Payment.

E. Delivery of required warranties does not relieve the Contractor of obligations assumed under provisions of the Contract.

F. Warranties provided directly by contractor are to be written using company letterhead documents.

G. A warranty may require multiple signatures if specified to be a joint warranty. Refer to individual warranty requirements in the appropriate Specification Section.

H. The warranty format shall be as follows:

Name of Project

Scope of Work

We warrant the Work to be in accordance with the Contract Documents. We shall provide all labor, material, tools and equipment necessary to correct work not in conformance with the Contract Documents or that becomes or is found to be defective within years after the Date of Substantial Completion. We will bear the cost of making good any damage caused by the defective work, including damage caused by its correction or removal, to the Owner's property or to property for which the Owner is liable. This warranty shall not apply to work which has been abused, neglected or altered by others or to work for which the Owner has previously given the Contractor a written acceptance of the defect. The warranty period shall begin at Noon on the date of Substantial Completion.

Company

Signature

Date

Title

1.8 SPARE PARTS AND MAINTENANCE MATERIALS

A. The Contractor shall deliver all spare parts and maintenance materials as required elsewhere in this Specification to the Owner at the final inspection.

1.9 CLOSEOUT PROCEDURES

A. Removal of Protection: Except as otherwise indicated or requested by the Owner, remove temporary protection devices and facilities which were installed during the course of the Work to protect existing or previously completed Work during the remainder of the construction period.

B. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner. Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these materials to the Owner's best advantage as directed.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTIONS - NOT USED.

END OF SECTION

DIVISION 03 – CONCRETE

SECTION 030100

CONCRETE REPAIRS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. All labor, material, tools, equipment and services to perform concrete repairs at areas indicated on the Drawings and in the Specifications, including but not limited to:

1. Concrete slab, overhead and miscellaneous repairs in the garage and stair and elevator towers.

2. Miscellaneous repairs indicated on the Drawings.

1.2 RELATED SECTIONS

A. Section 012100 – Allowances

B. Section 012900 – Payment Procedures

C. Section 015600 – Barriers

D. Section 071800 – Vehicular Traffic Membrane

E. Section 071900 – Water Repellent

F. Section 079200 – Expansion Joints

G. Section 079200 – Sealants

1.3 UNIT PRICES

A. Unit prices are taken for the work items listed in Section 012100, for the quantity measurements listed in Section 012900.

B. Include in the lump sum bid the quantities in Section 012100.

C. Final adjustment to the contract amount will depend on actual quantities of repair performed.

D. Repair quantities will be determined by measurements made jointly by the owner or its representative and the contractor. The contractor will record the measurements with both parties signing the record to attest to its accuracy.

1.4 REFERENCES

A. American Concrete Institute (ACI):

1. ACI 301 - Specification for Structural Concrete for Buildings.

2. ACI 305R - Hot Weather Concreting.

3. ACI 306R - Cold Weather Concreting.

4. ACI 318 - Building Code Requirements for Reinforced Concrete.

B. American Society for Testing and Materials (ASTM):

1. ASTM A185 - Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement.

2. ASTM A615 - Specification for Deformed and Plain-Billet Steel Bars for Concrete Reinforcement.

3. ASTM A775 – Standard Specification for Epoxy-Coated Reinforcing Steel Bars.

C. Structural Steel Painting Council (SSPC):

1. Surface Preparation Specification No. 3 (SP3) – Wire Wheel Cleaning.

2. Surface Preparation Specification No. 6 (SP6) – Commercial Blast Cleaning.

D. American Association of State Highway and Transportation Officials (AASHTO): AASHTO M182 - Specifications for Burlap Cloth Made from Jute or Kenaf.

E. Keep a copy of the referenced specifications cited in this section in the on-site field office.

1.5 SUBMITTALS

A. Submit literature for manufactured products, including manufacturer's specifications, test data and installation instructions.

B. Letter stating this Contractor and supplier are familiar with the referenced standards.

C. The Owner's review of details and construction operations shall not relieve this Contractor of his responsibility for completing the work successfully in accordance with the Contract Documents.

1.6 QUALITY ASSURANCE

A. The Contractor shall comply with all Federal, State and Municipal laws, codes, ordinances and regulations applicable to the Work in this Contract and also with all requirements of the National Fire Protection Association, the National Electric Code, and the Occupational Safety and Health Administration (OSHA). If the

above laws, codes or ordinances conflict with this Specification, then the laws, codes or ordinances shall govern, except in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

B. Concrete that does not conform to the specified requirements, including bond to substrate, strength, finish and tolerances shall be subject to removal and replacement, including necessary preparatory work, at no additional cost to the Owner and without extension to the Contract Time.

C. Contractor shall be responsible for restoration of other components of the Work damaged during placement of concrete or damaged during removal of unsatisfactory concrete.

D. ACI 301, ACI 305R and ACI 306R are a part of the Contract Documents, are incorporated herein as fully as if here set forth and are referred to as General Concreting Requirements.

E. Chloride Ion Limitations: Maximum acid-soluble chloride ion concentration, in hardened concrete shall not exceed .10% by weight of cement.

1.7 WARRANTY

A. A warranty period of two (2) years shall be provided for concrete work performed under this Section against defects, as determined by the Owner, including but not limited to debonding, excessive cracking and surface scaling.

PART 2 PRODUCTS

2.1 MATERIALS

A. Fine and Coarse Aggregates:

1. Meeting requirements of ASTM C-33.

B. Water:

1. Mixing water shall be potable meeting requirements of ASTM C-94.

C. Pre-packed Concrete Materials:

1. Horizontal Application – Typical Repair Areas (Patch Material Type A):

a. MasterEmaco T 310CI by BASF

b. SikaQuick 1000 by Sika Corp.

c. MasterEmaco T 1060/1061 by BASF

d. Planitop 18 ES by Mapei. (Planitop 18 TG is trowel grade for ramps)

2. Vertical and Overhead Repair Areas-Trowel Grade (Patch Material Type B.1):
    a. MasterEmaco S 488Cl by BASF
    b. SikaQuick VOH by Sika Corp.
    c. MasterEmaco N 425 by BASF
    d. Planitop XS by Mapei
3. Vertical and Overhead Repair Areas-Form-and-Pour (Patch Material Type B.2):
    a. MasterEmaco S 477Cl by BASF
    b. SikaQuick FNP by Sika Corp.
    c. MasterEmaco S 440 by BASF
    d. Planitop 15 by Mapei

D. Bar Coating:
1. Sikadur 32, Hi-Mod LPL by Sika, Inc.
2. MasterEmaco ADH 326 by BASF

E. Bonding Agent (used for shallow floor patches if the patch is not deep enough for patch anchors; patch material must be placed while epoxy is still wet)
1. Sikadur 32, Hi-Mod LPL by Sika, Inc.

F. Welded Wire Reinforcement:
1. Conforming to ASTM A185.

G. Reinforcing Steel:
1. All reinforcing steel shall have a minimum Fy of 60 ksi.
2. Provide epoxy coated steel where shown on Drawings.

H. Curing Compound:
1. VOCOMP-25 by W.R. Meadows.
2. MasterKure CC 1315WB by BASF
3. Liquid membrane forming curing compound shall conform to the requirements of ASTM C1315, Type 1, Class A and have data from an independent laboratory indicating a maximum moisture loss of 0.40 grams per square cm. when applied at a coverage rate of 300 square feet per gallon.

I. Form Lumber:

1. New fire retardant material, grade and size to adequately form, support and brace concrete and to provide finishes that match adjacent surfaces.

J. Epoxy Grout:

1. Sikadur 32, Hi-Mod LPL epoxy mixed with silica sand.

K. Patch Anchors:

1. Stainless steel spikes by Powers Rawl.

PART 3 EXECUTIONS

3.1 GENERAL

A. Prior to the start of work, the Contractor shall survey areas to receive repair concrete to determine locations and approximate quantity of material.

B. Prior to start of excavations, perform an on-site review of the work areas with the Owner. Provide a minimum of 2 working days notice prior to the requested review day.

C. Prior to performing operations such as jack hammer work, the Contractor shall make a careful and thorough survey of the underside of the level on which he intends to work and shall remove all loose soffit concrete which may fall as a result of those operations. The Contractor shall also be responsible for posting all signs and erecting all barricades as necessary to prevent pedestrians and vehicles from entering the area below hazardous work.

D. During concrete removal work, Contractor shall not damage existing mild steel reinforcement. Mild steel reinforcement that is damaged by the Contractor, as determined by the Owner, shall have a new reinforcing bar the same size as the damaged bar lapped to each side of the damaged area. Lap lengths shall be determined by ACI 318. Cost of new reinforcing bar, concrete removal and patching for lap length shall be borne by the Contractor.

E. It is intended that the existing reinforcement steel exposed during the work shall remain in place (unless noted on Drawing for removal) and undamaged during removal of the unsatisfactory concrete. Tie loose reinforcement bars in place in an approved manner prior to placing patch mix. If the reinforcement is deteriorated, as determined by the Owner, the Owner may direct that it be replaced and spliced in accordance with ACI splice and development requirements for reinforcement bars. Additional concrete removal may be required to expose undamaged reinforcing. If required, compensation will be made in accordance with the established Unit Prices.

F. Concrete placement for patches or overlays on sloping surfaces shall begin on the low elevation end and proceed upwards to the high elevation end.

G. Control joints to be either tooled or sawed into concrete slab. Confirm control joint pattern with Owner prior a minimum of 24 hours prior to placement of concrete. Tooled joints are to be cut while concrete is wet. Sawed joints to be cut within 6 hours of slab placement before slab begins to crack.

3.2 PROTECTION

A. Contractor shall protect all open excavations, and reinforcing therein, from damage due to mechanical disturbance, weather conditions or other causes.

B. Contractor shall protect occupied areas below the work area during all phases of the work including removal, preparation and placement of materials.

C. Provide barricades to close areas immediately below the work area. Coordinate the time closing of required areas with the Owner.

3.3 SHALLOW, DEEP FLOOR REPAIR PROCEDURE

A. Refer to the Drawings for repair details. Contractor shall sound the concrete deck using chain drag method and hammer survey to identify the limits of deteriorated concrete within the Work Area. Mark with paint each area to be repaired. Location of paint marks must be approved by the Owner's representative.

B. Before removal of floor concrete within a Work Area, the Contractor and the Owner's representative will record the area bounded by the paint marks. Take measurements to the nearest inch in such a way that results in a total plan area at each location.

C. Contractor and Owner's representative shall affix their signatures to each measurement sheet completed, attesting to the agreed-upon accuracy of the measurements. Furnish copies of measurement sheets to both parties for their records.

D. Sum and calculate the total repair area to yield total square feet. Measurements are the sole basis for calculation of final payment, based upon the item's unit price. Refer to Section 012200 and Section 012900. Base unit price on the area of the repair and the depths indicated on the repair details.

E. Remove floor concrete within the Work Area by conventional chipping methods.

F. Conventional Chipping Method:

1. Sawcut the concrete deck surface along the perimeter of the paint marks which define the removal area. Do not cut existing reinforcement. Depth of sawcuts shall be 3/4 inch. Cut perimeter of removal area before beginning chipping hammer work. Do not over cut corners of patch area.

2. In post-tensioned structures, Contractor shall take caution to not cut or damage existing post-tensioning tendons or wires. Damage shall be repaired as directed by Engineer at no cost to the Owner.

3. Perform concrete removal with no larger than 18 pound chipping hammers.

4. Begin concrete removal at the center of the removal area and work towards the sawcut perimeter. Maintain vertical sawcut edge at perimeter. Re-saw if necessary to maintain required edge.

5. Contractor shall use due diligence to perform concrete chipping operation in a manner to avoid punching through slab. Means such as utilizing wide chipping blades and performing chipping procedures on a low angle are recommended.

G. The surface of the sound, exposed concrete shall be relatively flat with 1/4" amplitude over the repair area for new concrete patches and overlays. Contractor is responsible for insuring that the final concrete repair area is sound.

H. Within 24 hours of concrete repair material placement, media blast the excavation and the immediately adjacent surface. Reinforcing steel shall be cleaned to a SSPC-SP6 condition unless otherwise indicated.

I. After completion of all cleaning operations, blow-out excavations with oil-free and water-free compressed air. Previously cleaned excavations that are subjected to contamination must be re-cleaned.

J. The Owner will inspect excavations prior to coating reinforcing steel. Final touch-up of excavations and reinforcing steel shall be performed before proceeding.

K. Within 8 hours after cleaning, coat all surfaces of exposed steel with one coat of bar coating. Allow coating to become tack free before proceeding with second coat.

L. Apply second coat of bar coating to previously coated steel. Do not apply coating to substrate or allow coating to puddle in low areas of excavation.

M. Thoroughly saturate all concrete surfaces to be in contact with new concrete as necessary to provide a saturated surface dry condition.

N. Just prior to concrete placement blow-down area with oil-free compressed air to remove standing and puddled water.

O. Place Patch Material Type A in the excavations. Vibrate new patch material to ensure consolidation in maximum-depth areas and at the excavations perimeter. Screed material flush with adjacent surfaces and finish with a float or light trowel.

P. After finishing, fog concrete surfaces with water using approved fog spray device (hose not permitted) to prevent surface drying prior to start of curing.

Q. Cure Patch Material Type A with curing compound in accordance with manufacturer's written instructions.

3.4 OVERHEAD REPAIR PROCEDURE

A. Refer to the Drawings for repair details. Contractor shall sound overhead and vertical concrete surfaces using hammer sounding techniques to identify the limits of deteriorated concrete within the Work Area. Mark with paint each area to be repaired. Location of paint marks must be approved by the Owner's representative.

B. Before removal of overhead or vertical concrete within a Work Area, the Contractor and the Owner's representative will record the area bounded by the paint marks. Take measurements to the nearest inch in such a way that results in a total plan area at each location.

C. Contractor and Owner's representative shall affix their signatures to each measurement sheet completed, attesting to the agreed-upon accuracy of the measurements. Furnish copies of measurement sheets to both parties for their records.

D. Calculate and sum the total repair area to yield total square feet. Measurements are the sole basis for calculation of final payment, based upon the item's unit price. Refer to Section 012100 and Section 012900. Base unit price on the area of the repair and the depths indicated on the repair details.

E. Remove concrete within the Work Area by conventional chipping methods.

F. Conventional Chipping Method:

1. Saw cut the concrete surface along the perimeter of the paint marks which define the removal area. Do not cut existing reinforcement. Depth of saw cuts shall be 1/2 inch. Cut perimeter of removal area before beginning chipping hammer work. Do not over cut corners of patch area.

2. In post-tensioned structures, Contractor shall take caution to not cut or damage existing post-tensioning tendons or wires. Damage shall be repaired as directed by Engineer at no cost to the Owner.

3. Perform concrete removal with no larger than 18 pound chipping hammers.

4. Begin concrete removal at the center of the removal area and work towards the saw cut perimeter. Maintain vertical saw cut edge at perimeter. Resaw if necessary to maintain required edge.

5. Contractor shall use due diligence to perform concrete chipping operation in a manner to avoid punching through a slab. Means such as utilizing wide chipping blades and performing chipping procedures on a low angle are recommended.

G. The surface of sound, exposed concrete shall be relatively flat with a ¼" amplitude over the repair area. Contractor is responsible for insuring that the final concrete repair area is sound.

H. Within 24 hours of concrete repair material placement, media blast the excavation and the immediately adjacent surface. Reinforcing steel shall be cleaned to a SSPC-SP6 condition unless otherwise indicated.

I. After completion of all cleaning operations, blow-out excavations with oil-free and water-free compressed air. Previously cleaned excavations that are subjected to contamination must be re-cleaned.

J. The Owner will inspect excavations prior to coating reinforcing steel. Final touch-up of excavations and reinforcing steel shall be performed before proceeding.

K. Within 8 hours after cleaning, coat all surfaces of exposed steel with one coat of bar coating. Allow coating to become tack free before proceeding with second coat.

L. Apply second coat of bar coating to previously coated steel. Do not apply coating to substrate.

M. Maintain all concrete surfaces of repair areas in a wet condition to provide a surface saturated dry condition.

N. Just prior to material placement, blow-down area with oil-free compressed air to remove any standing water near vertical repair locations.

O. Place Patch Material Type B in the excavations per manufacturer's written instructions. Vibrate new patch material at vertical repairs to ensure consolidation in maximum-depth areas. Screed material flush with adjacent surfaces and finish with a light trowel.

P. After finishing, fog concrete surfaces with water using approved fog spray device (hose not permitted) to prevent surface drying prior to start of curing.

Q. Cure Patch Material Type B in accordance with manufacturer's written instructions.

3.5 FIELD QUALITY CONTROL

A. All excavations shall be inspected and approved prior to placing concrete. The Contractor shall notify the Owner 2 working days in advance of required inspection.

B. Notify the Owner at least 2 working days prior to placing concrete.

C. Acceptance of Structure:

1. Acceptance of Structure shall be in accordance with ACI 301 Chapter 18.

2. Contractor shall bear all costs of correcting rejected work, including the cost of Owner's services thereby made necessary.

3.6 CLEANING

A. Empty containers shall be removed from the Garage at the end of each working day. Cloths soiled with adhesive materials that might constitute a fire hazard shall be placed in suitable metal safety containers or shall be removed from the building at the end of each working day. Special care shall be taken in storage of disposal of flammable materials. Comply with health, fire and environmental regulations.

B. All spilled materials shall be completely removed from hardware, adjacent floor areas, metal work, etc. Remove spilled coating by approved methods.

C. Repaint in matching color all curbs, columns, walls, etc., where existing paint was removed during preparation of adhesive materials installations.

D. All hardware, adjacent floor areas, metal work, etc., and the general premises shall be left clean and free of all construction dust, dirt and debris.

END OF SECTION

DIVISION 04 MASONRY

SECTION 040100

MASONRY REPAIR

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. All labor, material, equipment, tools and services to complete masonry work required for the project, as indicated on the drawings and the specifications, including but not limited to:

a. Inspection of masonry surfaces.

b. Repointing of mortar joints as designated by the Engineer.

B. Related sections:

1. Allowances – Refer Section 012100.

1.2 REFERENCES

A. American Concrete Institute (ACI):

1. ACI 530 – Building Code Requirements for Masonry Structures.

2. ACI 530.1 – Specifications for Masonry Structures.

B. American Society for Testing and Materials (ASTM):

1. ASTM C90 – Standard Specification for Load Bearing Concrete Masonry Units.

2. ASTM C91 – Standard Specification for Masonry Cement.

3. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar.

4. ASTM C150 – Standard Specification for Portland Cement.

5. ASTM C270 - Standard Specifications for Mortar in Unit Masonry.

6. ASTM C404 – Standard Specification for Aggregate for Masonry Grout.

7. ASTM C780 – Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

C. Structural Steel Painting Council (SSPC):

1. Surface Preparation Specification No. 3 (SP3) – Wire Wheel Cleaning.

2. Surface Preparation Specification No. 6 (SP6) – Commercial Blast Cleaning.

1.3 DEFINITIONS

A. "Defective mortar" as used herein means mortar joints that are loose, crack, split, spalled, delaminated, soft, or missing.

B. "Hairline crack" as used herein means cracks measuring less than 1/32 inch limited to the surface of the masonry unit.

C. "Tight crack" as used herein means cracks measuring less than 1/16 inch limited to the surface area of the masonry unit.

D. "Masonry foreman" as used herein means technically competent employee identified as supervising all masonry work included in this Specifications section and the Drawings.

E. "CMU" or "Block" as used herein means concrete masonry unit included in this Specifications section and the Drawings.

1.4 SUBMITTALS

A. Product:

1. Submit mix design for masonry mortar.

B. Mason:

1. Resume of Mason foreman per Paragraph 1.5.B.

C. Closeout:

1. Upon completion of the Work and prior to final payment, provide fully executed warranties.

1.5 QUALITY ASSURANCE

A. The Contractor shall comply with all Federal, State and Municipal laws, codes, ordinances and regulations applicable to the Work in this Contract and also with all requirements of the National Fire Protection Association, the National Electric Code, and the Occupational Safety and Health Administration (OSHA). If the above laws, codes or ordinances conflict with this Specification, then the laws, codes or ordinances shall govern, except in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

B. Bidder's Qualifications:

1. Contractor shall have at least 3 years experience doing work of scope and size specified herein and indicated on Drawings.

2. Mason foreman shall have supervised at least three prior projects of similar magnitude and type.

C. Regulatory Requirements:

1. Comply with applicable laws, ordinances, and the Ohio Building Code.

D. Installation:

1. Mason foreman shall be on site during 90% of all masonry work. Masonry work identified as not being installed under the direct supervision of Mason foreman shall be subject to removal and replacement, at the direction of the Owner.

2. Repointing:

a. Provide mock-up of repointing in an area 3’-0” x 3’-0”. Owner to locate mock-up area.

b. Mock-up to demonstrate cleaning of joint, installation of new mortar, and mortar color and texture.

c. Approved mock-up to be maintained as reference.

E. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

F. Contractor will provide access to all work areas during normal working hours for the Owner and the Engineer to review the progress and quality of work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packing, shipping, Handling and Unloading:

1. Deliver materials to job site in sealed, undamaged containers/packaging.

B. Storage and Protection:

1. Protect materials in a dry place, off ground and under cover to protect them from wetting, staining, chipping and other damage.

2. Do not use materials showing evidence of water or other damage.

1.7 PROJECT CONDITIONS

A. Environmental Requirements

1. Maintain materials, building surfaces and surrounding air to a minimum temperature of 40 degrees F. for a period of 48 hours before the start of work and 72 hours after completion of work.

2. Conform to manufacturer's specific requirements.

B. Existing Conditions:

1. The building’s interior HVAC system cannot be used for temporary heating or cooling in performance of the facade restoration work.

1.8 WARRANTY

A. Provide two (2) year warranty on all workmanship and materials unless otherwise specified.

PART 2 PRODUCTS

2.1 MATERIALS

A. Mortar:

1. Prepackaged Mortar: ASTM C270, type N.

a. Acceptable Manufactures

1) Cemex USA, Houston, TX

2) Fairborn Cement, Xenia, OH

3) WORKRITE Cements, York, PA

2. Mortar Aggregate: ASTM C144, standard masonry type.

3. Water: Clean and potable.

4. Mortar Color: As selected by Owner from manufacturer's standard colors to match existing.

5. Masonry cements are prohibited.

2.2 MIXES

A. Mortar:

1. Batch Control: Measure and batch materials either by volume or weight, such that the required proportions for mortar can be accurately controlled and maintained. Measurement of sand materials by shovel will not be permitted.

2. Mix mortars with the maximum amount of water consistent with workability to provide maximum tensile bond strength within the capacity of the mortar.

3. Do not use mortar that has begun to set, or if more than 2 hours has elapsed since initial mixing. Retemper mortar during 2 hour period as required to restore workability.

4. Do not lower freezing point of mortar by use of admixtures or anti-freezing agents.

5. Chloride containing additives are prohibited.

6. Air content shall not exceed 12 percent.

PART 3 EXECUTION

3.1 EXAMINATION

A. Prior to the start of work, examine surfaces intended to receive the specified work and note conditions or defects that will adversely affect the execution and/or quality of the work.

B. Notify Owner in writing of any such conditions or defects. Do not begin work until unsatisfactory conditions are corrected. Failure to notify Owner prior to beginning work constitutes acceptance by Contractor of the surfaces and conditions under which the work is to be performed, and acceptance by Contractor for the performance of the work.

3.2 PREPARATION

A. Protection

1. Provide temporary protection during the course of the work to prevent water entry into the building and walls and to maintain the building in a weather tight condition. Ensure that protection is in place and water tight before ending day's work.

2. Be prepared for unexpected weather changes so that temporary protection can be quickly installed.

3. Protect all existing adjacent surfaces that are to remain and are not included in the work of this Section.

4. Provide safeguards from work of this Section for pedestrian traffic and adjacent property. Do not permit drift of dust or liquids.

5. Use safeguards recommended by manufacturers of products specified herein for personnel handling and applying said materials.

6. Protect surrounding areas from construction activities, dirt, dust and debris.

3.3 MASONRY REPOINTING:

A. During the repointing of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar.

B. Cut out mortar in joints to a minimum depth of 3/4” or until sound mortar is encountered, whichever is greater. Remove mortar with hammer and chisel, or with grinders equipped with integral dust extraction system. Dust and debris created by mortar removal must be contained and collected.

C. When cutting is complete, hand wire bush joint and remove remaining residual dust and loose material by vacuuming.

D. Premoisten joint and install new mortar. Pack tightly in two, 3/8 inch layers. Where

depth of new mortar exceeds one inch, install in maximum 3/8 inch layers.

E. Finish to a smooth, compact, joint to match existing surrounding joints.

F. Remove excess mortar and mortar smears as work progresses. Dry brush at the end of each day's work. Do not allow excess mortar or mortar smears to dry on the face of new or existing brick.

3.4 CLEANING

A. General:

1. Notify Engineer immediately if conditions exist that may be detrimental to the success of the cleaning and possible damage to substrate.

2. Clean all face brick with cleaning solution per manufacturer's recommendations and instructions.

a. Provide a general and masonry repair cleaning.

3. Protect building surfaces and landscaping below during cleaning.

4. Provide adequate protection of all surrounding surfaces not intended to be cleaned from damage (surface blemish, staining, etching, etc.) due to preparation and cleaning procedures. Repair damage at no cost to the Owner.

5. Provide adequate protection of adjacent brick not being cleaned during a specific cleaning operation. Repair damage at no cost to the Owner.

B. Façade Masonry Cleaning:

1. Prior to the start of all masonry repairs within a work area, clean all brick surfaces with general cleaner to remove existing dirt and stains from facade.

2. General cleaning to remove all surface contamination such as dirt, foreign matter, rust, rust stains, mold, mildew, and efflorescence. Cleaned surface to meet or exceed mock-up area.

C. Masonry Repair Cleaning:

1. Unless noted otherwise, clean all brick surfaces with repointing cleaner to remove excess mortar, mortar smears and stains after completion of repointing and repair work.

2. Use non-metallic tools in cleaning operations. Remove large pieces of mortar using wood paddles and scrappers.

3. Clean areas of new mortar no earlier than 14 days nor later than 28 days after completion of work.

4. Clean ground area of masonry materials, rubble and debris.

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 071800

VEHICULAR TRAFFIC MEMBRANE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Heavy duty vehicular traffic membrane system.

1.2 RELATED SECTIONS

A. Barriers - Refer Section 015600.

B. Concrete Repairs - Refer Section 030100.

C. Expansion Joints - Section 079000.

D. Sealants - Refer Section 079200.

E. Pavement Markings - Refer Section 321723

1.3 DEFINITIONS

A. The term "manufacturer's recommendations", or variations thereon it shall mean "manufacturer's recommendations which are found in publications available to and commonly used by the general architectural and consulting professions."

1.4 SUBMITTALS

A. Joint and Several Warranty Form meeting the requirements of Article 1.8.

B. Skid Resistance Addenda Form to Joint and Several Warranty meeting the requirements of Articles 1.8 and 3.4.

C. Bond Test Addenda Form to Joint and Several Warranty meeting the requirements of Articles 1.8 and 3.4.

D. Literature for all manufactured products, including manufacturer's specifications, test data and installation instructions or applicator's manual.

E. 12" x 12" samples of each membrane system to be used. Sample shall be applied to plywood or similar rigid material.

F. 1/4-lb. (±) sample of aggregate type intended to be used. Provide two (2) samples, one sent to THP for record, and other sample sent to Membrane Manufacturer for laboratory testing and sieve analysis.

G. Letter from Membrane Manufacturer stating sample aggregate was received, tested and reviewed, and is approved for use for the specified system and jobsite conditions. Letter shall include the following information:

1. Sieve or partical size analysis.
2. Grain Shape.
3. Hardness (Moh's Scale)
4. Moisture Content (ASTM C-566)
5. Specific Gravity (ASTM C-128)
6. Bulk Density (ASTM C-29)
7. Chemical Analysis

H. If requested, copy of letter of approval per Article 1.5 Paragraph B.

I. If requested, resume per Article 1.5 Paragraph C.

J. If requested, letters of Certification per Article 1.5 Paragraphs E, F, and G.

K. Material Safety Data Sheets on all materials which are classified as hazardous materials.

L. Maintenance manuals with the following information.

1. Project name.
2. Project location.
3. Date.
4. Owner's name.
5. Coating system(s).
6. Drawings indicating the coating systems and their location in the structure.
7. Schematic drawing of each membrane type identifying each element of the membrane system by dry film thickness and manufacturer's reference number or name.
8. Recommendations for routine care and maintenance.
9. List of three (3) approved Contractors nearest the project location authorized to perform repairs.
10. Identify common causes of damage and instructions for temporary patching until permanent repair can be made.

11. Upon completion of the Work and prior to final payment, provide a fully executed warranty.

1.5 QUALITY ASSURANCE

A. Applicable Codes:

1. The Contractor shall comply with all Federal, State and Municipal laws, codes, ordinances and regulations applicable to the Work in this Contract and also with all requirements of the National Fire Protection Association, the National Electric Code, and the Occupational Safety and Health Administration (OSHA). If the above laws, codes or ordinances conflict with this Specification, then the laws, codes or ordinances shall govern, except in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

B. The membrane applicator shall be approved by the manufacturer and shall have been an approved manufacturer's applicator for the membrane products, as identified on the subcontractor supplemental proposal form, for a minimum of three consecutive years. If requested, the contractor shall provide written confirmation from the manufacturer within three calendar days of the request.

C. The membrane applicator and its superintendent shall meet the following minimum requirements:

1. Installed the approved membrane materials as identified on the Bid Form in a traffic membrane system in three previous similar projects. Each of the three projects shall have been a minimum of 50,000 square feet in size.

2. Installed the approved membrane materials as identified on the Bid Form in a traffic membrane system currently in use within the last two years.

D. Conform to the Field Quality Control requirements in Part 3 of this Section.

E. Membrane manufacturer to certify that aggregate specified is acceptable for use in the membrane system.

F. Membrane manufacturer to certify that sealants in contact with membrane are compatible with membrane system.

G. Membrane manufacturer to certify that substrate surfaces in contact with any component of the vehicular traffic membrane are compatible.

H. Field Samples:

1. Prior to beginning surface preparation, prepare a sample area in the initial phase work area for the project to be used as the minimum standard of acceptability for cleanliness and surface texture to be achieved throughout the work. The area shall be at least 400 sq. ft. Size and location shall be as directed by the Engineer. The standard shall be jointly reviewed and approved by both the Engineer and the Manufacturer relative to Article 3.2 paragraph B.4 prior to start of full scale

surface preparation work. The approved standard shall remain uncoated until all surface preparation work is completed.

2. After approval, the sample area shall be covered with 6 mil thick plastic sheets. Edges shall be continuously taped, as well as splices, and the perimeter shall be weighted down. The sample area shall be kept covered unless viewing is needed for comparative purposes or until final preparation for membrane application. Contractor shall monitor the area to insure the integrity of the covering. Neither foot nor vehicular traffic shall be allowed on the covering unless additional protective measures are taken to protect the cleanliness of the sample area.

I. Manufacturer's Representation:

1. For installation of membrane materials, a technically competent employee of the membrane manufacturer, approved by the Engineer and not associated with the installation crew, shall be on site before and during the installation of the membrane system during the first Work Area plus one additional Work Area which reflects changing environmental conditions, if requested by the Engineer.

2. Application of the membrane shall not begin until the manufacturer's technician has approved the cleanliness and surface texture of the substrate.

3. The technician shall remain on site for the length of time necessary to observe the installation of the total membrane system.

4. The technician shall review all Contract application techniques and procedures and shall advise the Contractor when, where and as required to obtain Specification compliance.

5. The Contractor and the membrane Manufacturer shall comply with the terms set forth in items 1 through 4 above at no additional cost to the Owner.

J. An employee of the applicator who has been trained by the membrane manufacturer on the installation of the approved membrane system shall be present during all applications of the membrane system.

K. Within twenty-four hours of application of membrane materials submit log required by Article 3.4 Paragraph F to Engineer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to job site in sealed, undamaged containers. Each container shall be identified with material's name, date of manufacture and lot number.

B. Only those materials being used during any one work shift may be stored in the current work area. Materials being used for shift work shall be uniformly distributed throughout the intended work area so as to not overload or otherwise distress the structural system. All other materials, if stored on site, shall be stored at the designated staging area.

C. Coating materials shall be kept sealed when not in use.

D. Storage and handling of materials shall conform to the manufacturer's requirements and the requirements of the applicable environmental protection and safety regulatory agencies.

E. Storage areas shall be heated or cooled as required to maintain the temperatures within the range recommended by the coating manufacturer.

F. The handling and use of toxic or flammable solvents shall conform to the requirements of the applicable safety regulatory agencies, recommended by the manufacturer.

1.7 JOB CONDITIONS

A. Phasing of the traffic membrane installation is required. Refer to Drawings and the outline schedule in Specification Section 011000, as appropriate.

1. The entire garage will be closed for the duration of the project.

1.8 WARRANTY

A. Completed installation shall be warranted jointly and severally on a single document by manufacturer and applicator against defects of materials and workmanship. The length of the warranty period shall not be less than (5) years from the date of substantial completion of the Project.

B. Manufacturer and installer shall further warrant the skid resistance and bond strength of the installed systems. The test may be measured at any single location, and shall meet the specified criteria in Part 3, Article 3.4. The length of the warranty period shall not be less than five (5) years from the date of substantial completion of the Project.

C. Warranty documents shall not require the signature of the Owner to be effective, shall not limit the Owner’s legal remedies otherwise allowed per the project contract, and shall not limit the venue of any potential legal jurisdiction.

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PART 2 PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Lymtal International

B. Neogard Corporation

2.2 MATERIALS

A. Heavy Duty Vehicular Traffic Membrane System:

1. Iso-flex 760 Aliphatic System by Lymtal International, comprised of:

a. Primer:

- Iso-Flex Epoxy SF, Primer 750 or Primer 757.
- Apply at manufacturer's recommended application rate.

b. Base Coat

- Iso-Flex 750 Base Coat
- Apply at 40 mils dry film thickness.

c. Top Coat

- Iso-Flex 760 Aliphatic Top Coat
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

d. 2nd Top Coat

- Iso-Flex 760 Aliphatic Top Coat
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

e. Aggregate

- Unimin 12/20 by US Silica, either Ottawa, MN or Voca, Texas.
- Install at membrane manufacturer's maximum application rate.
- Uniformly distributed with no bare spots.

2. FC System by Neogard Corporation, comprised of:

a. Primer

- Neogard 7760/7761 VOC
- Apply at manufacturer's recommended application rate.

b. Base Coat

- Neogard FC7500/FC7960
- Apply at 40 mils dry film thickness.

c. Top Coat

- Neogard FC7540/FC7964
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

d. 2nd Top Coat

- Neogard FC7540/FC7964
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

e. Aggregate

- 12/20 by Carmeuse Industrial Sands, Brady, Texas
- Install at membrane manufacturer's maximum application rate.
- Uniformly distributed with no bare spots.

3. Sikalastic Traffic System by Sika Corporation, comprised of:

a. Primer

- Sikalastic FTP Lo-VOC Primer or MT Primer.
- Apply at manufacturer's recommended application rate.

b. Base Coat

- Sikalastic 720 Base Coat.
- Apply at 40 mils dry film thickness.

c. Top Coat

- Sikalastic 745 Aliphatic Top Coat.
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

d. 2nd Top Coat

- Sikalastic 745 Aliphatic Top Coat.
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

e. Aggregate

- Unimin 12/20 by US Silica, either Ottawa, MN or Voca, Texas.
- Install at membrane manufacturer's maximum application rate.
- Uniformly distributed with no bare spots.

4. MasterSeal Traffic 2500 System by BASF, comprised of:

a. Primer

- MasterSeal P255.
- Apply at manufacturer's recommended application rate.

b. Base Coat

- MasterSeal M265 Base Coat.
- Apply at 40 mils dry film thickness.

c. Top Coat

- MasterSeal TC295 Aliphatic Top Coat.
- Apply at 18 mils dry film thickness.
- Aggregate seeded and back rolled to provide slip resistant surface.

d. 2nd Top Coat

- MasterSeal TC295 Aliphatic Top Coat
- Apply at 18 mils dry film thickness
- Aggregate seeded and back rolled to provide slip resistant surface

e. Aggregate

- Badger 12/20 by Badger Corporation, Fairwater, WI.
- Install at membrane manufacturer's maximum application rate.
- Uniformly distributed with no bare spots.

B. Localized Leveling Repairs:

1. Lymtal Systems:

a. Primer

- Per Article 2.2 Paragraph A.1.a.

b. Leveling Material

- Iso-Flex 750 Base Coat.
- Pre-mix with manufacturer approved aggregate.
- Install in multiple lifts up to 1" thickness total.

2. Neogard Systems:

a. Primer

- Per Article 2.2 Paragraph A.2.a.

b. Leveling Material

- Neogard FC7500 Base Coat.
- Pre-mix with manufacturer approved aggregate.
- Install in multiple lifts up to 1" thickness total.

3. Sika Systems:

a. Primer

- Per Article 2. 2 Paragraph A. 3.a

b. Leveling Material

- Sikalastic 720 Base Coat.
- Pre-mix with manufacturer approved aggregate.
- Install in multiple lifts up to 1" thickness total.

4. BASF Systems:

a. Primer

- Per Article 2.2 Paragraph A.4.a.

b. Leveling Material

- MasterSeal M265 Base Coat.
- Pre-mix with manufacturer approved aggregate.
- Install in multiple lifts up to 1" thickness total.

C. Individual steps of any systems inclusive of greater than 5 percent solvents by either weight or volume calculations shall require monitoring by a licensed industrial hygienist for fumes and odors within work areas, at open air intakes within 200 ft. of work areas, and inside occupied spaces adjacent to work areas. Credentials of licensed hygienist and a monitoring plan must be approved by the Engineer in advance of the start of any membrane work.

D. Membrane color shall be manufacturer's standard gray, unless otherwise indicated in the Documents.

E. Intermediate coat and lock coat materials shall be U.V. stable.

PART 3 EXECUTIONS

3.1 EXAMINATION

A. Contractor and membrane manufacturer shall jointly review existing substrates (original concrete, past or new concrete repairs or overlays, past membrane or coating systems) to ensure compatibility with the specified membrane system. Submit in writing any materials which may cause membrane adhesion to substrate less than normally anticipated or other compatibility or performance difficulties. Failure to review and identify deleterious products/materials, and if failure of the membrane is a result of adhesion difficulties or chemical or physical incompatibilities with substrate materials, the Contractor and Manufacturer shall be responsible for all costs related to correcting the deficient Work. Manufacturer is bound to meet the above noted responsibilities equally with the Contractor regardless of the provisions of other agreements.

B. Inspect deck surface for any visibly distressed concrete. If encountered, chain drag area to determine extent of distressed or delaminated area and repair as indicated on the Drawings, and Specification Section 030100.

C. Examine areas for slab cracks to be routed and sealed.

3.2 PREPARATION

A. Protection:

1. Erect barriers and barricades to protect adjoining areas from dirt, steel shot and debris generated from this work. Refer to Section 015600.

2. Cover exposed drain grates during shotblasting/grinding operations. Recoat with approved rust inhibitive or galvanizing paint grates damaged by blasting operations. Similarly protect and recoat if necessary other, in place metal elements. Drains to be functional during non-working hours and during periods of inclement weather.

3. Cover exposed drain grates to protect from membrane material. Drains to be functional during non-working hours and during periods of inclement weather. Do not allow membrane material to enter drain piping system.

B. Concrete (General):

1. Preparation and cleaning procedures shall be in strict accordance with this Specification, unless more stringent requirements are recommended by the system manufacturer.

2. Surface must be dry. New concrete shall be at least 28 days old and proven dry via mat tests, to be considered for membrane system installation without installation of a vapor barrier. Review manufacturer requirements relative to site conditions in advance of performing the work.

3. Surfaces shall be free from all traces of dirt, salt, grease, oil, asphalt, laitance, curing compounds, paint stripes, coatings and other foreign materials. Use manufacturer approved degreasing agents if necessary.

4. Concrete surfaces shall be cleaned using shotblast equipment (with integral vacuum process) to achieve standard of cleanliness per Article 1.5 Paragraph G. The size of shot and travel speed of the equipment shall be chosen to provide a uniformly clean surface and profile; basis for bid must be two perpendicular normal speed passes, or one slow speed pass.

5. Areas which cannot be adequately cleaned by shotblasting shall be cleaned by grinding with accompanying vacuum procedures.

6. Surfaces that become contaminated by dirt or moisture after initial shotblasting or grinding, shall be cleaned again by shotblasting or grinding to manufacturer's requirements at no additional cost to the Owner.

7. Minimum standard of acceptability applies to all surfaces intended to receive membrane regardless of surface preparation procedure or process.

8. The use of acids in surface preparation procedures and techniques is prohibited.

9. After completion of shotblasting/grinding, and prior to application of membrane materials, repair all scaled, freeze-thaw damaged and loose, pop-out areas, cracks and all damage made apparent by the shotblasting/grinding procedures, in a manner approved by the Engineer. Such repair work shall be part of the Base Bid without unit price adjustment. Areas requiring patching will be subject to re-shotblast or re-grinding where a patch exceeds one (1) square foot in area.

10. Grind all high spots or transition grind all depressions per details, and clean to manufacturer's requirements.

C. Existing Membrane (Recoat):

1. Preparation and cleaning procedures shall be in strict accordance with this Specification, unless more stringent requirements are recommended by the system manufacturer.

2. Locate and remove areas of deteriorated or debonded membrane.

3. Remove deteriorated membrane with approved procedures until sound, intact and well bonded membrane is achieved. Prepare concrete and install leveling per procedures outlined in Part 2, Article 2.2 Paragraph G.

4. All surfaces to be recoated shall be cleaned using shotblast equipment (with integral vacuum process) to achieve standard of cleanliness per Article 1.5 Paragraph G. The size of shot and travel speed of the equipment shall be chosen to provide a uniformly clean surface and profile.

5. Areas which cannot be adequately cleaned by shotblasting shall be cleaned by grinding with accompanying vacuum procedures.

6. Degrease all oil and other staining per the manufacturer's recommendations.

7. Detergent scrub and pressure wash clean existing membrane surfaces. Thoroughly rinse surfaces to assure all detergents and residual degreasing agents are flushed to drains.

D. Membrane Removal:

1. If existing membrane system scheduled to be removed, the criteria for acceptance are 0% of the existing membrane remaining on horizontal surfaces. 5% of the existing membrane may remain on the vertical curb faces with no area larger than 3 square inches.

2. The membrane removal is to be done with a dry cutting process only.

3. After removal, perform surface preparation the same as for Concrete, Part 3, Article 3.2 Paragraph B.

3.3 INSTALLATION

A. General:

1. Install materials in strict accordance with all safety and weather conditions required by product literature and Local, State and Federal regulations.

2. Fumes and dust shall be controlled to prevent harmful or undesirable effects in surrounding areas. All potential avenues for penetration of fumes or dust into surrounding occupied areas shall be sealed prior to the start of the work.

3. All exposed membrane edges and termination details shall be taped to provide straight, neat edges.

4. Install base coat membrane materials on concrete surfaces only when concrete temperature has stabilized or is falling. Do not install base coat membrane on concrete surfaces when surface temperature is rising.

5. Install membrane materials only if the temperature of the surfaces to be coated is 5 degrees or higher than the dew point temperature measured at the job site.

B. Sealants - Refer to Section 079200.

C. Membrane:

1. Where necessary to locally level surfaces and after approval by Owner, install membrane leveling materials in depressed areas. Refer to Part 2, Article 2.2 Paragraph G.

2. Install detail coat 4" wide by 20 mil thick (dry film thickness) over properly primed cracks, caulked joints, joints between concrete pours, or leveling repairs, junctures and other locations in the membrane area which is a deviation from the nominal membrane plane, except where otherwise indicated by the Specifications or Drawings.

3. The membrane system shall turn up 4" at all vertical surfaces unless shown otherwise on the drawings. Detail coat is required at all turn-ups to vertical surfaces. Detail coat at turn-ups shall be the same as the detail coat required by Part 3, Article 3.3 Paragraph C.1.

4. Contractor shall ensure the specified/recommended application rates of all components of the membrane system. Base coat(s), intermediate coat, and lock coat of each application of the membrane system shall be distributed onto the deck by calibrated, notched squeegees. Squeegees showing signs of wear shall be discarded.

5. Contractor shall ensure specified/recommended application rates of liquid products on vertical or sloped surfaces by the use of non-sag grade materials or by multiple applications of material over previous applications which are fully cured.

6. Each fluid-applied component of the membrane system shall be back-rolled to properly distribute materials across the deck and eliminate squeegee marks.

7. Use of power rollers either to distribute the membrane system or to backroll squeegee marks shall not be permitted.

8. No vehicular traffic shall be allowed on membrane areas for at least 48 hours after completion of membrane installation. Provide extended cure time with no vehicular traffic exposure if temperatures fall below 50°F.

3.4 FIELD QUALITY CONTROL

A. Bond Test:

1. Bond tests of the installed membrane systems may be performed by the Engineer during and after the membrane work on this project. Tests shall be conducted using a calibrated instrument which measures in-place bond strength by applying a direct axial pull on a 3 inch diameter steel disk epoxied to the completed membrane top surface.

2. A membrane phase for the purpose of bond testing is an area of base coat installed in a single work shift. If examined, a membrane phase will be tested at (3) locations per phase no sooner than 10 days after completion of the entire membrane system and no sooner than 14 days if temperatures fall below 40°F for two or more days. Contractor shall assume a total of 4 test locations in the Base Bid.

3. The acceptance criteria for initial tests of a Phase shall average bond strength of 200 psi for all locations, with no single location testing below 150 psi. Any Phase failing to meet the initial acceptance criteria may be retested at a later date by the Engineer. Retests of Phase shall include at least 4 separate test locations not sooner than 14 days after the initial tests. The acceptance criteria for retests of a Phase shall average bond strength of 200 psi for all locations, with no single location testing below 175 psi.

4. Any Phase failing to meet the initial test and retest acceptance criteria shall be considered "deficient" and shall be cause for the Contractor to execute or provide one of the following remedies:

    a. Extend Standard Guarantee to include an additional 5 years (for a total of 10 years) on membrane system intercoat bond and bond to the concrete for the "deficient" areas.

    b. Removal and replacement of the "deficient" area, including all necessary preparatory work and Engineering costs to coordinate and observe the work, at no additional cost to the Owner.

5. Any additional bond testing requested by the Contractor to limit the extent of the "deficient" area(s) as determined by initial tests and retests as defined above shall be paid for by the Contractor.

6. Contractor shall include as part of his proposal the costs of repairing all test locations.

B. Skid Test:

1. Prior to any membrane preparation work and after membrane installation, the Engineer may conduct tests to determine values of the static coefficient of friction between the coated and uncoated floor surfaces and the neoprene base of the Engineer's test equipment.

2. Determination of the coefficient of friction will consist of a series of individual tests for each surface type. The initial coefficient of friction is defined as the average of the tests performed on the concrete surfaces prior to membrane preparatory work. The final coefficient of friction is defined as the averages of the tests performed on each type of completed membrane system surface.

3. The final, average static coefficient of friction shall be a minimum of 0.85 under wet and dry conditions and equal to or greater than 110% of the initial coefficient of friction. No individual test area shall have a coefficient less than 0.80 or 95% of

the initial coefficient of friction. Any membrane system that does not conform, as determined by the Engineer, to the specified acceptance criteria shall be subject to rework, upgrading or replacement of the deficient areas, including necessary preparatory work, at no additional cost to the Owner.

C. The Engineer may direct the Contractor to make test cuts in the membrane for testing purposes. Tests cuts shall be 2" x 2" and will be in partially-completed or fully-completed membrane. A maximum of 3 total tests per separate installation phase may be made. Contractor shall include as part of his Proposal the costs of taking test cuts as and where directed by the Engineer and the costs of patching test cut areas.

D. The Engineer will periodically monitor application rates of the membrane system individual components and will notify job foremen of discrepancies noted.

E. The Contractor shall keep at the site and maintain in proper condition an adequate number (at least one per application crew) of wet film thickness gages and shall continuously use such to ensure the specified thickness of each membrane coat is uniformly maintained. The periodic monitoring of application rates per Article 3.4 Paragraph D shall not relieve the Contractor of the responsibility of verifying specified coating thickness.

F. Contractor shall provide information required by Part 3, Article 3.6.

3.5 CLEANING

A. Empty containers shall be removed from the project work areas at the end of each working day. Cloths soiled with coating that might constitute a fire hazard shall be placed in suitable metal safety containers or shall be removed from the building at the end of each working day. Special care shall be taken in storage or disposal of flammable materials. Comply with health, fire and environmental regulations.

B. All spilled coating material shall be completely removed from hardware, adjacent floor areas, metal work, etc. Remove spilled coating by approved methods.

C. Repaint in matching color all curbs, columns, walls, etc., where existing paint was removed during preparation for membrane application.

D. All hardware, adjacent floor areas, metal work, etc., and the general premises shall be left clean and free of all construction dirt and debris.

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3.6 MEMBRANE APPLICATION LOG FORM EXAMPLE

DAILY MEMBRANE APPLICATION LOG

Project:

Date: Time Start Time End

Work Area
(Give Description)

Membrane Materials Applied
Type and Quantity

Crew Size Size of Area Materials Applied
(in Square Feet)

Temperature Data (°F)

	Start				End
Deck					
Air					
Relative Humidity (%)					
Dewpoint					

Note: Contractor shall estimate quarter points in time between the start and end of membrane application. Record air and deck temperatures at those times.

Superintendent's Signature:

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 071900

PENETRATING CONCRETE WATER REPELLENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. All labor, material, equipment, special tools and services to prepare and install penetrating water repellent on concrete surfaces as indicated on the Drawings and in the Specifications, including but not limited to:

1. All supported levels not scheduled to received new vehicular traffic membrane.

1.2 RELATED SECTIONS

A. Concrete Repairs - Refer Section 030100.

B. Vehicular Traffic Membrane – Refer Section 071800.

C. Expansion Joints – Refer Section 079000.

D. Sealants – Refer Section 079200.

E. Pavement Markings – Refer Section 321723.

1.3 DEFINITIONS

A. Where the term "manufacturer's recommendations," or variations thereon, are found in this Specification, it shall mean "manufacturer's recommendations which are found in publications available to and commonly used by the general architectural and engineering professions."

1.4 SUBMITTALS

A. Literature for manufactured products, including manufacturer's specifications, test data and installation instructions or applicator's manual.

B. Manufacturer's letter of applicator approval per Paragraph 1.5.C.

C. Listing of completed projects per Paragraph 1.5.D.

D. Submit personal resume to verify compliance with Paragraph 1.5.F.

E. Letter of compatibility per Paragraph 1.5.H.

F. Letters of compatibility per Paragraph 1.5.I.

G. Form of Warranty meeting the requirements of Paragraph 1.8.A.

1.5 QUALITY ASSURANCE

A. Applicable Codes:

1. The Contractor shall comply with all Federal, State and Municipal laws, codes, ordinances and regulations applicable to the Work in this Contract and also with all requirements of the National Fire Protection Association, the National Electric Code, and the Occupational Safety and Health Administration (OSHA). If the above laws, codes or ordinances conflict with this Specification, then the laws, codes or ordinances shall govern, except in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

2. If the above laws, codes or ordinances conflict with the Specification, then the laws, codes or ordinances shall govern, excerpt in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

B. No payments shall be approved for work performed unless Contractor coordinates in advance with the Owner for a manufacturer's representative to witness the work.

C. If requested by Owner, the installer shall be approved in writing by the manufacturer for application of the approved water repellent.

D. Work under this Section shall be performed by organizations which have successfully performed at least three projects of similar size and type, in a similar climate within the past five years.

E. Final selection of the water repellent applicator shall be subject to the approval of the Owner.

F. All work under this Section shall be under the immediate control of a person (Contractor's superintendent or other designated person) experienced in this type of work. This person shall have supervised three prior projects of similar magnitude and type, shall be present during all operations, and shall be approved by the Owner.

G. A technically competent employee of the manufacturer (not associated with the installation crew), approved by the Owner, shall perform sub-items 1 through 8 listed below. The General Contractor shall provide Owner's Representative with 2 weeks advance notice of initial water repellent installation and 3 days advance notice for all subsequent installations requiring the manufacturer's representative's review.

1. Witness and approve in writing the surface cleanliness and preparation procedures.

2. Witness the application of water repellent on at least one phase of all of the specifically identified surfaces as indicated on Drawings.

3. Advise the contractor where and when modifications to procedures are required to obtain Specification compliance.

4. After the field sample application and prior to the next application, establish in writing procedures to be used for the remainder of the project. The procedures shall be written particularly for this project based on field sample application observations and anticipated condition for the remainder of the work. Manufacturer's standard published literature is not acceptable. The procedures shall address, but not be limited to:

    a. If applicable, type, size, speed, number of passes and clean-up procedures for surface preparation equipment.

    b. Surface preparation acceptance criteria.

    c. Special surface preparation procedures, if any, for particular areas, such as heavily stained areas.

    d. Allowable moisture and atmospheric conditions site specific to this project.

    e. Modifications to application rates and techniques to limit potential glazing or discoloration from over application of material.

    f. All other special instructions necessary to ensure proper installation.

5. Prior to leaving the site, submit to the Owner for review and approval (2) copies of the written procedures developed for the remainder of the work.

6. Give a copy of the written procedures to the contractor.

7. Review in person with the contractor's superintendent (or person in charge of this work) the written procedures in the presence of the Owner.

8. Provide an additional copy of the written procedures which shall remain on site at all times for the duration of the work.

H. The water repellent and substrate surfaces shall be certified in writing as being compatible prior to beginning the work by the water repellent manufacturer.

I. Verify in writing, from both the sealant and water repellent manufacturers that the approved sealant is compatible with the approved water repellent.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials to job site in sealed, undamaged containers.

B. Each container shall be identified with materials name, date of manufacture, lot and batch number.

C. Store materials not being used in the work shift in an approved storage area which is well ventilated, lighted and not subject to direct sun rays.

D. Storage area shall be heated or cooled as required to maintain the temperature within the range recommended by the water repellent manufacturer.

E. Materials shall be kept sealed when not in use.

F. Keep storage area neat and clean and secure from vandalism and theft.

G. Perform work in strict accordance with all safety and weather conditions required by product literature or as modified by applicable rules and regulations of Local, State and Federal authorities having jurisdiction.

H. When toxic or flammable solvents are used, the water repellent applicator shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.

1.7 SEQUENCING

A. Complete all concrete repairs, sealant installations and adjacent traffic membrane installations prior to application of water repellent.

1.8 WARRANTY

A. Completed installation shall be warranted on a single document by the manufacturer against defects of materials for a period of not less than ten (10) years, beginning with the date of substantial completion of the Project.

PART 2 PRODUCTS

2.1 VOC COMPLIANT WATER REPELLENT MATERIALS

A. All Areas:

1. "Protectosil BHN" by Evonik Industries., Parsippany, N.J. applied at 200 sq. ft. per gallon.

2. Alternative products approved during bidding process.

PART 3 EXECUTIONS

3.1 PREPARATION

A. All surface preparation and cleaning procedures shall be in strict accordance with this Specification, unless more stringent requirements are asked for by the water repellent manufacturer.

B. Floor areas scheduled to receive penetrating water repellent as shown on the Drawings shall be cleaned using equipment with integral vacuum process to achieve a standard of cleanliness acceptable to the Owner and water repellent manufacturer. The travel speed of the equipment and number of passes shall be chosen to provide a uniformly clean surface and profile. Basis for bid shall be one normal speed pass. Areas inaccessible blasting shall be prepared as approved by the water repellant manufacturer. Waterblasting at 5000 psi tip pressure is acceptable with the following conditions:

1. Waterblasting is witnessed by the manufacturer's representative.

2. Waterblasting does not damage concrete or sealant repairs.

3. Waterblasting procedure provides a level of surface cleanliness acceptable to the Owner.

C. Field Samples:

1. Prior to beginning surface preparation, prepare a sample area of all surfaces to be used as the minimum standard of acceptability for cleanliness and surface texture to be achieved throughout the work. The area shall be at least 400 sq. ft. Size and location shall be as directed by the Engineer. The standard shall be jointly reviewed and approved by both the Engineer and the Manufacturer relative to paragraph 3.1.B prior to start of full scale surface preparation work. The approved standard shall remain untreated until all surface preparation work is completed.

2. After approval, the sample area shall be covered with 6 mil thick plastic sheets. Edges shall be continuously taped, as well as splices, and the perimeter shall be weighted down. The sample area shall be kept covered unless viewing is needed for comparative purposes or until final preparation for water repellent. Contractor shall monitor the area to insure the integrity of the covering. Neither foot or vehicular traffic shall be allowed on the covering unless additional protective measures are taken to protect the cleanliness of the sample area.

D. Minimum standard of acceptability applies to all surfaces intended to receive penetrating water repellent, regardless of surface preparation procedure or process.

E. Obtain approval from the Owner for the surface preparation standard locations prior to proceeding with the surface preparation work.

3.2 APPLICATION

A. Apply water repellent on all surfaces at specified rate unless directed otherwise. Contractor shall grid deck to meet square footage requirement based on unit size of material to ensure specified application rate.

B. All new concrete to be treated shall be cured above 50 degrees F. for at least 14 days before application of water repellent, unless this requirement is specifically waived by the concrete deck repair material and water repellent material manufacturers.

C. All concrete to receive water repellent shall be air dried for at least 72 hours following surface wetting at temperatures averaging above 50 degrees F. before application, or at least 48 hours at temperatures averaging above 70 degrees F. before application.

D. All urethane sealants in contact with silane treated surfaces and membranes adjacent to silane treated surfaces shall be cured for 72 hours at an average of 70 degrees F, unless otherwise noted by urethane manufacturer.

E. Ambient and concrete temperatures shall be 50 degrees F. or more during application

of water repellent. Temperature, humidity and wind velocity (if applicable) shall be within manufacturer's specified limits to prevent solvent flash-off.

F. Apply water repellent using low pressure airless spray equipment to assure uniform application rate over the treated area. Surface residues or pools shall be brushed and rolled out thoroughly using pre-saturated deep nap brushes and until they completely penetrate into the surface.

3.3 CLEAN-UP

A. During the progress of the Work, remove from the project all discarded water repellent materials, rubbish, cans, and rags.

B. Clean all surfaces affected by sealer material overspray and repair all damage caused by water repellent material overspray to adjacent construction or property at no cost to the Owner.

C. All hardware, adjacent floor areas, metal work, etc., and the premises shall be left clean and free of all construction dirt and debris. This includes the removal of all dust from pipes, etc., which resulted as part of the construction process.

D. Empty containers shall be removed from the building at the end of each working day. All cloths soiled with water repellent that might constitute a fire hazard shall be placed in suitable metal safety containers or shall be removed from the building at the end of each working day. Special care shall be taken in storage or disposal of flammable materials. Comply with health and fire regulations.

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 079000

EXPANSION JOINTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. New vertical compressible expansion joint installation – Type A

B. New horizontal compressible expansion joint installation – Type B

C. New wing compression expansion joint seal installation – Type C

1.2 RELATED SECTIONS

A. Section 015600 - Barriers

B. Section 030100 - Concrete Repairs.

C. Section 071800 - Vehicular Traffic Membrane.

D. Section 079200 - Sealants.

E. Section 321723 - Pavement Markings.

1.3 SUBMITTALS

A. Joint and Several Warranty Form meeting the requirements of Paragraph 1.7.

B. Letter of inspection approving blockout or noting unacceptable conditions per Paragraph 1.4F.

C. Shop drawings of all expansion joint conditions, including typical section, factory manufactured splices and each termination detail.

D. Literature for manufactured products, including manufacturer's specifications, test data and installation instructions including temperature limitations and joint opening recommendations.

E. Letter of approval per Paragraph 1.4.B.

F. Prior project experience per Paragraph 1.4.C.

G. Joint System Sample per Paragraph 1.4.E.

H. Name and resume of persons per Paragraphs 1.4.D and 1.4.F.

I. Letter from expansion joint manufacturer per Paragraph 1.6.

1.4 QUALITY ASSURANCE

A. Applicable Codes:

1. The Contractor shall comply with all Federal, State and Municipal laws, codes, ordinances and regulations applicable to the Work in this Contract and also with all requirements of the National Fire Protection Association, the National Electric Code, and the Occupational Safety and Health Administration (OSHA). If the above laws, codes or ordinances conflict with this Specification, then the laws, codes or ordinances shall govern, except in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

2. If the above laws, codes or ordinances conflict with the Specification, then the laws, codes or ordinances shall govern, excerpt in such cases where the Specification exceeds them in quality of materials or labor, then the Specifications shall be followed.

B. The expansion joint installer shall be approved by the manufacturer.

C. All work under this Section shall be performed by Contractors which have successfully performed at least three verifiable years of projects that are similar in magnitude and type to those involved in this Contract and three or more prior projects in a climate similar to that for this project.

D. All work under this Section shall be under the immediate control of the Contractor's non-working superintendent(s) experienced in this type of work. The person(s) shall have supervised three prior projects of similar magnitude and type, and shall be present during all operations. This person(s) shall be approved by the Owner.

E. The Owner may submit material samples to an independent testing laboratory for verification of material properties and/or conformance to performance standards.

F. A technically competent employee of the expansion joint manufacturer (not associated with the installation crew or Contractor) shall be present before and during the installation of the initial lengths of the joint system (minimum 50% of total joints) on this project. This person shall be approved by the Owner.

G. The expansion joint manufacturer and installer must inspect the completed block-outs prior to the start of new joint system installation. Unacceptable conditions must be reported, in writing, to the Owner prior to start of work. Starting installation of the new expansion joints constitutes acceptance of the completed block-out conditions.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver all materials to job site in sealed, undamaged containers. Each container shall be identified with materials' name, date of manufacture, lot and batch number.

B. Store materials when not in actual use in a place specifically assigned for that purpose which is well ventilated and lighted and not subject to direct sun rays. Materials shall be kept or packaged when not in use. Keep storage area neat and clean and secure from vandalism and theft.

C. Perform work in strict accordance with all safety and weather conditions required by product literature or as modified by applicable rules and regulations of Local, State and Federal authorities having jurisdiction.

D. When toxic or flammable solvents are used, the seal installer shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.

1.6 SEQUENCING

A. The expansion joint seal manufacturer shall provide a written procedure for installation of new expansion joint seals within 10 days after placement of cementitious material used for the modification of expansion joint block-outs and overlays.

1.7 WARRANTY

A. A warranty of five years shall be provided for all types of new expansion joint seals. The manufacturer and approved installer shall jointly and severally maintain the joint in a safe, waterproof condition for the warranty period at no additional cost to the Owner. The Contractor is responsible for compliance of both the manufacturer and approved installer for the warranty period.

PART 2 PRODUCTS

2.1 VERITICAL COMPRESSIBLE EXPANSION JOINT – TYPE A:

A. Colorseal by Emseal Joint Systems, LTD;

1. Seal size - 3” (Field verify prior to bidding)

B. Willseal Color Coreseal or Seismic Seal by Willseal, Inc.

1. Seal size - 3” (Field verify prior to bidding)

2.2 COMPRESSIBLE EXPANSION JOINT SEAL – TYPE C SYSTEM:

A. DSM seal by Emseal, Inc.

1. Seal size varies – field verify prior to bidding

B. Isoflex Precom H-SL by Lymtal International.

1. Seal size varies – field verify prior to bidding

C. Wabo H Seal by Watson Bowman Acme/BASF

1. Seal size varies – field verify prior to bidding.

D. Willseal 250 by Willseal, Inc.

1. Seal size varies – field verify prior to bidding

2.3 WINGED COMPRESSION SEAL EXPANSION JOINT SYSTEM – TYPE B:

A. Thermafex Parking Deck EJ System by Emseal Joint Systems

1. Seal size varies – field verify prior to bidding.

B. Iso-flex Winged EJ System by Lymtal International

1. Seal size varies – field verify prior to bidding.

C. Wabocrete 201 Membrane System by Watson, Bowman, Acme/BASF

1. Seal size varies – field verify prior to bidding.

PART 3 EXECUTIONS

3.1 GENERAL

A. Where scheduled for replacement, remove existing expansion joint systems and perform minor concrete repairs as required to perform the work. Refer to Drawings and Section 030100 as appropriate.

B. If found, remove styrofoam or any other form of joint filler material in expansion joint openings.

C. Cure all expansion joint system nosing and adhesive materials in accordance with manufacturer's recommendations. Allow nosing to cure for minimum time period based on temperature conditions required by the manufacturer. Verify nosing and adhesive material is cured, prior to allowing vehicular traffic across the joint. Use traffic plates if necessary, temporarily anchor to the deck side of the joint, to accommodate traffic.

D. Accelerated curing by heating of nosing and adhesive material is not permitted.

E. Do not install seals or associated materials over or on wet substrate materials.

F. Cease installation of seals under adverse weather conditions, or when temperatures (deck or ambient) are outside the allowable temperature limits.

G. Install seals as soon during the Work as substrate temperatures permit.

3.2 NEW WINGED SEAL EXPANSION JOINT SYSTEM INSTALLATION

A. Preparation of concrete joint openings:

1. Where appropriate, perform all necessary repairs to establish consistent joint openings across the entire deck surface. Use manufacturers approved epoxy based repair materials for minor joint edge or block-out repairs, or alternative concrete repair materials for larger repair areas. Refer to Specification Section 030100.

2. Rout and seal adjacent construction joints or cracks that intersect the block-out for a length of 8 inches. Refer to Specification Section 079200.

3. Grind and vacuum clean all concrete surfaces to be in contact with seal system no sooner than 24 hours before seal installation. Contact surfaces shall be clean, dry and sound. Re-grinding is required if contact surfaces become contaminated after the initial blasting. This includes contamination by rainwater runoff. Wet sand blasting followed by adequate drying is approved if conditions warrant, as approved by manufacturer.

4. Coordinate preparation procedures to avoid damage to vehicles on levels below or adjacent to work area. Remove all dirt and debris from joint opening and adjacent floor areas on both levels immediately after work is complete.

B. Installation:

1. Install new seal per manufacturer’s installation instructions. Perform work during coolest portion of day, typically in the middle of the night. Complete work at least 4 hours prior to anticipated rising deck temperatures. Cease installation of joint system under adverse weather conditions.

2. Splice seal material per manufacturer’s instructions to form a continuous length. Do not splice seal in drive lane unless approved by the Engineer.

3. All transitions, turn-ups, corners and “T” joints shall be factory manufactured components shall be approved in advance by Engineer.

4. Seal elevation shall be installed flush or slightly recessed from nosing/header surface.

5. Cure materials in accordance with manufacturer’s recommendations.

3.3 NEW COMPRESSIBLE EXPANSION JOINT SYSTEM INSTALLATION

A. Preparation of concrete joint openings:

1. Where appropriate, perform all necessary repairs to establish consistent joint openings across the entire deck surface. Use manufacturers approved epoxy based repair materials for minor joint edge or block-out repairs, or alternative concrete repair materials for larger repair areas. Refer to Specification Section 030100.

2. Rout and seal adjacent construction joints or cracks that intersect the block-out for a length of 8 inches. Refer to Specification Section 079200.

3. Grind and vacuum clean all concrete surfaces to be in contact with seal system no sooner than 24 hours before seal installation. Contact surfaces shall be clean, dry and sound. Re-grinding is required if contact surfaces become contaminated after the initial blasting. This includes contamination by rainwater runoff. Wet sand blasting followed by adequate drying is approved if conditions warrant, as approved by manufacturer.

4. Coordinate preparation procedures to avoid damage to vehicles on levels below or adjacent to work area. Remove all dirt and debris from joint opening and adjacent floor areas on both levels immediately after work is complete.

B. Seal Installation:

1. Install new seal per manufacturer's installation instructions. Perform work during coolest portion of day, typically in the middle of the night. Complete work at least 4 hours prior to anticipated rising deck temperatures. Cease installation of joint system under adverse weather conditions.

2. Install manufacturer's approved adhesive or bonder to compression seal and concrete, nosing or metal surfaces which will be in contact.

3. Install seals per manufacturer's installation instructions.

4. Install the seals in continuous lengths with no splices in the horizontal plane of the seal. Recess seals slightly from adjacent floor surfaces.

5. Turn seals up onto and across curbs and up 4 inches at adjoining vertical wall and column surfaces. Vertical installation to be flush with adjoining wall and column surfaces.

6. As appropriate, provide heat welds or adhesive at direction changes from horizontal to vertical. Execute welds per manufacturer's requirements.

7. Before installation, test splices with a 150# axial tension load.

8. Seal splices at end conditions as recommended by the manufacturer if those conditions are not shown on the Drawings.

9. Install any supplemental cap seal materials in the same work shift, or no later than the next day if no inclement weather is predicted.

3.4 CLEAN-UP

A. During the progress of the Work, remove from the project all discarded materials, rubbish, cans and rags.

B. Clean all surfaces of drops or spills of nosing materials with manufacturer approved solvents which are not deleterious to the concrete surface.

C. All hardware, adjacent floor areas, metal work, etc., and the premises shall be lift clean and free of all construction dirt and debris. This includes the removal of debris from pipes, etc., which resulted as part of the construction process.

D. Empty containers shall be removed from the building at the end of each working day. All cloths soiled with solvent or other materials that might constitute a fire hazard shall be placed in suitable metal safety containers or shall be removed from the building at the end of each working day. Special care shall be taken in storage or disposal of flammable materials. Comply with health and fire regulations.

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 079200

SEALANTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cove joint sealant.

B. Control joint sealant.

C. Construction joint sealant.

D. Isolation joints.

1.2 RELATED SECTIONS

A. Section 030100 - Concrete Repairs.

B. Section 071800 - Vehicular Traffic Membrane

1.3 DEFINITIONS

A. Where the term "manufacturer's recommendations," or variations thereon, are found in this Specification, it shall mean "manufacturer's recommendations which are found in publications available to and commonly used by the general architectural and consulting professions."

1.4 SUBMITTALS

A. Copies of literature for all manufactured products, including manufacturer's specifications, test data and installation instructions or applicator's manual.

B. Letter per Paragraph 1.5.A.

C. Resume of contractor superintendent or employee per Paragraph 1.5.C.

D. Manufacturer's certification per Paragraphs 1.5.E.

E. Proof samples of sealants intended to be installed per Paragraph 1.5.F.

F. If requested, Field samples of sealants installed on site per Paragraph 1.5.G.

G. Material Safety Data Sheets on all materials which are classified as hazardous materials.

H. Upon completion of the Work and prior to final payment, provide written recommendations for routine care and maintenance. Provide list of three Contractors nearest the project location who are qualified to perform repairs to the sealants. Identify common causes of damage and include instructions for temporary patching until permanent repair can be made by qualified personnel.

I. Upon completion of the Work and prior to final payment, provide a fully executed warranty.

1.5 QUALITY ASSURANCE

A. The sealant installer must be acceptable to the manufacturer. Provide written confirmation that the intended sealant installer is acceptable to the manufacturer.

B. The Contractor shall review locations where joint sealant work is specified, and shall submit in writing existing conditions and newly specified details which would cause sealant material to fail. Failure to review existing conditions or identify details or procedures which will cause failure of sealant material to perform as specified, the Contractor shall become responsible for all costs relating to correcting the deficient work, including all direct and indirect costs to the Owner.

C. The Contractor's superintendent, or another technically competent employee of the Contractor approved by the Owner and Manufacturer, shall be on site and supervise installation of all sealant on this project. Sealant identified as being installed not under the direct supervision of this person shall be subject to removal and replacement, at the direction of the Owner. This person identified for supervision of the work shall have supervised at least three prior projects of similar magnitude and type.

D. The Owner may, at his discretion, choose to remove up to a six-inch length of sealant in locations at a time after installation and initial curing of sealant to verify installation as specified. The Contractor shall include in his Bid the costs to repair one such location for each 100 ft. of sealant installation. If inspections of these locations by the Owner reveal deficient installation of sealant, the Owner may remove additional sealant to further quantify the length of deficient sealant. The Contractor shall repair all deficient locations of sealant found by the Owner at no additional cost and no extension of time for the work.

E. Sealant materials shall be certified to be compatible by the manufacturer for use with the membrane system.

F. Proof Samples of all sealant materials used on the job site shall be prepared in advance of the work by the Contractor and submitted to the Owner for purposes of testing and examination. Samples shall be manufactured with a unit of material from the first batch intended for use on the project. Samples (4 total) shall be at least 2 inch x 2 inch square and 1/2 inch thick, with troweled top surfaces, identified with manufacturer's batch numbers, date and location of preparation.

G. The Owner may, at his discretion, direct the Contractor to prepare and submit Field Samples of sealant materials used on the job site during the work. Samples shall be manufactured on site, from a unit of material from the same batch in use that day. Samples (2 total) shall be at least 2 inch x 2 inch square and 1/2 inch thick, with troweled top surfaces, identified with manufacturer's batch numbers, date and location on the project where the sealants represented in the samples were installed. Up to three sets of Field Samples may be requested on this

project in the Base Bid.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to job site in sealed, undamaged containers. Each container shall be identified with material's name, date of manufacture and lot number.

B. Only those materials being used during any one work shift may be stored in the Work area. Coordinate location of storage area with the Owner.

C. Sealant materials shall be kept sealed when not in use.

D. Storage and handling of materials shall conform to the requirements of the applicable safety regulatory agencies.

E. Storage areas shall be heated or cooled as required for maintaining the product temperatures within the range recommended by the manufacturer.

1.7 PROJECT CONDITIONS

A. Install sealant materials in strict accordance with all safety and weather conditions required by product literature or as modified by applicable rules and regulations of Local, State and Federal authorities having jurisdiction.

B. Fumes and dust shall be controlled to prevent harmful or undesirable effects in surrounding areas.

C. When toxic or flammable solvents are used, the Contractor shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.

1.8 SEQUENCING

A. Install sealants after any required concrete repairs.

B. Install sealants after adequate cure of concrete repairs. Confirm required cure time with sealant manufacturer.

C. Install all sealants prior to installation of membrane systems.

1.9 WARRANTY

A. New exposed sealant work shall be warranted for a period of five years against defects due to installation or material deficiencies, including but not limited to excessive softness, excessive entrapped air in cured cross sections, disbonding, cohesive failure, leakage and ultra violet exposure degradation.

B. Sealant work under membrane systems shall be warranted as part of and included in the membrane system guarantee. Refer to Section 071800.

PART 2 PRODUCTS

2.1 SEALANTS

A. Garage Sealants

1. Approved urethane sealants:

a. Sika 2c NS-TG by Sika Corp.

b. Dymeric 240FC by Tremco, Inc.

c. Isoflex 880/881 by Lymtal International.

2. Minimum compression or extension of 25% of the nominal joint width without adhesive or cohesive failure.

3. Primer(s) as recommended by sealant manufacturer for each substrate.

4. Cove sealants shall be gun grade (non-sag).

5. For joint edge repairs refer to Specification Section 030100.

B. Façade Sealants

1. Approved silicone sealants:

a. 795 silicone perimeter sealant by Dow Corning.

b. SilPruf SC2000 sealant by G.E.

2. Primer as recommended by sealant manufacturer.

2.2 ACCESSORIES

A. Backer Rod: Backer Rod shall be closed-cell, polyethylene in sizes to maintain 25 percent compression. Backer rod shall not be used except where indicated on the Drawings or unless approval for each intended application location is obtained from the Owner. Alternative use of bond breaker tape in size appropriate for the width of joint and approved for use by the sealant manufacturer will be allowed on a case-by-case basis.

B. Bond Breaker Tape: Polyethylene tape or other approved plastic tape as recommended by sealant manufacturer. Bond Breaker Tape shall not be used except where indicated on the Drawings or unless approval for each intended application location is obtained from the Owner.

PART 3 EXECUTIONS

3.1 GENERAL

A. Remove existing sealants in joint cavities and clean surfaces to remove residue. Rout any new joint cavities scheduled for new sealant. Sandblast or shot blast all joint cavities scheduled for new sealant and blow clean with oil-free and water-free compressed air within 24 hours of sealant installation. Areas, including cove sealant locations, inaccessible to shotblasting must be sandblasted. If approved by the Engineer in advance joint cavities may be prepared by abrasive wheel (zec wheel) cleaning in lieu of sandblasting or shotblasting.

B. Primer shall be used for all sealant installations regardless of manufacturer's requirements, unless a letter from the manufacturer states use of a primer is detrimental. Allow primer to cure per manufacturer's recommendation prior to sealant installation.

C. Joint cavities that become contaminated by dirt or moisture after initial shotblasting, sandblasting or abrasive wheel preparation, shall be cleaned again and blown down with oil-free and water-free compressed air at no additional cost to the Owner.

D. Modify the depth of existing joints by additional routing or positioning of backer rod to maintain a width to depth ratio of 2 to 1 unless otherwise noted on the drawings. At no location is the sealant width allowed to exceed 1-1/2".

E. In areas indicated on the Drawings or otherwise directed by the Owner, remove existing failed and deteriorated sealant, all existing cove sealants and existing sealants to be covered by urethane traffic membrane.

F. Reinstall new sealant where existing sealant is removed. Refer to Article 3.2 for new sealant installation requirements in membrane areas and Article 3.3 for repair sealant requirements.

G. Where necessary, square up joint edges and execute repairs with epoxy repair mortar in accordance with manufacturer's recommendations.

H. Rout cracks per details in surfaces at locations directed by the Owner.

I. Rout joints per details.

3.2 NEW SEALANT

A. Refer to Article 3.1 for joint cavity preparation requirements.

B. Blow down joint cavity and apply primer as recommended by the sealant manufacturer.

C. Install backer rod or bond-breaker tape where required. Vary size of backer rod if necessary based on field conditions per Article 2.1.F or Article 2.2.F.

D. Install sealant as indicated in details on the Drawings.

3.3 CLEAN-UP

A. During the progress of the Work, remove from the project all discarded coating materials, rubbish, cans and rags.

B. All sealant material and drops shall be completely removed from hardware, adjacent floor areas, metal work, etc., and the premises shall be left clean and in orderly condition.

C. All hardware, adjacent floor areas, metal work, etc., and the general premises shall be left clean and free of all construction dust, dirt and debris. This includes removal of all dust from pipes, etc., which resulted from work specified herein.

D. Repaint in matching color all curbs, columns, walls, etc., where existing paint was removed during preparation for sealant installation. Refer to Section 321723.

E. Empty containers shall be removed from the garage at the end of each working day. All cloths soiled with coating that might constitute a fire hazard shall be placed in suitable metal safety containers or shall be removed from the building at the end of each working day. Special care shall be taken in storage or disposal of flammable materials. Comply with health and fire regulations.

END OF SECTION

DIVISION 9 – FINISHES

SECTION 099100

HIGH PERFORMANCE COATINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. All labor, material, equipment, special tools and services required to clean and/or prepare surfaces and apply new coatings, as required by the Drawings and this Specification, including but not limited to the following:

a. Complete cleaning, surface preparation, primer installation where necessary and new coating on steel and metal surfaces.

b. Temporary protection of doors, curtain walls, and interior spaces during construction. Refer to Specification Section 015600.

c. Provide access to work area for Owner representative or Engineer.

B. Related Sections:

1. Barriers – Section 015600

1.2 REFERENCES

A. ASTM D 16 – Terminology Related to Paint, Varnish, Lacquer, and Related Products.

B. Structural Steel Painting Council (SSPC): SSPC-SP 1 – Solvent Cleaning.

C. Structural Steel Painting Council (SSPC): SSPC-SP 3 – Power Tool Cleaning.

1.3 DEFINITIONS

A. "Coating" as used herein means all paint systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

B. “Dry Film Thickness” as used herein means the thickness of a coat in a fully cured state measured in mils (1/1000 inch).

C. “Well-adhered” as used herein means materials that cannot be removed by lifting with a dull putty knife.

1.4 SUBMITTALS

A. Submit manufacturer's technical information including coating label analyses and application instructions.

B. Submit complete line of manufacturer’s color samples for each product.

C. Letter of approval per Paragraph 1.5.A.

D. Prior project experience per Paragraph 1.5.B.

E. Name and resume of persons per Paragraph 1.5.C.

F. Manufacturer’s sample warranty.

1.5 QUALITY ASSURANCE

A. The contractor shall be a certified installer by the manufacturer.

B. The contractor shall be approved by the manufacturer and shall have no less than (5) years experience in performance of similar work in size and complexity.

C. All work under this Section shall be under the immediate control of the Contractor's superintendent(s) experienced in this type of work. The person(s) shall have supervised three prior projects of similar magnitude and type, and shall be present during all operations. This person(s) shall be approved by the Owner.

D. Regulatory Requirements:

1. Comply with applicable laws, ordinances, and the Local Building Code.

E. Provide access to work area for Owner representative or Engineer to inspect quality of work, progress, and field conditions. Access to be completed during normal working hours.

F. Color to match existing. Provide sample for review and approval by Owner.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material.

2. Fed. Spec. number, if applicable.

3. Manufacturer's stock number and date of manufacture.

4. Manufacturer's name.

5. Contents by volume, for major pigment and vehicle constituents.

6. Thinning instructions.

7. Application instructions.

8. Color name and number.

B. Storage and Protection:

1. Protect materials in a dry place, off ground and under cover to protect them from moisture and other damage.

2. Do not use materials showing evidence of water or other damage.

3. Storage and handling of materials shall conform to the requirements of the applicable safety regulatory agencies.

4. Storage areas shall be heated or cooled as required to maintain the temperatures within the range recommended by the manufacturer.

1.7 PROTECTION

A. Place coating or solvent soaked rags, waste, or other materials which might constitute a fire hazard in metal containers and remove from premises at the close of each day's work.

B. Protect the work of all other trades against damage, marking or injury by suitable covering during the progress of the coating and finishing work. Repair any damage done.

C. Protect and filter debris and chemicals from entering storm drains. Direct water runoff from all cleaning processes to the filtration system before allowing it to enter the storm drain system.

D. During all cleaning operations, coordinate drain protection with the local municipality.

1.8 PROJECT CONDITIONS

A. Environmental requirements:

1. Owner shall have the existing coating system tested by an independent laboratory to confirm removal of the existing system will not require abatement.

2. Install coating materials in strict accordance with all safety and weather conditions required by product literature or as modified by applicable rules and regulations of Local, State and Federal authorities having jurisdiction.

3. Fumes and dust shall be controlled to prevent harmful or undesirable effects in surrounding areas. Do not allow fumes, dirt, dust or debris to enter building.

4. When toxic or flammable solvents are used, the Contractor shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.

5. Apply water base coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 Deg. F. (10 Deg. C.) and 90 Deg. F.

(32 Deg. C.), unless otherwise permitted by coating manufacturer's printed instructions.

6. Apply solvent-thinned coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 45 Deg. F. (7 Deg. C.) and 95 Deg. F. (35 Deg. C.), unless otherwise permitted by coating manufacturer's printed instructions.

7. Do not apply coating in snow, rain, fog or mist; or when relative humidity exceeds 85 percent or to damp or wet surfaces unless otherwise permitted by coating manufacturer's printed instructions.

8. Apply coating to surfaces that are cured and dry per manufacturer’s tolerances.

1.9 WARRANTY

A. Coating System Warranty:

1. The applicator shall furnish a (5) year warranty to the Owner for all types of new coating installed. New coating work shall be warranted against defects due to installation, including but not limited to debonding and inadequate preparation.

a. All required testing and quality assurance operations necessary to furnish warranty are Contractor and manufacturer’s responsibility.

2. The manufacturer shall furnish a (5) year warranty to the Owner for all types of new coating installed. New coating work shall be warranted against material defects, including but not limited to debonding, cohesive failure, cracking, and ultra violet exposure degradation.

a. All required testing and quality assurance operations necessary to furnish warranty are Contractor and manufacturer’s responsibility.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Sherwin Williams.

B. Tnemec Company.

C. ICI Paints.

2.2 MATERIALS

A. No lead-based products are permitted.

B. Use no thinners other than those specified by manufacturer.

C. Use only paints and coatings that are compatible with concrete and previously coated surfaces.

D. Use only primers and undercoats that are suitable for each surface to be covered and that are compatible with finish coating required.

E. Notify Engineer in writing of any anticipated problems in using coating systems specified on existing substrates.

F. Provide cleaners for removal of loose paint, dirt, and pollutants; which are compatible with all primers, intermediate coats, and finish coat. Thoroughly rinse all clean agents before applying primer or finish coats. Pre-approve cleaning agents with paint manufacturer.

G. All products must be provided by a single manufacturer.

H. Color shall be formulated to match original-condition coating system, by referencing an area not subjected to direct UV exposure and weathering. The University shall have the opportunity to review and approve the color formulation via mock-up prior to the Contractor purchasing coating materials for the entire project.

2.3 MATERIALS AND PROCEDURES

A. General Cleaning Requirements:

1. All existing garage area drains shall be clear and protected prior to beginning any work.

2. All biological growth must be removed prior to coating.

3. All efflorescence, lime run, and surface contaminants should be removed prior to application of new coating.

4. Existing coating must be adhered to the substrate per the manufacturer's requirements. Manufacturer shall approve the surface preparation and existing conditions before the contractor applies coating to ensure the product warranty will be honored.

B. Previously Coated or Rusted Exterior Metal (and galvanized metal): Materials and procedures are listed in order of process/application. Apply per manufacturers recommendations.

1. Surface Preparation:

a. Chemical Etch galvanized metals with the following (or approved equal) per manufacturer's instructions.

1) Great Lakes Laboratories Clean 'n Etch.

2) Henkel's Galvaprep 5.

2. Approved manufacturer's systems:

   a. Sherwin Williams:

      1) Primer: One (1) Coat Macropoxy 646 - 5.0 to 10.0 mils DFT.

      2) Acrylic Finish Coat: Two (2) Coats: Shercryl HPA – 2.0 to 4.0 mils DFT.

   b. Tnemec:

      1) Primer: One (1) Coat: Chembuild Series 135; 4.0 to 6.0 mils DFT.

      2) Acrylic Finish Coat: Two (2) Coats: Endura-Tone Series 1028; – 2.0 to 4.0 mils DFT.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine surfaces intended to receive coatings and note conditions or defects that will adversely affect the execution and/or quality of the work.

B. Starting of cleaning and coating work will be construed as applicator's acceptance of surfaces and conditions within any particular area.

C. Notify Owner and A/E in writing of any such conditions or defects. Do not begin work until unsatisfactory conditions are corrected. Failure to notify Owner and A/E prior to beginning work constitutes acceptance by Contractor of the surfaces and conditions under which the work is to be performed, and acceptance by Contractor for the performance of the work.

3.2 PREPARATION

A. Protection

1. Provide adequate protection of all surrounding surfaces not intended to receive coating from damage due to preparation, cleaning or coating procedures. Repair damage at no cost to the Owner.

2. Program coating so that construction dirt, dust, and debris will not fall onto wet, newly coated surfaces.

3. When toxic or flammable solvents are used, the coating contractor shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.

4. Provide the necessary protection to contain all dust, dirt, debris and coating chips within work area. Do not allow to migrate into building interior spaces or storm drain system.

5. Provide "Wet Paint" signs as required to protect newly coated finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of coating operations.

B. Surface Preparation

1. Perform preparation and cleaning procedures in accordance with coating manufacturer's instructions and as herein specified, for each particular substrate condition.

2. Remove all surface contamination such as chalk, loose coating, mill scale dirt, foreign matter, rust, rust stains, mold, mildew, mortar, efflorescence, weld splatter and slag, and sealers from surfaces to be coated.

3. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-coated, or provide surface-applied protection prior to surface preparation and coating operations. Remove, if necessary, for complete coating of items and adjacent surfaces. Following completion of coating of each space or area, reinstall removed items.

4. Clean existing steel with missing or loose coating to SSPC-SP 3 power tool cleaning condition, then solvent wipe surfaces per SSPC-SP 1 prior to primer application. Galvanized metals to be chemical etched prior to primer application.

5. Do not field coat the following work:

a. Sealant Joints

b. Prefinished and natural finished items including but not limited to prefinished equipment, acoustic materials, finished mechanical and electrical equipment such as light fixtures and grilles.

c. Non-ferrous metal surfaces including aluminum, stainless steel, chromium plate, copper, and tern coated stainless steel except where noted coated.

d. Operating parts and labels.

C. MATERIALS PREPARATION

1. Mix and prepare coating materials in accordance with manufacturer's directions.

2. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using. Continuously agitate zinc-rich primers.

3. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of coating in a clean condition, free of foreign materials and residue.

3.3 APPLICATION

A. General:

1. Apply coating in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

2. Apply additional coats when undercoats, stains, or other conditions show through final coat of coating, until coating film is of uniform finish, color, and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

3. Generally, coating surfaces behind movable equipment same as similar exposed surfaces. Coating surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.

4. Do not coat over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable coating film.

B. Scheduling Coating:

1. All caulking and sealants shall be in place and thoroughly cured prior to application of coatings.

2. Apply first-coat material to surfaces that have been cleaned, pretreated, or otherwise prepared for coating within 8 hours of completion of preparation and prior to formation of flash rust.

3. Apply finish coats within 48 hours after completion of cleaning efforts. Areas not coated within this time frame shall be solvent-wiped to SSPC-SP 1 condition.

4. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of coating does not cause lifting or loss of adhesion of the undercoat.

5. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

C. Application:

1. Apply prime coat of materials which is required to be coated or finished, and which has not been prime coated by others.

2. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

3. Pigmented (Opaque) Finishes: Complete cover to provide an opaque, smooth

surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

4. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish, or recoat work not in compliance with specified requirements.

3.4 CLEANING

A. During progress of work, remove from site discarded coating materials, rubbish, cans, and rags at end of each work day.

B. Upon completion of coating work, clean window glass and other coating-spattered surfaces. Remove spattered coating by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

3.5 SCHEDULES

A. Coating colors shall be as indicated below:

1. Final colors to be selected by University. Design intent is to match original paint colors.

END OF SECTION

DIVISION 32 - SITE WORK

SECTION 321723

PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Line striping.

B. Directional arrows and text.

1.2 RELATED SECTIONS

A. Section 030100 - Concrete Repairs.

1.3 SUBMITTALS

A. Manufacturer product data sheets.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to job site in sealed, undamaged containers. Each container shall be identified with material name, date of manufacture and batch number.

B. Only those materials being used during any one work shift may be stored in the Work area. Coordinate location of storage area with the Owner.

C. Marking materials shall be kept sealed when not in use.

D. Storage and handling of materials shall conform to the requirements of the applicable safety regulatory agencies.

E. Storage areas shall be heated or cooled as required maintaining the temperatures within the range recommended by the manufacturer.

1.5 WARRANTY

A. The Contractor shall warrant the pavement marking media from chipping and peeling for a period of two years.

PART 2 PRODUCTS

2.1 MATERIALS – PAINT

A. Approved Products:

1. Concrete surfaces:

a. Fast-Dry Acrylic Waterborne Traffic Marking Paint, by Aexcel Corporation.

b. Set Fast Acrylic Aisle Marking Paint, by Sherwin Williams.

2. Membrane surfaces:

   a. Acrylithane HS2 by Neogard

   b. Isoflex 630 by Lymtal International

3. Color to match existing. Provide sample for review and approval by Owner.

PART 3 EXECUTIONS

3.1 EXAMINATION

A. The Contractor, prior to existing pavement marking removal, shall make drawings, take photographs, establish reference lines or perform other documentation necessary to ensure that existing pavement marking layout is duplicated upon completion of the Work specified in this Section.

3.2 APPLICATION

A. New Pavement Markings:

1. Paint shall be applied within 36 hours of completion of membrane top coat in accordance with the manufacturer's specifications and written instructions.

2. The surface to be painted shall be clean and dry, free of dust, debris and other loose materials.

3. Paint shall be spray applied in 2 solid coats with no thin or bare spots in either coat. First coat shall be tinted to differentiate between the second coat.

4. New pavement markings shall be straight and neat. Striping shall be geometrically accurate and uniform throughout the garage. Discrepancies shall be corrected at no additional cost to the Owner.

5. Pavement marking work shall be coordinated with concrete repairs. Perform pavement marking on new concrete only after it has cured.

6. Traffic shall not be permitted on new pavement markings until media has properly cured per manufacturer's requirements.

7. New pavement markings shall line up with existing markings on vertical surfaces; otherwise, Contractor shall remove and replace markings on vertical surfaces.

3.3 CLEAN-UP

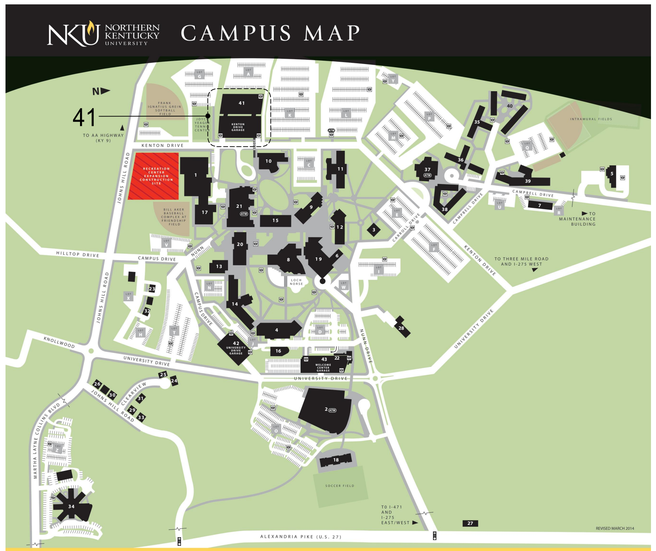
A. After each day’s work, remove containers, rubbish and rags.

B. Remove drips, overspray and spillage of material from all surfaces.

END OF SECTION

NORTHERN KENTUCKY UNIVERSITY

KENTON DRIVE GARAGE REPAIRS



DRAWING INDEX:

GENERAL NOTES:

CODES AND DOCUMENTS

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL LAWS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND REGULATIONS ADOPTED PURSUANT THERETO.
2. ALL WORK SHALL CONFORM TO THE CURRENT KENTUCKY BUILDING CODE AND ALL LOCAL REQUIREMENTS.
3. ASCE/SEI 7-10, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
4. ACI 301-16, SPECIFICATIONS FOR STRUCTURAL CONCRETE AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
5. ANSI/AISC 303-16, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
6. ANSI/AWS D1.1, STRUCTURAL WELDING CODE - STEEL.
7. ADDITIONAL TECHNICAL SPECIFICATIONS IN THE PROJECT MANUAL.
8. A SEPARATE BOUND PROJECT MANUAL DATED MARCH, 2019 EXISTS AND IS PART OF THE CONTRACT DOCUMENTS. GENERAL CONDITIONS, TECHNICAL INFORMATION, AND REQUIREMENTS ARE INCLUDED IN THE PROJECT MANUAL. CLEARLY ORGANIZED AND DESCRIBED IN SECTION CONSISTENT WITH NORMALLY ACCEPTED CONSTRUCTION SPECIFICATION INSTITUTE FORMATS. THE CONTRACTOR IS TOTALLY RESPONSIBLE FOR ALL REQUIREMENTS LISTED IN THE PROJECT MANUAL, BUT NOT NECESSARILY INCLUDED IN THE DRAWINGS.
9. ALL DETAILS, SECTIONS AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE, UNLESS OTHERWISE NOTED.
10. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.

COORDINATION AND CONSTRUCTION

1. THE SPECIFICATIONS AND DRAWINGS COMPLEMENT EACH OTHER. BOTH SHALL BE THOROUGHLY REVIEWED BEFORE PROCEEDING WITH ANY WORK. THE CONTRACTOR SHALL COMPLETE ALL WORK REQUIRED AND NECESSARY FOR THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, DRAWINGS, AND REFERENCED STANDARDS.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT FOR SUCCESSFUL COMPLETION OF THIS PROJECT.
3. CONTRACTOR SHALL APPLY, SECURE, AND PAY FOR ALL REQUIRED LOCAL PERMITS, FEES, LICENSES, AND APPROVAL FOR COMPLETION OF THE WORK.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS AT THE SITE PRIOR TO SUBMITTING SHOP DRAWINGS AND FABRICATING ANY WORK. IMMEDIATELY REPORT ANY DISCREPANCIES TO THE A/E.
5. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
6. NEW CONSTRUCTION WORK SHALL ALIGN WITH AND MATCH EXISTING CONSTRUCTION WORK EXCEPT WHERE OTHERWISE DIMENSIONED OR DETAILED.
7. ANY ADJACENT, EXISTING FINISHES AND/OR EQUIPMENT DAMAGED DURING DEMOLITION OR CONSTRUCTION WORK SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
8. CONTRACTOR WILL COORDINATE ALL CONSTRUCTION ACTIVITIES, SCHEDULE, AND PHASING WITH THE OWNER AND THE A/E.
9. CONTRACTOR SHALL FURNISH THE OWNER AND A/E ACCESS TO ALL WORK AREAS DURING NORMAL WORKING HOURS AND WHEN WORK IS BEING PERFORMED.
10. CONTRACTOR SHALL DISPOSE OF ALL DEBRIS OFF SITE IN A LAWFUL MANNER.

SAFETY

1. PROJECT SAFETY IS CONTRACTORS RESPONSIBILITY. CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE PATRONS, STAFF, GENERAL PUBLIC, WORKMEN AND STRUCTURE DURING CONSTRUCTION.
2. CONTRACTOR, AT HIS OWN EXPENSE, SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES SHALL BE USED AND INSPECT THE SAME IN THE FIELD. OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVE OF A/E SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
3. THE DUTY OF THE A/E TO CONDUCT CONSTRUCTION REVIEW OF CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF ADEQUACY OF CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

SITE REQUIREMENTS

1. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
2. CONSTRUCTION ACTIVITIES WILL NEED TO BE COORDINATED WITH THE OWNER.
3. CONTRACTOR SHALL PROVIDE ALL SIGNAGE REQUIRED TO CLEARLY ESTABLISH THE WORK AREAS AS RESTRICTED AND OFF LIMITS TO THE PUBLIC. ALL SIGNS SHALL BE PROFESSIONALLY PREPARED AND REVIEWED IN ADVANCE BY THE OWNER.
4. CONTRACTOR SHALL PROVIDE ALL SIGNAGE AND ADDITIONAL TRAFFIC CONTROL METHODS TO SAFELY REROUTE PEDESTRIAN AND VEHICULAR TRAFFIC AROUND WORK AREAS. IF NECESSARY PROVIDE TRAFFIC CONTROL PERSONNEL.
5. CONTRACTOR SHALL PROVIDE DUST AND DEBRIS CONTROL MEASURES TO ENSURE ALL DUST AND DEBRIS GENERATED BY THE WORK REMAINS WITHIN THE WORK AREA AND DOES NOT POSE HAZARDOUS OR OBJECTIONABLE CONDITIONS FOR STUDENTS, EMPLOYEES, AND THE GENERAL PUBLIC.
6. CONTRACTOR SHALL PROTECT ALL LANDSCAPING WHICH INCLUDE BUT ARE NOT LIMITED TO PAVERS, PAVING (CONCRETE AND ASPHALT), TREES, SHRUBS, BUSHES, GRASS, SITE FEATURES (SITE WALLS, BOLLARDS).
7. THE CONTRACTOR SHALL MAINTAIN A CLEAN AND ORDERLY SITE AND STORAGE AREA.

THP
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Cincinnati, Ohio 45202
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ISSUES
1 03/15/2019 FOR BID

REVISIONS

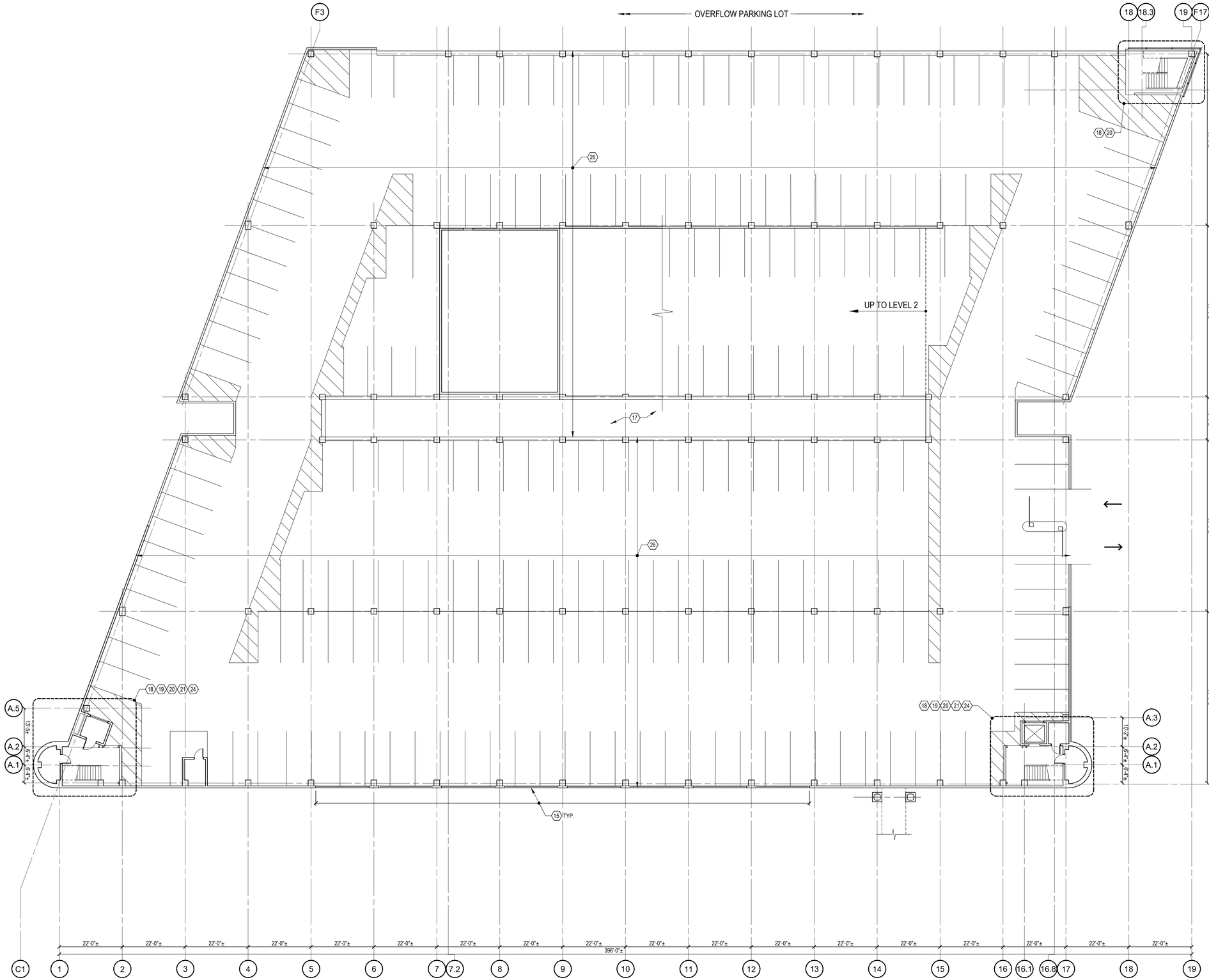
DRAWN BY: J.P. HOLMAN
ENGINEER: R.J. KENNEDY
CHECKED BY: W.M. JUDD

KENTON DR. GARAGE REPAIRS

DRAWING TITLE
TITLE SHEET

JOB NUMBER 18565.00
DATE 03/15/2019

DRAWING NUMBER
001



KENTON DR. GARAGE

LEVEL ONE PLAN

1/16" = 1'-0"

1 / 101

NORTH

DRAWING NOTES:

A. ALL KEY NOTES ARE TYPICAL, UNLESS NOTED OTHERWISE.

B. ALL WORK ITEMS NOTED ARE LUMP SUM, UNLESS NOTED OTHERWISE.

C. SURVEY WORK FOR UNIT COST REPAIR ITEMS. CONFIRM ALL UNIT COST REPAIRS WITH A/E PRIOR TO STARTING WORK.

D. HEAVY EQUIPMENT IS NOT PERMITTED IN OVERFLOW PARKING LOT WEST OF THE GARAGE WITHOUT OWNER APPROVAL.

KEY NOTES:

1. PRIOR TO MEMBRANE AND WATER-REPELLENT APPLICATION, SURVEY ALL CONCRETE SLAB SURFACES TO LOCATE POSSIBLE SHALLOW SLAB AND JOINT EDGE CONCRETE REPAIR NEEDS. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM THE FOLLOWING CONCRETE SLAB REPAIRS.
   A. DEEP CONCRETE SLAB REPAIRS PER DETAIL 1 ON DRAWING 201.
   B. JOINT EDGE REPAIRS PER DETAIL 2 ON DRAWING 201.
2. WITHIN SHADED AREA, PREPARE SURFACES AND PROVIDE NEW HEAVY DUTY TRAFFIC MEMBRANE SYSTEM. REFER TO TYPICAL MEMBRANE DETAILS ON DRAWING 401 AND SPECIFICATION SECTION 071800. PERFORM RANDOM CRACK REPAIRS AS PART OF LUMP SUM MEMBRANE WORK.
3. PREPARE CONCRETE DECK SURFACES AT ALL SUPPORTED LEVELS NOT SCHEDULED FOR MEMBRANE COATING, INCLUDING RAMP DOWN TO GRADE LEVEL, AND PROVIDE NEW PENETRATING CONCRETE WATER REPELLENT. REFER TO SPECIFICATION SECTION 07 19 00.
4. REMOVE AND REPLACE EXISTING EXPANSION JOINT WING SEAL. REFER TO EXPANSION JOINT DETAIL 6 ON DRAWING 301.
5. PRIOR TO NEW EXPANSION JOINT INSTALLATION, SURVEY CONCRETE SURFACES TO LOCATE DAMAGED BLOCKOUT. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM WING SEAL BLOCKOUT REPAIRS PER DETAIL 5 ON DRAWING 201.
6. REMOVE AND REPLACE EXISTING EXPANSION JOINT COMPRESSION SEAL AROUND STAIR TOWER. REFER TO EXPANSION JOINT DETAIL 7 ON DRAWING 301. REMOVE EXISTING COVER PLATES AS NECESSARY TO PERFORM WORK.
7. REMOVE AND REPLACE EXISTING VERTICAL EXPANSION JOINT SEAL AT WALL. REFER TO DETAIL 7 ON DRAWING 301. EXTEND COMPRESSION JOINT SEAL OVER TOP OF WALL AND 6" DOWN BACKSIDE.
8. SURVEY CONCRETE SLAB SURFACES TO LOCATE RANDOM CRACKS TO BE REPAIRED. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM RANDOM CRACK REPAIRS PER DETAIL 2 ON DRAWING 301. NOTE: RANDOM CRACK REPAIRS AT MEMBRANE AREAS ARE NOT PART OF UNIT PRICE WORK AND SHOULD BE INCLUDED IN LUMP SUM MEMBRANE WORK EFFORTS.
9. REMOVE AND REPLACE ALL CONSTRUCTION JOINT SEALANTS WITHIN THE GARAGE. REFER TO DETAIL 1 ON DRAWING 301.
10. PROVIDE NEW COVE SEALANT AT ALL VERTICAL PROJECTIONS WITHIN THE GARAGE INCLUDING WALLS, COLUMNS, PIPES, ETC. REFER TO DETAILS 3 AND 4 ON DRAWING 301.
11. REMOVE AND REPLACE VERTICAL WALL JOINT SEALANTS. WRAP SEALANTS UP AND OVER TOP OF WALLS. REFER TO SPECIFICATION SECTION 079200.
12. PROVIDE NEW ELASTOMERIC COATING AT ALL EXPOSED SLAB EDGES AND BEAM ENDS. COLOR TO BE SELECTED BY THE OWNER. REFER TO SPECIFICATION SECTION 099100. PRIOR TO COATING, SURVEY ALL EXISTING PT TENDON GROUT POCKETS FOR POSSIBLE DAMAGE. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, PER LOCATION, REMOVE AND REPLACE DAMAGED GROUT WITH NEW EPOXY GROUT. REFER TO SPECIFICATION SECTION 030100.
13. EXISTING CARBON FIBER REINFORCED BEAM. PREPARE CARBON FIBER SURFACES, PRIME AND COAT WITH INTUMESCENT PAINT. REFER TO SPECIFICATION SECTION 099100. COLOR TO BE SELECTED BY THE OWNER.
14. EXISTING VEHICULAR GUARD RAIL. PREPARE ALL STEEL SURFACES INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
15. EXISTING METAL SECURITY GRILLS. PREPARE ALL STEEL SURFACES INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
16. EXISTING PEDESTRIAN BRIDGE. PREPARE ALL STEEL FRAMING SURFACES AND SECURITY GRILLS ALONG BOTH SIDES OF BRIDGE, INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
17. REMOVE ALL VEGETATION FROM STRUCTURE AND DISPOSE OF OFF SITE. NOTE: VEGETATION EXTENDS INTO GARAGE AT MULTIPLE LOCATIONS.
18. SURVEY ENTIRE STAIRWELL TO LOCATE DAMAGED CONCRETE STEPS AND LANDINGS. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM FOLLOWING CONCRETE STAIR REPAIRS.
   A. STAIR TREAD REPAIR PER DETAIL 3 ON DRAWING 201.
   B. SHALLOW SLAB REPAIRS SIMILAR TO DETAIL 1 ON DRAWING 201.
   C. OVERHEAD CORNER REPAIRS PER DETAIL 4 ON DRAWING 201.
19. WITHIN STAIR/ELEVATOR TOWER, PREPARE AND PROVIDE NEW RECOAT PAINT SYSTEM AT ALL TUBE STEEL FRAMING INCLUDING COLUMNS, BOLTED CONNECTIONS AND SUPPORT ANGLES. REFER TO SPECIFICATION SECTION 099100.
20. WITHIN STAIR/ELEVATOR TOWER, PREPARE AND PROVIDE NEW RECOAT PAINT SYSTEM AT ALL METAL RAILING SURFACES. REFER TO SPECIFICATION SECTION 099100.
21. PRIOR TO RAIL PAINTING, REMOVE EXISTING GROUT AT RAIL POST EMBEDMENTS . UPON COMPLETION OF RAIL PAINTING, PROVIDE NEW EPOXY GROUT AND COVE SEALANT. REFER TO DETAIL 6 ON DRAWING 201.
22. TRIM ALL CURTAIN WALL AND WINDOW GASKETS AROUND STAIR/ELEVATOR TOWER AND WET SEAL GLASS TO FRAME INTERFACE WITH NEW SILICONE SEALANT. REFER TO DETAIL 8 ON DRAWING 301.
23. REMOVE AND REPLACE ALL EXISTING SEALANTS AROUND PERIMETER OF CURTAIN WALL AND WINDOW FRAMES WITH NEW SILICONE. REFER TO SIMILAR TYPICAL SEALANT DETAILS ON DRAWING 301 AND SPECIFICATION SECTION 079200.
24. AT STAIR/ELEVATOR TOWER SURVEY CMU WALL TO LOCATE TUCK POINTING REPAIR NEEDS. AS A UNIT COST WORK ITEM WHERE DIRECTED, PERFORM TUCK POINTING REPAIRS PER DETAIL 7 ON DRAWING 201.
25. COORDINATE WITH THE OWNER AND PERFORM NECESSARY FLASHING AND ROOFING REPAIRS ON T&M BASIS.
26. RECORD ALL EXISTING PAVEMENT MARKINGS WITHIN THE GARAGE INCLUDING LINE STRIPING, DIRECTION ARROWS, CURB PAINT, ETC. UPON COMPLETION OF WORK, REPAINT ALL EXISTING PAVEMENT MARKINGS WITHIN THE GARAGE. PROVIDE NEW PAVEMENT MARKINGS AT ALL LOCATIONS DISTURBED DURING WORK TO ORIGINAL CONDITION. REFER TO SPECIFICATION SECTION 321723. DO NOT USE PLAN DRAWINGS FOR STRIPING LAYOUT.

LEGEND:

- EXPANSION JOINT
- CONTROL JOINT
- BEAM/GIRDER BELOW
- NEW MEMBRANE SYSTEM
- POUR STRIP

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ISSUES	
1	03/15/2019 FOR BID

REVISIONS

DRAWN BY: J.P. HOLMAN
ENGINEER: R.J. KENNEDY
CHECKED BY: W.M. JUDD

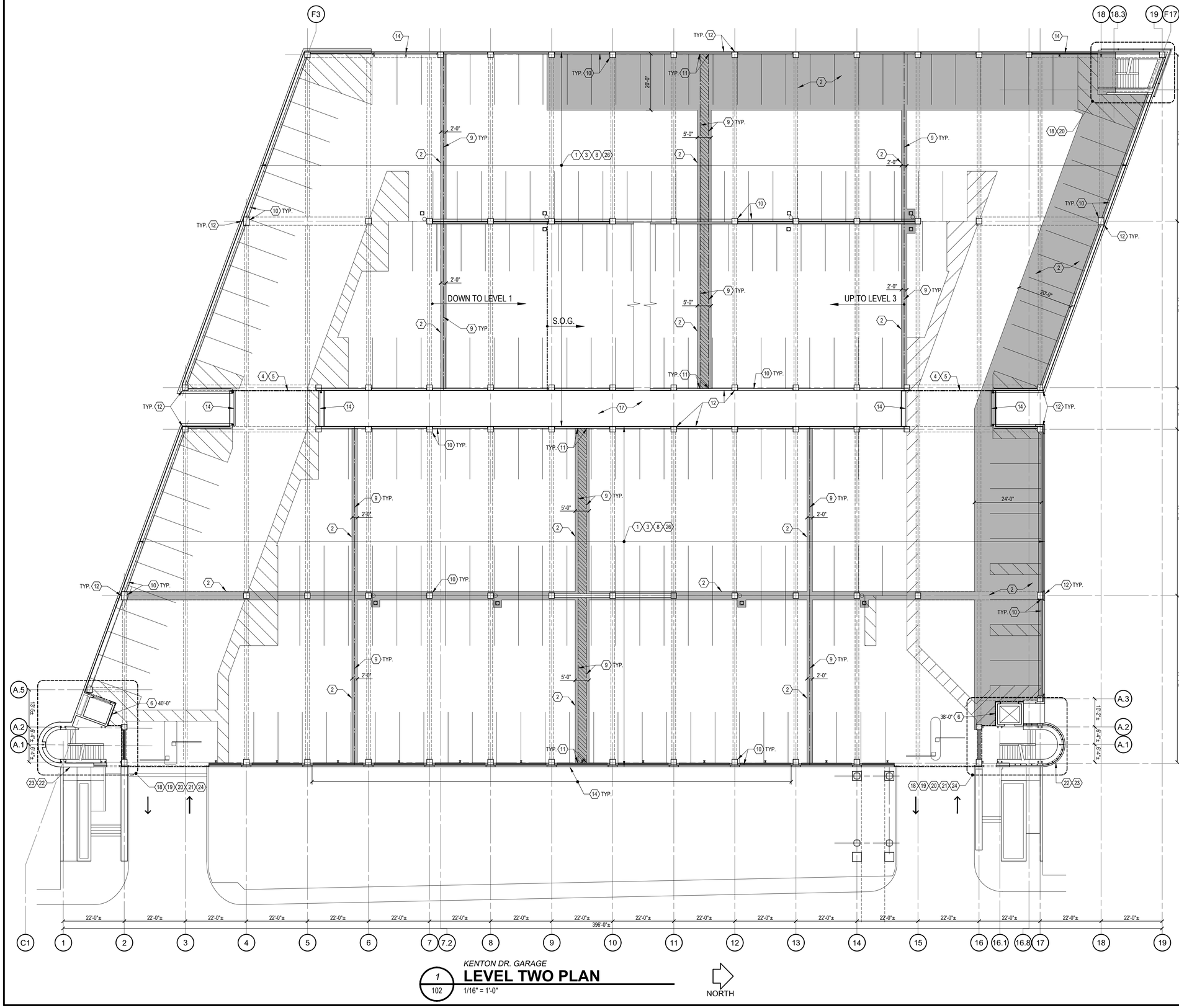
NKU

KENTON DR. GARAGE REPAIRS

DRAWING TITLE: LEVEL ONE PLAN

JOB NUMBER: 18565.00
DATE: 03/15/2019

DRAWING NUMBER: 101



KENTON DR. GARAGE

1 / 102 LEVEL TWO PLAN

1/16" = 1'-0"

NORTH

DRAWING NOTES:

A. ALL KEY NOTES ARE TYPICAL, UNLESS NOTED OTHERWISE.

B. ALL WORK ITEMS NOTED ARE LUMP SUM, UNLESS NOTED OTHERWISE.

C. SURVEY WORK FOR UNIT COST REPAIR ITEMS. CONFIRM ALL UNIT COST REPAIRS WITH A/E PRIOR TO STARTING WORK.

D. HEAVY EQUIPMENT IS NOT PERMITTED IN OVERFLOW PARKING LOT WEST OF THE GARAGE WITHOUT OWNER APPROVAL.

KEY NOTES:

1. PRIOR TO MEMBRANE AND WATER-REPELLENT APPLICATION, SURVEY ALL CONCRETE SLAB SURFACES TO LOCATE POSSIBLE SHALLOW SLAB AND JOINT EDGE CONCRETE REPAIR NEEDS. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM THE FOLLOWING CONCRETE SLAB REPAIRS.
   A. DEEP CONCRETE SLAB REPAIRS PER DETAIL 1 ON DRAWING 201.
   B. JOINT EDGE REPAIRS PER DETAIL 2 ON DRAWING 201.
2. WITHIN SHADED AREA, PREPARE SURFACES AND PROVIDE NEW HEAVY DUTY TRAFFIC MEMBRANE SYSTEM. REFER TO TYPICAL MEMBRANE DETAILS ON DRAWING 401 AND SPECIFICATION SECTION 071800. PERFORM RANDOM CRACK REPAIRS AS PART OF LUMP SUM MEMBRANE WORK.
3. PREPARE CONCRETE DECK SURFACES AT ALL SUPPORTED LEVELS NOT SCHEDULED FOR MEMBRANE COATING, INCLUDING RAMP DOWN TO GRADE LEVEL, AND PROVIDE NEW PENETRATING CONCRETE WATER REPELLENT. REFER TO SPECIFICATION SECTION 07 19 00.
4. REMOVE AND REPLACE EXISTING EXPANSION JOINT WING SEAL. REFER TO EXPANSION JOINT DETAIL 6 ON DRAWING 301.
5. PRIOR TO NEW EXPANSION JOINT INSTALLATION, SURVEY CONCRETE SURFACES TO LOCATE DAMAGED BLOCKOUT. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM WING SEAL BLOCKOUT REPAIRS PER DETAIL 5 ON DRAWING 201.
6. REMOVE AND REPLACE EXISTING EXPANSION JOINT COMPRESSION SEAL AROUND STAIR TOWER. REFER TO EXPANSION JOINT DETAIL 7 ON DRAWING 301. REMOVE EXISTING COVER PLATES AS NECESSARY TO PERFORM WORK.
7. REMOVE AND REPLACE EXISTING VERTICAL EXPANSION JOINT SEAL AT WALL. REFER TO DETAIL 7 ON DRAWING 301. EXTEND COMPRESSION JOINT SEAL OVER TOP OF WALL AND 6" DOWN BACKSIDE.
8. SURVEY CONCRETE SLAB SURFACES TO LOCATE RANDOM CRACKS TO BE REPAIRED. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM RANDOM CRACK REPAIRS PER DETAIL 2 ON DRAWING 301. NOTE: RANDOM CRACK REPAIRS AT MEMBRANE AREAS ARE NOT PART OF UNIT PRICE WORK AND SHOULD BE INCLUDED IN LUMP SUM MEMBRANE WORK EFFORTS.
9. REMOVE AND REPLACE ALL CONSTRUCTION JOINT SEALANTS WITHIN THE GARAGE. REFER TO DETAIL 1 ON DRAWING 301.
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11. REMOVE AND REPLACE VERTICAL WALL JOINT SEALANTS. WRAP SEALANTS UP AND OVER TOP OF WALLS. REFER TO SPECIFICATION SECTION 079200.
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15. EXISTING METAL SECURITY GRILLS. PREPARE ALL STEEL SURFACES INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
16. EXISTING PEDESTRIAN BRIDGE. PREPARE ALL STEEL FRAMING SURFACES AND SECURITY GRILLS ALONG BOTH SIDES OF BRIDGE, INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
17. REMOVE ALL VEGETATION FROM STRUCTURE AND DISPOSE OF OFF SITE. NOTE: VEGETATION EXTENDS INTO GARAGE AT MULTIPLE LOCATIONS.
18. SURVEY ENTIRE STAIRWELL TO LOCATE DAMAGED CONCRETE STEPS AND LANDINGS. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM FOLLOWING CONCRETE STAIR REPAIRS.
   A. STAIR TREAD REPAIR PER DETAIL 3 ON DRAWING 201.
   B. SHALLOW SLAB REPAIRS SIMILAR TO DETAIL 1 ON DRAWING 201.
   C. OVERHEAD CORNER REPAIRS PER DETAIL 4 ON DRAWING 201.
19. WITHIN STAIR/ELEVATOR TOWER, PREPARE AND PROVIDE NEW RECOAT PAINT SYSTEM AT ALL TUBE STEEL FRAMING INCLUDING COLUMNS, BOLTED CONNECTIONS AND SUPPORT ANGLES. REFER TO SPECIFICATION SECTION 099100.
20. WITHIN STAIR/ELEVATOR TOWER, PREPARE AND PROVIDE NEW RECOAT PAINT SYSTEM AT ALL METAL RAILING SURFACES. REFER TO SPECIFICATION SECTION 099100.
21. PRIOR TO RAIL PAINTING, REMOVE EXISTING GROUT AT RAIL POST EMBEDMENTS . UPON COMPLETION OF RAIL PAINTING, PROVIDE NEW EPOXY GROUT AND COVE SEALANT. REFER TO DETAIL 6 ON DRAWING 201.
22. TRIM ALL CURTAIN WALL AND WINDOW GASKETS AROUND STAIR/ELEVATOR TOWER AND WET SEAL GLASS TO FRAME INTERFACE WITH NEW SILICONE SEALANT. REFER TO DETAIL 8 ON DRAWING 301.
23. REMOVE AND REPLACE ALL EXISTING SEALANTS AROUND PERIMETER OF CURTAIN WALL AND WINDOW FRAMES WITH NEW SILICONE. REFER TO SIMILAR TYPICAL SEALANT DETAILS ON DRAWING 301 AND SPECIFICATION SECTION 079200.
24. AT STAIR/ELEVATOR TOWER SURVEY CMU WALL TO LOCATE TUCK POINTING REPAIR NEEDS. AS A UNIT COST WORK ITEM WHERE DIRECTED, PERFORM TUCK POINTING REPAIRS PER DETAIL 7 ON DRAWING 201.
25. COORDINATE WITH THE OWNER AND PERFORM NECESSARY FLASHING AND ROOFING REPAIRS ON T&M BASIS.
26. RECORD ALL EXISTING PAVEMENT MARKINGS WITHIN THE GARAGE INCLUDING LINE STRIPING, DIRECTION ARROWS, CURB PAINT, ETC. UPON COMPLETION OF WORK, REPAINT ALL EXISTING PAVEMENT MARKINGS WITHIN THE GARAGE. PROVIDE NEW PAVEMENT MARKINGS AT ALL LOCATIONS DISTURBED DURING WORK TO ORIGINAL CONDITION. REFER TO SPECIFICATION SECTION 321723. DO NOT USE PLAN DRAWINGS FOR STRIPING LAYOUT.

LEGEND:

- EXPANSION JOINT
- CONTROL JOINT
- BEAM/GIRDER BELOW
- NEW MEMBRANE SYSTEM
- POUR STRIP

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ISSUES
1 — 03/15/2019 — FOR BID

REVISIONS

DRAWN BY: J.P. HOLMAN
ENGINEER: R.J. KENNEDY
CHECKED BY: W.M. JUDD

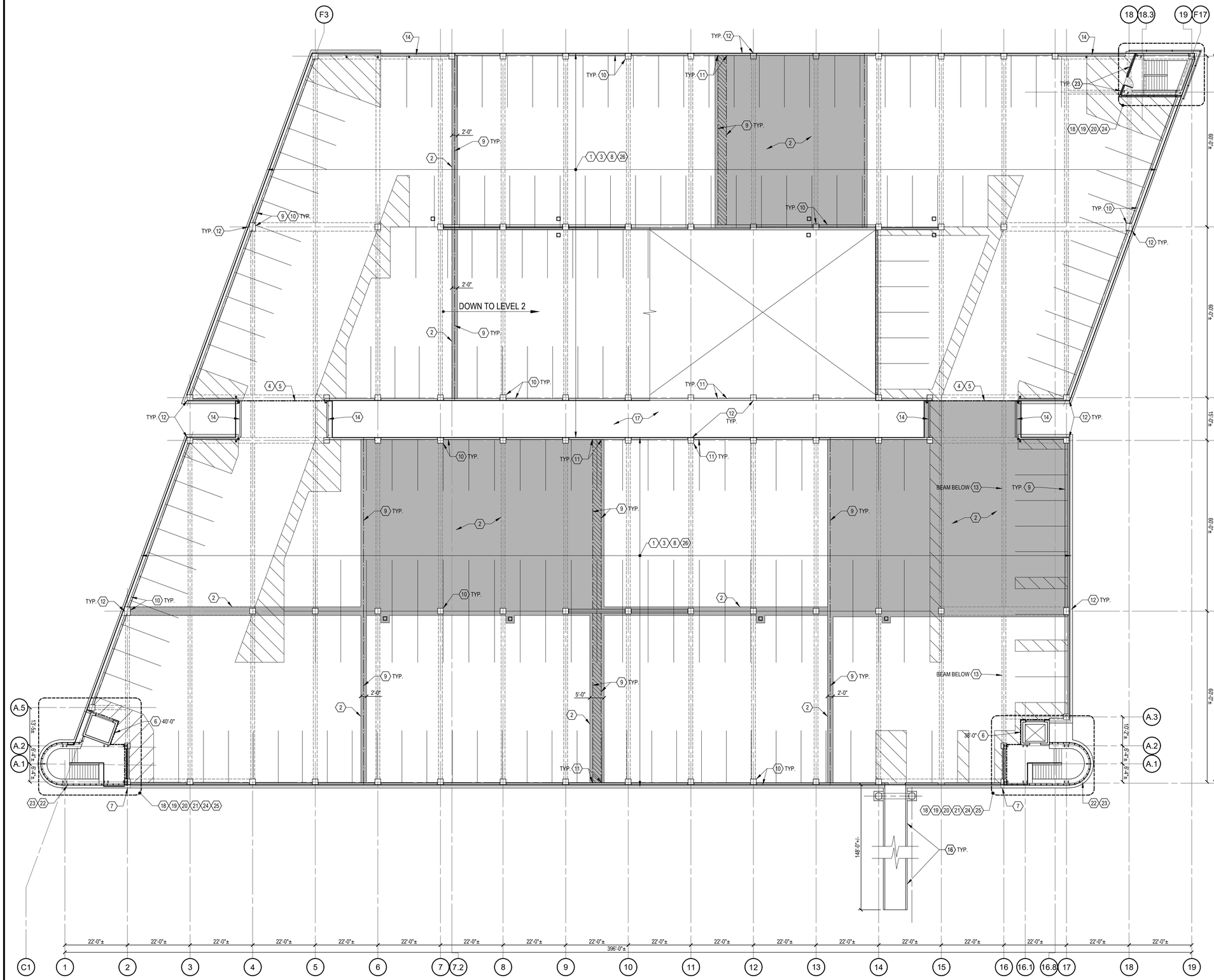
NKU

KENTON DR. GARAGE REPAIRS

DRAWING TITLE: LEVEL TWO PLAN

JOB NUMBER: 18565.00
DATE: 03/15/2019

DRAWING NUMBER: 102



KENTON DR. GARAGE

LEVEL THREE PLAN

1 / 103

1/16" = 1'-0"

NORTH

DRAWING NOTES:

A. ALL KEY NOTES ARE TYPICAL, UNLESS NOTED OTHERWISE.

B. ALL WORK ITEMS NOTED ARE LUMP SUM, UNLESS NOTED OTHERWISE.

C. SURVEY WORK FOR UNIT COST REPAIR ITEMS. CONFIRM ALL UNIT COST REPAIRS WITH A/E PRIOR TO STARTING WORK.

D. HEAVY EQUIPMENT IS NOT PERMITTED IN OVERFLOW PARKING LOT WEST OF THE GARAGE WITHOUT OWNER APPROVAL.

KEY NOTES:

1. PRIOR TO MEMBRANE AND WATER-REPELLENT APPLICATION, SURVEY ALL CONCRETE SLAB SURFACES TO LOCATE POSSIBLE SHALLOW SLAB AND JOINT EDGE CONCRETE REPAIR NEEDS. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM THE FOLLOWING CONCRETE SLAB REPAIRS.
   A. DEEP CONCRETE SLAB REPAIRS PER DETAIL 1 ON DRAWING 201.
   B. JOINT EDGE REPAIRS PER DETAIL 2 ON DRAWING 201.
2. WITHIN SHADED AREA, PREPARE SURFACES AND PROVIDE NEW HEAVY DUTY TRAFFIC MEMBRANE SYSTEM. REFER TO TYPICAL MEMBRANE DETAILS ON DRAWING 401 AND SPECIFICATION SECTION 071800. PERFORM RANDOM CRACK REPAIRS AS PART OF LUMP SUM MEMBRANE WORK.
3. PREPARE CONCRETE DECK SURFACES AT ALL SUPPORTED LEVELS NOT SCHEDULED FOR MEMBRANE COATING, INCLUDING RAMP DOWN TO GRADE LEVEL, AND PROVIDE NEW PENETRATING CONCRETE WATER REPELLENT. REFER TO SPECIFICATION SECTION 07 19 00.
4. REMOVE AND REPLACE EXISTING EXPANSION JOINT WING SEAL. REFER TO EXPANSION JOINT DETAIL 6 ON DRAWING 301.
5. PRIOR TO NEW EXPANSION JOINT INSTALLATION, SURVEY CONCRETE SURFACES TO LOCATE DAMAGED BLOCKOUT. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM WING SEAL BLOCKOUT REPAIRS PER DETAIL 5 ON DRAWING 201.
6. REMOVE AND REPLACE EXISTING EXPANSION JOINT COMPRESSION SEAL AROUND STAIR TOWER. REFER TO EXPANSION JOINT DETAIL 7 ON DRAWING 301. REMOVE EXISTING COVER PLATES AS NECESSARY TO PERFORM WORK.
7. REMOVE AND REPLACE EXISTING VERTICAL EXPANSION JOINT SEAL AT WALL. REFER TO DETAIL 7 ON DRAWING 301. EXTEND COMPRESSION JOINT SEAL OVER TOP OF WALL AND 6" DOWN BACKSIDE.
8. SURVEY CONCRETE SLAB SURFACES TO LOCATE RANDOM CRACKS TO BE REPAIRED. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM RANDOM CRACK REPAIRS PER DETAIL 2 ON DRAWING 301. NOTE: RANDOM CRACK REPAIRS AT MEMBRANE AREAS ARE NOT PART OF UNIT PRICE WORK AND SHOULD BE INCLUDED IN LUMP SUM MEMBRANE WORK EFFORTS.
9. REMOVE AND REPLACE ALL CONSTRUCTION JOINT SEALANTS WITHIN THE GARAGE. REFER TO DETAIL 1 ON DRAWING 301.
10. PROVIDE NEW COVE SEALANT AT ALL VERTICAL PROJECTIONS WITHIN THE GARAGE INCLUDING WALLS, COLUMNS, PIPES, ETC. REFER TO DETAILS 3 AND 4 ON DRAWING 301.
11. REMOVE AND REPLACE VERTICAL WALL JOINT SEALANTS. WRAP SEALANTS UP AND OVER TOP OF WALLS. REFER TO SPECIFICATION SECTION 079200.
12. PROVIDE NEW ELASTOMERIC COATING AT ALL EXPOSED SLAB EDGES AND BEAM ENDS. COLOR TO BE SELECTED BY THE OWNER. REFER TO SPECIFICATION SECTION 099100. PRIOR TO COATING, SURVEY ALL EXISTING PT TENDON GROUT POCKETS FOR POSSIBLE DAMAGE. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, PER LOCATION, REMOVE AND REPLACE DAMAGED GROUT WITH NEW EPOXY GROUT. REFER TO SPECIFICATION SECTION 030100.
13. EXISTING CARBON FIBER REINFORCED BEAM. PREPARE CARBON FIBER SURFACES, PRIME AND COAT WITH INTUMESCENT PAINT. REFER TO SPECIFICATION SECTION 099100. COLOR TO BE SELECTED BY THE OWNER.
14. EXISTING VEHICULAR GUARD RAIL. PREPARE ALL STEEL SURFACES INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
15. EXISTING METAL SECURITY GRILLS. PREPARE ALL STEEL SURFACES INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
16. EXISTING PEDESTRIAN BRIDGE. PREPARE ALL STEEL FRAMING SURFACES AND SECURITY GRILLS ALONG BOTH SIDES OF BRIDGE, INCLUDING BOLTED CONNECTIONS AND PROVIDE NEW RECOAT PAINT SYSTEM. REFER TO SPECIFICATION SECTION 099100.
17. REMOVE ALL VEGETATION FROM STRUCTURE AND DISPOSE OF OFF SITE. NOTE: VEGETATION EXTENDS INTO GARAGE AT MULTIPLE LOCATIONS.
18. SURVEY ENTIRE STAIRWELL TO LOCATE DAMAGED CONCRETE STEPS AND LANDINGS. REPORT FINDINGS TO THE OWNER. AS A UNIT COST WORK ITEM, WHERE DIRECTED, PERFORM FOLLOWING CONCRETE STAIR REPAIRS.
   A. STAIR TREAD REPAIR PER DETAIL 3 ON DRAWING 201.
   B. SHALLOW SLAB REPAIRS SIMILAR TO DETAIL 1 ON DRAWING 201.
   C. OVERHEAD CORNER REPAIRS PER DETAIL 4 ON DRAWING 201.
19. WITHIN STAIR/ELEVATOR TOWER, PREPARE AND PROVIDE NEW RECOAT PAINT SYSTEM AT ALL TUBE STEEL FRAMING INCLUDING COLUMNS, BOLTED CONNECTIONS AND SUPPORT ANGLES. REFER TO SPECIFICATION SECTION 099100.
20. WITHIN STAIR/ELEVATOR TOWER, PREPARE AND PROVIDE NEW RECOAT PAINT SYSTEM AT ALL METAL RAILING SURFACES. REFER TO SPECIFICATION SECTION 099100.
21. PRIOR TO RAIL PAINTING, REMOVE EXISTING GROUT AT RAIL POST EMBEDMENTS . UPON COMPLETION OF RAIL PAINTING, PROVIDE NEW EPOXY GROUT AND COVE SEALANT. REFER TO DETAIL 6 ON DRAWING 201.
22. TRIM ALL CURTAIN WALL AND WINDOW GASKETS AROUND STAIR/ELEVATOR TOWER AND WET SEAL GLASS TO FRAME INTERFACE WITH NEW SILICONE SEALANT. REFER TO DETAIL 8 ON DRAWING 301.
23. REMOVE AND REPLACE ALL EXISTING SEALANTS AROUND PERIMETER OF CURTAIN WALL AND WINDOW FRAMES WITH NEW SILICONE. REFER TO SIMILAR TYPICAL SEALANT DETAILS ON DRAWING 301 AND SPECIFICATION SECTION 079200.
24. AT STAIR/ELEVATOR TOWER SURVEY CMU WALL TO LOCATE TUCK POINTING REPAIR NEEDS. AS A UNIT COST WORK ITEM WHERE DIRECTED, PERFORM TUCK POINTING REPAIRS PER DETAIL 7 ON DRAWING 201.
25. COORDINATE WITH THE OWNER AND PERFORM NECESSARY FLASHING AND ROOFING REPAIRS ON T&M BASIS.
26. RECORD ALL EXISTING PAVEMENT MARKINGS WITHIN THE GARAGE INCLUDING LINE STRIPING, DIRECTION ARROWS, CURB PAINT, ETC. UPON COMPLETION OF WORK, REPAINT ALL EXISTING PAVEMENT MARKINGS WITHIN THE GARAGE. PROVIDE NEW PAVEMENT MARKINGS AT ALL LOCATIONS DISTURBED DURING WORK TO ORIGINAL CONDITION. REFER TO SPECIFICATION SECTION 321723. DO NOT USE PLAN DRAWINGS FOR STRIPING LAYOUT.

LEGEND:

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ISSUES

1	03/15/2019 FOR BID

REVISIONS

DRAWN BY: J.P. HOLMAN

ENGINEER: R.J. KENNEDY

CHECKED BY: W.M. JUDD

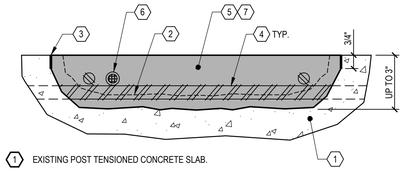
NKU

KENTON DR. GARAGE REPAIRS

DRAWING TITLE: LEVEL THREE PLAN

JOB NUMBER: 18565.00 DATE: 03/15/2019

DRAWING NUMBER: 103



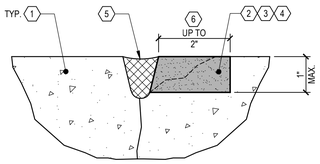
1. EXISTING POST TENSIONED CONCRETE SLAB.
2. EXISTING DELAMINATION PLANE.
3. PROVIDE 3/4" DEEP SAWCUT AROUND PERIMETER OF REPAIR AREA.
4. PREPARE AND COAT EXPOSED STEEL. REFER TO SPECIFICATION SECTION 030100.
5. REMOVE ALL SOUND AND UNSOUND CONCRETE WITHIN SHADED AREA. REFER TO SPECIFICATION SECTION 030100.
6. POTENTIAL EXPOSURE OF POST-TENSIONING TENDON (PT). LOCATION OF PT VARIES. IF NEEDED, CAREFULLY EXCAVATE AROUND PT, DO NOT DAMAGE PT. INSPECT PT FOR CORROSION AND/OR CHIPPING HAMMER DAMAGE AND REPORT TO ENGINEER. REPAIR PT SHEATHING PER SPECIFICATION SECTION 030100.
7. PREPARE CAVITY AND PROVIDE NEW CONCRETE PATCH MATERIAL. REFER TO SPECIFICATION SECTION 030100.

DEEP CONCRETE REPAIR (PT SLAB)

1 / 201 DETAIL

NO SCALE

PAY UNIT PER SQUARE FOOT



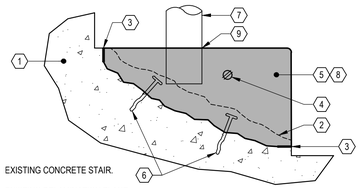
1. EXISTING CONCRETE SLAB.
2. SHALLOW CONCRETE JOINT EDGE REPAIR. GRIND SQUARE EDGE, REMOVE DETERIORATED CONCRETE, SANDBLAST AND BLOW CLEAN WITH COMPRESSED AIR.
3. IMMEDIATELY PRIOR TO PLACING EPOXY/SAND MIXTURE, POUR NEAT EPOXY AND WORK INTO CAVITY TO PROMOTE POSITIVE ADHESION.
4. PROVIDE EPOXY/SAND MIXTURE. REFER TO SPECIFICATION SECTION 030100.
5. NEW SEALANT, REFER TO SEALANT DETAILS ON DRAWING 301.
6. FOR EDGE REPAIR GREATER THAN 2", CONSULT WITH OWNER AND REPAIR WITH CONCRETE PATCH MATERIAL.

JOINT EDGE REPAIR

2 / 201 DETAIL

NO SCALE

PAY UNIT PER LIN. FT.



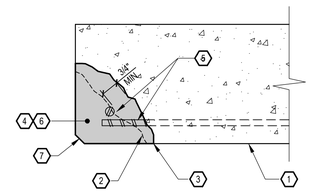
1. EXISTING CONCRETE STAIR.
2. EXISTING DELAMINATION PLANE.
3. PROVIDE 3/4" SAWCUT AROUND PERIMTER OF REPAIR AREA.
4. EXISTING REINFORCEMENT BAR. CUT OFF EXPOSED REINFORCING BAR AND EPOXY COAT THE CUT END OF THE BAR.
5. REMOVE ALL SOUND AND UNSOUND CONCRETE WITHIN SHADED AREA. REFER TO SPECIFICATION SECTION 030100.
6. PROVIDE STAINLESS STEEL CONCRETE PATCH ANCHOR AT 6" O.C. STAGGERED, MINIMUM (2) PER PATCH. REFER TO SPECIFICATION SECTION 030100.
7. STAIR RAIL EMBEDMENT. CLEAN STEEL RAIL TO SSPC-SP6 CONDITION, PRIME AND APPLY (2) INDEPENDENT COATS OF PAINT.
8. PREPARE CAVITY SURFACES AND INSTALL PATCH MATERIAL. REFER TO SPECIFICATION SECTION 030100.
9. INSTALL COVE SEALANT PER DETAIL 3 ON DRAWING 301.

CONCRETE STAIR TREAD REPAIR

3 / 201 DETAIL

NO SCALE

PAY UNIT PER LINEAR FOOT



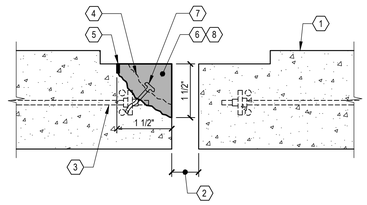
1. EXISTING CONCRETE STAIR/LANDING.
2. EXISTING DELAMINATION PLANE.
3. PROVIDE 1/2" SAWCUT AROUND PERIMETER OF REPAIR AREA.
4. REMOVE ALL SOUND AND UNSOUND CONCRETE WITHIN SHADED AREA. REFER TO SPECIFICATION SECTION 030100.
5. EXCAVATE 3/4" AROUND ALL REINFORCING. PREPARE AND COAT. REFER TO SPECIFICATION SECTION 030100.
6. PREPARE CAVITY SURFACES AND INSTALL PATCH MATERIAL. REFER TO SPECIFICATION SECTION 030100.
7. FORM CHAMFER AT CORNER TO MATCH EXISTING.

OVERHEAD STAIR CORNER REPAIR

4 / 201 DETAIL

NO SCALE

PAY UNIT PER LINEAR FOOT



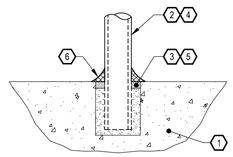
1. EXISTING POST TENSIONED CONCRETE SLAB.
2. EXPANSION JOINT OPENING. PROVIDE FORMS FOR BLOCKOUT. REPAIR TO MAINTAIN GAP.
3. EXISTING POST TENSIONED ANCHORAGE. DO NOT EXCAVATE ANY CONCRETE ON "LIVE" SIDE OF ANCHOR. PREPARE AND COAT EXPOSED ANCHORS WITH (2) COATS OF BAR COATING. REFER TO SPECIFICATION SECTION 030100.
4. EXISTING DELAMINATION PLANE.
5. PROVIDE 3/4" SAWCUT AROUND PERIMETER OF REPAIR AREA.
6. REMOVE ALL CONCRETE WITHIN SHADED AREA. REFER TO SPECIFICATION SECTION 030100.
7. INSTALL 1/4" DIA x 3" PATCH ANCHORS 1'-0" O.C. REFER TO SPECIFICATION SECTION 030100. SPACE PATCH ANCHORS TO AVOID POST TENSIONED ANCHORS.
8. PREPARE CAVITY SURFACES AND INSTALL PATCH MATERIAL. REFER TO SPECIFICATION SECTION 030100.

EXPANSION JOINT BLOCKOUT REPAIR

5 / 201 DETAIL

NO SCALE

PAY UNIT PER LINEAR FOOT

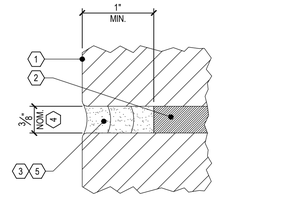


1. EXISTING CONCRETE STAIR.
2. EXISTING STEEL RAIL POST SCHEDULED FOR NEW PAINT.
3. PRIOR TO RAIL PAINTING REMOVE EXISTING GROUT AND INSPECT RAIL POST FOR DAMAGE.
4. PERFORM PAINT REPAIRS PRIOR TO NEW GROUT AND SEALANT INSTALLATION.
5. PROVIDE NEW EPOXY GROUT. FILL DEPRESSION FLUSH WITH ADJACENT CONCRETE. ALLOW TO CURE PRIOR TO NEW SEALANT INSTALLATION. REFER TO SPECIFICATION SECTION 030100.
6. PROVIDE NEW COVE SEALANT. REFER TO DETAIL 3/301.

TYPICAL RAIL POCKET REPAIR

6 / 201 DETAIL

NO SCALE



1. EXISTING CMU TO REMAIN.
2. EXISTING SOUND MORTAR TO REMAIN.
3. SAW CUT EXISTING MORTAR UNTIL SOUND MORTAR IS ENCOUNTERED, MINIMUM DEPTH OF 1". DO NOT DAMAGE CMU OR WIDEN JOINTS.
4. CLEAN AND WET AREAS OF CMU TO RECEIVE NEW MORTAR.
5. PROVIDE NEW MORTAR IN MAXIMUM LIFTS OF 3/8" DEEP. REFER TO SPECIFICATION SECTION 040100.

TYPICAL TUCKPOINT

7 / 201 DETAIL

NO SCALE

PAY UNIT PER LIN. FT.

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ISSUES

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ENGINEER: R.J. KENNEDY

CHECKED BY: W.M. JUDD

NKU

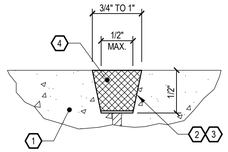
KENTON DR. GARAGE REPAIRS

DRAWING TITLE
CONCRETE REPAIR DETAILS

JOB NUMBER 18565.00

DATE 03/15/2019

DRAWING NUMBER
201



1 EXISTING CONCRETE SLAB.

2 CUT-OUT ALL EXISTING JOINT SEALANTS IF PRESENT, THEN GRIND SURFACES TO REMOVE SEALANT RESIDUE AND SLOPE SIDE SURFACES AS SHOWN. PROVIDE A MINIMUM WIDTH TO DEPTH RATIO OF 2:1.

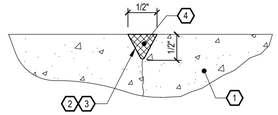
3 PREPARE ALL SURFACES INTENDED FOR NEW SEALANT. REFER TO SPECIFICATION SECTION 079200.

4 PRIME SUBSTRATE AND PROVIDE NEW SEALANT. INSTALL SEALANT FLUSH WITH ADJOINING SURFACES BENEATH MEMBRANE, AND CONCAVE ELSEWHERE. REFER TO SPECIFICATION SECTION 079200.

CONSTRUCTION JOINT

1/301 DETAIL

NO SCALE



1 EXISTING CONCRETE SLAB.

2 ROUT NEW AND EXISTING CRACKS PER SPECIFICATION SECTION 079200 IN A "V" CONFIGURATION, MINIMUM OF 1/2" WIDE x 1/2" DEEP, OR WHEN THE 1/2" DIMENSION IS INSUFFICIENT, USE A MINIMUM WIDTH TO DEPTH RATIO OF 1:1.

3 PREPARE ALL SURFACES INTENDED FOR NEW SEALANT. REFER TO SPECIFICATION SECTION 079200.

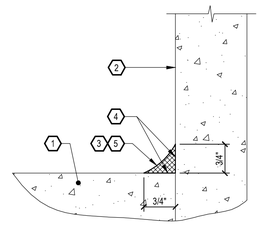
4 PRIME SUBSTRATE AND PROVIDE NEW SEALANT. INSTALL SEALANT FLUSH WITH ADJOINING SURFACE BENEATH MEMBRANE, CONCAVE ELSEWHERE. REFER TO SPECIFICATION SECTION 079200.

RANDOM CRACK

2/301 DETAIL

NO SCALE

PAY UNIT PER LIN. FT. AT NON-MEMBRANE LOCATIONS
PAY LUMP SUM AT MEMBRANE LOCATIONS



1 EXISTING CONCRETE SLAB.

2 EXISTING WALL, CURB, OR ANY OTHER VERTICAL PROJECTION.

3 REMOVE EXISTING SEALANT WHERE PRESENT. REFER TO SPECIFICATION SECTION 079200.

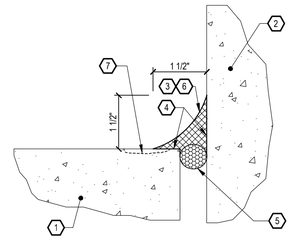
4 PREPARE ALL SURFACES INTENDED FOR NEW SEALANT. INSTALL SEALANT FLUSH WITH ADJOINING SURFACE BENEATH MEMBRANE, AND CONCAVE ELSEWHERE. REFER TO SPECIFICATION SECTION 079200.

5 PROVIDE COVE SEALANT WITH MINIMUM 1/2" THROAT. INSTALL PER DIMENSIONS UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 079200.

COVE SEALANT

3/301 DETAIL

NO SCALE



1 EXISTING CONCRETE SLAB.

2 EXISTING WALL, CURB OR ANY OTHER VERTICAL PROJECTION.

3 REMOVE EXISTING SEALANT WHERE PRESENT.

4 PREPARE ALL SURFACES INTENDED FOR NEW SEALANT. INSTALL SEALANT FLUSH WITH ADJOINING SURFACE BENEATH MEMBRANE, AND CONCAVE ELSEWHERE. REFER TO SPECIFICATION SECTION 079200.

5 OVERSIZED BACKER ROD.

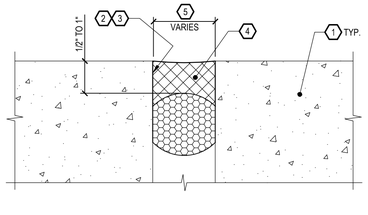
6 OVERSIZED COVE SEALANT. INSTALL PER DIMENSIONS UNLESS OTHERWISE NOTED. REFER TO SPECIFICATION SECTION 079200.

7 PERFORM CONCRETE REPAIRS IF NECESSARY PRIOR TO SEALANT INSTALLATION.

OVERSIZE PERIMETER WALL COVE

4/301 DETAIL

NO SCALE



1 EXISTING CONCRETE SLAB.

2 CUT-OUT ANY EXISTING JOINT SEALANTS, THEN GRIND SURFACES TO REMOVE SEALANT RESIDUE. PROVIDE A MINIMUM WIDTH TO DEPTH RATIO OF 3:2. REFER TO SPECIFICATION SECTION 079200.

3 PREPARE ALL SURFACES INTENDED FOR NEW SEALANT. REFER TO SPECIFICATION SECTION 079200.

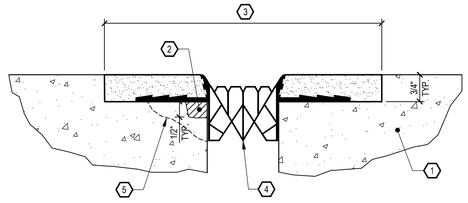
4 PRIME SUBSTRATE, INSTALL BACKER ROD, AND PROVIDE NEW SEALANT. REFER TO SPECIFICATION SECTION 079200.

5 FOR BIDDING PURPOSES ASSUME UP TO 1 1/2" WIDE.

ISOLATION JOINT SEALANT

5/301 DETAIL

NO SCALE



1 EXISTING CONCRETE SLAB.

2 POSSIBLE JOINT EDGE BLOCKOUT REPAIRS USING MANUFACTURER'S RECOMMENDED MATERIALS. SQUARE CUT EDGES OF REPAIR MINIMUM 1/2" DEEP. REFER TO SPECIFICATION SECTION 079000.

3 REQUIRED BLOCKOUT WIDTH. CUT CONCRETE DECK AS REQUIRED TO ACCEPT NEW JOINT SEAL. VERIFY BLOCKOUT WIDTH IS APPROPRIATE FOR WINGED COMPRESSION SEAL SIZE SELECTED WITH MANUFACTURER'S REPRESENTATIVE. REFER TO SPECIFICATION SECTION 079000.

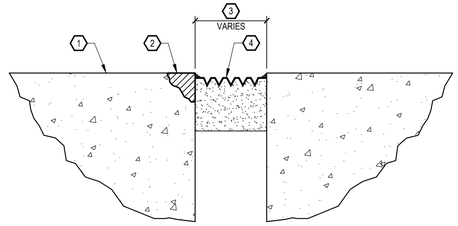
4 REPLACE EXISTING EXPANSION JOINT WITH NEW WINGED COMPRESSION SEAL EXPANSION JOINT SYSTEM. REFER TO SPECIFICATION SECTION 079000.

5 WHERE CORNERS ARE SPALLED 1 1/2" DEEP OR GREATER, REFER TO DETAIL 5 ON DRAWING 201. SHALLOWER REPAIRS WILL BE INCLUDED IN THE EXPANSION JOINT COST PER NOTE 2 ABOVE.

NEW WINGED COMRESSION SEAL REPLACEMENT

6/301 DETAIL

NO SCALE



1 EXISTING CONCRETE SLAB OR WALL.

2 POSSIBLE JOINT EDGE REPAIRS. IF SPALLS ARE LESS THAN 1" WIDE/DEEP, REPAIR PER MANUFACTURER'S RECOMMENDATIONS PER SPECIFICATION SECTION 079000. SPALLS GREATER THAN 1" WIDE/DEEP, REFER TO SIMILAR DETAIL 2/201.

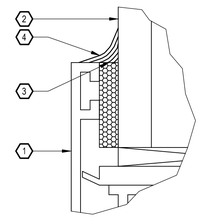
3 EXISTING JOINT OPENING. FIELD VERIFY TO ACCOMMODATE NEW JOINT SYSTEM. WHERE NECESSARY, SAWCUT ENLARGE OPENING TO ACCOMMODATE JOINT SEAL SYSTEM FOR BIDDING PURPOSES, ASSUME 4" WIDE JOINT.

4 NEW COMPRESSIBLE EXPANSION JOINT SEAL SYSTEM. REFER TO SPECIFICATION SECTION 079000.

NEW COMPRESSIBLE SEAL EXPANSION JOINT

7/301 DETAIL

NO SCALE



1 EXISTING WINDOW FRAME.

2 EXISTING GLASS PANEL. DO NOT DAMAGE.

3 CUT BACK EDGE OF EXISTING GASKET FLUSH WITH WINDOW FRAME (AS REQUIRED).

4 WET SEAL REPAIR: PREPARE WINDOW AND FRAME AND PROVIDE SILICONE SEALANT CAP BEAD AROUND PERIMETER OF WINDOW (ALL FOUR SIDES). REFER TO SPECIFICATION SECTION 079000.

TYPICAL WET SEAL REPAIR

8/301 DETAIL

NO SCALE

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ISSUES / REVISIONS

1	03/15/2019 FOR BID

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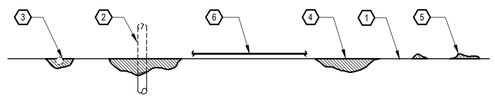
KENTON DR. GARAGE REPAIRS

DRAWING TITLE: SEALANT AND EXPANSION JOINT DETAILS

JOB NUMBER: 18565.00
DATE: 03/15/2019

DRAWING NUMBER: 301



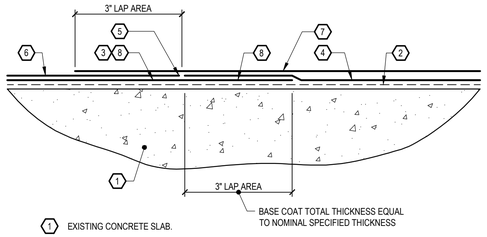
EXPOSED METAL SURFACE DEFECTS

1. EXISTING CONCRETE SLAB.
2. CUT OFF NON-FUNCTIONAL METALS 3/4" BELOW CONCRETE SURFACE. PREPARE CONCRETE AND PATCH WITH EPOXY/SAND MIXTURE. NO FLAME CUTTING PERMITTED. REFER TO SPECIFICATION SECTION 030100.
3. EXPOSED SLAB REINFORCING AND/OR WIRE MESH. CUT AND REMOVE SUFFICIENT AMOUNT OF REINFORCING TO PROVIDE 1/2" COVER AT CUT ENDS. PREPARE AND PATCH WITH EPOXY/SAND MIXTURE. CONSULT WITH ENGINEER PRIOR TO CUTTING REINFORCING.
4. REPAIR MINOR EXISTING SURFACE DEFECTS CAUSED BY AGGREGATE POP-OUTS, SURFACE SCALING, AND FREEZE-THAW DAMAGE IN MANNER ACCEPTABLE TO ENGINEER AND MEMBRANE MANUFACTURER. REFER TO SPECIFICATION SECTION 071800.
5. GRIND SMOOTH OR OTHERWISE REMOVE EXISTING EXCESS CONCRETE AND/OR MATERIAL DEPOSITED (LEFT ON SLAB) FROM CONSTRUCTION ACTIVITIES. WHERE EXISTING SLAB CONCRETE IS MOUNDED OR OTHERWISE PROTRUDES MORE THAN 1/16" ABOVE DECK, GRIND SMOOTH, OR GRIND TRANSITION SLOPE OF 1:4 (MAXIMUM) WITH BLENDING RADII AT PERIMETER OF LARGE AREAS.
6. NEW MEMBRANE SYSTEM. REFER TO SPECIFICATION SECTION 071800.

SUPPLEMENTAL SURFACE PREPARATION

1/401 DETAIL

NO SCALE

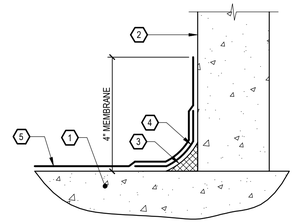


1. EXISTING CONCRETE SLAB.
2. WHERE REQUIRED, VAPOR BARRIER COAT. REFER TO DRAWINGS AND SPECIFICATION SECTION 071800.
3. FIRST BASE COAT. MASK ALONG TERMINATION EDGE. (SEE NOTE 7 FOR SPECIAL CONDITION WHERE NEW MEMBRANE TIES INTO EXISTING).
4. SECOND BASE COAT.
5. MASK TERMINATION EDGE FOR FIRST TOP COAT INSTALLATION.
6. FIRST TOP COAT.
7. SECOND GRIT COAT.
8. WHERE NEW TRAFFIC MEMBRANE SYSTEM IS TO TIE INTO EXISTING TRAFFIC MEMBRANE SYSTEM, PROCEED AS FOLLOWS:
   - ABRASIVE WHEEL PREPARE 3" WIDE LAP AREA. REMOVE TOP COAT TO EXPOSE EXISTING BASE COAT.
   - PREPARE EXISTING BASE COAT PER TRAFFIC MEMBRANE MANUFACTURER REQUIREMENTS.
   - LAP NEW BASE COAT ONTO EXISTING BASE COAT AND PROCEED AS NOTED ABOVE.

MEMBRANE SYSTEM TIE-IN

2/401 DETAIL

NO SCALE

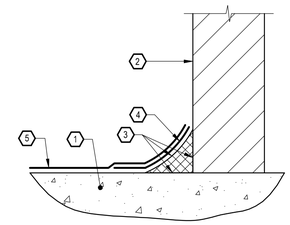


1. EXISTING CONCRETE SLAB.
2. EXISTING CONCRETE WALL, CURB, OR ANY OTHER VERTICAL PROJECTION.
3. PROVIDE NEW COVE SEALANT. REFER TO DETAIL 3 ON DRAWING 301.
4. PROVIDE NEW 4" WIDE DETAIL COAT CENTERED ON JOINT. REFER TO SPECIFICATION SECTION 071800.
5. NEW MEMBRANE SYSTEM. TERMINATE ON VERTICAL SURFACES AS SHOWN. WHERE VERTICAL PROJECTION IS BLOCK OR OTHER NON-CONCRETE MATERIAL, TERMINATE MEMBRANE SYSTEM ON COVE SEALANT. REFER TO SPECIFICATION SECTION 071800.

MEMBRANE AT VERTICAL SURFACE

3/401 DETAIL

NO SCALE

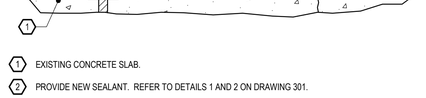


1. EXISTING CONCRETE SLAB.
2. EXISTING LIGHT POLE PEDESTAL.
3. PROVIDE NEW COVE SEALANT. REFER TO DETAIL 3 ON DRAWING 301.
4. TERMINATE NEW MEMBRANE ON COVE SEALANT. REFER TO SPECIFICATION SECTION 071800.
5. PROVIDE NEW MEMBRANE SYSTEM. REFER TO SPECIFICATION SECTION 071800.

MEMBRANE TERMINATION ON OVERSIZE COVE SEALANT

4/401 DETAIL

NO SCALE

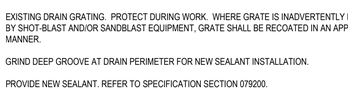


1. EXISTING CONCRETE SLAB.
2. PROVIDE NEW SEALANT. REFER TO DETAILS 1 AND 2 ON DRAWING 301.
3. PROVIDE NEW 4" WIDE DETAIL COAT CENTERED ON SEALANT. REFER TO SPECIFICATION SECTION 071800.
4. PROVIDE NEW MEMBRANE SYSTEM. EXTEND AT LEAST 4" UP VERTICAL SURFACES. REFER TO SPECIFICATION SECTION 071800.

MEMBRANE OVER CJ's OR CRACKS

5/401 DETAIL

NO SCALE

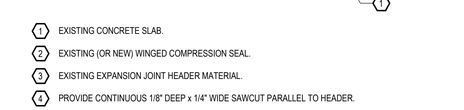


1. EXISTING CONCRETE SLAB.
2. EXISTING DRAIN GRATING. PROTECT DURING WORK. WHERE GRATE IS INADVERTENTLY BLASTED BY SHOT-BLAST AND/OR SANDBLAST EQUIPMENT, GRATE SHALL BE RECOATED IN AN APPROVED MANNER.
3. GRIND DEEP GROOVE AT DRAIN PERIMETER FOR NEW SEALANT INSTALLATION.
4. PROVIDE NEW SEALANT. REFER TO SPECIFICATION SECTION 079200.
5. PROVIDE NEW MEMBRANE SYSTEM. TERMINATE ON SEALANT. REFER TO SPECIFICATION SECTION 071800.
6. PROVIDE PLUMBERS PLUG IN DRAIN OPENING DURING MEMBRANE SYSTEM PREPARATION AND INSTALLATION. REMOVE PLUG AT END OF EACH WORK DAY AND DURING INCLEMENT WEATHER.

MEMBRANE AT DRAIN

6/401 DETAIL

NO SCALE



1. EXISTING CONCRETE SLAB.
2. EXISTING (OR NEW) WINGED COMPRESSION SEAL.
3. EXISTING EXPANSION JOINT HEADER MATERIAL.
4. PROVIDE CONTINUOUS 1/8" DEEP x 1/4" WIDE SAWCUT PARALLEL TO HEADER.
5. WIRE WHEEL HEADER SURFACES, WIPE CLEAN WITH SOLVENT AND COAT HEADER AND ADJACENT CONCRETE WITH EPOXY COATING AND ENCAPSULATED SAND MIXTURE.
6. NEW MEMBRANE SYSTEM. REFER TO SPECIFICATION SECTION 071800.

MEMBRANE TERMINATION ON EXPANSION JOINT NOSING

7/401 DETAIL

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KENTON DR. GARAGE REPAIRS

DRAWING TITLE: MEMBRANE DETAILS

JOB NUMBER: 18565.00 DATE: 03/15/2019

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