Contract Routing Form

ROUTING: Routine printed on: 05/25/2021

Contract between: Proaxis LLC
and Dept. or Division: Engineering Division
Name/Phone Number:

Project: 2021 Parking Garage Maintenance

Contract No.: 8591
Enactment No.: RES-21-00314
Dollar Amount: 485,852.24

File No.: 65027
Enactment Date: 05/10/2021

(Please DATE before routing)

Signatures Required	Date Received	Date Signed
City Clerk	05|25|2021	05|25|2021
Director of Civil Rights	5/26/21	6|8|21 MG
Risk Manager	6/8/2021	6/8/2021 RAN
Finance Director	6-8-21	6-9-21
City Attorney	6/9/2021	6-10-21
Mayor	6.10.21	6.15.21

Please return signed Contracts to the City Clerk's Office
Room 103, City-County Building for filing.

Original + 2 Copies

05/25/2021 13:03:01 enjls - Bill Putnam 266-6528

City of Madison

City of Madison
Madison, WI 53703
www.cityofmadison.com

Legislation Details (With Text)

File #:	65027	**Version:** 1	**Name:**	Awarding Public Works Contract No. 8591, 2021 Parking Garage Maintenance.
Type:	Resolution		**Status:**	Passed
File created:	4/9/2021		**In control:**	BOARD OF PUBLIC WORKS
On agenda:	5/4/2021		**Final action:**	5/4/2021
Enactment date:	5/10/2021		**Enactment #:**	RES-21-00314

Title: Awarding Public Works Contract No. 8591, 2021 Parking Garage Maintenance. (2nd, 4th and 6th ADs)

Sponsors: BOARD OF PUBLIC WORKS

Indexes:

Code sections:

Attachments: 1. 8591.pdf, 2. 8591 Contract.pdf

Date	Ver.	Action By	Action	Result
5/4/2021	1	COMMON COUNCIL	Adopt Unanimously Under Suspension of Rules 2.04, 2.24, & 2.25	Pass
4/21/2021	1	BOARD OF PUBLIC WORKS	RECOMMEND TO COUNCIL TO ADOPT UNDER SUSPENSION OF RULES 2.04, 2.05, 2.24, & 2.25 - REPORT OF OFFICER	Pass
4/9/2021	1	BOARD OF PUBLIC WORKS	Refer	

The 2021 Adopted Budget includes $655,500 for parking garage maintenance costs. These funds are included in the Parking Utility purchased service budget. No additional appropriation required.
Awarding Public Works Contract No. 8591, 2021 Parking Garage Maintenance. (2nd, 4th and 6th ADs)
BE IT RESOLVED, that the following low bids for miscellaneous improvements be accepted and that the Mayor and City Clerk be and are hereby authorized and directed to enter into a contract with the low bidder contained herein, subject to the Contractor's compliance with Section 39.02 of the Madison General Ordinances concerning compliance with the Affirmative Action provisions **and subject to the Contractor's compliance with Section 33.07 of the Madison General Ordinances regarding Best Value Contracting:**

BE IT FURTHER RESOLVED, that the funds be encumbered to cover the cost of the projects contained herein.

See attached document (Contract No. 8591) for itemization of bids.

$485,852.24

Contract No. 8591
2021 Parking Garage Maintenance

Pro-Axis LLC

Acct No. 82145561-54210-00000	$ 67,542.04
Contingency 8% +	$ 5,403.36
Sub-Total	$ 72,945.40
Acct No. 82145562-54210-00000	$ 35,999.41
Contingency 8% +	$ 2,879.95
Sub-Total	$ 38,879.36
Acct No. 82145566-54210-00000	$ 161,581.20
Contingency 8% +	$ 12,926.50
Sub-Total	$ 174,507.70
Acct No. 82145565-54210-00000	$ 67,176.19
Contingency 8% +	$ 5,374.10
Sub-Total	$ 72,550.29
Acct No. 82145567-54210-00000	$ 153,553.40
Contingency 8% +	$ 12,284.27
Sub-Total	$ 165,837.67
GRAND TOTAL	$524,720.42

NAIC National Association of Insurance Commissioners

Wisconsin

State Based Systems

Demographics

Company Name: West Bend Mutual Insurance Company
SBS Company Number: 54218767
Domicile Type: Domestic
NAIC Group Number:
Merger Flag: No

NAIC CoCode: 15350
State of Domicile: Wisconsin
Organization Type: Mutual

Short Name:
FEIN: 39-0698170
Country of Domicile: United States
Date of Incorporation: 01/01/1894

Address

Business Address
1900 S 18th Ave
West Bend, WI 53095
United States

Mailing Address
1900 S 18th Ave
West Bend, WI 53095
United States

Statutory Home Office Address
1900 S 18th Ave
West Bend, WI 53095
United States

Main Administrative Office Address
1900 S 18th Ave
West Bend, WI 53095
United States

Phone, Email, Website

Phone

Type	Number
Business Primary Phone	(262) 365-2512
Fax Phone	(262) 365-2770
Business Primary Phone	(262) 334-5571
Toll Free Phone	(800) 236-5010

Email
No results found.

Website
No results found.

Company Type

Company Type: Property and Casualty
Status: Active
Effective Date: 10/19/1961
Issue Date: 05/01/1894
Articles of Incorporation Received: No

Status Reason:
Legacy State ID: 110833
Approval Date:
Article No:

Status Date: 05/01/1894
Expiration Date:
File Date:
COA Number:

Appointments

Show 10 entries

Showing 1 to 2 of 6647 entries

mosc

Licensee Name	License Number	NPN	License Type	Line of Authority	Appointment Date	Effective Date	Expiration Date
ELIZABETH MOSCA	12305256	12305256	Intermediary (Agent) Individual	Casualty	08/08/2011	02/08/2021	03/15/2022
ELIZABETH MOSCA	12305256	12305256	Intermediary (Agent) Individual	Property	08/08/2011	02/08/2021	03/15/2022

First Previous 1 Next Last

Line Of Business

Line of Business	Citation Type	Effective Date
Aircraft	Aircraft	10/19/1961
Automobile	Automobile	10/19/1961
Disability Insurance	Disability Insurance	10/19/1961
Fidelity Insurance	Fidelity Insurance	10/19/1961
Fire, Inland Marine and Other Property Insurance	Fire, Inland Marine and Other Property Insurance	10/19/1961
Liability and Incidental Medical Expense Insurance (other than automobile)	Liability and Incidental Medical Expense Insurance (other than automobile)	10/19/1961
Miscellaneous	Miscellaneous	10/19/1961
Ocean Marine Insurance	Ocean Marine Insurance	10/19/1961
Surety Insurance	Surety Insurance	10/19/1961
Workers Compensation Insurance	Workers Compensation Insurance	10/19/1961

Contact

Contact Type	Preferred Name	Name	E-mail	Phone	Address
Registered Agent for Service of Process		CHRISTOPHER ZWYGART			Other WEST BEND MUTUAL INSURANCE CO 1900 S 18TH AVE WEST BEND, WI United States County 53095

$485,852.24
CONTRACTOR'S OFFICE COPY

BID OF **PROAXIS LLC**

2021

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

2021 PARKING GARAGE MAINTENANCE

CONTRACT NO. 8591

MUNIS NO. 8214556A

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON **MAY 4, 2021**

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

https://bidexpress.com/login

2021 PARKING GARAGE MAINTENANCE
CONTRACT NO. 8591

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This Proposal, and Agreement have
been prepared by:

CITY ENGINEERING DIVISION
CITY OF MADISON
MADISON, DANE COUNTY, WISCONSIN

Sabrina J. Tolley
Assistant City Parking Utility Manager

SJT: whp

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION
CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	2021 PARKING GARAGE MAINTENANCE
CONTRACT NO.:	8591
SBE GOAL	11%
BID BOND	5%
SBE PRE BID MEETING	See Pre Bid Meeting info below
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	4/1/2021
BID SUBMISSION (2:00 P.M.)	4/8/2021
BID OPEN (2:30 P.M.)	4/8/2021
PUBLISHED IN WSJ	3/18/2021, 3/25/2021 & 4/1/2021

SBE PRE BID MEETING: Small Business Enterprise Pre-Bid Meetings are not being held in person at this time. Contractors can schedule one-on-one phone calls with Juan Pablo Torres Meza in Affirmative Action to count towards good faith efforts. Juan Pablo can be reached at 608-261-9162 or by email, jtorresmeza@cityofmdison.com.

PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/business/pw/forms.cfm. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

BIDS TO BE SUBMITTED: by hand to 1600 EMIL ST., MADISON, WI 53713 or online at www.bidexpress.com.

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

The process for submission of bids has not changed. Bids may be submitted on line through Bid Express or in person at 1600 Emil St. Please note that the doors at 1600 Emil St. are locked, but there is a sign with phone numbers on the door. Please call one of the numbers and staff will come to the door to get your bid. Until further notice, the bid openings will be closed to the public to support the guidance of social distancing as the City responds to responsively to COVID-19 impacts to services. The bids will be posted on line after the bid opening. If you have any questions, please call Alane Boutelle at 608-267-1197, or John Fahrney at 608-266-9091.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2021 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website, www.cityofmadison.com/Business/PW/specs.cfm.

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901 (2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be pre-qualified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)l. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

SECTION 102.4 PROPOSAL

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member/partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized registered agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided thereof on the proposal.

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express (www.bidexpress.com). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond (City of Madison form) equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. Nothwithstanding any language to the contrary contained herein, the City

may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion or performance of the contract.

Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an ☒

Building Demolition

101 ☐ Asbestos Removal
120 ☐ House Mover
110 ☐ Building Demolition

Street, Utility and Site Construction

201 ☐ Asphalt Paving
205 ☐ Blasting
210 ☐ Boring/Pipe Jacking
215 ☐ Concrete Paving
220 ☐ Con. Sidewalk/Curb & Gutter/Misc. Flat Work
221 ☐ Concrete Bases and Other Concrete Work
222 ☐ Concrete Removal
225 ☐ Dredging
230 ☐ Fencing
235 ☐ Fiber Optic Cable/Conduit Installation
240 ☐ Grading and Earthwork
241 ☐ Horizontal Saw Cutting of Sidewalk
242 ☐ Infrared Seamless Patching
245 ☐ Landscaping, Maintenance
246 ☐ Ecological Restoration
250 ☐ Landscaping, Site and Street
251 ☒ Parking Ramp Maintenance
252 ☐ Pavement Marking
255 ☐ Pavement Sealcoating and Crack Sealing
260 ☐ Petroleum Above/Below Ground Storage Tank Removal/Installation
262 ☐ Playground Installer
265 ☐ Retaining Walls, Precast Modular Units
270 ☐ Retaining Walls, Reinforced Concrete
275 ☐ Sanitary, Storm Sewer and Water Main Construction
276 ☐ Sawcutting
280 ☐ Sewer Lateral Drain Cleaning/Internal TV Insp.
285 ☐ Sewer Lining
290 ☐ Sewer Pipe Bursting
295 ☐ Soil Borings
300 ☐ Soil Nailing
305 ☐ Storm & Sanitary Sewer Laterals & Water Svc.
310 ☐ Street Construction
315 ☐ Street Lighting
318 ☐ Tennis Court Resurfacing
320 ☐ Traffic Signals
325 ☐ Traffic Signing & Marking
332 ☐ Tree pruning/removal
333 ☐ Tree, pesticide treatment of
335 ☐ Trucking
340 ☐ Utility Transmission Lines including Natural Gas, Electrical & Communications
399 ☐ Other_____

Bridge Construction

501 ☐ Bridge Construction and/or Repair

Building Construction

401 ☐ Floor Covering (including carpet, ceramic tile installation, rubber, VCT
402 ☐ Building Automation Systems
403 ☐ Concrete
404 ☐ Doors and Windows
405 ☐ Electrical - Power, Lighting & Communications
410 ☐ Elevator - Lifts
412 ☐ Fire Suppression
413 ☐ Furnishings - Furniture and Window Treatments
415 ☐ General Building Construction, Equal or Less than $250,000
420 ☐ General Building Construction, $250,000 to $1,500,000
425 ☐ General Building Construction, Over $1,500,000
428 ☐ Glass and/or Glazing
429 ☐ Hazardous Material Removal
430 ☐ Heating, Ventilating and Air Conditioning (HVAC)
433 ☐ Insulation - Thermal
435 ☐ Masonry/Tuck pointing
437 ☐ Metals
440 ☐ Painting and Wallcovering
445 ☐ Plumbing
450 ☐ Pump Repair
455 ☐ Pump Systems
460 ☐ Roofing and Moisture Protection
464 ☐ Tower Crane Operator
461 ☐ Solar Photovoltaic/Hot Water Systems
465 ☐ Soil/Groundwater Remediation
466 ☐ Warning Sirens
470 ☐ Water Supply Elevated Tanks
475 ☐ Water Supply Wells
480 ☐ Wood, Plastics & Composites - Structural & Architectural
499 ☐ Other_____
_____

State of Wisconsin Certifications

1 ☐ Class 5 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for quarries, open pits and road cuts.
2 ☐ Class 6 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for trenches, site excavations, basements, underwater demolition, underground excavations, or structures 15 feet or less in height.
3 ☐ Class 7 Blaster - Blasting Operations and Activities for structures greater than 15 ' in height, bridges, towers, and any of the objects or purposes listed as "Class 5 Blaster or Class 6 Blaster".
4 ☐ Petroleum Above/Below Ground Storage Tank Removal and Installation (Attach copies of State Certifications.)
5 ☐ Hazardous Material Removal (Contractor to be certified for asbestos and lead abatement per the Wisconsin Department of Health Services, Asbestos and Lead Section (A&LS).) See the following link for application: www.dhs.wisconsin.gov/Asbestos/Cert. State of Wisconsin Performance of Asbestos Abatement Certificate must be attached.
6 ☐ Certification number as a Certified Arborist or Certified Tree Worker as administered by the International Society of Arboriculture
7 ☐ Pesticide application (Certification for Commercial Applicator For Hire with the certification in the category of turf and landscape (3.0) and possess a current license issued by the DATCP)
8 ☐ State of Wisconsin Master Plumbers License.

SECTION B: PROPOSAL

Please refer to the Bid Express Website at https://bidexpress.com look up contract number and go to Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at www.bidexpress.com

Click on the "Register for Free" button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a 'per bid' basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the 'Digital ID' process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

SECTION C: SMALL BUSINESS ENTERPRISE

Instructions to Bidders
City of Madison
SBE Program Information

2 Small Business Enterprise (SBE) Program Information

2.1 Policy and Goal

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of SBEs on this project. SBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for SBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting SBE goals.

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an SBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the SBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an SBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an ad hoc basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible SBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified SBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified SBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a SBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an SBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

2.2 Contract Compliance

Questions concerning the SBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.

2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the SBE Directory or you may access the SBE Directory online at www.cityofmadison.com/civil-rights/contract-compliance/targeted-business-enterprise-programs/targeted-business-enterprise.

All contractors, subcontractors, vendors and suppliers seeking SBE status must complete and submit the **Targeted Business Certification Application** to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may access the Targeted Business Certification Application online at www.cityofmadison.com/civil-rights/contract-compliance/targeted-business-enterprise-programs/targeted-business-enterprise. Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

2.4.1.1 Attendance at the pre-bid meeting.

2.4.1.2 Using the City of Madison's directory of certified SBEs to identify SBEs from which to solicit bids.

2.4.1.3 Assuring that SBEs are solicited whenever they are potential sources.

2.4.1.4 Referring prospective SBEs to the City of Madison Affirmative Action Division for certification.

2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible SBE participation.

2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by SBEs.

2.4.1.7 Providing SBEs with specific information regarding the work to be performed.

2.4.1.8 Contacting SBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.

2.4.1.9 Utilizing the bid of a qualified and competent SBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.

2.4.1.10 Contacting SBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.

2.4.1.11 Completion of Cover Page (page C-6), Summary Sheet (page C-7) and SBE Contact Reports (pages C-8 and C9) if applicable.

2.4.2 **Reporting SBE Utilization and Good Faith Efforts**

The Small Business Enterprise Compliance Report is to be submitted by the bidder with the bid: This report is due by the specified bid closing time and date. Bids submitted without a completed SBE Compliance Report as outlined below may be deemed non-responsible and the bidder ineligible for award of this contract. Nothwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion, performance of the contract, or percentage of SBE utilization.

2.4.2.1 If the Bidder meets or exceeds the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

2.4.2.1.1 **Cover Page,** Page C-6; and
2.4.2.1.2 **Summary Sheet,** C-7.

2.4.2.2 If the bidder does not meet the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

2.4.2.2.1 **Cover Page,** Page C-6;
2.4.2.2.2 **Summary Sheet,** C-7; and
2.4.2.2.3 **SBE Contact Report,** C-8 and C-9. (A separate Contact Report must be completed for each applicable SBE which is not utilized.)

2.5 Appeal Procedure

A bidder which does not achieve the established goal and is found non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may appeal that decision to the Small Business Enterprises Appeals Committee. All appeals shall be made in writing, and shall be delivered to and received by the City Engineer no later than 4:30 PM on the third business day following the bidder's receipt of the written notification of ineligibility by the Affirmative Action Division Manager. Postmark not acceptable. The notice of appeal shall state the basis for the appeal of the decision of the Affirmative Action Division Manager. The Appeal shall take place in accordance with Madison General Ordinance 33.54.

2.6 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any SBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another SBE if available.

The City will monitor the project to ensure that the actual percentage commitment to SBE firms is carried out.

2.7 SBE Definition and Eligibility Guidelines

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small Business Enterprise is defined as:

A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a SBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. SBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.

B. A business that has averaged no more than $4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of $1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

SBE certification is valid for one (1) year unless revoked.

SECTION D: SPECIAL PROVISIONS

2021 PARKING GARAGE MAINTENANCE
CONTRACT NO. 8591

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

SECTION 102.11: **BEST VALUE CONTRACTING**

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than $65,000 for a single trade contract; or equal to or greater than $318,000 for a multi-trade contract pursuant to MGO 33.07(7).

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SECTION 01 00 00

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION SUMMARY

A. Section Includes:
1. Section Summary
2. Work Covered by Contract Documents
3. Contractor's Duties
4. Contracts
5. Time of Completion and Liquidated Damages
6. Work Sequence
7. Contractor Use of Public Rights-Of-Way
8. Contractor Use of Premises
9. Definitions
10. Measurement of Quantities
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13. Submittals
14. Temporary Utilities
15. Traffic/Dust/Debris
16. Special Controls
17. Parking
18. Security
19. Cleaning
20. Project Closeout
21. Record Drawings

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. This work covers repairs at the Government East (GE), Capitol Square North (CSN), State Street Capitol (SSCo), State Street Campus-Lake (SSCL), State Street Campus-Frances (SSCF), and Overture Center (OC) parking ramps in Madison, Wisconsin. Work includes concrete repair of slabs, columns, and beams, joint repairs, sealant replacement at slab cracks and joints, expansion joint replacement, membrane repair and placement, grit-blast and paint steel and concrete, and repair cracked stair treads.

B. The repair work to be done is shown on the plans/details and described in these specifications.

C. Ramp construction:
1. Capitol Square North (CSN): post-tensioned cast-in-place concrete.
2. Overture Center (OC) Ramp: post-tensioned cast-in-place concrete.
3. State Street Campus Lake (SSCL):
   a. Mild steel reinforced cast-in-place concrete.
   b. Post-tensioned cast-in-place concrete girders
4. State Street Campus Frances (SSCF):

a. Post-tensioned cast-in-place concrete (levels 1-2)
b. Precast concrete (levels 3-5)

5. State Street Capitol (SSCo):
   a. Mild steel reinforced cast-in-place concrete (levels 1-3)
   b. Post-tensioned cast-in-place concrete (levels 4-6)

1.3 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for:
   1. Labor, materials, and equipment.
   2. Tools, construction equipment, and machinery.
   3. Water, heat, and utilities required for construction not part of the existing ramp system. Other facilities and services necessary for proper execution and completion of work.

B. Pay legally required sales, consumer and use taxes. Secure and pay for, as necessary for proper execution and completion of work and as applicable at time of receipt for bids:
   1. Permits
   2. Government fees
   3. Licenses

C. Give required notices.

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

E. Contractor is responsible for complying with City Affirmative Action and Best Value Engineering requirements.

F. Promptly submit written notice to Engineer of observed variance of Contract Documents from legal requirements. It is not Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations.

G. Appropriate modifications to Contract Documents will adjust necessary changes.

H. Assume responsibility for work known to be contrary to such requirements, without notice.

I. Enforce strict discipline and good order among employees. Do not employ on work, unfit persons or persons not skilled in assigned task.

1.4 CONTRACTS

A. Construct work under a unit price contract with unit prices included to account for changes in the quantity of work from that estimated. Review proposal form for work to be completed as Lump Sum.

1.5 TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Construction is anticipated to start on or before June 30, 2021, and to be completed by October 31, 2021.

B. The successful Contractor must agree to commence work on a date to be specified in a written Notice to Proceed and to fully complete by dates specified.

C. Liquidated damages for failure to complete construction by given date shall be as stated in the third paragraph of Section 109.9 of the City of Madison Standard Specifications for Public Works Construction – most current year.

D. Completion shall include all construction as outlined in the plans and specifications as well as removal of all materials, debris, barricades, and other construction related items from the site.

E. Final project closeout shall be completed within 30 days of the construction completion date for all work addressed above. Final project closeout shall include, but not be limited to, submittal of warranties, lien waivers, wage rate compliance affidavits, documents of completed work, and proper pay applications

F. Each day shall be defined as a twenty-four (24) hour period beginning at 12:01 a.m.

1.6 WORK SEQUENCE

A. The Contractor will be allowed 140 parking stalls before July 31, 2021 and 70 parking stalls after July 31, 2021 out of service at each ramp for the work. This will include the top side of the deck being restored and the level below. The parking structure will be open during the weekends. Additional parking spaces may be made available upon request and will be reviewed on a case by case basis. The Contractor shall make as many spaces available as possible other than those designated for restoration.

B. No parking or traffic will be allowed above areas being restored on the underside of the slab or below the areas being restored on the topside of the slab. This area will be included in the Contractor's work area. Contractor shall keep ramp attendant and cashier informed about the number of parking stalls out of service.

C. Contractor shall conduct their work between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday unless written request for special circumstances is acceptable to the Owner. Contractor shall plan work and make request in writing at least seven days prior to deviation from normal.

D. Concrete pours shall be scheduled between 9:00 a.m. and 2:30 p.m. to avoid conflicts with peak hour traffic. Contractor shall provide the Engineer and Owner with their schedule for concrete pours.

E. Dust protection must be in place prior to beginning work; refer to Traffic/Dust/Debris section (1.15).

F. Prior to the weekend, the Contractor shall clean the site adequately and secure equipment to prevent vandalism, personal injury, or theft.

G. The Contractor will be asked to reduce the number and type of parking spaces out of service for Special Events dates. The City will provide the Contractor with a schedule of dates. These dates will include but not be limited to Art Fair on the Square, IronMan, Taste of Madison, Mad City Marathon, Maxwell Street Days, and Freakfest (Halloween).

H. Prior to start of work, the Contractor shall survey the existing utilities within and around the structure. Existing utilities include electrical lighting and conduits, water piping including sprinklers, and mechanical duct work. Existing utilities that are broken shall be brought to the attention of the Engineer. The Contractor at the Contractor's expense shall remove and/or protect in place existing utilities. Existing utilities damaged by the Contractor shall be replaced by the Contractor at the Contractor's expense.

I. Prior to the start of work, the Contractor in the presence of the Engineer and Owner shall inspect the condition of the drains in areas affected by the Contractor's work to determine that they are clean and in proper working order. During and at the completion of the project, the drains shall be in similar condition and working order as observed in the initial inspection.

1.7 CONTRACTOR USE OF PUBLIC RIGHTS-OF-WAY

A. The General Contractors proposed use of the site may require a Street Occupancy Permit.

B. The General Contractor shall make application for a Street Occupancy Permit before proceeding with work in any public right-of-way. At the time of application for a Street Occupancy Certificate, the Contractor shall provide a drawing showing construction site fencing, construction entrances, proposed placement of equipment, and traffic routing.

C. A copy of the Street Occupancy Permit shall be at the job site during working hours.

D. Peak hour traffic flow in Madison occurs between the hours of 7:00 a.m. and 8:30 a.m. and between 3:30 p.m. and 5:30 p.m., Monday through Friday. During these hours work that will interfere with the flow of traffic shall not be permitted on or in the street governed by this permit.

E. All signing or barricading shall be done in conformance with the Federal "Uniform Manual on Traffic Control Devices".

F. All pavement markings removed, disturbed or damaged shall be restored or replaced, in kind, by the City at the expense of the City.

G. For removal or replacement of traffic and parking signs, contact the City of Madison Traffic Engineering Field Operations, 1120 Sayle Street 266-4767, 8:00 a.m. - 4:00 p.m., 24 hours in advance of when you need the sign removed. This service is provided free of charge. If you remove the signs, you will be billed for reinstallation and any damage to the sign installation.

H. NO MATERIALS shall be stored in the street or street right-of-way.

I. A fence may be required around the occupancy area and the construction site depending on the Contractor's intended use. The occupancy area shall be considered part of the construction site. No stopping, standing or parking signs shall be installed, by the Contractor, on the fence surrounding the construction site.

J. A clean, safe access route shall be provided to the parking ramp at all locations desired by the City of Madison, Parking Utility.

K. "Sidewalk Closed Use Other Side" signs shall be installed at each end of the block when a portion of the block is closed to pedestrian traffic.

1.8 CONTRACTOR USE OF PREMISES

A. Confine operations at the site to areas permitted by law, ordinance, permits, and contract documents.

B. Do not unreasonably encumber site with materials and equipment.

C. Do not load structure with weight that will endanger structure.

D. Assume full responsibility for protection and safekeeping of products stored on the premises. Construction equipment, shoring, tools, etc., shall not be stored in areas of the Owner's continued use.

E. Move any stored products which interfere with operations of Owner or other Contractor.

F. There is no storage for materials outside of Contractor's work area.

1.9 DEFINITIONS

A. CONTRACT DOCUMENTS - Contract documents for this project include but are not limited to:
   1. Specifications and Drawings for "City of Madison 2020 Parking Garage Maintenance".
   2. General Conditions, which are included in the Standard Specifications for Public Works Construction, most current year, of the City of Madison, Department of Public Works. The Standard Specifications described above are available online at https://www.cityofmadison.com/business/pw/specs.cfm
   3. Architectural and structural drawings for the original construction. Drawings are available for review at the City Department of Transportation office, Room 100, Madison Municipal Building, Madison, WI 53701.

B. UNSOUND CONCRETE - Concrete which contains internal and/or surface cracking or loss of density, and which in the judgment of the Engineer is detrimental to the strength and serviceability of the structure. Unsound concrete is also associated with concrete surface spalling and crumbling, infiltration of moisture and salts, corrosion of reinforcement, rust staining, increased porosity, and reduced strength.

C. DELAMINATION - Planar cracking of concrete usually initiated by bursting stresses due to expansion of corrosion by-products of embedded reinforcing.

D. SOUND CONCRETE - Firm, dense, homogeneous concrete which contains in the judgment of the Engineer no significant detriments to its strength or serviceability.

E. REMOVAL - Removal of unsound and sound concrete, epoxy patches and asphalt using chipping hammers or other means.

F. SCARIFYING - The process of making numerous cuts into a concrete surface, which results in fracturing the cement paste and aggregate, exposing a new roughened surface free of contaminants.

G. SLAB - Flat, horizontal or ramped layers of reinforced concrete which spans and is supported by columns, beams or walls.

H. SUPPORT BARS - Reinforce bars used to support the main reinforcing bars and not shown on the original drawings as main reinforcing bars themselves.

I. DRAWINGS - Graphical description of the work to be performed, designated.

J. SPECIFICATIONS - Written description of the work to be performed, designated.

1.10 MEASUREMENT OF QUANTITIES

A. Work to be performed on a unit price basis shall be measured according to the quantities described in the above work items. Payment will be made for work actually performed, based on quantities recorded by the Contractor and approved by the Engineer. Records described below shall be maintained using a Geographical Information System Database, referred to hereinafter as GIS, provided by the Engineer. Unless otherwise stated, the Engineer will verify the accuracy of the record by visual examination of the work performed and measuring the quantities with a measuring tape, wheel, or other appropriate device.

B. The Contractor shall notify the Owner and the Engineer at once in writing of any unit price work that deviates materially from the prescribed basis for bidding and for which an adjustment in Unit Price is desired. The Contractor shall measure and quantify all such deviations, subject to the Engineer's verification, prior to any repair work which might make verification impossible. No adjustments in Unit Prices will be considered unless supporting field measurements are provided, and subject to the Owner's prior approval. Adjustments will only be considered if all repairs of a given type have been measured and all deviations, both plus and minus have been included in the determination of the average deviation from the Unit Price basis.

C. When actual work requires 50 percent or greater change in quantity than those quantities indicated, Owner or Contractor may claim a Unit Price adjustment.

D. Removal of top and underside of slab, beams, columns/walls, and joist stem concrete:
   1. The Contractor shall maintain a record of the location and quantity of concrete removed, identified by unit price item. This record shall be submitted to the Engineer on a weekly basis. Quantities shall be recorded digitally via GIS.

E. Placing replacement and supplemental reinforcing:
   1. The Contractor shall maintain a record of the location and quantity of reinforcement placed. This record shall show the quantity and size placed. Replacement and supplemental reinforcement shall be documented in the existing GIS Repair Identifier (Point, Line or Area) for which the repair is performed. This record shall be submitted to the Engineer on a weekly basis via GIS.

F. Installation of slab crack and joint sealant:
   1. The Contractor shall maintain a record of the location and quantity of cracks and joints sealed via GIS.

G. Placement of Traffic Coatings:
   1. The Contractor shall maintain a record of the areas of traffic coating placement via GIS. This is to include areas receiving the Full Membrane System and those that receive the Wear Coat and Top Coat.

1.11 PROJECT MEETINGS

A. Pre-Bid Meeting:
   1. Refer to Section A: Advertisement for Bids and Instructions to Bidders

B. Pre-Construction Meeting:
   1. Soon after award of Contract and prior to the start of construction, each Prime Contractor shall attend a pre-construction conference with representatives of the Owner and Engineer.
   2. The Contractor shall have at the meeting responsible representatives from subcontractors who are to perform the work.
   3. The Contractor shall submit the following information at the Pre-Construction Meeting:
      a. Construction Schedule
      b. List of Sub-Contractors
      c. Procedures for demolition
      d. Procedures for dust control
      e. Procedures for noise control
   4. The Engineer shall provide instruction of procedures for the usage of GIS.
   5. The Construction Schedule submitted by the Contractor shall describe in detail when each portion of the work is to be accomplished and subcontractors shall participate in the discussion. The Engineer will serve to interpret the Contract Documents should such questions arise. A representative of the Owner may also be present to discuss work to be completed by others in conjunction with this project and the Owner' partial occupancy and use of the garage during construction.
   6. Any other questions that the Contractor or subcontractors have about the work or its scheduling shall be raised at this meeting.
   7. Requirements for contract administration and construction operations will be defined for participants.
   8. Prepare in reproducible form approved by the Engineer and include:
      a. Breakdown of work activities in categories approved by Engineer, segmented as necessary to allow close monitoring of progress of the work during construction.
      b. Order of work necessary to meet Time for Completion.
      c. Breakdown of the work of all Subcontractors scheduled in cooperation with the Contractor's work.
      d. Signatures of all Contractors.
      e. Space for the additional display of actual performance on the schedule.
   9. After necessary revisions and approval by the Engineer, provide two prints of project construction schedule to the Engineer.
   10. Time, date, and place of the meeting will be determined by the Engineer.

C. Progress Meetings:
   1. Bi-weekly project meetings will be held at the project site by the Engineer's representative and Owner's representative for the purpose of coordinating and expediting the Work progress.
   2. Attendance at project meetings by all Prime Contractors, or their authorized representative, is mandatory.
   3. Date and time of the meetings will be determined at the pre-construction meeting.
   4. Contractors shall give verbal reports of progress on the project, discuss the work schedule for the coming period and present all conflicts, discrepancies, or other difficulties for resolution.

5. Upon request of the Engineer, the contractor shall update the schedule to reflect changes required by actual conditions and indicate actual work completed. Provide the Engineer with same number of copies as required for original submission.
6. Show changes occurring since previous submission of schedule such as:
    a. Major changes in scope.
    b. Activities modified since previous submission.
    c. Revised projections of progress and completion.
    d. Other identifiable changes.
7. Provide a narrative report as needed to define:
    a. Problem areas, anticipated delays, and the impact on the schedule.
    b. Corrective action recommended, and its effect.
    c. The effect of changes in schedules of other Prime Contractors.
8. Where work is not performed according to the Construction Schedule, a short narrative should be written by the contractor describing the cause of delay and intended action to remedy the delay.
9. When the work performed is not meeting the construction schedule, the Engineer may request that the contractor increase the labor and equipment being furnished in order to meet the schedule. Should the contractor choose not to follow the engineer's request he shall provide a written submittal explaining how the schedule is to be met without an increase in labor and equipment.
10. Meeting minutes will be distributed within two (2) business days of the meeting by the Engineer and will serve as the meeting agenda for the next progress meeting.

1.12 JOB SITE ADMINISTRATION

A. The Contractor shall always have at the site of the work, while work is in progress, a superintendent or foreman having authority both to receive orders from the Engineer and to act for the Contractor.

B. The Engineer will have a representative on-site eight (8) hours per week on average during progress of the work.

C. The Engineer's inspections and project coordination shall take place between regular business hours of 7 a.m. to 5 p.m. The Contractor will take all necessary steps to allow the Engineer to carry out the Engineer's duties without interference by noise, dust, or other construction activities.

1.13 SUBMITTALS

A. General:
    1. Refer to General Conditions for basic requirements for all submittals.
    2. Refer to technical specifications for all submittals required.

B. Submittal Requirements:
    1. Project information shall be first sent to the Engineer.
    2. Schedule submittals at least 14 days before the time that reviewed and approved submittals will be needed.
    3. Accompany submittals with transmittal letter containing the date, project title and number, Contractor's name and address, the quantity of items submitted, notifications of any deviations from Contract Documents, the Section of Work and other pertinent data.

C. Schedules:
   1. Refer to Project Meetings.

D. Subcontractor and Materials List:
   1. The Subcontractor and major suppliers list shall be submitted on or before the first pre-construction meeting.
   2. The Engineer will promptly review list and indicate in writing approval or disapproval of subcontractors and/or materials. Resubmit revised list, upon disapproval of any item, until such time as approval of all items has been obtained from the Engineer.
   3. Use of unspecified or unapproved materials and equipment will not be permitted.

E. Schedule of Values:
   1. Before the first Application for Payment, the Contractor shall submit to the Engineer a schedule of values of the various portions of the Work, including quantities if required by the Engineer, aggregating the total Contract Sum, divided to facilitate payments to Subcontractors.
   2. Prepare a schedule of values in such form and supported by such substantiating data as the Engineer may require. Each item in the schedule of values shall include its proper share of overhead and profit. This schedule, when approved by the Engineer, shall be used only as a basis for the Contractor's Applications for Payment.

F. Material Safety Data Sheets:
   1. Contractor shall submit Material Safety Data Sheets for all products (sealants, concrete, etc.) they intend to use on the project.

G. Test Reports and Data:
   1. Submit test reports and data where required by technical specifications. Results of testing, including concrete cylinder breaks, shall be submitted to the Contractor and the Engineer.

H. Application for Payment:
   1. For each progress payment (no more frequent than once a month) the Engineer shall supply a summary of completed repair items, by ramp, to the Contractor for the designated billing period as documented via GIS. A repair shall be considered complete when the Repair Identifier (Point, Line or Area) and "Quantity Installed" contained therein is approved by the Engineer. Work not complete at the time of the itemized Application for Payment submittal will not be included in that payment. Contractor shall use AIA Documents G702 and G703 Application and Certificate for Payment or similar.

I. Record Drawings:
   1. Usage of GIS by the Contractor for all repairs shall constitute a Record Drawing submission. Each Repair Identifier (Point, Line or Area) shall include, at a minimum, the quantity of repair completed and date of completion.
   2. At time of final acceptance and prior to final payment, all Repair Identifiers (Points, Lines or Areas) designated for repair shall be populated by the Contractor with the requisite information as stipulated by the Engineer.

J. Guarantees, Warranties, and Certificates:
   1. Submit all guarantees, warranties, and certificates to the Engineer prior to final payment.

1.14 TEMPORARY UTILITIES

A. The Contractor shall arrange for, obtain and pay for all temporary utilities necessary to complete the work except as stated otherwise in these specifications.

B. WATER: The Owner, during non-freezing conditions, will provide needed water for the Contractor's use. This shall consist of the existing water supply in the ramp. Water requirements beyond what is supplied in the garage shall be the responsibility of the Contractor and paid for by the Contractor. Water shall be used prudently. Connections are the responsibility of the Contractor.
   1. The Contractor shall not permit water to run uncontrolled off of their work site or be carried airborne off the site or onto vehicles and persons occupying part of the site. To prevent this, suitable enclosures shall be provided.
   2. The Contractor shall meet the DNR waste water regulations for construction site runoff requirements.
   3. The Contractor shall inspect all existing hose bibs for damage prior to use. Any damage to hose bibs after Contractor use shall be paid by the Contractor. Hose bibs shall be operated by owner-supplied devices, not by tools.

C. ELECTRICAL AND LIGHTING: The Contractor shall provide all temporary electric power and connections necessary for the Contractor's work. The Contractor can use the existing 110/220 volt service in the ramp. The Owner will provide the existing lighting. Supplementary lighting, if necessary, shall be provided by the Contractor.

D. DRAINS, SUMPS AND SEWERS: The Contractor shall not permit debris, or other deleterious contaminants to be washed down drains within the garage and be discharged into the City sewer system. The Contractor shall meet the DNR waste water regulations of 40 milligrams of solids per liter measured at the discharge from the sump pit. The Contractor shall provide filters, settling tanks or other methods necessary to meet these requirements.

E. TELEPHONE: The Contractor shall provide temporary telephone service to the job site. This service shall consist of at least a cellular phone for the Contractor's purpose.

F. TOILETS: The Contractor shall provide and maintain suitable, weather tight, sanitary toilet facilities for all workers during construction period. When toilet facilities are no longer required, promptly remove from site, disinfect, and clean or treat the area as required.
   1. The Contractor shall keep all toilet facilities clean and supplied with toilet tissue at all times. Maintain facilities in accordance with requirements of applicable building codes.

G. PROJECT SIGN: No individual advertising signs, plaques or credits, temporary or permanent, will be permitted on the building or premises, except the name of each contractor on their office or material shed.

H. EXPLOSIVES: Use of explosives, for any purpose, is prohibited.

I. FIRST AID: The Contractor shall provide temporary first-aid facilities on the site.

J. FIRE PROTECTION: The Contractor shall provide temporary fire protection as required by federal, state, and local laws and ordinances.

1.15 TRAFFIC/DUST/DEBRIS

A. The Contractor shall provide personnel, signs, barricades, lights and warning devices to control the orderly flow of traffic, both inside and outside of the garage where needed, and prevent pedestrians and cars from entering areas of the Contractor's operations. The traffic devices shall meet the requirements of the U.S. Department of Transportation Manual on Uniform Traffic Control Devices.

B. The Owner will continue to use the building during the renovation. The Contractor must schedule and arrange the work so as to maintain access to undisturbed parking areas. Short interruptions in traffic flow may be permitted but must be scheduled and written approval given by the Engineer seven (7) days prior to the planned interruption. During these interruptions, the Contractor shall provide personnel and signage to direct traffic within the structure.

C. Traffic control signs may be necessary several bays removed from the actual work area to maintain an orderly flow of traffic. The Owner shall make the final determination as to the required limit of traffic control.

D. The Contractor shall move these signs, barricades, lights and warning devices as necessary as the location of the work within the garage changes and previously worked-in areas are occupied by the Owner.

E. Contractor will provide appropriate signage warning the public of the construction area and directing them to exits. They shall provide and maintain necessary walkway with appropriate protective railings and enclosures required to prevent bodily injury to the public and maintain normal public usage during course of construction.

F. The General Contractor shall provide temporary barriers around areas of overhead removal to prevent damage or injury from flying debris associated with this work. Barriers shall consist of plywood screen walls or reinforced polyethylene extending from the top of floor to the underside of the floor above and supported by steel post shores or Ellis post shores.

G. Where possible, hoses, electrical cords, etc. shall be located overhead. Whenever such items are located in traffic paths, plywood coverings with adequate signs shall be provided.

H. General Contractor shall provide and maintain necessary safe passage through the areas being restored to prevent bodily injury to the public and to maintain normal public usage during course of construction. Engineer's approval required for all proposed temporary exit ways or walkways.

I. The Contractor shall erect temporary enclosures around the area of work, including areas adjacent to stairwells, driving lanes, parapets, walkways, etc. The Contractor shall provide adequate protection to prevent damage or injury from flying debris associated with this work. Barriers shall consist of plywood screen walls or reinforced polyethylene extending from the top of floor to the underside of the floor above and supported by steel post shores or Ellis post shores.

J. Dust protection is required around work area and shall be fastened tight to the floor and ceiling above. Flexible duct work or similar shall be used in addition to fans to vent work areas to the outside. Exhaust air shall be filtered, and filters maintained to prevent escaping dust. Dust protection must be in place prior to any concrete removal.

K. The Contractor shall be responsible for maintaining any means of egress required by governing codes, for the continued use of the parking facility. Enclosures which limit the means of egress from the structure shall have provisions for emergency egress through the partitions.

L. Dust filters shall be erected to limit dust being carried from the site. Contractor shall use crack router with vacuum attachment to eliminate dust from this process. Water shall be used during concrete removal, sawing, etc. to hold down dust.

M. Removal areas need to be covered during times contractor is not present to prevent pedestrians from entering Contractor's area of work. Removal areas in public pathways shall be covered with steel plates.

N. The Contractor shall maintain access to undisturbed parking areas throughout the concrete restoration and membrane placement.

O. All Contractors shall comply with applicable OSHA regulations.

P. All plastic sheeting shall be new or like new with no holes or rips that will allow the escape of dust. Plastic sheeting shall be replaced when it becomes torn.

Q. All plastic sheeting shall conform to NFPA 701.

1.16 SPECIAL CONTROLS

A. NOISE CONTROL: Contractor shall confine hours of work from 7:00 a.m. to 7:00 p.m. Monday through Friday except holidays. Noise levels shall be held to a minimum at all times considering the nature of the work and are subject to City ordinance.
   1. Contractor shall erect noise control around work areas for primary goal of minimizing construction work noise affecting the parking attendant's booth. Noise control shall consist of insulating blankets, batt insulation, or other similar means. Noise control shall be erected along edge of work area directly in line with attendant booths and shall return along the work area a distance sufficient in controlling the construction noise.
   2. The Contractor shall erect sound barriers around all equipment including air compressors that will sit outside the ramp.

B. SPECIAL RESPONSIBILITIES: The Contractor shall be responsible for damages to vehicles in or near the garage, resulting from their operations. The Contractor shall settle claims within 30 days of receipt of claim.

C. POLLUTION CONTROL: All internal combustion engines used in the Contractor's work and operating in a fixed location while running shall have their exhaust piped to the outside of the building and directed away from this building or any adjacent structures so as to prevent accumulation of fumes or carbon stains on the surfaces of the structure.
   1. Compressors may be located on the roof level of the ramp. Care shall be taken to prevent the exhaust from entering the attendant booth air intake ducts.
   2. Place plywood or other suitable material below compressors to protect the substrate from grease, oil, and other debris.

1.17 PARKING

A. Parking of vehicles and equipment required for construction purposes shall be in the Contractor's designated work areas. No parking will be provided for employees of any Contractor on site. Any vehicle in the parking ramp not parked within the construction area, which are required for this project, will be charged for parking.

B. All Contractors and their employees shall cooperate with the General Contractor and others in the parking of vehicles to avoid interference with normal construction activities.

C. Do not obstruct existing service drives and parking areas outside the Contractor's work area with equipment, materials and/or vehicles. Keep accessible for Owner's use at all times.

1.18 SECURITY

A. The Contractor shall provide for the security of materials and equipment stored at the site. Material and equipment shall not be stored in areas which the Owner continues to use. The Contractor may store equipment and materials in areas in which the Contractor is working; otherwise they shall be removed from the site.

1.19 CLEANING

A. General:
   1. Each Contractor shall keep premises free of accumulation of surplus materials and debris resulting from their operations and the operations of Subcontractors.
      a. Do not throw debris from ramp.
      b. Remove all debris from premises.
      c. No burning of debris on premises allowed.
      d. Do not use Owner's dump containers.
   2. At a minimum, remove debris dumpster weekly and additionally as required by the Engineer. Keep interior of ramp free at all times of unattended combustible debris.
   3. Drive lanes, adjacent to work area, shall be cleaned daily to eliminate airborne dust.
   4. Remove all tools, equipment, scaffolding and temporary facilities immediately when no longer required for execution of the work.
   5. The Contractor shall "broom clean" all floors within and adjacent to work areas as construction progresses to eliminate dirt and trash accumulation and maintain proper project cleanliness. Stair towers and areas of pedestrian traffic flow shall be "broom-clean" daily. Unless work area is secured against entry by pedestrians, all rubble shall be removed from ramp surface and all open holes shall be covered with steel plates.

B. Safety Requirements:
   1. Store volatile wastes in covered metal containers and remove from premises daily.
   2. Prevent accumulation of wastes which create hazardous conditions.
   3. Provide adequate ventilation during use of volatile or noxious substances.
   4. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
   5. Do not burn or bury waste materials on the project site.
   6. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm and sanitary drains.

C. Materials:
   1. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
   2. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

D. Submittals:
   1. Submit plan for disposal of waste.

E. Cleaning During Construction:
   1. Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulation of waste materials.
   2. Wet down dry materials to lay dust and prevent blowing dust.
   3. At daily intervals during progress of work, clean site and public properties, and dispose of waste materials. Prior to any removal, the Contractor shall submit their plan for confining, collecting, and disposal of waste material as a result of the Contractor's removal operations.
   4. Provide on-site dump container for collection of waste materials. Contractor shall coordinate with Owner for location of dumpster.
   5. Remove waste materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.
   6. Schedule cleaning operations so that dust and other contaminants resulting from the cleaning process will not fall on wet, newly painted surfaces or adjacent parked cars.

F. Final Cleaning:
   1. Immediately prior to final inspection, the Contractor shall clean all surfaces to condition acceptable for immediate occupancy by the Owner and remove all foreign matter from all finished items.
   2. The Contractor shall leave all work clean in all respects, ready for use and occupancy by the Owner without additional work.
   3. Employ experienced workers, or professional cleaners, for final cleaning.
   4. In preparation of substantial completion or occupancy, conduct final inspection of sight exposed interior and exterior surfaces, and of concealed spaces.
   5. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
   6. Water blast and broom clean to remove dust and debris from paved surfaces, walls, ceilings and stairs. Hand wash with rags, sponges or equivalent, all railings, pipes, windows, door frames, light fixtures, etc. and rinse, from within work areas and other areas affected by construction. If dust protection is not erected and maintained to prevent dust and debris from being tracked through the structure, the Contractor will be required to perform final cleaning procedures throughout the structure from the top level to the basement.
   7. Remove debris from drains and sumps and check that drains are again operable.

1.20 PROJECT CLOSEOUT

A. Completion:
   1. All work shall be complete when written notice requesting final inspection is submitted to the Engineer.

B. Guarantees, Bonds, and Affidavits:
   1. Required prior to final payment is made. Submit all required written documents including guarantees, bonds, and affidavits.
   2. Guarantees shall extend the full period of the required guarantee period after:

a. Replacement of work found defective during guarantee period at any time after completion.
b. Repair of inoperative items or adjustments to proper working condition of items not operating properly at time of inspection at completion.
c. Completion of work not completed at time of completion.

3. Items of equipment or material bearing a guarantee of the manufacturer or supplier longer than that described in the City of Madison Standard Specifications for Public Works Construction – most current year, shall not serve to release the manufacturer or supplier from their obligation to repair or replace such items within the limits of their guarantee after expiration of guarantees required by these specifications.

1.21 RECORD DRAWINGS

A. Required prior to final payment is made.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 22 00

UNIT PRICES

PART 1 - GENERAL

1.1 PAYMENT

A. Work is to be paid for on Unit Price basis and bid on estimated quantities. These work items are to be installed and completed per specifications and as shown on drawings.

1.2 MEASUREMENT OF QUANTITIES

A. Refer to General Requirements for complete information.

Item	Type of Work	Unit Price
1	**Top/Wear Coat Membrane Installation** including surface preparation of existing membrane system. Work includes placement of wear coat and topcoat membrane over existing areas with exposed membrane (base coat) and areas with heavily worn or weathered membrane. Epoxy required to fill depressions at risk of collection of water is included. Refer to specification section 07 18 00. Payment is based on area of membrane installed.	$/Sq. Ft.
2	**Localized Full-System Membrane Repair** including surface preparation of existing membrane and exposed concrete surfaces at existing and new concrete patch areas. Work shall include surface preparation, primer, base coat, wear coat, and topcoat. Refer to specification section 07 18 00. Payment is based on area of membrane installed.	$/Sq. Ft.
3	**Full System Membrane Removal and Replacement** including complete removal of existing bonded or unbonded membrane to a sound concrete surface. Work shall include complete membrane removal, surface preparation, primer, base coat, wear coat, and topcoat. Refer to specification section 07 18 00. Payment is based on area of membrane installed.	$/Sq. Ft.
4	**Concrete Vertical Surface Spall Repair with Galvanic Anodes** including removal of concrete, grit-blasting of newly exposed concrete surface and reinforcing steel, attachment of sacrificial galvanic anodes, coating of exposed reinforcement, and placing pre-packaged concrete fill. Refer to Detail B4/S502, C5/S503, D5/S503, and specification sections 03 01 07, 03 37 00 and 03 31 07. Payment is based on exposed surface area of concrete placed.	$/Sq. Ft.
5	**Concrete Vertical Surface Spall Repair** including removal of concrete, grit-blasting of newly exposed concrete surface and reinforcing steel, coating of exposed reinforcement, and placing pre-packaged concrete fill. Refer to Detail B4/S502, C5/S503, D5/S503, and specification sections 03 01 07 and 03 31 07. Payment is based on exposed surface area of concrete placed.	$/Sq. Ft.

6	**Concrete Surface Spall Repair with Galvanic Anodes** including removal of concrete to an estimated variable depth of 1" to 5" from top of slab, grit-blasting of the newly exposed concrete surface and reinforcing steel, attachment of sacrificial galvanic anodes, coating of exposed reinforcement, and placing "ready- mix" concrete fill (pre-packaged concrete at Contractor's option). Refer to detail A5/S502 and specification sections 03 01 07, 03 37 00 and 03 31 07. Payment is based on area of concrete placed at top surface of slab.	$/Sq. Ft.
7	**Concrete Surface Spall Repair** including removal of concrete to an estimated variable depth of 1" to 5" from top of slab, grit-blasting of the newly exposed concrete surface and reinforcing steel, coating of exposed reinforcement, and placing "ready- mix" concrete fill (pre-packaged concrete at Contractor's option). Refer to detail A5/S502 and specification sections 03 01 07 and 03 31 07. Payment is based on area of concrete placed at top surface of slab.	$/Sq. Ft.
8	**Overhead Surface Spall Repair with Galvanic Anodes** including removal of concrete, grit-blasting of newly exposed concrete surface and reinforcing steel, attachment of sacrificial galvanic anodes, coating of exposed reinforcement and placing pre-packaged concrete fill or shotcrete. Refer to detail B5/S502 and specification sections 03 01 07, 03 31 07, 03 37 00 and 03 37 13. Payment is based on exposed area of concrete placed.	$/Sq. Ft.
9	**Overhead Surface Spall Repair** including removal of concrete, grit-blasting of newly exposed concrete surface and reinforcing steel coating of exposed reinforcement and placing pre-packaged concrete fill or shotcrete. Refer to detail B5/S502 and specification sections 03 01 07, 03 31 07 and 03 37 13. Payment is based on exposed area of concrete placed.	$/Sq. Ft.
10	**Stair Spall Repair with Galvanic Anodes** including restoration at designated stair treads, installation of hairpins, resetting rail posts, grit-blasting of the newly exposed concrete surface and reinforcing steel, attachment of galvanic anodes, coating of exposed reinforcement and embedded posts, and casting replacement concrete at stair tread. Refer to Detail A6/S504 and specification sections 03 01 07, 03 37 00, 03 37 13 and 03 31 07. Payment is based on area of work completed.	$/Sq. Ft.
11	**Stair Spall Repair** including restoration at designated stair treads, installation of hairpins, resetting rail posts, grit-blasting of the newly exposed concrete surface and reinforcing steel, coating of exposed reinforcement and embedded posts, and casting replacement concrete at stair tread. Refer to Detail A6/S504 and specification sections 03 01 07 and 03 31 07. Payment is based on area of work completed.	$/Sq. Ft.
12	**Overhead Concrete Joist Spall Repair with Galvanic Anodes** including removal of concrete, grit-blasting of newly exposed steel, attachment of galvanic anodes, coating of exposed reinforcement, and placing pre-packaged or shotcrete concrete fill. Refer to Detail A5/S505 and specification sections 03 01 07, 03 37 00 and 03 31 07. Payment is based on area of concrete placed as measured on one face of the joist web. Repairs are assumed to be the full thickness of the joist web.	$/Sq. Ft.

13	**Overhead Concrete Joist Spall Repair** including removal of concrete, grit-blasting of newly exposed steel, coating of exposed reinforcement, and placing pre-packaged or shotcrete concrete fill. Refer to Detail A5/S505 and specification sections 03 01 07 and 03 31 07. Payment is based on area of concrete placed as measured on one face of the joist web. Repairs are assumed to be the full thickness of the joist web.	$/Sq. Ft.
14	**Re-anchor Stair Treads** including the removal of existing stair treads and installation of new tread anchors. Concrete below removed stair tread shall be inspected for additional damage with repairs performed as directed by the engineer as per pay items 4-12. Existing stair tread may be reused if condition is acceptable. Payment is based on stair treads re-anchored.	$/Item
15	**Epoxy Injection** including epoxy injection of concrete cracks and removal/grinding flush of epoxy injection ports. Refer to specification section 03 64 07. Payment is based on linear footage of crack injected with epoxy.	$/Lin. Ft.
16	**Concrete Slab Crack Repair** including grinding crack and joint edges, installing backer rod or bond breaker tape, and installing sealant. Refer to Detail B5/S504 and specification sections 07 90 07. Payment is based on length of sealant installed.	$/Lin. Ft.
17	**CMU Crack/Mortar Joint Repair** including removal, replacement and tooling of masonry mortar joints. Refer to specification sections 04 01 01 and 04 05 14. Payment is based on linear footage of masonry joints repaired.	$/Lin. Ft.
18	**Replace Expansion Joint – Wing Joint** including chipping out existing joint including angles flanking slab separation, placing concrete to form new block out, and placing new joint seal system. Refer to detail B6/S504 and specification sections 03 01 07, 03 31 07 and 07 95 07. Payment is based on length of expansion joint slab system installed.	$/Lin. Ft.
19	**Replace 4" Polyurethane Seal with Wing Joint** including removal of existing expansion joint seal, widening joint as required at OC, replacing/rebuilding epoxy block outs, replacing epoxy nosing and removing traffic plates and installing new expansion joint. Refer to details B6/S504 and C5/S504, and specification sections 03 01 07, 03 31 07 and 07 95 07. Payment is based on length of expansion joint installed.	$/Lin. Ft.
20	**Replace 8" Polyurethane Seal with Wing Joint** including removal of existing expansion joint seal, widening joint as required at OC, replacing/rebuilding epoxy block outs, replacing epoxy nosing and removing traffic plates and installing new expansion joint. Refer to details B6/S504 and C5/S504, and specification sections 03 01 07, 03 31 07 and 07 95 07. Payment is based on length of expansion joint installed.	$/Lin. Ft.
21	**Steel Cleaning/Painting** including all preparation, grit-blasting to near white conditions, priming, and painting as outlined in specification section 09 97 13. Payment is based on area of steel surface painted.	$/Sq. Ft.
22	**Remove and Replace Existing Sealant** including removal of existing sealant from cracks and joints, grinding crack and joint edges, and installing new sealant with backer rod as required. Joint width varies. Refer to specification 07 90 07. Payment is based on length of sealant installed.	$/Lin. Ft.

23	**Precast Shear Connector Repair** including the removal and replacement of existing sealant and rewelding of existing or new plate. Cleaning and painting of exposed steel connection to be paid by pay item 32. Refer to detail C6/S505 and specification section 09 97 13 and 07 90 07. Payment is based on each connection repaired with sealant reinstalled.	$/Item
24	**Exposed Steel Reinforcing** including removal of existing visible corrosion by grit-blasting and painting of exposed steel with galvanic paint. Refer to specification section 03 01 07. Payment is based on linear footage of steel painted.	$/Lin. Ft.
25	**Brick Masonry Repair** including removal and replacement of damaged brick masonry and mortar joints to match existing brick aesthetics. A limited quantity of reclaimed brick for Capitol Square North work is available from the owner but requires cleaning. Refer to specification sections 04 01 01 and 04 05 14. Payment is based on area of brick and mortar joints installed.	$/Sq. Ft.
26	**Brick Masonry Sealing (CSN)** including necessary surface preparation of brick exterior, application of approved brick sealing product to all exposed exterior faces, and cleaning of adjacent glass windows (both sides). Payment is based on only area of brick and mortar joints sealed.	$/Sq. Ft.
27	**Anchor Replacement** including removal of existing anchor, drilling and epoxying of new steel anchor. Payment is based on number of steel anchors installed.	$/Item
28	**Tapered Column Repair (SSCo)** including removal of concrete, grit-blasting of newly exposed concrete surface and existing reinforcing steel, installing new epoxy-coated reinforcing and placing pre-packaged concrete fill. Entire column to be painted yellow to match existing. Refer to Detail A6/S505 and specification sections 03 01 07 and 03 31 07. Payment is based on each column repaired and painted.	$/Item
29	**Weep Drain Repair (SSCo)** including removal and replacement of concrete, coring of pile cap and installation and coupling of new PVC pipe. Refer to detail B5/SS505 and specification sections 03 01 07 and 03 31 07.	Lump Sum
30	**Level 2 Resloping (SSCo)** including surface preparation, installation of new concrete repair material and water testing for adequate drainage. Refer to plan notes on SC-S102 and specification sections 03 01 07 and 03 31 07.	Lump Sum
31	**Precast Shear Wall Connection Replacement (SSF)** including removal of existing connections and installation of new lateral connections. Refer to detail B6/S501 and specification sections 03 01 07, 03 31 07, 03 37 00, 03 37 13 and 05 50 00. Payment is lump sum.	Lump Sum
32	**Sealant Removal and Replacement with Shear Connectors (SSF)** including removal of existing sealant from cracks and joints, grinding crack and joint edges, cleaning and painting of corroded shear connectors from above and below, and installing new sealant with backer rod as required. Joint width varies. Refer to specification sections 07 90 07 and 09 97 13. Payment is based on length of sealant installed.	$/Lin. Ft.

33	**Epoxy Injection of Topping Slabs (SSCo)** including epoxy low-pressure injection of concrete topping slabs on a grid of 2'-0"x2'-0" within repair area, sealing of injection ports/holes and localized restoration of existing membrane where occurs at individual port locations. Refer to specification section 03 64 07. Payment is based on square footage of topping slab injected with epoxy.	$/Sq. Ft.
34	**Pour Strip Replacement (CSN)** including demolition of existing pour strip, grit blasting and painting of exposed steel angles, forming of new pour strip, placement of rebar, surface preparation of existing concrete, finishing of new concrete, installation of compression seal expansion joint, installation of sealant joint and installation of Kelmar membrane system. Refer to detail C6/S501 and specification sections 03 01 07, 03 31 07, 07 18 00, 07 90 07, 07 95 07, and 09 97 13. Payment is lump sum.	Lump Sum

PRODUCTS (Not Used)

PART 2 - EXECUTION (Not Used)

END OF SECTION

QUANTITY SUMMARY

Description	Pay Item	SSL	SSF	SSCo	CSN	OC	Total Estimated Quantity
Top/Wear Coat Membrane Installation	1	10	0	0	0	0	10 SF
Localized Full System Membrane Repair	2	119	0	0	10	0	129 SF
Full System Membrane Removal and Replacement	3	10	0	0	0	0	10 SF
Concrete Vertical Surface Repair with Galvanic Anodes	4	244	3	86	77	30	440 SF
Concrete Vertical Surface Repair	5	2	9	7	15	4	37 SF
Topside Surface Spall Repair with Galvanic Anodes	6	119	3	299	7	8	436 SF
Topside Surface Spall Repair	7	0	7	0	2	2	11 SF
Overhead Surface Spall Repair with Galvanic Anodes	8	247	21	342	35	30	675 SF
Overhead Surface Spall Repair	9	2	1	7	2	0	12 SF
Stair Spall Repair with Galvanic Anodes	10	0	0	2	0	3	5 SF
Stair Spall Repair	11	5	3	11	0	0	19 SF
Concrete Joist Spall Repair with Galvanic Anodes	12	246	0	0	0	0	246 SF
Concrete Joist Spall Repair	13	10	0	0	0	0	10 SF
Re-Anchor Stair Tread	14	0	0	7	10	0	17 Each
Epoxy Injection	15	10	0	0	0	0	10 LF
Concrete Slab Crack Repair	16	435	118	0	0	352	905 LF
CMU Crack/Mortar Joint Repair	17	0	171	224	11	0	406 LF
Expansion Joint Replacement - Wing Joint	18	172	0	214	0	0	386 LF
Replace 4" Polyurethane Seal Joint with Wing Joint	19	0	0	0	0	43	43 LF
Replace 8" Polyurethane Seal Joint with Wing Joint	20	29	0	0	0	177	206 LF
Steel Cleaning/Painting	21	0	10	0	0	0	10 SF
Remove and Replace Existing Sealant	22	477	989	1324	69	22	2881 LF
Precast Shear Connector Repair	23	0	61	0	0	0	61 Each
Clean and Paint Exposed Steel Reinforcing	24	0	0	7	5	0	12 LF
Brick Masonry Repair	25	0	4	0	9	4	17 SF
Brick Masonry Sealing (CSN)	26	0	0	0	1320	0	1320 SF
Anchor Replacement	27	2	0	0	9	0	11 Each
Tapered Column Repair (SSCo)	28	0	0	2	0	0	2 Each
Weep Drain Repair (SSCo)	29	0	0	1	0	0	1 LS
Level 2 Resloping (SSCo)	30	0	0	1	0	0	1 LS
Precast Shear Wall Connection Replacement (SSF)	31	0	1	0	0	0	1 LS
Sealant Removal and Replacement with Shear Connectors (SSF)	32	0	2688	0	0	0	2688 LF
Epoxy Injection of Topping Slabs (SSCo)	33	0	0	411	0	0	411 SF
Pour Strip Replacement (CSN)	34	0	0	0	1	0	1 LS

SECTION 03 01 07

CONCRETE RESTORATION FOR PARKING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Concrete surface repair.
2. Include materials, labor, services and incidentals necessary for completion of this Section of Work.
3. Include the removal of unsound concrete, examination of exposed reinforcing, grit-blasting of acceptable reinforcing, replacement of unacceptable reinforcing with new, and cleaning of the newly exposed underlying sound concrete prior to casting new fill concrete.
4. Grit-blasting of exposed reinforcing steel and concrete surfaces is not required with Hydro-demolition concrete removal option. Concrete and steel surfaces shall be thoroughly cleaned of all slurry and residue following removal, prior to application of rebar coating and bonding agent.
5. The removal work shall be carried out in a manner so as to create a minimum disturbance with the continued use of the parking structure.
6. Warning: Concrete slabs at Capitol Square North and the Overture Center Ramps are reinforced with post-tensioned (P/T) tendons. The lower two structured levels of State Street Campus – Frances and top three levels of State Street Capitol are also P/T reinforced. Contractor shall lovate P/T tendons prior to removal of concrete. Contractor shall exercise extreme caution when chipping so as not to damage nor displace P/T tendons or anchorages. Any damage shall be repaired at Contractor's expense.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.
2. Section 03 15 07 – Vehicular Traffic Expansion Joint Assemblies for Parking Structures.
3. Section 03 31 07 – Structural Concrete for Parking Structures.
4. Section 03 64 07 – Crack Injection Repairs for Parking Structures.
5. Section 07 14 07 – Fluid-Applied Waterproofing for Parking Structures.
6. Section 07 19 07 – Water Repellents for Parking Structures.
7. Section 07 90 07 – Joint Protection for Parking Structures.

1.2 MEASUREMENT AND PAYMENT

A. Engineer shall locate and mark all areas of delamination to be repaired.

B. Contractor to document size of repair and when repair is complete, using an online database provided by Engineer.

C. Engineer to approve extents of concrete removal prior to Contractor installing repair materials.

D. Online database shall be used as a record for payments.

E. Repair Surface:

1. Basis of Measurement: Reference the specific repair detail on the Drawings. Measurement shall be made by the square foot.
2. Basis of Payment: Includes surface preparation, forming if necessary, concrete repair, finishing, and curing.

F. For concrete spall repair quantities, reference Bid Form.

1.3 REFERENCES

A. ASTM International (ASTM):
1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
2. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
3. ASTM A996 - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
4. ASTM C33 - Standard Specification for Concrete Aggregates.
5. ASTM C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. Cube Specimens).
6. ASTM C150 - Standard Specification for Portland Cement.
7. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
8. ASTM C293 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading).
9. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.

B. American Welding Society (AWS):
1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.

1.4 SUBMITTALS

A. Division 01 – General Requirements: Submittal procedures.

B. Product Data: Submit product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

C. Manufacturer's Instructions: Submit manufacturer's instructions for preparation, mixing, placing, and curing.

1.5 CLOSEOUT SUBMITTALS

A. Division 01 – General Requirements: Closeout procedures.

B. Division 01 – General Requirements - Project Record Documents: Using an online database to record actual locations and quantities of structural repairs.

C. Division 01 – General Requirements - Operation and Maintenance Data: Procedures for submittals.

1.6 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years documented experience.

B. Contractor: Company specializing in concrete repair with minimum five (5) years documented experience and approved by manufacturer.

C. Source Limitations: For repair products, obtain each color, grade, finish, type, and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.

D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Engineer.
   2. Do not proceed with remaining work until workmanship is approved by Engineer.
   3. Refinish mock-up area as required to produce acceptable work.

1.7 PRE-INSTALLATION MEETINGS

A. A pre-construction meeting is required with Contractor in order to coordinate work schedule and inspection required by Engineer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Division 01 - General Requirements: Product storage and handling requirements.

B. Comply with instructions for storage, shelf life limitations, and handling.

1.9 EXISTING CONDITIONS

A. Conduct demolition to minimize interference with adjacent building areas. Maintain protected egress and access at all times.

B. Provide, erect, and maintain temporary barriers and security devices.

PART 2 - PRODUCTS

2.1 HORIZONTAL REPAIR MORTAR

A. Flowable structural-repair concrete with integral corrosion inhibitor.
   1. MasterEmaco S 466 CI by BASF
   2. SikaTop 111 Plus by Sika
   3. Eucocrete Supreme by The Euclid Chemical Company
   4. Or approved equal.

2.2 OVERHEAD AND VERTICAL REPAIR MORTARS

A. One-component, shrinkage-compensated, fiber-reinforced product that contains an integral corrosion inhibitor.
   1. MasterEmaco S 488 CI by BASF
   2. SikeTop 123 Plus by Sika
   3. Duraltop Gel by The Euclid Chemical Company
   4. Or approved equal with corrosion inhibitor.

2.3 REBAR PRIMER AND BONDING AGENT

A. Water-based epoxy-cementitious bonding agent and rebar coating.
   1. MasterEmaco P 124 by BASF
   2. Sika Armatec 110 EpoCem by Sika
   3. Duralprep AC by The Euclid Chemical Company
   4. Or approved equal.

2.4 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615, 60 ksi yield grade billet-steel deformed bars, epoxy coated finish.

B. Stirrup Steel: ASTM A82, epoxy coated finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Division 01 - General Requirements: Administrative requirements for coordination and project conditions.

B. Verify surfaces are ready to receive work.

C. Beginning of installation means acceptance of existing surfaces.

3.2 PREPARATION

A. Prior to removal, the Contractor shall submit the Contractor's plan for confining dust and water run-off, collecting and disposal of broken concrete, steel reinforcement and other waste material as a result of the Contractor's removal operations. This plan shall be submitted to the Engineer and the Owner prior to start of construction. Dumpster location shall be coordinated with the Engineer and the Owner. Stockpiling of removal debris within parking garage is not allowed unless authorized and coordinated with the Engineer.

B. Shore the structure as required. Shoring design, supply, and installation is the responsibility of the Contractor.

C. Contractor responsible for removing and reinstalling or protection in place of mechanical, electrical, and plumbing utilities including electrical lighting and conduits as required for repair work.

D. At slab areas with a membrane, place plywood protection on the topside of slab for overhead concrete removal above to prevent damage to the membrane floor coating.

E. Delaminated areas which require removal of unsound concrete will be identified and marked by the Engineer. The unsound concrete shall be removed by chipping to sound concrete. The marking by the Engineer in the field does not guarantee that unsound concrete is not present in areas beyond those marked. Additional concrete removal may be required after the Contractor's initial removal. The Engineer will review the removal areas prior to concrete replacement.

F. Use hammers of 15 pounds or less for concrete removal, unless approved in advance by Engineer.

G. Remove concrete in an area extending slightly beyond outer boundary of unsound concrete.

H. Edges of removed area shall not be feathered, but shall be undercut sawed to a minimum depth of 3/4-inch for topside spall repairs.

I. Edges of underside and vertical spalls shall be undercut sawed to a minimum depth of 1/2-inch when prepackaged patching material is used.

J. During removals, care shall be exercised to avoid damaging exposed steel, breaking its bond to surrounding concrete, and/or cracking adjacent sound concrete.

K. Pneumatic tools should not be placed in direct contact with reinforcing steel.

L. Contractor shall be responsible for the labor and material costs to replace reinforcement or to provide supplemental reinforcement when excessive damage to existing reinforcement is caused by careless operation of Contractor's tools.

M. Following the initial removal of concrete and visual location of P/T tendons (at OC, CSN, and SSCF) in area of patch, perimeter of removal area shall be saw cut to square the area of removal prior to placing new concrete.

N. During the chipping process in deteriorated concrete areas, care shall be exercised to avoid cracking of the underlying sound concrete.

O. During removal of the unsound concrete, if more than half of the reinforcing bar diameter is exposed or if the bar is not firmly bonded to the surrounding concrete, or if the bar is corroded, then the remaining concrete around the bar shall be removed. The clearance between the bar and the concrete shall be minimum of ¾". Support bars for the main reinforcing steel shall not be exposed provided there is no corrosion on these bars.

P. The newly exposed sound concrete shall be cleaned by blowing away loose material with a deep grit-blast, with chipping hammer removal option, followed by cleaning with a compressed air jet.

Q. As a precautionary safety measure, the area directly below areas being repaired shall be closed until concrete demolition work is completed.

R. The Engineer shall be allowed 24 hours for the inspection of properly prepared concrete surfaces and reinforcement, before the scheduled concrete placement.

3.3 REINFORCEMENT CLEANING AND REPLACEMENT

A. Exposed reinforcing shall be thoroughly cleaned by grit-blasting, to remove rust and unsound concrete with chipping hammer removal option.

B. Bars that are damaged or that have lost more than 10 percent or their original area at any point along the length shall be considered unacceptable and shall be removed and replaced with an equivalent new bar of equal length at the Engineer's direction. No. 8 bars and smaller that have lost between 5 percent and 10 percent of their original area at any point can be blast cleaned and reused as long as a new full length #4 bar is used as supplemental steel next to the old cleaned bar at the Engineer's direction.

C. Exposed or supplemental reinforcing bars shall be no closer than ¾" measured radially from existing concrete. The elevation of exposed or supplemental reinforcing shall be maintained at the original height.

D. Where portions of reinforcing bars are exposed, the Engineer will determine if the embedded portion of the bar is soundly bonded to the remaining concrete. If, in the Engineer's judgment, the bar is not soundly bonded, the Contractor shall remove concrete around and under the bar for a length as determined by the Engineer.

E. Install additional reinforcing bars as detailed.

F. Drill and epoxy in dowels as detailed.

G. Cleaned reinforcing shall be coated with protective rebar primer prior to casting new concrete.

H. Engineer shall be allowed inspection of properly placed patch.

3.4 APPLICATION - CEMENTITIOUS MORTAR

A. Apply brush coating of slurry mix to damp concrete surfaces. Provide full surface coverage.

B. Apply cementitious mortar by steel trowel to fill patch area in accordance with manufacturer's instructions.

C. Damp cure cementitious mortar for two (2) days.

3.5 CLEAN-UP

A. Remove demolished materials from site as work progresses. Upon completion of work, leave areas of work in clean condition.

B. Debris shall not be flushed down the existing floor drains.

END OF SECTION

SECTION 03 31 07

STRUCTURAL CONCRETE FOR PARKING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Structural Concrete.
2. Admixtures.
3. Curing and Treatment Requirements.
4. Floor flatness and levelness.
5. Formwork, shoring, bracing, and anchorage.
6. Concrete reinforcement and accessories.

B. Work Installed but Furnished Under Other Sections:
1. Division 04 – Masonry: Masonry accessories attached to formwork.
2. Division 05 – Metals: Metal fabrications attached to formwork.
3. Division 07 – Thermal and Moisture Protection: Flashing reglets attached to formwork.

C. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.
2. Section 03 64 07 – Crack Injection Repairs for Parking Structures.
3. Section 07 19 07 – Water Repellents for Parking Structures.
4. Section 07 90 07 – Joint Protection for Parking Structures.
5. Section 07 95 07 – Traffic Joint Expansion Assemblies for Parking Structures.

1.2 MEASUREMENT AND PAYMENT

A. See bid form.

1.3 REFERENCES

A. Incorporated Guides and References:
1. American Concrete Institute (ACI):
a. ACI 302.1R – Guide for Concrete Floor and Slab Construction.
b. ACI 304R – Guide for Measuring, Mixing, Transporting and Placing Concrete.
c. ACI 304.2R - Placing Concrete by Pumping Methods.
d. ACI 305R - Hot Weather Concreting.
e. ACI 309R – Guide for the Consolidation of Concrete.
f. ACI 347 – Guide to Formwork for Concrete.
g. ACI SP-66 – ACI Detailing Manual.
h. ACI 362.1 – Guide for the design an construction of durable concrete parking structures.

B. Specifications:

1. American Concrete Institute (ACI):
   a. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials.
   b. ACI 301 - Specifications for Structural Concrete.
   c. ACI 303.1 – Specification for Cast-In-Place Architectural Concrete.
   d. ACI 306.1 – Specification for Cold Weather Concreting.
   e. ACI 308.1 – Specification for Curing Concrete.
   f. ACI 315 - Details and Detailing of Concrete Reinforcement.
   g. ACI 318 - Building Code Requirements for Structural Concrete and Commentary.
2. ASTM International (ASTM):
   a. ASTM A497 – Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.
   b. ASTM A615 – Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
   c. ASTM A704 – Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
   d. ASTM A706 – Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
   e. ASTM A767 – Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
   f. ASTM A775 – Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
   g. ASTM A884 – Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
   h. ASTM A934 – Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
   i. ASTM A1064 - Standard Specification for Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
   j. ASTM C33 – Standard Specification for Concrete Aggregates.
   k. ASTM C94 – Standard Specification for Ready-Mixed Concrete.
   l. ASTM C150 – Standard Specification for Portland Cement.
   m. ASTM C157 – Standard Test Method for Length Change of Hardened Hydraulic – Cement Mortar and Concrete.
   n. ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete.
   o. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
   p. ASTM C618 – Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use in Concrete.
   q. ASTM C989 – Standard Specification for Slag Cement for Use in Concrete and Mortars.
   r. ASTM C1116 – Standard Specification for Fiber-Reinforced Concrete.
   s. ASTM C1202 – Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration.
   t. ASTM C1240 – Standard Specification for Silica Fume Used in Cementitious Mixtures.
   u. ASTM C1602 – Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.
   v. ASTM D1751 – Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
   w. ASTM D3963 – Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars.
   x. ASTM E1155 – Standard Test Method for Determining F_F Floor Flatness and F_L Floor Levelness Numbers.

y. ASTM E1643 – Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
z. ASTM E1745 – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

1.4 SUBMITTALS

A. Submit proposed mix design of each class of concrete to Engineer not later than 10 days after Notice to Proceed or 15 days prior to the first concrete placement, whichever comes first.

B. Provide test mix results for all concrete use for parking structure slabs, beams and columns. Must include ASTM C1202 and C157.

C. Submit shop drawings of reinforcing steel under provisions of Division 01 – General Requirements.
1. Initial submittal of reinforcement shop drawings shall be complete. No partial submittals will be accepted.
2. Indicate reinforcement sizes, spacings, locations and quantities of reinforcing steel, and wire reinforcement, bending and cutting schedules, splicing, supporting and spacing devices.

D. Material Certificates: For each of the following, signed by the manufacturers:
1. Cementitious materials.
2. Admixtures.
3. Waterstops.
4. Curing compounds.
5. Bonding agents.
6. Vapor retarders.

1.5 REGULATORY REQUIREMENTS

A. Conform to requirements of local, state and federal rules and regulations applicable to Work and Project location.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather Concreting
1. Placement and curing of concrete where (1) average daily temperature for three consecutive days is less than 40 degrees F, and (2) air temperature is not greater than 50 degrees F for more than one-half of a 24-hour period from midnight to midnight shall be in accordance with ACI 306.1.

B. Hot Weather Concreting
1. Placement and curing of concrete subject to a combination of (1) rising air temperature (generally greater than 75 degrees F) and (2) wind and low relative humidity shall be in accordance with ACI 305R.
2. Contractor shall provide plan for minimizing exposure of concrete to adverse conditions due to combinations of high air temperature, direct sunlight, drying winds, and high concrete temperature.
3. Protect concrete from rapid temperature drop.

4. Pre-wet subgrade and forms.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Plywood Forms: Douglas Fir or Spruce-Pine-Fir species: Sound, undamaged sheets with clean true edges, exterior glue, facing material to provide finish specified.

B. Lumber: Douglas Fir or Spruce species; construction grade or better; with grade stamp clearly visible.

C. Preformed Steel Wall Forms: Minimum 16 gage thick, Vertically and horizontally matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and surface appearance.

D. Tubular Column Type: Round, spirally wound laminated fiber material; inside surface treated with release agent.

E. Form Ties For Exposed Surfaces: Plastic cone snap ties with 1-inch outside diameter by 1-inch (nominal) long cones, with no metal within 1-inch of concrete face after removal;
   1. Manufacturers:
      a. Advance Concrete Formwork, Inc.
      b. Dayton Superior.
      c. Symons - A Dayton Superior Company.
      d. Williams Form Engineering Corporation.
      e. Substitutions: As approved by Engineer.

F. Form Ties For Hidden Surfaces: Metal spreader type, removable to a depth of 1-inch from concrete face;
   1. Manufacturers:
      a. Advance Concrete Formwork, Inc.
      b. Dayton Superior.
      c. Williams Form Engineering Corporation.
      d. Substitutions: As approved by [Engineer] [Engineer/Architect].
   2. Contractor shall use formwork, form components and accessories provided by a single manufacturer. Intermixing of formwork, components and accessories shall not be allowed.

2.2 SHORING

A. Include materials, labor, services and incidentals necessary for completion of shoring.

B. Shoring shall be designed by Contractor to temporarily support members whose support is to be removed by partial demolition and concrete removal.

C. The Contractor shall submit to Engineer, a record of reference elevations of shored members at various stages as described below.

D. Contractor shall obtain reference elevations of members supported by shoring prior to concrete removal, during concrete removal, after concrete removal, during and after concrete replacement, and after shoring removal.

E. When reference elevations indicate unanticipated movements, shoring shall be adjusted to minimize adverse effects of that movement.

F. Shores supporting vertical loads shall be adjustable through positive means, such as by adjustable screw jacks, in order to compensate for elastic shortening of shores during loading and other effects.

G. Shores shall be effectively cross braced to prevent buckling failure of individual members and overall shoring stability failure.

H. Shores shall be provided to carry full weight of floor system for entire bay in which work is being performed. Shores shall be in place prior to removal of unsound slab concrete and shall be supported on 1 structural level or to grade.

I. Shores shall be installed snug, plumb and square.

J. Shores shall be adjusted as required during progress of work as indicated by movements measured during relative elevation surveys of shored members.

K. Shores shall only be removed when compressive strength results of replacement concrete reaches 75 percent of its specified 28-day strength. If Contractor chooses to have supplemental strength tests, it shall be the responsibility of the Contractor to make and pay for costs of these tests. Supplemental cylinders shall be stored on the structure in vicinity of the area they represent and shall be cured in the same manner as that portion of the structure.

L. Shores that have been removed shall not be stored in such a manner that they interfere with Owner's continued use of the structure. If shoring is not to be used within the structure it shall be removed from the structure or stored in the area in which Contractor is working.

2.3 REINFORCING STEEL

A. Reinforcing Steel of Parking Structure: A615, 60ksi yield grade carbon steel deformed bars; epoxy coated in accordance to ASTM A775 finish.

B. Welded Steel Wire Reinforcement: Deformed type, ASTM A497; in flat sheets; uncoated, finish.

C. Reinforcement Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire fabric, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete.

2.4 FIBER REINFORCEMENT

A. Synthetic Macro Fibers: Synthetic macro fibers engineered and designed for use in concrete, complying with ASTM C1116, Type III.
   1. Manufacturers – Macro Fibers:

a. The Euclid Chemical Company - TUF-STRAND SF
b. Propex Concrete Systems Corporation - Fibermesh 650
c. W. R. Grace & Co., Construction Products Division - STRUX 90/40
d. Substitutions: As approved by Engineer.

2.5 CONCRETE MATERIALS

A. Cementitious Materials
1. Portland Cement: ASTM C150, gray color, Type I except as specified below.
2. Fly Ash: ASTM C618, Class C.
3. Ground Granulated Blast Furnace Slag: ASTM C989, Grade 100 or 120.
4. Silica Fume: ASTM C1240.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: ASTM C1602, clean and not detrimental to concrete.

2.6 ADMIXTURES

A. Admixtures to be used in the concrete mixture shall be submitted to the Engineer for approval as part of the mixture design.

B. Chemical admixtures shall be in accordance with ASTM C494.

C. Admixtures shall be used in accordance with manufacturer's written recommendations.

D. Admixtures containing chlorides, sulfides, or nitrides are not permitted.

E. Admixtures permitted shall be supplied by a single manufacturer for project.

F. Air Entrainment Admixture: ASTM C260;
1. Manufacturers:
a. Axim Italcementi Group.
b. BASF Admixtures, Inc.
c. Grace Construction Products.
d. The Euclid Chemical Company.
e. Substitutions: As approved by Engineer.

G. Corrosion Inhibiting Admixture;
1. Manufacturers:
a. W.R. Grace – Type: DCI Corrosion Inhibitor. Dosage rate 3 gallons per cubic yard.
b. Master Builders – Type: Rheocrete CNI. Dosage rate 3 gallons per cubic yard.
c. Axim Concrete Technologies – Type: Cateol 1000 CN-CI. Dosage rate 3 gallons per cubic yard.
d. Cortec Corporation – Type: MCI 2005NS. Dosage rate 1.5 pints per cubic yard.
e. Substitutions: As approved by Engineer.

2.7 ACCESSORIES

A. Vapor Retarder: ASTM E1745; Class C, 10 mil minimum thickness, water vapor permeance rating of 0.050 perms or less;
   1. Manufacturers:
      a. Americover - Vapor Block VB 10.
      b. Fortifiber - Moistop Ultra 10.
      c. Stego Industries - Stego Wrap 10-mil.
      d. W.R. Meadows - Perminator.
      e. Substitutions: As approved by Engineer.

B. Joint Filler: ASTM D1751, Bituminous fiber, 1/2-inch wide by depth of concrete less 1/8-inch.

C. Form Release Agent: Colorless material which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating, intended for use on concrete;
   1. Manufacturers:
      a. BASF Construction Chemicals, LLC - Building Systems: Castoff.
      b. Dayton Superior - Clean Strip Ultra (J-3).
      c. W.R. Meadows - Duogard.
      d. Substitutions: As approved by Engineer/Architect.

2.8 CURING AND TREATMENT MATERIALS

A. Water: Potable and clean.

B. Burlap shall be clean, evenly woven, free of encrusted concrete or other contaminating materials, and shall be reasonably free of cuts, tears, broken or missing areas.

2.9 CONCRETE MIXTURE

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture of field test data, or both, according to ACI 301.

B. Limit cementitious materials to values indicated in ACI table 4.2.3. Indicate compliance in proposed design.

C. In designing the concrete mixtures used in the parking slabs, ramps and columns, beams and walls supporting such slabs conform to the recommendations of ACI 362 1.R, unless otherwise shown on the drawings or specified herein.

D. Limit water-soluble, chloride-ion content in hardened concrete to values indicated in ACI 318, Table 4.4.1. Indicate compliance in the proposed mix designs.

E. Mix concrete in accordance with ASTM C94.

F. Concrete mix designs shall be designed and submitted in accordance with Division 01 and included as part of cost of this Work.

G. Mix designs shall be prepared by a qualified agency acceptable to Engineer. One (1) copy of mix designs shall be submitted for Engineer's review prior to placing any concrete.

H. Mix design shall indicate brands, types, and quantities of admixtures included, compressive strength, slump, sieve analysis for fine and coarse aggregate, quantities of all ingredients, type and brand of cement, source of aggregate, whether fine aggregate is natural or manufactured.

I. Design of mix shall assure placing and finishing characteristics that meet Project requirements.

J. Mix designs contained in the Schedule of Mixes may be modified and submitted to Engineer for approval, by use of mid or high range water reducing admixtures to control slumps required for pumping of concrete. Strength, placing and finishing requirements shall be maintained.

K. Concrete mixtures placed directly over vapor retarders shall be designed to have low shrinkage characteristics and designed to minimize slab curling.

L. Initial and final set times of concrete mix designs shall be coordinated between the contractor and concrete supplier.

2.10 SCHEDULE OF MIXES

A. Footings, Pile Caps: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 4000 psi.
   2. Maximum Aggregate Size: 1-1/2 inches.
   3. Maximum Water-Cement Ratio: 0.50.

B. Foundation Walls, Grade Beams: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 4000 psi.
   2. Maximum Aggregate Size: 3/4 - inch.
   3. Air Entrainment: 6 percent air content is required with an acceptable air content of plus or minus 1.5 percent.

C. Parking Slab on Grade, Equipment Pads: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 3000 psi.
   2. Maximum Aggregate Size: 3/4 - inch.
   3. Maximum Slump (Inch): 3
   4. Maximum Water-Cement Ratio: 0.50.
   5. Air Entrainment: 6 percent air content is required with an acceptable air content of plus or minus 1.5 percent.

D. Stair Pans and Landings: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 3000 psi.
   2. Maximum Aggregate Size: 3/8 - inch.
   3. Maximum Slump (Inch): 3
   4. Maximum Water-Cement Ratio: 0.50.

E. Parking Structure - Columns: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 6000 psi.
   2. Maximum Aggregate Size: 3/4 - inch.
   3. Air Entrainment: 6 percent air content is required with an acceptable air content of plus or minus 1.5 percent.
   4. Maximum Water-Cement Ratio: 0.42.
   5. Corrosion Inhibitor

F. Parking Structure – Elevated Slabs, Joists, Beams, Elevated Barrier Walls: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 6000 psi.
   2. Maximum Aggregate Size: 3/4 - inch.
   3. Air Entrainment: A minimum of six (6) percent air content is required with acceptable range of air content is plus or minus 1.5 percent.
   4. Maximum Water-Cement Ratio: 0.40.
   5. Flyash Content: Minimum 50 lbs./yd, Maximum 100 lbs./yd.
   6. Slag Content: Minimum 50 lbs./yd, Maximum 100 lbs./yd.
   7. Silica Fume Content: Minimum 0 lbs./yd, Maximum as approved by Engineer.
   8. Maximum Chloride Absorption per ASTM C1202: 1500 coulumbs.
   9. Corrosion Inhibitor
   10. Shrinkage shall not exceed 0.04% per ASTM C157 at 28 days.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits stated below.

C. Verify lines, levels, and measurement before proceeding with formwork.

D. Earth forms are not permitted.

E. Align form joints.

F. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings which may be affected by agent.

G. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

H. Provide ¾" x ¾" chamfer strips for all exposed concrete corners of formwork.

I. Use mechanical rebar splicers and anchors in order to reduce congestion.

3.2 REINFORCEMENT

A. Place, support, and secure reinforcement against displacement.

B. Locate reinforcing splices as shown on Drawings.

C. Cut ends of epoxy coated rebars shall be coated with epoxy material equivalent to factory coating.

D. Damage to rebar coating as a result of bending shall be repaired with equivalent coating.

3.3 VAPOR RETARDERS

A. Vapor retarders shall be provided where slabs will receive vapor-sensitive floor coverings or in humidity-controlled areas or as indicated on drawings.
   1. Install vapor retarders directly under concrete slab-on-ground at areas with vapor-sensitive floor coverings and where subgrade granular material is subject to future moisture infiltration.
   2. Where subgrade material is dry, and will not be subject to future moisture infiltration and where humidity will be controlled, place the vapor retarder beneath the dry granular material and the concrete slab-on-ground directly on the dry granular material.

B. Installation of Water Vapor Retarders shall be in accordance with ASTM E1643.

C. Edges shall be lapped six (6) inches and sealed.

D. Contractor is responsible for maintaining conditions to provide a dry subgrade material where the slab is cast on top of granular material.

E. Contractor is responsible for maintaining a puncture free vapor retarder. Any punctures shall be sealed appropriately to prevent vapor transmission.

F. Do not disturb vapor retarder while placing reinforcement.

3.4 PLACING CONCRETE

A. Notify Engineer a minimum of 48 hours prior to commencement of concreting operations.

B. Failure to notify Engineer may result in rejection of concrete placed without observation.

C. Place concrete in accordance with ACI 301.

D. Place pumped concrete in accordance with ACI 304.2R. Line coating mix to initiate pumping shall not be used in pour but shall be wasted.

E. Ensure reinforcement and embedded items are not disturbed during concrete placement.

F. Concrete with excessive honeycomb or embedded debris shall be rejected and replaced at no cost to OWNER.

G. Application of surface retarders and sawcutting of joints shall be planned in advance.

H. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury.

I. Placing During Hot Weather:
   1. Place concrete during hot weather conditions in accordance with ACI 305R.

J. Placing During Cold Weather:

1. Place concrete during cold weather conditions in accordance with ACI 306.1.

K. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.5 FLOOR SLABS - GROUND

A. Place floor slabs-on-ground with contraction and construction joints as indicated on Drawings.

B. Saw cut contraction joints as soon as possible, without raveling, after placement of concrete, but within 24 hours.

C. Cut slabs with 3/16-inch thick blade, cutting one-fourth depth of slab thickness.

D. Separate slabs on fill from vertical surfaces with a joint filler.

E. Extend joint filler from bottom of slab to within 1/8-inch of finished slab surface.

F. Parking shall be floated and broom finished in accordance with ACI 302.1R. Immediately after finishing, begin curing.

G. Commercial and security office floor finish shall be single toweled.

3.6 FLOOR CURING AND TREATMENT

A. Wet burlap curing shall begin promptly to prevent drying of concrete. Moist curing shall continue for seven (7) days after placing.

B. Do not allow concrete to cool rapidly.

C. Keep forms covered and burlap continually moist during the first seven (7) days of the curing period.

D. Verify compatibility of floor treatment materials with mastics and finish materials to be applied to floor.

E. Provide a moist cure for a full seven (7) days through the use of burlap. Material shall completely cover the concrete surface and shall be weighted down to prevent shifting due to wind or other factors.

3.7 REPAIR OF VERTICAL SURFACE DEFECTS

A. Upon stripping of forms, vertical surfaces shall be inspected for defects caused by surface air voids, honeycombing, form tie holes, peeling, and fins.

B. Surface air voids shall be repaired with a unit packaged mixture of sand and cement mixed on job site with water and a unit of acrylic. Mixture shall be brushed uniformly on to surface and into voids. Where surface is to be exposed, surface finish of repair shall match adjacent surface. Final appearance of exposed concrete shall be approved by Engineer and Owner.

C. Honeycombed and other defective concrete shall be removed down to sound concrete and patched to match adjacent surfaces.

3.8 FINISHING OF FORMED SURFACES

A. After removal of forms and repair of defects, surfaces of concrete shall be given finishes specified below.

B. When finish is to match a sample furnished to Contractor, sample finish shall be reproduced on an area at least 100 square feet in size in an inconspicuous location designated by Engineer prior to application in the specified area. Application of finish shall not be made until approved by Engineer.

C. Rough Form Finish: Surface left with texture imparted by forms; form facing material not specified; tie holes and defects shall be patched; fins exceeding 1/4-inch shall be chipped or rubbed off.

D. Smooth Form Finish: Surface produced by form facing material shall be a smooth, hard, uniform texture on concrete; forms may be plywood, tempered form grade hardboard, metal, plastic, paper or other acceptable material capable of producing finish; arrangement of facing material shall be orderly and symmetrical with number of seams kept to practical minimum; forms supported to prevent deflection and to maintain tolerances; tie holes and defects shall be patched; all fins shall be removed.

E. Tops of walls or buttresses, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces shall be struck smooth after concrete is placed and shall be floated to a texture reasonably consistent with that of formed surface.

F. Final finish on formed surfaces shall continue uniformly across unformed surfaces.

G. Where a schedule of finishes is not included in this Section, or finishes are not shown on Drawings, the following finishes shall be used as applicable: Rough Form Finish for all concrete surfaces not exposed to public view; Smooth Form Finish with Grout Cleaned Finish for all concrete surfaces exposed to public view.

3.9 TOLERANCES

A. All tolerances for concrete work shall be in accordance with ACI 117.

3.10 FIELD QUALITY CONTROL

A. Testing and analysis of concrete shall be performed under provisions of Division 01.

B. Testing firm will cast test cylinders and perform slump and air entrainment tests in accordance with ACI 301.

C. Three concrete test cylinders shall be cast from each increment of 100 cubic yards of each class of concrete placed each day or from each placement of each class if less than 100 cubic yards.

D. During hot or cold weather, as defined in Section 1.6, one additional test cylinder shall be cast from each increment of 100 cubic yards of each class of concrete placed each day or from each pour of each class if less than 100 cubic yards and be cured on site under same conditions as concrete it represents.

E. One slump test will be taken for each set of tests cylinders cast and whenever consistency of concrete appears to vary.

F. No water may be added to the concrete at the site unless pre-approved in writing by the Engineer for that specific mix. If pre-approved, the mix ticket must state how much water may be added.

3.11 PREPARATION OF EXISTING WORK

A. Drill holes in existing concrete, insert steel dowels and pack with non-shrink grout where new concrete is doweled to existing concrete work.

B. Prior to placement of new concrete clean with steel brush and apply bonding agent in accordance with manufacturer's instructions.

END OF SECTION

SECTION 03 37 00

EMBEDDED GALVANIC ANODES

PART 1 - GENERAL

1.1 SUMMARY

A. This work under this section shall consist of providing all work, materials, labor, equipment and supervision necessary to complete the following required in these specifications and on the drawings.

B. Provide embedded galvanic anodes in the horizontal walking surfaces of stairs and walkway of project. Anodes are to be placed at a maximum 24" on center, each way, into concrete spalls.

C. This Section includes furnishing all labor, materials, equipment and service necessary to properly install Galvanic Anodes designed to mitigate corrosion of reinforcing steel in concrete.

1.2 RELATED SECTIONS

A. Section 03 01 07 – Concrete Restoration for Parking Structures

B. Section 03 37 13 – Shotcrete

1.3 SUBMITTALS

A. Make submittals in accordance with requirements of Division 1 and as specified in this Section.

B. Submit material samples of anode(s) and related materials at least 10 days in advance of installation.

C. Product Data: Submit manufacturer's product data, including surface preparation and placement instructions. Contractor to provide material safety data sheets (MSDS/SDS) for materials used and stored on site.

D. Comply with Division 01 – General Requirements: Submittal Procedures.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Provide proof of documented quality assurance system. Manufacturing anodes for at least 5 years.

B. Pre-placement Meeting: Convene a pre-placement meeting 5 days before start of placement of concrete repair mortar. Require attendance of parties directly affecting work of this section, including contractor, Engineer, and manufacturer's representative. Review surface preparation, placement, protection and coordination with other work.

C. All galvanic anodes, galvanic anode accessory parts and materials, shall originate from a single manufacture.

D. All repair mortars used in repairs containing galvanic anodes shall be approved by anode manufacturer.

E. Repair mortars, concrete and bonding agents shall be Portland cement-based materials with volumetric resistivity below 15,000 ohm/cm, as measured after 28-day wet cure and in saturated condition. Contractor shall provide submittals confirming resistivity of repair materials prior to beginning work. Non-conductive repair materials such as epoxy, urethane, or magnesium phosphate shall not be permitted.

F. If required, pack embedding mortar between the anode and the substrate concrete to create a conductive grout bridge ensuring no voids exist.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in clean, dry area in accordance with manufacturer's instructions. Keep containers sealed until ready for use. Avoid extreme temperatures.

C. Handling: Protect materials during handling and placement to prevent damage or contamination.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Galvanic Anodes:
   1. Description: Pre-manufactured concrete casing containing zinc, around a pair of galvanized steel tie wires designed to mitigate corrosion of reinforcing steel in concrete.
   2. The core of the anode shall consist of a minimum of 160 grams of electrolytic high grade zinc in compliance with ASTM B418 cast around a pair of steel tie wires and encased in a highly alkaline cementitious shell with a pH of 14. The anodes shall have one side that is less than 1.5-inches in height.
   3. Galvanic anode shall incorporate insulating barrier at interface of anode and reinforcing bar to prevent "dumping" of current into attachment bar there by extending coverage area and service life of galvanic anode.
   4. Manufacturers:
      a. Galvashield XP4 - Vector Corrosion Technologies, (319) 364-5355
      b. Sentinel Gold - Euclid Chemical Company, (800) 321-7628
      c. Master Protect 8160CP - BASF Building Systems, (262) 277-4045
      d. FerroGard 675 – Sika, (847) 767-2414
      e. Substitutions: As approved by Engineer.
      f. Basis for Design:
         1) Galvashield XP4 from Vector Corrosion Technologies.

B. Repair Mortars Compatible with Galvanic Anodes
   1. Repair Mortar: Shall be prepackaged, cementitious repair mortar Repair mortar shall be capable of achieving a minimum 3-day compressive strength of 3,000 psi and 5,000 psi at 28

days per ASTM C 109, as certified by manufacturer, Manufacturer to provide written certification of compatibility with galvanic anode corrosion protection system.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive anode. Notify Engineer if surfaces are not acceptable. Do not begin placement until unacceptable conditions are corrected.

3.2 SURFACE PREPARATION

A. Concrete removal and preparation of concrete surface for repair shall be conducted according to Section 03 01 29 - Restoration of Concrete.
   1. Remove all unsound concrete from around and behind steel reinforcement.
   2. Provide minimum ¾" clearance between anode and substrate or ¼" larger than top size aggregate of repair material, whichever is larger.
   3. Clean exposed reinforcing steel to remove all rust, mortar, etc. Provide bright metal surface that will provide sufficient electrical connection.
   4. Secure loose reinforcing steel by tying tightly to other bars with steel tie wire. Newly secured reinforcing steel shall be tested to ensure electrical continuity in accordance with the subsequent paragraph.

B. Electrical continuity of rebar within repair area shall be confirmed with use of a high-impedance multimeter indicating a reading of 1.0mV or less.

C. If necessary, establish the electrical continuity with uncoated steel tie wire.

3.3 PLACEMENT

A. Place anodes as close as practical to edge of repair area (within 6") while providing sufficient clearance for anode to be completely surrounded by repair mix.
   1. Minimum 1.5" of repair mix cover shall be provided over galvanic anode unit.
   2. Where possible install Anode with top face parallel to concrete surface. Anode may be angled down in cases where concrete cover is very shallow.
   3. Install anodes after cleaning reinforcement but before any other treatment of the reinforcing.

B. Install galvanic anodes to existing reinforcement along the perimeter of the repair at spacing as specified on the plans. In no case shall the distance between anodes exceed 24 inches.

C. If the anode is to be tied onto a single bar, or if less than 1.5-inch of concrete cover is expected, place anode beneath the uncoated bar and secure to reinforcing steel.

3.4 PROTECTION

A. Anodes shall be installed and covered as soon as possible after removal from their original sealed packaging. Any anodes removed from their original packaging must be protected from excessive moisture and/or contaminants until time of repair material placement.

B. Do not allow anodes to freeze.

END OF SECTION

SECTION 03 37 13

SHOTCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Applicable provisions of Division 01 shall govern work of this section.

B. The word "Shotcrete" used in this specification shall mean the wet mix process as described in ACI 506R.

C. Related Sections:
1. Section 03 01 07 – Concrete Restoration for Parking Structures.
2. Section 03 31 07 – Structural Concrete for Parking Structures.
3. Section 03 37 00 – Embedded Galvanic Anodes.

D. Include all materials, labor, services and incidentals necessary for the completion of this section of the work.

E. Furnish the necessary equipment and materials to apply shotcrete patches on the underside of the parking structure slab, columns or beams.

1.2 REFERENCES

A. Industry Standards, Specifications and Codes
1. General:
   a. Comply with all provisions of the following codes and standards except as modified herein. All referenced codes and standards including all revisions and commentaries shall be the most currently adopted as of the date of these contract documents.

B. American Society For Testing and Materials (ASTM):
1. ASTM C 33 Specification for Concrete Aggregate
2. ASTM C 39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
3. ASTM C 42 Standard Method of Obtaining and Testing Drilled Cored and Sawed Beams of Concrete
4. ASTM C 150 Specification for Portland Cement
5. ASTM C 260 Standard Specification for Air Entrained Admixtures for Concrete
6. ASTM C 309 Standard Specification for Liquid Membrane - Forming Compounds for Curing Concrete
7. ASTM E 329 Specification for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as used in Construction
8. Additional ASTM numbers are noted in later text.

C. American Concrete Institute (ACI):
1. ACI 301 Specification for Structural Concrete in Buildings

2. ACI 305 Recommended Practice for Hot Weather Concreting
3. ACI 306 Recommended Practice for Cold Weather Concreting
4. ACI 318 Building Code Requirements for Reinforced Concrete
5. ACI 506 Guide to Shotcrete
6. ACI 506.2 Specification for Materials, Proportioning and Application of Shotcrete
7. Field Guide to Concrete Repair Application Procedures:
8. RAP Bulletin #12 Concrete Repair by Shotcrete Application

1.3 SUBMITTALS

A. The Contractor shall submit trial mix proportions with compressive strength results as described later in this section.

B. The Contractor shall submit test results of shotcrete core tests after each day's gunning as described later in this section.

1.4 APPLICATOR QUALIFICATIONS

A. The Contractor shall have three (3) years of experience in performing work similar to that shown in the drawings and specifications. The foreman of the shotcrete crew shall have a minimum of two years' experience as a shotcrete nozzleman, finisher and gunman. The nozzleman shall have certification or a minimum 3,000 hours experience as a nozzleman and completed at least one similar application as a nozzleman.

B. The Contractor shall submit a list of three (3) projects in which similar work to that specified was successfully completed. This list shall contain the following for each of the three (3) projects:
1. Project Name
2. Owner of project
3. Owner's representative, address and phone number
4. One-sentence description of work
5. Cost of this shotcrete work
6. Total restoration cost of project
7. Date of completion

C. The sum of the costs for shotcrete with corrosion inhibitor work of the five (5) projects provided above shall be a minimum of $100,000.

1.5 DELIVERY, STORAGE AND HANDLING

A. Cement shall be stored in weathertight enclosures which shall provide protection from dampness and contamination. Aggregate stockpiles shall be arranged and used in a manner to avoid segregation or contamination with foreign matter or other aggregates. Reinforcement shall be stored so as to avoid contact with the ground.

PART 2 - PRODUCTS

2.1 PRE-PORTIONED BAG MIX

A. Contractor's option to use batched material or use of pre-portioned bag mix.

B. MS-W1 Synthetic Fiber Shotcrete with Corrosion Inhibitor by King Packaged Materials Company, Ontario CA.

2.2 CONCRETE TYPE, STRENGTHS AND USES

A. The minimum compressive strength indicated, based on 3" diameter, 3" long core specimens shall be as follows:

Concrete Type	Strength	Use
Shotcrete	7 days - 3300 PSI 28 days - 4000 PSI	Beams and underside of slab repair

2.3 MATERIALS

A. Cement:
   1. Shall be Portland Cement conforming to ASTM C150, type 1.

B. Admixtures:
   1. Admixtures shall be submitted to the engineer for approval.
   2. The total chloride ion content of the mix shall not exceed 0.10% by weight of cement.

C. Air entraining:
   1. Shall conform to ASTM C260. The entrained air content shall be controlled in a range of 6% to 8% of total air at the pump.
   2. Air entraining shall be required for all shotcrete used in exterior applications.

D. Water:
   1. Mixing water shall be fresh, clean and potable.

E. Reinforcing:
   1. Corroded reinforcing shall be prepared per Section 02 41 17 "removal of existing concrete and surface preparation".

F. Aggregates:
   1. Aggregates shall be clean, free of salt and organic impurities and conform to the requirements of ASTM C33. The combined gradation shall conform to one of the gradations shown below:

Gradation Limits for Combined Aggregate - Gradation No.1

Sieve Size U.S. Standard Square Mesh	Percent by Weight Passing
1/2"	-
3/8"	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

2.4 MIX PROPORTIONS AND PRECONSTRUCTION TESTING

A. The required shotcrete mix shall be developed prior to the actual application of shotcrete to any surface forming a permanent part of the repair work. A trial mix shall be made with the same ingredients and tested in the same mixing and placing equipment that is proposed for use in the work. The mix design proposed for use, when tested as described below shall have a minimum compressive strength of 3,300 PSI at 7 days and 4,000 PSI at 28 days.

B. A sand to cement ratio of 3½ to 4.0 is recommended, the actual mix proportions used will be at the discretion of the Contractor so long as the requirements for strength and proper steel encasement are met. The lowest water-cement ratio compatible with the above parameters is recommended.

C. Mix designs of each separate mix shall be prepared and the following data shall be submitted to the Engineer for each mix design. The Contractor shall be responsible for costs relating to testing.
   1. Sieve analysis for fine and coarse aggregate
   2. Test for aggregate organic impurities
   3. Proportions of all materials
   4. Mixing method
   5. Mill certificates for cement
   6. Slump at the pump
   7. Air content at the pump

D. Two test panels shall be made using the trial mix by one of the nozzlemen expected to work on the job. The panel shall be at least 18" x 18" x 3"; they shall be gunned in an upside-down horizontal position simulating actual field conditions. At least six (6) cubes or cores shall be cut from each of the test panels. These specimens shall be cut from the shotcreted test panels not earlier than 5 days after shotcreting. The specimens shall be examined by the Engineer for sand pockets or lamination. Three specimens shall be tested for compressive strength at 7 and 28 days. For cube specimens and core cylinders with a length/diameter ratio less than 2, the minimum

compressive strength shall be at least equal to the specified strength divided by 0.85. During storage, the specimens shall be kept continuously moist. Costs for cutting and testing shall be paid by the Owner.

E. The proportions of materials determined on the basis of developed mix proportions and trial mix testing along with compressive strength data shall be submitted to the Engineer for approval. After approval by the Engineer, these proportions shall be used in the actual application of shotcrete and shall not be varied without further approval.

PART 3 - EXECUTION

3.1 PREPARATION OF CHIPPED-OUT SURFACES TO RECEIVE SHOTCRETE

A. The Engineer will locate and mark the areas to be repaired.

B. Refer to Section 03 01 07 "Concrete Restoration for Parking Structures".

3.2 BATCHING AND MIXING

A. Weight batching shall be used to control mix proportions. With the Engineer's permission, volume batching may be used during shotcreting operations provided that a minimum of one weight batching check is made every 8 hours for control purposes. Cement may be batched by integral bags.

B. Aggregate and cement shall be thoroughly mixed in the surface dry state before being deposited in the placing equipment. The moisture content of the combined aggregate at the time of mixing shall meet the approval of the inspector and should be in the range of 3% to 6% of weight of the oven-dry (110°C) aggregate.

C. The water content of the mix should be such as to produce the minimum slump that can be handled by the pump. A slump in the range of 1½" to 3" at the pump is normally suitable. The applied mix shall be dry enough to prevent sagging or sloughing from the repair surface.

3.3 PLACEMENT OF SHOTCRETE

A. The provisions of "Guide to Shotcrete" (ACI 506) and "Specification for Materials, Proportioning and Application of Shotcrete" (ACI 506.2) should be followed insofar as they apply to the work.

B. The thickness of any given layer of shotcrete shall be such as to preclude sagging or falling away. If wind or air currents cause separation of the nozzle stream during placement, shotcreting shall be discontinued or suitable means shall be provided to screen the nozzle stream.

C. The surface of freshly placed shotcrete shall be broomed or scraped to remove any loose material if additional layers of shotcrete are to be applied thereto after hardening. Such surfaces shall also be dampened before applying succeeding layers.

D. No shotcrete shall be placed if drying or stiffening of mix takes place at any time prior to delivery to the nozzle. Under no circumstances shall any rebound or previously expended material be included in the work or used in the shotcrete mix.

E. If during the placement of shotcrete there is any overspray on adjacent surfaces including replacement subsequently to be shotcreted, all such overspray or rebound shall be removed prior to final set and before placement of shotcrete on such surfaces.

F. Shotcrete which lacks uniformity, exhibits segregation, honeycombing or lamination, or which contains any dry patches, voids or sand pockets shall be removed and replaced.

G. The nozzle shall be held at such a distance and angle so that material shall be fully placed behind reinforcement before any material is allowed to accumulate on its face.

H. Provide alignment wires to establish thickness and plane surfaces. Install alignment wires at corners and offsets not established by form work. Ensure alignment wires are tight, true to line and placed to allow further tightening.

3.4 FINISHING

A. Scraping with a featheredge or screed to remove high spots shall not be done until the shotcrete has become stiff enough to withstand the pull of the screeding device.

B. The final surface finish shall be troweled for architectural appearance. The finished surface shall retain the original architectural form. Partial forming of edges and corners with multiple passes of shotcrete shall be provided as directed by the Engineer.

3.5 CURING

A. Freshly applied shotcrete shall be protected from premature drying and temperatures below 40°F and shall be maintained with minimal moisture loss at a relatively constant temperature.

B. Shotcrete shall be kept continuously moist for at least 7 days. The following method shall be used:
   1. Applying a curing compound in accordance with ASTM C-309 "Specifications for Liquid Membrane – Forming Compounds for Curing Concrete". Two applications shall be made; the second shall be within an hour of the first application. Curing compounds shall not be used on any surface which additional shotcrete or other cementitious materials are to be bonded. Curing compounds shall be compatible with the surface sealer to be used.

3.6 LIMITATIONS OF OPERATIONS

A. No traffic shall be permitted in the bay above during the shotcreting work for 48 hours thereafter.

B. Traffic and pedestrian movement through the work area shall be limited to prevent damage or injury resulting from the work. Adjacent surfaces shall be protected as much as possible and shall be cleaned after the shotcrete work is completed.

3.7 FIELD QUALITY CONTROL

A. Specimens for determining compressive strength shall be made by the Contractor for each 8- hour period that shotcrete is placed.

B. A test panel with minimum dimensions of 18" x 18" x 3" shall be gunned in the same position as the work represented and field cured in the same manner as the work. The panels shall be gunned by the nozzleman doing most of the work.

C. At least three 3" diameter cores or 3" cubes shall be cut from each panel for testing. Panels shall not be removed prior to 12 hours after shotcreting. Specimens shall not be cut until immediately prior to testing. All cutting and testing shall be performed by a qualified approved testing laboratory which meets the requirements of ASTM E 329 and their reports will be sent to the Engineer and the Contractor. Cost for fabrication of the test panel shall be paid for by the Contractor. Cost for cutting and testing shall be paid for by the Owner.

D. Testing of cores and cubes shall be in accordance with ASTM C 42. Each test report shall contain the following information for each set:
   1. Individual test specimen strength, type of failure
   2. Specimen number
   3. Portion of structure represented by the concrete tested
   4. Date cast
   5. Date tested
   6. Concrete properties specified
   7. Notice if tests indicate concrete is not in conformance with specifications.

E. The specimens shall be tested at an age of 7 days. Strength of concrete shall be considered satisfactory if average of two 7-day tests in each set of cores or cubes equals or exceeds 3,300 PSI and neither of the 7-day tests is 500 PSI or more below the specified 7-day strength.

F. Should results of test not meet preceding requirements, associated shotcrete work will either be rejected by the Engineer or additional testing will be performed at 28 days. If strength acceptance criteria are not met by core tests at 28 days, the Contractor shall remove and replace all questionable areas of concrete at the Contractor's expense. The costs of additional tests shall be paid for by the Contractor.

G. Contractor may choose to have cores removed and tested from the work in place rather than the test panels at Contractor's expense.

H. The Engineer may perform additional destructive and non-destructive testing to detect voids in the shotcrete repairs. If any voids are found, the costs of these initial tests as well as all subsequent tests shall be paid by the Contractor. The Contractor shall also remove and replace at no cost to the Owner, all shotcrete repairs found to contain voids. If no voids are found, the costs of all tests will be paid by the Owner.

END OF SECTION

SECTION 03 64 07

CRACK INJECTION REPAIRS FOR PARKING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Crack repair, crack waterproofing, and void filling in concrete members by pressure injection of flexible epoxies.
2. Section also includes conducting tests to confirm the success of the repair performed.
3. Cleaning concrete surfaces at cracks to be injected.
4. Sealing the exterior surface of the crack and installing injection ports.
5. Injection of the specified materials into cracks in concrete beams and slabs on all areas of the structure.
6. See Bid Form for quantities. Payment shall be by linear foot of crack injected.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all Work under this section.
2. Section 03 01 07 – Concrete Restoration for Parking Structures.
3. Section 03 15 07 – Vehicular Traffic Expansion Joint Assemblies for Parking Structures.
4. Section 03 31 07 – Structural Concrete for Parking Structures.
5. Section 07 14 07 – Fluid-Applied Waterproofing for Parking Structures.
6. Section 07 19 07 – Water Repellents for Parking Structures.
7. Section 07 90 07 – Joint Protection for Parking Structures.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
2. ASTM D412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
3. ASTM C321 – Standard Test Method for Bond Strength of Chemical Resistant Mortars.
4. ASTM C881 – Standard Specification for Epoxy Resin Base Bonding Systems for Concrete.
5. ASTM C882 – Standard Test Method for Bond Strength of Epoxy Resin Systems used with Concrete by Slant Shear.
6. ASTM D570 – Standard Test Method for Water Absorption of Plastics.
7. ASTM D638 – Standard Test Method for Tensile Properties of Plastics.
8. ASTM D648 – Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
9. ASTM D695 – Standard Test Method for Compressive Properties of Rigid Plastics.
10. ASTM D732 – Standard Test Method for Shear Strength of Plastics by Punch Tool.
11. ASTM D790 – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
12. ASTM D2240 – Standard Test Method for Rubber Property - Durometer Hardness.

1.3 SUBMITTALS

A. Division 01 – General Requirements: Submittal procedures.

B. Product Data: Submit product data including characteristics, limitations, and identify dissolving solvents, fuels and potential destructive compounds.

C. Manufacturer's Installation Instructions: Submit special environmental requirements to install the Product. Submit statement of procedures, and description of equipment and injection method to be used prior to commencing work.

D. Material Safety Data Sheets: Submit Material Safety Data Sheets for all materials to be used. Contractor shall include his proposed safety procedures for handling and storage of these materials.

1.4 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five (5) years documented experience.

B. Applicator: Company specializing in performing Work of this Section with minimum five (5) years documented experience approved by manufacturer.

1.5 PRE-INSTALLATION MEETING

A. Division 01 - General Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing Work of this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Division 01 - General Requirements: Product storage and handling requirements.

B. Maintain ambient storage temperature of between 45 and 65 degrees F in accordance with manufacturer's written instructions.

C. Keep away from heat, fire, and open flame.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Division 01 - General Requirements: Product environmental requirements.

B. Do not install materials when temperature is below 50 degrees F or above 90 degrees F.

C. Maintain this temperature range, 24 hours before, during, and 24 hours after installation.

D. Restrict traffic from area where materials are being installed or are curing.

1.8 WARRANTY

A. Division 01 – General Requirements: Product warranties and product bonds.

B. Contractor shall furnish a three year written warranty agreeing to re-inject all cracks which fail to adhere to the surfaces of crack.

PART 2 - PRODUCTS

2.1 INJECTION MATERIALS

A. Epoxy:
1. The injection resin shall be a two-component, low viscosity, structural epoxy adhesive designed for pressure injection grouting. The injection resin shall meet or exceed the provisions of ASTM C881, Type IV, Grade 1.
2. Epoxy shall be resistant to water and moisture when cured, shall be able to gel and cure to strength in the presence of moisture, and shall have sufficient working life to permit progressive injection procedures without premature blocking of the crack or the injection ports.
3. The injection resin shall be supplied by BASF or Sika.
4. Substitutions: Not Permitted.

2.2 SURFACE SEAL MATERIALS

A. Surface Seal:
1. The surface seal shall be a mixed epoxy resin adhesive.
2. The surface seal shall have adequate strength to hold the injection ports in place and shall be capable of withstanding the pressure during adhesive injection and cure.
3. The surface seal shall be capable of being removed without undue alteration of the concrete substrate surface.
4. The surface seal shall be supplied by BASF or Sika.
5. Substitutions: Not Permitted.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Division 01 - General Requirements: Coordination and project conditions.

B. Verify substrate is ready to receive work, surface is clean, dry and free of substances which could affect bond of surface seal.

C. Do not begin work until concrete substrate has cured 28 days, minimum.

D. Prior to the performance of any work, this Contractor shall mark all cracks that require repair.

E. The Engineer shall inspect the marked surfaces to verify adequacy and completeness prior to the performance of any work.

3.2 PREPARATION

A. Clean concrete surfaces adjacent to cracks of dust, dirt, oil, efflorescence, paint, or other contamination which may prevent bonding of surface seal material.

B. Wire brush surfaces and clean using water, acid, or sandblasting as appropriate. Rinse the surface and allow to dry.

C. Provide temporary entry ports located on the crack surface.

D. Space the entry ports to accomplish movement of injection fluids between adjacent portions, but not greater than the depth of the crack to be filled or the thickness of the concrete member.

E. Provide temporary surface seal material at the concrete crack face between and around the entry ports. Surface seal shall act to arrest the extrusion of injection materials.

F. Surface seal may need to be applied to both surfaces on cracks that pass through the concrete member. Allow the surface seal to completely cure before beginning the epoxy injection.

G. Protect adjacent surfaces.

3.3 EPOXY INJECTION

A. Inject epoxy into prepared entry ports using sufficient pressure and equipment appropriate for this application to insure 95 percent (minimum) penetration of cracks.

B. Injection shall begin at the lowest entry port and continue until the adhesive emerges from the two adjacent entry ports.

C. Seal the injection port and transfer injection to the adjacent entry port.

D. Continue the process of injection from port to port until the entire crack is filled.

E. After the crack has been completely filled, permit the adhesive to cure.

F. After the adhesive has cured, remove the surface seal and temporary ports as well as any adhesive runs or spills from the concrete surface.

G. Clean the surfaces adjacent to the repair and blend the finish to match adjacent concrete surfaces.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

A. Division 01 - General Requirements: Protecting installed construction.

B. Do not permit traffic over repaired areas until the injection adhesive has cured.

END OF SECTION

SECTION 04 01 01

MAINTENANCE OF MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Water cleaning of brick surfaces.
2. Replacement of brick units.
3. Repair of damaged masonry.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.
2. Section 04 05 14 - Masonry Mortaring and Grouting.
3. Section 07 19 01 – Clear Penetrating Sealers.
4. Section 07 19 07 - Water Repellents for Parking Structures.
5. Section 07 90 00 - Joint Protection for Parking Structures.

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.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 and ACI 530.1 requirements.

1.4 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years experience.

B. Installer: Company specializing in performing Work of this section with minimum five (5) years experience.

1.5 MOCKUP

A. Division 01 – General Requirements: Mockup requirements.

B. Clean a wall panel, 10 x 10 ft to determine extent of cleaning cleaning methods and cleaning products.

C. Repeat, using same cleaning methods until acceptable.

D. Locate where directed by Engineer.

E. Acceptable panel will become standard for work of this section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Division 01 – General Requirements: Product storage and handling requirements.

B. Store mortar ingredients in manufacturer's packaging, or when delivered loose, with adequate weatherproof covering.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.

B. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than eight (8) mph.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Cleaning Agent: Detergent type.

B. Clay Brick: Owner has supply of salvaged brick for this work.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify surfaces to be cleaned are ready for work of this section.

3.2 PREPARATION

A. Protect elements surrounding work of this section from damage or disfiguration.

B. Immediately remove stains, efflorescence, or other excess resulting from work of this section.

C. Construct barriers to close off occupied areas.

3.3 INSTALLATION

A. Rebuilding:
   1. Cut out damaged and deteriorated masonry with care in manner to prevent damage to adjacent remaining materials.
   2. Support brick structure in advance of cutting out units to maintain stability of remaining materials.

3. Cut away loose or unsound adjoining masonry stone and mortar as directed by Engineer to provide firm and solid bearing for new work.
4. Build in new masonry units following procedures for new work specified in Section 04 05 14 – Masonry Mortaring and Grouting.
5. Mortar Mix: Colored and proportioned to match existing work.
6. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in openings, accessories and fittings.

B. Repointing:
1. Cut out loose or disintegrated mortar in joints to minimum 1/2 inch depth or until sound mortar is reached.
2. Utilize power tools only after test cuts determine no damage to masonry units results.
3. Do not damage masonry units.
4. When cutting is complete, remove dust and loose material by brushing.
5. Premoisten joint and apply mortar specified in Section 04 05 14 – Masonry Mortaring and Grouting. Pack tightly in maximum 1/4 inch layers. Form smooth, compact concave joint to match existing.
6. Moist cure for 72 hours.

C. Cleaning Existing Masonry
1. High Pressure Cold Water: Cold water blast brick masonry surfaces at specified locations, providing uniform finish.

3.4 CLEANING

A. Division 01 – General Requirements: Final cleaning.

B. As work proceeds and on completion, remove excess mortar, smears, droppings.

C. Clean surrounding surfaces.

END OF SECTION

SECTION 04 05 14

MASONRY MORTARING AND GROUTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes mortar for masonry.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.
2. Section 04 01 01 - Maintenance of Masonry: Bedding and pointing mortar for masonry restoration work.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See bid form.

1.3 REFERENCES

A. American Concrete Institute (ACI):
1. ACI 530 - Building Code Requirements for Masonry Structures.
2. ACI 530.1 - Specifications for Masonry Structures.

B. ASTM International (ASTM):
1. ASTM C5 - Standard Specification for Quicklime for Structural Purposes.
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 Specification for Mortar for Unit Masonry.
6. ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
7. ASTM C476 - Standard Specification for Grout for Masonry.

1.4 SUBMITTALS

A. Division 01 – General Requirements: Submittal requirements.

B. Samples: Submit two samples of mortar, illustrating mortar color and color range.

C. Design Data: Submit design mix when Property specification of ASTM C270 is to be used, required environmental conditions, and admixture limitations.

D. Test Reports:
1. Submit reports on mortar indicating conformance of mortar to property requirements of ASTM C270.

E. Manufacturer's Installation Instructions: Submit manufacturer's installation instructions.

F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 and ACI 530.1.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Division 01 – General Requirements.

B. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.

C. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Premix Mortar: ASTM C387/C387M, Type S, with color to match existing mortar.

B. Water: Clean and potable.

C. Mortar Color: Match existing.

D. Calcium chloride is not permitted.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Division 01 – General Requirements: Coordination and project conditions.

3.2 INSTALLATION

A. Install mortar.

3.3 FIELD QUALITY CONTROL

A. Division 01 – General Requirements: Field inspecting, testing, adjusting, and balancing.

B. Establishing Mortar Mix: In accordance with ASTM C270.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes shop fabricated metal items as follows:
   1. Structural supports for miscellaneous attachments.

B. Related Sections:
   1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.

1.2 REFERENCES

A. ASTM International (ASTM):
   1. ASTM A36 - Standard Specification for Carbon Structural Steel.
   2. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
   3. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   4. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   5. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
   6. ASTM A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
   7. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.
   8. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
   9. ASTM A992 - Standard Specification for Structural Steel Shapes.

B. American Welding Society (AWS):
   1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
   2. AWS D1.1 - Structural Welding Code - Steel.
   3. AWS D1.6 - Structural Welding Code - Stainless Steel.

C. The Society for Protective Coatings (SSPC):
   1. SSPC - Steel Structures Painting Manual.
   2. SSPC SP 1 - Solvent Cleaning.
   3. SSPC SP 10 - Near-White Blast Cleaning.
   4. SSPC Paint 15 - Steel Joist Shop Paint.
   5. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).

1.3 SUBMITTALS

A. Division 01 – General Requirements: Submittal requirements.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

C. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.

1.4 SUSTAINABLE DESIGN SUBMITTALS

A. Division 01 – General Requirements: Requirements for sustainable design submittals.

1.5 QUALITY ASSURANCE

A. Finish joints in accordance with NOMMA Guideline 1.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Division 01 – General Requirements: Product storage and handling requirements.

B. Accept metal fabrications on site in labeled shipments. Inspect for damage.

C. Protect metal fabrications from damage by exposure to weather.

1.7 FIELD MEASUREMENTS

A. Verify field measurements are as indicated on shop drawings.

PART 2 - PRODUCTS

2.1 MATERIALS - STEEL

A. Structural W-Shapes: ASTM A992.

B. Channels and Angles: ASTM A36.

C. Steel Plate: ASTM A36.

D. Hollow Structural Sections: ASTM A500, Grade B.

E. Sheet Steel: ASTM A653, Grade 33 Structural Quality, galvanized with G90 coating class.

F. Bolts: ASTM A325; Type 1.
1. Finish: Hot dipped galvanized.

G. Nuts: ASTM A563 heavy hex type.
1. Finish: Hot dipped galvanized.]

H. Washers: ASTM F436; Type 1.
1. Finish: Hot dipped galvanized.

I. Welding Materials: AWS D1.1; type required for materials being welded.

J. Touch-Up Primer for Galvanized Surfaces: SSPC Paint 20 Type I Inorganic.

2.2 MATERIALS - STAINLESS STEEL

A. Bars and Shapes: ASTM A276; Type 302.

B. Tubing: ASTM A269; Type 304.

C. Plate, Sheet and Strip: ASTM A240 OR ASTM A666; Type 302.

D. Bolts, Nuts, and Washers: ASTM A354.

E. Welding Materials: AWS D1.6; type required for materials being welded.

2.3 BOLLARDS

A. Bollards: Steel pipe, concrete filled, crowned cap, six (6) inches diameter, length as indicated on Drawings; galvanized.

B. Concrete Fill: 3,000 psi as specified in Section 03 31 00 – Structural Concrete.

C. Anchors: Concealed type as indicated on Drawings.

2.4 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Exposed Welded Joints: NOMMA Guideline 1 Joint Finish.

D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.5 FACTORY APPLIED FINISHES - STEEL

A. Prepare surfaces to be primed in accordance with SSPC SP 2.

B. Galvanizing: ASTM A123; hot dip galvanize after fabrication.

C. Galvanizing for Fasteners, Connectors, and Anchors:
   1. Hot-Dipped Galvanizing: ASTM A153.
   2. Mechanical Galvanizing: ASTM B695; Class 50 minimum.

2.6 FACTORY APPLIED FINISHES - STAINLESS STEEL

A. Satin Polished Finish: Number 4, satin directional polish parallel with long dimension of finished face.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Division 01 – General Requirements: Coordination and project conditions.

B. Verify field conditions are acceptable and are ready to receive Work.

3.2 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.

C. Field weld components indicated on Drawings.

D. Perform field welding in accordance with AWS D1.1.

E. Obtain approval of [Engineer] [Engineer/Architect] prior to site cutting or making adjustments not scheduled.

F. After erection, touch up welds, abrasions, and damaged finishes with prime paint or galvanizing repair paint to match shop finishes.

3.3 ERECTION TOLERANCES

A. Division 01 – General Requirements: Tolerances.

3.4 FIELD QUALITY CONTROL

A. Welding: Inspect welds in accordance with AWS D1.1.

END OF SECTION

SECTION 07 18 00

TRAFFIC COATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes fluid applied membrane coating.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.
2. Section 07 90 07 - Joint Protection for Parking Structures: Joint between traffic membrane and membrane termination.
3. Section 07 95 07 – Traffic Joint Expansion Assemblies for Parking Structures.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
2. ASTM D903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
3. ASTM D1044 - Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
4. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
5. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

1.3 SUBMITTALS

A. Division 01 – General Requirements: Submittal procedures.

B. Product Data: Submit product characteristics, limitations, and identify dissolving solvents, fuels, and potential destructive compounds.

C. Submit stepped sample of coating system applied to ¼" x 6" x 6" plywood or similar rigid base showing each component for each duty grade to be applied. Sample shall be noted with component mil thicknesses and aggregate size and manufacturer. Also submit sample of aggregate to be used.

D. Manufacturer's Installation Instructions: Submit special environmental conditions required to install the Product and potential incompatibilities with adjacent materials.

E. Applicator's License Certificate
1. Submit copy of 'Certificate of License' issued to system applicator by traffic coating manufacturer.

1.4 CLOSEOUT SUBMITTALS

A. Division 01 – General Requirements: Closeout procedures.

B. Maintenance Manual
   1. Upon completion of work required by this Section, submit maintenance manual, identified with project name, location and date; type of coating system applied and surface to which system was applied, including sketches where necessary. Include recommendations for periodic inspections, care and maintenance and snow removal guideline. Identify common causes of damage with instructions for temporary patching until permanent repair can be made.

C. Warranty
   1. Installer shall review surface condition of slab prior to the installation of traffic coating system. Written notice shall be provided to Engineer stating any condition which will impair performance of traffic coating system, including compatibility with existing traffic coating were present. Installation of traffic coating system shall constitute acceptance of surface by Installer.
   2. Completed installation shall be guaranteed jointly and severally on a single document, by traffic coating manufacturer and applicator, against defects of materials and workmanship for a period of 5 years. Warranty shall cover delamination of system from substrate and degradation of waterproofing ability.
   3. Installer and manufacturer shall provide labor and materials to repair deficiencies or defects which develop due to normal use.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years documented experience.

B. Applicator: Company specializing in performing Work of this section with minimum five (5) years documented experience.

1.6 MOCKUP

A. Division 01 – General Requirements: Requirements for mockup.

B. Construct mockup panel, 10' feet long by 10' feet wide, including membrane system applied to representative substrate.

C. Locate where directed by Engineer.

D. Incorporate accepted mockup as part of Work.

1.7 PRE-INSTALLATION MEETINGS

A. Division 01 – General Requirements: Pre-installation meeting.

B. A pre-construction meeting is required with Contractor in order to coordinate work schedule and inspection required by Engineer. Stepped sample of coating system shall be reviewed and agreed

to for surface texture. Approved surface texture shall be used throughout. Areas deemed to vary from sample shall be recoated at no additional cost. These primarily are areas devoid of surface aggregates that present a slippery surface when wet.

C. Convene minimum one (1) week prior to commencing work of this section.

1.8 APPLICATOR QUALIFICATIONS

A. System applicator shall be licensed or trained to install selected traffic coating system and shall have experience in application of fluid applied deck coatings. Contractor or their subcontractor shall submit qualifications to A/E showing traffic coating applicator has experience in installing specified traffic coating. Traffic coating applicator shall have completed a minimum of 200,000 sq. ft. of traffic coating application. Qualifications shall consist of a minimum of five (5) projects completed within the past 5 years using traffic coating Contractor proposes to install for this Project. List shall include name of project, location, areas of product application, and contact person with phone number. Projects listed shall be a minimum of 10,000 sq. ft. per project listed.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Division 01 – General Requirements: Product storage and handling requirements.

B. Maintain ambient storage temperature of 55 degrees F.

1.10 ENVIRONMENTAL REQUIREMENTS

A. Division 01 – General Requirements: Environmental requirements.

B. Do not install materials when temperature is below 50 degrees F or above 90 degrees F.

C. Maintain this temperature range, 24 hours before, during and 72 hours after application.

D. Restrict traffic from area where materials are being installed or are curing.

E. Rain shall not be anticipated within 8 hours of application.

F. Substrate surface temperatures shall be above 40 deg F and lower than 110 deg F. Proper notices shall be given prior to start of membrane application.

G. Proper notices shall be given prior to start of membrane installation.

H. Positive ventilation for interior applications is to be continuously supplied throughout application period and 8 hours after. Installer is responsible for fume control. Air intakes for buildings are to be protected against infiltration of fumes into ventilation systems.

1.11 WARRANTY

A. Division 01 – General Requirements: Product warranties and product bonds.

B. Furnish five (5) year manufacturer warranty coverage for delamination of system from substrate and degradation of waterproofing ability.

PART 2 - PRODUCTS

2.1 TRAFFIC MEMBRANE

A. Components shall be products of selected traffic coating system or shall be certified as compatible with components produced by system manufacturer.

B. Traffic coating system shall be a fully adhered, fluid applied, traffic bearing, elastomeric membrane system. System shall be capable of preventing infiltration of water, salts, gasoline and other fluids into concrete.

C. Installer shall not change traffic coating system after selection of system has been made without approval of A/E.

D. Installer shall verify slab surface condition prior to installation of system. Areas of heavy wear or slab irregularities shall be filled prior to traffic coating placement to assure a level, uniform surface. This shall be done according to membrane manufacturers recommendations.

E. Areas identified having a topping system shall be manufacturer's heavy-duty system. These systems shall consist of a primer, base coat or membrane, wear coat and topcoat.

F. Wear coats are to be saturated with aggregate.

G. Material thicknesses are wet film thicknesses. Thickness listed for wear coat does not include aggregate.

H. Approved traffic coating systems include systems described for Full System replacement. At placement for worn membrane the replacement will consist of wear coat and finish or top coat:
   1. Overture Center Ramp, State Street Campus - Lake and Frances, and State Street Capitol:
      a. "MasterSeal Traffic 2500 - Heavy Duty Traffic System" by BASF. System shall consist of primer, base coat, intermediate coat, and finish coat. Total wet film thickness shall be 50 mils exclusive of aggregate. Thickness does not include primer. Color: Grey.
      b. Requests for substitutions will be considered in accordance with the submittals of Section 0100 00 - General Requirements.
   2. Capitol Square North Ramp:
      a. "Kelmar FWC III - Exposure 3" by Technical Barrier Systems. System shall consist of primer, base coat, wear coat, and finish coat. Total wet film thickness shall be 71 mils exclusive of aggregate. Thickness does not include primer. Color: Black.
      b. Requests for substitutions will be considered in accordance with the submittals of Section 0100 00 - General Requirements.

I. Where lapping onto existing traffic coating, new traffic coating shall be compatible and match existing. Contractor shall perform "pull off" bond test, or similar, to prove compatibility with existing.

J. Color:
   1. Topcoat color varies and shall match existing.

K. Installer shall furnish related materials required for crack repair, cant sealant, overbanding and flashing per system manufacturers' requirements to achieve a complete waterproof system.

PART 3 - EXECUTION

3.1 GENERAL

A. Work shall be performed in accordance with manufacturer's specifications.

3.2 CONDITION OF SURFACES

A. Before coating work is commenced, top surface of slab shall be shot-blasted to remove laitance concrete from existing, replaced, or new concrete slab. Areas of worn or heavily weathered membrane to receive a new wear coat shall also be shot-blasted prior to application. Surfaces shall be cleaned with oil free compressed air jet following shot-blasting. In areas designated for full membrane removal and replacement, existing membrane materials are to be removed completely to sound concrete with milling as required.

B. Concrete slabs shall be prepared using a shot-blast machine followed by cleaning with a compressed air jet. Prepared concrete shall have a surface profile of CSP 3-4 (Concrete Surface Preparation 3-4 as established by International Concrete Repair Institute #310.2-1997). Surface appearance shall be verified and approved by Owner and Engineer prior to sealer application. Note: CSP 3-4 is the typical deck coating MFG. recommendation ICRI #310.2-1997 is the new designation.

C. Areas inaccessible to shot-blast machine shall be grit-blasted to achieve CSP 1 surface profile.

D. Additional cleaning to remove deposits, which hinder bond of traffic coating to concrete surface, shall be done by traffic coating applicator as part of application with no additional cost to Owner.

E. Remove foreign projections on deck by grinding or other suitable methods.

F. Honeycomb, voids, deteriorated, or unsound concrete shall be repaired to produce a sound, uniform surface in accordance with Engineer's recommendations and as shown on Drawings.

G. Concrete surfaces shall be visibly dry and pass a 4-hour rubber mat test (no condensation) prior to application of coating system. Mat shall be black and taped to deck on edges.

H. Verify curing methods used for concrete are compatible with surface requirements for coating system.

I. Top surfaces of substrates other than concrete shall be treated as required by traffic coating manufacturer.

J. Commencement of coating installation implies acceptance of top surface of substrate area only, as suitable to accept traffic coating. Responsibility for other aspects of substrate shall be responsibility of others.

3.3 PREPARATION

A. Rout or sawcut cracks exceeding 1/16 inch in width and fill with sealant as detailed.

B. Traffic coating system shall bridge cracks that open up in substrate up to 1/16 inch in width maximum. Acceptable width of caulked joints is per system manufacturers' specification.

C. Fill expansion, control and construction joints to be overcoated by deck coating with sealant. Joints larger than 1 inch shall be reviewed with traffic coating system specification.

D. Protect adjacent surfaces with drop cloths or masking tape as required.

3.4 FLASHINGS

A. At projections through deck coatings where projections are structurally and rigidly connected to substrate, such as posts, vents, pipes, stanchions, railings, rigidly connected wall/slab intersections and similar connected items having limited movement, provide a bead of sealant. Tool sealant to form a cant and allow to cure before overcoating. Tooled sealant shall be overlain with a fluid applied integral membrane flashing.

B. At locations of potential high movement such as wall/slab intersections which are not structurally and rigidly connected, provide sheet flashing or reinforce coating with uncoated, woven fiberglass cloth. Where sheet flashings are used, they shall be free or unbonded to substrate near meeting angle but shall be fully bonded away from meeting angle. Do not use precured sheet flashings over expansion joints in horizontal surfaces.

3.5 PRIMER

A. Prime concrete, masonry and metal surfaces at manufacturers recommended rate. Concrete primer shall be compatible for use intended. Note traffic coating on horizontal surface shall be placed on concrete while vertical placement may be on concrete or brick.

3.6 DETAIL WORK

A. Apply non flowing type coating over flashings (sheet flashings, sealant cants and rigid corners). Extend coating beyond flashing out onto adjacent deck surface and extend above top of flashing and terminate in a straight line. Use masking tape.

B. Apply non-flowing type detail coats over cracks, construction joints, cant joints, patch perimeters, etc. Detail coats shall be included in deck coating cost.

C. Allow detail work to cure prior to installation of coating system.

3.7 BASE COAT

A. In areas identified by Project Drawings to receive full system membrane traffic coating, apply coating material at film thickness specified. Extend coating over fluid applied flashings and detail coatings.

B. Allow to cure per by manufacturers requirements.

C. Areas designated to receive membrane wear coat and top coat placement will not need base coat application.

3.8 WEAR COAT

A. Apply wear coating material at thickness specified to horizontal areas indicated on Project Drawings to receive traffic coating. Vertical surface will not receive a wear coat.

B. While coating is still fluid, uniformly broadcast aggregate over surface. Aggregate to be applied to saturation for wear coat.

C. Allow to cure per manufacturers requirements.

D. Remove excess aggregate from deck surface by manual sweeping or mechanical vacuum, followed by air blast.

E. Wear coat will be applied at locations designated to receive full system membrane and wear coat and top coat placement.

3.9 TOP COAT

A. Apply a top coat of material as recommended by manufacturer, to encapsulate top layer of aggregate. Application of top coat is not to eliminate non-slip surface texture of membrane system in place.

B. Allow finished installation to cure per manufacturer before permitting traffic on surfaces.

C. Top coat will be applied at locations designated to receive full system membrane and wear coat and top coat placement.

3.10 CLEANING

A. Clean stains from adjacent surfaces per manufacturer's instructions.

B. Note: When using solvents for cleanup, extinguish sources of ignition in the area and observe proper precautionary measures for handling materials.

C. Remove foreign matter from finished coating surfaces.

3.11 MAINTENANCE

A. Damaged surfaces may be cleaned and have liquid coating and grit applied to match surrounding surface. Where a regular maintenance and cleaning program is required, surfaces may be washed with commercial detergents or chlorinated solvents.

3.12 PROTECTION OF INSTALLED CONSTRUCTION

A. Division 01 – General Requirements: Protecting installed construction.

B. Do not permit traffic over unprotected surfaces.

END OF SECTION

SECTION 07 19 07

WATER REPELLENTS FOR PARKING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Water repellent coating applied to concrete surfaces.

B. Related Sections:
   1. Applicable provisions of Division 01 shall govern all work under this Section.
   2. Section 03 31 07 - Structural Concrete for Parking Structures: Concrete surfaces.
   3. Section 07 90 07 - Joint Protection for Parking Structures.

1.2 REFERENCES

A. ASTM International (ASTM):
   1. ASTM D1653 - Standard Test Method for Water Vapor Transmission of Organic Coating Films.
   2. ASTM G154 - Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials.

1.3 SYSTEM DESCRIPTION

A. Applied Penetrant: Material to restrict moisture absorption in material being treated as recommended by manufacturer for specific substrate.

1.4 SUBMITTALS

A. Division 01 – General Requirements: Submittal procedures.

B. Product Data: Submit details of product description, tests performed, limitations to coating, and chemical properties including percentage of solids.

C. Manufacturer's Installation Instructions: Submit special procedures and conditions requiring special attention, and cautionary procedures required during application.

D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years documented experience.

B. Applicator: Company specializing in performing Work of this section with minimum five (5) years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Division 01 – General Requirements: Product storage and handling requirements.

B. Protect coating liquid from freezing.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Division 01 – General Requirements: Environmental requirements.

B. Do not apply coating when surface temperature is lower than 50 degrees F or higher than 100 degrees F.

C. Do not apply coating when wind velocity exceeds manufacturer recommendations.

1.8 WARRANTY

A. Division 01 – General Requirements: Product warranties and product bonds.

B. Furnish five (5) year manufacturer warranty for water repellents.

PART 2 - PRODUCTS

2.1 WATER REPELLENTS

A. Manufacturers:
   1. BASF Building Systems: Series: MasterProtect H400.
   2. Substitutions: In accordance with Division 01 – General Requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Division 01 – General Requirements: Coordination and project conditions.

B. Verify joint sealants are installed and cured.

C. Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of coating.

3.2 PREPARATION

A. Delay Work until concrete substrate is cured minimum of 30 days.

B. Remove loose particles and foreign matter.

C. Remove oil or foreign substance with chemical solvent which will not affect coating.

D. Pressure wash and rinse surfaces with water and let dry per manufacturers requirements.

3.3 APPLICATION

A. Apply at rate of 250 sq.ft/gallon by airless spray.

B. Apply in one continuous, uniform coat.

C. Allow to soak in and broom out puddles.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

A. Division 01 – General Requirements: Protecting installed construction.

B. Protect adjacent surfaces not scheduled to receive coating.

C. Protect landscaping, property, and vehicles.

D. When applied to unscheduled surfaces, remove immediately by methods as instructed by coating manufacturer.

END OF SECTION

SECTION 07 90 07

JOINT PROTECTION FOR PARKING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Sealants.
2. Joint backing.
3. Accessories.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM C834 - Standard Specification for Latex Sealants.
2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
5. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
6. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

1.3 QUALITY ASSURANCE

A. Applicator Qualifications:
1. Contractor shall have a minimum of 3 years of experience in performing work similar to that shown in Drawings and Specifications.

B. Warranty:
1. The completed installation shall be guaranteed jointly and severally on a single document, by sealant manufacturer and installer agreeing to repair or replace sealants which fail to perform as airtight and watertight joints or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance or general durability or appear to deteriorate in other manner not clearly specified by submitted manufacturer's data as an inherent quality of material for exposure indicated.
2. Warranty period shall be 5 years.

1.4 SUBMITTALS

A. Division 01 – General Requirements: Submittal procedures.

B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples, 1/4-inch x 2-inch in size illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.

E. Warranty: Include coverage for installed sealants and accessories failing to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years documented experience.

B. Applicator: Company specializing in performing Work of this section with minimum five (5) years documented experience, and approved by manufacturer.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Division 01 – General Requirements.

B. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.7 COORDINATION

A. Division 01 – General Requirements: Coordination and project conditions.

B. Coordinate Work with sections referencing this section.

PART 2 - PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
   1. Sika Corp., Model Sikaflex-2c, SL or NS.
   2. BASF, Model Sonolastic SL2 or NP2.
   3. Substitutions: In accordance with Division 01 – General Requirements.

B. Sealant color will be chosen at time of construction from manufacturer's standard color pallet.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round rod compatible with sealant; ASTM D1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION MEETING

A. The installer, Engineer, sealant manufacturer's technical representative and other trades involved in coordination with sealant work shall meet with Contractor at Project Site to review procedures and time schedule proposed for installation of sealants and coordination with other work. Review each major sealant application required on the Project.

3.2 EXAMINATION

A. Division 01 – General Requirements: Coordination and project conditions.

B. Verify substrate surfaces and joint openings are ready to receive work.

C. Verify joint backing and release tapes are compatible with sealant.

3.3 PREPARATION

A. Removal of sealants by means of waterblasting is not permitted.

B. Complete removal of existing sealant is required prior to installation of new sealants.

C. Contractor shall saw and grind surface of cracks and joints. Edges of cracks or joints to be sealed shall be of sound substrate. Prior to installing sealant, surfaces shall be cleaned of foreign debris and edges ground. Joint edges shall be slightly rounded. Rout out random cracks to a nominal depth of 3/8" and a width of ¼".

D. Remove loose materials and foreign matter impairing adhesion of sealant.

E. Clean and prime joints.

F. Perform preparation in accordance with ASTM C1193.

G. Protect elements surrounding Work of this section from damage or disfiguration.

H. At location of weld plate or flange connectors, grit-blast exposed steel to near white metal condition and coat with zinc rich coating. Install bond breaker tape over horizontal steel surface prior to backer road and sealant installation.

I. Clean joint surfaces immediately before installation of sealant or caulking compound. Grind or grit-blast joint blackouts to remove dirt, coatings, existing sealant, moisture and other substances which interfere with bond of sealant or caulking compound.

J. Installer must examine joint surfaces, backing and anchorage of units forming sealant rabbet and conditions under which sealant work is to be performed and notify Contractor in writing of conditions detrimental to proper and timely completion of work and performance of sealants. Do not proceed with sealant work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

3.4 INSTALLATION

A. Perform installation in accordance with ASTM C1193.

B. Prime or seal joint surfaces wherever shown or recommended by the sealant manufacturer. Do not allow primer or sealant to spill or migrate onto adjoining surfaces.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Deposit sealant in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant to a slightly concave surface slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form a slight cove so joint will not trap moisture and dirt.

G. Install sealant to depths as recommended by sealant manufacturer.

H. Tool joints smooth with adjacent surfaces.

3.5 CLEANING

A. Division 01 – General Requirements: Final cleaning.

B. Clean adjacent soiled surfaces.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Division 01 – General Requirements: Protecting installed construction.

B. Protect sealants until cured.

END OF SECTION

SECTION 07 95 07

VEHICULAR TRAFFIC EXPANSION JOINT ASSEMBLIES FOR PARKING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Expansion joint assemblies for parking garage floor surfaces.
2. Removal of the existing expansion joint system, surface preparation, patching and cleaning of the existing concrete slab to receive the new expansion joint; and the installation of the new expansion joint system.

B. Related Sections:
1. Applicable provisions of Division 01 – General Requirements shall govern Work under this Section.
2. Division 03 – Concrete: Expansion and contraction joints in concrete joints.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM B455 - Standard Specification for Copper-Zinc-Lead Alloy (Leaded-Brass) Extruded Shapes.

1.3 SUBMITTALS

A. Division 01 – General Requirements: Submittal requirements.

B. Shop Drawings: Indicate joint and splice locations, miters, layout of work, affected adjacent construction, anchorage locations, and details for all special conditions.

C. Product Data: Submit joint assembly profiles, profile dimensions, and anchorage devices.

D. Samples: Submit two samples 2-inch long, illustrating profile, dimension, color, and finish selected.

E. Manufacturer's Installation Instructions:
1. The system manufacturer shall furnish the Owner with a written single source performance warranty that the expansion joint sealant system be free of defects related to design, workmanship or material deficiency for a five year period from the date of substantial completion of the work required under this section. The following problems shall be specifically covered under the warranty:
   a. Adhesive or cohesive failure of the seal.
   b. Discoloration, crazing or other weathering deficiency of the seal.
   c. Abrasion or tear failure of the seal resulting from normal traffic use.
   d. Defective joint installation.
2. Perform repair under this warranty at no cost to the Owner.

3. The system manufacturer shall submit a detailed warranty consistent with the terms of this specification prior to construction for approval. The approved warranty shall be made part of the contractual agreement and shall represent the sole warranty statement for the project.
4. Snowplows, abrasive maintenance equipment, and vandalism are not normal traffic use and are exempt from the warranty.
5. Furnish the Owner with five copies of the snow removal guidelines for the areas covered by this warranty.

F. Submit two copies of the Material Safety Data Sheets for all materials to be used. Contractor shall also submit two copies of his proposed safety procedures for handling and storage of this material.

G. Submit a written statement from the manufacturer describing shelf life for materials and products to be furnished and used on this project.

1.4 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with not less than five (5) years experience.

B. Applicator: Company specializing in applying work of this Section with not less than five (5) years experience and acceptable to manufacturer.

1.5 PRE-INSTALLATION MEETINGS

A. Division 01 – General Requirements: Pre-installation meeting.

B. Convene minimum one (1) week prior to commencing work of this section.

1.6 FIELD MEASUREMENTS

A. Verify field measurements are as instructed by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Division 01 – Product Requirements: Product storage and handling requirements.

B. Delivery material to project in sealed, original packages or containers bearing name and brand of manufacturer and date manufactured.

C. Every precaution shall be taken to avoid danger of fire. Store hazardous materials in accordance with local ordinances. Provide dry chemical or CO2 fire extinguishers in areas. Allow no smoking or open containers of solvents. Store solvents in safety cans.

D. Store materials at temperatures not exceeding those recommended by membrane manufacturer.

E. Manufacturer shall submit to Engineer a written statement of materials' shelf life and proper storage conditions. Materials that have been improperly stored or that have an expired shelf life shall not be installed.

1.8 WARRANTY

A. The system manufacturer shall furnish the Owner with a written single source performance warranty that the expansion join sealant system be free of defects related to design workmanship or material deficiency for a five year period from the date of substantial completion of the work required under this section. The following problems shall be specifically covered under the warranty:
   1. Adhesive or cohesive failure of the seal.
   2. Discoloration, crazing or other weathering deficiency of the seal.
   3. Abrasion or tear failure of the seal resulting from normal traffic use.
   4. Defective joint installation.

B. Perform repair under this warranty at no cost to the Owner.

C. The system manufacturer shall submit a detailed warranty consistent with the terms of this specification prior to construction for approval. The approved warranty shall be made part of the contractual agreement and shall represent the sole warranty statement for the project.

D. Snowplows, abrasive maintenance equipment, and vandalism and are not normal traffic use and are exempt from the warranty.

E. Furnish the Owner with five copies of the snow removal guidelines for the areas covered by this warranty.

1.9 MAINTENANCE

A. Manufacturer shall provide Owner a preventive maintenance guidelines for parking structure expansion control systems.

PART 2 - PRODUCTS

2.1 EXPANSION JOINT SYSTEMS

A. Expansion joint system shall consist of a thermoplastic rubber elastomeric membrane embedded in an elastomeric concrete material capable of bonding to substrate. Joint shall have a fire barrier system capable of providing a two (2) hour fire rating.

B. Expansion joint systems with nosing shall be:
   1. "WaboCrete Membrane System – ME Series" by Watson Bowman ACME
   2. "Thermaflex Membrane/Nosing System, Type TCR" by Emseal
   3. Or approved equal.

C. Expansion joint systems without nosing shall be:
   1. "Wabo H Seal – Model EH" by Watson Bowman ACME
   2. "DSM System" by Emseal
   3. Or approved equal.

2.2 COMPONENTS

A. Gland Element: Thermoplastic elastomeric rubber membrane, exhibiting Shore A hardness of 60-80 Durometer.

B. Header Material (Nosing): Elastomeric polyurethane material mixed with aggregate, exhibiting Shore D hardness of 35 Durometer minimum, compressive strength of 1,800 psi minimum, and bond strength of 300 psi minimum.

2.3 FABRICATION

A. Ship membrane seal to jobsite in the longest practical continuous length.

B. Provide membrane seals with factory heat welded splices at all horizontal and vertical changes in direction such as 90 degree corners, tees, and crosses and at curbs, walls, and columns. Spliced ends of the membrane seals shall be rimmed using factory made 45 degree miter cuts. Seal shall extend a minimum of 3'-0" in each direction from factory splice.

C. Only straight, butt splice connections shall be heat welded on jobsite following manufacturer's written instructions and utilizing specialty heat fusing equipment approved by manufacturer.

D. All factory and field heat fused connections shall incorporate welding of complete gland profile including all internal and external web configurations.

E. Membrane seal and concrete header material shall be black in color. Changes in color shall be approved by Engineer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Division 01 – General Requirements: Coordination and project conditions.

B. Verify joint preparation, condition, and affected dimensions are acceptable.

3.2 PREPARATION

A. Remove concrete around columns as necessary to create new blockouts in slab.

B. Coordinate forming and placement of new blockouts with concrete contractor. Blockouts shall be formed to manufacturer's recommended dimensions.

C. Contractor shall clean surfaces of all contaminants and prepare concrete surfaces according to manufacturer's recommendations.

D. Manufacturer's representative shall be on site prior to commencement of installation for inspection of substrate preparation, inspection of blockout and joint configuration, and to discuss job specific installation instructions.

E. Joints shall run up and across adjacent curbs and run at least six (6) inches up adjacent walls and columns.

3.3 INSTALLATION

A. Protect adjacent areas by laying ground cloths and taping joint edges as required to prevent staining, marring, etc.

B. Align work plumb and level, flush with adjacent surfaces.

C. Install expansion joint in strict accordance with manufacturer's instructions.

D. Do not permit traffic over unprotected floor joint surfaces.

END OF SECTION

SECTION 09 97 13

CLEANING AND REPAINTING STRUCTURAL STEEL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Clean and repaint existing structural steel surfaces including existing paint systems that have red lead primer.
2. Remove existing paint from existing structural steel surfaces.
3. Prepare existing steel surface for repainting, and paint cleaned structural steel surfaces.

B. Related Sections
1. Applicable provisions of Division 01 – General Requirements shall govern all work under this section.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM D4285 - Test Method for Indicating Oil or Water in Compressed Air.
2. ASTM D4417 - Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
3. ASTM E11: - Specification for Wire Cloth and Sieves For Testing Purposes.

B. Federal Specification Unit (FS):
1. FS A-A-3054 - Paint, Heat Resisting (204 C).
2. FS A-A-3120 - Paint: For Swimming Pools.
3. FS QPL-TT-P-28-15 - Paint, Aluminum, Heat Resisting (1200 Deg. F).
4. FS TT-C-555 - Coating, Textured (For Interior and Exterior Masonry Surfaces).

C. Northeast Protective Coatings Committee (NEPCOAT):
1. Technology Guide Number 6 – Guide for Containing Surface Preparation Debris Generated During Paint Removal Operations

D. SSPC: The Society for Protective Coatings (SSPC):
1. SSPC - Steel Structures Painting Manual.
2. SSPC Paint 16 - Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint.
3. SSPC SP 2 - Hand Tool Cleaning.
4. SSPC SP 3 - Power Tool Cleaning.
5. SSPC SP 5 - White Metal Blast Cleaning.
6. SSPC SP 6 - Commercial Blast Cleaning.
7. SSPC SP 7 - Brush-Off Blast Cleaning.
8. SSPC SP 10 - Near-White Blast Cleaning.
9. SSPC SP 11 - Power Tool Cleaning to Bare Metal.

1.3 SUBMITTALS

A. Source and gradation of blast abrasive.

1. Type and source of solvent if required.

B. Manufacturer's information regarding specified coating materials, including:
   1. Required wet and dry film thickness.
   2. Project safety data.
   3. Thinning recommendations.
   4. Temperature requirements.
   5. Profile recommendations.
   6. Mixing and application procedures.
   7. Required equipment.

1.4 COATING APPLICATION REQUIREMENTS

A. Have painter, blasting operator, or both consult with manufacturer's technical representative for answers to technical questions relating to application of specified coating materials.

B. Obtain surface preparation approval from Engineer before applying paint.

C. Use equipment capable of taking dry film thickness readings on all portions including nuts and bolts.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Follow manufacturer's recommendations if weather conditions require paint thinning.

B. Apply paint only when the following weather conditions exist:
   1. Temperature of Air and Steel: Above 40 degrees F, but not so hot as to cause paint to blister.
   2. Relative Humidity:
      a. Less than 85 percent or such that combination of temperature and humidity conditions inhibits surface condensation.
      b. Apply a thin film of water to a small area to test humidity. Surface may be painted if film evaporates within 15 minutes.
      c. Steel temperature a minimum of 5 degrees F above dew point.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Blasting Abrasive: Type and size as specified.

B. Solvent: Type and source as required.

C. Cold Galvanizing Compound: Premixed liquid organic zinc compound, ZRC Galvanizing Compound by ZRC Worldwide complying with the following:
   1. Metallic zinc content, 95 percent by weight in dry film.
   2. Solids content, 52 percent by volume.
   3. Application rate, 1.5 mils dry film thickness per coat.
   4. Number of coats required, 2.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean surfaces including bearing units of oil, grease, and dirt with clean petroleum solvents or steam cleaning prior to blasting operation. Refer to SSPC-SP10.

B. Blast surfaces clean to near white with 0.5 to 2 mil profile.

C. Discoloration, light shadows, or slight streaks caused by stains of rust is not allowed on more than 5 percent of surface area.

D. Define acceptable surface preparation using SSPC-Vis 1.

E. Use SSPC-SP-11 to clean areas such as backside of base plates, corners, etc., that cannot otherwise be cleaned.

F. Meet soluble salts requirements of SSPC and coatings manufacturer.

G. Coat surface within 8 hours from blasting.

H. Do not coat surface if rust has started to form. Clean surface again before applying prime coat.

I. Protection:
   1. Enclosure system must withstand extreme high winds.
   2. Protect portions of structure that will not be painted.

J. Recover a minimum of 95 percent of debris from cleaning operation.
   1. Sample debris from cleaning operation. Submit samples to an independent accredited Materials Testing Lab for composition and disposal evaluation.
   2. Place reclaimed waste paint in EPA-USDOT approved containment. Store at project site.
   3. Submit paint composition and disposal evaluation results from independent materials testing lab. Disposition will be given to Contractor within 30 days. Dispose of waste paint as directed by Engineer. Submit disposal certificates for waste paint.

3.2 APPLICATION

A. Field Inspection:
   1. Do not apply paint until Engineer approves prepared surface.
   2. Use rubber rollers or other approved protective devices on scaffold fastenings.
   3. Do not use metal rollers, clamps, and other types of fastenings that mar or damage freshly coated surfaces.

B. Prime Coat:
   1. Maintain dry film thickness of prime coat between 2.5 and 6.0-mils. Refer to SSPC PA2.
   2. Apply two or more coats without producing runs, bubbles, or sags if required film thickness cannot be obtained by one coat.
   3. Blast clean any coat that produces "mud-cracking" or adds more than 7.0 mils to a soundly bonded coating or bare steel. Re-coat surface.

4. Thoroughly clean areas having deficient primer thickness with power washing equipment to remove dirt. Wire-brush, vacuum, and re-coat area.

C. Intermediate Coat: Apply paint to produce a uniform, even coating that bonds to underlying surface. Refer to SSPC-PA 1.
   1. Use coating type and minimum dry film thickness specified.
   2. Produce a dry-film thickness of intermediate coat greater than 4 mils. Refer to SSPC PA2.

D. Use wet and dry film thickness gauges for testing coating thickness during and after application.

E. Painting Safety: Follow SSPC Paint Application Guide No. 3, "A Guide to Safety in Paint Application."

3.3 SUSPENSION OF WORK

A. Engineer may suspend work for questionable performance of painter, blasting operator, or equipment.

B. Suspension of work results from inadequate surface preparation, improper profile, runs, sags, overspray, thin film thickness, excessive film build-up, uneven coating, non-uniform color, improper curing, or any other defect in coating system.

END OF SECTION

SECTION E: BIDDERS ACKNOWLEDGEMENT

CONTRACT TITLE 2021 PARKING GARAGE MAINTENANCE

CONTRACT NO. 8591

Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

1. The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2021 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda to the Contract Nos. _____ through _____ issued thereto, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not acknowledge here)
2. If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3. The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4. I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5. *(IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY. FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).*
5. I hereby certify that all statements herein are made on behalf of ProAxis LLC (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of Wisconsin a partnership consisting of Kevin Marquardt, Robert Nichols; an individual trading as ProAxis LLC; of the City of Madison State of Wisconsin; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

K Marquardt
SIGNATURE

LLC Member
TITLE, IF ANY

Sworn and subscribed to before me this 8th day of April, 2021.

Cindy Dragon
(Notary Public or other officer authorized to administer oaths)
My Commission Expires 9-14-24

Bidders shall not add any conditions or qualifying statements to this Proposal.

SECTION F: BEST VALUE CONTRACTING

CONTRACT NO. 8591

Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

N/A

2. Madison General Ordinance (M.G.O.), 33.07(7), does provide for some exemptions from the active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.

☒ Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.

☐ No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.

☐ Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.

☐ First-time Contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.

☐ Contractor has been in business less than one year.

☐ Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade.

☐ An exemption is granted in accordance with a time period of a "Documented Depression" as defined by the State of Wisconsin.

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

☐ The Contractor has reviewed the list and shall not use any apprenticeable trades on this project.

LIST APPRENTICABLE TRADES (check all that apply to your work to be performed on this contract)

- ☐ BRICKLAYER
- ☐ CARPENTER
- ☒ CEMENT MASON / CONCRETE FINISHER
- ☐ CEMENT MASON (HEAVY HIGHWAY)
- ☐ CONSTRUCTION CRAFT LABORER
- ☐ DATA COMMUNICATION INSTALLER
- ☐ ELECTRICIAN
- ☐ ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / SERVICE
- ☐ GLAZIER
- ☐ HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER
- ☐ INSULATION WORKER (HEAT & FROST)
- ☐ IRON WORKER
- ☐ IRON WORKER (ASSEMBLER, METAL BLDGS)
- ☒ PAINTER & DECORATOR
- ☐ PLASTERER
- ☐ PLUMBER
- ☐ RESIDENTIAL ELECTRICIAN
- ☒ ROOFER & WATER PROOFER
- ☐ SHEET METAL WORKER
- ☐ SPRINKLER FITTER
- ☐ STEAMFITTER
- ☐ STEAMFITTER (REFRIGERATION)
- ☐ STEAMFITTER (SERVICE)
- ☐ TAPER & FINISHER
- ☐ TELECOMMUNICATIONS (VOICE, DATA & VIDEO) INSTALLER-TECHNICIAN
- ☐ TILE SETTER

CERTIFICATE OF BIENNIAL BID BOND

TIME PERIOD- VALID (FROM/TO) February 1, 2020 through January 31, 2022
NAME OF SURETY West Bend Mutual Insurance Company
NAME OF CONTRACTOR ProAxis LLC
CERTIFICATE HOLDER City of Madison, Wisconsin

This is to certify that a biennial bid bond issued by the above-named Surety is currently on file with the City of Madison.

This certificate is issued as a matter of information and conveys no rights upon the certificate holder and does not amend, extend or alter the coverage of the biennial bid bond.

Cancellation: Should the above policy be cancelled before the expiration date, the issuing Surety will give thirty (30) days written notice to the certificate holder indicated above.

SIGNATURE OF AUTHORIZED CONTRACTOR REPRESENTATIVE

4/8/2021

DATE

CONTRACT NO. 8591

Small Business Enterprise Compliance Report

This information may be submitted electronically through Bid Express or submitted with bid in sealed envelope.

Cover Sheet

Prime Bidder Information

Company:	ProAxis LLC
Address:	2738 Progress Road Madison, WI 53716
Telephone Number:	608-279-7699
Fax Number:	NA
Contact Person/Title:	Kevin Marquardt - LLC Member

Prime Bidder Certification

Name:	Kevin Marquardt
Title:	LLC Member
Company:	ProAxis LLC

I certify that the information contained in this SBE Compliance Report is true and correct to the best of my knowledge and belief.

Cindy Drager
Witness' Signature

K Marquardt
Bidder's Signature

4-8-2021
Date

CONTRACT NO. 8591

Small Business Enterprise Compliance Report

Summary Sheet

SBE Subcontractors Who Are NOT Suppliers

Name(s) of SBEs Utilized	Type of Work	% of Total Bid Amount
ProAxis LLC is SBE certified and will be self performing all of the work		100 %
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
Subtotal SBE who are NOT suppliers:		100 %

SBE Subcontractors Who Are Suppliers

Name(s) of SBEs Utilized	Type of Work	% of Total Bid Amount
		%
		%
		%
		%
		%
		%

Subtotal Contractors who are suppliers: _____ % x 0.6 = _____ % (discounted to 60%)

Total Percentage of SBE Utilization: 100 %.

2021 PARKING GARAGE MAINTENANCE

CONTRACT NO. 8591
DATE: 4/8/2021

			ProAxis LLC
Item	Quantity	Price	Extension
Section B: Proposal Page			
1 - Top/Wear Coat Membrane Installation - SF	10.00	$232.56	$2,325.60
2 - Localized Full System Membrane Repair - SF	129.00	$31.88	$4,112.52
3 - Full System Membrane Removal and Replacement - SF	10.00	$159.69	$1,596.90
4 - Concrete Vertical Surface Repair with Galvanic Anodes - SF	440.00	$141.28	$62,163.20
5 - Concrete Vertical Surface Repair - SF	37.00	$114.70	$4,243.90
6 - Topside Surface Spall Repair with Galvanic Anodes - SF	436.00	$99.25	$43,273.00
7 - Topside Surface Spall Repair - SF	11.00	$118.74	$1,306.14
8 - Overhead Surface Spall Repair with Galvanic Anodes - SF	675.00	$109.94	$74,209.50
9 - Overhead Surface Spall Repair - SF	12.00	$95.00	$1,140.00
10 - Stair Spall Repair with Galvanic Anodes - SF	5.00	$332.41	$1,662.05
11 - Stair Spall Repair - SF	19.00	$289.46	$5,499.74
12 - Overhead Concrete Joist Spall Repair with Galvanic Anodes - SF	246.00	$142.99	$35,175.54
13 - Overhead Concrete Joist Spall Repair - SF	10.00	$128.65	$1,286.50
14 - Re-anchor Stair Tread - EACH	17.00	$28.69	$487.73
15 - Epoxy Injection - LF	10.00	$126.75	$1,267.50
16 - Concrete Slab Crack Repair - LF	905.00	$10.22	$9,249.10
17 - CMU Crack/Mortar Joint Repair - LF	406.00	$7.59	$3,081.54
18 - Expansion Joint Replacement - Wing Joint - LF	386.00	$160.56	$61,976.16
19 - Replace 4" Polyurethane Seal with Expansion Joint with Wing Joint - LF	43.00	$120.25	$5,170.75
20 - Replace 8" Polyurethane Seal with Expansion Joint with Wing Joint - LF	206.00	$94.23	$19,411.38
21 - Steel Cleaning / Painting - SF	10.00	$158.35	$1,583.50
22 - Remove and Replace Existing Sealant - LF	2881.00	$12.30	$35,436.30
23 - Precast Shear Connector Repair - EACH	61.00	$103.77	$6,329.97
24 - Clean and Paint Exposed Steel Reinforcing - LF	12.00	$51.81	$621.72
25 - Brick Masonry Repair - SF	17.00	$64.45	$1,095.65
26 - Brick Masonry Sealing (CSN) - SF	1320.00	$3.11	$4,105.20
27 - Anchor Replacement - EACH	11.00	$84.35	$927.85
28 - Tapered Column Repair (SSCO) - EACH	2.00	$1,535.88	$3,071.76
29 - Weep Drain Repair (SSCO) - LS	1.00	$3,628.82	$3,628.82
30 - Level 2 Resloping (SSCO) - LS	1.00	$3,579.55	$3,579.55
31 - Precast Shear Wall Connection Replacement (SSF) - LS	1.00	$3,373.90	$3,373.90
32 - Sealant Removal and Replacement with Shear Connectors - LF	2688.00	$13.06	$35,105.28
33 - Epoxy Injection of Topping Slabs (SSCO) - SF	411.00	$13.68	$5,622.48
34 - Pour Strip Replacement (CSN) - LS	1.00	$42,731.51	$42,731.51
34 Items	Totals		$485,852.24

Department of Public Works
Engineering Division
Robert F. Phillips, P.E., City Engineer

City-County Building, Room 115
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53703
Phone: (608) 266-4751
Fax: (608) 264-9275
engineering@cityofmadison.com
www.cityofmadison.com/engineering

Deputy City Engineer
Gregory T. Fries, P.E.

Deputy Division Manager
Kathleen M. Cryan

Principal Engineer 2
Christopher J. Petykowski, P.E.
John S. Fahrney, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Mark D. Moder, P.E.
Janet Schmidt, P.E
James M. Wolfe, P.E.

Facilities & Sustainability
Bryan Cooper, Principal Architect

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

BIENNIAL BID BOND

ProAxis LLC
(a corporation of the State of Wisconsin) (individual), (partnership), (hereinafter referred to as the "Principal") and West Bend Mutual Insurance Company a corporation of the State of Wisconsin (hereinafter referred to as the "Surety") and licensed to do business in the State of Wisconsin, are held and firmly bound unto the City of Madison, Wisconsin (hereinafter referred to as the "City"), in the sum equal to the individual proposal guaranty amounts of the total bid or bids of the Principal herein accepted by the City, for the payment of which the Principal and the Surety hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is that the Principal has submitted to the City certain bids for projects from the time period of February 1, 2020 through January 31, 2022.

If the Principal is awarded the contract(s) by the City and, within the time and manner required by law after the prescribed forms are presented for its signature, the Principal enters into (a) written contract(s) in accordance with the bid(s), and files with the City its bond(s) guaranteeing faithful performance and payment for all labor and materials, as required by law, or if the City rejects all bids for the work described, then this obligation shall be null and void; otherwise , it shall remain in full force and effect.

In the event the Principal shall fail to execute and deliver the contract(s) or the performance and payment bond(s), all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to pay to the City within ten (10) calendar days of written demand a total equal to the sum of the individual proposal guaranty amounts of the total bid(s) as liquidated damages.

The Surety, for value received, hereby agrees that the obligations of it and its bond shall be in no way impaired or affected by any extension of time within which the City may accept a bid, and the Surety does hereby waive notice of any such extension.

This bond may be terminated by the Surety upon giving thirty (30) days written notice to the City of its intent to terminate this bond and to be released and discharged therefrom, but such termination shall not operate to relieve or discharge the Surety from any liability already accrued or which shall accrue before the expiration of such thirty (30) day period.

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

PRINCIPAL

ProAxis LLC
COMPANY NAME AFFIX SEAL

December 20, 2019
DATE

By: LLC Member
SIGNATURE AND TITLE

SURETY

West Bend Mutual Insurance Company
COMPANY NAME AFFIX SEAL

December 20, 2019
DATE

By:
SIGNATURE AND TITLE
Elizabeth Mosca, Attorney-in-Fact

This certifies that I have been duly licensed as an agent for the Surety in Wisconsin under National Provider No. 12305256 for the year 2020 and appointed as attorney in fact with authority to execute this bid bond, which power of attorney has not been revoked.

December 20, 2019
DATE

AGENT SIGNATURE

PO Box 259408
ADDRESS

Madison, WI 53725-9408
CITY, STATE AND ZIP CODE

608-252-9674
TELEPHONE NUMBER

Note to Surety and Principal: Any bid submitted which this bond guarantees may be rejected if the Power of Attorney form showing that the Agent of Surety is currently authorized to execute bonds on behalf of Surety is not attached to this bond.

WEST BEND
A MUTUAL INSURANCE COMPANY

THE SILVER LINING®

Bond No. _____

POWER OF ATTORNEY

Know all men by these Presents, That West Bend Mutual Insurance Company, a corporation having its principal office in the City of West Bend, Wisconsin does make, constitute and appoint:

Patrick A. McKenna, Brooke L. Parker, Judith A. Walker, Elizabeth Mosca, David Zenobi

lawful Attorney(s)-in-fact, to make, execute, seal and deliver for and on its behalf as surety and as its act and deed any and all bonds, undertakings and contracts of suretyship, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed in amount the sum of: $3,000,000

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of West Bend Mutual Insurance Company at a meeting duly called and held on the 21st day of December, 1999.

Appointment of Attorney-In-Fact. The president or any vice president, or any other officer of West Bend Mutual Insurance Company may appoint by written certificate Attorneys-In-Fact to act on behalf of the company in the execution of and attesting of bonds and undertakings and other written obligatory instruments of like nature. The signature of any officer authorized hereby and the corporate seal may be affixed by facsimile to any such power of attorney or to any certificate relating therefore and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the company, and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the company in the future with respect to any bond or undertaking or other writing obligatory in nature to which it is attached. Any such appointment may be revoked, for cause, or without cause, by any said officer at any time.

In witness whereof, the West Bend Mutual Insurance Company has caused these presents to be signed by its president undersigned and its corporate seal to be hereto duly attested by its secretary this 22nd day of September, 2017.

Attest Christopher C. Zwygart
Christopher C. Zwygart
Secretary

WEST BEND MUTUAL INSURANCE COMPANY CORPORATE SEAL WASHINGTON CO., WIS.

Kevin A. Steiner
Chief Executive Officer/President

State of Wisconsin
County of Washington

On the 22nd day of September, 2017, before me personally came Kevin A. Steiner, to me known being by duly sworn, did depose and say that he resides in the County of Washington, State of Wisconsin; that he is the President of West Bend Mutual Insurance Company, the corporation described in and which executed the above instrument; that he knows the seal of the said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by order of the board of directors of said corporation and that he signed his name thereto by like order.

JULI A. BENEDUM NOTARY PUBLIC STATE OF WISCONSIN

Juli A. Benedum
Senior Corporate Attorney
Notary Public, Washington Co., WI
My Commission is Permanent

The undersigned, duly elected to the office stated below, now the incumbent in West Bend Mutual Insurance Company, a Wisconsin corporation authorized to make this certificate, Do Hereby Certify that the foregoing attached Power of Attorney remains in full force effect and has not been revoked and that the Resolution of the Board of Directors, set forth in the Power of Attorney is now in force.

Signed and sealed at West Bend, Wisconsin this 20 day of December 2017.

WEST BEND MUTUAL INSURANCE COMPANY CORPORATE SEAL WASHINGTON CO., WIS.

Heather Dunn
Vice President – Chief Financial Officer

Notice: Any questions concerning this Power of Attorney may be directed to the Bond Manager at NSI, a division of West Bend Mutual Insurance Company.

SECTION H: AGREEMENT

THIS AGREEMENT made this 14th day of May in the year Two Thousand and Twenty-One between **PROAXIS LLC** hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted **MAY 4, 2021**, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work**. The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

   2021 PARKING GARAGE MAINTENANCE
   CONTRACT NO. 8591

2. **Completion Date/Contract Time**. Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.

3. **Contract Price**. The City shall pay to the Contractor at the times, in the manner and on the conditions set forth in said specifications, the sum of **FOUR HUNDRED EIGHTY-FIVE THOUSAND EIGHT HUNDRED FIFTY-TWO AND 24/100** (**$485,852.24**) Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.

4. **Affirmative Action.** In the performance of the services under this Agreement the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

   The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

   If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

   The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualification and application procedures .

and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement
Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national original and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.

3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or ten thousand dollars ($10,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms "DBE, MBE and WBE" shall be substituted for the term "small business" in this Article.)

5. Substance Abuse Prevention Program Required. Prior to commencing work on the Contract, the Contractor, and any Subcontractor, shall have in place a written program for the prevention of substance abuse among its employees as required under Wis. Stat. Sec. 103.503.

6. **Contractor Hiring Practices.**

Ban the Box - Arrest and Criminal Background Checks. (Sec. 39.08, MGO)

This provision applies to all prime contractors on contracts entered into on or after January 1, 2016, and all subcontractors who are required to meet prequalification requirements under MGO 33.07(7)(I), MGO as of the first time they seek or renew pre-qualification status on or after January 1, 2016. The City will monitor compliance of subcontractors through the pre-qualification process.

a. **Definitions.** For purposes of this section, "Arrest and Conviction Record" includes, but is not limited to, information indicating that a person has been questioned, apprehended, taken into custody or detention, held for investigation, arrested, charged with, indicted or tried for any felony, misdemeanor or other offense pursuant to any law enforcement or military authority.

"Conviction record" includes, but is not limited to, information indicating that a person has been convicted of a felony, misdemeanor or other offense, placed on probation, fined, imprisoned or paroled pursuant to any law enforcement or military authority.

"Background Check" means the process of checking an applicant's arrest and conviction record, through any means.

b. **Requirements.** For the duration of this Contract, the Contractor shall:

1. Remove from all job application forms any questions, check boxes, or other inquiries regarding an applicant's arrest and conviction record, as defined herein.

2. Refrain from asking an applicant in any manner about their arrest or conviction record until after conditional offer of employment is made to the applicant in question.

3. Refrain from conducting a formal or informal background check or making any other inquiry using any privately or publicly available means of obtaining the arrest or conviction record of an applicant until after a conditional offer of employment is made to the applicant in question.

4. Make information about this ordinance available to applicants and existing employees, and post notices in prominent locations at the workplace with information about the ordinance and complaint procedure using language provided by the City.

5. Comply with all other provisions of Sec. 39.08, MGO.

c. Exemptions: This section shall not apply when:

1. Hiring for a position where certain convictions or violations are a bar to employment in that position under applicable law, or

2. Hiring a position for which information about criminal or arrest record, or a background check is required by law to be performed at a time or in a manner that would otherwise be prohibited by this ordinance, including a licensed trade or profession where the licensing authority explicitly authorizes or requires the inquiry in question.

To be exempt, Contractor has the burden of demonstrating that there is an applicable law or regulation that requires the hiring practice in question, if so, the contractor is exempt from all of the requirements of this ordinance for the position(s) in question.

2021 PARKING GARAGE MAINTENANCE
CONTRACT NO. 8591

IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused this contract to be sealed with its corporate seal and to be executed by its Mayor and City Clerk on the dates written below.

Countersigned:

Witness — 4-26-21 Date

Witness — 4/26/2021 Date

PROAXIS LLC
Company Name

President — 4/26/2021 Date

Secretary — 4/26/2021 Date

CITY OF MADISON, WISCONSIN

Provisions have been made to pay the liability that will accrue under this contract.

Finance Director — 6/9/2021 Date

Witness — 6/15/21 Date

Witness — 5/25/21 Date

Approved as to form:

City Attorney — 6/10/21 Date

Mayor — 6/15/21 Date

City Clerk — 5/25/21 Date

Bond No. 2491391

SECTION I: PAYMENT AND PERFORMANCE BOND

ET ALL KNOW BY THESE DOCUMENTS PRESENTED, that we **PROAXIS LLC** as principal,
nd West Bend Mutual Insurance Company as surety, are held and firmly bound unto the City of Madison,
ompany of Middleton, WI
Visconsin, in the sum of **FOUR HUNDRED EIGHTY-FIVE THOUSAND EIGHT HUNDRED FIFTY-TWO AND 24/100 ($485,852.24)** Dollars, lawful money of the United States, for the payment of which sum to he City of Madison, we hereby bind ourselves and our respective executors and administrators firmly by these presents.

The condition of this Bond is such that if the above bounden shall on his/her part fully and faithfully perform all of the terms of the Contract entered into between him/herself and the City of Madison for the construction of:

2021 PARKING GARAGE MAINTENANCE
CONTRACT NO. 8591

in Madison, Wisconsin, and shall pay all claims for labor performed and material furnished in the prosecution of said work, and save the City harmless from all claims for damages because of negligence in the prosecution of said work, and shall save harmless the said City from all claims for compensation (under Chapter 102, Wisconsin Statutes) of employees and employees of subcontractor, then this Bond is to be void, otherwise of full force, virtue and effect.

Signed and sealed this 14th day of May, 2021

PROAXIS LLC
Company Name (Principal)

President

N/A
Seal

Countersigned:

Witness

Secretary

West Bend Mutual Insurance Company
Surety Seal

☒ Salary Employee ☐ Commission

By
Attorney-in-Fact, Elizabeth Mosca

Approved as to form:

City Attorney

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Producer Number 12305256 for the year 2021, and appointed as attorney-in-fact with authority to execute this payment and performance bond which power of attorney has not been revoked.

May 14, 2021
Date

Agent Signature

WEST BEND
A MUTUAL INSURANCE COMPANY

THE SILVER LINING®

Bond No. 2491391

POWER OF ATTORNEY

Know all men by these Presents, That West Bend Mutual Insurance Company, a corporation having its principal office in the City of West Bend, Wisconsin does make, constitute and appoint:

Elizabeth Mosca

lawful Attorney(s)-in-fact, to make, execute, seal and deliver for and on its behalf as surety and as its act and deed any and all bonds, undertakings and contracts of suretyship, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed in amount the sum of: Ten Million Dollars ($10,000,000)

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of West Bend Mutual Insurance Company at a meeting duly called and held on the 21st day of December, 1999.

Appointment of Attorney-In-Fact. The president or any vice president, or any other officer of West Bend Mutual Insurance Company may appoint by written certificate Attorneys-In-Fact to act on behalf of the company in the execution of and attesting of bonds and undertakings and other written obligatory instruments of like nature. The signature of any officer authorized hereby and the corporate seal may be affixed by facsimile to any such power of attorney or to any certificate relating therefore and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the company, and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the company in the future with respect to any bond or undertaking or other writing obligatory in nature to which it is attached. Any such appointment may be revoked, for cause, or without cause, by any said officer at any time.

In witness whereof, the West Bend Mutual Insurance Company has caused these presents to be signed by its president undersigned and its corporate seal to be hereto duly attested by its secretary this 22nd day of September, 2017.

Attest Christopher C. Zwygart
Christopher C. Zwygart
Secretary

WEST BEND MUTUAL INSURANCE COMPANY CORPORATE SEAL WASHINGTON CO., WIS.

Kevin A. Steiner
Chief Executive Officer/President

State of Wisconsin
County of Washington

On the 22nd day of September, 2017, before me personally came Kevin A. Steiner, to me known being by duly sworn, did depose and say that he resides in the County of Washington, State of Wisconsin; that he is the President of West Bend Mutual Insurance Company, the corporation described in and which executed the above instrument; that he knows the seal of the said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by order of the board of directors of said corporation and that he signed his name thereto by like order.

JULI A. BENEDUM NOTARY PUBLIC STATE OF WISCONSIN

Juli A. Benedum
Senior Corporate Attorney
Notary Public, Washington Co., WI
My Commission is Permanent

The undersigned, duly elected to the office stated below, now the incumbent in West Bend Mutual Insurance Company, a Wisconsin corporation authorized to make this certificate, Do Hereby Certify that the foregoing attached Power of Attorney remains in full force effect and has not been revoked and that the Resolution of the Board of Directors, set forth in the Power of Attorney is now in force.

Signed and sealed at West Bend, Wisconsin this 14th day of May, 2021.

WEST BEND MUTUAL INSURANCE COMPANY CORPORATE SEAL WASHINGTON CO., WIS.

Heather Dunn
Vice President – Chief Financial Officer

Notice: Any questions concerning this Power of Attorney may be directed to the Bond Manager at NSI, a division of West Bend Mutual Insurance Company.