## MEETING OF THE ADVISORY PARKING COMMITTEE Wednesday, August 4, 2021 @ 7:30am

- 1. Roll Call
- 2. Introductions
- 3. Review of the Agenda
- 4. Approval of Minutes, June 16, 2021
- 5. Invitation to Bid Review N. Old Woodward Structure
- 6. Invitation to Bid Review Park, Peabody and Chester Structures
- 7. 135 Pierce, Design Review Outdoor Dining
- 8. 115 Willits, Design Review Outdoor Dining
- 9. Parking Structure Exterior Signage Review
- 10. Meeting Open to the Public for items not on the Agenda
- 11. Miscellaneous Communications
  - a Semcog Information EV Charging Stations
- 12. Next Meeting September 1, 2021
- 13. Adjournment

Notice: Please note that board meetings will be conducted in person. Members of the public can attend in person at Birmingham City Hall or may attend virtually at <a href="https://com.us/j/98209276859">https://com.us/j/98209276859</a>

#### Meeting ID: 982 0927 6859

Persons with disabilities that may require assistance for effective participation in this public meeting should contact the City Clerk's Office at the number (248) 530-1880, or (248) 644-5115 (for the hearing impaired) at least one day before the meeting to request help in visual, hearing, or other assistance.

Las personas con incapacidad que requieren algún tipo de ayuda para la participación en esta sesión pública deben ponerse en contacto con la oficina del escribano de la ciudad en el número (248) 530-1800 o al (248) 644-5115 (para enos un dia antes de la reunión para solicitar ayuda a la visual, auditiva, o de otras asistencias. (Title VI of the Civil Rights Act of 1964).

## City of Birmingham Advisory Parking Committee Regular Meeting

### Held Remotely Via Zoom And Telephone Access Wednesday, June 16, 2021

### **Minutes**

These are the minutes of the Advisory Parking Committee ("APC") regular meeting held on Wednesday, June 16, 2021. The meeting was called to order at 7:30 a.m. by Chair Al Vaitas.

- 1. Rollcall
- Present:
   Chair Al Vaitas (Bloomfield Hills, MI)

   Vice-Chair Richard Astrein (Huntington Woods, MI)

   Aaron Black

   Steven Kalczynski

   Lisa Krueger (arrived 7:36 a.m.)

   Judith Paskiewicz

   Mary-Claire Petcoff

   Jennifer Yert

All located in Birmingham, MI unless otherwise noted.

- Absent: Anne Honhart Lisa Silverman
- Administration: Scott Grewe, Patrol Commander Mike Albrecht, Police Commander Laura Eichenhorn, City Transcriptionist Jim Surhigh, Consulting City Engineer (left at 8:30 a.m.) Scott Zielinski, Assistant City Engineer
- MKSK: Matt Manda Brad Strader Haley Wolfe
- 2. Introductions

CCE Surhigh, ACE Zielinski, and the team from MKSK were introduced to the APC by PC Grewe.

- 3. Review of the Agenda
- 4. Approval Of Minutes: Meeting Of June 2, 2021

### Motion by Mr. Astrein

Advisory Parking Committee June 16, 2021

Seconded by Mr. Kalczynski to approve the minutes of the regular APC meeting of June 2, 2021 as submitted.

Motion carried, 4-0.

ROLL CALL VOTE Yeas: Astrein, Vaitas, Petcoff, Kalczynski Nays: None Abstain: Black, Paskiewicz, Yert

5. Phase Three, S. Old Woodward Reconstruction

The team from MKSK and CCE Surhigh presented the item.

A few APC members noted that local businesses had been concerned about a proposed loss of metered parking in this area in the past. They said business owners in the area might express the same concerns in regards to these plans.

Mr. Strader explained MKSK would be soliciting feedback on the plans from both the businesses in the area and from the public at large.

In reply to Mr. Kalczynski, PC Grewe stated that while he did not have exact figures on-hand it seemed that Phases One and Two had been a success. He said that he had received fewer complaints regarding pedestrian safety and that accidents were most likely down. While acknowledging that lessened parking demand resulting from the Covid-19 pandemic may have been a factor, he noted he had not received any complaints regarding reduced parking availability in the areas impacted by Phases One and Two.

The MKSK team noted that they were proposing the relocation of some of the parking lot driveways along this stretch of S. Old Woodward for safety reasons.

Ms. Krueger was in favor of that proposal, stating that relocating some of those driveways would improve the safety of both pedestrians and drivers.

Dr. Paskiewicz thanked the presenters.

PC Grewe stated that if any APC members had further thoughts on the designs after the meeting they could forward those to him and he would forward them on to the design team.

- 6. Meeting Open to the Public for items not on the Agenda
- 7. Miscellaneous Communications

PC Grewe notified that the August 2021 APC meeting would likely be held in person. He said he would keep them up to date should that change.

8. Next Meeting: Wednesday, August 4, 2021

# 9. Adjournment

No further business being evident, the meeting adjourned at 8:51 a.m.

Patrol Commander Scott Grewe



## INVITATION TO BID For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS (N. OLD WOODWARD AVE.)

Sealed proposals endorsed **"2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS"**, will be received at the Office of the City Clerk, 151 Martin Street, PO Box 3001, Birmingham, Michigan, 48012; until Friday, August 20, 2021 at 2:00 p.m. at which time bids will be publicly opened and read.

**Bidders will be required to attend a mandatory pre-bid meeting on Thursday, August 12, 2021 at 9:30 a.m**. at the City of Birmingham Municipal Building, 151 Martin Street, Birmingham, MI 48009 – City Commission Room 2<sup>nd</sup> floor. Bidders must register for the prebid meeting by Wednesday, August 11, 2021 at 2:30 p.m. by contacting Commander Scott Grewe at (248) 530-1867 or by email at sgrewe@bhamgov.org

The City of Birmingham, Michigan is accepting sealed bid proposals from qualified professional firms to furnish all labor, equipment, material and supervision necessary to complete repairs as detailed in (1) municipal parking structure: N. Old Woodward Ave. This work must be performed as specified accordance with the specifications contained in the Invitation to Bid (ITB) prepared on behalf of the City of Birmingham, Michigan by Wiss, Janney, Eltner Associates, Inc. (WJE) of Southfield, Michigan.

The ITB, including the Specifications, may be obtained online from the Michigan Intergovernmental Trade Network at <u>http://www.mitn.info</u> or at the City of Birmingham, 151 Martin St., Birmingham, Michigan, ATTENTION: Commander Scott Grewe or by email at sgrewe@bhamgov.org

The acceptance of any proposal made pursuant to this invitation shall not be binding upon the City until an agreement has been executed.

Submitted to MITN:	Friday, August 6, 2021
Pre-bid RSVP deadline:	Wednesday, August 11, 2021 at 2:30 p.m
Mandatory Pre-Bid Meeting:	Thursday, August 12, 2021 at 9:30 a.m. 151 Martin Street,
	Birmingham, MI 48009 – City Commission Room 2 <sup>nd</sup> floor.
Deadline for Submissions:	August 20, 2021 at 2:00 p.m.
Contact Person:	Commander Scott Grewe
	151 Martin Street
	Birmingham, MI 48009
	Phone: (248) 530-1867
	Email: sgrewe@bhamgov.org



# INVITATION TO BID For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

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# INTRODUCTION

For purposes of this invitation to bid the City of Birmingham will hereby be referred to as "City" and the private firm will hereby be referred to as "Contractor."

The City of Birmingham, Michigan is accepting sealed bid proposals from qualified professional firms to **2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS**. This work must be performed as specified accordance with the specifications outlined by the Scope of Work contained in this Invitation to Bid (ITB).

During the evaluation process, the City reserves the right where it may serve the City's best interest to request additional information or clarification from proposers, or to allow corrections of errors or omissions. At the discretion of the City, firms submitting proposals may be requested to make oral presentations as part of the evaluation.

It is anticipated the selection of a firm will be completed by September 13, 2021. An Agreement for services will be required with the selected Contractor. A copy of the Agreement is contained herein for reference. Contract services will commence upon execution of the service agreement by the City.

# INVITATION TO BID (ITB)

The purpose of this ITB is to request sealed bid proposals from qualified parties presenting their qualifications, capabilities and costs to provide **2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS** in one parking structure: N. Old Woodward.

## MANDATORY PRE-BID MEETING

Prior to submitting a bid, interested firms are required to attend a pre-bid meeting to conduct an on-site visit of the location and access to the project location to make inquiries about the ITB. Thursday, August 12, 2021 at 9:30 a.m. 151 Martin Street, Birmingham, MI 48009 – City Commission Room 2<sup>nd</sup> floor.

## **INVITATION TO SUBMIT A PROPOSAL**

Proposals shall be submitted no later than Friday, August 20, 2021 at 2:00 p.m. to: City of Birmingham Attn: City Clerk 151 Martin Street Birmingham, Michigan 48009

One (1) original and one (1) copy of the bid proposal shall be submitted. The bid proposal should be firmly sealed in an envelope, which shall be clearly marked on the outside, "2021 **MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS**". Any bid proposal received after the due date cannot be accepted and will be rejected and returned, unopened, to the proposer. Proposer may submit more than one proposal provided each proposal meets the functional requirements.

# **INSTRUCTIONS TO BIDDERS**

- 1. Any and all forms requesting information from the bidder must be completed on the attached forms contained herein (see Contractor's Responsibilities). If more than one bid is submitted, a separate bid proposal form must be used for each.
- 2. Any request for clarification of this ITB shall be made <u>in writing</u> and delivered to: Commander Scott Grewe, (248-530-1867, sgrewe@bhamgov.org, 151 Martin Street, Birmingham, MI 48009. Such request for clarification shall be delivered, in writing, <u>no later than 5 days prior to the deadline for submissions</u>.
- 3. All bid proposals must be submitted following the ITB format as stated in this document and shall be subject to all requirements of this document including the instruction to respondents and general information sections. All bid proposals must be regular in every respect and no interlineations, excisions, or special conditions shall be made or included in the ITB format by the respondent.
- 4. The contract will be awarded by the City of Birmingham to the most responsive and responsible bidder with the lowest price and the contract will require the completion of the work pursuant to these documents.
- 5. Each respondent shall include in his or her proposal, in the format requested, the cost of performing the work. Municipalities are exempt from Michigan State Sales and Federal Excise taxes. Do not include such taxes in the proposal figure. The City will furnish the successful company with tax exemption information when requested.
- 6. Each respondent shall include in their proposal the following information: Firm name, address, city, state, zip code, telephone number, and fax number. The company shall also provide the name, address, telephone number and e-mail address of an individual in their organization to whom notices and inquiries by the City should be directed as part of their proposal.

# **EVALUATION PROCEDURE AND CRITERIA**

The evaluation panel will consist of City staff and any other person(s) designated by the City who will evaluate the proposals based on, but not limited to, the following criteria:

- 1. Ability to provide services as outlined.
- 2. Related experience with similar projects, Contractor background, and personnel qualifications.
- 3. Quality of materials proposed.
- 4. Overall Costs.
- 5. References.

# **TERMS AND CONDITIONS**

- 1. The City reserves the right to reject any or all proposals received, waive informalities, or accept any proposal, in whole or in part, it deems best. The City reserves the right to award the contract to the next most qualified Contractor if the successful Contractor does not execute a contract within ten (10) days after the award of the proposal.
- 2. The City reserves the right to request clarification of information submitted and to request additional information of one or more Contractors.
- 3. The City reserves the right to terminate the contract at its discretion should it be determined that the services provided do not meet the specifications contained herein. The City may terminate this Agreement at any point in the process upon notice to Contractor sufficient to indicate the City's desire to do so. In the case of such a stoppage, the City agrees to pay Contractor for services rendered to the time of notice, subject to the contract maximum amount.
- 4. Any proposal may be withdrawn up until the date and time set above for the opening of the proposals. Any proposals not so withdrawn shall constitute an irrevocable offer, for a period of ninety (90) days, to provide the services set forth in the proposal.
- 5. The cost of preparing and submitting a proposal is the responsibility of the Contractor and shall not be chargeable in any manner to the City.
- 6. The successful bidder will be required to furnish a Performance Bond in an amount not less than 100% of the contract price in favor of the City of Birmingham, conditioned upon the faithful performance of the contract, and completion on or before the date specified.
- 7. Payment will be made within thirty (30) days after invoice. Acceptance by the City is defined as authorization by the designated City representative to this project that all the criteria requested under the Scope of Work contained herein have been provided. Invoices are to be rendered each month following the date of execution of an Agreement with the City.
- 8. The Contractor will not exceed the timelines established for the completion of this project.

9. The successful bidder shall enter into and will execute the contract as set forth and attached as Attachment A.

## CONTRACTOR'S RESPONSIBILITIES

Each bidder shall provide the following as part of their proposal:

- 1. Complete and sign all forms requested for completion within this ITB.
  - a. Bidder's Agreement (Attachment B p. 16)
  - b. Cost Proposal (Attachment C p. 17)
  - c. Iran Sanctions Act Vendor Certification Form (Attachment D p. 18)
  - d. Agreement (p. 10 only if selected by the City).
- 2. Provide a description of completed projects that demonstrate the firm's ability to complete projects of similar scope, size, and purpose, and in a timely manner, and within budget.
- 3. Provide a written plan detailing the anticipated timeline for completion of the tasks set forth in the Scope of Work (p. 9).
- 4. The Contractor will be responsible for any changes necessary for the plans to be approved by the City of Birmingham.
- 5. Provide a description of the firm, including resumes and professional qualifications of the principals involved in administering the project.
- 6. Provide a list of sub-contractors and their qualifications, if applicable.
- 7. Provide three (3) client references from past projects, include current phone numbers. At least two (2) of the client references should be for projects utilizing the same materials included in the Contractor's proposal.
- 8. The Contractor will be responsible for the disposal of all material and any damages which occur as a result of any of employees or subcontractors of the Contractor during this project.
- 9. The contractor will be responsible for getting the building and parking permits at no cost to the contractor.
- 10. The successful bidder shall provide a Performance Bond in an amount not less than 100% of the contract price in favor of the City of Birmingham, conditioned upon the faithful performance of the contract, and completion on or before the date specified.
- 11. Provide a project timeline addressing each section within the Scope of Work and a description of the overall project approach. Include a statement that the Contractor will be available according to the proposed timeline.

# CITY RESPONSIBILITY

- 1. The City will provide a designated representative to work with the Contractor to coordinate both the City's and Contractor's efforts and to inspect and verify any work performed by the Contractor.
- 2. The City will provide access to the City of Birmingham during regular business hours or during nights and weekends as approved by the City's designated representative.

## SETTLEMENT OF DISPUTES

The successful bidder agrees to certain dispute resolution avenues/limitations. Please refer to paragraph 17 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

## INSURANCE

The successful bidder is required to procure and maintain certain types of insurances. Please refer to paragraph 12 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# **CONTINUATION OF COVERAGE**

The Contractor also agrees to provide all insurance coverages as specified. Upon failure of the Contractor to obtain or maintain such insurance coverage for the term of the agreement, the City may, at its option, purchase such coverage and subtract the cost of obtaining such coverage from the contract amount. In obtaining such coverage, Birmingham shall have no obligation to procure the most cost effective coverage but may contract with any insurer for such coverage.

# **EXECUTION OF CONTRACT**

The bidder whose proposal is accepted shall be required to execute the contract and to furnish all insurance coverages as specified within ten (10) days after receiving notice of such acceptance. Any contract awarded pursuant to any bid shall not be binding upon the City until a written contract has been executed by both parties. Failure or refusal to execute the contract shall be considered an abandoned all rights and interest in the award and the contract may be awarded to another. The successful bidder agrees to enter into and will execute the contract as set forth and attached as Attachment A.

## INDEMNIFICATION

The successful bidder agrees to indemnify the City and various associated persons. Please refer to paragraph 13 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# **CONFLICT OF INTEREST**

The successful bidder is subject to certain conflict of interest requirements/restrictions. Please refer to paragraph 14 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# **EXAMINATION OF PROPOSAL MATERIALS**

The submission of a proposal shall be deemed a representation and warranty by the Contractor that it has investigated all aspects of the ITB, that it is aware of the applicable facts pertaining to the ITB process and its procedures and requirements, and that it has read and understands the ITB. Statistical information which may be contained in the ITB or any addendum thereto is for informational purposes only.

## PROJECT TIMELINE

Submitted to MITN:	Friday, August 6, 2021
Pre-bid RSVP deadline:	Wednesday, August 11, 2021 at 230 p.m.
Mandatory Pre-Bid Meeting:	Thursday, August 12, 2021 at 9:30 a.m. 151 Martin Street, Birmingham, MI 48009 – City Commission Room 2 <sup>nd</sup> floor <b>.</b>
Deadline for Submissions:	Friday, August 20, 2021 at 2:00 p.m. – Bids publicly opened 151 Martin Street, Birmingham, MI 48009 – City Commission Room $2^{nd}$ floor.
Contract Signature Deadline:	Thursday, September 2, 2021 at 10:00 a.m.
Award of Bid:	Monday, September 13, 2021 7:30 p.m. Birmingham City Commission meeting
Construction Schedule:	Work to begin September, 2021

The Contractor will not exceed the timelines established for the completion of this project.

# SCOPE OF WORK

The Contractor shall perform the following services in accordance with the requirements as defined and noted herein:

- 1. The primary goal for the project is to perform concrete and waterproofing repairs and improvements on the 5th (roof) level. Work includes but is not limited to the following activities: cleaning and inspecting all floor drains and replacing damaged drain components; removal and replacement of the slab-on-ground at the south-west stair tower entrance; column and wall concrete repairs; underside and topside concrete repairs throughout the Level 5 slab and the Level 4 ramp and slab leading to Level 5; localized underside and topside repairs at the remaining supported levels; repairing damaged and failed traffic coating at the Level 5 curbs; and the installation of a new traffic- bearing membrane on Level 5 and the Level 4 ramp and slab leading to Level 5. See Specification Section 01 11 00 Summary of Work for more information.
- 2. The Contractor shall be responsible for the disposal of all materials in a safe and legal manner.
- 3. The Contractor shall operate in a safe manner and will observe all MIOSHA guidelines.
- 4. The Contractor shall provide any and all manuals and/or warranty information related to this project to the City upon completion of the project, as specified in this ITB.
- 5. This section and referenced documents shall constitute the Scope of Work for this project and as such all requirements must be met.

# ATTACHMENT A - AGREEMENT For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

This AGREEMENT, made this \_\_\_\_\_day of \_\_\_\_\_, 2021, by and between CITY OF BIRMINGHAM, having its principal municipal office at 151 Martin Street, Birmingham, MI (hereinafter sometimes called "City"), and \_\_\_\_\_\_, Inc., having its principal office at \_\_\_\_\_\_ (hereinafter called "Contractor"), provides as follows:

### WITNESSETH:

**WHEREAS**, the City of Birmingham, through its Maintenance Department, is desirous of having work completed to remove and replace an existing flat roof system at the Baldwin Public Library in the City of Birmingham.

WHEREAS, the City has heretofore advertised for bids for the procurement and performance of services required to perform 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS as detailed in the specifications for N. Old Woodward Ave. / Park St. / Peabody St. / Chester St, and in connection therewith has prepared a request for sealed Invitation to Bid proposals ("ITB"), which includes certain instructions to bidders, specifications, terms and conditions.

WHEREAS, the Contractor has professional qualifications that meet the project requirements and has made a bid in accordance with such request for cost proposals to perform 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS.

**NOW, THEREFORE,** for and in consideration of the respective agreements and undertakings herein contained, the parties agree as follows:

1. It is mutually agreed by and between the parties that the documents consisting of the Invitation to Bid to perform **2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS** and the Contractor's cost proposal dated \_\_\_\_\_\_, 2021 shall be incorporated herein by reference and shall become a part of this Agreement, and shall be binding upon both parties hereto. If any of the documents are in conflict with one another, this Agreement shall take precedence, then the ITB.

2. The City shall pay the Contractor for the performance of this Agreement in an amount not to exceed \_\_\_\_\_\_, as set forth in the Contractor's \_\_\_\_\_\_, 2021 cost proposal.

3. This Agreement shall commence upon execution by both parties, unless the City exercises its option to terminate the Agreement in accordance with the Invitation to Bid.

4. The Contractor shall employ personnel of good moral character and fitness in performing all services under this Agreement.

5. The Contractor and the City agree that the Contractor is acting as an independent Contractor with respect to the Contractor 's role in providing services to the City pursuant to this Agreement, and as such, shall be liable for its own actions and neither the Contractor nor its employees shall be construed as employees of the City. Nothing contained in this Agreement shall be construed to imply a joint venture or partnership and neither party, by virtue of this Agreement, shall have any right, power or authority to act or create any obligation, express or implied, on behalf of the other party, except as specifically outlined herein. Neither the City nor the Contractor shall be considered or construed to be the agent of the other, nor shall either have the right to bind the other in any manner whatsoever, except as specifically provided in this Agreement, and this Agreement shall not be construed as a contract of agency. The Contractor shall not be entitled or eligible to participate in any benefits or privileges given or extended by the City, or be deemed an employee of the City for purposes of federal or state withholding taxes, FICA taxes, unemployment, workers' compensation or any other employer contributions on behalf of the City.

6. The Contractor acknowledges that in performing services pursuant to this Agreement, certain confidential and/or proprietary information (including, but not limited to, internal organization, methodology, personnel and financial information, etc.) may become involved. The Contractor recognizes that unauthorized exposure of such confidential or proprietary information could irreparably damage the City. Therefore, the Contractor agrees to use reasonable care to safeguard the confidential and proprietary information and to prevent the unauthorized use or disclosure thereof. The Contractor shall inform its employees of the confidential or proprietary nature of such information and shall limit access thereto to employees rendering services pursuant to this Agreement. The Contractor further agrees to use such confidential or proprietary information only for the purpose of performing services pursuant to this Agreement.

7. This Agreement shall be governed by and performed, interpreted and enforced in accordance with the laws of the State of Michigan. The Contractor agrees to perform all services provided for in this Agreement in accordance with and in full compliance with all local, state and federal laws and regulations.

8. If any provision of this Agreement is declared invalid, illegal or unenforceable, such provision shall be severed from this Agreement and all other provisions shall remain in full force and effect.

9. This Agreement shall be binding upon the successors and assigns of the parties hereto, but no such assignment shall be made by the Contractor without the prior written consent of the City. Any attempt at assignment without prior written consent shall be void and of no effect.

10. The Contractor agrees that neither it nor its subcontractors will discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment because of race, color, religion, national origin, age, sex, height, weight or marital status. The Contractor shall inform the City of all claims or suits asserted against it by the Contractor's employees who work pursuant to this Agreement. The Contractor shall provide the City with periodic status reports concerning all such claims or suits, at intervals established by the City.

11. The Contractor shall not commence work under this Agreement until it has, at its sole expense, obtained the insurance required under this paragraph. All coverages shall be with insurance companies licensed and admitted to do business in the State of Michigan. All coverages shall be with carriers acceptable to the City of Birmingham.

12. The Contractor shall maintain during the life of this Agreement the applicable types of insurance coverage and minimum limits as set forth below:

A. Workers' Compensation Insurance:

<u>For Non-Sole Proprietorships</u>: Contractor shall procure and maintain during the life of this Agreement, Workers' Compensation Insurance, including Employers Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

<u>For Sole Proprietorships</u>: Contractor shall complete and furnish to the City prior to the commencement of work under this Agreement a signed and notarized Sole Proprietor Form, for sole proprietors with no employees or with employees, as the case may be.

- B. <u>Commercial General Liability Insurance</u>: Contractor shall procure and maintain during the life of this Agreement, Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$1,000,000 per occurrence combined single limit, Personal Injury, Bodily Injury and Property Damage. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent; (E) Deletion of all Explosion, Collapse and Underground (XCU) Exclusions, if applicable.
- C. <u>Motor Vehicle Liability</u>: Contractor shall procure and maintain during the life of this Agreement Motor Vehicle Liability Insurance, including all applicable no-fault coverages, with limits of liability of not less than \$1,000,000 per occurrence combined single limit Bodily Injury and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.
- D. <u>Additional Insured</u>: Commercial General Liability and Motor Vehicle Liability Insurance, as described above, shall include an endorsement stating the following shall be *Additional Insureds*: The City of Birmingham, including all elected and appointed officials, all employee and volunteers, all boards, commissions and/or authorities and board members, including employees and volunteers thereof. This coverage shall be primary to any other coverage that may be available to the additional insured, whether any other available coverage by primary, contributing or excess.
- E. <u>Professional Liability</u>: Professional liability insurance with limits of not less than \$1,000,000 per claim if Contractor will provide service that are customarily subject to this type of coverage.
- F. <u>Pollution Liability Insurance</u>: Contractor shall procure and maintain during the life of this Agreement Pollution Liability Insurance, with limits of liability of not less than \$1,000,000, per occurrence preferred, but claims made accepted.
- G. <u>Owners Contractors Protective Liability</u>: The Contractor shall procure and maintain during the life of this contract, an Owners Contractors Protective Liability Policy with limits of liability not less than \$3,000,000 per occurrence, combined single limit, Personal Injury, Bodily Injury and Property Damage. The City of Birmingham shall be "Name Insured" on said coverage.

- H. <u>Cancellation Notice</u>: Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.
- I. <u>Proof of Insurance Coverage</u>: Contractor shall provide the City of Birmingham at the time the Agreement is returned for execution, Certificates of Insurance and/or policies, acceptable to the City of Birmingham, as listed below.
  - 1) Two (2) copies of Certificate of Insurance for Workers' Compensation Insurance;
  - 2) Two (2) copies of Certificate of Insurance for Commercial General Liability Insurance;
  - 3) Two (2) copies of Certificate of Insurance for Vehicle Liability Insurance;
  - 4) Two (2) copies of Certificate of Insurance for Professional Liability Insurance;
  - 5) If so requested, Certified Copies of all policies mentioned above will be furnished.
- J. <u>Coverage Expiration</u>: If any of the above coverages expire during the term of this Agreement, Contractor shall deliver renewal certificates and/or policies to the City of Birmingham at least (10) days prior to the expiration date.
- K. <u>Maintaining Insurance</u>: Upon failure of the Contractor to obtain or maintain such insurance coverage for the term of the Agreement, the City of Birmingham may, at its option, purchase such coverage and subtract the cost of obtaining such coverage from the Agreement amount. In obtaining such coverage, the City of Birmingham shall have no obligation to procure the most cost-effective coverage but may contract with any insurer for such coverage.

13. To the fullest extent permitted by law, the Contractor and any entity or person for whom the Contractor is legally liable, agrees to be responsible for any liability, defend, pay on behalf of, indemnify, and hold harmless the City of Birmingham, its elected and appointed officials, employees and volunteers and others working on behalf of the City of Birmingham against any and all claims, demands, suits, or loss, including all costs and reasonable attorney fees connected therewith, and for any damages which may be asserted, claimed or recovered against or from and the City of Birmingham, its elected and appointed officials, employees, volunteers or others working on behalf of the City of Birmingham, by reason of personal injury, including bodily injury and death and/or property damage, including loss of use thereof, which arises out of or is in any way connected or associated with this Agreement. Such responsibility shall not be construed as liability for damage caused by or resulting from the sole act or omission of its elected or appointed officials, employees, volunteers or others working on behalf of the City of Birmingham.

14. If, after the effective date of this Agreement, any official of the City, or spouse, child, parent or in-law of such official or employee shall become directly or indirectly interested in this Agreement or the affairs of the Contractor, the City shall have the right to terminate this Agreement without further liability to the Contractor if the disqualification has not been removed within thirty (30) days after the City has given the Contractor notice of the

disqualifying interest. Ownership of less than one percent (1%) of the stock or other equity interest in a corporation or partnership shall not be a disqualifying interest. Employment shall be a disqualifying interest.

15. If Contractor fails to perform its obligations hereunder, the City may take any and all remedial actions provided by the general specifications or otherwise permitted by law.

16. All notices required to be sent pursuant to this Agreement shall be mailed to the following addresses:

City of Birmingham Attn: Commander Scott Grewe 151 Martin Street Birmingham, MI 48009 (248) 530-1867

CONTRACTOR (Insert Contractor Information)

17. Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled either by commencement of a suit in Oakland County Circuit Court, the 48th District Court or by arbitration. If both parties elect to have the dispute resolved by arbitration, it shall be settled pursuant to Chapter 50 of the Revised Judicature Act for the State of Michigan and administered by the American Arbitration Association with one arbitrator being used, or three arbitrators in the event any party's claim exceeds \$1,000,000. Each party shall bear its own costs and expenses and an equal share of the arbitrator's and administrative fees of arbitration. Such arbitration shall qualify as statutory arbitration pursuant to MCL§600.5001 et. seq., and the Oakland County Circuit Court or any court having jurisdiction shall render judgment upon the award of the arbitrator made pursuant to this Agreement. The laws of the State of Michigan shall govern this Agreement, and the arbitration shall take place in Oakland County, Michigan. In the event that the parties elect not to have the matter in dispute arbitrated, any dispute between the parties may be resolved by the filing of a suit in the Oakland County Circuit Court or the 48th District Court.

18. <u>FAIR PROCUREMENT OPPORTUNITY</u>: Procurement for the City of Birmingham will be handled in a manner providing fair opportunity for all businesses. This will be accomplished without abrogation or sacrifice of quality and as determined to be in the best interest of the City of Birmingham.

IN WITNESS WHEREOF, the said parties have caused this Agreement to be executed as of the date and year above written.

WITNESSES / NOTARY PUBLIC	CONTRACTOR		
Ву:	Ву:		
Notary Public signature above	CONTRACTOR		
Notary Public stamp below:	Its: INSERT TITLE HERE		
CITY OF BIRMINGHAM	Bv:		
	Pierre Boutros, Mayor		
	By:		
Approved:	Alexandria D. Bingham, City Clerk		
Thomas M. Markus, City Manager (Approved as to substance)	Mark H. Clemence, Chief of Police (Approved as to substance)		
Mark Gerber, Director of Finance (Approved as to financial obligation)	Mary M. Kucharek, City Attorney (Approved as to form)		

# ATTACHMENT B - BIDDER'S AGREEMENT For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

In submitting this proposal, as herein described, the Contractor agrees that:

1. They have carefully examined the specifications, terms and Agreement of the Invitation to Bid and all other provisions of this document and understand the meaning, intent, and requirement of it.

2. They will enter into a written contract and furnish the item or items in the time specified in conformance with the specifications and conditions contained therein for the price quoted by the proponent on this proposal.

PREPARED BY (Print Name)	DATE	
TITLE	DATE	
AUTHORIZED SIGNATURE	E-MAIL ADDRESS	
COMPANY		
ADDRESS	PHONE	
NAME OF PARENT COMPANY	PHONE	
ADDRESS		

# ATTACHMENT C - COST PROPOSAL For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

In order for the bid to be considered valid, Section 00 41 44 - Bid Form must be completed in its entirety.

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

Authorized signature\_\_\_\_\_ Date\_\_\_\_\_

# ATTACHMENT D - IRAN SANCTIONS ACT VENDOR CERTIFICATION FORM For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

Pursuant to Michigan Law and the Iran Economic Sanction Act, 2012 PA 517 ("Act"), prior to the City accepting any bid or proposal, or entering into any contract for goods or services with any prospective Vendor, the Vendor must certify that it is not an "Iran Linked Business", as defined by the Act.

By completing this form, the Vendor certifies that it is not an "Iran Linked Business", as defined by the Act and is in full compliance with all provisions of the Act and is legally eligible to submit a bid for consideration by the City.

PREPARED BY (Print Name)	DATE	
TITLE	DATE	
AUTHORIZED SIGNATURE	E-MAIL ADDRESS	
COMPANY		
ADDRESS	PHONE	
NAME OF PARENT COMPANY	PHONE	
ADDRESS		
TAXPAYER I.D.#		

PROJECT MANUAL FOR CITY OF BIRMINGHAM 2021 NORTH OLD WOODWARD PARKING STRUCTURE REPAIR PROJECT 333 NORTH OLD WOODWARD AVE. BIRMINGHAM, MICHIGAN WJE No. 2019.6318 July 30, 2021 For Bids

Prepared by

WISS, JANNEY, ELSTNER ASSOCIATES, INC. 30700 Telegraph Road, Suite 3580 Bingham Farms, Michigan 48025 248.593.0900

### SECTION 00 01 10 TABLE OF CONTENTS

Section Number	Section Title	Pages
	Division 00 - Procurement and Contracting Requirements	
00 41 44	Bid Form	00 41 44-1 to 4
	Division 01 - General Requirements	
01 11 00	Summary of Work	01 11 00-1 to 4
01 22 00	Unit Prices	01 22 00-1 to 9
	Division 02 - Existing Conditions	
02 01 11	Shoring	02 01 11-1 to 3
	Division 03 - Concrete	
03 01 31	Concrete Removal and Surface Preparation	03 01 31-1 to 8
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03 37 13	Shotcrete	03 37 13-1 to 10
	Division 07 - Thermal & Moisture Protection	
07 18 00	Traffic Coating	07 18 00-1 to 10
07 92 00	Joint Sealants	07 92 00-1 to 7

# END OF SECTION 00 01 10

### SECTION 00 41 44 BID FORM

NOTE: Bidder shall state Unit Price Bid and Total Bid amount for each unit price item. Total Bid amount for each item shall be product of Estimated Quantity multiplied by Unit Price. Unit Price Bid and Total Bid amounts shall be written numerically in spaces provided.

*GRAND TOTAL* shall be sum of Total Bid amounts for various items and will be Contract Sum written in Owner-Contractor Agreement.

All words and numbers shall be written in non-erasable medium.

#### LUMP SUM PORTION OF BASE BID

Per Section 01 11 00 - Summary of Work

	Type of Work	<b>Total Bid</b>
1.	General Conditions	\$
2.	Performance Bond and Labor and Material Payment Bond	\$
3.	Loose Concrete Removal at underside of Levels 2, 3, and 4	\$
4.	Floor Drain Cleaning/Grate Replacement (Keynote 4)	\$
5.	Remove and replace cover plates in stair towers	\$
	Sum of Lump Sum Bid Items 1 through 5: Subtotal	L1: \$

### **UNIT PRICE PORTION OF BASE BID**

Per Section 01 22 00 - Unit Prices

Ite	m Description	Est. Qty.	Units	Unit Price	Total Bid
6.	Partial-depth horizontal concrete repair - overlay only (Keynote 6)	2,000	SF	\$	\$
7.	Partial-depth horizontal concrete repair (Keynote 7)	3,500	SF	\$	\$
8.	Partial-depth underside concrete repair (Keynote 8)	4,500	SF	\$	\$
9.	Full-depth concrete repair (Keynote 9)	500	SF	\$	\$
10.	Curb concrete repair (Keynote 10)	800	SF	\$	\$
11.	Formed vertical concrete repair (Keynote 11)	200	SF	\$	\$
12.	Formed slab edge concrete repair (Keynote 12)	100	SF	\$	\$
13.	Supplemental steel reinforcement	2	ton	\$	\$
14.	Supplemental epoxy-grouted steel dowels	500	each	\$	\$
15.	Rout and seal cracks in slab (Keynote 15)	5,000	LF	\$	\$
16.	Replace sealant at concrete overlay control joints (Keynote 16)	70,000	LF	\$	\$
17.	Replace sealant at cove (Keynote 17)	2,000	LF	\$	\$
18.	Install traffic-bearing membrane on Level 5 and Level 4 ramp and slab leading to Level 5 (Keynote 18)	45,000	SF	\$	\$
19.	Localized traffic-bearing membrane replacement (Keynote 19)	200	SF	\$	\$
20.	Traffic-bearing membrane replacement (large areas) (Keynote 20)	900	SF	\$	\$
21.	Localized repointing of brick masonry (Keynote 21)	50	LF	\$	\$
22.	Localized replacement of concrete masonry units (Keynote 22)	35	SF	\$	\$
23.	Slab on ground replacement at southwest pedestrian entrance (Keynote 23)	150	SF	\$	\$
	Sum of Unit Price Bid Items 6 through 23:			Subtotal U1:	\$

#### SUMMARY PORTION OF BASE BID

	Subtotal L1: \$
	Subtotal U1: \$
Grand Total (Sum of Subtotals L1 and U1):	\$
Grand Total (in words):	
	Dollars

#### **CONSTRUCTION SCHEDULE**

The Contractor agrees to commence work under the Contract on or before a date to be specified in a written "Notice to Proceed." The Contractor proposes to complete all Base Bid work within \_\_\_\_\_\_ calendar days from the date specified in the Notice to Proceed. It is anticipated that this project will begin as soon as September, 2021 and be completed during the 2021 construction season.

The selected Contractor shall submit a detailed construction/work sequence schedule describing the work to be performed in each phase on an event by event basis, together with an estimate of time necessary to complete each phase of the Project, including a proposed completion date.

#### SUBCONTRACTORS

Indicate portion(s) of work to be completed by a subcontractor and name of subcontractor:

#### Portion of Work

Subcontractor (if used)

Waterproofing

Concrete Repairs

Caulking

Other

#### **BIDDER'S ENDORSEMENT**

I hereby certify that all statements herein are made on behalf of \_\_\_\_\_\_

(Name and Address of Corporation, Partnership, or Person submitting bid)

of the City of \_\_\_\_\_ State of \_\_\_\_\_

that I have examined and carefully prepared this Bid from the plans and specifications, and have checked the same in detail before submitting this Bid; that I have full authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

(Signature)

(Title)

END OF SECTION 00 41 44

### SECTION 01 11 00 SUMMARY OF WORK

### PART 1 GENERAL

### 1.1 SUMMARY

C. Section Includes: Description of existing conditions and Work scope, and Contractor duties and use of premises.

### **1.2 CONTRACTOR DUTIES**

- C. Except as specifically noted, provide and pay for:
  - 1. Labor, materials, and equipment.
  - 2. Tools, construction equipment, and machinery.
  - 3. Water, heat, power, and lights required for construction beyond those available at facility.
  - 4. Other facilities and services necessary for proper execution and completion of Work.
  - 5. Legally required sales, consumer, and use taxes.
  - 6. Permits, government fees, and licenses as necessary for proper execution and completion of Work and as applicable at time of receipt of bids.
- D. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities having jurisdiction, which bear on performance of Work.
  - 1. Take necessary safety precautions to prevent injury to construction personnel, nonconstruction personnel, Owner's property, and adjacent facilities.
  - 2. Perform work in a manner to minimize hazards due to the disturbance of lead containing materials (paint) and comply with MIOSHA requirements for assessing, monitoring, and protecting employees from lead hazard.
  - 3. Give required notices.
  - 4. Products shall comply with local regulations, including environmental restrictions.
  - 5. Promptly submit written notice to Architect/Engineer of observed variance of Contract Documents from legal requirements. It is not the Contractor's responsibility to make certain that Drawings and Specifications comply with codes and regulations.
    - a. Propose appropriate modifications to Contract Documents for necessary changes.
    - b. Assume responsibility for Work known to be contrary to such requirements, which is performed without notice.
- E. Enforce strict discipline and good order among employees. Do not employ unfit persons or persons not skilled in their assigned tasks.
- F. Provide 24-hour emergency contact information for Contractor and major subcontractors, including names and telephone numbers.

### 1.3 **PROJECT CONDITIONS**

- C. Description of Existing Structure:
  - 1. The parking structure was constructed in 1966 and has five levels of parking with a centralized ramp system. The structural system on the supported levels consists of a two-way slab system comprised of reinforced concrete flat slabs supported on columns with drop panels. Level 1 is a reinforced concrete slab on ground, and Level 5 is uncovered

rooftop parking. The supported slabs are approximately 15 inches thick, including a concrete topping overlay that varies in thickness from three to six inches. The structure is square in plan with approximate dimensions of 200 feet by 200 feet, for a total area of 200,000 square feet of floor space between all levels. The facade at the corner towers is primarily brick masonry cladding with concrete masonry unit (CMU) backup; additionally, precast concrete units with an exposed aggregate finish extends from grade to the top of the corner towers, surrounding the windows and doors. A prestressed cable vehicle barrier system is in place in between the stair towers.

- D. Description of Deterioration:
  - 1. Spalled, loose, and unsound (delaminated) concrete is common on the topside and underside of the elevated concrete slabs.
  - 2. Spalls and cracks are commonly present at the interior slab edges.
  - 3. Cracks are present in many locations on the topside of the slabs, and in some locations, on the underside of the slabs.
  - 4. A traffic-bearing membrane with tears and abrasions is present on the curbs on Level 5.

## 1.4 WORK SCOPE

- C. The primary project objectives of this bid package is to address critical repair items and address waterproofing and concrete repair items on the roof level of the structure, as well as address concrete repair items on the other levels as the schedule permits.
- D. Work includes, but is not limited to, the following activities:
  - 1. Floor drain cleaning and grate replacement
  - 2. Partial-depth and full-depth concrete slab repairs
  - 3. Formed slab edge concrete repairs
  - 4. Formed vertical concrete repairs
  - 5. Routing and sealing of cracks
  - 6. Replacement of sealant at construction joints
  - 7. Replacement of sealant at coves
  - 8. Installation of traffic-bearing membrane at roof level and ramp and slab leading to roof level

### 1.5 LUMP SUM WORK ITEMS

- C. Lump Sum Item 1: General Conditions All work defined in the Contract Documents not included in the other work items below. This includes, but in not limited to, supervision; mobilization; coordination; permits; personnel lifts; dust protection; submittals; mock-ups; shoring for concrete repairs; concrete material testing, protection of existing construction from damage; dumpsters; job site cleaning; temporary facilities and controls; temporary traffic control and signage; and project close out.
- D. Lump Sum Item 2: Performance Bond and Labor and Material Payment Bond, each in the amount of 100 percent of the contract sum. Refer to Section 00 60 11 for additional information.
- E. Lump Sum Item 3: Loose Concrete Removal This item includes: removal of loose and unsound concrete from the underside of concrete slabs throughout the entire parking structure. The concrete removal shall be completed using hand tools or small electric chipping hammers. The purpose of the work is to remove loose concrete to mitigate a potential hazard of loose concrete falling onto pedestrians or vehicles. Repairs are excluded.

- F. Lump Sum Item 4: Floor Drain Cleaning/Grate Replacement (Keynote 4) This item includes: at each floor drain on each level, temporarily remove each drain grate and drain bowl and removing debris and clean each drain; replace damaged floor drains grates and damaged strainers at locations shown on the plan; reinstall drain grates and drain bowls.
- G. Lump Sum Item 5: Remove and replace metal cover plates in stair towers This item includes: at each stair tower and at all levels, remove and replace each metal cover plate at the transition between the stair tower and the parking structure; remove debris; and re-secure metal cover plates with stainless steel drop in anchors and stainless steel machine screws or equal approved. Replacement of sealant shall be performed, and partial-depth concrete repairs may be required, under separate pay items, if needed.

### 1.6 UNIT PRICE WORK ITEMS

- C. Refer to Section 01 22 00 for description of work and basis for payment for unit price items on the east elevation.
- D. Concrete Repair Items
  - 1. Partial-depth horizontal concrete repair <u>overlay only</u> (Keynote 6)
  - 2. Partial-depth horizontal concrete repair (Keynote 7)
  - 3. Partial-depth underside concrete repair (Keynote 8)
  - 4. Full-depth concrete repair (Keynote 9)
  - 5. Curb concrete repair (Keynote 10)
  - 6. Formed vertical concrete repair (Keynote 11)
  - 7. Formed concrete slab edge repair (Keynote 12)
  - 8. Supplemental steel reinforcement
  - 9. Supplemental epoxy-grouted steel dowels
- E. Waterproofing Repair Items
  - 1. Rout and seal cracks in slab (Keynote 15)
  - 2. Replace sealant at concrete overlay control joints (Keynote 16)
  - 3. Replace sealant at cove (Keynote 17)
  - 4. Install traffic-bearing membrane on Level 5 (roof level) and Level 4 ramp and slab leading to Level 5 (Keynote 18)
  - 5. Localized traffic-bearing membrane replacement (Keynote 19)
  - 6. Traffic-bearing membrane replacement (large areas) (Keynote 20)
- F. Masonry Repair Items
  - 1. Localized repointing at brick masonry (Keynote 21)
  - 2. Localized replacement of concrete masonry units (Keynote 22)
- G. Slab-on-ground Repair Item
  - 1. Slab-on-ground replacement at southwest pedestrian entrance (Keynote 23)

## 1.7 ALTERNATE WORK ITEMS

A. No Alternate Work items are being solicited at this time.

## 1.8 SCHEDULE

C. Schedule: It is anticipated that work will begin in September 2021.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION 01 11 00

### SECTION 01 22 00 UNIT PRICES

### PART 1 - GENERAL

### 1.1 PAYMENT OF UNIT PRICE QUANTITIES

- A. A portion of the work is to be paid for on a Unit Price basis based on actual quantities. The work items and basis of payment are listed below. These activities are described in Section 01 11 00 Summary of Work and in the Drawings and are to be completed as per the Specification.
  - 1. Definition: Unit price, stated on the Bid Form, is the price per unit of measurement for materials and services for a specific Work activity. The Contract Sum may be increased or decreased by Unit Price adjustment, based on the difference between the estimated bid quantity and the actual Work quantity.
  - 2. Payment Procedures:
    - a. As part of Project closeout, the Contract Sum will be modified by the unit price times the variation in the actual Work quantity from the estimated quantity included in the Bid Form, based on quantities measured by the Contractor and approved by the Architect/Engineer.

Bid Item		Type of Work	Unit
6	Partial-	depth horizontal concrete repair - overlay only (Keynote 6)	
	The cos	st of this work includes:	
	a)	Furnishing labor and materials	
	b)	Partial-depth removal and disposal of sound and unsound concrete	
	c)	Sawcutting edges of removal area	
	a)	Sandblasting clean exposed concrete and air blasting	
	b)	Forming and recasting repair with ready-mix concrete or proprietary repair concrete	
	d)	Curing	

e) Installation of sealant around perimeter of repair at Levels 2-4

Note: The installation of supplemental steel reinforcing and dowels are paid under separate unit price items.

Payment based on surface area (square foot) of concrete repaired.

\$/SF

Bid Item	Type of Work	Unit
7	Partial-depth horizontal concrete repair (Keynote 7)	
	The cost of this work includes:	
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Partial-depth removal and disposal of sound and unsound concrete</li> <li>c) Sawcutting edges of removal area</li> <li>d) Sandblasting and air blasting clean exposed concrete and steel reinforcing steel surfaces</li> <li>e) Coating exposed steel with corrosion-inhibiting coating</li> <li>c) Forming and recasting repair with ready-mix concrete or proprietary repair concrete</li> <li>f) Curing</li> <li>g) Installation of sealant around perimeter of repair at Levels 2-4</li> </ul>	
	Note: The installation of supplemental steel reinforcing and dowels are paid under separate unit price items.	
	Payment based on surface area (square foot) of concrete repaired.	\$/SF
8	Partial depth underside concrete repair (Keynote 8)	
	The cost of this work includes:	
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Removal and disposal of sound and unsound concrete</li> <li>c) Sawcutting edges of removal area</li> <li>d) Sandblasting and air blasting clean exposed concrete and steel reinforcing bar surfaces</li> <li>e) Coating exposed steel with corrosion-inhibiting coating</li> <li>f) Restoring the section with shotcrete technique</li> <li>g) Curing</li> </ul>	
	Payment based on surface area (square foot) of concrete repaired.	\$/SF

)	<ul><li>Full-depth concrete repair (Keynote 9)</li><li>The cost of this work includes:</li><li>a) Furnishing labor and materials</li><li>b) Removal and disposal of sound and unsound concrete (12-15" nominal</li></ul>	
	<ul><li>The cost of this work includes:</li><li>a) Furnishing labor and materials</li><li>b) Removal and disposal of sound and unsound concrete (12-15" nominal</li></ul>	
	<ul><li>a) Furnishing labor and materials</li><li>b) Removal and disposal of sound and unsound concrete (12-15" nominal</li></ul>	
	<ul> <li>thickness)</li> <li>c) Sawcutting edges of removal area</li> <li>d) Sandblasting and air blasting clean exposed concrete and steel reinforcing bar surfaces</li> <li>e) Coating exposed steel with corrosion-inhibiting coating</li> <li>f) Installing new dowels and reinforcing steel shown in the details</li> <li>g) Forming and recasting repair with ready-mix concrete or proprietary repair concrete</li> <li>h) Curing</li> <li>i) Installation of sealant around perimeter of repair at top surfaces of Levels 2-4</li> </ul>	
	Note: The installation of supplemental steel reinforcing and dowels are paid under separate unit price items.	
	Payment based on surface area (square foot) of concrete repaired.	\$/SF
10	Partial-depth curb concrete repair (Keynote 10)	
	The cost of this work includes:	
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Partial-depth removal and disposal of sound and unsound concrete</li> <li>c) Sawcutting edges of removal area</li> <li>d) Sandblasting and air blasting clean exposed concrete and steel reinforcing steel surfaces</li> <li>d) Coating exposed steel with corrosion-inhibiting coating</li> <li>e) Forming and recasting repair with ready-mix concrete or proprietary repair concrete</li> <li>e) Curing</li> <li>f) Installation of sealant around perimeter of repair and at cove at Levels 2-4</li> </ul>	
	Note: The installation of supplemental steel reinforcing and dowels are paid under separate unit price items.	
	Payment based on surface area (square foot) of concrete repaired.	\$/SF

Bid Item	Type of Work	Unit
11	Formed vertical concrete repair (Keynote 10)	
	The cost of this work includes:	
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Removal and disposal of sound and unsound concrete to a minimum depth of 3 in., an average depth of 4 in., or 3/4 in. below bottom of existing conventional steel reinforcement</li> <li>c) Shoring</li> <li>d) Sawcutting edges of removal area</li> <li>e) Sandblasting clean and air blasting exposed concrete and steel reinforcing bar surfaces</li> <li>f) Coating exposed steel with corrosion-inhibiting coating</li> <li>g) Formwork</li> <li>h) Restoring the section with formed and poured using ready-mix concrete or proprietary flowable repair concrete</li> <li>i) Curing</li> </ul>	
	Payment based on surface area (square foot) of concrete repaired.	\$/SF
12	<ul> <li>Formed slab edge concrete repair (Keynote 11)</li> <li>The cost of this work includes: <ul> <li>a) Furnishing labor and materials</li> <li>b) Removal and disposal of sound and unsound concrete</li> <li>c) Sawcutting edges of removal area</li> <li>d) Sandblasting and air blasting clean exposed concrete and steel reinforcing bar surfaces</li> <li>e) Coating exposed steel with corrosion-inhibiting coating</li> <li>f) Formwork</li> <li>g) Restoring the section with formed and poured using ready-mix concrete or proprietary flowable repair concrete</li> <li>h) Curing</li> </ul> </li> <li>Payment based on surface area (square foot) of concrete repaired.</li> </ul>	\$/SF
13	<ul><li>Supplemental steel reinforcement</li><li>The cost of this work includes:</li><li>a) Furnishing and installing epoxy-coated (shop applied) conventional steel reinforcement in concrete repairs</li></ul>	
	Payment based on weight (ton) of steel installed.	\$/ton
Bid Item	Type of Work	Unit
-------------	--	---------
14	Supplemental Dowels	
	The cost of this work includes:	
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Drilling holes for dowels</li> <li>c) Cleaning holes in accordance with manufacturer instructions</li> <li>d) Filling holes with epoxy adhesive</li> <li>e) Permitting inspector access to inspect holes after cleaning</li> <li>f) Installing dowels in accordance with manufacturer instructions</li> </ul>	
	Payment based on each dowel installed.	\$/each
15	Rout and seal cracks in slab (Keynote 14)	
	The cost of this work includes:	
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Existing sealant removal, if present</li> <li>c) Routing crack or joint</li> <li>d) Applying primer</li> <li>e) Installing sealant</li> <li>f) Permitting sealant to cure adequate time</li> </ul>	
	Payment based on length (linear feet) of sealing cracks and joints.	\$/LF
16	Replace sealant at concrete overlay control joints (Keynote 15)	
	The cost of this work includes: a) Furnishing labor and materials	
	<ul> <li>b) Removing existing sealant and preparing concrete surface for new sealant</li> <li>c) Installing bond breaker</li> <li>d) Applying primer for sealant</li> <li>e) Installing sealant</li> <li>f) Permitting sealant to cure adequate time</li> </ul>	
	Replacement of concrete as required to restore the joint profile and address deterioration will be paid under Bid Items 6 or 7 as appropriate.	
	Payment based on length (linear feet) of sealant replaced.	\$/LF

Bid Item	Type of Work	Unit	
17	Replace sealant at cove (Keynote 16)		
	The cost of this work includes:		
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Removing existing sealant and preparing concrete and traffic coating to received new sealant</li> <li>c) Applying primer for sealant</li> <li>d) Installing sealant</li> <li>e) Permitting sealant to cure adequate time</li> </ul>		
	Payment based on length (linear feet) of joint seal replaced.	\$/LF	
18	Traffic-bearing membrane installation (Keynote 17) The cost of this work includes:		
	<ul> <li>a) Furnishing labor and materials</li> <li>b) Preparation of existing waterproofing membrane to remain</li> <li>c) Shotblasting horizontal surfaces to be coated</li> <li>d) Sandblasting vertical surfaces to be coated</li> <li>e) Air blast cleaning of all surfaces</li> <li>f) Protection of prepared surfaces from contamination until membrane installation</li> <li>g) New cove sealant at all interfaces between vertical and horizontal surfaces</li> <li>h) Replace sealant at concrete overlay control joints</li> <li>i) Detail strip of basecoat of membrane over all joints, cracks, and tie-ins</li> <li>j) Heavy-duty membrane at vertical surfaces</li> <li>l) Upturning membrane at vertical surfaces</li> <li>l) Parking stall striping and pavement markings to match existing</li> </ul>		
	Routing and sealing of cracks in slab will be paid under Bid Item 15 as appropriate.		
	Payment based on surface area (square foot) of concrete repaired.	\$/SF	
19	Localized traffic-bearing membrane replacement (Keynote 19) The cost of this work includes: a) Furnishing labor and materials		
	Payment based on surface area (square foot) of traffic coating replaced. Coating repairs less than one square foot will be measured at one square foot	\$/SF	

Bid Item		Type of Work	Unit
20	Traffic coating replacement (large areas) (Keynote 20)		
	The cost of this work includes:		
	<ul> <li>a)</li> <li>b)</li> <li>c)</li> <li>d)</li> <li>e)</li> <li>f)</li> <li>g)</li> <li>h)</li> <li>i)</li> <li>j)</li> <li>k)</li> </ul>	Furnishing labor and materials Preparation of existing waterproofing membrane to remain Shotblasting horizontal surfaces to be coated Sandblasting vertical surfaces to be coated Air blast cleaning of all surfaces Protection of prepared surfaces from contamination until membrane installation New cove sealant at all interfaces between vertical and horizontal surfaces Detail strip of basecoat of membrane over all joints, cracks, and tie-ins Heavy-duty membrane system installation Upturning membrane at vertical surfaces Parking stall striping and pavement markings to match existing	
	Payme	nt based on surface area (square foot) of membrane installed.	\$/SF
21	Repointing of brick masonry (Keynote 21)		
	The cost of this work includes:		
	a) b) c)	Removing existing mortar Cleaning and preparing surfaces for new mortar Installing new mortar in lift per details	
	Payme	nt based on length (linear feet) of mortar replaced.	\$/LF
22	Replacement of concrete masonry units (Keynote 22)		
	The cost of this work includes:		
	a) b) c)	Removing existing units Installing new units in-kind Coating new units to match existing	
	Repointing of mortar required to replace units will be paid under bid item 15 as appropriate.		
	Payme	nt based on surface area (square foot) of units replaced.	\$/SF

Bid Item		Type of Work	Unit
23	Slab or	n ground repair at southwest pedestrian entrance (Keynote 23)	
	The co	st of this work includes:	
	<ul> <li>a)</li> <li>b)</li> <li>c)</li> <li>d)</li> <li>e)</li> <li>f)</li> <li>g)</li> <li>h)</li> <li>i)</li> </ul>	Furnishing labor and materials Removal and disposal of sound and unsound concrete to achieve positive drainage to drain Sawcutting edges of removal area Sandblasting clean and air blasting exposed concrete and steel reinforcing bar surfaces Coating exposed steel with corrosion-inhibiting coating Installing new dowels and reinforcing steel shown in the details Installing new asphaltic expansion joint filler along slab-to-wall interface Installing new cove sealant along slab-to-wall interface above new joint filler per details Forming and recasting repair with ready-mix concrete or proprietary repair concrete	
	j)	Curing	
	Payme	nt based on surface area (square foot) of concrete repaired.	\$/SF

### **1.2 MEASUREMENT OF QUANTITIES**

- A. Measure work to be performed on a unit price basis according to the methods described in 1, 2, 3 and 4 below. Payment will be made for work actually performed, based on quantities recorded by the Contractor and approved by the Engineer. Unless stated otherwise, records described below shall consist of both plan view drawings and tables cross-referenced to the drawings with the required data. Unless otherwise stated, the Engineer will verify the accuracy of the record by visual examination of the work performed and measurement of the quantities with a measuring wheel or similar method.
  - 1. Unit Price Items 6, 7, 8, 9, 10, 11, 12, 18, 19. 20, 22, and 23: The Contractor shall maintain a record of the location and surface area in square feet for each repair completed.
  - 2. Unit Price Items 15, 16, 17, and 18: The Contractor shall maintain a record of the location and length in linear feet for each repair installed.
  - 3. Unit Price Items 13 and 14: The Contractor shall maintain a record of the location and weight of supplemental steel installed for each repair.
  - 4. The Contractor shall submit this record to the Engineer on a weekly basis.
- B. The Contractor shall notify the Owner's Representative 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 verification by the Engineer, 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 Representative'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.

### END OF SECTION 01 22 00

### SECTION 02 01 11 SHORING

#### PART 1 GENERAL

#### 1.1 SUMMARY

A. Section Includes: Supply, installation, and removal of temporary shoring to support structural elements vertically.

#### B. Related Sections:

- 1. Section 01 11 00 Summary of Work
- 2. Section 01 22 00 Unit Prices
- 3. Section 03 01 31 Concrete Removal and Surface Preparation

#### 1.2 PAYMENT

- A. Include the following in General Conditions or unit prices as applicable:
  - 1. Design of shoring, developing shoring procedures, preparing shoring submittals, and providing and installing shoring.

#### 1.3 COORDINATION

A. Coordinate with Owner's Representative and with other trades to ensure that shoring does not interfere with Owner use of Site or work of other trades.

#### 1.4 SUBMITTALS

A. Product Data: Manufacturer's literature and technical data indicating type of shoring proposed for use and safe load-carrying capacity of shoring for heights and lengths of shoring components to be used.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store shoring materials in approved storage area at Site, such that materials do not interfere with Owner's continued use of facility.
- B. Limit stored materials on structure to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.

#### 1.6 **PROJECT CONDITIONS**

A. Comply with Owner's limitations and restrictions for Site use and accessibility.

#### **PART 2 PRODUCTS**

#### 2.1 MANUFACTURED ASSEMBLIES

- A. Design Criteria:
  - 1. Design for dead load and minimum 20-pound-per-square-foot construction load over tributary area of member being repaired, as follows:
    - a. Design shall include a minimum factor of safety of 2.0.

- b. Design spreaders to distribute load over an effective area to result in a 2,500 psf or less bearing pressure on the concrete slab.
- c. Consider removal of loads from member and transfer of loads into structure below, without overloading structural members.
- d. Detail shoring to avoid interference with Owner operations.
- e. Consider shoring stiffness relative to stiffness of members being shored.
- B. Shoring: Steel posts, steel frames, or other steel assemblies with sufficient capacity to support calculated shoring loads at spacing and positioning shown on shop drawings.
  - 1. Adjustable through positive means, such as screw jacks, to achieve tight fit to structure above and below and to compensate for elastic shortening of shores during loading and service.
  - 2. Use undamaged components, including bracing, supplied by shoring manufacturer.

### 2.2 ACCESSORIES

- A. Spreaders:
  - 1. At bottom of shores: steel or timber cribbing with minimum a minimum cross section of 3-1/2 inches by 3-1/2 inches, or other material; with sufficient bearing area and length to distribute shoring reactions into supporting structural element below.
  - 2. At top of shores: Timber or steel spreader beams or wood bearing pads; to fully support member being shored without damage to member surface.
- B. Shims: Wood or steel; at bearing points above shores to ensure tight contact with shored member.

# PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of shoring Work.
  - 1. Ensure that work done by other trades is complete and ready for shoring Work.
  - 2. Notify Engineer in writing of conditions which may adversely affect installation or performance of shoring Work and recommend corrections.
  - 3. Do not proceed with shoring Work until adverse conditions have been corrected and reviewed by Engineer.
  - 4. Commencing shoring Work constitutes acceptance of Work surfaces and conditions.

#### 3.2 INSTALLATION

- A. Install shoring in accordance with manufacturer's recommendations and approved shop drawings at designated locations and at additional locations designated by Engineer. Installed assembly shall be of such quality that assembly will support imposed loads without excessive settlement or deflection.
  - 1. Position to avoid interference with Owner operations.
  - 2. Install snug, plumb, and square. Install cross-bracing recommended by shoring manufacturer and shoring designer to prevent buckling failure of individual members and overall shoring stability failure. Extend shoring above and below level of repair work as required by shoring design.

- 3. Install spreader beams or bearing pads and shims as necessary, and adjust shores to ensure tight, uniform fit against structural element to be supported. Minimize differential loading of vertical shoring members.
- 4. Install timber cribbing wood or wood bearing pads as necessary to distribute loads into supporting elements. If more than 1 layer of cribbing is required, install each successive layer perpendicular to preceding layer.
- 5. If shoring is to be placed on coated or finished surface, protect surface from damage with plywood, plastic sheets, or other means.
- B. Preload shores with screw jacks to bring shoring into a uniform, snug-tight condition.
- C. Protect shores from damage from construction activities, Owner use of facility, and other causes.
- D. Check shores daily and adjust as necessary to maintain snug condition, plumbness, and full effectiveness.
- E. Modify and adjust shoring as required to meet conditions of work and to ensure Project safety.

# 3.3 REMOVAL OF SHORES

- A. Remove shores when compressive strength of repair concrete exceeds 75 percent of its specified 28-day strength and a minimum of 14 days of curing. Contractor may elect to have additional concrete strength tests performed at his own expense, to confirm when repair concrete meets removal requirements.
- B. Store shoring materials in approved storage area at Site, such that materials do not interfere with Owner's continued use of facility. Promptly remove shoring materials from Site when no longer needed for work.

### END OF SECTION 03 01 01

### SECTION 03 01 31 CONCRETE REMOVAL AND SURFACE PREPARATION

### PART 1 GENERAL

### 1.1 SUMMARY

- A. Section Includes: Concrete removal and surface preparation prior to concrete replacement, including:
  - 1. Removal of unsound and sound concrete.
  - 2. Preparation of concrete and steel surfaces.
  - 3. Coating reinforcing bars and embedded steel with corrosion-inhibiting material.
  - 4. Supply and installation of supplemental epoxy-coated reinforcing bars.
  - 5. Supply and installation of epoxy-grouted steel dowels.
- B. Related Sections:
  - 1. Section 00 31 26 Existing Hazardous Material Information
  - 2. Section 01 22 00 Unit Prices
  - 3. Section 02 01 11 Shoring
  - 4. Section 03 01 34 Concrete Repair

### 1.2 UNIT PRICES

- A. Perform the following Work on unit price basis:
  - 1. Concrete removal and surface preparation. Included in concrete unit prices.
  - 2. Supply and installation of supplemental steel reinforcement. Payment based on nominal weight of bars installed.
  - 3. Supply and installation of epoxy-grouted dowels. Payment based on number of dowels installed.

### 1.3 COORDINATION

A. Coordinate with Owner's Representative and with other trades to ensure that adjacent areas are not adversely affected by concrete removal Work.

### 1.4 SUBMITTALS

- A. Product Data: Manufacturer's literature and technical data for corrosion-inhibiting coating materia, and epoxy for epoxy-grouted dowels, indicating applicability of product for proposed use.
- B. Certificates:
  - 1. For installer of epoxy-grouted dowels: ACI-CRSI Certification as Adhesive Anchor Installer.
- C. Epoxy-Coated Reinforcing Steel:
  - 1. Mill test reports for steel reinforcement, indicating conformance with ASTM A615/A615M.
  - 2. Certification from CRSI indicating that coating applicator is certified by CRSI Epoxy Plant Certification Program.

- 3. Certification statement from coating applicator that material, coating process, and coating properties conform to ASTM A775/A775M, including preheat temperatures, cure times, thickness checks, holidays detected, and bend test results for each bar size.
- D. Confinement, Collection, and Disposal Plan: Written plan for confining, collecting, and disposing of broken concrete, sandblast grit, dust, debris, existing reinforcing, and other waste material resulting from removal operations and surface preparation.

## 1.5 QUALITY ASSURANCE

- A. Mockups: Demonstrate adequacy of concrete removal and surface preparation procedures as part of mockups in 03 01 34 and 03 01 35.
- B. Qualifications for Installer of Epoxy-Grouted Dowels: Experienced individual with current ACI-CRSI certification as Adhesive Anchor Installer.
  - 1. Applicable only for anchors in horizontal or upwardly inclined orientations.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials or structure.
- B. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
- D. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature and humidity range required by material manufacturer.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- G. Remove materials that cannot be applied within stated shelf life from Site and replace with new materials.

### 1.7 **PROJECT CONDITIONS**

- A. Verify existing dimensions and details prior to start of concrete removal Work. Notify Engineer of conditions found to be different than those indicated in the Contract Documents. Engineer will review situation and inform Contractor and Installer of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Dust, Fume, and Noise Controls:

- 1. Confine dust and debris to Work area and prevent from entering portions of facility that remain in use.
- 2. Direct equipment exhaust away from occupied spaces. Vent equipment operating within structure to outside or condition exhaust gases with catalytic converter.
- 3. Operate equipment at noise levels conforming to requirements of city, state, and federal laws and codes, and Owner limitations.
- D. Maintain adequate ventilation during preparation and application of materials.

# 1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials or mislocation of embedded elements such as reinforcing steel, which may interfere with proper execution of the Work.
  - 1. Notify Engineer of conditions that may interfere with proper execution of the Work prior to proceeding with Work.

### PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Corrosion-Inhibiting Coating Materials: Use material specifically intended for reinforcing steel embedded in concrete.
  - 1. Zinc-rich Steel Primer:
    - a. MasterProtect P 8100 AP, supplied by BASF Construction Chemicals, LLC.
    - b. ECB Electro-Chemical Barrier, supplied by Conproco,
    - c. or approved equal.
  - 2. Epoxy Coating:
    - a. Sikadur 32 Hi-Mod by Sika Corporation
    - b. or approved equal.
  - 3. Cementitious Coating:
    - a. Sika Armatec 110 EpoCem by Sika Corporation
    - b. or approved equal
- B. Epoxy-Coated Reinforcing Bars: Deformed bars with 60,000 psi minimum yield strength conforming to ASTM A615/A615M, Grade 60. Sizes as shown on Drawings or directed by Engineer.
  - 1. Reinforcing bars shall be shop-coated with fusion-bonded protective coating of epoxy powder applied by electrostatic spray method or electrostatic fluidized-bed method in accordance with ASTM A775/A775M.
    - a. Reinforcing bars shall be supplied by certified CRSI epoxy-coating application plant. Furnish certification statement with each shipment.
    - b. Repair Material: Liquid, two-part, epoxy repair material; supplied by epoxy resin manufacturer and complying with requirements of ASTM A775A/A775M.
  - 2. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars in place. Bar supports shall be manufactured from steel wire, plastic, or precast concrete in accordance with "Bar Support Specifications and Standard Nomenclature" in CRSI *Manual of Standard Practice*.

- a. With epoxy-coated reinforcing steel, use metal chairs and supports coated with epoxy, plastic, or other inert dielectric polymer coating.
- 3. Plastic-Coated Tie Wire: Wire used to secure bars during concrete placement shall be 16gauge steel wire, and shall be plastic coated to protect the reinforcing coating from physical damage.
- C. Steel Wire and Welded Wire Reinforcement, Plain and Deformed: Steel wire and welded wire reinforcement shall conform with 65,000 pounds per square inch minimum yield strength conforming to ASTM A1064.
  - 1. Epoxy coated wire and welded wire reinforcement shall conform to the requirements of ASTM A884.
  - 2. Welded Wire Reinforcement shall be epoxy coated 6x6-W4xW4, unless otherwise approved by Engineer based on existing reinforcing. Use epoxy coated 6x6-W4xW4 for all new installations where not otherwise specified
- D. Epoxy-Grouted Dowels:
  - 1. Dowels: ASTM A615/A615M, Grade 60, epoxy-coated steel bars, cut true to length with ends square and free of burrs.
  - 2. Epoxy-Adhesive for Dowels: Adhesive must be supplied in pre-measured sausages. Use one of the following:
    - a. HIT-HY 200-R hybrid adhesive supplied by Hilti, Inc.
    - b. AC100+ Gold vinylester supplied by Powers Fasteners.
    - c. Or approved equal.

### 2.2 FABRICATION

- A. Fabricate and detail steel reinforcement to shapes and dimensions shown on Drawings in accordance with and within fabricating tolerances shown in CRSI's *Manual of Standard Practice*.
- B. Bends and hooks shall conform to dimensions defined as "ACI Standard Hooks" in CRSI's *Manual of Standard Practice* unless otherwise shown on Drawings.
- C. Welded Wire Reinforcing shall conform to the recommendations of the Wire Reinforcing Institutes WWR 400-R-03.
- D. Do not bend or straighten reinforcing bars in manner that will injure coating material. Reduce rate of bending as necessary to minimize cracking or debonding of coating. Promptly coat visible cracking or debonding of coating in bending area and elsewhere, except that hairline cracks, 0.003 inches or less in width, at base of bar deformation need not be coated.

### PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements and other conditions affecting concrete removal Work.
  - 1. Ensure that work done by other trades is complete and ready for concrete removal Work.
  - 2. Verify that areas and conditions under which concrete removal Work is to be performed permit proper and timely completion of Work.

- 3. Notify Engineer in writing of conditions which may adversely affect concrete removal Work and recommend corrections.
- 4. Do not proceed with concrete removal Work until adverse conditions have been corrected and reviewed by Engineer.
- 5. Commencing concrete removal Work constitutes acceptance of Work surfaces and conditions.

# 3.2 **PROTECTION**

- A. Take precautions to ensure safety of people, including building users, and workmen, and animals, and protection of property, including adjacent building elements, equipment, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with building users, motor vehicles, building equipment landscaping, and other surfaces that could be harmed by such contact.
- C. Limit access to Work areas.
- D. Erect temporary protective canopies, as necessary, over occupied areas that must remain in service during Work.
- E. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

### 3.3 EQUIPMENT

- A. Pneumatic Chipping Hammers:
  - 1. Nominal 30-lb class or less for removal of concrete at repair areas.
  - 2. Nominal 15-lb class or less for detail work adjacent to and beneath reinforcing steel.
- B. Saws capable of sawcutting concrete to specified depth.
- C. Sandblasting equipment capable of removing laitance, dirt, loose pieces of concrete, and surface contaminants from exposed concrete surfaces and rust, concrete, and surface contaminants from exposed steel surfaces.
- D. High-pressure, oil-free compressed air equipment capable of removing dust and dirt from exposed concrete removal areas.
- E. Percussive or rotary drilling equipment for making holes in concrete substrate for dowel installation.

### 3.4 CONCRETE REMOVAL AND SURFACE PREPARATION

- A. Sound perimeter beam and column concrete surfaces and mark with paint areas of unsound concrete. Engineer will review markings before concrete removal Work begins. Provide a minimum of 24 hours advance notice to Engineer prior to commencing concrete removal.
- B. Prior to concrete removal Work:
  - 1. Remove abandoned plumbing and electrical lines and associated fixtures that interfere with Work. Shore active plumbing and electrical lines and reattach at completion of

Work. Owner will relocate active plumbing and electrical lines that cannot be temporarily supported.

- 2. Install shoring as specified or directed by Engineer.
- 3. Develop plan for confining and disposing of broken concrete and other debris from removal Work.
- 4. Develop and implement plan for assessing and monitoring lead hazard during concrete removal. Perform removal to minimize hazards due to the disturbance of lead paint.
- C. Concrete removal areas:
  - 1. Where possible, make rectangular in shape in plan.
  - 2. Avoid re-entrant corners.
  - 3. Extend at least 4 inches beyond edge of unsound concrete.
- D. Create square edges of removal areas.
  - 1. Sawcut 1/2 inch at top surface removal areas. Do not saw through reinforcing steel, embedded electrical conduits, or other embedments.
  - 2. Chip or sawcut square edges of overhead and vertical removal areas at least 1/2 inch deep. For areas to be repaired with shotcrete, taper remainder of edges at 1:1 slope into cavity to eliminate square edges.
- E. Remove unsound concrete and, as necessary, sound concrete to create minimum removal depth of 2 inches and gaps around partially exposed reinforcing bars of at least 3/4 inches.
  - 1. Exercise care to avoid cracking underlying sound concrete, punching through member, or damaging embedments such as electrical conduit.
  - 2. Limit chipping hammer size and impact angle to minimize damage to sound concrete. Impact angle shall be no more than 60 degrees to surface.
  - 3. Avoid abrupt changes in depth of removal.
- F. Prepare concrete surfaces in repair areas to have a minimum peak-to-valley surface roughness of approximately 1/4 inch, meeting the requirements of ICRI CSP 7. Achieve preparation using chipping hammers or by scarification.
- G. Notify Engineer and Owner's Representative of embedded electrical conduit encountered in removal areas. Proceed as directed by Engineer and Owner's Representative. Unless otherwise directed, remove abandoned conduit and wires in removal area.
- H. Inspect and sound concrete surfaces in and around removal areas. Remove additional unsound concrete. Sawcut or chip square new removal area perimeter as necessary.
- I. Sandblast clean surfaces of removal area, including vertical edges, to remove surface contaminants, loose pieces of concrete, and concrete that is bruised or micro-fractured and to roughen surfaces. Air blast clean removal area surfaces with dry, oil-free compressed-air jet.
- J. Inspect prepared concrete surfaces and remedy defects. Allow Engineer at least 48 hours to observe prepared surfaces prior to patch placement.

# 3.5 REINFORCEMENT PREPARATION

A. Leave existing reinforcing in place unless otherwise directed by Engineer.

- B. Notify Engineer of reinforcing bars that are incorrectly located or have less than 1/2 inch of concrete cover; are damaged or fractured; or have lost more than ten percent of their original cross-sectional area at any point. Engineer will determine remedial action.
- C. Sandblast clean exposed steel surfaces, including existing reinforcement and embedments, to SSPC-SP 6/NACE No. 3 finish, with minimal rust or concrete debris. Clean steel surfaces with dry, oil-free compressed-air jet. Exercise care to clean undersides of reinforcing bars. Protect tendon sheathing from damage during sandblasting.
- D. Inspect prepared steel surfaces and clean remaining contaminants. Allow Engineer at least 24 hours to observe prepared surfaces prior to coating steel.
- E. Apply two coats of corrosion-inhibiting material on exposed steel surfaces.
  - 1. Batch, mix, and apply material according to recommendations of material supplier.
  - 2. Exercise care to coat difficult-to-reach surfaces, such as undersides of reinforcing bars.
  - 3. Minimize spillage on concrete surfaces. Remove materials that will act as bond breaker by chipping or other means.
  - 4. Inspect coated steel surfaces and apply additional coats to uncoated or thinly-coated areas. Allow Engineer at least 24 hours to observe prepared coated surfaces prior to concrete placement.
- F. Install supplemental epoxy-coated reinforcement as directed by Engineer.
  - 1. Remove additional sound concrete to properly position bars with minimum clear concrete cover of 1 1/2 inches and full encasement by the replacement material; and to achieve specified lap splice length with existing bars.

## 3.6 INSTALLATION OF EPOXY-GROUTED STEEL DOWELS

- A. Remove and replace unsound concrete at dowel locations.
  - 1. Holes shall be dry-drilled using percussive tool. Other methods of drilling must be submitted to the Engineer for approval.
  - 2. Locate existing reinforcement with reinforcing bar locator and position holes to avoid existing reinforcement.
  - 3. Do not damage existing reinforcement.
  - 4. Make hole diameter at least 1/8 inch larger than dowel diameter, unless otherwise recommended by epoxy manufacturer.
  - 5. Remove epoxy from end of dowel, if present, to be epoxied into concrete.
- B. Clean holes with stiff brush and dry, oil-free compressed-air jet to remove loose concrete, dust, and debris. Repeat brushing and blowing out hole until dust-free air emanates from hole.
- C. Inject epoxy with tube into back of hole and fill hole to front, withdrawing tube to prevent entrapped air.
  - 1. Discard initial portion of epoxy according to manufacturer's directions. Change mixing tubes as recommended by the material manufacturer.
  - 2. Install sufficient material to completely fill annular space around dowel.
- D. Insert dowel to bottom of hole and secure in center of hole, perpendicular to surface, until epoxy has set.
- E. Promptly remove excess epoxy.

F. Apply two coats of corrosion-inhibiting material on exposed steel surfaces per Article 3.5 for dowels without shop applied epoxy coating.

# 3.7 NEW STEEL REINFORCEMENT

- A. General: Comply with CRSI Manual of Standard Practice for placing reinforcement
- B. Clean reinforcement of loose rust and mill scale, earth, ice and other foreign materials.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Do not weld reinforcement unless specifically approved by Architect/Engineer.
- E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- F. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges of adjoining sheets at least one mesh spacing plus 2 inches. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.
- G. Where directed by Architect/Engineer, coat new bars in accordance with requirements for existing reinforcing.
- H. Epoxy-Coated Reinforcement as directed by Architect/Engineer: Use epoxy coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D3963.

### 3.8 CLEANING

A. Remove and legally dispose of concrete and steel debris, sandblast materials, and excess materials.

# END OF SECTION 03 01 31

### SECTION 03 01 34 CONCRETE REPLACEMENTS

## PART 1 GENERAL

### 1.1 SUMMARY

- A. Section Includes: Supply and placement of cast-in-place concrete for replacement applications, including formwork, reinforcement, concrete materials, mix design, batching procedures, placement procedures, finishes, and curing. Proprietary cementitious replacement materials are also included.
- B. Related Sections:
  - 1. Section 01 22 00 Unit Prices
  - 2. Section 03 01 01 Shoring
  - 3. Section 03 01 31 Concrete Removal and Surface Preparation

# 1.2 REFERENCES

- A. Definitions:
  - 1. Cementitious Materials: Portland cement alone or in combination with one or more of fly ash, silica fume, and other pozzolans, or slag cement.

### 1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
  - 1. With Owner's Representative.
  - 2. With other trades:
    - a. To ensure that work done by other trades is complete and ready for concrete replacement Work.
    - b. To avoid or minimize work on, or in immediate vicinity of, concrete replacement Work in progress.
    - c. To ensure that subsequent work will not adversely affect completed concrete replacements.

### 1.4 SUBMITTALS

- A. Product Data: Manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and mixing and application or placement instructions.
  - 1. Include temperature ranges for storage and application of materials, and special coldweather application requirements or limitations.
  - 2. Include Globally Harmonized System (GHS) Safety Data Sheets or, if not yet available, Material Safety Data Sheets for information only.
- B. Design Mixes: For each concrete mix, including required test reports.
  - 1. Proportions of materials.
  - 2. Mill tests and certification for cement, fly ash, and slag cement. Certification for silica fume.
  - 3. Sieve analysis for fine and coarse aggregate.

- 4. Test results for deleterious substances in aggregates and potential aggregate reactivity.
- 5. Slump during laboratory tests.
- 6. Air content during laboratory tests.
- 7. Three-, seven-, and 28-day laboratory compression test results. Minimum three cylinders at each test age.
- 8. Indicate:
  - a. Amount of mix water to be withheld for later addition at Site.
  - b. Range of high-range, water-reducing admixture dosage that may be added at Site without adversely affecting hardened concrete.
- C. Field Quality Control: Batch tickets for ready-mix concrete.

# 1.5 QUALITY ASSURANCE

- A. Contractor Qualifications: Experienced firm that has successfully completed concrete replacement work similar in material, design, and extent to that indicated for the Project. Must have successful construction with specified materials in local area in use for minimum of five years.
  - 1. Employ foreman with minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during the Work. Do not change foremen during the course of the Project except for reasons beyond the control of Contractor; inform Architect/Engineer in advance of any changes.
- B. Ready-Mix Supplier Qualifications: ASTM C94/C94M; Certification of Production Facilities and Delivery Vehicles by National Ready Mixed Concrete Association.
- C. Mockups: Construct mockup to demonstrate construction procedures, quality of Work, and aesthetic effects.
  - 1. Construct mock-up of at least one horizontal topside repair and one column repair, to illustrate acceptable formwork configuration and concrete placement without segregation or poor consolidation of material. Use equipment, materials, and procedures proposed for use on Project.
  - 2. Construct mockups on existing members, at locations designated by Architect/Engineer, under same weather conditions expected during Work. Provide access to mockup locations.
  - 3. Architect/Engineer will observe concrete removal and surface preparation work, prepared concrete removal areas, and installation of repair material. Notify Architect/Engineer and Owner's Representative at least seven days in advance of when mockups will be constructed.
  - 4. Photograph concealed portions of approved mockup before concealing, and retain photographs at Site.
  - 5. Sound surfaces after form removal to identify delaminations in repair and examine surfaces for evidence of segregation and poor consolidation..
  - 6. If Architect/Engineer or Owner's Representative determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved. Remove and replace mockups that are not approved.
  - 7. Approved mockups shall be maintained in undisturbed condition throughout Project as basis for acceptance of completed work and may become part of completed Work if undisturbed at time of Substantial Completion.
  - 8. Do not order materials or proceed with repair Work until mockups have been approved by Architect/Engineer and Owner's Representative.

### 1.6 WARRANTY

A. All concrete repairs shall be guaranteed for a period of two years after the completion of the Contract Work against all surface defects, delamination of the patch material from the substrate concrete, delamination within the patch material itself, and patch deterioration.

### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials or structure.
- B. Deliver, store, and handle reinforcing steel to prevent bending and damage.
  - 1. Avoid damaging reinforcement coating.
  - 2. Repair damaged reinforcement coating according to ASTM D3963/D3963M.
- C. For proprietary materials:
  - 1. Deliver materials to Site in original bags and containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.
  - 2. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
  - 3. Store materials in original, undamaged bags or containers in a clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Manufacturer's standard packaging and covering is not considered adequate weather protection.
- D. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- E. Conspicuously mark damaged or opened bags or containers or bags or containers with contaminated materials, and remove from Site promptly.
- F. Remove materials that cannot be applied within stated shelf life from Site and replace with new materials.

### **1.8 PROJECT CONDITIONS**

- A. Verify existing dimensions and details prior to the start of concrete replacement Work. Notify Architect/Engineer of conditions found to be different than those indicated in the Contract Documents. Architect/Engineer will review situation and inform Contractor of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.

#### 1.9 CHANGES IN WORK

A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.

1. Notify Architect/Engineer of conditions that may interfere with proper execution of the Work or jeopardize performance of the Work, prior to proceeding with the Work.

# PART 2 PRODUCTS

### 2.1 FORM MATERIALS

- A. Forms: Plywood, lumber, metal, plastic, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
  - 1. Use panels that will provide continuous, true, and smooth concrete surfaces.
  - 2. Furnish panels in largest practicable sizes to minimize number of joints.
  - 3. Do not use rust-stained, steel, form-facing material.
  - 4. For Smooth-Form Finish: Use form-facing material capable of producing smooth, uniform texture on concrete. Do not use form-facing materials with raised grain, torn surfaces, worn edges, dents, or other defects that will impair texture of concrete surface.
- B. Accessories:
  - 1. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 inch by 3/4 inch minimum.
  - 2. Form Ties: Factory-fabricated; removable or snap-off metal or glass-fiber-reinforced plastic form ties; designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
    - a. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of the exposed concrete surface.
    - b. Furnish ties that, when removed, will leave holes not larger than 1 inch in diameter in the concrete surface.
  - 3. Form-Release Agent: Commercially-formulated form-release agent that will not bond with, stain, or adversely affect the concrete surface and will not impair subsequent treatments of the concrete surface.
    - a. Formulate form-release agent with rust inhibitor for steel, form-facing materials.

### 2.2 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of same brand from same manufacturer's plant, each aggregate from one source, and admixtures through one source from single manufacturer.
- B. Portland Cement: ASTM C150/C150M, Type I or II.
- C. Fly Ash: ASTM C618, Class F or C.
- D. Ground-Granulated Blast-Furnace Slag (GGBFS): ASTM C595.
- E. Silica Fume: ASTM C1240, amorphous silica.
- F. Aggregates: ASTM C33/C33M; from single source with documented record of at least ten years of satisfactory service using similar aggregates and cementitious materials in similar applications and service conditions.
  - 1. Coarse Aggregates: Uniformly graded; 3/8-inch nominal maximum size; Class 4S.
  - 2. Alkali Reactivity: Coarse and fine aggregates shall have expansion indicative of innocuous behavior; that is, less than 0.10 percent expansion after 16 days when tested according to ASTM C1260; or mitigating measures shall be included in concrete mix.

- a. Provide ASTM C1260 test results for aggregates proposed for use, performed within last year.
- b. If reported expansion is 0.10 percent or more at 16 days after casting, use mitigation measures shown to render innocuous results when tested according to ASTM C1260 or provide coarse and fine aggregates from a remote source, with expansion indicative of innocuous behavior when tested according to ASTM C1260. ASTM C1293 procedure may be substituted for ASTM C1260.
- G. Water: Potable.

# 2.3 ADMIXTURES:

- A. General: Admixtures certified by manufacturer to contain no more than 0.1 percent chloride ions and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
  - 1. Air-Entraining Admixture: ASTM C260/C260M.
  - 2. Water-Reducing Admixture: ASTM C494/C494M, Type A.
  - 3. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
  - 4. Water-Reducing and Accelerating Admixture: ASTM C494/C494M, Type E.
  - 5. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D

### 2.4 PROPRIETARY REPLACEMENT MATERIALS

- A. For Top Surface, Formed Vertical and Overhead Replacements: Pre-bagged concrete containing aggregate. Use one of the following or approved equal:
  - 1. MS-S10 Self-Consolidating Concrete manufactured by King Packaged Materials Company.
  - 2. Sikacrete 211 SCC manufactured by Sika Corporation.
- B. For Trowel-Applied Replacements Vertical and Overhead Surfaces: Polymer- or silica-fumemodified, cementitious, non-sag mortar that is specifically intended for this application. Only to be used at locations approved by Architect/Engineer. The patching mortar shall not be installed in layers and shall not be installed in depths exceeding 1 1/2 inches.
- C. Use one of the following or approved equal:
  - 1. MasterEmaco N 400 manufactured by BASF Construction Chemicals, LLC.
  - 2. SikaTop 123 Plus manufactured by Sika Corporation.
  - 3. Mapei Planitop X, by Mapei.
  - 4. SikaQuick VOH, by Sika Corporation.
- D. Do not use proprietary replacement materials that contain added gypsum.

### 2.5 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C171, white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Membrane-Forming Curing Compound (for underside patches only): ASTM C309, Type 1; Solvent-borne; VOCs less than 350 g/L and legal limits compatible with new coating. Silicate materials shall not be used.

### 2.6 CONCRETE MIXES

- A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mixes or field-test data, according to ACI 301.
  - 1. Use qualified independent testing agency conforming to requirements of ASTM C1077 for preparing, testing, and reporting proposed mix designs for laboratory trial mix basis.
- B. Partial Depth and Full Depth Replacements: Proportion normal-weight concrete mix as follows:
  - 1. 28-day Compressive Strength: 5,000 pounds per square inch.
  - 2. Fly Ash or Slag Cement: Include 20 to 25 percent by mass of total cementitious materials, as cement replacement, unless otherwise approved.
  - 3. Silica Fume: Maximum 10 percent by mass of total cementitious materials, as cement replacement, unless otherwise approved.
  - 4. Maximum Water-Cementitious Materials Ratio, by weight: 0.40
  - 5. Slump: 4 inches maximum.
    - a. With High-Range, Water-Reducing Admixture:
      - 1) 2- to 4-inch slump prior to adding admixture.
      - 2) 8 inches maximum slump after admixture is added.
  - 6. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having air content of 6 (+/- 1.5) percent, unless otherwise indicated.
  - 7. Admixtures: Use admixtures according to manufacturer's written instructions.
    - a. Use water-reducing admixture. Alternately use high-range, water-reducing admixture (superplasticizer), as required, for placement and workability.
    - b. Use retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
    - c. Use calcium nitrite based corrosion Inhibiting admixture with a minimum dosage of 3 gal/  $yd^3$
  - 8. Shrinkage: 600\_micro-strain maximum at 90 days when tested according to ASTM C157.
  - 9. Bond Strength: ASTM C1583/1583M, ICRI Guide for Using In-Situ Tensile Pull-off Tests to Evaluate Bond of Concrete Surface Materials; 175 pounds per square inch minimum, failure away from bond line; unless properly prepared substrate precludes achieving minimum strength.

#### 2.7 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI Manual of Standard Practice.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of concrete replacements.
  - 1. Ensure that work done by other trades is complete and ready for concrete replacement Work.
  - 2. Verify that areas and conditions under which concrete replacement Work is to be performed permit proper and timely completion of the Work.
  - 3. Notify Architect/Engineer in writing of conditions which may adversely affect installation or performance of concrete replacements and recommend corrections.

- 4. Do not proceed with concrete replacement Work until adverse conditions have been corrected and reviewed by Architect/Engineer.
- 5. Commencing concrete replacement Work constitutes acceptance of Work surfaces and conditions.

### 3.2 PROTECTION

- A. Take precautions to ensure the safety of people, including building users, passers-by, and workmen, and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Install protection to prevent damage to existing roofing.
- C. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- D. Protect paving and sidewalks, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- E. Limit access to Work areas.
- F. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- G. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

### 3.3 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 of ACI 117.
  - 1. Limit abrupt or gradual concrete surface irregularities to ACI 347R Class A, 1/8 inch.
  - 2. Form openings, chases, offsets, keyways, reglets, blocking, screeds, and bulkheads required in Work. Determine sizes and locations from trades providing such items.
  - 3. Chamfer exterior corners and edges of permanently exposed concrete to match existing.
  - 4. Construct forms tight enough to prevent loss of concrete mortar.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, and recesses, for easy removal.
- D. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.
- E. Provide temporary openings for cleanouts and inspection ports where the interior area of the formwork is inaccessible. Close openings with panels tightly fitted to forms and securely

braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

- F. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris immediately before placing concrete.
- G. Retighten forms and bracing before placing concrete to prevent mortar leaks and maintain proper alignment.

### 3.4 REMOVING AND REUSING FORMS

- A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support the weight of concrete, may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is hard enough not to be damaged by form-removal operations and provided curing and protection operations are maintained.
- B. Leave formwork for beam soffits, joists, slabs, and other structural elements that support the weight of concrete in place until concrete has achieved at least 75 percent of its 28-day design compressive strength and a minimum of 7 days.
- C. Clean and repair surfaces of forms to be reused in the Work. Do not use split, frayed, delaminated, or otherwise damaged form-facing material, or patched forms, for exposed surfaces.

#### 3.5 STEEL REINFORCEMENT

- A. General: Comply with CRSI Manual of Standard Practice for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Do not weld reinforcement unless specifically approved by Architect/Engineer.
- E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- F. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D3963/D3963M.

#### 3.6 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish batch ticket information.
  - 1. Deliver concrete to Site and discharge within 90 minutes or before 300 revolutions of mixer drum, whichever comes first, after introduction of mix water. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes. Due to the nature of the Work, trucks with short loads may be required. Concrete that exceeds the specified time limits shall be rejected.

- 2. Do not add water-reducing or high-range, water-reducing admixture indiscriminately to increase slump.
- 3. Introduce high-range, water-reducing admixture at the Site with additional mixing per the manufacturer's recommendations. Dosage must be approved by Architect/Engineer.
- 4. Reject concrete that arrives at the Site with a slump exceeding the maximum specified slump.
- B. Site Mixing: Measure, and mix concrete materials and concrete as recommended in ACI 546.4R-20 Guide for Job Site Quality Control and Quality Assurance of Cementitious Packaged Materials.
  - 1. Site mix pre-bagged, proprietary materials only.
  - 2. Develop batching and mixing operations so that quality control is assured.
  - 3. Designate one or two individuals to batch and mix concrete. Fully instruct these individuals on batching and mixing procedures. No other persons shall batch or mix concrete without prior notification to Architect/Engineer.
  - 4. If the weight of the packaged material is out of tolerance (more than 2 percent), contact the manufacturer for recommendations.
  - 5. Combine and mix ingredients to uniform consistency in accordance with the manufacturer's recommendations.

### 3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify the following:
  - 1. Installation of formwork, reinforcement, and embedded items is complete.
  - 2. Concrete surfaces and forms are clean of frost, ice, mud, debris, and water.
  - 3. Forms are thoroughly wetted or oiled.
  - 4. Reinforcement is securely tied in place and thoroughly cleaned of ice and other coatings that may reduce or destroy bond with concrete.
  - 5. Required inspections have been performed.
  - 6. Equipment for mixing and transporting concrete is clean.
  - 7. Vibrators are operational.
- B. Before sampling for testing and placing concrete, water may be added at Site, up to the amount allowed in the design mix.
  - 1. Do not add water after adding high-range, water-reducing admixture.
- C. For top surface and full depth repair areas where new concrete will be cast against existing concrete surfaces, wet existing surface at least 2 hour prior to placement. Prior to placing concrete, remove standing or flowing water with compressed air and allow existing concrete surface to dry to saturated, surface-dry condition with no visible water on the surface. Do not allow water to puddle.
- D. For proprietary repair materials, cast new concrete against existing concrete surfaces prepared according to recommendations of repair material manufacturer.
- E. Convey concrete from the mixer to the place of deposit in a manner such that no segregation or loss of materials occurs.
- F. Deposit concrete:
  - 1. Place concrete as near as possible to its final position to avoid segregation due to re-handling or flowing.

- 2. Do not allow concrete to fall a vertical distance from the point of discharge to the point of deposit that will cause segregation of materials.
- 3. Do not allow concrete to disturb or displace reinforcing bars, floor drains, or other embedments.
- 4. Place concrete at a rate so that the concrete is plastic and flows readily into corners of forms and into spaces around reinforcing bars.
- 5. Place concrete continuously until the replacement volume or section is completed, with no cold joints.
- 6. Dispose of concrete that has partially set prior to placement or that has been contaminated by foreign material.
- G. Consolidate concrete with mechanical vibrating equipment, so that the concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 1. Use internal vibrators with minimum speed of 7,000 vibrations per minute and that are sufficiently narrow to fit into spaces between reinforcing bars, formwork, and existing concrete. Have extra vibrators at the Site in case a vibrator does not work.
  - 2. Do not use vibrators to transport concrete.
  - 3. Insert and withdraw vibrators vertically at uniformly spaced locations no farther apart than the visible effectiveness of the vibrator.
  - 4. At each insertion, limit the duration of the vibration to the time necessary to consolidate the concrete without causing mix constituents to segregate.
- H. Cold-Weather Placement: Protect concrete Work from physical damage or reduced strength due to frost, freezing, or low temperatures. Comply with ACI 306R and as follows.
  - 1. When the air temperature has fallen or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F and not more than 80 degrees F at the point of placement. Mix water and aggregates together before adding cement. Do not add cement if the temperature of the water/aggregate mixture exceeds 70 degrees F.
  - 2. Do not use frozen materials or materials containing ice or snow.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix design.
- I. Hot-Weather Placement: Protect concrete Work from physical damage or reduced strength due to rapid evaporation or overheating of concrete. Refer to Fig. 2.1.5 in ACI 305R for hot-weather conditions that may adversely affect concrete placement, finishing, and curing. Do not allow the temperature of the concrete at the time of placement to exceed 90 degrees F. When hot-weather conditions exist, use one or more of the following procedures:
  - 1. Place concrete at night or early in morning.
  - 2. Cool ingredients before mixing to maintain the concrete temperature below 90 degrees F at the time of placement. Chilled mixing water or chopped ice may be used to control the temperature; include the water equivalent of the ice in the mixing water quantity. Use liquid nitrogen to cool the concrete at Contractor's option.
  - 3. Cover steel reinforcement with water-soaked burlap so the steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
  - 4. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep the subgrade moisture uniform without standing water, soft spots, or dry areas.
  - 5. Provide windbreaks or sunshades, or both.

#### 3.8 FINISHING TOP SURFACES

- A. Float and broom finish top surfaces.
  - 1. Float finish: Consolidate the surface with a power-driven float or by hand floating if the area is small or inaccessible to a power driven float. Re-straighten, cut down high spots, and fill low spots. Repeat float passes and re-straightening until the surface is left with uniform, smooth, granular texture.
  - 2. Medium-Broom Finish: Apply medium-broom finish, perpendicular to traffic flow, on top surfaces subjected to vehicular or pedestrian traffic.
  - 3. Do not wet concrete surfaces or add cement.
- B. For large top partial depth and full-depth slab repair areas, finish and measure the surface so that the gap at any point between the concrete surface and an unleveled, freestanding, 10-foot-long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed 1/4 inch. Slope concrete to prevent puddles and to align with adjacent surfaces.
- C. At the tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.
- D. Hot-Weather Conditions: Fog the surface with water if hot, dry, or windy conditions cause moisture loss approaching 0.2 pounds per square foot per hour before or during finishing operations.

### 3.9 FINISHING FORMED SURFACES

A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and fill tie holes and defective areas with mortar or concrete. Remove fins and other projections exceeding 1/8 inch in height. Do not apply rubbed finish to smooth-formed finish.

### 3.10 CONCRETE CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete above 55 degrees F and in a moist condition for at least seven days after placing.
- B. Unformed Top Surfaces: Begin curing immediately after finishing concrete. Use moisture-retaining cover.
  - 1. Place cover in widest practicable width, with sides and ends lapped at least 12 inches.
  - 2. Seal sides and ends of cover by holding down with soil, concrete pieces, or some other weight, or by using waterproof tape or adhesive.
  - 3. Immediately repair holes or tears in cover during curing period, using cover material and waterproof tape.
  - 4. Re-wet concrete surface at least twice daily or as necessary to keep the concrete surface moist.
- C. Unformed Overhead Surfaces: Begin curing immediately after form removal.
  - 1. Apply a curing compound uniformly in a continuous operation by power spray or roller according to the manufacturer's written instructions and at twice the recommended coverage rate.

- 2. Recoat areas subjected to heavy rainfall within three hours after initial application.
- 3. Maintain the continuity of the coating and repair damage during curing period.
- D. In cold weather, protect concrete from falling below 55 degrees F with insulating blankets or heated enclosures vented to the outside. If used, vent heaters to outside of the enclosure around the concrete replacement.

#### 3.11 PROPRIETARY REPLACEMENT MATERIALS

A. Measure, batch, mix, place, finish, and cure per manufacturer's recommendations.

### 3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair defective areas designated by Architect/Engineer. Remove and replace concrete that cannot be repaired to Architect/Engineer's satisfaction.
- B. Surface defects on exposed surfaces include:
  - 1. Voids, such as spalls, air bubbles, honeycomb, rock pockets, and form-tie voids, more than 1/4 inch in any dimension in solid concrete but not less than 1/2 inch deep.
  - 2. Cracks at least 0.01 inch wide. Notify Architect/Engineer of cracks that penetrate through section.
  - 3. Fins and other projections exceeding 1/8 inch.
- C. Verify that concrete curbs, expansion joints, and transitions from one surface plane to another (inside and outside corners) are cleanly formed and free of broken edges and excess concrete.
- D. Repair defects on concealed surfaces that affect concrete's durability and structural performance as determined by Architect/Engineer.
- E. As soon as possible, cut out spalls, air bubbles, honeycombs, rock pockets, and voids. Make edges of cuts perpendicular to concrete surface. Clean voids and fill with repair mortar according to the manufacturer's recommendations. Use polymer- or silica fume-modified, cementitious, non-sag mortar that is specifically intended for this application. Use one of the following or approved equal:
  - 1. MasterEmaco N 420 manufactured by BASF Construction Chemicals, LLC.
  - 2. SikaTop 123 Plus manufactured by Sika Corporation.
- F. If requested by Engineer, fill cracks with high-molecular-weight methacrylate, or low-viscosity methyl methacrylate or epoxy. Use one of the following or approved equal:
  - 1. Concrete Protector & Restorer CP&R 5741 Hi Mod Low Odor or 5742LO Low Mod manufactured by 3M.
  - 2. MasterSeal 630 manufactured by BASF Construction Chemicals, LLC.
  - 3. SikaPronto 19 TF manufactured by Sika Corporation.
- G. After concrete has gained sufficient strength to be unaffected by grinding, grind off fins, other projections, and high areas.
- H. Repair materials and installation not specified above may be used if approved by Architect/Engineer.

#### 3.13 FIELD QUALITY CONTROL

- A. Submit batch tickets for ready-mix concrete.
- B. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to sample materials and perform tests during concrete placement.
- C. Provide:
  - 1. Access to Work.
  - 2. Materials for sampling.
  - 3. Site facilities for sampling, testing, and storage of materials.
  - 4. Incidental labor.
- D. Testing Services: Sampling and testing of composite samples of fresh concrete shall be performed according to the following requirements:
  - 1. Testing Frequency: Obtain one composite sample of each concrete mix for each day's pour.
  - 2. Take samples from transport vehicle or mixer during discharge according to ASTM C172. Take samples at other locations if directed by Architect/Engineer.
  - 3. Slump: ASTM C143/C143M; one test for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change. If high-range, water-reducing admixture is used, perform one test prior to adding admixture.
  - 4. Air Content: ASTM C231/C231M; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
  - 5. Concrete Temperature: ASTM C1064/C1064M; one test for each composite sample; and one test hourly when air temperature is 40 degrees F and below or 80 degrees F and above.
  - 6. Unit Weight: ASTM C567; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
  - 7. Compression Test Specimens: ASTM C31/C31M.
    - a. Cast four standard cylinder specimens for each composite sample, immediately after sample is taken. Store specimens at the Site for at least 16 hours at a temperature of 60 to 80 degrees F. Provide a temperature-controlled box or other enclosure if necessary. After at least 16 hours, but not more than 30 hours, transport the specimens to the laboratory and air cure at 73 degrees F and 50 percent relative humidity.
    - b. If requested by Architect/Engineer, take three additional cylinder specimens and field cure in the vicinity of the area that they represent and in the same manner as that portion of the structure.
  - 8. Compressive-Strength Tests: ASTM C39/C39M.
    - a. Test one laboratory-cured specimen at seven days and two at 28 days. Hold the fourth specimen in reserve in case additional testing is required.
    - b. Test one field-cured specimen at three days and two at 28 days.
  - 9. Test results shall be reported in writing to Owner's Representative, Architect/Engineer, concrete supplier, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain:
    - a. Name of concrete testing and inspecting agency.
    - b. Project identification name.
    - c. Date of concrete placement.
    - d. Specific location of concrete batch in Work.

- e. Concrete mix number, design compressive strength at 28 days, design slump range, and design air content range.
- f. Specimen number, cylinder size, dates of compression tests, compressive breaking strengths and types of break for seven- and 28-day tests, and measured slump, air content, and air and concrete temperatures.
- g. Statement that indicates whether test results are in conformance with Specifications.
- 10. Concrete strength is satisfactory if the average of two 28-day compressive-strength tests in each set of specimens equals or exceeds the specified 28-day compressive strength and neither test value is more than 500 pounds per square inch less than the specified 28-day strength.
- 11. If any seven-day compressive-strength test result is less than 75 percent of the specified 28-day compressive strength, submit revised mix design data for concrete that will conform to Specifications.
- 12. When the compressive strength of field-cured specimens is less than 85 percent of the companion laboratory-cured cylinders, evaluate operations and provide corrective procedures for protecting and curing the in-place concrete. Pay the cost of sampling and testing non-conforming field-cured specimens. Owner will pay the cost of sampling and testing conforming field-cured specimens.
- 13. Non-Conforming Concrete:
  - a. If tests indicate that concrete is not in conformance with the Specification, remove and replace non-conforming concrete or perform additional testing, acceptable to Architect/Engineer, to verify conformance with the Specification, at no cost to Owner.
  - b. Procure core samples in accordance with ASTM C42/C42M.
  - c. If tests indicate that the slump, air entrainment, or other requirements have not been met, examine core samples petrographically, according to ASTM C856, to evaluate hardened concrete characteristics.
  - d. If compressive-strength tests do not meet the acceptance requirements, procure three core samples from each portion of the structure represented by the unsatisfactory tests, and test in compression. The strength of concrete in the area represented by core tests is satisfactory if the average of three compressive strength tests equals or exceeds 85 percent of the specified 28-day compressive strength and no compressive-strength test value is less than 75 percent of the specified 28-day compressive strength. If strength acceptance criteria are not met, remove and replace non-conforming concrete areas at no cost to Owner.
  - e. Perform additional inspection and testing, at no cost to the Owner, to determine the compliance of replaced or additional work with the specified requirements.
- E. Chain drag or hammer tap concrete replacements to locate delaminations. Remove and recast delaminated replacements at no cost to Owner.

# 3.14 CLEANING

- A. At the end of each workday, clean the Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- B. After completing the concrete replacement Work:
  - 1. Clean soiling from adjacent surfaces. Exercise care to avoid scratching or damage to surfaces.
  - 2. Repair surfaces stained, marred, or otherwise damaged during concrete replacement Work.

3. Clean up debris and surplus materials and remove from Site.

# END OF SECTION 03 01 34

#### SECTION 03 37 13

#### SHOTCRETE

#### PART 1 GENERAL

#### 1.1 SUMMARY

A. Section Includes: Supply and installation of shotcrete applied by wet-mix or dry-mix process, including shotcrete materials and batching, placement, finishing, and curing procedures.

#### 1.2 RELATED SECTIONS:

A. Section 03 01 31 - Concrete Removal and Surface Preparation

### 1.3 REFERENCES

- A. Definitions:
  - 1. Shotcrete: Mortar or concrete pneumatically projected onto surface at high velocity.
  - 2. Wet-Mix Shotcrete: Shotcrete with ingredients, including water, mixed before introduction into delivery hose. Accelerator, if used, is usually added at nozzle.
  - 3. Dry-Mix Shotcrete: Shotcrete with most of water added at nozzle.
  - 4. Rebound: Shotcrete material which ricochets off receiving surface.
- B. Reference Standards: Latest edition as of Specification date.
  - 1. American Concrete Institute (ACI).
    - a. 305R: Guide to Hot Weather Concreting.
    - b. 306R: Guide to Cold Weather Concreting.
    - c. 506.2: Specification for Shotcrete.
  - 2. ASTM International.
    - a. A820: Standard Specification for Steel Fibers for Fiber-Reinforced Concrete.
    - b. C33M: Standard Specification for Concrete Aggregates.
    - c. C42: Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
    - d. C94: Standard Specification for Ready-Mixed Concrete.
    - e. C150: Standard Specification for Portland Cement.
    - f. C171: Standard Specification for Sheet Materials for Curing Concrete.
    - g. C309: Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
    - h. C1064: Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
    - i. C1077: Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation.
    - j. C1116: Standard Specification for Fiber-Reinforced Concrete.
    - k. C1140: Standard Practice for Preparing and Testing Specimens from Shotcrete Test Panels.
    - 1. C1141: Standard Specification for Admixtures for Shotcrete.
    - m. C1218: Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
    - n. C1240: Standard Specification for Silica Fume Used in Cementitious Mixtures.
    - o. C1436: Standard Specification for Materials for Shotcrete.

# 1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For each shotcrete mix, include:
  - 1. Statement of intended use for mix and mix identification designation.
  - 2. Sources and proportion of materials, including admixtures added at nozzle.
  - 3. Mill test certificates for cement and fly ash.
  - 4. Sieve analysis for fine and coarse aggregate.
  - 5. Test results for deleterious substances in aggregates and potential aggregate reactivity.
  - 6. Mixing and placement method.
  - 7. Air content during laboratory tests. Include air content before shooting and expected air content after shooting.
  - 8. 7- and 28-day laboratory compression test results. Minimum 3 cores from test panels at each test age.
- C. Shotcrete Subcontractor Qualifications:
  - 1. Evidence that Subcontractor's existing company has minimum 5 years of continuous experience in similar shotcrete work; list of at least 5 representative, successfully-completed projects of similar scope and size, including:
    - a. Project name.
    - b. Owner's name.
    - c. Owner's Representative name, address, and telephone number.
    - d. Description of work.
    - e. Project supervisor.
    - f. Total cost of shotcrete work and total cost of project.
    - g. Completion date.
  - 2. Similar project lists for foreman and nozzlemen.
  - 3. ACI certification for nozzlemen.

### 1.5 QUALITY ASSURANCE

- A. Shotcrete Subcontractor Qualifications: Experienced firm that has successfully completed shotcrete work similar in material, design, and extent to that indicated for Project. Must have successful construction with specified materials in local area in use for minimum of 5 years.
  - 1. Employ foreman with minimum 5 years of experience as foreman on similar projects and as certified shotcrete nozzleman to be on Site at all times during shotcrete Work. Do not change foremen during course of Project except for reasons beyond control of Subcontractor; inform Architect/Engineer in advance of any changes.
  - 2. Employ nozzlemen with:
    - a. ACI certification for shotcrete procedure and repair positions to be used.
    - b. Minimum 3 years of experience on similar projects.
    - c. Acceptable visual grading on mockup test panels.
  - 3. Employ equipment operators and blow men with minimum 6 months of apprenticeship on similar projects.
- B. Mockups: Before installing shotcrete, produce test panels and test shotcrete specimens in accordance with ASTM C1140, to verify quality of installed shotcrete, to demonstrate aesthetic effects, and to set quality standard for installation.
  - 1. Produce test panels by each nozzleman for each design mix, shooting orientation, and required finish, using equipment and personnel selected for job.

2. Test panels shall be minimum 24 inches by 24 inches by 3 1/2 inches and shall include reinforcement similar to that in members being repaired.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials and structure.
- B. Deliver materials to Site in original, unopened bags and containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
- D. Store materials in original, undamaged bags or containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Manufacturer's standard packaging and covering is not considered adequate weather protection.
- E. Store aggregate stockpiles in manner to avoid segregation or contamination with foreign matter or other aggregates. Store away from normal drainage paths and cover with canvas or plastic if necessary to keep dry.
- F. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- G. Conspicuously mark damaged or opened bags or containers or bags or containers with contaminated materials, and remove from Site as soon as possible.

#### 1.7 **PROJECT CONDITIONS**

- A. Verify existing dimensions and details prior to start of shotcrete Work. Notify Architect/Engineer of conditions found to be different than those indicated in Contract Documents. Architect/Engineer will review situation and inform Contractor of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Handle and install materials in strict accordance with safety requirements required by manufacturer, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site.
- D. Maintain adequate ventilation during preparation and placement of shotcrete.

### 1.8 CHANGES IN WORK

A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with Contract Documents. Such conditions may interfere with Work and may consist of damage or deterioration of substrate or surrounding materials that could jeopardize integrity or performance of Work.

B. Notify Architect/Engineer of conditions that may interfere with proper execution of Work or jeopardize performance of Work prior to proceeding with Work.

### PART 2 PRODUCTS

#### 2.1 SHOTCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of same brand from same manufacturer's plant, each aggregate from one source, and each admixtures from the same manufacturer.
- B. Portland Cement: ASTM C150, Type I or II.
- C. Silica Fume: ASTM C1240, amorphous silica.
- D. Normal-Weight Aggregates: ASTM C33; from single source with documented record of at least 10 years of satisfactory service using similar aggregates and cementitious materials in similar applications and service conditions; free of salt and organic impurities; with gradation conforming to ASTM C1436, Grading No. 1
- E. Synthetic Fibers: ASTM C1116, Type III; fibrillated polypropylene fibers engineered and designed for use in shotcrete; not less than 1 inch long.
- F. Water: Potable.

### 2.2 ADMIXTURES

- A. General: C1141, Class A or B; subject to acceptance by Architect/Engineer.
  - 1. Do not use calcium chloride or admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
  - 2. Certify chloride contents of admixtures and compatibility of admixtures with each other and with other cementitious materials.
- B. Additive: Gun-Rite HP, manufactured by J. E. Tomes & Associates, Blue Island, IL or approved equal can be used as prepackaged admixture.

#### 2.3 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C171, white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Membrane-Forming Curing Compound: ASTM C 309, Type 1, Solvent-borne, acrylic material. Wax-based or silicate materials shall not be used. Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Burke Spartan Cote V. O. C.; Edoco.
  - 2. Dress & Seal 30; L&M Construction Chemicals, Inc.
  - 3. MasterKure CC 300 SB; BASF Corporation Construction Systems.

## 2.4 SHOTCRETE MIXES

- A. Prepare design mixes for each type and strength of shotcrete, determined by field test data and according to ACI 211.1 and ACI 301. Proportion mixtures as follows:
  - 1. Minimum 28-day Compressive Strength: 4,300 pounds per square inch (psi) for drilled core specimens, 1-1/2-inch minimum diameter by 3 inch long. 5,000 pounds per square inch (psi) for sawn 3-inch cube specimens.
  - 2. Minimum 7-Day Compressive Strength: 3,200 pounds per square inch (psi) for drilled core specimens, 1-1/2-inch minimum diameter by 3 inch long. 3,800 pounds per square inch (psi) for sawn 3-inch cube specimens.
  - 3. Air entrainment: 4 to 6 percent in place, 5 to 8 percent at the mixer.
  - 4. Silica Fume: 5 to 10 percent by weight of portland cement.
  - 5. Synthetic Fibers: 8.5 to 15 pounds per cubic yard; uniformly dispersed in shotcrete mixture.
  - 6. Gun-Rite HP at dosage recommended by manufacturer.
  - 7. No chlorides shall be intentionally introduced into shotcrete mix.
    - a. Water-soluble Chloride Ion Content in Hardened Shotcrete: ASTM C1218; 0.15 percent by weight of cementitious materials maximum.
- B. Design Mix Adjustments: Propose adjustments to design mix as necessary when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant.

# PART 3 EXECUTION

### 3.1 SAMPLES AND MOCK-UPS OF SHOTCRETE

- A. Contractor to perform samples and field mock-ups for each type of repair to be performed as required above.
- B. The concrete materials and finishing techniques shall be such as to create a surface and appearance that matches the finish, texture, and appearance of adjacent existing concrete.
- C. Produce test panels and test shotcrete specimens in accordance with ASTM C1140, to monitor quality of shotcrete during mock-ups.
- D. No work shall proceed until review and approval of samples and mock-ups.

### 3.2 SHOTCRETE EQUIPMENT

- A. Mixing Equipment: Capable of thoroughly mixing shotcrete materials in sufficient quantities to maintain continuous placement.
- B. Wet-Mix Delivery Equipment:
  - 1. Capable of discharging aggregate-cement-water mixture accurately, uniformly, and continuously at velocities that apply materials to prepared surface with minimum rebound and maximum adherence and density.
  - 2. Provide uniform, steady supply of clean, compressed air to maintain constant nozzle velocity while simultaneously operating blow pipe for cleaning away rebound.
  - 3. Use pump with metering equipment to monitor and control rate of admixtures added at nozzle.
- C. Dry-Mix Delivery Equipment:
- 1. Capable of discharging aggregate-cement mixture into delivery hose under close control and maintaining continuous stream of uniformly mixed materials at required velocity to discharge nozzle.
- 2. Discharge nozzle equipped with manually-operated water-injection system for supplying even flow of water to aggregate-cement mixture.
- 3. Provide uniform, steady supply of clean, compressed air to maintain constant nozzle velocity while simultaneously operating blow pipe for cleaning away rebound.
- 4. Provide water supply with uniform pressure at discharge nozzle to ensure uniform mixing with aggregate-cement mix. Provide water pump with system if line water pressure is inadequate.

#### 3.3 PREPARATION

- A. Prepare unsound concrete removal areas and exposed concrete and steel surfaces to receive shotcrete as specified in Section 03 01 31.
- B. Supply and install epoxy-grouted dowels as specified in Section 03 01 31.

#### 3.4 BATCHING AND MIXING SHOTCRETE

- A. Site Mixing: Measure, batch, and mix shotcrete materials and shotcrete according to ASTM C94.
  - 1. Develop batching and mixing operations so that quality control is assured.
  - 2. Designate 1 or 2 individuals to batch and mix shotcrete. Fully instruct these individuals on batching and mixing procedures. No other persons shall batch or mix shotcrete without prior notification to Architect/Engineer.
  - 3. Maintain accurate mix proportions. Batch materials by weight on basis of whole bags of cement. Maintain calibrated scale at Site during shotcrete placement operations. Batching by volume is permitted if weight-volume relationship for each material is verified on daily basis, and aggregate moisture content is measured at least once daily and aggregate volume is adjusted for bulking.
  - 4. Incorporate admixtures into mix in manner recommended by manufacturer and approved by Architect/Engineer. Measure with accuracy of +/-3 percent. Add each admixture separately.
  - 5. Combine and mix ingredients to uniform consistency.
  - 6. Mix shotcrete materials in appropriate drum or paddle type batch machine mixer.
    - a. For mixer capacity of 1 cubic yard or smaller, mix at least 1 1/2 minutes, but not more than 5 minutes after ingredients are in mixer.
    - b. For mixer capacity larger than 1 cubic yard, increase mixing time by 15 seconds for each additional 1 cubic yard.
    - c. Provide sufficient number of mixers, including reserve mixers, so that shotcrete placement operations will proceed uninterrupted and each patch is completed before patch shotcrete achieves initial set.

#### 3.5 SHOTCRETE PLACEMENT

A. Areas prepared for shotcrete repair will be reviewed and approved by Architect/Engineer prior to shotcrete placement. Notify Architect/Engineer at least 48 hours in advance of shotcrete placement.

- B. Install protective coverings and other means to protect adjacent surfaces from rebound and overspray, and from impact from nozzle stream.
- C. Provide safe, stable platform that permits nozzleman unobstructed access to and clear visibility of shotcreting area. Provide supplemental lighting as necessary.
- D. Wet and damp dry existing surfaces to obtain saturated-surface-dry condition immediately before placing shotcrete to prevent excessive moisture absorption from shotcrete and improve bond. Layer surfaces should be saturated-surface-dry before placing subsequent layers.
- E. Apply shotcrete to completely fill removal cavities with dense, sound shotcrete.
  - 1. Apply within 90 minutes after batching. Do not place shotcrete if drying or stiffening of mix takes place prior to delivery to nozzle.
  - 2. Apply first in corners, recesses, and other areas where rebound and overspray cannot easily escape.
  - 3. Hold nozzle approximately perpendicular to receiving surface. At corners, direct nozzle at approximately 45-degree angle or bisect corner angle.
  - 4. Maintain reinforcement in position during shotcreting. Place shotcrete to completely encase reinforcement and other embedded items. Maintain steel reinforcement free of overspray and prevent buildup against front face during shotcreting.
  - 5. Remove with blow pipe and dispose of rebound and overspray materials during shotcreting to maintain clean surfaces and prevent rebound entrapment. Do not re-use rebound or previously expended material.
  - 6. Deposit shotcrete in minimum number of layers required to build up full thickness of shotcrete without sagging, sloughing, or dislodging. Cut out and replace shotcrete that sags or sloughs.
    - a. Broom or scrape shotcrete with trowel once lift has reached initial set to provide roughened surface and to remove rebound and overspray.
    - b. Do not apply curing compound or other bond breaking material to surfaces that will receive additional layer of shotcrete.
    - c. Do not place subsequent lifts until previous lift of shotcrete is capable of supporting new shotcrete.
    - d. Before placing subsequent layer, sound layer surface with hammer and remove hollow areas resulting from rebound pockets or lack of bond.
    - e. Do not allow shotcrete that is to receive additional layer to reach final set.
    - f. If shotcrete surface to receive additional shotcrete reaches final set, delay surface preparation by at least 24 hours, at which time surface shall be prepared by sandblasting in accordance with Section 03 01 31.
  - 7. Remove hardened overspray, rebound, and laitance from shotcrete surfaces to receive additional layers of shotcrete; dampen surfaces before shotcreting.
  - 8. Apply shotcrete slightly above finished edges of adjacent concrete.
  - 9. If there is delay between applying layers or before commencing finishing operations, temporarily cover shotcrete with clear or white polyethylene film or similar plastic sheeting with minimum thickness 4 mils, to retard early drying.
- F. Do not disturb shotcrete surfaces before beginning finishing operations.
- G. Environmental Conditions:
  - Cold-Weather Shotcreting: Protect shotcrete from physical damage or reduced strength caused by frost, freezing, or low temperatures, according to ACI 306R and as follows:
     a. Do not use frozen materials or materials containing ice or snow.

- b. Do not place shotcrete on frozen surfaces or surfaces containing frozen materials.
- c. Do not use calcium chloride, salt, or other materials containing antifreeze agents.
- d. Discontinue shotcreting when ambient temperature is 40 degrees F and falling. Uniformly heat water and aggregates before mixing to obtain shotcrete shooting temperature of not less than 50 degrees F and not more than 90 degrees F.
- 2. Hot-Weather Shotcreting: Protect shotcrete from physical damage or reduced strength caused by hot-weather conditions or high temperatures, according to ACI 305R and as follows:
  - a. Cool ingredients before mixing to maintain shotcrete temperature at time of placement below 90 degrees F.
  - b. Reduce temperature of reinforcing steel and receiving surfaces below 100 degrees F before shotcreting.
- 3. Do not apply shotcrete during periods of high wind which could interfere with shotcrete stream, unless suitable enclosures or wind breaks are installed.

#### 3.6 SURFACE FINISHES

- A. Screed Finish: After shotcrete has stiffened to point where surface will not pull or crack when screeded, trim excess material with rod or trowel to true line.
- B. The finished surfaces shall retain the original architectural form provided 1 in. of clear cover (minimum) exists over the reinforcing bars. Under the direction of the Engineer, repair areas shall be built-up as required to maintain the minimum 1 in. clear cover over the reinforcing bars. Partial forming of edges and corners with multiple passes of shotcrete shall be provided as directed by the Engineer.

#### 3.7 SHOTCRETE CURING

- A. General: Protect freshly placed shotcrete from premature drying and excessive cold or hot temperatures. Maintain above 55 degrees F and in moist condition for at least 7 days after placing.
- B. Unformed Overhead Surfaces: As soon as free water has disappeared from shotcrete surface, apply curing compound uniformly in continuous operation by power spray or roller according to manufacturer's written instructions and at twice recommended coverage rate. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
- C. Protect concrete from falling below 55 degrees F with insulating blankets or heated enclosures.
- D. No traffic shall be permitted on the slab during the shotcreting work or until the shotcrete has reached 90 percent of its specified 28 day strength, but not less than 3 days.

#### 3.8 REPAIR OF DEFECTIVE SHOTCRETE

- A. Defective Shotcrete:
  - 1. Does not pass specified tests;
  - 2. Debonded or delaminated;
  - 3. Exhibits laminations, voids, or sand/rock pockets exceeding limits for specified core grade of shotcrete; or
  - 4. Contains cracks or crazing in excess of 0.01 inches wide or that penetrate to reinforcement;

- B. Remove and replace defective shotcrete at no cost to Owner.
  - 1. Remove unsound and loose materials, and contaminants that may inhibit bond of shotcrete repairs.
  - 2. Chip or scarify areas to be repaired to extent necessary to provide sound substrate and to minimum specified patch depth.
  - 3. Cut or chip edges square and 1/2 inch deep at perimeter of removal area, tapering remaining shoulder at 1:1 slope into cavity to eliminate square shoulders.
  - 4. Prepared areas will be reviewed and approved by Architect/Engineer prior to placement of repair material. Do not proceed with placement of repair material until prepared areas have been approved by Architect/Engineer.
  - 5. Dampen surfaces and apply repair material. Use 1 of following or approved equal:
    - a. Shotcrete: Place, finish, and cure per this Section.
    - b. Polymer- or silica fume-modified, cementitious, non-sag mortar that is specifically intended for this application; use 1 of following or approved equal:
      - 1) MasterEmaco N 400 manufactured by BASF Corporation Construction Systems.
      - 2) SikaTop 123 Plus manufactured by Sika Corporation.
  - 6. Engage Owner's testing agency to perform additional tests on shotcrete repairs in accordance with Paragraph 3.9. Pay costs associated with testing shotcrete repairs.
- C. Repair core holes from in-place testing with polymer- or silica fume-modified, cementitious, non-sag mortar.

#### 3.9 FIELD QUALITY CONTROL

- A. Owner will engage qualified independent testing agency, conforming to requirements of ASTM C1077 and acceptable to Architect/Engineer, to perform quality control testing and inspections.
- B. Test Panels: Produce test panels and test shotcrete specimens in accordance with ASTM C1140, to monitor quality of shotcrete.
  - 1. Produce one test panel daily by each nozzleman for each design mix for each shooting orientation. Clearly label test panels with date placed, nozzleman, and portion of structure represented.
  - 2. Test panels shall be minimum 24 inches by 24 inches by 3 1/2 inches and shall include reinforcement similar to that in members being repaired.
  - 3. Cover and tightly wrap test panels with plastic, or store in moist room, until testing.
  - 4. Testing agency will obtain 3 specimens for compression testing and 3 specimens for visual grading from each test panel immediately prior to testing. Specimens will be cores, minimum 1 1/2 inch diameter by 3 inches long, or cubes minimum 3 inches on side. Specimens for compression testing will not include reinforcement, and specimens for visual grading will include reinforcement.
    - a. Test 3 specimens for compressive strength at 7 days, in accordance with ASTM C42.
      - 1) Strength is acceptable if mean of 7-day test results is at least specified compressive strength with no individual test result more than 500 pounds per square inch less than specified compressive strength.
      - 2) If compressive strength does not satisfy criteria, revise mix design and test additional test panels. Shotcrete Work represented by unacceptable test results will be rejected unless testing of specimens of in-place shotcrete is performed at 28 days and above requirements are satisfied for specified 28-day compressive strength
    - b. Visually inspect each set of reinforced shotcrete cores taken from test panels and determine mean core grades according to ACI 506.2.

- 1) Shotcrete is unacceptable if mean grade is 2.5 or more, or if individual specimen grade is greater than 3.
- 2) If grading is unacceptable, produce and inspect second set of test panels. If grading of second set of test panels is unacceptable, nozzleman shall not be permitted to shoot on Project.
- C. Air Content: ASTM C173, volumetric method, or ASTM C231, pressure method; one test for each set of compressive-strength specimens, measured before pumping.
- D. Shotcrete Temperature: ASTM C1064; one test for each set of compressive-strength specimens, and one test hourly when air temperature is 40 degrees F and below or 80 degrees F and above.
- E. Test results shall be reported in writing to Owner's Representative, Architect/Engineer, and shotcrete Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain:
  - 1. Name of testing and inspecting agency.
  - 2. Project identification name.
  - 3. Date of shotcrete placement.
  - 4. Shotcrete mix proportions and design compressive strengths at 7 and 28 days, and design air content range.
  - 5. Specimen number and size, date tested, compressive breaking strengths and types of breaks, visual core grades, and measured air content and air and concrete temperatures.
  - 6. Statement that shotcrete test results are in accordance with Specifications.
- F. Architect/Engineer or Owner's Representative may perform destructive and non-destructive testing to detect voids in shotcrete. Owner will pay for initial testing. If substantial voids are found, Contractor will pay for subsequent tests.
- G. In-Place Shotcrete:
  - 1. At locations designated by Architect/Engineer, obtain set of 3 unreinforced cores from repair areas, visually grade cores according to ACI 506.2, and test cores for compressive strength according to ASTM C42. Do not cut steel reinforcement.
  - 2. If visually grading or strength results do not satisfy specification requirements, pay for sampling and testing and replace shotcrete represented by cores.
- H. Sound new shotcrete surfaces after shotcrete has set and repair delaminated areas.

#### 3.10 CLEANING

- A. After completing shotcrete Work:
  - 1. Clean soiling from adjacent surfaces. Exercise care to avoid scratching or damage to surfaces.
  - 2. Repair surfaces stained, marred, or otherwise damaged during shotcrete Work.
  - 3. Clean up rebound and overspray materials, debris, and surplus materials and remove from Site.

#### END OF SECTION 03 37 13

#### SECTION 07 18 00

#### TRAFFIC COATING

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Surface preparation, supply, and application of traffic coating.
- B. Related Sections:
  - 1. Section 03 01 34 Concrete Replacements
  - 2. Section 07 92 00 Joint Sealants

#### 1.2 REFERENCES

#### 1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
  - 1. With Owner's Representative.
  - 2. With other trades:
    - a. To ensure that work done by other trades is complete and ready for traffic-coating Work.
    - b. To avoid or minimize work on, or in immediate vicinity of, traffic-coating Work in progress.
    - c. To ensure that subsequent work will not adversely affect quality of completed traffic coating.
- B. Pre-application Meeting:
  - 1. Conduct meeting at Site.
  - 2. Time, date, location, and attendee notification to be facilitated by Contractor.
  - 3. Review requirements for traffic coating, including:
    - a. Construction schedule.
    - b. Availability of materials, Applicator's personnel, equipment, and facilities needed to make progress and avoid delays.
    - c. Site use, access, staging, and set-up location limitations.
    - d. Approved mockup procedures.
    - e. Impact of forecast weather conditions.
    - f. Ventilation requirements.
    - g. Surface preparation and substrate condition.
    - h. Application procedures.
    - i. Special details and sheet flashings.
    - j. Minimum curing period.
    - k. Testing and inspection requirements.
    - l. Governing regulations.
  - 4. Contractor's Site superintendent, traffic-coating manufacturer's technical representative, Applicator's foreman, Owner's Representative, and Architect/Engineer shall attend.

#### 1.4 SUBMITTALS

- A. Product Data: Traffic-coating manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and application instructions.
  - 1. Include traffic-coating manufacturer's color chart.
- B. Samples: For each type of traffic coating required, stepped samples on rigid backing large enough to illustrate build-up of traffic coatings, of same thickness and material indicated for Work.
- C. Sample Warranties: Copies of traffic-coating manufacturer's warranty and Applicator's warranty, both stating obligations, remedies, limitations, and exclusions. Submitted with bid.
- D. Following completion of the Work:
  - 1. Traffic-coating manufacturer's warranty inspection reports.
  - 2. Completed warranty from traffic-coating manufacturer.
  - 3. Completed warranty from Applicator.

#### 1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Experienced firm that has successfully completed traffic-coating work similar in material, design, and extent to that indicated for Project; that is approved, authorized, or licensed by traffic-coating manufacturer to apply traffic coating; and that is eligible to receive traffic-coating manufacturer's warranty. Must have successful installations of specified materials in local area in use for minimum of five years.
  - 1. Employ foreman trained by traffic-coating manufacturer and with minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site during Work. Do not change foremen during course of Project except for reasons beyond control of Installer; inform Architect/Engineer in advance of any changes.
- B. Random tests to determine tensile bond strength of membrane to substrate shall be conducted by the Contractor at the job site using an Elcometer Adhesion Tester Model 106 or similar device. Performance of a manual pull test can be completed as additional testing using a hook probe. Contractor shall perform tests at the beginning of the Work during the mock-up, and at intervals as required to assure specified adhesion with a minimum of three (3) tests per phase. Test results shall be submitted to the Owner and the Membrane Manufacturer. Contractor shall immediately notify the Owner and Membrane Manufacturer in the event bond test results are below specified values.
  - 1. Tensile bond strength of membrane to substrate greater than or equal to 200 psi for traffic coating.
  - 2. Remove material that does not comply.
  - 3. In the event the bond strengths are lower than the minimum specified, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation.
- C. Mockups: Prior to start of Work or purchase of material, apply traffic coating to at least 100 square feet of each substrate, at locations determined by Architect/Engineer, to demonstrate surface preparation, joint and crack treatment, thickness, texture, color, and standard of workmanship.
  - 1. If Architect/Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
  - 2. Approved mockup will be standard for judging completed Work.

- 3. Maintain approved mockups in undisturbed condition during Work as standard for judging completed Work. Mockups, if undamaged at time of Substantial Completion, may be incorporated into Work.
- D. Technical Support during work:
  - 1. Manufacturer's representative shall review work in progress on a periodic basis (target at least one visit per phase).
  - 2. Manufacturer's representative shall inspect application of membrane including random measurements of membrane thickness.
  - 3. Manufacturer shall visit the site as needed or requested.
- E. At completion of work:
  - 1. Manufacturer's representative performs final inspection of completed work.
  - 2. Issue warranty
- F. Membrane Manufacture Quality Control: Membrane manufacturer shall provide a technical representative to be on site at beginning of installation of the membrane system to establish the standard quality to be used on the remaining portion of the membrane work. Technical representative shall perform periodic site visit throughout remainder of membrane installation work.
- G. Contractor shall, during construction, complete a daily field installation report which includes, project name, date, weather and temperature data, material installed, location and square footage of material installed, codes or batch identification for the product installed, any testing information including moisture testing of substrate, and any other relevant data or information. This daily report will be completed each day of installation of the traffic membrane and submitted to the Architect/Engineer.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, directions for storing, and complete manufacturer's written instructions.
- B. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which have been exposed to moisture to their detriment.
- C. Store and handle materials in accordance with manufacturer's written instructions, safety requirements, and all applicable laws and regulations. Remove from Site, and replace at no cost to Owner, any materials that are damaged or otherwise negatively affected by not being stored or handled in accordance with manufacturer's written instructions.
- D. Store materials in original, undamaged containers and packaging in clean, dry, location on raised platforms and protected from weather, within temperature range required by manufacturer. Protect stored materials from direct sunlight and sources of ignition. Manufacturer's standard packaging and covering alone is *not* considered adequate weather protection.
- E. Locate materials in a secure location approved by Owner's Representative

- F. Conspicuously mark damaged or opened containers, containers with contaminated materials, damaged materials, and materials that cannot be used within stated shelf life and remove from Site as soon as possible. Replace discarded materials in a timely manner at no cost to Owner.
- G. Limit stored materials on structures so as to preclude damage to materials and structures.
- H. Maintain copies of all applicable Safety Data Sheets (SDS) with materials in storage area, such that they are available for ready reference on Site.

#### 1.7 **PROJECT CONDITIONS**

- A. Verify existing dimensions and details prior to start of traffic-coating Work. Notify Architect/Engineer of conditions found to be different than those indicated in the Contract Documents. Architect/Engineer will review situation and inform Contractor and Applicator how to proceed.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Ensure that drains are operational at the end of each workday or if precipitation is forecast.
- D. Environmental Limitations: Apply traffic coating when existing and forecast weather conditions permit traffic coating to be installed according to traffic-coating manufacturer's written instructions and warranty requirements. Do not apply traffic coating under the following conditions, unless otherwise recommended by traffic-coating manufacturer and approved by Architect/Engineer.
  - 1. Apply only when substrate temperature is above 50 degrees F or more than 5 degrees F above dew point, or within range recommended by traffic-coating manufacturer.
  - 2. Apply only when ambient temperature is above 40 degrees F or within range recommended by traffic-coating manufacturer.
  - 3. Do not apply to damp or wet substrate; when relative humidity exceeds 85 percent; in snow, rain, fog, or mist; or when snow, rain, fog, or mist is forecast during application or curing period. Apply only to frost-free substrate.
- E. Maintain adequate ventilation during preparation and application of traffic-coating materials. Notify Owner's Representative at least one week in advance of Work with materials with noxious vapors. Review application schedule and venting precautions with Owner's Representative prior to beginning application.

#### 1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
  - 1. Notify Architect/Engineer of conditions that may interfere with the proper execution of the Work or jeopardize the performance of the Work prior to proceeding with the Work.

#### 1.9 WARRANTIES

- A. Manufacturer's Warranty:
  - 1. Written warranty, signed by traffic-coating manufacturer, including:

- a. Repair or replace traffic coating that does not comply with requirements; that does not remain watertight; that fails in adhesion, cohesion, or general durability; that experiences abrasion or tearing failure not due to misuse; that experiences surface crazing, fading or chalking; or that deteriorates in a manner not clearly specified by submitted traffic-coating manufacturer's data as an inherent quality of the material for the application indicated. Warranty does not include deterioration or failure of traffic coating due to failure of substrate prepared according to requirements, formation of new substrate cracks exceeding 1/16 inch in width, fire, vandalism, or snowplow abuse.
- b. Provide access to warranty repair and replacement areas.
- 2. Warranty Period: Five years after Substantial Completion date.
- B. Applicator's Warranty:
  - 1. Written warranty on warranty form at the end of the Section signed by Applicator, including:
    - a. Repair or replace traffic coating that does not comply with requirements; that does not remain watertight; that fails in adhesion, cohesion, or general durability; that experiences abrasion or tearing failure not due to misuse; that experiences surface crazing, fading, or chalking; or that deteriorates in a manner not clearly specified by submitted traffic-coating manufacturer's data as an inherent quality of the material for the application indicated. Warranty does not include deterioration or failure of traffic coating due to failure of substrate prepared according to requirements, formation of new substrate cracks exceeding 1/16 inch in width, fire, vandalism, or snowplow damage.
    - b. Provide access to warranty repair and replacement areas.
    - c. Repair or replacement, to satisfaction of Owner, of other work or items which may have been displaced or damaged as consequence of defective Work.
    - d. Make immediate emergency repairs within 48 hours of notice of leakage.
  - 2. Warranty Period: Five years after Substantial Completion date.

#### PART 2 - PRODUCTS

#### 2.1 TRAFFIC COATING

- A. Source Limitations: Obtain materials through one source from single traffic-coating manufacturer. Provide materials not available from traffic-coating manufacturer from sources approved by traffic-coating manufacturer. Provide new materials.
- B. Use one of the following traffic coatings, or approved equal:
  - 1. Heavy-duty vehicular system:
    - a. Iso-Flex 750U-HL HVT Deck Coating System by LymTal International, Inc., consisting 25 dry mils of base coat, 15 dry mils of wear course, 3/4 pound of sand per square feet, and 12 dry mils of lock coat.
    - b. Auto-Gard Vehicular Traffic-Bearing Waterproofing with double-texturing, by Neogard, consisting of 20 dry mils of base coat, 32 dry mils of wearing surface coat, and 20 to 30 pounds of aggregate per 100 square feet.
    - c. MasterSeal Traffic 1500 Extra-Heavy-Duty System by BASF Construction Chemicals, LLC, consisting of 20 dry mils of base coat, 20 dry mils of mid-coat, 15 dry mils of finish coat, and 50 to 70 pounds of aggregate per 100 square feet.
  - 2. Heavy-duty vehicular system (two-component):

- a. Iso-Flex 750U-HL HVT Deck Coating System by LymTal International, Inc., consisting 25 dry mils of base coat, 15 dry mils of wear course, 3/4 pound of sand per square feet, and 12 dry mils of lock coat.
- b. Auto-Gard FC T Vehicular Traffic-Bearing Waterproofing with double-texturing, by Neogard, consisting of 20 dry mils of base coat, 32 dry mils of wearing surface coat, and 20 to 30 pounds of aggregate per 100 square feet.
- c. MasterSeal Traffic 2500 Extra-Heavy-Duty System by BASF Construction Chemicals, LLC, consisting of 20 dry mils of base coat, 20 dry mils of mid-coat, 15 dry mils of finish coat, and 50 to 70 pounds of aggregate per 100 square feet.
- C. Primer: Traffic-coating manufacturer's standard, factory-formulated primer recommended for substrate under conditions of service and application.
- D. Joint Reinforcement: Traffic-coating manufacturer's standard reinforcement.
- E. Aggregate: Clean silica sand, uniform in gradation, and approved by traffic-coating manufacturer.
- F. Top Coat Color: Approved in advance in writing by Owner's Representative.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions with Applicator and traffic-coating manufacturer's representative for compliance with requirements and other conditions affecting performance of traffic coating.
  - 1. Ensure that work done by other trades is complete and ready for traffic-coating Work.
  - 2. Verify compatibility with and suitability of substrates.
  - 3. Verify that areas and conditions under which traffic-coating Work is to be performed permit proper and timely completion of Work.
  - 4. Notify Architect/Engineer in writing of conditions which may adversely affect application or performance of traffic coating and recommend corrections.
  - 5. Do not proceed with traffic-coating Work until adverse conditions have been corrected and reviewed by Architect/Engineer.
  - 6. Commencing traffic-coating Work constitutes acceptance of Work surfaces and conditions.

#### 3.2 PROTECTION

- A. Comply with traffic coating manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.
- B. Cover adjacent surfaces with materials that are proven to resist traffic coating.
- C. Take precautions to ensure safety of people (including building users, passers-by, and workers) and protection of property (including adjacent building elements, landscaping, and motor vehicles).
- D. Take precautions to protect against air-borne materials and run-off.

- E. Protect paving, sidewalk, and adjacent building areas from mechanical damage due to equipment.
- F. Prevent dust, debris, coating overspray/spatter, and other construction materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- G. Limit access to Work areas.
- H. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.
- I. Protect from damage, all elements of completed work and original construction to remain.

#### 3.3 SURFACE PREPARATION

- A. Equipment:
  - 1. Concrete cleaning equipment such as Blastrac Concrete Cleaning System manufactured by Wheelabrator-Frye, Inc., or equal.
  - 2. Abrasive blasting equipment capable of removing contaminants and laitance from concrete surface.
  - 3. Compressed air equipment capable of removing dust and dirt from concrete surface.
- B. Remove existing traffic coating and other materials to expose substrate.
  - 1. Existing traffic coating system is unknown.
  - 2. Remove only as much of existing traffic coating as can be prepared and new traffic coating installed in one day, unless provisions are implemented to maintain watertightness in interim or larger removal areas are approved by Owner's Representative.
  - 3. Provide temporary protection as needed if watertightness is compromised.
  - 4. Do not begin removal of existing traffic coating when weather conditions are not conducive to maintaining watertightness or for application of new traffic coating.
- C. Clean and prepare concrete substrate according to traffic-coating manufacturer's written instructions. Provide clean, dust-free, and dry substrate.
  - 1. Verify that concrete has cured and aged for minimum time period recommended by trafficcoating manufacturer.
  - 2. Verify that substrate is sound and is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D4263.
  - 3. Verify that concrete curbs, expansion joints, and transitions from one surface plane to another (inside and outside corners) are cleanly formed and free of broken edges and excess concrete.
  - 4. Remove concrete fins and projections, concrete splatter, and other irregularities which would prevent monolithic, continuous application of traffic coating.
  - 5. Properly repair substrate defects such as delaminations, spalls, voids, form tie holes, honeycombing, and cracks, with latex-modified concrete or another material acceptable to traffic-coating manufacturer and Architect/Engineer.
  - 6. Remove grease, oil, asphalt solids, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
  - 7. Shotblast or scarify concrete to provide clean surface, free of laitance, dirt, and other loose or foreign material. Use care to avoid pockmarking concrete surface.
  - 8. Uniformly clean concrete surfaces by abrasive blast, according to ASTM D4259, to expose top surface of fine aggregate and provide sound surface, free of laitance, dirt, and other

loose or foreign material. Use self-contained, recirculating, blast-cleaning apparatus. Remove remaining loose material and clean surfaces according to ASTM D4258. Produce surface texture equal to CSP 3 or 4 from ICRI Guide for Selecting and Specifying Concrete Surface Preparation.

- 9. Level areas of surface scaling or rough, uneven areas where surface roughness is unacceptable for traffic-coating application, as determined by Architect/Engineer, with skim coat of epoxy or other material compatible with traffic coating and recommended by traffic-coating manufacturer.
- 10. Rout cracks and joints designated by traffic-coating manufacturer's representative and verified by Architect/Engineer, remove existing sealant, and install new sealant.
- 11. Abrasive blast clean curb, column, and wall surfaces that will receive traffic coating.
- 12. Thoroughly sweep substrate and clean with oil-free compressed air.
- D. Mask adjoining surfaces not receiving traffic coating to prevent spillage and overspray affecting other construction.
- E. Close off deck drains and other deck penetrations to prevent spillage and migration of trafficcoating fluids.
- F. Applicator and traffic-coating manufacturer's representative shall examine substrate to ensure that it is properly prepared and ready to receive traffic coating. Traffic-coating manufacturer's representative shall report in writing to Applicator and Architect/Engineer conditions which will adversely affect traffic-coating system application or performance. Do not proceed with traffic-coating application until these conditions have been corrected and reviewed by Architect/Engineer.
- G. Proceed with application only after unsatisfactory conditions have been corrected. Commencing application constitutes acceptance of Work surface preparation and conditions.

#### 3.4 APPLICATION

- A. Provide and maintain barricades for vehicular and pedestrian traffic at traffic-coating areas during application and curing period.
- B. Allow sealant, concrete replacement materials, and skim coats to fully cure prior to installing traffic coating.
- C. Apply traffic coating material according to traffic-coating manufacturer's written recommendations.
  - 1. If pin-holing, blistering, or bubbling occurs, delay Work until later test areas are free of pinholes, blisters, or bubbling.
  - 2. Start traffic-coating application in presence of traffic-coating manufacturer's representative.
  - 3. Install sealant cant at intersections of horizontal and vertical surfaces.
  - 4. Batch and thoroughly mix components as recommended by the traffic-coating manufacturer.
  - 5. Apply detail coat at intersections of horizontal and vertical surfaces, at drains and other deck penetrations, and at cracks and joints.
  - 6. Apply traffic-coating system.
    - a. Wipe detail coat to remove dust and contamination.

- b. Apply each coat in one uniform application, broadcast aggregate if required, and backroll for even coverage. Allow each coat to cure before apply next coat. Sweep or vacuum off excess aggregate.
- c. Apply at least 4 inches up sides of columns, walls, and other vertical surfaces, and up curb faces and across top curb surfaces.
- d. Omit aggregate on vertical surfaces.
- e. If pinholes occur in base coat, apply additional base coat material using flat squeegee or other tool approved by traffic-coating manufacturer, to fill holes before proceeding with subsequent coats.
- f. Prevent contamination or damage during application and curing.
- g. Verify that wet film thickness of each component coat complies with requirements every 100 square feet.

#### 3.5 FIELD QUALITY CONTROL

- A. Architect/Engineer will take a minimum of one sample (one-square inch) of new traffic-coating system for every 4,000 square feet of traffic-coating installed. Dry film thickness will be measured.
  - 1. Dry film thickness is satisfactory if not less than minimum thickness specified by trafficcoating manufacture or this Section, whichever is greater.
  - 2. If dry film thickness is too thin, apply additional material at no cost to Owner, or perform other remedial action recommended by traffic-coating manufacturer or Architect/Engineer.
  - 3. Patch sample areas with traffic-coating system.
- B. Architect/Engineer may perform bond strength testing to verify adequate bond strength in accordance with ASTM D7234 Stard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.
  - 1. Contractor to patch test areas with traffic coating system at no cost to Owner.
- C. Chain drag traffic-coating areas at conclusion of Work to locate debonded areas. Remove and replace debonded areas.

#### 3.6 CLEANING

- A. At the end of each workday, clean Site and Work areas and place and place all items to be discarded in appropriate containers.
- B. After completing traffic coating Work:
  - 1. Clean all materials resulting from Work that are not intended to be part of the finished Work using appropriate cleaning agents and procedures. Exercise care to avoid damaging surfaces.
  - 2. Repair at no cost to Owner all items damaged during the Work.
  - 3. Remove and legally dispose of debris and surplus materials from Site.

#### 3.7 **PROTECTION**

- A. Protect traffic-coating from damage and wear during remainder of construction period.
- B. Replace Work or materials damaged beyond repair, in opinion of Architect/Egnineer, at no cost to Owner.

#### END OF SECTION 07 18 00

#### APPLICATOR'S WARRANTY FOR

We (Applicator) hereby warrant materials and workmanship of Work which we have installed at above-referenced Project for a period of five (5) years from date of substantial completion. We agree to repair or replace traffic coating which fails to remain watertight; or fails in adhesion, cohesion, or general durability; or experiences surface crazing, fading or chalking; or deteriorates in any other manner not clearly specified by submitted manufacturer's data as an inherent quality of the material for the application indicated. Warranty does not include deterioration or failure of traffic coating due to failure of substrate prepared according to requirements, formation of new substrate cracks exceeding 1/16 inch in width, fire, vandalism, or snowplow damage.

We also agree to repair or replace to satisfaction of Owner, other work or items which may be displaced or damaged as a consequence of defective Work.

In event of our failure to comply with foregoing conditions, within seven days after being notified in writing by Owner, we collectively or separately do hereby authorize Owner or his successor in interest to proceed to have said defects repaired and made good at our expense and we will honor and pay costs and charges therefore upon demand.

Date of Substantial Completion:	
Applicator's signature:	
Typed name and title of company official signing	above and issuing this warranty:
Name:	Title:
Date of Signature:	
Contractor's signature:	
Typed name and title of company official signing	above for Contractor:
Name:	Title:
Date of Signature:	

#### SECTION 07 92 00 JOINT SEALANTS

#### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Surface preparation and installation of sealant in joints as indicated in Drawings and Specifications.
- B. Related Sections:
  - 1. Section 01 11 00 Summary of Work
  - 2. Section 01 22 00 Unit Prices
  - 3. Section 09 96 53 Concrete Replacements
  - 4. Section 07 18 00 Traffic Coatings

#### **1.2 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate Work to ensure that adjacent areas are not adversely affected; that new materials and building interior are kept continuously dry; and that continuous, watertight, new sealant installation is provided. Coordinate:
  - 1. With Owner's Representative.
  - 2. With other trades:
    - a. To ensure that work done by other trades is complete and ready for sealant Work.
    - b. To avoid or minimize work on, or in immediate vicinity of, sealant Work in progress.
    - c. To ensure that subsequent work will not adversely affect completed sealant Work.

#### 1.3 SUBMITTALS

- A. Product Data: Sealant manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and installation instructions.
  - 1. Include temperature ranges for storage and application of materials, and special coldweather application requirements or limitations.
  - 2. SpecData sheet for substrate cleaner and substrate primer recommended by sealant manufacturer for specific substrate surface and conditions.
- B. Samples: Sealant manufacturer's color sample card, either printed or with thin sealant beads, showing range of colors available for each product exposed to view.
- C. Manufacturer's Reports and Certifications:
  - 1. Prior to sealant installation, report from sealant manufacturer with results of sealant compatibility, sealant and substrate staining, and mockup adhesion tests. Report shall:
    - a. State that materials which come into contact with or in close proximity to sealant have been tested.
    - b. Include sealant manufacturer's interpretation of test results relative to material performance, potential staining of sealant and substrates, dirt accumulation of sealant, and dirt runoff from sealant.

- c. Include sealant manufacturer's recommendations for substrate preparation and primer needed to obtain durable adhesion and installation procedures successfully used in mockups and field tests.
- 2. Product Certificates: For each sealant product, accessory, related products, joint type, and substrate, sealant manufacturers' written approval of their products' use for specified conditions; based on mockups and field tests.
- D. Following completion of the Work:
  - 1. Sealant manufacturer's inspection report of completed sealant installation.
  - 2. Completed warranty from sealant manufacturer.
  - 3. Completed warranty from Installer.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced firm that has successfully completed sealant work similar in material, design, and extent to that indicated for Project; that is approved, authorized, or licensed by sealant manufacturer to install sealant; and that is eligible to receive sealant manufacturer's warranty. Must have successful installations of specified materials in local area in use for minimum of five years.
  - 1. Employ foreman with minimum five years of experience as foreman on similar projects, to be on Site at all times during Work. Do not change foremen during the course of the Project except for reasons beyond the control of the Installer; inform Engineer in advance of any changes.
- B. Compatibility Tests: Include sealant and sealers or coatings that may come into contact with sealant following sealant installation.
- C. Mockups: Install 10 feet of sealant in each type of joint to verify and set quality standards for materials and installation procedures, and to demonstrate aesthetic effects.
  - 1. Include each type of backing material, sealant, primer and other related products.
  - 2. Mockups shall be accessible or located as indicated by Owner's Representative.
  - 3. Notify Owner's Representative, Manufacturer's Representative and Architect/Engineer 7 days in advance of date when mockups will be constructed.
  - 4. Sealant manufacturer's representative shall observe the preparation of the joints for the mock-up. The sealant manufacturer's representative provide written confirmation that the joint preparation is performed in accordance with the sealant manufacturer's recommendations.
  - 5. Field-Adhesion Testing: After sealants have cured, perform field-adhesion tests according to ASTM C1521.
    - a. Conduct tests for each type of sealant and joint substrate, with a primer.
    - b. Arrange for tests to take place with sealant manufacturer's technical representative present.
    - c. Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Use alternate materials or modify installation procedure, or both, for sealants that fail to adhere to substrates.
  - 6. If Architect/Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
  - 7. Mockups, when approved by Owner's Representative and Architect/Engineer, will become standard for Work.

8. Do not begin joint sealant Work until mockup is accepted by Owner's Representative and Architect/Engineer.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such a manner as to prevent damage to materials or structure.
- B. Deliver materials to Site in original packages with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application or which have been exposed to moisture.
- D. Store materials in original, undamaged containers and packaging in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight. Manufacturer's standard packaging and covering is *not* considered adequate weather protection.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark wet or damaged materials and remove from Site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

#### 1.6 **PROJECT CONDITIONS**

- A. Verify existing dimensions and details prior to start of sealant Work. Notify Engineer of conditions found to be different than those indicated in the Contract Documents. Engineer will review situation and inform Contractor and Installer of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Install sealant when existing and forecast weather conditions permit sealant to be installed according to sealant manufacturer's written instructions and warranty requirements.
  - 1. Do not install sealant when ambient or substrate temperatures are below 40 degrees F or are expected to fall below 40 degrees F in next 12 hours.
  - 2. Do not proceed with installation during inclement weather except for temporary work necessary to protect building interior and installed materials. Remove temporary work and Work that becomes moisture damaged.

#### 1.7 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
  - 1. Notify Engineer of conditions that may interfere with the proper execution of the Work or jeopardize the performance of the Work prior to proceeding with the Work.

#### 1.8 WARRANTY

- A. Installer's Warranty: The Contractor shall warrant the sealing of joints to be free of faults and defects in accordance with the General Conditions, except that the warranty shall be for a minimum of two (2) years from the date of Substantial Completion. Installed work discovered to contain faults or defects within the two year warranty period shall be repaired or replaced with materials in accordance with the specification at no cost to the Owner. The warranty shall be signed by the Contractor and Installer performing the work.
- B. Manufacturer's Warranty: Manufacturer's standard form in which sealant manufacturer agrees to furnish the specified joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Periods: 5 years from date of Substantial Completion.
- C. Warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
  - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
  - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
  - 3. Mechanical damage caused by individuals, tools, or other outside agents.
  - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

#### PART 2 PRODUCTS

#### 2.1 ELASTOMERIC JOINT SEALANTS

- A. General:
  - 1. Comply with ASTM C920 and other requirements indicated.
  - 2. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing on similar projects, mockups and preconstruction testing for Project, and field experience.
  - 3. Select products based on mockups, preconstruction testing, and sealant manufacturer's previous testing and experience.
  - 4. Source Limitations: Obtain each type of joint sealant through one source from single manufacturer.
  - 5. Colors of Exposed Joint Sealants: Selected and approved in writing by Owner's Representative, from sealant manufacturer's full range.
  - 6. Ensure sealant selected is compatible with Elastomeric Coating product used.
- B. Single-Component, Non-sag, Polyurethane Sealants:
  - 1. DynaTrol 1-XL manufactured by Pecora Corporation.
  - 2. MasterSeal NP 1 manufactured by BASF Building Systems.
  - 3. SikaFlex-1a manufactured by Sika Corporation.
  - 4. Or approved equal
- C. Multi-Component, Non-sag, Polyurethane Sealants:

- 1. DynaTrol II manufactured by Pecora Corporation.
- 2. MasterSeal NP 2 manufactured by BASF Building Systems.
- 3. SikaFlex-2c NS manufactured by Sika Corporation.
- 4. Or approved equal.

#### 2.2 AUXILIARY MATERIALS

A. General: Sealant-backer materials, primers, surface cleaners, masking tape, and other materials recommended by sealant manufacturer, that are non-staining and compatible with substrates; based on mockups, preconstruction testing, and sealant manufacturer's previous testing and experience.

#### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions with Installer and sealant manufacturer's representative for compliance with requirements and for other conditions affecting installation or performance of sealant.
  - 1. Verify dimensions of sealant joints at Site by field measurement so that proper sealant profiles will be accurately maintained.
  - 2. Ensure that work done by other trades is complete and ready for sealant Work.
  - 3. Verify that areas and conditions under which sealant Work is to be performed permit proper and timely completion of Work.
  - 4. Notify Engineer in writing of conditions which may adversely affect installation or performance of sealant, including joints with widths less than those allowed by sealant manufacturer for applications indicated, and recommend corrections.
  - 5. Do not proceed with sealant Work until adverse conditions have been corrected and reviewed by Engineer.
  - 6. Commencing sealant Work constitutes acceptance of Work surfaces and conditions.

#### 3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals, and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving and sidewalks, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Comply with sealant manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.

- G. Cover adjacent surfaces with materials that are proven to resist sealant.
- H. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

#### 3.3 SURFACE PREPARATION

- A. Remove existing sealant and other foreign material from joints.
- B. Repair damaged or deteriorated substrate surfaces according to sealant manufacturer's written instructions and as approved by Engineer.
- C. Clean joint substrates immediately before installing sealant, to comply with sealant manufacturer's written instructions based on mockups and preconstruction testing.
  - 1. Remove from substrate foreign material that could interfere with adhesion of sealant, including dirt, dust, existing sealant, oil, grease, and surface coatings.
  - 2. Provide dry substrate; prevent wetting of substrate prior to sealant installation.
  - 3. Clean porous substrates, such as concrete, masonry, stone, wood, by brushing, grinding, blast-cleaning, mechanical-abrading, or combination of methods to produce clean, sound substrate capable of developing optimum bond with sealant. Remove laitance and form-release agents from concrete. Remove loose particles remaining after cleaning operations by vacuuming or blowing out joints with oil-free, compressed air.
  - 4. Clean nonporous surfaces, such as metal, with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of sealant.
- D. Install masking tape on adjacent surfaces to prevent permanent staining or damage due to contact with sealant or cleaning methods to remove sealant smears. Remove tape immediately after tooling sealant, without disturbing sealant.

#### 3.4 INSTALLATION OF SEALANT

- A. General: Comply with sealant manufacturer's written installation instructions for products and applications indicated, based on mockups and preconstruction testing.
- B. Joint Priming: Prime joint substrates where recommended in writing by sealant manufacturer, based on mockups and preconstruction testing. Apply primer to comply with sealant manufacturer's written instructions.
  - 1. Confine primer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.
  - 2. Limit priming to areas that will be covered with sealant in same day. Unless recommended otherwise by sealant manufacturer, reprime areas exposed for more than 24 hours.
- C. Install sealant backer and position to produce cross-sectional shape and proper depth of installed sealant.
  - 1. Use properly-sized backer. Do not use multiple-backer units or braided-backer units to accommodate wide joints.
  - 2. Install backer with device that will provide consistent depth between substrate surface and outer surface of backer.
  - 3. Do not leave gaps between ends of sealant backers.
  - 4. Do not stretch, twist, puncture, or tear sealant backers.

- 5. Remove wet backers and replace with dry materials.
- D. Install bond-breaker tape at back of designated joints.
- E. Install sealant immediately after installing backer material; to produce uniform, cross-sectional shape and depth; to directly contact and fully wet joint sides and backer material; and to completely fill recesses in joint configuration.
  - 1. For Non-Sag Sealant:
    - a. Install sealant flush with surface.
    - b. Immediately after sealant application and before skinning or curing begins, tool joint with slightly concave surface, compressing sealant into joint to form smooth, uniform sealant bead; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agent.
  - 2. For pourable sealants:
    - a. Install sealant slightly below surface.
    - b. Immediately after sealant application and before skinning or curing begins, lightly tool joint, compressing sealant into joint to form smooth, uniform sealant bead; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agent.
    - c. Remove excess sealant from surfaces adjacent to joints.

#### 3.5 FIELD QUALITY CONTROL

A. At completion of Project, observe installed sealant for damage, deterioration, or air pokcets within the sealant bead. If damage or deterioration occurs, neatly cut out and remove damaged or deteriorated sealant, prepare and prime surfaces, and install new sealant. Replace sealant immediately so new sealant is indistinguishable from original Work.

#### 3.6 CLEANING

- A. As sealant Work progresses, clean off excess sealant or sealant smears by methods and with cleaning materials approved in writing by sealant manufacturer and manufacturers of products in which joints occur. Exercise care to avoid scratching or damage to surfaces.
- B. At the end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- C. After completing sealant Work:
  - 1. Repair surfaces stained, marred, or otherwise damaged during sealant Work.
  - 2. Clean up debris and surplus materials and remove from Site.

#### 3.7 PROTECTION

A. Protect sealant during and after curing period from contact with contaminating substances and from damage, so sealants are without deterioration or damage at time of Substantial Completion.

#### END OF SECTION 07 92 00

# **PROJECT:**

# **CITY OF BIRMINGHAM - 2021 PARKING STRUCTURE REPAIRS** NORTH OLD WOODWARD PARKING STRUCTURE

333 N Old Woodward Ave Birmingham, MI 48009

**CLIENT:** 

**OWNER:** 

# **City of Birmingham**

151 Martin Street Birmingham, MI 48012

**ARCHITECT / ENGINEER:** 

# Wiss, Janney, Elstner Associates, Inc.

30700 Telegraph Road, Suite 3580 Bingham Farms, Michigan 48025

SITE PLAN:



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Sheet Number	Sheet Title	
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S102	2nd Level Framing Plan	
S103	3rd Level Framing Plan	
S104	4th Level Framing Plan	
S105	5th Level Framing Plan	
S501	Repair Details	
S502	Repair Details	
S503	Repair Details	



#### **GENERAL NOTES**

#### SCOPE OF WORK

- 1. This project includes repairs and improvements to concrete and waterproofing elements of the North Old Woodward Parking Structure located at 333 North Old Woodward Avenue in Birmingham, Michigan. The 2021 bid package is focused on concrete repair and waterproofing repair items on the roof level of the structure but includes localized repairs at all levels. It includes, but is not limited to the following:
- a. Cleaning and inspecting all floor drains and replacing damaged drain components. b. Removal and replacement of the slab-on-ground at the south-west stair tower entrance.
- c. Column and wall concrete repairs.
- d. Underside and topside concrete repairs throughout the Level 5 slab and the Level 4 ramp and slab leading to Level 5, as well as localized underside and topside repairs on the remaining supported levels.
- e. Repairing localized damaged and failed traffic coating at the curbs and the installation of a new traffic coating on Level 5 and the Level 4 ramp and slab leading up to Level 5.
- 2. The work also requires coordination with the Owner's use of the parking structure and maintaining vehicular and pedestrian circulation beyond the construction work area.

#### Phasing & Work Restrictions:

- 1. The Contractor shall maintain at least one entrance and one exit from Levels 1-4 at all times. 2. Construction Activities may be required to meet Owner's schedule except as approved in advance by the Owner's Representative.
- 3. Relocation of barricades and signage should be anticipated to occur during off hours when the parking spaces are more readily available.
- 4. The Owner will continue to use the parking structure during construction. The Contractor must schedule and arrange their work so as to maintain access at all times to all parking areas that are not under construction, for both vehicles and pedestrians. Short interruptions in traffic flow may be permitted but all interruptions must be scheduled and approved in advance in writing by the Owner.

#### GENERAL

- 1. All construction shall be performed in general accordance with the drawings, project specifications, and the applicable provisions of the codes indicated.
- 2. All construction shall conform to the requirements contained in the 2015 Michigan Rehabilitation Code for Existing Buildings.
  - a. Because the MRCEB is the selected code for compliance, provisions of the 2015 Michigan Building Code (MBC) are only applicable where specifically referenced by the MRCEB, and when cited, only apply to the prescribed extent of the reference.
  - b. The intent of the project is to repair deteriorated portions of the structural and waterproofing components in order to maintain the same use, configuration, function, and purpose that currently exists. No modifications or alterations to the existing occupancy, use, or layout will be performed as part of this work. Therefore, the "Work Area" compliance method per MRCEB has been selected for this project and the work shall comply with the applicable provisions in Chapter 6 "Repairs."
- 3. The parking structure will remain occupied during Work.
  - a. Develop project schedule and submit to Owner and Engineer prior to start of construction. Modify schedule as construction progresses and resubmit schedule on a bi-weekly basis. b. The Contractor shall coordinate with the Engineer and Owner prior to relocating to a new work area
  - c. Provide all necessary measures to clearly delineate construction work area from remainder of occupied parking structure.
- 4. The Contractor shall verify all existing conditions at the job site prior to starting the work, and shall immediately notify the Owner's Representative of any discrepancies, omissions, or other conditions that may affect the scope of work prior to beginning Work impacted by the noted conditions. Do not scale Drawings.
- 5. Unanticipated conditions encountered during the course of the work that require additional replacements shall be brought to the attention of the Owner's Representative. No additional work
- shall be performed unless approved in advance by the Owner's Representative. 6. The Contractor shall be responsible for all construction means and methods and safety programs for the site and Contractor staff.
- 7. Contractor shall furnish all labor, materials, and equipment for work. 8. Where information within the Contract Documents differ from written manufacturer instructions or
- recommendations, the most stringent requirements apply. 9. The extent of all replacement areas is subject to final approval and quantity verification by the Owner's Representative.
- 10. Traffic shall be routed around work areas until the new concrete or repair mortar has gained at least 75 percent of its specified 28-day compressive strength and new sealants can withstand traffic.

5. Mortar:

#### CONCRETE REPAIRS

WATERPROOFING

EGEND		ABBREVIATIONS
- PLAN / DETAIL NAME LABEL	A/E C/C CONC.	ARCHITECT/ENGINEER CENTER-TO-CENTER CONCRETE
- ELEVATION CALLOUT	CONT. CSP DET.	CONTINUOUS CONCRETE SURFACE PROFILE DETAIL
- SECTION CALLOUT	EQ. (E) FD GA	EQUAL EXISTING FLOOR DRAIN GAGE
- DETAIL / VIEW CALLOUT	GALV. HORIZ. ICRI	GALVANIZED HORIZONTAL INTERNATIONAL CONCRETE REPAIR INSTITUTE
- KEYED NOTE / OBSERVATION	INT LF MAX.	INTERIOR LINEAR FEET MAXIMUM
- ELEVATION MARKER	(N) N.T.S.	NEW NOT TO SCALE
- DRAWING MATCHLINE	O.C. O.D. PSI REINE	ON CENTER RAIN CONDUCTOR POUNDS PER SQUARE INCH REINFORCED
GRAPHICAL PLAN SCALE	REQ. SIM. SF	REQUIRED SIMILAR SQUARE FEET
STRUCTURAL GRIDLINE	TEMP T.O. TYP.	TEMPORARY TOP OF TYPICAL
- NORTH ARROW	VERT. V.I.F. WP	VERTICAL VERIFY IN FIELD WATERPROOFING WELDED WIRE REINFORCEMENT
	Ø	DIAMETER

11. Contractor is solely responsible for any damage to the building, equipment, or adjacent property caused by the work. Any such damage shall be reported to the Owner prior to repairing the damage. All damage to the building, equipment, or property must be repaired to the satisfaction of the Owner or replaced to match existing

12. Materials and equipment shall be confined to the Work Areas and site staging areas.

13. Do not load structure with weight that will endanger structure. Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises.

14. Protect existing structure and waterproofing adjacent to repairs from damage during construction and store all new materials to prevent damage to these items.

15. Temporary relocation and reinstallation of mechanical, electrical, and plumbing work shall be performed by the Owner. Provide 72-hour notice to Owner's Representative of electrical work that is required to permit require Work.

16. Dust control: The Contractor shall erect, as required, temporary enclosures of polyethylene or other suitable material around the area of work. The Contractor shall provide for the protection of his employees from dust according to OSHA and other environmental agencies having jurisdiction.

#### MASONRY REPAIRS

1. Masonry work shall comply with the Specification for Masonry Structures (TMS 602/ACI 530.1-30) 2. Install mortar in accordance with BIA standards. 3. Pre-hydrate mortars thoroughly, mixing all ingredients except water; then, mix again, adding only enough water to produce a damp workable mix which will retain its form when pressed into a ball. After keeping mortars in this dampened condition for 1 to 1-1/2 hours, add sufficient water to bring it

to the proper consistency; that is, somewhat drier than conventional masonry mortars. Do not use mortar if more than 2-1/2 hours has elapsed since the initial mixing of the mortar. 4. Concrete Masonry Units (CMU): a. ASTM C90; normal-weight, hollow units; face nominal 8 inches by 16 inches; thickness

to match existing.

a. Mortar: ASTM C270, Type N

b. Aggregate: ASTM C144 Portland cement: ASTM C150/C150M, Type I, II, or III

d. Hydrated line: ASTM C207, Type S

e. Water: ASTM C207, Type S

6. Refer to Technical Specifications

1. Refer to Technical Specifications

TEMPORARY SHORING 1. Refer to Technical Specifications

# QUALITY CONTROL AND SPECIAL INSPECTIONS

1. The Owner's Representative may perform quality control tests on a random basis from time to time to evaluate installation of the new construction for conformance to the drawings and specifications. The Contractor shall make access available at no additional cost to inspect and test the specified areas and make appropriate repairs after completion of Owner's Representative inspection. Defective work shall be repaired at no cost to the Owner.

2. Special inspections are required for this construction work in accordance with Section 1704 of the 2015 *Michigan Building Code*. Coordinate work with Engineer and Testing Agency to permit the necessary special inspections.

3. The special inspections required for this project are as follows.

a. Initial and periodic inspection of epoxy-grouted dowel installation. Note that the manufacturer's evaluation report details the necessary inspections, including an initial inspection prior to the installation of any dowels.

b. Periodic inspection of the steel reinforcement and formwork.

- c. Periodic verification of use of required concrete mix design.
- d. Continuous inspection during fresh concrete sampling for strength tests, slump testing, air content testing, and concrete temperature determination.

e. Periodic inspection of curing temperature and techniques. f. Periodic verification of concrete strength prior to removal of shores and forms from beams

and structural slabs. 4. Contractor shall engage special inspector for concrete testing.

Wiss, Janney, Elstner Associates, Inc 30700 Telegraph Road, Suite 3580 Bingham Farms, Michigan 48025 248.593.0900 tel | 248.593.8532 fax www.wje.com Atlanta | Austin | Boston | Chicago | Cleveland | Dallas | Denver | Detroi Doylestown | Honolulu | Houston | Indianapolis | London | Los Angeles /lilwaukee | Minneapolis | New Haven | Northbrook (HQ) | New York Philadelphia | Pittsburgh | Portland | Princeton | Raleigh | San Antonio San Diego | San Francisco | Seattle | South Florida | Washington, DC Consultants City of Birmingham - 2021 **Parking Structure Repairs** 333 N Old Woodward Ave Birmingham, MI 48009 Client City of Birmingham 151 Martin Street Birmingham, MI 48012 2 07/30/21 For Bids 1 07/23/21 For Owner Review Date Mark Description THIS SHEET PLOTS FULL SIZE AT 24x36 (INCHES) 2019.6318 Project No. 07/30/2021 Date PCES Drawr JDB/MEL/PT Checked As Noted Scale Cover Sheet and **General Notes** Sheet Title

Sheet No.

G001







![](_page_96_Picture_3.jpeg)

![](_page_97_Figure_0.jpeg)

![](_page_97_Picture_3.jpeg)

![](_page_98_Figure_0.jpeg)

![](_page_98_Picture_3.jpeg)

# **KEY NOTES:**

- 1. Not used
- 2. Not used
- 3. Not used
- Floor drain cleaning/grate replacement. See Summary of Work Section 01 11 00.

5. Not used

- 6. Partial-depth horizontal concrete repair <u>overlay only</u>. See Details 1/S501 and 3/S501.
- Partial-depth horizontal concrete repair. See Detail 1/S501.
- Partial-depth underside concrete repair. See Detail 2/S501.

- 13. Not used
- 14. Not used
- 5/S503 and 6/S503.
- 17. Replace sealant at cove. See Detail 7/S503.
- **18.** Install traffic-bearing membrane. See Sheet S503.
- 1/S503.
- 21. Localized repointing of brick masonry. See Details 1/S502, 2/S502, and 3/S502.
- 22. Localized replacement of concrete masonry units. See Detail 6/S502.
- Slab-on-ground replacement at southwest pedestrian entrance. See Detail 4/S502.

# SHEET NOTES:

SHOWN. ADDITIONAL REPAIR LOCATIONS MAY BE IDENTIFIED IN THE FIELD BY THE ENGINEER.

![](_page_99_Figure_0.jpeg)

2

1

SCALE: 1/16" = 1'-0"

3

4

5

![](_page_99_Picture_5.jpeg)

FULL DEPTH REPAIR MAY BE REQUIRED WHERE PARTIAL DEPTH TOPSIDE AND UNDERSIDE REPAIR AREAS ALIGN. ENGINEER TO DETERMINE REPAIR TYPE FOLLOWING INSPECTION AFTER REMOVAL OF UNSOUND CONCRETE BY CONTRACTOR, TYP.

6/S502.

![](_page_100_Figure_0.jpeg)

![](_page_100_Figure_2.jpeg)

![](_page_101_Picture_0.jpeg)

1

![](_page_101_Figure_2.jpeg)

![](_page_101_Picture_3.jpeg)

4

3

SOUND CONCRETE SUBSTRATE BELOW NEW COVER PLATE. IF UNSOUND, PERFORM TOPSIDE CONCRETE REPAIR PER DETAIL 1/S501.

REMOVE AND REPLACE DETERIORATED CMU AND MORTAR. SEE DETAILS 1/S502, 2/S502, AND 3/S502.

### MASONRY UNITS ALONG JOINT AS WELL AS AT ENDS

![](_page_101_Figure_10.jpeg)

![](_page_101_Figure_12.jpeg)

![](_page_101_Figure_14.jpeg)

![](_page_101_Figure_15.jpeg)

PERFORM PARTIAL DEPTH VERTICAL CONCRETE REPAIR PER DETAIL 5/S501. INSTALL CONCRETE REPAIR WITH EXPOSED AGGREGATE FINISH TO MATCH EXISTING AESTHETIC.

PERFOMED CURB EDGE CONCRETE

REPAIR PER DETAIL 4/S501

PERFORM LOCALIZED REPOINTING PER DETAILS 1/S502, 2/S502, AND 3/S502

REMOVE AND REPLACE SLAB-ON-GROUND TO SLOPE SLAB TOWARDS DRAIN. SEE DETAIL 4/S502

![](_page_101_Figure_22.jpeg)

# Repointing Mortar Removal Isometric SCALE: 1/4" = 1'-0"

5 6 7 8	
b     r     8	r         Engineers Architects Attentats scientists           r         Wiss, Janney, Elstner Associates, Inc. Sorgon Telegraph Road, Suite 3580 Bingham Farms, Michigan 48025 (28.593.0900 tel   248.593.8532 fax) www.wje.com           Hanta   Austin   Boston   Chicago   Cleveland   Dallas   Denver   Detroit Divestown   Honolulu   Houston   Indianapolis   London   Los Angeles Miwaukee   Minneapolis   New Haven   Northbrock (HQ)   New York Philadelphia   Pittsburgh   Portland   Princeton   Raleigh   San Antonio San Diego   San Francisco   Seattle   South Florida   Washington, DC           r         Consultants
A Slab on Ground Full Depth Repair and Subsurface Preparation Detail	
FIRST LIFT OF MORTAR SHALL BE NO GREATER THAN 1/4 DEP. COMPRESS MORTAR BY TOULING AFTER IT BECOMES THUMB-PRINT' HARD. STEP 1 STEP 1 STEP 1 STEP 1 STEP 1 STEP 1 STEP 2 STEP 3 STEP 3 STE	Project City of Birmingham - 2021 Parking Structure Repairs 333 N Old Woodward Ave Birmingham, MI 48009
CENTER OF JOINT. ADJACENT MASONRY UNITS ALONG JOINT AS WELL AS AT ENDS OF JOINT SHALL NOT BE DAMAGED DURING CUTTING OF JOINT. SUSE EXTREME CARE TO AVOID DAMAGE TO ADJACENT UNITS. <u>STEP 1</u> MORTAR REMOVAL NOTES: MORTAR REMOVAL NOTES: MORTAR REMOVAL NOTES: MORTAR REMOVAL NOTES: MORTAR REMOVAL NOTES:	c Client City of Birmingham 151 Martin Street Birmingham, MI 48012
<ol> <li>CRESCENT-SHAPED REMNANTS OF MORTAR LEFT BY MASONRY SAW ARE <u>NOT</u> PERMITTED. REMOVE WITH ROUTER OR CHISEL TO ACHIEVE UNIFORM 3/4" MINIMUM REMOVAL DEPTH.</li> <li>DO NOT DAMAGE FACE OF MASONRY UNITS. ALL MASONRY UNITS DAMAGED DURING MORTAR REMOVAL AND REPOINTING ACTIVITIES SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.</li> </ol>	
Repointing Mortar Removal Procedure	H
2 Redenter + + + + + + + + + + + + + + + + + + +	B       2       07/30/21       For Bids         1       07/23/21       For Owner Review         Mark       Date       Description         0       12       1°         THIS SHEET PLOTS FULL SIZE       2"         AT 24x36 (INCHES)       Project No.       2019.6318         Date       07/30/2021         Drawn       PCES         Checked       JDB/MEL/PT         Scale       As Noted         A       Repair Details         Sheet Title
SCALE: 1/4" = 1'-0"	Sheet No. \$502
5 6 7 8	Sheet No.

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1

2

![](_page_102_Figure_2.jpeg)

![](_page_103_Picture_0.jpeg)

#### INVITATION TO BID For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS (PARK ST. / PEABODY ST. / CHESTER ST.)

Sealed proposals endorsed **"2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS"**, will be received at the Office of the City Clerk, 151 Martin Street, PO Box 3001, Birmingham, Michigan, 48012; until Friday, August 20, 2021 at 2:00 p.m. at which time bids will be publicly opened and read.

**Bidders will be required to attend a mandatory pre-bid meeting on Thursday, August 12, 2021 at 9:30 a.m**. at the City of Birmingham Municipal Building, 151 Martin Street, Birmingham, MI 48009 – City Commission Room 2<sup>nd</sup> floor. Bidders must register for the prebid meeting by Wednesday, August 11, 2021 at 2:30 p.m. by contacting Commander Scott Grewe at (248) 530-1867 or by email at sgrewe@bhamgov.org

The City of Birmingham, Michigan is accepting sealed bid proposals from qualified professional firms to furnish all labor, equipment, material and supervision necessary to complete repairs as detailed in (3) municipal parking structures: Park St., Peabody St. and Chester St. This work must be performed as specified accordance with the specifications contained in the Invitation to Bid (ITB) prepared on behalf of the City of Birmingham, Michigan by Wiss, Janney, Eltner Associates, Inc. (WJE) of Southfield, Michigan.

The ITB, including the Specifications, may be obtained online from the Michigan Intergovernmental Trade Network at <u>http://www.mitn.info</u> or at the City of Birmingham, 151 Martin St., Birmingham, Michigan, ATTENTION: Commander Scott Grewe or by email at sgrewe@bhamgov.org

The acceptance of any proposal made pursuant to this invitation shall not be binding upon the City until an agreement has been executed.

Submitted to MITN:	Friday, August 6, 2021
Pre-bid RSVP deadline:	Wednesday, August 11, 2021 at 2:30 p.m
Mandatory Pre-Bid Meeting:	Thursday, August 12, 2021 at 9:30 a.m. 151 Martin Street,
	Birmingham, MI 48009 – City Commission Room 2 <sup>nd</sup> floor.
Deadline for Submissions:	August 20, 2021 at 2:00 p.m.
Contact Person:	Commander Scott Grewe
	151 Martin Street
	Birmingham, MI 48009
	Phone: (248) 530-1867
	Email: sgrewe@bhamgov.org

![](_page_104_Picture_0.jpeg)

#### INVITATION TO BID For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

#### Contents

INTRODUCTION
INVITATION TO BID (ITB)
MANDATORY PRE-BID MEETING
INVITATION TO SUBMIT A PROPOSAL
INSTRUCTIONS TO BIDDERS
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#### INTRODUCTION

For purposes of this invitation to bid the City of Birmingham will hereby be referred to as "City" and the private firm will hereby be referred to as "Contractor."

The City of Birmingham, Michigan is accepting sealed bid proposals from qualified professional firms to **2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS**. This work must be performed as specified accordance with the specifications outlined by the Scope of Work contained in this Invitation to Bid (ITB).

During the evaluation process, the City reserves the right where it may serve the City's best interest to request additional information or clarification from proposers, or to allow corrections of errors or omissions. At the discretion of the City, firms submitting proposals may be requested to make oral presentations as part of the evaluation.

It is anticipated the selection of a firm will be completed by September 13, 2021. An Agreement for services will be required with the selected Contractor. A copy of the Agreement is contained herein for reference. Contract services will commence upon execution of the service agreement by the City.

#### INVITATION TO BID (ITB)

The purpose of this ITB is to request sealed bid proposals from qualified parties presenting their qualifications, capabilities and costs to provide **2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS** in (3) parking structure: Park St., Peabody St. and Chester St.

#### MANDATORY PRE-BID MEETING

Prior to submitting a bid, interested firms are required to attend a pre-bid meeting to conduct an on-site visit of the location and access to the project location to make inquiries about the ITB. Thursday, August 12, 2021 at 9:30 a.m. 151 Martin Street, Birmingham, MI 48009 – City Commission Room 2<sup>nd</sup> floor.

#### **INVITATION TO SUBMIT A PROPOSAL**

Proposals shall be submitted no later than Friday, August 20, 2021 at 2:00 p.m. to:

City of Birmingham Attn: City Clerk 151 Martin Street Birmingham, Michigan 48009

One (1) original and one (1) copy of the bid proposal shall be submitted. The bid proposal should be firmly sealed in an envelope, which shall be clearly marked on the outside, **"2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS**. Any bid proposal received after the due date cannot be accepted and will be rejected and returned, unopened, to the proposer. Proposer may submit more than one proposal provided each proposal meets the functional requirements.

#### **INSTRUCTIONS TO BIDDERS**

- 1. Any and all forms requesting information from the bidder must be completed on the attached forms contained herein (see Contractor's Responsibilities). If more than one bid is submitted, a separate bid proposal form must be used for each.
- Any request for clarification of this ITB shall be made <u>in writing</u> and delivered to: Commander Scott Grewe, (248-530-1867, sgrewe@bhamgov.org, 151 Martin Street, Birmingham, MI 48009. Such request for clarification shall be delivered, in writing, <u>no later than 5 days prior to the deadline for submissions</u>.
- 3. All bid proposals must be submitted following the ITB format as stated in this document and shall be subject to all requirements of this document including the instruction to respondents and general information sections. All bid proposals must be regular in every respect and no interlineations, excisions, or special conditions shall be made or included in the ITB format by the respondent.
- 4. The contract will be awarded by the City of Birmingham to the most responsive and responsible bidder with the lowest price and the contract will require the completion of the work pursuant to these documents.
- 5. Each respondent shall include in his or her proposal, in the format requested, the cost of performing the work. Municipalities are exempt from Michigan State Sales and Federal Excise taxes. Do not include such taxes in the proposal figure. The City will furnish the successful company with tax exemption information when requested.
- 6. Each respondent shall include in their proposal the following information: Firm name, address, city, state, zip code, telephone number, and fax number. The company shall also provide the name, address, telephone number and e-mail address of an individual in their organization to whom notices and inquiries by the City should be directed as part of their proposal.

#### EVALUATION PROCEDURE AND CRITERIA

The evaluation panel will consist of City staff and any other person(s) designated by the City who will evaluate the proposals based on, but not limited to, the following criteria:

- 1. Ability to provide services as outlined.
- 2. Related experience with similar projects, Contractor background, and personnel qualifications.
- 3. Quality of materials proposed.
- 4. Overall Costs.
- 5. References.

#### **TERMS AND CONDITIONS**

- 1. The City reserves the right to reject any or all proposals received, waive informalities, or accept any proposal, in whole or in part, it deems best. The City reserves the right to award the contract to the next most qualified Contractor if the successful Contractor does not execute a contract within ten (10) days after the award of the proposal.
- 2. The City reserves the right to request clarification of information submitted and to request additional information of one or more Contractors.
- 3. The City reserves the right to terminate the contract at its discretion should it be determined that the services provided do not meet the specifications contained herein. The City may terminate this Agreement at any point in the process upon notice to Contractor sufficient to indicate the City's desire to do so. In the case of such a stoppage, the City agrees to pay Contractor for services rendered to the time of notice, subject to the contract maximum amount.
- 4. Any proposal may be withdrawn up until the date and time set above for the opening of the proposals. Any proposals not so withdrawn shall constitute an irrevocable offer, for a period of ninety (90) days, to provide the services set forth in the proposal.
- 5. The cost of preparing and submitting a proposal is the responsibility of the Contractor and shall not be chargeable in any manner to the City.
- 6. The successful bidder will be required to furnish a Performance Bond in an amount not less than 100% of the contract price in favor of the City of Birmingham, conditioned upon the faithful performance of the contract, and completion on or before the date specified.
- 7. Payment will be made within thirty (30) days after invoice. Acceptance by the City is defined as authorization by the designated City representative to this project that all the criteria requested under the Scope of Work contained herein have been provided. Invoices are to be rendered each month following the date of execution of an Agreement with the City.
- 8. The Contractor will not exceed the timelines established for the completion of this project.
9. The successful bidder shall enter into and will execute the contract as set forth and attached as Attachment A.

# CONTRACTOR'S RESPONSIBILITIES

Each bidder shall provide the following as part of their proposal:

- 1. Complete and sign all forms requested for completion within this ITB.
  - a. Bidder's Agreement (Attachment B)
  - b. Cost Proposal (Attachment C)
  - c. Iran Sanctions Act Vendor Certification Form (Attachment D)
  - d. Agreement (only if selected by the City).
- 2. Provide a description of completed projects that demonstrate the firm's ability to complete projects of similar scope, size, and purpose, and in a timely manner, and within budget.
- 3. Provide a written plan detailing the anticipated timeline for completion of the tasks set forth in the Scope of Work (p. 9).
- 4. The Contractor will be responsible for any changes necessary for the plans to be approved by the City of Birmingham.
- 5. Provide a description of the firm, including resumes and professional qualifications of the principals involved in administering the project.
- 6. Provide a list of sub-contractors and their qualifications, if applicable.
- 7. Provide three (3) client references from past projects, include current phone numbers. At least two (2) of the client references should be for projects utilizing the same materials included in the Contractor's proposal.
- 8. The Contractor will be responsible for the disposal of all material and any damages which occur as a result of any of employees or subcontractors of the Contractor during this project.
- 9. The contractor will be responsible for getting the building and parking permits at no cost to the contractor.
- 10. The successful bidder shall provide a Performance Bond in an amount not less than 100% of the contract price in favor of the City of Birmingham, conditioned upon the faithful performance of the contract, and completion on or before the date specified.
- 11. Provide a project timeline addressing each section within the Scope of Work and a description of the overall project approach. Include a statement that the Contractor will be available according to the proposed timeline.

# CITY RESPONSIBILITY

- 1. The City will provide a designated representative to work with the Contractor to coordinate both the City's and Contractor's efforts and to inspect and verify any work performed by the Contractor.
- 2. The City will provide access to the City of Birmingham during regular business hours or during nights and weekends as approved by the City's designated representative.

# SETTLEMENT OF DISPUTES

The successful bidder agrees to certain dispute resolution avenues/limitations. Please refer to paragraph 17 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# INSURANCE

The successful bidder is required to procure and maintain certain types of insurances. Please refer to paragraph 12 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# **CONTINUATION OF COVERAGE**

The Contractor also agrees to provide all insurance coverages as specified. Upon failure of the Contractor to obtain or maintain such insurance coverage for the term of the agreement, the City may, at its option, purchase such coverage and subtract the cost of obtaining such coverage from the contract amount. In obtaining such coverage, Birmingham shall have no obligation to procure the most cost effective coverage but may contract with any insurer for such coverage.

# **EXECUTION OF CONTRACT**

The bidder whose proposal is accepted shall be required to execute the contract and to furnish all insurance coverages as specified within ten (10) days after receiving notice of such acceptance. Any contract awarded pursuant to any bid shall not be binding upon the City until a written contract has been executed by both parties. Failure or refusal to execute the contract shall be considered an abandoned all rights and interest in the award and the contract may be awarded to another. The successful bidder agrees to enter into and will execute the contract as set forth and attached as Attachment A.

# INDEMNIFICATION

The successful bidder agrees to indemnify the City and various associated persons. Please refer to paragraph 13 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# **CONFLICT OF INTEREST**

The successful bidder is subject to certain conflict of interest requirements/restrictions. Please refer to paragraph 14 of the Agreement attached as Attachment A for the details and what is required of the successful bidder.

# **EXAMINATION OF PROPOSAL MATERIALS**

The submission of a proposal shall be deemed a representation and warranty by the Contractor that it has investigated all aspects of the ITB, that it is aware of the applicable facts pertaining to the ITB process and its procedures and requirements, and that it has read and understands the ITB. Statistical information which may be contained in the ITB or any addendum thereto is for informational purposes only.

# PROJECT TIMELINE

Submitted to MITN:	Friday, August 6, 2021
Pre-bid RSVP deadline:	Wednesday, August 11, 2021 at 230 p.m.
Mandatory Pre-Bid Meeting:	Thursday, August 12, 2021 at 9:30 a.m. 151 Martin Street, Birmingham, MI 48009 – City Commission Room 2 <sup>nd</sup> floor.
Deadline for Submissions:	Friday, August 20, 2021 at 2:00 p.m. – Bids publicly opened 151 Martin Street, Birmingham, MI 48009 – City Commission Room $2^{nd}$ floor.
Contract Signature Deadline:	Thursday, September 2, 2021 at 10:00 a.m.
Award of Bid:	Monday, September 13, 2021 7:30 p.m. Birmingham City Commission meeting
Construction Schedule:	Work to begin September, 2021

The Contractor will not exceed the timelines established for the completion of this project.

# SCOPE OF WORK

The Contractor shall perform the following services in accordance with the requirements as defined and noted herein:

- The primary goal for the project is to perform localized structural and waterproofing repairs at the (3) identified structures. Work includes but is not limited to the following activities: cleaning and inspecting all floor drains and replacing damaged drain components; replacing expansion joints and control joint sealant; structural steel connection repairs; investigation and repair of two columns at the Peabody St. parking structure in conjunction with WJE. <u>See Specification Section 01 11 00 Summary of Work for more information.</u>
- 2. The Contractor shall be responsible for the disposal of all materials in a safe and legal manner.
- 3. The Contractor shall operate in a safe manner and will observe all MIOSHA guidelines.
- 4. The Contractor shall provide any and all manuals and/or warranty information related to this project to the City upon completion of the project, as specified in this ITB.
- 5. This section and referenced documents shall constitute the Scope of Work for this project and as such all requirements must be met.

# ATTACHMENT A - AGREEMENT For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

This AGREEMENT, made this \_\_\_\_\_day of \_\_\_\_\_, 2021, by and between CITY OF BIRMINGHAM, having its principal municipal office at 151 Martin Street, Birmingham, MI (hereinafter sometimes called "City"), and \_\_\_\_\_\_, Inc., having its principal office at \_\_\_\_\_\_ (hereinafter called "Contractor"), provides as follows:

#### WITNESSETH:

**WHEREAS**, the City of Birmingham, through its Maintenance Department, is desirous of having work completed to remove and replace an existing flat roof system at the Baldwin Public Library in the City of Birmingham.

WHEREAS, the City has heretofore advertised for bids for the procurement and performance of services required to perform 2021 MUNICIPAL PARKING STRUCTURE **REPAIR PROJECTS** as detailed in the specifications for N. Old Woodward Ave. / Park St. / Peabody St. / Chester St, and in connection therewith has prepared a request for sealed Invitation to Bid proposals ("ITB"), which includes certain instructions to bidders, specifications, terms and conditions.

WHEREAS, the Contractor has professional qualifications that meet the project requirements and has made a bid in accordance with such request for cost proposals to perform 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS.

**NOW, THEREFORE,** for and in consideration of the respective agreements and undertakings herein contained, the parties agree as follows:

1. It is mutually agreed by and between the parties that the documents consisting of the Invitation to Bid to perform **2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS** and the Contractor's cost proposal dated \_\_\_\_\_\_, 2021 shall be incorporated herein by reference and shall become a part of this Agreement, and shall be binding upon both parties hereto. If any of the documents are in conflict with one another, this Agreement shall take precedence, then the ITB.

2. The City shall pay the Contractor for the performance of this Agreement in an amount not to exceed \_\_\_\_\_\_, as set forth in the Contractor's \_\_\_\_\_\_, 2021 cost proposal.

3. This Agreement shall commence upon execution by both parties, unless the City exercises its option to terminate the Agreement in accordance with the Invitation to Bid.

4. The Contractor shall employ personnel of good moral character and fitness in performing all services under this Agreement.

5. The Contractor and the City agree that the Contractor is acting as an independent Contractor with respect to the Contractor 's role in providing services to the City pursuant to this Agreement, and as such, shall be liable for its own actions and neither the Contractor nor its employees shall be construed as employees of the City. Nothing contained in this Agreement shall be construed to imply a joint venture or partnership and neither party, by virtue of this Agreement, shall have any right, power or authority to act or create any obligation, express or implied, on behalf of the other party, except as specifically outlined herein. Neither the City nor the Contractor shall be considered or construed to be the agent of the other, nor shall either have the right to bind the other in any manner whatsoever, except as specifically provided in this Agreement, and this Agreement shall not be construed as a contract of agency. The Contractor shall not be entitled or eligible to participate in any benefits or privileges given or extended by the City, or be deemed an employee of the City for purposes of federal or state withholding taxes, FICA taxes, unemployment, workers' compensation or any other employer contributions on behalf of the City.

6. The Contractor acknowledges that in performing services pursuant to this Agreement, certain confidential and/or proprietary information (including, but not limited to, internal organization, methodology, personnel and financial information, etc.) may become involved. The Contractor recognizes that unauthorized exposure of such confidential or proprietary information could irreparably damage the City. Therefore, the Contractor agrees to use reasonable care to safeguard the confidential and proprietary information and to prevent the unauthorized use or disclosure thereof. The Contractor shall inform its employees of the confidential or proprietary nature of such information and shall limit access thereto to employees rendering services pursuant to this Agreement. The Contractor further agrees to use such confidential or proprietary information only for the purpose of performing services pursuant to this Agreement.

7. This Agreement shall be governed by and performed, interpreted and enforced in accordance with the laws of the State of Michigan. The Contractor agrees to perform all services provided for in this Agreement in accordance with and in full compliance with all local, state and federal laws and regulations.

8. If any provision of this Agreement is declared invalid, illegal or unenforceable, such provision shall be severed from this Agreement and all other provisions shall remain in full force and effect.

9. This Agreement shall be binding upon the successors and assigns of the parties hereto, but no such assignment shall be made by the Contractor without the prior written consent of the City. Any attempt at assignment without prior written consent shall be void and of no effect.

10. The Contractor agrees that neither it nor its subcontractors will discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment because of race, color, religion, national origin, age, sex, height, weight or marital status. The Contractor shall inform the City of all claims or suits asserted against it by the Contractor's employees who work pursuant to this Agreement. The Contractor shall provide the City with periodic status reports concerning all such claims or suits, at intervals established by the City.

11. The Contractor shall not commence work under this Agreement until it has, at its sole expense, obtained the insurance required under this paragraph. All coverages shall be with insurance companies licensed and admitted to do business in the State of Michigan. All coverages shall be with carriers acceptable to the City of Birmingham.

12. The Contractor shall maintain during the life of this Agreement the applicable types of insurance coverage and minimum limits as set forth below:

A. Workers' Compensation Insurance:

<u>For Non-Sole Proprietorships</u>: Contractor shall procure and maintain during the life of this Agreement, Workers' Compensation Insurance, including Employers Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

<u>For Sole Proprietorships</u>: Contractor shall complete and furnish to the City prior to the commencement of work under this Agreement a signed and notarized Sole Proprietor Form, for sole proprietors with no employees or with employees, as the case may be.

- B. <u>Commercial General Liability Insurance</u>: Contractor shall procure and maintain during the life of this Agreement, Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$1,000,000 per occurrence combined single limit, Personal Injury, Bodily Injury and Property Damage. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent; (E) Deletion of all Explosion, Collapse and Underground (XCU) Exclusions, if applicable.
- C. <u>Motor Vehicle Liability</u>: Contractor shall procure and maintain during the life of this Agreement Motor Vehicle Liability Insurance, including all applicable no-fault coverages, with limits of liability of not less than \$1,000,000 per occurrence combined single limit Bodily Injury and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.
- D. <u>Additional Insured</u>: Commercial General Liability and Motor Vehicle Liability Insurance, as described above, shall include an endorsement stating the following shall be *Additional Insureds*: The City of Birmingham, including all elected and appointed officials, all employee and volunteers, all boards, commissions and/or authorities and board members, including employees and volunteers thereof. This coverage shall be primary to any other coverage that may be available to the additional insured, whether any other available coverage by primary, contributing or excess.
- E. <u>Professional Liability</u>: Professional liability insurance with limits of not less than \$1,000,000 per claim if Contractor will provide service that are customarily subject to this type of coverage.
- F. <u>Pollution Liability Insurance</u>: Contractor shall procure and maintain during the life of this Agreement Pollution Liability Insurance, with limits of liability of not less than \$1,000,000, per occurrence preferred, but claims made accepted.
- G. <u>Owners Contractors Protective Liability</u>: The Contractor shall procure and maintain during the life of this contract, an Owners Contractors Protective Liability Policy with limits of liability not less than \$3,000,000 per occurrence, combined single limit, Personal Injury, Bodily Injury and Property Damage. The City of Birmingham shall be "Name Insured" on said coverage.

- H. <u>Cancellation Notice</u>: Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.
- I. <u>Proof of Insurance Coverage</u>: Contractor shall provide the City of Birmingham at the time the Agreement is returned for execution, Certificates of Insurance and/or policies, acceptable to the City of Birmingham, as listed below.
  - 1) Two (2) copies of Certificate of Insurance for Workers' Compensation Insurance;
  - 2) Two (2) copies of Certificate of Insurance for Commercial General Liability Insurance;
  - 3) Two (2) copies of Certificate of Insurance for Vehicle Liability Insurance;
  - 4) Two (2) copies of Certificate of Insurance for Professional Liability Insurance;
  - 5) If so requested, Certified Copies of all policies mentioned above will be furnished.
- J. <u>Coverage Expiration</u>: If any of the above coverages expire during the term of this Agreement, Contractor shall deliver renewal certificates and/or policies to the City of Birmingham at least (10) days prior to the expiration date.
- K. <u>Maintaining Insurance</u>: Upon failure of the Contractor to obtain or maintain such insurance coverage for the term of the Agreement, the City of Birmingham may, at its option, purchase such coverage and subtract the cost of obtaining such coverage from the Agreement amount. In obtaining such coverage, the City of Birmingham shall have no obligation to procure the most cost-effective coverage but may contract with any insurer for such coverage.

13. To the fullest extent permitted by law, the Contractor and any entity or person for whom the Contractor is legally liable, agrees to be responsible for any liability, defend, pay on behalf of, indemnify, and hold harmless the City of Birmingham, its elected and appointed officials, employees and volunteers and others working on behalf of the City of Birmingham against any and all claims, demands, suits, or loss, including all costs and reasonable attorney fees connected therewith, and for any damages which may be asserted, claimed or recovered against or from and the City of Birmingham, its elected and appointed officials, employees, volunteers or others working on behalf of the City of Birmingham, by reason of personal injury, including bodily injury and death and/or property damage, including loss of use thereof, which arises out of or is in any way connected or associated with this Agreement. Such responsibility shall not be construed as liability for damage caused by or resulting from the sole act or omission of its elected or appointed officials, employees, volunteers or others working on behalf of the City of Birmingham.

14. If, after the effective date of this Agreement, any official of the City, or spouse, child, parent or in-law of such official or employee shall become directly or indirectly interested in this Agreement or the affairs of the Contractor, the City shall have the right to terminate this Agreement without further liability to the Contractor if the disqualification has not been removed within thirty (30) days after the City has given the Contractor notice of the

disqualifying interest. Ownership of less than one percent (1%) of the stock or other equity interest in a corporation or partnership shall not be a disqualifying interest. Employment shall be a disqualifying interest.

15. If Contractor fails to perform its obligations hereunder, the City may take any and all remedial actions provided by the general specifications or otherwise permitted by law.

16. All notices required to be sent pursuant to this Agreement shall be mailed to the following addresses:

City of Birmingham Attn: Commander Scott Grewe 151 Martin Street Birmingham, MI 48009 (248) 530-1867

CONTRACTOR (Insert Contractor Information)

17. Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled either by commencement of a suit in Oakland County Circuit Court, the 48th District Court or by arbitration. If both parties elect to have the dispute resolved by arbitration, it shall be settled pursuant to Chapter 50 of the Revised Judicature Act for the State of Michigan and administered by the American Arbitration Association with one arbitrator being used, or three arbitrators in the event any party's claim exceeds \$1,000,000. Each party shall bear its own costs and expenses and an equal share of the arbitrator's and administrative fees of arbitration. Such arbitration shall qualify as statutory arbitration pursuant to MCL§600.5001 et. seq., and the Oakland County Circuit Court or any court having jurisdiction shall render judgment upon the award of the arbitrator made pursuant to this Agreement. The laws of the State of Michigan shall govern this Agreement, and the arbitration shall take place in Oakland County, Michigan. In the event that the parties elect not to have the matter in dispute arbitrated, any dispute between the parties may be resolved by the filing of a suit in the Oakland County Circuit Court or the 48th District Court.

18. <u>FAIR PROCUREMENT OPPORTUNITY</u>: Procurement for the City of Birmingham will be handled in a manner providing fair opportunity for all businesses. This will be accomplished without abrogation or sacrifice of quality and as determined to be in the best interest of the City of Birmingham.

IN WITNESS WHEREOF, the said parties have caused this Agreement to be executed as of the date and year above written.

WITNESSES / NOTARY PUBLIC	CONTRACTOR					
Ву:	Ву:					
Notary Public signature above	CONTRACTOR					
Notary Public stamp below:	Its: INSERT TITLE HERE					
CITY OF BIRMINGHAM	Bv:					
	Pierre Boutros, Mayor					
	By:					
Approved:	Alexandria D. Bingham, City Clerk					
Thomas M. Markus, City Manager (Approved as to substance)	Mark H. Clemence, Chief of Police (Approved as to substance)					
Mark Gerber, Director of Finance (Approved as to financial obligation)	Mary M. Kucharek, City Attorney (Approved as to form)					

# ATTACHMENT B - BIDDER'S AGREEMENT For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

In submitting this proposal, as herein described, the Contractor agrees that:

1. They have carefully examined the specifications, terms and Agreement of the Invitation to Bid and all other provisions of this document and understand the meaning, intent, and requirement of it.

2. They will enter into a written contract and furnish the item or items in the time specified in conformance with the specifications and conditions contained therein for the price quoted by the proponent on this proposal.

PREPARED BY (Print Name)	DATE	
TITLE	DATE	
AUTHORIZED SIGNATURE	E-MAIL ADDRESS	
COMPANY		
ADDRESS	PHONE	
NAME OF PARENT COMPANY	PHONE	
ADDRESS		

# ATTACHMENT C - COST PROPOSAL For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

In order for the bid to be considered valid, Section 00 41 44 - Bid Form must be completed in its entirety.

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

Authorized signature\_\_\_\_\_ Date\_\_\_\_\_

# ATTACHMENT D - IRAN SANCTIONS ACT VENDOR CERTIFICATION FORM For 2021 MUNICIPAL PARKING STRUCTURE REPAIR PROJECTS

Pursuant to Michigan Law and the Iran Economic Sanction Act, 2012 PA 517 ("Act"), prior to the City accepting any bid or proposal, or entering into any contract for goods or services with any prospective Vendor, the Vendor must certify that it is not an "Iran Linked Business", as defined by the Act.

By completing this form, the Vendor certifies that it is not an "Iran Linked Business", as defined by the Act and is in full compliance with all provisions of the Act and is legally eligible to submit a bid for consideration by the City.

PREPARED BY (Print Name)	DATE	
TITLE	DATE	
AUTHORIZED SIGNATURE	E-MAIL ADDRESS	
COMPANY		
ADDRESS	PHONE	
NAME OF PARENT COMPANY	PHONE	
ADDRESS		
TAXPAYER I.D.#		

City of	Birmingham N	IEMORANDUM Planning Division
DATE:	July 7 <sup>th</sup> , 2021	
TO:	Planning Board	
FROM:	Nicholas Dupuis, City Planner	
SUBJECT:	135 Pierce – Planthropie – Design Revie	ew.
Zoning:	B4 (Business-Residential) & D4 (Downtown C	)verlay)

**Existing Use:** 2-Story Commercial Building

#### Introduction

The subject site is located on the east side of Pierce St. south of Maple Rd. The applicant has submitted a Design Review application for the addition of a new outdoor dining platform in the Pierce St. right-of-way for an existing food and drink establishment, Planthropie.

#### Proposal

The applicant is proposing to install a new outdoor dining platform across one parking space adjacent to the subject site. The dining platform is proposed to measure 17 ft. x 6.5 ft. (110 sq. ft.) with four tables, twelve chairs, and two umbrellas. The platform is proposed to have a 36 in. metal railing along the perimeter. Please see the following table for details on the proposed materials:

Material	Location	Color
Trex Composite Decking	Clam Shell	
Aluminum Railing	Platform and sidewalk	White
Melamine	Table top	White
Aluminum	Table base	Black
Polypropylene	Chairs	White

Article 4, Section 4.44 (A)(7)(e) permits an elevated, ADA compliant, enclosed platform on the street in front of an eating establishment to create an outdoor dining area from April 1 through November 15 only if the Engineering Department determines there is sufficient space available for this purpose given parking and traffic conditions. In addition, all outdoor dining areas are expected to meet the following requirements:

- 1. Outdoor dining areas shall provide and service refuse containers within the outdoor dining area and maintain the area in good order;
- 2. All outdoor activity must cease at the close of business;

- 3. All tables and chairs provided in the outdoor dining area shall be constructed primarily of metal, wood, or material of comparable quality; and
- 4. Table umbrellas shall be considered under Site Plan Review and shall not impede sight lines into a retail establishment, pedestrian flow in the outdoor dining area, or pedestrian or vehicular traffic flow outside the outdoor dining area.

At this time, the applicant has met the requirements with the exception of the proposed polypropylene chairs. The Planning Board should discuss whether or not the proposed polypropylene chairs are a material of comparable quality.

As for the review of parking and traffic conditions, the applicant will be required to go before the Advisory Parking Committee (APC). Due to scheduling restraints, the applicant was unable to appear before the APC before the Planning Board review. Thus, **the applicant must go before the APC for a review of the parking and traffic conditions in the area of the proposed dining platform.** 

Finally, Section 4.44 (A) states that outdoor dining is permitted immediately adjacent to the principal use, and goes on to state that a dining platform may be erected on the street *in front of an eating establishment*. Due to the location of available parking spaces in which to place the proposed dining platform, the placement of the proposed outdoor dining platform exists just south of the eating establishment and principle use. Thus, **the Planning Board should discuss the location of the dining platform and its relation to the principle use, Planthropie.** 

#### Signage

There are no new signs proposed as a part of the Design Review application submitted.

# Lighting

There are no new light fixtures proposed as a part of the Design Review application submiutted.

#### **Planning and Zoning**

Because the existing building footprint it proposed to remain, there are no bulk, placement or height requirements that must be addressed as a part of this review.

#### **Design Standards**

Article 7, Section 7.09 states that the Design Review Board shall review all documents submitted pursuant to this section and shall determine the following:

- 1. All of the materials required by this section have been submitted for review.
- 2. All provisions of this Zoning Ordinance have been complied with.
- 3. The appearance, color, texture and materials being used will preserve property values in the immediate neighborhood and will not adversely affect any property values.

- 4. The appearance of the building exterior will not detract from the general harmony of and is compatible with other buildings already existing in the immediate neighborhood.
- 5. The appearance of the building exterior will not be garish or otherwise offensive to the sense of sight.
- 6. The appearance of the building exterior will tend to minimize or prevent discordant and unsightly properties in the City.
- 7. The total design, including but not limited to colors and materials of all walls, screens, towers, openings, windows, lighting and signs, as well as treatment to be utilized in concealing any exposed mechanical and electrical equipment, is compatible with the intent of the urban design plan or such future modifications of that plan as may be approved by the City Commission.

#### Recommendation

Accordingly, the Planning Division recommends that the Planning Board **APPROVE** the Design Review application for 135 Pierce – Planthropie – with the following conditions:

- 1. The Planning Board APPROVES the polypropylene dining chairs as a material of comparable quality; and
- 2. The applicant receives a favorable recommendation from the Advisory Parking Committee in regards to the parking and traffic conditions surrounding the subject site.

### Sample Motion Language

Motion to **APPROVE** the Design Review application for 135 Pierce – Planthropie – with the following conditions:

- 1. The Planning Board APPROVES the polypropylene dining chairs as a material of comparable quality; and
- 2. The applicant receives a favorable recommendation from the Advisory Parking Committee in regards to the parking and traffic conditions surrounding the subject site.

#### OR

Motion to **APPROVE** the Design Review application for 135 Pierce – Planthropie – with the following conditions:

- 1. The applicant must submit revised plans showing dining chairs constructed of wood or metal, or obtain a variance from the Board of Zoning Appeals; and
- 2. The applicant receives a favorable recommendation from the Advisory Parking Committee in regards to the parking and traffic conditions surrounding the subject site.

Motion to **POSTPONE** the Design Review application for 135 Pierce – Planthropie – pending receipt of the following:

1.	
2.	
3.	
•	

# OR

Motion to **DENY** the Design Review application for 135 Pierce – Planthropie – for the following reasons:

1.	
2.	
3.	

SLIDE CONTENT: PARKING SPOT TO BE USED



CN. WAY

N IN ALL SHALL

CI REACTION

(





# SLIDE CONTENT: TREX & RAILING PLAN

# Pre-assembled 6-ft x 2.25-in x 36-in Textured White Aluminum Deck



# SLIDE CONTENT: CODE COMPLIANCE



# SLIDE CONTENT: SEATING PLAN





# Design Review Application Planning Division

Form will not be processed until it is completely filled out

#### 1. Applicant

Name: \_\_\_\_\_\_Address: 135 Pierce Street, Birmingham, MI 48009\_\_\_\_\_

Phone Number: \_248-207-2038\_\_\_\_\_\_ Email address: \_\_hello@planthropie.com\_\_\_\_\_\_

#### 3. Project Contact Person

Name: \_\_Mark DiVitto\_\_\_\_\_ Address: \_135 Pierce Street, Birmingham, MI 48009\_\_\_\_

Phone Number: \_\_\_248-207-2038\_\_\_\_\_\_ Email address: \_\_\_hello@planthropie.com\_\_\_\_\_\_

#### 5. Required Attachments

- I. Two (2) paper copies and one (1) digital copy of all project plans including:
  - i. A detailed and scaled Site Plan depicting accurately and in detail the proposed construction, alteration or repair;
  - Colored elevation drawings for each building elevation;
  - iii. A Landscape Plan (if applicable);
  - iv. A Photometric Plan (if applicable);
- II. Specification sheets for all proposed materials, light fixtures and mechanical equipment;

#### 6. Project Information

Address/Location of the property: _135 Pierce Street,
Birmingham, MI 48009
Name of development: _Planthropie outdoor platform seating -
parking space
Sidwell #:
Current Use:Commercial
Proposed Use:
Area of Site in Acres:
Current zoning: B4

#### 2. Property Owner

Name: \_Pierce Birmingham Place LLC\_\_\_\_\_ Address: \_159 Pierce Street, Birmingham, MI 48009

Phone Number: \_\_\_\_323-662-3552\_\_\_\_\_ Email address: \_sciuba@simongroupholdings.com\_\_\_\_\_

#### 4. Project Designer/Developer

Name: \_\_JKS Construction \_\_\_\_\_Address: \_\_5238 Brett Ct, West Bloomfield, MI 48322\_\_\_\_

Phone Number: \_\_248-505-4066\_\_\_\_\_ Email address: \_jksconstruction20@gmail.com\_\_\_\_\_

- III. Samples of all proposed materials;
- Photographs of existing conditions on the site including all structures, parking areas, landscaping and adjacent structures;
- V. Current aerial photographs of the site and surrounding properties;
- VI. Warranty Deed, or Consent of Property Owner if applicant is not the owner;
- VII. Any other data requested by the Planning Board, Planning Department, or other City Departments.

	Yes	No
Is the property located in a floodplain?		
Is the property within a Historic District?		
$\rightarrow$ If so, which?Downtown		
Will the project require a variance?		
$\rightarrow$ If so, how many?	_	
Has the project been reviewed by another board?		
$\rightarrow$ If so, which?		

#### 7. Details of the Proposed Development (attach separate sheet if necessary)

Planthropie	is	requesting	approval	for	outdoor	platform	seating	in	the	parking	space	in	f
building.												_	
-													

See PowerPoint Diagrams attached\_\_\_\_\_

8.	Required	and	Proposed	Parking
----	----------	-----	----------	---------

#### 9. Landscaping

Location of landscape areas: \_\_\_\_\_

#### 10. Streetscape

Sidewalk width:	
Number of benches:	
Number of planters:	

\_\_\_\_\_

#### 11. Loading

Required number of loading spaces:
Proposed number of loading spaces:
Location of loading spaces on site:

#### **12. Exterior Waste Receptacles**

Required number of waste receptacles:O	ne
Proposed number of waste receptacles: Or	le
Location of waste receptacles:In seating area	

#### 13. Mechanical Equipment

#### **Utilities and Transformers:**

Number of ground mounted transformers:	_
Location of all utilities & easements:	_

#### Ground Mounted Mechanical Equipment:

Number of ground mounted units:
Location of all ground mounted units:

#### **Rooftop Mechanical Equipment:**

Number of rooftop units:
Type of rooftop units:
Location of all rooftop units:
Size of rooftop units (L•W•H):

# 14. Building & Site Lighting

Number of light fixtures on building:
Light level at each property line:
Type of light fixtures on building:
Location of light fixtures on building:

Typical size of parking spaces:
Typical width of maneuvering lanes:
Number of handicap spaces:
Screenwall material:
Height of screenwall:
Proposed landscape material
Number of existing street trees:
Number of proposed street trees:
Number of waste receptacles:
Typical size of loading spaces:
Screenwall material:
Height of screenwall:

Number of underground parking levels:

Size of waste receptacles:	
Screenwall material:	
Height of screenwall:	

Size of transformers (L•W•H):	
Screenwall material:	
Height of screenwall:	

Size of ground mounted units (L•W•H):	
Screenwall material:	
Height of screenwall:	

Location of screenwall:
Screenwall material:
Height of screenwall:
Distance from rooftop units to all screenwalls:

Number of light fixtures on site:
Type of light fixtures on site:
Height from grade:
Location of light fixtures on site:
<b>.</b>

The undersigned states the above information is true and correct, <u>and understands that it is the</u> <u>responsibility of the applicant to advise the Planning Division and / or Building Division of any</u> <u>additional changes made to an approved site plan</u>. The undersigned further states that they have reviewed the procedures and guidelines for Site Plan Review in Birmingham, and have complied with the same. The undersigned will be in attendance at the Planning Board meeting when this application will be discussed.

By providing your e-mail to the City, you agree to receive news notifications from the City. If you do not wish to receive these messages, you may unsubscribe at any time.

	DocuSigned by:	
Signature of Owner:	4D8BB5B2978C415	

6/11/2021 Date: \_\_\_\_\_

Print name: Sam Simon

~

Signature of Applicant.	·		Data: 6/11/21
Signature of Applicant:	$\square$		Date. Of 1 1 01
Print Name:Rawa (Rua) Oshana_	bb		
Signature of Architect:			Date:
Print Name:			
	Office Use Only		
Application #:	Date Received:	Fee:	
Date of Approval:	Date of Denial:	Accepted By:	

City	of Birr	ningham A Walkable Community =

**MEMORANDUM** 

**Planning Department** 

DATE: May 18, 2021

TO: Planning Board

FROM: Jana L. Ecker, Planning Director

SUBJECT: 115 Willits – Mare Mediterranean – Special Land Use Permit, Final Site Plan and Design Review

The applicant is proposing to reuse the former Cameron's Steakhouse restaurant for MARE Mediterranean, a new restaurant to operate under an existing Class C quota license. A SLUP is required for the service of alcoholic liquors, which is proposed using a Class C quota liquor license. MARE Mediterranean is not a bistro, and thus there are no specific maximum number of indoor, outdoor or bar seats. Article 7, Section 7.34 of the Zoning Ordinance requires a review and recommendation on the SLUP and Final Site Plan and Design Review by the Planning Board, and then final approval of the City Commission.

MARE Mediterranean is proposed to include 181 indoor seats (including 26 at the existing bar), using the existing furniture from the former Cameron's restaurant. Additional seating outdoors is proposed on a new platform extending into 2 on street parking spaces adjacent to the storefront. The outdoor dining area as proposed includes 38 seats.

The kitchen and bathroom areas of the former Cameron's restaurant will remain as well.

#### **1.0** Land Use and Zoning

- 1.1 <u>Existing Land Use</u> The existing land use is vacant commercial, with retail, residential Church and parking uses surrounding the proposed restaurant space.
- 1.2 <u>Existing Zoning</u> The property is currently zoned B-4, Business-Residential, and D-4 in the Downtown Overlay District. The existing use and surrounding uses appear to conform to the permitted uses of each Zoning District.
- 1.3 <u>Summary of Land Use and Zoning</u> The following chart summarizes existing land use and zoning adjacent to and/or in the vicinity of the subject site.

	North	South	East	West
Existing Land Use	Commercial / Retail / Church / Parking	Commercial / Retail	Commercial / Retail / Residential	Commercial / Retail / Residential
Existing Zoning District	R7, Multiple Family & PP, Public Property	B-4, Business- Residential	B-4, Business- Residential	B-4, Business- Residential
Downtown Overlay Zoning District	C, D-3 & P	D-4	D-4	D-4

#### 2.0 Screening and Landscaping

- 2.1 <u>Screening</u> No changes are proposed. However, it should be noted that the former restaurant shared the use of dumpsters with the Willits Building, and these were often moved outside of the building and left with no screening. In accordance with section 90-30 of the City Code, no more than 6 businesses may share trash facilities. Thus, the applicant will be required to provide details on the businesses sharing the trash facility to ensure compliance. Further, in accordance with the Zoning Ordinance, the dumpsters must remain inside the trash room at the rear of the Willits Building or the owners must apply for approval to store them outside and provide a screened enclosure.
- 2.2 <u>Landscaping</u> No changes are proposed.

#### 3.0 Parking, Loading, Access, and Circulation

- 3.1 <u>Parking</u> As the subject site is located within the Parking Assessment District, the applicant is not required to provide on-site parking.
- 3.2 <u>Loading</u> No changes are proposed.
- 3.3 <u>Vehicular Access & Circulation</u> Vehicular access to the building will not be altered.
- 3.4 <u>Pedestrian Access & Circulation</u> Pedestrians will have direct access to MARE Mediterranean through the existing entry door off the sidewalk.

3.5 <u>Streetscape</u> – No changes are proposed to the permanent streetscape. The required broom finish sidewalk and exposed aggregate sidewalk is existing. There is one pedestrian scale street light along the storefront, and this will remain and be surrounded by an outdoor dining platform. As mentioned above, a new elevated outdoor dining platform is proposed to house 9 four-top tables and 1 two-top table, as well as the required trash receptacle. Two sloped ramps will provide access to the platform from the City sidewalk. The platform is proposed to be enclosed by a 42" railing system. No specification sheets on the proposed railings have been provided at this time, and will be required prior to review by the City Commission.

#### 4.0 Lighting

The applicant is not proposing any new lighting for the property.

#### 5.0 Departmental Reports

- 5.1 <u>Engineering Division</u> The Engineering Department will provide comments before the meeting on May 26, 2021.
- 5.2 <u>Department of Public Services</u> The DPS has no concerns at this time.
- 5.3 <u>Fire Department</u> The Fire Department has provided the following comments:
  - Please provide any sprinkler, fire alarm, kitchen hood / renovations or modification plans to the AHJ for approval.
  - Field test verification required on all systems involving life safety.
  - Field inspection required for building layout.
  - Final occupant load to be determined in the field by Building Department and Fire Marshal
  - Fire sprinkler and alarm system to remain in service during construction / demolition and all phases.
  - Follow all IFC 2015 code requirements for hot work, construction or demolition practices.
- 5.4 <u>Police Department</u> The Police Department has no concerns at this time.
- 5.5 <u>Building Division</u> The Building Division has no building code concerns at this time. A complete code review will be performed when the construction documents are provided for the renovation of the tenant space.

#### 6.0 Design Review

At this time, the applicant is not proposing any design changes to the existing storefront, nor is any signage proposed. As this building is located within the Downtown Historic District, all design changes must be approved by the Historic District Commission.

#### Outdoor Dining Area

Outdoor cafes must comply with the site plan criteria as required by Article 04, Section 4.41 OD-01, Outdoor Dining Standards. Outdoor cafes are permitted immediately adjacent to the principal use and are subject to site plan review and the following conditions:

1. Outdoor dining areas shall provide and service refuse containers within the outdoor dining area and maintain the area in good order.

2. All outdoor activity must cease at the close of business, or as noted in Subsection 3 below, whichever is earlier.

3. When an outdoor dining area is immediately adjacent to any single-family or multiple-family residential district, all outdoor activity must cease at the close of business or 12:00 a.m., whichever is earlier.

4. All tables and chairs provided in the outdoor dining area shall be constructed primarily of metal, wood, or material of comparable quality.

5. Table umbrellas shall be considered under Site Plan Review and shall not impede sight lines into a retail establishment, pedestrian flow in the outdoor dining area, or pedestrian or vehicular traffic flow outside the outdoor dining area.

6. For outdoor dining located in the public right-of-way:

- (a) All such uses shall be subject to a license from the city, upon forms provided by the Community Development Department, contingent on compliance with all city codes, including any conditions required by the Planning Board in conjunction with Site Plan approval.
- (b) In order to safeguard the flow of pedestrians on the public sidewalk, such uses shall maintain an unobstructed sidewalk width as required by the Planning Board, but in no case less than 5 feet.
- (c) An elevated, ADA compliant, enclosed platform may be erected on the street adjacent to an eating establishment to create an outdoor dining area if the Engineering Department determines there is sufficient space available for this purpose given parking and traffic conditions.
- (d) No such facility shall erect or install permanent fixtures in the public rightof-way.
- (e) Commercial General Liability Insurance must be procured and maintained on an "occurrence basis" with limits of liability not less than \$1,000,000 per occurrence combined single limit, personal injury, bodily injury and property damage. This coverage shall include an endorsement naming the city, including all elected and appointed officials, all employees, all boards, commissions and/or authorities and board members, as an additional insured. This coverage must be primary and any other insurance maintained by the additional insureds shall be considered to be excess and non-contributing with this insurance, and shall include an endorsement providing for a thirty (30) day advance written notice of cancellation or non-renewal to be sent to the city's Director of Finance.

The applicant has provided a trash receptacle within the outdoor dining area as required by Article 04, section 4.41 OD-01 of the Zoning Ordinance. In addition, the applicant has provided proposed business hours for Mare Mediterranean as follows:

Monday – Closed

Tuesday thru Friday – 11:00 a.m. – Midnight Saturday – 5:00 p.m. to 1:00 a.m. Sunday – 12:00 p.m. to 10:00 p.m.

The proposed outdoor café is not immediately adjacent to any single-family zoned property.

# The applicant has not provided specification sheets for the proposed tables and chairs and will be required to do so prior to review by the City Commission.

No umbrellas are proposed for the outdoor dining area.

A site plan has been submitted with dimensions that show the required 5' clear pedestrian path along the building.

# The applicant will be required will be required to obtain an Outdoor Dining License from the City if the SLUP is approved by the City Commission.

<u>Signage</u>

No signage is proposed at this time. All signage for SLUPs must be approved through the SLUP process.

#### 7.0 Downtown Birmingham 2016 Overlay District

The site is located within the D-4 zone of the DB 2016 Regulating Plan, within the Downtown Birmingham Overlay District. The Planning Division finds the proposed site plan adequately implements the goals of the plan as they relate to outdoor café uses. The 2016 Plan states that outdoor dining space is in the public's best interest as it enhances street life, thus promoting a pedestrian friendly environment.

#### 8.0 Approval Criteria

In accordance with Article 7, section 7.27 of the Zoning Ordinance, the proposed plans for development must meet the following conditions:

- (1) The location, size and height of the building, walls and fences shall be such that there is adequate landscaped open space so as to provide light, air and access to the persons occupying the structure.
- (2) The location, size and height of the building, walls and fences shall be such that there will be no interference with adequate light, air and access to adjacent lands and buildings.
- (3) The location, size and height of the building, walls and fences shall be such that they will not hinder the reasonable development of adjoining property not diminish the value thereof.

- (4) The site plan, and its relation to streets, driveways and sidewalks, shall be such as to not interfere with or be hazardous to vehicular and pedestrian traffic.
- (5) The proposed development will be compatible with other uses and buildings in the neighborhood and will not be contrary to the spirit and purpose of this chapter.
- (6) The location, shape and size of required landscaped open space is such as to provide adequate open space for the benefit of the inhabitants of the building and the surrounding neighborhood.

#### 9.0 Approval Criteria for Special Land Use Permits

Article 07, section 7.34 of the Zoning Ordinance specifies the procedures and approval criteria for Special Land Use Permits. Use approval, site plan approval, and design review are the responsibilities of the City Commission. This section reads, in part:

Prior to its consideration of a special land use application (SLUP) for an initial permit or an amendment to a permit, the **City Commission shall refer the site plan and the design to the Planning Board for its review and recommendation. After receiving the recommendation, the City Commission shall review the site plan and design of the buildings and uses proposed** for the site described in the application of amendment.

The City Commission's approval of any Special Land Use application or amendment pursuant to this section shall constitute approval of the site plan and design.

#### **10.0 Suggested Action**

Based on a review of the site plans submitted, the Planning Division recommends that the Planning Board POSTPONE the applicant's request for Special Land Use Permit and Final Site Plan & Design Review for 115 Willits – Mare Mediterranean pending receipt of the following:

- 1. Details on the businesses sharing the trash facilities on site;
- 2. Detailed sign plans for any proposed business signage, including dimensions, materials and colors;
- 3. Specification sheets on the proposed tables, chairs, trash receptacle and railing system proposed in the outdoor dining area; and
- 4. Details regarding trash storage and disposal.

#### **11.0** Sample Motion Language

Based on a review of the plans submitted, the Planning Board recommends **POSTPONEMENT** of the Special Land Use Permit and Final Site Plan & Design Review for 115 Willits – Mare Mediterranean pending receipt of the following:

1. Details on the businesses sharing the trash facilities on site;

- 2. Detailed sign plans for any proposed business signage, including dimensions, materials and colors;
- 3. Specification sheets on the proposed tables, chairs, trash receptacle and railing system proposed in the outdoor dining area; and
- 4. Details regarding trash storage and disposal.

#### OR

Based on a review of the plans submitted, the Planning Board finds that all of the requirements of Article 7, Section 7.27 and Article 7, Section 7.34 have been met. Motion to recommend **APPROVAL** to the City Commission of the Special Land Use Permit and Final Site Plan & Design Review for 115 Willits – Mare Mediterranean with the following conditions:

- 1. Applicant provide details on the businesses sharing the trash facilities on site;
- 2. Applicant provide detailed sign plans for any proposed business signage, including dimensions, materials and colors;
- 3. Applicant provide specification sheets on the proposed tables, chairs, trash receptacle and railing system proposed in the outdoor dining area; and
- 4. Details regarding trash storage and disposal.

#### OR

Motion to recommend **DENIAL** of the Special Land Use Permit Amendment and Final Site Plan Review for 115 Willits – Mare Mediterranean for the following reasons:

1. \_\_\_\_\_

#### City Of Birmingham Regular Meeting Of The Planning Board Wednesday, May 26, 2021

Held Remotely Via Zoom And Telephone Access

Minutes of the regular meeting of the City of Birmingham Planning Board held on May 26, 2021. Chair Clein convened the meeting at 7:30 p.m.

**2. 115 Willits Street – Mare Mediterranean (former Cameron's Steakhouse),** Request for a Special Land Use Permit and Final Site Plan and Design Review to consider approval of new restaurant serving alcoholic liquors in an existing building.

PD Ecker reviewed the item.

Mr. Williams and Chair Clein agreed that the **outdoor dining** hours should not go past 12 a.m.

Applicant and owner Nino Cutraro agreed. Kelly Allen, attorney for the project and Simon Morrow, architect, were also present.

In reply to Mr. Jeffares, PD Ecker stated that she reached out to DPS to find out why there were only two trees between Bates and Old Woodward but had not yet heard back.

The applicant team confirmed they would adhere to the ordinance requirements regarding the dumpster and would adhere to the Fire Department's comments.

There were no public comments.

Chair Clein said he would be comfortable allowing the remaining items outstanding to be administratively approved.

#### Motion by Mr. Share

Seconded by Mr. Jeffares to recommend approval to the City Commission for the Special Land Use Permit for 115 Willits – Mare Mediterranean based on a review of the plans submitted and their adherence to Article 07, section 7.27 and Article 07, section 7.34 of the Zoning Ordinance and pending receipt of the following: 1. Details on the businesses sharing the trash facilities on site; 2. Applicant comply with all City Department requests; 3. Detailed sign plans for any proposed business signage to allow the Planning Department to complete their review of the recently submitted plans; 4. Outdoor dining be closed at midnight; and, 5. Specification sheets on the proposed tables, chairs, trash receptacle and railing system proposed in the outdoor dining area.

Birmingham Planning Board Proceedings May 26, 2021

Chair Clein stated that if documentation was not submitted to PD Ecker in time to allow for administrative review and approval that he did not want this item to proceed to the Commission for review.

Mr. Boyle commented that this applicant provided one of the best cover sheets he had ever seen for a site plan. He asked Planning to encourage other applicants to do the same.

#### Motion carried, 7-0.

ROLL CALL VOTE Yeas: Share, Jeffares, Boyle, Koseck, Whipple-Boyce, Williams, Clein Nays: None

#### Motion by Mr. Share

Seconded by Mr. Williams to recommend approval to the City Commission for the Final Site Plan and Design Review for 115 Willits – Mare Mediterranean based on a review of the plans submitted and their adherence to Article 07, section 7.27 and Article 07, section 7.34 of the Zoning Ordinance and pending receipt of the following: 1. Details on the businesses sharing the trash facilities on site; 2. Applicant comply with all City Department requests; 3. Detailed sign plans for any proposed business signage to allow the Planning Department to complete their review of the recently submitted plans; and, 4. Specification sheets on the proposed tables, chairs, trash receptacle and railing system proposed in the outdoor dining area.

Motion carried, 7-0.

ROLL CALL VOTE Yeas: Share, Williams, Clein, Jeffares, Boyle, Koseck, Whipple-Boyce Nays: None



# **TENANT SPACE SUMMARY**

115 WILLITS STREET, BIRMINGHAM, MICHIGAN PARCEL I.D. 08-19-25-378-029

WORK TO BE COMPLETED IN ACCORDANCE TO: MBC- MICHIGAN BUILDING CODE 2015 MEBC- MICHIGAN EXISTING BUILDING CODE 2015 MMC- MICHIGAN MECHANICAL CODE IFC- INTERNATIONAL FIRE CODE 2015 **IFGC- INTERNATION FUEL GAS CODE 2015** ASHRAE 90.1 2013 COMPLIANCE

\*NOTE EXISTING ELECTRICAL TO REMAIN EXISTING PLUMBING TO REMAIN EXISTING MECHANICAL TO REMAIN

USE CATEGORY: A-2 RESTAURANT

CONSTRUCTION: 2B (BUILDING FULL SPRINKLED-TO REMAIN)

EXIT CAPACITY: EXIT #1 = 72"/.2 = 360 EXIT #2 = 36"/.2 = 180 TOTAL EXIT CAPACITY = 540

TOILET CALCULATIONS: WOMENS = 3 [1 PER 75] MENS = 1 TOILET, 2 URINALS [1 PER 75] TOTAL = 4 TOILETS

4 FIXTURES X 75 = 300 OCCUPANTS ALLOWED.

# OCCUPANT SEATING SUMMARY:

MAIN DINING: 709 S.F. / 15 NET = 47 ALLOWED	46 PROVIDED
PRIVATE DINING # 1: 379 S.F. / 15 NET = 25 ALLOWED	24 PROVIDED

PRIVATE DINING # 2: 189 S.F. / 15 NET = 12.6 ALLOWED 12 PROVIDED

BOOTH SEATING #1: FIXED SEAT 1 PERSON PER 18" = 384"/18" = 21 PERSONS ALLOWED 16 PROVIDED

BOOTH SEATING #2: FIXED SEAT 1 PERSON PER 18" = 384"/18" = 21 PERSONS ALLOWED 16 PROVIDED

BOOTH SEATING #3: FIXED SEAT 1 PERSON PER 18" = 192"/18" = 10 PERSONS ALLOWED 10 PROVIDED

BAR SEATING: FIXED SEAT 1 PERSON PER 18" = 504" / 18" = 28 PERSONS ALLOWED 26 PROVIDED

NEAR BAR SEATING: 120 S.F. / 15 = 8 SEATS ALLOWED 8 PROVIDED

TOTAL ALLOWABLE INTERIOR DINING = 172.6 SEATS TOTAL PROPOSED INTERIOR DINING = 158 SEATS

LOUNGE AREA: 460 S.F. / 15 NET = 30.6 ALLOWED 30 PROVIDED EMPLOYEE CALCULATION (AREA ALLOWANCES PER

OCCUPANT) KITCHEN: 1,715 S.F. / 200 = 8.5 ALLOWABLE

OCCUPANCY CALCULATION FOR STANDING AREA: STANDING AREA 5 S.F./ PERSON 363 S.F. / 5 = 72 PERSONS ALLOWABLE

TOTAL PROPOSED OCCUPANCY: 269 PROPOSED






AERIAL MAP



T:\JOBS BY CUSTOMER\Mare Mediterranea





GIS MAP W/ LOCATION OF NEAREST WATER COURSE



Mare Mediterranean.fs

PROPOSED SIGNS FOR MARE MEDITERRANEAN TO BE LOCATED IN EXISTING CAMERON'S SIGN LOCATIONS

AERIAL OF BUILDING FROM OAKLAND GIS

GIS MAP W/ DIMENSIONS

**CLIENT CONTACT:** 

248.343.3130

2021 IMAGE 360 BRIGHTO ALL RIGHTS RESERVED.

**USE CATEGORY: A-2 RESTAURANT** 



INNOVATION IN OPERATION®

#### Memorandum

To: Scott Grewe
From: Catherine Burch & Sarah Burton
Copy: Advisory Parking Committee
Date: July 23<sup>rd</sup>, 2021
Subject: Parking Deck Exterior Signage

As we have discussed on numerous occasions, the appearance of the exterior signage on the parking decks is dated and extremely tired looking. These large signs were installed on the parking decks several decades ago and are meant to provide direction to parking patrons as well as serving as a recognition of the parking system. Due to the age of the signs and their prominent placement, they now reflect poorly on the image of the city and the parking system as a whole.

In an effort to prepare for the replacement of these signs and explore ideas to enhance the appearance of the parking decks, SP+ provided ideas and suggestions to the city in November of 2019. To assist in restarting this conversation and begin the process of replacing these signs, I have enclosed the presentation that was provided at that time. Additionally, the pictures below help to illustrate the current condition of the signs.

It is understood that the replacement of these signs may be linked to a much needed and larger wayfinding initiative for the parking decks and the entire parking system. However, it is important to note that these signs are very large and very visible to all visitors to Birmingham and their replacement should be considered a priority.

We look forward to working with you and the Advisory Parking Committee on a plan to replace these signs and toward a renewal of the entire wayfinding system for the parking decks.











# **Pierce Garage**

# Interior Signage Program Overview 11.25.19



# Level Identification 1 & 2























## Level Identification 3 & 4

















Photo by: Carroll DeWeese

















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Old Woodward Ave & Harmon St Beahh Park forsten en separative protectore, studyotth and turosit, luch reliferant/bareter, during the worter norscha an ane for deciding, era garden, testischer direment anskar, missive gardnarps, et al consorten to the Rouge Network Trick, and gene green space althourstelevator altexits' spanning timerespaceg althominghannam straining hanningskarg althomistopping tiboritipauk attiminghannam straining althomistopping althomistopping tiboritipauk attiminghannam straining and antipaution.





### Pedestrian Exit to Elevators







# Typical Column Sign Locations







# Exit Path









# Level 2 Exit Sign Locations













#### BIRMINGHAM

# Large Leaf Sculpture on Wall - Pierce





#### BIRMINGHAM

## Large Leaf Sculpture on Wall - Brown





#### Mesh on Levels - Pierce





#### BIRMINGHAM

#### Mesh on Levels - Brown





July 29, 2021

# White House, Senate Reach Bipartisan Deal on Infrastructure Package

#### Debate to begin in Congress

After months of negotiations, the White House and Senate have reached a bipartisan agreement on a broad infrastructure package. The Senate took a procedural vote Wednesday evening to begin debate on the infrastructure bill. A Fact Sheet summarizing the bill is available here.

Questions remain about how this bill will be paid for, as most revenue-generating measures were dropped from the text before the Senate vote. Below is a summary of of the bill's key spending initiatives:

- \$110 billion of new funds for roads, bridges, and major projects, and reauthorize the surface transportation program for the next five years building on bipartisan surface transportation reauthorization bills passed out of committee earlier this year.
- \$11 billion in transportation safety programs, including a new Safe Streets for All program to help states and localities reduce crashes and fatalities in their communities, especially for cyclists and pedestrians.
- \$39 billion of new investment to modernize transit, and improve accessibility for the elderly and people with disabilities, in addition to continuing the existing transit programs for five years as part of surface transportation reauthorization.
- \$66 billion in rail to eliminate the Amtrak maintenance backlog, modernize the Northeast Corridor, and bring world-class rail service to areas outside the northeast and mid-Atlantic.
- \$7.5 billion to build out a national network of EV chargers.
- \$2.5 billion in zero-emission buses.
- \$2.5 billion in low emission buses.
- \$2.5 billion for ferries.
- \$1 billion for the first-ever program to reconnect communities divided by transportation infrastructure.
- \$17 billion in port infrastructure.
- \$25 billion in airports to address repair and maintenance backlogs, reduce congestion and emissions near ports and airports, and drive electrification and other low-carbon technologies.
- \$50 billion to make our communities safer and our infrastructure more resilient to the impacts of climate change and cyber-attacks.
- \$55 billion investment in clean drinking water, including dedicated funding to replace lead service lines and the dangerous chemical PFAS (per- and polyfluoroalkyl). It will replace all of the nation's lead pipes and service lines.
- \$65 billion investment to ensure every American has access to reliable high-speed internet with a historic investment in broadband infrastructure deployment.
- \$21 billion in environmental remediation, making the largest investment in addressing the legacy pollution that harms the public health of communities and neighborhoods in

American history, creating good-paying union jobs in hard-hit energy communities and advancing economic and environmental justice.

• \$73 billion investment, the single largest investment in clean energy transmission in American history.

SEMCOG will continue to watch all of this closely and will share more details as Congress debates this important legislation.

Contact: Mike Spence, Administrator, Government Affairs.



SEMCOG - Southeast Michigan Council of Governments 1001 Woodward Avenue, Suite 1400, Detroit, Michigan 48226 313-961-4266 • Fax: 313-961-4869 • Staff email: <u>lastName@semcog.org</u> Website

SEMCOG is a regional planning partnership of governmental units serving 4.7 million people in the seven-county region of Southeast Michigan striving to enhance the region's quality of life.

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