

## **ADDENDUM NO 1**

### **1.1 PROJECT INFORMATION**

- A. Project Name: Target Center Ice Replacement Project
- B. Owner: City of Minneapolis
- C. Owner Project Number: OP8331
- D. Architect: Leo A Daly
- E. Architect Project Number: 023-10188-006
- F. Date of Addendum: One (1)

### **1.2 NOTICE TO BIDDERS**

- A. This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is **changed to the following**, at same time and location.
  - 1. Bid Date: **Thursday August 18, 2016**

### **1.3 ATTACHMENTS**

- A. This Addendum includes the following attached Documents, Specification Sections, and Sheet:
  - 1. Document: Table of Contents, dated 2016-08-11 (**reissued**).
  - 2. Section 00 43 13 Unit Prices Form dated 2016-08-11 (**new**).
  - 3. Section 00 41 13 Bid Form dated 2016-08-11 (**reissued**).
  - 4. Section 01 11 00 Work Scope Summary dated 2016-08-11 (**reissued**).
  - 5. Section 07 16 16 Crystalline Waterproofing dated 2016-16-16 (**new**).

### **1.4 REVISIONS TO PREVIOUS ADDENDA**

- A. None. First Addendum.

## 1.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

- A. Document Exhibits – NHL Facilities Standards, **(not reissued)**.
  - 1. Clarification of intent:
    - a. All bidders shall follow the requirements of the construction documents and project manual. The NHL Facilities Standards is a reference document only.
- B. Document Exhibits – Quality Program Requirements, **(not reissued)**.
  - 1. Clarification of intent:
    - a. The City of Minneapolis has hired Mortenson Construction as the Construction Manager – Advisor for this project. Mortenson Construction is also the Construction Manager – Constructor for a separate renovation of the Target Center. All bidders for this project will hold a Prime Contract directly with the City of Minneapolis but will be required to conform and coordinate their Quality Program Requirements with Mortenson Construction.
- C. Document Exhibits – Prime Contract Supplementary Terms and Conditions, **(not reissued)**.
  - 1. Clarification of intent:
    - a. The City of Minneapolis has hired Mortenson Construction as the Construction Manager – Advisor for this project. Mortenson Construction is also the Construction Manager – Constructor for a separate renovation of the Target Center. All bidders for this project will hold a Prime Contract contract directly with the City of Minneapolis but will be required to conform to Mortenson Construction’s Supplemental Terms and Conditions.
- D. Specification Section 00 41 13 Bid Form (Stipulated Sum), **(reissued)**.
  - 1. Bidders shall not clarify their bids on the Bid Form. Bids with clarifications will be viewed as non-responsive and subject rejection.
  - 2. Bidders shall not provide unsolicited alternatives on the Bid Form. Bidders shall submit substitution requests to the City of Minneapolis Purchasing Department for consideration per the requirements set forth in Specification Section 00 26 00 Procurement Substitution Procedures.
  - 3. Addition of Article 1.2.C Unit Price No. 1.

## 1.6 REVISIONS TO DIVISION 01 GENERAL REQUIREMENTS

- A. Specification Section 01 40 00a Quality Requirements, **(not reissued)**.
  - 1. Footer: Revise Specification Section Number to 01 40 00a.
- B. Specification Section 01 11 00 Work Scope Summary, **(reissued)**.
  - 1. Footer: Revise Specification Section Number to read: “01 11 00”.
  - 2. Footer: Revise Specification Section Name to read: “Summary Work Scope”

3. Revise Article 1.2.B
4. Add Article 1.2.FF

**1.7 REVISIONS TO DIVISIONS 02 - 49 SPECIFICATION SECTIONS**

- A. Specification Section 07 16 16 Crystalline Waterproofing, **(new)**.

**1.8 REVISIONS TO DRAWING SHEETS**

- A. None.

**END OF DOCUMENT 00 91 13**

Division	Section Title
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**PROCUREMENT AND CONTRACTING DOCUMENTS GROUP**

**DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 01 01	PROJECT TITLE PAGE
00 01 07	SEALS PAGE
00 11 13	ADVERTISEMENT CALL FOR BIDS
00 21 13	INSTRUCTIONS TO BIDDERS
00 22 13	SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
00 25 13	PREBID MEETINGS
00 26 00	PROCUREMENT SUBSTITUTION PROCEDURES
00 31 43	PERMIT APPLICATION
00 41 13	BID FORM (STIPULATED SUM)
00 43 13	BID SECURITY FORMS
00 43 22	UNIT PRICES FORMS [ <b>Addendum No. 1, 2016-08-11</b> ]
00 60 00	FORMS, AGREEMENTS AND CONDITIONS
00 73 00	GENERAL AND SUPPLEMENTARY CONDITIONS
EXIHIBITS	
	QUALITY PROGRAM REQUIREMENTS
	PRIME CONTRACT SUPPLEMENTARY TERMS AND CONDITIONS
	SAFETY PROGRAM REQUIREMENTS
	NHL FACILITIES STANDARDS ( <i>for reference</i> )

**SPECIFICATIONS GROUP**

*General Requirements Subgroup*

**DIVISION 01 - GENERAL REQUIREMENTS**

01 10 00	SUMMARY
01 11 00	WORK SCOPE SUMMARY
01 21 00	ALLOWANCES
01 25 00	SUBSTITUTION PROCEDURES
01 26 00	CONTRACT MODIFICATION PROCEDURES
01 29 00	PAYMENT PROCEDURES
01 31 00	PROJECT MANAGEMENT AND COORDINATION
01 32 33	PHOTOGRAPHIC DOCUMENTATION
01 33 00	SUBMITTAL PROCEDURES
01 40 00	QUALIFICATIONS AND QUALITY REQUIREMENTS
01 40 00a	QUALIFICATIONS AND QUALITY REQUIREMENTS FORM
01 73 00	EXECUTION
01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

01 77 00	CLOSEOUT PROCEDURES
01 78 39	PROJECT RECORD DOCUMENTS

*Facility Construction Subgroup*

**DIVISION 02 - EXISTING CONDITIONS**

02 41 19	SELECTIVE DEMOLITION
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**DIVISION 05 - METALS**

05 50 00	METAL FABRICATIONS
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**DIVISION 07 – THERMAL AND MOISTURE PROTECTION**

07 16 16	CRYSTALLINE WATERPROOFING [ <b>ADDENDUM NO. 1, 2016-08-11</b> ]
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**DIVISION 13 - SPECIAL CONSTRUCTION**

13 18 11	ICE RINK GENERAL REQUIREMENTS
13 18 12	ICE RINK REFRIGERATION SYSTEM
13 18 13	ICE RINK FLOOR SYSTEM
13 18 14	ICE RINK PIPING, VALVES AND ACCESSORIES
13 18 16	ICE RINK DASHER BOARD SYSTEM AND ACCESSORIES

*Facility Services Subgroup*

**DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING**

23 05 29	HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT
23 05 53	IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT
23 05 93	TESTING, ADJUSTING, AND BALANCING FOR HVAC
23 07 19	HVAC PIPING INSULATION
23 09 23.11	CONTROL VALVES
23 22 13	STEAM AND CONDENSATE HEATING PIPING
23 22 16	STEAM AND CONDENSATE PIPING SPECIALTIES
23 23 00	REFRIGERANT PIPING
23 57 00	HEAT EXCHANGERS FOR HVAC

**DIVISION 24 - INDUSTRIAL REFRIGERATION**

24 61 00	INDUSTRIAL REFRIGERATION COMPRESSORS
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**END OF TABLE OF CONTENTS**

**DOCUMENT 00 41 13 – [REVISED] BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)**

**1.1 BID INFORMATION**

- A. Bidder: \_\_\_\_\_.
- B. Project Name: Target Center – Ice Replacement Project.
- C. Project Location: 600 1<sup>st</sup> Avenue North, Minneapolis, MN 55403.
- D. Owner: City of Minneapolis.
- E. Architect: Leo A Daly.
- F. Architect Project Number: 023-10188-006/017.

**1.2 CERTIFICATIONS AND BASE BID**

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Leo A Daly and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, necessary to complete the construction of the above-named prime contract, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

- B. Lump Sum:

- 1. \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).
- a. **Bid Break Down**
  - 1) Demolition \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).
  - 2) Concrete Ice Slab \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).
  - 3) Structural Repairs (ALLOWANCE) \_\_\_\_\_ Dollars (\$ 100,000 \_\_\_\_\_).
  - 4) Mechanical \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).
  - 5) Electrical \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).
  - 6) Refrigeration and Piping \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).

- C. Unit Price No. 1: Removal of and recycling of the existing R-22 refrigerant. [Addendum No. 1, 2016-08-11]

- 1. \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) per unit.
- 2. The undersigned Bidder proposes the amounts below be deducted from the Contract Sum on performance and measurement of the individual items of Work.

**1.3 BID GUARANTEE**

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 60 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting two percent (2%) of the Base Bid amount above:
1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
- B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

**1.4 TIME OF COMPLETION**

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on or around April 8, 2017, and shall be substantially complete by August 15, 2017.

**1.5 ACKNOWLEDGEMENT OF ADDENDA**

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
1. Addendum No. 1, dated \_\_\_\_\_.
2. Addendum No. 2, dated \_\_\_\_\_.
3. Addendum No. 3, dated \_\_\_\_\_.
4. Addendum No. 4, dated \_\_\_\_\_.

**1.6 BID SUPPLEMENTS REQUIRED WITH BID.**

- A. The following supplements **Must Be Submitted With this Bid Form.**
1. **Bidder Qualifications:** See Section 01 40 00 Qualifications and Quality Requirements.
  2. Bid Form Supplement – Refer to Section 00 43 13 Bid Security Forms
  3. Contract (SUBP) Participation Form: Refer to Section 00 22 13 Supplementary Instructions to Bidders.
  4. Responsible Contractor Form: Refer to Section 00 22 13 Supplementary Instructions to Bidders.
  5. Prevailing Wage Form: Refer to Section 00 21 13 Supplementary Instructions to Bidders.
  6. Unit Price Form: Refer to Section 00 43 22 Unit Prices Form [Addendum No. 1, 2016-08-11]

**1.7 CONTRACTOR'S LICENSE**

- A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in the City of Minneapolis, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

**1.8 STATEMENT OF AWARD**

- A. This bid will be awarded to the low, responsive, responsible bidder meeting all specifications.

**1.9 SUBMISSION OF BID**

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 2015.
- B. Submitted By: \_\_\_\_\_(Name of bidding firm or corporation).
- C. Authorized Signature: \_\_\_\_\_(Handwritten signature).
- D. Signed By: \_\_\_\_\_(Type or print name).
- E. Title: \_\_\_\_\_(Owner/Partner/President/Vice President).
- F. Witness By: \_\_\_\_\_(Handwritten signature).
- G. Attest: \_\_\_\_\_(Handwritten signature).
- H. By: \_\_\_\_\_(Type or print name).
- I. Title: \_\_\_\_\_(Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. Email: \_\_\_\_\_.
- N. License No: \_\_\_\_\_.
- O. Federal ID No.: \_\_\_\_\_(Affix Corporate Seal Here).

**END OF DOCUMENT 00 41 13**

**DOCUMENT 00 43 22 - UNIT PRICES FORM**

**1.1 BID INFORMATION**

- A. Bidder: \_\_\_\_\_.
- B. Project Name: Target Center – Ice Replacement
- C. Project Location: 600 1st Avenue North, Minneapolis, MN 55403
- D. Owner: City of Minneapolis
- E. Owner Project Number: OP331
- F. Architect: Leo A Daly
- G. Architect Project Number: 023-01088-006/017
- H. Construction Manager: Mortenson Construction

**1.2 BID FORM SUPPLEMENT**

- A. This form is required to be attached to the Bid Form.
- B. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work.

**1.3 UNIT PRICES**

- A. Unit-Price No. 1: Removal of and recycling of the existing R-22 refrigerant.
  - 1. \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) per unit.
  - 2. The intent of this unit price is to establish the value of the recovered R-22 refrigerant within the existing refrigeration system in order to lower the cost of construction. The contractor shall verify the quantity of refrigerant upon its proper removal. The contract sum will be reduced by the value of the unit price listed above multiplied by the verified quantity of material.

**1.4 SUBMISSION OF BID SUPPLEMENT**

- A. Respectfully submitted this \_\_\_\_\_ day of \_\_\_\_\_, 2016.
- B. Submitted By: \_\_\_\_\_ (Insert name of bidding firm or corporation).

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Construction Documents [**Addendum No. 1, 2016-08-11**]

- C. Authorized Signature: \_\_\_\_\_ (Handwritten signature).
- D. Signed By: \_\_\_\_\_ (Type or print name).
- E. Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).

**END OF DOCUMENT 00 43 22**

## SECTION 01 11 00 – WORK SCOPE SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. All ice rink system (concrete slab and reinforcing, insulation, ice floor mechanical equipment, piping, under slab drainage, etc.) complete: design, furnish and install per the contract documents as necessary to provide a fully functional system.
- B. Prime Contractor shall remove and properly dispose of the existing refrigerant. Refer to Specification Section 00 43 22 Unit Prices Form for further information. **[Addendum No. 1, 2016-08-11]**
- C. All demolition is provided by this scope of work including ice slab piping and equipment as necessary to install new ice rink system.
- D. Concrete demolition and saw cutting activities need to use water to minimize the amount of dust in the facility. Slurry needs to be continuously cleaned up and properly disposed of.
- E. Means of disposal of concrete and equipment will be responsibility of this Contractor. General use of dumpsters will be provided by others on the project
- F. Prime Contractor shall include necessary means of traffic control for this scope of Work.
- G. Construction equipment used inside the facility will need to have scrubbers to reduce the amount of CO<sub>2</sub>. Prime contractor shall provide air monitoring within the facility during its operations. Daily documentation of air quality levels will be required
- H. Prime contractor shall include an ALLOWANCE of \$100,000 to repair unforeseen conditions of the existing moveable structural concrete slab. Any repairs to perform the identified demo of existing scope or installation of the new ice rink system will not be included as part of this allowance.
- I. Includes all Work for the refrigeration system renovation and ice melting pit. This includes all piping in mechanical room to ice plant equipment and piping in the concrete slab.
- J. Polyethylene vapor barrier is included.
- K. Furnish and install threaded rod inserts at perimeter of ice rink slab.

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Construction Documents

- L. Furnish and install ice slab stainless steel anchors, stainless steel inserts complete with anchor assembly, reinforcing bars, and welded steel plate for hockey goals, dasher boards and/or other inserts identified in the contract documents.
- M. Furnish and install all dasher board components such as but not limited to the slab inserts, and thermal break to receive the existing dasher board system.
- N. Furnish and install perimeter expansion joint at rink slab and adjacent slab.
- O. Furnish and install concrete admixtures, hardening, finishing and wet curing of slab.
- P. Provide seal around the rink slab perimeter.
- Q. A survey plan of the finish concrete.
- R. Furnish and install engineered rink refrigeration system per contract documents.
- S. Testing and Balancing of all equipment.
- T. Furnish and install 1/4 inch thick test ice slab. The test sheet of Ice Work needs to be completed and removed by September 1, 2016.
- U. Provide backup pump, crew on-call etc. to ensure any issues that occur do not effect continuous placement of the ice slab. No cold, construction, or saw-cut joints in the slab shall be allowed.
- V. Contractor shall ensure requirements are met prior to installation of reinforcing or piping by shooting in substrate on a six foot grid or smaller.
- W. Slab shall be placed in one continuous pour to ensure the requirements of the contract documents are maintained along with preventing slab cracking. All chips, cracks and blemishes in slab shall be repaired in a manner approved by the engineer of record at no additional cost. Grinding of slab is not approved manner to repair out of tolerance workmanship.
- X. Ice slab piping shall be kept under continuous pressure test during placement to ensure no leaks are buried.
- Y. All wiring and piping internal to this equipment shall be completed as part of this Scope of Work including temperature sensors
- Z. The Ice Rink Subcontractor must be clearly identified for approval prior to Work, including all previous ice slab experience.
- AA. Furnish and install refrigerant gas detector sensors.
- BB. Provide one additional full ice sheet painted for the Owner's use at project completion.
- CC. Contractor shall include painting of lines/logos as indicated on the documents
- DD. Prime Contractor acknowledges that there is concurrent construction renovation project scheduled over the same schedule as this project. Prime Contractor shall cooperate with

adjacent contractors in the coordination, phasing and sequencing of Work specifically with the replacement of the Center Hung Scoreboard installation activities.

- EE. Prime Contractor may begin work in the Target Center bowl April 15, 2016 and need to be substantially complete August 15, 2016. Anticipated access to start work in the back of house areas is April 1, 2016.
- FF. Prime Contractor shall water proof the existing ice melt pit after installation of ice melt heating coils. [**Addendum No. 1, 2016-08-11**].

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01 10 00**

## **SECTION 07 16 16 - CRYSTALLINE WATERPROOFING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. Section includes crystalline waterproofing for positive side application to the existing concrete ice melt pit.

#### **1.3 SUBMITTALS**

- A. Product Data: For each type of product indicated. Include construction details, material descriptions and installation instructions for crystalline waterproofing.
- B. Product Certificates: For waterproofing, patching, and plugging materials, from manufacturer.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for crystalline waterproofing.

#### **1.4 QUALITY ASSURANCE**

- A. Applicator Qualifications: A firm experienced in applying crystalline waterproofing similar in material, design, and extent to that indicated for this Project, whose work has resulted in applications with a record of successful in-service performance, and that employs workers trained and approved by manufacturer.
- B. Pre-installation Conference: Conduct conference at Project site

#### **1.5 PROJECT CONDITIONS**

- A. Proceed with waterproofing work only after pipe sleeves, vents, curbs, inserts, drains, and other projections through the substrate to be waterproofed have been completed. Proceed only after substrate defects, including honeycombs, voids, and cracks, have been repaired to provide a sound substrate free of forming materials, including reveal inserts.
- B. Ambient Conditions: Proceed with waterproofing work only if temperature is maintained at **40 deg F** or above during work and cure period, and space is well ventilated and kept free of water.

## PART 2 - PRODUCTS

### 2.1 WATERPROOFING MATERIALS

- A. Crystalline Waterproofing: Prepackaged, **gray** colored proprietary blend of Portland cement, specially treated sand, and active chemicals that, when mixed with water and applied, penetrates into concrete and concrete unit masonry and reacts chemically with the byproducts of cement hydration in the presence of water to develop crystalline growth within substrate capillaries to produce an impervious, dense, waterproof substrate; that has VOC content complying with limits of authorities having jurisdiction; with properties meeting or exceeding the criteria specified below.
1. **Products:** Subject to compliance with requirements, provide one of the following
    - a. **BASF Building Systems**; MasterSeal 500.
    - b. **Euclid** HEY'DI K-11
    - c. **Xypex Chemical Corporation**; Xypex.
  2. Water Permeability: Maximum zero for water at **30 feet** when tested according to CE CRD-C 48.
  3. Compressive Strength: Minimum **3500 psi** at 28 days when tested according to ASTM C 109/C 109M.

### 2.2 ACCESSORY MATERIALS

- A. Patching Compound: Factory-premixed cementitious repair mortar, crack filler, or sealant recommended by waterproofing manufacturer for filling and patching tie holes, honeycombs, reveals, and other imperfections; compatible with substrate and other materials indicated; and VOC content complying with limits of authorities having jurisdiction.
- B. Plugging Compound: Factory-premixed cementitious compound with hydrophobic properties and recommended by waterproofing manufacturer; resistant to water and moisture but vapor permeable for all standard applications (vertical, overhead, and horizontal surfaces not exposed to vehicular traffic); compatible with substrate and other materials indicated; and VOC content complying with limits of authorities having jurisdiction.
- C. Portland cement: ASTM C 150, Type I.
- D. Sand: ASTM C 144.
- E. Polymer Admixture for Protective Topping: Polymer bonding agent and admixture designed to improve adhesion to prepared substrates and not to create a vapor barrier.
- F. Water: Potable.

## 2.3 MIXES

- A. Crystalline Waterproofing: Add prepackaged dry ingredients to water according to manufacturer's written instructions. Mix together with mechanical mixer or by hand to required consistency.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for suitable conditions where waterproofing is to be applied.
- B. Proceed with application only after unsatisfactory conditions have been corrected.
- C. Notify Architect in writing of active leaks or defects that would affect system performance.

### 3.2 PREPARATION

- A. Protect other work from damage caused by cleaning, preparation, and application of waterproofing. Provide temporary enclosure to ensure adequate ambient temperatures and ventilation conditions for application.
- B. Do not allow waterproofing, patching, and plugging materials to enter reveals or annular spaces intended for resilient sealants or gaskets, such as joint spaces between pipes and pipe sleeves.
- C. Stop active water leaks with plugging compound according to waterproofing manufacturer's written instructions.
- D. Repair damaged or unsatisfactory substrate with patching compound according to manufacturer's written instructions.
  - 1. At holes and cracks in substrate, remove loosened chips and cut reveal with sides perpendicular to surface, not tapered, and approximately **1-inch** deep. Fill reveal with patching compound flush with surface.
- E. Surface Preparation: Comply with waterproofing manufacturer's written instructions to remove efflorescence, chalk, dust, dirt, mortar spatter, grease, oils, paint, curing compounds, and form-release agents to ensure that waterproofing bonds to surfaces.
  - 1. Clean concrete surfaces according to ASTM D 4258.
    - a. Scratch- and Float-Finished Concrete: Etch with 10 percent muriatic (hydrochloric) acid solution according to ASTM D 4260.
    - b. Prepare smooth-formed and trowel-finished concrete by mechanical abrading or abrasive-blast cleaning according to ASTM D 4259.

2. Concrete Joints: Clean reveals according to waterproofing manufacturer's written instructions.

### **3.3 APPLICATION**

- A. General: Comply with waterproofing manufacturer's written instructions for application and curing.
  1. Saturate surface with water for several hours prior to application and maintain damp condition until applying waterproofing. Remove standing water.
  2. Apply waterproofing to surfaces indicated on Drawings.
  3. Number of Coats: Number required for specified water permeability
  4. Application Method: Brush. Apply to ensure that each coat fills voids and is in full contact with substrate or previous coat.
  5. Dampen surface between coats.
- B. Final Coat Finish: Brushed
- C. Curing: Moist-cure waterproofing for two days immediately after final coat has set, followed by air drying, unless otherwise recommended in writing by manufacturer.
- D. Waterproofing Treatment Extensions: Extend waterproofing treatment as follows:
  1. Onto every substrate in areas indicated for treatment, including pipe, trenches, pipe chases, pits, sumps.

### **3.4 FIELD QUALITY CONTROL**

- A. Inspection: Engage manufacturer's representative to inspect completed application and provide a written report that application complies with manufacturer's written instructions.

**END OF SECTION 07 16 16**