

ADDENDUM NO. 1

Project: CITY OF GREAT FALLS INDOOR AQUATICS AND RECREATION CENTER
Project No.: 20-019
Date: SEPTEMBER 15, 2021
Bid Date: OCTOBER 13, 2021



NOTICE TO ALL PLANHOLDERS OF RECORD: Acknowledge receipt of this Addendum by inserting its number and date in the Bid Proposal. This addendum forms a part of the Contract Documents to the same extent as if bound and modifies the documents as follows:

A. GENERAL

- ITEM NO. 1. Current Plan Holders list: See Attachment "A"
- ITEM NO. 2. **CHANGE:** Section 01 10 00 Invitation to Bid. Bid date has been extended to Wednesday, October 13th. See Attachment "B".
- ITEM NO. 3. **CLARIFICATION:** City of Great Falls Building Permit to be paid by Contractor.
- ITEM NO. 4. **CLARIFICATION:** Bid submission to be on supplied bid form. It is not required to be contained in the bound copy of the specs.
- ITEM NO. 5. **CLARIFICATION:** Site water main installation is not part of contract. It has been bid under a separate contract, and construction will take place this Fall.
- ITEM NO. 6. **CLARIFICATION:** Contractor is to **not** access 8th Avenue South for any construction access. Contractor also to direct construction traffic towards 29th Street South and 10th Avenue South. Construction traffic is to avoid driving through residential neighborhood.
- ITEM NO. 7. **DELETE:** Spec Section 27 18 00 from Table of Contents.

B. ARCHITECTURAL SPECIFICATIONS

- ITEM NO. 8. **ADD:** Section 07 72 33 Roof Hatches. See Attachment "C".
- ITEM NO. 9. **ADD:** Section 13 24 16 Saunas. See Attachment "D".
- ITEM NO. 10. **CHANGE:** Section 07 21 13 Part 2.2.A.1. Minimum compressive strength of 25 psi.
- ITEM NO. 11. **CHANGE:** Section 07 26 00 Part 2.1.A.6 Minimum thickness: 15 mils.

DRAWINGS

- ITEM NO. 12. **CLARIFICATION:** Sheet A9.2 Equipment Schedule. Room 112 FPL – Davinci Single Sided Linear Gas Fireplace 84" x 36".
- ITEM NO. 13. Sheet A9.2 Equipment Schedule. Room 134 BN-3 **CHANGE:** to LOCKER ROOM BENCH – SEE SPEC. (HDPE)

C. CIVIL

SPECIFICATIONS

ITEM NO. 14. **CLARIFICATION:** Civil Specifications reference the Montana Public Works Standard Specifications 7th Addition, General Note #3, Sheet C2.0. The specifications are proprietary. Contractors may purchase a copy of the specifications at <https://web.mtagc.org/ecommerce/ecomlistpage.aspx>

ITEM NO. 15. **CLARIFICATION: Materials Testing.** Owner will provide building and site structural special inspections and quality assurance materials testing as required by the IBC and Sheet S1.2. Contractor is responsible for any quality control testing. This addendum supersedes other references to contractor provided quality assurance materials testing and special inspections in the contract documents.

DRAWINGS

ITEM NO. 16. **CLARIFICATION:** The electrical improvements for relocating the onsite power pole on the north end of the site and revising the service connection on the south end of the site have already been designed by NWE and paid for by the City. City will coordinate improvements with NWE.

ITEM NO. 17. **CLARIFICATION:** The manholes labeled as "sewer" south of the existing parking lot are actually existing irrigation points of connection. Existing Irrigation Points of Connection were connected to the water main that is being relocated in phase one, contractor is required to demolish all irrigation components related to the noted points of connection, per civil and landscape plans.

**D. LANDSCAPING
SPECIFICATIONS**

N/A

DRAWINGS

N/A

**E. STRUCTURAL
SPECIFICATIONS**

ITEM NO. 18. **ADD:** Section 04 82 00 Reinforced Unit Masonry. See Attachment "E".

ITEM NO. 19. **DELETE:** Section 03 35 00 Part 3.2.1. (RCB Basin)

DRAWINGS

ITEM NO. 20. **CLARIFICATION:** Sheet S1.0 Note 5.0. Crushed or uncrushed aggregates are acceptable as long as the material gradations meet the MPWSS standards specified.

ITEM NO. 21 **CLARIFICATION: Materials Testing.** Owner will provide building and site structural special inspections and quality assurance materials testing as required by the IBC and Sheet S1.2. Contractor is responsible for any quality control testing. This addendum supersedes other references to contractor provided quality assurance materials testing and special inspections in the contract documents.

**F. MECHANICAL/PLUMBING
SPECIFICATIONS**

N/A

DRAWINGS

N/A

**G. ELECTRICAL/TELECOM
SPECIFICATIONS**

ITEM NO. 22. Section 26 05 19, paragraph 3.2.C. **ADD:** MC cable may be installed in office and fitness areas where concealed in walls or ceilings. Homeruns shall be in EMT so that no MC cable is exposed.

DRAWINGS

ITEM NO. 23. Sheet E0.1 **CLARIFICATION:** Alternate 20 does not change electrical scope. Frog/geyser pumps and all grounding points shall be provided in the base bid.

ITEM NO. 24. Sheet E0.6 **CLARIFICATION:** Luminaire Schedule Type E8, Luminaire may be surface mounted to concrete pad per manufacturer's requirements.

ITEM NO. 25. Sheet E0.6 **CLARIFICATION:** Luminaire Schedule. Add Note 11 to bottom of schedule to read "SUBSTITUTIONS SHALL BE BASED ON PERFORMANCE IN POOL ROOMS. LUMINAIRE SHALL BE INDIRECT AND PROVIDE 100FC IN THE LAP POOL AND 50FC IN REC POOL PER POOL DESIGNER RECOMMENDATIONS."

ITEM NO. 26. Sheet E0.6 Luminaire Schedule **ADD:** Type E4E Mullion mount luminaire. Mule Lighting EUE-AC-20-A-W.

ITEM NO. 27. Sheet E0.6 **REVISE:** "MEP COORDINATION SCHEDULE – Alternate 1" to read "MEP COORDINATION SCHEDULE – Alternate 2".

ITEM NO. 28. Sheet E1.0 **REVISE:** Keynote 5 to read "AS PART OF BASE BID, PROVIDE 2" C.O. FROM SIGN LOCATION TO DATA ROOM (NOT SHOWN). THIS IS NOT REQUIRED IF ALTERNATE BID #17 IS ACCEPTED. REFER TO KEYNOTE 4".

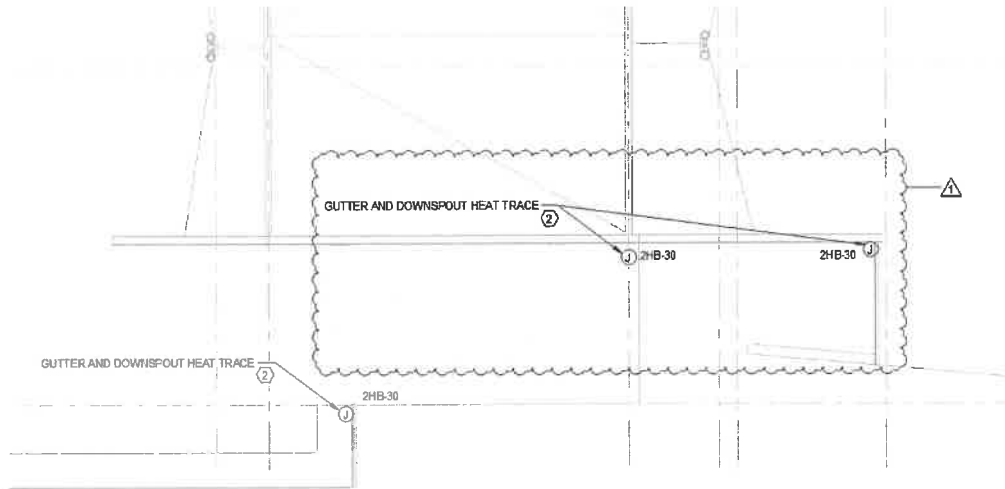
ITEM NO. 29. Sheet E2.0 **CLARIFICATION:** Partition sensor (Keynote 5) shall be provided as part of the base bid to allow future partition installation if Alternate #12 is not accepted.

ITEM NO. 30. Sheet E2.0 **CLARIFICATION:** Dimmer control in pool area B near grid A.5/3.2 is not required.

ITEM NO. 31. Sheet E2.0 Room 110 Child Watch, **ADD:** dimmer switch with 3-way on/off by interior door and 3-way on/off switch near exterior door.

ITEM NO. 32. Sheet E3.0 **REVISE:** See attached sheet for lap pool device clarifications and solar conduit clarifications. See Attachment "F".

ITEM NO. 33. Sheet E3.2 **REVISE:** Provide additional heat trace on south end of the building as shown below.



H. AQUATIC SPECIFICATIONS

N/A

DRAWINGS

ITEM NO. 34. Sheet PL521. **CLARIFICATION:** Pump P2A and VFD V2A are not required.

End of Addendum 1

Project: Indoor Aquatics and Recreation Center - O.F. 1770.0 10-6

9/14/2021

A	B	C	D	E	F	G	H
Set #	Date Iss	Company Name	Address	Phone	E-Mail	Contact	Add
1		GFBE					
2	8/24/21	Swank Enterprises	614 Pondera Avenue Valler, MT 59486	(406) 279-3241	kforbes@swankenterprises.com	Kevin Forbes	
3	8/27/21	Dick Anderson Construction	4610 Tri Hill Frontage Road Great Falls, MT 59404	406-761-8707	evenetz@daconstruction.com	Ed Venentz	
4	8/30/21	Sampson Construction	5825 S 14th St Lincoln, NE 68512	402-434-5420	pat.clough@sampson-construction.com	Pat Clough	
5	9/2/21	Sletten Construction	P.O. Box 2467 Great Falls, MT 59403	(406) 761-7920	mguelff@sletteninc.com	Mike Guelff	
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**CITY OF GREAT FALLS INDOOR AQUATICS AND RECREATION CENTER
GREAT FALLS, MONTANA**

SECTION 00 10 00

INVITATION TO BID

Separate sealed bids for construction of **INDOOR AQUATICS AND RECREATION CENTER- O.F. 1770.0** will be received by the City Clerk at the office of the City Clerk, Room 204, Civic Center, P.O. Box 5021, Great Falls, Montana 59403, #2 Park Drive South, Great Falls, MT 59403, until **3:00 p.m.** local time on **October 13, 2021**, and then publicly opened and read aloud thereafter in the Gibson Room at the Great Falls Civic Center.

Generally, project is comprised of approximately: 45,000 SF of a new construction stand-alone aquatic recreation center, site work such as excavation, new utility extensions, new parking lots, playgrounds, and landscaping. See Project Manual and Contract Documents for a complete Scope of Work. The project is publicly funded by an Office of Economic Adjustment (OEA) Grant, and with City of Great Falls Park District Levy funds.

On **August 23, 2021**, the contract documents consisting of Drawings and Project Manual in accordance with Instruction to Bidders, may be examined or purchased at the Great Falls Builders Exchange (<https://gfplans.com>) located at 325 2nd St South, Great Falls, MT. All contractors must purchase plans and be listed as a plan holder at the Builder's Exchange to be permitted to bid and bid in accordance with the Instructions to Bidders located in the Project Manual.

Questions may be directed in **writing** to LPW Architecture, Timothy Peterson at timothyp@lpwarchitecture.com or at this address: 15 5th Street South Great Falls, MT 59401 by 4:00pm local time, Friday, September 24, 2021. A list of questions and answers will be available in the form of an addendum to bidders on the plan holders list by September 29, 2021.

There will be a **Pre-Bid Conference** in the Gibson Room in the Civic Center at 2 Park Drive South #212 at **2:00 p.m.** on **September 8, 2021**. Interested CONTRACTORS are encouraged to attend.

CONTRACTOR and any of the CONTRACTOR'S subcontractors doing work on this project will be required to obtain registration with the Montana Department of Labor and Industry (DLI). Forms for registration are available from the Department of Labor and Industry, P.O. Box 8011, 1805 Prospect, Helena, Montana 59604-8011. Information on registration can be obtained by calling (406) 444-7734. CONTRACTOR is not required to have registered with the DLI prior to bidding on this project; but must have registered prior to execution of the Construction Agreement. All laborers and mechanics employed by the CONTRACTOR or subcontractors in performance of the construction work shall be paid wages at rates as may be required by the laws of the City of Great Falls and the State of Montana. The CONTRACTOR must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, national origin, or other class protected by state or federal law.

Each bid or proposal must be accompanied by a Certified Check, Cashier's Check, or Bid Bond payable to City of Great Falls, in an amount not less than ten percent (10%) of the total amount of the bid. Successful BIDDERS shall furnish an approved Performance Bond and Labor and Materials Payment Bond, each in the amount of one hundred percent (100%) of the contract amount. Insurance, as required, shall be provided by the successful BIDDER(s) and a certificate(s) of that insurance shall be provided. Contractor and all subcontractors must be licensed to perform work in the City of Great Falls prior to contract award.

No bid may be withdrawn after the scheduled time for public opening of bids, which is **3:00 p.m.**, local time on **October 6, 2021**.

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The City of Great Falls reserves the right to reject any or all proposals received, to waive informalities, to postpone the award of the contract for a period not to exceed sixty (60) days, and to accept the lowest responsive and responsible bid which is in the City's best interests.

The City of Great Falls is an Equal Opportunity Employer.

Posted at greatfallsmt.net/rfps and official posting board located on the first floor of the Civic Center, 2 Park Drive South, Great Falls, Montana, this 23rd day of August 2021.

Lisa Kunz, City Clerk
P.O. Box 5021
Great Falls, Montana 59403-5021

Published: Great Falls Tribune: Sunday, August 29, 2021; Sunday, September 12, 2021, Sunday, September 26, 2021

END OF SECTION

**Invitation to Bid
00 10 00 - 2**

**CITY OF GREAT FALLS INDOOR AQUATICS AND RECREATION CENTER
GREAT FALLS, MONTANA**

SECTION 07 72 33

ROOF HATCHES

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: Provide factory-fabricated roof hatches for ladder access.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.
- C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

- A. Manufacturer: A minimum of 5 years experience manufacturing similar products.
- B. Installer: A minimum of 2 years experience installing similar products.
- C. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-ventilated area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 - PRODUCTS

2.1 Manufacturers

- A. Basis-of-Design Manufacturer: Type E Roof Hatch by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.BILCO.com.
- B. Babcock Davis

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- C. Substitutions: Section 01 60 00 – Product Requirements.

2.2 ROOF HATCH

- A. Furnish and install where indicated on plans metal roof hatch Type E, size width: 36" x 36". Length denotes hinge side. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.
- B. Performance characteristics:
1. Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m²) with a maximum deflection of 1/150th of the span or 20 psf (97 kg/m²) wind uplift.
 2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
 3. Operation of the cover shall not be affected by temperature.
 4. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.
- C. Cover: Shall be 14 gauge paint bond G-90 galvanized steel with a 3" beaded flange with formed reinforcing members. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.
- D. Cover insulation: Shall be fiberglass of 1" (25mm) thickness, fully covered and protected by a metal liner, 22 gauge paint bond G-90 galvanized steel.
- E. Curb: Shall be 12" in height and of 14 gauge paint bond G-90 galvanized steel. The curb shall be formed with a 3-1/2" flange with 7/16" holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6" on center, to be bent inward to hold single ply roofing membrane securely in place.
- F. Curb insulation: Shall be rigid, high-density fiberboard of 1" thickness on outside of curb.
- G. Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe.
- H. Hardware
1. Heavy pintle hinges shall be provided
 2. Cover shall be equipped with a spring latch with interior and exterior turn handles
 3. Roof hatch shall be equipped with interior and exterior padlock hasps.
 4. The latch strike shall be a stamped component bolted to the curb assembly.
 5. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1" diameter red vinyl grip handle to permit easy release for closing.
 6. All hardware shall be zinc plated and chromate sealed.
 7. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.
- I. Finishes: Factory finish shall be alkyd based red oxide primed steel.

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.
 - 1. Test units for proper function and adjust until proper operation is achieved.
 - 2. Repair finishes damaged during installation.
 - 3. Restore finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

- A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

**CITY OF GREAT FALLS INDOOR AQUATICS AND RECREATION CENTER
GREAT FALLS, MONTANA**

SECTION 13 24 16

SAUNAS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pre-Cut Custom Saunas
- B. Sauna Accessories.
- C. Sauna Heaters.

1.2 RELATED SECTIONS

- A. Section 05 40 00 - Cold-Formed Metal Framing.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 07 90 00 - Joint Protection.
- D. Section 22 11 16 – Domestic Water Piping.

1.3 REFERENCES

- A. ASTM E 774 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified shall be supplied by a single manufacturer with a minimum of 10 years documented experience.

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- B. Installer Qualifications: A single installer with a minimum of 5 years demonstrated experience installing products of the same type and scope as specified.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Provide an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: AM-FINN Sauna & Steam, which is located at: 372 S. Eagle Rd. Suite 341; Eagle, ID 83616; Toll Free Tel: 800-237-2862; Tel: 208-724-8040; Fax: 208-286-0290; Email: [request info \(admin@am-finn.com\)](mailto:request_info_admin@am-finn.com); Web: <https://www.am-finn.com>
- B. Substitutions: Section 01 60 00 – Product Requirements.

2.2 SAUNA MATERIALS

- A. Lumber: Wood species and grades as follows, unless otherwise indicated:
 - 1. Western Red Cedar: WCLIB or WWPA; Clear Hear
- B. Insulating/Tempered Glass: Preassembled units consisting of insulating/tempered-glass units made from two lites of 5/32 inch (4mm) thick with 7/16 inch (11mm) air space, clear glass double sealed. Provide jamb and casing of western red cedar and complying with ASTM E 774 for Class CBA units
- C. Fasteners: Exposed: Stainless steel, or Exposed: hot-dip galvanized.

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2.3 SAUNAS

- A. Pre-Cut Saunas: Provide manufacturer's standard interior finishes, pre-hung door, and trim; designed to be constructed as a permanent part of the structure.
1. Rooms must be prepared ahead of sauna installation, including studding, insulation, and plywood for attaching paneling
 2. Vapor Barrier - FSK Shield Vapor Barrier on all walls and ceilings
 3. Wood Species: Western Red Cedar, Clear Grade, S4S
 4. Interior Wall and Ceiling Paneling: 1/2 inch by 6 inches nominal V-joint, tongue-and-groove wood boards; kiln-dried to no more than 12 percent moisture content. Attached to wall vertically. Standard vertical pattern is 35 inch lower piece with 60 inch upper piece. Gap is covered by Split Wall Trim.
 5. Interior Trim: Clear Western Red Cedar
 - a. Split Wall Trim (Euro-Trim): 7/16 inch by 3-1/2 inch boards, mitered corners for blending. Covers gap between 35 inch and 60 inch Wall boards.
 - b. Ceiling Trim: 7/16 inch by 3-1/2 inch boards, mitered corners for blending. Covers gap between ceiling and wall boards.
 - c. Corner Trim: 1 inch by 1 inch with 1/2 inch radius. Covers gap on corners.
 - d. Ceiling Corner Medallion: 1-1/2 inch by 1-1/2 inch by 3-1/2 inch Medallion for top of corner trim.
 - e. Base Trim: 7/16 inch by 3-1/2 inch boards, mitered corners for blending. Covers gap between wall boards and floor.
 6. Door: Manufacturer's standard, solid core, prehung door with glass vision panel as follows:
 - a. Door Wood Species: Western Red Cedar.
 - b. Jamb and Casing Wood Species: Western red cedar.
 - c. Glass Vision Panel: Preassembled units consisting of insulating/tempered-glass units made from two lites of 5/32 inch (4 mm) thick with 7/16 inch (11 mm) air space, clear glass double sealed. Provide jamb and casing of western red cedar and complying with ASTM E 774 for Class CBA units.
 - d. Size: 36 inches by 80 inches outside dimensions. Provide rough opening of 38 inches by 82 inches.
 - e. All doors are undercut 1 inch to 1-1/2 inches to provide proper and sufficient airflow into sauna. Do not cut vents or other openings in sauna walls unless required for sauna heater.
 - f. Door Hardware: Provide three self-closing brass hinges, and two wood door pulls (interior and exterior of door) of Western Red Cedar.
 7. Benches: ADA Compliant, Western Red Cedar, Clear Grade, S4S. All sharp edges have been broken, bench top boards have .125 inch fillet on corners, fasteners are hidden, standard 20 inch Depth and 19 inch Height. Exposed bench ends are covered with End Caps.
 - a. Standard 1 inch by 4 inch nominal wood boards, spaced not more than 1/2 inch apart and supported by 2 inch by 4 inch nominal wood framing.
 8. Flooring:
 - a. 2 foot by 2 foot Duckboards, 1 inch by 4 inch boards, 3/8 inch spacing, removable for cleaning
 9. Lighting:
 - a. Standard UL Listed Shatter-proof, water-proof light, hardwired.

2.4 SAUNA ACCESSORIES

- A. Guardrail: Wood guardrail for heater. Dimensions as required by heater UL listing.
- B. Thermometer.

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- C. Aluminum Hygrometer with Temperature and humidity readings.
- A. Wood bucket: 1-gallon (3.8L) capacity with plastic liner and wood ladle.

2.2 SAUNA HEATERS

- A. Scandia Ultra Sauna Heaters - Manufacturer's standard electric convection unit with stainless-steel interior, stainless-steel exterior. Provide heat-tested, shatter-resistant igneous rocks that are not in direct contact with heating-unit coils and are completely separated from the heating-unit coils. U.L. listed. Obtain rough-in instructions from supplier for electrical work which must be performed during build out phase prior to sauna installation. Especially critical if block or CMU wall construction is used. Conduits and location for heater control assembly on front wall are essential. Capacity as determined by manufacturer based upon square footage of sauna.
 - 1. Power Supply: 208 or 240-Volt and either single or three phase.
 - 2. Mounting: Wall mounted with bracket.
 - 3. Built-in Thermostat in Heater Controls: Manufacturer's T-Model system mounted integral with heater unit, with thermostat.
 - 4. Controls: Remote mechanical controls with thermostat and the following features:
 - a. Dial timer that automatically shuts off heater after 60 minutes.
 - b. Dial time-delay that allows heater to be preset up to 24-hours, seven days in advance, with manual override.

2.3 FABRICATION

- A. Fabricate saunas to dimensions, profiles, and details indicated. Sand boards smooth and ease edges to a radius of not less than 1/16 inch (1.6mm).
- B. Complete fabrication of Modular sauna panels, including assembly and hardware application, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation.
- C. Shop cut openings, to maximum extent possible, to receive hardware, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
- D. Nail or screw bench components together from bottom side. Countersink fasteners.
- E. Secure glass in wood frames with removable stops.
- F. Flush mount junction boxes for heater, control panel, and light fixtures, with concealed connecting electrical conduit.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that rough-ins for all utilities are properly sized and in correct locations.
- B. Do not begin installation until substrates have been properly prepared.

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- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 SAUNA INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install sauna components level, plumb, true, and straight with no distortions. Shim, as required, with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Install with no more than 1/16 inch in 96 inches (1.6 mm in 2400 mm) vertical cup or bow and 1/8 inch in 96 inches (3 mm in 2400 mm) horizontal variation from a true plane.
- C. Where local code requires installation of sprinkler heads inside sauna, insure heads are rated at a high enough temperature to withstand the heat which will collect at the ceiling of the sauna. Recommended sprinkler rated for temperatures between 250-300 degrees.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

**CITY OF GREAT FALLS INDOOR AQUATICS AND RECREATION CENTER
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SECTION 04 82 00

REINFORCED UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

- 1.1. Description: The CONTRACTOR shall furnish and install all masonry units and all other masonry according to the lines, dimensions, and elevations indicated on the plans. This work shall include, but is not limited to the following: concrete masonry units, facebrick veneer, glazed masonry units, reinforcement, anchorage, accessories, all cutting and fitting of masonry reinforcing, all flashings, sleeves, setting of all loose lintels, and all other items and work necessary to provide a complete structure.
- 1.2. Related Sections:
- A. 03200 Concrete Reinforcing
 - B. 03300 Cast-in-Place Concrete
 - C. 03600 Grouting
- 1.3. Submittals:
- A. Submit under provisions of Section 01300.
 - B. Submit 4 hard copies or 1 electronic set (as approved by ENGINEER) of the following to the ENGINEER for approval prior to fabrication:
 - 1. Shop Drawings: Detail Drawings
 - 2. Product Data: Clay or Shale Brick, Cement, Insulation, Water-Repellant Admixture
 - 3. Samples: Submit three samples of CMU smooth face block, three samples of split face CMU face block and three samples of burnished CMU shall be indicated by shading patterns on drawings, concrete brick, anchors, ties, bar positioners, and joint reinforcement.
 - 4. Test Reports: Concrete Masonry Units (CMU), concrete brick, anchors, ties, and bar positioners, joint reinforcement , and expansion-joint materials.
 - C. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
 - D.
- 1.4. Quality Assurance:
- A. Codes and Standards: Comply with the latest provisions of the following codes, specifications and standards, and as herein specified.
 - 1. American Concrete Institute (ACI) 530 Building Code Requirements for Masonry Structures.
 - ACI 530.1 Specifications For Masonry Structures.
 - ACI SP-66 ACI Detailing Manual.
 - 2. American Society of Testing and Materials (ASTM)
 - ASTM A82 Cold Drawn Steel Wire for Concrete Reinforcement.

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ASTM A123	Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products.
ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
ASTM A167	Stainless and Heat Resisting Chromium Nickel Steel Plate, Sheet, and Strip.
ASTM A525	Steel Sheet, Zinc Coated, (Galvanized) by the Hot Dip Process.
ASTM A580	Stainless and Heat Resisting Steel Wire.
ASTM A615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
ASTM A641	Zinc Coated (Galvanized) Carbon Steel Wire.
ASTM C5	Specification for Quick Lime for Structural Purposes.
ASTM C90	Load Bearing Concrete Masonry Units.
ASTM C91	Specification for Masonry Cement.
ASTM C144	Specification for Aggregate for Masonry Mortar.
ASTM C150	Specification for Portland Cement.
ASTM C207	Specification for Hydrated Lime for Masonry Purposes.
ASTM C270	Mortar for Unit Masonry.
ASTM C476	Standard Specification for Grout for Masonry.
ASTM C1019	Standard Test Method for Sampling and Testing Grout.
ASTM C1072	Standard Test Method for Measurement of Masonry Flexural Bond Strength.

3. International Code Council (ICC) International Building Code (IBC)
 4. International Masonry Industry All Weather Council (IMIAC): Recommended Practices and Guide Specification for Cold Weather Masonry Construction.
 5. IMIAC: Recommended Practices and Guide Specification for Hot Weather Masonry Construction.
- B. Perform Work in accordance with ACI 530 and ACI 530.1.
- C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- D. Hot and Cold Weather Requirements: TMS MSJC Specification.

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1.5. Mockup

- A. Construct a portion of veneer masonry wall into a panel sized 6' wide x full height which includes mortar and accessories, structural backup, flashings and indicates full extent of block/brick combination and patterns required.
- B. Mockup may remain as part of the Work.
- C. Mockup shall be approved by Architect/Owner and set standard for work.

PART 2 – APPLICABLE PUBLICATIONS

Not Used

PART 3 - PRODUCTS

3.1 Manufacturers: Concrete Masonry Units

- A. Kanta Products
- B. Engineer approved equal.

3.2 Concrete Masonry Units

- A. Solid and Hollow Block Units (CMU): ASTM C90, normal or standard weight and as follows:
 - 1. Block units shall have an average net area compressive strength as indicated below:
 - a. Celled block: 3,750 psi.
 - b. Bond beam block.: 3,750 psi
 - 2. Sizes: As required per Structural Drawings
 - 3. Exposed faces: Manufacturer standard texture and standard color.
- B. Masonry Veneer
 - 1. See Section 04813

3.3 Reinforcement and Anchorage

- A. Single Wythe Joint Reinforcement: Hot dipped galvanized, 9 gauge x 9 gauge
 - 1. Approved Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:
 - a. Hohmann & Barnard
 - b. Masonry Reinforcing Corp
 - c. Dur-O-Wal, Inc.
 - d. Approved Equal
- B. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars, uncoated finish.
- C. Wall Ties: Formed steel wire, 14 gage thick, adjustable, G-90 galvanized.
 - 1. Approved Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:
 - a. Hohmann & Barnard, Model X-Seal.
 - b. Duro-Wal

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- c. Masonry Reinforcing Corp.
- d. Approved Equal

3.4 Mortar

- A. Mortar shall conform to ASTM Specification C 270 for type M or S. Mortar shall be color tinted. Color is to match masonry units.

3.5 Grout and Ready-Mixed Grout

- A. Grout shall conform to ASTM C476. Grout consistency to be coarse grout unless fine grout is required by ACI 530/ASCE 5/TMS 402 based on minimum grout space dimensions coupled with maximum pour heights. Grout slump shall be between 8 and 10 inches. Minimum grout strength shall be 3,000 psi in 28 days, as tested by ASTM C1019. Ready-Mixed grout shall conform to ASTM C94.
- B. Grout Barriers: Grout barriers for vertical cores shall consist of fine mesh wire, fiberglass, or expanded metal.

3.6 Portland Cement

- A. Portland Cement shall be Type 1 in accordance with ASTM C150.

3.7 Hydrated Lime

- A. Hydrated lime shall be Type S in accordance with ASTM C207.

3.8 Quicklime (Pulverized)

- A. Quicklime (pulverized) shall pass a No. 20 sieve and at least 90 percent shall pass a No. 50 sieve and shall conform to ASTM Specification C5.

3.9 Masonry Cement

- A. Masonry cement shall be Type II in accordance with ASTM C91.

3.10 Sand

- A. Sand shall conform to ASTM Specification C144 and shall be well-screened, clean, hard, sharp, siliceous, free from injurious amounts of loam, silt or other impurities and shall be composed of grains of varying sizes within the following limits:

Sieve Size	Total Passing Percentage
No. 8	100
No. 16	60-100
No. 100	0-15

3.11 Water

- A. Water shall be fresh, clean and free from injurious quantities of acid, alkali, sewage or other deleterious substances.

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3.12 Anchors and Ties

- A. Anchors and ties shall be of wire or sheet metal so looped and corrugated as to form a secure bond and shall be zinc-coated. Wire shall be at least 0.12 inches in diameter and sheet metal shall be at least 7/8 inches wide and 0.036 inches thick. Anchors shall extend to within one-half inch of each face of wall. The ties and anchors shall conform to ASTM Specification A-525. The corrugated masonry anchors shall be 2" x 8" galvanized steel and shall be spaced at 18 inches horizontal center to center and for each sixth course.

3.13 Loose Fill Insulation

- A. Insulation shall be similar to Zonolite or Vermiculite.

3.14 Window Sills

- A. Window sills shall be precast concrete, of a standard shape, having drip nosing and an exterior projection of about 1 1/2 inches.

3.15 Flashings

- A. Copper/Kraft Paper Flashings: 5 oz/sq ft sheet copper bonded to fiber reinforced asphalt treated Kraft paper. Provide products by the following manufacturers.
 - 1. Approved Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:
 - a. York Flashings: Copper Fabric
 - b. Afco Flashing: Copper Fabric
- B. Lap Sealant: Butyl or Acrylic.

3.16 Accessories

- A. Preformed Control Joints: Polyvinyl chloride material. Provide with corner and tee accessories, cement fused joints.
 - 1. Approved Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:
 - a. Amico
 - b. Greenstreak
 - c. Volclay
 - d. PVC ASTM D2287 general purpose grade.
 - e. Approved Equal
- B. Joint Filler: Closed cell polyvinyl chloride or polyethylene; oversized 50 percent to joint width; self expanding.
- C. Weeps: Cell vents.
- D. Panel Reinforcing: Two parallel 9 gage wires either 1-5/8 inches or 2 inches on center with electrically butt-welded crosswires spaced at regular intervals, galvanized after welding; complying with ASTM A 82 and ASTM A 153 or Stainless Steel in the same dimensions.

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- E. Panel Anchors: 20 gage perforated steel strips 24 inches long by 1-3/4 inches wide, hot dipped galvanized after perforation or 24 gage Stainless Steel 16 inches long by 1-3/4 inches wide.
- F. Sealant (caulk): Non-staining; waterproof mastic; urethane type; use fire rated sealant for fire rated assemblies.

PART 4 - EXECUTION

4.1 Examination:

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other sections of work are properly sized and located.
- C. Verify that built in items are in proper location, and ready for roughing into masonry work.

4.2 Storing Masonry Materials

- A. Masonry Units. Masonry units at all times shall be covered or stored in an approved manner that will protect them from contact with the soil and exposure to weather. Chipped or cracked units will not be used.
- B. Cement and Lime. Cement and lime shall be stored off the ground in a dry, weather tight and properly ventilated building, with adequate provisions for prevention of absorption of moisture. Storage shall be such as to permit easy access for inspection and identification of each shipment
- C. Sand. Sand shall be stored in such a manner as to prevent any foreign matter being included in the mortar, and it shall be protected from freezing. Heating of sand may be required in cold weather.

4.3 Preparation:

- A. Direct and coordinate placement of metal anchors supplied to other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

4.4 Mixing Mortar

- A. Mortar materials shall be accurately measured by volume and mixed until evenly distributed throughout the batch. Unless otherwise approved, materials shall be mixed in a mechanical batch mixer. Actual mixing time shall not be less than two minutes. One bag of Portland Cement weighing not less than 94 pounds shall be considered as one cubic foot. Re tempering will not be permitted. Mortar having taken its initial set shall not be used.
Hydrated Lime. Hydrated lime shall be mixed with water to the consistency of putty and stored to prevent evaporation for at least 24 hours before use.
- B. Quicklime. Quicklime shall be slacked with enough water to make a cream, passed through a No. 10 sieve and stored to prevent evaporation for at least three days before use.
- C. Optional Mortar Mix. The Contractor will have the option of using masonry cement and Portland Cement in lieu of Portland Cement and lime. Mortar shall have a minimum

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compressive strength of 2,500 pounds per square inch when tested in cubes or cylinders at the end of 28 days.

- D. Strength. The mortar shall have a compressive strength of 2,500 psi.
- E. Testing. A series of tests to show compliance with ASTM Specification C-476 shall be conducted as the masonry work progresses. One series will be required for each 10,000 square feet of wall area.

4.5 Coursing:

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Tooled concave.
 - 4. Provide horizontal bond beams at 4'-0" o.c. or as indicated on structural drawings.

4.6 Placing and Bonding

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work. Bed joints shall not exceed 5/8-inches in thickness.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- D. Remove excess mortar as work progresses.
- E. Interlock intersections and external corners.
- F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- H. Isolate masonry partitions from vertical structural framing members.
- I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler and seal as required.
- J. Cold Weather Placing. Masonry shall not be erected when the ambient temperature is below 40°F. on a rising temperature or below 45°F. on a falling temperature, when there is a probability of such a condition existing within 48 hours, unless special provisions are made for heating the materials and protecting the work. No frozen work shall be built upon. No units having a film of water or frost on surface shall be laid in walls.
- K. Protection. Surfaces of masonry not being worked on shall be properly protected with a covering of strong waterproof membrane well secured in place.

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- L. Chases, Slots and Recesses. The Contractor shall build all slots, chases, recesses or openings as required for the proper installation of other work. This work shall be done at the points affected before the work is laid out, according to the dimensions indicated on the plans and in accordance with information furnished. He shall also build in miscellaneous items such as steel lintels, vent louvers, vents and other constructive work.
 - M. Cutting and Patching. Cutting and patching of masonry required to accommodate the work of others shall be performed by the masonry mechanics.
- 4.7 Weeps:
- A. Install weeps in veneer at 24 inches oc horizontally above through wall flashing, above shelf angles and lintels and at bottom of walls and where indicated on drawings.
- 4.8 Reinforcement and Anchorage – Masonry Veneer
- A. See Section 04813.
- 4.9 Masonry Flashings:
- A. Extend flashings horizontally at foundation walls, above ledge or shelf angles and lintels and at bottom of walls.
 - B. Turn flashing up minimum 12 inches and seal to sheathing over wood framed back up.
 - C. Lap end joints minimum 8 inches and seal watertight.
 - D. Turn flashing, fold, and seal at corners, bends, and interruptions.
- 4.10 Lintels:
- A. Install loose steel lintels as indicated over openings. Lintels shall extend into masonry a minimum of 24 inches or as indicated on drawings.
 - B. Provide masonry lintels where shown and wherever openings of more than 1'-0" for block size units are shown without structural steel or other supporting lintels.
 - 1. For hollow concrete masonry unit walls, use specially formed U-shaped lintel units with reinforcement bars placed as shown filled with coarse grout.
 - 2. Provide minimum bearing 8" at each jamb, unless otherwise indicated.
 - 3. Place grout in lintels or beams over openings in one continuous pour.
- 4.11 Engineered Masonry:
- A. Lay masonry units with core cells vertically aligned clear of mortar and unobstructed.
 - B. Place mortar in masonry unit bed joints back 1/4 inch from edge of unit grout spaces, bevel back and upward. Permit mortar to cure 7 days before placing grout where required.
 - C. Reinforce masonry unit cores and cavities with reinforcement bars and grout as indicated.
 - D. Retain vertical reinforcement in position at top and bottom of cells and at intervals not exceeding 192 bar diameters.

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- E. Wet masonry unit surfaces in contact with grout just prior to grout placement.
 - F. Grout spaces less than 2 inches in width with fine grout using low lift grouting techniques. Grout spaces 2 inches or greater in width with course grout using high or low lift grouting techniques.
 - G. Provide horizontal bond beams at 4'-0" o.c. or as indicated on structural drawings. Reinforce as indicated.
- 4.12 Control Joints:
- A. Do not continue horizontal joint reinforcement through control joints, unless otherwise indicated.
 - B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions. Seal exposed ends of control joint.
 - C. Size control joints in accordance with Division 7 requirements for sealant performance.
- 4.13 Built In Work
- A. As work progresses, install built in metal door frames, window frames, wood nailing strips, anchor bolts, plates, and other items to be built in the work and furnished by other sections.
 - B. Install built in items plumb and level.
 - C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout. Fill adjacent masonry cores with grout minimum 16 inches from framed openings.
 - D. Do not build in organic materials subject to deterioration.
- 4.14 Tolerances:
- A. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.
 - B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
 - C. Maximum Variation from Plumb: 1/4 inch per story non cumulative.
 - D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft.
 - E. Maximum Variation of Joint Thickness: 1/8 inch in 8 ft.
- 4.15 Cutting and Fitting:
- A. Cut and fit for conduit, sleeves and grounds. Coordinate with other sections of work to provide correct size, cheapened location.
 - B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

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4.16 Formwork and Shores:

- A. Temporary Formwork: Provide formwork and shores as required for temporary support of reinforced masonry elements.
- B. Formwork shall be designed and shop drawings prepared by a registered professional engineer in the state where the project is located.
- C. Formwork shall not be removed until the reinforced masonry member has cured sufficiently to carry its own weight and any other loads that may be placed on it during construction. All not less than the following minimum time to elapse after completion of the member before removing shores or forms provided adequate curing conditions have been obtained during the curing period:
 - 1. Lintels and beams: 10 days
 - 2. Allow 16 hours to elapse after completion of masonry columns and walls before placing floor or roof construction loads. Allow an additional 48 hours before applying concentrated loads such as girders, beams or trusses.

4.17 Field Quality Control:

- A. Field inspection and testing will be performed under provisions of Section 01430 Quality Assurance.
- B. Inspect and test all masonry work including mortar tests.
- C. Inspect and test engineered masonry work.

4.18 Cleaning:

- A. Remove excess mortar and mortar smears as work progresses.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non metallic tools in cleaning operations.
- E. At completion of the work, all holes in joints of exposed masonry surfaces shall be pointed by completely filling with mortar. After pointing, all surfaces shall be wetted and then cleaned with a solution of 10 percent by volume of muriatic acid, applied with a stiff fiber brush leaving the masonry clean and free of mortar daubs. After cleaning, all masonry shall be rinsed down with clear water.

4.19 Masonry Sealant

- A. Surface Preparation and Priming: Bare masonry surfaces shall be cleaned of all stains, efflorescence, oils, and greases; and then thoroughly dried. Structural defects (holes, cracks or loose masonry) shall be corrected with an appropriate patching material. If it has recently rained, allow the surface at least three days drying before application. On new construction, apply after the cement or mortar has had time to cure minimum 30 days. Sometimes form saving oils and concrete curing compounds leave an oily or waxy surface film on poured concrete and tilt up, precast slab constructed masonry surfaces. These deposits must first be removed by sandblasting or by weathering for at least two years before applying Silicone Water Repellent.

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- B. Application and Reduction. Apply non-diluted Silicone Water Repellent generously with a brush or low pressure garden sprayer, allowing material to run down surfaces 6 to 12 inches. These runs will disappear as the material dries. Application temperatures should be between 40°F. and 100°F. Higher or lower temperatures will reduce the effectiveness of the application. Only one full coat is necessary for full protection.
- C. Cleanup area and equipment with Kem Brush and Roller Cleaner or Mineral spirits.

END OF SECTION