St.Francis Neighborhood Center-Phase Two (SNFC-PH2)

RM Sovich Architecture

PROJECT MEMBERS	COMPANY NAME	CODE
Architect	RM Sovich Architecture	**RMSA**
Construction Manager		
Civil Engineer	-	
Structural Engineer	Skarda & Associates, Inc.	**SKA**
MEP Engineer	Henry Adams Consulting Engineers	**HAC**
Kitchen Consultant	-	
Interior design		
Contractor	TBD	**TBD**

Item #	RFI#	Name	Date received	Generated by	Dwg / Spec #	Description/question	Conflicting Sheet/ Spec #	Date/ Forwarded to	Date/ Received from	Arch/Engineer Response Date	Arch/ Engineer Response Date	Arch / Engineer Response	Revised drawings/Spesc.	Responsibility	Status	ADDENDUM #
1	0		3/16/23		A503 and A504	We are missing A503 and A504 from the package. The cover sheet listed Sheet # A503 and A504 as part of the packaged drawing. Please advise					3/16/23	Drawings A503 and A504 are attached.		Architect	Closed	ADD#01
2	1	Michael Trionfo	3/17/23		S102	2. S102 calls for "RT-1 Prefab Wood & Metal". The on center spacing and image representing the trusses would suggest a metal-webbed bar joist similar to a RedBuilt Open Web Truss, rather than a standard metal plate connected wood truss. Please confirm the Structural Engineer of Records intent for this project.					3/23/23	**We concur. Red-Built Open Webbed trusses are acceptable or equal. The load requirements are on the structural drawings. The truss is to be engineered by the manufacturer. Stamped engineered drawings are required.**		Structural	New Item	ADD#01
3	1	Michael Trionfo	3/17/23			2. Will the building be occupied during construction?					3/23/23	**Yes. The portion of the building to be renovated will be unoccupied. But the L shaped recent addition will be occupied. The users will need access via the courtyard and emergency egress through the Linden avenue exit. A meeting with the users will need to take place to coordinate the access when the Linden Ave porch is being replaced.**		Owner	New Item	ADD#01
4	1	Michael Trionfo	3/17/23			3. The luminaire schedule shows type PC fixtures with and without battery backup, but the type designations are the same. Please provide the battery backup fixture locations.								MEP	**Pending**	ADD#01
5	1	Michael Trionfo	3/17/23			4. Are the C-1 type fixtures shown on the luminaire schedule the type C fixtures shown on the E drawings?					3/23/23	**Yes.**		MEP	New Item	ADD#01
6	1	Michael Trionfo	3/17/23		E202	5. There is 1 type WS-4 light fixtures shown on drawing E202 but it is not listed on the luminaire schedule. Please provide light fixture information.					3/23/23	**Light fixture to match existing outside light fixture on the last addition. AP-LED-X47-NFL-SAP12-C + RM- D42-SAP-MT. Use SAP finish.**		MEP	New Item	ADD#01
7.0	1	Michael Trionfo	3/17/23			6. Please see attached Substitution Request from Secure Door and Hardware.					3/23/23	**The submitted substation will be considered but pricing shall be submitted as an alternate to be reviewed by client for both specified modern fold and for the requested substitute.**		Owner	New Item	ADD#01
8	1	Michael Trionfo	3/17/23			7. Is there a spec for the metal canopy on the new addition?					3/23/23	**It is not a product, it is to be custom framed with the building framing. The fascia is Hardi board and the flashing is white metal flashing.**		Architect	New Item	ADD#01
9.0	1	Michael Trionfo	3/17/23		SIT-2 and A100/ A101	8. There is a difference on how much of the white iron fence and gate should be relocated between drawing SIT-2 and A100/A101. Which drawing should we use for pricing?					3/23/23	**We would like to enclose it from three sides. Use the site plan- SIT-2**		Architect	New Item	ADD#01
10	1	Michael Trionfo	3/17/23			9. On the drawings at the trash pad, there is fence and a note that the new fence is to match the existing fence on site, but there are two types of fence on site – the white iron and wood. Which one should be installed at the trash pad?					3/23/23	**Please use six foot white iron fence as manufactured by LongFence. A cut sheet of a section is attached.**	Spec	Architect	New Item	ADD#01
11	2	Kim Boyd	3/21/23		A602.	1. Please refer to the snip from Plan Page 14 - A602. The flooring as indicated, shows the RF-7 walk off mat in Classroom 222. However, the pattern indicates the Kinetex carpet tile. The carpet tile seems more likely. Should we assume this to be a labeling error?					3/23/23	**We concur. Please use the Kinetex carpet tile pattern.**		Architect	New Item	ADD#01
12	2	Kim Boyd	3/21/23			2. Also, there is a round "medallion" shape in the center of Rm 222 and in Rm 223, that seems to indicate a small piece of RF-2 Forbo sheet vinyl, inset into the Kinetex carpet tile. Should we quote it this way? This just seems like a very odd design idea, but if you think that is what they want, we will quote it as is indicated.					3/23/23	**No medallion shape insert. That is a circle indicating the start point of the Kinetex carpet. Replace the note that refers to RF2 to read as "start pattern here".**		Architect	New Item	ADD#01
13	2	Kim Boyd	3/21/23			3. Lastly – There is a Johnsonite Millwork type base in the finish legend, but no indication of it on the finish plan. Should we assume that the new millwork base is to go in all areas of new flooring?					3/23/23	**Yes. All walls to receive Johnsonite wall base with the exception of the renovation of the existing building where it has to receive wood base.**		Architect	New Item	ADD#01
14	3	Michael Trionfo	3/21/23		Spec	1. Please provide a spec for the window blinds.					3/23/23	**See the attached spec.**	Spec	Architect	New Item	ADD#01

15	3	Michael Trionfo	3/21/23			2. Please provide more detail on the retaining wall.Drawings says (Rebar found 8" wide retaining wall")					3/23/23	**8" CMU wall reinforced w/ #4 @ 2'-8" OC in grout filled cells on 2'-0"x1'-0" deep concrete footing reinforced w/ 2-#5 continuous bottom. Refer to S104.**		Structural	New Item	ADD#01
16	3	Michael Trionfo	3/21/23			3. Is the IT/Data by the owners vendor or contractor?					3/23/23	**Ring and string in all concealed area to be by Contractor. IT/Data by the Owners vendor.**		Architect	New Item	ADD#01
17	3	Michael Trionfo	3/21/23			I'm unclear as to whether the surfacing is only the area shaped like the "number 9", or if it's the entire area. See below:					3/23/23	**The entire area. The color of the surface will changed based on the shape.**		Architect	New Item	ADD#01
18	4	Kim Boyd	3/21/23			1. Confirm existing part of the building will be unoccupied.					3/23/23	**The existing brick structure to be renovated will be unoccupied. The last addition will remain occupied.**		Architect	New Item	ADD#01
19	4	Kim Boyd	3/21/23		Spec	2. Please provide material Specs for Exterior hardi siding, wood & metals.					3/23/23	**See attached specification.**	Spec	Architect	New Item	ADD#01
20	4	Kim Boyd	3/21/23		A0.6 , A201 & A202	3. Please clarify extent of Exterior painting. Notes on images A0.6 show existing painted masonry wall on South Elevation, and existing signage panel scheduled for new finishes, however Elevations A201 & A202 do not. Please advise.					3/23/23	**Remove the paint instruction from existing masonry. Include painting the signage panel.**		Architect	New Item	ADD#01
21	4	Kim Boyd	3/21/23			4. Please clarify extent of refinish related to existing stained wood trim, stair railing and wall panels @ main circulation stair (Keynote 14/a101, notes on A102, A601 & A602) and stained doors & door frames/casing on 1st & 2nd floors of existing renovation.					3/23/23	**All the wood inside shall be sanded and re-stained - refer to the wood restoration specification for materials.**		Architect	New Item	ADD#01
22	4	Kim Boyd	3/21/23			5. Please clarify extent of refinish related to existing Wall Base EX-B1 & finish on new Wall Base WD-1.					3/23/23	**All the inside existing brick structure to be renovated shall be refinished as Wall Base EX-B1. Provide new Wall Base WD-1 in rooms per finish schedule.**		Architect	New Item	ADD#01
23	4	Kim Boyd	3/21/23		A004	6. Please clarify finish on Ceilings with "Stain" call-out on Finish Schedule A004.					3/23/23	**Wood deck at the specified rooms shall be clear or translucent stained wood ceiling including the underside of the porch.**		Architect	New Item	ADD#01
24	5	Kim Boyd	3/23/23		Spec	1. The new front porch, roof plan calls for TPO, elevations show a sloped standing seam metal roof, which is it?					3/23/23	**The porch roof is standing seam roof. Find the spec for standing seam metal. Contractor to provide roof underlayment over plywood and Ice and Water Shield 36" at the edge of roofing.**	Spec	Architect	New Item	ADD#01
25	5	Kim Boyd	3/23/23		Spec	2. The specs call for the TPO to be a heavy-duty vapor barrier, but the drawings do not. Do they want the VB or no?					3/23/23	**Provide heavy-duty vapor barrier per the spec.**		Architect	New Item	ADD#01
26	5	Kim Boyd	3/23/23		**AD001.**	3. The specs talk about demo, but there is no roof demo that I saw. Is that correct?					3/23/23	**There is a porch roof demolition. The existing porch roof has to be removed. See note number 21 on AD001.**		Architect	New Item	ADD#01
27	5	Kim Boyd	3/23/23		Spec	4. The specs call for this "Edge Accu Fit Guard Rail system" the plans look like it would go on the new section of flat roof. Is that something they still want installed there?					3/23/23	**Provide Edge Accu Fit Guard Rail system per the spec- locate it around the new HVAC unit.**		Architect	New Item	ADD#01
28	5	Kim Boyd	3/23/23			5. TPO spec calls for R30, plans show both R30 & R38, which thickness of insulation do they want? R30 is code.					3/23/23	**For continuous insulation use R30.**		Architect	New Item	ADD#01
29	5	Kim Boyd	3/23/23		Spec	6. Specs talk about "Gravity Vents," but I see no details or notes showing them on the plans.								MEP	**Pending**	ADD#01
30	5	Kim Boyd	3/23/23			7. Spec Calls for Firestone TPO. Firestone was just bought out and is now called "Elevate" and the company is in flux right now, so I'd like to use GAF TPO in lieu of the Firestone. Is that OK?					3/23/23	**Yes.**		Architect	New Item	ADD#01
31	5	Kim Boyd	3/23/23			8. Who is the existing control contractor in the building?								Owner	New Item	ADD#01
														Owner	**Pending**	ADD#01

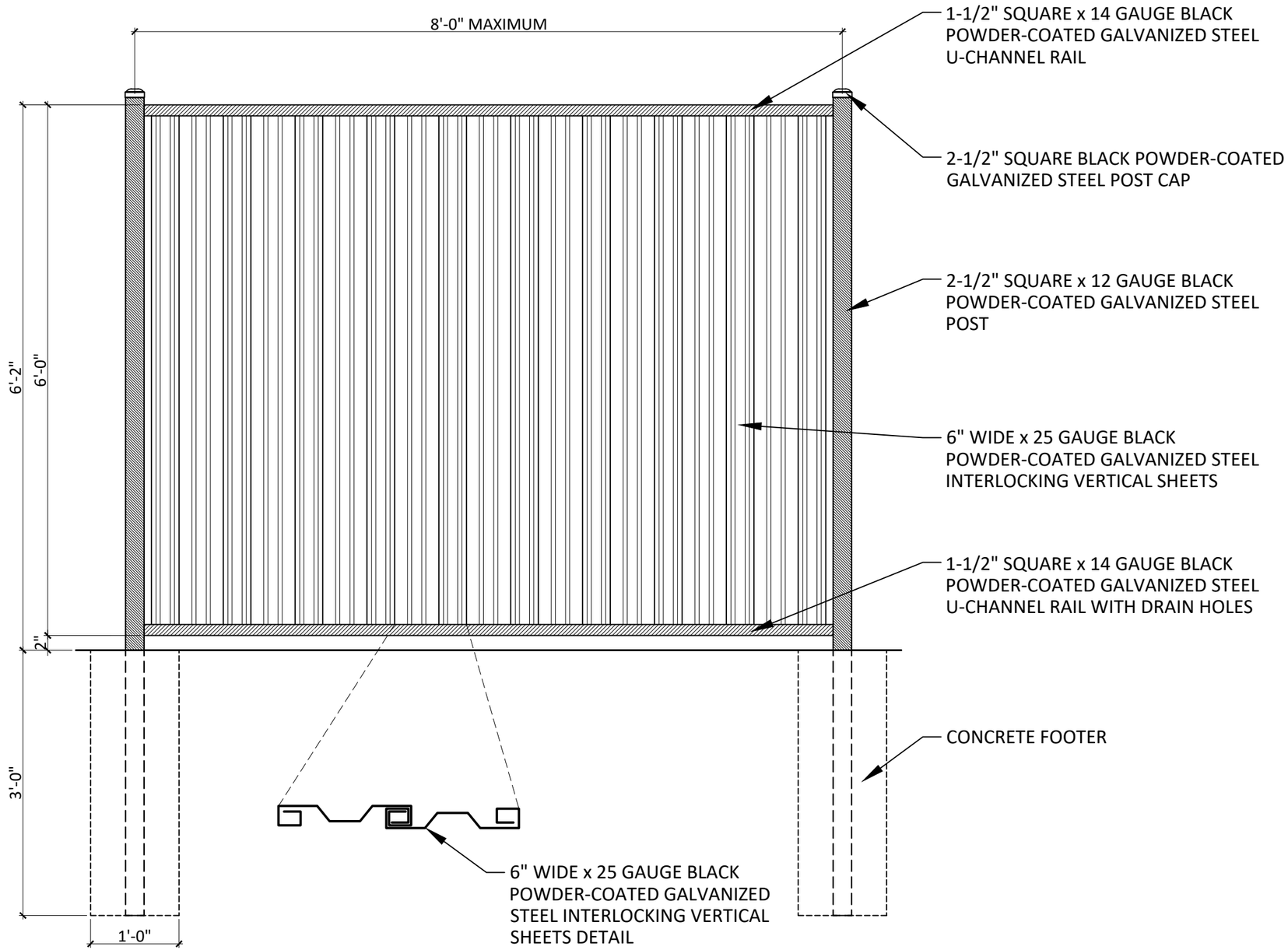
RFI ATTACHMENTS

RFI ATTACHMENTS

PROJECT : SNFC - PHASE-2
PROJECT# : #21005
DATE: 3/23/23
FROM: RM Sovich Architecture RMSOVICH@RMSARCHITECTURE.COM, Ftemelisso@rmsarchitecture.com

These attachments address questions by contractors, clarifications and revisions made after the drawings have been issued for bid and shall become part of the bid package for the above referenced project.

Item #	RFI ##	Attachments	Issued date
1	0	A503 and A504	3/23/23
10	1	A cut sheet of a section is attached.	3/23/23
14	3	Window blinds and roller shader spec	3/23/23
19	4	Exterior hardi siding, wood & metals spec	3/23/23
24	5	Standing seam metal Spec for	3/23/23



6'H IRON PRIVACY PANEL FENCE - ELEVATION

SCALE: 3/4" = 1' - 0"

LONG FENCE
www.longfence.com
1910 BETSON COURT
ODENTON, MD 21113
(301) 261-3444 (410) 793-0600

DATE: 1 / 14 / 2021

REVISION DATE:

LONG FENCE JOB # 20GC664

STATUS: SUBMITTAL

PROJECT: IRON PRIVACY PANEL FENCE & S SW GATE

COLOR: BLACK

PROJ MGR: CHRIS KUNKEL

DETAILER: ------

CUSTOMER: *WHITING TURNER CONT. COMPANY*

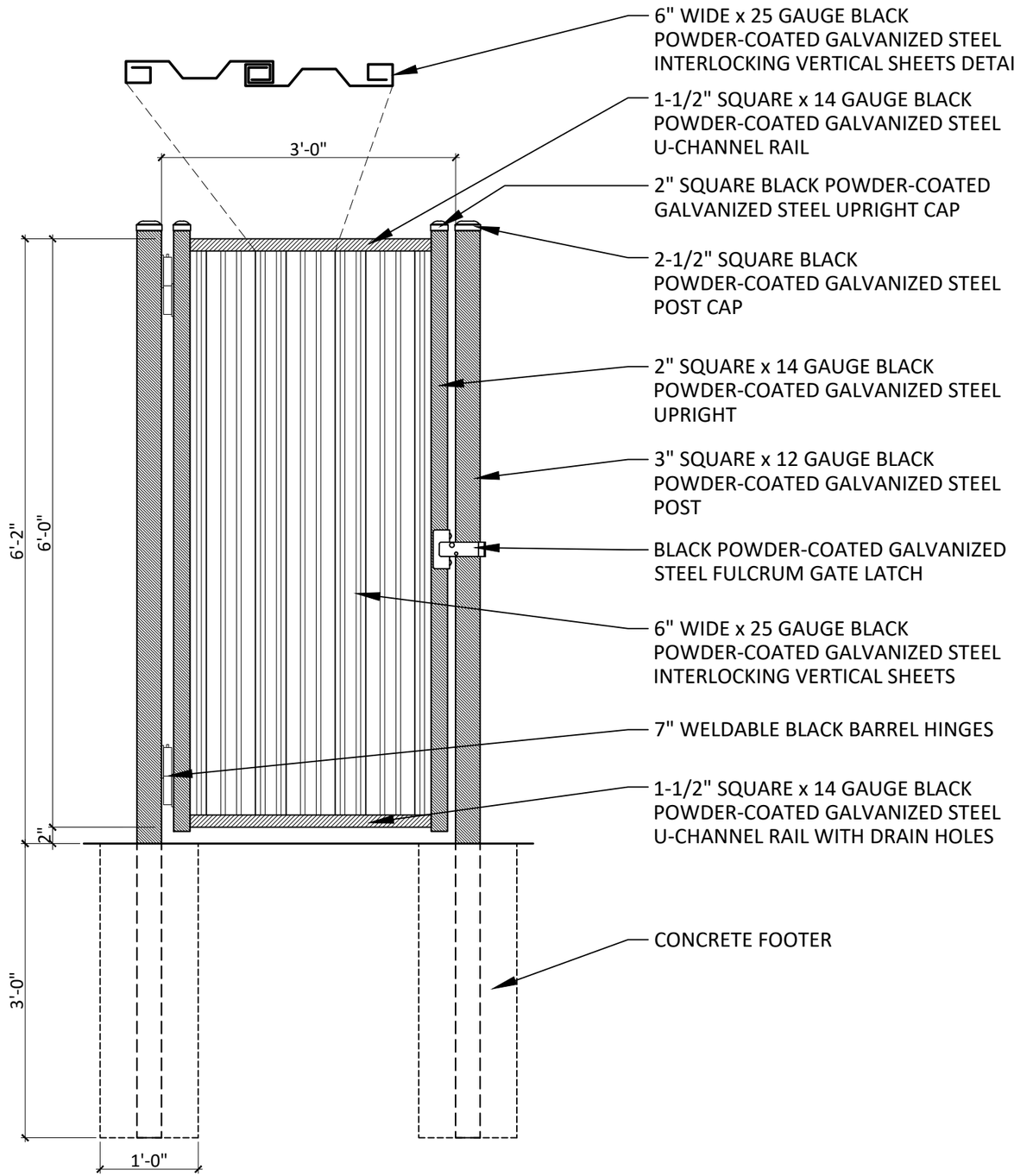
JOB NAME: ***ST. FRANCIS NEIGHBOR HOOD CENTER ADDITION***

2405 LINDEN AVENUE, BALTIMORE, MD 21217

DRAWN: CADIV

SCALE: AS NOTED

1 / 2



6'H - 3'W IRON PRIVACY SINGLE SWING GATE - ELEVATION

SCALE: 3/4" = 1' - 0"

LONG FENCE
www.longfence.com
1910 BETSON COURT
ODENTON, MD 21113
(301) 261-3444 (410) 793-0600

DATE: 1 / 14 / 2021

REVISION DATE:

LONG FENCE JOB # 20GC664

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2405 LINDEN AVENUE, BALTIMORE, MD 21217

DRAWN: CADIV

SCALE: AS NOTED

SECTION 07 46 00. SIDING

1.GENERAL,

1.1. SECTION INCLUDES

A. Factory-finished fiber cement panels, shingle, trim, fascia, moulding, and accessories; James Hardie HZ5 Engineered for Climate Siding.

1.2. RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

1.3. REFERENCES

A. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets.

B. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.

C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

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: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.

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 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5. QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years' experience with installation of similar products.

B. 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 siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

C. 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. Product Warranty: Limited, non-pro-rated product warranty.

1. HardiPanel HZ5 vertical siding for 30 years.

B. Product Warranty: Limited, product warranty.
1. HardieTrim HZ and HZ5 boards for 15 years.

C. Finish Warranty: Limited product warranty against manufacturing finish defects.
1. When used for its intended purpose, properly installed and maintained according to James Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.

D. Workmanship Warranty: Application limited warranty for 2 years.

2.PRODUCTS

2.1. MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 231 S. La Salle St. Suite 2000; Chicago, IL 60604; Toll Free Tel: 877-236-7526; Email: request info (info@jameshardie.com); Web: https://www.jameshardiepros.com | https://www.jameshardie.com

B. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2. SIDING

A. Vertical Siding: HardiePanel HZ5 siding as manufactured by James Hardie Building Products, Inc.
1. Type: Smooth Vertical siding panel 4 feet by 8 feet (1219 mm by 2438 mm).
2. Type: Smooth Vertical siding panel 4 feet by 9 feet (1219 mm by 2743 mm).
3. Type: Smooth Vertical siding panel 4 feet by 10 feet (1219 mm by 3048 mm).
4. Trim Accessories:

a. Base Outside Corner Trim: To be used as an outside corner connection for Base trim.
b. Base Inside Corner Trim: To be used as an inside corner connection for Base trim.
c. Base Jointer: To be used to connect Base trims.
d. HardieTrim Boards: Fiber cement trim for corners and windows. Can be mounted horizontally or vertically.

B. Trim:
1. HardieTrim HZ5 boards and HardieTrim HZ boards as manufactured by James Hardie Building Products, Inc.
2. HardieTrim HZ5 Fascia boards as manufactured by James Hardie Building Products, Inc.
3. HardieTrim HZ5 Crown moulding manufactured by James Hardie Building Products, Inc.
4. Artisan HZ5 Accent trim as manufactured by James Hardie Building Products, Inc.

2.3. FASTENERS

A. Wood Framing Fasteners:
1. Wood Framing: 4d common corrosion resistant nails.
2. Wood Framing: 6d common corrosion resistant nails.
3. Wood Framing: 8d box ring common corrosion resistant nails.
4. Wood Framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
5. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
6. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2-1/2 inches (64 mm) corrosion resistant siding nails.
7. Wood Framing: 0.091 inch (2.3 mm) shank by 0.221 inch (5.6 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
8. Wood Framing: 0.091 inch (2.3 mm) shank by 0.225 inch (5.7 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
9. Wood Framing: 0.121 inch (3 mm) shank by 0.371 inch (9.4 mm) head by 1-1/4 inches (32 mm) corrosion resistant roofing nails.
10. Wood Framing: No. 11 gauge 1-1/4 inches (32 mm) corrosion resistant roofing nails.
11. Wood Framing: No. 11 gauge 1-1/2 inches (38 mm) corrosion resistant roofing nails.
12. Wood Framing: No. 11 gauge 1-3/4 inches (44 mm) corrosion resistant roofing nails.
13. Wood Framing: 16 gauge 1-1/2 inches (38 mm) stainless finish nails

2.4. FINISHES

A. Factory Primer: Provide factory applied universal primer.
1. Primer: Factory primed by James Hardie.
2. Topcoat: Refer to Section 09 90 00 - Painting and Coating and Exterior Finish Schedule.

B. Factory Finish: Refer to Exterior Finish Schedule.
1. Product: ColorPlus Technology by James Hardie.
2. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.
3. Process:
a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.

b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photo spectrometer and verified by third party.

4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed.
5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.

C. Factory Finish Color for Trim, Soffit and Siding Colors:
1. Alpine Frost JH50-10. or
2. Arctic White JH10-20. *To be selected from sample with Owner.*

3.EXECUTION

3.1. EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Nominal 2 inch by 4 inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
1. Install water-resistive barriers and claddings to dry surfaces.
2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
3. Protect siding from other trades.

C. Minimum 20 gauge 3-5/8 inch (92 mm) C-Stud 16 inches maximum on center or 16 gauge 3-5/8 inches (92 mm) C-Stud 24 inches (610 mm) maximum on center metal framing complying with local building codes, including the use of water-resistive barriers and/or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
1. Install water-resistive barriers and claddings to dry surfaces.
2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
3. Protect siding from other trades.

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.

C. Install a water-resistive barrier is required in accordance with local building code requirements.

D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

E. Install Engineered for Climate HardieWrap weather barrier in accordance with local building code requirements.

F. Use Hardie Seam Tape and joint and laps.

G. Install Hardie flashing, and Hardie Flex Flashing

3.3. INSTALLATION - HARDIEPANEL HZ5 VERTICAL SIDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Install metal Z flashing and provide a 1/4 inch (6 mm) gap at horizontal panel joints.

C. Place fasteners no closer than 3/8 inch (9.5 mm) from panel edges and 2 inches (51 mm) from panel corners.

D. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

E. Maintain clearance between siding and adjacent finished grade.

F. Specific framing and fastener requirements refer to Tables 2 and 3 in International Code Council Evaluation Report No. ESR-2290.

G. Factory Finish Touch Up: Apply touch up paint to cut edges in accordance with manufacturer's printed instructions.
   1. Touch-up nicks, scrapes, and nail heads in pre-finished siding using the manufacturer's touch-up kit pen.
   2. Touch-up of nails shall be performed after application, but before plastic protection wrap is removed to prevent spotting of touch-up finish.
   3. Use touch-up paint sparingly. If large areas require touch-up, replace the damaged area with new pre-finished siding. Match touch up color to siding color through use of manufacturer's branded touch-up kits.

3.4. INSTALLATION - HARDIETRIM HZ5 BOARDS

A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.

B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.

D. Maintain clearance between trim and adjacent finished grade.

E. Trim inside corner with a single board trim both side of corner.

F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.

G. Allow 1/8 inch gap between trim and siding.

H. Seal gap with high quality, paint-able caulk.

I. Shim frieze board as required to align with corner trim.

J. Fasten through overlapping boards. Do not nail between lap joints.

K. Overlay siding with single board of outside corner board then align second corner board to

outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.

L. Shim frieze board as required to align with corner trim.

M. Install HardieTrim Fascia boards to rafter tails or to sub fascia.

3.5. FINISHING

A. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

3.6. PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 12 21 00 - WINDOW BLINDS
Part I - General

1.01 Scope

A. Supplier: Furnish and install 2 Inch Levolor Faux Wood Blinds.

B. Related work specified elsewhere.

1. Rough Carpentry

2. Windows

1.02 Submittals

A. Product Data: Manufacturer's descriptive literature shall be submitted indicating materials, finishes, construction and installation instructions, and verifying that product meets requirements specified. Manufacturer's recommendations for maintenance and cleaning shall be included.

B. Drawings and Diagrams: Wiring diagrams of any motorized components or units, working and assembly drawings shall be supplied as requested.

C. Sample: Responsible contracting officer or agent shall supply one sample shade of each type specified in this contract for approval. Supplied units shall be furnished complete with all required components, mounting hardware, instructions, and warranty.

1.03 Quality Assurance

A. Supplier: Manufacturer, subsidiary, or licensed agent shall be approved to supply the products specified, and to honor any claims against product presented in accordance with warranty.

B. Installer: Installer or agent shall be approved to install specified products by prior experience, demonstrated performance, and acceptance of requirements of manufacturer, subsidiary, or licensed agent. Installer shall be responsible for an acceptable installation.

C. Uniformity: Provide Levolor Faux Wood Blinds of only one manufacturer for entire project.

1.04 Delivery, Storage, and Handling

A. Product shall be delivered to site in manufacturer's original packaging.

B. Product shall be handled and stored to prevent damage to materials, finished, and operating mechanisms.

1.05 Project/Site Conditions (Before Product Installation Begins)

A. Prior to shade installation, building shall be enclosed; windows, frames, and sills shall be installed and glazed.

B. Wet work shall be complete and dry.

C. Ceilings, window pockets, electrical, and mechanical work above the product shall be complete.

1.06 Warranty

A. One Year Limited Warranty

B. LEVOLOR Commercial warrants the product against defects in materials or workmanship for 1 year from the date of purchase/install. LEVOLOR Commercial does not warrant damage due to accidents, misuse, abuse, improper installation, alteration, or improper cleaning. Detailed specifics of the warranty are available upon request.

Part II - Products

2.01 Acceptable Manufacturers

A. Basis of Design: LEVOLOR Commercial, 1400 Lavon Dr., McKinney, TX 75069.

B. Product substitutions must be approved by architect prior to close of bid.

2.02 Faux Wood Blinds

A. Product: LEVOLOR Commercial, 2 Inch Cordless Faux Wood Blind with Lift & Lock™ Cordless Lift

B. Materials:

1. Slats: Color coordinated 2 inch PVC or PMMA slats, 2 inches x 2.8mm thick - Passes 500 hour UV rated & NFPA 701 Fire retardant test. Finish with manufacturer's standard colors selected by architect from manufacturer's available contract colors.

2. Slat Support: Braided ladders of 100% polyester yarn color compatible with slats and spacing no more than 44mm.

3. Headrail: Heavy-duty, high-profile steel measuring 2 inches x 2 $^{1}/_{4}$ inches with U-shaped rolled edges treated with iron phosphate to resist corrosion. Internally fit with components required for specific performance and designed for smooth, quiet trouble-free operation. Headrail finish to be standard baked-on polyester and to coordinate with slats.

4. Bottom rail: Color coordinated hollow trapezoid bottom rail with recessed end-caps, 50mm width x 15mm height - passes 500 hour UV rated & NFPA 701 Fire retardant test.

Engineered polymer tape buttons secure the ladder and cord. Finish to be manufacturer's standard colors or stained finish to match slats.

5. **CONTROL SYSTEM: Adjustment-free cordless with internal spring mechanism for lifting.**

6. Tilt Mechanism: Permanently lubricated die-cast worm and gear type tilter. Gear mechanism in fully enclosed housing with clutch action to prevent ladder tapes from over-rotation.

END OF SECTION

SECTION 12 24 13 WINDOW ROLLER SHADES

1.GENERAL

1.1. SECTION INCLUDES

A. Roller shades for manual operation and accessories.

B. Shade fabric.

1.2. N/A

1.3. REFERENCES

A. ASTM International (ASTM):
1. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

B. Cradle to Cradle Products Innovation Institute (C2C):
1. C2C (DIR) - C2C Certified Products Registry.

C. National Fire Protection Association (NFPA):
1. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
2. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

D. Underwriters Laboratories (UL):
1. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.

E. Window Covering Manufacturers Association (WCMA):
1. WCMA A100.1 - Safety of Window Covering Products; 2018.

1.4. ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the work with other trades to provide rough-in of electrical wiring as required for installation of hardwired motorized shades.

B. Preinstallation Meeting: One week prior to commencing work related to this section. Require attendance of all affected installers.

C. Sequencing:
1. Do not fabricate shades until field dimensions for each opening have been taken with finished conditions in place. "Hold to" dimensions are not acceptable.
2. Do not install shades until final surface finishes and painting are complete.

1.5. SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's catalog pages and data sheets for products specified including materials, finishes, dimensions, profiles, mountings, and accessories.
1. Preparation instructions and recommendations.

2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes, accessories, and operating instructions.
3. Storage and handling requirements and recommendations.
4. Mounting details and installation methods.
5. Manufacturer's Instructions: Include storage, handling, protection, examination, preparation, and installation.
6. Project Record Documents: Record actual locations of control system components and show interconnecting wiring.
7. Operation and Maintenance Data: Component list with part numbers, and operation and maintenance instructions.

C. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work.
1. Prepare shop drawings on AutoCad or MicroStation format using base sheets provided electronically by the Architect.

D. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.

E. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements.
1. Shadecloth Sample: Mark face of material to indicate interior faces.
a. Test reports indicating compliance with specified fabric properties.
b. Verification Samples: 6 inches (150 mm) square, representing actual materials, color and pattern.

F. Maintenance Data: Bill of materials for all components with part numbers. Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

G. Warranty: Provide manufacturer's warranty documents as specified in this Section.

H. Warranty: Manufacturer's warranty documents as specified in this Section.

1.6. QUALITY ASSURANCE

A. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

B. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section.

C. Installer for Roller Shade System - Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.

D. Product Listing Organization Qualifications: Organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

E. Fire-Test-Response Characteristics: Passes NFPA 701 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.

F. Shadecloth Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC9644, ATCC9645.

G. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified. Initial submittals, which do not include the Environmental Certification will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.

H. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogens. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.

I. Recycling Characteristics: Provide documentation that the shade cloth can, and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.

J. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.

1.7. MOCK-UP

A. Provide a mock-up of one roller shade assembly for evaluation of mounting, appearance and accessories.
   1. Locate mock-up in window designated by Architect.
   2. Mockup Size: Full size.
   3. Mockup Size (WxH): 3 x 3 feet (0.94 x 0.94 m) minimum.
   4. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
   5. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
   6. Do not proceed with remaining work until, mock-up is accepted by Architect.
   7. Retain mock-up during construction as a standard for comparison with completed work.
   8. Do not alter or remove mock-up until work is completed or removal is authorized.
   9. Full-sized mock-up may become part of the final installation.
   10. Full-sized mock-up will become the property of the Owner to be used for spare parts.

1.8. DELIVERY, STORAGE, AND HANDLING

A. Deliver in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in Window Treatment Schedule.

B. Store and handle products per manufacturer's recommendations.

1.9. PROJECT CONDITIONS

A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.10. WARRANTY

A. Roller Shade Hardware and Chain Warranty: Manufacturer's standard non-depreciating warranty for interior shading.
   1. Shade Hardware: 10 years unless otherwise indicated.
      a. Mecho/7 with Classic Blackout shade fabric: 25 years.

2.PRODUCTS

2.1. MANUFACTURERS

A. Acceptable Manufacturer: Mecho, which is located at: 42-03 35th St.; Long Island City, NY 11101; ASD Tel: 718-729-2020; Fax: 718-729-2941; Email: marketing@mechoshade.com; Web: www.mechoshade.com.

B. N/A

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2. ROLLER SHADES, MANUAL OPERATION AND ACCESSORIES

A. Shade System; General:
   1. Components capable of being removed or adjusted without removing mounted shade brackets, or cassette support channel.
   2. Smooth operation raising or lowering shades.
   3. Cradle-to-Cradle certified for the complete shade system including operating hardware and shadecloth. Listed in C2C (DIR).

B. Basis of Design: Mecho/5x System as manufactured by Mecho.
   1. Description: Manually operated fabric window shades.
      a. Shade Type: Double Roller.
      b. Universal drive capability to offset drive chain for reverse or regular roll shades.
      c. Mounting: Window Jamb Mounting.
      d. Size: to fit windows
      e. Fabric: As indicated under Shade Fabric article.
   2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
      a. Material: Steel, 1/8 inch (3 mm) thick
      b. Double Roller Brackets: Configured for light-filtering and room-darkening shades in one opening.
         1) Light-Filtering Fabric: Room-side of opening.
         2) Room-Darkening Fabric: Glass-side of opening.
         3) Operating chain pulls for both fabrics configured for the same side of the window.

c. Single Shade Operation Width: Up to 180 inches (4572) dependent on fabric.

3. Roller Tubes:
   a. Material: Extruded aluminum.
   b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
   c. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge. Shade band to be removable and replaceable without removing roller tube from brackets or inserting spline from the side of the roller tube.
   d. Roller tubes to be capable of being removed and reinstalled without affecting roller shade limit adjustments.
4. Hembars: Designed to maintain bottom of shade straight and flat.
   a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
      1) Profile: Rectangular.
      2) Color: Manufacturer's standard color coordinated with shade fabric selected.
   b. Room-Darkening Shades: Provide a slot in bottom bar with wool-pile light seal.
5. Clutch Operator: Manufacturer's standard material and design integrated with bracket/brake assembly.
   a. Heavy-duty, 1/8" steel mounting bracket and integrated steel brake, clutch and sprocket assembly rigidly affix the shade support and user control to the building structure fully independent of the roller tube components.
   b. Permanently lubricated maintenance-free brake assembly employs an oil-impregnated steel hub with wrapped spring clutch.
   c. Brake must withstand minimum pull force of 50 pounds (22.7 kg) in the stopped position.
   d. Direct drive clutch requires no interstitial gear stages or plastic parts between the building structure and clutch ensuring reliable operation across the full range of shade sizes.
   e. Maximum shade hanging weight of 30 pounds (13.6 kg).
6. Drive Chain: Continuous loop stainless steel beaded ball chain, 100 pound (45 kg) minimum breaking strength. Provide upper and lower limit stops.
   a. Chain Retainer: Chain tensioning device complying with WCMA A100.1.
   b. Limit stops: Bead stops affixed to the chain maintain consistent shadeband alignment at the top and bottom of shade travel across multiple shades, and help prevent shade damage resulting from unmanaged user control.
7. Mecho/5x, Managed Lift Force, Hardware: Lifts single band or multiband shade assemblies:
   a. Lifting Force: 3 to 8.5 pounds (1.4 to 3.9 kg) max pull force to lift shade assemblies with a shade band hanging weight, not including mounting hardware, of 30 pounds (13.6 kg).
   b. Direct drive clutch with Managed Lift Force provides the best user experience by managing the user pull force while using the fewest number of chain pulls to position a shade.
   c. Backward compatible to Mecho/5 components including facia, regular and reverse roll, pockets, and wall-mounting accessories.
   d. Includes offset drive capability, left/right, front, or back to allow for utilization of blackout channels.
   e. Allows for ease of operation when obstructions do not allow for direct drive chain access.
   f. Offset chain drive shall not cause an increase of friction or pull force when operated up to a 26 degree angle from vertical.
8. Accessories:
   a. Fascia: Removable extruded aluminum fascia, size as required to conceal shade mounting, attachable to brackets without exposed fasteners.

1) Finish: Fabric wrapped to match shade.
2) Profile: Square.

b. Ceiling Pockets: Premanufactured metal shade pocket for recess mounting in acoustical tile or drywall ceilings; size and configuration as indicated on drawings.
1) Removable closure panel.
c. Room-Darkening Channels: Extruded aluminum side and center channels with brush pile edge seals, SnapLoc mounting base, and concealed fasteners. Channels to accept one-piece exposed blackout hembar to assure side light control and sill light control.
d. Adjustable Multi-band Coupler: Field-adjustable coupler positioned between adjacent shadebands driven by the same clutch facilitates hembar alignment between the bands while maintaining the light gap between the shade bands to no more than 1.25 inch (32mm).

2.3. ROLLER SHADE FABRICATION

A. Field measure finished openings prior to ordering or fabrication.

B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.

1. Horizontal Dimensions: Inside Mounting.
a. Fill openings from jamb to jamb. No light gap.

2.4. SHADE FABRIC

A. Basis of Design: Shade fabric as manufactured by Mecho.
1. Solar Shadecloths:
a. Fabric: Soho: 1100 series. 1 percent open. 2 x 2 basket-weave pattern of fine yarn PVC and polyester blend, same colors as in 1600 (3 percent open) and 1900 series, (5 percent open).
2. Blackout Shadecloths:
a. Fabric: Equinox Blackout: 0100 series. Opaque.
3. Fabric Properties: Non-flammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
a. Shade Type: Light filtering shades.
b. Shade Type: Room darkening shades.
4. Material Certificates and Product Disclosures:
a. Low-Emitting Material Certification: Greenguard Gold certified and listed in UL (GGG).
b. Cradle to Cradle Material Health Certificate:
1) Achievement Level: Silver.
c. Health Product Declaration (HPD): Published declaration with full disclosure of known hazards.
d. Declare label.

3.EXECUTION

3.1. EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

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

C. Start of installation shall be considered acceptance of substrates.

3.2. PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.

C. Coordinate with window installation and placement of concealed blocking to support shades.

3.3. INSTALLATION

A. Install shades level, plumb, square, and true per manufacturer's instructions and approved shop drawings. Locate so shade band is at least 2 inches (51 mm) from interior face of glass. Allow proper clearances for window operation hardware. Use mounting devices as indicated.

B. Replace shades exceeding specified tolerances at no extra cost to Owner.

C. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric.

D. Clean roller shade surfaces after installation, per manufacturer's written instructions.

E. Demonstrate operation and maintenance of window shade system to Owner's personnel.

F. Manufacturer's authorized personnel are to train Owner's personnel on operation and maintenance of system.
   1. Use operation and maintenance manual as a reference, supplemented with additional training materials as required.

3.4. PROTECTION AND CLEANING

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.
   1. Clean soiled shades and exposed components as recommended by manufacturer.
   2. Replace shades that cannot be cleaned to "like new" condition.

END OF SECTION

STANDING-SEAM METAL ROOF PANELS

SECTION 074114

PART 1 - GENERAL

1. RELATED DOCUMENTS

A. Drawings and other Contract Documents, listed in the agreement between the Owner and Contractor, apply to this Section.

2. SUMMARY

A. Section includes standing-seam metal roof panels.

3. PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

4. DESIGN AND PERFORMANCE REQUIREMENTS

A. Complete engineered system by manufacturers engineering department including

B. Design Load:

1. Calculate wind uplift using ASCE-‘10
2. Calculate clip spacing
3. Verify stress and deflection of panel meet project design load
4. Verify project design load conditions with ASTM 1592
5. Verify project design load conditions with UL580 class 90

C. Air Infiltration:

1. <.009 cfm/sf @ 6.24 psf pressure differential per ASTM E 283

D. Water Resistance:

1. No water penetration under 5 gal/hr spray at 15 psf pressure differential per ASTM E 331

E. UL-Approved Rated Fire Roofs:

1. 1, 1 ½ and 2 hour fire-rated assemblies per UL construction numbers P225, P516, P224, P225, P227, P230, P237, P505, P514, P516, P711, P715 and P803

F. UL90 Rating:

1. 24 ga. 18”steel panels installed over 5/8” plywood or OSB spaced at maximum of 3'-0" o.c.

G. ASTM 1592:

1. 24 ga. 18" Steel Panels:
   a. 29.7 psf @ 5'
   b. 30.30 psf @ 15"

H. Panels must have job site forming capabilities for projects with long panel runs over 50'

1. SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches.
3. If a WTW is required, shop drawings or Fabrals standard details must be reviewed by the manufacturer prior to installation

C. Samples: For each type of exposed finish required, prepared on Samples of size indicated below.

1. Metal Panels: 12 inches long by actual panel width. Include clips, fasteners, closures, and other metal panel accessories.
2. Include similar Samples of trim and accessories involving color selection.

D. Qualification Data: For Installer.

E. Product Test Reports: For each product, for tests performed by a qualified testing agency.

F. Field quality-control reports.

G. Sample Warranties: For special warranties.

H. Maintenance Data: For metal panels to include in maintenance manuals.

2. QUALITY ASSURANCE

A. Installer Qualifications: [An entity that employs installers and supervisors who are trained and approved by manufacturer.][Installer of sheet metal roofing for a minimum of 10 years documented experience.]

B. Panel Manufacturer: Minimum of 10 years experience in manufacturing architectural roof panels in a permanent stationary indoor facility. Provide facility information if requested.

3. DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Store panels, flashings and accessories ion a safe, dry environment under a waterproof breathable covering to prevent water damage. Allow for adequate ventilation to prevent condensation. Panels and flashings with strippable film shall not be stored in direct sunlight.

D. Remove strippable protective covering on metal panels during installation.

E. Upon receipt of delivery of metal panel system, and prior to signing the delivery ticket, the installer is to examine each shipment for damage and for completion of the consignment.

4. FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

5. COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

B. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

6. WARRANTY

A. Material and Workmanship Warranty: Manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including rupturing, cracking, or puncturing.
b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Paint Finish Warranty: 30 years from date of Substantial Completion. If metallic colors are used, the “fade” part of the warranty shall be removed.

1. 30 years for Kynar type finish.

C. Installer’s Warranty: Submit installer's warranty, signed by Installer, covering the Work of this Section, including all components of roof panels for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion

D. Weather-tight Warranty:

1. Warranty Period: Twenty years from date of Substantial Completion

PART 2 - PRODUCTS

1. MANUFACTURER

2. BASIS OF DESIGN:

A. Fabral® Facilities:

Lancaster,PA
Telephone
1.800.477.27
41
Website:
www.fabral.c
om
Jackson, GA
Telephone: 800.884.4484
Website: www.fabral.com

Grapevine, TX
Telephone:
800.477.9066
Website:
www.fabral.com

Cedar City, UT
Telephone: 800.432.2725
Website: www.fabral.com

2. STANDING-SEAM METAL ROOF PANELS

THIN SEAM

1. AZ50 Galvalume Steel:

B.

a. Material Gauge: 24 gauge.
b. Exterior Finish: As selected from manufacturer's premium finishes.
c. Color: As selected from manufacturer's full range.

1. MATERIALS

A. Metallic-Coated Steel Sheet: aluminum-zinc alloy-coated steel sheet (Galvalume) complying with ASTM A 792/A 792M, Class AZ50/AZ55 coating designation; structural quality. Pre-painted by the coil- coating process to comply with ASTM A 755/A 755M.

2. MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Sub-framing and Furring: Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weather-tight panel system including trim, copings, fasciae, mullions, sills, corner units, panel clips, flashings, sealants, gaskets, fillers, panel closures, and similar items. Match material and finish of metal panels unless otherwise indicated.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Panel Fasteners: Self-tapping screws designed to withstand design loads.

E. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are non-staining, and do not damage panel finish.

1. Sealant Tape: Buytl
2. Joint Sealant: One Part Poly
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

3. FABRICATION

A. General: Provide factory-formed metal roof panel system complying with ASTM E 1514 requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Form panels in continuous lengths, endlaps are not permitted.

D. Field forming of panels shall be done by factory employees operating the machines.

E. Fabricate metal panel joints with factory-installed butyl sealant that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

F. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
4. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.

5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

4. FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

A. Steel Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Mica Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
3. Three-Coat Metallic Fluoropolymer: AAMA 621. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

4. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

PART 3 - EXECUTION

1. EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

2. PREPARATION

A. Miscellaneous Supports: Install sub-framing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3. METAL PANEL INSTALLATION

A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Refer to manufacturers recommendations.
3. Install flashing and trim as metal panel work proceeds.
4. Panels to be in one continuous length, long length roofs must be field formed by Manufacturer.
5. Provide weather-tight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Steel Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.
2. Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.

C. Anchor Clips: Anchor metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.

D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

E. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
3. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so metal roof panels, and factory-applied sealant are completely engaged.

F. Accessory Installation: Install accessories with positive anchorage to building and weather tight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

G. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and

seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

4. ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal panel units within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

5. FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect metal roof panel installation, including accessories. Report results in writing.

B. Remove and replace applications of metal roof panels where tests and inspections indicate that they do not comply with specified requirements.

C. Prepare inspection reports.

D. Installer must have installation shop drawings on site at all times.

6. CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION