THIS DOCUMENT AND ATTACHMENT(S) ARE AVAILABLE FOR DOWNLOAD AT
http://www.bxwa.com/bxwa_toc/pub/304/sea9_seatac_des_moines_creek_p_61269/info.php
AN EMAIL NOTIFICATION WAS SENT TO REGISTERED PLANHOLDERS. FAILURE TO ACKNOWLEDGE RECEIPT ON THE BID FORM DOES NOT AFFECT THE BIDDER'S OBLICATION FOR COMPLIANCE.

ADDENDUM NO. 1

CITY OF SEATAC
SEATAC DES MOINES CREEK PARK TRAILHEAD

Date Prepared: **February 18, 2025**
Addendum No.: **One (1)**

The following modifications are hereby made part of the contract documents:

SPECIFICATIONS

Section 00430 – SUBCONTRACTOR LIST

Revise: **Section 00430 – Subcontractor List**

~~Name of Subcontractor~~ **Designated Work**	~~Designated Work~~ **Name of Subcontractor**	Estimated Subcontract Amount
HVAC (Heating, Ventilation & Air Conditioning)		
Electrical		
Plumbing		
Structural Steel Installation		
Rebar Installation		

Section 02780 – PERMEABLE INTERLOCKING CONCRETE PAVERS

1.9 MAINTENANCE MATERIALS

Revise: A. Provide ~~400 square feet~~ **100 square feet** of additional paver material for use by Owner for maintenance and repair.

Section 02820 – CHAINLINK FENCING & GATES

2.1 CHAINLINK FABRIC

Revise: C. Steel Chainlink Fabric: Provide fabric fabricated in one-piece widths. Comply with Chain Link Fence Manufacturers Institute "Product Manual" and with requirements indicated below:

1. Mesh and Wire Size: ~~1-¾" inch mesh~~ **2" inch mesh**, 9 gauge (0.148 inch diameter).

2.2 FRAMEWORK

Revise: C. Round Steel Pipe: Standard weight, Schedule 40, galvanized steel pipe complying with ASTM F1083. Comply with ASTM F1043, Material Design Group IA, external and internal coating Type A, consisting of not less than 1.8-oz./sq. ft. zinc; and the following strength and stiffness requirements:

1. Posts:
   ~~b.~~ Line posts shall be ~~2.875 inch~~ **2.375 inch** outside diameter, Schedule 40 pipe~~,~~ and ~~5.79 pounds per linear foot~~ **3.65 pounds per linear foot.**
2. Rails:
   a. Fences shall have top, ~~mid,~~ and bottom rails. See details for rail height.

Section 13120 – PREFABRICATED STRUCTURES

2.1 SYSTEM DESCRIPTION

Revise: C. Design Requirements:

3. Total load deflection: ~~L/240~~ **Manufacturer standard; must meet or exceed Washington State Building Code (IBC) requirements.**

2.3 MATERIALS

Revise: B. Metal Wall and Roof Panels, Trim, and Closures: ~~24 gauge~~, **24 gauge at walls, 26 gauge at roof,** ASTM A792 aluminum-zinc alloy coated steel, commercial quality, AZ55 coating class.

2.4 FABRICATION

Revise: D. Perforated Panel Pattern: Rolled formed corrugated, ~~7.2 panel, R-36, M-36 sheet~~ **PBC Panels; "S" shaped corrugation**; 1/8" round holes staggered on 7/32" centers. Open area: 30%

3.3 INSTALLATION OF METAL PANELS

Revise: E. Lap end joints ~~4 inches minimum~~ **per manufacturer standards**. Do not block perforation openings.

BIDDER'S QUESTIONS

Question (1/29/25 via email)
What is the engineer's estimate for this project?

Response

The Engineer's Estimate for Bonding Purposes is $3,600,000.00

Question (2/4/25 via email)

#1. *I was wondering if you had a quantities sheet for plant materials? Or if you have spacing on the plants? Currently there are just figures with undefined quantities and spacing between the individual plant species which makes this difficult to bid. Even a total quantity per plant size would be helpful in writing a quote.*

#2. *I also noticed that in the full sun layout Pinus contorta is listed under two different symbols, is one of these supposed to be Pinus ponderosa?*

#3. *Additionally, is there any room for substituting bare-roots?*

Response

#1. We've added plant spacing and quantity information to the Landscape Planting Plan Layout – L2.1.

#2. Regarding the full sun layout symbols, one of the symbols previously listed as Pinus contorta should instead be Arbutus menziesii. Refer to Landscape Planting Plan Layout – L2.1.

#3. For bidding purposes, please base your quote on the specified plant sizes. Once a contractor is selected, plant substitution needs will be reviewed on a case-by-case basis before procurement.

Question (2/5/25 via email)

Within the last five years we have two completed public projects and we are part of three other public projects currently under contract that will not be completed prior to the bid date of 2/27. Could the Bidder's Qualifications list of public projects be changed from "completed by the contractor" to "under contract" within the last five years?

Response

The requirement in the Statement of Bidder's Qualifications remains unchanged. The General Contractor (GC) must list five public projects of a similar nature that have been completed within the last five years as stated in the bid documents.

Question (2/6/24 via email)

#1. *Plan Sheet C4.4 Indicates that the Permeable Interlocking Concrete Pavers are to be installed in herringbone pattern. The mechanical installation method saves project cost by reducing labor hours, but the mechanical pallet layer includes half pavers (4.5"x4.5") on each pallet layer (see attached cutsheet). If we order the pavers for mechanical installation, will the half pavers be allowed to stay in the installation or must they be discarded?*

#2. *Spec Section 02780 1.9 A. Maintenance Materials calls for 400 SF of additional pavers to be delivered to owner-designated location. This is approximately 1,400 pavers weighing 15,000 lbs. on 5 pallets. Considering how rarely replacement of broken pavers is needed, could this quantity be reduced to 1 or 2 pallets for the Maintenance Materials?*

Response

#1. Yes, half pavers will be generally be allowed to stay in the installation, up to 10% of the half pavers may need to be replaced with full pavers at the discretion of the Owner's Representative.

#2. Additional pavers may be reduced to 100 square feet for the Maintenance Materials.

Question (2/6/24 via email)

I want to obtain more information on the demolition scope and any potentially hazardous waste removal included in the bid requirements. Specifically, I would appreciate clarification on:

#1. *The extent of demolition work involved in the project.*

#2. *Any hazardous materials that will require specialized removal or disposal.*

#3. *Compliance and certification requirements related to hazardous waste handling.*

#4. *Are any subcontracting opportunities available for these specific tasks.*

Response
#1. Refer to plans and specifications.

#2. Refer to plans and specifications.

#3. Refer to plans and specifications.

#4. Subcontracting will be led by the General Contractor. Refer to Builder's Exchange (www.bxwa.com) for the current bidders list.

Question (2/7/24 via email)
#1: *Spec Section 02820 2.2 - A (b) states that line posts should be 2.875" OD, but Sheet 36, Detail #9 shows 2.375" OD.*

#2: *Spec Section 02820 2.2 - 2(a) states that the fence should have top, mid, and bottom rails, but Sheet 36, Detail #9 shows top and bottom rails only.*

#3: *Spec Section 02820 2.1 A (1) states that the wire size should be 1 ¾", but Sheet 36, Detail #9 shows a 2" wire size.*

Response
#1: This should be 2.375" OD per Sheet 36, Detail #9.

#2. This should be top and bottom rails only per Sheet 36, Detail #9.

#3. This should be 2" wire size per Sheet 36, Detail #9.

Substitution Request (2/12/24) via email
Attached is a metal wall panel substitution request for SeaTac Des Moines Trailhead. The substitution request is for a panel with the same modularity as the PBC panel that is specified, supplied by a different manufacturer. Reasoning would be to find the most cost-effective material to satisfy the project plan/specifications for the most economical solution.

Response
The proposed substitution is not accepted as the AZ50 coating provides less corrosion resistance than the specified AZ55, the panel thickness is thinner (26 gauge vs. 24 gauge), and the perforation diameter and pattern (3/16" holes on 1/4" centers) do not match the required 1/8" holes on 7/32" centers with 30% open area.

Question (2/12/24) via email
#1*. Are roof panels to be 24 gauge or 26 gauge? Both gauges are called out in the same spec section. 13120-4*

#2. *Is roof deflection L/240 (Spec Design Requirement Section), L/180 (Design Loads Section), or are Manufacturer's standard deflections acceptable? See page 13120-3*

#3. *Is all roof panel PBC? I understand the area above the purlins is perforated and the main coverage is not, but I ask because three other panel types (7.2, R-36 and M-36) are all called out in specs but only PBC is called out in plans. If two different roof panel profiles 13120-3 See page 13120-3 and A1.1*

#4. *Are all wall panels (interior and exterior) PBC with 1/8" round holes staggered on 7/32" centers? I ask because three other panel types (7.2, R-36 and M-36) are all called out in specs but only PBC is called out in plans. 13120-3*

#5. *Interior liner panel locations are difficult to decipher. Is perforated interior liner panel required in the same locations that exterior wall panel exists? A1.1*

#6. *Is manufacturer's standard lap acceptable or are all roof and wall panels required to have 4" laps? 13120-5*

#7. *What is the total weight of the 10'-10" x 4'-8" interpretive sign? Looking for this information for PEMB wall loading. A1.1*

Response
#1. 26 gauge

#2. Manufacturer's standard deflections are acceptable, provided that they meet or exceed Washington State Building Code (IBC) requirements.

#3. All roof panels are PBC panels, featuring the traditional "S" shape corrugation characteristic of corrugated metal panels.

#4. All wall panels (interior and exterior) are PBC, featuring the traditional "S" shape corrugation characteristic of corrugated metal panels, with 1/8" round holes staggered on 7/32" centers.

#5. Panels will be installed on both sides of the wall girts, meaning that the exterior and interior wall coverage must match in all areas except where interrupted by structural columns. However, the edges of the interior and exterior panels do not need to align exactly.

#6. Manufacturer's standard lap is acceptable.

#7. The total weight of the interpretive sign is 300 lbs.

Question (2/14/24 via email)
Would the City consider allowing a few extra days to submit RFIs for the SeaTac Des Moines Creek Park bid, which are due today at 5 PM?

Response
No additional time will be provided for submitting RFIs. The deadline for RFIs remains today at 5:00 PM as stated in the bid documents.

Question (2/14/24 via email)
This project has a duration of 270 calendar days, but what is the expected date for the Notice to Proceed?

Response
The anticipated Notice to Proceed (NTP) is expected in April, but an exact date has not been determined at this time. Please refer to the Summary of Work section in the specifications for the anticipated project schedule.

Question (2/14/24 via email)
It appears that the subcontractor list for HVAC, Plumbing, Electrical, etc. needs to have the two column headers flipped where the subcontractor's name and trade are to be listed. Please clarify.

Response
Correct, the column headers were misaligned. A corrected form has been provided for your use.

Question (2/14/24 via email)

The bidder instructions state to list all subcontractors performing more than 10% of the work, but a sub-listing page for this has not been provided. Please clarify.

Response

The Subcontractor List (Section 00430) requires that bidders list all subcontractors performing more than 10% of the work. While a separate form for this is not included in the bid package, bidders should provide this information in their submission in a clear and legible format.

Attachments:

___ Section 00430 Subcontractor List (1 Page)

___ Addendum Sketch ADD-1.01 (1 Page)

___ Addendum Sketch ADD-1.02 (1 Page)

___ Addendum Sketch ADD-1.03 (1 Page)

___ Addendum Sketch ADD-1.04 (1 Page)

___ Addendum Sketch ADD-1.05 (1 Page)

___ Addendum Sketch ADD-1.06 (1 Page)

___ Substitution Request (49 Pages)

___ Pre-Bid Attendance List (2 Pages)

End of Addendum No. 1

SUBCONTRACTOR LIST

Instructions:

1) This form must be submitted on all projects where the Owner's estimate of the project cost (Engineer's estimate) **exceed $1,000,000** including additive alternates.
2) Pursuant to RCW 39.30.060, list the names of the subcontractors with whom the bidder, if awarded the contract, will subcontract for performance of the work of: Structural steel, rebar, HVAC (heating, ventilation, and air conditioning); plumbing as described in chapter 18.106 RCW; and electrical as described in chapter 19.28 RCW, or to name itself for the work. The prime contract bidder shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the prime contract bidder must indicate which subcontractor will be used for which alternate. Failure of the prime contract bidder to submit as part of the bid the names of such subcontractors or to name itself to perform such work or the naming of two or more subcontractors to perform the same work shall render the prime contract bidder's bid nonresponsive and, therefore, void.
3) This form must be submitted within one hour of the advertised bid due date/time, regardless of subcontractor usage.
4) This form must bear the bidder's signature to be considered complete.
5) Failure to properly complete and submit this form may result in a bid being declared non-responsive.
6) If there are no sub-contractor used, write no sub-contractors will be used.

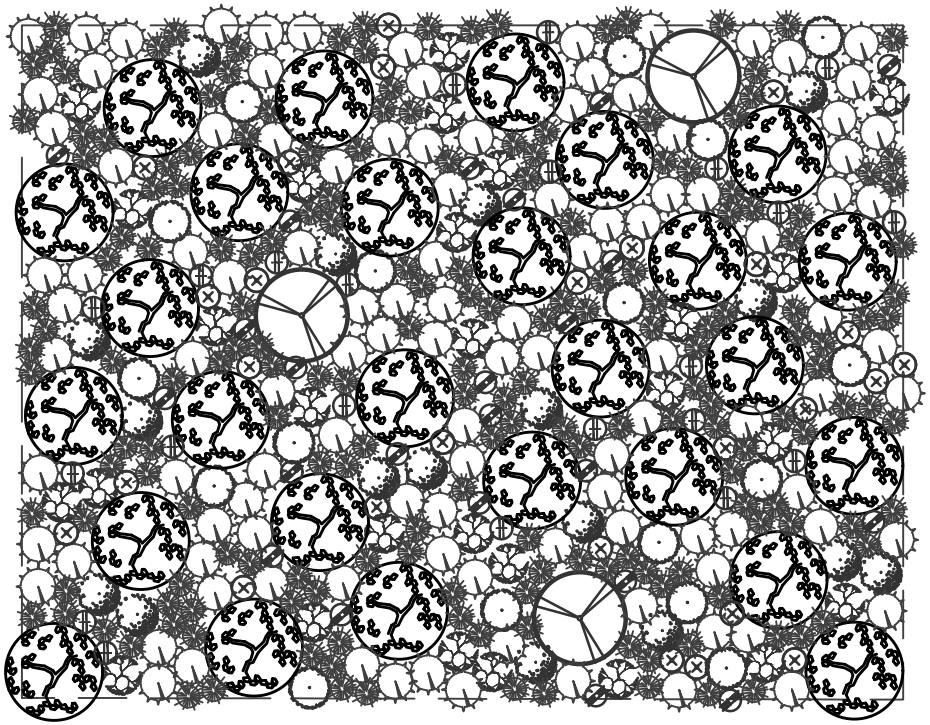
BASE BID

Designated Work	Name of Subcontractor	Estimated Subcontract Amount
HVAC (Heating, Ventilation & Air Conditioning)		
Electrical		
Plumbing		
Structural Steel Installation		
Rebar Installation		

_____ _____
Bidder's Signature Bidder's Name (Printed)

_____ _____
Company Date

GENERAL NOTE:
QUANTITIES SHOWN CORRESPOND DIRECTLY TO THE PLANTING LAYOUTS SHOWN ON THIS SHEET AND ARE NOT TOTAL PROJECT QUANTITIES. TOTAL PROJECT QUANTITIES WILL BE BASED ON THE FULL EXTENT OF PLANTING AREAS SHOWN ON THE LANDSCAPE PLANTING PLANS (L1.1 THRU L1.5) BY APPLYING THE PLANTING LAYOUTS AND SPACING ACROSS EACH OF THE DESIGNATED PLANTING AREAS.



1 L1.3 FULL SUN PLANTING LAYOUT

0 3' 6' 12'

PLANT SCHEDULE

	SIZE	QTY
TREES (SPACING = 18' O.C.)		
PINUS CONTORTA SHORE PINE	2 GAL	27
PACIFIC MADRONE ARBUTUS MENZIESII	2 GAL	3
SHRUBS (SPACING = 12' O.C.)		
AMELANCHIER ALNIFOLIA SASKATOON SERVICEBERRY	1 GAL	17
PHILADELPHUS LEWISII MOCK ORANGE	1 GAL	17
CORYLUS CORNUTA BEAKED HAZELNUT	1 GAL	27
GROUNDCOVER (SPACING = 5' O.C.)		
ELYMUS MOLLIS DUNE GRASS	4" CONTAINER	190
ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	4" CONTAINER	113
ACHILLEA MILLEFOLIUM VAR. OCCIDENTALIS YARROW	4" CONTAINER	26
BULBS (SPACING = 14' O.C.)		
CAMAS CAMAS QUAMASH	BULB	22
NODDING ONION ALLIUM CERNUUM	BULB	23

NOTE:
DO NOT INSTALL TREES CLOSER THAN 5' TO PAVED SURFACES. AVOID PLANTING OR DISTURBING SOIL WITHIN THE CRITICAL ROOT ZONE / DRIP LINE OF EXISTING TREES TO REMAIN.

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SeaTac Des Moines Creek Park Trailhead
SeaTac, WA

DRAWING NO/SHEET: 1 of 6 / L2.1

DRAWING TITLE: LANDSCAPE PLAN DETAILS

ADDENDUM: ADD-1.01

DATE: 2.18.25

CADD filename: R:\DRAWINGS\12006 – DES MOINES CREEK PARK TRAILHEAD\07 BID SET\12006–L2.0.DWG || Plotted: 2.17.25–14:12 By:(mfaulkner)

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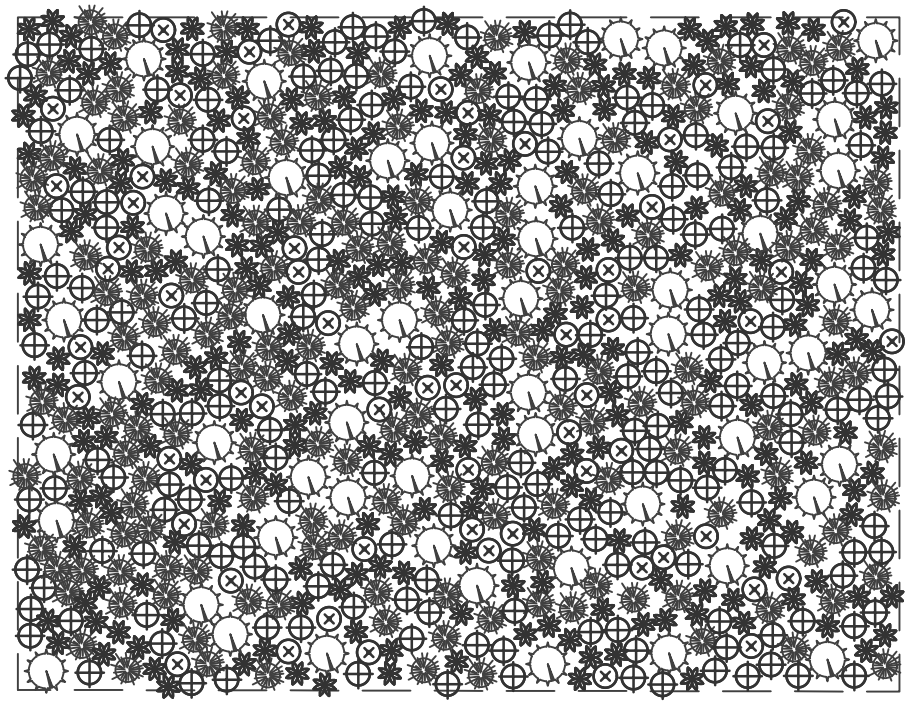

2 L1.3 PLAYGROUND PLANTING LAYOUT

0 3' 6' 12'

PLANT SCHEDULE

		SIZE	QTY
	GROUNDCOVER (SPACING = 3' O.C.)		
	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	1 GAL	61
⊗	ACHILLEA MILLEFOLIUM VAR. OCCIDENTALIS YARROW	1 GAL	64
✸	DESCHAMPSIA CESPITOSA TUFTED HAIRGRASS	1 GAL	273
⊕	ELYMUS GLAUCUS BLUE WILDRYE	1 GAL	222
✸	ELYMUS MOLLIS DUNEGRASS	1 GAL	176

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SeaTac, WA

DRAWING NO/SHEET: 2 of 6 / L2.1

DRAWING TITLE: LANDSCAPE PLAN DETAILS

ADDENDUM: ADD-1.02

DATE: 2.18.25

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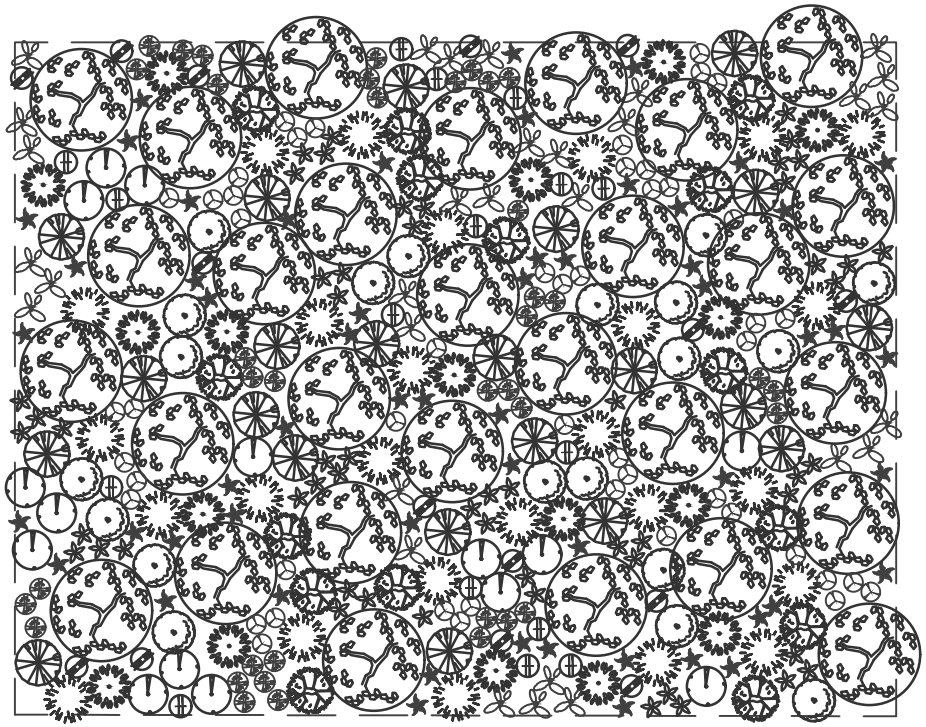

3 / L1.3 / L1.5 PART SHADE PLANTING LAYOUT

0 3' 6' 12'

PLANT SCHEDULE

	SIZE	QTY
TREES (SPACING = 18' O.C.)		
PINUS CONTORTA SHORE PINE	2 GAL	29
SHRUBS (SPACING = 9' O.C.)		
ROSA GYMNOCARPA BALD HIP ROSE	1 GAL	26
RUBUS LEUCODERMIS BLACK CAP RASPBERRY	1 GAL	23
GAULTHERIA SHALLON SALAL	1 GAL	20
SYMPHORICARPOS ALBUS SNOWBERRY	1 GAL	17
VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	1 GAL	15
MAHONIA NERVOSA LOW OREGON GRAPE	1 GAL	15
GROUNDCOVER (SPACING = 6' 0.C.)		
FRAGARIA VIRGINIANA VIRGINIA STRAWBERRY	4" CONTAINER	38
POLYSTICHUM MUNITUM WESTERN SWORD FERN	4" CONTAINER	56
DICENTRA FORMOSA WESTERN BLEEDING HEART	4" CONTAINER	55
MAIANTHEMUM DILATATUM FALSE LILY-OF-THE-VALLEY	4" CONTAINER	31
OXALIS OREGANA WOOD SORREL	4" CONTAINER	49
BULBS (SPACING = 17' O.C.)		
CAMAS CAMAS QUAMASH	BULB	16
NODDING ONION ALLIUM CERNUUM	BULB	15

NOTE:
DO NOT INSTALL TREES CLOSER THAN 5' TO PAVED SURFACES. AVOID PLANTING OR DISTURBING SOIL WITHIN THE CRITICAL ROOT ZONE / DRIP LINE OF EXISTING TREES TO REMAIN.

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DRAWING NO/SHEET: 3 of 6 / L2.1

DRAWING TITLE: LANDSCAPE PLAN DETAILS

ADDENDUM: ADD-1.03

DATE: 2.18.25

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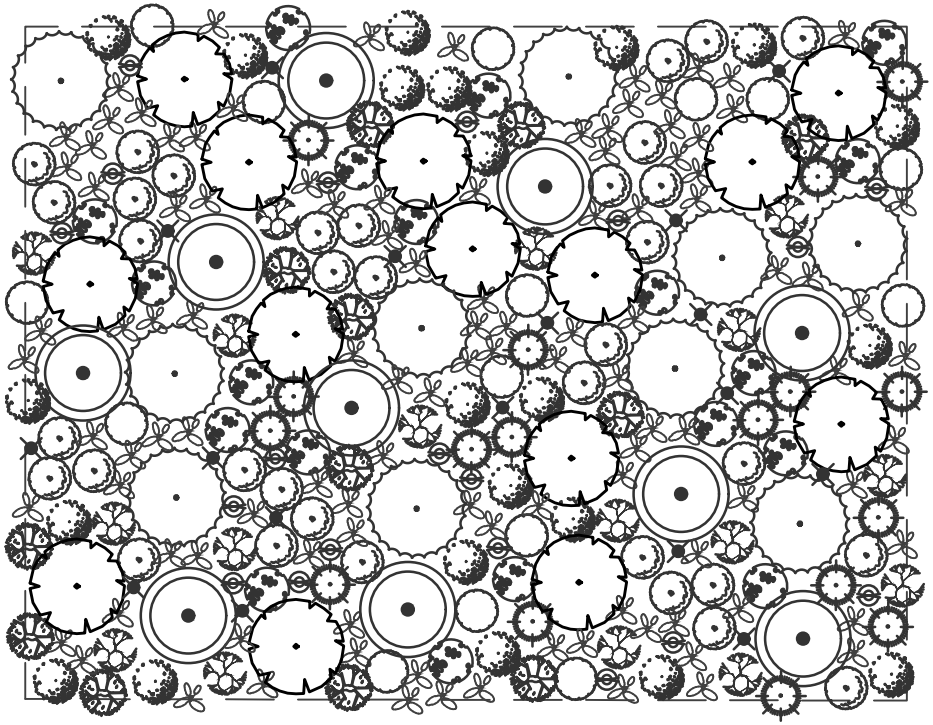

4 / L1.1 NATIVE FOREST PLANTING LAYOUT
0 3' 6' 12'
L1.2, L1.3, L1.4, L1.5

PLANT SCHEDULE

	SIZE	QTY
TREES (SPACING = 17' O.C.)		
ALNUS RUBRA RED ALDER	2 GAL	14
CORNUS NUTTALLII PACIFIC DOGWOOD	2 GAL	10
VINE MAPLE ACER CIRCINATUM	2 GAL	10
SHRUBS (SPACING = 8' O.C.)		
CORYLUS CORNUTA BEAKED HAZELNUT	1 GAL	17
VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	1 GAL	12
GAULTHERIA SHALLON SALAL	1 GAL	35
HOLODISCUS DISCOLOR OCEANSPRAY	1 GAL	15
RUBUS SPECTABILIS SALMONBERRY	1 GAL	19
SAMBUCUS RACEMOSA RED ELDERBERRY	1 GAL	17
AMELANCHIER ALNIFOLIA SASKATOON SERVICEBERRY	1 GAL	22
GROUNDCOVER (SPACING = 9' O.C.)		
MAIANTHEMUM DILATATUM FALSE LILY-OF-THE-VALLEY	4" CONTAINER	110
BULBS (SPACING = 16' O.C.)		
FAWN LILY ERYTHRONIUM OREGONUM	BULB	17
WILD GINGER ASARUM CAUDATUM	BULB	19

NOTE:
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SeaTac Des Moines Creek Park Trailhead
SeaTac, WA

DRAWING NO/SHEET: 4 of 6 / L2.1
DRAWING TITLE: LANDSCAPE PLAN DETAILS

ADDENDUM: ADD-1.04
DATE: 2.18.25

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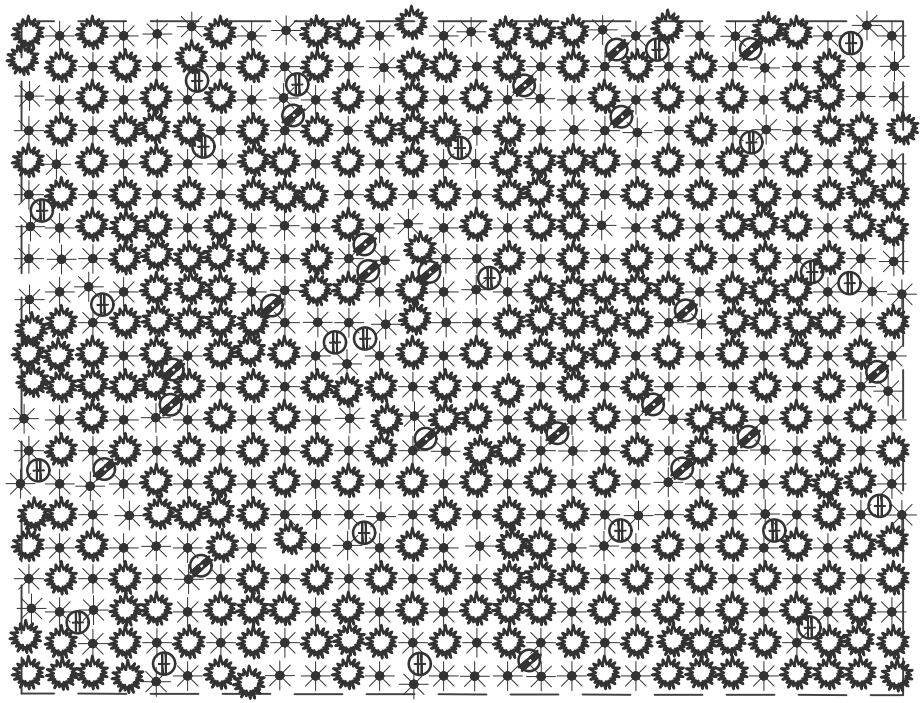

5 L1.1
L1.2, L1.3, L1.5
BIOSWALE PLANTING LAYOUT
0 1.5' 3' 6'

PLANT SCHEDULE

		SIZE	QTY
	GROUNDCOVER (SPACING = 3' O.C)		
	CAREX OBNUPTA SLOUGH SEDGE	4" CONTAINER	295
	SCIRPUS MICROCARPUS SMALL-FRUITED BULRUSH	4" CONTAINER	293
	BULBS (SPACING = 10' O.C.)		
	CAMAS CAMAS QUAMASH	BULB	23
	NODDING ONION ALLIUM CERNUUM	BULB	21

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SeaTac Des Moines Creek Park Trailhead
SeaTac, WA

DRAWING NO/SHEET: 5 of 6 / L2.1
DRAWING TITLE: LANDSCAPE PLAN DETAILS

ADDENDUM:
ADD-1.05
DATE: 2.18.25

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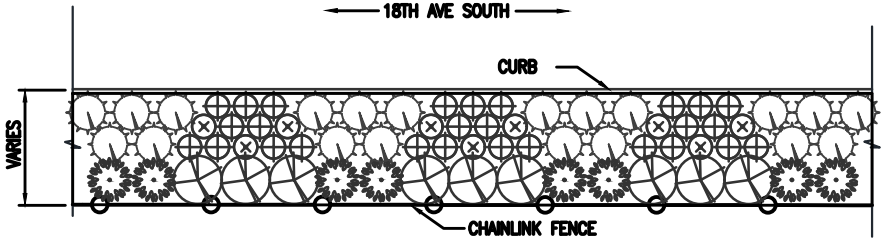

6 L1.2 L1.3, L1.5 STREETSCAPE PLANTING LAYOUT

0 3' 6' 12'

PLANT SCHEDULE

	SIZE	QTY
SHRUBS (SPACING = 9' O.C.)		
CORNUS SERICEA RED-TWIG DOGWOOD	1 GAL	9
SYMPHORICARPOS ALBUS SNOWBERRY	1 GAL	8
GROUNDCOVER (SPACING = 5' O.C.)		
ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	4" CONTAINER	20
ACHILLEA MILLEFOLIUM VAR. OCCIDENTALIS YARROW	4" CONTAINER	9
ELYMUS GLAUCUS BLUE WILDRYE	4" CONTAINER	27

NOTE:
INSTALL CONTINUOUS ROW OF RED-TWIG DOGWOOD AND SNOWBERRY ALONG CHAINLINK FENCE, THEN FILL IN THE REMAINING AREA WITH GROUNDCOVER AS SHOWN.

INSTALL MASS OF KINNIKINNICK SPACED AT 5' O.C. IN FRONT OF MONUMENT SIGNS TO MAINTAIN VISIBILITY.

BRUCE DEES & ASSOCIATES
Landscape Architecture • Urban Design
Site Planning • Recreation Facilities Design
221 S 28th St, Suite 100, Tacoma, WA 98402 (253)627-7947
www.bdassociates.com info@bdassociates.com

SeaTac Des Moines Creek Park Trailhead
SeaTac, WA

DRAWING NO/SHEET: 6 of 6 / L2.1

DRAWING TITLE: LANDSCAPE PLAN DETAILS

ADDENDUM: ADD-1.06

DATE: 2.18.25

CADD filename: R:\DRAWINGS\12006 – DES MOINES CREEK PARK TRAILHEAD\07 BID SET\12006–L2.0.DWG || Plotted: 2.17.25–11:32 By:(mfaulkner)

SUBMITTAL TRANSMITTAL

Project: SEATAC DES MOINES CREEK PARK TRAILHEAD **Date:** 2/11/2025

A/E Project Number: 120-06-05

Transmittal A

To: Bruce Dees & Associates
221 S. 28th Street, Suite 100
Tacoma, WA 98402

Submittal Number: 1

From: (Contractor) Sea Con By: Kyle Miller
Address 165 NE Juniper St Suite 100
City, State, Zip Issaquah, WA 98027

☐ Resubmission

(One Item per Transmittal)

Qty.	Item No.	Description	Spec. Section Title and Paragraph / Drawing Detail Reference
		Metal Wall Panel Substitution Request	13120

☐ Submitted for review

☒ Substitution involved – Substitution request attached with point-by-point comparative data or preliminary details.

☐ Resubmitted for review

☐ Other remarks on above submission:

Transmittal B

To: (Contractor) Attn: Date Received by A/E:

From: Bruce Dees & Associates By: Date Transmitted by A/E:

☐ Conforms to Design Concept

☐ Non-Conformance – Revise & Resubmit

☐ Conforms to Design Concept with Revisions/Notations as Noted

☐ Submission Incomplete / Resubmit

☐ Not subject to review

☐ No action required

■ Other remarks on above submission:

The substitution request in not accepted. AZ50 coating provides less protection than the specified AZ55. Panel thickness is thinner (26 gauge vs. 24 gauge). Perforation diameter and pattern do not match.

Copies: ☐ Owner ☐ Consultants ☐ ☐ ☐ ☐ One copy retained by sender

McElroy Metal, Inc.
1500 Hamilton Rd.
Bossier City, LA 71111
Phone: (800) 562-3576
Phone: (318) 747-8097
Fax: (318) 747-8099
E-mail: info@mcelroymetal.com
www.mcelroymetal.com

SECTION 07 42 13.13
METAL ROOF & WALL PANELS
M-COR

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Factory-formed metal roof and wall panels, including fascia, soffit and liner panels and includes:

1. Factory-formed panels in vertical installation.
2. Factory-formed panels in horizontal installation.
3. Metal flashings and trim.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers per CSI *MasterFormat* and specifier's practice.

Related Sections: Section(s) related to this section include:

1. Cold Formed Metal Framing: Division Metal Framing Section.
2. Building Insulation: Division 7 Building Insulation Section.
3. Sealants: Division 7 Joint Sealers Sections.
4. Flashing & Sheet Metal: Division 7 Flashing & Sheet Metal

Specifier Note: Paragraphs below list industry standards referenced in this section. Verify use of listed standards and add edition date of standards retained. Conditions of the Contract or Division 1 References Section may establish edition date of standards referenced. This article does not require compliance with standard, but is merely a listing of references used.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A653/A653M Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A792/A792M Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.
3. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. ASTM D2247 Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
5. ASTM E1680 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Metal Systems Under Specified Pressure Differences Across the Specimen.
6. ASTM E1646 Standard Test Method for Water Penetration of Metal Systems by Uniform Static Air Pressure Difference.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meetings:

1. Schedule meeting to discuss project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements before start of work onsite. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

   Specifier Note: Include location, date and other requirements here

2. Required attendees: Contractor, metal deck & metal installer, and any other subcontractors who have equipment penetrating the metal or work that requires access or traffic to metal roof and wall areas.

1.4 SYSTEM DESCRIPTION

A. Panel Performance Requirements: Provide panels, which have been manufactured, fabricated and installed to withstand structural and thermal movement, wind loading and weather exposure to maintain manufacturer's performance criteria without defects, damage, failure or infiltration of water.

Specifier Note: Select performance requirements based upon the panel selected in Section 2.2

1. Fire rating: Class A
2. Class 4 Impact Resistance: UL 2218

Specifier Note: Edit paragraph below based on paint finish selected.

B. Finish Performance Requirements:

1. Two coat coil applied, baked on full strength (70% resin, PVDF) fluorocarbon coating:
    a. Consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 -0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness.
    b. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM G23; color change, after removal of surface deposits such as dirt or chalk, maximum 5 NBS units.
    c. Humidity resistance: No blistering, peeling or loss of adhesion after 1000 hours testing, in accordance with ASTM D2247.
2. Silicone Modified Polyester:
    a. Consisting of a nominal .20-.30 mil dry film thickness primer and a nominal dry film thickness of 0.7-0.8 mil color coat for a total 0.9-1.1 mil total system dry film thickness.
    b. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM D2244; color change, after removal of surface deposits such as dirt or chalk.
    c. Humidity resistance: No blistering, peeling or loss of adhesion after 1000 hours testing, in accordance with ASTM D2247.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before construction. Coordinate this Article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.5 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data for specified products.

C. LEED Submittal Documentation:

1. Product Test Reports for applicable sustainable sites credits: For metal panels, indicating that panels comply with solar reflectance index requirement.
2. Product Data for applicable materials and resources credits: Indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Contractor to provide a statement indicating cost for each product having recycled content.

D. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

1. Indicate layout of metal panels and metal panel sizes, including custom-fabricated metal panels if indicated; indicate each item of trim and accessories.
2. Indicate in detailed drawings profile and gauge of interior and exterior sheets, and locations and types of fasteners; indicate locations, gauges, shapes and methods of attachment of metal panels, trim and accessory items.
3. Include sealant location and denote those that are factory and field applied.
4. Indicate products/materials required for construction activities and field worked conditions of this section not supplied by manufacturer of products of this section.

E. Samples: Submit selection and verification samples for finishes, colors and textures.

Specifier Note: Delete paragraph below if color and finish is pre-selected.

1. Selection Samples: For each product requiring color selection, 2 sets of manufacturer's sample chips representing full range of colors and finishes available.
2. Verification Samples: For each color and finish selected, 2 chips indicating match to selected color and finish.

F. Warranties:
1. Substrate Warranty
2. Finish Warranty

G. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.

H. Quality Assurance Submittals: Submit the following:

1. Contractor Certificates: Contractor's certification that:
   a. Manufacturer of products of this section meets specified qualifications.
   b. Installer of products of this section meets specified qualifications.
2. Manufacturer's Instructions: Manufacturer's installation instructions.
3. Manufacturer's Field Reports: Manufacturer's field reports if required.

I. Buy American Certification: Manufacturer's letters of compliance that supplied products comply With requirements.

J. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified herein.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate Article below with Division 1 Quality Assurance Section.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Provider of "hands on" installer training programs at manufacturer facility.
2. Minimum of ten years' experience in manufacturing metal roof and wall systems.
3. Provider of product produced in a permanent factory environment with fixed roll-forming equipment.

B. Installer Qualifications:

1. Experience on at least five projects of similar size, type and complexity as this project that have been in service for a minimum of two years with satisfactory performance of the metal panel system.
2. Employer of workers for this project who are competent in techniques required by manufacturer for installation indicated and who shall be supervised at all times when material is being installed.

Specifier Note: Retain paragraph below for erected assemblies, either onsite or offsite, required for review of construction, coordination of work of several sections, testing or observation of operation.

C. Mock-Ups: Establish standards by which work will be judged. Coordinate below with Division 1 Quality Control (Mock-up Requirements) Section. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, texture and pattern and workmanship standard. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

1. Include eave, ridge, valley, gable and hip conditions.

Specifier Note: Edit paragraph below when specifying mock-up size.

2. Mock-Up Size: [Specify size.].
3. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
4. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

D. Buy American Compliance: Materials provided under Work of this Section shall comply with the following requirements:

1. Buy American Act of 1933 BAA-41 U.S.C §§ 10a – 10d.
2. Buy American provisions of Section 1605 of the American Recovery and Reinvestment Act of 2009 (ARRA).

1.7 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements Sections.

1. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Identify fabricated components with UL 90 label where appropriate.

C. Delivery and Acceptance Requirements: Ensure all panels are received in good condition. In cases where damage is visible, note all paperwork; inform architect and project superintendent.

D. Packing, Shipping, Handling and Unloading:

1. Bundle panels in waterproof wrapping paper when nested, or wooden crates when panels cannot be nested.
2. Package trim and accessories in waterproof wrapping paper.

E. Storage and Protection: Store materials protected from exposure to harmful conditions. Store material in dry, above-ground location.

1. Stack prefinished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one end of each skid to allow for moisture runoff.
2. Store products of this section in manufacturer's unopened packaging until installation of products
3. Maintain dry, heated storage area for products of this section until installation of products.
4. Remove strippable plastic film before storage under high-heat conditions.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

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

1.9 WARRANTY

Specifier Note: Coordinate Article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

Specifier Note: Edit paragraph below based on paint system specified and manufacturer's warranty requirements. McElroy Metal, Inc. offers a standard warranty against defects in product workmanship and materials, including deterioration of metal panel finish.

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

1. Panel Material: Furnish manufacturers 45 year warranty covering the panel against rupture, structural failure, or perforation.
2. Panel Coating:
    a. Polyvinylidene Fluoride: Furnish manufacturer's 40-year warranty covering cracking, checking, and peeling, and 30 year warranty covering fade and chalk on the two coat coil applied, baked on full strength (70% resin, PVF2) fluorocarbon coating. Manufacturer's warranty may exclude surface deterioration due to physical damage and corrosive environments.
    b. Silicone Modified Polyester: Furnish manufacturer's 30-year warranty covering cracking, checking, and peeling, and 30 year warranty covering fade and chalk. Manufacturer's warranty may exclude surface deterioration due to physical damage and corrosive environments.

Specifier Note: Retain paragraph below only if a separate installer warranty is required and edit to suit Project requirements.

B. Special Warranty: Installer's standard form in which installer agrees to repair or replace panels that fail due to poor workmanship or faulty installation within the specified warranty period.

1. Warranty Period: <Insert number of years> years from date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes such as performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "of equal" products.

2.1 METAL PANELS

Specifier Note: Retain or delete paragraph below to suit project requirements and specifier's practice.

A. Manufacturer: McElroy Metal, Inc.

1. Contact: 1500 Hamilton Rd., Bossier City, LA 71111; Telephone: (800) 562-3576, (318) 747-8097; Fax: (318) 747-8099; E-mail: info@mcelroymetal.com; website: www.mcelroymetal.com.
2. Proprietary Products: McElroy Metal Preformed Wall and Metal Panels M-Cor.

Specifier Note: Edit paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Product Requirements (Product Substitution Procedures) Section.

Specifier Note: Delete paragraph below if substitutions are prohibited

B. Substitutions:

1. Basis of Design Product: Subject to compliance with requirements provide McElroy Metal M-Cor.
2. Substitution Limitations
    a. Requests for approval must be submitted in writing at least ten (10) days prior to bid date, and are accompanied by all related test reports and design calculations listed in section 1.4 and Design and Performance criteria Section 2.2.
    b. Substitute manufacturers will be approved by written addendum to all bidders. Voluntary alternates will not be considered. Substitutions will not be permitted after the bid date of this project.
    c. Metal panels proposed for substitution shall fully comply with specified requirements in appearance, assembly, and performance.

C. Forming: Use continuous end rolling method. No end laps are permitted on panels without architect approval. No portable rollforming machines will be permitted on this project, no installer—owner or installer-rented machines will be permitted. It is the intent of the Architect to provide factory-manufactured panel systems only for this project.

2.2 MANUFACTURED UNITS

Specifier Note: Paragraphs below list proprietary wall and metal panels offered by McElroy Metal, Inc. Select panel type appropriate to project. Panels are factory formed. Matching flashing and trim may be factory formed or field formed from substrate material. Consult with manufacturer regarding product options. Select product characteristics required; delete characteristics not required. If more than one panel type is required, give each a drawing designation name or type number. Coordinate panel types with drawings and consider a panel schedule at the end of this section, if required.

A. McElroy M-Cor Corrugated Panel:

1. Profile: Longitudinal ribs 1/2" (12.7 mm) deep, spaced 2.67" (68 mm) on center, 39 3/8" (1000 mm) sheet width.
2. Size: 37 3/8" (949 mm) cover width for wall applications, lengths indicated on drawings.
3. Size: 34 7/8 (886 mm) cover width for sidewall applications, lengths indicated on drawings.

2.3 MATERIALS

A. Material: Galvalume steel sheet conforming to ASTM A792, AZ55 coating for bare; AZ50 coating for painted; [24 or 26] gauge sheet thickness.

2.4 METAL ROOF PANEL ACCESSORIES

Specifier Note: Edit section below based on project conditions.

A. General: Provide complete metal panel assembly incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings, in [manufacturer's standard profiles] [profiles as indicated]. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.

B. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.

C. Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.

D. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:

1. Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.
2. Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.

E. Steel Sheet Miscellaneous Framing Components: ASTM C 645, with ASTM A 653/A 653M, G60 (Z180) hot-dip galvanized zinc coating.

F. Metal Accessories: Approved by metal panel manufacturer. Refer to [Section 07 72 00] "Metal Accessories" for requirements for metal accessories.

G. Snow Guards: Approved by metal panel manufacturer. Refer to [Section 07 72 53] "Snow Guards" for requirements for snow guards attached to metal panels

2.5 FABRICATION

A. General: Provide factory fabricated and finished metal panels and accessories meeting performance requirements, indicated profiles, and structural requirements.

B. Fabricate metal panel joints configured to accept sealant providing weathertight seal and preventing metal-to-metal contact and minimizing noise resulting from thermal movement.

C. Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings. Form from materials matching metal panel substrate.

2.6 FINISHES

Specifier Note: Select from finish options below. If a combination of finishes is required consider including a panel schedule in project documents.

A. Two coat coil applied, baked on full strength (70% resin, PVF2) fluorocarbon coating consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 -0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness. Finish to be selected from manufacturer's standard color selection. The back side of the material should be 0.25 mil primer and a 0.25 mil polyester wash coat.

Specifier Note: Edit section below as applicable.

1. Metal Panel Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.
2. Metal Related Trim/Accessories Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.

Specifier Note: Edit section below as applicable.

B. Modified Silicone-Polyester color coat applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations consisting of a nominal .20-.30 mil dry film thickness primer and a nominal dry film thickness of 0.7-0.8 mil color coat for a total 0.9-1.1 mil total system dry film thickness.

1. Metal Panel Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.
2. Metal Related Trim/Accessories Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.

C. Bare Galvalume steel sheet conforming to ASTM A792, AZ55

Specifier Note: Coordinate Article below for related materials specified in other sections with product requirements of this section.

2.7 RELATED MATERIALS

A. General: Coordinate use of related materials:

1. Underlayment: Refer to Division 7 Metaling Section
2. Plywood Deck: Refer to Division 6 Rough Carpentry Section
3. Sealants: Refer to Division 7 Joint Sealants Section

2.8 SOURCE QUALITY

A. Source Quality: Obtain metal panel products from a single manufacturer.

B. Quality Control: Obtain metal panels, trim and other accessories from a manufacturer capable of providing on-site technical support and installation assistance.

PART 3 EXECUTION

Specifier Note: Revise Article below to suit project requirements and specifier's practice.

3.1 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, recommendations and installation instructions for substrate verification, preparation requirements and installation.

1. Strippable Film: Remove manufacturer's protective film, if any, from surfaces of metal panels.

B. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

1. Verification of Conditions:
    a. Panel support systems are ready for construction activities of this section and within specified tolerances.
    b. Rough-in utilities are in correct locations.
2. Installer's Examination:
    a. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
    b. Transmit 2 copies of installer's report to Architect within 24 hours of receipt.
    c. Delay construction activities of this section until unacceptable conditions have been corrected.
    d. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 PREPARATION

A. Coordination: Coordinate metal panel work with other trades to provide a noncorrosive and leak-free metal installation.

1. Install substrate boards, hat channels, purlins, or furring channels in accordance with manufacturer's recommendations.
2. Coordinate work, with installation of other associated work, to ensure quality application.
3. Coordinate work with installation of associated metal flashings and building walls.
4. Coordinate work to minimize foot traffic and construction activity on installed finished surfaces.
5. Coordinate location of pipe penetrations to allow centering of pipe in panel.
6. Coordinate location of metal curbs, to allow proper integration with metal panel.
7. Coordinate work to minimize foot traffic and construction activity on installed finished. surfaces.
8. Dissimilar Metals: Prevent galvanic action of dissimilar metals.

Specifier Note: Coordinate Article below with manufacturer's recommended installation details.

3.3 INSTALLATION

A. General: Install metal panels to profiles, patterns and drainage indicated and required for leak-free performance. Provide for structural and thermal movement of work. Seal joints for leak-free metal installation.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws.
3. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
4. Locate and space fasteners in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Install continuous length panels if at all possible. If splices are required, locate panel splices over, but not attached to, structural supports and only with prior Architect approval.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws.
8. Fasten flashings and trim around openings and similar elements with self-tapping screws.
9. Provide weathertight EPDM Flashing for pipe- and conduit-penetrating panels.
10. Fix panels at location depicted on reviewed shop drawings.
11. Allow for required panel clearance at penetrations for thermal movement.
12. Align pipe penetrations to occur in the flat of the metal panel. Report and have corrected improperly placed penetrations before proceeding with panel installation. Remove and replace metal panels which have improperly placed penetration flashings.
13. Allow for required panel clearance at penetrations for thermal movement.
14. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leak-free metal installation.

15. Sealant-Type Joints: Provide sealant-type joint where indicated. Form joints to conceal sealant. Comply with Division 7 Joint Sealants Section for sealant installation.

B. Metal Installation:

1. Install metal panels plumb, true and in correct alignment with structural framing, in accordance with shop drawings and manufacturer's printed installation instructions.
2. Install metal panels using manufacturer's concealed fastening system or non-corroding fasteners color-matched to panel.
3. Install trim using concealed fasteners where possible; sight-exposed non-corroding fasteners color-matched to trim are permitted on vertical surfaces only.

C. Installation Tolerances:

Specifier Note: Panel installation tolerances are dependent on tolerances of panel support system construction. Coordinate with other sections.

1. Variation from Plumb: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
2. Variation from Level: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
3. Variation from True Plane: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).

Specifier Note: Edit the section below for project specific requirements.

D. Underlayment Installation
1. Underlayment to be supplied by metal panel manufacturer.
2. Self-adhered High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 40 mils thick adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
3. Thermal Stability: Stable after testing at 240 degree F; ASTM D1970.
4. Low-Temperature Flexibility: Passes after testing at minus 20 degree F; ASTM D1970.
5. Retain one of two subparagraphs below or delete both if indicated on Drawings.
    a. Apply over the entire metal surface.
    b. Apply over the metal area indicated below:
6. Revise subparagraphs below to suit Project or delete if indicated on Drawings. If inserting dimensions, note that many self-adhering sheet underlayments are manufactured in 36-inch- (914-mm-) wide rolls.
    a. Roof perimeter for a distance up from eaves of [24 inches] [36 inches] < Insert dimension> beyond interior wall line.
    b. Valleys, from lowest point to highest point, for a distance on each side of [18 inches] < Insert dimension>. Overlap ends of sheets not less than 6 inches.
    c. Rake edges for a distance of [18 inches] < Insert dimension>.
    d. Hips and ridges for a distance on each side of [18 inches] < Insert dimension>.
    e. Roof-to-wall intersections for a distance from wall of [18 inches] < Insert dimension>.
    f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of [18 inches] < Insert dimension>.

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for metal panels applied over substrate boards. Related products might include gypsum board, gypsum sheathing, perlite board and related fasteners.

E. Accessory Installation: Install accessories using techniques recommended by manufacturer and which will assure positive anchorage to building and weather tight mounting. Provide for thermal movement. Coordinate installation with flashings and other components

1. Substrate boards
    a. General: <Insert requirements>.
    b. Products: <Insert requirements>.

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for metal panel assemblies requiring miscellaneous metal framing. Related products might include hat-shaped furring channels, cold-rolled channels, Z-shaped and C-shaped channels, angles, struts and related fasteners.

2. Metal Framing
    a. General: <Insert requirements>
    b. Products: <Insert requirements>
    c. Material: [ASTM A 1011 Steel, Grade 55, Class 2, 55 ksi minimum yield strength, with red oxide finish] [ASTM A 653 Steel, Grade 55, Class 2, 55 ksi minimum yield strength, with G90 hot-dipped galvanized finish].

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for accessory components of metal panel assemblies made or approved by manufacturer. Related products might include trims, copings, fascia, corners, closures, clips, flashings, gutters, downspouts, metal curbs, sealants, gaskets, fillers, closure strips, and other items.

F. Flashing and Trim Installation: Comply with performance requirements, manufacturer's written installation instructions, and the SMACNA "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and install units to true level. Install work with laps, joints, and seams that will be permanently watertight.

G. Metal Curbs: Use .063 minimum thickness welded aluminum, or 18 gauge minimum welded stainless steel, factory-insulated, with integral cricket, and designed to fit metal panel module, sized to meet specification.

3.4 FIELD QUALITY REQUIREMENTS

A. Site Tests: (Post-Installation Testing): Owner reserves right to perform post-installation testing of installed metal panel installation.

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with owner and manufacturer and specify below. Consult with manufacturer for services required.

Coordinate Paragraph below with Division 1 Quality Assurance Section. Delete paragraph if manufacturer field services not required.

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.5 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas.

B. Repair or replace damaged installed products.

C. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

D. Remove construction debris from project site and legally dispose of debris.

E. Remove strippable coating and perform dry wipe-down cleaning of panels as erected.

3.6 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction:

1. Protect installed products from damage by subsequent construction activities.
2. Replace products having damage other than minor finish damage.
3. Repair products having minor damage to finish in accordance with panel Manufacturer's recommendation
4. Architect shall be sole judge of acceptability of repair to damaged finishes; replace products having rejected repairs

Specifier Note: Retain Article below to suit project requirements. CSI Page Format allows for Schedules, Forms and Tables to be located at the end of a section. Article may be used to describe specific criteria requirements of similar products or equipment.

3.7 SCHEDULES

Specifier Note: Retain paragraph below to suit project requirements. Reference a schedule or include a schedule as an attachment which indicates where to locate products and equipment.

A. Schedules: Refer to panel schedule attached to this section.

END OF SECTION

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SECTION 07 42 13.13
METAL ROOF & WALL PANELS
MEGA-RIB

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Factory-formed metal roof and wall panels, including fascia, soffit and liner panels and includes:

1. Factory-formed panels in vertical installation.
2. Factory-formed panels in horizontal installation.
3. Metal flashings and trim.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers per CSI *MasterFormat* and specifier's practice.

Related Sections: Section(s) related to this section include:

1. Cold Formed Metal Framing: Division Metal Framing Section.
2. Building Insulation: Division 7 Building Insulation Section.
3. Sealants: Division 7 Joint Sealers Sections.
4. Flashing & Sheet Metal: Division 7 Flashing & Sheet Metal

Specifier Note: Paragraphs below list industry standards referenced in this section. Verify use of listed standards and add edition date of standards retained. Conditions of the Contract or Division 1 References Section may establish edition date of standards referenced. This article does not require compliance with standard, but is merely a listing of references used.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A653/A653M Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A792/A792M Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.
3. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. ASTM D2247 Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
5. ASTM E1680 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Metal Systems Under Specified Pressure Differences Across the Specimen.
6. ASTM E1646 Standard Test Method for Water Penetration of Metal Systems by Uniform Static Air Pressure Difference.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meetings:

1. Schedule meeting to discuss project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements before start of work onsite. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

   Specifier Note: Include location, date and other requirements here

2. Required attendees: Contractor, metal deck & metal installer, and any other subcontractors who have equipment penetrating the metal or work that requires access or traffic to metal roof and wall areas.

1.4 SYSTEM DESCRIPTION

A. Panel Performance Requirements: Provide panels, which have been manufactured, fabricated and installed to withstand structural and thermal movement, wind loading and weather exposure to maintain manufacturer's performance criteria without defects, damage, failure or infiltration of water.

Specifier Note: Select performance requirements based upon the panel selected in Section 2.02

1. Air Infiltration: Maximum 0.011 cfm/lf (0.061 m^3/hr/m) of seam at static pressure of +/-6.24 psf (0.30 kPa) when tested per ASTM E1680.

2. Water Penetration: No uncontrolled water penetration through the panel joints at a static pressure of 12.0 psf (0.57 kPa) when tested in accordance with ASTM E1646.
2. Fire rating: Class A
3. Uplift Tests:
   a. UL 580 Class 90
4. Miami Dade
5. Class 4 Impact Resistance: UL 2218
6. Fire Resistance: UL 263
7. Florida State Approval
8. ICC-ES: ESL 1082

A. Finish Performance Requirements:

1. Two coat coil applied, baked on full strength (70% resin, PVDF) fluorocarbon coating:
   a. Consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 -0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness.
   b. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM G23; color change, after removal of surface deposits such as dirt or chalk, maximum 5 NBS units.
   c. Humidity resistance: No blistering, peeling or loss of adhesion after 1000 hours testing, in accordance with ASTM D2247.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before construction. Coordinate this Article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.5 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data for specified products.

C. LEED Submittal Documentation:

1. Product Test Reports for applicable sustainable sites credits: For metal panels, indicating that panels comply with solar reflectance index requirement.
2. Product Data for applicable materials and resources credits: Indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Contractor to provide a statement indicating cost for each product having recycled content.

D. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

1. Indicate layout of metal panels and metal panel sizes, including custom-fabricated metal panels if indicated; indicate each item of trim and accessories.
2. Indicate in detailed drawings profile and gauge of interior and exterior sheets, and locations and types of fasteners; indicate locations, gauges, shapes and methods of attachment of metal panels, trim and accessory items.
3. Include sealant location and denote those that are factory and field applied.
4. Indicate products/materials required for construction activities and field worked conditions of this section not supplied by manufacturer of products of this section.

E. Samples: Submit selection and verification samples for finishes, colors and textures.

Specifier Note: Delete paragraph below if color and finish is pre-selected.

1. Selection Samples: For each product requiring color selection, 2 sets of manufacturer's sample chips representing full range of colors and finishes available.
2. Verification Samples: For each color and finish selected, 2 chips indicating match to selected color and finish.

F. Warranties:
1. Substrate Warranty
2. Finish Warranty

G. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.

H. Quality Assurance Submittals: Submit the following:

1. Contractor Certificates: Contractor's certification that:
   a. Manufacturer of products of this section meets specified qualifications.
   b. Installer of products of this section meets specified qualifications.
2. Manufacturer's Instructions: Manufacturer's installation instructions.
3. Manufacturer's Field Reports: Manufacturer's field reports if required.

I. Buy American Certification: Manufacturer's letters of compliance that supplied products comply With requirements.

J. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified herein.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate Article below with Division 1 Quality Assurance Section.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Provider of "hands on" installer training programs at manufacturer facility.
2. Minimum of ten years' experience in manufacturing metal roof and wall systems.
3. Provider of product produced in a permanent factory environment with fixed roll-forming equipment.

B. Installer Qualifications:

1. Experience on at least five projects of similar size, type and complexity as this project that have been in service for a minimum of two years with satisfactory performance of the metal panel system.
2. Employer of workers for this project who are competent in techniques required by manufacturer for installation indicated and who shall be supervised at all times when material is being installed.

Specifier Note: Retain paragraph below for erected assemblies, either onsite or offsite, required for review of construction, coordination of work of several sections, testing or observation of operation.

C. Mock-Ups: Establish standards by which work will be judged. Coordinate below with Division 1 Quality Control (Mock-up Requirements) Section. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, texture and pattern and workmanship standard. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

1. Include eave, ridge, valley, gable and hip conditions.

Specifier Note: Edit paragraph below when specifying mock-up size.

2. Mock-Up Size: [Specify size.].
3. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
4. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

D. Buy American Compliance: Materials provided under Work of this Section shall comply with the following requirements:

1. Buy American Act of 1933 BAA-41 U.S.C §§ 10a – 10d.
2. Buy American provisions of Section 1605 of the American Recovery and Reinvestment Act of 2009 (ARRA).

1.7 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements Sections.

1. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Identify fabricated components with UL 90 label where appropriate.

C. Delivery and Acceptance Requirements: Ensure all panels are received in good condition. In cases where damage is visible, note all paperwork; inform architect and project superintendent.

D. Packing, Shipping, Handling and Unloading:

1. Bundle panels in waterproof wrapping paper when nested, or wooden crates when panels cannot be nested.
2. Package trim and accessories in waterproof wrapping paper.

E. Storage and Protection: Store materials protected from exposure to harmful conditions. Store material in dry, above-ground location.

1. Stack prefinished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one end of each skid to allow for moisture runoff.
2. Store products of this section in manufacturer's unopened packaging until installation of products
3. Maintain dry, heated storage area for products of this section until installation of products.
4. Remove strippable plastic film before storage under high-heat conditions.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

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

1.9 WARRANTY

Specifier Note: Coordinate Article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

Specifier Note: McElroy Metal, Inc. offers a standard warranty against defects in product workmanship and materials, including deterioration of metal panel finish.

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

1. Panel Material: Furnish manufacturers 45 year warranty covering the panel against rupture, structural failure, or perforation.
2. Panel Coating:
    a. Polyvinylidene Fluoride: Furnish manufacturer's 40-year warranty covering cracking, checking, and peeling, and 30 year warranty covering fade and chalk on the two coat coil applied, baked on full strength (70% resin, PVF2) fluorocarbon coating. Manufacturer's warranty may exclude surface deterioration due to physical damage and corrosive environments.

Specifier Note: Retain paragraph below only if a separate installer warranty is required and edit to suit Project requirements.

B. Special Warranty: Installer's standard form in which installer agrees to repair or replace panels that fail due to poor workmanship or faulty installation within the specified warranty period.

1. Warranty Period: <Insert number of years> years from date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes such as performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "of equal" products.

2.1 METAL PANELS

Specifier Note: Retain or delete paragraph below to suit project requirements and specifier's practice.

A. Manufacturer: McElroy Metal, Inc.

1. Contact: 1500 Hamilton Rd., Bossier City, LA 71111; Telephone: (800) 562-3576, (318) 747-8097; Fax: (318) 747-8099; E-mail: info@mcelroymetal.com; website: www.mcelroymetal.com.
2. Proprietary Products: McElroy Metal Preformed Wall and Metal Panels Mega-Rib.

Specifier Note: Edit paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Product Requirements (Product Substitution Procedures) Section.

Specifier Note: Delete paragraph below if substitutions are prohibited

B. Substitutions:

1. Basis of Design Product: Subject to compliance with requirements provide McElroy Metal Mega-Rib
2. Substitution Limitations
    a. Requests for approval must be submitted in writing at least ten (10) days prior to bid date, and are accompanied by all related test reports and design calculations listed in section 1.4 and Design and Performance criteria Section 2.2.
    b. Substitute manufacturers will be approved by written addendum to all bidders. Voluntary alternates will not be considered. Substitutions will not be permitted after the bid date of this project.
    c. Metal panels proposed for substitution shall fully comply with specified requirements in appearance, assembly, and performance.

C. Forming: Use continuous end rolling method. No end laps are permitted on panels without architect approval. No portable rollforming machines will be permitted on this project, no installer—owner or installer-rented machines will be permitted. It is the intent of the Architect to provide factory-manufactured panel systems only for this project.

2.2 MANUFACTURED UNITS

Specifier Note: Paragraphs below list proprietary wall and metal panels offered by McElroy Metal, Inc. Select panel type appropriate to project. Panels are factory formed. Matching flashing and trim may be factory formed or field formed from substrate material. Consult with manufacturer regarding product options. Select product characteristics required; delete characteristics not required. If more than one panel type is required, give each a drawing designation name or type number. Coordinate panel types with drawings and consider a panel schedule at the end of this section, if required.

A. McElroy Metal Mega-Rib Panel:

1. Profile: Longitudinal ribs 1 1/2" (38 mm) deep, spaced 7.2" (183 mm) on center.
2. Size: 36" (914 mm) cover width, lengths indicated on drawings.

Specifier Note: Delete one of the following options.

3. Finish:
    a. Bare Galvalume.
    b. Polyvinylidene fluoride color coat, minimum 70% polyvinylidene fluoride resin

content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.

Specifier Note: If a colored coating is specified above, determine method of color selection and delete all but one of the following three paragraphs. Coordinate selection method with requirements for submittal samples specified in Part 1. If more than one color is required, retain third paragraph below and coordinate with section schedule.

a. Color: Selected from full range of manufacturer's standard colors.

b. Color: [Specify color.].

c. Color: Specified in Schedule at end of section.

2.3 MATERIALS

A. Material: Galvalume steel sheet conforming to ASTM A792, AZ55 coating for bare; AZ50 coating for painted; [24 or 26] gauge sheet thickness.

2.4 METAL ROOF PANEL ACCESSORIES

Specifier Note: Edit section below based on project conditions.

B. General: Provide complete metal panel assembly incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings, in [manufacturer's standard profiles] [profiles as indicated]. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.

C. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.

D. Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.

E. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:

1. Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.
2. Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.

F. Steel Sheet Miscellaneous Framing Components: ASTM C 645, with ASTM A 653/A 653M, G60 (Z180) hot-dip galvanized zinc coating.

G. Light Transmitting Panel: Manufacturer's standard UV-resistant translucent panel, white, with haze value of not less than 90 percent when measured per ASTM D 1003

H. Metal Accessories: Approved by metal panel manufacturer. Refer to [Section 07 72 00] "Metal Accessories" for requirements for metal accessories.

I. Snow Guards: Approved by metal panel manufacturer. Refer to [Section 07 72 53] "Snow Guards" for requirements for snow guards attached to metal panels

2.5 FABRICATION

A. General: Provide factory fabricated and finished metal panels and accessories meeting performance requirements, indicated profiles, and structural requirements.

B. Fabricate metal panel joints configured to accept sealant providing weathertight seal and preventing metal-to-metal contact and minimizing noise resulting from thermal movement.

C. Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings. Form from materials matching metal panel substrate.

2.6 FINISHES

Specifier Note: Select from finish options below. If a combination of finishes is required consider including a panel schedule in project documents.

A. Two coat coil applied, baked on full strength (70% resin, PVF2) fluorocarbon coating consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 -0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness. Finish to be selected from manufacturer's standard color selection. The back side of the material should be 0.25 mil primer and a 0.25 mil polyester wash coat.

Specifier Note: Edit section below as applicable.

1. Metal Panel Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.
2. Metal Related Trim/Accessories Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.

Specifier Note: Edit section below as applicable.

B. Bare Galvalume steel sheet conforming to ASTM A792, AZ55

Specifier Note: Coordinate Article below for related materials specified in other sections with product requirements of this section.

2.7 RELATED MATERIALS

A. General: Coordinate use of related materials:

1. Underlayment: Refer to Division 7 Metaling Section
2. Plywood Deck: Refer to Division 6 Rough Carpentry Section
3. Sealants: Refer to Division 7 Joint Sealants Section

2.8 SOURCE QUALITY

A. Source Quality: Obtain metal panel products from a single manufacturer.

B. Quality Control: Obtain metal panels, trim and other accessories from a manufacturer capable of providing on-site technical support and installation assistance.

PART 3 EXECUTION

Specifier Note: Revise Article below to suit project requirements and specifier's practice.

3.1 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, recommendations and installation instructions for substrate verification, preparation requirements and installation.

1. Strippable Film: Remove manufacturer's protective film, if any, from surfaces of metal panels.

B. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

1. Verification of Conditions:
    a. Panel support systems are ready for construction activities of this section and within specified tolerances.
    b. Rough-in utilities are in correct locations.
2. Installer's Examination:
    a. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.

b. Transmit 2 copies of installer's report to Architect within 24 hours of receipt.
c. Delay construction activities of this section until unacceptable conditions have been corrected.
d. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 PREPARATION

A. Coordination: Coordinate metal panel work with other trades to provide a noncorrosive and leak-free metal installation.

1. Install substrate boards, hat channels, purlins, or furring channels in accordance with manufacturer's recommendations.
2. Coordinate work, with installation of other associated work, to ensure quality application.
3. Coordinate work with installation of associated metal flashings and building walls.
4. Coordinate work to minimize foot traffic and construction activity on installed finished surfaces.
5. Coordinate location of pipe penetrations to allow centering of pipe in panel.
6. Coordinate location of metal curbs, to allow proper integration with metal panel.
7. Coordinate work to minimize foot traffic and construction activity on installed finished. surfaces.
8. Dissimilar Metals: Prevent galvanic action of dissimilar metals.

Specifier Note: Coordinate Article below with manufacturer's recommended installation details.

3.3 INSTALLATION

A. General: Install metal panels to profiles, patterns and drainage indicated and required for leak-free performance. Provide for structural and thermal movement of work. Seal joints for leak-free metal installation.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws.
3. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
4. Locate and space fasteners in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Install continuous length panels if at all possible. If splices are required, locate panel splices over, but not attached to, structural supports and only with prior Architect approval.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws.
8. Fasten flashings and trim around openings and similar elements with self-tapping screws.
9. Provide weathertight EPDM Flashing for pipe- and conduit-penetrating panels.
10. Fix panels at location depicted on reviewed shop drawings.
11. Allow for required panel clearance at penetrations for thermal movement.

12. Align pipe penetrations to occur in the flat of the metal panel. Report and have corrected improperly placed penetrations before proceeding with panel installation. Remove and replace metal panels which have improperly placed penetration flashings.
13. Allow for required panel clearance at penetrations for thermal movement.
14. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leak-free metal installation.
15. Sealant-Type Joints: Provide sealant-type joint where indicated. Form joints to conceal sealant. Comply with Division 7 Joint Sealants Section for sealant installation.

B. Metal Installation:

1. Install metal panels plumb, true and in correct alignment with structural framing, in accordance with shop drawings and manufacturer's printed installation instructions.
2. Install metal panels using manufacturer's concealed fastening system or non-corroding fasteners color-matched to panel.
3. Install trim using concealed fasteners where possible; sight-exposed non-corroding fasteners color-matched to trim are permitted on vertical surfaces only.

C. Installation Tolerances:

Specifier Note: Panel installation tolerances are dependent on tolerances of panel support system construction. Coordinate with other sections.

1. Variation from Plumb: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
2. Variation from Level: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
3. Variation from True Plane: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).

Specifier Note: Edit the section below for project specific requirements.

D. Underlayment Installation
1. Underlayment to be supplied by metal panel manufacturer.
2. Self-adhered High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 40 mils thick adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
3. Thermal Stability: Stable after testing at 240 degree F; ASTM D1970.
4. Low-Temperature Flexibility: Passes after testing at minus 20 degree F; ASTM D1970.
5. Retain one of two subparagraphs below or delete both if indicated on Drawings.
    a. Apply over the entire metal surface.
    b. Apply over the metal area indicated below:
6. Revise subparagraphs below to suit Project or delete if indicated on Drawings. If inserting dimensions, note that many self-adhering sheet underlayments are manufactured in 36-inch- (914-mm-) wide rolls.
    a. Roof perimeter for a distance up from eaves of [24 inches] [36 inches] < Insert dimension> beyond interior wall line.
    b. Valleys, from lowest point to highest point, for a distance on each side of [18 inches] < Insert dimension>. Overlap ends of sheets not less than 6 inches.

c. Rake edges for a distance of [18 inches] < Insert dimension>.
d. Hips and ridges for a distance on each side of [18 inches] < Insert dimension>.
e. Roof-to-wall intersections for a distance from wall of [18 inches] < Insert dimension>.
f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of [18 inches] < Insert dimension>.

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for metal panels applied over substrate boards. Related products might include gypsum board, gypsum sheathing, perlite board and related fasteners.

E. Accessory Installation: Install accessories using techniques recommended by manufacturer and which will assure positive anchorage to building and weather tight mounting. Provide for thermal movement. Coordinate installation with flashings and other components

1. Substrate boards
   a. General: <Insert requirements>.
   b. Products: <Insert requirements>.

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for metal panel assemblies requiring miscellaneous metal framing. Related products might include hat-shaped furring channels, cold-rolled channels, Z-shaped and C-shaped channels, angles, struts and related fasteners.

2. Metal Framing
   a. General: <Insert requirements>
   b. Products: <Insert requirements>
   c. Material: [ASTM A 1011 Steel, Grade 55, Class 2, 55 ksi minimum yield strength, with red oxide finish] [ASTM A 653 Steel, Grade 55, Class 2, 55 ksi minimum yield strength, with G90 hot-dipped galvanized finish].

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for accessory components of metal panel assemblies made or approved by manufacturer. Related products might include trims, copings, fascia, corners, closures, clips, flashings, gutters, downspouts, metal curbs, sealants, gaskets, fillers, closure strips, and other items.

F. Flashing and Trim Installation: Comply with performance requirements, manufacturer's written installation instructions, and the SMACNA "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and install units to true level. Install work with laps, joints, and seams that will be permanently watertight.

G. Metal Curbs: Use .063 minimum thickness welded aluminum, or 18 gauge minimum welded stainless steel, factory-insulated, with integral cricket, and designed to fit metal panel module, sized to meet specification.

3.4 FIELD QUALITY REQUIREMENTS

A. Site Tests: (Post-Installation Testing): Owner reserves right to perform post-installation testing of installed metal panel installation.

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with owner and manufacturer and specify below. Consult with manufacturer for services required. Coordinate Paragraph below with Division 1 Quality Assurance Section. Delete paragraph if manufacturer field services not required.

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.5 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas.

B. Repair or replace damaged installed products.

C. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

D. Remove construction debris from project site and legally dispose of debris.

E. Remove strippable coating and perform dry wipe-down cleaning of panels as erected.

3.6 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction:

1. Protect installed products from damage by subsequent construction activities.
2. Replace products having damage other than minor finish damage.
3. Repair products having minor damage to finish in accordance with panel Manufacturer's recommendation
4. Architect shall be sole judge of acceptability of repair to damaged finishes; replace products having rejected repairs

Specifier Note: Retain Article below to suit project requirements. CSI Page Format allows for Schedules, Forms and Tables to be located at the end of a section. Article may be used to describe specific criteria requirements of similar products or equipment.

3.7 SCHEDULES

Specifier Note: Retain paragraph below to suit project requirements. Reference a schedule or include a schedule as an attachment which indicates where to locate products and equipment.

A. Schedules: Refer to panel schedule attached to this section.

END OF SECTION

Rev. 6/20

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SECTION 07 42 13.13
METAL ROOF & WALL PANELS
MULTI-COR

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Factory-formed metal roof and wall panels, including fascia, soffit and liner panels and includes:

1. Factory-formed panels in vertical installation.
2. Factory-formed panels in horizontal installation.
3. Metal flashings and trim.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers per CSI *MasterFormat* and specifier's practice.

Related Sections: Section(s) related to this section include:

1. Cold Formed Metal Framing: Division Metal Framing Section.
2. Building Insulation: Division 7 Building Insulation Section.
3. Sealants: Division 7 Joint Sealers Sections.
4. Flashing & Sheet Metal: Division 7 Flashing & Sheet Metal

Specifier Note: Paragraphs below list industry standards referenced in this section. Verify use of listed standards and add edition date of standards retained. Conditions of the Contract or Division 1 References Section may establish edition date of standards referenced. This article does not require compliance with standard, but is merely a listing of references used.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A653/A653M Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A792/A792M Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.
3. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. ASTM D2247 Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
5. ASTM E1680 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Metal Systems Under Specified Pressure Differences Across the Specimen.
6. ASTM E1646 Standard Test Method for Water Penetration of Metal Systems by Uniform Static Air Pressure Difference.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meetings:

1. Schedule meeting to discuss project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements before start of work onsite. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

   Specifier Note: Include location, date and other requirements here

2. Required attendees: Contractor, metal deck & metal installer, and any other subcontractors who have equipment penetrating the metal or work that requires access or traffic to metal roof and wall areas.

1.4 SYSTEM DESCRIPTION

A. Panel Performance Requirements: Provide panels, which have been manufactured, fabricated and installed to withstand structural and thermal movement, wind loading and weather exposure to maintain manufacturer's performance criteria without defects, damage, failure or infiltration of water.

Specifier Note: Select performance requirements based upon the panel selected in Section 2.2

1. Fire rating: Class A
2. Uplift Tests:
   a. UL 580 Class 90

3. Class 4 Impact Resistance: UL 2218
4. Florida State Approval
5. Texas Department of Insurance

Specifier Note: Edit paragraph below based on paint finish selected.

B. Finish Performance Requirements:

1. Two coat coil applied, baked on full strength (70% resin, PVDF) fluorocarbon coating:
    a. Consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 -0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness.
    b. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM G23; color change, after removal of surface deposits such as dirt or chalk, maximum 5 NBS units.
    c. Humidity resistance: No blistering, peeling or loss of adhesion after 1000 hours testing, in accordance with ASTM D2247.
2. Silicone Modified Polyester:
    a. Consisting of a nominal .20-.30 mil dry film thickness primer and a nominal dry film thickness of 0.7-0.8 mil color coat for a total 0.9-1.1 mil total system dry film thickness.
    b. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM D2244; color change, after removal of surface deposits such as dirt or chalk.
    c. Humidity resistance: No blistering, peeling or loss of adhesion after 1000 hours testing, in accordance with ASTM D2247.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before construction. Coordinate this Article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.5 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data for specified products.

C. LEED Submittal Documentation:

1. Product Test Reports for applicable sustainable sites credits: For metal panels, indicating that panels comply with solar reflectance index requirement.
2. Product Data for applicable materials and resources credits: Indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled

content. Contractor to provide a statement indicating cost for each product having recycled content.

D. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

1. Indicate layout of metal panels and metal panel sizes, including custom-fabricated metal panels if indicated; indicate each item of trim and accessories.
2. Indicate in detailed drawings profile and gauge of interior and exterior sheets, and locations and types of fasteners; indicate locations, gauges, shapes and methods of attachment of metal panels, trim and accessory items.
3. Include sealant location and denote those that are factory and field applied.
4. Indicate products/materials required for construction activities and field worked conditions of this section not supplied by manufacturer of products of this section.

E. Samples: Submit selection and verification samples for finishes, colors and textures.

Specifier Note: Delete paragraph below if color and finish is pre-selected.

1. Selection Samples: For each product requiring color selection, 2 sets of manufacturer's sample chips representing full range of colors and finishes available.
2. Verification Samples: For each color and finish selected, 2 chips indicating match to selected color and finish.

F. Warranties:

1. Substrate Warranty
2. Finish Warranty

G. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.

H. Quality Assurance Submittals: Submit the following:

1. Contractor Certificates: Contractor's certification that:
    a. Manufacturer of products of this section meets specified qualifications.
    b. Installer of products of this section meets specified qualifications.
2. Manufacturer's Instructions: Manufacturer's installation instructions.
3. Manufacturer's Field Reports: Manufacturer's field reports if required.

I. Buy American Certification: Manufacturer's letters of compliance that supplied products comply With requirements.

J. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified herein.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate Article below with Division 1 Quality Assurance Section.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Provider of "hands on" installer training programs at manufacturer facility.
2. Minimum of ten years' experience in manufacturing metal roof and wall systems.
3. Provider of product produced in a permanent factory environment with fixed roll-forming equipment.

B. Installer Qualifications:

1. Experience on at least five projects of similar size, type and complexity as this project that have been in service for a minimum of two years with satisfactory performance of the metal panel system.
2. Employer of workers for this project who are competent in techniques required by manufacturer for installation indicated and who shall be supervised at all times when material is being installed.

Specifier Note: Retain paragraph below for erected assemblies, either onsite or offsite, required for review of construction, coordination of work of several sections, testing or observation of operation.

C. Mock-Ups: Establish standards by which work will be judged. Coordinate below with Division 1 Quality Control (Mock-up Requirements) Section. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, texture and pattern and workmanship standard. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

1. Include eave, ridge, valley, gable and hip conditions.

Specifier Note: Edit paragraph below when specifying mock-up size.

2. Mock-Up Size: [Specify size.].
3. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
4. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

D. Buy American Compliance: Materials provided under Work of this Section shall comply with the following requirements:

1. Buy American Act of 1933 BAA-41 U.S.C §§ 10a – 10d.

2. Buy American provisions of Section 1605 of the American Recovery and Reinvestment Act of 2009 (ARRA).

1.7 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements Sections.

1. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Identify fabricated components with UL 90 label where appropriate.

C. Delivery and Acceptance Requirements: Ensure all panels are received in good condition. In cases where damage is visible, note all paperwork; inform architect and project superintendent.

D. Packing, Shipping, Handling and Unloading:

1. Bundle panels in waterproof wrapping paper when nested, or wooden crates when panels cannot be nested.
2. Package trim and accessories in waterproof wrapping paper.

E. Storage and Protection: Store materials protected from exposure to harmful conditions. Store material in dry, above-ground location.

1. Stack prefinished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one end of each skid to allow for moisture runoff.
2. Store products of this section in manufacturer's unopened packaging until installation of products
3. Maintain dry, heated storage area for products of this section until installation of products.
4. Remove strippable plastic film before storage under high-heat conditions.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

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

1.9 WARRANTY

Specifier Note: Coordinate Article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

Specifier Note: Edit paragraph below based on paint system specified and manufacturer's warranty requirements. McElroy Metal, Inc. offers a standard warranty against defects in product workmanship and materials, including deterioration of metal panel finish.

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

1. Panel Material: Furnish manufacturers 45 year warranty covering the panel against rupture, structural failure, or perforation.
2. Panel Coating:
    a. Polyvinylidene Fluoride: Furnish manufacturer's 40-year warranty covering cracking, checking, and peeling, and 30 year warranty covering fade and chalk on the two coat coil applied, baked on full strength (70% resin, PVF2) fluorocarbon coating. Manufacturer's warranty may exclude surface deterioration due to physical damage and corrosive environments.
    b. Silicone Modified Polyester: Furnish manufacturer's 30-year warranty covering cracking, checking, and peeling, and 30 year warranty covering fade and chalk. Manufacturer's warranty may exclude surface deterioration due to physical damage and corrosive environments.

Specifier Note: Retain paragraph below only if a separate installer warranty is required and edit to suit Project requirements.

B. Special Warranty: Installer's standard form in which installer agrees to repair or replace panels that fail due to poor workmanship or faulty installation within the specified warranty period.

1. Warranty Period: <Insert number of years> years from date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes such as performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "of equal" products.

2.1 METAL PANELS

Specifier Note: Retain or delete paragraph below to suit project requirements and specifier's practice.

A. Manufacturer: McElroy Metal, Inc.

1. Contact: 1500 Hamilton Rd., Bossier City, LA 71111; Telephone: (800) 562-3576, (318) 747-8097; Fax: (318) 747-8099; E-mail: info@mcelroymetal.com; website: www.mcelroymetal.com.
2. Proprietary Products: McElroy Metal Preformed Wall and Metal Panels Multi-Cor.

Specifier Note: Edit paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Product Requirements (Product Substitution Procedures) Section.

Specifier Note: Delete paragraph below if substitutions are prohibited

B. Substitutions:

1. Basis of Design Product: Subject to compliance with requirements provide McElroy Metal Multi-Cor.
2. Substitution Limitations
    a. Requests for approval must be submitted in writing at least ten (10) days prior to bid date, and are accompanied by all related test reports and design calculations listed in section 1.4 and Design and Performance criteria Section 2.2.
    b. Substitute manufacturers will be approved by written addendum to all bidders. Voluntary alternates will not be considered. Substitutions will not be permitted after the bid date of this project.
    c. Metal panels proposed for substitution shall fully comply with specified requirements in appearance, assembly, and performance.

C. Forming: Use continuous end rolling method. No end laps are permitted on panels without architect approval. No portable rollforming machines will be permitted on this project, no installer—owner or installer-rented machines will be permitted. It is the intent of the Architect to provide factory-manufactured panel systems only for this project.

2.2 MANUFACTURED UNITS

Specifier Note: Paragraphs below list proprietary wall and metal panels offered by McElroy Metal, Inc. Select panel type appropriate to project. Panels are factory formed. Matching flashing and trim may be factory formed or field formed from substrate material. Consult with manufacturer regarding product options. Select product characteristics required; delete characteristics not required. If more than one panel type is required, give each a drawing designation name or type number. Coordinate panel types with drawings and consider a panel schedule at the end of this section, if required.

A. McElroy Metal Multi-Cor Corrugated Panels:

1. Profile: Longitudinal ribs 7/8" (22.2 mm) deep, spaced 2.67" (68 mm) on center, 35 1/2" (902 mm) sheet width.
2. Size: 31 3/8" (813 mm) cover width, lengths indicated on drawings.

2.3 MATERIALS

A. Material: Galvalume steel sheet conforming to ASTM A792, AZ55 coating for bare; AZ50 coating for painted; [24 or 26] gauge sheet thickness.

2.4 METAL ROOF PANEL ACCESSORIES

Specifier Note: Edit section below based on project conditions.

A. General: Provide complete metal panel assembly incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings, in **[**manufacturer's standard profiles**]** **[**profiles as indicated**]**. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.

B. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.

C. Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.

D. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:

1. Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.
2. Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.

E. Steel Sheet Miscellaneous Framing Components: ASTM C 645, with ASTM A 653/A 653M, G60 (Z180) hot-dip galvanized zinc coating.

F. Metal Accessories: Approved by metal panel manufacturer. Refer to [Section 07 72 00] "Metal Accessories" for requirements for metal accessories.

G. Snow Guards: Approved by metal panel manufacturer. Refer to [Section 07 72 53] "Snow Guards" for requirements for snow guards attached to metal panels

2.5 FABRICATION

A. General: Provide factory fabricated and finished metal panels and accessories meeting performance requirements, indicated profiles, and structural requirements.

B. Fabricate metal panel joints configured to accept sealant providing weathertight seal and preventing metal-to-metal contact and minimizing noise resulting from thermal movement.

C. Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings. Form from materials matching metal panel substrate.

2.6 FINISHES

Specifier Note: Select from finish options below. If a combination of finishes is required consider including a panel schedule in project documents.

A. Two coat coil applied, baked on full strength (70% resin, PVF2) fluorocarbon coating consisting of a nominal 0.25 mil dry film thickness primer, and a nominal dry film thickness of 0.7 -0.8 mil color coat for a total 0.9 to 1.1 mil total system dry film thickness. Finish to be selected from manufacturer's standard color selection. The back side of the material should be 0.25 mil primer and a 0.25 mil polyester wash coat.

Specifier Note: Edit section below as applicable.

1. Metal Panel Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.
2. Metal Related Trim/Accessories Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.

Specifier Note: Edit section below as applicable.

B. Modified Silicone-Polyester color coat applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations consisting of a nominal .20-.30 mil dry film thickness primer and a nominal dry film thickness of 0.7-0.8 mil color coat for a total 0.9-1.1 mil total system dry film thickness.

1. Metal Panel Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].
    c. Color: As indicated on panel schedule.
2. Metal Related Trim/Accessories Color:
    a. Selected from full range of manufacturer's standard colors.
    b. Color: [Specify color.].

c. Color: As indicated on panel schedule.

C. Bare Galvalume steel sheet conforming to ASTM A792, AZ55

Specifier Note: Coordinate Article below for related materials specified in other sections with product requirements of this section.

2.7 RELATED MATERIALS

A. General: Coordinate use of related materials:

1. Underlayment: Refer to Division 7 Metaling Section
2. Plywood Deck: Refer to Division 6 Rough Carpentry Section
3. Sealants: Refer to Division 7 Joint Sealants Section

2.8 SOURCE QUALITY

A. Source Quality: Obtain metal panel products from a single manufacturer.

B. Quality Control: Obtain metal panels, trim and other accessories from a manufacturer capable of providing on-site technical support and installation assistance.

PART 3 EXECUTION

Specifier Note: Revise Article below to suit project requirements and specifier's practice.

3.1 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, recommendations and installation instructions for substrate verification, preparation requirements and installation.

1. Strippable Film: Remove manufacturer's protective film, if any, from surfaces of metal panels.

B. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

1. Verification of Conditions:
   a. Panel support systems are ready for construction activities of this section and within specified tolerances.
   b. Rough-in utilities are in correct locations.
2. Installer's Examination:

a. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
b. Transmit 2 copies of installer's report to Architect within 24 hours of receipt.
c. Delay construction activities of this section until unacceptable conditions have been corrected.
d. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 PREPARATION

A. Coordination: Coordinate metal panel work with other trades to provide a noncorrosive and leak-free metal installation.

1. Install substrate boards, hat channels, purlins, or furring channels in accordance with manufacturer's recommendations.
2. Coordinate work, with installation of other associated work, to ensure quality application.
3. Coordinate work with installation of associated metal flashings and building walls.
4. Coordinate work to minimize foot traffic and construction activity on installed finished surfaces.
5. Coordinate location of pipe penetrations to allow centering of pipe in panel.
6. Coordinate location of metal curbs, to allow proper integration with metal panel.
7. Coordinate work to minimize foot traffic and construction activity on installed finished. surfaces.
8. Dissimilar Metals: Prevent galvanic action of dissimilar metals.

Specifier Note: Coordinate Article below with manufacturer's recommended installation details.

3.3 INSTALLATION

A. General: Install metal panels to profiles, patterns and drainage indicated and required for leak-free performance. Provide for structural and thermal movement of work. Seal joints for leak-free metal installation.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws.
3. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
4. Locate and space fasteners in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Install continuous length panels if at all possible. If splices are required, locate panel splices over, but not attached to, structural supports and only with prior Architect approval.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws.
8. Fasten flashings and trim around openings and similar elements with self-tapping screws.
9. Provide weathertight EPDM Flashing for pipe- and conduit-penetrating panels.
10. Fix panels at location depicted on reviewed shop drawings.

11. Allow for required panel clearance at penetrations for thermal movement.
12. Align pipe penetrations to occur in the flat of the metal panel. Report and have corrected improperly placed penetrations before proceeding with panel installation. Remove and replace metal panels which have improperly placed penetration flashings.
13. Allow for required panel clearance at penetrations for thermal movement.
14. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leak-free metal installation.
15. Sealant-Type Joints: Provide sealant-type joint where indicated. Form joints to conceal sealant. Comply with Division 7 Joint Sealants Section for sealant installation.

B. Metal Installation:

1. Install metal panels plumb, true and in correct alignment with structural framing, in accordance with shop drawings and manufacturer's printed installation instructions.
2. Install metal panels using manufacturer's concealed fastening system or non-corroding fasteners color-matched to panel.
3. Install trim using concealed fasteners where possible; sight-exposed non-corroding fasteners color-matched to trim are permitted on vertical surfaces only.

C. Installation Tolerances:

Specifier Note: Panel installation tolerances are dependent on tolerances of panel support system construction. Coordinate with other sections.

1. Variation from Plumb: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
2. Variation from Level: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
3. Variation from True Plane: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).

Specifier Note: Edit the section below for project specific requirements.

D. Underlayment Installation
1. Underlayment to be supplied by metal panel manufacturer.
2. Self-adhered High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 40 mils thick adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
3. Thermal Stability: Stable after testing at 240 degree F; ASTM D1970.
4. Low-Temperature Flexibility: Passes after testing at minus 20 degree F; ASTM D1970.
5. Retain one of two subparagraphs below or delete both if indicated on Drawings.
    a. Apply over the entire metal surface.
    b. Apply over the metal area indicated below:
6. Revise subparagraphs below to suit Project or delete if indicated on Drawings. If inserting dimensions, note that many self-adhering sheet underlayments are manufactured in 36-inch- (914-mm-) wide rolls.
    a. Roof perimeter for a distance up from eaves of [24 inches] [36 inches] < Insert dimension> beyond interior wall line.

b. Valleys, from lowest point to highest point, for a distance on each side of [18 inches] < Insert dimension>. Overlap ends of sheets not less than 6 inches.
c. Rake edges for a distance of [18 inches] < Insert dimension>.
d. Hips and ridges for a distance on each side of [18 inches] < Insert dimension>.
e. Roof-to-wall intersections for a distance from wall of [18 inches] < Insert dimension>.
f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of [18 inches] < Insert dimension>.

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for metal panels applied over substrate boards. Related products might include gypsum board, gypsum sheathing, perlite board and related fasteners.

E. Accessory Installation: Install accessories using techniques recommended by manufacturer and which will assure positive anchorage to building and weather tight mounting. Provide for thermal movement. Coordinate installation with flashings and other components

1. Substrate boards
    a. General: <Insert requirements>.
    b. Products: <Insert requirements>.

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for metal panel assemblies requiring miscellaneous metal framing. Related products might include hat-shaped furring channels, cold-rolled channels, Z-shaped and C-shaped channels, angles, struts and related fasteners.

2. Metal Framing
    a. General: <Insert requirements>
    b. Products: <Insert requirements>
    c. Material: [ASTM A 1011 Steel, Grade 55, Class 2, 55 ksi minimum yield strength, with red oxide finish] [ASTM A 653 Steel, Grade 55, Class 2, 55 ksi minimum yield strength, with G90 hot-dipped galvanized finish].

Specifier Note: Retain this article if required. Insert appropriate paragraphs in this article for accessory components of metal panel assemblies made or approved by manufacturer. Related products might include trims, copings, fascia, corners, closures, clips, flashings, gutters, downspouts, metal curbs, sealants, gaskets, fillers, closure strips, and other items.

F. Flashing and Trim Installation: Comply with performance requirements, manufacturer's written installation instructions, and the SMACNA "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and install units to true level. Install work with laps, joints, and seams that will be permanently watertight.

G. Metal Curbs: Use .063 minimum thickness welded aluminum, or 18 gauge minimum welded stainless steel, factory-insulated, with integral cricket, and designed to fit metal panel module, sized to meet specification.

3.4 FIELD QUALITY REQUIREMENTS

A. Site Tests: (Post-Installation Testing): Owner reserves right to perform post-installation testing of installed metal panel installation.

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with owner and manufacturer and specify below. Consult with manufacturer for services required. Coordinate Paragraph below with Division 1 Quality Assurance Section. Delete paragraph if manufacturer field services not required.

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.5 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas.

B. Repair or replace damaged installed products.

C. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

D. Remove construction debris from project site and legally dispose of debris.

E. Remove strippable coating and perform dry wipe-down cleaning of panels as erected.

3.6 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction:

1. Protect installed products from damage by subsequent construction activities.
2. Replace products having damage other than minor finish damage.
3. Repair products having minor damage to finish in accordance with panel Manufacturer's recommendation
4. Architect shall be sole judge of acceptability of repair to damaged finishes; replace products having rejected repairs

Specifier Note: Retain Article below to suit project requirements. CSI Page Format allows for Schedules, Forms and Tables to be located at the end of a section. Article may be used to describe specific criteria requirements of similar products or equipment.

3.7 SCHEDULES

Specifier Note: Retain paragraph below to suit project requirements. Reference a schedule or include a schedule as an attachment which indicates where to locate products and equipment.

A. Schedules: Refer to panel schedule attached to this section.

END OF SECTION

Rev. 6/20

Des Moines Creek Park Trailhead

Pre-Bid Meeting
February 12, 2025 at 11:00 a.m.

SIGN-IN SHEET

Name / Company	E-Mail Address	Address	Phone/Fax
Kelson McClung McClung Construction Co.	bids@mcclungconstruction.com	P.O. Box 1189 Buckley, WA 98321	253.397.9049
Jason Harkness Harkness Construction	jason@harknessconstruction.com	45015 244th Ave SE Enumclaw, WA	253.335.1449
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Name / Company	E-Mail Address	Address	Phone/Fax
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Talakai Construction	talakaioch@hotmail.com	9236 25th Ave SW Seattle, WA 98106	206.763.2638