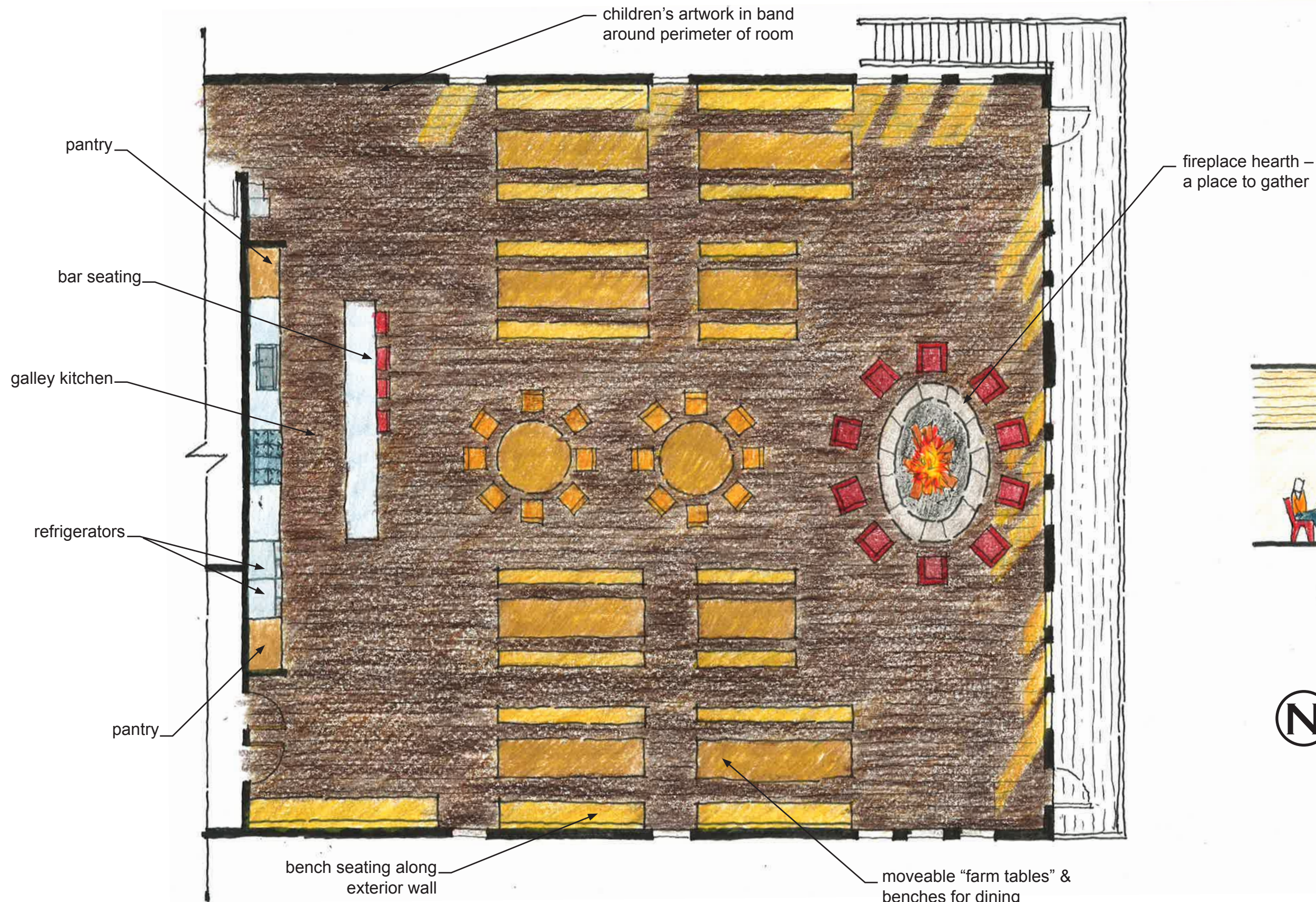


# MERTARVIK EVACUATION CENTER

NELSON ISLAND, ALASKA

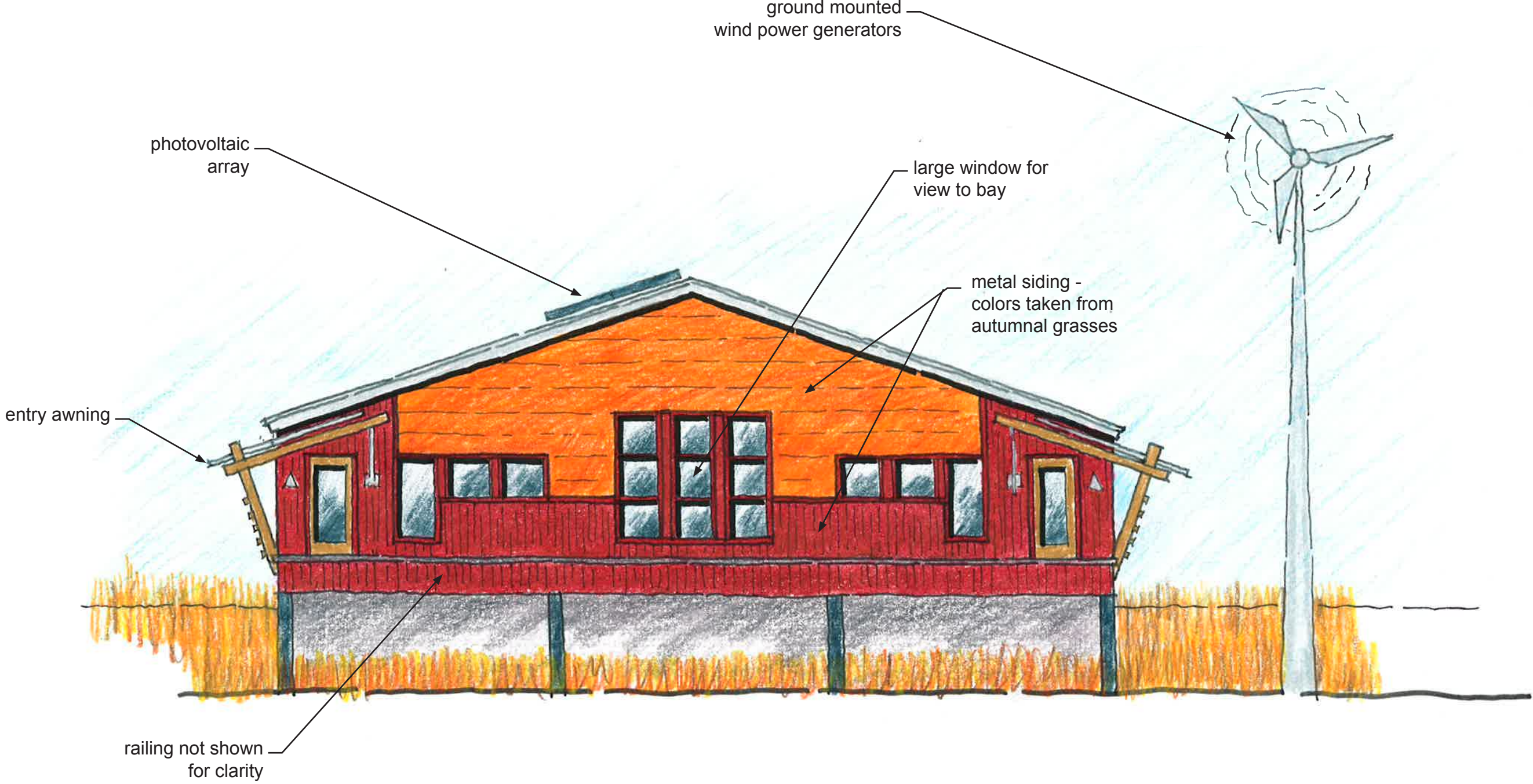
RENDERINGS, ARCHITECTURAL DRAWINGS & STRUCTURAL DRAWINGS





**MERTARVIK EVACUATION CENTER**  
 NELSON ISLAND, ALASKA





**MERTARVIK EVACUATION CENTER**  
 NELSON ISLAND, ALASKA



**EAST ELEVATION**

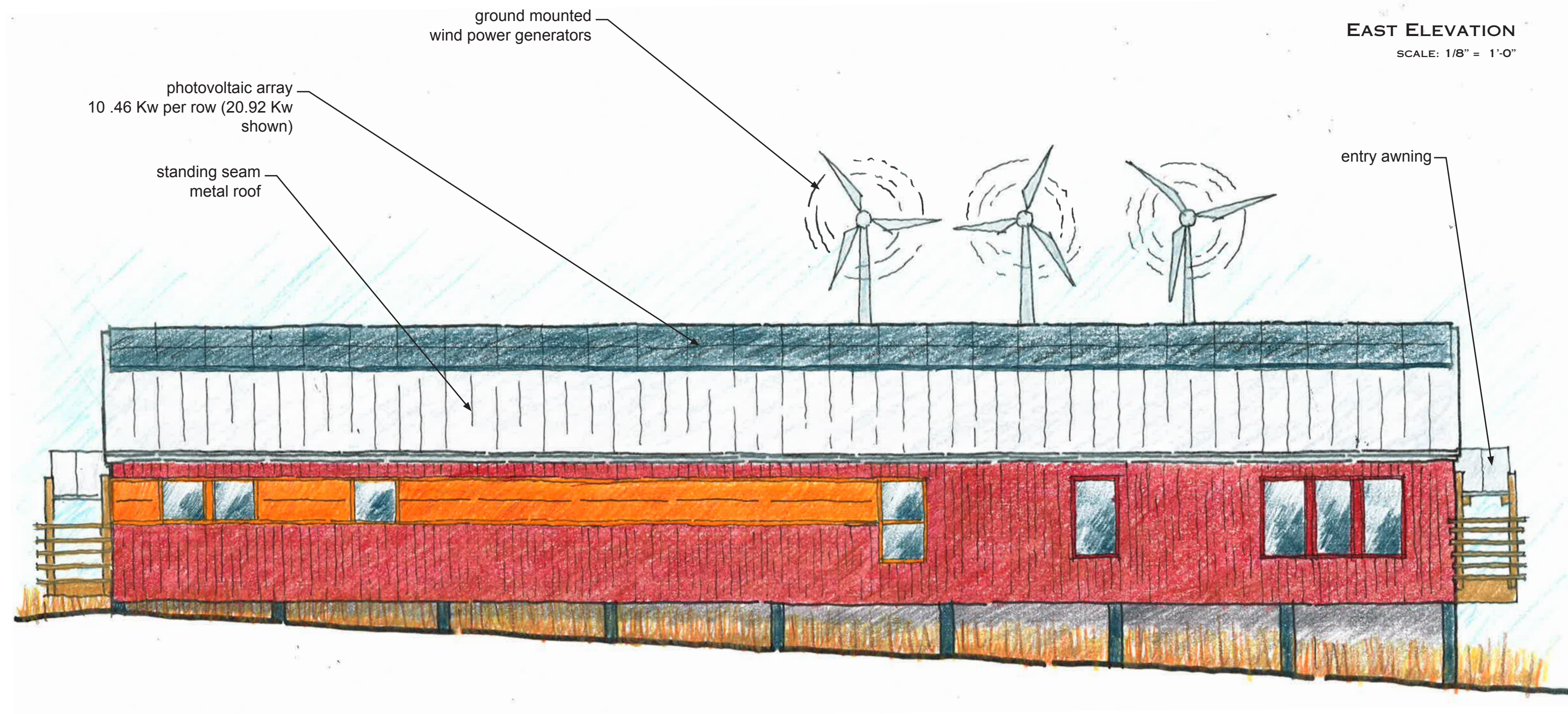
SCALE: 1/8" = 1'-0"

ground mounted  
wind power generators

photovoltaic array  
10 .46 Kw per row (20.92 Kw  
shown)

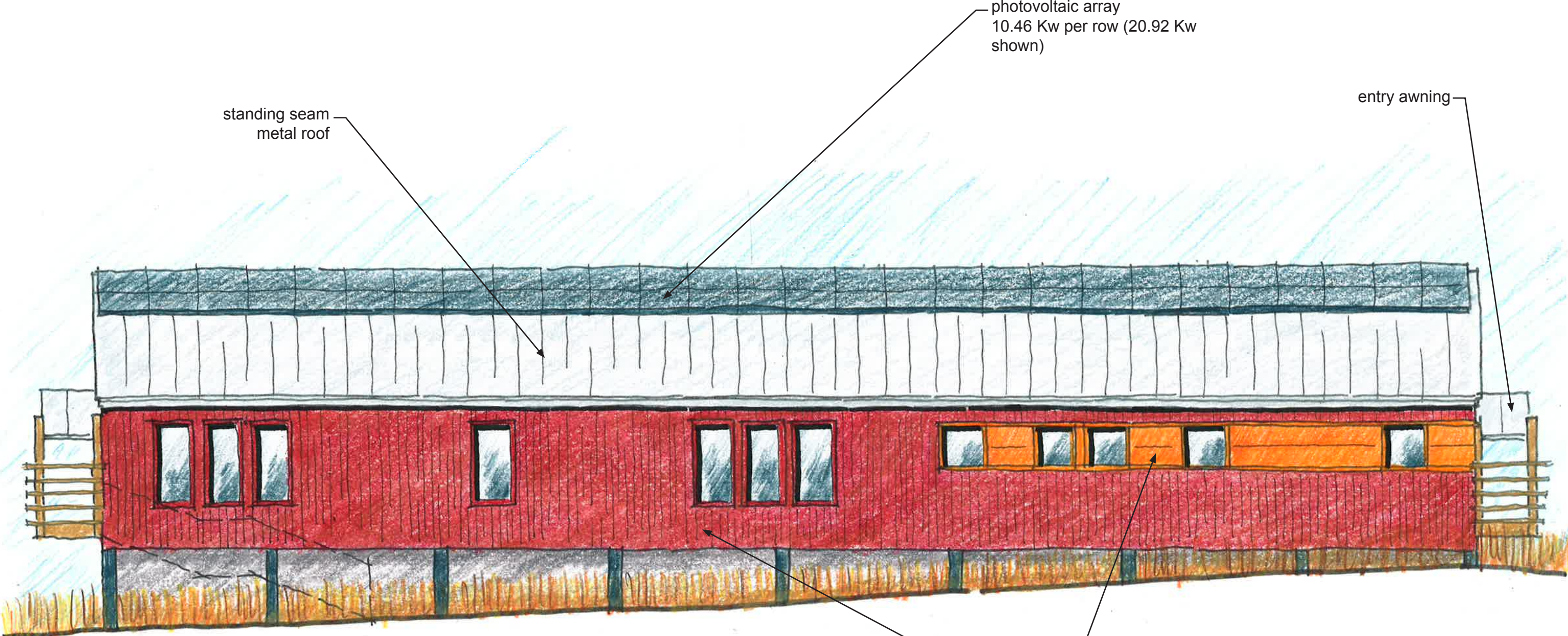
standing seam  
metal roof

entry awning



**MERTARVIK EVACUATION CENTER**  
NELSON ISLAND, ALASKA





standing seam  
metal roof

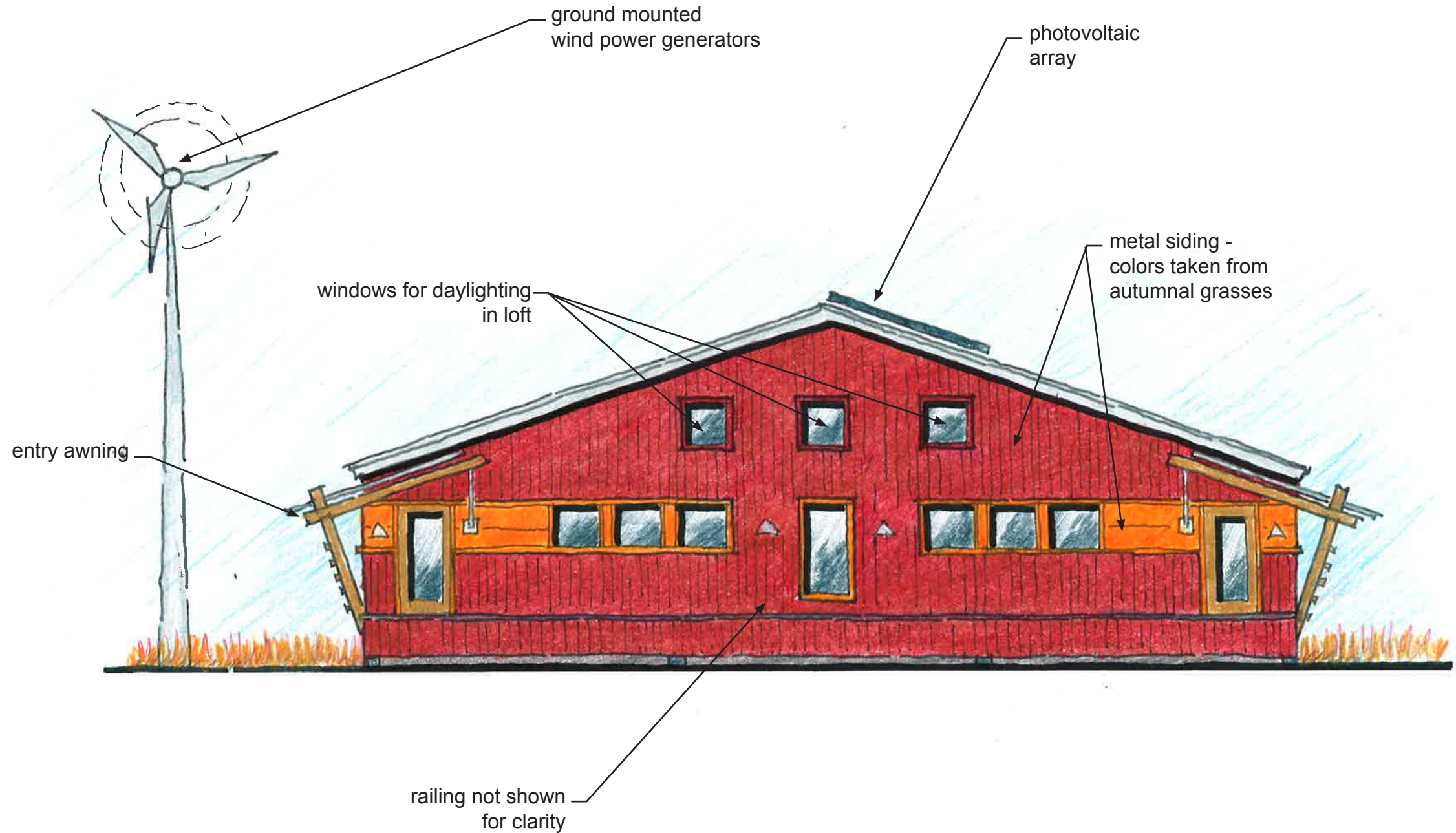
photovoltaic array  
10.46 Kw per row (20.92 Kw  
shown)

entry awning

metal siding -  
colors taken from  
autumnal grasses

**MERTARVIK EVACUATION CENTER**  
NELSON ISLAND, ALASKA





**MERTARVIK EVACUATION CENTER**  
 NELSON ISLAND, ALASKA





# MERTARVIK EVACUATION CENTER

PROGRESS PERMIT SET APRIL 18, 2012

## CONTACT INFORMATION

### OWNER

NEWTOK TRIBAL COUNCIL

### STRUCTURAL ENGINEER

MARTINO & LUTH, INC.  
820 16TH ST. #835  
DENVER, CO 80202  
303.260.7118  
www.martinoandluth.com

### PROJECT MANAGER

EARTH CORE SIPS  
LAFAYETTE, COLORADO 80026  
Scott Anderson  
303.618.1834  
scott@earthcoresips.com  
www.earthcoresips.com

### ARCHITECT OF RECORD

GEORGE WATT ARCHITECTURE  
726 PEARL ST. SUITE C  
BOULDER, COLORADO 80302  
303.443.4848  
www.gwattarchitect.com

## VICINITY MAP



DRAWING INDEX	
Sheet Number	Sheet Name
A0.0	COVER SHEET
A1.0	SITE INFORMATION
A2.0	CODE PLAN
A2.1	MAIN FLOOR PLAN
A2.2	FLOOR AND ROOF PANEL LAYOUT
A3.0	BUILDING SECTION/SCHEDULES
A4.0	EXTERIOR ELEVATIONS
A5.0	DETAILS
S0.0	GENERAL NOTES, SHEET LIST, ABBREVIATIONS AND LEGEND
S1.1	FLOOR AND LOFT FRAMING PLANS AND BUILDING SECTIONS
S1.2	ROOF FRAMING AND DETAILS

MERTARVIK EVACUATION CENTER

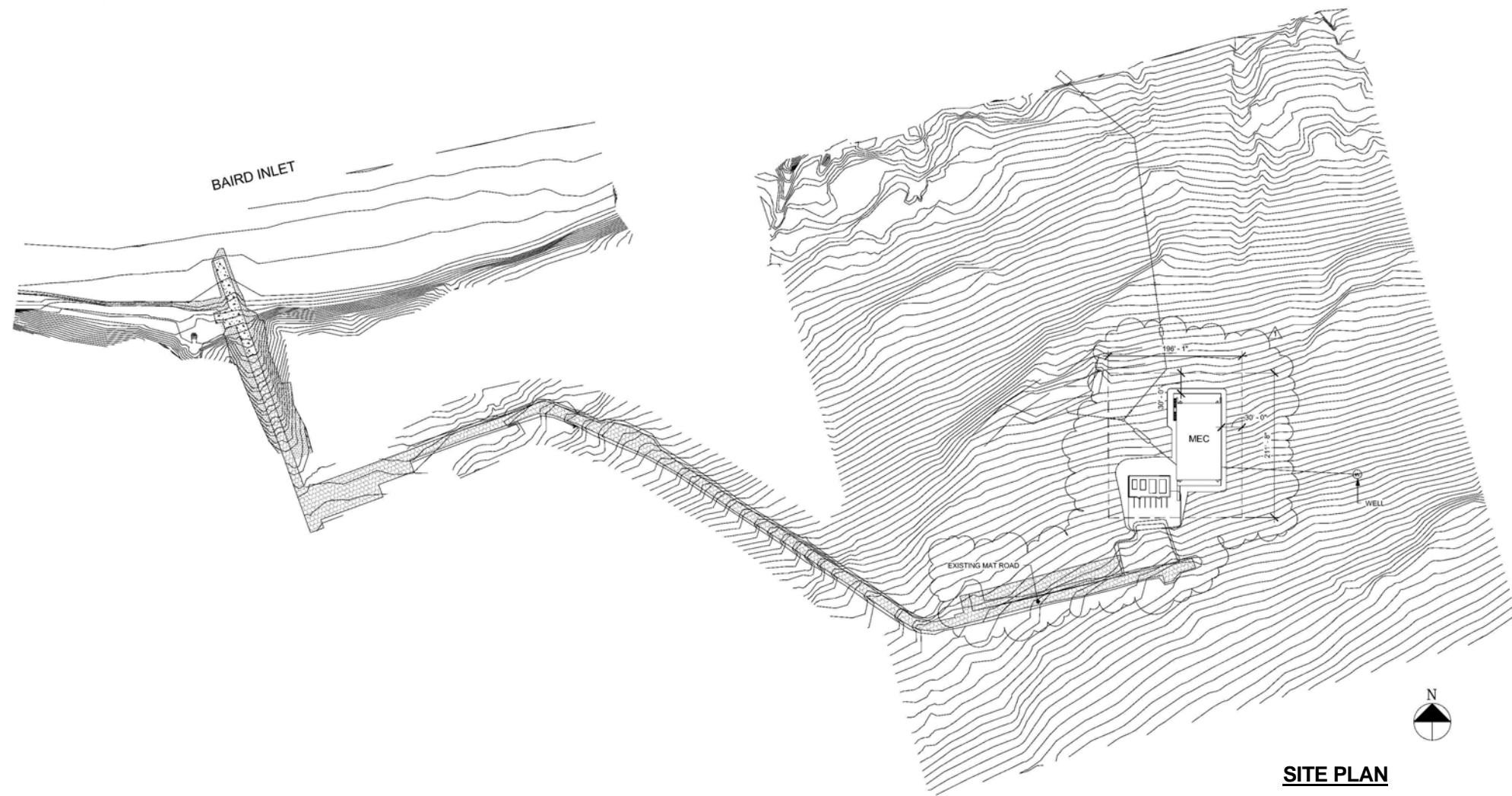
NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SIPS. Permission for use of this document is limited and EarthCore SIPS does not warrant any liability without agreement with EarthCore SIPS. COPYRIGHT 2012

Project Number  
Issued For PROGRESS  
Date: 04/18/12  
Revision Date

COVER SHEET

A0.0



**SITE PLAN**

\*\*REFERENCE ONLY-NOT TO SCALE

**MERTARVIK EVACUATION CENTER**

NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SPS. Permission for use of this document is limited and can be rescinded only by written agreement with EarthCore SPS. COPYRIGHT 2012

Project Number	
Issued For	PROGRESS
Date:	04/18/12
Revision	Date

SITE INFORMATION

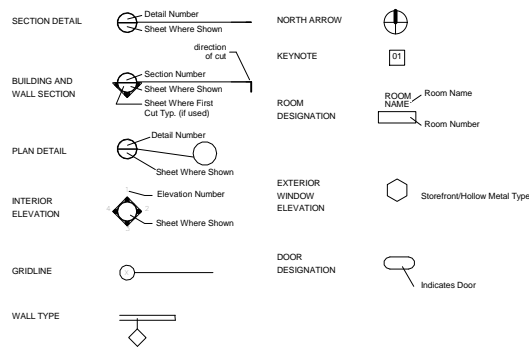
**A1.0**



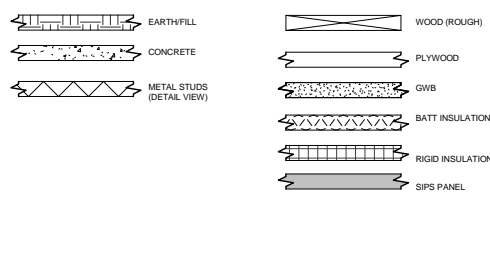
## ARCH. ABBREVIATIONS

AA	AUTOMATICALLY ACTUATED	MDF	MEDIUM DENSITY FIBER
AB	ANCHOR BOLT	MECH	MECHANICAL
AC	ABOVE COUNTER	MFR	MANUFACTURE(R)
AF	ABOVE FINISHED FLOOR	MHO	MAGNETIC HOLD OPEN
ALT	ALTERNATE	MIN	MINIMUM
ALUM	ALUMINUM	MO	MASONRY OPENING
ARCH	ARCHITECTURAL	MTL	METAL STUDS
		META	METAL
BD	BOARD	NIC	NOT IN CONTRACT
BLDG	BLOCK	NO	NUMBER
BLK	BLOCK	NOM	NOMINAL
BO	BOTTOM OF		
CA	CARD ACTUATED	OC	ON CENTER
CB	CHALKBOARD	OD	OUTSIDE DIAMETER (or)
CD	CONTRACTOR FURNISHED		
CDI	CONTRACTOR INSTALLED	OFCI	OWNER FURNISHED
CG	CORNER GUARD	OFCI	CONTRACTOR INSTALLED
CH	CONDUCTOR HEAD	OFCI	OWNER FURNISHED
CP	CAST IN PLACE		
CJ	CONTROL JOINT	OFVI	OWNER INSTALLED
CL	CENTER LINE		
CLG	CEILING	OH	OPPOSITE HAND
CMJ	CONCRETE MASONRY UNIT	OVERHEAD	
COL	COLUMN	OPNG	OPENING
CONC	CONCRETE	OPR	OPPOSITE
CONT	CONTINUOUS, CONTINUE	PAR	PARALLEL
CPT	CARPET	PB	PARTICLE BOARD
CR	CARD READER	PB	PUSH BUTTON
		PERP	PERPENDICULAR
D	DEEPDEPTH	PL	PLATE
DF	DRINKING FOUNTAIN	PL	PROPERTY LINE
DPS	DOOR AND FRAME SCHEDULE	PLM	PLASTIC LAMINATE
DIA	DIAMETER	PLWD	PLYWOOD
DS	DOWNSPOUT	PT	PAINT, PAINTED
DTL	DETAIL	PC	POLYISOCYANURATE
DWG	DRAWING	PVC	POLYVINYL CHLORIDE
EA	EACH		
ECAH	ELECTRIC CABINET UNIT HEATER	RD	ROOF DRAIN
EFS	EXPANSION JOINT FINISH SYSTEM	RE	REFERENCE
EJ	EXPANSION JOINT	REV	REVISION
EL	ELECTRICAL	RENF	REINFORCING
ELEV	ELEVATION/ELEVATOR	RFS	ROOM FINISH SCHEDULE
EOS	EDGE OF SLAB	RM	ROOM
EQ	EQUAL	RD	ROUGH OPENING
EWC	ELECT. WATER COOLER		
EXIST	EXISTING	SAT	SUSPENDED ACCOUS. TILE
EXP	EXPANSION	SCH	SCHEDULE
EXT	EXTERIOR	SD	STORM DRAIN
FAAP	FIRE ALARM ANNUNCIATOR PANEL	SFT	SQUARE FEET
FACP	FIRE ALARM CONTROL PANEL	SH	SHEET
FDR	FLOOR DRAIN	SM	SIMILAR
FDC	FIRE DEPARTMENT CONNECTION	SPEC	SPECIFICATION(S)
FE	FIRE EXTINGUISHER	SQ	SQUARE
FEB	FIRE EXTINGUISHER BRACKET	SSTL	STAINLESS STEEL
FEC	FIRE EXTINGUISHER CABINET	STL	STEEL
FF	FINISH FLOOR	STRUC	STRUCTURAL
FHC	FIRE HOSE CABINET	SUSP	SUSPENDED
FIN	FINISH		
FLR	FLOOR	TB	TACKBOARD
FRP	FIBERGLASS REIN. PLASTIC	TBD	TO BE DETERMINED
FS	FLOOR SINK	THK	THICKNESS
FT	FEET	THRU	THROUGH
FTG	FOOTING	TO	TOP OF
FV	FIELD VERIFY	TS	TUBE STEEL
		TYP	TYPICAL
GA	GAUGE		
GALV	GALVANIZED	UC	UNDER CONTRACT
GC	GENERAL CONTRACTOR	UNO	UNLESS NOTED OTHERWISE
GR	GRADE, GRADING		
GWB	GYPNUM WALL BOARD	VCT	VINYL COMPOSITE TILE
GYP	GYPNUM	VERT	VERTICAL
		VEST	VESTIBULE
H	HIGH/HEIGHT	VFCI	VENDOR FURNISHED
HB	HOSE BIB	CONTR	CONTRACTOR INSTALLED
HM	HOLLOW METAL	VFO	VENDOR FURNISHED
HO	HOLD OPEN	OWNER	OWNER INSTALLED
HORIZ	HORIZONTAL	VENDOR	VENDOR FURNISHED
HR	HAND RAIL	VFVI	VENDOR INSTALLED
HT	HEIGHT		
ID	INSIDE DIAMETER	W	WIDEN/WIDTH
IN	INCHES	W/	WITH
INSL	INSULATION, INSULATING	W/O	WITHOUT
INT	INTERIOR	WC	WATER CLOSET
		WD	WOOD
JO	JOINT		
KB	KEYBOARD		
KS	KNEE SPACE		
L	LONG/LENGTH		
MAS	MASONRY		
MAX	MAXIMUM		
MB	MARKERBOARD		

## ARCH. DRAWING SYMBOLS



## ARCHITECTURAL MATERIALS KEY



## LEGEND

--- 1-HR RATED WALL

## INTERIOR FINISH NOTES

- FLOORS IN SERVICE CORE TO BE "FORBO", MARMOLEUM, OR EQUAL - ALL OTHER FLOOR SURFACES TO BE WOOD.
- INTERIOR WALLS IN SERVICE CORE TO BE FRP - ALL OTHER WALL SURFACES TO BE WOOD PANELING.
- CEILING FINISH TO BE WOOD IN ALL AREAS.

## GENERAL NOTES

THE ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IN THE DRAWINGS PRIOR TO CONSTRUCTION. FAILURE TO NOTIFY THE ARCHITECT SHALL CONSTITUTE ACCEPTANCE BY THE BUILDER OF ALL RESPONSIBILITY. THIS IS A CUSTOM DESIGN FOR A SPECIFIC SITE. THESE PLANS MAY NOT BE USED ON ANY OTHER SITE WITHOUT THE ARCHITECT'S PRIOR WRITTEN APPROVAL. ANY CHANGES TO THESE PLANS WITHOUT PRIOR WRITTEN CONSENT BY THE ARCHITECT, SHALL CONSTITUTE ACCEPTANCE BY THE BUILDER AND OWNER OF THAT CHANGE.

**SIP MATERIALS:**  
**CORE:**  
 THE CORE MATERIAL SHALL BE 5 1/2" POLYURETHANE MEETING THE FOLLOWING CRITERIA:  
 CORE DENSITY (ASTM D-1622): 2.2 PCF  
 COMPRESSIVE STRENGTH (ASTM D1621): 17.5 PSI  
 FLEXURAL STRENGTH (ASTM-C203): 30 PSI MIN.  
 TENSILE STRENGTH (ASTM-D1623): 38 PSI MIN.  
 SHEAR STRENGTH (ASTM-C273): 25 PSI MIN.  
 SUBSTRATE ADHESION (ASTM-D1623): 22 PSI MIN.  
 WATER VAPOR PERMEANCE (ASTM-E96): < 1 PERM  
 WATER ABSORPTION (ASTM-C272): 4.3% VOL. MAX.  
 DIMENSIONAL STABILITY (ASTM-D2126): 2% MAX.  
 REFER TO IRC-09 TABLE R613.3.1 FOR ADDITIONAL INFORMATION.

**FACING:**  
 THE FACING SHALL BE 7/16" OSB CONFORMING TO APA RATED EXPOSURE 1 AND HAVING A SPAN RATING OF 2416. REQUIREMENTS OF APA'S RER-108 AND US DC P5-2-04 PERFORMANCE RATING ARE SATISFIED OR EXCEEDED.

**ADHESIVE:**  
 NO ADDITIONAL ADHESIVES ARE NEEDED FOR POLYURETHANE TO WOOD MATERIALS. POLYURETHANE ALREADY HAS A BONDING PROPERTY UNLIKE POLYSTYRENE. THE SUBSTRATE ADHESION OF POLYURETHANE TO HAVE A MINIMUM OF 22 PSI.

**LUMBER:**  
 ALL LUMBER USED FOR PLATES AND SPLINES ARE TO BE SPRUCE-PINE-FIR #2 OR HEM-FIR #2.

**SIP SCREWS:**  
 SIP SCREWS ARE TO HAVE A MINIMUM SHANK DIAMETER OF 0.188 INCH AND A MINIMUM HEAD DIAMETER OF 0.625 INCH. ALL SCREWS TO BE STAINLESS STEEL OR EQUAL.

**SPLINES:**  
 MINIMUM SPLINES TO BE CONSTRUCTED USING MINIMUM OF 3" WIDE SECTIONS OF 7/16" OSB SHEATHING ON THE INSIDE FACE OF EACH FACING CREATING A LAP SPLICE. THE LAP SPLICE SHALL BE NAILED TOGETHER WITH 8d NAILS AT 4" O.C. MINIMUM AT EACH PANEL. TO SPLINE SPLINES MAY BE SET INTO PLACE DURING MANUFACTURING TO CREATE A TONGUE CONNECTION IN THE FIELD. IN ADDITION, SPLINES MAY USE SOLID SAWN DIMENSIONAL LUMBER WHEN HIGHER CAPACITIES ARE NEEDED. REFER TO DWGS FOR SPLINE DETAILS.

## CODE ANALYSIS

Mertarvik Evacuation Center,  
 Mertarvik, Alaska  
 3.29.12

**Governing Codes:**  
 2006 International Building Code (IBC)  
 2006 National Electrical Code (NEC)  
 2006 International Mechanical Code (IMC)  
 2006 Uniform Plumbing Code (UPC)  
 2006 International Energy Conservation Code (IECC)  
 2006 Accessible and Usable Buildings and Facilities Standards (ICC/ANSI 117.1)  
 Title 13 of the Alaska Administrative Code, Chapters 50 - 55

**Climate Zone:**  
 7

**Chapter 3 - Use and Occupancy Classification:**  
 Building: A3, Community Hall

Gathering Space: A3, Community Hall  
 Clinic: B, Clinic-outpatient  
 Office: B, Office

**Chapter 5 - General Building Heights and Areas**  
**Section 503 - General Height and Area Limitations**  
**Table 503.1 - Allowable Height and Building Area**  
 Building Height:  
 Tabular allowable height is 40'-0" and number of stories is 1  
 Building is 1 story  
 Height of building from average grade to average height of highest roof surface is +1'-18'-1".

**Building Area:**  
 Tabular area allowed = 6000sf  
 Allowable area per Section 506.2 = 10500sf  
 Total Area = 6720sf  
 Storage Loft area (not included in Total Area) = 2819sf

**Section 508 - Mixed Use and Occupancy**  
**Table 508.2 - Incidental Uses**  
 Washeteria: F1, Laundry rooms over 100sf  
 Storage: S-2, Low hazard storage  
 Mechanical Room with equipment over 400,000 BTU

**Table 508.2 - Required separation of incidental areas**  
 1 hr - Mechanical Room with equipment over 400,000 BTU  
 1 hr - Washeteria: F1, Laundry rooms over 100sf  
 1 hr - Storage: S-2, Low hazard storage over 100sf

**Chapter 6 - Types of Construction**  
**Section 602 - Construction Classification**  
 Construction Type: V-B

**Table 601 - Fire Resistance Rating Requirements for Building Elements**  
 No requirements for type V-B construction

**Chapter 7 - Fire Resistance Rated Construction**  
**Section 715 - Opening Protectives**

**Table 715.4 - Fire Door and Fire Shutter Fire Protection Ratings**  
 Exit Enclosure and exit passageway rated to 1 hour requires 1 hour rated door  
 Other Fire Barriers rated to 1 hour requires 45 minute rated door

**Chapter 8 - Interior Finishes**

**Table 803.5 - Interior Wall and Ceiling Finish Requirements by Occupancy**  
 Exit Enclosure and exit passageways - Class A  
 Corridors - Class A  
 Rooms and enclosed spaces - Class C

**Chapter 9 - Fire Protection Systems**

**Section 906 - Portable Fire Extinguishers**  
 Low Hazard Occupancy:  
 Gathering Space - (2) ABC extinguishers  
 Storage Lot - (1) ABC extinguishers  
 Moderate Hazard Occupancy:  
 Kitchen - (1) 20B ABC extinguisher  
 Mechanical Room - (1) 20B ABC extinguisher

**Chapter 10 - Means of Egress**

**Section 1004 - Occupant Load**  
**Table 1004.1.1 - Maximum Floor Area Allowances per Occupant**  
 Gathering Space: Assembly Without Fixed Seats (unconcentrated) - 15sf  
 Kitchen: Kitchen - 200sf  
 Washeteria: Business Area - 100sf  
 Clinic: Business Area - 100sf  
 Office: Business Area - 100sf  
 Storage: Storage Areas - 300sf  
 Mechanical: Mechanical Equipment Room - 300sf

Room	Area	Occupants
Gathering Space	2448sf/15sf	217
Kitchen	0sf/200sf	0 - inc. in Gathering Space area
Washeteria	310sf/100	4
Clinic	332sf/100sf	4
Office	134sf/100sf	2
Storage	168sf/300sf	1 - total sf for two storage rooms
Mechanical Room	297sf/300sf	1
Arctic Entry 1	123sf	0 - accessory area
Arctic Entry 5	106sf	0 - accessory area
Mens Room	312sf	0 - accessory area
Womens Room	311sf	0 - accessory area
Total Occupiable Area	5341sf	229

**Section 1005 - Egress Width**

**Table 1005.1 - Egress Width per Occupant Served**  
 Tabular minimum width required = 12' where 36' is provided

**Section 1007 - Accessible Means of Egress**  
 Accessible means of egress provided per this section

**Section 1016 - Exit Access Travel Distance**

**Table 1016.1 - Exit Travel Distance**  
 Maximum travel distance = 200' where 124' is provided

**Section 1017 - Corridors**

1017.2 - Corridor Width  
 Minimum width = 44' where 84' (Arctic Entry 1) and 72' (Arctic Entry 5) are provided

**Section 1019 - Number of Exits and Continuity**

**Table 1019.1 - Minimum Number of Exits per Occupant Load**  
 2 exits required where 4 are provided

**Chapter 11 - Accessibility**

The building meets the requirements of Chapter 11 and ICC/ANSI 117.1

**Chapter 15 - Roof Assemblies and Rooftop Structures**

**Section 1505 - Fire Classification**

**Table 1505.1 - Minimum Coverage Classification for Types of Construction**  
 For Type V-B construction a Class C roof is required

**Chapter 26 - Plastic**

**Section 2603.4 - Thermal Barrier**  
 Still need resolution to this

**Chapter 29 - Plumbing Systems**

**Table 2902.1 - Minimum Number of Required Plumbing Fixtures**

Men (229 occupant load/2 = 115 men):  
 Water Closets: 1 required, 2 provided (1 urinal provided)  
 Lavatories: 1 required, 2 provided

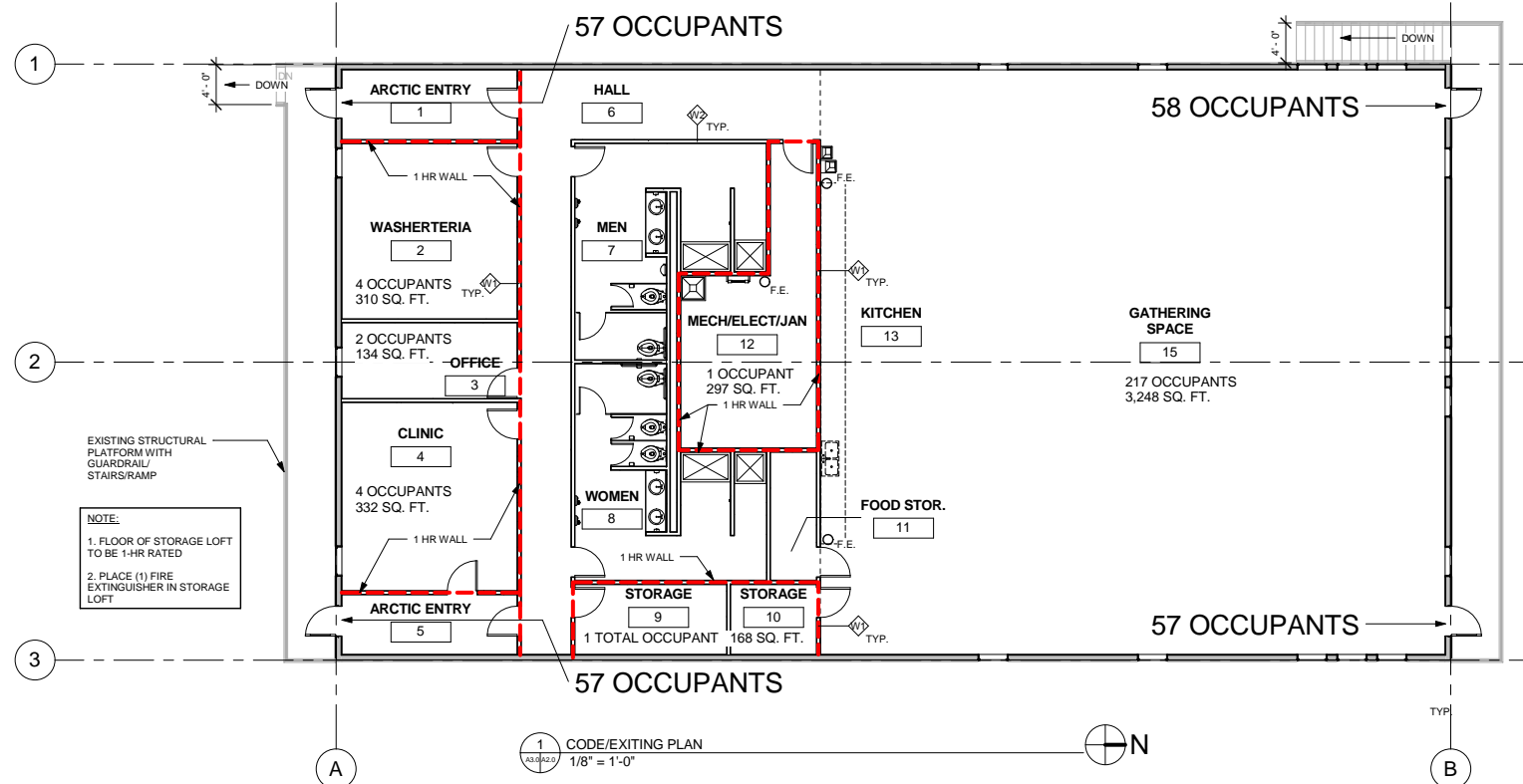
Drinking Fountains: 1 required, 1 provided

Women (229 occupant load/2 = 115 women):  
 Water Closets: 2 required, 3 provided  
 Lavatories: 1 required, 2 provided  
 Drinking Fountains: 1 required, 1 provided

1 service sink required, 1 provided

**Table 13 of the Alaska Administrative Code, Chapters 50 - 55**

**Section 421 - Special Security Requirements for Elevated Buildings**  
 Building is to be provided with a chain link fence below the exterior walls to grade.



# MERTARVIK EVACUATION CENTER

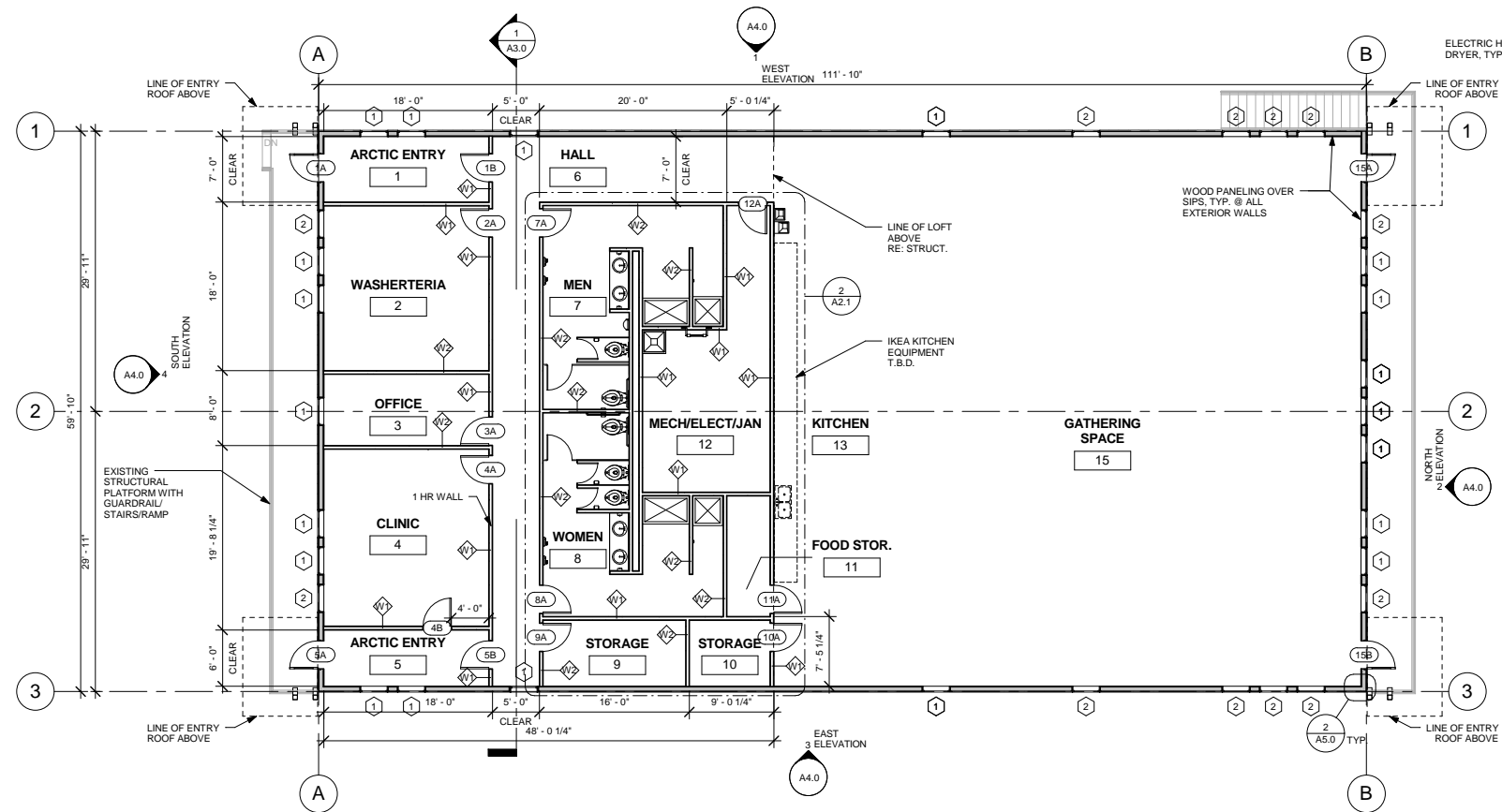
NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SPS. Permission for use of this document is limited and EarthCore SPS reserves the right to terminate this agreement without notice.

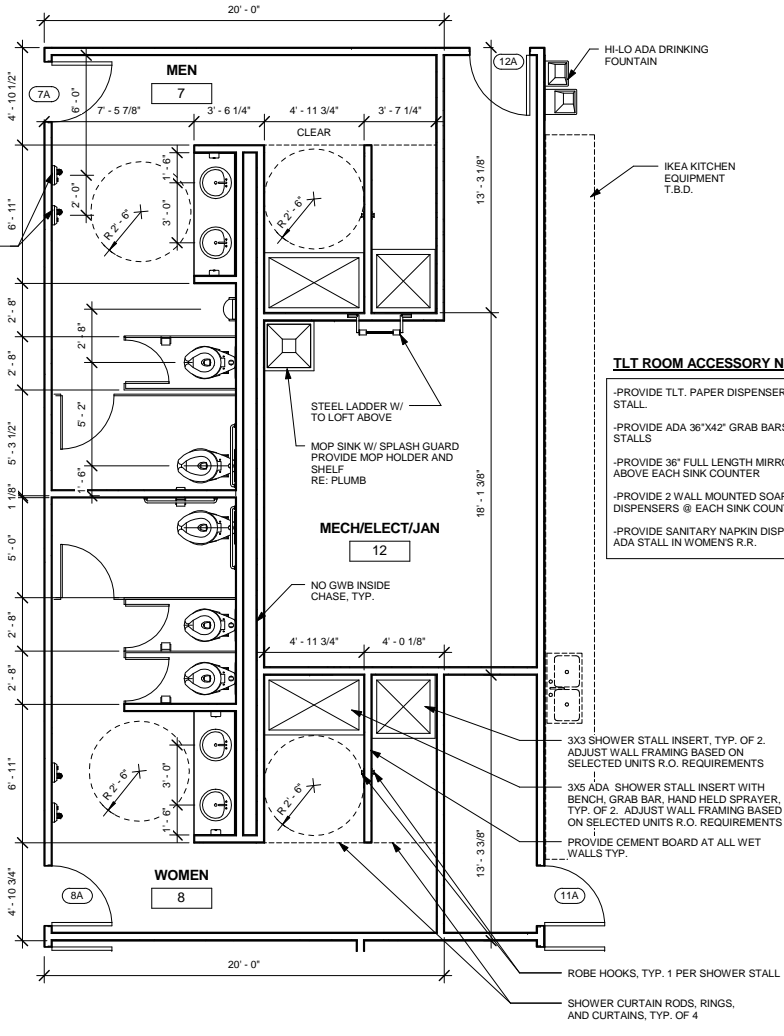
Project Number	
Issued For	PROGRESS
Date:	04/18/12
Revision	Date

CODE PLAN

# A2.0



1 MAIN FLOOR PLAN  
 1/8" = 1'-0"

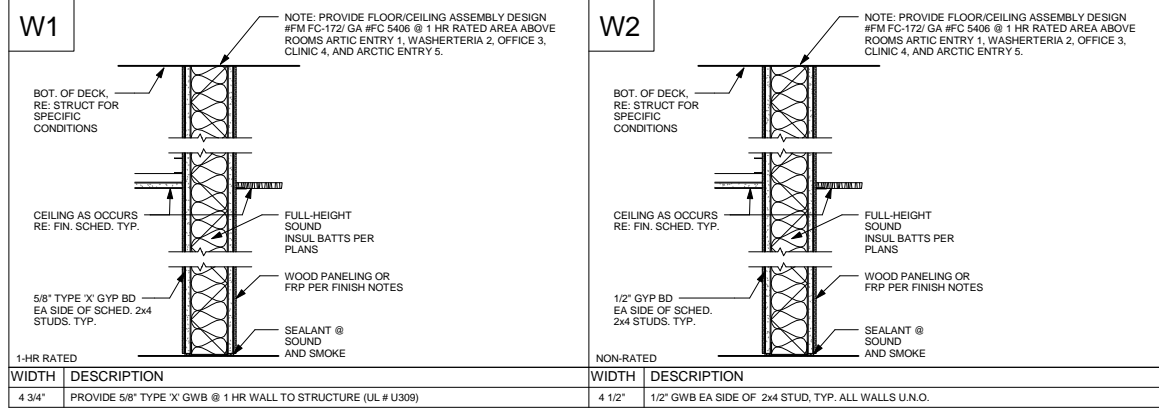


2 ENLARGED TLT. ROOM PLAN  
 1/4" = 1'-0"

- TLT ROOM ACCESSORY NOTES:**
- PROVIDE TLT. PAPER DISPENSER @ EACH STALL.
  - PROVIDE ADA 36"x42" GRAB BARS @ ADA STALLS
  - PROVIDE 36" FULL LENGTH MIRRORS ABOVE EACH SINK COUNTER
  - PROVIDE 2 WALL MOUNTED SOAP DISPENSERS @ EACH SINK COUNTER
  - PROVIDE SANITARY NAPKIN DISPOSAL @ ADA STALL IN WOMEN'S R.R.

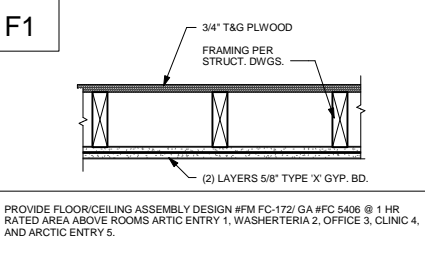
- 3X3 SHOWER STALL INSERT, TYP. OF 2. ADJUST WALL FRAMING BASED ON SELECTED UNITS R.O. REQUIREMENTS
- 3X5 ADA SHOWER STALL INSERT WITH BENCH, GRAB BAR, HAND HELD SPRAYER, TYP. OF 2. ADJUST WALL FRAMING BASED ON SELECTED UNITS R.O. REQUIREMENTS
- PROVIDE CEMENT BOARD AT ALL WET WALLS TYP.
- ROBE HOOKS, TYP. 1 PER SHOWER STALL
- SHOWER CURTAIN RODS, RINGS, AND CURTAINS, TYP. OF 4

INTERIOR PARTITION TYPES



3 TYP. INTERIOR WALL PARTITION  
 1 1/2" = 1'-0"

LOFT FLOOR ASSEMBLY TYPE



PROVIDE FLOOR/CEILING ASSEMBLY DESIGN #FM FC-172/ GA #FC 5406 @ 1 HR RATED AREA ABOVE ROOMS ARCTIC ENTRY 1, WASHETERIA 2, OFFICE 3, CLINIC 4, AND ARCTIC ENTRY 5.

MERTARVIK EVACUATION CENTER  
 NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SPS. Permission for use of this document is limited and can be rescinded only by written agreement with EarthCore SPS. COPYRIGHT 2012

Project Number	
Issued For	PROGRESS
Date:	04/18/12
Revision	Date

MAIN FLOOR PLAN

A2.1

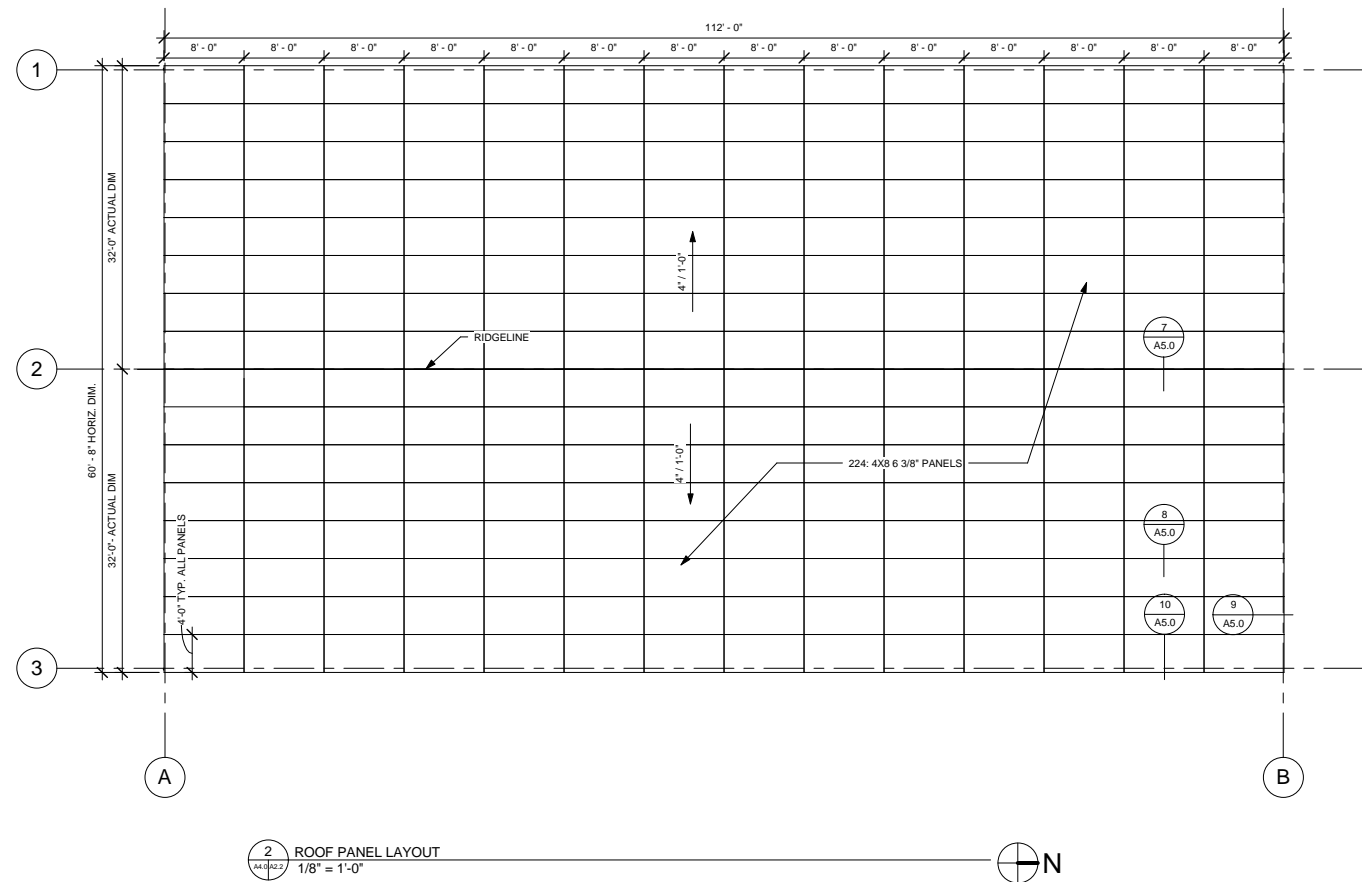
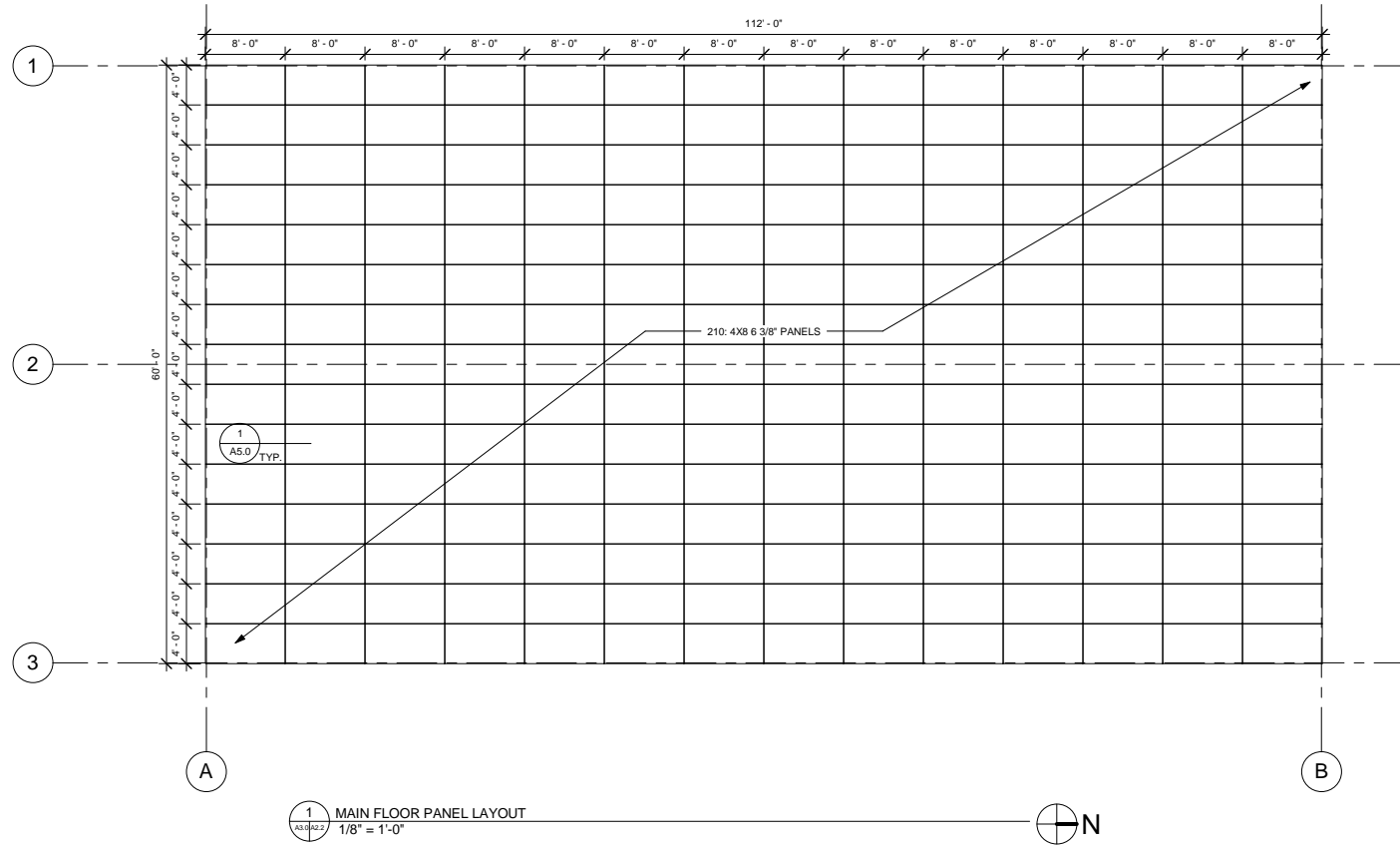
MERTARVIK EVACUATION CENTER  
 NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SPS. Permission for use of this document is limited and can be rescinded only by written agreement with EarthCore SPS. COPYRIGHT 2012

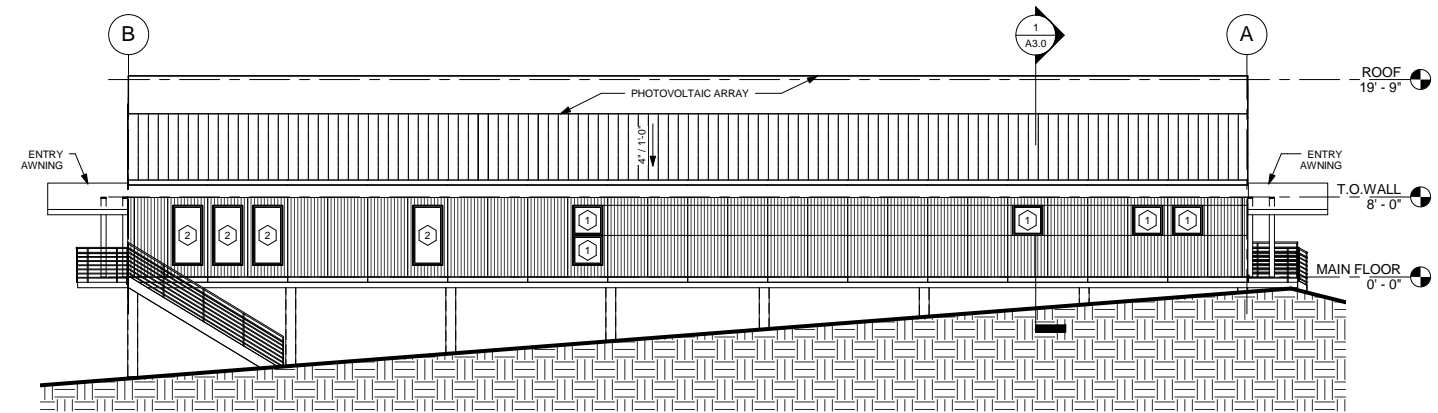
Project Number	
Issued For	PROGRESS
Date:	04/18/12
Revision	Date

FLOOR AND ROOF  
 PANEL LAYOUT

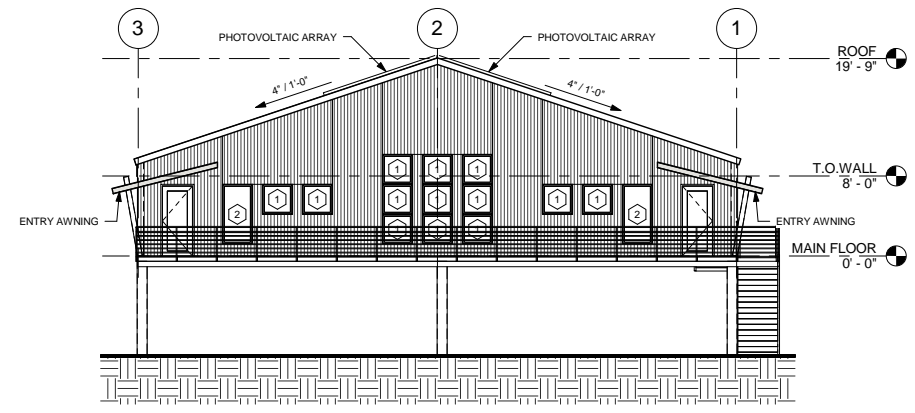
A2.2



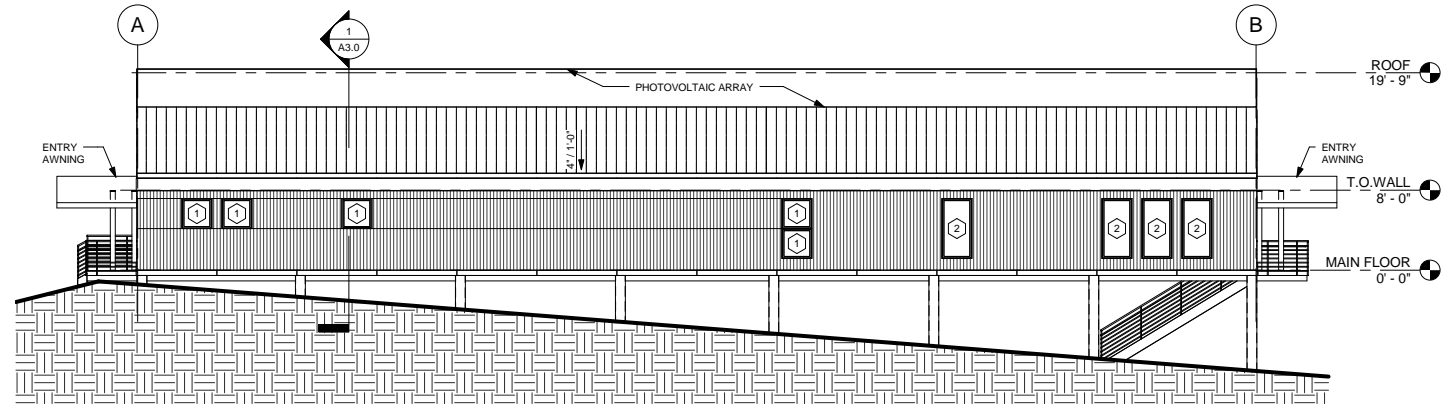




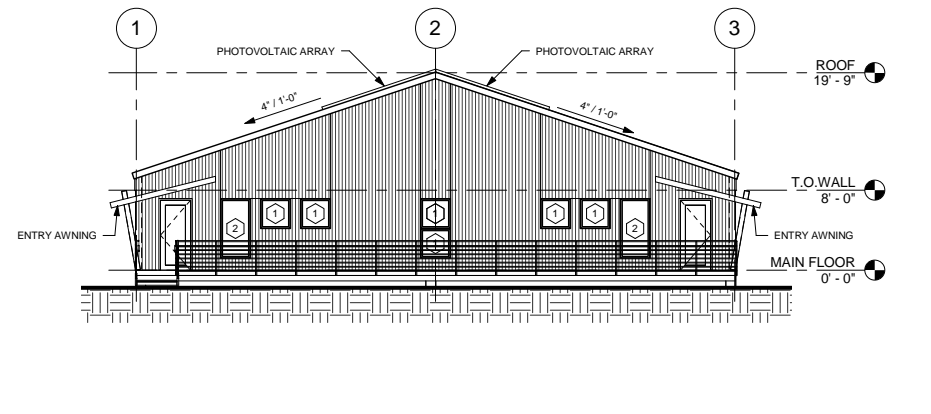
1 WEST ELEVATION  
1/8" = 1'-0"



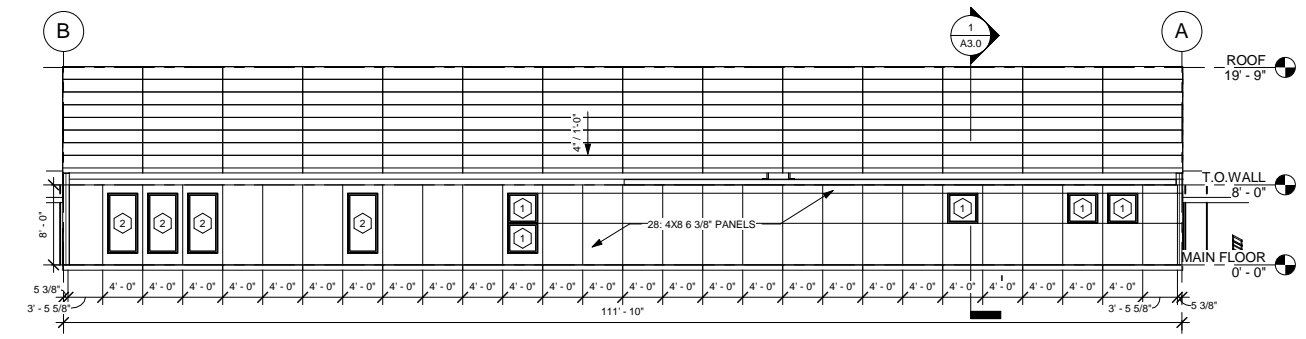
2 NORTH ELEVATION  
1/8" = 1'-0"



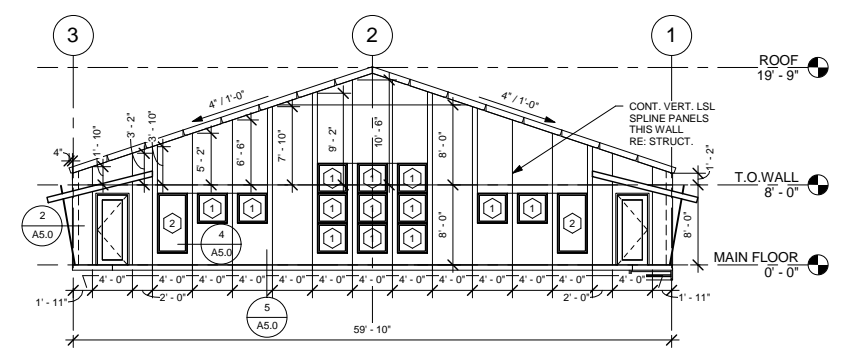
3 EAST ELEVATION  
1/8" = 1'-0"



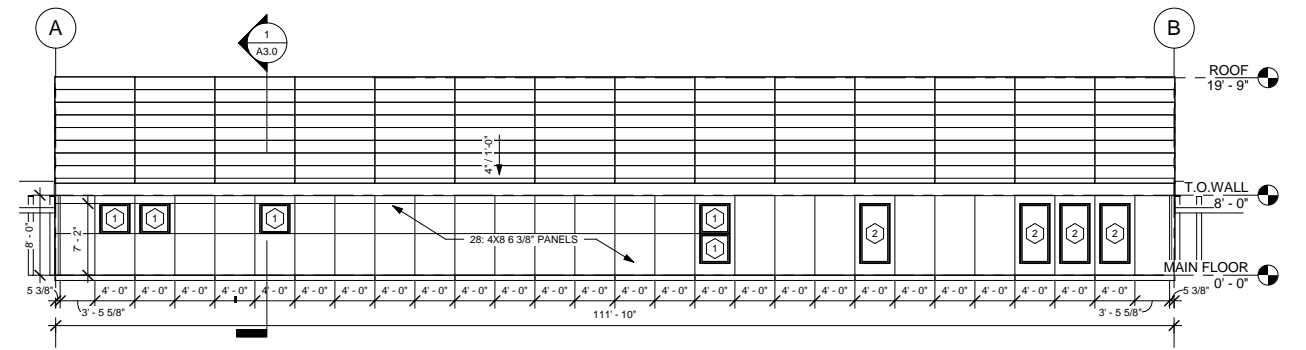
4 SOUTH ELEVATION  
1/8" = 1'-0"



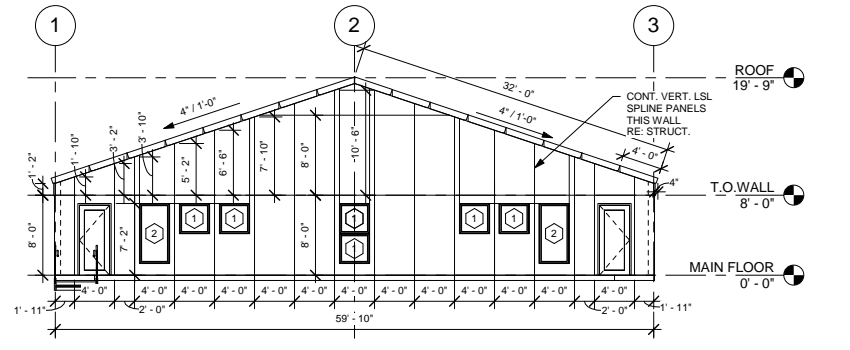
5 WEST ELEV-PANEL LAYOUT  
1/8" = 1'-0"



6 NORTH ELEV-PANEL LAYOUT  
1/8" = 1'-0"



7 EAST ELEV-PANEL LAYOUT  
1/8" = 1'-0"



8 SOUTH ELEV-PANEL LAYOUT  
1/8" = 1'-0"



# MERTARVIK EVACUATION CENTER

NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SPS. Permission for use of this document is limited and can be rescinded only by written agreement with EarthCore SPS. COP/MS/ST/2012

Project Number	
Issued For	PROGRESS
Date:	04/18/12
Revision	Date

EXTERIOR ELEVATIONS  
**A4.0**

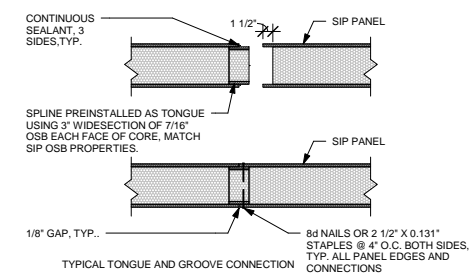
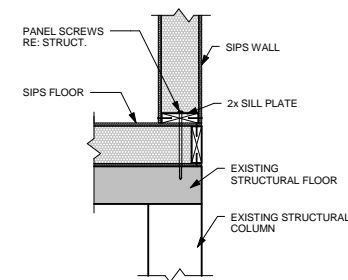
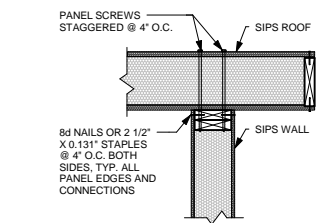
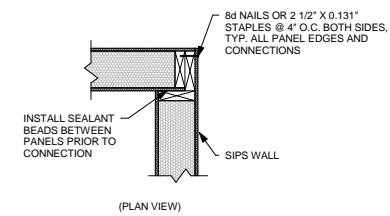
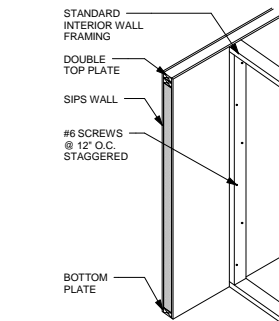
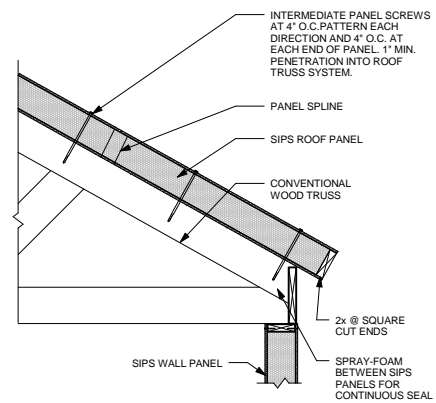
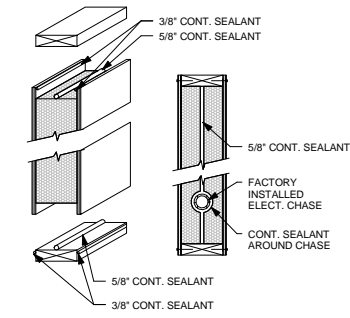
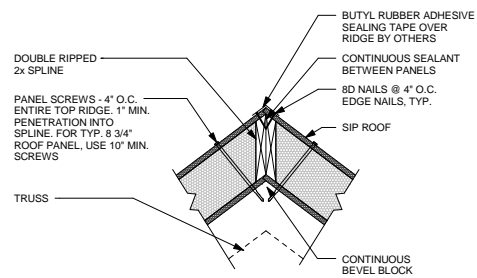
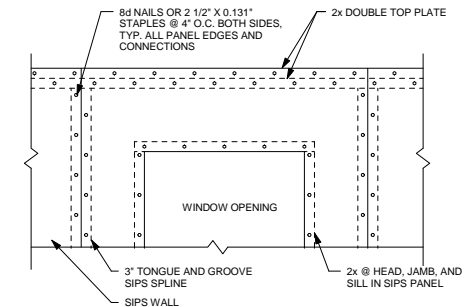
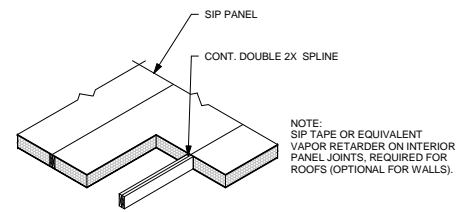
# MERTARVIK EVACUATION CENTER

NELSON ISLAND, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SIPS. Permission for use of this document is limited and can be rescinded only by written agreement with EarthCore SIPS. COPYRIGHT © 2012

Project Number	
Issued For	PROGRESS
Date	04/18/12
Revision	Date

DETAILS  
**A5.0**



**PROJECT DESCRIPTION**

- The Mertarvik Center project consists of a 112'-0" x 60'-0" community center. Since it is located in Alaska, the structure will be built on a platform which has already been designed and built. The platform framing consists of wood joists and glulam beams spanning to steel piles. Since this podium has already been designed by a registered professional engineer in the state of Alaska, we will only be designing the building which it supports.
- The building contains a single story and a loft. The main floor has a washereteria, office, clinic, arctic entry, bathrooms, storage, a mechanical/electrical/janitorial space, a kitchen and a gathering space. The loft will be used primarily for storage and potentially to support mechanical equipment.
- The gravity system consists of SIP roof panels over wood trusses spanning to exterior SIP bearing/shear walls. The loft floor framing is OSB over wood l-joists spanning to interior 2x4 wood bearing walls.
- The lateral system consists of wood sheathed SIP roof diaphragm spanning to wood sheathed SIP shear walls.
- This section is for general orientation only. The Contractor is responsible for all scope items described in the drawings and specifications as well as for all material and labor that can reasonably be inferred there from.

**GENERAL APPLICATION**

- These drawings must be used in conjunction with the architectural drawings on the project to clearly define all requirements for construction.
- No Contractor should attempt to bid or construct any portion of this project without consulting the project architectural, mechanical, and electrical specifications, and/or General Notes.
- These General Notes are intended to function as the structural portion of project specifications.
- All things which, in the opinion of the Contractor, appear to be deficiencies, omissions, contradictions or ambiguities in the drawings shall be brought to the attention of the Structural Engineer. Corrections or written interpretations shall be issued before affected work may proceed.
- The Contractor shall inform the Structural Engineer, clearly and explicitly in writing, of any deviation or substitution from requirements of the contract documents. Contractor shall not be relieved of any requirement of the contract documents by virtue of the Structural Engineer's review of shop drawings, project data, etc., unless the Contractor has clearly and explicitly informed the Structural Engineer in writing of any deviations or substitutions at time of submission.

**DESIGN CRITERIA**

- Building Code: IBC 2006
- Wind Loading:
  - Basic Wind Speed = 130 MPH
  - Exposure Category: D
  - Importance Factor, I = 1.15
  - Wind base shear:
 

East/West	North/South
33K	62K
- Seismic Loading:
  - Occupancy Category: IV
  - Seismic Importance Factor: I = 1.5
  - Mapped Spectral Response Accelerations: Ss = 0.3, S1 = 0.9
  - Site Class: E
  - Spectral Response Coefficients: Sds = 0.47, Sd1 = 0.21
  - Seismic Design Category: D
  - Basic Seismic-Force-Resisting System(s): Wood Shear Walls
  - Design Base Shear: 34K
  - Seismic Response Coefficient(s): Cs = 0.11
  - Response Modification Factor(s): R = 6.5
  - Analysis Procedure Used: Equivalent Lateral Force Procedure
- Superimposed Gravity Loading:
  - DEAD LOAD = 15PSF
  - ROOF SNOW LOAD = 30PSF
  - LOFT FLOOR LIVE LOAD = 125PSF

**CODES AND STANDARDS**

- Building Code: IBC 2006
- National Design Specification for Wood Construction\* by the National Forest Products Association.

**WOOD FRAMING**

- General
  - Codes:
    - IBC 2006
    - National Design Specification for Wood Construction (AFPA)
  - Submittals: Submit requested information for the following wood elements:
    - Premanufactured Trusses:
      - Submit dimensioned layout drawings designating trusses, geometry and locations.
      - Submit truss designs indicating all design loads. Truss designs SHALL BE SIGNED AND SEALED by the manufacturer's engineer licensed in the state in which the project is located.
- Cutting, notching and boring holes in joists, rafters, or beams are not allowed unless approved by the engineer in writing.
- Double up sawn floor joists under interior walls that run parallel with the floor joists
- Provide continuous blocking under walls that run perpendicular to joists.
- Joists, beams, and girders shall have 3 inches minimum solid bearing on wood, concrete, or masonry except where joist hangers are approved or where specifically noted otherwise.
- Discontinuous joists framed from opposite sides over bearing supports shall lap a minimum of 6 inches.
- Provide solid blocking of the same depth as the member at all bearing points.
- Products: Unless noted otherwise on the drawings or in these notes, all wood framing shall have the following minimum properties (normal duration) and be at a moisture content of 19% or less:
  - All wood shall have a maximum moisture content of 19% at the time of installation
    - In locations where the normal practice is for wood to be delivered at higher moisture content than 19%, the contractor shall procure the wood in advance and store it in spaced stacks far enough in advance for the wood to dry to less than 19% before installation
    - Where wood is installed at greater than 19% moisture content, it shall not be covered until it has reached 19%
      - The contractor shall be responsible for repairing any deficiencies resulting from the shrinkage of wood that is installed with greater than 19% moisture content.
  - Submit moisture content certificate from supplier to the architect

14.The grade mark of the association having jurisdiction must appear on each piece of sawn lumber

a. Studs:

- Doug Fir Stud Grade or better @ 16" o.c.
- Hem-Fir Stud Grade or better @ 16" o.c.
- LSL Premanufactured Studs @ 16" o.c. where noted on the drawings.
- Where indicated on the drawings use LSL Premanufactured plates at heavily loaded walls that exceed the perpendicular to grain stress on the standard plates.

b. Light Framing(4x or less):

b.1. Douglas Fir, No. 2:

Flexural Stress 900 psi  
 Compressive Stress 1350 psi  
 Horizontal Shear Stress 180 psi  
 Modulus of Elasticity 1,600,000 psi

b.2. Hem-Fir, Select Structural

Flexural Stress 1400 psi  
 Compressive Stress 1500 psi  
 Horizontal Shear Stress 150 psi  
 Modulus of Elasticity 1,600,000 psi

b.3. Hem-Fir, No. 2:

Flexural Stress 850 psi  
 Compressive Stress 1300 psi  
 Horizontal Shear Stress 150 psi  
 Modulus of Elasticity 1,300,000 psi

c. Manufactured Lumber (LVL, PSL, LSL)

c.1. Laminated Strand Lumber (LSL):

Flexural Stress 2250 psi  
 Horizontal Shear Stress 400 psi  
 Modulus of Elasticity 1,500,000 psi

c.2. Laminated Veneer Lumber (LVL):

Flexural Stress 2600 psi  
 Horizontal Shear Stress 285 psi  
 Modulus of Elasticity 1,900,000 psi

c.3. Wood l-Joists: Where framing members are noted "Red-I" use engineered wood l-Joists products by RedBuilt.

- Submit layout shop drawings for wood l-joists.
- Substitution may of equal product is acceptable upon submitted equal by contractor and approval by structural engineer.

c.4. Prefabricated Wood Trusses

- Comply with all applicable provisions of state and local building and safety codes and other federal (OSHA) safety requirements. These include:
  - Prefabricated metal plate-connected wood truss design shall conform to the "Design Specification for Light Metal Plate Connected Wood Trusses" except where state/local codes contain more stringent requirements.
  - Trusses shall be fabricated in accordance with the "TPI Quality Control Manual".
  - Install wood trusses according to "Bracing Wood Trusses Commentary".
  - Wood structural design shall conform to the NDS.
  - Lumber utilized shall be stress-graded bearing the grade mark of a recognized inspection agency and shall conform to the rules and service requirements of the American Lumber Standards Committee and PS-20.
- Design Responsibility: Fabricator shall be responsible for all member and connection design and detailing, and for all dimensioning, coordination, and erection of trusses. Contract documents show only basic locations and configurations required for trusses. Detailed positioning and spacing of trusses is the responsibility of the fabricator.
  - Truss Design Requirements: Design trusses to resist the dead loads of completed construction and the larger of the live, snow, and wind-uplift loads specified on the drawings or required in the applicable codes/standards.
  - Bottom chords shall be designed for the live loads required in the applicable codes/standards.
  - Metal anchorage devices for the trusses shall be designed for specified wind uplift less two-thirds (2/3) of the resisting dead load. Toenailing of trusses is not acceptable.

15. Connectors

- Nails:
  - Pre-drill nail holes when necessary to prevent splitting
- Bolts:
  - All exterior bolts, nuts, and washers are to be hot dipped galvanized in accordance with ASTM A153
  - Where bolts and plates are called for on the drawings, plates shall conform to ASTM A36 and bolts to ASTM A307.
  - ALL EXPOSED INTERIOR BOLTS IN WOOD STRUCTURE TO BE PLAIN, UNCOATED STEEL. Verify with architectural drawings for special coating requirements.
  - Holes for bolts shall be 1/16" oversize.
  - Retighten all bolts prior to closing in.
- Lag Screws:
  - All exterior lag bolts and washers are to be hot dipped galvanized in accordance with ASTM A153
  - Lag screws shall penetrate the main member a minimum of 8 times the shaft diameter. That is:
 

1/2"	4" min
3/4 "	6" min
1"	8" min

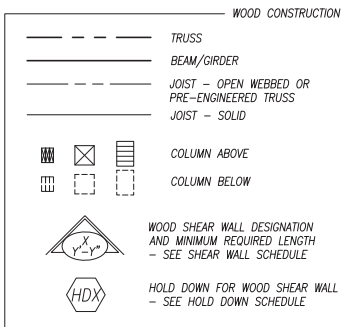
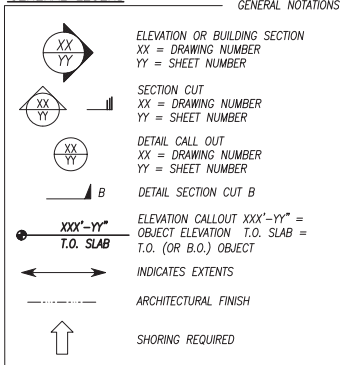
**QUALITY CONTROL**

- The Contractor is responsible for quality control, including workmanship and materials furnished by his subcontractors and suppliers.
 

Inspection or testing by the Owner does not relieve the Contractor of his responsibility to perform the Work in accordance with the Contract Documents.

Workmanship: The Contractor is responsible and shall bear the cost of correcting work which does not conform to the specified requirements.
- Correct deficient work by means acceptable to the Architect. The cost of extra work incurred by the Architect to approve corrective work shall be borne by the Contractor.

**GENERAL LEGEND**



**STRUCTURAL ABBREVIATIONS**

ABBREV.	DEFINITION	ABBREV.	DEFINITION
A.B.	anchor bolts	HORZ	horizontal
ADDNL	additional	IF	inner face
A.F.F.	above finished floor	INT	interior
ALT	alternate	JT	joint
ARCH	architectural	L, LEN	length
B, BOT	bottom	LAT	lateral
B.B.	bond beam	LLH	long leg horizontal
B.L.	brick ledge	LLV	long leg vertical
BLDG	building	LONG	longitudinal
BM	beam	LVL	laminated veneer lumber
BRG	bearing	MAS	masonry
BTWN	between	MAX	maximum
CJ	const./control joint	MECH	mechanical
CL,CLR	clear	MLAM	microlam
CMU	conc. masonry unit	MFR	manufacturer
COL	column	MIN	minimum
CONC	concrete	MTL	metal
CONN	connection	N.I.C.	not in contract
CONST	construction	NMWT	normal weight
CONT	continuous	NOM	nominal
CTRL	control	NS	near side
DET,DTL	detail	OF	outer face
DB	deck bearing	O.H.	opposite hand
DIM	dimension	OPNG	opening
DK	deck	PC	precast
DS	diagonal sheathing	PL	plate
DWGS	drawings	REINF	reinforcement
DWL	dowel	REQ'D	required
EA	each	RET	retaining
EE	extended end	RWR	rafter wall rafter
EF	each face	S.A.D.	see arch. drawings
EFF	effective	S.O.G.	slab on grade
EJ	expansion joint	SC	slip critical
EL,ELEV	elevation	SCHED	schedule
EOC	edge of concrete	SECT	section
EOD	edge of deck	SIP	structural insulating panel
EOM	edge of masonry	SL	slab
EOS	edge of slab	SPA	spacing
EW	each way	SST	Simpson Strong Tie
EXIST	existing	STFN	stiffener
EXP	expansion	STL	steel
EXT	exterior, extension	SUPPL	supplier
FDTN	foundation	SUPT	support
FF	finish floor	T	top
FL	floor	T,xx	top of xxx
FOS	face of stud	THK	thick, thickness
FP	full penetration	TJI	Wood I beam (see notes)
FS	for side	TRAN	transverse
FTG	footing	TYP	typical
GA	gauge	UNO	unless noted otherwise
GB	grade beam	U.S.C.	under separate contract
GEN	general	VERT	vertical
GLB	glu-lam beam	V.I.F.	verify in field
HAS	headed anchor stud	W	wide, width
HK	hook	WWF	welded wire fabric

Structural Drawing List

SHEET NUMBER	SHEET NAME	REVISION
SO.0	General Notes, Sheet List, Abbreviations and Legend	X
ST.1	Floor and Loft Framing Plans and Building Sections	X
ST.2	Roof Framing Plan and Details	X
Review 04/05/2012		
<b>ISSUE NOTATION:</b> X - ISSUED AS NOTED ABOVE I - ISSUED FOR INFORMATION ONLY ## - REVISION NUMBER (01, 02, etc.)		

MERTARVIK EVACUATION CENTER  
 MERTARVIK, ALASKA

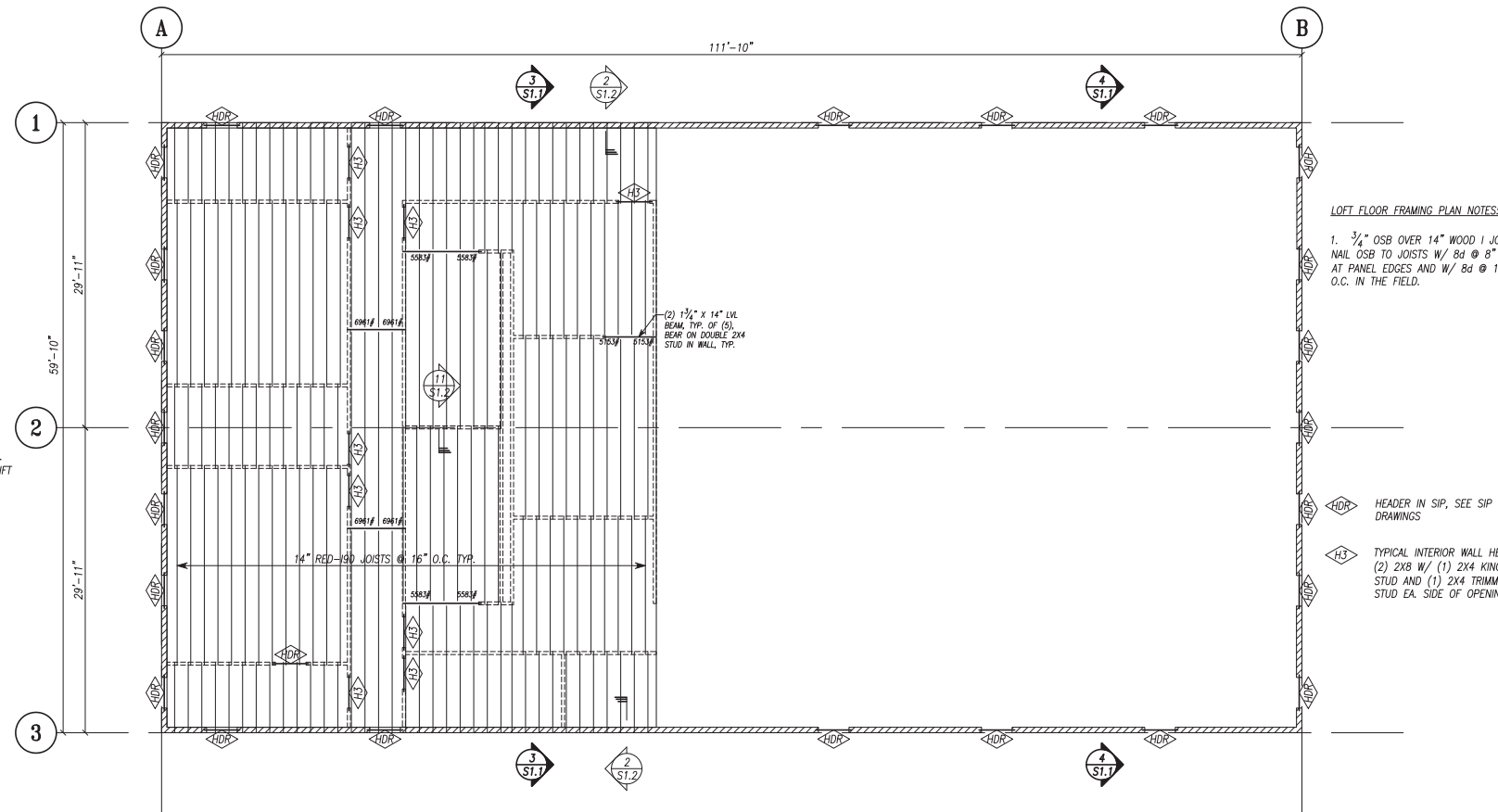
**MERTARVIK EVACUATION CENTER**  
 MERTARVIK, ALASKA

This document is an instrument of service, and as such, remains the property of EarthCore SIPS. Permission to use of this document is hereby granted and can be extended only by written agreement with EarthCore SIPS. COPYRIGHT 2012

Project Number	
Issued For	REVIEW
Date	04/05/12
Revision	Date

FLOOR AND LOFT FRAMING PLANS AND BUILDING SECTIONS

**S1.1**



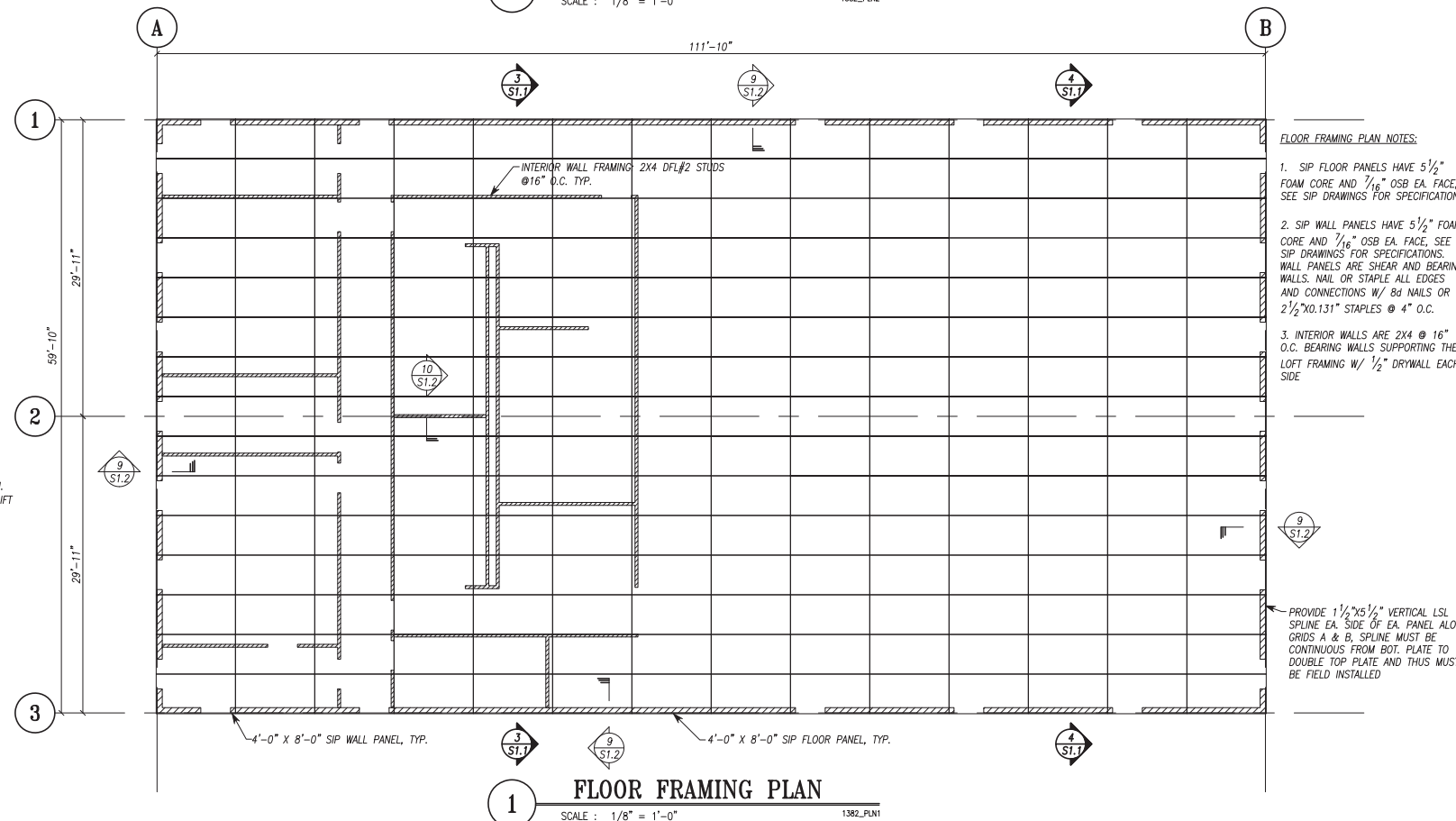
**2 LOFT FLOOR FRAMING PLAN**  
 SCALE : 1/8" = 1'-0"  
 1382\_FLN2

**LOFT FLOOR FRAMING PLAN NOTES:**

- 3/4" OSB OVER 14" WOOD I JOISTS, NAIL OSB TO JOISTS W/ 8d @ 8" O.C. AT PANEL EDGES AND W/ 8d @ 12" O.C. IN THE FIELD.

HEADER IN SIP, SEE SIP DRAWINGS

TYPICAL INTERIOR WALL HEADER:  
 (2) 2X8 W/ (1) 2X4 KING STUD AND (1) 2X4 TRIMMER STUD EA. SIDE OF OPENING



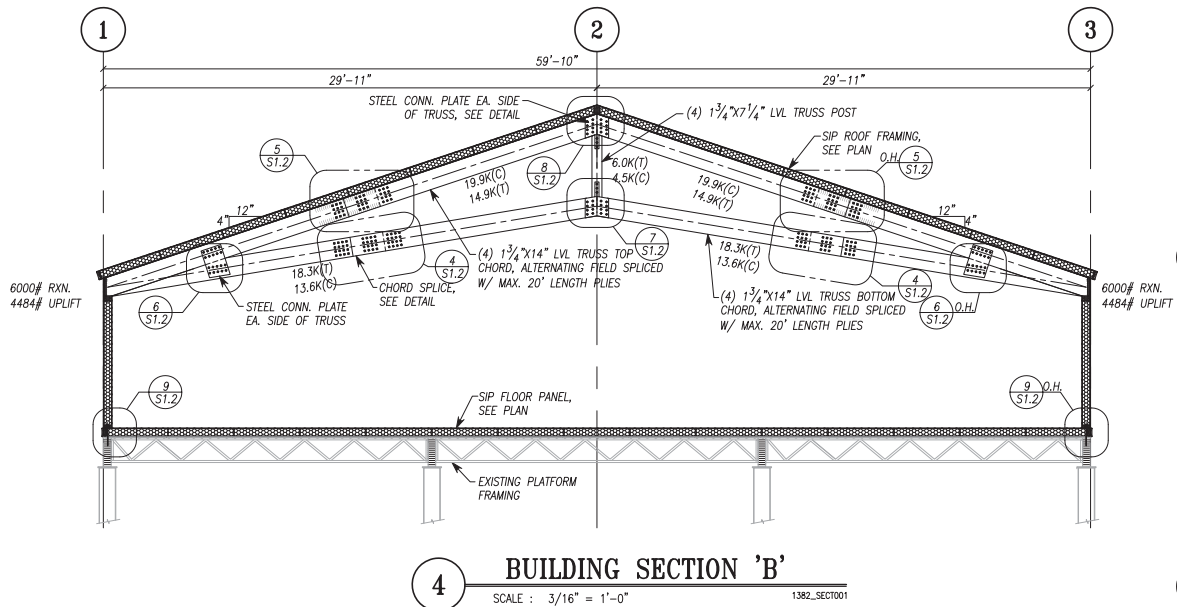
**1 FLOOR FRAMING PLAN**  
 SCALE : 1/8" = 1'-0"  
 1382\_FLN1

**FLOOR FRAMING PLAN NOTES:**

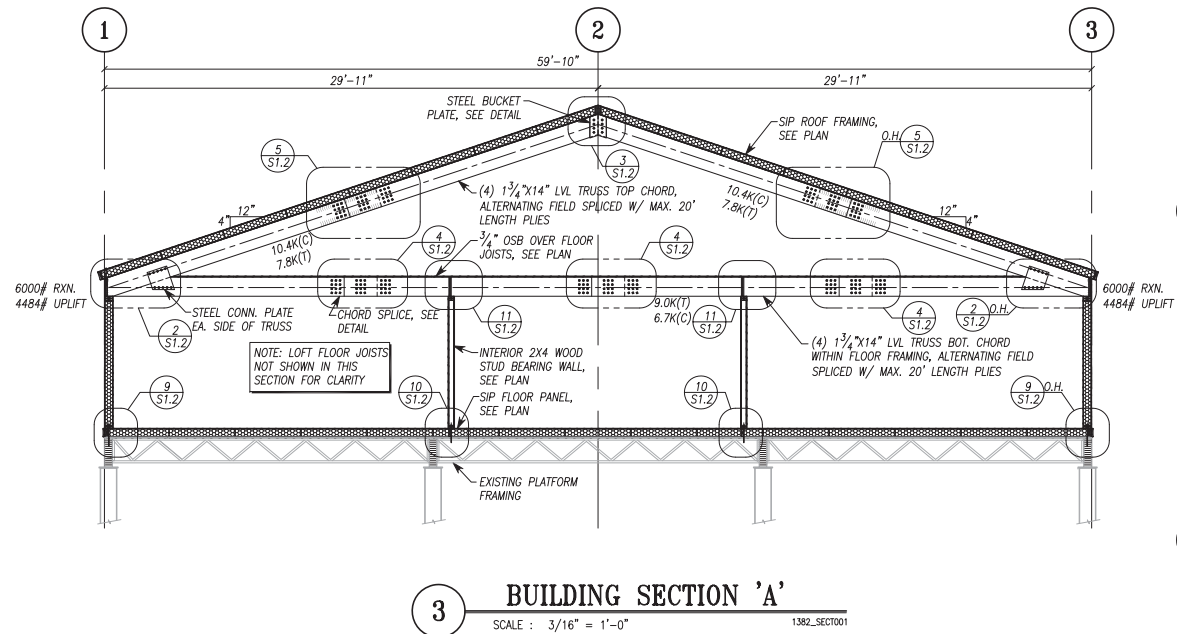
- SIP FLOOR PANELS HAVE 5 1/2" FOAM CORE AND 3/16" OSB EA. FACE. SEE SIP DRAWINGS FOR SPECIFICATIONS.
- SIP WALL PANELS HAVE 5 1/2" FOAM CORE AND 3/16" OSB EA. FACE. SEE SIP DRAWINGS FOR SPECIFICATIONS. WALL PANELS ARE SHEAR AND BEARING WALLS. NAIL OR STAPLE ALL EDGES AND CONNECTIONS W/ 8d NAILS OR 2 1/2" X 0.131" STAPLES @ 4" O.C.
- INTERIOR WALLS ARE 2X4 @ 16" O.C. BEARING WALLS SUPPORTING THE LOFT FRAMING W/ 1/2" DRYWALL EACH SIDE

PROVIDE 1 1/2" X 5 1/2" VERTICAL LSL SPLINE EA. SIDE OF EA. PANEL ALONG GRIDS A & B. SPLINE MUST BE CONTINUOUS FROM BOT. PLATE TO DOUBLE TOP PLATE AND THUS MUST BE FIELD INSTALLED

THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS ON THE PROJECT TO CLEARLY DEFINE ALL OF THE REQUIREMENTS FOR THE CONSTRUCTION. WHERE CONFLICTS OCCUR, CONTACT THE ARCHITECT FOR CLARIFICATION.

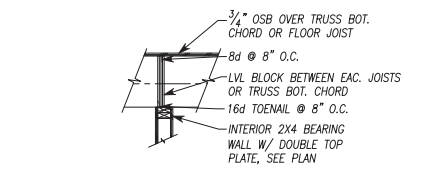


**4 BUILDING SECTION 'B'**  
 SCALE : 3/16" = 1'-0"  
 1382\_SECT01

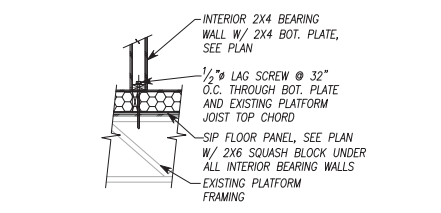


**3 BUILDING SECTION 'A'**  
 SCALE : 3/16" = 1'-0"  
 1382\_SECT01

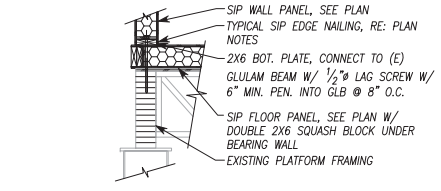




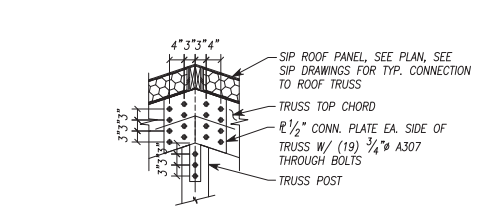
**11 LOFT FLOOR @ INT. WALL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



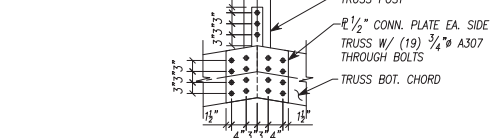
**10 INTERIOR WALL BASE**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



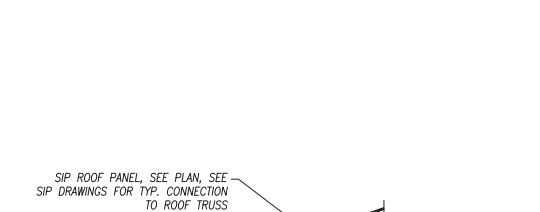
**9 EXTERIOR WALL BASE**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



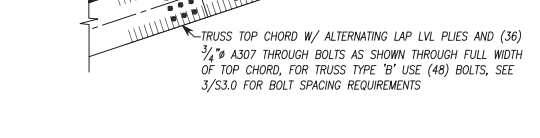
**8 TRUSS TYPE 'B' CONN. PL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



**7 TRUSS TYPE 'B' CONN. PL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



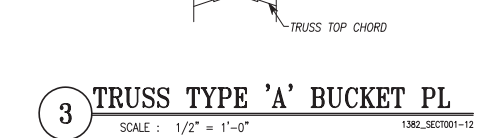
**5 TRUSS TOP CHORD SPLICE**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



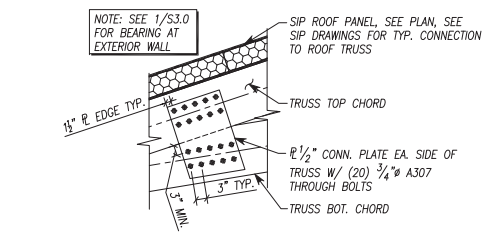
**4 TRUSS BOT. CHORD SPLICE**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



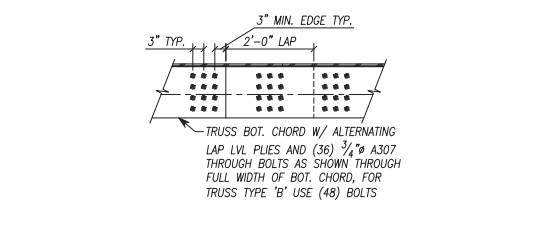
**3 TRUSS TYPE 'A' BUCKET PL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



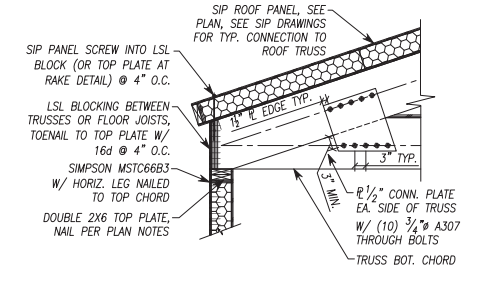
**2 TRUSS TYPE 'A' CONN. PL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



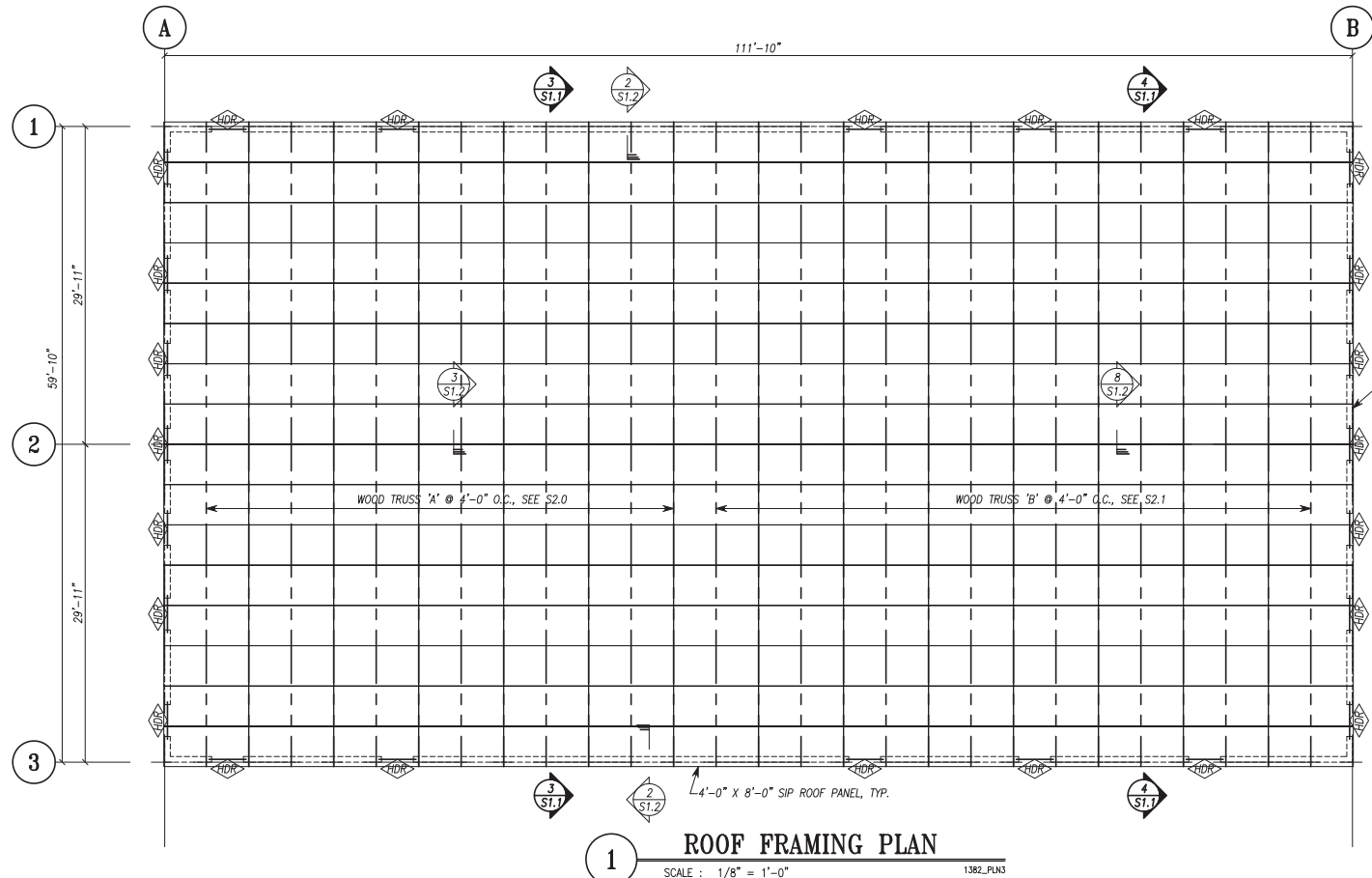
**6 TRUSS TYPE 'B' CONN. PL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



**4 TRUSS BOT. CHORD SPLICE**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



**2 TRUSS TYPE 'A' CONN. PL**  
 SCALE : 1/2" = 1'-0" 1382\_SECT001-12



**1 ROOF FRAMING PLAN**  
 SCALE : 1/8" = 1'-0" 1382\_PUN

**ROOF FRAMING PLAN NOTES:**

- SIP ROOF PANELS HAVE 5/2" FOAM CORE AND 7/16" OSB EA. FACE, SEE SIP DRAWINGS FOR SPECIFICATIONS. NAIL OR STAPLE ALL EDGES AND CONNECTIONS W/ 8d NAILS OR 2 1/2"x0.131" STAPLES @ 4" O.C.

AT RAKE, SIP ROOF PANEL BEARS ON WALL DOUBLE TOP PLATE, SEE 2/S1.2 FOR SIM. CONNECTION

HEADER IN SIP, SEE SIP DRAWINGS

NOTE: AS ALTERNATE, USE PRE-MANUFACTURED WOOD ROOF TRUSSES TO BE DESIGNED BY TRUSS MANUFACTURER, ROOF LOADS TO BE USED IN DESIGN:  
 DEAD LOAD = 15PSF  
 SNOW LOAD = 30PSF  
 WIND LOAD (DOWN) = 16.6PSF  
 WIND LOAD (UPLIFT) = 46.5PSF

THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS ON THE PROJECT TO CLEARLY DEFINE ALL OF THE REQUIREMENTS FOR THE CONSTRUCTION. WHERE CONFLICTS OCCUR, CONTACT THE ARCHITECT FOR CLARIFICATION.

This document is an instrument of service, and as such, remains the property of EarthCore SIPS. Permission to use of this document is hereby granted and can be extended only by written agreement with EarthCore SIPS. COPYRIGHT 2012

Project Number	
Issued For	REVIEW
Date	04/05/12
Revision	Date

ROOF FRAMING PLAN AND DETAILS  
**S1.2**