California Prison Health Care Receivership Corporation

Project/Construction Manager: ***VANIR*** *Construction Management, Inc.*

ADDENDUM No. 3

Date: March 17, 2008

Medical Warehouse Building, San Quentin State Prison

All project documents (Plans dated December 20, 2007; Project Manual dated December 27, 2007), including contract documents, drawings, specifications, all duly issued Addenda, and other documents shall remain unchanged with the exception of those elements added, revised, deleted, or clarified by this Addendum.

Clarifications, corrections, modifications, deletions, or additions included in this Addendum shall be incorporated in the project documents as noted. Data included herein supersedes previously issued data, otherwise the project documents shall remain unchanged.

Contractors are hereby notified that this Addendum shall be taken into consideration in submitting bids/proposals for the above project. Contractors are required to acknowledge receipt of the Addendum in the space provided in the Bid Proposal.

Contractors who would like to receive all or any part of this Addendum via email are requested to contact Lee Darby at lee.darby@vanir.com, (415) 419-5186 office, (415) 419-5187 fax.

ADDENDUM No. 3

Date: March 17, 2008

Medical Warehouse Building, San Quentin State Prison

Project Manual

INTRODUCTORY INFORMATION

Document 00011 Table of Contents

Add Section **16020 Personal Alarm System**. Replace page 3 with the attached replacement page.

BIDDING REQUIREMENTS

Document 00300 Bid Proposal

Revise page 1 to read that proposals are due "ON OR BEFORE: 3:00 pm PST Monday, **March 31, 2008**."

Revise page 2 to add a fourth "Addendum" item, including Addendum number, signature line, and date line.

*****See replacement pages 1 and 2, included in this Addendum.

CONTRACTING REQUIREMENTS

Document 00700 General Conditions

Revise paragraph 5.9, sub-paragraph F, to read, "Records shall be retained as specified in Section **1 of State Required Terms and Conditions**."

SPECIFICATIONS

Section 13122 Metal Building Systems

In paragraph 2.2 Materials, add the following sub-paragraphs:

N. Fire Alarm System: Contractor shall design (including calculations), furnish, and install within the building an addressable fire alarm system complete and in conformance with the code. Contractor shall prepare shop drawings and calculations for submittal to the State Fire Marshal for approval prior to the start of work. Fire alarm system shall be Notifier, or equal, and capable of communicating with the Notifier annunciator located at the San Quentin Fire Department. Fire alarm system shall include a fire alarm panel, annunciator, and all wiring, devices, accessories, and programming required for a fully operational system. Fire alarm panel shall report to the annunciator located at the San

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Quentin Fire Department via wiring and conduit run from the panel to an existing J-box and conduit system that will provide pathway to the Fire Department. Contractor to include a 1,000 lineal feet allowance of control wire for panel communication to the Fire Department.

O. Public Address System: Contractor shall design, furnish, and install a public address system that serves both the warehouse building and the loading dock area. Contractor shall prepare shop drawings and submit with product data to CPR Corp Representative.

*****See replacement pages 1 through 20, included in this Addendum.

Section 16020 Personal Alarm System

Add this section in its entirety.

Drawings

No Drawing changes are included in this Addendum.

Photographs and Additional Information

Photographs
N/A; no photographs are included in this Addendum.

Additional Information
N/A; no additional information is included in this Addendum.

END OF DOCUMENT

NOTICE TO CONTRACTORS

CALIFORNIA PRISON HEALTH CARE RECEIVERSHIP CORPORATION

Medical Warehouse Building
San Quentin State Prison

Sealed bids for the above named Project will be received at California Prison Health Care Receivership Corporation ("CPR Corp"), c/o Vanir Construction Management, Inc., 980 Ninth Street, Suite 900, Sacramento, California 95814, **until 3:00 pm PST on March 31, 2008**. This is a design-build project. Selection will be based on "best value" to CPR Corp, therefore bids will not be publicly opened. The bids relate to the performance of the following work:

The Work of this Contract consists of furnishing all labor, materials, equipment, services, and expertise necessary to complete the Work described in the Contract Drawings and Specifications. The new 7,000 SF pre-manufactured steel building will include interior warehouse space allowing for pallet stacking of bulk supplies, fixed shelving, a roll-up door, and a man door with call buzzer; a fully caged secure storage area; a 900 SF cold storage room; work space for six warehouse staff, including two offices, a workroom, and a unisex toilet; plus a covered loading dock area with stairs, a dock leveler, and a permanent scissor lift. The facility will have a personal alarm system, a fire alarm system that reports to the fire house located within the prison, an intercom PA system, and temperature/humidity control. The foundation will be a structural slab on piers. Exterior work includes subsurface metal detection and removal; asphalt concrete paving; hazardous materials abatement and removal of an existing watch tower, stockpiled building materials, concrete slab, and fencing; and other site improvements.

Contractor's State License Classification required to bid Project: B
Construction Manager Estimate: $2.5 million
Construction Duration: 240 calendar days

A **non-mandatory***** pre-bid conference is scheduled for **2:30 pm PST on February 27, 2008** at the West Gate, accessible from Sir Francis Drake Blvd, for escort to the Vanir Construction Management office modular at San Quentin State Prison. On-site inspections may be conducted after the pre-bid conference. Questions will be answered by addendum if received prior to 3:00 pm PST on March 5, 2008. Questions should be faxed to Vanir Construction Management, Inc., 415-419-5187, or emailed to lee.darby@vanir.com, Attention: Lee Darby. Questions received after this time may not be answered or addressed by addendum.

Prospective Bidders attending the pre-bid conference may park in the visitors parking outside the West Gate and enter onto the grounds of the San Quentin State Prison from the West Gate. Security clearances will be required, as outlined below.

***Security Clearance:** Bidder's attention is directed to the deadline to contact Vanir Construction Management to receive security clearance for entry into San Quentin for the pre-bid conference. **No later than 3:00 pm, February 19, 2008**, provide (1) full name, (2) date of birth, (3) Identification Number or California Drivers License Number, and (4) Social Security Number; for security clearance into the institution. Fax or e-mail the form to Ms. Darby at 415-419-5187 or lee.darby@vanir.com. Prospective bidders not providing the above information by

BID PROPOSAL

PROPOSAL TO: California Prison Health Care Receivership Corporation ("CPR")
c/o Vanir Construction Management, Inc.

ON OR BEFORE: **3:00 pm PST Monday, March 31, 2008**

DELIVER TO: Vanir Construction Management, Inc.
980 Ninth Street, Suite 900
Sacramento, CA 95814
Attention: Mani Subramanian

FOR: Medical Warehouse Building, San Quentin State Prison

The undersigned hereby proposes and agrees to furnish everything required to complete the project in the manner and time prescribed in the above entitled Contract Documents and in accordance with the prevailing wage rates as determined by the Department of Industrial Relations and as required by the General Conditions, for the quotation set forth in the space provided herein.

If awarded the contract, the undersigned agrees to sign the contract and to furnish the bonds and Certificate of Liability Insurance and other documents as required in the Instructions to Bidders and to start the work when notified.

Bidder's security of Bid Bond, cash, cashier's check, or certified check in the amount of at least 10 percent of the bid price must accompany this proposal. If Bid Bond is used as security, it shall be executed on the appropriate form attached to this proposal. The Bid Bond must be executed by an admitted surety insurer.

Proposal must be submitted under sealed cover and should be returned in an envelope plainly identified as a proposal for the work being bid upon and addressed as directed in the Instructions to Bidders. **Faxed, emailed, or telephoned proposals will not be accepted.**

Proposal must be signed in the same name style in which the bidder is licensed. Bidder bidding jointly or as a combination of several business organizations is specifically cautioned that the bidder must be jointly licensed in the same form and style in which this proposal is executed.

_____ _____
Authorized Signature Date

_____
Name of Authorized Signer (please print)

_____ _____
Bidder (Company) Name Contractor License Number

_____
Address

DESCRIPTION	TOTAL BID PRICE
Allowance: Procure a private utility locator firm to locate existing underground utilities	$ 5,000.00
Allowance: Provide a Personal Alarm System	$ 15,000.00
Complete the Work.	$_____Including above Allowance(s)

The Total Bid Price is based on a review of the documents listed below. Failure by the bidder to acknowledge receipt of any document could result in the rejection of the bid.

DOCUMENTS	SIGNATURE	DATE
Initial Plans and Specifications	_____	_____
Addendum No. _____	_____	_____
Addendum No. _____	_____	_____
Addendum No. _____	_____	_____
Addendum No. _____	_____	_____

A. Additional Requirements

1. As part of this Bid Proposal, the Contractor shall submit the following information for review by the CPR:

   a. Product Compliance Confirmation
   b. Statement of Qualifications
   c. Project Approach

5.9 Termination For Convenience.

A. CPR Corp reserves the right to terminate the Contract at any time, upon seven (7) days written notice, if CPR Corp determines that to do so would be in its best interest.

B. CPR Corp will issue to Contractor a written notice that the Contract is to be terminated. Upon receipt of notice, except as otherwise directed, Contractor shall:

1. Stop work.
2. Take action, as necessary, to protect materials and equipment from damage.
3. Notify subcontractors and suppliers that the Contract is being terminated, and that work on their contracts or orders will be terminated.
4. Provide CPR Corp Representative with an inventory of materials and equipment previously purchased or ordered, including storage location and such other information as CPR Corp Representative may request.
5. Dispose of materials and equipment as directed, and provide CPR Corp with title to other materials and equipment purchased for work hereunder, including materials and equipment for which progress payments have been made, and with documents of title for such materials and equipment.

C. Contractor's responsibility for damage to materials and equipment transferred to CPR Corp will terminate when title and delivery of such materials and equipment have been accepted in writing by CPR Corp.

D. When the CPR Corp Representative determines that Contractor has completed work necessary to secure the Project for termination, CPR Corp will accept such work.

E. The total compensation under the Contract to be paid to Contractor will be determined by the CPR Corp Representative as follows:

1. The necessary direct cost to Contractor for performance of work, including mobilization, demobilization, and work done to secure the Project for termination, plus an allowance for indirect costs and profit not to exceed 22 percent.
2. The necessary direct cost to Contractor of handling materials and equipment returned to the supplier, delivered to CPR Corp or as otherwise directed, plus an allowance for indirect costs and profit not to exceed 15 percent.
3. Contractor's actual necessary administrative costs directly attributable to the termination of the Contract.

F. Records shall be retained as specified in Section 1 of State Required Terms and Conditions.

END OF SECTION

METAL BUILDING SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes a single-story, single-span, rigid-frame-type pre-engineered metal building of the nominal length, width, eave height, and roof pitch indicated.

1. Exterior walls are covered with field-assembled insulated wall panels attached to framing members using exposed fasteners.
2. Roof system consists of the manufacturer's standard standing-seam insulated roof.
3. Manufacturer's standard building components and accessories may be used, provided components, accessories, and complete structure conform to design indicated and specified requirements.

B. Products Furnished but Not Installed Under This Section.

1. Section 03300 - Cast-In-Place Concrete: Placement of anchor bolts.

C. Related Sections: The following sections contain requirements that relate to this section:

1. Section 03300 - Cast-In-Place Concrete: Concrete footings, grade beams, and floor slab.
2. Section 05500 – Metal Fabrications
3. Section 05051 - Tamper Proof Metal Fasteners: Exposed fasteners in inmate accessible areas.
4. Section 07210 - Building Insulation.
5. Section 07900 - Joint Sealant
6. Section 08110 – Standard Steel Doors and Frames
7. Section 08331 - Overhead Coiling Doors.
8. Section 08520 - Aluminum Windows (for interior windows only).
9. Section 08700 - Finish Hardware.
10. Section 08800 - Glazing (Non-Security).
11. Section 09900 - Painting.
12. Division 15 - Mechanical: Mechanical rough-in utilities.
13. Division 16 - Electrical: Electrical rough-in utilities.

1.2 REFERENCES

A. AAMA 101 - Specification for Aluminum Prime Windows and Sliding Glass Doors.

B. AAMA 603.8 - Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.

C. AISC - Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

D. AISC - Code of Standard Practice for Steel Bridges and Buildings.

E. AISI - Specification for the Design of Cold-Formed Steel Structural Members.

F. ASTM A36 - Structural Steel.

G. ASTM A123 - Zinc Coatings (Hot Dip Galvanized) on Iron and Steel Products.

H. ASTM A153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.

I. ASTM A307 - Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.

J. ASTM A325 - Structural Bolts, Heat Treated, 120/105 ksi Minimum Tensile Strength.

K. ASTM A446 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.

L. ASTM A490 - Heat-Treated Steel Structural Bolts 150 ksi Minimum Tensile Strength.

M. ASTM A500 – Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

N. ASTM A501 - Hot Formed Welded and Seamless Carbon Steel Structural Tubing.

O. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, General Requirements.

P. ASTM A529 - Structural Steel with 42 ksi (290 MPa) Minimum Yield Point (2 inch (13mm) Maximum Thickness).

Q. ASTM C553 - Mineral Fiber Blanket and Felt Insulation (Industrial Type).

R. ASTM A570 - Steel, Sheet and Strip, Carbon, Hot Rolled, Structural Quality.

S. ASTM A572 - High Strength Low Alloy Columbium-Vanadium Steel of Structural Quality.

T. ASTM A792 - Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot-Dip Process, General Requirements.

U. ASTM C612 - Mineral Fiber Block and Board Thermal Insulation.

V. ASTM C665 - Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

W. AWS A2.0 - Standard Welding Symbols.

X. AWS D1.1 - Structural Welding Code - Steel.

Y. CCR - California Code of Regulations.

Z. SSPC - Steel Structures Painting Council.

1.3 SYSTEM DESCRIPTION

A. Clear span rigid frame type and modular rigid frame type supported with intermediate columns as indicated.

B. Primary Framing: Rigid frame of rafter beams and columns, canopy beams, intermediate columns, end wall columns, and wind bracing. There shall be no intermediate columns in the floor area of the building. All columns and structure are to be located on the perimeter walls.

C. Secondary Framing: Purlins, girts, eave struts, flange bracing, sill supports, clips, and other items detailed.

D. Wall and Roof System: Preformed metal panels of indicated profile, with sub-girt framing/anchorage assembly, sag rods, insulation, and accessory components. The roof shall be a clear span type structure.

E. Roof Slope: per drawings.

1.4 DESIGN REQUIREMENTS

A. Design building structure and components in accordance with requirements of CCR Title 24, Part 2. State Chapters apply. Alternate methods of analysis are not acceptable.

B. Conform to AISC and AISI Specifications.

C. Assembly to permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range of 55 degrees F.

D. Size and fabricate wall and roof systems free of distortion or defects detrimental to appearance or performance.

E. Size system to support monorail system, where indicated.

1.5 STRUCTURAL DESIGN - VERTICAL LOADS

A. Design for in-place loads generated by the materials used, equipment supported on roofs or walls, equipment suspended from roofs or walls, suspended finishes, and other items indicated to be supported.

B. Design for minimum 11 psf dead load for mechanical piping and ceiling loads in addition to the metal building dead load in buildings.

C. Where operating equipment is located on, or suspended from the structure, the design weight of the equipment shall be increased 20 percent for impact.

D. In addition to the loads specified above, design Structure to support the following minimum live loads, unless greater loads are indicated:
   1. Uniform live load on roofs and canopies: 20 pounds per sq ft.
   2. Concentrated load anywhere on the roof deck and canopy deck: 275 pounds.
   3. Uniform live load on walkways, unreducible: 100 pounds per sq ft.
   4. Concentrated load anywhere on walkways and slabs: 1,000 pounds.

E. Allowable Deflections Under Dead and Live Loads
   1. Structural Members: L/240 of the clear span.
   2. Roof and Canopy Decks: L/240 of the center to center span.

1.6 STRUCTURAL DESIGN - LATERAL LOADS

A. Design structure to resist wind load of 80 mph, exposure C using Method 1 per CCR Title 24, California Building Code, State Chapters.
   1. Design and detail skin, roof decks, walls, and roof supporting members for pressure and suction acting perpendicular to the surface.
   2. Deflection of skin, roof decks, walls, and roof supporting members for pressure and suction acting perpendicular to the surface shall not exceed L/240 of the center to center span.
   3. Limit drift due to wind forces, computed at the eave, to 0.005 times the eave height.

B. Design structure to resist seismic forces, where V = ZICW/Rw and:

Z	=	0.40
C	=	2.75
I	=	Varies - see Drawings
Rw	=	6 for moment-resisting frames.
Rw	=	8 for braced frames, provided that all members and connections in braced frames be designed for 3(Rw/8) times the design seismic force.

   1. Limit drift due to seismic forces, computed at the eave, to 0.005 times the eave height.
   2. Design structure to carry equipment loads including, but not limited to, mechanical equipment, plumbing, electrical, suspended ceilings, interior and exterior partitions, masonry walls, and storage contents of mezzanines.

1.7 STRUCTURAL DESIGN - LATERAL BRACING SYSTEM

A. Bracing and connections shall be capable of transferring loads from structure to foundations in a direct manner. Eccentricities shall be avoided, and shall be accounted for where they occur. Wall bracing shall clear all openings and not penetrate rated walls.

B. There shall be a complete and continuous "collector" and "chord" system capable of delivering the code specified lateral forces to the bracing systems. Collector and chord members shall be designed to resist axial tension and compression forces in combination with any other loads delivered simultaneously to these members.

C. Provide adequate tie-downs for overturning forces to the foundations. Coordinate column base details with details indicated on structural Drawings.

D. Longitudinal Vertical (Wall) Bracing
   1. Lateral Force Resisting System: Concentric diagonal braced frames on member center lines or moment resisting frames.
   2. Braces: Steel angle sections.
   3. Washers: Cast iron or similar brittle material shall not be used for washers.
   4. Where moment frames are used in conjunction with braced frames, moment frames must have compatible (equivalent) stiffness to the braced frames, and the "Rw" value for the most stringent system shall be used for computing loads on the entire structure.

E. Roof Bracing: Design braces for three times the code-specified forces, including the importance factor "I", if tension only braces are used, and where the slenderness ratio exceeds 120.

F. Where applicable to building length, separation for expansion and sliding joints may be provided to allow seismic and thermal movements of framing members in the longitudinal axis of the building.
   1. Double columns are allowed at the separation.
   2. Coordinate locations with architectural Drawings.

1.8 SYSTEM PERFORMANCE REQUIREMENTS

A. General: Engineer, design, fabricate and erect the pre-engineered metal building system to withstand loads from winds, gravity, structural movement including movement thermally induced, and to resist in-service use conditions that the building will experience, including exposure to the weather, without failure. Design each member to withstand stresses resulting from combinations of loads that produce the maximum allowable stresses in that member as prescribed in MBMA's "Design Practices Manual."

B. Design Loads: Basic design loads, as well as auxiliary and collateral loads.

   1. Basic design loads include live load, wind load, and seismic load, in addition to the dead load.
   2. Auxiliary loads include dynamic live loads such as those generated by material handling equipment.
   3. Collateral loads include additional dead loads over and above the weight of the metal building system such as sprinkler systems and roof-mounted mechanical systems.

C. Structural Framing and Roof and Siding Panels: Design primary and secondary structural members and exterior covering materials for applicable loads and combinations of loads in accordance with the Metal Building Manufacturers Association's (MBMA) "Design Practices Manual."

   1. Structural Steel: Comply with the American Institute of Steel Construction's (AISC) "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" for design requirements and allowable stresses.

2. Light Gage Steel: Comply with the American Iron and Steel Institute's (AISI) "Specification for the Design of Cold Formed Steel Structural Members" and "Design of Light Gage Steel Diaphragms" for design requirements and allowable stresses.
3. Welded Connections: Comply with the American Welding Society's (AWS) "Standard Code for Arc and Gas Welding in Building Construction" for welding procedures.

1.9 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Product data consisting of metal building system manufacturer's product information for building components and accessories.

C. Submit structural drawings and calculations, signed and sealed by a structural engineer licensed in the State of California.
1. Submit three copies of complete structural design calculations. Submit with shop drawings.
2. Include vertical loads, lateral seismic loads, and wind loads.
3. Calculations shall be complete and shall include roof decks, wall panels, structural members, equipment supports, framing around openings, braces, connections, lateral bracing of equipment, bracing of interior and exterior walls, suspended ceilings, and suspended equipment.
4. When structural calculations are electronically prepared, submit diagrammatic models of each element, clearly cross referenced to calculations.

D. Shop drawings for metal building structural framing system, roofing and siding panels, and other metal building system components and accessories that are not fully detailed or dimensioned in manufacturer's product data.
1. Structural Framing: Furnish complete erection drawings prepared by or under the supervision of a professional engineer legally authorized to practice in the jurisdiction where the Project is located. Include details showing fabrication and assembly of the metal building system. Show anchor bolts settings and sidewall, endwall, and roof framing. Include transverse cross-sections.
2. Roofing and Siding Panels: Provide layouts of panels on walls and roofs, details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Include transverse cross-sections.
3. Building Accessory Components: Provide details of metal building accessory components to clearly indicate methods of installation including the following:
    a. Personnel doors: Provide elevations and details of each type of door and frame, including anchors and reinforcement; show location and installation requirements for finish hardware. Provide schedule of doors and frames using the same reference numbers for details and openings as those indicated on the drawings; include complete hardware schedule.
    b. Overhead Coiling Service Doors: Provide fully dimensioned details of construction, including 1/4 inch per foot (1:50) scale elevations of door units and not less than 3/4

inch per foot (1:20) scale details showing door curtain, guides, counterbalance, and method of operation.

c. Aluminum Windows: Provide 1/4 inch per foot (1:50) scale elevations of window units and not less than 3/4 inch per foot (1:20) scale details showing anchors, hardware, operators, and glazing details.

d. Sheet Metal Accessories: Provide layouts at 1/4 inch per foot (1:50) scale. Provide details of ventilators, louvers, gutters, downspouts, and other sheet metal accessories at not less than 1-1/2 inch per foot (1:10) scale showing profiles, methods of joining, and anchorages.

E. Certificates of welders performing structural welding.

F. Certificates that all bolts supplied and installed are of United States manufacture and meet the requirements of these specifications.

G. Manufacturer's certificate that products meet or exceed specified requirements.

H. Submit location and schedule of off-site fabrication.

I. Wiring diagrams from the manufacturer of motor operated overhead service doors detailing power, signal, and control systems differentiating clearly between field-installed and manufacturer-installed wiring.

J. Samples for initial selection purposes in form of manufacturer's color charts or chips showing full range of colors, textures, and patterns available for metal roofing and siding panels with factory-applied finishes.

K. Samples for verification purposes of roofing and siding panels. Provide sample panels 12 inch (300 mm) long by actual panel width, in the profile, style, color, and texture indicated. Include clips, battens, fasteners, closures, and other panel accessories.

L. Installer certificates signed by metal building manufacturer written certification certifying that the installer complies with requirements included under the "Quality Assurance" Article.

1.10 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer to erect the pre-engineered metal building who has specialized in the erection and installation of types of metal buildings systems similar to that required for this project and who is certified in writing by the metal building system manufacturer as qualified for erection of the manufacturer's products.

B. Manufacturer's Qualifications: Provide pre-engineered metal buildings manufactured by a firm experienced in manufacturing metal buildings systems that are similar to those indicated for this project and have a record of successful in-service performance.

C. Single-Source Responsibility: Obtain the metal building system components, including structural framing, wall and roof covering, and accessory components, from one source from a single manufacturer.

D. Design Criteria: The drawings indicate sizes, profiles, and dimensional requirements of the pre-engineered metal building system. Metal building systems having equal performance characteristics with deviations from indicated dimensions and profiles may be considered, provided deviations do not change the design concept or intended performance.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Deliver prefabricated components, sheets, panels, and other manufactured items so they will not be damaged or deformed. Package wall and roof panels for protection against transportation damage.

B. Handling: Exercise care in unloading, storing, and erecting wall and roof covering panels to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal wall and roof panels so that water accumulations will drain freely. Do not store panels in contact with other materials that might cause staining, denting or other surface damage.

1.12 WARRANTY

Furnish the roofing and siding panel manufacturer's written warranty, covering failure of the factory-applied exterior finish on metal wall and roof panels within the warranty period. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents. Warranty period for factory-applied exterior finishes on wall and roof panels is 20 years after the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

Subject to compliance with requirements, manufacturers offering metal building systems that may be incorporated in the work include but are not limited to the following:

1. American Buildings Co.
2. American Steel Building Co., Inc.
3. Armco Steelox Building Systems.
4. Behlen Manufacturing Co.
5. Butler Manufacturing Co.
6. Ceco Buildings Division.
7. Garco Building Systems.

8. Kirby Building Systems, Inc.
9. Package Steel Buildings Corp.
10. Southern Structures, Inc.
11. Star Buildings Division, H. H. Robertson Co.
12. Varco-Pruden Buildings.

2.2 MATERIALS

A. Hot-Rolled Structural Steel Shapes: Comply with ASTM A 36 or ASTM A 529.

B. Steel Tubing or Pipe: Comply with ASTM A 500 Grade B, ASTM A 501, or ASTM A 53.

C. Steel Members Fabricated from Plate or Bar Stock: Provide 42,000 psi (290 MPa) minimum yield strength. Comply with ASTM A 529 (ASTM A 529M), ASTM A 570 (ASTM A 570M), or ASTM A 572 (ASTM A 572M).

D. Steel Members Fabricated by Cold Forming: Comply with ASTM A 607 Grade 50.

E. Cold-Rolled Carbon Steel Sheet: Comply with requirements of ASTM A 366 or ASTM A 568 (ASTM A 568M).

F. Hot-Rolled Carbon Steel Sheet: Comply with requirements of ASTM A 568 (ASTM A 568M) or ASTM A 569.

G. Structural Quality Zinc-Coated (Galvanized) Steel Sheet: Comply with ASTM A 446 with G90 (ASTM A 446M with Z275) coating complying with ASTM A 525 (ASTM A 525M). Grade to suit manufacturer's standards.

H. Commercial Quality Zinc-Coated (Galvanized) Steel Sheet: Comply with ASTM A 526 with G60 (ASTM A 526M with Z180) coating complying with ASTM A 525 (ASTM A 525M).

I. Aluminum-Coated Steel Sheets: Comply with ASTM A 463 with T1-40 coating.

J. Aluminum Sheets: Comply with ASTM B 209 (ASTM B 209M) for Alclad alloy 3003 or 3004 with temper as required to suit forming operations.

K. Bolts for Structural Framing: Comply with ASTM A 307 or ASTM A 325 (ASTM A 325M) as necessary for design loads and connection details.

L. Thermal Insulation: Glass fiber blanket insulation, complying with ASTM C 991, of 0.5 lb per cu. ft. (8 kg/cu. m) density, thickness as indicated, with UL flame spread classification of 25 or less, and 2 inch (50 mm) wide continuous vapor-tight edge tabs.

1. Vapor Barrier: Vinyl-reinforced foil.
2. Retainer Strips: 26 gage (0.55 mm) formed galvanized steel retainer clips colored to match the insulation facing.

M. Paint and Coating Materials: Comply with performance requirements of the federal specifications indicated. Unless specifically indicated otherwise, compliance with compositional requirements of federal specifications indicated is not required.

1. Shop Primer for Ferrous Metal: Fast-curing, lead-free, universal primer, selected by the manufacturer for resistance to normal atmospheric corrosion, compatibility with finish paint systems, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure. Comply with FS TT-P-645.
2. Shop Primer for Ferrous Metal: Fast-curing, lead-free, abrasion- resistant, rust-inhibitive primer selected by the manufacturer for compatibility with substrates with types of alkyd finish paint systems indicated and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure. Comply with FS TT-P-86, Types I, II, or III.
3. Shop Primer for Galvanized Metal Surfaces: Zinc dust-zinc oxide primer selected by the manufacturer for compatibility with substrate. Comply with FS TT-P-641.

N. Fire Alarm System: Contractor shall design (including calculations), furnish, and install within the building an addressable fire alarm system complete and in conformance with the code. Contractor shall prepare shop drawings and calculations for submittal to the State Fire Marshal for approval prior to the start of work. Fire alarm system shall be Notifier, or equal, and capable of communicating with the Notifier annunciator located at the San Quentin Fire Department. Fire alarm system shall include a fire alarm panel, annunciator, and all wiring, devices, accessories, and programming required for a fully operational system. Fire alarm panel shall report to the annunciator located at the San Quentin Fire Department via wiring and conduit run from the panel to an existing J-box and conduit system that will provide pathway to the Fire Department. Contractor to include a 1,000 lineal feet allowance of control wire for panel communication to the Fire Department.

O. Public Address System: Contractor shall design, furnish, and install a public address system that serves both the warehouse building and the loading dock area. Contractor shall prepare shop drawings and submit with product data to CPR Corp Representative.

2.3 STRUCTURAL FRAMING

A. Rigid Frames: Fabricate from hot-rolled structural steel shapes. Provide factory-welded, shop-painted, built-up "I-beam"-shape or open-web-type frames consisting of tapered or parallel flange beams and tapered columns. Furnish frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly.

B. Primary Endwall Framing: Provide the following primary endwall framing members fabricated for field-bolted assembly:

1. Endwall Columns: Manufacturer's standard shop-painted, built-up factory-welded "I"-shape or cold-formed "C" sections, fabricated from 14 gage (1.9 mm) steel.

2. Endwall Beams: Manufacturer's standard shop-painted "C"-shape roll-formed sections fabricated from 16 gage (1.5 mm) steel.

C. Secondary Framing: Provide the following secondary framing members:

1. Roof Purlins, Sidewall and Endwall Girts: "C"-or "Z"-shaped sections fabricated from 16 gage (1.5 mm) shop-painted roll-formed steel. Purlin spacers shall be fabricated from 14 gage (2.0 mm) cold-formed galvanized steel sections.
2. Eave Struts: Unequal flange "C"-shaped sections formed to provide adequate backup for both wall and roof panels. Fabricate from 16 gage (1.5 mm) shop-painted roll-formed steel.
3. Flange and Sag Bracing: 1-5/8 x 1-5/8 inch (41 x 41 mm) angles fabricated from 16 gage (1.5 mm) shop-painted roll-formed steel.

4. Base or Sill Angles: Fabricate from 14 gage (1.9 mm) cold-formed galvanized steel sections.
5. Secondary endwall structural members, except columns and beams, shall be the manufacturer's standard sections fabricated from 14 gage (2.0 mm) cold-formed galvanized steel.

D. Wind Bracing: Provide adjustable wind bracing using 1/2 inch (13 mm) diameter threaded steel rods; comply with ASTM A 36/A36M or ASTM A 572/A572M, Grade D. Locate interior end bay bracing only where indicated.

E. Bolts: Provide shop-painted bolts except when structural framing components are in direct contact with roofing and siding panels. Provide zinc-plated or cadmium-plated bolts when structural framing components are in direct contact with roofing and siding panels.

F. Shop Painting: Clean surfaces to be primed of loose mill scale, rust, dirt, oil, grease, and other matter precluding paint bond. Follow procedures of SSPC-SP3 for power-tool cleaning, SSPC-SP7 for brush-off blast cleaning, and SSPC-SP1 for solvent cleaning.

1. Prime structural steel primary and secondary framing members with the manufacturer's standard rust-inhibitive primer.
2. Prime galvanized members, after phosphoric acid pretreatment, with manufacturer's standard zinc dust-zinc oxide primer.

2.4 ROOFING AND SIDING PANELS

A. Face Sheets: Fabricate wall and roof panel face sheets to the profile or configuration indicated from 24 ga. kynar coated steel.

B. Insulated Wall Panels: Provide factory- or field-assembled wall panel units, consisting of a central insulating core with metal interior and exterior face sheets. Securely fasten units together with rivets, bolts, studs, "snap-on," or other approved methods of fastening, including interlocking with basic wall units.

1. Fabricate wall panels in a manner that will eliminate condensate on the interior side. Design joints between panels to form weathertight seals.
2. Insulating core of panels shall provide minimum R –factor 12.
3. All exterior walls are to be insulated.

C. Lap-Seam Roof Panels: Manufacturer's standard factory-formed lap-seam roof panel system designed for mechanical attachment of panels to roof purlins using exposed fasteners and sealants. Form panels of 24 gage (0.55 mm), Grade C, zinc-coated steel sheets. Roof panels shall be exposed fastener type.

D. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets, self-locking bolts, end-welded studs, and other suitable fasteners designed to withstand design loads.

1. Provide metal-backed neoprene washers under heads of fasteners bearing on weather side of panels.
2. Use aluminum or stainless steel fasteners for exterior application and galvanized or cadmium-plated fasteners for interior applications.
3. Locate and space fastenings in true vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
4. Provide fasteners with heads matching color of roofing or siding sheets by means of plastic caps or factory-applied coating.

E. Accessories: Provide the following sheet metal accessories factory-formed of the same material in the same finish as roof and wall panels:

1. Flashings
2. Closers
3. Fillers
4. Metal expansion joints
5. Ridge covers
6. Fascias

F. Flexible Closure Strips: Closed-cell, expanded cellular rubber, self-extinguishing flexible closure strips. Cut or pre-mold to match configuration of roofing and siding sheets. Provide closure strips where indicated or necessary to ensure weathertight construction.

G. Sealing Tape: Pressure-sensitive 100 percent solids grey polyisobutylene compound sealing tape with release paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

H. Joint Sealant: One-part elastomeric polyurethane, polysulfide, or silicone rubber sealant as recommended by the building manufacturer.

I. Fluoropolymer Finish: Provide shop-applied fluoropolymer finish to galvanized steel roofing and siding panels and related trim and accessory elements.

1. Clean galvanized steel with an alkaline compound, then treat with a zinc phosphate conversion coating and seal with a chromic acid rinse.
2. Apply a 2-coat fluoropolymer coating system to pretreated steel. Coating shall consist of a specially formulated inhibitive primer applied to a dry film thickness of 0.15 mil (0.004 mm) to 0.25 mil (0.006 mm) and a fluorocarbon color coat containing not less than 70 percent polyvinylidene fluoride resin by weight applied to a dry film thickness of 0.80 mils (0.02 mm) to 1.3 mils (0.03 mm).
3. Color: As selected by the Architect from the manufacturer's standard colors.

2.5 HOLLOW METAL DOORS AND FRAMES

A. Hollow metal doors and frames are specified under Section 08110 – Standard Steel Windows and Doors.

B. Finish hardware is specified under Section 08700 – Finish Hardware.

2.6 ALUMINUM WINDOWS

A. Aluminum Extrusions: Provide extrusions of alloy and temper recommended by the manufacturer for strength, corrosion resistance, and application of required finish, but not less than 22,000 psi (152 MPa) ultimate tensile strength and 0.062 inch (1.6 mm) thickness at any location for main frame and sash members. Comply with ASTM B 221 (ASTM B 221M).

1. Provide "Thermal-Break" construction. Separate frame and sash members exposed on the exterior from metal parts exposed on the interior by a continuous gasket or filler of rubber or plastic, locked into construction.
2. Mullions: Provide mullions between adjacent windows, fabricated of extruded aluminum matching the finish of window units.

B. Fasteners: Aluminum, nonmagnetic stainless steel, or other material warranted by the manufacturer to be noncorrosive and compatible with aluminum window members, trim, hardware, anchors, and other components of window units.

1. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125 inch (3 mm) thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads or provide standard noncorrosive pressed-in splined grommet nuts.
2. Provide exposed fasteners that match the finish of members and hardware being fastened.

C. Anchors, Clips, and Window Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel complying with ASTM A 123.

D. Compression Glazing Strips and Weatherstripping: Molded neoprene gaskets complying with ASTM D 2000 designation 2BC415 to 3BC620, molded PVC gaskets complying with ASTM D 2287, or molded expanded neoprene gaskets complying with ASTM C 509, Grade 4.

E. Sliding Weatherstripping: Woven pile weatherstripping of wool, polypropylene or nylon pile and resin-impregnated backing fabric, and aluminum backing strip; comply with AAMA 701.

F. Sealants: Type recommended for joint size or movement, to remain permanently elastic, non-shrinking, and non-migrating.

G. Insect Screens: Provide removable insect screen on each operable exterior sash, with finish matching window.

H. Heavy Commercial Windows: Provide units complying with AAMA Grade and Performance Class HC40 for "Heavy Commercial" type buildings. Design wind velocity at project site is 100 mph (160 km/h).

I. Window Types (Operation): Drawings indicate locations of operating sash, of the following types and grades:

1. Double-Hung Units: Comply with AAMA DH-HC40 for heavy commercial grade double-hung windows.
2. Aluminum Finish: Primed for paint, AA-M10C12C42R1x, 2.0-mil (0.05 mm) baked epoxy-resin primer.

J. Pre-glazed Construction: To the greatest extent possible, glaze units at the shop prior to installation.

2.7 INTERIOR WINDOWS

A. Interior windows are specified in Section 08520.

B. Glazing: Specified in Section 08800.

2.8 SHEET METAL ACCESSORIES

A. General: Provide aluminum sheet metal accessories with aluminum roofing and siding panels.

B. Gutters: Form in 96 inch (2400 mm) long sections, complete with end pieces, outlet tubes, and other special pieces as required. Size in accordance with SMACNA. Join sections with riveted and soldered or sealed joints. Provide expansion-type slip joint at center of runs. Furnish gutter supports spaced 36 inches (900 mm) on center, constructed of same metal as

gutters. Provide bronze, copper, or aluminum wire ball strainers at outlets. Finish to match roof fascia and rake.

C. Downspouts: Form in 10 feet (3 m) long sections, complete with elbows and offsets. Join sections with 1-1/2 inch (38 mm) telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inch (1500 mm) on center in between. Finish to match wall panels.

D. Continuous Ridge Ventilators: Provide factory-engineered and -fabricated, continuous ridge ventilator of the continuous-heat-valve type as furnished by the building manufacturer. Provide in standard length sections in locations indicated. Provide throat size and total length indicated, complete with side baffles, ventilator assembly, operating damper, hardware, bird screen, end caps, splice plates, flashing, reinforcing diaphragms, closures, and fasteners. Finish to match roof panels. Provide bird screens of 1/2 x 1/2 inch (13 mm) galvanized steel or expanded diamond mesh.

E. Wall Louvers: Provide louvers, size and design indicated, of 18 gage (1.2 mm) steel. Fold or bead blades at edges, set at an angle that excludes driving rains, and secure to frames by riveting or welding. Finish to match wall panels.

1. Provide vertical mullions for louvers 48 inches (1200 mm) and more in width, with one mullion for each 48 inches (1200 mm) of width.
2. Provide flanges on interior face of frames where air intake or exhaust louvers are indicated to be connected with mechanically operated dampers or metal ductwork.
3. Provide 1/2 x 1/2 inch (13 x 13 mm) galvanized steel mesh bird screens in rewirable frames on exterior face of louvers. Secure with clips to ensure ease of removal for cleaning and rewiring. Fabricate screens and frames of same type metal as louvers.

2.9 FABRICATION - FRAMING

A. Fabricate structural steel members in accordance with AISC - Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

B. Fabricate members in accordance with AISC Specification for plate, bar, tube, or rolled structural shapes.

C. Anchor Bolts: Formed with bent shank, assembled with template for casting into concrete. Do not galvanize anchor bolts embedded in concrete.

D. Provide framing for openings.

2.10 FABRICATION - WALL AND ROOF SYSTEMS

A. Siding
   1. Panel Configuration: Building manufacturer's standard, meeting specified requirements; minimum 24 gage thick; 36 inch net coverage width, 1-1/8 inch deep minimum; sculptured for rigidity.
   2. Side Seams: Overlapping and concealed.

B. Roofing
   1. Panel Configuration: Provide specified load carrying capabilities and deflection limitations; minimum 16 inches wide; minimum 24 gage.
   2. Seams
      a. Standing seams with factory applied non-hardening sealant.
      b. Seams shall be continuously locked or crimped together by mechanical means during erection.
      c. Panels with lap type longitudinal side joints and exposed fasteners are not acceptable.
   3. Provide resilient gaskets as necessary for complete weather seal.
   4. Structural Fastening System
      a. Panels shall be fastened to the purlins or secondary support members with a concealed clip or backing device of steel having a protective metallic coating.
      b. Through penetration of the roof surface by exposed fasteners shall occur only at terminal locations of roof panels.
      c. System shall allow the roof covering to move independently of differential thermal movement of the structural framing system.
   5. Except at the concealed fastener, there shall be no thermal contact of the roof panels with the supporting purlins.
   6. Where roof panels are to be used as structural diaphragms to resist wind or seismic forces, roof decks must have an ICBO approval and be installed in conformance with ICBO requirements. Shear values shall not exceed ICBO approved values.
   7. Roof panels shall support walkways where indicated. Provide complete assembly and attach to structure.

C. Girts
   1. Manufacturer's standard rolled formed structural shape meeting specified requirements.
   2. Provide minimum one sag rod between spans.

D. Purlins
   1. Rolled formed structural shape.
   2. Design Capacity: Calculated in accordance with AISI Specification of the Design of Cold Formed Steel Structural Members.
   3. Configuration, Thickness, Spacing: Manufacturer's standard.
   4. Depth: Eight inches.
   5. Bracing System: Conform with requirements of Metal Building Manufacturers Association.

E. Internal and External Corners: Same material thickness and finish as adjacent material, profile shop cut and factory mitered to required angles.

F. Expansion Joints: Same material and finish as adjacent material where exposed.

G. Flashings, Closure Pieces, Fascia, Infills, Caps, and Trim: Same material and finish as adjacent material, profile to suit system. Provide at rake, corners, and eaves; at framed openings and wherever necessary to provide weather tightness and a finished appearance.

H. EPDM Rubber Boots: Flashing devices around pipe penetrations shall be flexible, one-piece devices molded from EPDM rubber. Rubber boot material shall be approved by the metal building manufacturer, as compatible with the system. Boots shall have base rings fabricated of minimum 0.07 inch thick aluminum conforming to the contours of the roof panel, to form a weather tight seal.

I. Fasteners: To maintain load requirements, and weathertight installation, same finish as cladding, non-corrosive [type.] [finish.]
   1. Siding
      a. Ten Feet or Less Above Adjacent Grade: Tamper proof metal fasteners under provisions of Section 05051.
      b. More Than Ten Feet Above Grade: Manufacturer's standard screws or bolts.
   2. Roofing
      a. Stainless steel screws, bolts, or rivets with weatherseal washers, or carbon steel shank fasteners with vinyl or stainless steel capped heads.

J. Roof Openings
   1. Openings Larger Than Eight Inches Round or Square: Framed with a welded base fabricated from minimum 0.07 inch thick aluminum.
   2. Support base with roof purlins and header framing.
   3. Base shall project minimum 12 inches above the roof weather surface; the configuration of the base flanges shall match the roof panel.
   4. Fasten base flange to provide complete support and weathertightness.

K. Roof Curbs: Minimum 12 inch height, top of curb level; conform to NRCA standards.

L. Ventilators and Ridge Vents: Metal building manufacturer's standard; finish to match building.

M. Wall Louvers: Metal building manufacturer's standard type and finish; minimum 12 gage galvanized steel; self framing, self-flashing, with integral head gutter; insect or bird screens as indicated with steel mesh screen and frame.

2.11 FABRICATION – GUTTERS AND DOWNSPOUTS

A. Fabricate of same material and finish as roofing metal; minimum 26 gage unless otherwise indicated.

B. Form gutters and downspouts to profile and size indicated to collect and remove water. Fabricate with connection pieces.

C. Form sections in maximum possible lengths. Hem exposed edges. Allow for expansion at joints.

D. Fabricate support straps of same material and finish as roofing metal, color as selected.

2.12 FINISHES

A. Framing Members: Clean, prepare, and shop prime. Do not prime surfaces to be field welded.

B. Roof Panels: ASTM A792; zinc-aluminum coating over steel substrate; Galvalume.

C. Wall Panels: Factory applied thermoset siliconized polyester fin

PART 3 EXECUTION

3.1 ERECTION

A. Erect framing in accordance with AISC Specification

B. Framing: Erect framing true to line, level, plumb, rigid, and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use a non-shrinking grout to obtain uniform bearing and to maintain a level base line elevation. Moist cure grout for not less than 7 days after placement.

C. Purlins and Girts: Provide rake or gable purlins with tight-fitting closure channels and fascias. Locate and space wall girts to suit door and window arrangements and heights. Secure purlins and girts to structural framing and hold rigidly to a straight line by sag rods.

D. Bracing: Provide diagonal rod or angle bracing in roof and sidewalls as indicated.

1. Movement-resisting frames may be used in lieu of sidewall rod bracing, to suit manufacturer's standards.
2. Where diaphragm strength of roof or wall covering is adequate to resist wind forces, rod or angle bracing will not be required.

E. Framed Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to building structural frame.

3.2 ROOFING AND SIDING

A. General: Arrange and nest sidelap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line. Protect factory finishes from damage.

1. Field cutting of exterior panels by torch is not permitted.
2. Provide weatherseal under ridge cap. Flash and seal roof panels at eave and rake with rubber, neoprene, or other closures to exclude weather.

B. Roof Sheets: Provide sealant tape at lapped joints of ribbed or fluted roof sheets and between roof sheets and protruding equipment, vents, and accessories. Apply a continuous ribbon of sealant tape to clean, dry surface of the weather side of fastenings on end laps, and on side laps of corrugated nesting-type, ribbed, or fluted panels and elsewhere as needed to make roof sheets weatherproof to driving rains.

C. Standing-Seam Roof Panel System: Fasten roof panels to purlins with concealed clip in accordance with the manufacturer's instructions.

1. Install clips at each support with self-drilling fasteners.
2. At end laps of panels, install tape calk between panels.
3. Install factory-calked cleats at standing-seam joints. Machine-seam cleats to the panels to provide a weathertight joint.

D. Wall Sheets: Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete and elsewhere as necessary for waterproofing. Handle and apply sealant and backup in accordance with the sealant manufacturer's recommendations.

1. Align bottom of wall panels and fasten panels with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws. Fasten window and door frames with machine screws or bolts. When building height requires two rows of panels at gable ends, align lap of gable panels over wall panels at eave height.
2. Install screw fasteners with power tools having controlled torque adjusted to compress neoprene washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
3. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.

E. Sheet Metal Accessories: Install gutters, downspouts, ventilators, louvers, and other sheet metal accessories in accordance with manufacturer's recommendations for positive anchorage to building and weathertight mounting. Adjust operating mechanism for precise operation.

F. Windows: Anchor windows securely in place. Seal perimeter of each unit with the elastomeric sealant used for panels. Adjust and lubricate operating sash and hardware for proper operation. Clean surfaces of window units. Mount screens direct to frames with tapped screw clips.

G. Glazing: Clean channel surfaces and prime as recommended by sealant manufacturer. Cut glass to required size for measured opening; provide adequate edge clearance and glass bite all around. Do not install glass that has significant edge damage or other defects.

1. Install setting blocks at quarter points, set in a bed of sealant if heel-bead is used. Install spacers inside and out, all around, wherever liquid or plastic/mastic compounds are used, except on glass sizes smaller than 50 united inches (1250 mm length plus width).
2. Replace glass that is broken or damaged prior to the time of acceptance. Each piece of exterior glass must be airtight and watertight through normal weather/temperature cycles and through normal door/window operation.

H. Thermal Insulation: Install insulation concurrently with installation of roof panels in accordance with manufacturer's directions. Install blankets straight and true in one-piece lengths with both sets of tabs sealed to provide a complete vapor barrier. Locate insulation on underside of roof sheets, extending across the top flange of purlin members and held taut and snug to roofing panels with retainer clips. Install retainer strips at each longitudinal joint, straight and taut, nesting with roof rib to hold insulation in place.

I. Cleaning and Touch-Up: Clean component surfaces of matter that could preclude paint bond. Touch up abrasions, marks, skips, or other defects to shop-primed surfaces with same type material as shop primer.

END OF SECTION

PERSONAL ALARM SYSTEM

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes
   1. Personal alarm devices and equipment.
   2. Installation material for the personal alarm system.
   3. Dedicated, hardwired personal alarm system that is functionally redundant to the reporting over the fire alarm system.

B. Products
   1. Personal alarm receivers in enclosures.
   2. Horns.
   3. Strobes.
   4. Key reset switches.
   5. Special back boxes.

C. Related Sections
   1. Section 05051 - Tamper Proof Metal Fasteners.
   2. Section 16010 - Basic Electrical Requirements.

1.2 SYSTEM DESCRIPTION

A. System Functions:
   1. Personal alarms are indicated to a strobe located at each entry point to the building and is annunciated as a single zone for the entire building and initiates interior horns (3 total, located by Owner).
   2. Acknowledging alarms at the Building Control panel does not affect the ability of the personal alarm system in the building to go into alarm, exercise the horn and strobe, or reset.

B. Local Building Functions:
   1. Personal Alarm System annunciation at the building shall be within one second.
   2. Personal alarm zones within the building have a unique coding scheme. Transmitters and receivers for each zone are coded alike. System configuration provides transmitters for one zone that do not activate receivers in adjacent zones.
   3. Annunciation of personal alarm events are on a zone by zone basis at the building control panel at one of the Building Control points.
   4. When a receiver associated with an individual zone goes into alarm, the horn(s) and strobe(s) associated with that zone will annunciate.
   5. Resetting of a personal alarm zone, via the key reset switch, is the only action required to fully reset both the Personal Alarm System.

6. Acknowledging alarms at the Building control panel does not affect the ability of the personal alarm systems in the building to go into alarm, exercise the horn and strobe or reset.
7. The personal alarm system in the building shall have the capability to be reported to a relay network in Central Control, within Building 18, on a building-by-building basis. The relay network accepts inputs from both the hardwired system. The intent is to provide redundant reporting of the personal alarms, if required. The hardwired system shall report a building alarm to the Building Control (annunciation) panel at one of the Building Control Points within one (1) second of alarm origination.
8. Power for the building shall be by the battery-backed power supply independent of the fire alarm system.
9. Provide a test switch for the system. Switch to be a tubular key type with momentary action and normally closed contacts. Holding switch during system test will de-activate all horns and strobes for all zones. Reset of each zone shall not be required prior to releasing test switch in order to avoid activation of horns and strobes. Label switch "Personal Alarm System Test." Annunciation at the designated Building Control Point shall be normal (as previously described) during the system test.
10. Equip each receiver with a red LED and buzzer.

1.3 SUBMITTALS

A. Submit under provisions of the General Conditions and Division 1.

B. Shop Drawings:
   1. Submit system layout and cross reference product data.
   2. Submit wiring diagrams and system interface requirements.
   3. Submit power supply and battery calculations.
   4. Submit horn tone capabilities and schedule to be completed by CPR and CDCR Representatives which indicates tone to be programmed.

C. Product Data:
   1. Submit product data for system equipment and components.
   2. Indicate features and characteristics.

D. Quality Control Submittals:
   1. Submit manufacturer's installation instructions.
   2. Submit report of test results.

E. Contract Closeout Submittals:
   1. As-Built Documents: Accurately record system layout including zone coding designations.
   2. Operation and Maintenance Data
      a. Include information on operation preventative maintenance and troubleshooting.

b. Submit in bound document format.
c. Test results.

1.4 SEQUENCING AND SCHEDULING

A. Personal alarm system equipment, including receivers, enclosures, transmitters, horns, strobes, key switches, and special back boxes. All conduit, cable, junction boxes, standard back boxes (single gang, 2-gang, octagon ceiling, etc.) and cable connectors required within the building shall be furnished and installed by the Contractor.

B. The Contractor shall provide technical assistance in the installation of the personal alarm system; as well as witness the testing of each system to assure that it is operational as specified.

C. The Contractor shall be responsible for providing and installing power to the required cabinets and devices.

1.5 EXTRA MATERIALS

A. Submit maintenance materials under provisions of Division 1.

B. Furnish to the CPR Representative the following number of transmitters:
1. 10 each.
2. One key for each key reset switch provided.
3. One key for each test switch provided.

PART 2 PRODUCTS

2.1 PRODUCTS FURNISHED BY CONTRACTOR

A. Manufacturers and model numbers of equipment furnished by the Contractor are for bidding purposes only and are subject to change. Specifications and product features are included for reference only.

2.2 MANUFACTURERS

A. Equipment, except as noted.
1. Linear Corporation.

2.3 LOCATION OF EQUIPMENT

A. The building personal alarm system includes a power supply with battery backup, test switch and relay network boards as required for system functions as described herein. The test switch and relay network boards shall be located in one of the Building Control Points. The power supply and battery backup shall be located in a separate NEMA 12 type cabinet mounted near one of the Building Control Point(s).

B. Power Supply System:
   1. Manufacturer:
      a. Sola.
      b. Acopian.
      c. Power One.
   2. Sized to accommodate specified loads. Output of system fused for over current protection. Monitor the output of system to provide a trouble indication of failure of power supply, via the Fire Alarm System. Power supply shall trickle charge the battery to keep batteries fully charged.

C. Relay Boards:
   1. Manufacturer:
      a. Potter-Brumfield.
      b. Or equal.
   2. Each building personal alarm zone includes a relay network board located in one of the Building Control Point(s) to effect the system functions as described herein.
   3. Configured with plug-in relays to provide receiver monitoring and zone annunciation/reset as described herein. All boards shall be standard for the entire facility. Equipment boards with plug-in terminals to facilitate easy replacement.

D. Battery:
   1. Manufacturer:
      a. Yuasa.
      b. Or equal.
   2. Sealed type. Capable of operating the personal alarm system for the building under maximum normal load for twenty-four hours and then capable of operating the system for an additional five minutes in the worst case alarm condition. Output of each power supply shall be monitored to provide a "Trouble" indication to the Fire Alarm System, if the power supply fails.

E. Test Switch: As required for functional operation.

2.4 TRANSMITTERS

A. Manufacturer:
   1. Linear Model D-22A.

B. Pulse-width A-1 modulation at 250 bits/second one-way transmission with one digitally coded alarm output, compact and portable for shirt pocket, belt clip-on, and disposable batteries. Provide a holster for each transmitter.

2.5 PERSONAL ALARM RECEIVERS

A. Personal Alarm Receivers
   1. Manufacturer:
      a. Linear Model D-67.
   2. Receiver compatible with transmitter; auxiliary red LED with 1/4" lens, antenna, and 24 Volt DC buzzer with isolation diode.

2.6 PERSONAL ALARM RECEIVER ENCLOSURE

A. Housing Unit Chases:
   1. Manufacturer:
      a. Hoffman Model No. A-864CHSCFG.
      b. Or equal.
   2. Construction: Polycarbonate NEMA 4X with tamperproof hardware for inmate accessible areas and hinged cover, spacers that hold receivers minimum 2" from structural steel.
   3. Features: Knockouts as required, design for view of receiver alarm indicating LED, mounting hardware.

B. Assemble complete with receiver.

2.7 HORNS (3 TOTAL TO BE INSTALLED)

A. Manufacturer:
   1. Edwards Adaptation Model 5530.
   2. Federal Signal Model 300GC.
   3. Or equal.

B. 110 dBA minimum sound level at 10 feet on axis, 13 distinctive field programmable tone selection without replacement of parts, weatherproof construction, 24 Volt DC. Provide with backbox. Tone will be selected by CDC Representative.

2.8 STROBES

A. Exterior (5 Total to be installed, one at each of the exterior entry doors):
   1. Manufacturer:
      a. Federal Signal Model No. 131 ST with LWMB2 Mounting Kit.
      b. Edwards 97R-EK with WBR mounting kit.
      c. Or equal.
   2. Single Flash Unit, Weatherproof, 1000 effective candlepower and 2,000,000 peak candlepower intensity through a clear dome, 75-85 flashes/minute, red dome, 24 Volt DC. Designed to fit standard 4 inch square backbox.

B. Interior (5 Total to be installed at locations designated by Owner to provide adequate coverage):

1. Manufacturer:
   a. Federal Signal Model No. FB2PST with LWMB2 Mounting Kit.
   b. Edwards 98BR-G1 with WBR mounting kit.
   c. Or equal.
2. Single Flash Unit, 300 effective candlepower intensity through a clear dome, 80-90 flashes/minute, red dome, 24 Volt DC. Designed to fit standard 4 inch square backbox.

2.9 KEY RESET SWITCH

A. Manufacturer:
   1. Seco-Larm Model No. SS-095.
   2. Allcoswitch Model No. SWK-12-3.
   3. Or equal.

B. Key switch for tubular type security key. Momentary ON/Shunt OFF operation. Maintained OFF, springs back from ON position. Key removable from OFF position only. All switches keyed alike. Flush mounted, gasketed, weatherproof with 11 gauge brushed stainless steel cover plate and security screws. Designed to fit standard single-gang backbox.

2.10 KEY TEST SWITCH

A. Manufacturer:
   1. Seco-Larm Model No. SS-095.
   2. Allcoswitch Model No. SWK-12-3.
   3. Or equal.

B. Key switch for tubular type security key. Momentary ON/Shunt OFF operation. Maintained OFF, springs back from ON position. Key removable from OFF position only. All switches keyed alike but keyed differently than key reset switches.

C. Power Supply/Battery Back-up System: Combination multi-regulator, float mode battery charger/power supply with a vented, locking cabinet. Battery capacity for 24 hours of total system maximum normal load and subsequent 5 minute alarm condition. System shall have the following characteristics or features:
   1. Input Voltage: 120 VAC, 60 Hz, single phase.
   2. Output Voltage: 24 VDC, regulated.
   3. Ripple: .350 Vac (RMS) @4.0 amp load.
   4. Overcurrent Protection: AC Fuse, Battery Fuse, Electronically Limited Regulators.
   5. Battery Type: Lead Acid/Gell Cell.
   6. Front Panel Indicators: AC Presence, Fault.
   7. Trouble Conditions Reported: Low battery, loss of AC, blown battery fuse/removed, blown AC fuse/removed. Single common trouble alarm reported to FACP.
   8. Trouble Output: Form "C" relay contacts.

9. Recharge Time: the battery shall automatically recharge during the first 48 hours of power restoration after being discharged during a power outage.
10. Battery Size Safety Factor: In addition, the capacity of each battery shall be increased by a safety factor of 1.2.
11. Manufacturer:
    a. Alarm-SAF, AS/PS Series Power Supplies/Charges, Uninterruptible Power System with batteries.

PART 3 EXECUTION

3.1 INSTALLATION

A. Provide wiring in accordance with Section 260010 and as indicated.

B. Locate ceiling access doors or removable acoustic panels, where required, for access to all equipment located above ceilings.

C. Furnish exposed fasteners for key switches under provisions of Section 050553.

D. Set receiver codes per instructions provided by CPR and CDCR Representative.

3.2 WIRING

A. Provide wiring in accordance with Section 260010.

3.3 BATTERIES

A. Do not provide batteries until the Contractor is prepared to provide power.

B. Maintain charge on batteries in accordance with manufacturer's instructions after they are installed by the Electrical Contractor. Coordinate with Electrical Contractor.

3.4 INSTALLATION

A. Terminate personal alarm system inputs (receivers, reset key switches) and outputs (horns, strobes, annunciators) on the specified terminal block.

B. Extend power from supply/battery back-up system to personal alarm system relay boards.

C. Extend personal alarm system input and output signals to FACP as required.

D. CPR and CDCR Representatives to specify specific alarm tones to be programmed into the personal alarm horns for the building. Contractor responsible for programming all horns as required.

3.5 FIELD QUALITY CONTROL

A. Furnish installation instructions, wiring diagrams, receiver coding and buzzer requirements, drawings, and technical assistance to contractors performing the installation.

B. In presence of the CPR and CDCR Representatives test the personal alarm receiver zone.
   1. Confirm operation of each receiver by operating transmitter and visually or audibly monitoring the alarm LED on the receiver and noting the proper horn/strobe annunciation including time for annunciation.
   2. Test that there are no "dead" areas within the coverage zones; accomplish test with transmitter held vertically face up, vertically face down, and horizontally facing away from receivers from within the building, including special locations as directed by CDCR Representative.
   3. Document and submit test results by receiver and zone.

3.6 TESTING

A. The Contractor will be responsible for testing coverage of each zone and floor in the system. This contractor shall assist in the testing including providing personnel and equipment.

B. Provide 4 hours for each maintenance training session.

C. Provide 1 hour for end user training session.

3.7 COORDINATION WITH FIRE ALARM SYSTEM

A. The personal alarm system shall be integrated in to the fire alarm system, at the local control panel.

3.8 TRAINING

A. Conduct coincident with Fire Alarm System training.

END OF SECTION