

ADDENDUM NO. 1

**BID NO. 2022PW01
CHINO INSTRUCTIONAL BUILDING
FROM
PREQUALIFIED CONTRACTORS**

**CHAFFEY COMMUNITY COLLEGE DISTRICT
RANCHO CUCAMONGA, CALIFORNIA
COUNTY OF SAN BERNARDINO**

February 3, 2022



Chaffey College

CHAFFEY COMMUNITY COLLEGE DISTRICT
5885 Haven Avenue
Rancho Cucamonga, CA 91737

The following changes, additions, deletions, clarifications, or corrections shall become part of the Contract Documents for Chaffey Community College District Bid No. **2022PW01, Chino Instructional Building from Pre-Qualified Contractors** at the Chaffey College, Chino Campus, first advertised January 11, 2022. All other terms, specifications, and conditions remain the same. Each bidder is responsible for transmitting this information to all affected subcontractors and suppliers prior to the opening of bids. Each bidder shall acknowledge receipt of this Addendum on its Bid Form.

ITEM No. 1: Updates to Specification Sections

Item AD1.1:

Update to Specification Section 075500 – DELETE existing DSA approved Specification Section 075500 Modified Bituminous Membrane Roofing dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Specification Section 075500 Modified Bituminous Membrane Roofing dated January 28, 2022.

Item AD1.2:

Update to Specification Section 076200 – DELETE existing DSA approved Specification Section 076200 SHEET METAL FLASHING AND TRIM dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Specification Section 076200 SHEET METAL FLASHING AND TRIM dated January 28, 2022.

ITEM No. 2: Revised Detail

Item AD2.1:

Revise Detail 4/A10.43 – DELETE existing DSA approved Detail 4/A10.43 ROOF FLASHING AT THRU WALL SCUPPER ISOMETRIC dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Detail 4/A10.43 ROOF FLASHING AT THRU WALL SCUPPER ISOMETRIC dated January 28, 2022.

ITEM No. 3: Update Dimensions and Clean up

Item AD3.1:

Update Sheet S2.20A – DELETE existing DSA approved Sheet S2.20A, 2ND FLOOR FRAMING PLAN – SEGMENT A dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet S2.20A, 2ND FLOOR FRAMING PLAN – SEGMENT A dated January 28, 2022.

Item AD3.2:

Update Sheet S2.20B – DELETE existing DSA approved Sheet S2.20B, 2ND FLOOR FRAMING PLAN – SEGMENT B dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet S2.20B, 2ND FLOOR FRAMING PLAN – SEGMENT B dated January 28, 2022.

Item AD3.3:

Update Sheet S2.40A – DELETE existing DSA approved Sheet S2.40A, ROOF FRAMING PLAN – SEGMENT A dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet S2.40A, ROOF FRAMING PLAN – SEGMENT A dated January 28, 2022.

Item AD3.4:

Update Sheet S5.10 – DELETE existing DSA approved Sheet S5.10, EBF FRAME ELEVATIONS dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet S5.10, EBF FRAME ELEVATIONS dated January 28, 2022.

Item AD3.5:

Update Sheet S8.20 – DELETE existing DSA approved Sheet S2.80, STEEL SECTIONS AND DETAILS dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet S2.80, STEEL SECTIONS AND DETAILS dated January 28, 2022.

ITEM No. 4: Update of product data and clarification of conduit runs

Item AD4.1:

Update Sheet FA0.01 – DELETE existing DSA approved Sheet FA0.01, FIRE ALARM LEGEND, GENERAL NOTES, AND ABBREVIATIONS dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet FA0.01, FIRE ALARM LEGEND, GENERAL NOTES, AND ABBREVIATIONS dated January 28, 2022.

Item AD4.2:

Update Sheet FA1.21 – DELETE existing DSA approved Sheet FA1.21, FIRE ALARM SITE PLAN dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet FA1.21, FIRE ALARM SITE PLAN dated January 28, 2022.

Item AD4.3:

Update Sheet FA6.01 – DELETE existing DSA approved Sheet FA6.01, FIRE ALARM RISER dated August 19, 2021 and **REPLACE** with the attached DSA approved Addendum No.1, Sheet FA6.01, FIRE ALARM RISER dated January 28, 2022.

END OF ADDENDUM NO. 1 INCLUDING REFERENCED ENCLOSURES


Enclosures:

1. DSA FORM 140 WITH APPROVAL DATE OF JANUARY 28, 2022.
2. DSA approved Addendum No.1, Specification Section 075500 Modified Bituminous Membrane Roofing dated January 28, 2022.
3. DSA approved Addendum No.1, Specification Section 076200 SHEET METAL FLASHING AND TRIM dated January 28, 2022.
4. DSA approved Addendum No.1, Detail 4/A10.43 ROOF FLASHING AT THRU WALL SCUPPER ISOMETRIC dated January 28, 2022.
5. DSA approved Addendum No.1, Sheet S2.20A, 2ND FLOOR FRAMING PLAN – SEGMENT A dated January 28, 2022.
6. DSA approved Addendum No.1, Sheet S2.20B, 2ND FLOOR FRAMING PLAN – SEGMENT B dated January 28, 2022.
7. DSA approved Addendum No.1, Sheet S2.40A, ROOF FRAMING PLAN – SEGMENT A dated January 28, 2022.
8. DSA approved Addendum No.1, Sheet S5.10, EBF FRAME ELEVATIONS dated January 28, 2022.
9. DSA approved Addendum No.1, Sheet S2.80, STEEL SECTIONS AND DETAILS dated January 28, 2022.
10. DSA approved Addendum No.1, Sheet FA0.01, FIRE ALARM LEGEND, GENERAL NOTES, AND ABBREVIATIONS dated January 28, 2022.
11. DSA approved Addendum No.1, Sheet FA1.21, FIRE ALARM SITE PLAN dated January 28, 2022.
12. DSA approved Addendum No.1, Sheet FA6.01, FIRE ALARM RISER dated January 28, 2022.

APPLICATION FOR SUBMITTAL OF POST-APPROVAL DOCUMENT

This application is for submittal of documents, after the initial approval of the project (post-approval documents), that require Division of the State Architect (DSA) review and approval. This form shall be completed by the Design Professional in General Responsible Charge of the project, in accordance with California Code of Regulations, Title 24, Part 1, Sections 4-317, 4-323 and 4-338 and in compliance with DSA IR A-6: Construction Change Document Submittal and Approval Process.

DSA documents referenced within this form are available on the [DSA Forms](#) or [DSA Publications](#) webpages.

1. SUBMITTAL TYPE: (Is this a resubmittal? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>)			
Deferred Submittal <input type="checkbox"/>	Addendum Number: <u>001</u>	Revision Number:	CCD Number: _____ Category A <input type="checkbox"/> or B <input type="checkbox"/>
2. PROJECT INFORMATION:			
School District/Owner: <u>Chaffey Community College District</u>		DSA File Number: <u>36-C1</u>	
Project Name/School: <u>Chaffey College Chino Campus Instructional Building</u>		DSA Application Number <u>04</u> <u>119722</u>	
3. APPLICANT INFORMATION:			
Date Submitted: <u>01/19/22</u>	Attached Pages? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Number of pages? <u>36</u>		
Firm Name: <u>HMC Architects</u>	Contact Name: <u>Milad Sarkis</u>		
Work Email: <u>Milad.Sarkis@hmcarchitects.com</u>	Work Phone: <u>(909) 366-2315</u>		
Firm Address: <u>3546 Concours Street</u>	City: <u>Ontario</u>	State: <u>CA</u>	Zip Code: <u>91764</u>
4. REASON FOR SUBMITTAL: (Check applicable boxes)			
<input checked="" type="checkbox"/> For revision or addendum prior to construction.		<input type="checkbox"/> For a project currently under construction.	
<input type="checkbox"/> For a project that has a form DSA 301-N: Notification of Requirement for Certification, DSA 301-P: Posted Notification of Requirement for Certification or a 90-Day Letter issued.			
<input type="checkbox"/> To obtain DSA approval of an existing uncertified building or buildings.			
<input type="checkbox"/> For Category B CCD this is: <input type="checkbox"/> a voluntary submittal, <input type="checkbox"/> a DSA required submittal (attach DSA notice requiring submission).			
5. DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE:			
Name of the Design Professional In General Responsible Charge: <u>Kenneth H. Salyer</u>			
Professional License Number: <u>C-19082</u>		Discipline: <u>Architecture</u>	
Design Professional in General Responsible Charge Statement: The attached post-approval documents have been examined by me for design intent and appear to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications. They are acceptable for incorporation into the construction of the project.			
Signature: <u></u>		_____	
DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE			
6. CONFIRMATION, DESCRIPTION AND LISTING OF DOCUMENTS:			
For addenda, revisions, or CCDs: CHECK THIS BOX <input checked="" type="checkbox"/> to confirm that <i>all</i> post-approval documents have been stamped and signed by the Responsible Design Professional listed on form DSA 1: Application for Approval of Plans and Specifications for this project. (For Deferred Submittals, refer to IR A-18: Use of Construction Documents Prepared by Other Professionals, and IR A-19: Design Professional's Signature and Seal (Stamp) on Construction Documents, when applicable, for signature and seal requirements.)			
Provide a brief description of construction scope for this post-approval document (attach additional sheets if needed): <u>Updates to specification sections 07 55 00 & 07 62 00. Revised Detail 4/A10.43. Update missing dimensions & clean up on sheets S2.20A, S2.20B, S2.40B, S5.10, S8.20. Update New FA product data on FA0.01, clarification on conduit run on FA1.21, and FA6.01.</u>			
List of DSA-approved drawings affected by this post-approval document: <u>Specifications - Section 07 55 00, 07 62 00, Drawings - A10.43, S2.20A, S2.20B, S2.40A, S5.10, S8.20, FA0.01, FA1.21, FA6.01</u>			

DSA USE ONLY		
	Returned	DSA STAMP
SSS <u>DW</u> Date <u>01/20/2022</u> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Required Comments: _____	Date: <u>02/01/2022</u>	<div style="border: 2px solid black; border-radius: 15px; padding: 10px; text-align: center;"> <p>APPROVED DIV. OF THE STATE ARCHITECT</p> <p>APP: 04-119722 INC:</p> <p>REVIEWED FOR</p> <p>SS <input checked="" type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input checked="" type="checkbox"/></p> <p>DATE: <u>01/28/2022</u></p> </div>
FLS <u>JA</u> Date <u>01/25/2022</u> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Required Comments: _____	By: <u>DP</u>	
ACS <u>SL</u> Date <u>01/28/2022</u> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Required Comments: _____		

SECTION 07 55 00

MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Cold Applied 2-Ply Asphalt Roofing
- B. Accessories
- C. Edge Treatment and Roof Penetration Flashings
- D. Related Sections:
 - 1. Section 07 21 13, Rigid Thermal Insulation.
 - 2. Section 07 21 15, Tapered Insulation.
 - 3. Section 07 62 00, Sheet Metal Flashing and Trim.
 - 4. Section 09 29 00, Gypsum Board.

1.02 REFERENCES

- A. Conform to current adopted reference standards by date of issue of the current code cycle and the date of the Contract Documents.
- B. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- C. Factory Mutual Research (FM): Roof Assembly Classifications.
- D. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- E. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- F. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- G. Warnock Hersey (WH): Fire Hazard Classifications.
- H. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- I. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- J. UL - Fire Resistance Directory.

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- K. California Title 24 Energy Efficient Standards.

1.03 DESIGN / PERFORMANCE REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a WH Class rating for roof slopes indicated on the Drawings as follows:
 - 1. Warnock Hersey Class A Rating.

1.04 DESIGN REQUIREMENTS:

- A. Uniform Wind Uplift Load Capacity
 - 1. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
 - a. Design Code: ASCE 7, Method 2 for Components and Cladding.
 - b. Wind Speed: 110 mph, unless noted otherwise on Drawings
- B. Roof system shall have been tested in compliance with the following codes and test requirements:
 - 1. International Code Council Evaluation Service (ICC-ES):
 - a. Membrane Systems
 - 1) ESR

1.05 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions.
- B. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.
- C. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- D. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- E. Applicator Qualifications: Submit manufacturer's written acceptance of applicator stating contractor is qualified to install system and receive specified warranty.

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- F. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- G. Manufactures Inspections: Provide letter from corporate officer of manufacture stating intent to provide inspections (5) per week, during project as outlined in section 3.8 "Field Quality Control".
- H. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- I. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.07 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to commencing Work of this section.

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- B. Review installation procedures and coordination required with related Work.
- C. Inspect and make notes of job conditions prior to installation:
 - 1. Record minutes of the conference and provide copies to all parties present.
 - 2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
 - 3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.09 COORDINATION

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

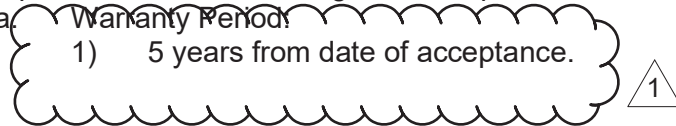
1.10 PROJECT CONDITIONS

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

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1.11 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including Garland Metal Components.
- B. Warranty Period:
 - 1. 30 years from date of acceptance.
 - 2. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
 - a. Warranty Period:
 - 1) 5 years from date of acceptance.



PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company, Inc. Cleveland, OH.
- B. Or approved equal in accordance with Division 01, General Requirements for Substitutions.

2.02 COLD APPLIED 2-PLY ROOF

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 - 1. HPR Glasbase
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressPly Plus FR Mineral:
- D. Interply Adhesive: (1 and 2)
 - 1. Weatherking Plus WC:
- E. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressPly E FR Mineral:

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- G. Flashing Ply Adhesive:
 - 1. Weatherking Flashing Adhesive:
- H. Surfacing: Requires 30 day wait before applying.
- I. Surface Coatings:
 - 1. Pyramic:
 - 2. LiquiTec: In water ways and around drains only.

2.03 ACCESSORIES

- A. Roof Cover Board: Refer to Section 09 29 00, Gypsum Board.
- B. Insulation: Refer to Section 07 21 13 and Section 07 21 15.
- C. Roof Mats: Manufacturer's standard roof walkway mats for specified roofing system.

2.04 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.
- B. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- C. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.
- D. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.
- E. Liquid Flashing - Tuff-Flash: An asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.
 - 1. Tensile Strength, ASTM D 412: 400 psi
 - 2. Elongation, ASTM D 412: 300%
 - 3. Density @77 deg. F 8.5 lb/gal typical
- F. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07 62 00.
 - 1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.
- G. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07 62 00.

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1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Verify roof insulation and cover board have been installed per manufacturer's installation instructions.
- F. Beginning installation means acceptance of substrate.

3.02 PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.
- B. Metal Deck: Metal deck shall be installed as specified in Section

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1. Fastening of the deck should comply with the anticipated live and dead loads pertaining to the building as well as applicable Code.
2. Steel decks shall be minimum 22-gauge factory galvanized or zinc alloy coated for protection against corrosion.
3. Suitable insulation shall be mechanically attached as recommended by the insulation manufacturer.
4. Decks shall comply with the gauge and span requirements in the current Factory Mutual FM Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.
5. When re-roofing over steel decks, surface corrosion shall be removed, and repairs to severely corroded areas made. Loose or inadequately secured decking shall be fastened, and irreparable or otherwise defective decking shall be replaced.

C. Lightweight Insulating Concrete Deck

1. Lightweight insulating concrete decks are required to have a minimum thickness of 2 inches (51 mm), a minimum compressive strength of 125 psi (0.86 MPa) and a minimum density of 22 pcf (352 kg/sm).
2. Install roof system immediately following deck curing to prevent damage from exposure to precipitation. The deck manufacturer determines the minimum curing time and maximum exposure limitations.
3. LWIC shall not be poured during rainy periods. Deck areas that have frozen before they have cured shall be removed and replaced. Decks which receive precipitation prior to installation of the roof membrane shall be checked for moisture content and dryness.
4. Lightweight insulating concrete decks are acceptable only on slopes up to 1 inch per foot (83 mm/m).
5. Do not attach insulation directly to lightweight concrete decks. Over old, dry decks, additional board insulation may be solidly mopped to an approved mechanically attached anchor sheet (base sheet).

3.03 INSTALLATION - GENERAL

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
 1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40

degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.04 INSTALLATION COLD APPLIED ROOF SYSTEM

- A. Base Ply: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
- B. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 - 1. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 - 2. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
 - 3. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 - 4. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 - 5. Install base flashing ply to all perimeter and projection details.
 - 6. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- C. Modified Cap Ply(s): Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.
 - 1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 - 2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.

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3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
 6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.
- D. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- E. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
 2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
 3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
 4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.
- F. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07 62 00. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- G. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- H. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.

4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

I. Flashing Cap Ply:

1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

J. Surface Coatings: Apply roof coatings in strict conformance with the manufacturer's recommended procedures. Coating can only be applied after a 30-day waiting period following installation of all membrane.

K. Install roof mats per manufacturer's installation instructions.

3.05 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. Metal Edge:

1. Inspect the nailers to assure proper attachment and configuration.
2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
3. Install continuous cleat and fasten at 6 inches (152 mm) o.c.

4. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailers every 3 inches (76 mm) o.c. staggered.
 5. Prime metal edge at a rate of 100 square feet per gallon and allow to dry. Do not prime for Green-Lock System lightly sand metal to improve bond.
 6. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) on to the field of roof. Assure ply laps do not coincide with metal laps.
 7. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Seal outside edge with rubberized cement.
- B. Roof Edge With Gutter:
1. Inspect the nailer to assure proper attachment and configuration. Increase slope at metal edge by additional degree of slope in first board.
 2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
 3. Install gutter and strapping.
 4. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
 5. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailer every 3 inches (76 mm) o.c. staggered.
 6. Prime metal edge at a rate of 100 square feet per gallon and allow to dry. Do not prime for Green-Lock System lightly sand metal to improve bond.
 7. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) onto the field of the roof. Assure ply laps do not coincide with metal laps.
 8. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof.
- C. Scupper Through Wall:
1. Inspect the nailer to assure proper attachment and configuration.
 2. Run one ply over nailer, into scupper hole and up flashing as in typical wall flashing detail. Assure coverage of all wood nailers.
 3. Install a scupper box in a 1/4 inch (6 mm) bed of mastic. Assure all box seams are soldered and have a minimum 4 inch (101 mm) flange. Make sure all corners are closed and soldered. Prime scupper at a rate of 100 square feet per gallon and allow to dry.
 4. Fasten flange of scupper box every 3 inches (76 mm) o.c. staggered.
 5. Strip in flange of scupper box with base flashing ply covering entire area with 6 inch (152 mm) overlap on to the field of the roof and wall flashing.
 6. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams.
- D. Coping Cap:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 3. Attach tapered board to top of wall.

4. Install base flashing ply covering entire wall and wrapped over top of wall and down face with 6 inches (152 mm) on to field of roof and set in cold asphalt. Nail membrane at 8 inches (203 mm) o.c.
 5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams and allow to cure and aluminize.
 6. Install continuous cleat and fasten at 6 inches (152 mm) o.c. to outside wall.
 7. Install new metal coping cap hooked to continuous cleat.
 8. Fasten inside cap 24 inches (609 mm) o.c. with approved fasteners and neoprene washers through slotted holes, which allow for expansion and contraction.
- E. Surface Mounted Counterflashing/Coping Cap:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of roof.
 4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams and allow to cure and aluminize.
 5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
 6. Secure counterflashing set on butyl tape above flashing. Fasten 8 inches (203 mm) o.c. and caulk top of counterflashing.
 7. Attach tapered board to top of wall (minimum slope 1/4 -12). Do not use organic fiberboard or perlite.
 8. Cover tapered board and all exposed wood with base flashing ply. Fasten inside and out at 8 inches (203 mm) o.c.
 9. Install continuous cleat and fasten at 6 inches (152 mm) o.c. to outside wall.
 10. Install new metal coping cap hooked to continuous cleat.
 11. Fasten inside of cap 24 inch (609 mm) o.c. with approved fasteners and neoprene washers.
- F. Surface Mounted Counterflashing:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
 4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
 5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
 6. Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.
- G. Reglet Mounted Counterflashing:

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1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
6. Cut reglet in masonry one joint above flashing.
7. Secure reglet counterflashing with expansion fasteners and caulk reglet opening.

H. Expansion Joint:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Chamfer top of curb. Prime vertical curb at a rate of 100 square feet per gallon and allow to dry.
2. Mechanically attach wood cant to expansion joint nailers. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install compressible insulation in neoprene cradle.
4. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
6. Install pre-manufactured expansion joint cover. Fasten sides at 12 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.

I. Equipment Support:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install pre-manufactured cover. Fasten sides at 24 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.
6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

J. Curb Detail/Air Handling Station:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install pre-manufactured counterflashing with fasteners and neoprene washers or per manufacturer's recommendations.
6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

K. Skylight:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of wood nailer and apply a three-course application of mastic and mesh. Allow to cure and aluminize.
5. Install pre-manufactured lens and fasten flashing sides at 8 inches (203 mm) o.c. with fasteners and neoprene washers.

L. Exhaust Fan:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply installed over the base flashing ply, 9 inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install metal exhaust fan over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendation.

M. Passive Vent/Air Intake:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb with 6 inches (152mm) on to the field of the roof.
4. Install a second ply of modified flashing ply installed over the base flashing ply, 9 inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.

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5. Install passive vent/air intake over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendations.

N. Roof Drain:

1. Plug drain to prevent debris from entering plumbing.
2. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
3. Run roof system plies over drain. Cut out plies inside drain bowl.
4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
5. Install base flashing ply (40 inch square minimum) in bitumen.
6. Install modified membrane (48 inch square minimum) in bitumen.
7. Install clamping ring and assure that all plies are under the clamping ring.
8. Remove drain plug and install strainer.
9. Install LiquidTec Coating around all drains in 6'x6' area at 5 gallons per square according to manufactures requirements.

O. Plumbing Stack:

1. Minimum stack height is 12 inches (609 mm).
2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
4. Install base flashing ply in bitumen.
5. Install membrane in bitumen.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.

P. Heat Stack:

1. Minimum stack height is 12 inches (609 mm).
2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
4. Install base flashing ply in bitumen.
5. Install modified membrane in bitumen.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Install new collar over cape. Weld collar or install stainless steel draw band.

3.06 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

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3.07 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.08 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations at least (5) days per week. Provide a final inspection upon completion of the Work.
 - 1. Warranty shall be issued upon manufacturer's acceptance of the installation.
 - 2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
 - 3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.09 SCHEDULES

- A. Base (Ply) Sheet:
 - 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50mm/min @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

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B. Modified Cap (Ply) Sheet:

1. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

C. Interply Adhesive:

1. Weatherking Plus WC: Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
 - a. Non-Volatile Content ASTM D 4479 78%
 - b. Density ASTM D1475 9.0 lbs./gal.
 - c. Viscosity Stormer ASTM D562 900-1100 grams
 - d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
 - e. Slope: up to 2:12
 - f. V.O.C. ASTM D 3960 Less than 250 g/l
 - g. Flash Point ASTM D 93 105 deg. F
 - h. Slope maximum 1:12

D. Flashing Base Ply:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147
 - 1) Passes -40 deg. F (-40 deg. C)

E. Flashing Ply Adhesive:

1. Weatherking Flashing Adhesive: Brush grade flashing adhesive.
 - a. Non-Volatile Content ASTM D 4479 70 min.
 - b. Density ASTM D 1475 8.6 lbs./gal. (1kg/l)
 - c. Flash Point ASTM D 93 100 deg. F (37 deg. C)

F. Surfacing:

1. Flashing Cap (Ply) Sheet:

a. StressPly E FR Mineral (Environmental): 160 mil SBS and SIS (Styrene-Butadiene-Styrene and Styrene-Isoprene-Styrene) mineral surfaced rubber modified roofing membrane with fire retardant characteristics and reinforced with a dual fiberglass scrim and polyester scrim. ASTM D 6162, Type III Grade G

1) Tensile Strength, ASTM D 5147

a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf/in XD 550 lbf/in

b) 50 mm/min. @ 23 +/- 2 deg. C MD 87.5 kN/m XD 96.25 kN/m

2) Tear Strength, ASTM D 5147

a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 900 lbf XD 950 lbf

b) 50 mm/min. @ 23 +/- 2 deg. C MD 4003 N XD 4226 N

3) Elongation at Maximum Tensile, ASTM D 5147

a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6.0% XD 6.0%

b) 50 mm/min. @ 23 +/- 2 deg. C MD 6.0% XD 6.0%

4) Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F(-40 deg.)

2. Surface Coatings:

a. Surfacing:

1) Pyramic: White elastomeric roof coating, Energy Star approved acrylic roof coating:

a) Weight/Gallon 12 lbs./gal. (1.44 g/cm³)

b) Non-Volatile % (ASTM D 1644) 66 min

c) Reflectance 81%

2) LiquiTec: Highly reflective multi-purpose, zero VOC, dual-component polyurea, liquid waterproofing membrane. VOC compliant and meets South Coast AQMD standards.

a) Tensile Strength: ASTM D 412, 2100 psi

b) Tear Resistance: ASTM D 624, 449 lbs./in

c) Elongation: ASTM D 412, 210%

d) Density @ 77 degrees F (25 degrees C, ASTM D 2939) 10.4 lb./gal (1.2 g/m³)

e) Flash Point: ASTM D 93, 110 degrees F min. (43 degrees C)

f) Non-Volatile: ASTM D 75, Typical 83%

g) Viscosity @ 77 degrees F (25 degrees C); Brookfield RVT, #4 Spindle 10 rpm 9200 cP

h) Wet Film Thickness @ 2 gal./100 sq. ft. (0.82 l/m²)

i) VOC: 0 g/l

j) Reflectance: 0.84

k) Emittance: 0.88

l) SRI: 105

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Wall Flashing.
2. Parapet Copings and Flashings.
3. Fascias and scuppers.
4. Roof flashings.
5. Reglets and counterflashing.
6. Roof joint cover flashings.
7. Downspouts and Strainers.
8. Conductor Heads.
9. Gravel Stops.
10. Counterflashings for roof hatches and skylights.
11. Interior Roof Drains.
12. Flashings for electrical conduits, mechanical lines and plumbing water lines roof [and wall] penetrations.
13. Door drips.
14. Equipment Roof Curbs and Flashing.
15. Equipment support stand penetrations.
16. Closures
17. Sill Pan Flashings.
18. Termination Bars.

B. Related Section:

1. Section 01 35 42, CALGreen Requirements.
2. Section 09 90 00, Painting.

1.02 REFERENCE STANDARDS

- A. Conform to current adopted reference standards by date of issue of the current code cycle and the date of the Contract Documents.
- B. California Building Code 2019 Chapters 14 and 15.
- C. California Green Building Standards Code, CALGreen - 2019.
- D. American Society for Testing and Materials (ASTM)
 1. ASTM A480/A480M- General Requirements for Flat-Rolled Stainless Steel and Heat Resisting Steel Plate, Sheet, and Strip.
 2. ASTM A653/A653M-11 - Sheet Steel, Zinc-Coated (Galvanized) or Zinc - Iron Alloy Coated by the Hot-Dip Process
 3. ASTM B32 - Solder Metal
 4. ASTM D4601 - Asphalt-Coated Glass Fiber Base Sheet Used in Roofing

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- E. National Roofing Contractors Association (NRCA)
 - 1. NRCA Manual - Fifth Edition.
- F. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
 - 1. SMACNA Manual - Architectural Sheet Metal Manual, Current Edition

1.03 SUBMITTALS

- A. Shop drawings showing material profile, jointing pattern, jointing details, fastening methods and installation details.
- B. Product data.
- C. CALGreen Submittals:
 - 1. Product Data Sheets and Declaration Statements showing compliance with CALGreen Code per 1.04.A.
- D. Manufacturer's installation instructions.
- E. Samples for each type of sheet metal flashing and trim indicated with field-applied color finishes.

1.04 QUALITY ASSURANCE

- A. California Green Building Standards Code, CALGreen - 2019.
 - 1. Adhesives, sealants, primers and caulks shall comply with air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, per CALGreen Tables 5.504.4.1 and 5.504.4.2.
 - 2. Paints and Coatings shall comply with VOC limits in Table 1 of the ARB, per CALGreen Table 5.504.4.3.

1.05 STORAGE AND HANDLING

- A. Stack preformed and pre-finished material to prevent twisting, bending, or abrasion and to provide ventilation.
- B. Prevent contact with materials during storage that may cause discoloration, staining or damage.

PART 2 - PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M-11, G90.

2.02 ACCESSORIES

- A. Fasteners: round head, galvanized steel with soft neoprene washers at exposed fasteners. Finish exposed fasteners same as flashing metal.

- B. Ice Dam Underlayment: 45 mil thick self-adhering high-temperature underlayment, R-Mer Seal by The Garland Company, or equal as approved in accordance with Division 01 for substitutions.
- C. Metal Primer: For repair of Galvanized sheet metal, Zinc type, Galvilite by ZRC or equal.
- D. Protective Backing Paint: Bituminous.
- E. Sealant: Two-component, polyurethane-type specified in Section 07 92 00, Joint Sealants.
- F. Solder: ASTM B32; Grade Sn50, flux type and alloy composition as required for use with metals to be soldered. Raw muriatic acid for galvanized steel.
- G. Rosin-Sized sheathing paper: Sealtight Red Rosin Paper by W.R. Meadows.
- H. Termination Bar: Mill finished Extruded aluminum (6063 alloy) with radius corners.

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square and free from distortion or defects. Fabricate all components per SMACNA standards unless more stringent conditions are imposed by the Roofing Contractor, in that case the more stringent conditions shall prevail.
- B. Fabricate cleats and starter strips of same material as sheet, interlockable with sheet.
- C. Form pieces in longest practical lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.
- F. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- G. Solder lap seams of all non-moving metal joints and seal other metal joints, rivet to strengthen seam. After soldering, remove flux. Wipe and wash solder joints clean.
- H. Fabricate corners from one piece with minimum 18 inch long legs; solder seam for rigidity.
- I. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- J. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and break edges.

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- K. Provide expansion joints for gutters at every 30 feet. Fabricate per SMACNA details.

2.04 FINISH

- A. Galvanized finish: ASTM A653/A653M-11, G90.
- B. Shop prepare and prime exposed ferrous metal surfaces.
- C. Back paint concealed metal surfaces with protective backing paint when in contact with copper, redwood or red cedar.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place and nailing strips located.
- B. Verify membrane termination and base flashings are in place, sealed and secure.
- C. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

- A. Field measure site conditions prior to fabricating Work.
- B. Install starter and edge strips and cleats before starting installation.
- C. Install reglets true to lines and levels. For surface-mounted seal top of reglets with sealant.
- D. Insert counterflashings into reglets to form tight fit. Seal flashings into reglets with sealant.
- E. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Architect.
- F. Lock and seal all joints.
- G. Apply plastic-cement compound between metal flashings and felt flashings.
- H. Install separate layer(s) of metal strips, counter flashings, and aluminum tapes prior to Ice Dam Underlayment installation where adjoining EPDM, TPO, or PVC membranes.
- I. Fit flashings tight in place. Make corners square, surfaces true and straight in planes and lines accurate to profiles.
- J. Seal metal joints watertight.

3.03 INSTALLATION

- A. Wall Flashing: Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect it to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashings with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting trim, Section 1405.3 CBC.
1. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
 2. Openings Flashing in Frame Stud Construction: Install continuous head, sill, jamb, and similar opening flashings to extend 4 inches beyond wall openings. Install over self-adhesive flashings.
 3. Sealants for penetrations: specified in section 07 92 00 Joint Sealers.
 4. Submit shop drawings showing details for approval and use minimum of 24 gauge galvanized steel, UNO.

1

- B. Parapet Copings and Flashings: Fabricate in minimum 96-inch long, but not exceeding 10-foot long sections. Use minimum 22-gauge galvanized steel. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Provide all copings and caps of the types and shapes indicated on the Drawings. Install Self-Adhesive Flashing (Ice dam, high temperature) under copings. Build in integral expansion joints allowing for movement of the metal without resulting in distortion of coping or leaks of any kind. Miter corners, seal, and solder watertight. All Work shall be watertight.

1

- C. Copings at top of wall:
1. Copings: Manufactured coping system consisting of formed metal coping cap in section lengths not exceeding 12 feet, concealed anchorage, concealed splice plates with same finish as coping caps, mitered corner units, and end cap units.
 - a. Manufacturers:
 - 1) R-Mer Edge Coping by The Garland Company.
 - 2) Or equal in accordance with Division 01, Substitutions
 - b. Coping Caps: fabricated from the following exposed metal.
 - 1) Galvanized Steel: 22-Gauge.
 - c. PVDF Finish, Coping Cap Color: As selected by Architect from manufacturer's full range.
 - d. Corners: Continuously welded.
 - e. Manufacturer's standard transitions, end caps, and attachments.

- D. Fascias and Scuppers: Fabricate to detail of 20 gauge galvanized sheet. Apply sealant in all crevices. Fabricate scuppers with 6 inch flanges.

- E. Roof Flashings: Provide roof flashings as indicated in drawings and required to complete entire project. Submit shop drawings showing details for approval, use minimum of 24 gauge galvanized steel.

- F. Reglets and Counterflashings: Minimum 24 gauge galvanized steel as detailed in drawings, submit shop drawings.
 - 1. Reglets: For Surface-mounted and imbed applications.
 - 2. Counterflashings: Over bituminous base flashings.
 - 3. Counterflashings: Roof mounted mechanical equipment and vent stacks.
 - 4. Counterflashings: Roof Hatches and Skylights.
- G. Roof Joint Cover Flashings: Provide roof joint covers as indicated in drawings. Submit shop drawings showing details for approval and use minimum of 24 gauge galvanized steel. Fabricate tops slope to drain.
- H. Refrigerant Plumbing Lines Wall Flashing: Titan Outlet by Airex Manufacturing, Thousand Palms, CA or equal. Size as required to enclose pipes.
- I. Downspouts and Strainers: Downspouts shall be 24 gauge, galvanized steel, rectangular unless noted otherwise. Strainers shall be 10 gauge galvanized steel wire basket type. Provide all anchor clips and straps as required for installation. Install a wire basket strainer in all downspouts at gutter level. Rivet and solder flange of downspout to gutters per SMACNA details. Locate downspouts every 30 feet unless otherwise noted on drawing. Provide splash pans. Concrete splash block, Section 03 48 00.
 - 1. At steel pipe overflow-drain and interior drain pipe leaders install Downspout Nozzle #1770 by JR Smith, Montgomery, Alabama. Nickel bronze with bird screen cast bronze body and flange. Refer to Drawings for pipe sizes and locations of drains and leaders. Minimum pipe size Schedule 40, 4 [6] inches, galvanized.
 - 2. Downspout Filter: FlowGard by KriStar Enterprises, Inc., Santa Rosa, CA. Model FG-DS4, 4" diameter, box size 14 x 29 x 7.5 inches, dual-wall geotextile fabric liner encapsulating absorbent, surfaced mounted unit. Locate at each pipe drain.
- J. Conductor Heads: Provide conductor heads per SMACNA Figure 1-25, Design 1-25F unless Design Number noted otherwise; 24 gauge Galvanized sheet metal.
- K. Gravel Stops: Fabricate of 24 gauge galvanized steel. Form true-to-line and detail as indicated. Provide formed corners locked and soldered full, with flashing flanges at least 4 inches under overlapping roofing materials and with aprons formed to straight lines. Install gravel stops in full bed of plastic cement and nail at 6 inch centers. All joints in gravel stops shall be butt type with back-up plates 12 inches long, of same gauge and profile as the gravel stop. Wipe all exposed surfaces clean. Protect adjacent, exposed surfaces from plastic cement smears and stains.
- L. Counterflashings for roof hatches and skylights: 24 gauge sheet metal flashing, removable, per NRCA BUR/MB-14.
- M. Interior Roof Drains: Provide 16 oz. Copper 30" x 30" [0.024" Stainless steel] flashing at single roof drains and 30" x 48" at drain and overflow drain unit.
 - 1. Refer to drawings.

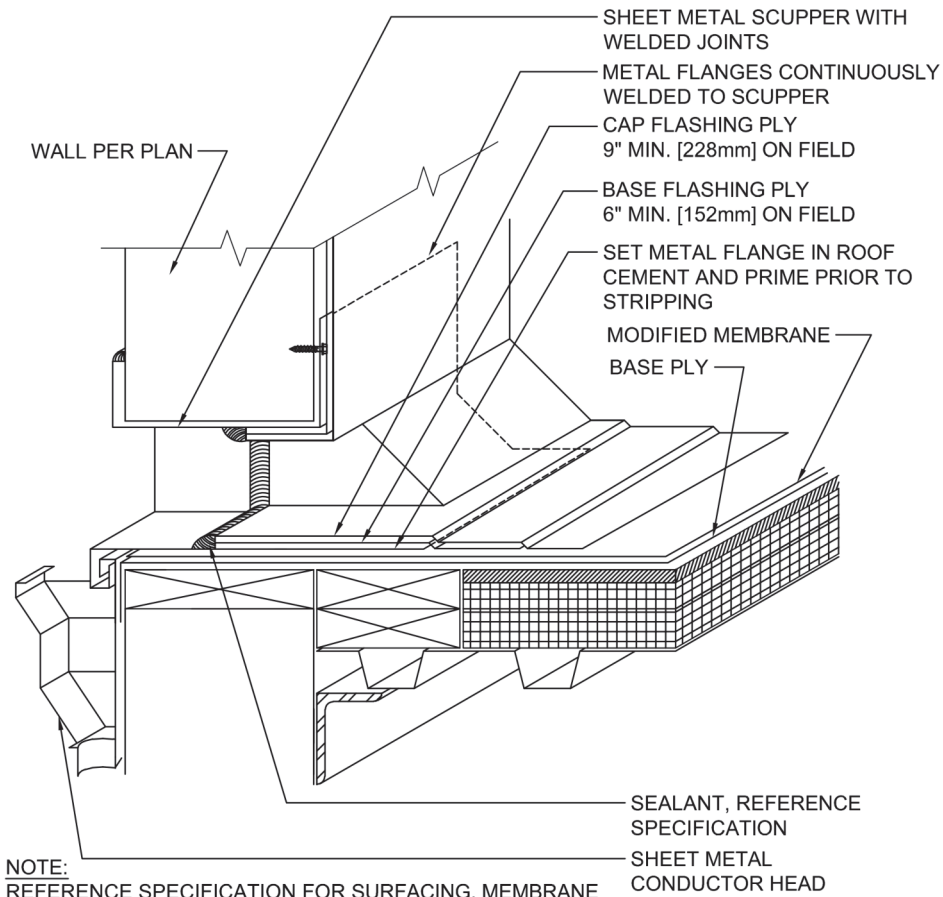
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- N. Roof Pipe Penetrations Flashings: Provide pre-manufactured flashings and counterflashings for pipe penetrations for electrical conduits, mechanical and plumbing lines. Flashing: galvanized steel., with 6" flange. Field seal top of cast-iron counterflashing with silicone sealant per Section 07 92 00, secure to pipe with set screw.
1. Model 1100-4 Series by Elmdor/Stoneman, City of Industry, CA: For single pipe penetrations and 1100-5 Series for vents.
 2. Model 910 Future Flash and 915 Multi-Flash Adaptors by Elmdor/Stoneman, City of Industry, CA: Multiple-pipe penetrations, within single pre-manufactured flashing unit: Counterflashing: PVC cap, adapter base and compression nut. Compression rings and gasket. Install per manufacturer's instructions.
- O. Window drips at heads of all doors and windows in exterior walls where no roof or overhead protection occurs :
1. At non-recessed or flush conditions: Provide drips of aluminum metal, extend drips 2-inches beyond jambs. Product: Superior Metal Trim SWD Superior Window Drip for 7/8" thick plaster, 2" leg, No. SWD 078-200A, or equal.
 2. At recessed or soffit conditions: Provide drips of aluminum, alloy 6063 T5, clear anodized. Product: Fry Reglet Drip Screed, non-vented, No. DS-875-875 or equal.
- P. Equipment Roof Curbs and Flashing: Fabricate equipment roof curbs with 20 gauge galvanized steel, not less than 8" high, with 6" flanges, full welded construction. Provide curb flashings and counterflashings, 24 gauge galvanized sheet metal fully soldered and mitered corners. Lengths, sizes, quantities, and location to completely flash roof equipment curbs.
- Q. Roof Penetrations: Equipment support stand penetrations; 8" high Flashing Collar flanged 6", overlapped 4" by Rain Collar, 24 gauge [26 gauge stainless steel] components, secured with stainless steel drawband sealed top with polyurethane sealant. Stripping and roofing cement products per Roofing Section. Pitch pockets not permitted.
- R. Miscellaneous: Provide miscellaneous flashings as indicated in drawings and required to complete entire project, except for items provided under other Sections. Submit shop drawings showing details for approval and use minimum of 24 gauge galvanized steel.
1. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
- S. Galvanized sheet metal plaster reveals: 24 gauge sheet metal reveal moldings as detailed and as specified herein. Form molding flanges with screed to slope and drain moisture away from plaster. Paint Finish: Per Section 09 90 00, Special Coatings. Color as selected by Architect.
- T. Sill Pans and Window Flashings: Window, door and storefront sill/jamb pans per SMACNA, ASTM E2112 or manufacturer's recommendations. Sill pans: Fabricate from 24 galvanized sheet metal fully soldered seams , minimum 4" high returns at window openings, 1/2" turnup at back.

3.04 FINISH

- A. Paint exposed metal flashings with High Performance paints in accordance with Section 09 90 00, for Special Coatings. Colors to be selected by Architect.
1. Parapet Coping to match metal panel color where adjacent.
 2. Parapet Coping to match curtain wall color (clear anodized) where adjacent.
 3. Parapet Coping to match plaster color where adjacent.

END OF SECTION



NOTE:
 REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

APPROVED
 DIV. OF THE STATE ARCHITECT

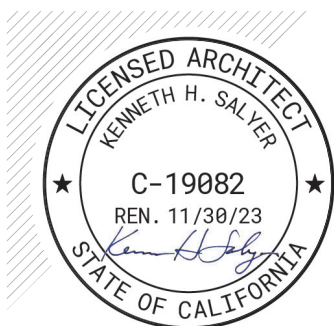
APP: 04-119722 INC:

REVIEWED FOR

SS FLS ACS

DATE: 01/28/2022

ROOF FLASHING AT THRU WALL SCUPPER ISOMETRIC | 4



Project:
CHAFFY COLLEGE CHINO CAMPUS - CHINO INSTRUCTIONAL BUILDING
 CHAFFEY COLLEGE

DIVISION OF THE STATE ARCHITECT FILE NO: 36-C1
 A# 04-119722

Reference Drawing: A10.43
ROOF DETAILS

Scale: NTS
Project No: 5009006000
Date: 01/19/2022
Drawing No: ASK-001

Addendum:
 1

DATE PLOTTED: 06/17/2021 10:45:00 AM

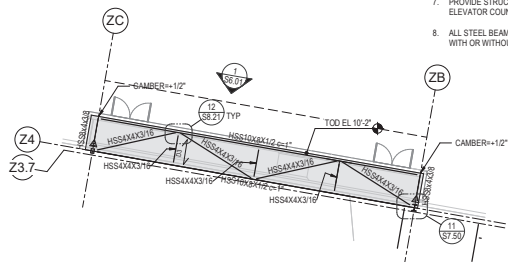
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FRAMING PLAN NOTES

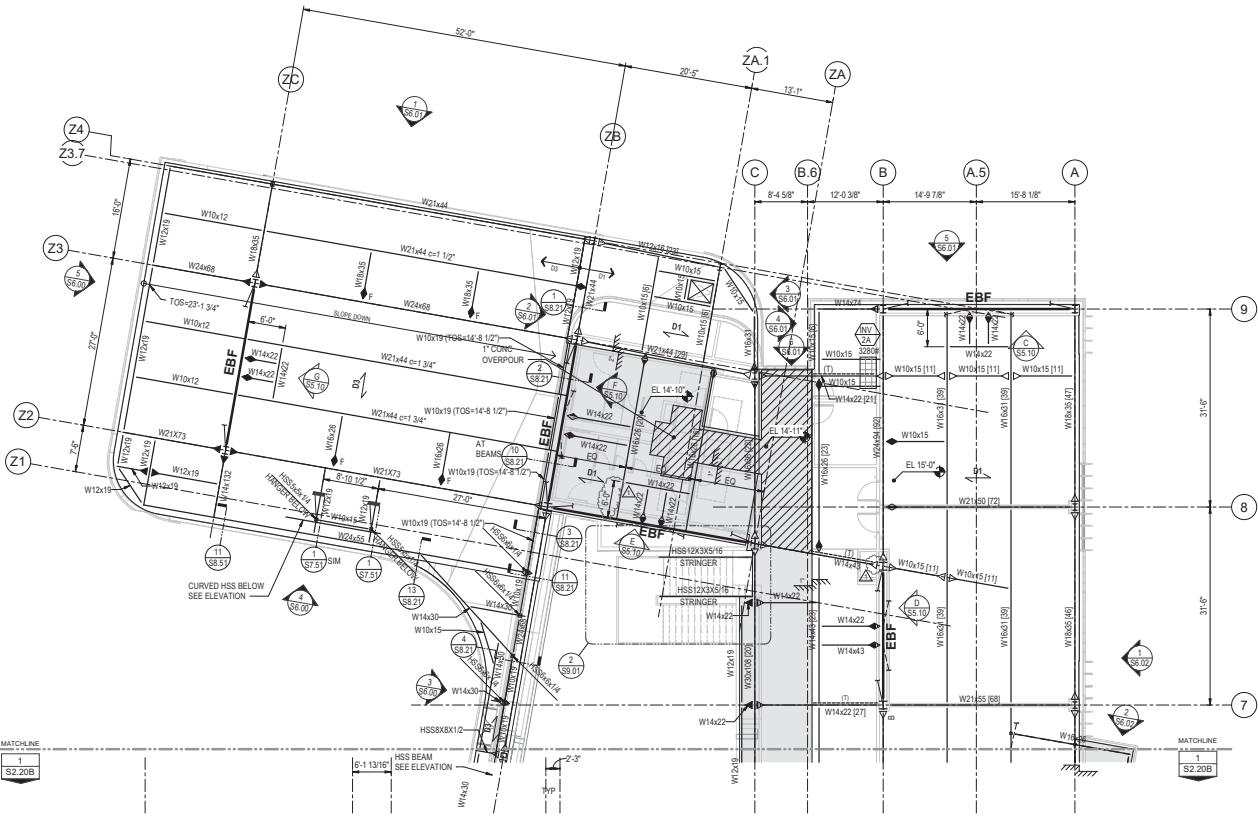
- FOR GENERAL NOTES SEE 80X SERIES SHEETS. TYPICAL DETAILS OCCUR THROUGHOUT THESE STRUCT DWGS IN ADDITION TO THOSE ON S2X SERIES SHEETS.
- VERIFY CONC SLAB ELEVATIONS INCLUDING SLAB DEPRESSIONS, SLOPES, OPINGS, CURBS, DRAINS, TRENCHES, & SLAB EDGE LOCATIONS, & WALL OVERALL DIMENSIONS INCLUDING LOCATIONS OF OPINGS WITH ARCHITECTURAL DWGS.
- SEE ARCHITECTURAL DWGS FOR REMAINDER OF DIMENSIONS & ELEVATIONS NOT SHOWN ON STRUCT DWGS. VERIFY ALL DIMENSIONS & ELEVATIONS WITH ARCHITECTURAL DWGS PRIOR TO START OF WORK.
- CENTER COLUMNS ON GRIDLINES UNO.
- SPACE BEAMS EQUALLY BETWEEN COLUMNS & GIRDERS UNO.
- LOCATE TOP OF STRUCT STEEL ELEVATION (TOS) FROM DATUM TOP OF SLAB ELEVATION MINUS TOTAL SLAB THICKNESS (T) PER 2 / S0.51 UNO.
- PROVIDE STRUCTURAL STEEL FRAMING TO SUPPORT ELEVATOR GUIDERAILS AND ELEVATOR COUNTERWEIGHTS PER 1 / S0.91
- ALL STEEL BEAMS SUPPORTING CONCRETE OVER METAL DECK SHALL MEET 1/50.51 WITH OR WITHOUT STUDS INDICATED ON THE PLANS.

FRAMING LEGEND

- EL XXX'-XX" DATUM TOP OF STRUCT SLAB ELEVATION - VERIFY W/ ARCHITECTURAL DWGS
- (T) TOP OF STRUCT SLAB ELEVATION OTHER THAN DATUM - VERIFY W/ ARCHITECTURAL DWGS
- NON-FRAME STEEL COLUMN MARK FOR COLUMN OCCURRING ABOVE - 'CB' DENOTES COLUMN BELOW - COLUMN W/ NO MARK DENOTES CONTINUING COLUMN FROM BELOW TO POINTS ABOVE - SEE S0.42 UNO
- CHANGE IN TOP OF STRUCT SLAB ELEVATION - VERIFY DROP DISTANCES (WHERE INDICATED) W/ ARCHITECTURAL DWGS
- DECK CONSTRUCTION MARK - ARROWS DENOTE DECK SPAN DIRECTION - SEE 2 / S0.51
- SHEAR STUD MARK - SEE 1 / S0.51
- CAMBER AS INDICATED
- BEAM STIFFENER SHEAR PLATE CONN MARK - SEE 1 / S0.41
- ANGLE BRACE MARK (SINGLE ARROW DENOTES LOW END OF ANGLE BRACING BEAM BOTTOM FLANGE) - SEE 1 / S0.42
- DRAG BEAM CONNECTION MARK - SEE 4 / S0.41 (SFRS)
- BEAM TO COLUMN NON-FRAME MOMENT CONNECTION MARK - SEE 3 / S0.41 - CANTILEVER BEAM SIZE (IF NOT SHOWN) TO MATCH BACKSPAN BEAM SIZE UNO
- BEAM TO BEAM NON-FRAME MOMENT CONNECTION MARK - SEE 4 / S0.42 - CANTILEVER BEAM SIZE (IF NOT SHOWN) TO MATCH BACKSPAN BEAM SIZE UNO
- BEAM TO BEAM END CONNECTION AT SPLICES - SEE 1B / S0.41
- BROKEN BACK BEAM CONNECTION - SEE 2 / S0.42
- STRUCT TEE ON BEAM MARK - SEE 6 / S0.51
- LEDGER ANGLE ON BEAM MARK - SEE 7 / S0.51
- EBF (ECCENTRICALLY BRACED FRAME) MARK - SEE EBF ELEVATIONS ON S5-XX SERIES SHEETS
- PROTECTED ZONE, SEE S5.21
- MECH UNO - SEE MECH DWGS
- MAXIMUM DESIGN OPERATING WT
- MECH PAD - SEE 8 / S0.51 & 5 / S0.53
- DROPPED SLAB OR DEPRESSED SLAB - SEE DETAILS INDICATED
- INDICATES CONC OVER METAL DECK GREATER THAN SHOWN IN 2/50.51 POURED MONOLITHICALLY



CANOPY FRAMING PLAN
SCALE: 1/8" = 1'-0" **2**



2ND FLOOR FRAMING PLAN - SEGMENT A
SCALE: 1/8" = 1'-0" **1**

AGENCY APPROVAL:

APPROVED
DIV. OF THE STATE ARCHITECT
APP. 04-119722 INC.
REVIEWED FOR
S8 D1 PLS 13 ACS 12
DATE: 01/28/2022



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ISSUE

J.	DESCRIPTION	DATE
1	ADDENDUM 1	1/19/2022

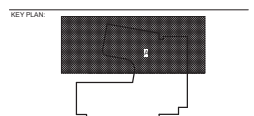
KEYNOTES

NOTES

CONSULTANT:

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architectural engineers

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Pasadena, CA 91101
Telephone 626.394.2815
www.soifilbouquet.com
SB Job No.2005



CLIENT:

CHAFFEY COLLEGE - CHINO CAMPUS
5897 COLLEGE PARK AVE.
CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

2ND FLOOR FRAMING PLAN - SEGMENT A

ADDENDUM #1

FILE NO.: 38-C1 AP: 04-119722

DATE: 06.17.2021 CLIENT PROJ. NO.:

SHEET:

S2.20A

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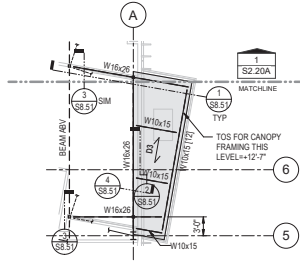
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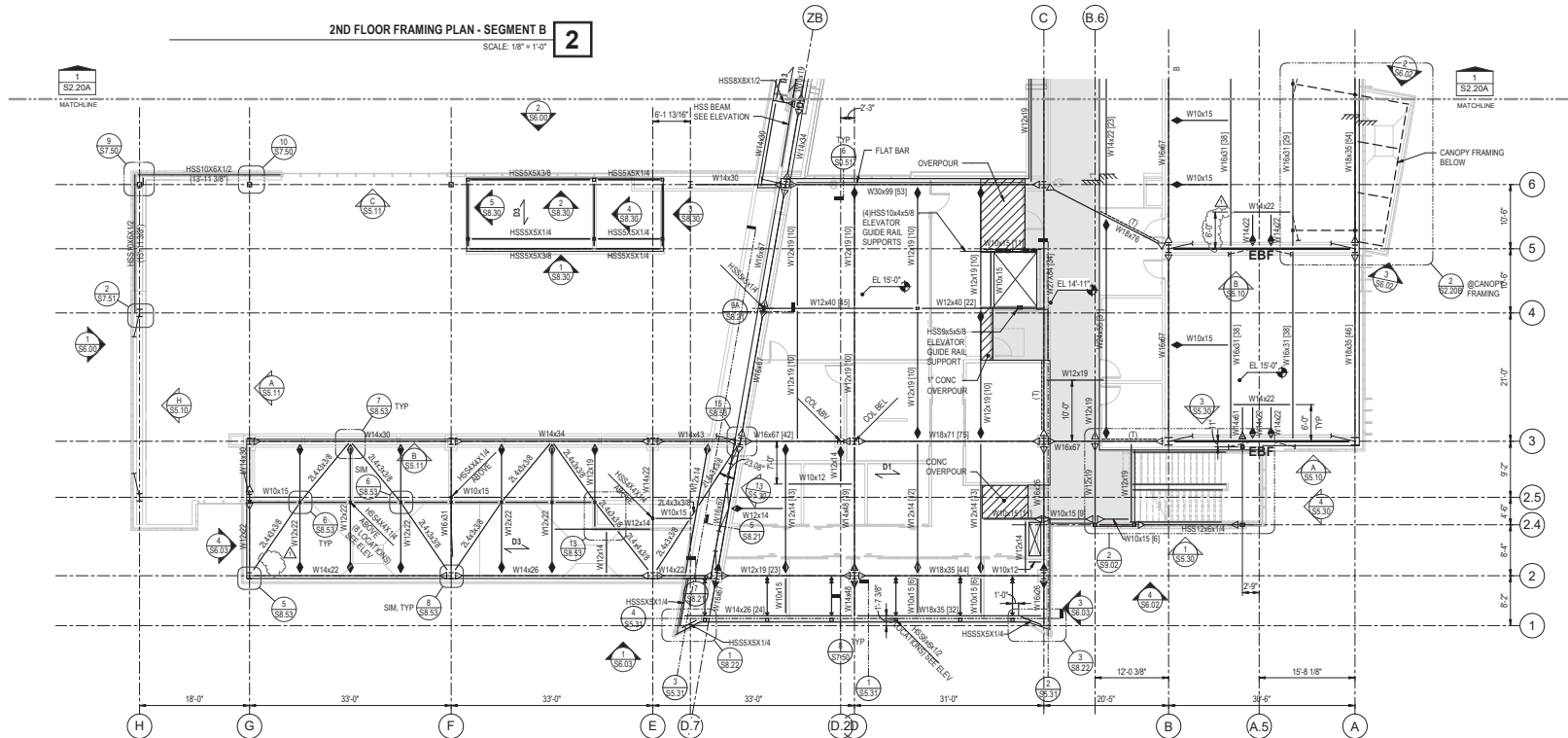
- FOR GENERAL NOTES SEE 80X SERIES SHEETS. TYPICAL DETAILS OCCUR THROUGHOUT THESE STRUCT DWGS IN ADDITION TO THOSE ON 82X SERIES SHEETS.
- VERIFY CONC SLAB ELEVATIONS INCLUDING SLAB DEPRESSIONS, SLOPES, OPNGS, CURBS, DRAINS, TRENCHES, & SLAB EDGE LOCATIONS, & WALL OVERALL DIMENSIONS INCLUDING LOCATIONS OF OPNGS WITH ARCHITECTURAL DWGS.
- SEE ARCHITECTURAL DWGS FOR REMAINDER OF DIMENSIONS & ELEVATIONS NOT SHOWN ON STRUCT DWGS - VERIFY ALL DIMENSIONS & ELEVATIONS W/ ARCHITECTURAL DWGS PRIOR TO START OF WORK.
- CENTER COLUMNS ON GRIDLINES UNO.
- SPACE BEAMS EQUALLY BETWEEN COLUMNS & GIRDERS UNO.
- LOCATE TOP OF STRUCT STEEL ELEVATION (TOS) FROM DATUM TOP OF SLAB ELEVATION MINUS TOTAL SLAB THICKNESS (T) PER 2 / 50.51 UNO.
- PROVIDE STRUCTURAL STEEL FRAMING TO SUPPORT ELEVATOR GUIDERAILS AND ELEVATOR COUNTERWEIGHTS PER 1 / 50.91
- ALL STEEL BEAMS SUPPORTING CONCRETE OVER METAL DECK SHALL MEET 105.51 WITH OR WITHOUT STUDS INDICATED ON THE PLANS.

FRAMING LEGEND

- EL XXXX'XXX DATUM TOP OF STRUCT SLAB ELEVATION - VERIFY W/ ARCHITECTURAL DWGS
- (X*) TOP OF STRUCT SLAB ELEVATION OTHER THAN DATUM - VERIFY W/ ARCHITECTURAL DWGS
- NON-FRAME STEEL COLUMN MARK FOR COLUMN OCCURRING ABOVE - "CB" DENOTES COLUMN BELOW - COLUMN W/ NO MARK DENOTES CONTINUING COLUMN FROM BELOW TO POINTS ABOVE - SEE 50.42 UNO
- CHANGE IN TOP OF STRUCT SLAB ELEVATION - VERIFY DROP DISTANCES (WHERE INDICATED) W/ ARCHITECTURAL DWGS
- DX DECK CONSTRUCTION MARK - ARROWS DENOTE DECK SPAN DIRECTION - SEE 2 / 50.51
- [X] SHEAR STUD MARK - SEE 1 / 50.51
- CB* CAMBER AS INDICATED
- BEAM STIFFENER SHEAR PLATE CONN MARK - SEE 1 / 50.41
- ANGLE BRACE MARK (SINGLE ARROW DENOTES LOW END OF BRACING BEAM BOTTOM FLANGE) - SEE 1 / 50.42
- DRAG BEAM CONNECTION MARK - SEE 4 / 50.41 (SFRS)
- BEAM TO COLUMN NON-FRAME MOMENT CONNECTION MARK - SEE 3 / 50.41 - CANTILEVER BEAM SIZE (IF NOT SHOWN) TO MATCH BACKSPAN BEAM SIZE UNO
- BEAM TO BEAM END CONNECTION AT SPICES - SEE 15 / 50.41
- BROKEN BACK BEAM CONNECTION - SEE 2 / 50.42
- (T) STRUCT TEE ON BEAM MARK - SEE 6 / 50.51
- (L) LEDGER ANGLE ON BEAM MARK - SEE 7 / 50.51
- EBF EBF (ECCENTRICALLY BRACED FRAME) MARK - SEE EBF ELEVATIONS ON 55XX SERIES SHEETS
- PROTECTED ZONE, SEE 55.21
- MECH UNIT NO - SEE MECH DWGS
- MAXIMUM DESIGN OPERATING WT
- MECH PAD - SEE 8 / 50.51 & 5 / 50.53
- DROPPED SLAB OR DERESSED SLAB - SEE DETAILS INDICATED
- INDICATES CONC OVER METAL DECK GREATER THAN SHOWN IN 2/50.51 POURED MONOLITHICALLY



2ND FLOOR FRAMING PLAN - SEGMENT B 2
SCALE: 1/8" = 1'-0"



2ND FLOOR FRAMING PLAN - SEGMENT B 1
SCALE: 1/8" = 1'-0"

AGENCY APPROVAL:

APPROVED
BY: OF THE STATE ARCHITECT
APP: 04-11972Z INC.
REVIEWED FOR
S3 PLS 13 ACS 12
DATE: 01/28/2022



Chaffey College

HMC Architects

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ISSUE	DESCRIPTION	DATE
1	ADDENDUM 1	1/19/2022

NOT FOR CONSTRUCTION

KEYNOTES

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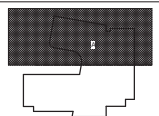
CONSULTANT

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architectural engineers

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8th Floor
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Telephone 626.342.2615
www.soil+bouquet.com
SB Job No.20055



KEY PLAN



FACILITY:

CHAFFEY COLLEGE - CHINO CAMPUS
5897 COLLEGE PARK AVE.
CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

2ND FLOOR FRAMING PLAN - SEGMENT B

ADDENDUM #1

FILE NO.: 38-C1 AF: 04-11972Z

DATE: 04.17.2021 CLIENT PROJ. NO.:

SHEET:

S2.20B

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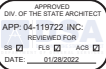
FRAMING PLAN NOTES

- FOR GENERAL NOTES SEE S0.X SERIES SHEETS. TYPICAL DETAILS OCCUR THROUGHOUT THESE STRUCT DWGS IN ADDITION TO THOSE ON S2.X SERIES SHEETS.
- VERIFY CONC SLAB ELEVATIONS INCLUDING SLAB DEPRESSIONS, SLOPES, OPNGS, CURBS, DRAINS, TRENCHES, & SLAB EDGE LOCATIONS, & WALL OVERALL DIMENSIONS INCLUDING LOCATIONS OF OPNGS WITH ARCHITECTURAL DWGS.
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- SPACE BEAMS EQUALLY BETWEEN COLUMNS & GIRDERS UNO.
- LOCATE TOP OF STRUCT STEEL ELEVATION (TOS) FROM DATUM TOP OF SLAB ELEVATION MINUS TOTAL SLAB THICKNESS (T) PER 2 / S0.51 UNO.
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- ALL STEEL BEAMS SUPPORTING CONCRETE OVER METAL DECK SHALL MEET 1/50.51 WITH OR WITHOUT STUDS INDICATED ON THE PLANS.

FRAMING LEGEND

- EL XXX'-XX" DATUM TOP OF STRUCT SLAB ELEVATION - VERIFY W/ ARCHITECTURAL DWGS
- (X*) TOP OF STRUCT SLAB ELEVATION OTHER THAN DATUM - VERIFY W/ ARCHITECTURAL DWGS
- NON-FRAME STEEL COLUMN MARK FOR COLUMN OCCURRING ABOVE - 'CP' DENOTES COLUMN BELOW - COLUMN W/ NO MARK DENOTES CONTINUING COLUMN FROM BELOW TO POINTS ABOVE - SEE S0.42 UNO
- CHANGE IN TOP OF STRUCT SLAB ELEVATION - VERIFY DROP DISTANCES (WHERE INDICATED) W/ ARCHITECTURAL DWGS
- DX DECK CONSTRUCTION MARK - ARROWS DENOTE DECK SPAN DIRECTION - SEE 2 / S0.51
- [X] SHEAR STUD MARK - SEE 1 / S0.51
- C/C* CAMBER AS INDICATED
- BEAM STIFFENER SHEAR PLATE CONN MARK - SEE 1 / S0.41
- ANGLE BRACE MARK (SINGLE ARROW DENOTES LOW END OF ANGLE BRACING BEAM BOTTOM FLANGE) - SEE 1 / S0.42
- DRAG BEAM CONNECTION MARK - SEE 4 / S0.41 (SFRS)
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- BEAM TO BEAM END CONNECTION AT SPLICES - SEE 1B / S0.41
- BROKEN BACK BEAM CONNECTION - SEE 2 / S0.42
- (T) STRUCT TEE ON BEAM MARK - SEE 6 / S0.51
- (L) LEDGER ANGLE ON BEAM MARK - SEE 7 / S0.51
- EBF (ECCENTRICALLY BRACED FRAME) MARK - SEE EBF ELEVATIONS ON S5-XX SERIES SHEETS
- PROTECTED ZONE, SEE S5.21
- MECH UNIT NO. - SEE MECH DWGS
- MAXIMUM DESIGN OPERATING WT
- MECH PAD - SEE 8 / S0.51 & 5 / S0.53
- DROPPED SLAB OR DEPRESSIONED SLAB - SEE DETAILS INDICATED
- INDICATES CONC OVER METAL DECK GREATER THAN SHOWN IN 2/50.51 POURED MONOLITHICALLY

AGENCY APPROVAL:



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ISSUE

J	DESCRIPTION	DATE
1	ADDENDUM 1	1/19/2022

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KEYNOTES

NOTES

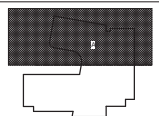
CONSULTANT

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architectural engineers

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Pasadena, CA 91101
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SB Job No. 20055



KEY PLAN



FACILITY:

CHAFFEY COLLEGE - CHINO CAMPUS
5897 COLLEGE PARK AVE.
CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

ROOF FRAMING PLAN - SEGMENT A

ADDENDUM #1

FILE NO.: 38-C1 AP: 04-119722

DATE: 06/17/2021 CLIENT PROJ. NO.:

SHEET:

ROOF FRAMING PLAN - SEGMENT A

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

1



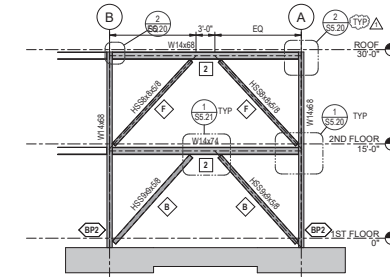
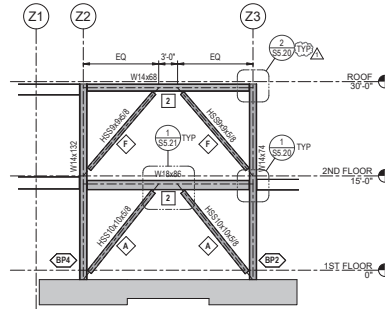
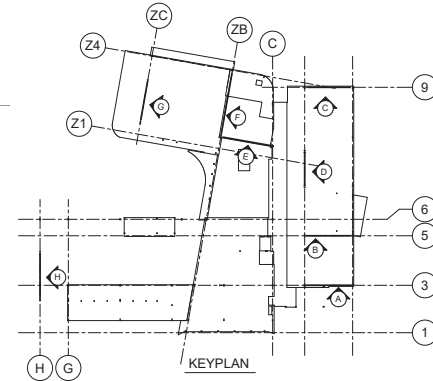
PLEASE RECYCLE

S2.40A

DATE PLOTTED: 04/11/2021 10:00 AM

EBF ELEVATION NOTES

1. **BP-21** INDICATES BASE PLATE TYPE, PER DETAIL **1** (SS.22)
2. **A** INDICATES GUSSET PL. & WELD TYPE, PER DETAIL **4** (SS.20)
3. FASTENING & WELDING TO LINK BEAM PROTECTED ZONES IS PROHIBITED AS SHOWN ON DETAILS **1** (SS.51)
4. **Z** INDICATES NO. OF INTERMEDIATE STIFFENERS FOR LINK BEAM. COORDINATE WITH DETAILS ON SHEET **1** (SS.21), **2** (SS.21), AND **4** (SS.20) FOR WELDING OF STIFFENERS



EBF ELEVATION AT GRID LINE ZB

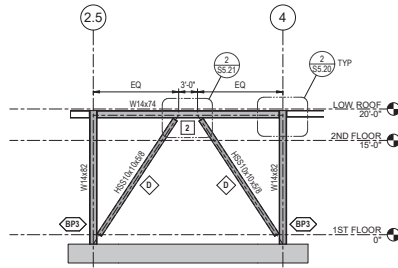
SCALE: 1/8" = 1'-0"

F

EBF ELEVATION AT GRID LINE 9

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

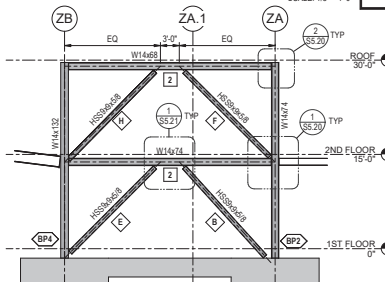
C



EBF ELEVATION AT GRID LINE H

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

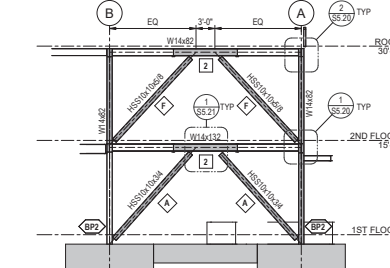
H



EBF ELEVATION AT GRID LINE Z2

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

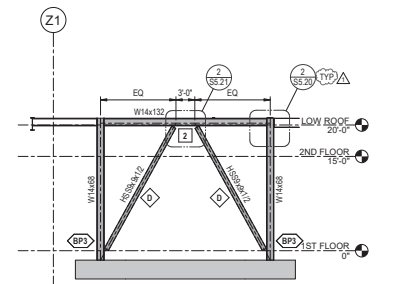
E



EBF ELEVATION AT GRID LINE 5

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

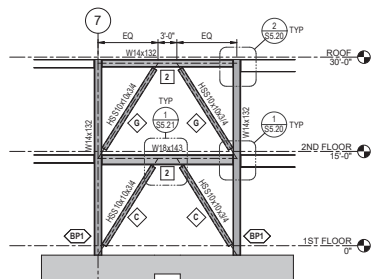
B



EBF ELEVATION AT GRID LINE ZC

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

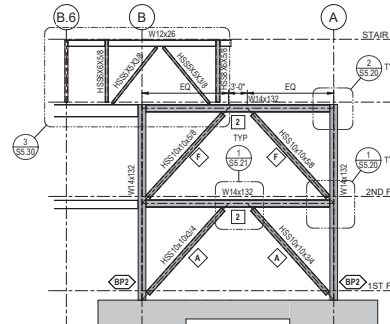
G



EBF ELEVATION AT GRID LINE B

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

D



EBF ELEVATION AT GRID LINE 3

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

A

AGENCY APPROVAL:

APPROVED
BY: OF THE STATE ARCHITECT
APP. 04-119722 INC.
REVIEWED FOR:
SB □ PLK □ ACS □
DATE: 04/28/2022



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J. DESCRIPTION	DATE
T. ADDENDUM 1	1/19/2022

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KEYNOTES

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FACILITY:

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5897 COLLEGE PARK AVE.
CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

EBF FRAME ELEVATIONS

ADDENDUM #1

FILE NO.: 38-C1

APP. 04-119722

DATE: 04.17.2021

CLIENT PROJ. NO.

SHEET:

S5.10

PLEASE RECYCLE

DATE: 01/28/2022

15020213.210107.M

AGENCY APPROVAL:

APPROVED
DIV. OF THE STATE ARCHITECT
APP. 04-119722 INC.
REVIEWED FOR
S8 PL 13 ACS
DATE: 01/28/2022



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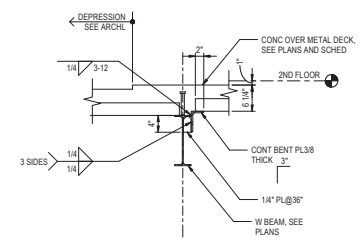
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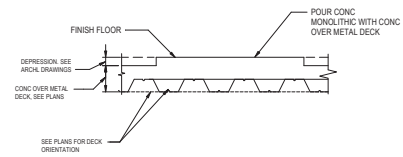
ISSUE

J. DESCRIPTION	DATE
1. ADDENDUM 1	1/19/2022

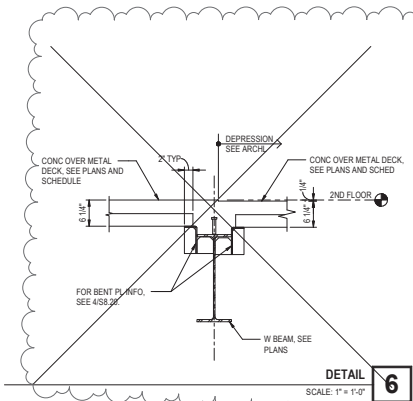
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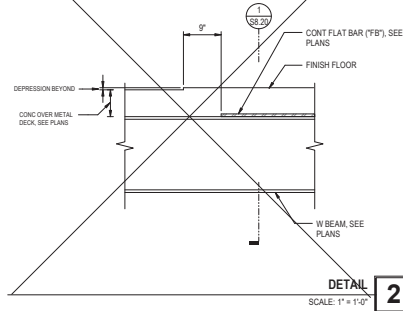
DETAIL 4
SCALE: 1" = 1'-0"



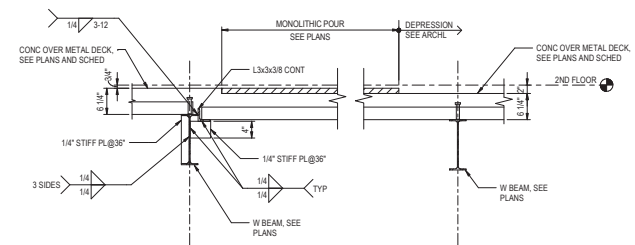
DETAIL 3
SCALE: 1" = 1'-0"



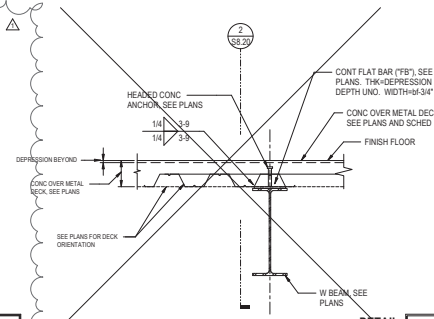
DETAIL 6
SCALE: 1" = 1'-0"



DETAIL 2
SCALE: 1" = 1'-0"



DETAIL 5
SCALE: 1" = 1'-0"



DETAIL 1
SCALE: 1" = 1'-0"

KEYNOTES

NOTES

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FACILITY:

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CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

STEEL SECTIONS AND DETAILS

ADDENDUM #1

FILE NO.: 38-C1

APP: 04-119722

DATE: 06.17.2021

CLIENT PROJ. NO.

SHEET:

S8.20

PLEASE RECYCLE

DATE PLOTTED: 01/19/2022 10:58 AM
 PLOT SCALE: 1/8" = 1'-0"

PROJECT: CHAFFEY COLLEGE | CHINO CAMPUS | 5897 COLLEGE PARK AVENUE | CHINO, CA 91710
 SHEET: FIRE ALARM SITE PLAN | 102' x 144'

GENERAL NOTES

- A. CONNECT REMOTE NOTIFICATION POWER SUPPLIES TO FIRE ALARM CONTROL PANEL WITH TWO (2) #14 W/G UNLESS OTHERWISE NOTED.
- B. ALL DETECTION CIRCUITS SHALL USE TWO (2) #14 AWG, UNLESS OTHERWISE NOTED.
- C. SEE VOLTAGE DROP CALCULATIONS FOR NOTIFICATION CIRCUIT CABLE QUANTITY AND SIZE.
- D. IN FINISHED INTERIOR AREAS, RUN ALL CONDUITS CONCEALED, UNLESS OTHERWISE NOTED. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECT'S PAINTING SECTION FOR REQUIREMENTS.
- E. FOR RACEWAY IN NON-ACCESSIBLE LOCATIONS, USE EXPOSED WIREMOLD (V70) SERIES SURFACED MOUNTED RACEWAYS.
- F. ALL INTERIOR FIRE ALARM CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- G. SEE DETAILS FOR MOUNTING REQUIREMENTS OF FIRE ALARM DEVICES.
- H. THERE SHALL BE NO ROOF PENETRATIONS WITHIN 4'-0" OF RATED OR AREA SEPARATION WALLS. VERIFY EXACT LOCATIONS OF THESE WALLS WITH ARCHITECTURAL DRAWINGS.
- I. MAINTAIN ALL SPACING AND PENETRATION REQUIREMENTS THROUGH FIRE RATED OR AREA SEPARATION WALLS. VERIFY EXACT LOCATIONS OF THESE WALLS WITH ARCHITECTURAL DRAWINGS.
- J. CONNECT ALL DUCT SMOKE DETECTORS, MAGNETIC FLOOR HOLDERS, ROLLING SMOKE DOORS AND FIRE SMOKE DAMPERS TO FACP. PROVIDE POWER SUPPLY AND 120V/24V TRANSFORMERS AS REQUIRED. SEE WIRING DIAGRAM.
- K. PROVIDE ACCESS PANELS WHERE REQUIRED TO ALLOW ACCESS TO ABOVE CEILING HEAT DETECTORS FOR MAINTENANCE.
- L. HEAT DETECTORS MOUNTED BELOW CEILING SHALL BE 185 DEGREE FAHRENHEIT COMBINATION FUSED TEMPERATURE RATE OF RISE, UNLESS OTHERWISE NOTED. HEAT DETECTORS MOUNTED ABOVE CEILING SHALL BE HIGH FIXED TEMPERATURE, UNLESS OTHERWISE NOTED.
- M. CONNECT ALL WATER FLOW SWITCHES AND TAMPER SWITCHES VIA ADDRESSABLE MODULE.

AGENCY APPROVAL:



Chaffey College

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J. DESCRIPTION	DATE
T. ADDENDUM #1	01.19.2022

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KEY PLAN



FACILITY:

CHAFFEY COLLEGE | CHINO CAMPUS
 5897 COLLEGE PARK AVE.
 CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

FIRE ALARM SITE PLAN

ADDENDUM #1

FILE NO.: 38-C1	AP: 04-119722
DATE: 01.19.2022	CLIENT PROJ. NO.:

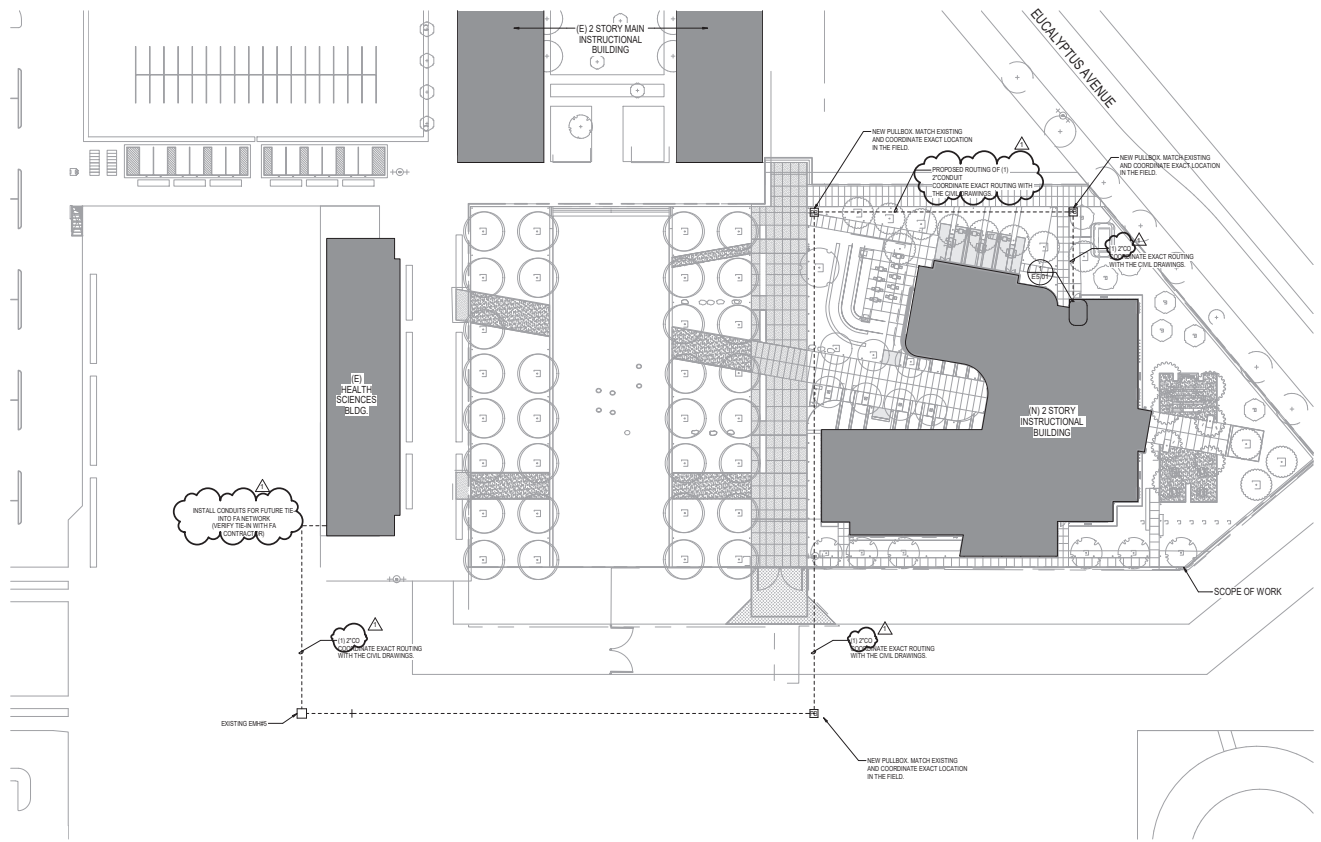
SHEET:



FIRE ALARM SITE PLAN 1

PLEASE RECYCLE

FA1.21



DATE: 01/28/2022

PROJECT: CHAFFEY COLLEGE | CHINO CAMPUS | 5897 COLLEGE PARK AVENUE | CHINO, CA 91710

AGENCY APPROVAL:

APPROVED BY: DIV. OF THE STATE ARCHITECT

APP. 04-119722 INC.

REVIEWED FOR: SS PL AC

DATE: 01/28/2022



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J. DESCRIPTION	DATE
T. ADDENDUM #1	01.19.2022

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5897 COLLEGE PARK AVENUE,
CHINO, CA 91710

PROJECT:

CHINO INSTRUCTIONAL BUILDING

SHEET NAME:

FIRE ALARM RISER

ADDENDUM #1

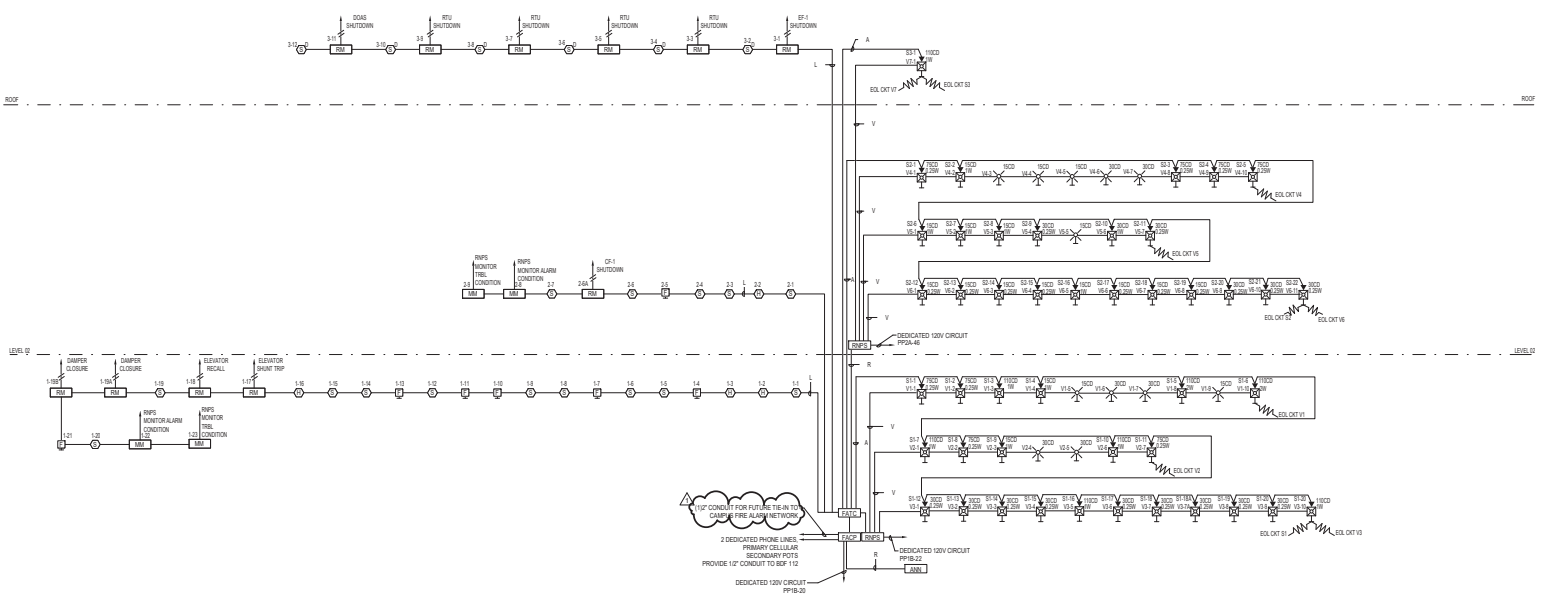
FILE NO.: 38-C1	AP: 04-119722
DATE: 01.19.2022	CLIENT PROJ. NO.
SHEET:	

FA6.01

PLEASE RECYCLE

GENERAL NOTES

- A. ALL DETECTION CIRCUITS SHALL USE TWO (2) #14 AWG UNLESS OTHERWISE NOTED.
- B. SEE VOLTAGE DROP CALCULATIONS FOR VERIFICATION ON NOTIFICATION CIRCUIT CABLE QUANTITY AND SIZE.
- C. THE PROJECT INSPECTOR SHALL VERIFY CANDELA SETTINGS AFTER INSTALLATION OF ALL MULTICANDELA VISUAL NOTIFICATION DEVICES DUE TO FIELD ADJUSTABILITY.
- D. THE CONTRACTOR SHALL HAND WRITE THE DATE OF INSTALLATION ON ALL FIRE ALARM BATTERIES IN A LOCATION VISIBLE TO SERVICE PERSONNEL.



FA RISER

NTC