BOARD OF EDUCATION
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Superintendent: Dr. Patrick Gittisriboongul, Ed.D.

ADDENDUM 002

For

BID# 01MOT27 Will Rogers Elementary School HVAC Replacement Project
Building H– DSA Application #03-125978
September 28, 2026

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents. Acknowledge receipt of this Addendum in space provided on the Bid Form. Failure to acknowledge may subject Bidder to disqualification.

1. BID DOCUMENT

1.1- **DELETE** the **SEWUP OWNER CONTROLLED INSURANCE PROGRAM (OCIP) PROJECT INSURANCE MANUAL** from the Bid Documents in its entirety.

1.2- **BIDDER EXPERIENCE FORM (ATTACHED) -** THE FORM IS PART OF THE REQUIRED DOCUMENTS TO BE SUBMITTED WITH YOUR BID PROPOSAL.

2. BID Q&A

2.1- ADD **Q & A _BID#01MOT27 _ WILL ROGERS ELEMENTARY SCHOOL HVAC REPLACEMENT PROJECT BUILDING H– DSA APPLICATION #03-125978,** per attachment.

3. SPECIFICATIONS

3.1- Reference to **SECTION 07 01 50 - ROOF MAINTENANCE AND REPAIR**

3.1-1. **Remove SECTION 07 01 50 - ROOF MAINTENANCE AND REPAIR.**

3.2- **Added SPECIFICATION SECTION 07 01 50.72 REHABILITATION OF BUILD-UP ROOFING ADD02,** per attachment**.**

4. DRAWINGS

4.1- **MECHANICAL**

4.1-1. Reference to **SHEET M-0.2**

4.1-1.1. Attached **SHEET M-0.2 ADD02,**

4.1-1.1.1. Revision to remark 2 on Split System Outdoor Unit Heat Pump Schedule.

4.1-1.2. Reference to **SHEET M-1.2**

4.1-1.3. Attached **SHEET M-1.2 ADD021**

4.1-1.3.1. Revised CFM from '(E)' existing to '(N)' for new airflow on air devices in classroom H206, per attachment.

4.1-1.3.2. Revised CFM from '(E)' existing to '(N)' for new airflow on air devices in workroom H218, per attachment.

4.1-1.3.3. Removed redundant diffuser in workroom H218 that does not exist and indicates balance to 350 CFM.

4.1-2. Reference to **SHEET M-4.1**

4.1-2.1. Attached **SHEET M-4.1 ADD02**

4.1-2.1.1. Added detail 13/M-4.1 for roof flashing detail, per attachment.

4.1-3. Reference to **SHEET M-4.2**

4.1-3.1. Attached **SHEET M-4.2 ADD02**

4.1-3.1.1. Added detail 3/M-4.2 for roofing product data, per attachment.

4.1-3.1.2. Removed redundant diffuser in workroom H218 that does not exist and indicates balance to 350 CFM.

4.2- **PLUMBING**

4.2-1. Reference to **SHEET P-0.1**

4.2-2. **Attached SHEET P-0.1 ADD02**

4.2-2.1. Added Note 30 to GENERAL NOTES to indicate Paint all exposed copper piping in the approved color to match the building exterior, typical.

CC:

1. **Attachment –** Q & A _ **Will Rogers Elementary School HVAC Replacement Project Building H– DSA Application #03-125978.**
2. **SPECIFICATION SECTION 07 01 50.72 REHABILITATION OF BUILD-UP ROOFING ADD02**
3. **SHEET M-0.2 ADD02**
4. **SHEET M-1.2 ADD02**
5. **SHEET M-4.1 ADD02**
6. **SHEET M-4.2**
7. **SHEET P-0.1 ADD02**

BIDDER EXPERIENCE

REFERENCES – Provide three references that are comparable to the HVAC Replacement DSA projects BID No. 01MOT27 completed for school districts similar in size and financial structure to Lynwood Unified School District.

Reference 1

District Name: _____
Project Name / Scope: _____
DSA Application Number: _____
Project Location: _____
Project Value: _____
Completion Date: _____
Contact Person: _____
Title / Role: _____
Phone: _____
Email: _____

Reference 2

District Name: _____
Project Name / Scope: _____
DSA Application Number: _____
Project Location: _____
Project Value: _____
Completion Date: _____
Contact Person: _____
Title / Role: _____
Phone: _____
Email: _____

Reference 3

District Name: _____
Project Name / Scope: _____
DSA Application Number: _____
Project Location: _____
Project Value: _____
Completion Date: _____
Contact Person: _____
Title / Role: _____
Phone: _____
Email: _____

Lynwood Unified School District
Q & A - Bid#01MOT27 Will Rogers ES HVAC Units Replacement Project Bldg. H - DSA 03-125978
Issued on 9/23/2026
Bid Due on September 30, 2026 10:00 AM (PDT)

Submitted By	Submit Date	Question	Answer
Allison Mechanical Inc.,	Mon, Sep 21, 2026 at 1:58 PM	Is this work to be done off hours?	The work may be performed during regular working hours without disrupting school operations or compromising safety. The District may allow after-hours or weekend work with prior approval, at no additional cost to the District and at the Contractor's own responsibility.
Allison Mechanical Inc.,	Mon, Sep 21, 2026 at 1:58 PM	Can the conduits for the control wires be reused in the wall and going out to the roof?	This is acceptable, however if the conduit is damaged or undersized, the contractor is required to replace it.
Allison Mechanical Inc.,	Mon, Sep 21, 2026 at 1:58 PM	Can you please provide us with pictures of the other locations of the units so that we can see if they are in had lid or in T-bar areas.	The fan coil units are all installed above existing t-bar, with exception of storage room H21 on second floor which is exposed. Architectural RCP showing these areas are available upon request from DSA# 03-104730.
Allison Mechanical Inc.,	Mon, Sep 21, 2026 at 1:58 PM	What fire alarm system does the school use? (Silent night, Honeywell ect.)	Fire alarm control panel on site is Siemens Cerberus Pro Voice EVAC. See attached from fire alarm upgrade.
Allison Mechanical Inc.,	Mon, Sep 21, 2026 at 1:58 PM	Is the roof under warranty?	No
Allison Mechanical Inc.,	Mon, Sep 21, 2026 at 1:58 PM	What kind of roofing system is used at this school?	Reference to Project Bid Specifications Sections 07 01 50 and 07 62 00
Hands Construction Co.	Sun, Sep 20, 2026 at 4:18 P	Equipment Quantity Clarification; The Notice Inviting Bids states that the project includes replacement of 22 rooftop units and 12 split-system units. However, Mechanical Schedule M-0.2 appears to show 24 packaged rooftop units and 10 split-system heat pump systems. Please confirm the correct equipment quantities to be included in the bid.	See mechanical plan sheet M-0.2 for correct quantity of units (24 rooftop packaged units and 10 split systems).
Hands Construction C	Sun, Sep 20, 2026 at 4:18 P	TAB / Airflow Criteria; Specification Section 23 05 93 requires testing, adjusting, and balancing of the HVAC systems, including adjustment of air terminals to indicated or specified airflow values. However, the mechanical plans do not appear to provide design CFM values for each individual diffuser, register, or grille. Please provide the required design airflow values for individual air terminals, or clarify the required TAB criteria for the existing duct distribution systems.	The airflows shown on remodel sheets M-1.1 and M-1.2 designated with '(N)' are the new airflows with exception of classroom H206 return airflows should also be indicated with '(N)'. There is also only one supply diffuser served by SFC-8 in H218 ON M-1.2 to be balanced to 350 CFM (the second is redundant and does not exist. Exhaust not in scope of work for balancing.
Hands Construction C	Sun, Sep 20, 2026 at 4:18 P	Existing Ductwork Capacity; The project appears to reuse the existing duct distribution systems, with new duct transitions and connections to the new HVAC equipment. Please confirm that the existing ductwork has been evaluated and is adequate for the scheduled airflow and external static pressure of the new equipment. If TAB determines that duct enlargement or additional duct modifications are required beyond those shown in the Contract Documents, please confirm whether such work would be handled as unforeseen work under the project allowance/change-order provisions	If the TAB determines that duct work needs to be resized then it is considered unforeseen.
New Air Inc.	Sep 17, 2026 at 12:50 PM	Would you please send us the list of qualified electrical, duct cleaning, and plumbing contractors approved by the Lynwood Unified School District?	District does not provide contractors list. The Prime Contractor is responsible for selecting qualified subcontractors who comply with all applicable Contract Document requirements, including licensing, DIR registration, CWA, insurance, and subcontractor-listing requirements.

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

A2

SECTION 07 01 50.72 - REHABILITATION OF BUILT-UP ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. New base and penetration flashings associated with HVAC installations.

1.2 MATERIALS OWNERSHIP

A. Demolished materials shall become Contractor's property and shall be removed from Project site.

1.3 DEFINITIONS

A. Retain definitions and terms that remain after this Section has been edited.

B. Roofing Terminology: Refer to ASTM D1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.

C. Existing Roofing System: Built-up asphalt roofing, and components and accessories between deck and roofing membrane.

D. Roofing Coating Preparation: Existing roofing that is to remain and be prepared to accept roof repairs.

E. Patching: Removal of a portion of existing membrane roofing system from deck or removal of selected components and accessories from existing membrane roofing system and replacement with similar materials.

F. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

G. Existing to Remain: Existing items of construction that are not indicated to be removed.

H. Manufacturer: Manufacturer of roofing rehabilitation products, unless otherwise indicated.

I. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

J. Demolition Waste: Building and site improvement materials resulting from re-roofing preparation, demolition or selective demolition operations.

K. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

1.4 ROOFING CONFERENCES

A. Roofing Rehabilitation Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to roofing system.

1. Meet with Owner; roofing materials manufacturer's representative; roofing re-coating Installer including project manager and foreman; and installers whose work interfaces with or affects re-coating including

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A. Roofing Rehabilitation Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to roofing system.

1. Meet with Owner; roofing materials manufacturer's representative; roofing re-coating Installer including project manager and foreman; and installers whose work interfaces with or affects re-coating including

installers of roof accessories and roof-mounted equipment requiring removal and replacement as part of the Work.

2. Review methods and procedures related to new flashings, including roofing system manufacturer's written instructions.

3. Review drawings and specifications.

4. Review roof drainage during each stage of coating application and review roof drain plugging and plug removal procedures.

5. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

6. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect coating.

7. Review existing conditions that may require notification of Owner before proceeding.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product specified.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.

1. Letter written for this Project indicating manufacturer approval of Installer to apply specified products and provide specified warranty.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, and for dust control. Indicate proposed locations and construction of barriers.

C. Contractor's Product Certificate: Submit certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

1. Indicate that proposed system components are compatible.

D. Warranties: Unexecuted sample copies of special warranties.

E. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, which might be misconstrued as having been damaged by coating operations. Submit before Work begins.

F. Inspection Reports: Reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions required and carried out.

1. Submit report within 24 hours after inspection.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: To include in maintenance manuals.

B. Warranties: Executed copies of approved warranty forms.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and the following:

1. Qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.

B. Manufacturer Qualifications: Primary product manufacturer with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.

C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:

1. An authorized full-time technical employee of the manufacturer.

2. An independent party certified as a Registered Roof Observer by the Roof Consultants Institute, retained by the Contractor or the Manufacturer and approved by the Manufacturer.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with rehabilitation work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.

1. Store all materials prior to application at temperatures recommended by manufacturer.

2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer.

3. Do not apply roofing in rain, fog, or mist.

B. Protect building to be rehabilitated, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from rehabilitation operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1.10 WARRANTY

A. Installer Warranty: Installer's warranty signed by Installer, as follows.

1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.

2. Scope of Warranty: Work of this Section.

3. Warranty Period: 2 years from date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: The roof system specified in this Section is based upon products of Tremco CPG Incorporated. Provide specified products or pre-approved equivalent products.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Rehabilitated roofing shall withstand exposure to weather without failure or leaks due to defective manufacture or installation.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

2.3 MATERIALS, GENERAL

A. General: Roof rehabilitation coating materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.

B. Temporary Roofing Materials: Selection of materials and design of temporary roofing is responsibility of Contractor.

C. Temporary Roof Drainage: Design and selection of materials for temporary roof drainage are responsibilities of the Contractor.

D. Infill Materials: Where required to replace test cores and to patch existing roofing, use infill materials matching existing membrane roofing system materials, unless otherwise indicated.

2.4 RESTORATIVE COATINGS

A. Cold-Applied Rubberized Surfacer for Bituminous Roofing: Neoprene-modified water-based low VOC low odor asphalt emulsion surfacer formulated for use over new smooth surfaced bituminous roofing.

1. Tremco, Tremlastic S.

2. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 25 g/L.

3. Elongation, ASTM D412: 100 percent.

B. Cold-Applied Reflective Aluminum Roof Coating: Water-based aluminum coating approved by manufacturer.

2.5 FLASHING MATERIALS

A. Cold-applied bio-based low odor urethane roofing adhesive, two-part, USDA BioPreferred, formulated for compatibility and use with specified roofing membranes and flashings.

1. Tremco, Powerply Endure Bio Adhesive TF.

2. Volatile Organic Compounds (VOC), maximum, ASTM D3690: 0 g/L.

3. Low Temperature Flexibility, ASTM D2240: Pass at -30 deg F (-34 deg C).

4. Solids, by Volume, ASTM D2697: 100 percent.

5. Biobase Content, Minimum, ASTM D6866: 70 percent.

B. Base Sheet: ASTM D6164 Type I Grade S SBS/RET/Urethane-modified asphalt coated polyester reinforced high elongation sheet, smooth surfaced.

C. Reinforcing Fabric:

1. Reinforcing fabric, stitch-bonded polyester, 100 percent recycled content, infused with curing accelerant activated when installed in conjunction with specially formulated adhesive.
   a. Tremco, Rapid Set Fabric.
   b. Breaking Strength, minimum, ASTM D5034: Machine direction, 65 lbf/in (11 kN/m); Cross machine direction, 85 lbf/in (14 kN/m).
   c. Elongation, ASTM D5034: Machine direction, 24 percent; Cross machine direction, 95 percent.
   d. Weight, ASTM D3776: 2.5 lb/100 sq. ft. (120 g/m2).
   e. Thickness, minimum, ASTM D1777: 0.025 inch (0.63 mm).
   f. Recycled Content, post consumer: 83 percent.
2. Reinforcing fabric, stitch-bonded polyester, 100 percent recycled content, infused with curing accelerant activated when installed in conjunction with specially formulated adhesive.
   a. Tremco, Permafab.
   b. Breaking Strength, minimum, ASTM D 5034: Machine direction, 65 lbf/in (12.0 kN/m); Cross machine direction, 85 lbf/in (12.0 kN/m).
   c. Elongation: Machine direction, 24 percent; Cross machine direction, 95 percent.
   d. Weight, ASTM D 3776: 2.5 lb/100 sq. ft. (120 g/m2).
   e. Thickness, minimum, ASTM D 1777: 0.025 inch (0.63 mm).
   f. Recycled Content, post-consumer: 83 percent.

D. Bio-Based Polyurethane Roof Coating Base Coat: ASTM D7311, Two-part catalyzed low-odor polyurethane roof base coating formulated for direct application and for use with fiber reinforcement in conjunction with a compatible top coat.

E. Bio-Based Polyurethane Roof Coating Top Coat: ASTM D7311, Two-part catalyzed low-odor polyurethane roof top coating formulated for direct application over compatible reinforced base coat.

F. Polyurethane Metal Primer: Water-based, quick-drying, brush-grade one-part primer for use as an adhesion promoter for urethane sealants and coatings to non-porous surfaces.

G. Asphalt Primer, Water-Based: Water-based, polymer modified, asphalt primer.

1. Asbestos Content, EPA 600/R13/116: None.
2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 2 g/L.

2.6 AUXILIARY MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system.

B. Joint Sealant: Elastomeric joint sealant recommended in writing by joint sealant manufacturer as compatible with applied coating and project substrates, with movement capability appropriate for application.

1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
   a. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.

   b. Hardness, Shore A, ASTM C661: 40.

   c. Adhesion to Concrete, ASTM C794: 35 pli.

   d. Tensile Strength, ASTM D412: 350 psi (2410 kPa).

   e. Color: Aluminum Stone.

C. Skirt Metal: 22-gauge galvanized metal with hemmed edge.

D. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.7 WALKWAYS

A. Walkway Pads:

1. Walkway pads, ceramic-granule-surfaced reinforced asphaltic composition slip-resisting pads, manufactured as a traffic pad for foot traffic, 1/2 inch (13 mm) thick minimum.
   a. Flexural Strength at max. load, minimum, ASTM C203: 218 psi (1.5 kPa).

   b. Granule adhesion (weight loss), maximum, ASTM D4977: 1.1 gram.

   c. Impact Resistance at 77 deg. F (25 deg. C), ASTM D3746: No Damage to Roof.

   d. Pad Size: 36 by 48 inch (914 by 1220 mm).

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect existing roofing system that is indicated not to be rehabilitated, and adjacent portions of building and building equipment.

1. Mask surfaces to be protected. Seal joints subject to infiltration by coating materials.

2. Limit traffic and material storage to areas of existing roofing membrane that have been protected.

3. Maintain temporary protection and leave in place until replacement roofing has been completed.

B. Pollution Control: Comply with environmental regulations of authorities having jurisdiction. Limit spread of dust and debris.

1. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

2. Remove debris from building roof by chute, hoist, or other device that will convey debris to grade

C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

3.2 ROOFING PREPARATION

A. Membrane Surface Preparation:

1. Substrate Cleaning: Clean substrate of contaminants such as dirt, debris, oil, and grease that can affect adhesion of repair material.

2. Verify that existing substrate is dry before proceeding with application of coating. Spot check substrates with an electrical capacitance moisture-detection meter.

3. Verify adhesion of new products.

B. Surface Priming: Prime surfaces to receive fluid-applied coating using coating manufacturer's recommended product for surface material. Apply at application rate recommended by manufacturer.

1. Ensure primer does not puddle and substrate has complete coverage.

2. Allow to cure completely prior to application of coating.

3.3 REPLACEMENT FLASHING AND STRIPPING INSTALLATION

A. Fill in where any roofing is removed with substrate board (and insulation if applicable) matching height of the existing roof system. Secure to decking per manufacturer’s written instructions.

1. Use low rise foam to adhere any insulation and coverboard.

B. Install cant strips at transitions to vertical edges.

C. Install modified ply sheet set in urethane adhesive over substrate board (if present), up sides of curbs, and onto the field of the roof 6”.

D. Install two polyester ply sheets set in rubberized emulsion over the completed ply sheet extending 12” and 24” past the edge of the ply sheet.

E. Install skirt metal counterflashing secured at 8” oc.

F. Install fully reinforced liquid applied flashing system over all new penetrations.

3.4 COATING APPLICATION

A. Existing aluminized roofs: Once ply system has adequately cured, apply aluminized coating in number of coats and thickness of application recommended in writing my manufacturer for application.

B. Existing acrylic coated roofs: Once ply system has adequately cured, apply acrylic coating in number of coats and thickness of application recommended in writing my manufacturer for application.

C. Existing polyurethane coated roofs: Once ply system has adequately cured, apply bio based coating system in number of coats and thickness of application recommended in writing my manufacturer for application.

D. Joint Sealant: Apply joint sealant at terminations and penetrations of coatings as required to maintain weathertight application.

3.5 WALKWAY INSTALLATION

A. Walkway Pads: Install walkway pads surrounding all new equipment.

1. Set walkway pads in cold-applied adhesive.

3.6 DISPOSAL

A. Collect demolished and waste materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

3.7 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

PACKAGED ROOF TOP GAS ELECTRIC UNIT SCHEDULE

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY		IEER-SEER/EFR	CFM	OSA CFM	DCV CFM	ESP	FAN BHP	ELECTRICAL FLA					POWER EXHAUST ELECTRICAL							UNIT WT	ECON/PE WT	TOTAL WT	CONTROLS	ANCHORAGE	REMARKS
			TOTAL	SENSIBLE	INPUT	OUTPUT							V	PH	HZ	MCA	MOCP	V	PH	HZ	FLA	MCA	MOCP	HP					
H 1	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 2	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 3	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	460/480	3	60	2.8	3.5	6.3	1.0	605	- / 195	800	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 4	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	460	150	1.00	1.42	460	3	60	13	20	460/480	3	60	2.8	3.5	6.3	1.0	605	- / 195	800	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 5	48FCDM07A2M6-3A0A0	BLDG H	71.15	52.00	67.00	54.00	14.00/ -	2400	460	150	1.00	1.32	460	3	60	14	20	460/480	3	60	2.8	3.5	6.3	1.0	630	- / 195	825	4 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 6	48FCGA04A2M6-3A0A0	BLDG H	35.13	25.39	60.00	49.00	13.40/-	1200	400	150	1.00	0.55	460	3	60	10	15	460/480	3	60	2.8	3.5	6.3	0.5	590	- / 195	785	2 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8
H 7	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 8	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 9	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 10	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 7, 8
H 11	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	460	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 12	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	400	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 13	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	460	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 14	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	460	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 15	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 16	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	460	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 17	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 18	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 19	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	400	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 20	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	400	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 21	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	460	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 22	48FCGA05A2M6-3A0A0	BLDG H	48.41	34.31	60.00	49.00	14.00/ -	1600	460	150	1.00	1.02	460	3	60	11	15	460/480	3	60	1.5	1.9	3.4	0.5	595	- / 195	790	3 M-4.1	3 S201	1, 2, 3, 4, 6, 7, 8, 9
H 23	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8
H 24	48FCGA06A2M6-3A0A0	BLDG H	59.31	44.73	60.00	49.00	14.00/ -	2000	400	150	1.00	1.42	460	3	60	13	20	NONE	NONE	NONE	NONE	NONE	NONE	NONE	605	45 / -	650	2 M-4.1	3 S201	1, 2, 3, 4, 5, 6, 8

REMARK:

1. PRE-PURCHASED AND FACTORY INSTALLED MOUNTED HAIL GUARD.
2. PROVIDE MERV-13 FILTER FOR ROOF TOP HEAT PUMP UNIT.
3. PROVIDE PERMANENT LABEL FOR EACH HEAT PUMP UNIT BY CONTRACTOR. LABEL IDENTIFICATION SHALL BE PER DISTRICT DIRECTION.
4. PRE-PURCHASED ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW T24 COMPLIANT VENTSTAR T8850 THERMOSTAT AND SENVA TOTAL SENSE SERIES AQ2W-ACAAAAD CO2 SENSOR PROVIDE WITH OLED DISPLAY AND SOLID COVER.
5. INSTALL PRE-PURCHASED 100% DRY BULB ECONOMIZER. ULTRA LOW LEAK ECONOMIZER ORIENTATION TO MATCH EXISTING. ADJUSTABLE DRY BULB SENSOR BELIMO. PAINTED RAIN HOOD WITH ALUMINUM FILTER 100%. BAROMETRIC RELIEF.
6. REUSE EXISTING SEISMIC CLIPS FOR CONNECTION TO EXISTING CURB. FOR MISSING OR DAMAGED SEISMIC CLIPS, PROVIDE NEW PER DETAIL 5/M-4.1.
7. INSTALL PRE-PURCHASED MODULATING POWER EXHAUST MODULE. PROVIDE SEPARATE POWER FROM A/C UNIT.
8. REUSE EXISTING SMOKE DETECTION MODULE TO SHUT DOWN UNIT.
9. INSTALL FLUE DISCHARGE DEFLECTOR KIT PER MANUFACTURER GUILDLINES AND TERMINATE 3'-0" ABOVE UNIT OSA-INTAKE PER 2025 CMC 802.6.1

NOTE:

1. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO GENERAL NOTE 24 ON M-0.1 AND SHEET T-1 FOR MORE INFORMATION.
2. SEE ABOVE - "PACKAGED ROOFTOP GAS ELECTRIC UNIT SCHEDULE" FOR EQUIPMENT TAG NUMBER, ELECTRICAL INFORMATION AND ACCESSORIES.
3. INSTALL NEW ROOF TOP GAS ELECTRIC UNIT PER MANUFACTURER GUIDELINES.
4. AREAS WITH UNIT SUPPLYING MORE THAN 2,000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SYSTEM SHUT DOWN PER SECTION 608 OF THE 2025 CMC.
5. EXISTING ROOF CURB TO REMAIN. FOR DAMAGED ROOF CURB REPLACEMENT, CONTRACTOR TO PROVIDE UNIT COST FOR CURB REPLACEMENT AND ASSOCIATED ROOFING.

AIR DISTRIBUTION SCHEDULE

SYM.	MFR. & MODEL #	NECK SIZE	CFM RANGE	MAX. NECK VELOCITY	MAX. N.C.	S.P. DROP	TYPE	DAMPER	REMARKS
- SD-1	KRUEGER 1240	8"x8"	0-60	400	30	.06	MODULAR	NONE	FRAME 23 FOR T-BAR

LEGEND

400 / SD-1 — CFM / AIR DISTRIBUTION DEVICE

SD	SUPPLY DIFFUSER
RG	RETURN GRILLE
TG	TRANSFER GRILLE
EG	EXHAUST GRILLE

SPLIT SYSTEM OUTDOOR UNIT HEAT PUMP SCHEDULE

SYM	MFR & MODEL #	TONS	AREA SERVICED	COOLING CAPACITY	HEATING CAPACITY	HSPF2	SEER	ELECTRICAL				APPROX. DIMENSIONS W x H x D	WEIGHT (LBS)	CONTROL DETAIL	ANCHORAGE DETAIL	REMARKS
								V	PH	MCA	MOCP					
HP 1	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 2	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 3	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 4	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 5	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 6	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 7	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 8	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 9	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2
HP 10	CARRIER 25SCA524A003	2	BLDG H	23,800	24,200	7.5	15.96	208/230	1	14.5	25	31.19x31.19x32.06	175	2 M-4.2	1 S201	1, 2

REMARKS:

1. ISOLATION NEOPRENE PADS
2. PROVIDE 5/8" SUCTION LINE AND 3/8" LIQUID LINE. COORDINATE WITH MANUFACTURER FOR ADDITIONAL REFRIGERANT PIPING SIZING, ROUTING, AND REFRIGERANT CHARGE. (1A)

NOTE:

1. INSTALL UNITS AND PROVIDE ALL ACCESSORIES AS PER MANUFACTURER GUIDELINES.
2. CONTRACTOR SHALL INSULATE ALL REFRIGERANT SUCTION AND LIQUID PIPING INCLUDING JOINTS & PIPING SUPPORTS. INSULATION WALL THICKNESS SHALL BE PER 2025 ENERGY CODE REQUIREMENT. PROVIDE WEATHER JACKETING FOR ALL EXTERIOR REFRIGERANT PIPING.
3. UNITS ARE PRE-PURCHASED BY DISTRICT. OBTAIN SUBMITTALS FROM DISTRICT/OWNER. REFER TO T-1 FOR MORE INFORMATION.

SPLIT SYSTEM FAN COIL SCHEDULE

SYM	MFR & MODEL #	AREA SERVICED	COOLING CAPACITY		HEATING CAPACITY	MAX.CFM	OSA CFM	ESP (IN WG)	ELECTRICAL				WT (LBS)	CONTROL DETAIL	ANCHORAGE DETAIL	REMARKS
			TOTAL	SENSIBLE					V	PH	MCA	MOCP				
FC 1	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 2	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 3	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 4	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 5	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 6	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 7	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 8	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 9	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1
FC 10	CARRIER FJ4DNXB24L00	BLDG H	24.00	18.03	23.64	800	60	0.5	208	1	3.6	15	150	2 M-4.2	2 S201	1

REMARKS:

1. PROVIDE SECONDARY DRAIN PAN WITH OVERFLOW SWITCH TO SHUT OFF UNIT.
2. PROVIDE NEW SPRING ISOLATORS PER DETAIL 2/S201.
3. ELECTROMECHANICAL CONTROLS WITH NEW CARRIER SYSTEMVU CONTROLLER. NEW T24 COMPLIANT VENTSTAR T8850 THERMOSTAT.

NOTE:

1. ALL DIMENSIONS, SERVICE FCU ACCESS LOCATIONS, AND CONNECTION LOCATIONS SHALL BE VERIFIED PRIOR TO ORDERING/BEGINNING INSTALLATION. CONTRACTOR TO PROVIDE FILTER BOX LAYOUT WITH FAN COIL IN SHOP DRAWINGS.
2. CONTRACTOR TO PROVIDE CONDENSATE PUMP AS REQUIRED.
3. PROVIDE SECONDARY CONDENSATE DRAIN PAN. SEE PLUMBING DRAWINGS FOR CONDENSATE DRAIN TERMINATIONS.

AGENCY APPROVAL

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — ABBY BARENTER — No. M29253 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

WILL ROGERS ELEMENTARY SCHOOL
LYNWOOD UNIFIED SCHOOL DISTRICT
11220 DUNCAN AVENUE
LYNWOOD, CALIFORNIA, 90262

No.	Rev. Date	Description
1	4/27/2026	BACKCHECK PH 1
2	6/15/2026	ADDENDUM 1
3	9/24/2026	BIDDING ADDENDUM 1
4		

JOB NO: 501-26-0008
DATE: 9/25/2026
DRAWN: ZF
CHECK: HL
ARCHITECT: PETRA
ENGINEER: OED
DSA NUMBER: 03-125978

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL SCHEDULES

SHEET NO:
M-0.2 ADD02

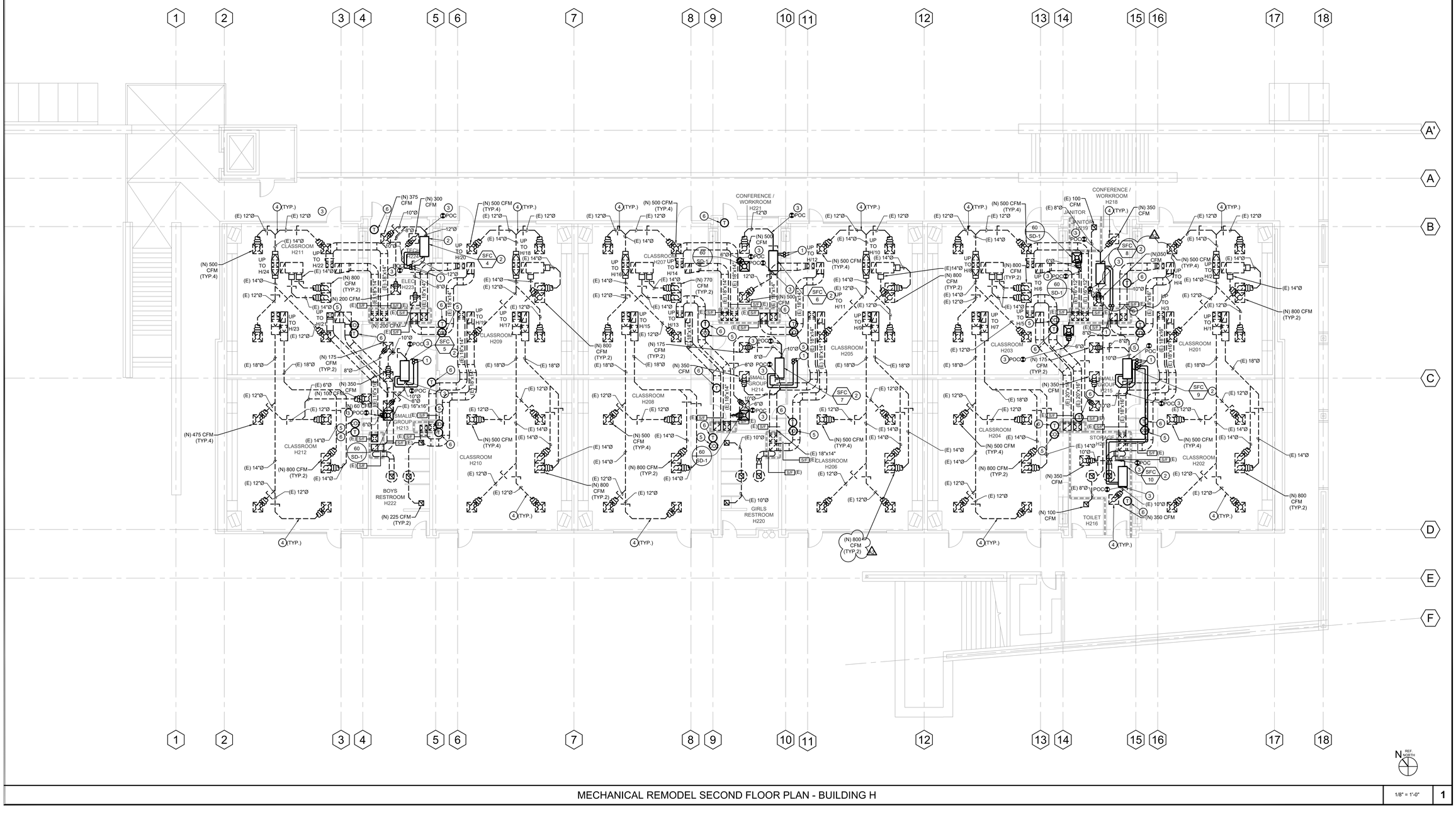
MECHANICAL KEY NOTES:

1. NEW 3/8"L & 5/8"G REFRIGERANT LINES DOWN FROM THE ROOF. CONTRACTOR SHALL FIELD VERIFY EXISTING REFRIGERANT PIPING ROUTING AND PROVIDE NEW REFRIGERANT PIPING FOLLOWING THE SAME ROUTING.
2. INSTALL NEW UNIT AT SAME LOCATION AS EXISTING. PROVIDE 30"X30" ACCESS CLEARANCE TO SERVICE THE FC UNITS. SEE STRUCTURAL DETAILS 2/S201 FOR FAN COIL ANCHORAGE.
3. RECONNECT TO EXISTING DUCTWORK.
4. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN.
5. INSTALL NEW CO2 SENSOR AT 48" AFF. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING PER MANUFACTURER GUIDELINES.
6. INSTALL NEW THERMOSTAT AT 48" AFF AT SAME LOCATION AS EXISTING. FIELD VERIFY ALL EXISTING LOCATIONS. INSTALL LOW VOLTAGE WIRING MATCHING EXISTING PATH FOR THERMOSTAT AND CO2 SENSOR POWER AND FOR CO2 SENSOR TO CONTROL NEW UNIT ECONOMIZER PER MANUFACTURER GUIDELINES. SEE DETAILS 1/M-4.2 FOR SENVA CO2 WIRING.

CONTRACTION NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AS NECESSARY PRIOR TO INSTALLATION.
2. BEFORE BIDDING ON THIS WORK, THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES, EXISTING EQUIPMENT AND SERVICES. HE SHALL DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE NEW EQUIPMENT, DUCTWORK, AND PIPING THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT AND MATERIALS INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE PROJECT. FAILURE TO VISIT THE SITE WILL IN NO WAY RELIEVE THE CONTRACTOR OF THE NECESSITY OF FURNISHING ANY MATERIAL OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS ADDITIONAL WORK SHALL BE PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER.
3. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND ELECTRICAL SERVICES IN THE AREA OF CONSTRUCTION AND NOTIFY THE ENGINEER OR ANY DISCREPANCIES.
4. PATCH AND REPAIR EXISTING SURFACES AS REQUIRED TO FACILITATE DEMOLITION AND/OR PERFORMANCE OF THE NEW WORK. ALL NEW WORK SHALL MATCH IN KIND, QUALITY AND FINISH U.O.N.
5. CONTRACTOR SHALL MINIMIZE IMPACT TO EXISTING CEILING AND IMPLEMENT MEASURES TO MITIGATE DAMAGE TO THE EXISTING CEILING SYSTEM. THE CONTRACTOR SHALL REPAIR AND REPLACE ALL TILES DAMAGED DURING CONSTRUCTION.
6. CONTRACTOR TO PROVIDE POST AIR BALANCE FOR NEW SYSTEM AND AIR DISTRIBUTION. SEE SPECIFICATION SECTION 23 05 93 FOR ADDITIONAL INFORMATION.
7. REFERENCE TO DSA IR-25-2 SECTION 3. SUSPENDED LAY-IN PANEL CEILING: 2022 CBC
   - 3. CEILING SYSTEM ALTERATION
   - 3.1 EXISTING GRID CUT OR ALTERED WHEN ANY PORTION OF AN EXISTING GRID SYSTEM IS CUT OR ALTERED AND ANY ONE OF THE CONDITIONS DESCRIBED IN THE SUBSECTIONS BELOW APPLIES,THE ENTIRE CEILING IN THE AFFECTED SPACE SHALL BE EVALUATED AND UPGRADED AS REQUIRED TO MEET THE REQUIREMENTS OF THE CURRENT CBC AND THIS IR. WITH DSA CONCURRENCE, OTHER EXISTING LATERAL BRACING SYSTEMS MAY BE DEEMED EQUIVALENT TO A 4-WAY BRACE WIRE AND COMPRESSION POST LATERAL FORCE BRACING SYSTEM.
   - 3.1.1 THE EXISTING CEILING DOES NOT HAVE LATERAL BRACING ASSEMBLIES (I.E.,4-WAY BRACE WIRES AND COMPRESSIONPOST).
   - 3.1.2 THE EXISTING CEILING HAS LATERAL BRACING ASSEMBLIES(I.E.,4-WAY BRACE WIRES AND COMPRESSION POST) WITH SPACING GREATER THAN 12-FEET ON CENTER IN EITHER PRINCIPAL AXIS.
   - 3.1.3 THE AREA CUT OR ALTERED EXCEEDS 10 PERCENT OF THE ENTIRE CEILING AREA.THE 'ENTIRE' CEILING IN THE AFFECTED SPACE IS DEFINED AS THE AREA OF CEILING BOUNDED BY FOUR WALLS OR A COMBINATION OF WALLS AND EXPANSION JOINTS OR SEISMIC SEPARATION JOINTS.
   - 3.2 EXISTING GRID NOT CUT OR ALTERED EVALUATION AND ASSOCIATED UPGRADE TO THE CEILING GRID,SUSPENSION SYSTEM, AND LATERAL FORCE BRACING ASSEMBLIES IS NOT REQUIRED WHEN THE CEILING GRID IS NOT CUT OR ALTERED, AND THE SCOPE OF WORK IS LIMITED TO THE FOLLOWING:
     - 3.2.1 REPLACEMENT OF EXISTING CEILING PANELS WITH LIKE PANELS OF EQUAL OR LESSER WEIGHT.
     - 3.2.2 REPLACEMENT OF LUMINAIRES OR AIR TERMINALS WITH LIKE UNITS (I.E.,EQUAL SIZE AND EQUAL OR LESSER WEIGHT) PLACED IN THE SAME LOCATIONS.
     - 3.2.3 REPLACEMENT OF ONLY THE INTERNAL LIGHTING COMPONENTS EXISTING LUMINAIRES AND THE ATTACHMENT OF THE LUMINAIRE'S OUTER ENCLOSURE TO EXISTING GRID IS NOT (E.G.,LENS,BALLAST,OR LAMPS) WITHIN ALTERED.
     - 3.3 REUSE OF EXISTING CEILING WIRES EXISTING CEILING HANGER AND BRACING WIRES MAY BE REUSED PROVIDED THE FOLLOWING REQUIREMENTS ARE MET:
     - 3.3.1 WIRE GAUGE AND SPACING COMPLIES WITH THE CURRENT APPLICABLE CODES AND THIS IR.
     - 3.3.2 DSA-APPROVED CONSTRUCTION DRAWINGS INCLUDE A DETAIL SPECIFYING THE SPLICE BETWEEN A NEW AND EXISTING WIRE. ACCEPTABLE WIRE SPLICE DETAILS ARE PROVIDED IN APPENDIX A DETAIL6.10 BELOW.
     - 3.3.3 WIRES ARE TESTED IN ACCORDANCE WITH SECTION 6.2 BELOW.

WALL MATERIAL LEGEND	
	1-HR. FIRE RATED WALL



MECHANICAL REMODEL SECOND FLOOR PLAN - BUILDING H | 1/8" = 1'-0" | 1

AGENCY APPROVAL

optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER
ABBY BANEVICH
No. M29253
Exp. 6/30/27
MECHANICAL
STATE OF CALIFORNIA

PROJECT NAME:

WILL ROGERS ELEMENTARY SCHOOL
LYNWOOD UNIFIED SCHOOL DISTRICT
11220 DUNCAN AVENUE
LYNWOOD, CALIFORNIA, 90262

No.	Rev. Date	Description
1	4/27/2026	BACKCHECK PH 1
2	6/15/2026	ADDENDUM 1
3	9/24/2026	BIDDING ADDENDUM 1
4		

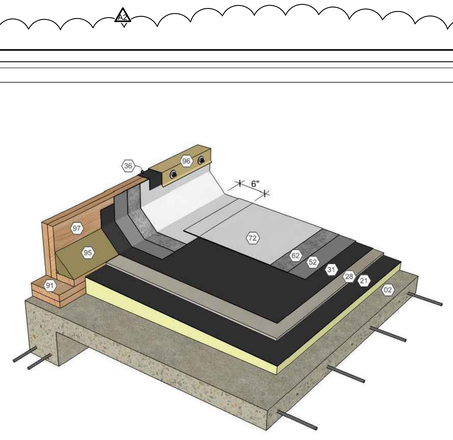
JOB NO:	501-26-0008
DATE:	9/25/2026
DRAWN:	ZF
CHECK:	HL
ARCHITECT:	PETRA
ENGINEER:	OED
DSA NUMBER:	03-125978

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL SECOND FLOOR PLAN - BUILDING H

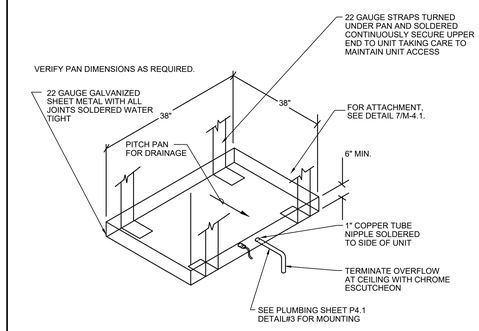
SHEET NO:
M-1.2 ADD02



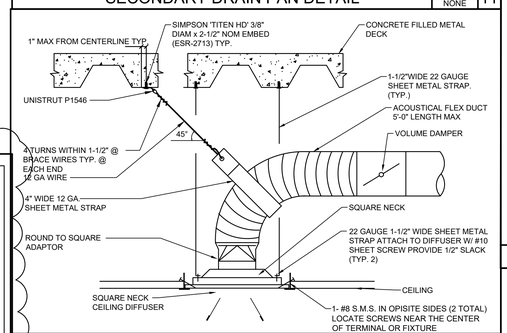
ROOF FLASHING CONCRETE DECK DETAIL — SCALE NONE — 13

FLAT ROOF (SLOPE 1" OR LESS IN 12")

REFRIGERANT PIPE SUPPORT ON ROOF — SCALE NONE — 12

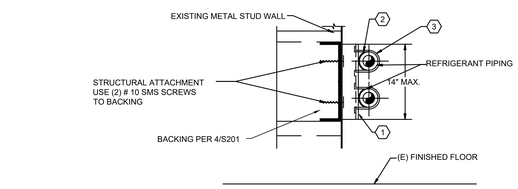


SECONDARY DRAIN PAN DETAIL — SCALE NONE — 11



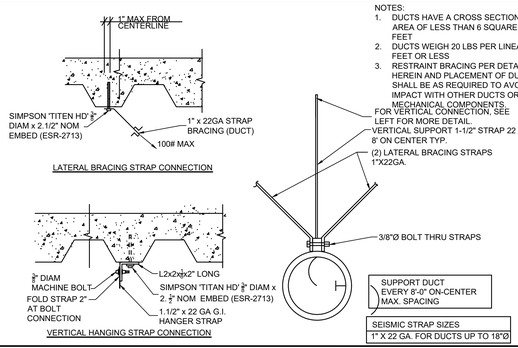
CEILING DIFFUSER MOUNTING — SCALE NONE — 10

REFRIGERANT PIPING THRU CONCRETE ROOF — SCALE NONE — 9

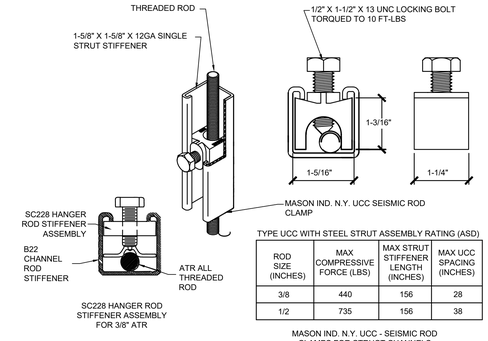


MATERIAL LIST
(UNISTRUT OR EQUAL PRODUCT)
1. P1000T CHANNEL AT 6'-0" MIN.
2. 4" WIDE 18 GA ALUMINUM SHEET ROLLED TO CONFORM TO PIPE INSULATION O.D.
3. P2057 PIPE CLAMP FOR 2" INSULATED PIPE. P1117 FOR 2" PIPE; P2029 FOR 3/4" PIPE

REFRIGERANT PIPING SUPPORT — SCALE NONE — 8



ROUND DUCT SUPPORT DETAIL — SCALE NONE — 7



TYPE UCC WITH STEEL STRUT ASSEMBLY RATING (ASD)

ROD SIZE (INCHES)	MAX COMPRESSIVE FORCE (LBS)	MAX STRUT STIFFENER LENGTH (INCHES)	MAX UCC SPACING (INCHES)
3/8	440	156	28
1/2	735	156	38

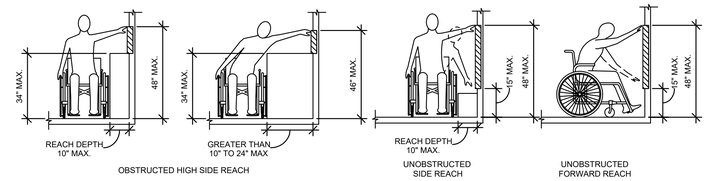
MASON IND. N.Y. UCC - SEISMIC ROD CLAMPS FOR STRUCT CHANNELS

FOR REFERENCE SEE X3.0/OPM-0043-13 (REFER TO DETAIL 1/M15.11)

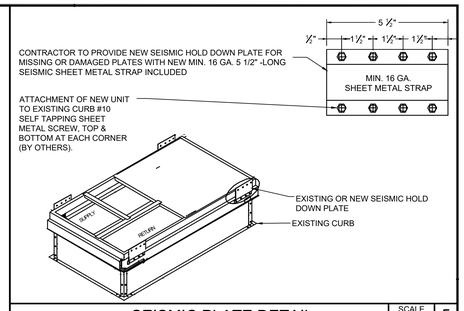
ROD STIFFENER AND ROD CLAMP DETAIL — SCALE NONE — 6

FORWARD REACH TO WALL MOUNTED OBJECTS W/O OBSTRUCTIONS
30"x48" CLEAR FLOOR SPACE FOR FORWARD APPROAC IS PROVIDED TO OBJECT.
- ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE ADJOINS AN ACCESIBLE ROUTE OR ADJOINTS ANOTHER WHEELCHAIR CLEAR FLOOR SPACE

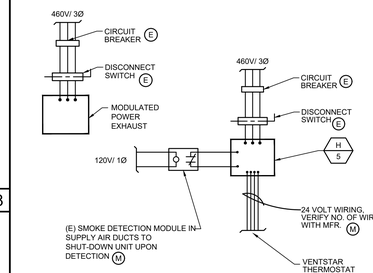
SIDE REACH - WALL MOUNTED OBJECTS W/0 OBSTRUCTIONS
30"x48" CLEAR FLOOR SPACE FOR PARALLEL APPROACH IS PROVIDED AT OBJECT.
- ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE ADJOINS AN ACCESIBLE ROUTE OR ADJOINTS ANOTHER WHEELCHAIR CLEAR FLOOR SPACE



CONTROL DEVICE MOUNTING DETAIL — SCALE NONE — 1



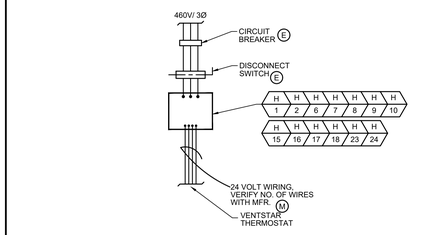
SEISMIC PLATE DETAIL — SCALE NONE — 5



AC WITH MORE THAN 2000 CFM (H-5)

A/C CONTROL WITH POWER EXHAUST — SCALE NONE — 4

A/C CONTROL WITH POWER EXHAUST — SCALE NONE — 3



AC WITH EQUAL OR LESS THAN 2000 CFM

A/C CONTROL(ECONOMIZER) — SCALE NONE — 2

AGENCY APPROVAL

oed optimum energy design
Consulting Engineers
5200 E. La Palma Ave
Anaheim, CA 92807
Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — BAINER — No. M29253 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

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LYNWOOD UNIFIED SCHOOL DISTRICT
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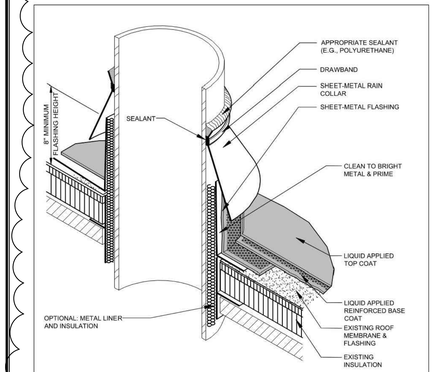
JOB NO: 501-26-0008
DATE: 9/25/2026
DRAWN: ZF
CHECK: HL
ARCHITECT: PETRA
ENGINEER: OED
DSA NUMBER: 03-125978

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DETAILS

SHEET NO:
M-4.1 ADD02



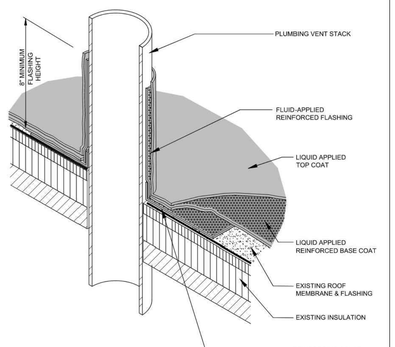
NOTES

1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.

SHEET-METAL STACK VENT [HOT OR COLD] FULLY REINFORCED RESTORATION
LA-FR-18 N.T.S.

TREMCO ROOFING & BUILDING MAINTENANCE

© 2017 TREMCO



NOTES

1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.

PLUMBING VENT OR PIPE PENETRATION FULLY REINFORCED RESTORATION
LA-FR-19 N.T.S.

TREMCO ROOFING & BUILDING MAINTENANCE

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PHYSICAL PROPERTIES
CODES & APPROVALS
MAINTENANCE
PRECAUTIONS
TECHNICAL SUPPORT

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Roofing & Building Maintenance
www.tremcoroofing.com
3735 Green Road
Beachwood, Ohio 44122
1.800.852.6053

220 Wicksteed Avenue
Toronto, Ontario, M4H 1G7
1.800.668.9879

Tremco Roofing and Building Maintenance is part of Tremco Construction Products Group.

TremLastic S

PROPERTY	TYPICAL VALUE	TEST METHOD
Density	8.6 lbs/gal (1.006 kg/m³)	ASTM D1475
Residue by evaporation	50%	ASTM D2939
Elongation	1	ASTM D412
VOC	16 g/L	

CLASSIFIED UL US — FM APPROVED

Your local Tremco Roofing representative can provide you with effective maintenance procedures, which may vary depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Users must read container labels and Safety Data Sheets for health and safety precautions prior to use.

Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weatherproofing technology, complement and extend the service of the Tremco Service Staff.

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91123

TREMCO TREMLASTIC S

SCALE NONE 3

TremLastic S

A high performance, non-fibered, rubberized asphalt emulsion

FEATURES	BENEFITS
Rapid-Set Application	• Delivers waterproofing performance in a fraction of the time vs. similar products
Low Odor	• Perfect for odor-sensitive accounts
Versatile	• Can be used in a variety of roofing applications
Reflective Top Coat Options	• Different reflective top coat finishes including White, Aluminized and others

APPLICATION (CONTINUED)

Priming: Primers may be needed on specific substrates/surfaces prior to application. See the Roof Substrates/Surfaces Application Chart below for recommended primers.

Primer Name	BUR - Smooth	MB - Smooth	MB - Granule	Metal	Metal - Fluoropolymer	Single Ply	Structural Concrete	Walls	Pre-Existing Coating/Sealants*
Preferred Primer	SP Primer 1.0 gal (3.8 L) per 100 sq. ft. (372 sq. m)	SP Primer 1.0 gal (3.8 L) per 100 sq. ft. (372 sq. m)	SP Primer 1.0 gal (3.8 L) per 100 sq. ft. (372 sq. m)	N/A	N/A	N/A	N/A	N/A	N/A
Alternate Primer	Tremprime WB 1.0 gal (3.8 L) per 100 sq. ft. (372 sq. m)	Tremprime WB 1.0 gal (3.8 L) per 100 sq. ft. (372 sq. m)	Tremprime WB 1.0 gal (3.8 L) per 100 sq. ft. (372 sq. m)	N/A	N/A	N/A	N/A	N/A	N/A

Note: Coverage rates are minimum recommended rates for specified system.
**Pre-existing coatings/sealants require pull tests to determine adhesion and compatibility.*

COVERAGE RATES

Review the appropriate product data sheets for specific product and application information.

Three-Course: 30-65 ½ ft²/gal
Fully-Reinforced Field Applications: 4-5 gals/100 sq. ft. (64-80 wet mils)
Fully-Reinforced Flashing Applications: 2-1/2 gal/100 sq. ft. (40 wet mils)
Three-Course Applications: 30-65 ½ ft²/gal

Rapid-Set ICE System: Apply TremLastic S at 4-5 gals/100 sq. ft. (64-80 wet mils). Immediately install Rapid-Set Reinforcing Fabric into the wet TremLastic S, rolling or brooming the fabric until it is free of wrinkles, voids, air pockets, etc. Once the installation is able to support foot traffic, apply the subsequent coats of ICE Coating directly to the Rapid-Set Reinforcing Fabric.

Permafab Fully-Reinforced Installations: Apply TremLastic S at 2 - 2-1/2 gals/100 sq. ft. (32-40 wet mils). Immediately install Permafab into the wet TremLastic S, rolling the fabric until it is free of wrinkles, voids, air pockets, etc. Immediately apply a second application of TremLastic S at 2 - 2-1/2 gals/100 sq. ft. (32-40 wet mils). Allow installation to cure prior to application of approved liquid applied products.

Reflective Top Coat Installations: TremLastic S must cure a minimum of 14 days prior to the direct application of water-based or acrylic liquid applied products. Once cured, prime TremLastic S with SP Primer and install the approved liquid applied product.

TremLastic S must cure a minimum of 30 days prior to the direct application of solvent-based liquid applied products. Once cured, prime TremLastic S with Treminime QD and install the approved liquid applied product.

SPRAY EQUIPMENT RECOMMENDATIONS

Weather and site conditions may effect the curing process and times.

General Guidelines

Component	Pressure	Tip Size	Flow Rate	Filters	Hose Type	RPM	Product Temp
One Component	1,500 psi	.060 - .093	1.6 - 3.75 gpm	Remove	High Pressure	¼" High Pressure	Ambient

TEMPERATURE RECOMMENDATIONS

- Must use heavy-duty or industrial grade spray rigs
- Properly clean and maintain spray equipment before, during and after use
- Equipment should be properly grounded during use

Minimum application temperatures must be 50°F and rising.
Do not apply when:
- Dew point is within 5°F (2.77°C) of ambient temperatures
- Precipitation, fog, or dew is imminent prior to cure of the product
- Freezing temperatures are expected prior to cure of the product

CLEAN UP

Soap & Water

LIMITATIONS

- Not recommended for use over the following:

Roof Decks: Cementitious wood fiber, metal, poured-in-place gypsum, structural lightweight or lightweight insulating concrete, and wood decks (includes plywood, tongue and groove, etc.).
Products/Systems: Asphalt-based or coal tar gravel surfaced BUR systems, clay tile, expanded or extruded polystyrene insulation, metal roofing panels, fluoropolymer finished metal, shingles, silicone-based products, and tar-based products.
- Not for use under continuous immersion

DESCRIPTION

TremLastic S is a water-based, low odor, non-fibered, neoprene rubber modified asphalt emulsion.

BASIC USES

TremLastic S is applied to new and existing smooth asphalt BUR and MB roof surfaces. TremLastic S can be used as a detailing product for our Alumanation 301, Solargard 6083, and ICE Coating restoration systems. It can also be utilized to provide a smooth surface for surfacing applications of Alumanation 301, Polarcote FR, and ICE Coating on new BUR and MB roof system installations. TremLastic S is the recommended product for use in the Rapid-Set ICE system as a ply adhesive for Tremco's Rapid Set Reinforcing Fabric.

PACKAGING

5 gal (18.9 L) pail, 53 gal (200.6 L) lined drum

COLOR

Black

GRADE

Brush, Roller, Spray

STORAGE

12 months shelf life in unopened containers when properly stored.

DO NOT FREEZE

Recommended storage conditions are indoors in a ventilated, dry area removed from heat, open flame, ignition sources, and direct sunlight. Storage temperatures should range from 60-70°F (15-21°C) and must not drop below 32°F (0°C) or exceed 110°F (43°C).

On the job site, materials should remain on the pallet until use and be stored in a shaded, ventilated area. Materials should be covered with a light-colored, reflective tarp for protection against the elements. Allow for adequate air flow inside the pallets.

Shelf life could be affected if the product is not stored properly.

APPLICATION

Surface Preparation: Surface must be clean, dry, in sound condition, and free of dirt, debris, and contaminants. Rust must be abraded until it no longer exhibits flaking or chalking. Weak insulation must be identified and replaced. Deficient areas of existing system must be repaired. All repairs should be made with like materials matching the existing components and allowed to properly cure prior to application of liquid-applied products.

If the surface has a pre-existing coating, paint or sealant, please contact Tremco Roofing for adhesion/compatibility testing and surface preparation recommendations.

Mixing:
Pails: Use a heavy duty corded power drill with Jiffy Mixer mixing blade. Mix until product is consistent in appearance and viscosity. Do not thin.
Drums: Use industrial drum mixing equipment to mechanically mix each container. Mix until product is consistent in appearance and viscosity. Do not thin.

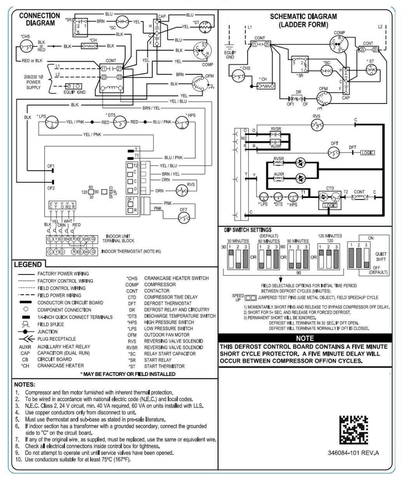
SENVA CO2 SENSOR SPECS

SCALE NONE 1

25SCA5
Comfort Series™ Air Conditioner with Puron® Refrigerant 1.5 to 5 Nominal Tons

Carrier® Turn to the experts

Wiring Diagram



NOTES:

1. Compressor and fan motor furnished with inherent thermal protection.
2. To be wired in accordance with national electric code (N.E.C.) and local codes.
3. N.E.C. Class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with LLS.
4. Use copper conductors only from disconnect to unit.
5. Must use thermostat and subbase as stated in provided literature.
6. If indoor section has a transformer with a grounded secondary, connect the grounded side to "C" on the circuit board.
7. If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
8. Check all electrical connections inside control box for tightness.
9. Do not attempt to operate unit until service valves have been opened.
10. Use conductors suitable for at least 75°C (167°F).

346084-101 REV.A

Fig. 1 – Sizes 18 - 60

F.IH: Installation Instructions

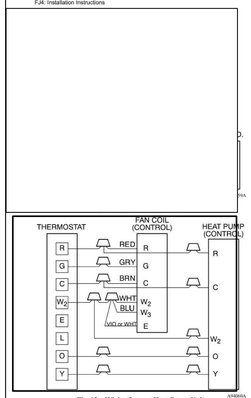


Fig. 12 – Wiring Layout Heat Pump Unit

Transformer Information

The transformer is factory wired for 230V operation. For 208V applications, disconnect the black wire from the 230V terminal on transformer and connect it to the 208V terminal (Fig. 14).

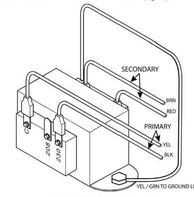


Fig. 14 – Transformer Connections

Heater Staging

If electric heat staging is required, a multi-stage heating room thermostat is required. Consult your equipment supplier for a suitable thermostat.

Manufactured Housing

In manufactured housing applications, the Code of Federal Regulations, Title 24, Chapter XX, Part 3280.714 requires that supplemental electric heat be locked out at outdoor temperatures above 40° F (4° C), except for a heat pump defrost cycle. See Fig. 13 for typical low voltage wiring with outdoor thermostat.

Ground Connections

NOTE: Use UL listed conduit and conduit connectors for connecting supply wire(s) to unit to obtain proper grounding. Grounding may also be accomplished by using grounding lugs provided in control box.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to establish uninterrupted or unbroken ground could result in personal injury and/or death.

According to NEC, NFPA 70, and local codes, the cabinet must have an uninterrupted or unbroken ground to minimize personal injury if an electrical fault should occur. The ground may consist of electrical wire or metal conduit when installed in accordance with existing electrical codes. If conduit connection uses reducing washers, a separate ground wire must be used.

Minimum CFM and Motor Speed Selection

The fan speed selection is done at the motor connector. Units with or without electric heaters require a minimum CFM. Refer to the unit wiring label to ensure that the fan speed selected is not lower than the minimum fan speed indicated.

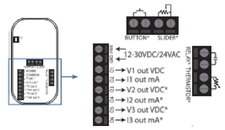
Specifications and designs without notice and without obligations.

7

SPLIT SYSTEM WIRING DIAGRAMS

SCALE NONE 2

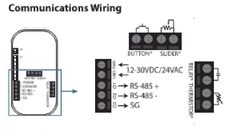
Analog Wiring



*These terminals may not be populated depending on which model is ordered.

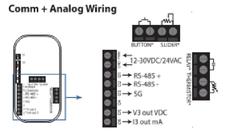
Outputs 1(V1,I1), 2(V2,I2) and 3(V3,I3), will be auto populated in order of the AQ2W ordering matrix:
CO2, RH, Temp, VOC, PM, Slider, CO, O3

Communications Wiring



NOTE: A 120 Ω termination resistance may be added in parallel with the RS-485 +/- by moving the very top DIP switch (DIP 1) to the left position. See "DIP Configuration" section for more information.

Comm + Analog Wiring



SENVA

AIR QUALITY

SPECIFICATIONS

PMx (Optional) CLASS 1 LASER PRODUCT	Type	Optical
	Size Range	PM1.0, PM2.5, PM4.0, PM10.0
	Scale	0-1,000 µg/m³
	Lower detection limit	0.3 µm
	Precision	±10 µg/m³ (0-100µg/m³); ±10% (100-1,000 µg/m³)
	Long-Term Drift	±1.25 µg/m³ / year
PIR (Optional)	Type	Passive Infrared
	Axis X field of view	140°, 15 ft (4.5m)
	Axis Y field of view	76°, 15 ft (4.5m)
Ambient Light	Type	Phototransistor
	Scale	0-100 fc (lm/ft²), readable over comms
Operating Environment	Temperature	32 to 122°F (0 to 50°C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions	5.67"h x 3.00"w x 1.07"d (With concealing ring: 6.35"h x 3.69"w x 1.25"d)
Compliance	Agency	CE, RoHS

BACnet® is a registered trademark of ASHRAE

ORDERING

AQ2 ☐ - ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Package
W = Surface

Output Type
A = Analog
B = BACnet/ Modbus

CO2
A = None
C = CO2
D = Dual Channel CO2

Relative Humidity
A = None
2 = 2% RH

VOC
A = None
V = VOC

Particulate Matter*
A = None
P = PM 1.0, 2.5, 4.0, 10.0

Temperature Output
A = None
B = Transmitter
C = 100Pt RTD
D = 1000Pt RTD
E = 10KType 2
F = 10KType 3
G = 10kw/11k
H = 3k
I = 2k2
J = 1k8
K = 20k

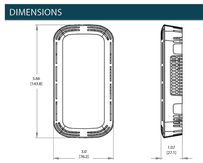
Display
X = None
D = OLED Display
S = OLED display with solid cover
R = Air Quality Ring

PIR Sensor
P = PIR Sensing

Accessories**
C = 1k Ω SP Slider
F = 10k Ω SP Slider
E = 910 Ω offset resistor
S= Slider override PB
O = Thermistor Override PB
U = User PB

*PM Available on AQ2W-8 Surface mount + BACnet/Modbus versions only
**Additional SP sliders and offset resistors available upon request
***Slider and pushbutton options not available with PM sensor. Call for additional slider and override options.

DIMENSIONS



Standard Surface Mount



Concealing Ring (Provided)

- Conceal oversized drywall cutouts or European junction boxes

Higher Reliability, Faster Installation, Superior Accuracy | Sense the difference | 4

SENVA

SPECIFICATIONS

Power Supply	Non-Display	16-30VDC/24VAC[1], 3.5W nominal, 4W max.	
	Display or LED Ring	24-30VDC/24VAC[1], 4.3W nominal, 5W max.	
Interface	OLED (optional)	1.5" Organic LED Display, 128x128, color	
	Air Quality Ring	Color changing (red/yellow/green) LED Air Quality Ring	
Analog Outputs (Analog version only)	Quantity	Up to 3 outputs	
	Source	CO2, RH%, Temp, Temp slider, TVOC (selectable)	
	Scale	0-5V, 0-10V, 4-20mA (switch selectable, programmable per output)	
Protocol Output (Comms version only)	Protocol	BACnet MS/TP or Modbus RTU	
	Connection	3-wire RS-485, with isolated ground	
	Data Rate	9600, 19200, 38400, 57600, 76800, 115200 (switch selectable)	
	Address Range	0-127	
Relay (Standard except for PM models)	Type	Solid-state output, 1A @ 30VAC/DC, N.O.	
	Polarity	NO/NC (selectable)	
	Source	CO2 setpoint, RH setpoint, Temp setpoint, TVOC setpoint, PIR motion detection, Air Quality, off (selectable)	
CO2 (Optional)	Type	Non-dispersive Infrared (NDIR)	
	Accuracy	±(30ppm + 3% of reading) (400-2,000ppm), -10-50°C, 0-85%RH ±(50ppm+ 5% of reading) (2,000-5,000ppm), -10-50°C, 0-85%RH >5,000ppm consult factory	
	Resolution	1 ppm	
	Range	0-2,000 PPM (Default) (Programmable up to 10,000ppm)	
	Response time	90 seconds to 90% reading	
	Sample rate	1s	
	Temp and Pressure Compensation	Yes, barometric pressure readable over comms	
Relative Humidity (Optional)	Type	Digital CMOS	
	Accuracy[2]	2% models, +/-2% over 0 to 80%RH range	
	Resolution	0.05%RH	
	Response time [3]	30s	
	Sample rate	3s	
	Operating range	0 to 100%RH (non-condensing)	
	Operating conditions [4]	-4 to 140°F (-20 to 60° C) @ RH>90%; -4 to 176°F @ RH=50%	
Temperature Transmitter (Optional)		With RH option	Without RH option
	Type	Silicon Band-gap	NTC Thermistor
	Nominal Accuracy	±0.3° C (operating range)	±0.5° C (operating range)
	Maximum Accuracy [2]	±0.5° C (at 25° C), ±1.0° C	±1.0° C (at 25° C), ±2.0° C
	Resolution	0.1° C	0.05° C
	Response time	30s	30s
	Sample rate	3s	100 milliseconds
TVOC (Optional)	Type	MOS	
	Gas	Total VOC	
	Range	0-10,000 µg/m³ (Display may be programmed to show PPB)	
	Response Time	<10s	
	Temp and Pressure Compensation	Yes	
	Output	0-2,000 µg/m³ (default) programmable up to 10,000 µg/m³	

1. *One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.*
2. *Models with PM sensor included achieve ±5% accuracy over 0 to 80%RH range and an additional temperature shift of up to +0.5°C*
3. *Time for reaching 63% of reading at 25° C and 1 m/s airflow*
4. *Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)*

3 | 866-660-8864 | fax 503-296-2529 | www.senvainc.com

SCALE NONE 1

AGENCY APPROVAL

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Telephone (714) 693-2277

STAMP

REGISTERED PROFESSIONAL ENGINEER — ROBERT BANNER — No. M29253 Exp. 6/30/27 — MECHANICAL — STATE OF CALIFORNIA

PROJECT NAME:

WILL ROGERS ELEMENTARY SCHOOL
LYNWOOD UNIFIED SCHOOL DISTRICT
11220 DUNCAN AVENUE
LYNWOOD, CALIFORNIA, 90262

No.	Rev. Date	Description
1	4/27/2026	BACKCHECK PH 1
2	6/15/2026	ADDENDUM 1
3	9/24/2026	BIDDING ADDENDUM 1
4		

JOB NO: 501-26-0008
DATE: 9/25/2026
DRAWN: ZF
CHECK: HL
ARCHITECT: PETRA
ENGINEER: OED
DSA NUMBER: 03-125978

CONSULTANT

STAMP

SHEET DESCRIPTION:
MECHANICAL DETAILS

SHEET NO:
M-4.2ADD02

MEP COMPONENT ANCHORAGE NOTE

All mechanical, plumbing, and electrical components shall be anchored and installed per the details on the DSA-approved construction documents. The following components shall be anchored or braced to meet the force and displacement requirements prescribed in the 2025 CBC Sections 1617A.1.18 through 1617A.1.26 and ASCE 7-16 Chapters 13, 26, and 30:

1. All permanent equipment and components.
2. Temporary, movable or mobile equipment that is permanently attached (e.g. hard wired) to the building utility services such as electricity, gas or water. "Permanently attached" shall include all electrical connections except plugs for 110/220 volt receptacles having a flexible cable.
3. Temporary, movable or mobile equipment which is heavier than 400 pounds or has a center of mass located 4 feet or more above the adjacent floor or roof level that directly support the component is required to be restrained in a manner approved by DSA.

The following mechanical and electrical components shall be positively attached to the structure but need not demonstrate design compliance with the references noted above. These components shall have flexible connections provided between the component and associated ductwork, piping, and conduit.
Flexible connections must allow movement in both transverse and longitudinal directions:

A. Components weighing less than 400 pounds and having a center of mass located 4 feet or less above the adjacent floor or roof level that directly support the component.

B. Components weighing less than 20 pounds, or in the case of distributed systems, less than 5 pounds per foot, which are suspended from a roof or floor or hung from a wall.

The anchorage of all mechanical, electrical and plumbing components shall be subject to the approval of the design professional in general responsible charge or structural engineer delegated responsibility and acceptance by DSA. The project inspector will verify that all components and equipment have been anchored in accordance with the above requirements.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

MEP Distribution System Bracing Note for Piping, Ductwork, and Electrical Conduit:

Piping, ductwork, and electrical distribution systems shall be braced to comply with the forces and displacements prescribed in ASCE 7-22 Section 13.3 as defined in ASCE 7 Sections 13.6.5, 13.6.6, 13.6.7, 13.6.8; and 2025 CBC, Sections 1617A.1.24, 1617A.1.25 and 1617A.1.26.

The method of showing bracing and attachments to the structure for the identified distribution system are as noted below. The MEP design professional engineer responsible for content on these sheets has verified that the design methods identified below are in accordance with DSA IR 16-13.

Mechanical Piping (MP), Mechanical Ducts (MD), Plumbing Piping (PP), Electrical Distribution Systems (E):

MP☐ MD☐ PP☒ E☐ Option 1: Project-Specific Design.

MP☐ MD☐ PP☐ E☐ Option 2: Design Based on OSHPD OPM, Within Project Submittal

MP☐ MD☐ PP☐ E☐ Option 3: Design Based on OSHPD OPM, Deferred Submittal

APPLICABLE CODES

BUILDING OCCUPANCY CLASSIFICATION: -

THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF:

CODES

2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2025 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
2025 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
2025 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
2025 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
2025 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2025 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
2025 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2025 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2025 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXACT LOCATION OF EXISTING LINES, LATERALS AND WYES BEFORE STARTING. SHOULD IT BE NECESSARY TO REROUTE LINES DUE TO CONDITIONS FOUND ON THE SITE OR IF INDICATED P.O.C. CANNOT BE MADE TO THE LINES AS FOUND, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT BEFORE INSTALLING ANY WORK WHICH MAY BE AFFECTED.
2. OFFSET PIPES AS REQUIRED TO CLEAR MECHANICAL DUCTWORK.
3. FURNISH AND INSTALL A SHUT-OFF VALVE, PLUG COCK OR STOP AT EACH PIECE OF EQUIPMENT FURNISHED BY OTHERS REQUIRING DRAIN, WASTE, WATER, ETC.
4. SEAL AND FLASH ALL PENETRATIONS THROUGH ROOF WATERTIGHT.
5. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF ALL A.C. UNITS.
6. UNLESS OTHERWISE NOTED, ALL CONDENSATE AND GAS DROPS SHALL BE CONCEALED IN WALLS.
7. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS AND LOCATIONS ARE NOT EXACTLY LOCATED. THE CONTRACTOR SHALL LOCATE ALL OFFSETS, BENDS, AND SPECIAL FITTINGS TO SUIT JOB SITE CONDITIONS. THEREFORE THE CONTRACTOR SHALL MAKE HIMSELF FULLY AWARE OF ALL EXISTING CONDITIONS AND LOCATE ALL REQUIRED SPECIAL FITTINGS TO SUIT EXISTING CONDITIONS.
8. THIS CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT HIS WORK AND EQUIPMENT. HE SHALL COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER TRADES AND ALL JOB CONDITIONS.
9. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, CHARGES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENT AGENCIES.
10. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE PLANS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
11. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM, TO THE FULL SATISFACTION OF EACH REPRESENTATIVE. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.
12. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF MECHANICAL EQUIPMENT MATERIAL ARISES ON THE DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON DRAWINGS AND/OR IN THE SPECIFICATION TO ENSURE COMPLETE AND OPERABLE SYSTEMS.
13. ALL PIPING INSULATION AND SEALING MATERIALS SHALL HAVE FLAME SPREAD RATING NOT EXCEEDING 25 AND SMOKE DEVELOPED RATING NOT EXCEEDING 50.
14. BEFORE ORDERING ANY PIECE OF EQUIPMENT, THE CONTRACTOR SHALL PROVIDE EQUIPMENT SUBMITTALS, SHOP DRAWINGS WITH EQUIPMENT DIMENSIONS, AND SITE CLEARANCE AVAILABLE. WHERE REQUIRED BY SPACE LIMITATIONS HAVE UNITS SHIPPED IN SECTIONS.
15. SANITARY VENTS TO BE 10'-0" FROM ANY AND ALL FRESH AIR INTAKES, FAN DISCHARGE OR HEATING EQUIPMENT.
16. ALL PIPE BRANCH CONNECTIONS SHALL OFF-SET. NO "BULL HEAD" CONNECTIONS WILL BE ALLOWED.
17. ALL EXISTING PLUMBING LINES SHOWN ARE TAKEN FROM EXISTING DRAWINGS WHICH INDICATE APPROXIMATE LOCATION ONLY. THE CONTRACTOR IS TO INCLUDE IN HIS BID TO PERFORM FIELD INVESTIGATION TO PIN POINT THE EXACT LOCATION AS REQUIRED FOR DEMOLITION OR MAKING NEW CONNECTION.
18. INTERRUPTION OF EXISTING SERVICES: THE CONTRACTOR'S ATTENTION IS CALLED TO THE PRESENCE OF EXISTING, CONDUIT, PIPING, ETC. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGE BY HIM OR HIS CAUSED WORK TO EXISTING BUILDINGS, CONDUIT, PIPING, PLANTS, ETC. NEW WORK AND INSTALLATIONS SHALL BE MADE WITH MINIMAL INTERRUPTIONS OF SERVICES TO EXISTING BUILDINGS ANY INTERRUPTIONS REQUIRED SHALL BE SCHEDULED TO MINIMIZE INCONVENIENCE TO THE OWNER, AND AT TIMES AS APPROVED IN ADVANCE BY THE ARCHITECT. NEW WORK AND INSTALLATIONS SHALL NOT IMPAIR THE PROPER FUNCTIONING OF THE EXISTING FACILITY. THE COMPLETED PROJECT SHALL BE A PROPERLY FUNCTIONING ENTITY THROUGHOUT. FURNISH ALL LABOR AND MATERIALS REQUIRED TO RELOCATE, REMOVE, REINSTALL, RECONNECT, REPLACE, ETC., ANY EXISTING PIPING TO ACCOMMODATE THE WORK. MATERIALS SHALL BE AS SPECIFIED UNLESS OTHERWISE APPROVED I IN WRITING BY THE ARCHITECT, CONTRACTOR SHALL INCLUDE IN HIS BID ANY EXTRA WORK REQUIRED TO MINIMIZE SHUTDOWN TIME.
19. WHERE EQUIPMENT IS NOTED AND/OR SHOWN TO BE REMOVED AND/ OR RELOCATED, THIS REMOVAL AND/OR RELOCATION SHALL INCLUDE ALL PIPING, SUPPORT, TRIM, ETC. CONSIDERED TO BE A FUNCTIONING PART OF THE ITEM.
20. ALL EXISTING PIPING AND EQUIPMENT THAT IS REMOVED SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
21. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.
22. CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS, FLOORS AND CEILING OPENED DURING CONTRUCTION TO MATCH EXISTING.
23. ALL UTILITIES BEING REMOVED FOR THE PROJECT SHALL BE REMOVED BACK TO ITS SOURCE.
24. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.
25. ALL PIPING AND RELATED VALVES AND FITTINGS TO BE DEMOLISHED SHALL BE DISPOSED AND REMOVED FROM THE PROJECT SITE.
26. ALL PIPING SHOWN TO BE DEMOLISHED AND/OR REMOVED SHALL BE CAPPED OFF AT THE POINT OF DEMOLITION AND CLEAR FROM INTERFERENCE FROM NEW WORK BEING INSTALLED.
27. ANY DISCREPANCIES ARISE BETWEEN THE PLUMBING DRAWINGS AND OTHER DISCIPLINES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BID AND CONSTRUCTION.
28. PROVIDE INSULATION FOR ALL CONDENSATE DRAIN INDOOR.
29. ALL CONDENSATE DRAIN PIPING SHALL SLOPE 1/8"/FT. MINIMUM.
30. PAINT ALL EXPOSED COPPER PIPING PER APPROVED COLOR TO MATCH EXTERIOR BUILDING COLOR, TYPICAL. △1

LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER
CD	CD	CONDENSATE DRAIN
OCD	OCD	OVERFLOW CONDENSATE DRAIN
TP	TP	TRAP PRIMER
G	G	GAS LINE
		DIRECTION OF FLOW
		SHUT-OFF VALVE
	SOV/GC	SHUT-OFF VALVE OR GAS COCK IN YARD BOX
	GC	GAS COCK
	BV	BALANCING VALVE
	FCO	FLOOR CLEANOUT
	WCO	CLEANOUT
		RISER UP
		RISER DOWN
	ABV	ABOVE
	BEL	BELOW
	CLG	CEILING
	CONT	CONTINUATION
	DN	DOWN
	EXIST	EXISTING
	FLR	FLOOR
	POC	POINT OF CONNECTION
		DEMOLITION KEYNOTE
		REMODEL KEYNOTE
		POINT OF DISCONNECT
		POINT OF CONNECTION

PIPE MATERIAL SCHEDULE

SERVICE	ABBR:		MATERIAL: SEAMLESS COPPER TUBING, TYPE L, DRAWN TEMPER, ASTM B88	CPVC SCH 80 PAINTED WITH UV PROTECTION	COPPER TYPE M 95/5 SOLDER	BLACK STEEL SCH 40	REMARKS
CONDENSATE DRAIN	(CD)	INDOOR			●		GRAVITY @ 1% SLOPE MIN. PROVIDE INSULATION FOR INDOOR PIPING. PAINTED W/ UV INHIBITOR FOR EXPOSED OUTDOOR PIPE.
		OUTDOOR			●		
GAS	(G)					●	

SHEET INDEX

S.NO.	SHEET No.	SHEET TITLE
1	P-0.1	PLUMBING GENERAL NOTES AND LEGEND
2	PD-1.1	PLUMBING DEMO FIRST FLOOR PLAN - BUILDING H
3	PD-1.2	PLUMBING DEMO SECOND FLOOR PLAN - BUILDING H
4	PD-1.3	PLUMBING DEMO ROOF PLAN - BUILDING H
5	P-1.1	PLUMBING FIRST FLOOR PLAN - BUILDING H
6	P-1.2	PLUMBING SECOND FLOOR PLAN - BUILDING H
7	P-1.3	PLUMBING ROOF PLAN - BUILDING H
8	P-4.1	PLUMBING DETAILS

AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-125978 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☐
DATE: 05/26/2026

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Anaheim, CA 92807
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STAMP

REGISTERED PROFESSIONAL ENGINEER ABBY "BARCHYER" No. M29253 Exp. 6/30/27 MECHANICAL STATE OF CALIFORNIA

PROJECT NAME:

WILL ROGERS ELEMENTARY SCHOOL
LYNWOOD UNIFIED SCHOOL DISTRICT
11220 DUNCAN AVENUE
LYNWOOD, CALIFORNIA, 90262

No.	Rev. Date	Description
△1	9/24/2026	BIDDING ADDENDUM 1
△		
△		
△		

JOB NO: 501-26-0008
DATE: 3/23/2026
DRAWN: JE
CHECK: HA
ARCHITECT:
ENGINEER: OED
DSA NUMBER: 03-125978

CONSULTANT

STAMP

SHEET DESCRIPTION:
PLUMBING GENERAL NOTES & LEGENDS

SHEET NO:
P-0.1 ADD02