

MECHANICAL ABBREVIATIONS table listing symbols and abbreviations for components like air conditioners, ducts, valves, and controls.

MECHANICAL MANDATORY MEASURES table detailing requirements for equipment efficiency, controls, ventilation, and damper operation.

MECHANICAL GENERAL NOTES table containing 15 numbered notes regarding duct insulation, construction standards, and system requirements.

MECHANICAL SYMBOLS table providing graphical symbols for various mechanical components such as diffusers, ducts, valves, and dampers.

EQUIPMENT ANCHORAGE NOTE detailing requirements for anchoring mechanical equipment to structural members.

MECHANICAL SHEET INDEX table listing sheet numbers and descriptions for the project's mechanical drawings.

ACCEPTANCE TESTING table outlining mandatory acceptance testing procedures and requirements for non-residential buildings.



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS  
FILLMORE UNIFIED SCHOOL DISTRICT  
555 Central Ave. Fillmore, CA. 93015

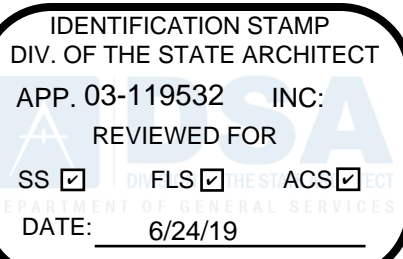
ISSUED FOR table listing key dates and milestones for the project's design and construction phases.

REVISIONS table with columns for revision number, description, and date.



MECHANICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS  
M001  
WD PROJ. # 18413 | DRAWN BY: WD | CHECKED: Checker | DATE: 5/08/2019

NOT FOR CONSTRUCTION



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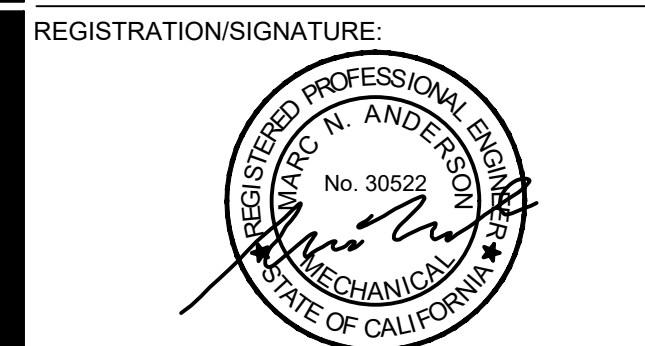


Consulting Mechanical Engineers 1300 Quail Street, Suite 208 Newport Beach, CA 92660 (949) 657-2500 | www.asysinc.com

FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS FILLMORE UNIFIED SCHOOL DISTRICT 555 Central Ave. Fillmore, CA. 93015

ISSUED FOR: 11/06/2017 SCHEMATIC DESIGN 06/21/2018 DESIGN DEVELOPMENT 06/21/2018 CONSTRUCTION DOCUMENTS 12/07/2018 50% CD 11/09/2018 90% CD 12/10/2018 OSA SUBMITTAL 12/21/2018 DSA BACKCHECK 5/08/2019

REVISIONS:



DATE: SHEET TITLE:

MECHANICAL SCHEDULES

SHEET NUMBER: M002

WD PROJ. # 18413 | DRAWN BY: WD | CHECKED: Checker | DATE: 5/08/2019

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AIR DISTRIBUTION SCHEDULE table with columns: SYM, CFM, MAX. P.D. INCHES, MAX. NC, NECK SIZE, MFR/MODEL, REMARKS. Includes rows for CD-1, RG-1/EG-1/EG-1, SWS-1, SWR-1, DL-1.

NOTE: CEILING DIFFUSER THROWS SHALL BE 4-MAY UNLESS OTHERWISE NOTED. PROVIDE REMOTE CABLE OPERATED DAMPER AT HARD CEILINGS. ALL AIR DISTRIBUTION DEVICES TO HAVE CONCEALED MOUNTING OPTION. PROVIDE FILLER PANEL FOR AIR DISTRIBUTION INSTALLED IN LAY-IN CEILINGS. ALL AIR DISTRIBUTION TO PERFORM AT NC-30 OR LOWER SOUND LEVELS. FOR 1, 2, OR 3-WAY PATTERN INDICATED ON FLOOR PLANS, ADJUST CORES OR INSTALL QUADRANT BLANKS.

ROOFTOP A/C UNIT SCHEDULE

ROOFTOP A/C UNIT SCHEDULE table with columns: SYM, MFR/MODEL, AREA SERVED, COOLING (MBH) @ AHR1 360, HEATING, EVAPORATOR FAN BHP, ESP (INCHES) W.G., MIN. OSA CFM, ELECTRICAL, OPER. WT. (LBS.), REMARKS.

\* DOES NOT INCLUDE WEIGHT OF ROOF CURBS

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE table with columns: SYM, MFR./MODEL, COOLING (MBH), HEATING (MBH), CFM, ESP, OSA CFM, ELECTRICAL, OPER. WT. (LBS.), SYM, MFR./MODEL, REFRIGERANT, ELECTRICAL, OPER. WT. (LBS.), REMARKS, AREA SERVED.

EXHAUST FAN SCHEDULE

EXHAUST FAN SCHEDULE table with columns: SYM, MFR./MODEL, TYPE, CFM, S.P. INCHES, RPM, SONES, ELECTRICAL, OPER. WT. (LBS.), REMARKS, BLDG. LOCATION.

DUST COLLECTOR SCHEDULE

DUST COLLECTOR SCHEDULE table with columns: SYM, MFR./MODEL, AREA SERVED, CFM, S.P. INCHES, MOTOR HP, MOTOR RPM, ELECTRICAL, REMARKS.

MAKE-UP AIR UNIT SCHEDULE

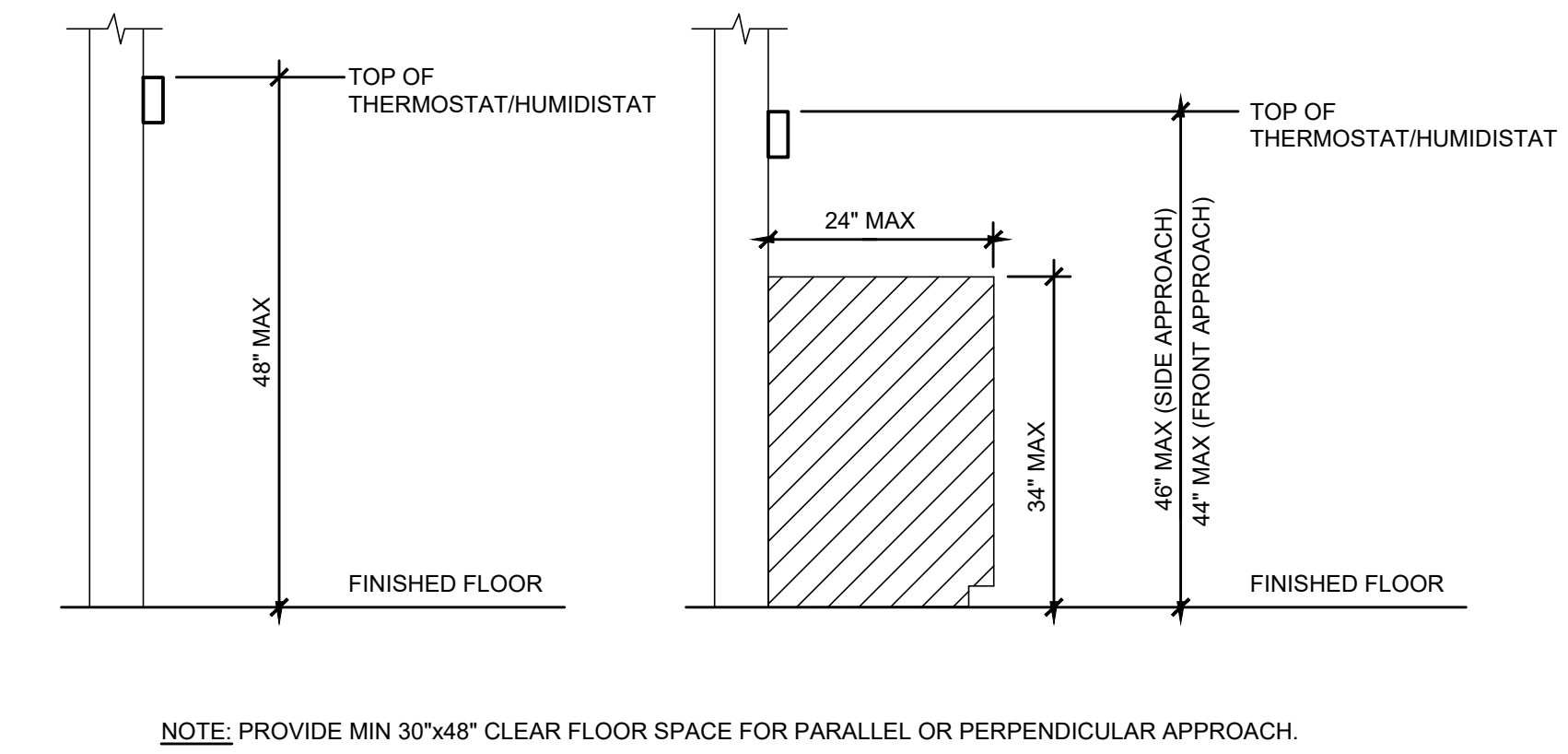
MAKE-UP AIR UNIT SCHEDULE table with columns: SYM, MFR./MODEL, AREA SERVED, CFM, E.S.P. (IN), FAN (HP), EVAPORATIVE COOLING, HEATING, FILTERS, ELECTRICAL, OPER. WT. (LBS.), REMARKS.

\* IN HEATING MODE, UNITS SHALL BE LIMITED VIA CONROLS TO DISCHARGE AIR NO HIGHER THAN 80 DEG F (PER SECTION 140.9 OF THE 2016 BUILDING ENERGY EFFICIENCY STANDARDS).

POWER EXHAUST SCHEDULE

POWER EXHAUST SCHEDULE table with columns: SYM, MFR./MODEL, UNIT SERVED, CFM, RPM, S.P. INCHES, MOTOR HP, ELECTRICAL, WEIGHT (LBS.), REMARKS.

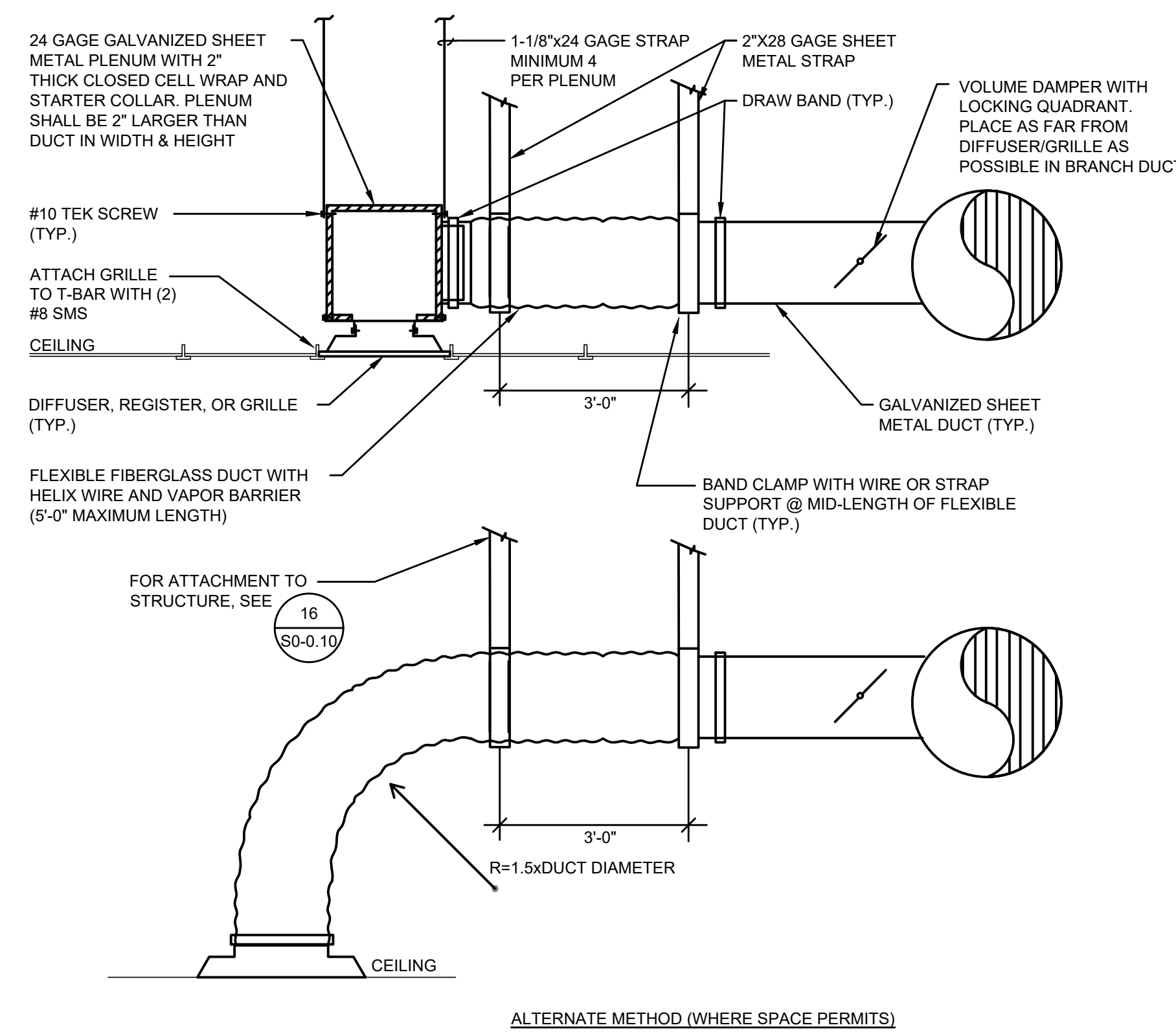
NOT FOR CONSTRUCTION



(ADA) CONTROL DEVICE MOUNTING DETAIL

SCALE: NONE

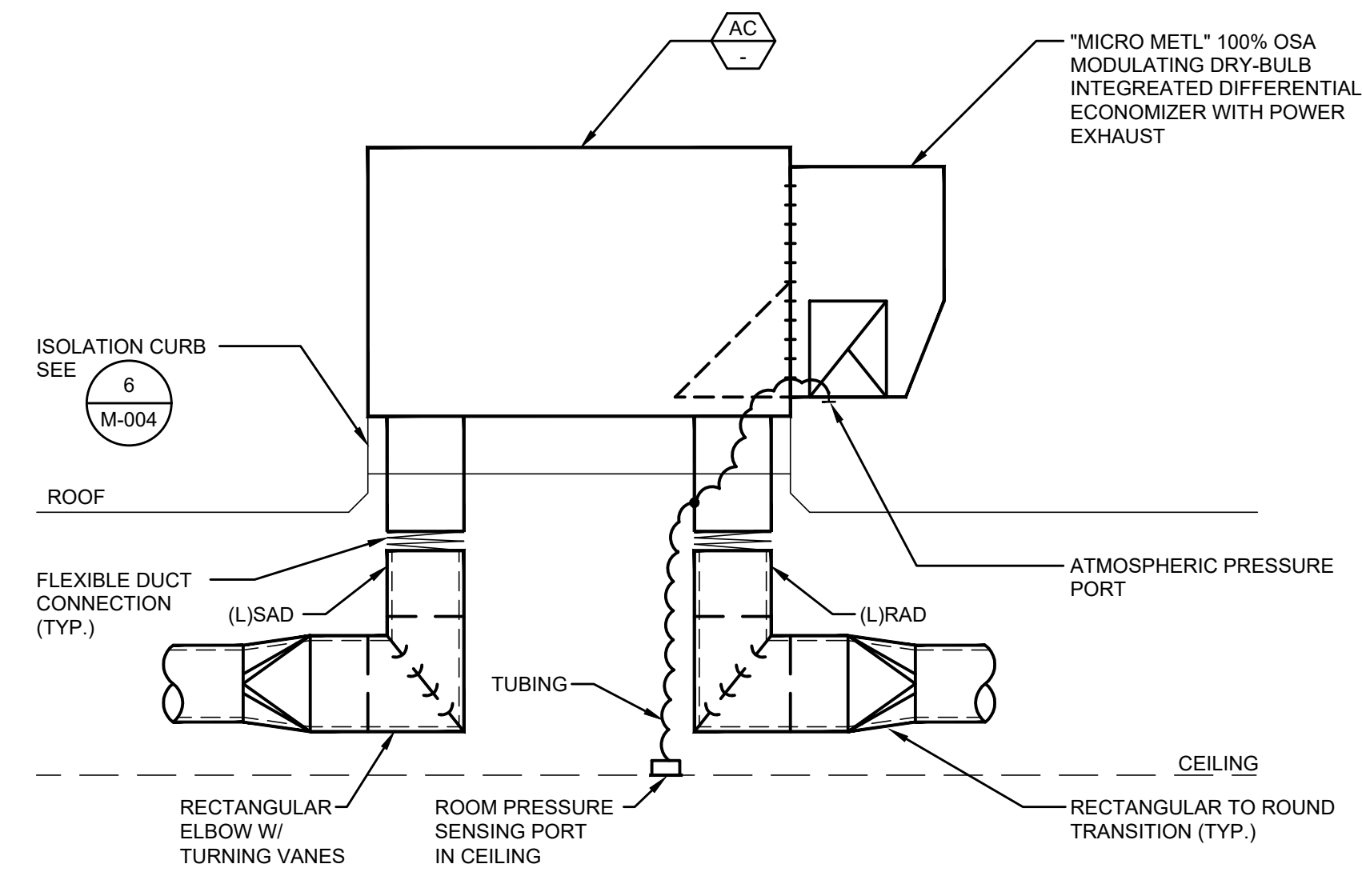
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AIR DISTRIBUTION DEVICE MOUNTING DETAIL

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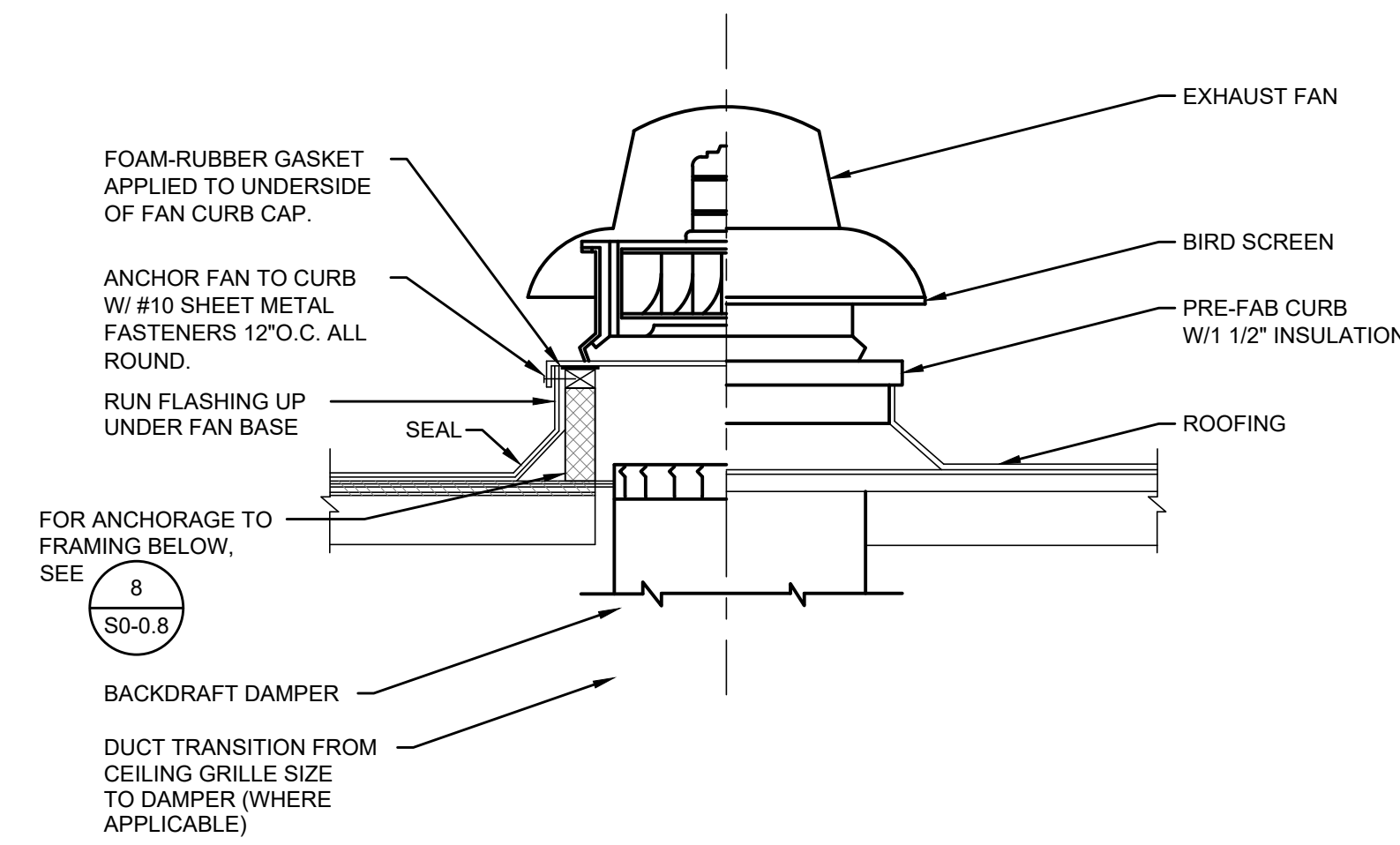
2



A/C WITH POWER EXHAUST ECONOMIZER DETAIL

SCALE: NONE

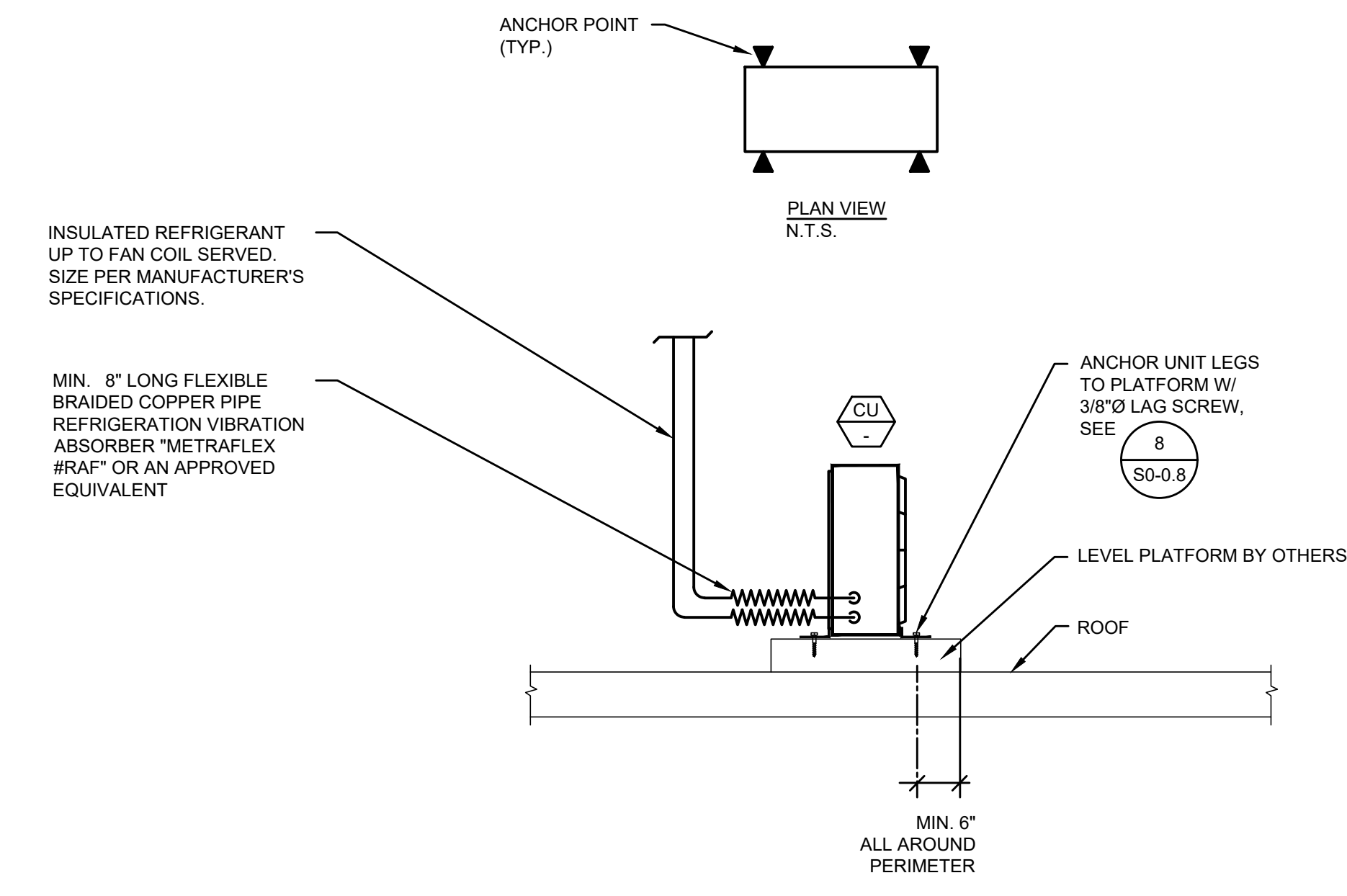
1



ROOF MOUNTED EXHAUST FAN DETAIL (EF-1, 3, 4, 6, & 7)

SCALE: NONE

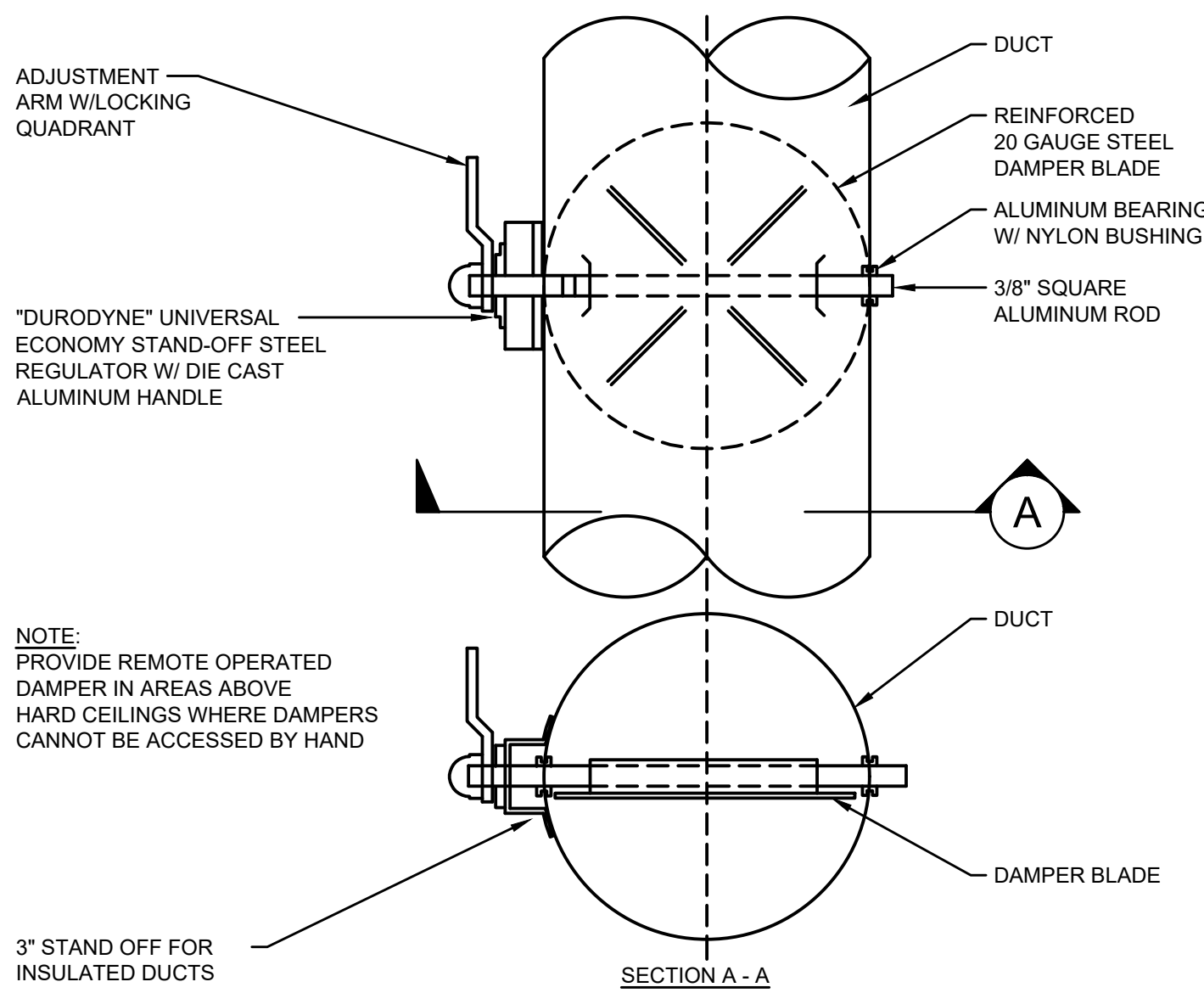
5



CONDENSING UNIT MOUNTING DETAIL

SCALE: NONE

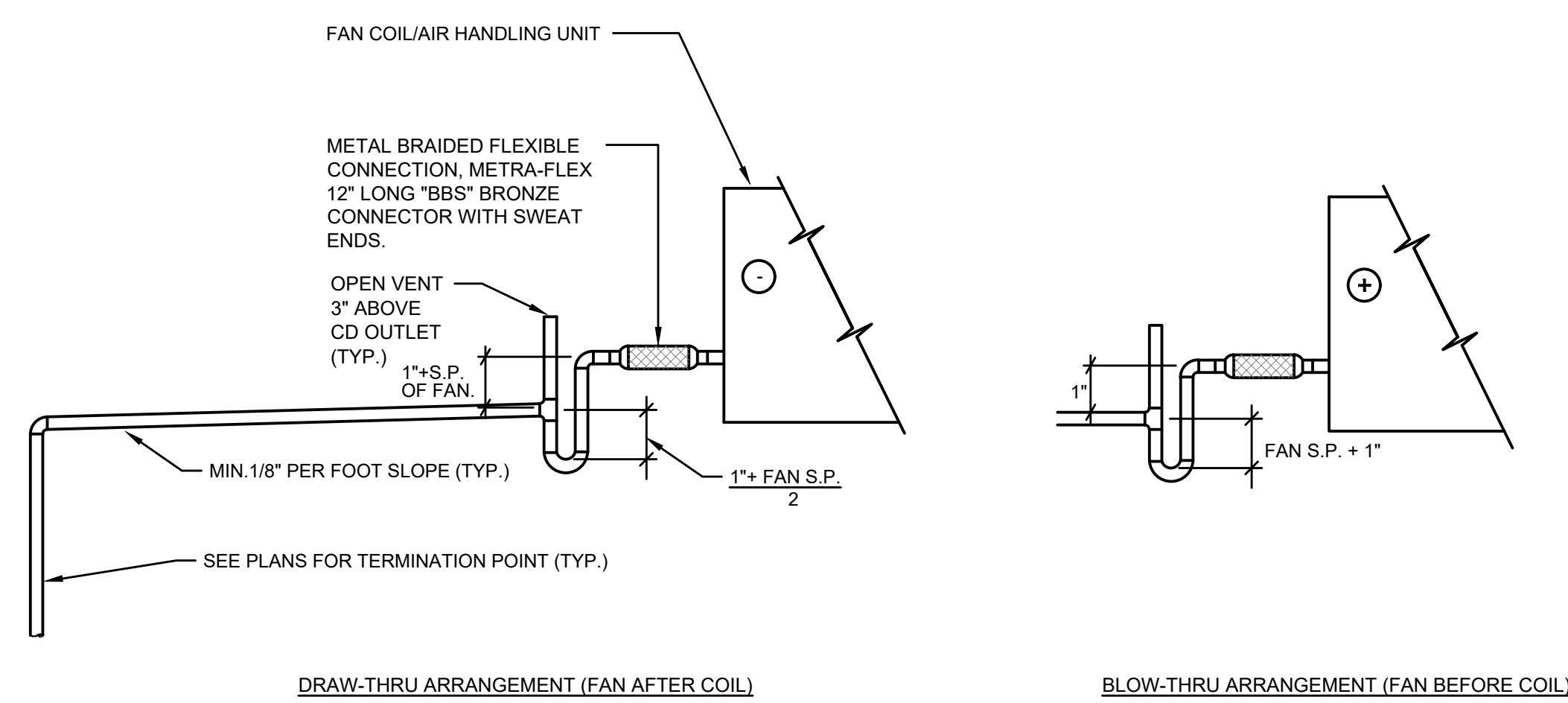
6



ROUND DUCT MANUAL VOLUME DAMPER DETAIL

SCALE: NONE

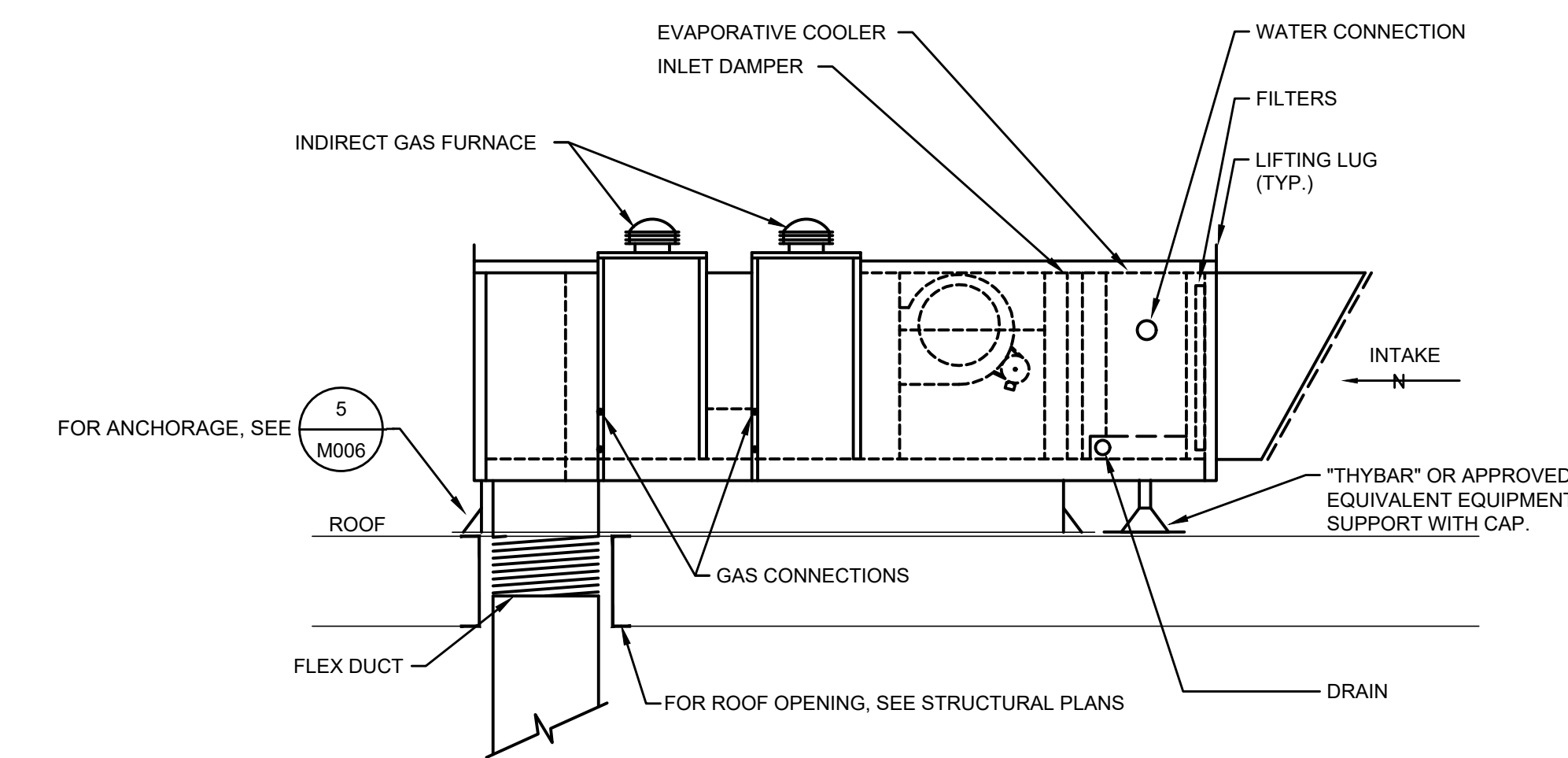
4



CONDENSATE P-TRAP DETAIL

SCALE: NONE

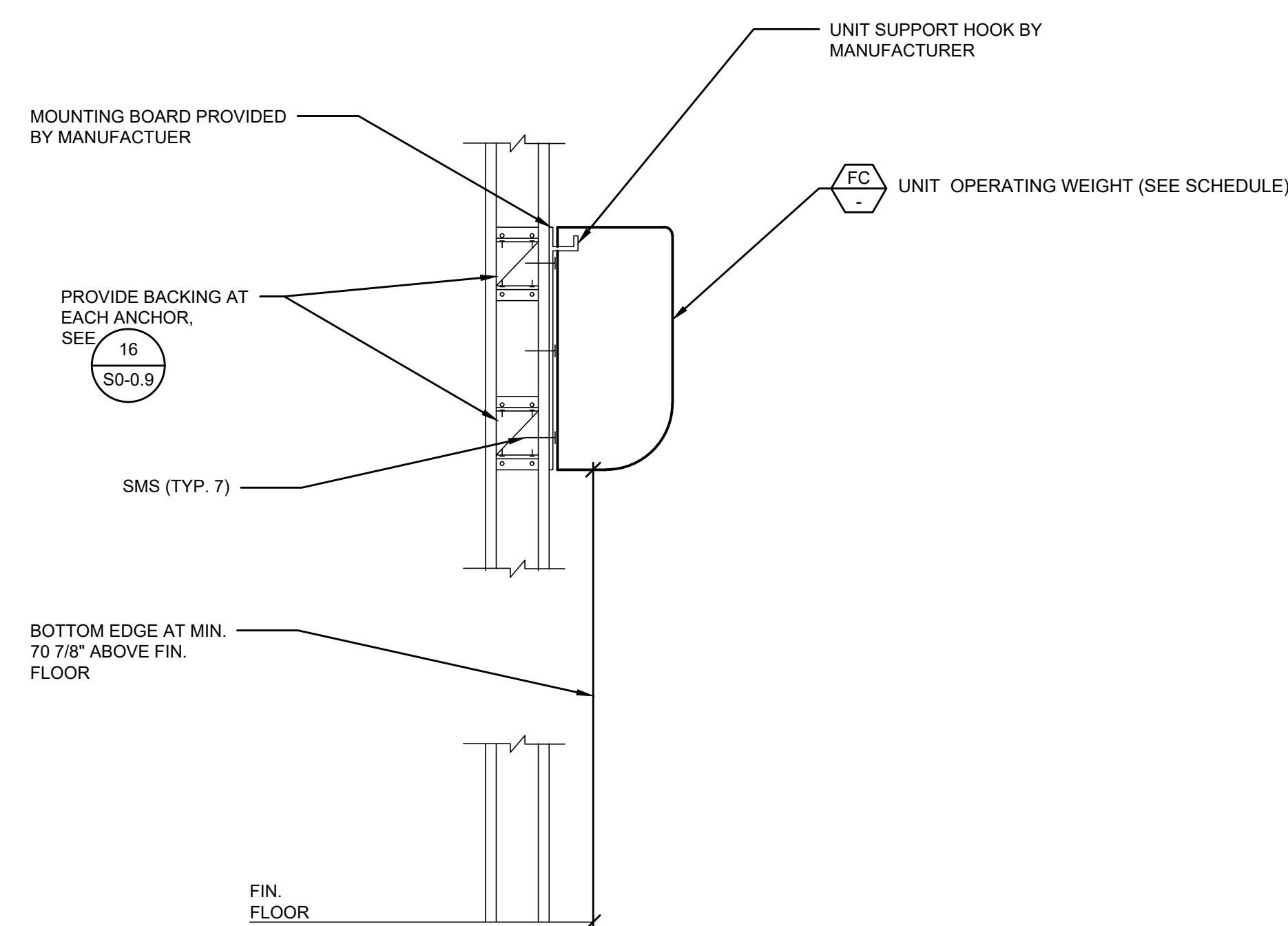
8



MUA-3 DETAIL

SCALE: NONE

9

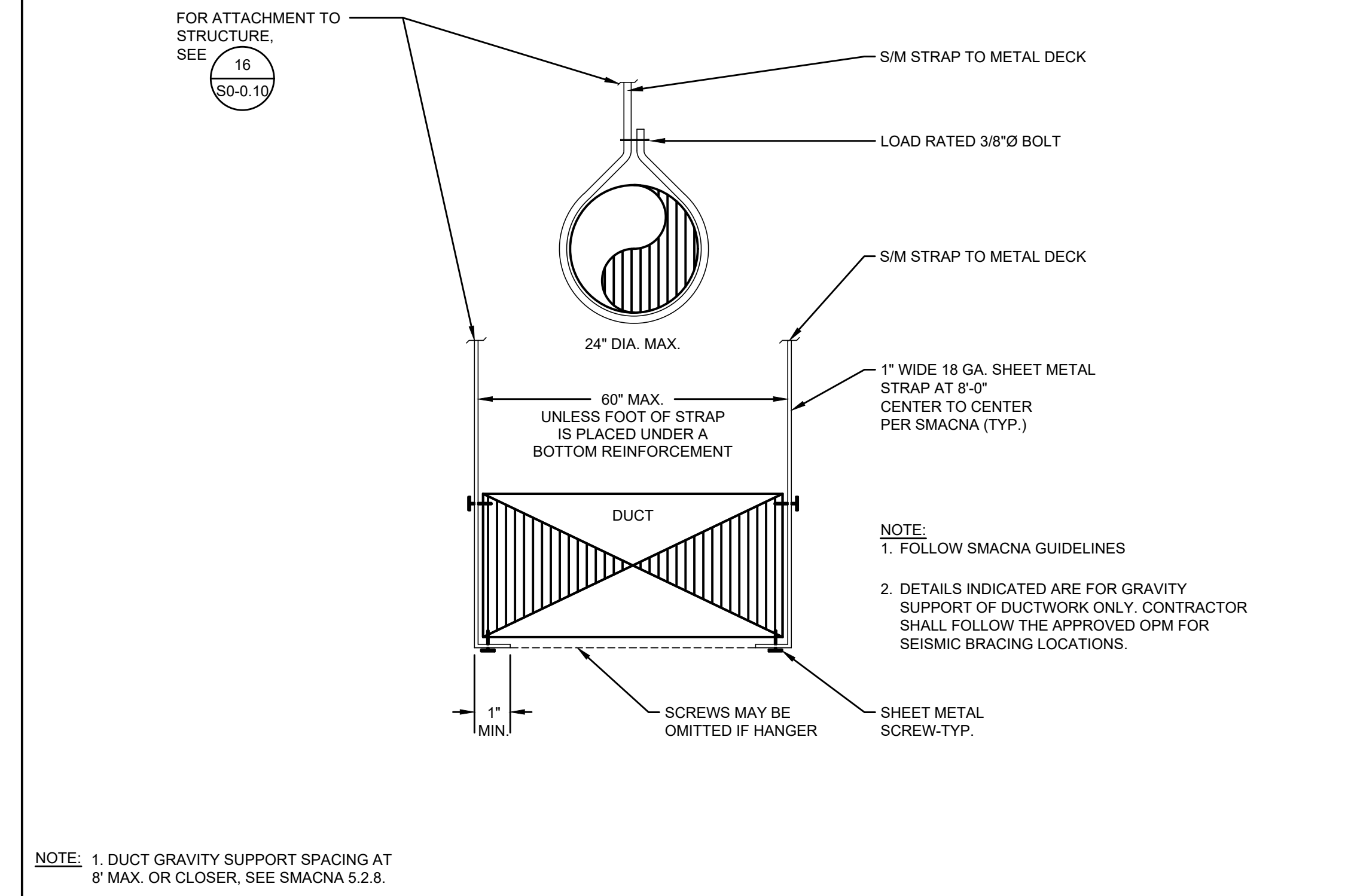


DUCTLESS FAN COIL MOUNTING DETAIL

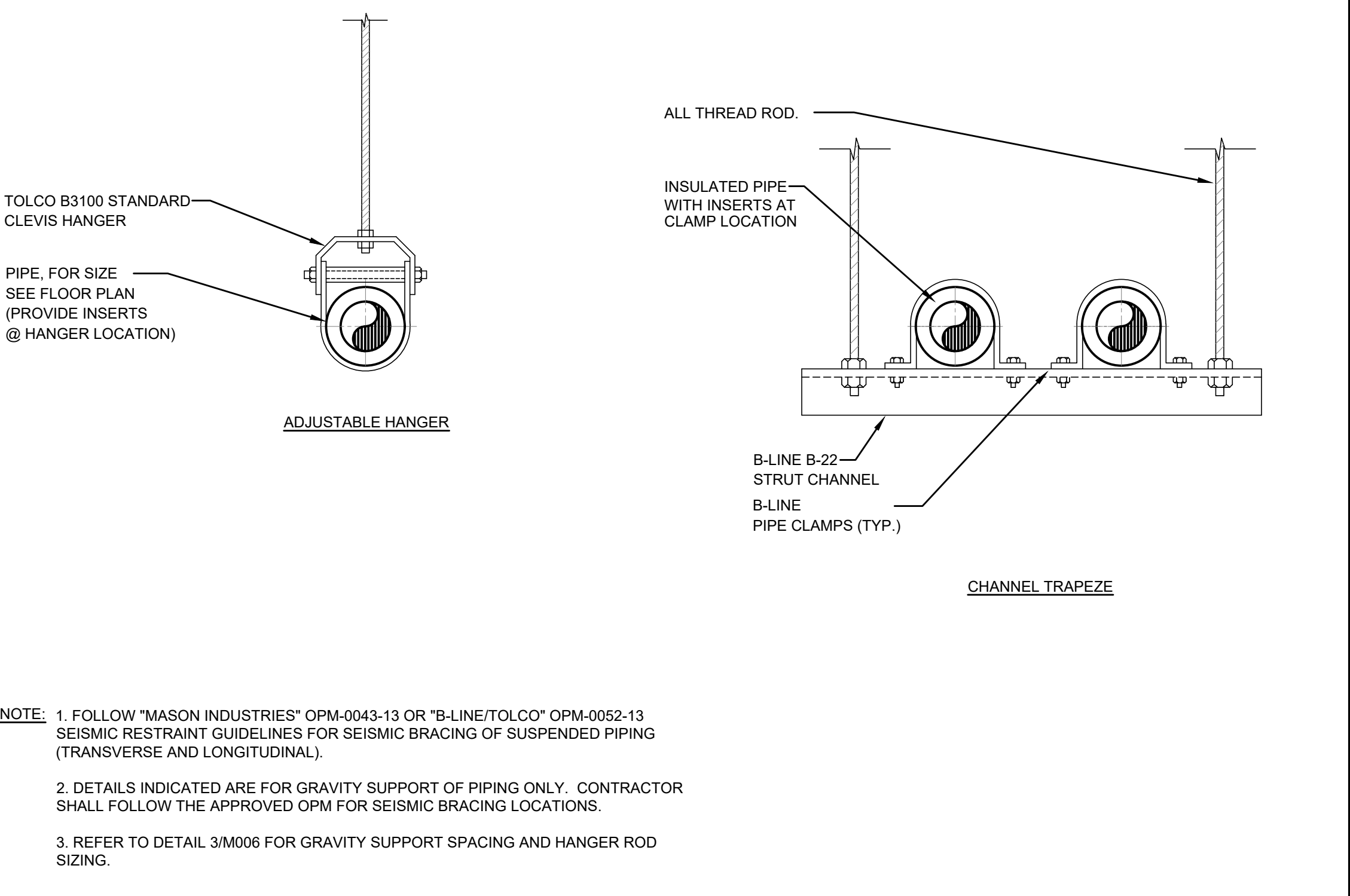
SCALE: NONE

7

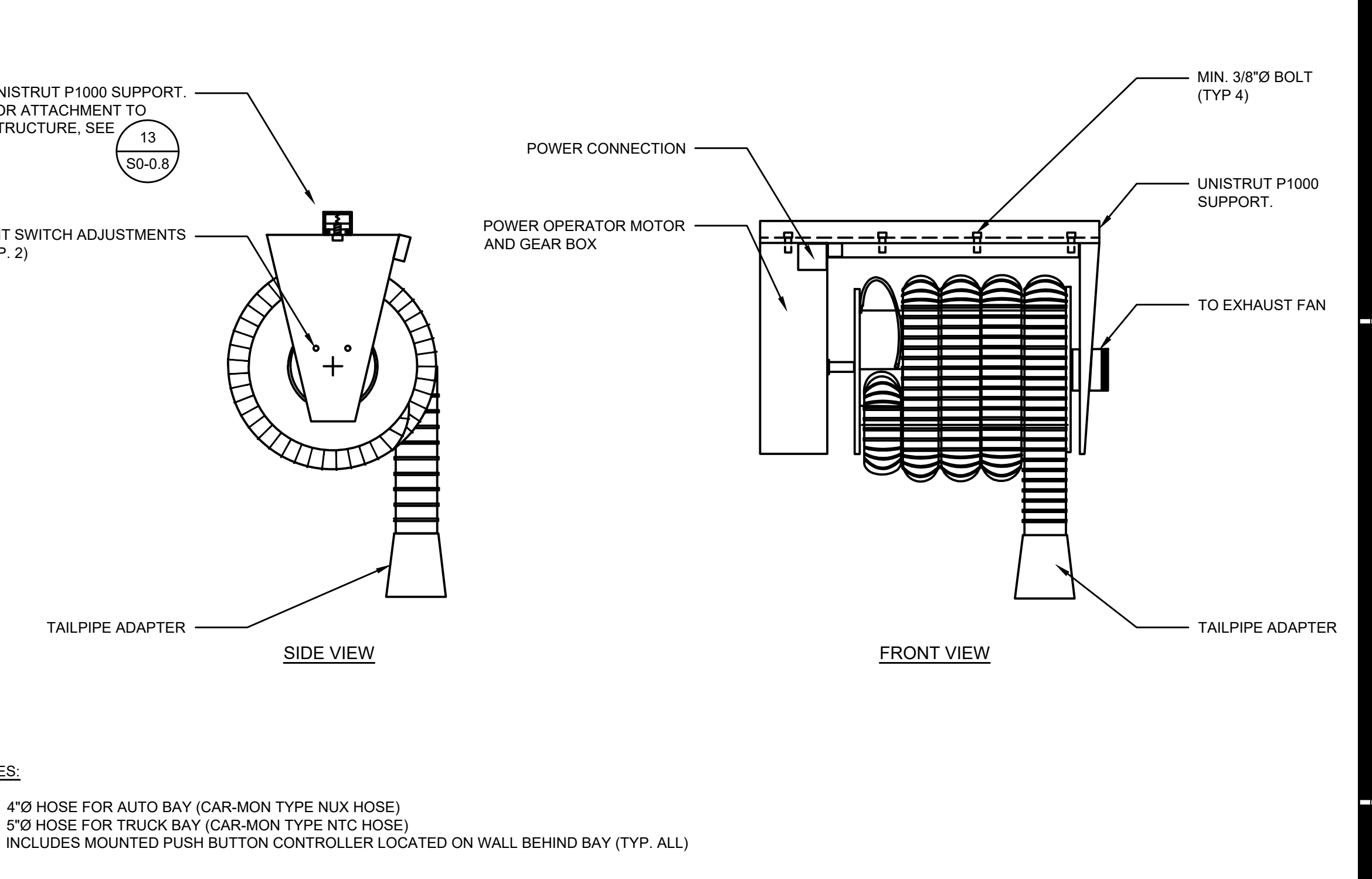
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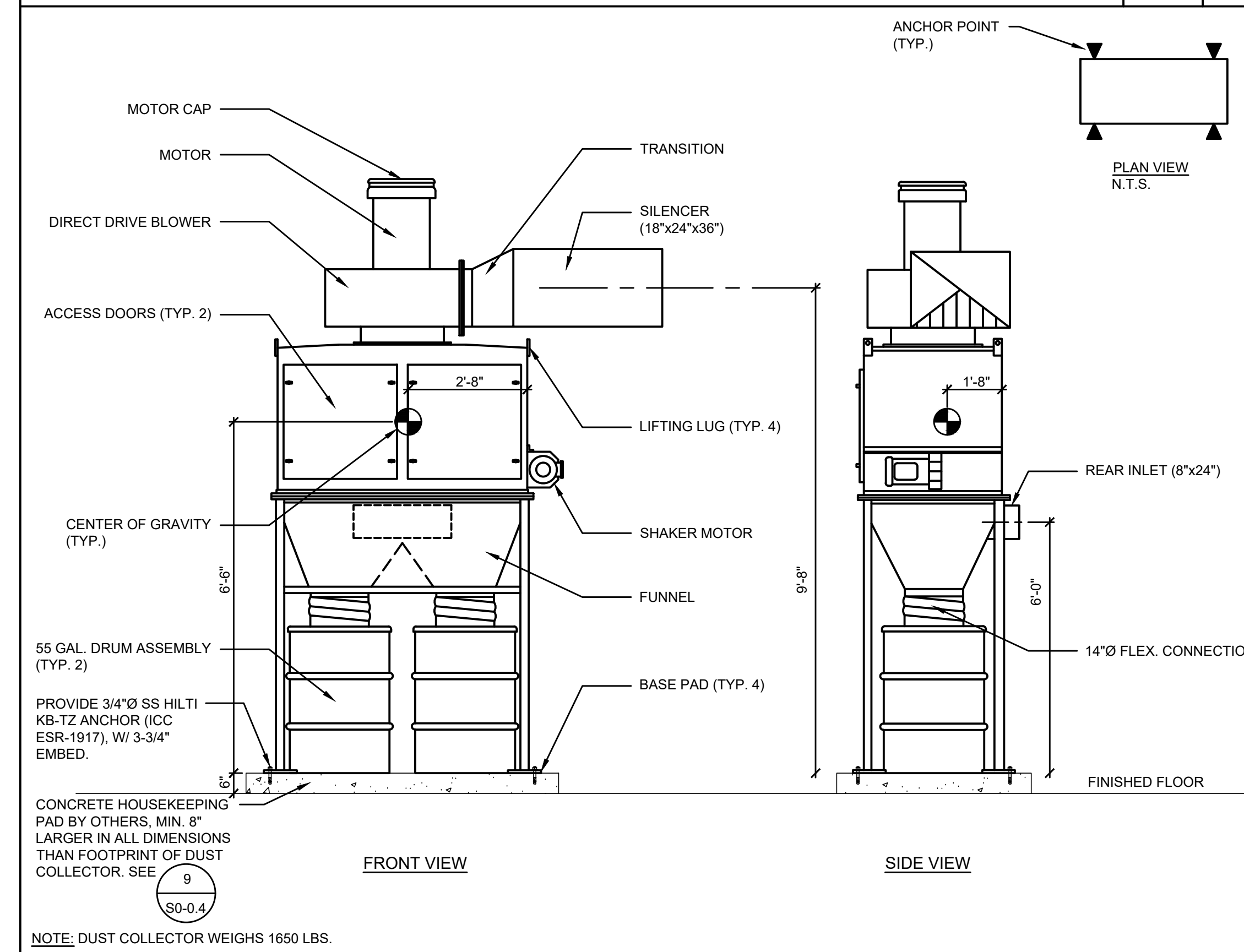
**SUSPENDED DUCT GRAVITY SUPPORT DETAIL** SCALE: NONE 1



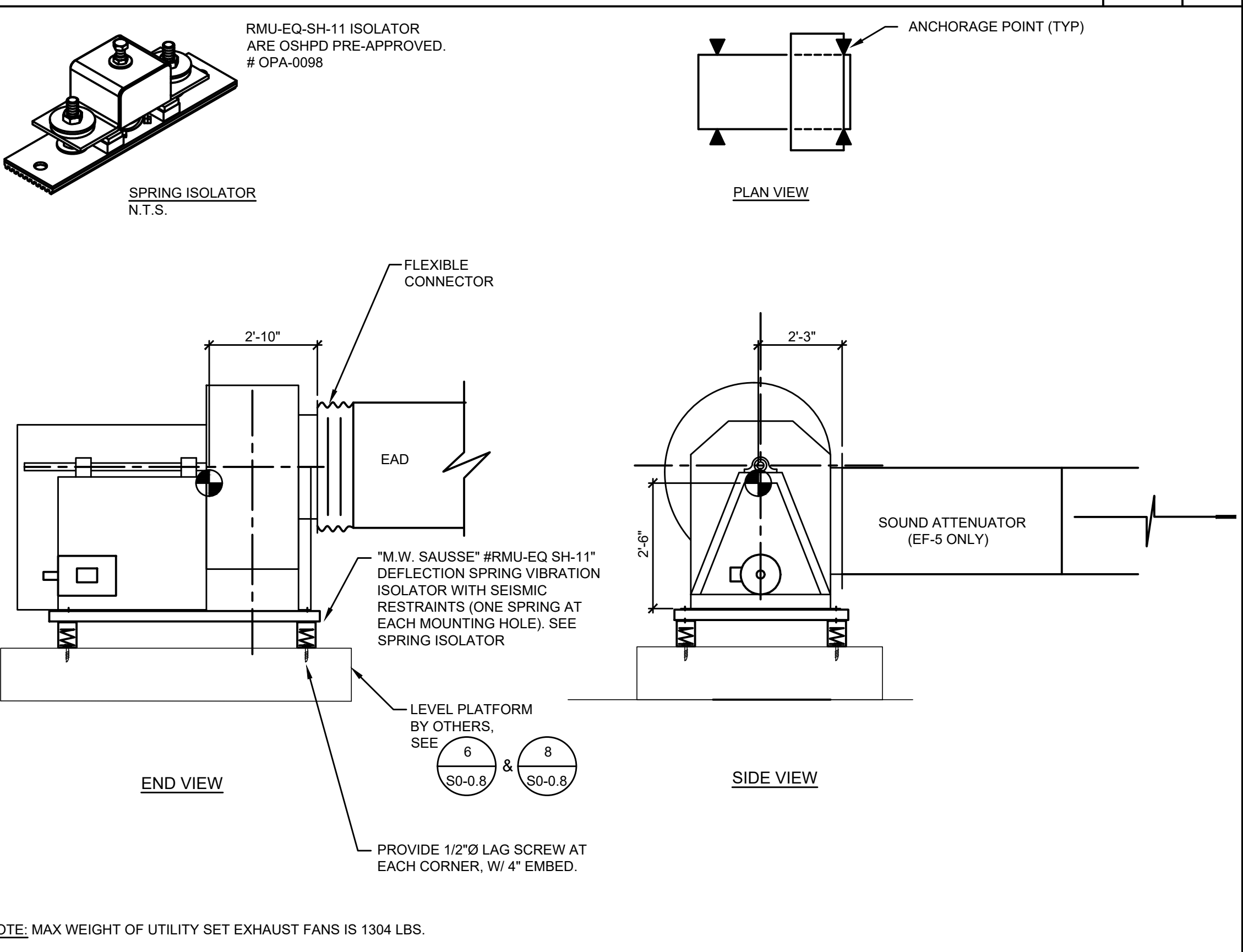
**SUSPENDED PIPE GRAVITY SUPPORT DETAIL** SCALE: NONE 2



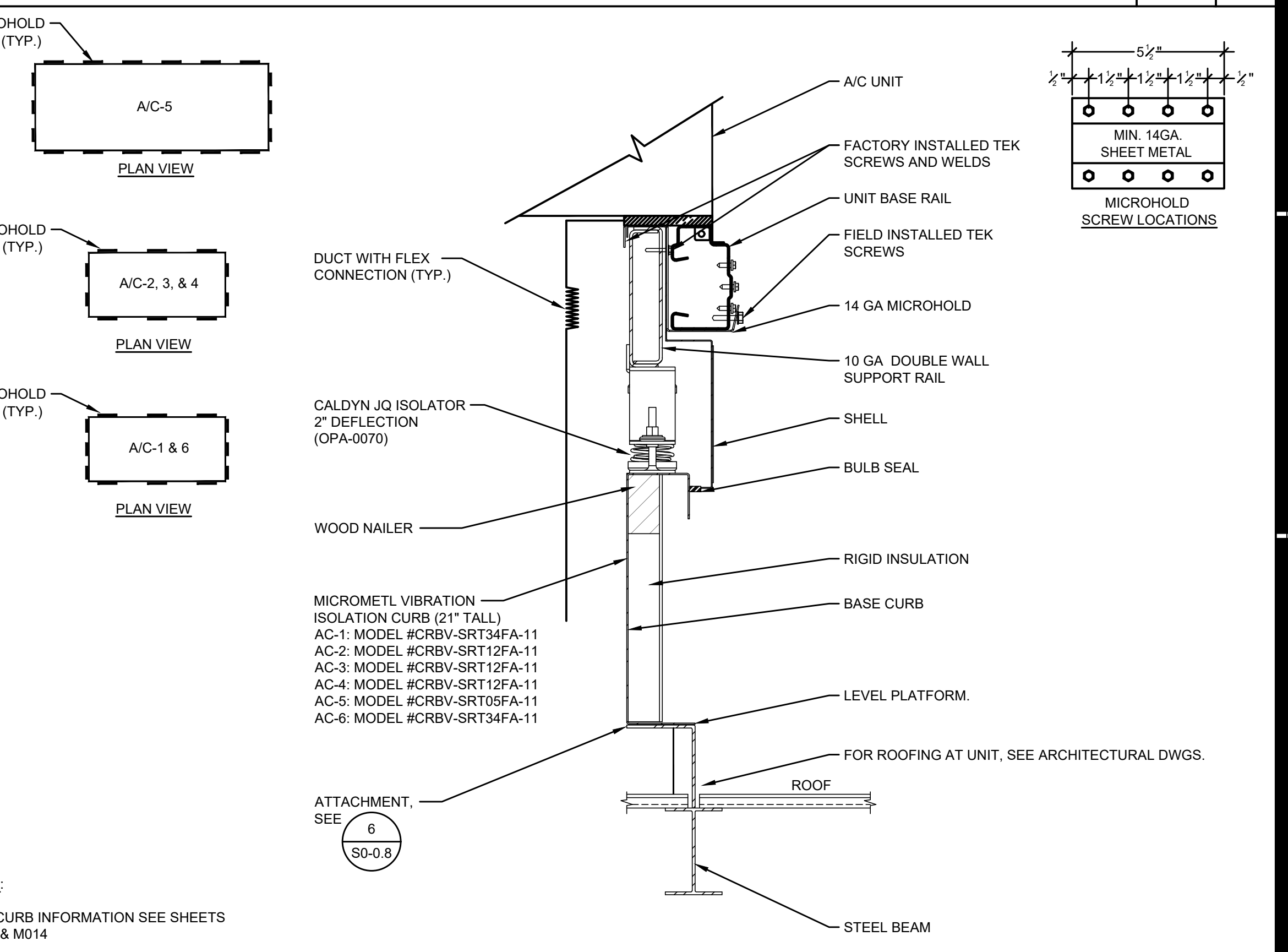
**VEHICLE EXHAUST EXTRACTION DETAIL** SCALE: NONE 3



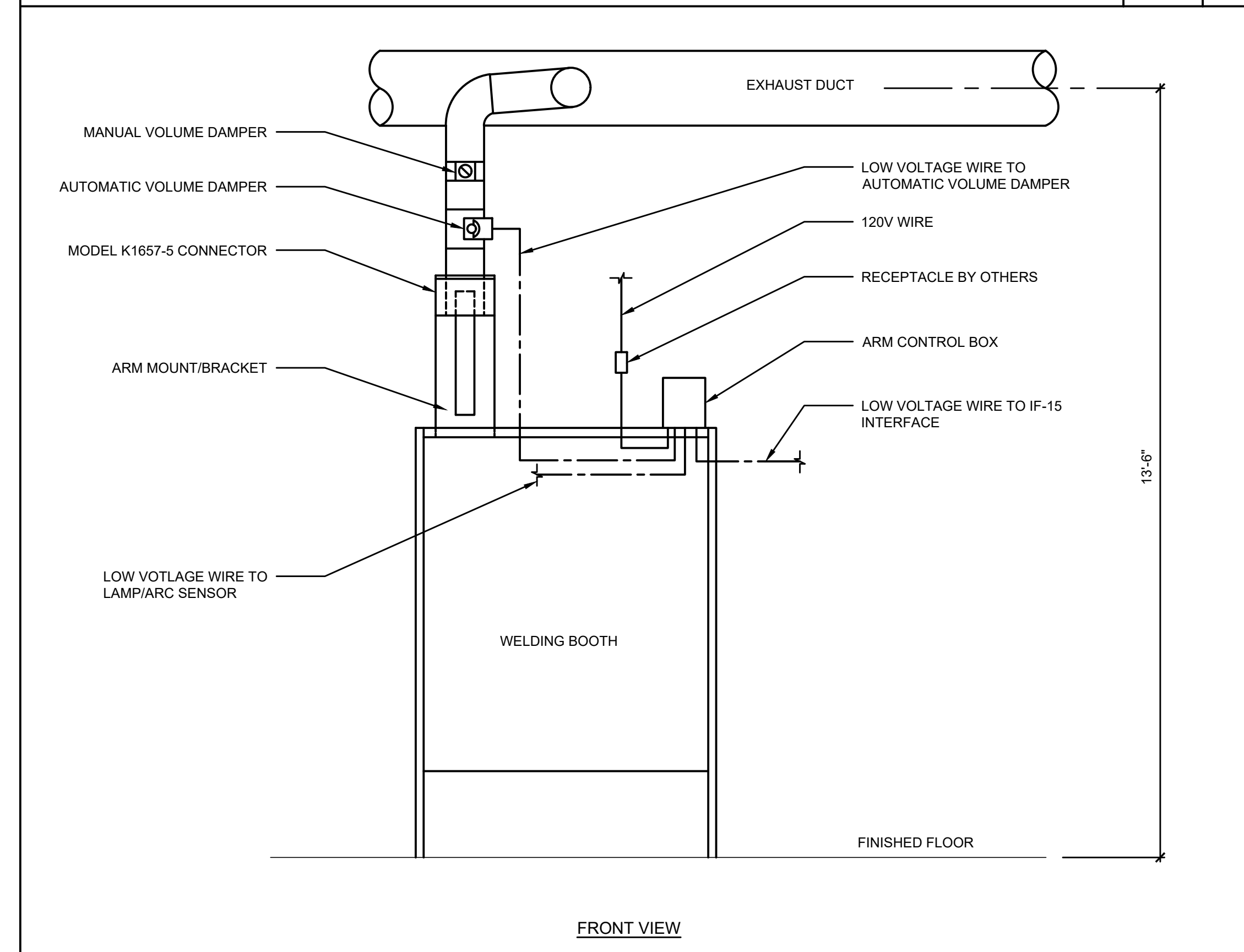
**DUST COLLECTOR DETAIL** SCALE: NONE 4



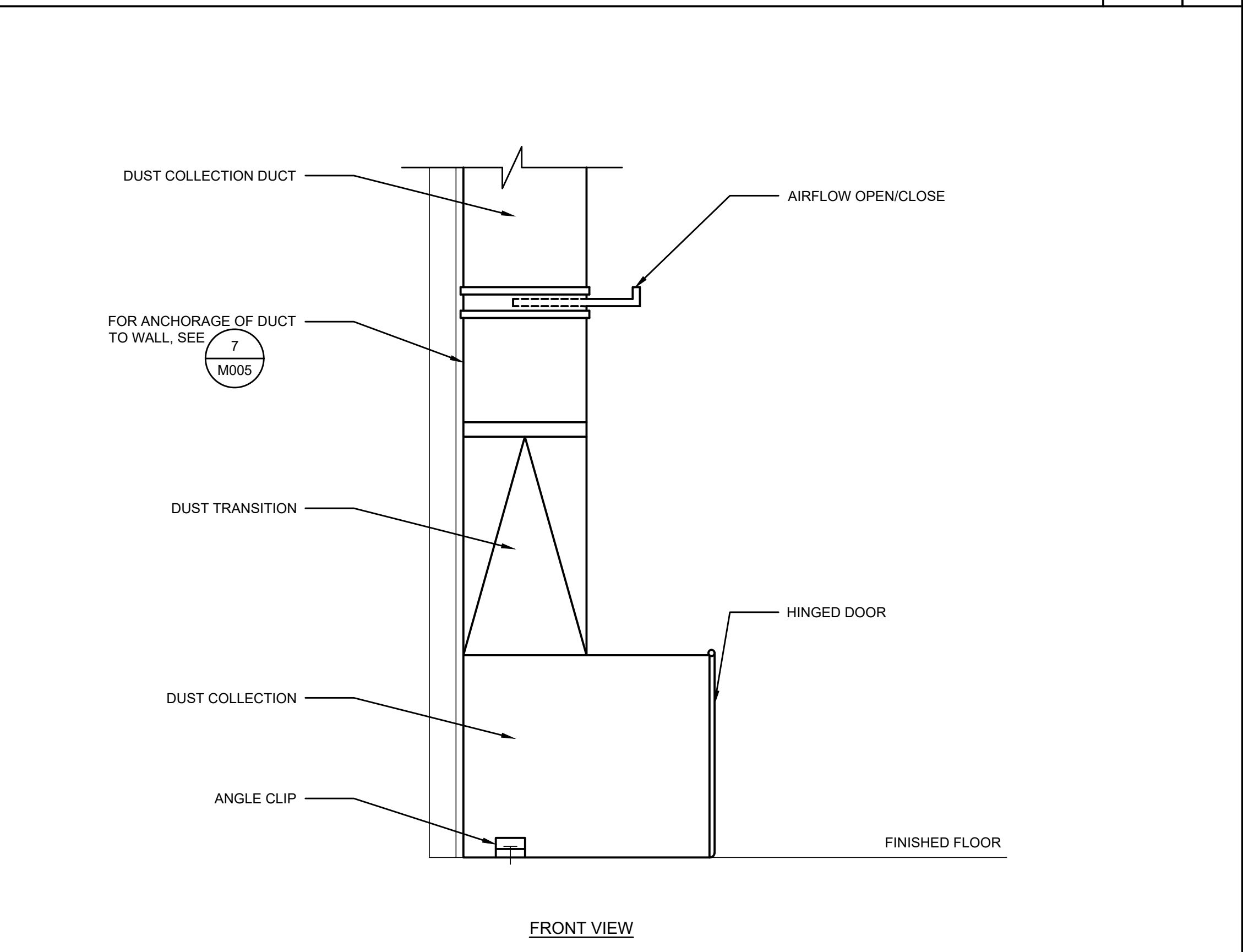
**UTILITY SET EXHAUST FAN DETAIL** SCALE: NONE 5



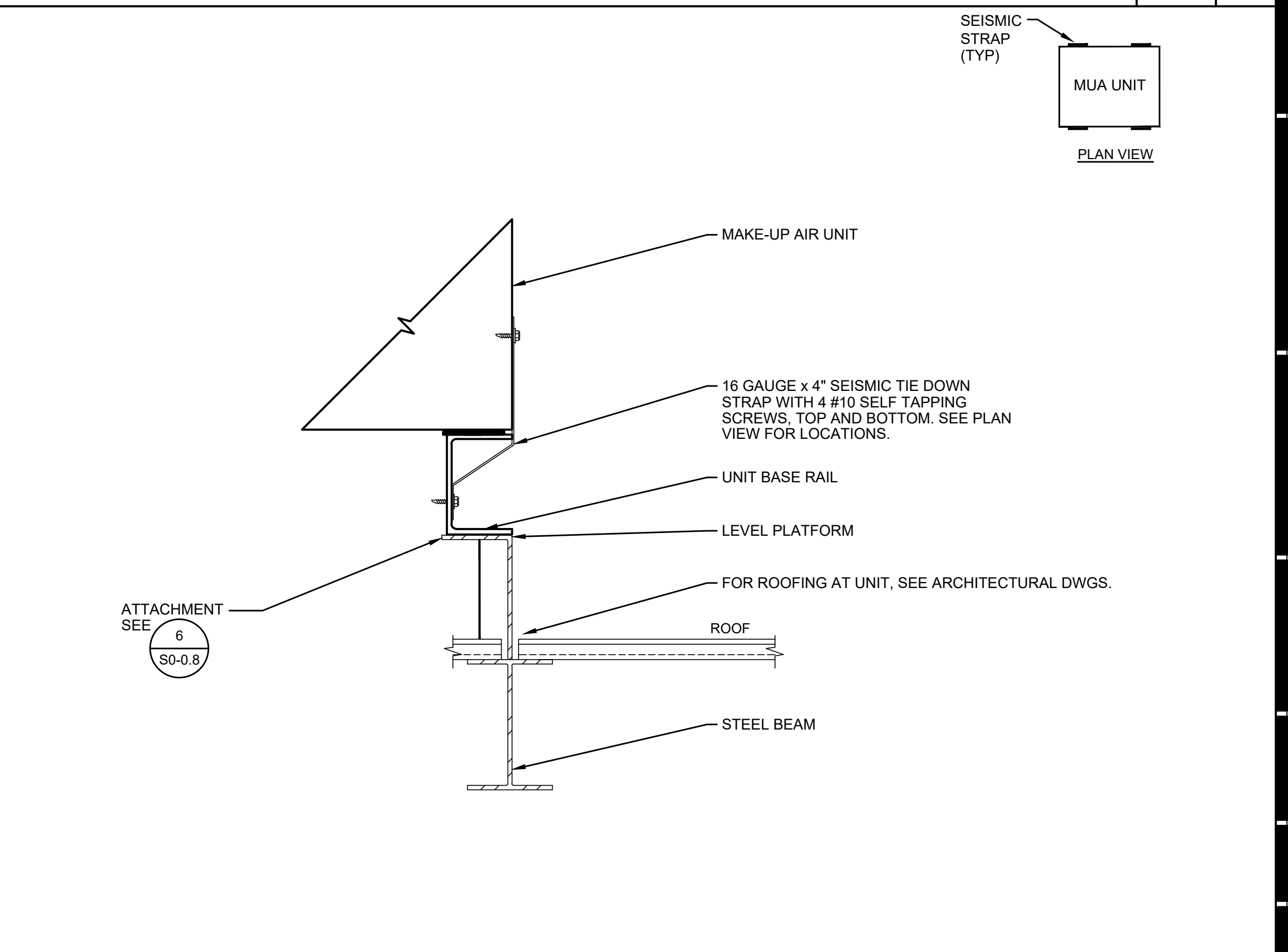
**A/C UNIT MOUNTING DETAIL** SCALE: NONE 6



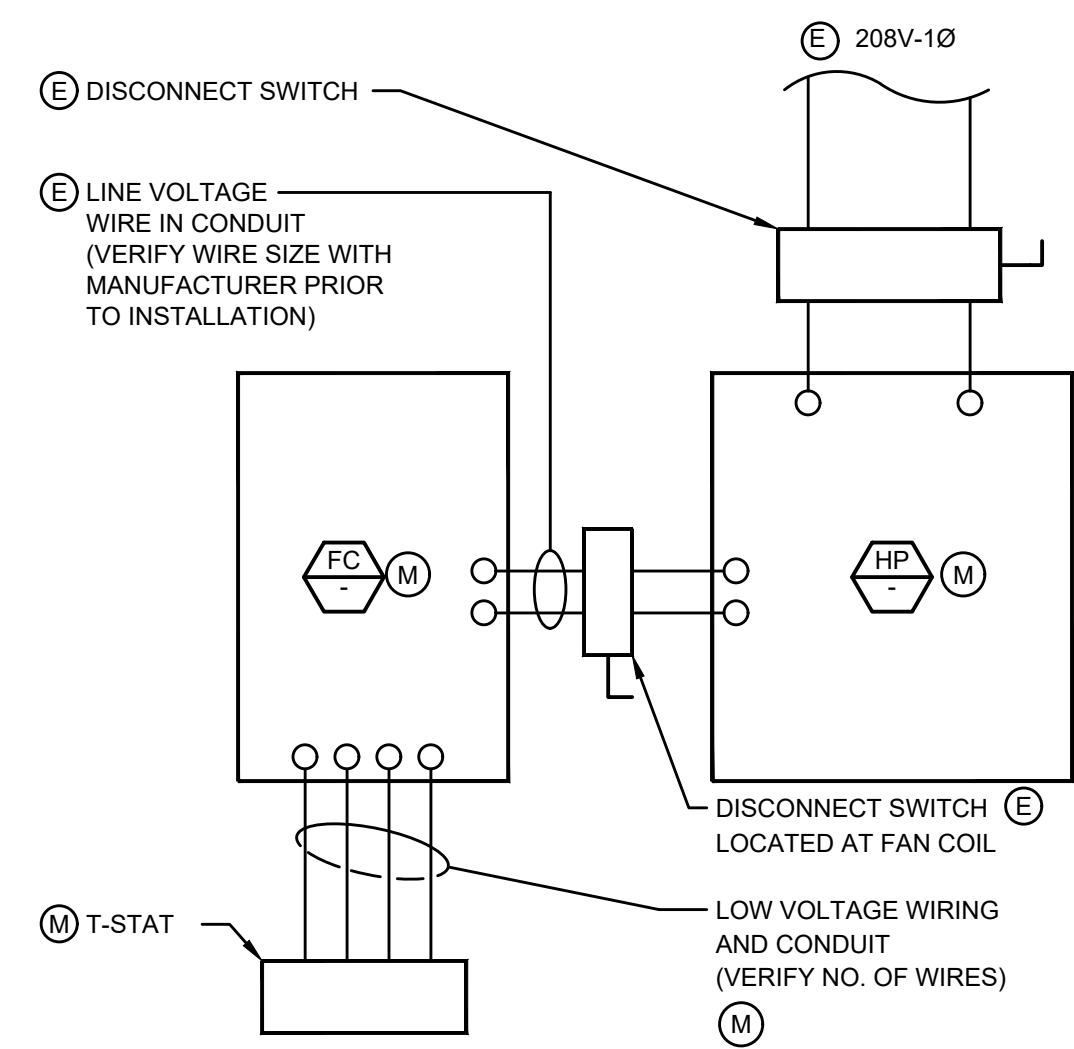
**WELDING FUME EXTRACTION ARM DETAIL** SCALE: NONE 7



**FLOOR SWEEP DETAIL** SCALE: NONE 8



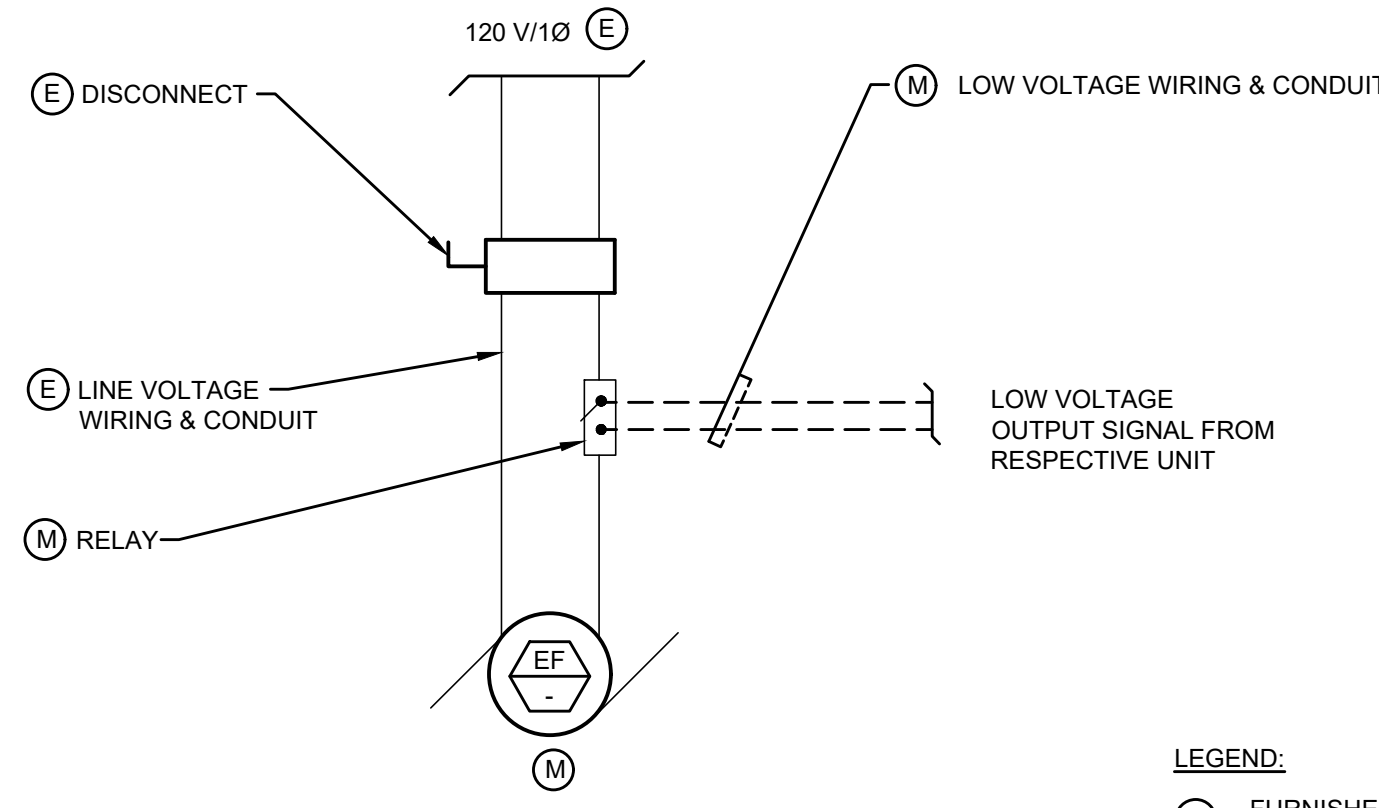
**MUA-1 & 2 MOUNTING DETAIL** SCALE: NONE 9



LEGEND:  
 (M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR  
 (E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR

SPLIT SYSTEM HEAT PUMP WIRING DIAGRAM

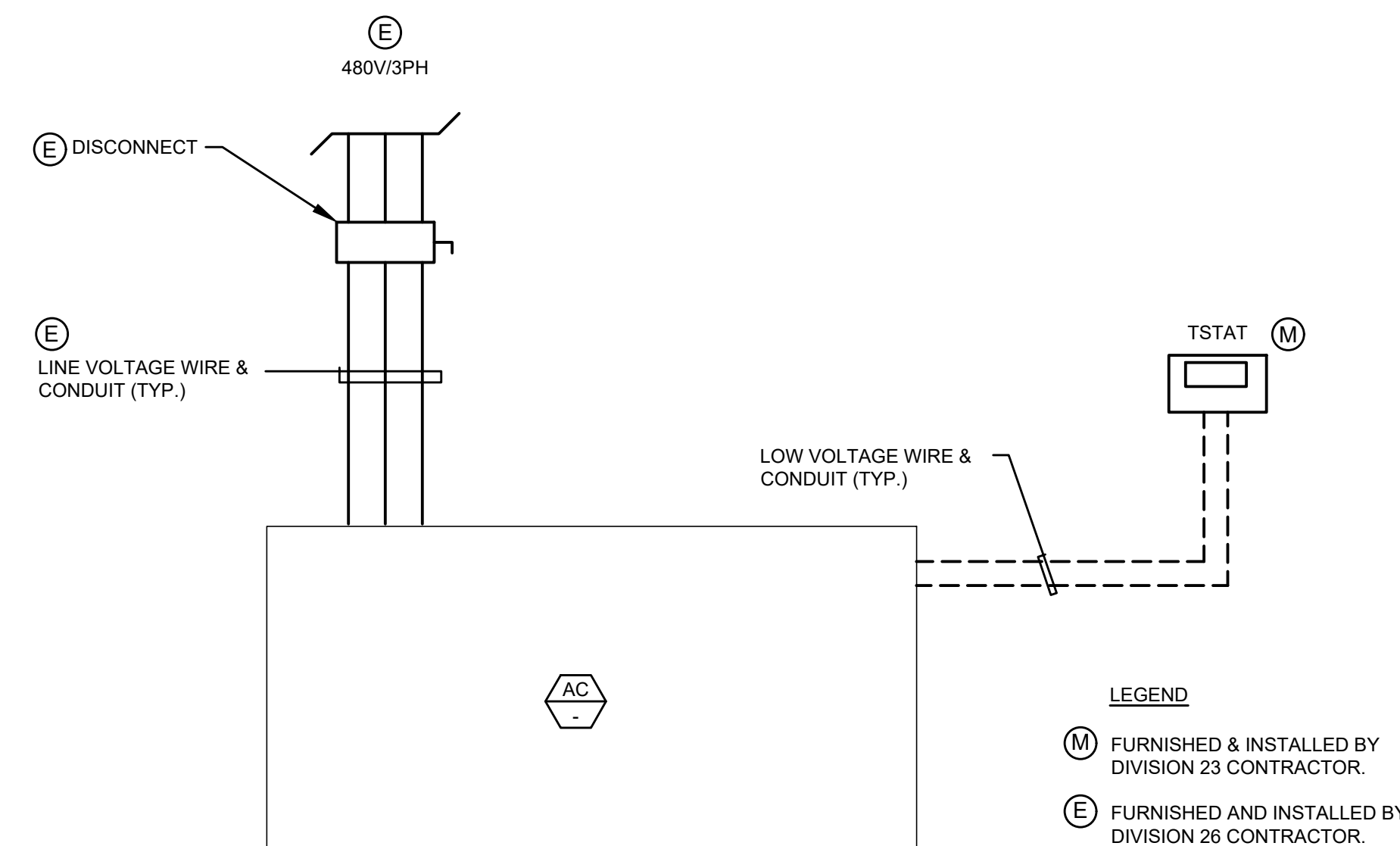
SCALE: NONE



LEGEND:  
 (M) FURNISHED & INSTALLED BY MECHANICAL CONTRACTOR  
 (E) FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR

EXHAUST FAN INTERLOCK WIRING DIAGRAM

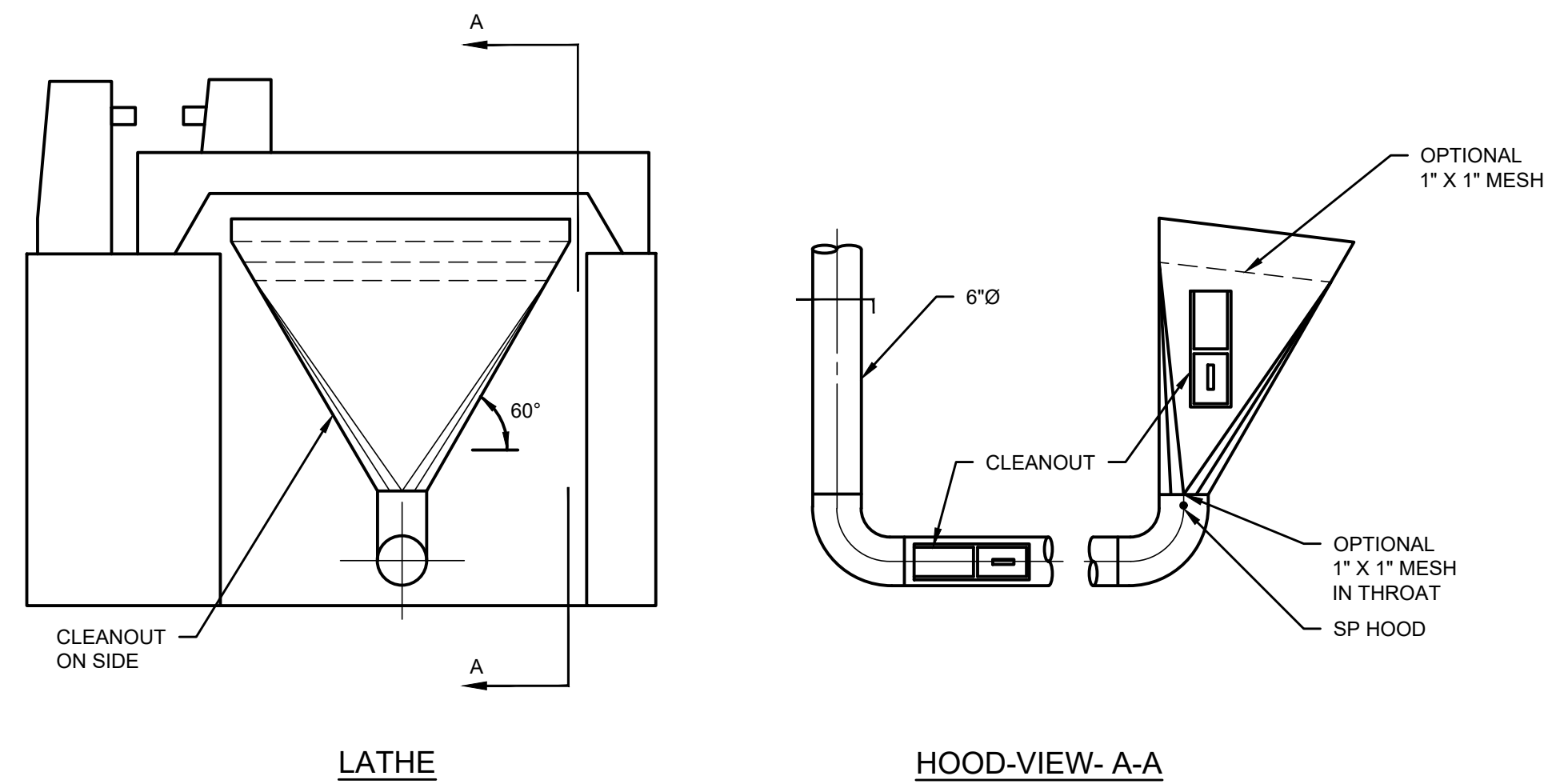
SCALE: NONE



LEGEND:  
 (M) FURNISHED & INSTALLED BY DIVISION 23 CONTRACTOR  
 (E) FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR

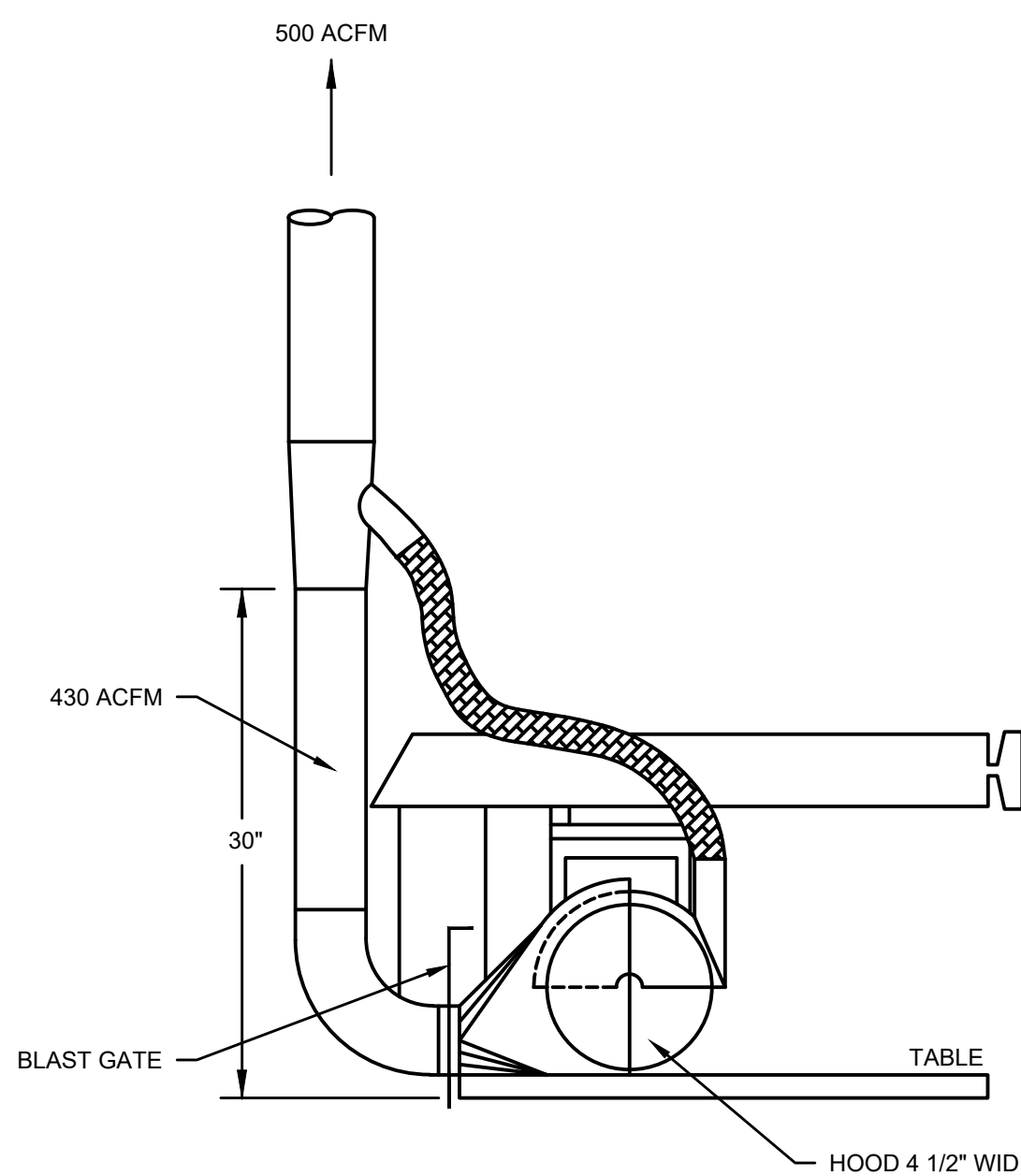
PACKAGE ROOFTOP AC UNIT WIRING DIAGRAM

SCALE: NONE



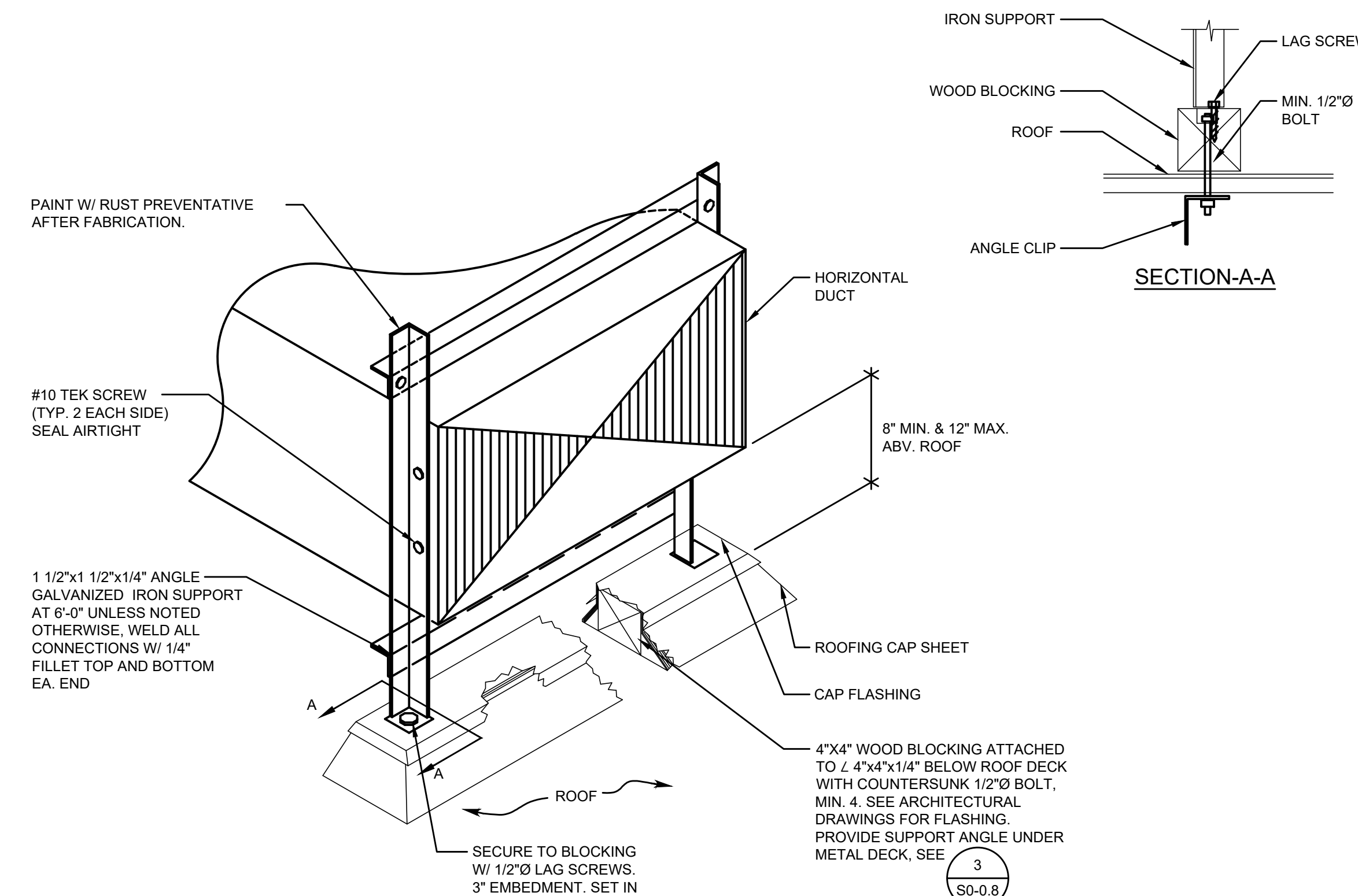
WOOD WORKING LATHE EXHAUST DUCT DETAIL

SCALE: NONE



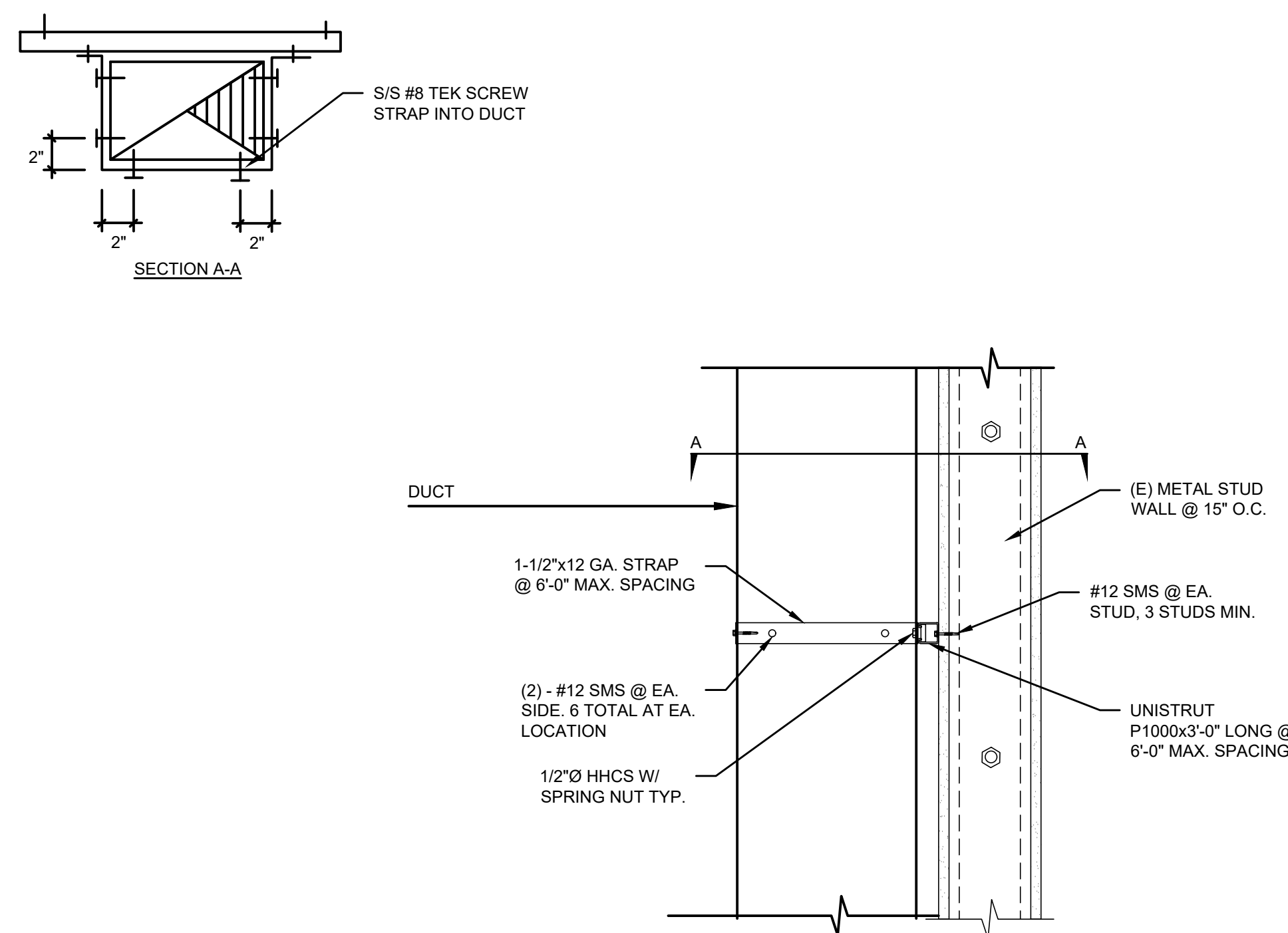
RADIAL ARM EXHAUST DUCT DETAIL

SCALE: NONE



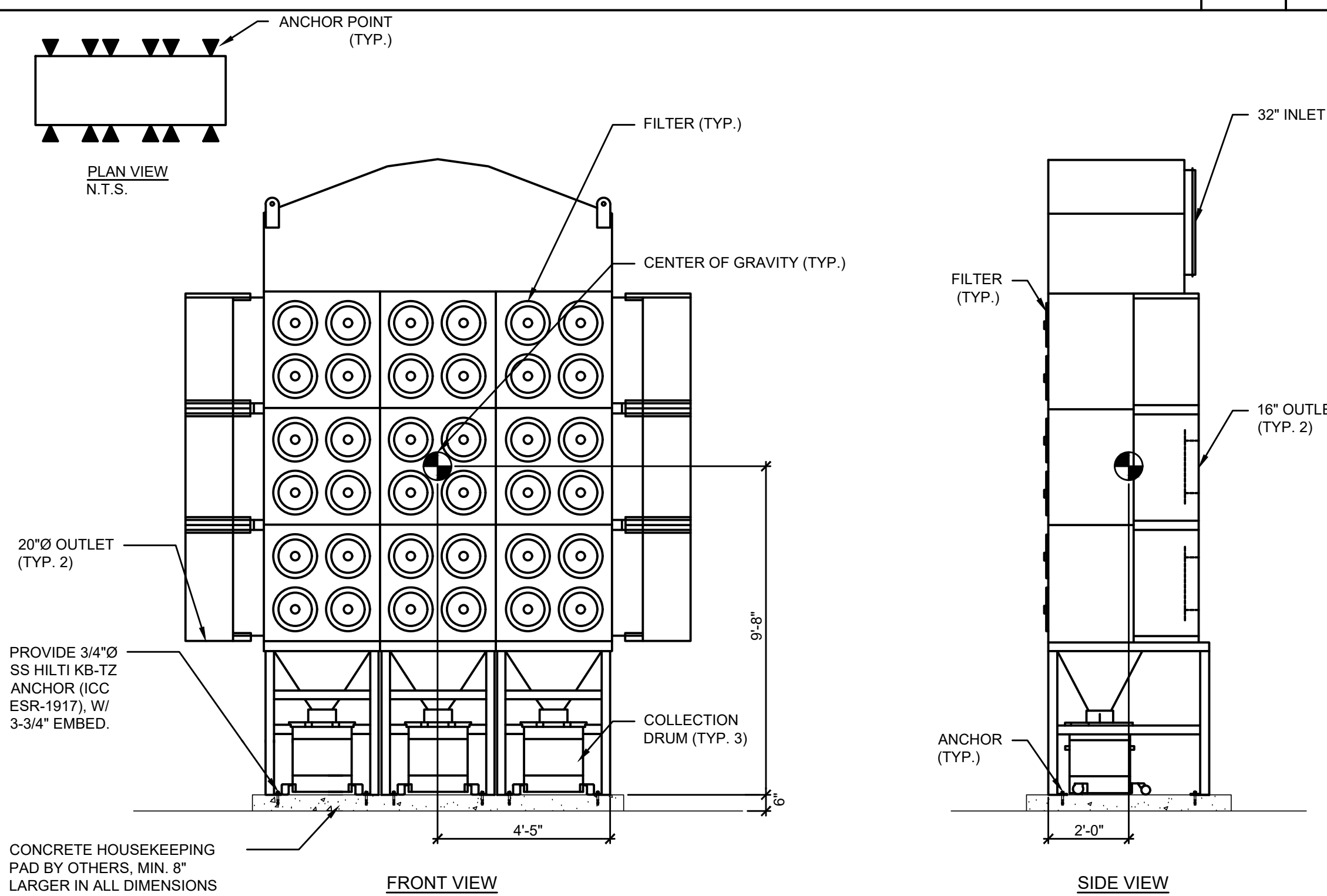
ROOFTOP DUCT SUPPORT DETAIL

SCALE: NONE



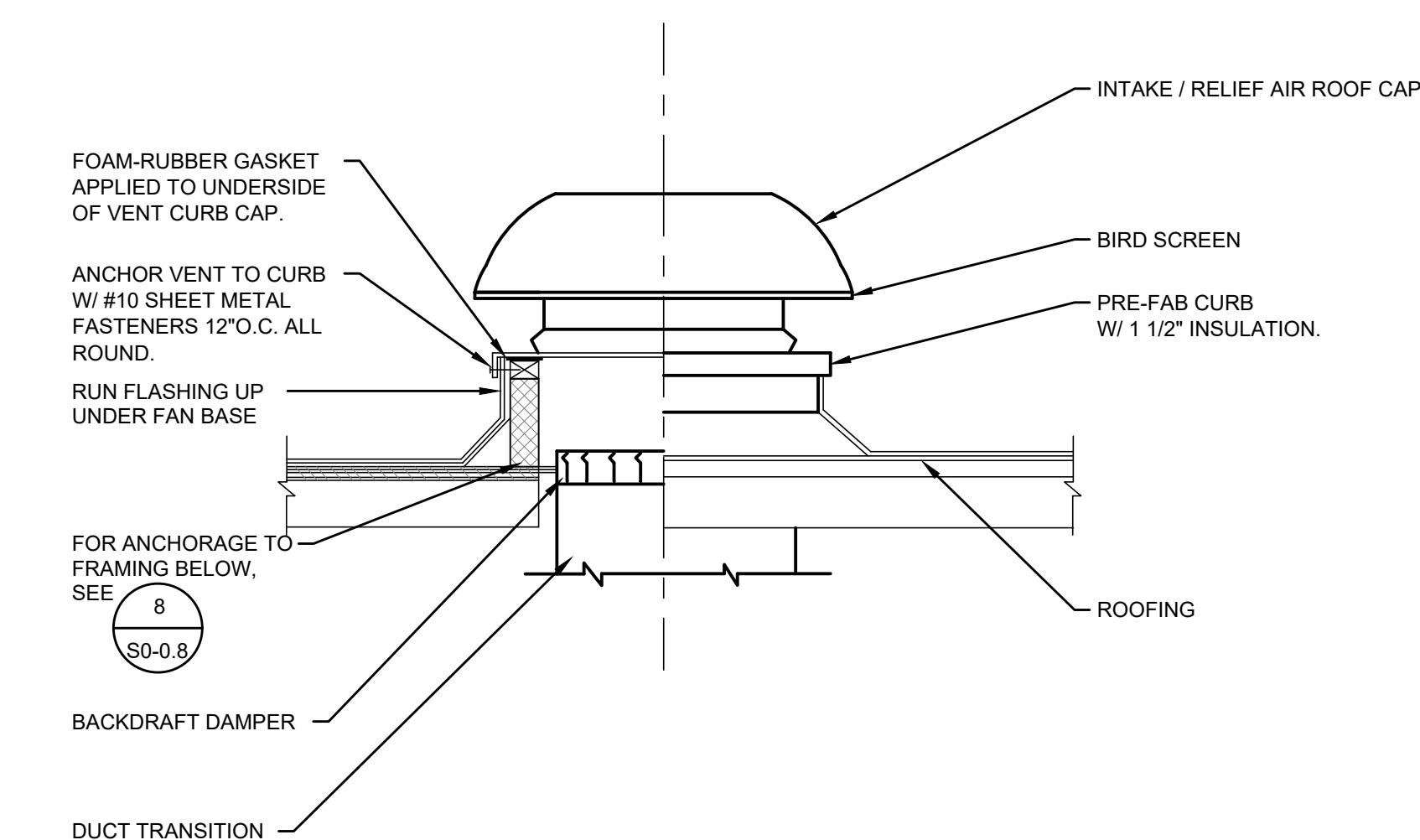
WALL SUPPORT OF WOOD DUST DUCT

SCALE: NONE



WELDING FUME FILTER BANK DETAIL

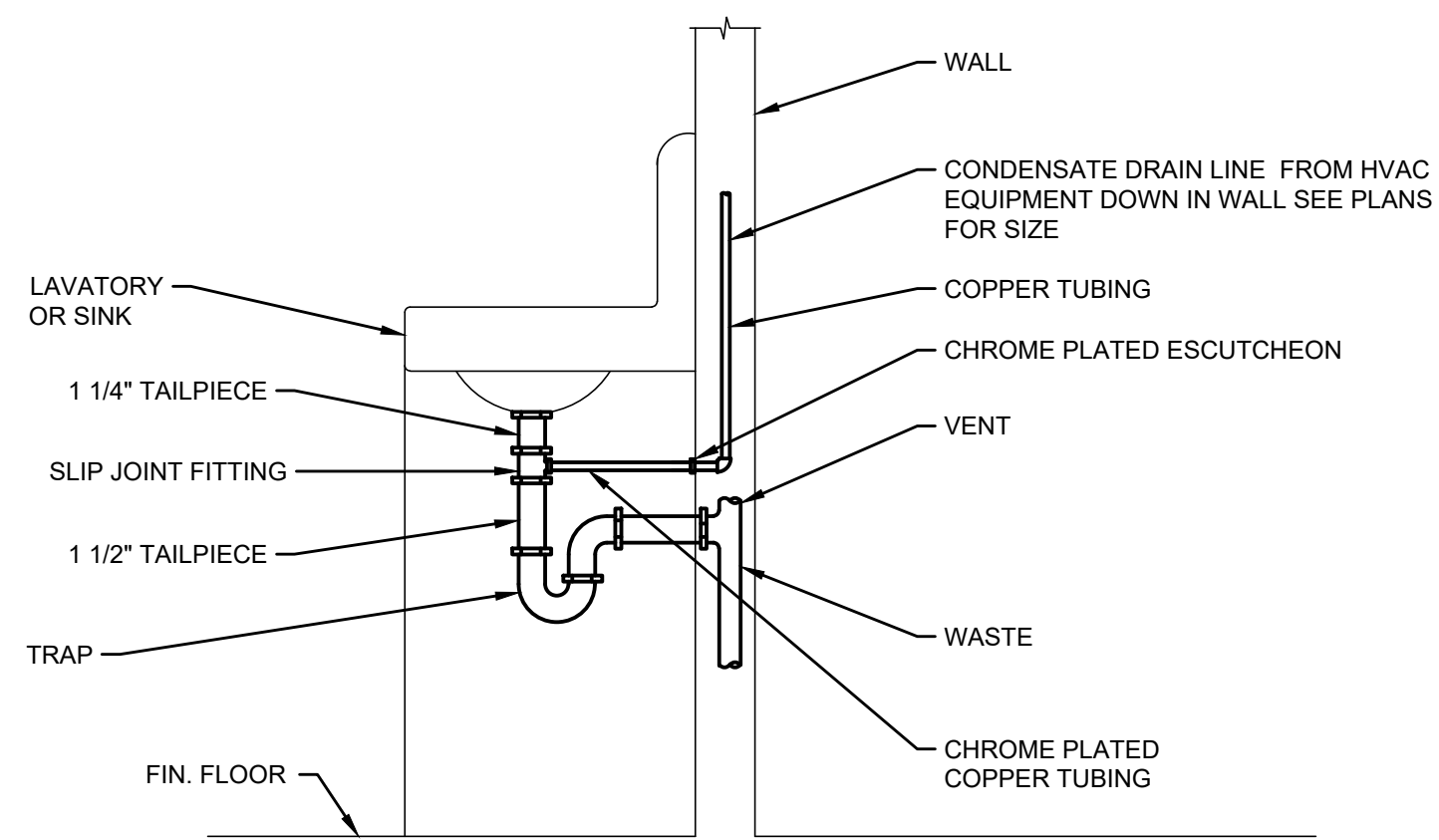
SCALE: NONE



OSA INTAKE / RELIEF VENT DETAIL

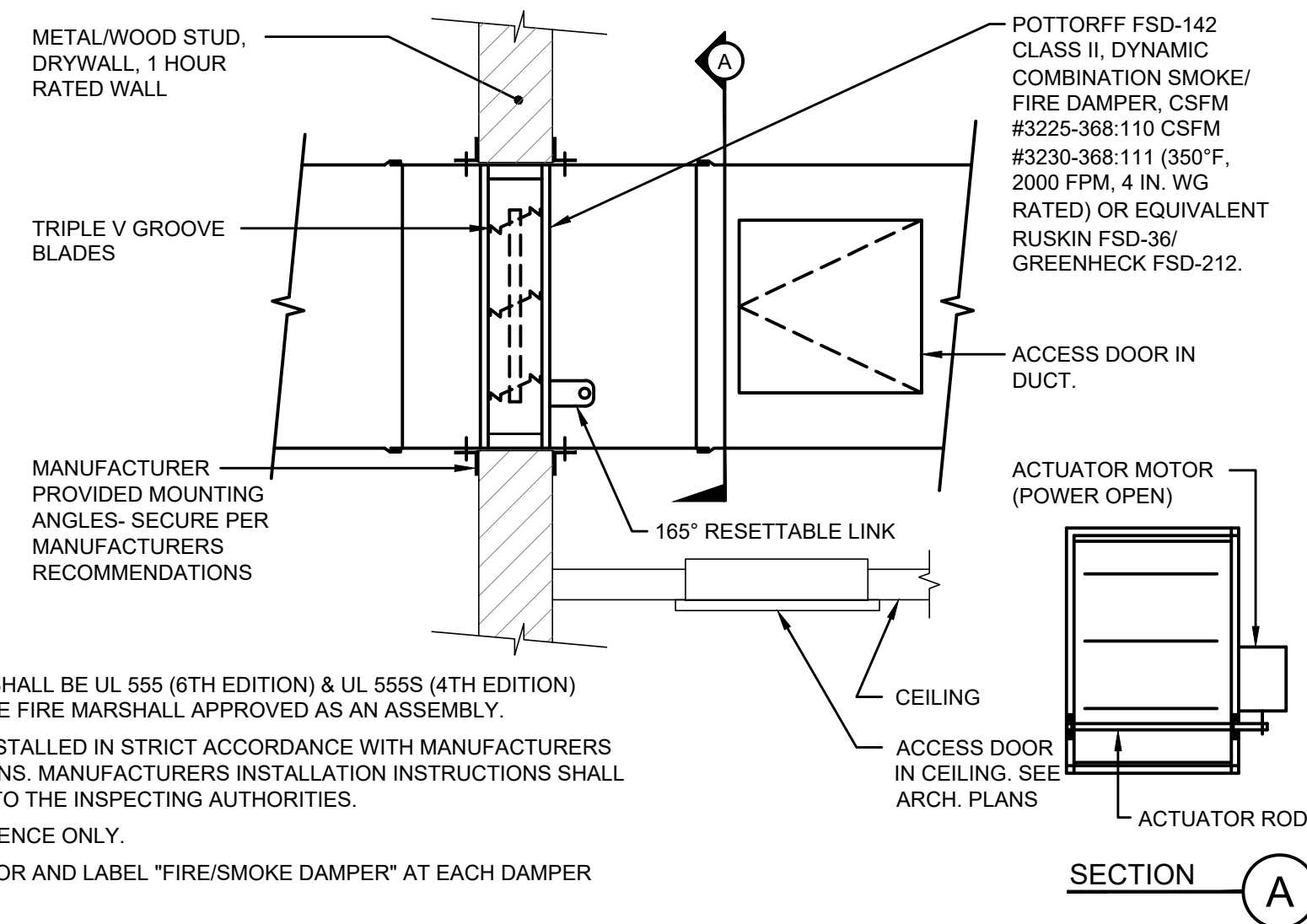
SCALE: NONE

NOTE: PROVIDE "GREENHECK # GRSR-12 FOR RELIEF AND GSRI-12 FOR INTAKE, OR AN APPROVED EQUIVALENT.



CONDENSATE CONNECTION TO LAV TAILPIECE DETAIL

SCALE  
NONE 1



- NOTES**
- DAMPER ACTUATOR SHALL BE UL 555 (6TH EDITION) & UL 555S (4TH EDITION) APPROVED AND STATE FIRE MARSHALL APPROVED AS AN ASSEMBLY.
  - DAMPER SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS PRINTED INSTRUCTIONS. MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
  - DETAIL IS FOR REFERENCE ONLY.
  - PROVIDE ACCESS DOOR AND LABEL "FIRE/SMOKE DAMPER" AT EACH DAMPER LOCATION.
  - DAMPER SHALL BE ACTIVATED BY HEAT (RESETTABLE LINK) OR ROOM SMOKE DETECTOR (SEE FIRE ALARM DRAWINGS.)

COMBINATION SMOKE / FIRE DAMPER DETAIL

SCALE  
NONE 2

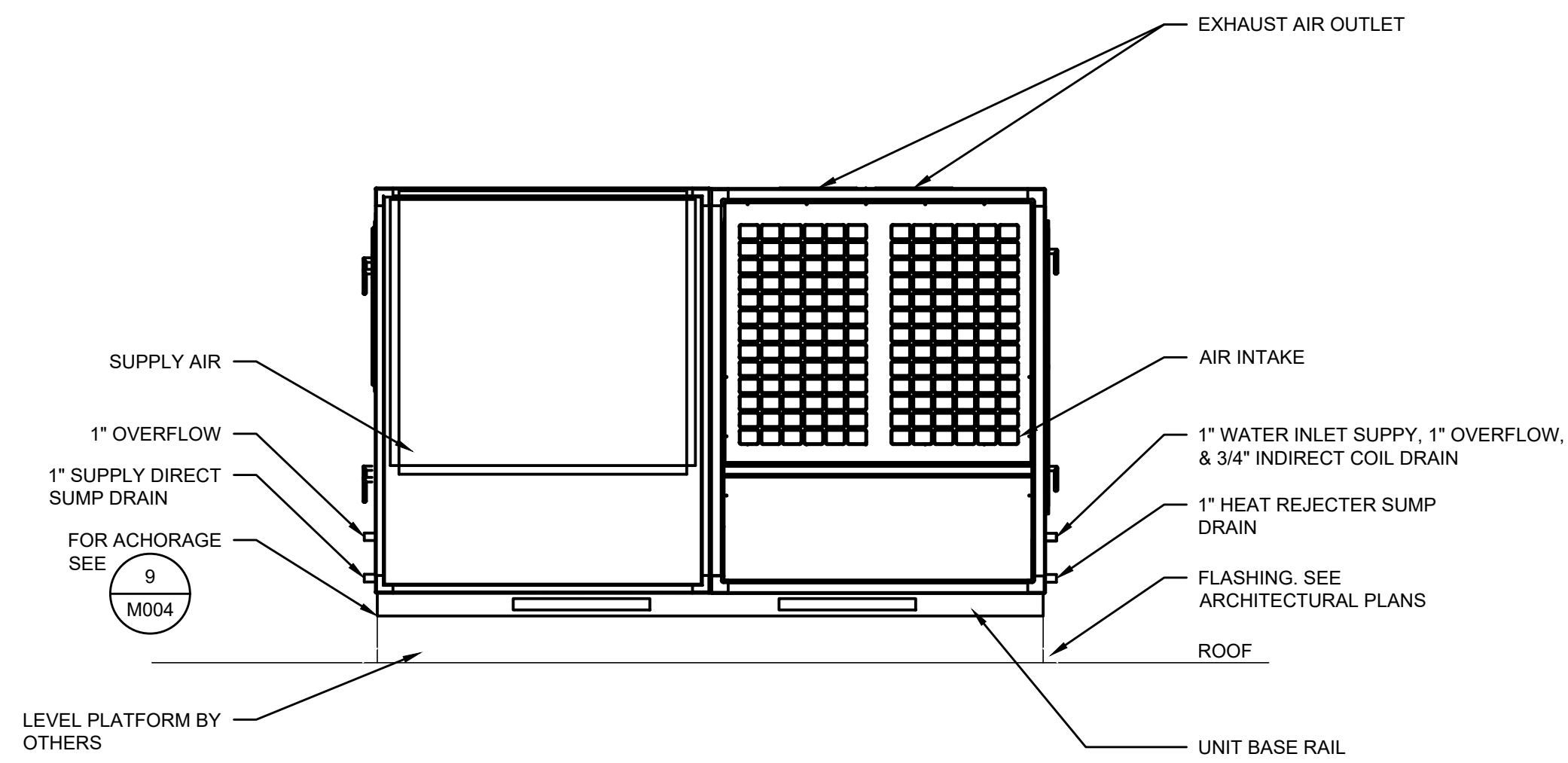
TYPE L COPPER PIPING		
PIPE NOMINAL SIZE	SUPPORT SPACING (O.C. FT)	ROD SIZE (INCH DIA)
3/4"	5	3/8
1"	6	3/8
1-1/4"	7	3/8
1-1/2"	8	3/8
2"	8	3/8

SCHEDULE 40 STEEL PIPING		
PIPE NOMINAL SIZE	SUPPORT SPACING (O.C. FT)	ROD SIZE (INCH DIA)
3/4"	9	3/8
1"	9	3/8
1-1/2"	10	3/8
2"	10	3/8
2-1/2"	10	1/2
3"	10	1/2
4"	10	5/8

SCHEDULE 80 STEEL PIPING		
PIPE NOMINAL SIZE	SUPPORT SPACING (O.C. FT)	ROD SIZE (INCH DIA)
3/4"	7	3/8
1"	7	3/8
1-1/2"	9	3/8
2"	10	3/8
2-1/2"	10	1/2
3"	10	1/2
4"	10	5/8

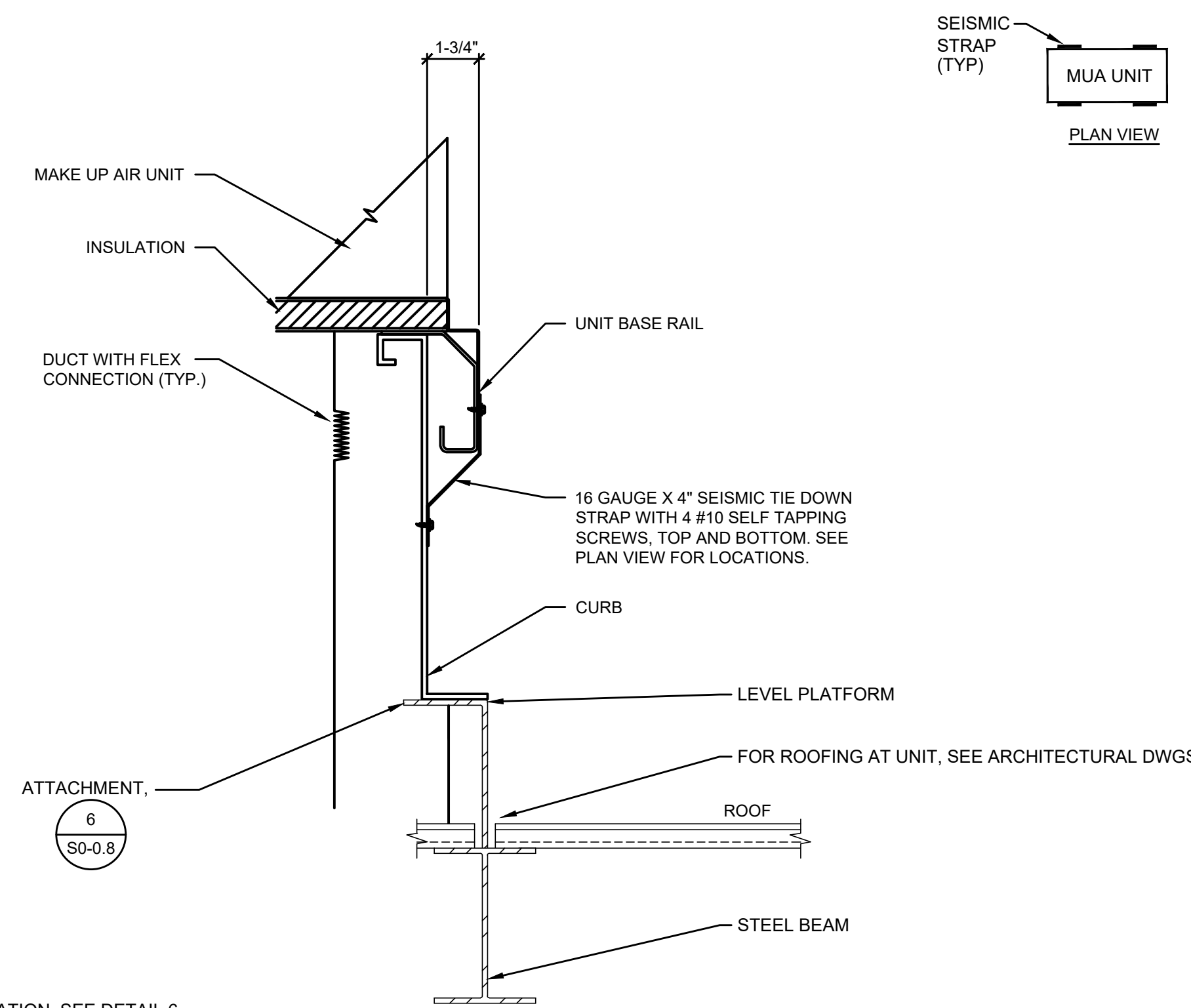
PIPE SUPPORT SPACING AND HANGER ROD SIZING

SCALE  
NONE 3



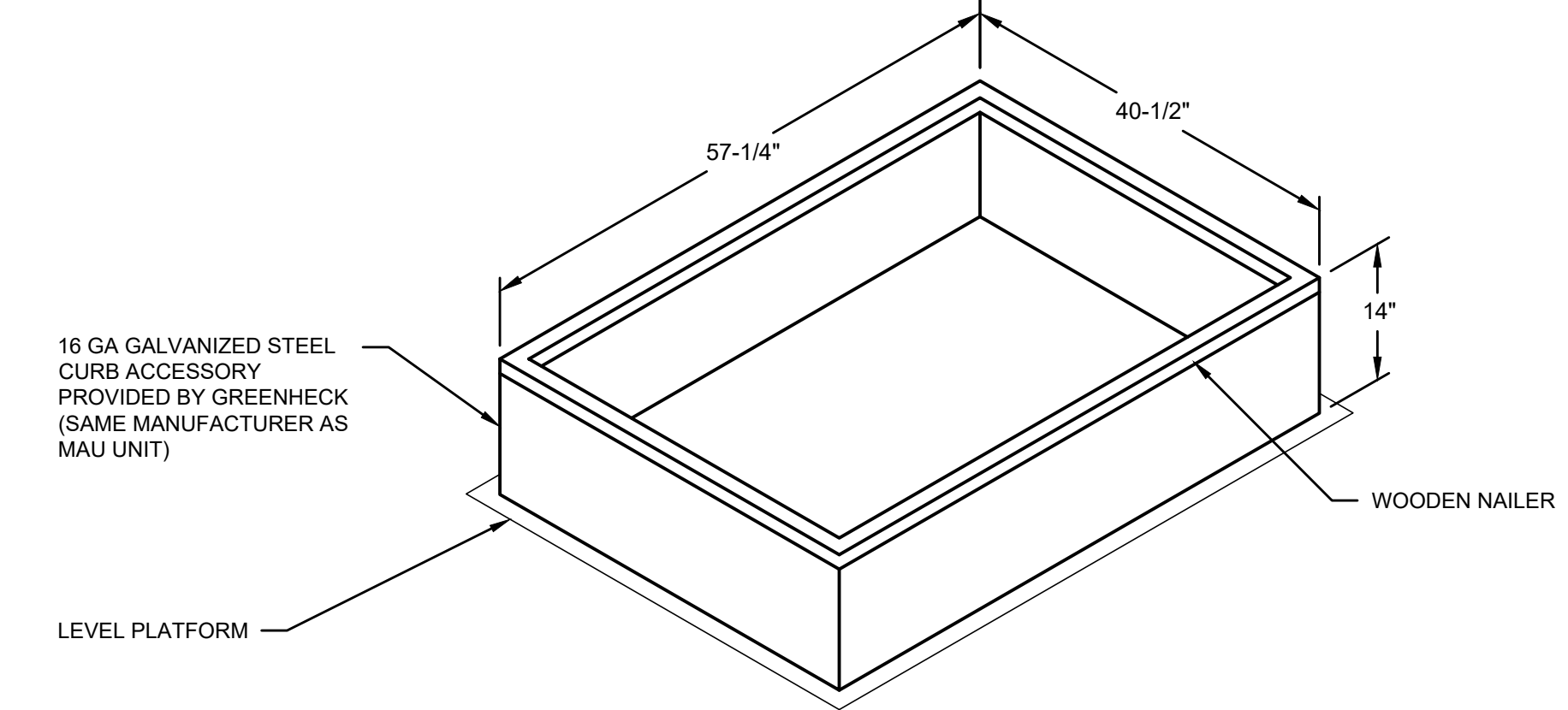
MUA-1 & 2 DETAIL

SCALE  
NONE 4



MUA-3 MOUNTING DETAIL

SCALE  
NONE 5



MUA-3 ROOF CURB DETAIL

SCALE  
NONE 6

NONE

SCALE  
NONE 7

NONE

SCALE  
NONE 8

NONE

SCALE  
NONE 9

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APP. 03-119532 INC.  
REVIEWED FOR  
SS [ ] FLS [ ] ACS [ ]  
DATE: 6/24/19

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FILLMORE HIGH  
SCHOOL -  
NEW CTE BUILDINGS  
FILLMORE  
UNIFIED SCHOOL  
DISTRICT  
555 Central Ave. Fillmore, CA.  
93015

ISSUED FOR:  
11/16/2017  
SCHEMATIC DESIGN  
DESIGN DEVELOPMENT 09/21/2018  
CONSTRUCTION DOCUMENTS 12/07/2018  
50% CD 11/09/2018  
90% CD 12/10/2018  
DSA SUBMITTAL 12/21/2018  
DSA BACKCHECK 5/08/2019

REVISIONS:

REGISTRATION/SIGNATURE:

REGISTERED PROFESSIONAL ENGINEER  
MECHANICAL  
No. 30025  
STATE OF CALIFORNIA

DATE: \_\_\_\_\_  
SHEET TITLE:

**MECHANICAL  
DETAILS &  
DIAGRAMS**

SHEET NUMBER:

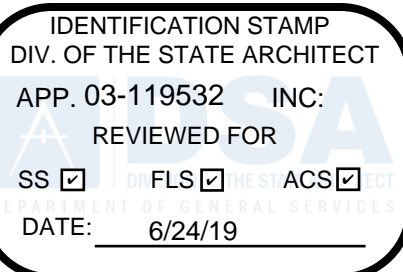
**M006**

WD PROJ. # 18413 | DRAWN BY: WD | CHECKED: Checker | DATE: 5/08/2019

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Project Name: Fillmore High School CTE - Building A, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: New/Complete, NRCC-PRF-01-E, Page 1 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16a

A. PROJECT GENERAL INFORMATION table with 4 columns: 1. Project Location (city), 2. CA Zip Code, 3. Climate Zone, 4. Total Unconditioned Floor Area in Scope, 5. Total Unconditioned Floor Area, 6. Total # of Stories (Habitable Above Grade), 7. Total # of Dwelling Units, 8. Standards Version, 9. Compliance Software (version), 10. Weather File, 11. Building Orientation (deg), 12. Permitted Scope of Work, 13. Building Type(s), 14. Gas Type

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kWh/ft²-yr) § 140.1. BUILDING COMPLIES table with 5 columns: 1. Energy Component, 2. Standard Design (TDV), 3. Proposed Design (TDV), 4. Compliance Margin (TDV), 5. Percent Better than Standard

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21

Project Name: Fillmore High School CTE - Building A, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: New/Complete, NRCC-PRF-01-E, Page 4 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16a

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY table with columns: Yes, NA, Prescriptive Requirement, Compliance Forms, Yes, NA, Mandatory Requirement, Compliance Forms

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21

Project Name: Fillmore High School CTE - Building A, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: New/Complete, NRCC-PRF-01-E, Page 7 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16a

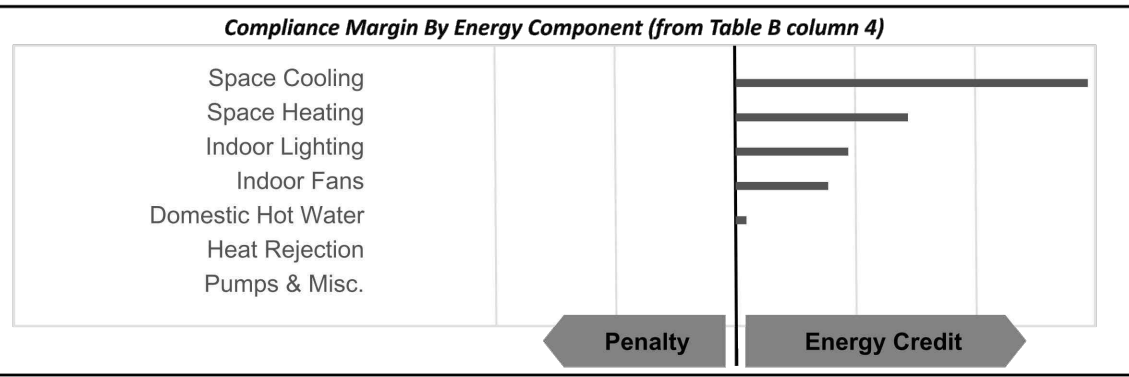
H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRVC) - Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information) table with 10 columns: 1. Total Conditioned Floor Area, 2. Total Unconditioned Floor Area, 3. Addition Conditioned Floor Area, 4. Addition Unconditioned Floor Area, 5. Number of Floors Above Grade, 6. Number of Floors Below Grade, 7. Opaque Surfaces & Orientation, 8. Total Gross Surface Area, 9. Total Fenestration Area, 10. Window to Wall Ratio

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21

Project Name: Fillmore High School CTE - Building A, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: New/Complete, NRCC-PRF-01-E, Page 2 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16a

C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings) table with 7 rows and 2 columns: 1st Space Cooling: Check envelope and mechanical, 2nd Space Heating: Check envelope and mechanical, 3rd Indoor Lighting: Check lighting, 4th Indoor Fans: Check envelope and mechanical, 5th Domestic Hot Water: Check mechanical, 6th Heat Rejection: Check envelope and mechanical, 7th Pumps & Misc.: Check mechanical



D. EXCEPTIONAL CONDITIONS This project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylight Control requirements are met.

E. HERS VERIFICATION This Section Does Not Apply

F. ADDITIONAL REMARKS None Provided

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21

Project Name: Fillmore High School CTE - Building A, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: New/Complete, NRCC-PRF-01-E, Page 5 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16a

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRVC) - Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21

Project Name: Fillmore High School CTE - Building A, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: New/Complete, NRCC-PRF-01-E, Page 8 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16a

J. FENESTRATION ASSEMBLY SUMMARY table with 10 columns: 1. Fenestration Assembly Name / Tag or LID, 2. Fenestration Type / Product Type / Frame Type, 3. Certification Method, 4. Assembly Method, 5. Area (ft²), 6. Overall U-Factor, 7. Overall SHGC, 8. Overall VT, 9. Status, 10. Confirmed

K. OPAQUE SURFACE ASSEMBLY SUMMARY table with 8 columns: 1. Surface Name, 2. Surface Type, 3. Area (ft²), 4. Framing Type, 5. Cavity R-Value, 6. Continuous R-Value, 7. U-Factor / F-Factor, 8. Status

Status: N - New, A - Altered, F - Existing

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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY table with columns: Building Component, Compliance Path, Compliance Forms (required for submittal), Location of Mandatory Notes on Plans

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H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRVC) - Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance

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L. ROOFING PRODUCT SUMMARY table with 7 columns: 1. Product Type, 2. Product Density (lb/ft²), 3. Aged Solar Reflectance, 4. Thermal Emittance, 5. SRI, 6. Cool Roof Credit, 7. Roofing Product Description

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) § 110.1 / § 110.2 table with 11 columns: 1. Equip Name, 2. Equip Type, 3. System Type, 4. Qty, 5. Total Heating Output, 6. Supp Heat Source, 7. Supp Heat Output, 8. Total Cooling Output, 9. Efficiency, 10. Acceptance Testing, 11. Status

1 Dry System Equipment includes furnaces, air handling units, heat pumps, etc.

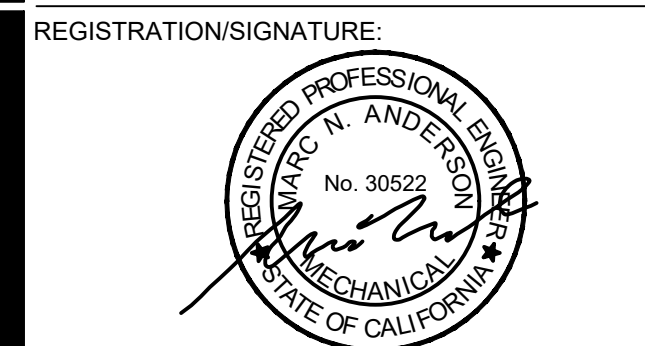
CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS, FILLMORE UNIFIED SCHOOL DISTRICT, 555 Central Ave. Fillmore, CA. 93015

ISSUED FOR: SCHEMATIC DESIGN, DESIGN DEVELOPMENT, CONSTRUCTION DOCUMENTS, 50% CD, 90% CD, OSA SUBMITTAL, DSA BACKCHECK

REVISIONS:



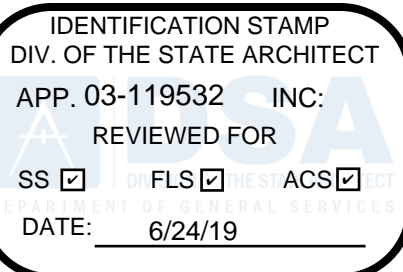
TITLE 24 ENERGY COMPLIANCE FORMS BUILDING A

SHEET NUMBER: M007

WD PROJ. # 18413, DRAWN BY: WD, CHECKED: Checker, DATE: 5/08/2019

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Project Name: Fillmore High School CTE - Building A, NRCC-PRF-01-E, Page 10 of 22, Calculation Date/Time: 11:30, Tue, Dec 18, 2018, Input File Name: Fillmore High School CTE - Building A.cibd16x

Simple Systems must complete NRCC-CR-01-E commissioning design review form, Complex Systems must complete NRCC-CR-04-E commissioning design review form, A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS, Status: N - New, A - Altered, E - Existing

Wet System Equipment table with columns 12-24 and Confirmed status. Includes equipment like Bradford White EF-60T-1502.

1. Wet System Equipment includes boilers, chillers, cooling towers, water heaters, etc. 2. Status: N - New, A - Altered, E - Existing

Discrepancy between modeled and designed equipment sizing? (If "Yes," see Table F, "Additional Remarks" for an explanation) No

N. ECONOMIZER & FAN SYSTEMS SUMMARY § 140.4 Confirmed

N. Economizer & Fan Systems Summary table with columns 1-5 and Confirmed status. Includes equipment like AC-1, MUA-1, CU-1/FC-1, etc.

Mechanical ventilation calculations and exhaust flows are included in the NRCC-PRF-MCH-DETAILS section

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O. EQUIPMENT CONTROLS § 120.2 Confirmed. Table with columns 1-5 and Confirmed status. Includes equipment like AC-1, Restroom Zone18, Office Zone38, etc.

P. SYSTEM DISTRIBUTION SUMMARY § 120.4 / § 140.4(I) Confirmed

P. System Distribution Summary table with columns 1-6 and Confirmed status. Includes equipment like AC-1, MUA-1, CU-1/FC-1, etc.

1. Status: N - New, A - Altered, E - Existing

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R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)1 § 130.0 Confirmed

R. Indoor Conditioned Lighting Schedule table with columns Name or Item Tag, Complete Luminaire Description, Watts per luminaire, How Wattage is Determined, Total Number Luminaires, Installed Watts, Pass, Fail. Includes equipment like R2, S1, S3, S4.

1. Lighting power densities were used in the compliance report. Building departments will need to check prescriptive forms for Luminaire Schedule details.

S1. COVERED PROCESS SUMMARY - ENCLOSED PARKING GARAGES § 140.9

This Section Does Not Apply

S2. COVERED PROCESS SUMMARY - COMMERCIAL KITCHENS § 140.9

This Section Does Not Apply

S3. COVERED PROCESS SUMMARY - COMPUTER ROOMS § 140.9

This Section Does Not Apply

S4. COVERED PROCESS SUMMARY - LABORATORY EXHAUSTS § 140.9

This Section Does Not Apply

T. UNMET LOAD HOURS

T. Unmet Load Hours table with columns Thermal Zone Name, Cooling Unmet Load Hour Limit for Thermal Zone, Proposed Cooling Unmet Load Hours, Heating Unmet Load Hour Limit for Thermal Zone, Proposed Heating Unmet Load Hours. Includes 6-Auto Repair Lab Zone.

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U. ENERGY USE SUMMARY

U. Energy Use Summary table with columns Energy Component, Standard Design Site (MWh), Proposed Design Site (MWh), Margin (MWh), Standard Design Site (MBtu), Proposed Design Site (MBtu), Margin (MBtu). Includes categories like Space Heating, Space Cooling, Indoor Fans, etc.

1. Status: N - New, A - Altered, E - Existing

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NRCC-PRF-ENV-DETAILS - SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS Confirmed

A. Opaque Surface Assembly Details table with columns 1-4 and Confirmed status. Includes details for Slab On Grade8, (Membrane) Metal Roof10, Laminate Panel Wall12, (Corrugate) Insulated 828, (Int) Wall Metal Stud44, Metal Roof82, (Plaster) Insulated 8 CMB4.

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)

This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:34:21

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C. OPAQUE DOOR SUMMARY Confirmed

C. Opaque Door Summary table with columns 1-7 and Confirmed status. Includes Wood Door31.

1. Status: N - New, A - Altered, E - Existing

NRCC-PRF-MCH-DETAILS - SECTION START-

A. MECHANICAL VENTILATION AND REHEAT (Adapted from 2016-NRCC-MCH-03-E) Confirmed

A. Mechanical Ventilation and Reheat table with columns 1-11 and Confirmed status. Includes equipment like 1-Engine Lab & Classroom Zo, 2-Restroom Zone, 3-Office Zone, etc.

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Does the Project Include Zonal Systems? (If "Yes," see NRCC-PRF-MCH-DETAILS for system information) Yes, Does the Project Include a Solar Hot Water System? (If "Yes," see NRCC-PRF-MCH-DETAILS for system information) No, Multifamily or Hotel/ Motel Occupancy? (If "Yes," see NRCC-PRF-MCH-DETAILS for DHW system information) No

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (See NRCC-PRF-LTI-DETAILS for more info)3 § 140.6 Confirmed

Q. Indoor Conditioned Lighting General Info table with columns 1-5 and Confirmed status. Includes equipment like Classrooms, Lecture, Training, Vocational Areas, Corridors, Restrooms, Stairs, and Support Areas, Office (250 square feet in floor area or less), Auto Repair Area.

1. See Table 140.6.C 2. See NRCC-LTI-01-E for unconditioned spaces 3. Lighting information for existing spaces modeled is not included in the table

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)1 § 130.0 Confirmed

R. Indoor Conditioned Lighting Schedule table with columns Name or Item Tag, Complete Luminaire Description, Watts per luminaire, How Wattage is Determined, Total Number Luminaires, Installed Watts, Pass, Fail. Includes equipment like P1, R1.

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT § 10-103

I certify that this Certificate of Compliance documentation is accurate and complete. Documentation Author Name: Tim Bergstrom, Signature: Tim Bergstrom, Date Signed: 12/18/2018, License # C 20495

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California: 1. I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.

Responsible Envelope Designer Name: David Smith, Signature: David Smith, Date Signed: 12-18-2018, License # C 20495

Responsible Lighting Designer Name: Adam Sloan, Signature: Adam Sloan, Date Signed: 12-18-2018, License # E-18589

Responsible Mechanical Designer Name: Marc Anderson, Signature: Marc Anderson, Date Signed: 12/18/2018, License #: M-30522

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:34:21

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B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY § 140.4 Confirmed

B. Zonal System and Terminal Unit Summary table with columns 1-8 and Confirmed status. Includes equipment like CU-1/FC-1, CU-2/FC-2, 2-Restroom Zone-Trm, 1-Engine Lab & Classroom Zo-Trm, 6-Auto Repair Lab Zone-Trm.

C. EXHAUST FAN SUMMARY Confirmed

C. Exhaust Fan Summary table with columns 1-6 and Confirmed status. Includes equipment like Restroom Zone18, Office Zone38, Tele./Compr. Room Zone53, Auto Repair Lab Zone75.

D. DHW EQUIPMENT SUMMARY - (Adapted from NRCC-PLB-01) § 110.3 Confirmed

D. DHW Equipment Summary table with columns 1-11 and Confirmed status. Includes equipment like Bradford White EF-60T-1502.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:34:21



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS, FILLMORE UNIFIED SCHOOL DISTRICT, 555 Central Ave. Fillmore, CA. 93015

ISSUED FOR: SCHEMATIC DESIGN, DESIGN DEVELOPMENT, CONSTRUCTION DOCUMENTS, 50% CD, 90% CD, OSA SUBMITTAL, DSA BACKCHECK

REVISIONS table with columns No., Description, Date

REGISTRATION/SIGNATURE: REGISTERED PROFESSIONAL ENGINEER, No. 30022, MECHANICAL ENGINEER, STATE OF CALIFORNIA

TITLE 24 ENERGY COMPLIANCE FORMS BUILDING A

SHEET NUMBER: M008

WD PROJ. # 18413, DRAWN BY: WD, CHECKED: Checker, DATE: 5/08/2019

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NOT FOR CONSTRUCTION



Project Name:	Fillmore High School CTE - Building A	NRCC-PRF-01-E	Page 19 of 22
Project Address:	555 Central Ave. Fillmore 93015	Calculation Date/Time:	11:30, Tue, Dec 18, 2018
Compliance Scope:	NewComplete	Input File Name:	Fillmore High School CTE - Building A.cidb16a

#### E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

#### F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)

This Section Does Not Apply

#### G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)

§ R44

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify.)

Test Description	# of units	MCH-02A	MCH-02B	MCH-03A	MCH-03B	MCH-04A	MCH-04B	MCH-05A	MCH-05B	MCH-06A	MCH-06B	MCH-07A	MCH-07B	MCH-08A	MCH-08B	MCH-09A	MCH-09B	MCH-10A	MCH-10B	MCH-11A	MCH-11B	Confirmed		
																						Pass	Fail	
Equipment Requiring Testing or Verification																								
WH-11 - SHW	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AC-1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Restroom Zone18	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Office Zone38	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tele./Compr Room Zone53	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MUA-1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Auto Repair Lab Zone75	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CU-1/FC-1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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#### 5. Wall Display

This Section Does Not Apply

#### 6. Floor Display and Task Lighting

This Section Does Not Apply

#### 7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

#### 8. Very Valuable Merchandise

This Section Does Not Apply

#### H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E)

§ 130.4

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify.)

Test Description	# of units	Indoor				Outdoor		Confirmed	
		NRCA-LTI-02-A	NRCA-LTI-03-A	NRCA-LTI-04-A	NRCA-LTI-02-A	Pass	Fail		
Equipment Requiring Testing or Verification									
Occupant Sensors	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Time Switch	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Daylighting	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demand Responsive	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Controls	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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#### G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)

§ R44

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify.)

Test Description	# of units	MCH-02A	MCH-02B	MCH-03A	MCH-03B	MCH-04A	MCH-04B	MCH-05A	MCH-05B	MCH-06A	MCH-06B	MCH-07A	MCH-07B	MCH-08A	MCH-08B	MCH-09A	MCH-09B	MCH-10A	MCH-10B	MCH-11A	MCH-11B	Confirmed		
																						Pass	Fail	
Equipment Requiring Testing or Verification																								
CU-2/FC-2	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CU-3/FC-3	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

#### H. EVAPORATIVE COOLER SUMMARY

1.	2.	3.	4.	5.	6.	7.	8.	9.	Confirmed
System ID	Type	Qty	Effectiveness	Pump Power (Watts)	Secondary Fan Flow Rate (cfm)	Secondary Fan Total Efficiency	Secondary Fan Static Pressure (in H2O)	Secondary Air Source	Pass Fail
ECDA-Air20 S-CRS-790074	Direct	1	0.95	1207.4	NA	NA	NA	NA	<input type="checkbox"/>
ECDA-Air20 S-CRS-790074	Indirect	1	0.8	0	7000	0.50	0.00117836	Outdoor	<input type="checkbox"/>

#### NRCC-PRF-LTI-DETAILS -SECTION START-

#### A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E)

§ 140.6

This Section Does Not Apply

#### B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E)

§ 130.1

This Section Does Not Apply

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21

#### ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL ENV-MM

Project Name	Fillmore High School CTE - Building A	Date	12/18/2018
<b>DESCRIPTION</b>			
<b>Building Envelope Measures:</b>			
§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.		
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.		
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.		
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.		
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft <sup>2</sup> of window area, 0.3 cfm/ft <sup>2</sup> of door area for residential doors, 0.3 cfm/ft <sup>2</sup> of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft <sup>2</sup> for nonresidential double doors (swinging).		
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.		
§110.6(a):	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.		
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).		
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: <b>Metal Building-</b> The weighted average U-factor of the roof assembly shall not exceed 0.098. <b>Wood Framed and Others-</b> The weighted average U-factor of the roof assembly shall not exceed 0.075. The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: <b>Metal Building-</b> The weighted average U-factor of the wall assembly shall not exceed 0.113. <b>Metal Framed-</b> The weighted average U-factor of the wall assembly shall not exceed 0.151. <b>Light Mass Walls-</b> An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. <b>Heavy Mass Walls-</b> An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. <b>Wood Framed and Others-</b> The weighted average U-factor of the wall assembly shall not exceed 0.110. <b>Spandrel Panels and Opaque Curtain Wall-</b> The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. <b>Demising Walls-</b> The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.		
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: <b>Raised Mass Floors-</b> Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. <b>Other Floors-</b> The weighted average U-factor of the floor assembly shall not exceed 0.071.		

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Compliance Scope:	NewComplete	Input File Name:	Fillmore High School CTE - Building A.cidb16a

#### C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)

§ 140.6

General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (see Table G)	0
<b>Total watts</b>	0

#### D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E)

§ 140.6-D

This Section Does Not Apply

#### E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E)

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft <sup>2</sup> )	Allowed Watts	Confirmed	
							Pass	Fail
NA	NA	NA	NA	NA	NA	NA	<input type="checkbox"/>	<input type="checkbox"/>

Note: Tailored Method for Special Function Areas is not currently implemented.

#### F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)

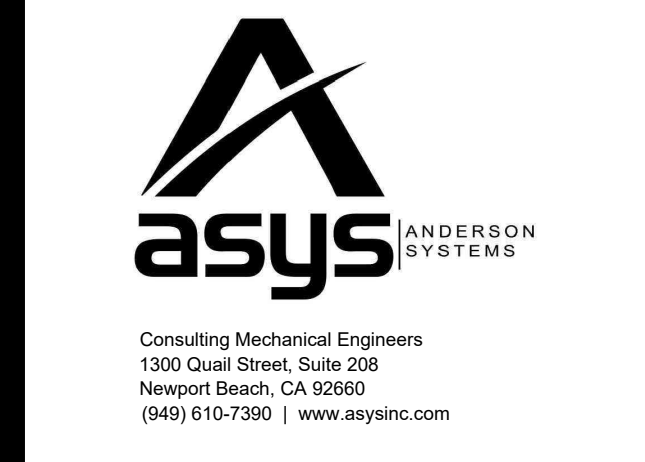
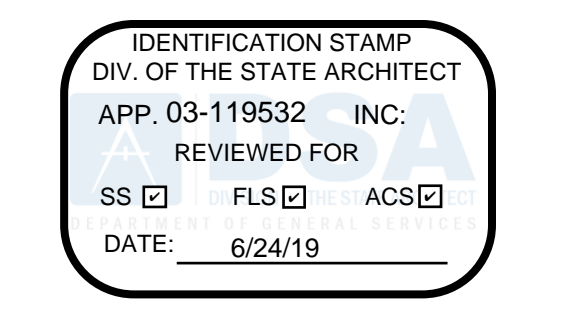
Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed	
						Pass	Fail
NA	NA	NA	NA	NA	NA	<input type="checkbox"/>	<input type="checkbox"/>

Note: All applicable spaces are listed under the Non-Rectangular Spaces table.

#### G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)

Wall Display	1.	2.	3.	4.	Allowed Watts	Confirmed	
						Pass	Fail
0	0	0	0	0	0	<input type="checkbox"/>	<input type="checkbox"/>

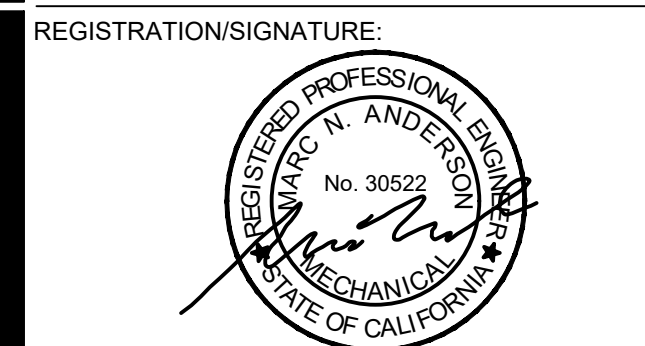
CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:34:21



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS  
FILLMORE UNIFIED SCHOOL DISTRICT  
555 Central Ave. Fillmore, CA. 93015

ISSUED FOR:	11/6/2017
SCHEMATIC DESIGN:	12/1/2018
DESIGN DEVELOPMENT:	08/21/2018
CONSTRUCTION DOCUMENTS:	12/07/2018
95% CD:	11/09/2018
90% CD:	12/10/2018
DSA SUBMITTAL:	12/21/2018
DSA BACKCHECK:	5/08/2019

REVISIONS:



DATE: SHEET TITLE:

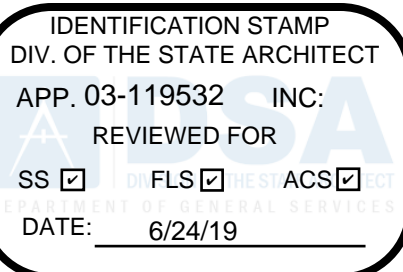
**TITLE 24 ENERGY COMPLIANCE FORMS BUILDING A**

SHEET NUMBER:  
**M009**

WD PROJ. #	DRAWN BY:	CHECKED	DATE
18413	WD	Checker	5/08/2019

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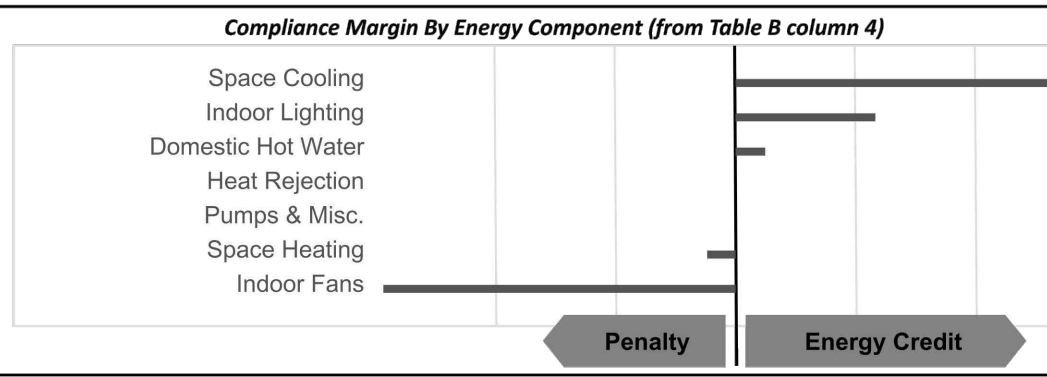
Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

A. PROJECT GENERAL INFORMATION table with columns for Project Location, Standards Version, Compliance Software, etc.

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kWh/ft²-yr) table with columns for Energy Component, Standard Design, Proposed Design, etc.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings) table with columns for Item, Description, and Compliance Path.



D. EXCEPTIONAL CONDITIONS: The proposed building claims credit for non-mandatory lighting control credits via Power Adjustment Factors (PAFs) as outlined in Standards Table 140.6-A.

E. HERS VERIFICATION: This Section Does Not Apply.

F. ADDITIONAL REMARKS: None Provided.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY table with columns for Building Component, Compliance Path, and Compliance Forms.

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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY table with columns for Building Component, Compliance Path, and Compliance Forms.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) table with columns for Building Component, Compliance Forms, and Pass/Fail status.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) table with columns for Building Component, Compliance Forms, and Pass/Fail status.

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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) table with columns for Building Component, Compliance Forms, and Pass/Fail status.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

J. FENESTRATION ASSEMBLY SUMMARY table with columns for Fenestration Assembly Name, Surface Area, and Performance Metrics.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

K. OPAQUE SURFACE ASSEMBLY SUMMARY table with columns for Surface Name, Surface Type, Area, and Performance Metrics.

Project Name: Fillmore High School CTE - Building B, Project Address: 555 Central Ave. Fillmore 93015, Compliance Scope: NewComplete

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information) table with columns for Total Conditioned Floor Area, Unconditioned Floor Area, etc.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

K. OPAQUE SURFACE ASSEMBLY SUMMARY table with columns for Surface Name, Surface Type, Area, and Performance Metrics.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

L. ROOFING PRODUCT SUMMARY table with columns for Product Type, Product Density, and Performance Metrics.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

M. HVAC SYSTEM SUMMARY (See NRCC-PRF-MCH-DETAILS for more information) table with columns for Equip Name, Equip Type, System Type, and Performance Metrics.

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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583

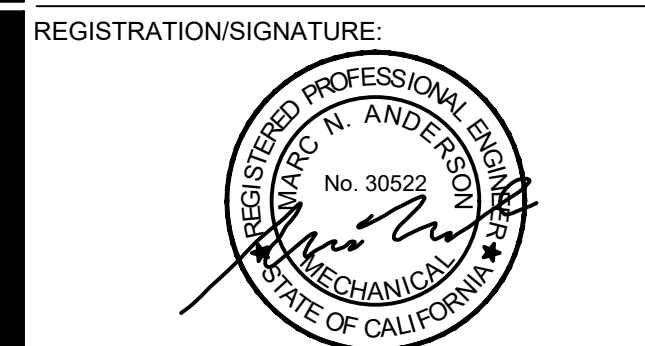
CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS, FILLMORE UNIFIED SCHOOL DISTRICT, 555 Central Ave. Fillmore, CA. 93015

ISSUED FOR: SCHEMATIC DESIGN, DESIGN DEVELOPMENT, CONSTRUCTION DOCUMENTS, etc.

REVISIONS table with columns for Revision Number, Description, and Date.



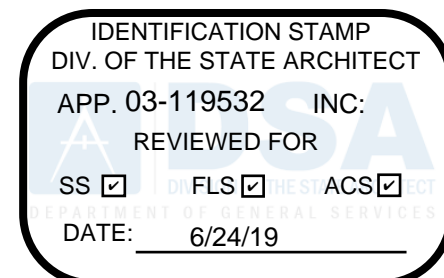
TITLE 24 ENERGY COMPLIANCE FORMS BUILDING B

SHEET NUMBER: M010

WD PROJ. # 18413, DRAWN BY: WD, CHECKED: Checker, DATE: 5/08/2019

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Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 10 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) § 110.1 / § 110.2. Table with columns 1-11 and Confirmed status. Rows include Wood Shop Zone50, AC-6, MUA-2, Metal Shop Zone97, Compressor/Gas Storage Zone111, MPOE Room Zone122, Electrical Room Zone130, Elevator Machine Room Zone136, FC-4/CU-4, FC-5/CU-5, FC-6/CU-6.

1 Dry System Equipment includes furnaces, air handling units, heat pumps, etc.
2 Simple Systems must complete NRCC-CMR-01-E commissioning design review form
3 Complex Systems must complete NRCC-CMR-04-E commissioning design review form
4 A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 13 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

O. EQUIPMENT CONTROLS § 120.2 Confirmed. Table with columns 1-3 and Confirmed status. Rows include MUA-2, Metal Shop Zone97, Compressor/Gas Storage Zone111, MPOE Room Zone122, Electrical Room Zone130, Elevator Machine Room Zone136, WH-21 - SHW.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 16 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

S2. COVERED PROCESS SUMMARY - COMMERCIAL KITCHENS § 140.9. This Section Does Not Apply.

S3. COVERED PROCESS SUMMARY - COMPUTER ROOMS § 140.9. This Section Does Not Apply.

S4. COVERED PROCESS SUMMARY - LABORATORY EXHAUSTS § 140.9. This Section Does Not Apply.

T. UNMET LOAD HOURS. Table with columns: Thermal Zone Name, Cooling Unmet Load Hour Limit for Thermal Zone, Proposed Cooling Unmet Load Hours, Heating Unmet Load Hour Limit for Thermal Zone, Proposed Heating Unmet Load Hours. Rows include 9-Metal Shop Zone, 10-Compressor/Gas Storage Zo.

U. ENERGY USE SUMMARY. Table with columns: Energy Component, Standard Design Site (MWh), Proposed Design Site (MWh), Margin (MWh), Standard Design Site (MBtu), Proposed Design Site (MBtu), Margin (MBtu). Rows include Space Heating, Space Cooling, Indoor Fans, Heat Rejection, Pumps & Misc., Domestic Hot Water, Indoor Lighting, COMPLIANCE TOTAL, Receptacle, Process, Other Ltg, Process Motors, TOTAL.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 11 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

Wet System Equipment 1. Table with columns 12-24 and Confirmed status. Rows include Bradford White EF-60T-1502.

1 Wet System Equipment includes boilers, chillers, cooling towers, water heaters, etc.
2 Status: N - New, A - Altered, E - Existing

Discrepancy between modeled and designed equipment sizing? (If "Yes", see Table F, "Additional Remarks" for an explanation) No

N. ECONOMIZER & FAN SYSTEMS SUMMARY § 140.4 Confirmed. Table with columns 1-5 and Confirmed status. Rows include AC-2, AC-3, AC-4, AC-5, AC-6, MUA-2, FC-4/CU-4, FC-5/CU-5, FC-6/CU-6.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 14 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

P. SYSTEM DISTRIBUTION SUMMARY § 120.4 / § 140.4(I) Confirmed. Table with columns 1-6 and Confirmed status. Rows include AC-2, AC-3, AC-4, AC-5, AC-6, MUA-2, FC-4/CU-4, FC-5/CU-5, FC-6/CU-6.

Does the Project include Zonal Systems? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information) Yes
Does the Project include a Solar Hot Water System? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information) No
Multifamily or Hotel/Motel Occupancy? (If "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information) No

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info) § 140.6 Confirmed. Table with columns 1-5 and Confirmed status. Rows include Classroom, Lecture, Training, Vocational Areas, Corridors, Restrooms, Stairs, and Support Areas.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 17 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT § 10-103

I certify that this Certificate of Compliance documentation is accurate and complete.
Documentation Author Name: Tim Bergstrom
Company: asys, inc.
Address: 1300 Quail St., Suite 208
City/State/Zip: Newport Beach CA 92660
Phone: 949-610-7390

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1 I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or a licensed architect.
2 I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
3 I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Responsible Envelope Designer Name: David Smith
Company: WestGroup Designs
Address: 19520 Jamboree Road, Suite 100
City/State/Zip: Irvine CA 92612
Phone: (949) 250-0880
Responsible Lighting Designer Name: Adam Sloan
Company: AG Design Engineers, Inc.
Address: 171 S. Anila Drive, Suite 111
City/State/Zip: Orange, California 92869
Phone: 714.769.9900
Responsible Mechanical Designer Name: Marc Anderson
Company: Asys, Inc.
Address: 1300 Quail Street
City/State/Zip: Newport Beach CA 92660
Phone: (949) 610-7390

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 12 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section

O. EQUIPMENT CONTROLS § 120.2 Confirmed. Table with columns 1-3 and Confirmed status. Rows include AC-2, AC-3, AC-4, Staff Work Room Zone42, AC-5, Wood Shop Zone50, AC-6.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 15 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info) § 140.6 Confirmed. Table with columns 1-5 and Confirmed status. Rows include Office (Greater than 250 square feet in floor area), Electrical, Mechanical, Telephone Rooms, Building Totals.

1 See 90A-140.6-C
2 See NRCC-LTI-01-E for unconditioned spaces
Lighting information for existing spaces modeled is not included in the table

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E) § 130.0 Confirmed. Table with columns 1-6 and Confirmed status. Rows include P1, R1, S1, S3, S4.

If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.

S1. COVERED PROCESS SUMMARY - ENCLOSED PARKING GARAGES § 140.9. This Section Does Not Apply.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E Page 18 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cibd16x

NRCC-PRF-ENV-DETAILS - SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS Confirmed

Table with columns 1-4 and Confirmed status. Rows include Slab On Grade7, Built Up Metal Roof9, (Int) Ceiling1, (Laminated) Insulated Metal14, (Plaster) Insulated Metal17, Metal Floor41, (Int) Floor66, (Int) Wall Metal Stud84.

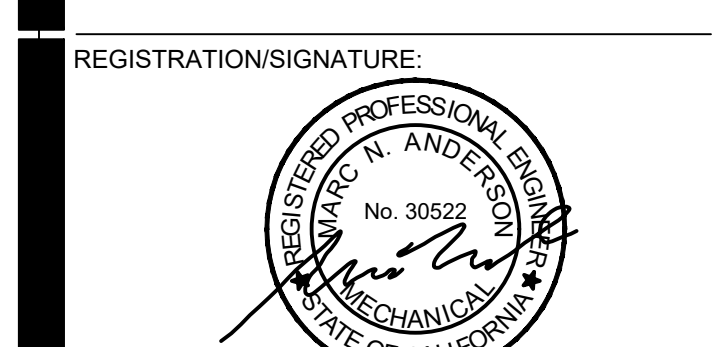
CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2018-12-18 11:42:21



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS UNIFIED SCHOOL DISTRICT 555 Central Ave. Fillmore, CA. 93015

ISSUED FOR: 11/02/2017 SCHEMATIC DESIGN, 09/21/2018 DESIGN DEVELOPMENT, 12/07/2018 CONSTRUCTION DOCUMENTS, 50% CD, 11/09/2018, 90% CD, 12/10/2018, DSA SUBMITTAL, 12/21/2018, DSA BACKCHECK, 5/08/2019

REVISIONS:



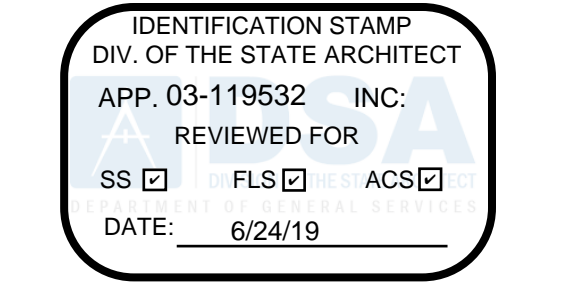
TITLE 24 ENERGY COMPLIANCE FORMS BUILDING B

SHEET NUMBER: M011

WD PROJ. # 18413, DRAWN BY: WD, CHECKED: Checker, DATE: 5/08/2019

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Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 19 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

A. OPAQUE SURFACE ASSEMBLY DETAILS, Confirmed, Table with columns 1-4, Pass/Fail

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E), This Section Does Not Apply

C. OPAQUE DOOR SUMMARY, Confirmed, Table with columns 1-7, Pass/Fail

Status: N - New, A - Altered, E - Existing

NRCC-PRF-MCH-DETAILS - SECTION START-

A. MECHANICAL VENTILATION AND REHEAT (Adapted from 2016-NRCC-MCH-03-E), Confirmed, Table with columns 1-11, Pass/Fail

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 20 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

A. MECHANICAL VENTILATION AND REHEAT (Adapted from 2016-NRCC-MCH-03-E), Confirmed, Table with columns 1-11, Pass/Fail

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 21 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY, Confirmed, Table with columns 1-8, Pass/Fail

C. EXHAUST FAN SUMMARY, Confirmed, Table with columns 1-6, Pass/Fail

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 22 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

C. EXHAUST FAN SUMMARY, Confirmed, Table with columns 1-6, Pass/Fail

D. DHW EQUIPMENT SUMMARY (Adapted from NRCC-PLB-01), Confirmed, Table with columns 1-11, Pass/Fail

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS, This Section Does Not Apply

F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01), This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 25 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

H. EVAPORATIVE COOLER SUMMARY, Confirmed, Table with columns 1-9, Pass/Fail

NRCC-PRF-LTI-DETAILS - SECTION START-

A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E), § 140.6, Confirmed, Table with columns 1-9, Pass/Fail

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E), § 130.1, This Section Does Not Apply

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E), § 140.6, General lighting power (see Table D) 0, General lighting power from special function areas (see Table E) NA, Additional "use it or lose it" (see Table G) 0, Total watts 0

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E), § 140.6-D, This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 23 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E), § RA4, Declaration of Required Acceptance Certificates (NRCA) - Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify), Table with columns Test Description, MCH-01-A through MCH-01-N, Confirmed

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 26 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E), § 140.6(c) 3H, Table with columns Room Number, Primary Function Area, Illuminance Value (Lux), Room Cavity Ratio (Table G), Allowed LPD, Floor Area (ft²), Allowed Watts, Confirmed

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E), Rectangular Spaces, Table with columns Room Number, Task/Activity Description, Room Length (ft), Room Width (ft), Room Cavity Height (ft), RCR, Confirmed

Non-Rectangular Spaces, This Section Does Not Apply

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E), Table with columns 1-4, Confirmed

H. INDOOR AND OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTI-01-E), § 130.4, Declaration of Required Acceptance Certificates (NRCA) - Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify), Table with columns Test Description, NRCA-LTI-02-A, NRCA-LTI-03-A, NRCA-LTI-04-A, NRCA-LTI-04-B, Confirmed

I. WALL DISPLAY, This Section Does Not Apply

J. FLOOR DISPLAY AND TASK LIGHTING, This Section Does Not Apply

K. COMBINED ORNAMENTAL AND SPECIAL EFFECTS LIGHTING, This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21

Project Name: Fillmore High School CTE - Building B, NRCC-PRF-01-E, Page 27 of 27, Project Address: 555 Central Ave. Fillmore 93015, Calculation Date/Time: 11:37, Tue, Dec 18, 2018, Compliance Scope: NewComplete, Input File Name: Fillmore High School CTE - Building B.cbd16x

B. VERY VALUABLE MERCHANDISE, This Section Does Not Apply

H. INDOOR AND OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTI-01-E), § 130.4, Declaration of Required Acceptance Certificates (NRCA) - Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify), Table with columns Test Description, NRCA-LTI-02-A, NRCA-LTI-03-A, NRCA-LTI-04-A, NRCA-LTI-04-B, Confirmed

I. WALL DISPLAY, This Section Does Not Apply

J. FLOOR DISPLAY AND TASK LIGHTING, This Section Does Not Apply

K. COMBINED ORNAMENTAL AND SPECIAL EFFECTS LIGHTING, This Section Does Not Apply

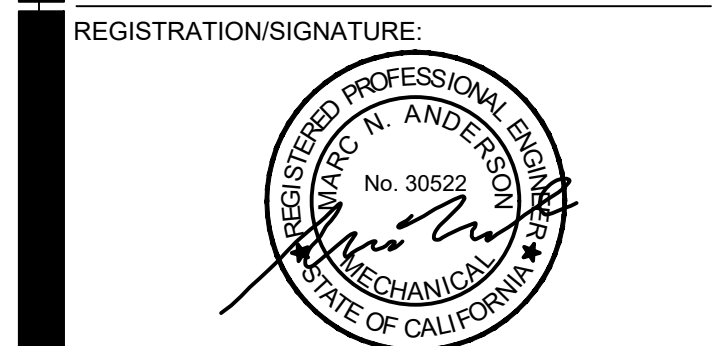
CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance, Report Version: NRCC-PRF-01-E-09132018-5583, Report Generated at: 2018-12-18 11:42:21



FILLMORE HIGH SCHOOL - NEW CTE BUILDINGS, FILLMORE UNIFIED SCHOOL DISTRICT, 555 Central Ave. Fillmore, CA. 93015

ISSUED FOR: 11/6/2017, SCHEMATIC DESIGN, 12/07/2018, DESIGN DEVELOPMENT, 08/21/2018, CONSTRUCTION DOCUMENTS, 12/07/2018, 50% CD, 11/09/2018, 90% CD, 12/10/2018, DSA SUBMITTAL, 12/21/2018, DSA BACKCHECK, 5/08/2019

REVISIONS: Table with columns for revision details



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TITLE 24 ENERGY COMPLIANCE FORMS BUILDING B

SHEET NUMBER: M012

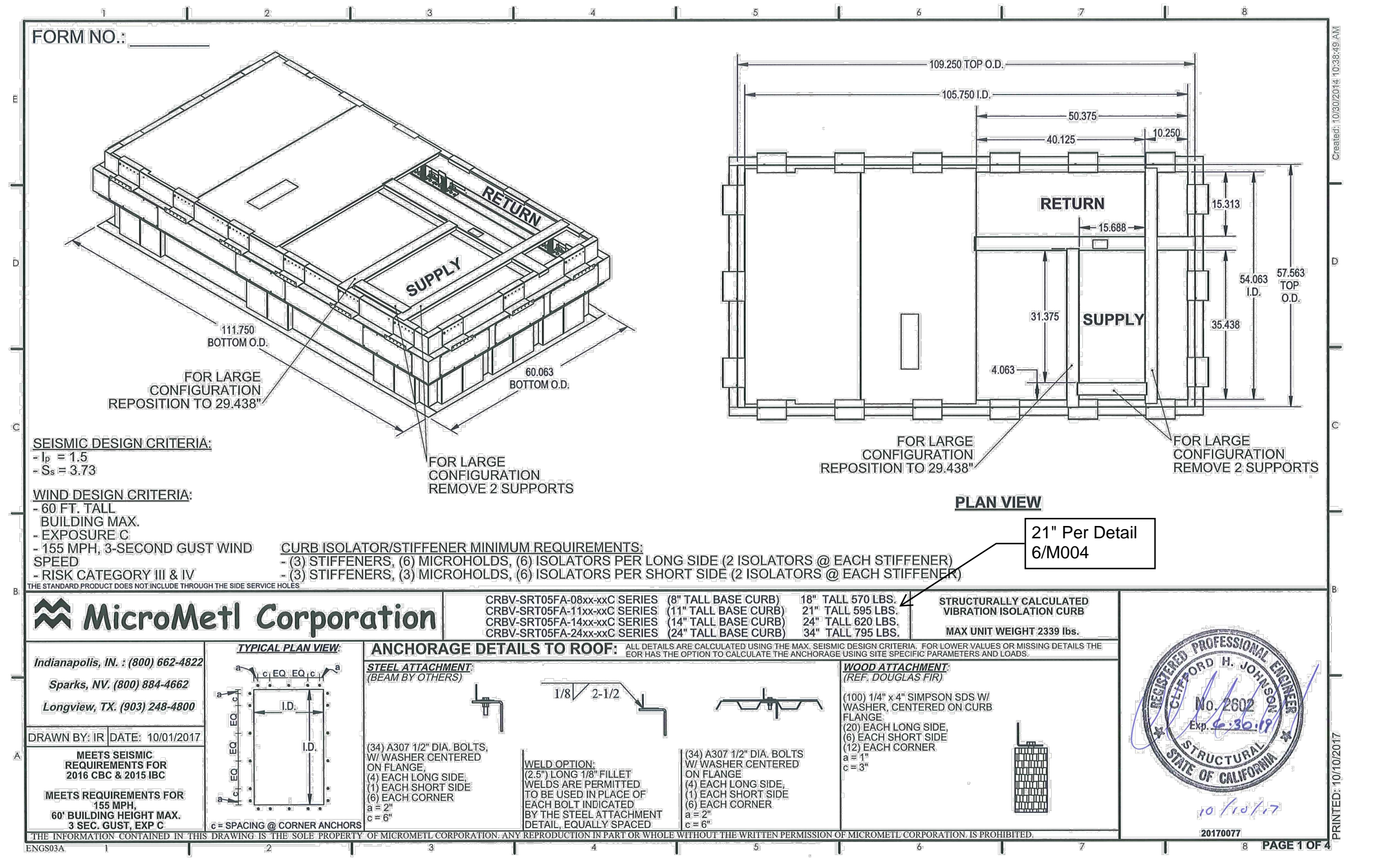
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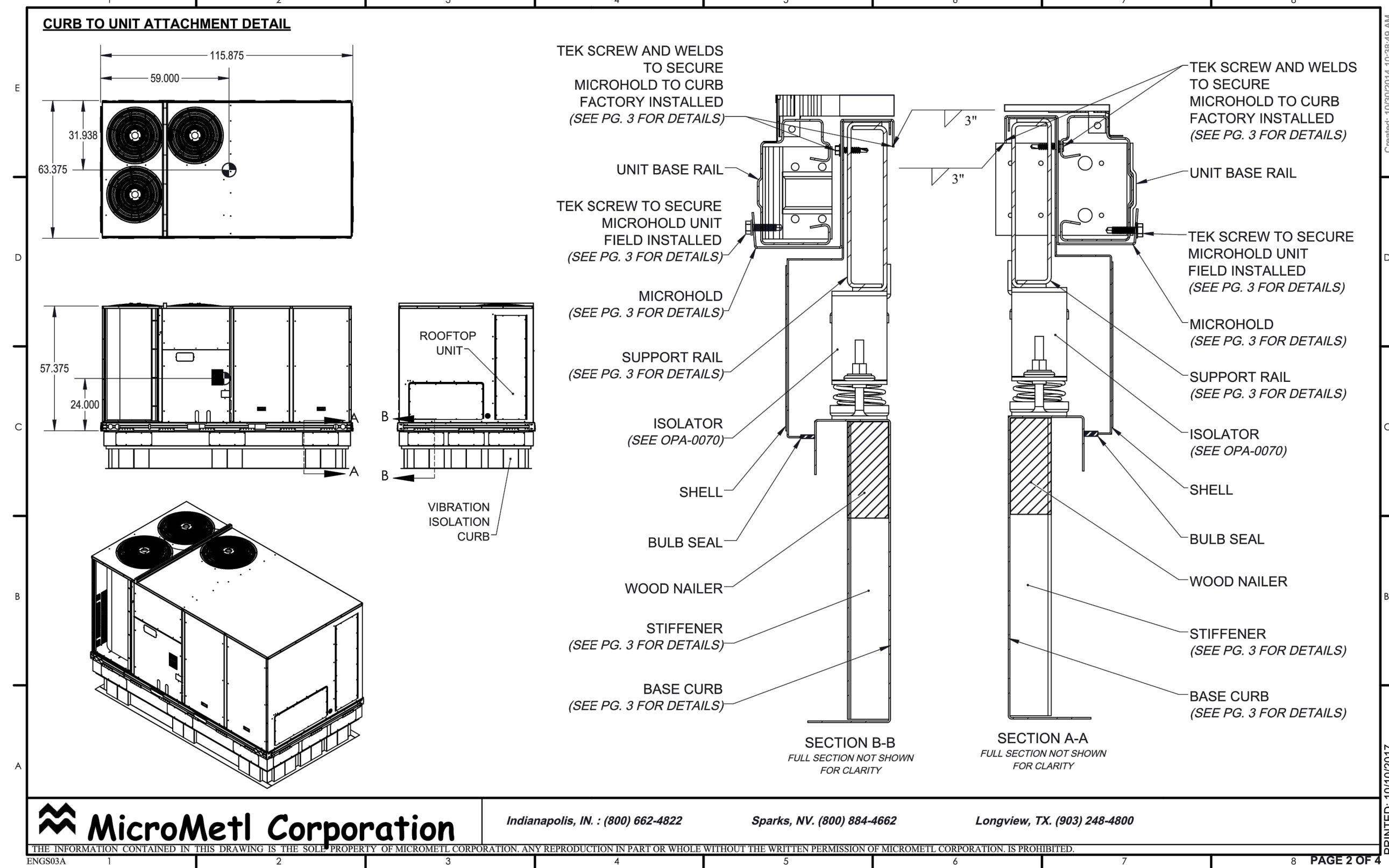
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SCHEMATIC DESIGN:	12/07/2018
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90% CD:	12/10/2018
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DSA SUBMITTAL:	12/21/2018

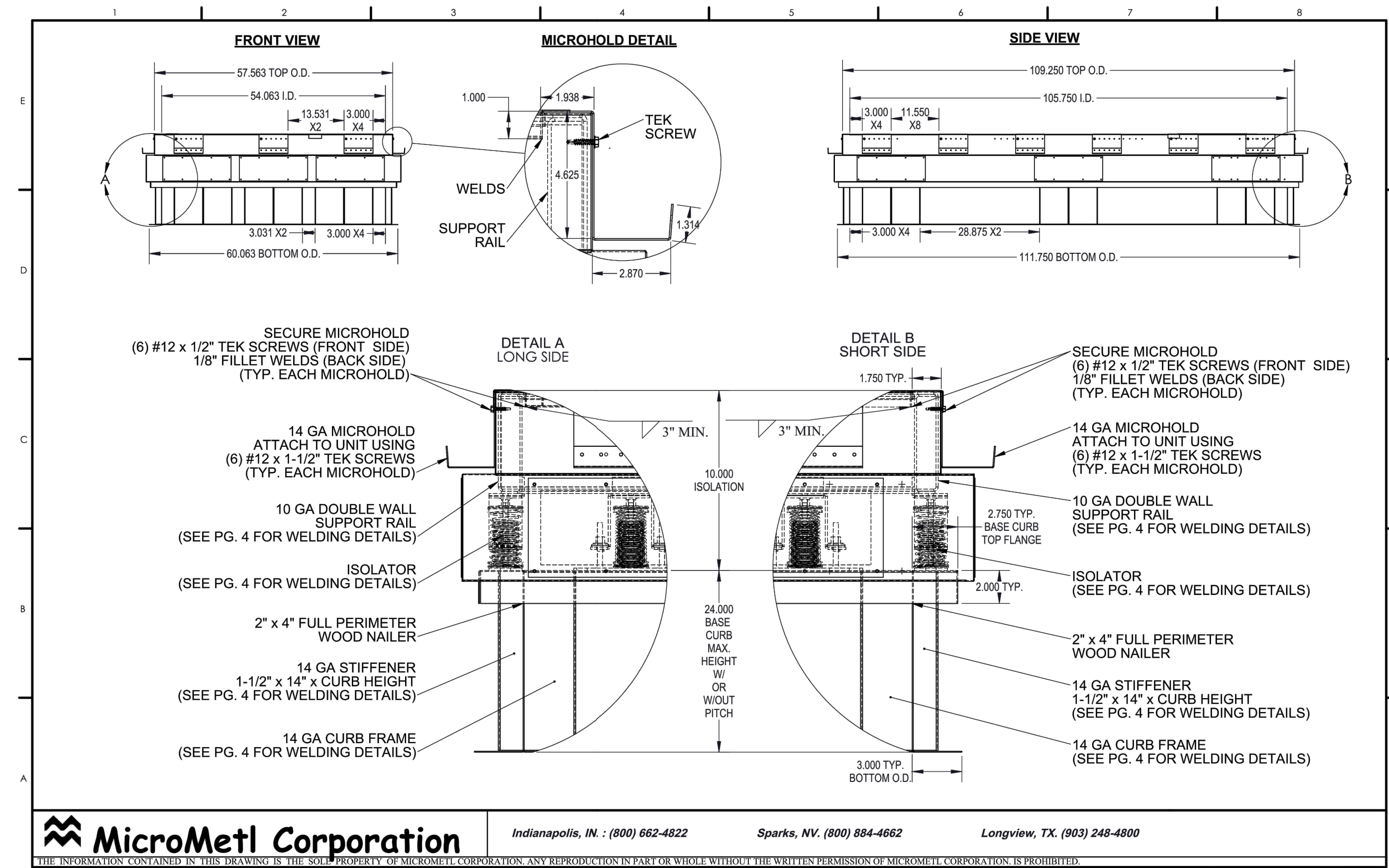
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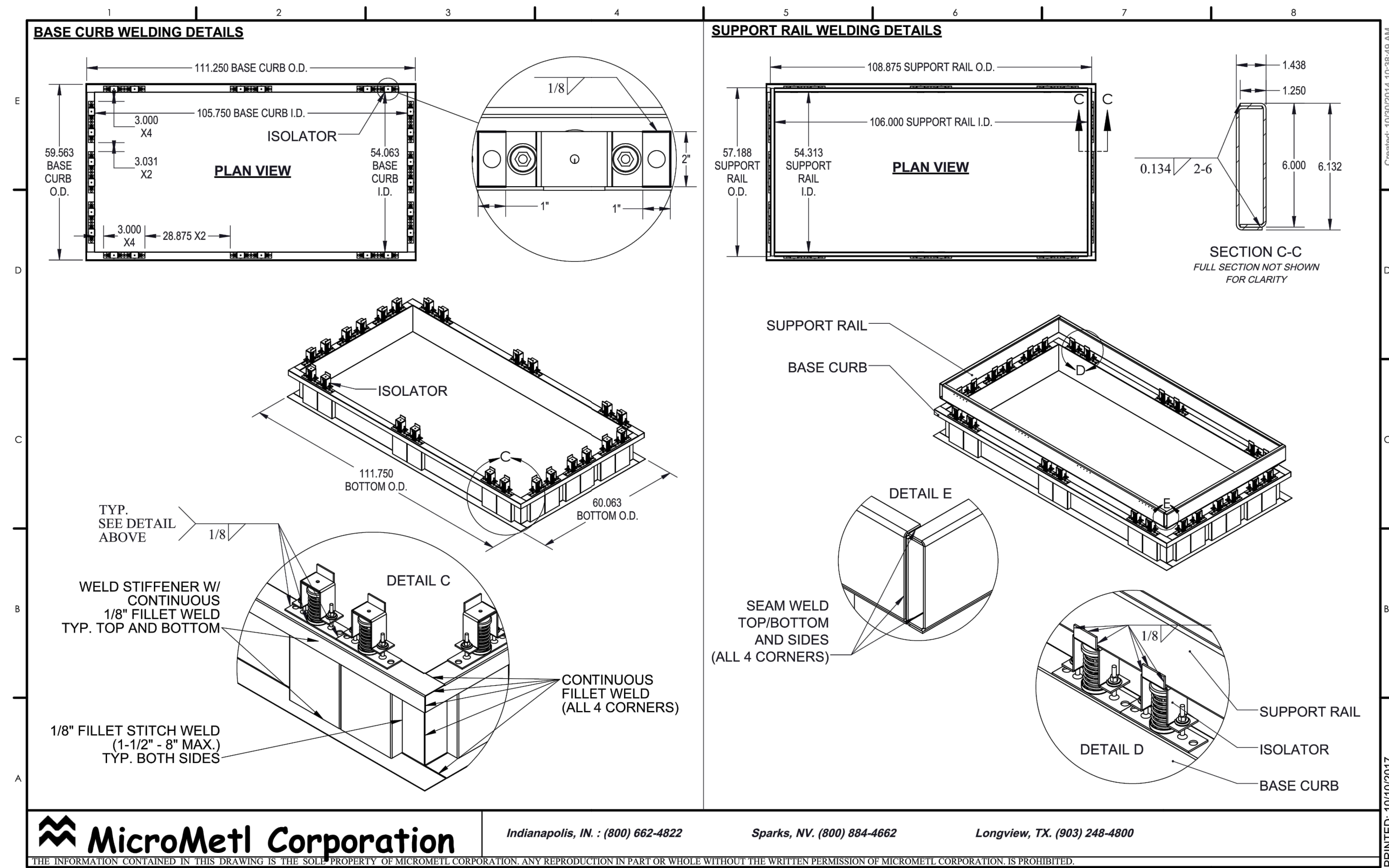
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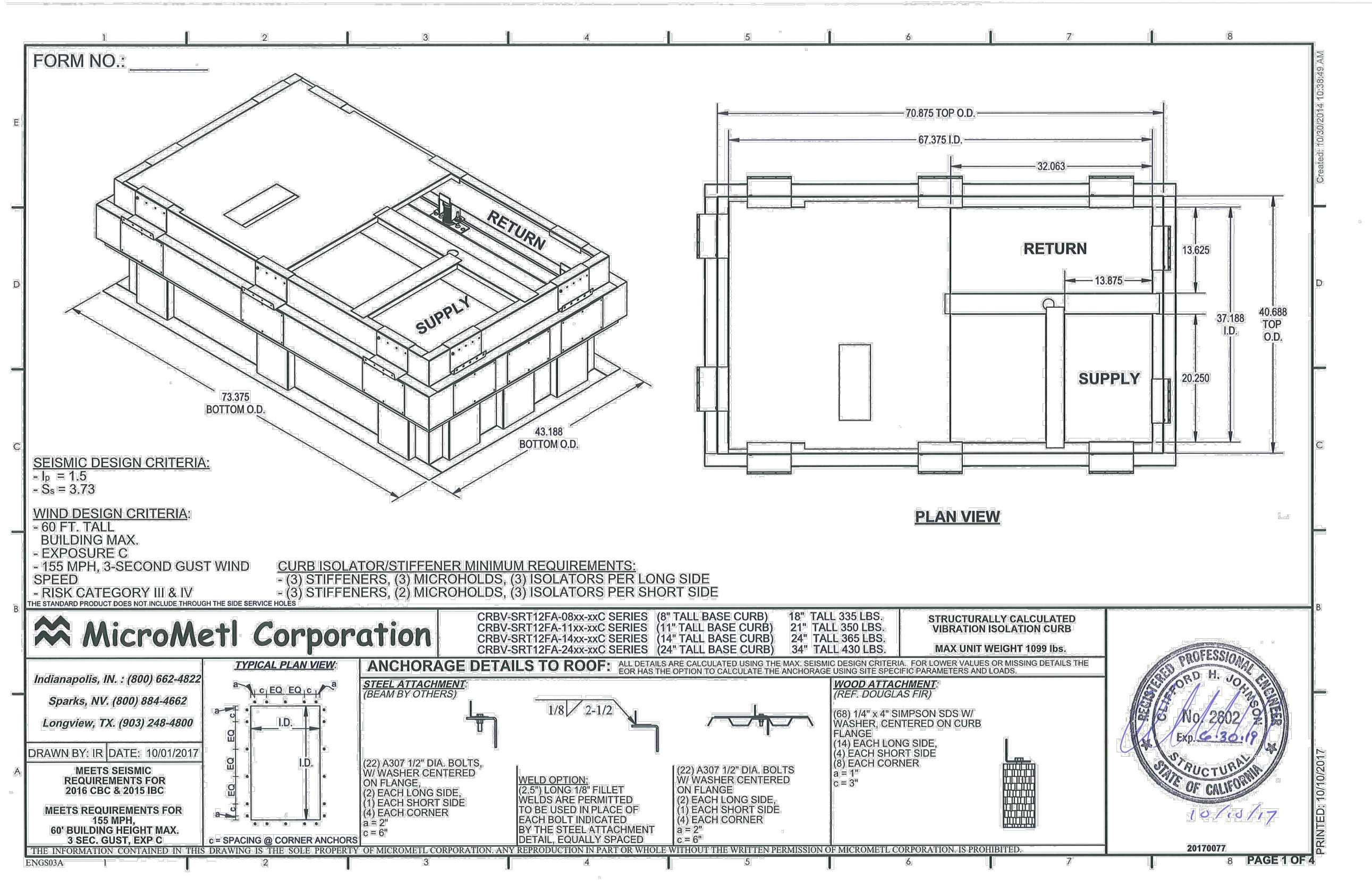
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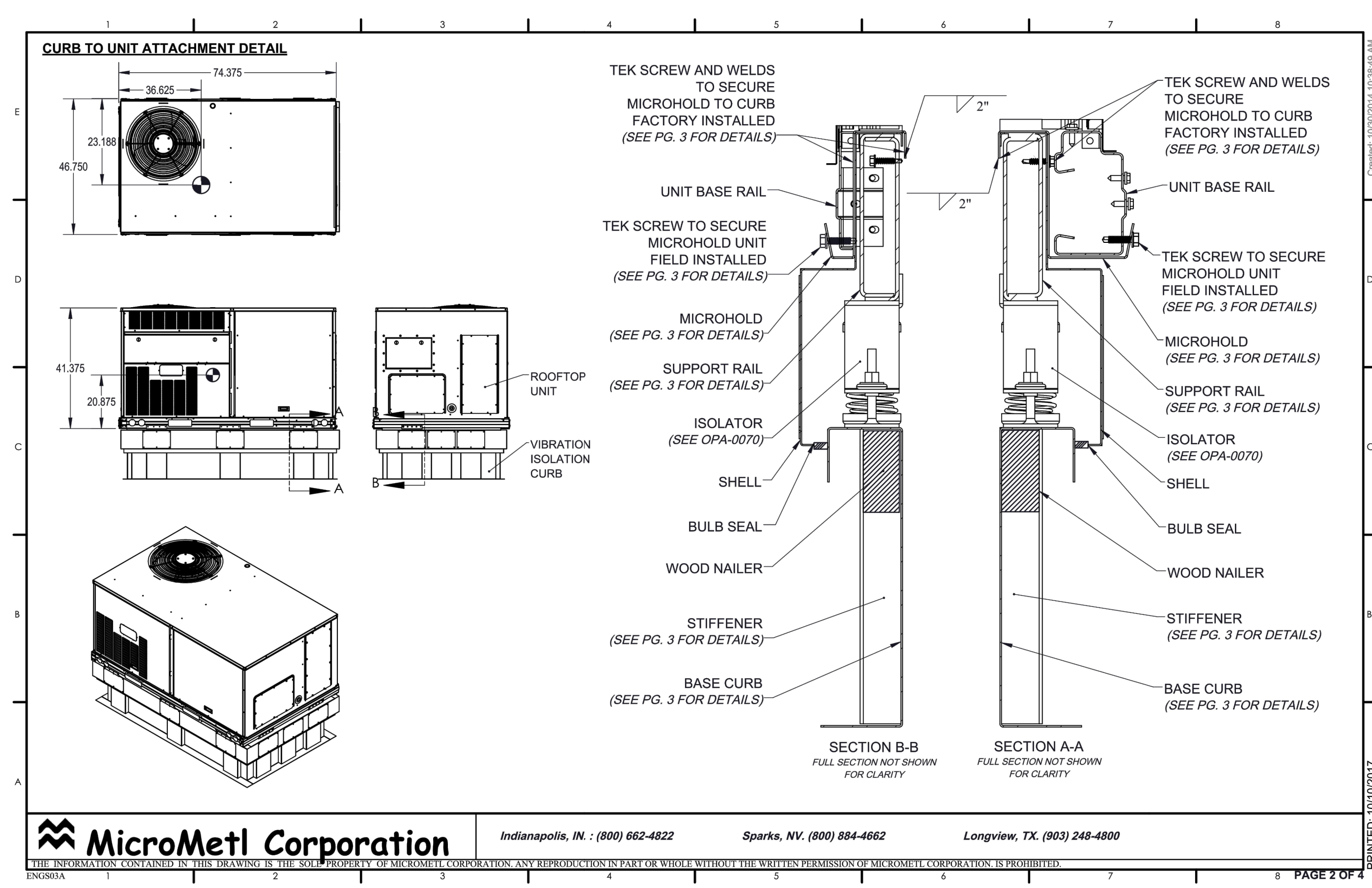
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AC-5 VIBRATION ISOLATION CURB STRUCTURAL CALCULATIONS

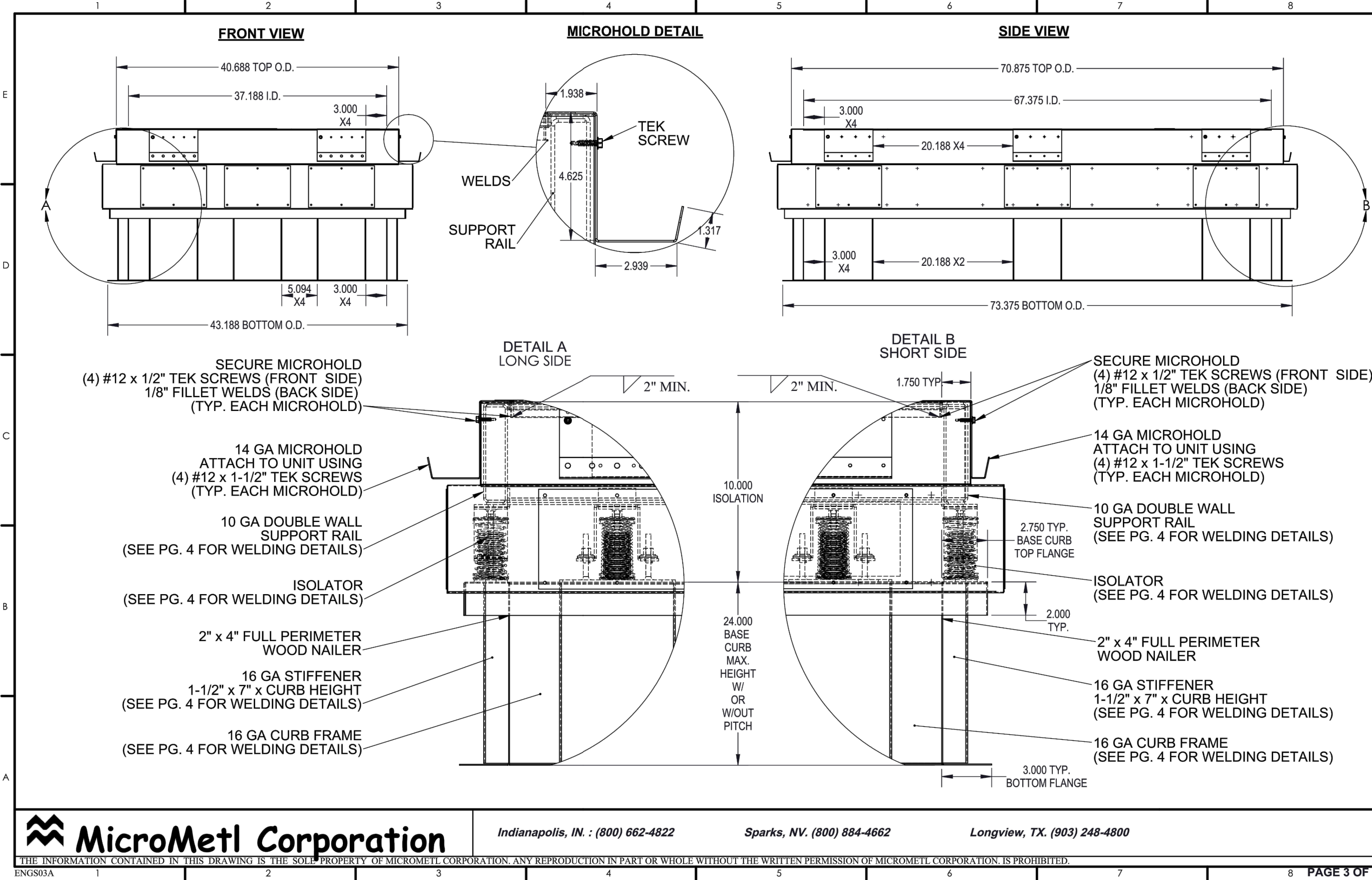


AC-2, 3, & 4 VIBRATION ISOLATION CURB STRUCTURAL CALCULATIONS

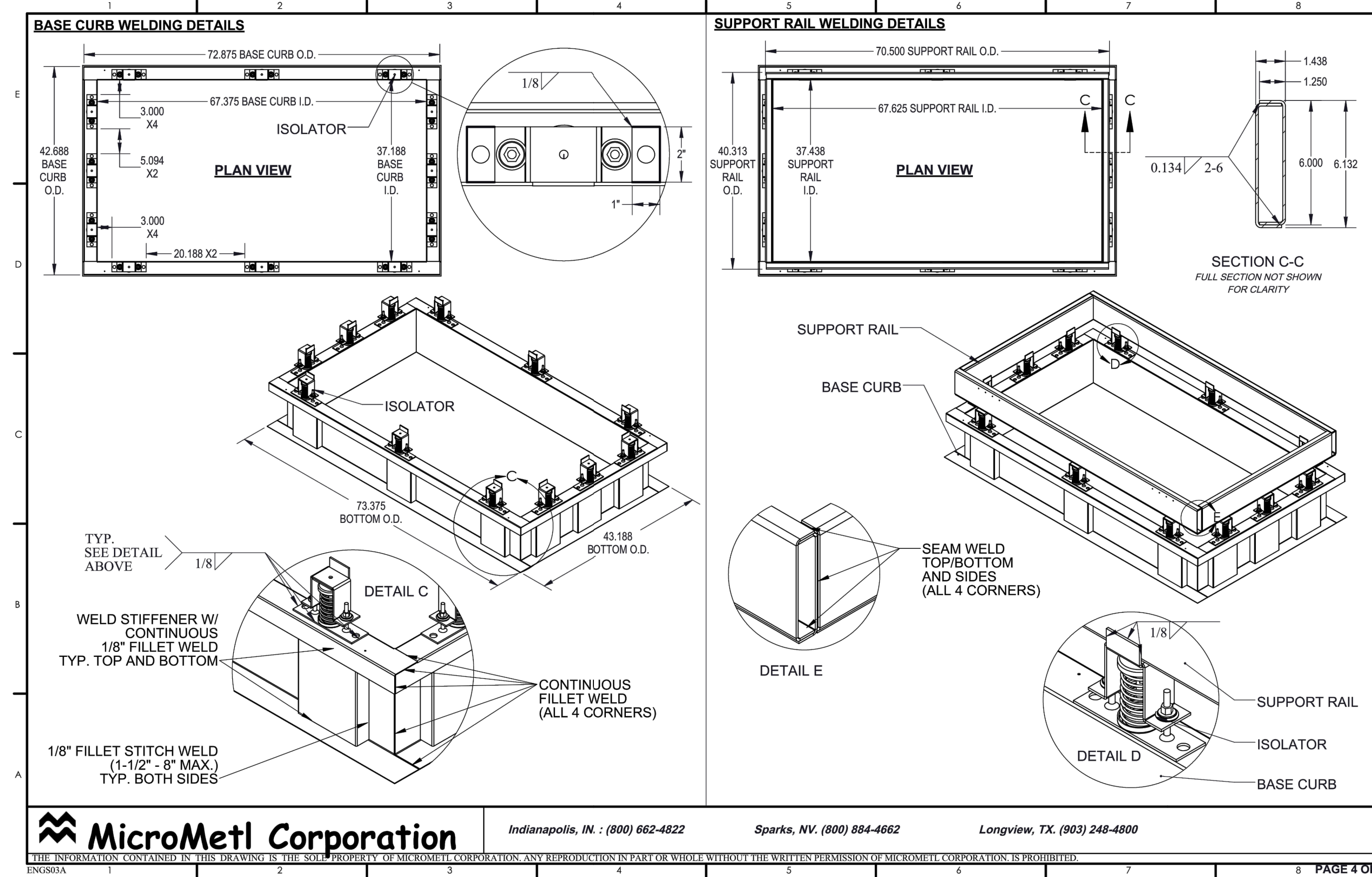


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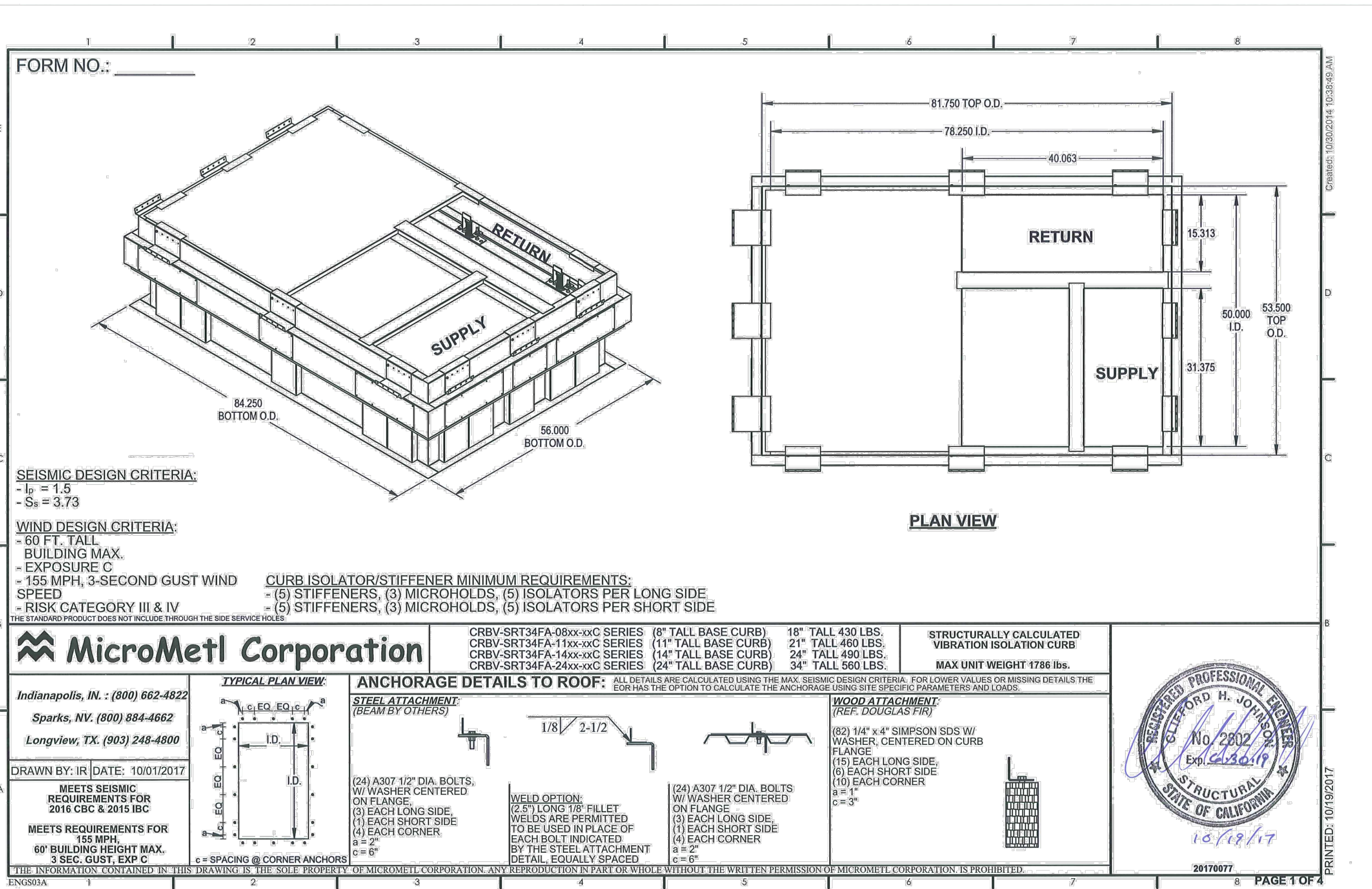
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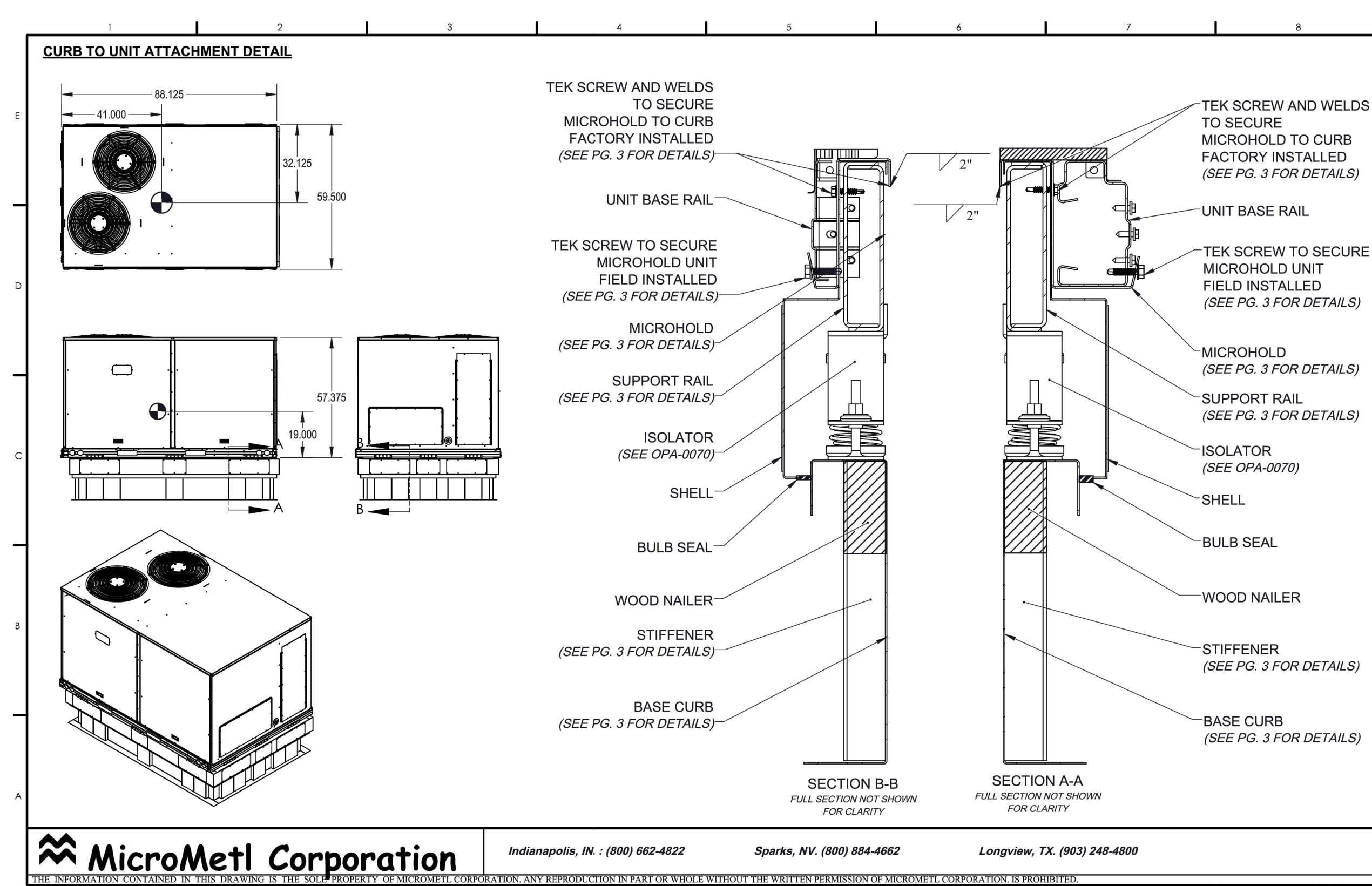
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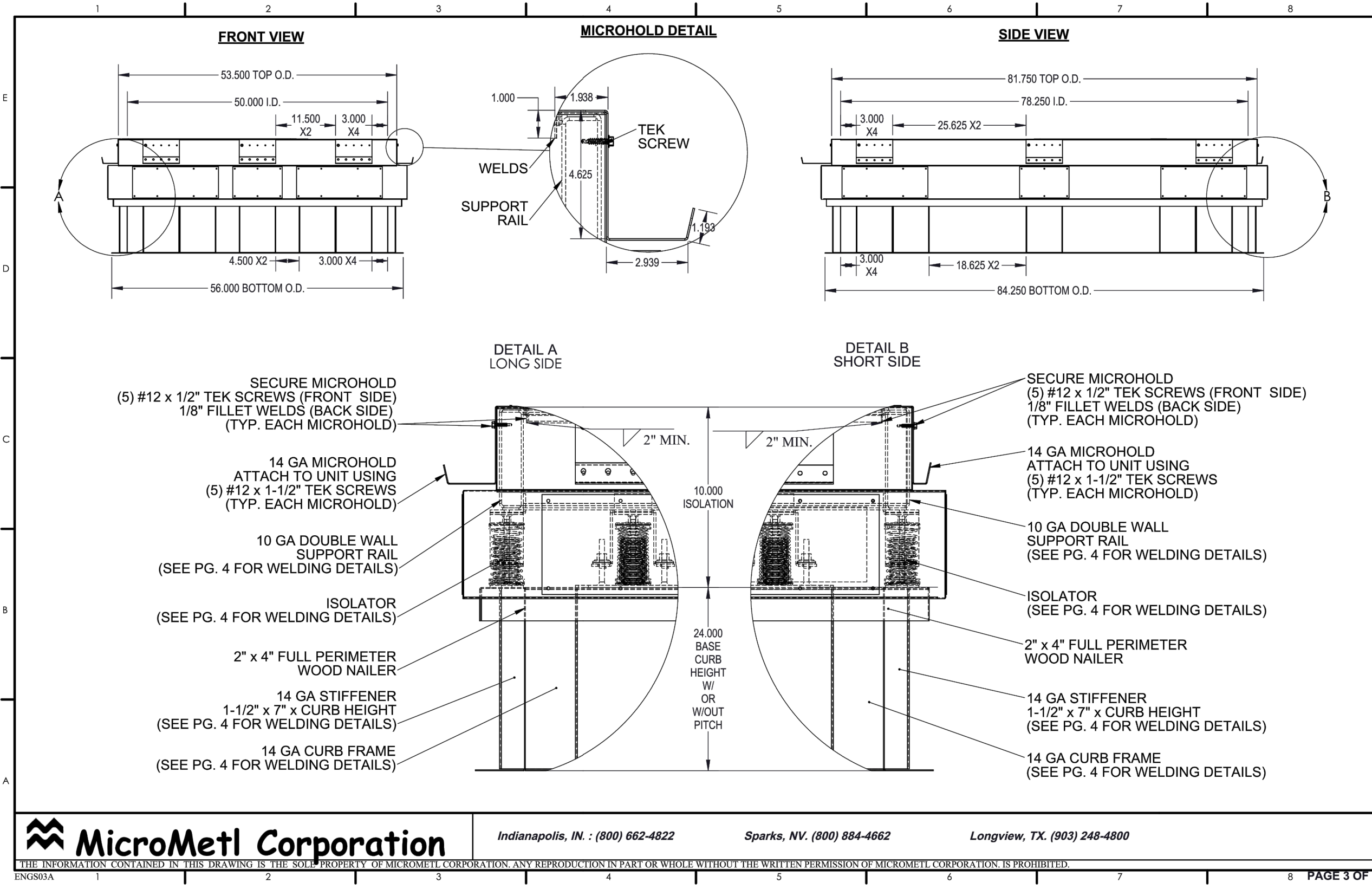
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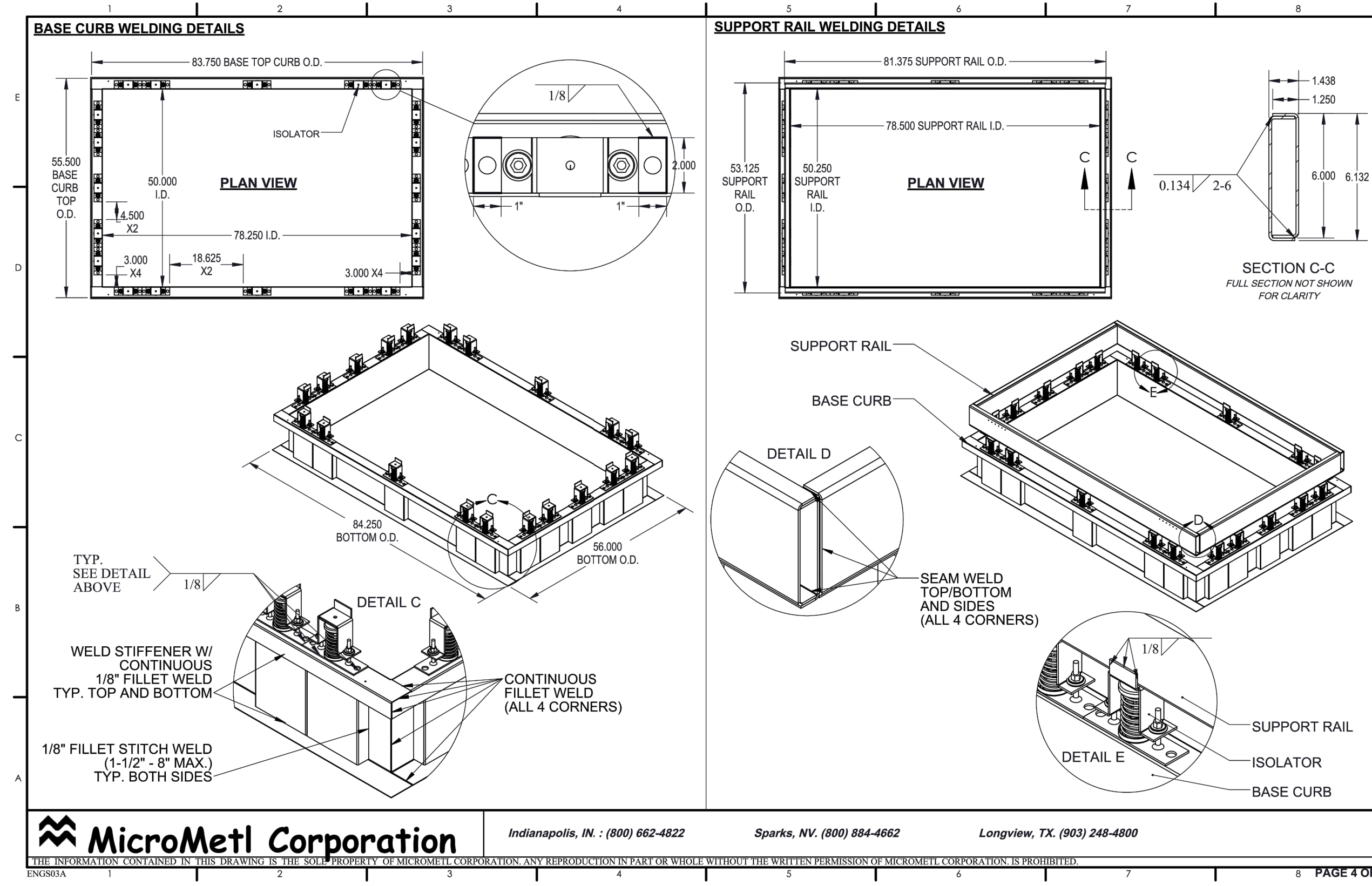
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AC-1 & 6 VIBRATION ISOLATION CURB STRUCTURAL CALCULATIONS



AC-1 & 6 VIBRATION ISOLATION CURB STRUCTURAL CALCULATIONS



AC-1 & 6 VIBRATION ISOLATION CURB STRUCTURAL CALCULATIONS

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93015

ISSUED FOR:	11/16/2017
SCHEMATIC DESIGN:	06/21/2018
DESIGN DEVELOPMENT:	12/07/2018
CONSTRUCTION DOCUMENTS:	11/09/2018
90% CD:	12/10/2018
100% CD:	12/21/2018
DSA SUBMITTAL:	

REVISIONS:

REGISTRATION/SIGNATURE:  
  
DATE: \_\_\_\_\_

SHEET TITLE:  
**VIBRATION ISOLATION  
CURB STRUCTURAL  
CALCULATIONS**

SHEET NUMBER:  
**M014**

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FLOOR PLAN LEGEND

..... 1-HR FIRE RATED WALL  
 ..... 2-HR FIRE RATED WALL

NOTES

① PROVIDE FIRESTOPPING AT RATED WALL PENETRATION. SEE ARCHITECTURAL PLANS.

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CONSTRUCTION DOCUMENTS	12/07/2018
50% CD	11/09/2018
90% CD	12/10/2018
DSA SUBMITTAL	12/21/2018
DSA BACKCHECK	5/08/2019

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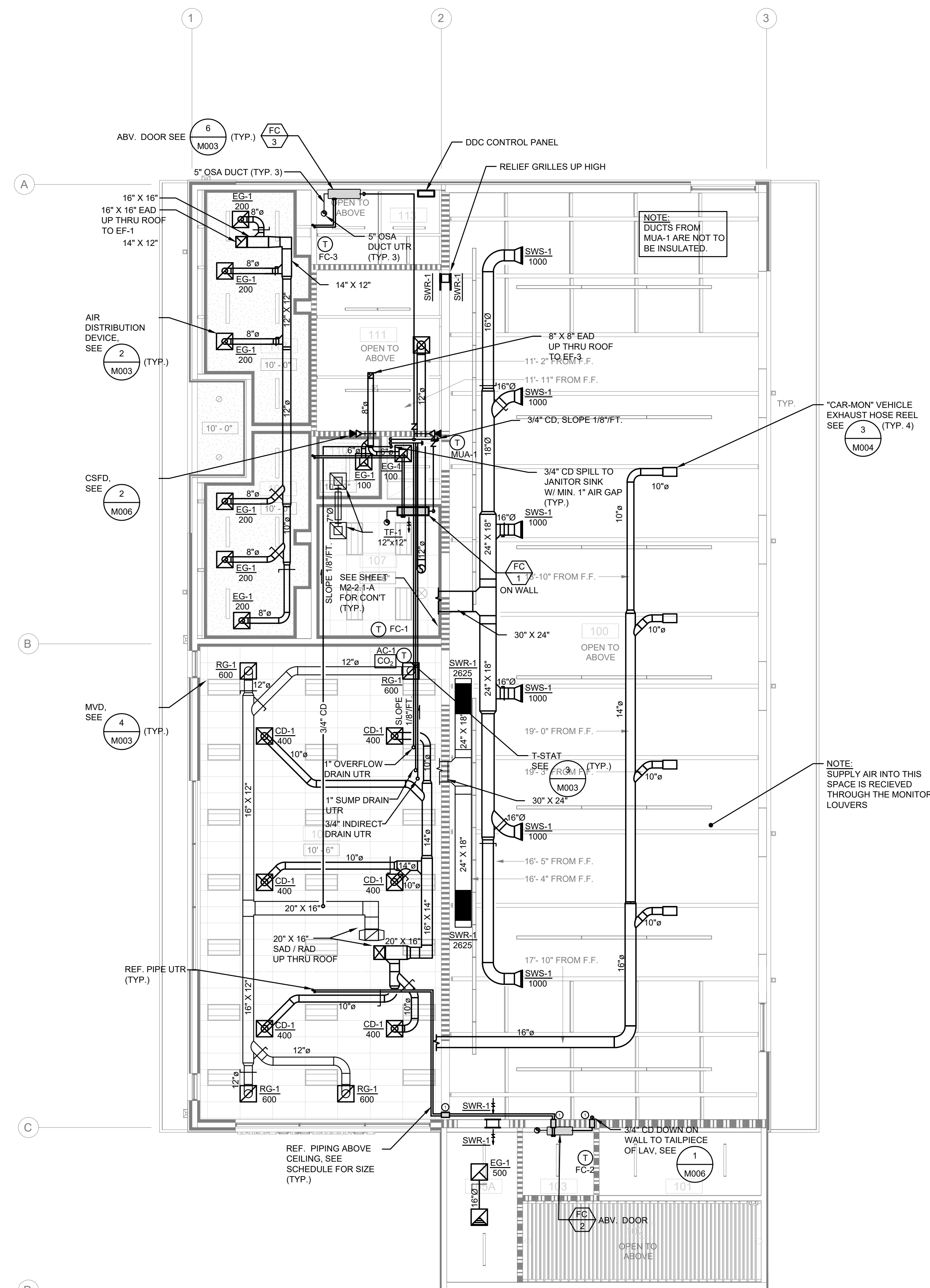
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SHEET TITLE:  
**MECHANICAL FLOOR PLAN - BLDG A**

SHEET NUMBER:  
**M2-1.1-A**

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FLOOR PLAN LEGEND

..... 1-HR FIRE RATED WALL

NOTES

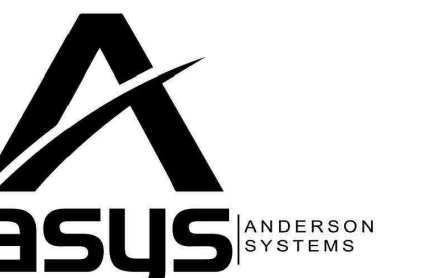
1) PROVIDE FIRESTOPPING AT RATED WALL PENETRATION. SEE ARCHITECTURAL PLANS.

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SHEET TITLE:  
**MECHANICAL FIRST  
FLOOR PLAN -  
BLDG. B**

SHEET NUMBER:  
**M2-1.1-B**

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**LONGITUDINAL CABLE BRACING DETAIL FOR STRAP SUPPORTED ROUND DUCT** DETAIL 20

SEE SECTION 11 FOR STRUCTURAL ATTACHMENTS FOR HANGER AND BRACE

TOLCO FIG. 99 OR B-LINE ATR ALL THREAD ROD. (SEE PAGE 13-6)

B-LINE SOLID, PUNCHED, OR SLOTTED B22 CHANNEL WITH TOLCO FIG. 98 OR 98B ROD STIFFENER. (SEE PAGE 12-16, 12-17) (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

B-LINE HN SERIES HEX NUT AND B-LINE B200 SERIES SQUARE WASHER. (SEE PAGE 13-15, 13-16) (TYP)

#10 SELF TAPPING SHEET METAL SCREWS MAX. 12" O.C. MAX. SCREW LENGTH 1". (TYP)

TOLCO FIG. 990 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-7) (TYP)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

TOLCO FIG. 991 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-8) (TYP)

SHEET METAL STRAPS 2 1/2" X 12 GA. (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

MINIMUM ROD SIZE	MINIMUM CABLE SIZE	LONGITUDINAL ASSEMBLY ALLOWABLE LOAD, F <sub>y</sub> (ASD)		
		BRACE ANGLE MEASURED FROM HORIZ. [Deg]		
3/8"	1/8"	419	438	406
1/2"	3/16"	422	424	437
3/4"	3/16"	458	470	447

GENERAL NOTES:  
1) SEE PAGE 8-21, 8-22, 8-23, 8-24 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.  
2) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13

EATON'S B-LINE BUSINESS  
599 WEST MONROE STREET (190-A) AND L. 02049  
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MAH  
Structural Engineer: Mohammad Hariri  
California SE No. 83545

PAGE: **8-17**  
DATE: NOVEMBER 29, 2016

12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 253 of 501

LONGITUDINAL CABLE BRACING FOR STRAP SUPPORTED ROUND DUCT

SCALE: NONE 3

**TRANSVERSE CABLE BRACING DETAIL FOR STRAP SUPPORTED ROUND DUCT** DETAIL 19

SEE SECTION 11 FOR STRUCTURAL ATTACHMENTS FOR HANGER AND BRACE

B-LINE SOLID, PUNCHED, OR SLOTTED B22 CHANNEL WITH TOLCO FIG. 98 OR 98B ROD STIFFENER. (SEE PAGE 12-16, 12-17) (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

B-LINE HN SERIES HEX NUT AND B-LINE B200 SERIES SQUARE WASHER. (SEE PAGE 13-15, 13-16) (TYP)

#10 SELF TAPPING SHEET METAL SCREWS MAX. 12" O.C. MAX. SCREW LENGTH 1". (TYP)

TOLCO FIG. 99 OR B-LINE ATR ALL THREAD ROD. (SEE PAGE 13-6)

TOLCO FIG. 990 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-7) (TYP)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

TOLCO FIG. 991 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-8) (TYP)

SHEET METAL STRAPS 2 1/2" X 12 GA. (TYP)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

MINIMUM ROD SIZE	MINIMUM CABLE SIZE	TRANSVERSE ASSEMBLY ALLOWABLE LOAD, F <sub>y</sub> (ASD)		
		BRACE ANGLE MEASURED FROM HORIZ. [Deg]		
3/8"	1/8"	876	480	435
1/2"	3/16"	1263	893	666
3/4"	3/16"	1492	786	758

GENERAL NOTES:  
1) SEE PAGE 8-21, 8-22, 8-23, 8-24 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.  
2) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13

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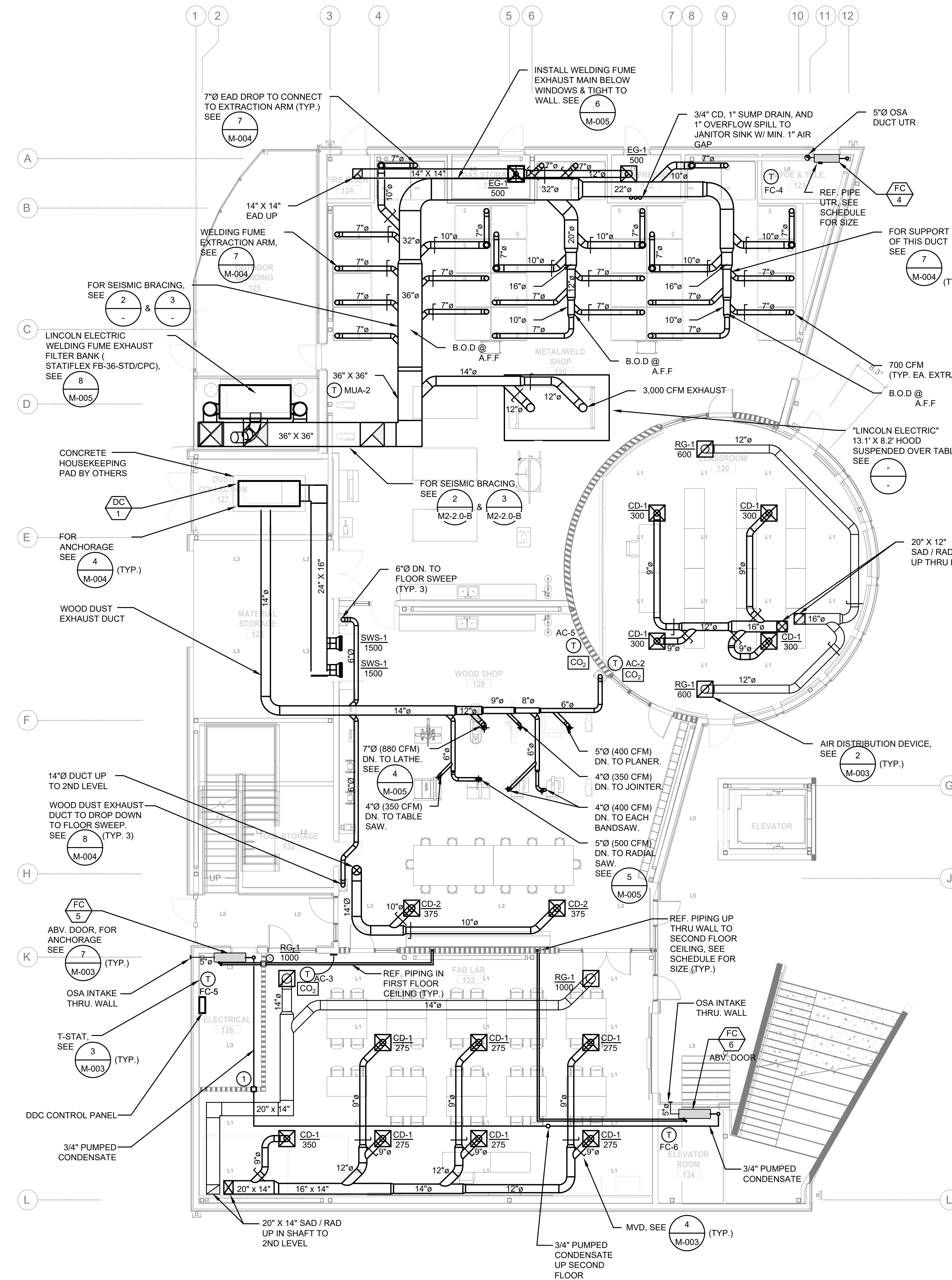
MAH  
Structural Engineer: Mohammad Hariri  
California SE No. 83545

PAGE: **8-16**  
DATE: NOVEMBER 29, 2016

12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 252 of 501

TRANSVERSE CABLE BRACING FOR STRAP SUPPORTED ROUND DUCT

SCALE: NONE 2



MECHANICAL FIRST FLOOR PLAN - BLDG. B

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

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..... 1-HR FIRE RATED WALL

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 93015

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 DESIGN DEVELOPMENT 06/21/2018  
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 OSA SUBMITTAL 12/21/2018  
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SHEET TITLE:

**MECHANICAL  
 SECOND FLOOR  
 PLAN - BLDG. B**

SHEET NUMBER:

**M2-2.0-B**

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**LONGITUDINAL CABLE BRACING FOR TRAPEZE SUPPORTED RECTANGULAR DUCT** **DETAIL 18**

SEE SECTION 11 FOR STRUCTURAL ATTACHMENTS FOR HANGER AND BRACE

TOLCO FIG. 99 OR B-LINE ATR ALL THREAD ROD. (SEE PAGE 13-6)

B-LINE SOLID, PUNCHED, OR SLOTTED B22 CHANNEL WITH TOLCO FIG. 96 OR 98B ROD STIFFENER (SEE PAGE 12-16, 12-17) (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

B-LINE SOLID OR PUNCHED CHANNEL PUNCHED HOLE DIAMETER MUST BE 1/16" MAX. LARGER THAN ROD DIAMETER. (SEE PAGE 13-17, 13-18, 13-19, 13-20) (TYP)

B-LINE HN SERIES HEX NUT AND B-LINE B200 SERIES SQUARE WASHER. (SEE PAGE 13-15, 13-16) (TYP)

TOLCO FIG. 990 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-7) (TYP)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

TOLCO FIG. 991 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-8)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

#10 SELF TAPPING SHEET METAL SCREWS MAX. 12" O.C. MAX. SCREW LENGTH 1". (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

DO NOT BEND BRACE PAST 90°

MINIMUM ROD SIZE	MINIMUM CABLE SIZE	LONGITUDINAL ASSEMBLY ALLOWABLE LOAD, F <sub>y</sub> (ASD)		
		BRACE ANGLE MEASURED FROM HORIZ. [lbs]		
		30°	31° - 45°	46° - 60°
3/8"	1/8"	419	438	408
1/2"	3/16"	422	424	437
3/4"	3/16"	458	470	447

GENERAL NOTES:  
 1) SEE PAGE 8-21, 8-22, 8-23, 8-24 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.  
 2) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13.  
 3) DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE F<sub>y</sub> VALUE USED IN DESIGN.

**FAT-N** EATON'S B-LINE BUSINESS  
 390 WEST MARSHALL STREET | IRVINE, CALIF. 92614  
 P: (949) 861-7419 | F: (949) 358-1438

**MRH** Structural Engineer: Mohammad Hurrif  
 California SE No. 533545

PAGE: **8-14**  
 DATE: NOVEMBER 29, 2018

12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 250 of 501

**LONGITUDINAL CABLE BRACING FOR TRAPEZE SUPPORTED DUCT** **SCALE 3**

**TRANSVERSE CABLE BRACING FOR TRAPEZE SUPPORTED RECTANGULAR DUCT** **DETAIL 17**

SEE SECTION 11 FOR STRUCTURAL ATTACHMENTS FOR HANGER AND BRACE

TOLCO FIG. 99 OR B-LINE ATR ALL THREAD ROD. (SEE PAGE 13-6)

B-LINE SOLID, PUNCHED, OR SLOTTED B22 CHANNEL WITH TOLCO FIG. 96 OR 98B ROD STIFFENER (SEE PAGE 12-16, 12-17) (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

B-LINE SOLID OR PUNCHED CHANNEL PUNCHED HOLE DIAMETER MUST BE 1/16" MAX. LARGER THAN ROD DIAMETER. (SEE PAGE 13-17, 13-18, 13-19, 13-20) (TYP)

B-LINE HN SERIES HEX NUT AND B-LINE B200 SERIES SQUARE WASHER. (SEE PAGE 13-15, 13-16) (TYP)

TOLCO FIG. 990 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-7) (TYP)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

TOLCO FIG. 991 CABLE SWAY BRACE ATTACHMENT. TIGHTEN UNTIL BREAK-OFF NUTS COME OFF. (SEE PAGE 12-8)

PRE STRETCHED GALVANIZED AIR CRAFT CABLE W/ 7 X 19 STRAND CORE (SEE PAGE 12-20) (TYP)

#10 SELF TAPPING SHEET METAL SCREWS MAX. 12" O.C. MAX. SCREW LENGTH 1". (TYP)

OPPOSING CABLE BRACE IS REQUIRED. (TYP)

DO NOT BEND BRACE PAST 90°

MINIMUM ROD SIZE	MINIMUM CABLE SIZE	TRANSVERSE ASSEMBLY ALLOWABLE LOAD, F <sub>y</sub> (ASD)		
		BRACE ANGLE MEASURED FROM HORIZ. [lbs]		
		30°	31° - 45°	46° - 60°
3/8"	1/8"	476	480	435
1/2"	3/16"	1263	893	666
3/4"	3/16"	1492	786	758

GENERAL NOTES:  
 1) SEE PAGE 8-21, 8-22, 8-23, 8-24 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.  
 2) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13.

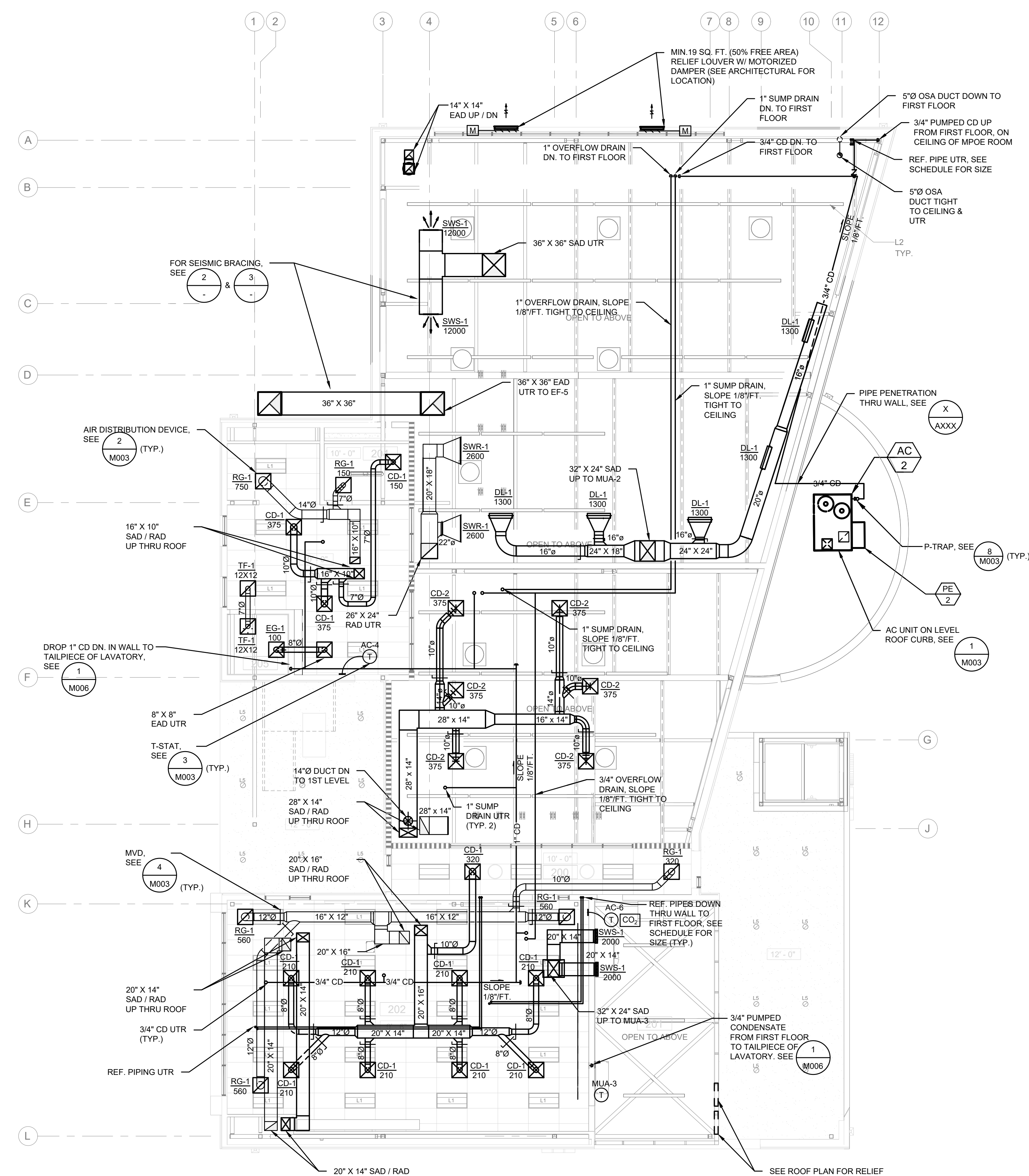
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 390 WEST MARSHALL STREET | IRVINE, CALIF. 92614  
 P: (949) 861-7419 | F: (949) 358-1438

**MRH** Structural Engineer: Mohammad Hurrif  
 California SE No. 533545

PAGE: **8-13**  
 DATE: NOVEMBER 29, 2018

12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 249 of 501

**TRANSVERSE CABLE BRACING FOR TRAPEZE SUPPORTED DUCT** **SCALE 2**



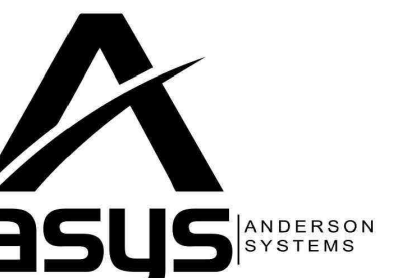
NOT FOR CONSTRUCTION

IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 APP. 03-119532 INC.  
 REVIEWED FOR  
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 DATE: 6/24/19



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 93015

ISSUED FOR:	11/16/2017
SCHEMATIC DESIGN	09/21/2018
DESIGN DEVELOPMENT	12/07/2018
CONSTRUCTION DOCUMENTS	11/09/2018
50% CD	12/10/2018
90% CD	12/21/2018
DSA SUBMITTAL	5/08/2019
DSA BACKCHECK	

REVISIONS:

REGISTRATION/SIGNATURE:



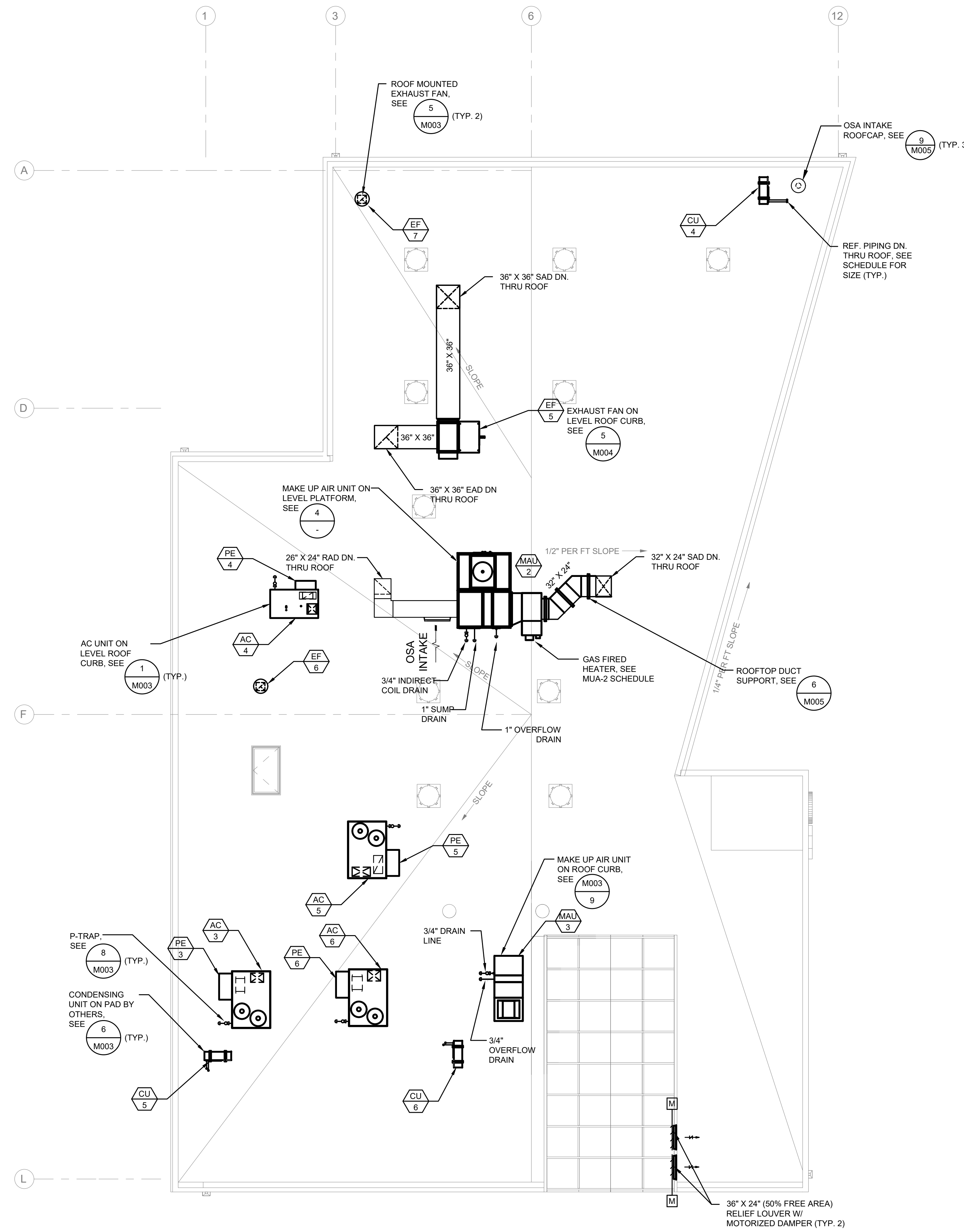
DATE: \_\_\_\_\_

SHEET TITLE:  
**MECHANICAL ROOF  
 PLAN - BLDG. B**

SHEET NUMBER:  
**M2-2.1-B**

WD PROJ. #	DRAWN BY:	CHECKED	DATE
18413	WD	Checker	5/08/2019

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MECHANICAL ROOF PLAN - BLDG. B

