

**APRIL 6, 2017**  
**BOARD OF COUNTY COMMISSIONERS**  
**ORANGE COUNTY, FLORIDA**  
**ADDENDUM NO. 2 / IFB Y17-744-CC**  
**ORANGE COUNTY FIRE RESCUE-STATIONS VEHICLE EXHAUST**  
**REMOVAL SYSTEM**

**REVISED BID OPENING DATE: APRIL 13, 2017**

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions, and/or revisions to, and shall take precedence over, the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

- A. The bid opening date is changed from ~~April 11, 2017 at 2:00 P.M.~~ to April 13, 2017 at 2:00 P.M.
- B. **Revision:** In Part C – Instructions to Bidders, Paragraph 28 References, and Attachment E, References, make the following change to the similar project description:

“A project in which the bidder was responsible for pulling a Commercial **Building** Permit and was responsible for the oversight and installation of a Vehicle Exhaust Extraction System, with products including rail systems, hoses, nozzles, hose reels and hose drops and extraction fans, as well as experience with gas monitoring systems and general exhaust systems.”

- C. Questions and Answers:

1. **Question:** Hex Note #1 on every fire station drawing requires installing a smoke detector compatible with the existing FA system. Please furnish the brand name and model # of the existing FA system on each fire station.

**Answer:** Silent Knight Model SK-4.

2. **Question:** Central ventilation controller typical wiring riser diagram shows auto-emailer and Honeywell gas monitor are connected to CVCP. Please furnish the location of auto-emailer and gas monitor. Please furnish quantity and size of wires for the two devices mentioned above.

**Answer:** The auto-emailer is part of the basis-of-design controller (integral component or accessory). The gas monitor works with the NO2 and CO sensors to transmit concentration to the main controller. This is the configuration of our Bases of Design (BOD) control System. (Other manufactures could be configured differently.) For the BOD configuration, the Contractor shall wall-mount the gas monitor adjacent to the exhaust system controller. The HVAC plans show major control components' proposed location with Key Notes 11 and 12 for each station. NO2 and CO sensors shall be mounted as specified. Refer to the manufacturer's data for wire size and type requirements.

**3. Question:** The drawings for this project refer to on-board ignition starts however the specifications give no direction as to the starting mechanism for the vehicle exhaust system fans. Since there is no direction in the written specifications that I found as to the starting mechanism for the vehicle exhaust system other than the safe Air electrical diagram at the bottom left of the mechanical drawings, are pressure sensors in the ductwork with transmitters an acceptable starting method instead of the on-board ignition transmitter start method? On-board ignition starts on the type shown on the drawings can sometimes cause interference with other electrical transmissions such as overhead door transmissions, etc.

**Answer:** Pressure sensors with transmitters are not acceptable. Provide vehicle RF transmitter as shown on diagram and explained in the sequence of operation in design documents. Basis of Design: Safe Air USB Vehicle Transmitter Kit SA-WD-VTK-2 or equivalent. (See attached Submittal Sheet for reference).

**4. Question:** The fans specified in the drawings seem to be much higher horse power than what we would generally require if we had done the drawings. Are you more interested in CFM delivery or the actual horse power rating specified? Since we generally use larger hoses than some of our competitors, the static pressure on our systems are generally less. Should we quote the fan horse power as specified or quote a fan which will deliver the required CFM at a typical static pressure rate designed for our particular system?

**Answer:** Provide fans with required HP and static pressure scheduled then field balance to required CFM.

**5. Question:** In the Pre-Bid Meeting, it was stated the only GEF (General Exhaust Fans) that were required to activate if CO/NO2 levels exceed required safety levels are the fans specified in the drawings. We are not required to provide GEF fans for those stations where GEF fans are not shown in the drawings correct?

**Answer:** Correct. Provide interlock operation of existing apparatus bay GEFs (shown on drawings) as described in the sequence of operations.

**6. Question:** When the number of tracks or suction rails on the drawings vary from the scheduled listing of tracks or rails, does the drawing take precedence? Should we quote the number of tracks and hose drops shown in the drawings instead of what the schedule describes on the listing? Example, Station 40's listing describes 2 sliding balancer track systems with one drop each and 1 suction rail system with one drop on the schedule for a total of 3 tracks or rails and 3 hose drops but show 3 sliding balancer track systems and 1 suction rail system on the drawing for a total of 4 hose drops.

**Answer:** This discrepancy noted only occurs for Fire Station 40. Please refer to the attached revised Sheet M-140.

**7. Question** My Company holds a Class A Certification Air Conditioning License (CAC1818915) in Florida under the name of Clean Air Concepts, which is a DBA for Rossman Enterprises, Inc. As I read the bid request, I will be able to submit a bid to you as a Prime Bidder holding this license. I do not need to hold a General Contractor's or a Builders license. Is this correct?

**Answer:** Bidders must be a licensed Building Contractor, General Contractor, Mechanical Contractor, or Air Conditioning Contractor. Reference Part C – Instructions to Bidder, No. 16 b, "Said licenses **shall** be in the Bidder's name as it appears on the Official Bid Form."

**8. Question:** Orange County will waive all permit fees on this project; however are any of the stations located within any city limits that will require a license where the fees will not be waived?

**Answer:** Refer to Part C – Instructions to Bidders, No. 31 Licenses/Permits/Fees. All of the stations are located within Orange County.

**9. Question:** At the pre-bid for Y17-744 it was discussed that a building permit was not going to be needed and that only a

mechanical and electrical would be needed. Please clarify.

**Answer:** A building permit is not required for this project. Only mechanical and electrical permits will be required.

D. The Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the proposal.

E. All other terms and conditions of the IFB remain the same.

**Receipt acknowledged by:**

\_\_\_\_\_  
**Authorized Signature**

\_\_\_\_\_  
**Date Signed**

\_\_\_\_\_  
**Title**

\_\_\_\_\_  
**Name of Firm**

# SafeAir Corp. Transmitter – SA-WD-VTK-2

The SafeAir Vehicle transmitter kit (SA-WD-VTK-2) is designed to control the starting of the SafeAir Central Ventilation Controller (WD-4E-UL) by the starting of vehicles that would be house in a fire station or other facility.

The VTK is designed to auto start the Fan controls (WD-4E-UL) when the vehicle is started in the station or when the vehicle returns to the station and gets within 500 feet of the Building.

This transmitter is mounted on the Dashboard of the vehicle by a Velcro button and is plugged into the lighter outlet of the vehicle (plug & play) that is connected to key switchable power. When the vehicle is turned on, the transmitter will transmit for as long as the vehicle runs in the station or moves outside the 500' radius of the building.

The USB power cord/lighter male plug is provided with the transmitter kit and is fused to protect the transmitter from surge. There are two USB outlets on the lighter plug that allow for the VTK transmitter power and one for Phone or laptop power supply. No Custom installation wiring is needed.

The VTK transmitter will recognize the Start or Return of the vehicles and start source capture blowers, general area exhaust fans, Air filtration air cleaners and open motor drive dampers.

The VTK has a Power On light (Blue) located on the power plug and transmitter to show power is supplied to the unit. The transmitter also has a red light to indicate that the transmitter is transmitting as designed. A red temporary stop button located on the VTK unit, allows the operator to press the button and stop the signal to the fan controller. This is used when vehicles are outside the bays for service or daily inspections.

Dimensions – 4"x 3"x 1.38"

Color – White Sun Shield

Power supply – 12 volt

Fuse rating – .05 Amp

Frequency – 315 MHZ

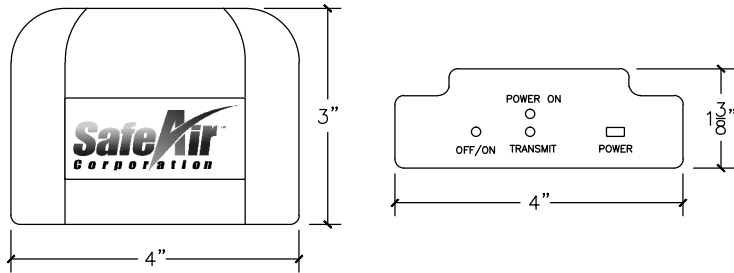
Transmit range – 500 ft. avg.

Power on light – Blue fiber optic

Transmit light – Red fiber optic

Power cord – 3 feet

Cord type – USB with lighter plug



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DRAWING NO. SA-WD-VTK-2

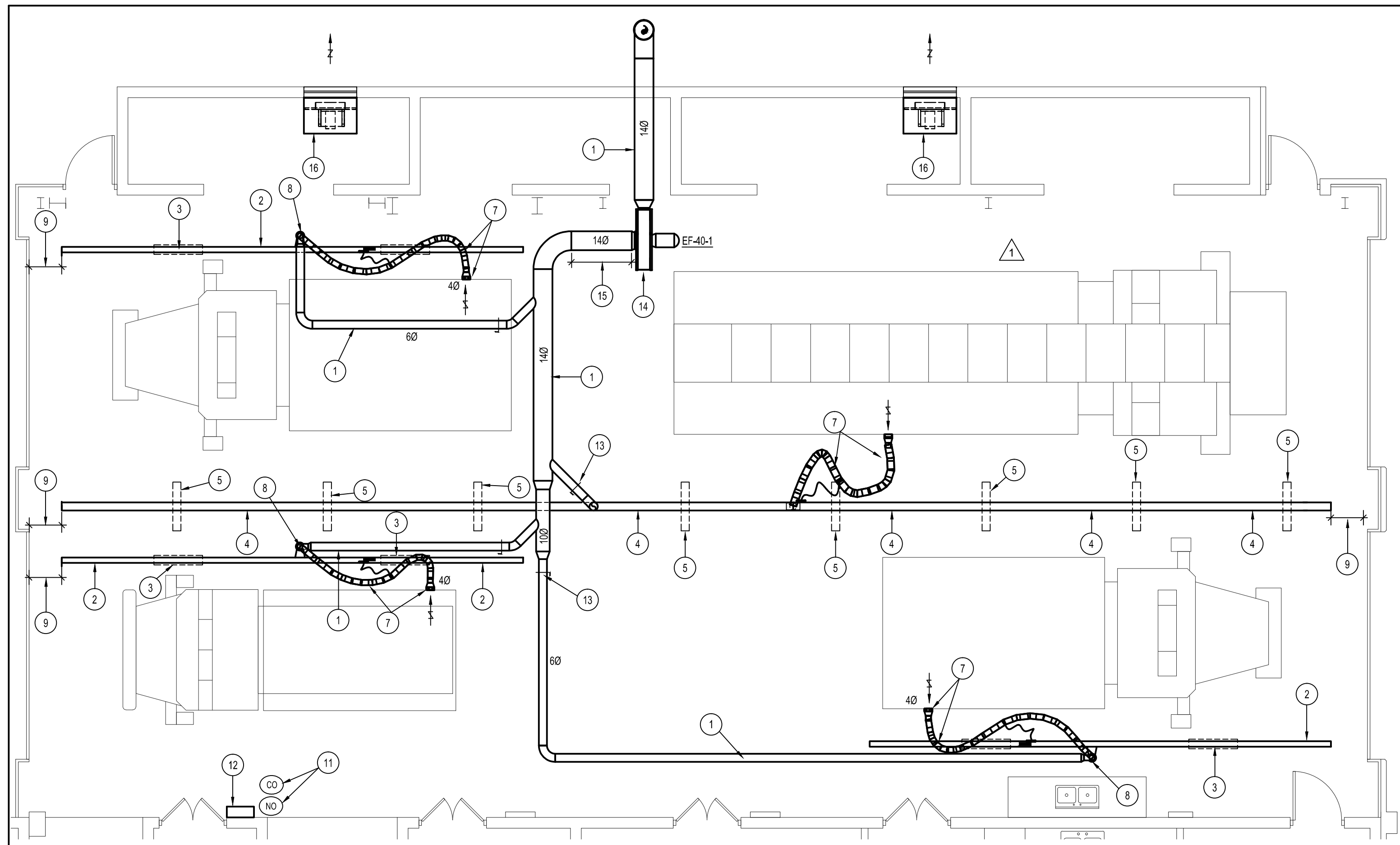
DRAWN BY: RDB

SHEET: 1 OF 1

DATE: 04-20-2014

TITLE:

SA-WD-VTK-2 SUBMITTAL



**VENTILATION SYSTEM KEY NOTES**

- DUCTWORK ELEVATION ± 1/4" TO 1 1/4" AFF. VERIFY EXACT ELEVATION / LOCATION IN FIELD PRIOR TO FABRICATION / INSTALLATION.
- SLIDING BALANCER TRACK WITH TROLLEY SYSTEM (TYPICAL OF 2 LOCATIONS/DROPS). COORDINATE WITH EXISTING STRUCTURE AND EQUIPMENT.
- SLIDING BALANCER TRACK SUPPORTS (TYPICAL). EXACT NUMBER AND LOCATION SHALL BE FIELD DETERMINED BY THE CONTRACTOR IN COORDINATION WITH ACTUAL CONDITIONS AND IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- STRAIGHT RAIL AND TROLLEY SYSTEM (TYPICAL OF 2 LOCATIONS/DROPS). COORDINATE WITH EXISTING STRUCTURE AND EQUIPMENT.
- STRAIGHT RAIL SUPPORTS (TYPICAL). EXACT NUMBER AND LOCATION SHALL BE FIELD DETERMINED BY THE CONTRACTOR IN COORDINATION WITH ACTUAL CONDITIONS AND IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- MODIFY EXHAUST PIPE AS NECESSARY TO ACCEPT SPECIAL CONNECTOR ADAPTER. CONTRACTOR SHALL FIELD VERIFY TAIL PIPE DIAMETER AND LOCATION.
- 4 TO 8 INCH IN DIAMETER HIGH TEMP EXTRACTION HOSE WITH MAGNETIC GRABBER CONNECTOR AND SAFETY HANDLE. REQUIRED HOSE LENGTH AND DIAMETER TO BE VERIFIED BY MFR DURING PROCUREMENT AND SUBMITTAL PHASE.
- HOSE CONNECTOR AT SLIDING BALANCER TRACK (TYPICAL). EXACT LOCATION TO BE FIELD DETERMINED.
- DISTANCE FROM SLIDING BALANCER TRACK OR STRAIGHT RAIL END-STOP TO DOOR SHALL NOT EXCEED 5 FT. PROVIDE 27 INCH LONG BALANCER LOCKING CABLE (TYPICAL OF 4 PLACES).
- STRAIGHT RAIL TOP CONNECTION FITTING.
- WALL-MOUNTED CO AND NO2 SENSORS. CO SENSOR SHALL BE MOUNTED 3'-5 FT AFF. NO2 SENSOR SHALL BE WALL-MOUNTED 1'-3 FT FROM THE ROOF/CEILING.
- MICROPROCESSOR-BASED DIGITAL CONTROLLER HANG-MOUNTED 48 IN. AFF.
- AIRFLOW BALANCING MANUAL VOLUME DAMPER (TYPICAL).
- VEHICLE EXHAUST CENTRIFUGAL FAN HUNG FROM STRUCTURE ABOVE. COORDINATE EXACT LOCATION IN FIELD PRIOR TO INSTALLATION.
- PROVIDE A MINIMUM OF 5 FT OF STRAIGHT DUCT BETWEEN THE FAN INLET AND OUTLET AND THE 90 DEG. ELBOW.
- EXISTING WALL-MOUNTED VENTILATION FANS SERVING APPARATUS BAY. ON/OFF CONTROL FOR EXISTING VENTILATION FANS SHALL BE RE-WIRED SUCH THAT FANS ARE CONTROLLED THROUGH THE VEHICLE EXHAUST SYSTEM CONTROLLER FOR BOTH SIMULTANEOUS AND MANUAL OPERATION.

**VENTILATION SYSTEM GENERAL NOTES**

VERIFY EXACT LOCATION OF LIGHT FIXTURES, STRUCTURAL COMPONENTS & ROOF FRAMING IN FIELD. COORDINATE WITH STRUCTURAL MOUNTING LOCATIONS OF DUCTWORK, RAILS, TRACKS & SUPPORTS PRIOR TO ORDERING/PURCHASING FABRICATION/INSTALLATION OF DUCTWORK, RAILS, TRACKS & ACCESSORIES.

PROVIDE MODIFICATION TO VEHICLE EXHAUST TAIL PIPES AS NECESSARY. VEHICLE EXHAUST PIPES SHALL BE CUT IN A 90° ANGLE AND ALL SHARP EDGES SHALL BE GRIND OFF. NEW TAIL PIPE ADAPTER/CONNECTOR SHALL BE FLUSH WITH THE BODY OF THE VEHICLE.

VEHICLE EXHAUST FLUE SHALL TERMINATE A MINIMUM OF 19'-0" AWAY FROM OUTSIDE AIR INTAKE OPENINGS.

CONTRACTOR SHALL REPAIR/PATCH AND PAINT AFFECTED WALLS AND CEILING AS REQUIRED TO MATCH ADJACENT FINISH AND COLOR.

PRIOR TO TURNOVER OF EACH INSTALLED SYSTEM, CONTRACTOR SHALL COMPLETE AN ACCEPTANCE AND INSPECTION, INDICATING FULL COMPLIANCE WITH SPECIFICATIONS AS PER DESIGN AND TO THE SATISFACTION OF THE OWNER.

ALL DUCTWORK AND FITTINGS SHALL BE IN CLASS 1 OR SMACNA CLASS II. IT SHALL MEET CRITERIA FOR CONSTRUCTION AND PERFORMANCE AS OUTLINED IN ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS SMACNA. CONSTRUCTION MATERIAL SHALL BE MINIMUM G-90 GALVANIZED SHEET METAL IN ACCORDANCE WITH ASTM-A-425 AND ASTM-A-527.

**SEQUENCE OF OPERATION**

CENTRAL VEHICLE EXHAUST SYSTEM CONTROLS AND INTERLOCKS MULTIPLE FAN MOTORS AND SHALL MONITOR EXTERNAL GAS DETECTORS WHILE PROVIDING VISUAL AND AUDIBLE ALARM WARNING SIGNALS SHOULD A THRESHOLD LEVEL OF GASES BE DETECTED OR LOSS OF POWER SIGNAL.

A YELLOW STROBE LIGHT SHALL FLASH IF LOW LEVEL (25 PPM) CO OR (0.22 PPM) NO2 OF TOXIC GAS IS DETECTED. RED STROBE LIGHT SHALL FLASH AND ALARM HORN SHALL SOUND IF A HIGH LEVEL (200 PPM) CO OR (2 PPM) NO2.

INTERNAL BATTERY BACKUP SYSTEM SHALL CAUSE AN ALARM HORN TO ACTIVATE WHENEVER A POWER LOSS IS DETECTED AND OPERATE FOR A MINIMUM OF 20 MINUTES AFTER POWER IS LOST.

UPON RECEIPT OF CONTROL SIGNAL BY THE CENTRAL VENTILATION CONTROLLER FROM VEHICLE TRANSMITTERS OR CO/NO2 SENSORS, THE FOLLOWING SEQUENCE OF OPERATION SHALL OCCUR:

SOURCE CAPTURE FAN SHALL BE ENERGIZED TO RUN DURING BOTH SIGNAL TRANSMISSION AND/OR SIGNAL FROM NO2/CO SENSORS.

INTERLOCKED GENERAL VENTILATION FANS SHALL BE ENERGIZED TO RUN DURING SIGNAL TRANSMISSION OR THROUGH MANUAL ACTIVATION AT THE CONTROLLER.

UPON COMPLETION OF VEHICLE SIGNAL TRANSMISSION, SYSTEM SHALL RUN FOR A PRE-DETERMINED TIME UNTIL ONE FULL AIR EXCHANGE HAS BEEN BATTERED OR UNTIL CO/NO2 SENSORS REACH BELOW THRESHOLD LEVELS.

UPON COMPLETION OF SYSTEM CYCLE/RUN TIME, FANS SHALL BE DE-ENERGIZED.

UPON RECEIPT OF CONTROL SIGNAL BY THE CONTROLLER FROM AREA SMOKE/FIRE DETECTORS AND/OR FIRE ALARM PANEL, THE INTERLOCKED FANS AND DAMPERS SHALL BE DE-ENERGIZED AND SHUT/DOWN.

**GAS MONITORING THRESHOLD LEVELS**

CO SENSOR - 25 PPM - RUN FAN  
NO2 SENSOR - 1 PPM - RUN FAN

CONTROLLER WILL MONITOR AND SEND EMAIL OR TEXT ALERTS IF:

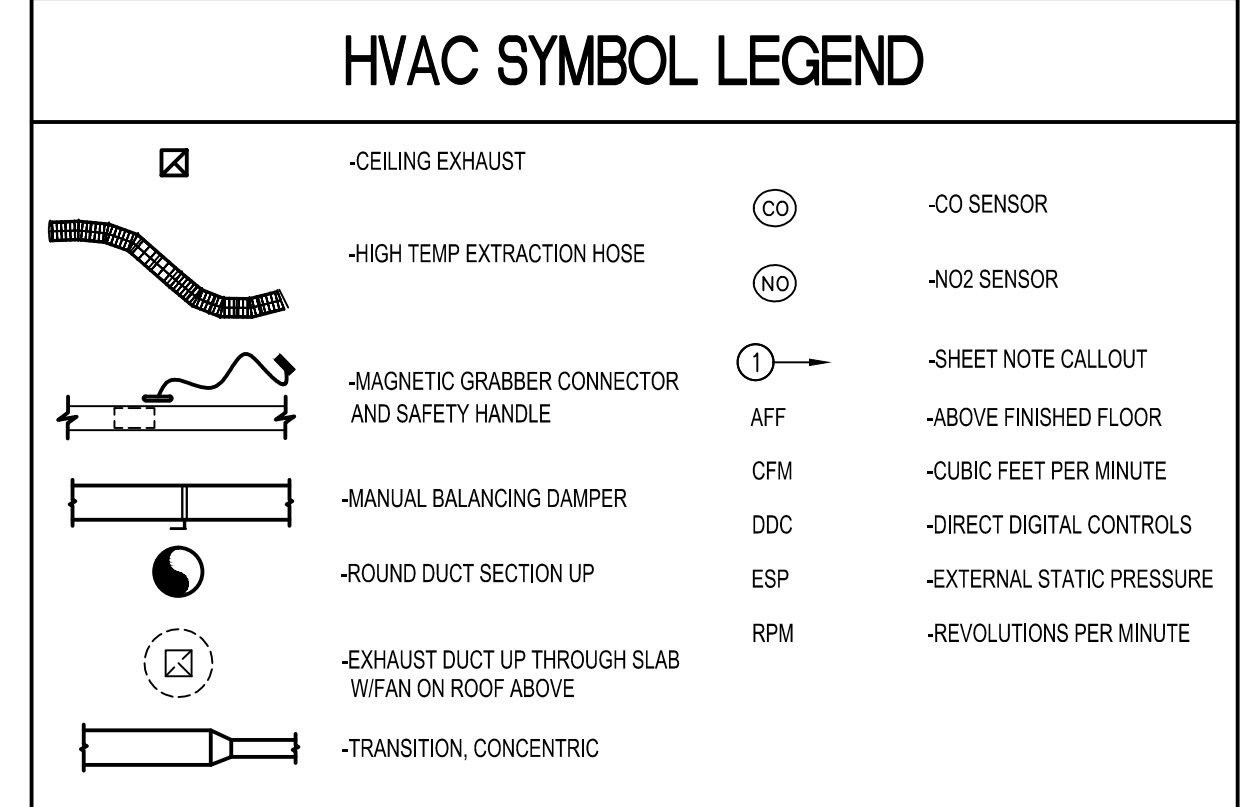
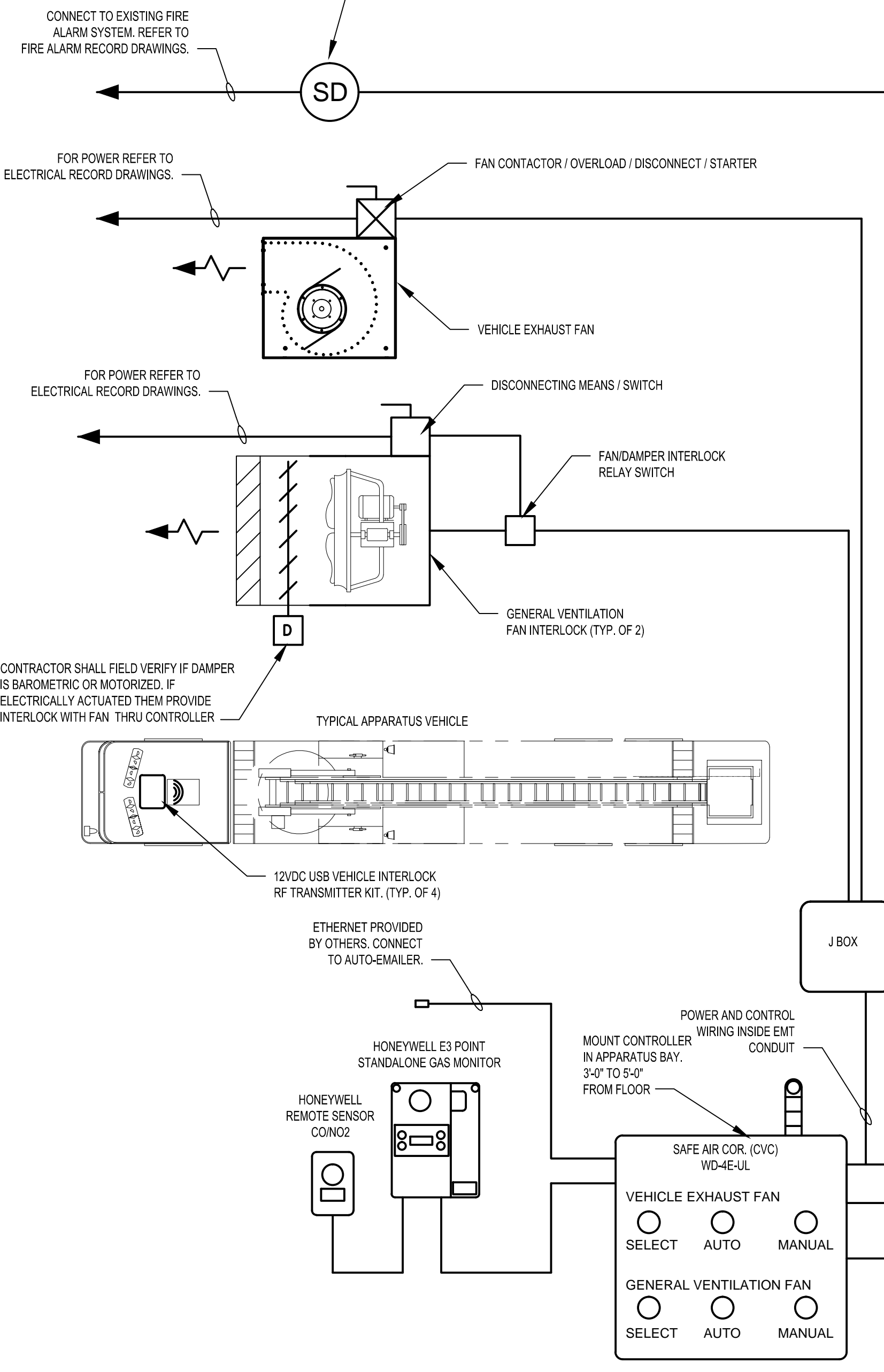
- LOSS OF POWER OCCURS
- UPON ACTIVATION OF TOXIC GAS ALARM
- UPON ACTIVATION OF FRESMOKO ALARM
- UPON ACTIVATION OF HIGH HOSE TEMPERATURE ALARM

**MECHANICAL GENERAL NOTES**

- CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
- DIMENSIONS SHALL BE FIELD-VERIFIED AND COORDINATED PRIOR TO PROCUREMENT OR FABRICATION. COORDINATE THE WORK WITH OTHER TRADES INVOLVED. FIELD MODIFICATIONS SUCH AS OFFSETS IN SPRING OR DUCTWORK (INCLUDING DIVIDED DUCTWORK) NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST. FOR PROJECTS INVOLVING RENOVATION, COORDINATE NEW WORK WITH EXISTING ELEMENTS SUCH AS THE BUILDING STRUCTURE AND ARCHITECTURAL FEATURES, SPRINKLER PIPING, LIGHTS, PLUMBING, AND ELECTRICAL CONDUIT.
- DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARD.
- SEE SPECIFICATIONS FOR GAUGES, THICKNESS, BRACING, REQUIREMENTS, ETC., OF DUCTWORK.
- DUCT SIZES AND ALL OPENINGS THROUGH BUILDING CONSTRUCTION SHALL SUIT EQUIPMENT FURNISHED.
- ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION.
- ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
- REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT.
- ACCESS PANELS IN DUCTWORK AND CEILING SHALL BE PROVIDED WHERE REQUIRED FOR OPERATION, BALANCING OR MAINTENANCE OF ALL MECHANICAL EQUIPMENT.
- ALL DUCTWORK AND PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, TURNING VANES, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS, ALL SPRU DUCT FITTINGS SHALL TRANSITION TO FULL SIZE OF THE SUM OF BOTH BRANCHES, UPSTREAM OF SPLIT.
- PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCTWORK CONNECTING TO EACH FAN, AIR HANDLING UNITS, AND FAN COLLANTS.
- INTERRUPTIONS TO EXISTING SERVICES SHALL BE SCHEDULED FOR TIMES OTHER THAN NORMAL OPERATING HOURS (SUCH AS NIGHTS AND WEEKENDS). SUCH INTERRUPTIONS TO SERVICES SHALL NOT BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER'S REPRESENTATIVE AND PROPER COORDINATION WITH OTHER TRADES. PREWORK SHALL BE PERFORMED TO MAKE THE SHUTDOWN PERIOD AS BRIEF AS POSSIBLE.
- ALL EQUIPMENT, DUCTWORK, ETC., TO BE REMOVED SHALL REMAIN PROPERTY OF THE OWNER OR DISPOSED OF LEGALLY AS DIRECTED BY OWNER.
- MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC., AND ALL FIRE RATED AND FRESMOKO RATED PARTITIONS, TO ALLOW FOR INSPECTIONS OF RATED WALLS.
- LOCATE ALL OUTSIDE AIR INTAKES A MINIMUM OF 10'-0" CLEAR FROM ALL PLUMBING VENTS AND EXHAUST AIR DISCHARGE LOCATIONS. LOWEST POINT OF EACH OUTSIDE AIR INTAKE ON ROOF SHALL BE A MINIMUM OF 24" ABOVE ROOF.
- SLEEVE AND SEAL ALL PENETRATIONS THROUGH BUILDING PARTITIONS.

**C FIRE STATION 40 - BAY**  
SCALE: 3/16" = 1'-0"

CONNECT TO EXISTING FIRE ALARM SYSTEM. REFER TO LOCAL CODES & NFPA FOR FAN CONTROL SHUTDOWN. (TYPICAL. FIELD VERIFY QUANTITY.)



**STRAIGHT RAIL SCHEDULE**

Type/Model	Approx. Total Length	Est. Number of Supports	Rail Qty.	Approx. Height	Notes
STRAIGHT RAIL/ STR	78'-0"	8	5	12'-0"	1, 2, 3

**SLIDING BALANCER TRACK SCHEDULE**

Type/Model	Approx. Total Length	Est. Number of Supports	Track Qty.	Approx. Height	Notes
SLIDING TRACK / SBT	28'-6"	3	2	12'-0"	1, 2, 3
SLIDING TRACK / SBT	28'-6"	3	2	12'-0"	1, 2, 3

**NOTES:**

- MODEL NUMBERS AND FAN SELECTION ARE BASED ON PLYMOVENT STR
- VERIFY EXACT ELEVATION/LOCATION IN THE FIELD PRIOR TO FABRICATION AND INSTALLATION.
- TYPICAL DISTANCE BETWEEN SUPPORTS IS APPROX. 10 FT, DEPENDING ON LENGTH OF TRACK. ADDITIONAL SUPPORTS MAY BE NEEDED. REFER TO MFR INSTALLATION INSTRUCTIONS.

**NOTES:**

- MODEL NUMBERS AND FAN SELECTION ARE BASED ON PLYMOVENT SBT
- VERIFY EXACT ELEVATION/LOCATION IN THE FIELD PRIOR TO FABRICATION AND INSTALLATION.
- TYPICAL DISTANCE BETWEEN SUPPORTS IS APPROX. 10 FT, DEPENDING ON LENGTH OF TRACK. ADDITIONAL SUPPORTS MAY BE NEEDED. REFER TO MFR INSTALLATION INSTRUCTIONS.

**FAN SCHEDULE**

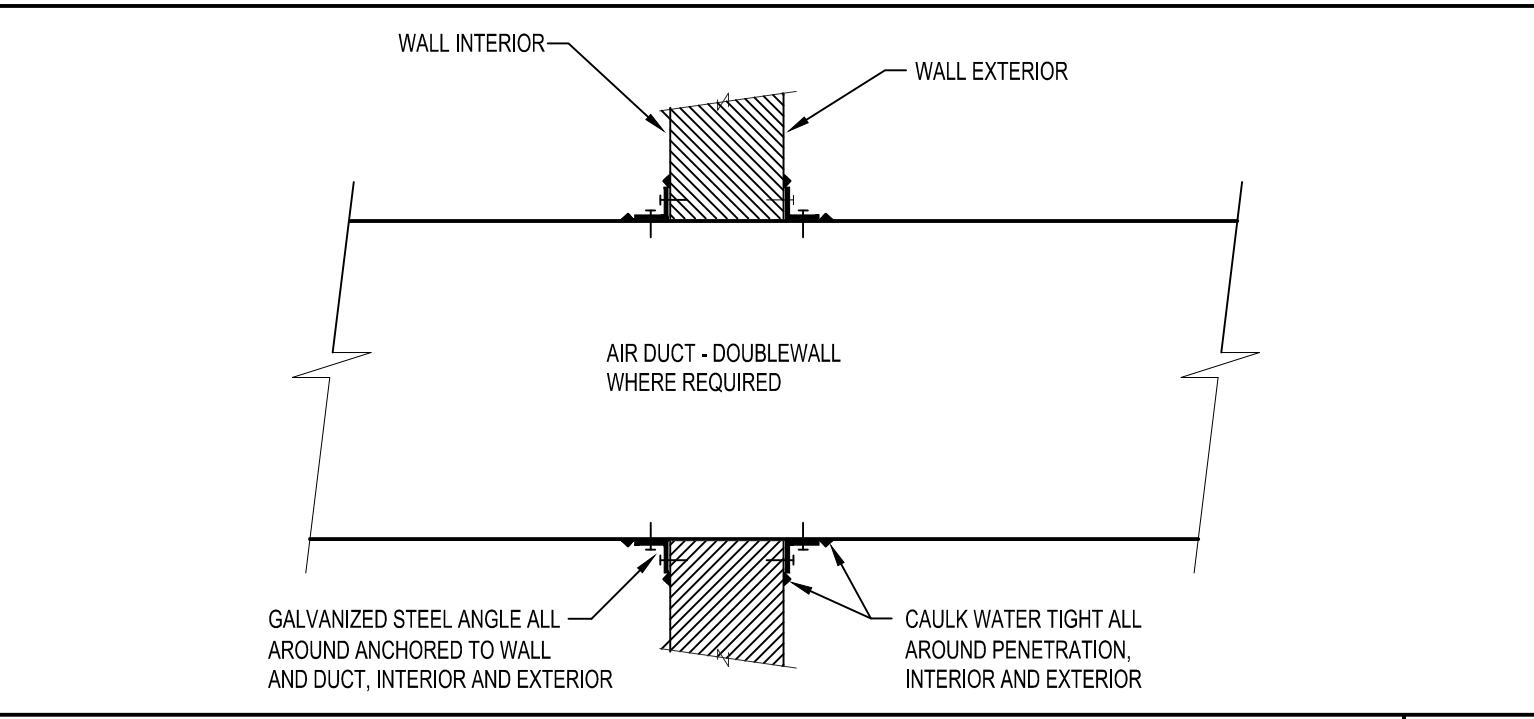
PLAN MARK	MODEL NO.	TYPE	MIN. CFM	ESP (W/C)	FAN RPM	MOTOR			VOLT/ PHASE	DRIVE TYPE	FAN SERVICE
						HP	AMPS	TYPE			
EF-40-1	TEV-585	INLINE	2,300	8.9	3500	TEFC	7.5	19.2	208/3	DIRECT	APPARATUS BAY

**NOTES:**

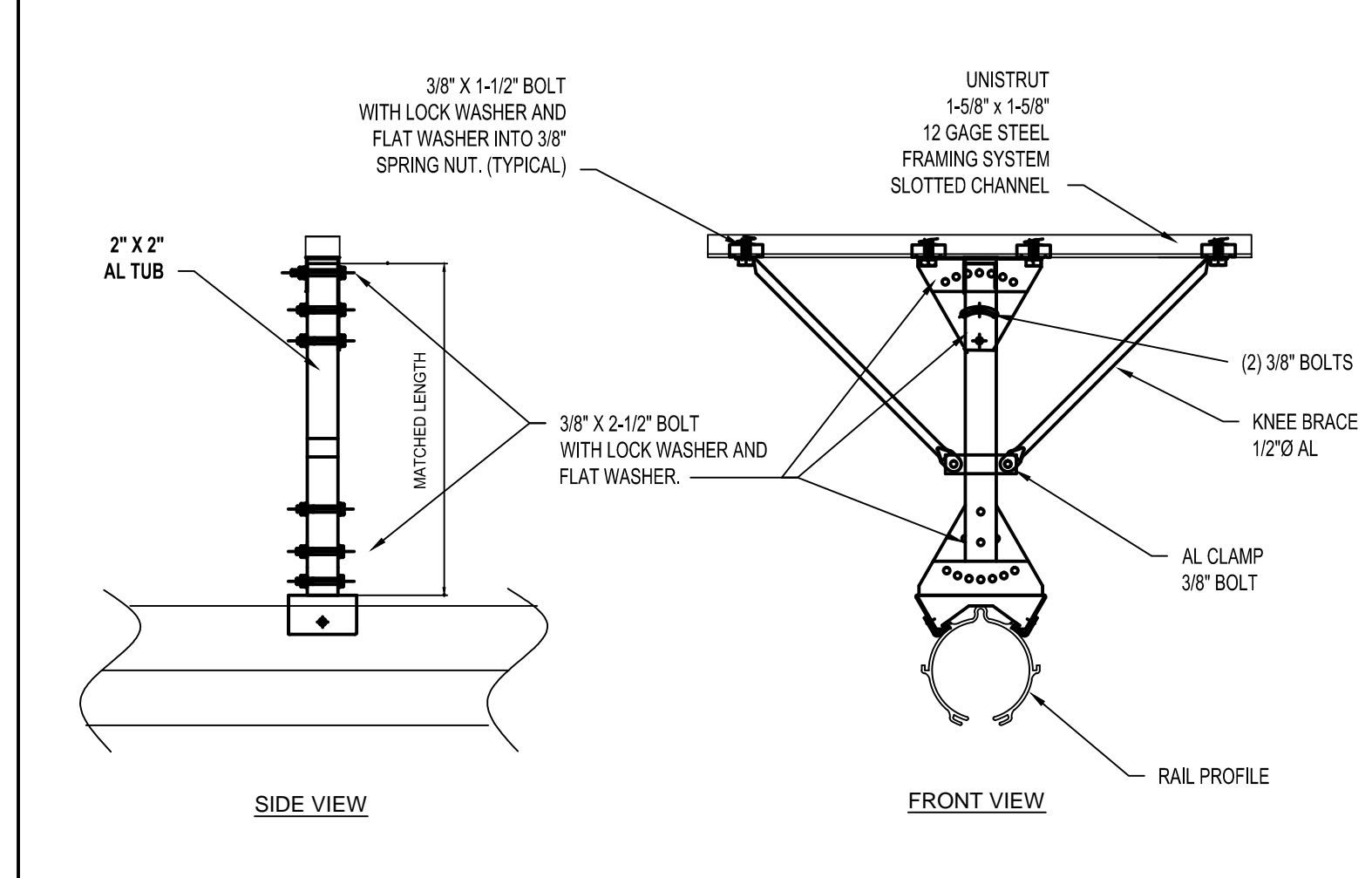
- MODEL NUMBERS AND FAN SELECTION ARE BASED ON PLYMOVENT

**ACCESSORIES:**

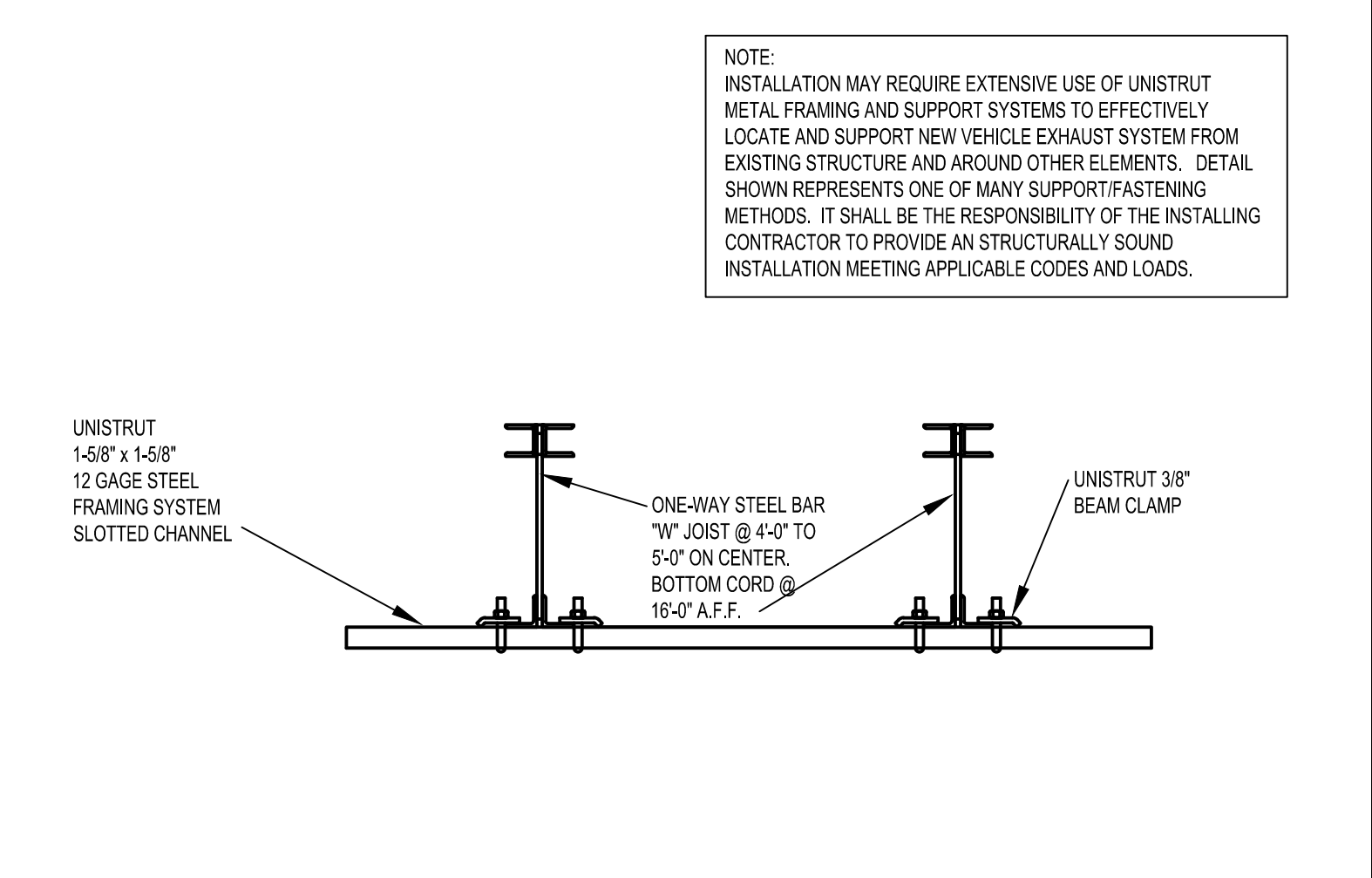
- BACKDRAFT DAMPER
- DISCONNECT SWITCH
- VIBRATION ISOLATORS
- JET RAIN CAP W/DRAIN
- EQUIPMENT SUPPORTS
- SPEED CONTROLLER
- MOTOR STARTER



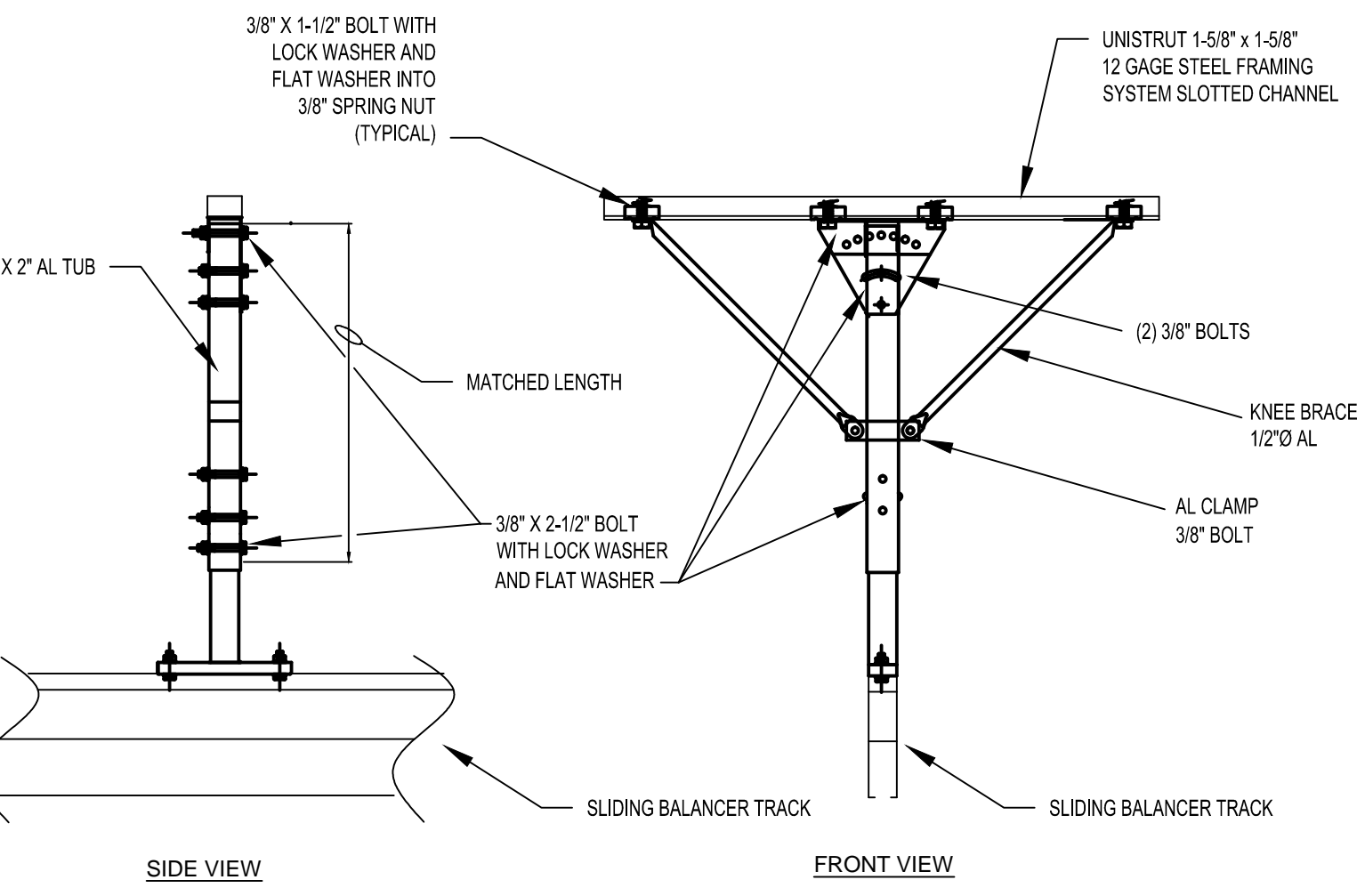
**EXTERIOR WALL DUCT PENETRATION**  
No Scale



**STRAIGHT RAIL AND SUPPORT DETAIL**  
No Scale



**UNISTRUT TO EXISTING STRUCTURAL MOUNTING SUPPORT DETAIL**  
No Scale



**SLIDING BALANCER TRACK SUPPORT DETAIL**  
No Scale

**TABLE 4-2 MINIMUM HANGER SIZES FOR ROUND DUCT**

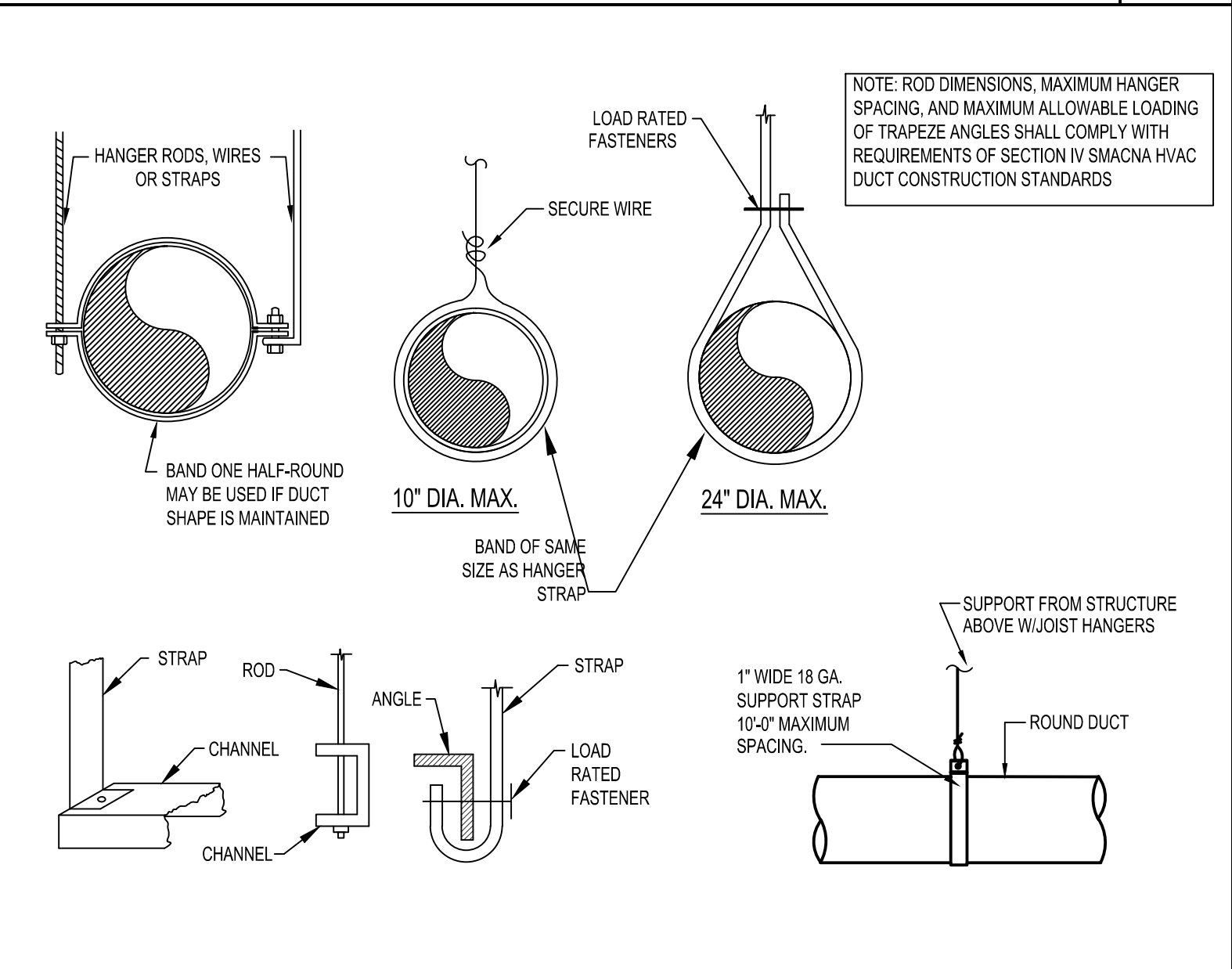
DIA.	MAXIMUM SPACING	WIRE DIA.	ROD	STRAP
10" DN. 250 MM DN	12' 3.7 M	ONE 12 GA. ONE 2.75 MM	1/4" 6.4 MM	1"x 22 GA. 25.4 x 0.85 MM
11-18"	12'	TWO 12 GA. OR ONE 8 GA.	1/4"	1"x 22 GA.
460 MM	3.7 M	ONE 4-27 MM	6.4 MM	25.4 x 0.85 MM
18-24" 610 MM	12' 3.7 M	TWO 10 GA. TWO 3.51 MM	1/4" 6.4 MM	1"x 22 GA. 25.4 x 0.85 MM

**NOTES:**

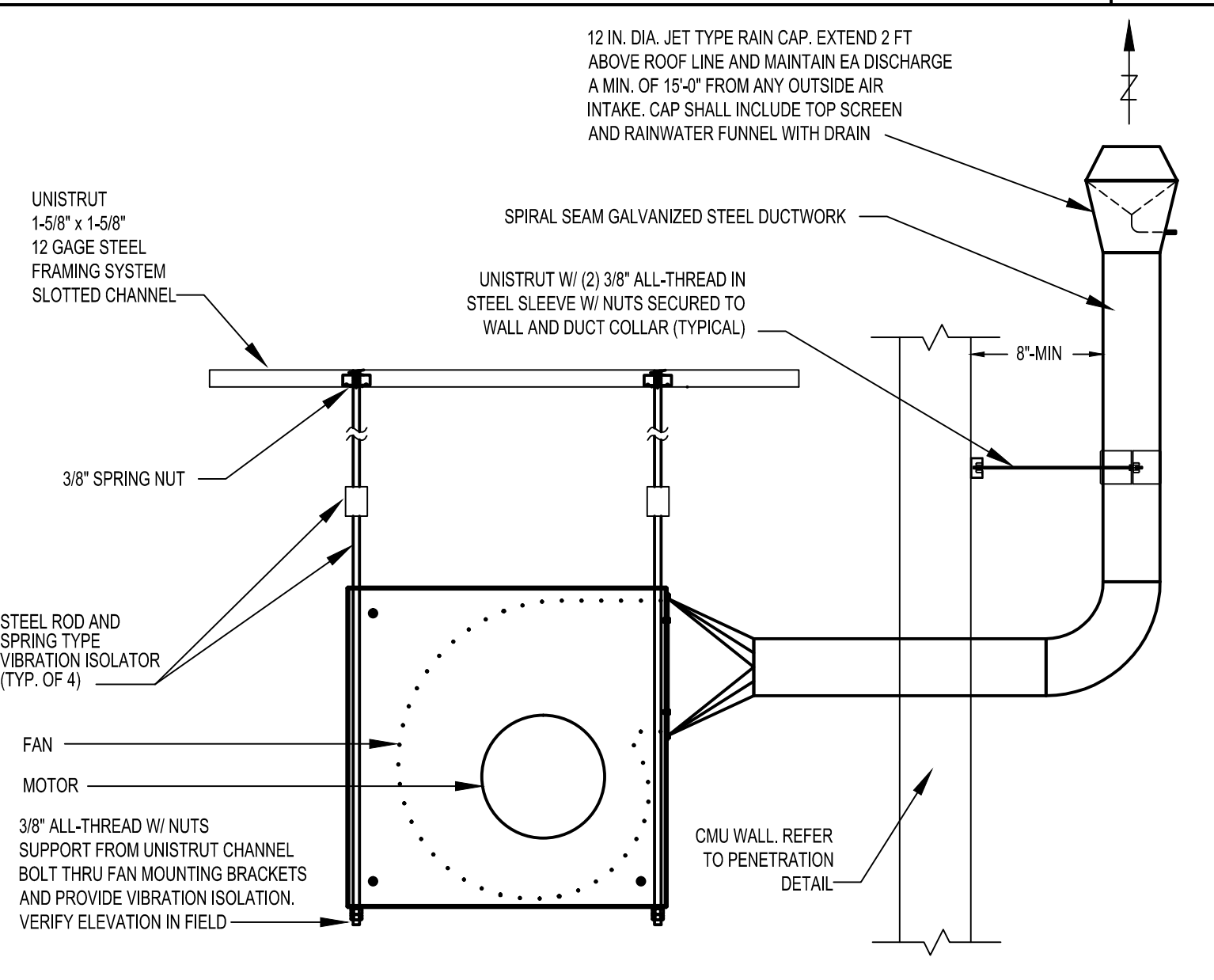
- STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL; WIRE IS BLACK ANNEALED, BRIGHT BASIC, OR GALVANIZED STEEL. ALL ARE ALTERNATIVES
- REFER TO SMACNA DUCT STANDARDS - SECOND EDITION: FIG. 4-4 FOR LOWER SUPPORTS
- REFER TO SMACNA DUCT STANDARDS - SECOND EDITION: FIG. 4-2 AND 4-3 FOR UPPER ATTACHMENTS.
- TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES TO BE WITHIN THEIR LOAD LIMITS. REFER TO SMACNA DUCT STANDARDS - SECOND EDITION ALLOWABLE LOADS WITH TABLE 4-1. HANGER SPACING MAY BE ADJUSTED BY SPECIAL ANALYSIS.

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**ROUND DUCT SUPPORTS**  
No Scale



**FAN MOUNTING DETAIL**  
No Scale



**SLIDING BALANCER TRACK SUPPORT DETAIL**  
No Scale

**CENTRAL VENTILATION CONTROLLER TYPICAL WIRING RISER DIAGRAM**



482 SOUTH KELLER ROAD  
ORLANDO, FL 32810  
PHONE: 407.647.7275 FAX: 407.740.8958

CONSULTANT:

CLIENT:



PROJECT NAME:

**Orange County  
Fire Rescue Exhaust Removal System**

100047127

No.	Date	Description
03/08/2017		PERMIT REVISIONS
04/04/2017		BIDDING REVISIONS

ISSUE LOG  
PROFESSIONAL SEALS:

KELLIE A. RAMOS, P.E.  
FL. REG. NO. 76996

SHEET TITLE:

**FIRE STATIONS 40  
HVAC PLAN**

SHEET INFORMATION:

JOB No. <b>100047127</b>	Date Issued: February 17, 2017
Designed By: RLJ	Sheet Number:
Checked By: DLH	
QC Review: T.J.F.	
Phase: 100%	

**M-140**