



Oakland Housing
Authority

IFB #18-006

1619 Harrison Street Renovation and Modernization Project

Addendum #1

Date issued and released, October 31, 2018

Responses to Questions:

The following questions were submitted by the deadline and are answered in this addendum.

Question #1: Are you putting out a bid for labor only or for is the IFB for materials as well?

Answer #1: No – See Bid Documents.

Question #2: Will the Oakland Housing Authority pay the vendor in 30 days?

Answer #2: Yes, after All Certified Payroll is in and approved – OHA Policy –Net 30 days.

Question #3: Do you have any information regarding the project's cost valuation?

Answer #3: No – OHA Policy.

Question #4: Do you have an engineer's estimate or ROM (for bonding purposes)?

Answer #4: No – OHA Policy.

Question #5: Does the Oakland Housing Authority have a bid bond form?

Answer #5: Yes. Please see attached Contractor Bond Deposit Form.

Question #6: What is the anticipated duration of the project?

Answer #6: See bid document. Project duration will be mutually agreed upon between the Oakland Housing Authority and the bidder. Failure to reach an agreement to the duration of the project may result in disqualification.

Question #7: If vendors are to come up with the schedule, is project duration based on that schedule? (Do vendors get to determine the duration?)

Answer #7: General Contractor generated – see bid documents. Please also see answer to question #6.

Question #8: Will the schedule be included as a basis of project award?

Answer #8: General Contractor generated – see bid documents. Please also see answer to question #6.

Question #9: Is there a Project Labor Agreement (PLA), or anything similar, involved in this contract?

Answer #9: No.

Question #10: What can vendors expect from Addendum 1?

Answer #10: Please see attached questions and answers.

Question #11: Does the Oakland Housing Authority have a Non-Collusion Affidavit?

Answer #11: Yes. Please see attached Non-Collusion Affidavit.

Question #12: Are minority requirements listed in the bid document?

Answer #12: There is no mention of the term "minority" in the IFB documents. The Oakland Housing Authority does collect information regarding woman and minority owned business in the Profile & Certification form.

Question #13: Within the Subcontractor List – where is the provision for subcontractor's trade or scope of work (per California Public Contract Code 4104)? What to do?

Answer #13: Please see attached revised Sub-Contractors Form.

Question #14: Is there a mechanical piping drawing that was omitted?

Answer #14: The heating hot water supply and return lines are rising up into the air handling unit. Provide connections from existing lines and connect to the air handling unit heating coils, per manufacturer's recommendations. The boiler listed on sheet M2 should be labeled as existing.

Question #15: Where is the boiler located? I didn't see one in the drawings, but there's one in the schedule.

Answer #15: The boiler and pump system are existing to remain and are located in the lower parking garage level. The existing heating hot water supply and return lines are currently piped to the existing AHU on the roof, Existing AHU to be removed and replaced with a new AHU.

Question #16: Where is the piping intended to be run from the boiler to the air handling unit (AHU)?

Answer #16: Heating hot water riser lines are located within the existing AHU housing.

Question #17: In the demo drawings, there appears to be an AHU served by a chiller – but not in the *new* work plan (for piping arrangements from the new chiller to the new AHU). What's that all about?

Answer #17: The new AHU is to use heating hot water for heating and a new roof mounted air cooled condensing unit for DX cooling.

Question #18: Does the AHU in the schedule have its own DX coil/compressor? If so, what does the chiller supply the chilled water to?

Answer #18: The air cooled condensing unit is miss-labeled as a chiller on sheet M2. The Seasons-4 equipment designation is correct. Refer to attached documentation.

Question #19: The air-cooled chiller indicates a flow rate of 76 GPM on the water side, but there isn't a chilled water pump (CHWP-1) on the schedule. Is there an existing pump to be reconnected to? If so, where is it located?

Answer #19: See answer provided in question #18.

Question #20: The air-cooled chiller has a remark of "information purposes only, skid mount unit." What is on this skid? What are the connections to the skid? (chilled water supply/return, make-up water, drain, etc.)

Answer #20: Unit specified by Seasons-4, Inc., or approved equal. See attached documentation

Question #21: Detail #2 on M10 shows an expansion tank with a minimum capacity of 100 gallons, but there isn't one on the schedule. What are the necessary make and model numbers of said tank?

Answer #21: Information shown in detail is existing equipment, including the boiler, pumps and expansion tanks.

Question #22: Detail #1 on M10 shows a hydronic re-heat coil in the variable air volume (VAV) system, but there's no piping shown anywhere in the building to any of the VAV locations. So then, what's the purpose of detail #1? Is it to show the one heating hot water (HHW) coil at the AHU? If so, how does the three-way valve interlock with every t-stat? There isn't a flow rate in the VAV schedule on M1, and yet the control valve notes the size per flow rate in the schedule.

Answer #22: Detail is for the AHU heating coils. The VAV units are dual duct and single duct cooling only units.

Question #23: What are the location and routing details for piping from HHWP-1 to boiler to AHU? Detail #2 in M10 indicates HHWP-1 with VFD, but that wasn't indicated in the mechanical drawings.

Answer #23: It needs to be confirmed if the existing heating hot water pump has a VFD. If not, one will need to be added. This is to be determined.

Question #24: There are no details for rooftop pipe supports from AHU to boiler/chiller, as required. Please clarify this.

Answer #24: Existing hot water (loop) piping goes from the ceiling space on 2nd floor directly into the AHU, any additional details shall be developed.

Question #25: Detail #4 on M9 refers to mounting VAV units with 3-5/8" strut – is the purpose of this detail to be 1-5/8" strut?

Answer #25: Yes that is correct; it should be identified as 1-5/8" strut.

Question #26: Where would we have to connect the rooftop gas to the boiler? Plumbing drawings do not include rooftop pages.

Answer #26: The boiler and gas line are existing. The drawings will be revised to indicate this.

Question #27: Is the rooftop gas sufficient to supply the required 1,500,000 BTU/H for the boiler?

Answer #27: See answer to question #26.

Question #28: Is there make-up water available on the rooftop for the heating and chilled water systems?

Answer #28: There is make up water to the existing heating hot water system. Cooling system was incorrectly noted as chilled water and the intent is to use DX cooling.

Question #29: Is there a construction start date?

Answer #29: General Contractor – See bid Documents or 30 within days of OHA Board of Commissioners approval. Please also see answer to question #6.

Question #30: Is there a construction end date?

Answer #30: General Contractor – See bid Documents. Please also see answer to question #6.

Question #31: What are the hours construction can take place?

Answer #31: Normal business hours – City of Oakland.

Question #32: Is there a laydown area?

Answer #32: See Bid documents.

Question #33: Is there parking provided?

Answer #33: See Bid documents.

Question #34: Is there a phasing requirement?

Answer #34: See Bid documents.

Question #35: Section 093013 Tile describes two tile types in paragraph 1.2.A, one for exterior and one for interior. Paragraph 2.2.C describes only the interior tile. Please provide a specification for the exterior courtyard tile.

Answer #35: Exterior Courtyard tile shall be Dal Tile Ambassador, Porcelain tile "Global Grey" 12" x 24". Install in linear 1/2 bond offset pattern

Question #36: Paragraph 3.3.A.4 indicates that the interior floor tile is to be thin-set "similar to TCA F122". Method F122 is a thin-set method over a waterproof membrane. Is waterproof membrane required under the interior CT1 floor tiles? If so, please provide a material specification.

Answer #36: Install interior thinset per TCNA F-113.

Question #37: The drawings indicate that patching of the existing restroom tiles will be required. Do records exist identifying these existing tiles?

Answer #37: No.

Question #38: Per A0.1 "General Note" #2: Bid set of drawings is not coordinated with Asbestos Work Plan. Please remove/revise Keynotes 3 and 18 from Demolition Drawings A1.1 and A 1.2 because all those areas will receive mechanical, electrical and carpenter's work and required to be abated or removed. Technically all existing surfaces require to be abated. Please advise:

Answer #38:

- a. Sheet A0.1, Delete General Note #2
- b. Sheets A1.1 and A1.2

1. Revise Key Note 3 to read:

Existing Concrete Walls with asbestos abatement where required by ACC Environmental Consultants Work Plan report dated September 2018 in Bid Documents.

2. Revise Key Note 18 to read:

Demo Existing Gypsum Board Ceiling, provide asbestos abatement where required by ACC Environmental Consultants Work Plan report dated September 2018 in Bid Documents.

Stated Abatement work will be at no additional cost to OHA.

Question #39: All details on A8.2 refer to the Light Gage Metal Framing construction. There is no Light Gage Metal Framing Section in the Spec. Book. Please provide.

Answer #39: See attached Specification Section 09 22 16 Non Structural Metal Framing.

Question #40: Please provide UL listing for the fire rated walls.

Answer #40: The following are the UL listings for Wall types on Sheet A8.2

(Verify with UL)

- a. Wall Type 1- 1 hour rated interior partition UL Des U419
- b. Wall Type 2- 1 hour rated interior sound partition UL Des U465
- c. Wall Type 3- 1 hour rated interior sound partition UL Des U465

Question #41: What are the ceiling types in rooms 103, 106, 110, and 208? RCP shows a 2 x 2 grid pattern but also has keynote 11 "existing exposed concrete."

Answer #41: Rooms 103, 106, 110 and 208 all get new 2' X 2' grid and ceiling per the reflected ceiling plan, delete keynote 11 in those areas. Delete "Paint" from all keynote 11. Concrete in All open ceiling areas is to be unpainted.

Question #42: What are the liquidated damages per day for this project?

Answer #42: Not applicable.

Question #43: What is the warranty period to be covered by GC for this project?

Answer #43: See bid documents.

Question #44: Section 36.b of the "Instructions to Bidders for Contracts Public and Indian Housing Programs" document states that the contractor shall furnish the PHA with a certificate of insurance evidencing Builder's Risk. But Section 7.19 of the "Construction Services Agreement" states that the PHA shall purchase and maintain a Builder's Risk insurance policy. So who will cover the Builder's Risk – OHA or the contractor?

Answer #44: The Contractor will carry the coverage and indemnify OHA.

Question #45: If the contractor is to cover Builder's Risk, is flood and earthquake coverage required?

Answer #45: Flood and earthquake insurance is not required.

Question #46: What about pollution liability insurance? Does OHA cover it, or the contractor?

Answer #46: The Contractor will also carry/cover pollution liability insurance.

Question #47: In multiple places, the Project Manual asks us to provide additional signs not called out on plans. Shall we include these as add alts? (Example – signage plan on **A.20** doesn't call for any Room ID type signage. But within **Project Specs 10 14 00 – 2.5: E, Name Signs**, they appear to be asking for eight Room ID signs, listed as "A through H.")

Answer #47: - Drawings prevail - Refer to Sheets A - 2.0, 2.01, 2.22.

Other Addendum Items:

- 1) AC package unit on NW corner of 2nd floor roof demoed and disposed of legally. Including sheet metal box plenum demoed above (E) room 222 with flex duct. (or Grid H.5/2) Shows on Sheet M5. At no additional cost to OHA.
- 2) Demolition – Old telephone wiring in IT Lab Room to be demolished. Verify and coordinate with OHA prior. At no additional cost to OHA. See attached sheet ELData1.01
- 3) Electrical/Data General Contractor and their subcontractor(s) will be responsible for data wiring Owner Furnished, Owner installed furniture. (cubicles). General contractor's wiremen will have to install all data in the cubicles, terminate, number and test. There will be a raceway. The cubicles will be prewired electrically (UL approved), General contractor's electrician will connect furniture whips to the newly installed junction box(s). This work and related coordination will be done at no additional cost to OHA.
- 4) The existing copper hot water loop to the existing boiler on roof for AHU-1 needs a repair and 4 isolation valves. 2" type K copper with lagging. The repair is in the 2nd floor ceiling- 10 linear feet of type K 2" copper. Isolation valves - two at the boiler on the 1621 Harrison Roof the other two valves at AHU-1 second floor ceiling space. This work shall be done at no additional cost to OHA.
- 5) Omit Page 00700-1 General Conditions dated September 12, 2018 in the Project Manual by Kodama Diseno (not listed in the Table of Contents). Does not pertain.
- 6) All if any dimension lumber installed on this project shall be Fire-Retardant as specified 06 10 00 Rough Carpentry at no additional cost to OHA.

- 7) Insurance Coverage Change - **Crane Physical Damage Insurance** as required by the State of California (Code Section 1763.1). Builders Risk Insurance coverage should be \$100,000.00 per occurrence and replacement value at the time of damage.



Oakland Housing
Authority

IFB #18-006
1619 Harrison Street Renovation and Modernization Project

Addendum #1
Date issued and released, October 31, 2018

Bidder hereby acknowledges this addendum:

Name of Firm: _____

Authorized Signature: _____

Date: _____

Acknowledgement of this Addendum must be included with your bid.

Attachment A

SUBCONTRACTOR LIST

IFB No. 18-006

(PAGE 1 OF 2)

California Public Contract Code Section 4104(a) requires all bidders to identify all subcontractors that will provide work in excess of ½ of 1% of the bid amount. Failure to provide all the information requested below may result in rejection of the bid.

Subcontractor	Portion of the Work to be Done	Location	CA License No.*	Public Works Registration No.*
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

(Attach additional page if necessary.)

* The Public Works Registration Number is required by California Labor Code section 1725.5. An inadvertent error in listing the California Contractor's License Number or the Public Works Registration Number will not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the corrected numbers are submitted to OHA by the prime contractor within 24 hours after the bid opening and provided the corrected numbers correspond to the submitted name and location for that subcontractor.

Date _____ Name of Bidder _____

By _____

Title _____

Address _____

Attachment B

NON-COLLUSION AFFIDAVIT

State of _____

County of _____

_____, Being first duly sworn, deposes and says,

That s/he is, _____ the party making the foreseeing proposal or bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference, with any person, to fix the bid price or any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Oakland Housing Authority or any person interested in the proposed contract; and that all statements in said proposal or bid are true.

Signature: _____

Title: _____

Company Name: _____

Bidder, if the Bidder is an Individual
Partner, if the Bidder is a Partnership
Officer, if the Bidder is a Corporation

On _____ before me, _____, personally appeared
Date Here Insert Name and Title of the Officer

Name of Signer(s)

Who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____
Signature of Notary Public

Attachment C



CONTRACTOR BOND DEPOSIT & RELEASE AUTHORIZATION FORM

TO BE COMPLETED BY INITIATING DEPARTMENT	
PART 1 – BOND DEPOSIT REQUEST	
Contractor:	Amount Held \$:
Bid/RFP #:	Type of Bond: <input type="checkbox"/> Bid Bond <input type="checkbox"/> Performance Bond <input type="checkbox"/> Payment Bond <input type="checkbox"/> Other
Project Name:	Type of Payment: Date of Check: _____
Site Address:	<input type="checkbox"/> Cashier's Check <input type="checkbox"/> Money Order <input type="checkbox"/> Other _____
Project Manager:	Date:

TO BE COMPLETED BY CCGS

Reviewed by: _____ Date: _____

TO BE COMPLETED BY FINANCE

Received by: _____ Date: _____

TO BE COMPLETED BY INITIATING DEPARTMENT	
PART 2 – RELEASE AUTHORIZATION	
The Contractor has complied with all requirements of the Bid or Contract and Labor Compliance requirements which these funds secured and authorization to release the deposited funds is herewith granted.	
Authorization: _____	Date: _____

TO BE COMPLETED BY CCGS

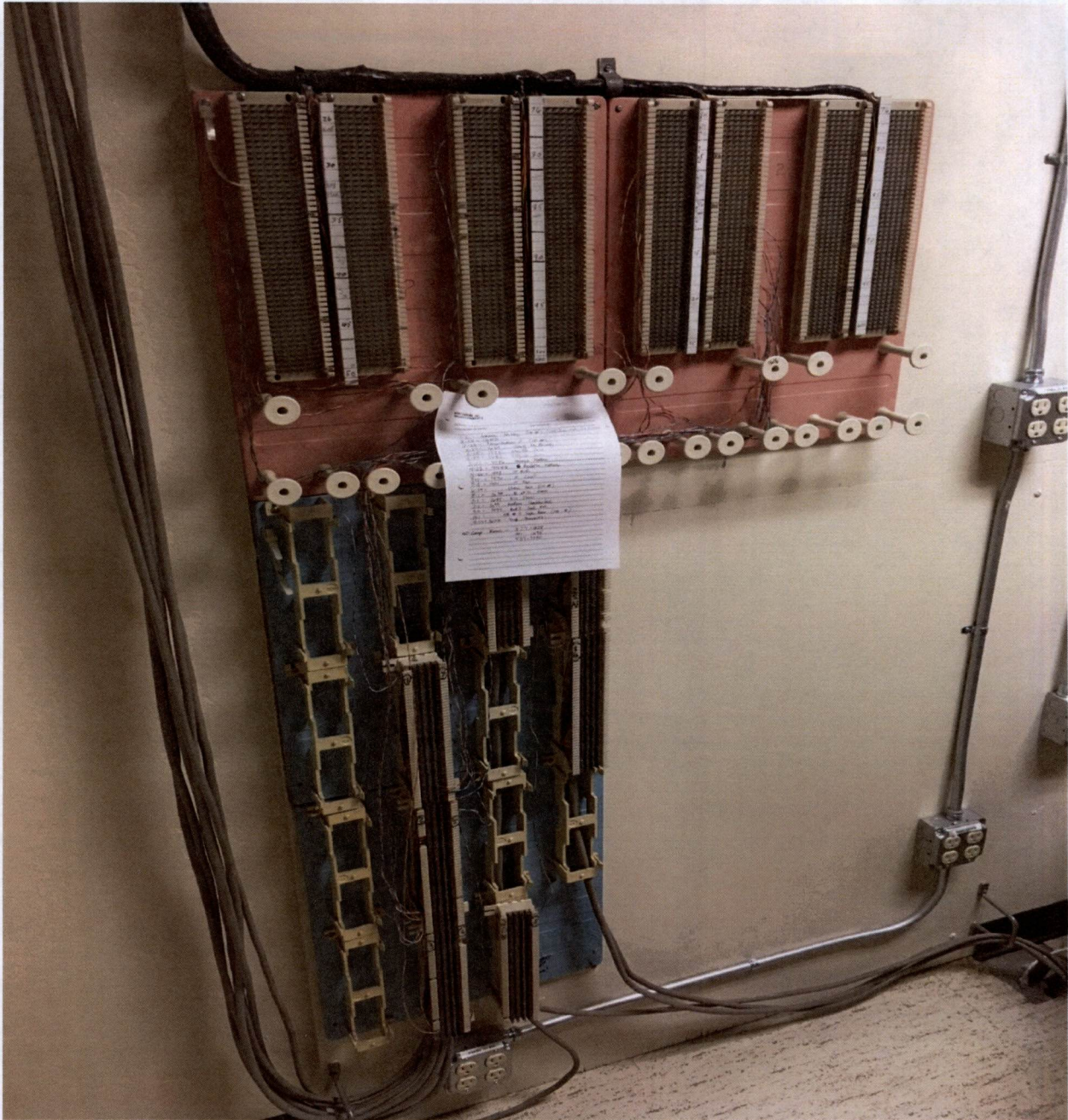
Approved by: _____ Date: _____
(Labor Compliance)

_____ Date: _____
(CCGS)

TO BE COMPLETED BY FINANCE

Received by: _____ Date: _____

Attachment D



ELData -1.01 - 10 31 2018 form CID

Unused – Verify in field - To be Demolished in Room 229 IT Lab

Attachment E

OAKLAND HOUSING AUTHORITY

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

- A. Related Documents:
1. Drawings and general provisions of the Subcontract apply to this Section.
 2. Review these documents for coordination with additional requirements and information that apply to work under this Section.
- B. Section Includes:
1. Metal framing, [including metal suspension system for [gypsum board] [lath and plaster] ceilings].
- C. Related Sections:
1. Division 01 Section "General Requirements."
 2. Division 01 Section "Special Procedures."
 3. Division 01 Section "Construction Waste Management".
 4. Division 01 Section "Lateral Force Procedures".
 5. Division 05 Section "Cold-Formed Metal Framing".
 6. Division 07 Section "Blanket Insulation."
 7. Division 07 Section "Penetration Firestopping."
 8. Division 08 Section "Access Doors and Frames."
 9. Division 09 Section "Gypsum Board".

1.2 REFERENCES

- A. General:
1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
 2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
 3. Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.
- B. AISI "Specification for the Design of Cold-Formed Steel Structural Members", latest edition and amendments.
- C. ASTM International:
1. ASTM A641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 2. ASTM A1008 Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 3. ASTM A1011 Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 4. ASTM C645 Standard Specification for Nonstructural Steel Framing Members.
 5. ASTM C754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Panel Products.

1.3 SUBMITTALS

- A. Submit under provisions of Division 01 Section "General Requirements."
- B. Product Data: Manufacturer's product data and installation instructions for each item of metal framing, [metal suspension system], [safing insulation], and accessories.
- C. Approved ICBO report for fasteners proposed to attach metal framing systems to building superstructure.
- D. LEED Submittal:

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<Retain subparagraph below if recycled content is required for LEED-NC or LEED-CI Credits MR 4.1 and MR 4.2.>

1. Product Data for Credit MR 4.1[and Credit MR 4.2]: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
 1. California Building Code (CBC), Chapter 16 as modified by Division 01 Section "Lateral Force Procedures".
 2. CBC Chapter 25.
- B. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

1.5 DELIVERY AND STORAGE

- A. Deliver materials in original unopened packages, containers or bundles bearing manufacturer's name, brand, and type of material.
- B. Store materials in accordance with manufacturer's recommendations and in protected dry storage areas. Protect metal items from rusting.

PART 2 - PRODUCTS

2.1 MATERIALS

<Delete the following paragraphs where appropriate.>

- A. Metal Studs: ASTM 645, C-type, 20 gage (.0329 inch (0.8 mm) minimum thickness) unless otherwise indicated, 1-5/8 inch (9.5 mm) flanges, screw type, galvanized.
 1. Runners: Same as studs.
 2. Top Runners: Double 2 inches (50 mm) min flange top runners at head of structure high partitions.
 3. Where stud size is not indicated, conform to manufacturer's recommendations and code requirements for minimum size based on partition heights.
- B. Shaft-Wall Framing: ASTM 645, 20 gage (.0329 inch (0.8 mm) minimum thickness) unless otherwise indicated, galvanized, floor and ceiling runners, studs, angles and clips as required for UL approved fire-rated shaftwall systems.
 1. Manufacturer: Approved by gypsum board shaft liner manufacturer to maintain single source responsibility for system.
- C. Metal Furring Channels: 22 gage (.0269 inch (0.7 mm) minimum thickness) unless otherwise indicated, galvanized, roll formed, hat shaped channels, screw type.
- D. Stiffener Channels: 1-1/2 (38 mm) and 3/4 (18 mm) galvanized cold rolled steel channels.
- E. Resilient Channels: 25 gage (.022 inch (.56 mm)) galvanized.
- F. Suspension Channels: 1-1/2 (38 mm) cold rolled steel channels, 20 gage (.0329 inch (0.8 mm) minimum thickness) unless otherwise indicated, galvanized for exterior use, shop primed for interior use, interlocking to form supporting network.

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- G. Fasteners: As recommended by metal framing and shaft wall framing manufacturers. Fasteners attached to building superstructure shall have ICBO approved report.
- H. Hangers: ASTM 641, Class 1, not less than sizes in Table 5 of ASTM C754 and CBC Chapter 25; hanger rods, flat hangers, and angle-type hangers as required.
- I. Backing Plates: 16 gage (.0538 inch (1.4 mm) minimum thickness) unless otherwise indicated, 12 gage (.0966 (2.5 mm) minimum thickness) at handrails unless otherwise indicated, ASTM A1008 or A1011 sheet steel, minimum 40,000 psi, at counters and wall-supported items.
- J. Safing Insulation: Comply with Division 07 Section "Penetration Firestopping"; use same safing insulation as used elsewhere in project.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect surfaces, backing, and structural systems to receive metal framing, furring and ceiling suspension systems, and report any discrepancies in writing to Project Manager for resolution. Starting work implies acceptance of existing conditions.

3.2 PREPARATION

- A. Obtain dimensions and locations from other trades, and provide openings and enclosures for accessories, specialties, equipment and ductwork.

3.3 INSTALLATION

A. General:

1. Erect metal framing, shaft wall framing, and ceiling suspension systems in accordance with ASTM 754, CBC and Division 01 Section "Lateral Force Procedures", and manufacturer's recommendations.
2. Attach securely to building structure. Include all welding required for attachment of clips and attachment devices to structural steel frame.
3. Install members true to lines and levels to provide flatness with maximum variation of 1/8 inch (3 mm) in 10 feet (3 m) in any direction for walls, and 1/8 inch (3 mm) in 12 feet (3.6 m) for ceilings.
4. Install backing plates at studs to support wall mounted items, including fixtures, lavatories, counters, shelves, casework, accessories, and hardware. Weld to studs 16 gauge and heavier, screw to studs 18 gauge and lighter.
5. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work which is to be placed in or behind partition or ceiling framing. Allow items to be installed after framing is complete.
6. Safing Insulation: Comply with Division 07 Section "Penetration Firestopping".

B. Metal Framing:

1. Door Opening Framing: Install double studs at door frame jambs. Install runners on each side at frame head height between jamb studs and adjacent studs.
2. Install solid blocking at edges of gypsum board panels.
3. Furring: Install wall furring channels vertically, unless otherwise indicated. [Unless otherwise indicated, terminate vertical furring 3 inches (75 mm) above suspended ceilings.]

<Edit the following paragraph as appropriate.>

C. Ceiling Framing:

1. Coordinate location of hangers with other work. Provide trapeze supports and steel bracing as required to support ceiling.
2. Install ceiling framing independent of walls, columns, and above-ceiling work.
3. Space main carrying at maximum 48 inches (1219 mm) on center, maximum 6 inches (150 mm) from boundary walls or interruptions in ceiling continuity. Lap splices minimum 12 inches (300 mm) and

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- secure together 2 inches (50 mm) from each end of splice. Level channels to provide a tolerance of 1/8 inch (3 mm) in 12 feet (3.6 m) in finished ceiling.
4. Place metal furring channels perpendicular to carrying channels. Space furring channels at maximum 24 inches (600 mm) on center. Lap splices minimum 8 inches (200 mm) and secure together 2 inches (50 mm) from each end of splice.
 5. Reinforce openings which interrupt channels, with lateral channel bracing extending minimum 24 (600 mm) past each end of openings.
 6. Laterally brace entire suspension system.

<Include the following paragraph if appropriate.>

3.4 WASTE MANAGEMENT

- A. Separate unused metals for recycling in accordance with requirements of Division 01 Section "Construction Waste Management."

END OF SECTION 092216

Attachment F

ENGINEERING SPECIFICATIONS

JOB NAME	OAKLAND HOUSING AUTHORITY
LOCATION	OAKLAND, CA
DATE PREPARED	Revised 08/09/2018
SEASONS-4 REFERENCE #	P07139-01AHU
UNIT MODEL #	AHXXX / 6DZR34-102A-HW14-.36SE
UNIT DESIGNATION	AHU-1
SYSTEM VOLTAGE	208/3/60

DESIGN DATA

TOTAL COOLING CAPACITY (BTUH)	1,226,008
SENSIBLE CAPACITY (BTUH)	992,451
TOTAL AIRFLOW (CFM)	36,000
OUTDOOR AIR (CFM)	4,320 - 36,000
ESTIMATED REFRIGERANT CHARGE (R410A)	284.6
UNIT EER (REF AHRI 340/360)	10.1
FIELD PIPING CONNECTION SIZES:	
LIQUID LINE SIZE	3 @ 1-1/8"
SUCTION LINE SIZE	3 @ 2-1/8"
UNIT DESIGNED AS VARIABLE AIR VOLUME	
UNIT DESIGNED WITH CONDENSER FAN VFD	

COOLING COIL SECTION 1

FACE AREA (SQ-FT)	70.0
ROWS/FPI	6/12
COIL CIRCUITS (NUMBER)	3
TOTAL CAPACITY (BTUH)	1,226,008
SENSIBLE CAPACITY (BTUH)	992,451
ENTERING AIR TEMP (FDB/FWB)	80.2/65.4
COIL LEAVING AIR TEMP (FDB/FWB)	55.1/54.0
CONDITIONED AIR (CFM)	36,000

SUPPLY AIR BLOWER SECTION

TYPE	AF SWSI PLENUM (80% WHEEL WIDTH)
NUMBER/SIZE	2/36"
AIRFLOW (CFM)	36,000
TOTAL STATIC PRESSURE (TSP) IN WC	4.88
EXTERNAL STATIC (ESP) IN WC	2.50
DESIGN FAN SPEED (RPM)	1,159
FAN BHP	2 @ 19.1
MOTOR HP	2 @ 20
MOTOR DRIVE	DIRECT DRIVE W/ VFD

RETURN AIR BLOWER SECTION

TYPE	AF SWSI PLENUM (90% WHEEL WIDTH)
NUMBER/SIZE	2/27"
AIRFLOW (CFM)	34,000
TOTAL STATIC PRESSURE (TSP) IN WC	2.00
EXTERNAL STATIC (ESP) IN WC	1.50
DESIGN FAN SPEED (RPM)	1,761
FAN BHP	2 @ 11.4
MOTOR HP	2 @ 15
MOTOR DRIVE	DIRECT DRIVE W/ VFD

ENGINEERING SPECIFICATIONS

FILTER SECTION

TYPE	2" Pleated; MERV 8
NUMBER/SIZE	28/24x24
TOTAL FACE AREA (SQ-FT)	112.0
FACE VELOCITY (FPM)	321

HOT WATER SECTION 1

FACE AREA (SQ-FT) for 2 Coils	36.7
ROWS/FPI	2/12
COIL CIRCUITS (NUMBER)	2
CAPACITY (BTUH) for 2 Coils	1,396,012
ENTERING AIR TEMP (DEG F)	70.0
LEAVING AIR TEMP (DEG F)	105.6
CONDITIONED AIR (CFM)	36,000
ENTERING WATER TEMP (DEG F)	180
LEAVING WATER TEMP (DEG F)	140.1
FLOWRATE (GPM) for 2 Coils	70.0
TYPE FLUID	Water
FLUID PRESSURE DROP (FT WATER each Coil)	2.64
SUPPLY/RETURN CONNECTION SIZE (each Coil)	1.625/1.625

UNIT SECTION WEIGHTS (LBS)

SA PLENUM SECTION	4,850
COIL SECTION	3,850
SA BLOWER SECTION	4,800
FILTER / RA SECTION	6,300

UNIT WEIGHT (LBS) 19,800



ENGINEERING SPECIFICATIONS

ELECTRICAL DATA

JOB NAME OAKLAND HOUSING AUTHORITY
LOCATION: OAKLAND, CA
DATE PREPARED Revised 08/09/2018
SEASONS-4 REF # P07139-01AHU **UNIT MODEL #** AHXXX / 6DZR34-102A-HW14.-36SE
UNIT DESIGNATION AHU-1
SYSTEM VOLTAGE 208 **CONTROL VOLTAGE** 120 **EXT. VOLTAGE** 24

<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
RA FAN	2	15.0	37.4	261.0	9.2	Baldor Super-E
SA FAN	2	20.0	56.0	365.0	15.5	Baldor Super-E
CONTROL CIRCUIT			7.2			
CONVENIENCE OUTLET			7.2			10 Amps
TOTALS (COOL)	4	***	201.2		49.3	
TOTALS (HEAT)	4	70.0	201.2		49.3	

M.C.A. (MINIMUM CIRCUIT AMPACITY)
M.O.P. (MAXIMUM OVERCURRENT PROTECTION)
S.C.C.R. (SHORT CIRCUIT CURRENT RATING)

P07139-01AHU



BLOWER SPECIFICATIONS

Prepared: 08/09/2018 (Revised)

Printed: 08/09/2018

SUPPLY AIR BLOWER SECTION

AHU-1

OAKLAND HOUSING AUTHORITY

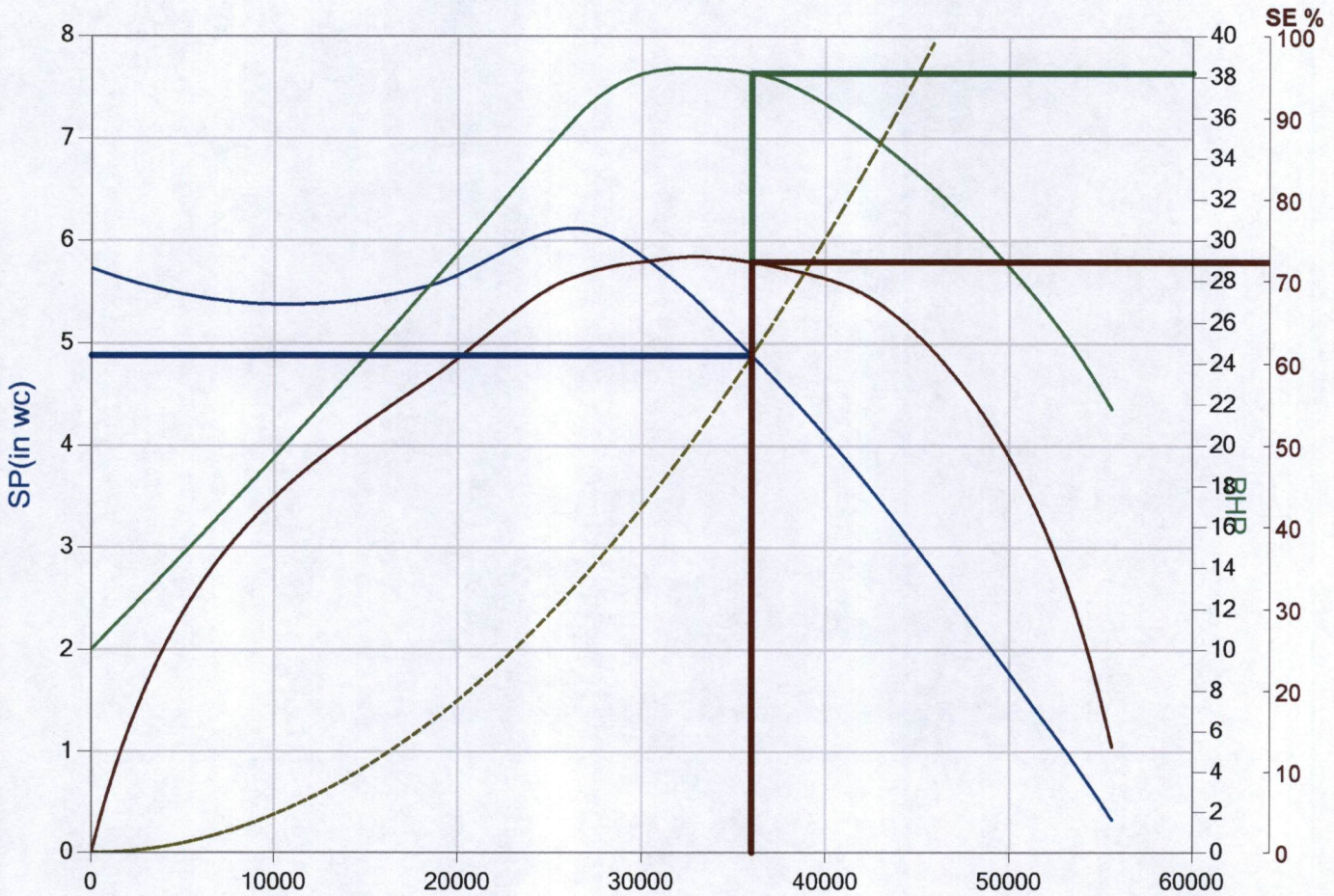
OAKLAND, CA

Greenheck APH Plenum SWSI (2) APH-36 Direct Drive (Wheel Width: 80%)

Quantity	CFM	SP	RPM	BHP (Ea)	SE	Temp (°F)	Altitude (Ft)	Class
2	36,000	4.88	1,159	19.10	72%	70	0	II

Sound Power Level by Octave Band (Per Blower)

	1	2	3	4	5	6	7	8	LwA
Inlet	85	91	96	84	81	75	72	71	90
Outlet	89	93	98	93	89	83	80	76	95





BLOWER SPECIFICATIONS

Prepared: 08/09/2018 (Revised)

Printed: 08/09/2018

RETURN AIR BLOWER SECTION

AHU-1

OAKLAND HOUSING AUTHORITY

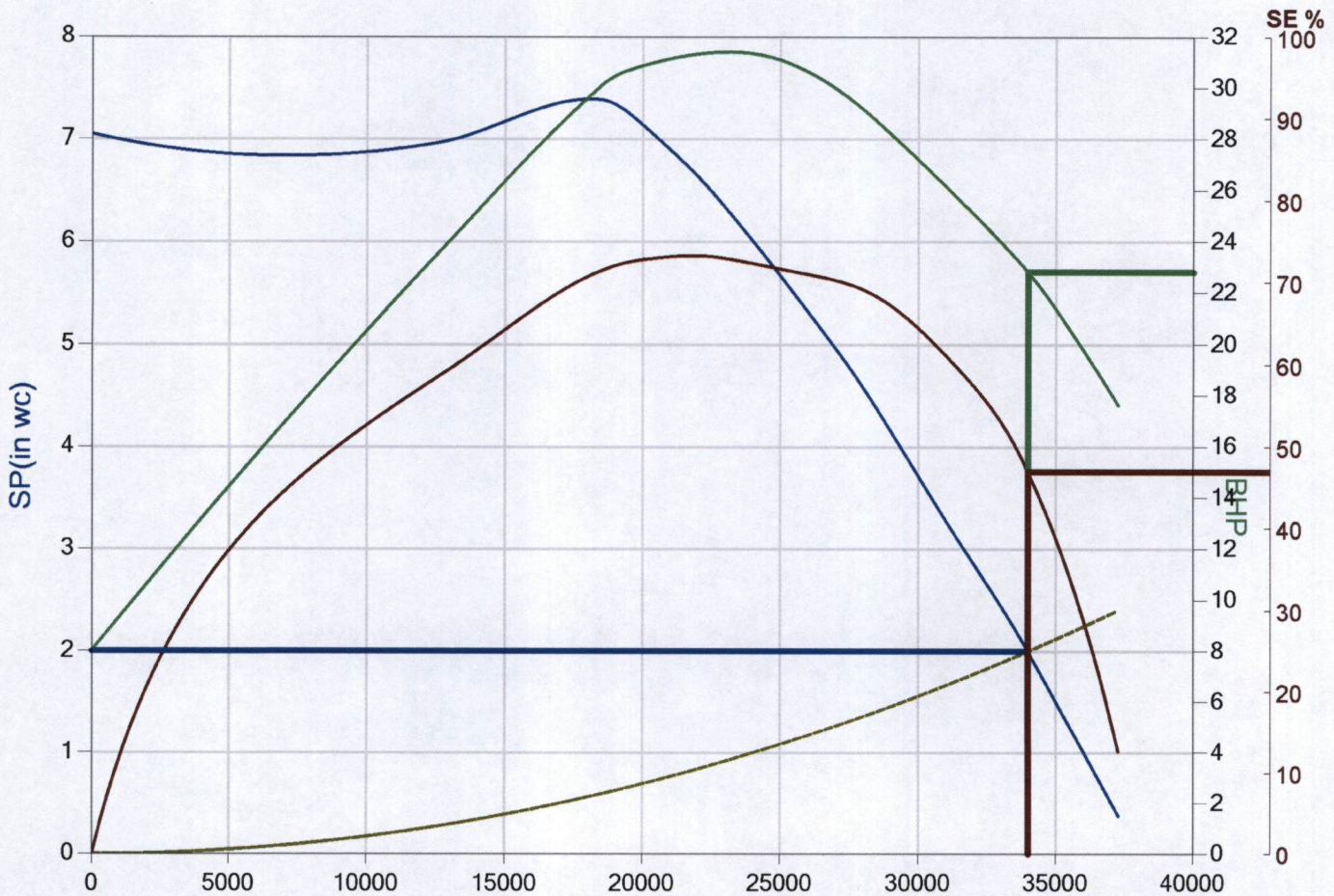
OAKLAND, CA

Greenheck APH Plenum SWSI (2) APH-27 Direct Drive (Wheel Width: 90%)

Quantity	CFM	SP	RPM	BHP (Ea)	SE	Temp (°F)	Altitude (Ft)	Class
2	34,000	2.00	1,761	11.40	47%	70	0	II

Sound Power Level by Octave Band (Per Blower)

	1	2	3	4	5	6	7	8	LwA
Inlet	86	88	94	96	91	87	82	78	97
Outlet	89	92	98	103	98	93	87	83	103



ENGINEERING SPECIFICATIONS

JOB NAME	OAKLAND HOUSING AUTHORITY
LOCATION	OAKLAND, CA
DATE PREPARED	Revised 08/09/2018
SEASONS-4 REFERENCE #	P07139-01CU
UNIT MODEL #	VAXXX / 6DFK14-1026-XXXXX-XXSE
UNIT DESIGNATION	CU-1
SYSTEM VOLTAGE	208/3/60

DESIGN DATA

TOTAL COOLING CAPACITY (BTUH)	1,226,008
SENSIBLE CAPACITY (BTUH)	992,451
TOTAL AIRFLOW (CFM)	36,000
OUTDOOR AIR (CFM)	4,320 - 36,000
ESTIMATED REFRIGERANT CHARGE (R410A)	284.6
UNIT EER (REF AHRI 340/360)	10.1
FIELD PIPING CONNECTION SIZES:	
LIQUID LINE SIZE	3 @ 1-1/8"
SUCTION LINE SIZE	3 @ 2-1/8"
UNIT DESIGNED AS VARIABLE AIR VOLUME	
UNIT DESIGNED WITH CONDENSER FAN VFD	

COMPRESSOR SECTION

COMPRESSOR:

TYPE	COPELAND SCROLL (TANDEM)
NUMBER	6
STAGES OF CAPACITY	MODULATING

AIR COOLED CONDENSER SECTION

CONDENSER COIL:

COIL FACE AREA/ROWS/FPI	136.5/6/10
DESIGN AMBIENT TEMPERATURE (FDB):	96.0

CONDENSER FANS:

TYPE	PROPELLER
DIA/RPM	30/1,140
QTY/HP	10/1

UNIT SECTION WEIGHTS (LBS)

SA PLENUM SECTION	5,500
COIL SECTION	500
SA BLOWER SECTION	550
FILTER / RA SECTION	950

UNIT WEIGHT (LBS)	7,500
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ENGINEERING SPECIFICATIONS

ELECTRICAL DATA

JOB NAME OAKLAND HOUSING AUTHORITY
LOCATION: OAKLAND, CA
DATE PREPARED Revised 08/09/2018
SEASONS-4 REF # P07139-01CU **UNIT MODEL #** VAXXX / 6DFK14-1026-XXXXX-XXSE
UNIT DESIGNATION CU-1
SYSTEM VOLTAGE 208 **CONTROL VOLTAGE** 120 **EXT. VOLTAGE** 24

<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
COMP 1A	1	***	55.8	340.0	15.4	ZPD182KCE
COMP 1B (TDM)	1	***	55.8	340.0	15.4	ZP182KCE
COMP 2A & 2B	2	***	55.8	340.0	15.2	ZP182KCE
COMP 3A & 3B	2	***	55.8	340.0	15.2	ZP182KCE
COND FAN	10	1.0	4.2	25.2	1.0	
CONTROL CIRCUIT			7.2			
CONVENIENCE OUTLET			7.2			10 Amps
TOTALS (COOL)	16	***	391.2		101.5	
TOTALS (HEAT)			14.4			

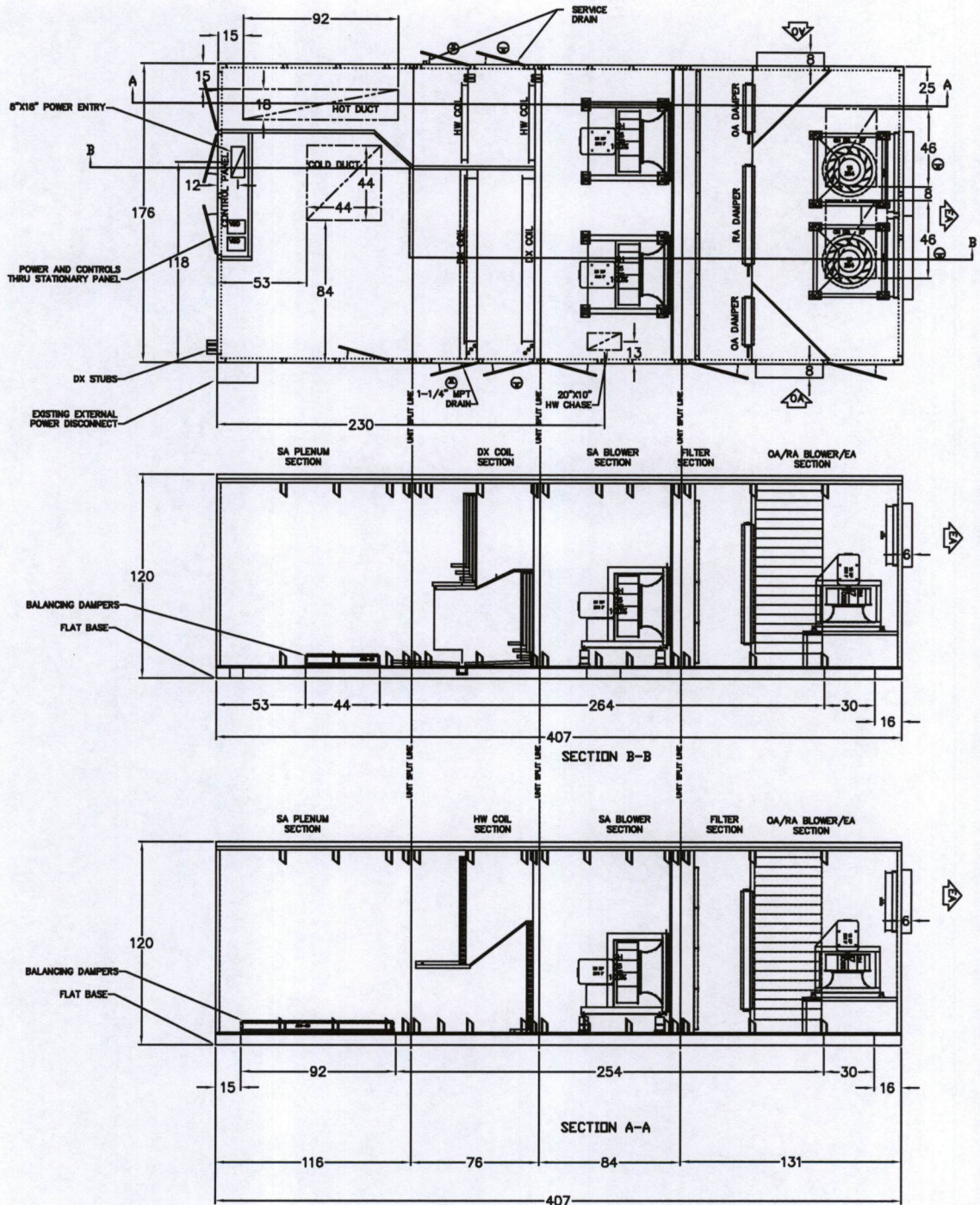
M.C.A. (MINIMUM CIRCUIT AMPACITY)
M.O.P. (MAXIMUM OVERCURRENT PROTECTION)
S.C.C.R. (SHORT CIRCUIT CURRENT RATING)

P07139-01CU



SEASONS 4

ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971



LEGEND

- Ⓜ HINGED ACCESS DOOR
- Ⓛ LIFT-OFF ACCESS DOOR
- Ⓟ BALANCING DAMPER

NOTE: O.A./E.A. LOUVERS, FURNACE VENT CAPS, ETC. MAY REQUIRE FIELD INSTALLATION

REV. #	BY	DATE	DESCRIPTION	DIMENSIONAL DATA	DRAWN BY	GWM
0	GWM	02/02/2018	ORIGINAL ISSUE	OAKLAND HOUSING AUTH. OAKLAND, CA AHU-1	DATE	08/09/2018
1	GWM	02/05/2018	ADDED BALANCING DAMPERS		SCALE	N/A
2	GWM	08/09/2018	REVISED BASED ON FIELD VISIT		REVISION #	2
					DWG. NAME	P07139D01GM

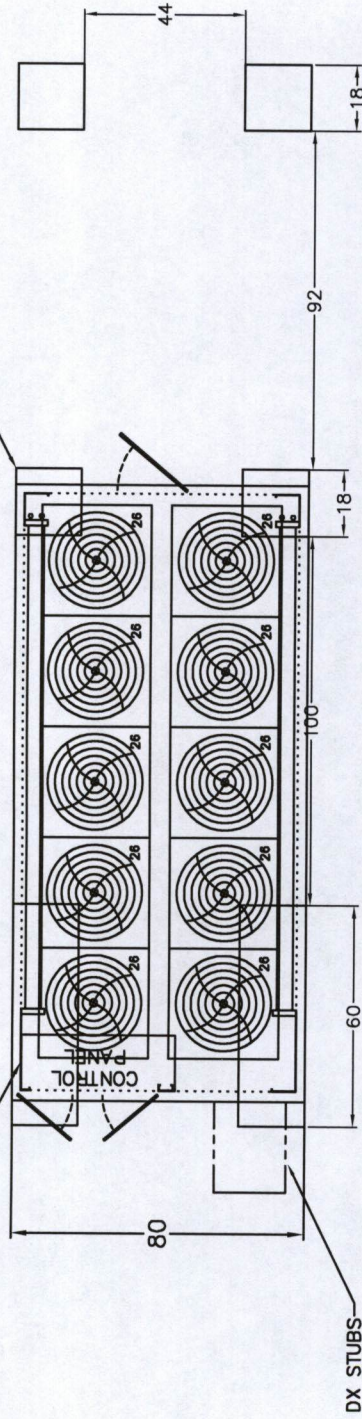


SEASONS 4

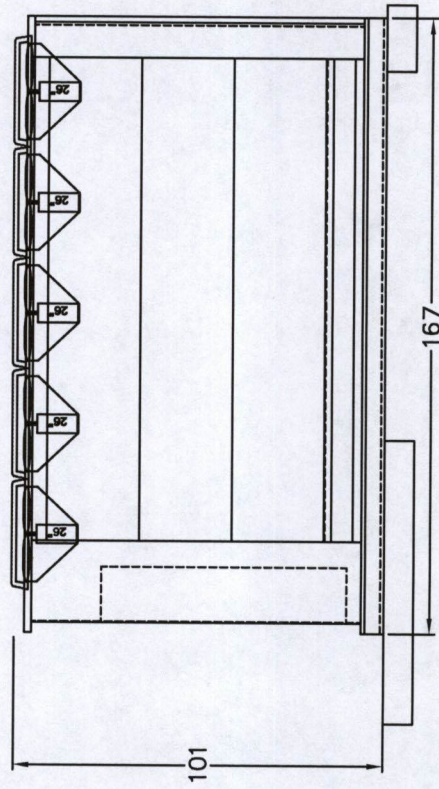
ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

ELECTRICAL ENTRY THRU SIDE

EXISTING CONDENSER SECTION ROOF PADS



CONDENSING SECTION



REV. #	DATE	DESCRIPTION
0	02/20/16	ORIGINAL ISSUE
1	03/09/2018	REVISED BASED ON FIELD /IST

NOTE: O.A./E.A. LOUVERS, FURNACE /ENT CAPS, ETC. MAY REQUIRE FIELD INSTALLATION

REV. #	DATE	DESCRIPTION	BY	DATE	BY
0	02/20/16	ORIGINAL ISSUE	GWM	2/2/2018	GWM
1	03/09/2018	REVISED BASED ON FIELD /IST	GWM	03/09/2018	N/A

DIMENSIONAL DATA	
OAKLAND HOUSING AUTH.	
OAKLAND, CA	
CU-1	
DRAWN BY	GWM
DATE	2/2/2018
SCALE	N/A
REVISION #	1
DWG. NAME	P07139D02GM