

Air Handling Equipment

Submittal

HEALTH CENTER EMERYVILLE



9651 Airway Rd. Suite E.
San Diego CA 92154-7914
Ph. 619) 671 0100
Fax. 619) 671 0160

Sales Agency

DMG - Sacramento
10210 Systems Parkway #370
Sacramento, CA

Sales Agent

Claude Poinski

Energy Labs:

Job Number

8858

Sales Engineer

Bill Willems

Revision Date

11/30/2015

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Project Summary

Revision Sheet

Testing Summary and Procedures

Unit Specifications

AHU-1-1

AHU-2-1

AHU-2-2

AHU-3-4-1

Construction Details

Energy Labs Warranty



Project Summary



| Project Summary

Unit Information								
Unit	Supply CFM	Return CFM	Location	Qty	Base Material	Paint	Color	Voltage
AHU-1-1	11000	8500	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-2-1	35000	24000	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-2-2	2500	0	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-3-4-1	55000	42000	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase

* To see Cabinet Dimensions and Unit Weight, please refer to Mechanical Drawing.

Fans										Motor								
Unit	Type	Duty	Mfr	Size	Qty	CFM	SP	CL	Fan RPM	Max RPM	BHP	HP	RPM	Manuf.	Type	Eff.(%)	Encl.	Frame Encl.
AHU-1-1	Plenum Fan	Return	Energy Labs	182	2	4250	2.8	1	1775	2256	2.72	5	1800	Reliance	Premium	89.5	TEFC	184T
AHU-1-1	Plenum Fan	Supply	Energy Labs	182	2	5500	6	2	2527	2959	7.56	10	1800	Reliance	Premium	91.7	TEFC	215T
AHU-2-1	Optiline Fan	Return	Energy Labs	222	4	6000	3.83	2	1746	2413	5.37	10	1800	Reliance	Premium	91.7	TEFC	215T
AHU-2-1	Optiline Fan	Supply	Energy Labs	182	6	5833	7.5	3	2794	3735	10.12	15	1800	Reliance	Premium	92.4	TEFC	254T
AHU-2-2	Plenum Fan	Supply	Energy Labs	165	1	2500	4.35	2	2429	3100	2.67	5	1800	Reliance	Premium	89.5	TEFC	184T
AHU-3-4-1	Plenum Fan	Other	Energy Labs	300	2	10500	3.25	1	1127	1328	7.42	10	1200	Reliance	Premium	91	TEFC	256T
AHU-3-4-1	Plenum Fan	Other	Energy Labs	300	2	10500	3.25	1	1127	1328	7.42	10	1200	Reliance	Premium	91	TEFC	256T
AHU-3-4-1	Optiline Fan	Supply	Energy Labs	222	6	9167	6.75	2	2264	2413	14.12	20	1800	Reliance	Premium	93	TEFC	256T

Filters								
Unit	Manuf.	Type	Efficiency	Face Area (Sqft)	FV	Size/Qty	Depth (in)	Class
AHU-1-1	Flanders	Prepleat 40 LPD	30% - MERV 8	30	367	24x24(6), 12x24(3)	2	2
AHU-1-1	Flanders	Superflow V Minipleat	95% - MERV 14	30	367	24x24(6), 12x24(3)	12	2
AHU-2-1	Flanders	Prepleat 40 LPD	30% - MERV 8	80	438	24x24(20)	2	2
AHU-2-1	Flanders	Superflow V Minipleat	95% - MERV 14	80	438	24x24(20)	12	2
AHU-2-2	Flanders	Prepleat 40 LPD	30% - MERV 8	8	313	24x24(2)	2	2
AHU-2-2	Flanders	Superflow V Minipleat	95% - MERV 14	8	313	24x24(2)	12	2
AHU-3-4-1	Flanders	Prepleat 40 LPD	30% - MERV 8	126	437	24x24(28), 12x24(7)	2	2
AHU-3-4-1	Flanders	Superflow V Minipleat	95% - MERV 14	126	437	24x24(28), 12x24(7)	12	2

Roof Curb							
Unit	By ELI	Curb Tag		Construction	Slope	Insulation	Material
AHU-1-1	Yes	RCAHU-1-1		BOLTED	No	No	10 Ga. Bright Galv.
AHU-2-1	Yes	RCAHU-2-1		BOLTED	No	No	10 Ga. Bright Galv.
AHU-2-2	Yes	RCAHU-2-2		BOLTED	No	No	10 Ga. Bright Galv.
AHU-3-4-1	Yes	RCAHU-3-4-1		BOLTED	No	No	10 Ga. Bright Galv.

Testing Data Table							
Unit	Leakage (+)	Leakage (-)	Air Performance	Inlet SWL	Outlet SWL	Witnessed	Deflection
AHU-1-1	No	No	No	No	No	No	No
AHU-2-1	No	No	No	No	No	No	No
AHU-2-2	No	No	No	No	No	No	No
AHU-3-4-1	No	No	No	No	No	No	No

Unit Information



AHU-1-1



- ☒ REVIEWED - NO EXCEPTIONS TAKEN
- ☐ INCORPORATE COMMENTS IN CONSTRUCTION
- ☐ REVISE AS NOTED AND RESUBMIT

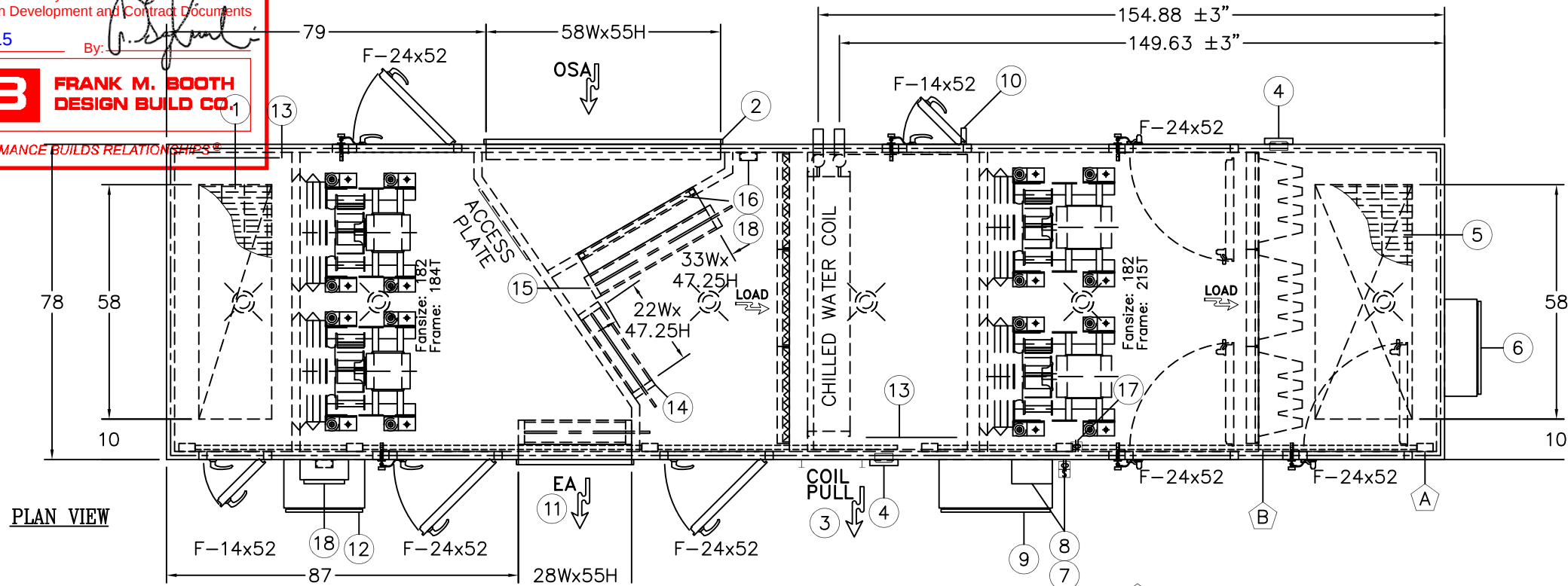
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Date: 12/01/2015 By: [Signature]



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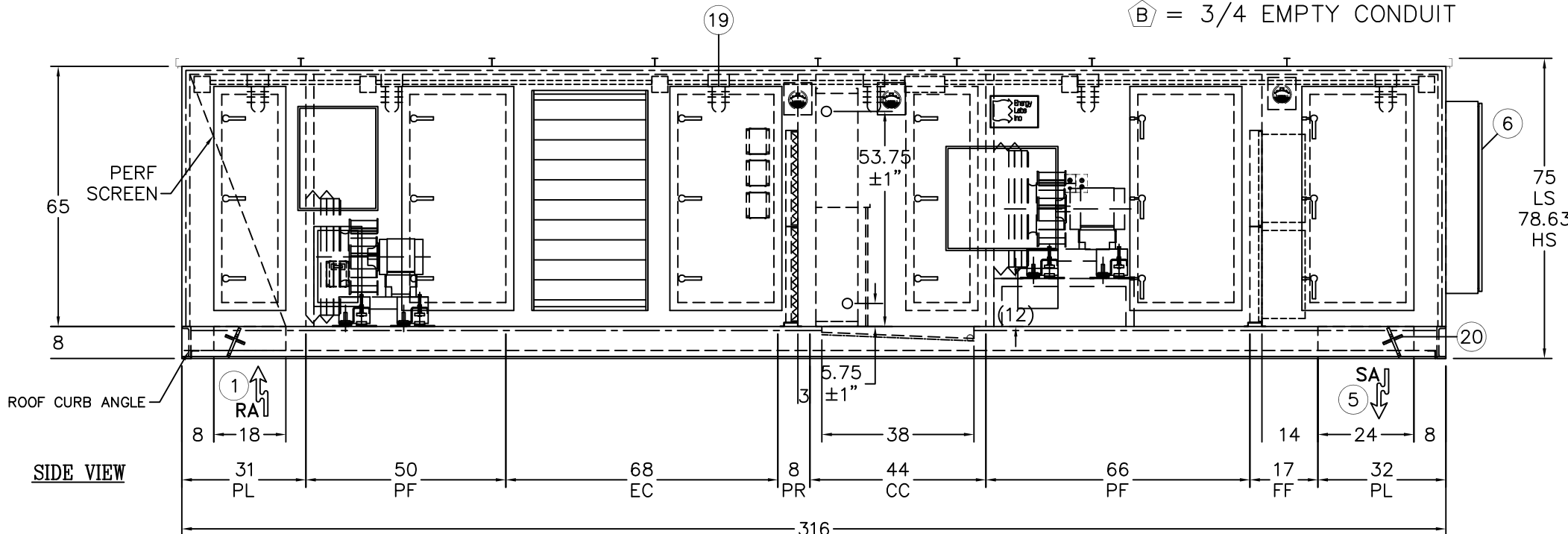
NOTE:
Locations and sizes of Energy Labs, Inc. logos are approximate and are subject to change due to unexpected interference with external components.
Logos to be located on both sides of the unit if possible.



PLAN VIEW

A = EMPTY J-BOX FOR CONTROLS

B = 3/4 EMPTY CONDUIT



SIDE VIEW

- 1 RA Opening w/ Removable Walkway Grating & Collar equal to perimeter channel height minus 2"
- 2 OSA Louver(s)
- 3 Removable Panel (Coil Removal)
- 4 Filter Gauge
- 5 SA Opening w/ Removable Walkway Grating & Collar equal to perimeter channel height minus 2"
- 6 24Wx48H TCP
- 7 Light Switch & GFCI outlet
- 8 10Wx10H J-Box For 120V Connection Point
- 9 28Wx26H Main Disconnect/ SF VFD's
- 10 1-1/4" MPT Drain Connection
- 11 Exh Louver w/Damper (1 Actuator(s) by Others)
- 12 20Wx26H RF VFDs
- 13 Fan Blankoff Plate
- 14 RA Damper (1 Actuator(s) by Others)
- 15 OSA Damper (1 Actuator(s) by Others)
- 16 Ebtron OSA Monitor Probes and Controller (By DMG To ELI For Mounting)
- 17 GFCI Outlet
- 18 Ebtron Fan Array Probes and Controller (By DMGN To ELI For Mounting)
- 19 Marinelight w/Fluorescent Bulbs
- 20 Non-Removable Lifting Lugs

UNIT INFORMATION/FOR SHIPPING PURPOSES						
OVERALL	OVERALL DIMENSIONS			WEIGHTS		
	LENGTH	HEIGHT	WIDTH	SHIPPING	OPERATING	Lbs/ft2
OVERALL	327	79	92	8725	8900	52

FOAM PANEL CONSTRUCTION

ROOF CURB WEIGHT = 1200 Lbs

LEGEND:

- | | |
|-------------------|------------------|
| OSA = Outside Air | SA = Supply Air |
| RA = Return Air | EA = Exhaust Air |
| NS = Near Side | FS = Far Side |
| HS = High Side | LS = Low Side |
-
- | | |
|---------------------------|-------------------------|
| AB = Air Blender | MB = Mixing Box |
| CC = Cooling Coil | MS = Moisture Separator |
| CU = Condensing Unit | MZ = Multizone |
| DE = Direct Evaporative | PF = Plenum Fan |
| DF = DWDI Fan | PFF = Pre/Final Filter |
| DX = DX Coil | PL = Plenum |
| EC = Economizer | PR = Pre-Filter |
| FF = Final Filter | SC = Steam Coil |
| FU = Furnace | ST = Sound Trap |
| HC = Heating Coil | VF = Vee Filter |
| IE = Indirect Evaporative | |

NOTES:

1. All dimensions are in inches unless otherwise specified.
2. Opening dimension tolerances are ± 0.50 , all other cabinet dimension tolerances are ± 1.00 .
3. Lifting lug locations on mechanical drawings are for representation only. Actual lifting location will vary depending on Energy Labs Engineering review.

PROJECT ENGINEER: BW 8/20/15
DESIGN ENGINEER: KP 11/18/15
DESCRIPTION: MECHANICAL DRAWING
DRAWING NAME: SU-AHU-1-1 8858.dwg
JOB NUMBER: 8858



9651 AIRWAY RD. SUITE E
SAN DIEGO, CA 92154
(619) 671-0100

(1) ONE EACH

CFM: 11000/8500

MODEL: C6578-FC-L

JOB NAME:

Health Center
Emeryville

UNIT TAG:

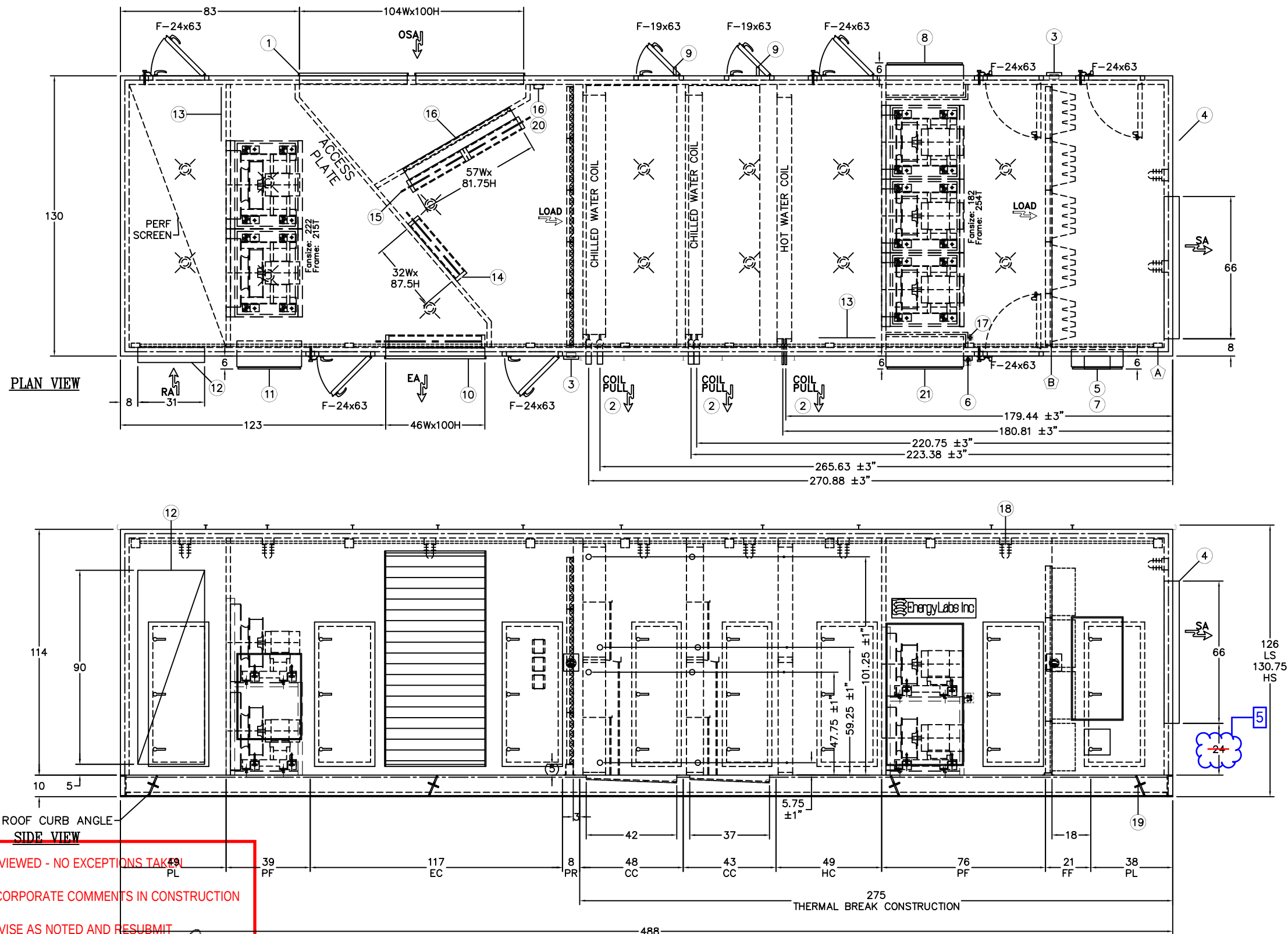
AHU-1-1

NO.	DATE	REVISION	DWN	APP

					PROJECT ENGINEER: BW	8/20/15	 Energy Labs Inc 9651 AIRWAY RD. SUITE E SAN DIEGO, CA 92154 (619) 671-0100	QTY: <i>(1) ONE EACH</i>	JOB NAME: <i>Health Center Emeryville</i>
					DESIGN ENGINEER: KP	11/18/15		CFM:	
					DESCRIPTION: CURB DRAWING			MODEL:	UNIT TAG: <i>AHU-1-1</i>
					DRAWING NAME: CU-AHU-1-1 8858.dwg				
NO.	DATE	REVISION	DWN	APP	JOB NUMBER:	<i>8858</i>			

AHU-2-1





- 1 OSA Louver(s)
- 2 Removable Panel (Coil Removal)
- 3 Filter Gauge
- 4 SA Opening w/ 3" Collar
- 5 24Wx48H TCP
- 6 Light Switch & GFCI outlet
- 7 12Wx12H J-Box For 120V Connection Point
- 8 36Wx56 SF VFD 4-6
- 9 1-1/4" MPT Drain Connection
- 10 Exh Louver w/Damper (2 Actuator(s) by Others)
- 11 30Wx40H RF VFD
- 12 RA Opening w/3" Collar
- 13 Fan Blankoff Plate
- 14 RA Damper (1 Actuator(s) by Others)
- 15 OSA Damper (2 Actuator(s) by Others)
- 16 Ebtron OSA Monitor Probes and Controller (By DMG To ELI For Mounting)
- 17 GFCI Outlet
- 18 Marinelight w/Fluorescent Bulbs
- 19 Non-Removable Lifting Lugs
- 20 Ebtron Fan Array Monitor Probes and Controller (By DMG To ELI For Mounting)
- 21 36Wx66H Main Disconnect/ SF VFD 1-3

UNIT INFORMATION/FOR SHIPPING PURPOSES						
	OVERALL DIMENSIONS			WEIGHTS		
	LENGTH	HEIGHT	WIDTH	SHIPPING	OPERATING	Lbs/ft2
OVERALL	494	131	144	26175	27170	61.2

FOAM PANEL CONSTRUCTION

- LEGEND:**
- OSA = Outside Air
RA = Return Air
NS = Near Side
HS = High Side
- SA = Supply Air
EA = Exhaust Air
FS = Far Side
LS = Low Side
- SECTIONS:**
- AB = Air Blender
CC = Cooling Coil
CU = Condensing Unit
DE = Direct Evaporative
DF = DWDI Fan
DX = DX Coil
EC = Economizer
FF = Final Filter
FU = Furnace
HC = Heating Coil
IE = Indirect Evaporative
- MB = Mixing Box
MS = Moisture Separator
MZ = Multizone
PF = Plenum Fan
PFF = Pre/Final Filter
PL = Plenum
PR = Pre-Filter
SC = Steam Coil
ST = Sound Trap
VF = Vee Filter

- NOTES:**
- All dimensions are in inches unless otherwise specified.
 - Opening dimension tolerances are ± 0.50 , all other cabinet dimension tolerances are ± 1.00 .
 - Lifting lug locations on mechanical drawings are for representation only. Actual lifting location will vary depending on Energy Labs Engineering review.

- ☐ REVIEWED - NO EXCEPTIONS TAKEN
- ☒ INCORPORATE COMMENTS IN CONSTRUCTION
- ☐ REVISE AS NOTED AND RESUBMIT

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Date: 12/01/2015 By: [Signature]



PROJECT ENGINEER: BW 8/20/15
DESIGN ENGINEER: KP 11/18/15
DESCRIPTION: MECHANICAL DRAWING
DRAWING NAME: SU-AHU-2-1 8858.dwg
JOB NUMBER: 8858

Energy Labs Inc
9651 AIRWAY RD. SUITE E
SAN DIEGO, CA 92154
(619) 671-0100

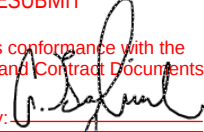
(1) ONE EACH
CFM: 35000/24000
MODEL: C114130-FCH-L

JOB NAME: Health Center Emeryville
UNIT TAG: AHU-2-1

NO.	DATE	REVISION	DWN	APP
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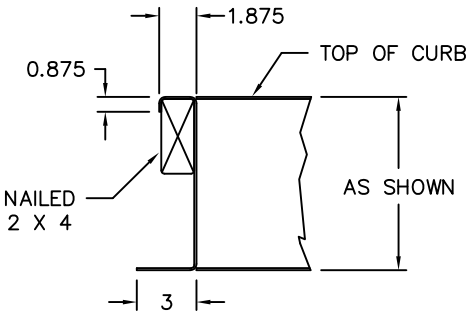
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Date: 12/01/2015 By: 

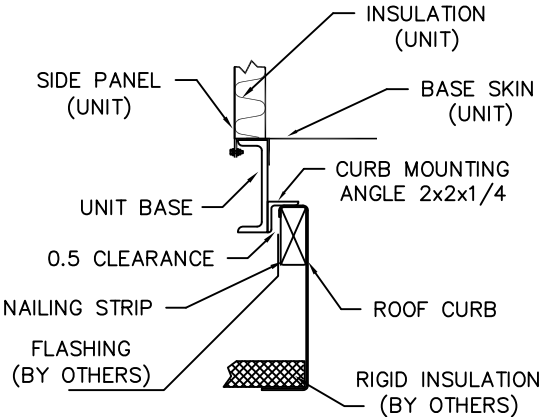
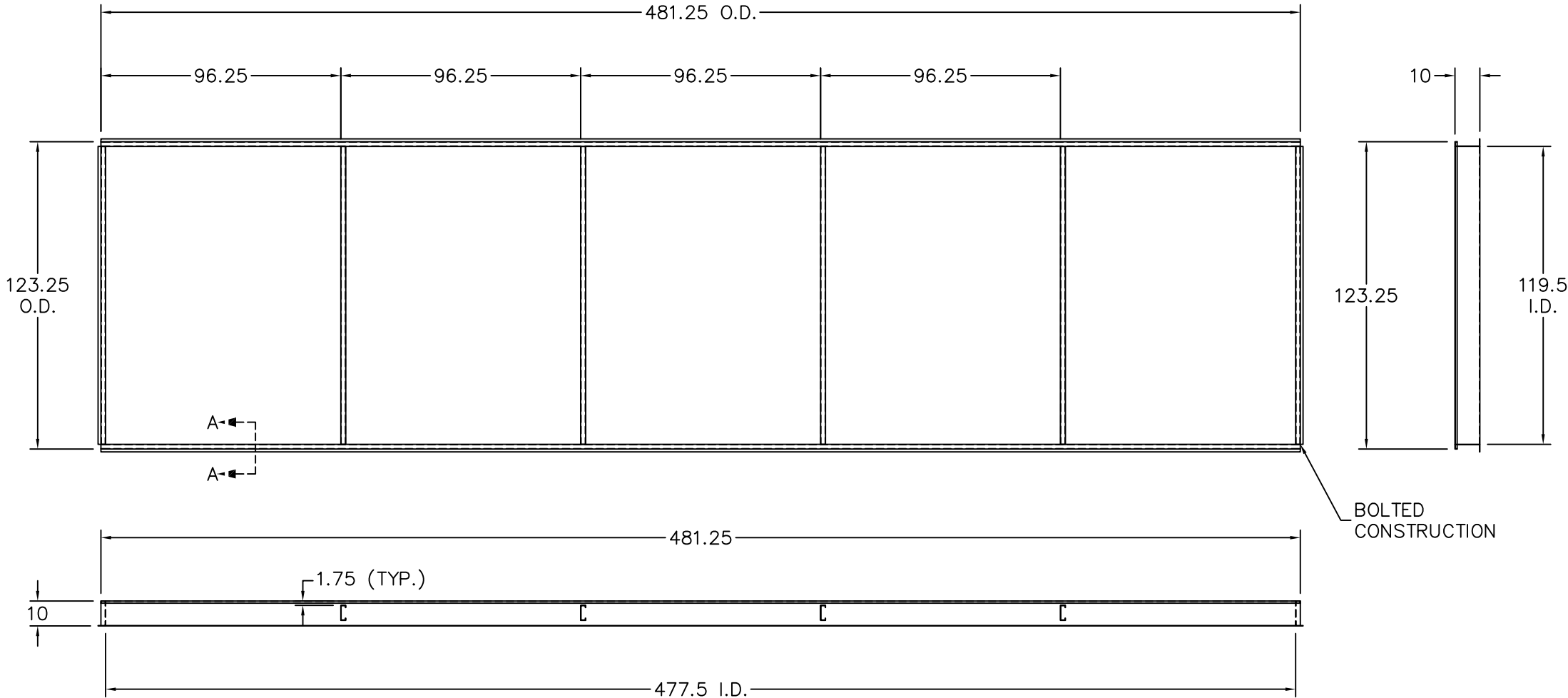


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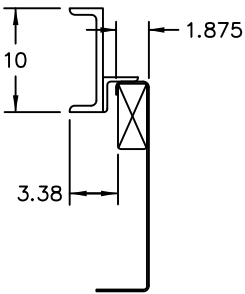
ROOF CURB DIMENSIONS ARE BASED ON A 130.00" WIDE X 488.00" LONG UNIT WITH 10" BASE CHANNEL.
ROOF CURB PROVIDED BY ENERGY LABS INC. FOR FIELD ASSEMBLY BY OTHERS.
CURB WEIGHT = 1650 Lbs



SECTION A-A



UNIT MOUNTING AND FLASHING DETAIL



UNIT/CURB SIZING

SUBMITTAL SHEET AND ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. MAINTAIN A MINIMUM OF 8" ABOVE FINISHED ROOF. CONFIRM PRIOR TO RELEASE.

- NOTES:
- 1. All dimensions are in inches unless otherwise specified.
 - 2. Curb dimension tolerances are ± .25".

					PROJECT ENGINEER: BW	8/20/15	 9651 AIRWAY RD. SUITE E SAN DIEGO, CA 92154 (619) 671-0100	QTY: (1) ONE EACH	JOB NAME: Health Center Emeryville
					DESIGN ENGINEER: KP	10/21/15		CFM:	
					DESCRIPTION: CURB DRAWING				
					DRAWING NAME: CU-AHU-2-1-8858.dwg				
					JOB NUMBER: 8858			MODEL:	UNIT TAG: AHU-2-1
NO.	DATE	REVISION	DWN	APP					

Air Handling Equipment

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Project Summary

Revision Sheet

Testing Summary and Procedures

Unit Specifications

AHU-1-1

AHU-2-1

AHU-2-2

AHU-3-4-1

Construction Details

Energy Labs Warranty



Project Summary



| Project Summary

Unit Information								
Unit	Supply CFM	Return CFM	Location	Qty	Base Material	Paint	Color	Voltage
AHU-1-1	11000	8500	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-2-1	35000	24000	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-2-2	2500	0	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-3-4-1	55000	42000	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase

* To see Cabinet Dimensions and Unit Weight, please refer to Mechanical Drawing.

Fans										Motor								
Unit	Type	Duty	Mfr	Size	Qty	CFM	SP	CL	Fan RPM	Max RPM	BHP	HP	RPM	Manuf.	Type	Eff.(%)	Encl.	Frame Encl.
AHU-1-1	Plenum Fan	Return	Energy Labs	182	2	4250	2.8	1	1775	2256	2.72	5	1800	Reliance	Premium	89.5	TEFC	184T
AHU-1-1	Plenum Fan	Supply	Energy Labs	182	2	5500	6	2	2527	2959	7.56	10	1800	Reliance	Premium	91.7	TEFC	215T
AHU-2-1	Optiline Fan	Return	Energy Labs	222	4	6000	3.83	2	1746	2413	5.37	10	1800	Reliance	Premium	91.7	TEFC	215T
AHU-2-1	Optiline Fan	Supply	Energy Labs	182	6	5833	7.5	3	2794	3735	10.12	15	1800	Reliance	Premium	92.4	TEFC	254T
AHU-2-2	Plenum Fan	Supply	Energy Labs	165	1	2500	4.35	2	2429	3100	2.67	5	1800	Reliance	Premium	89.5	TEFC	184T
AHU-3-4-1	Plenum Fan	Other	Energy Labs	300	2	10500	3.25	1	1127	1328	7.42	10	1200	Reliance	Premium	91	TEFC	256T
AHU-3-4-1	Plenum Fan	Other	Energy Labs	300	2	10500	3.25	1	1127	1328	7.42	10	1200	Reliance	Premium	91	TEFC	256T
AHU-3-4-1	Optiline Fan	Supply	Energy Labs	222	6	9167	6.75	2	2264	2413	14.12	20	1800	Reliance	Premium	93	TEFC	256T

Filters								
Unit	Manuf.	Type	Efficiency	Face Area (Sqft)	FV	Size/Qty	Depth (in)	Class
AHU-1-1	Flanders	Prepleat 40 LPD	30% - MERV 8	30	367	24x24(6), 12x24(3)	2	2
AHU-1-1	Flanders	Superflow V Minipleat	95% - MERV 14	30	367	24x24(6), 12x24(3)	12	2
AHU-2-1	Flanders	Prepleat 40 LPD	30% - MERV 8	80	438	24x24(20)	2	2
AHU-2-1	Flanders	Superflow V Minipleat	95% - MERV 14	80	438	24x24(20)	12	2
AHU-2-2	Flanders	Prepleat 40 LPD	30% - MERV 8	8	313	24x24(2)	2	2
AHU-2-2	Flanders	Superflow V Minipleat	95% - MERV 14	8	313	24x24(2)	12	2
AHU-3-4-1	Flanders	Prepleat 40 LPD	30% - MERV 8	126	437	24x24(28), 12x24(7)	2	2
AHU-3-4-1	Flanders	Superflow V Minipleat	95% - MERV 14	126	437	24x24(28), 12x24(7)	12	2

Roof Curb							
Unit	By ELI	Curb Tag		Construction	Slope	Insulation	Material
AHU-1-1	Yes	RCAHU-1-1		BOLTED	No	No	10 Ga. Bright Galv.
AHU-2-1	Yes	RCAHU-2-1		BOLTED	No	No	10 Ga. Bright Galv.
AHU-2-2	Yes	RCAHU-2-2		BOLTED	No	No	10 Ga. Bright Galv.
AHU-3-4-1	Yes	RCAHU-3-4-1		BOLTED	No	No	10 Ga. Bright Galv.

Testing Data Table							
Unit	Leakage (+)	Leakage (-)	Air Performance	Inlet SWL	Outlet SWL	Witnessed	Deflection
AHU-1-1	No	No	No	No	No	No	No
AHU-2-1	No	No	No	No	No	No	No
AHU-2-2	No	No	No	No	No	No	No
AHU-3-4-1	No	No	No	No	No	No	No

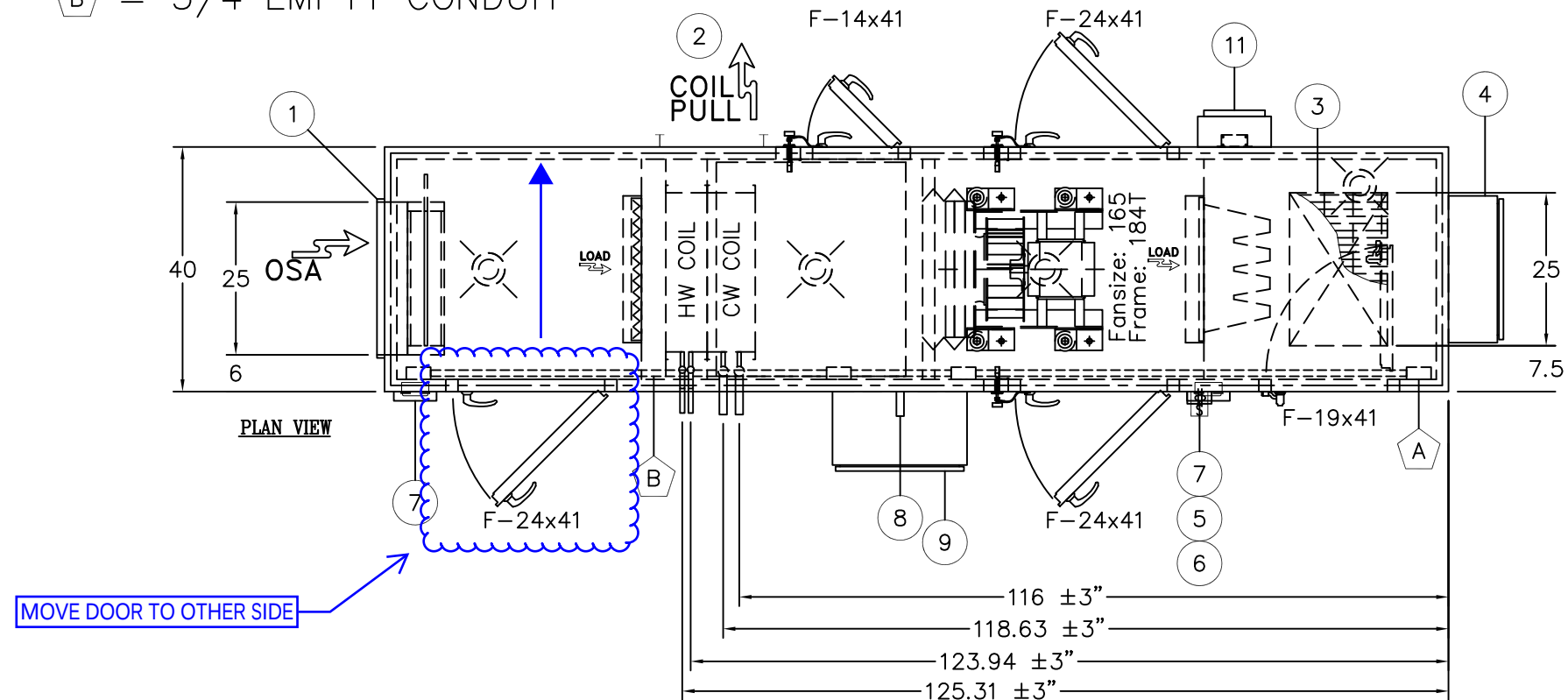
Unit Information



AHU-2-2



⬡ = EMPTY J-BOX FOR CONTROLS
⬡ = 3/4 EMPTY CONDUIT

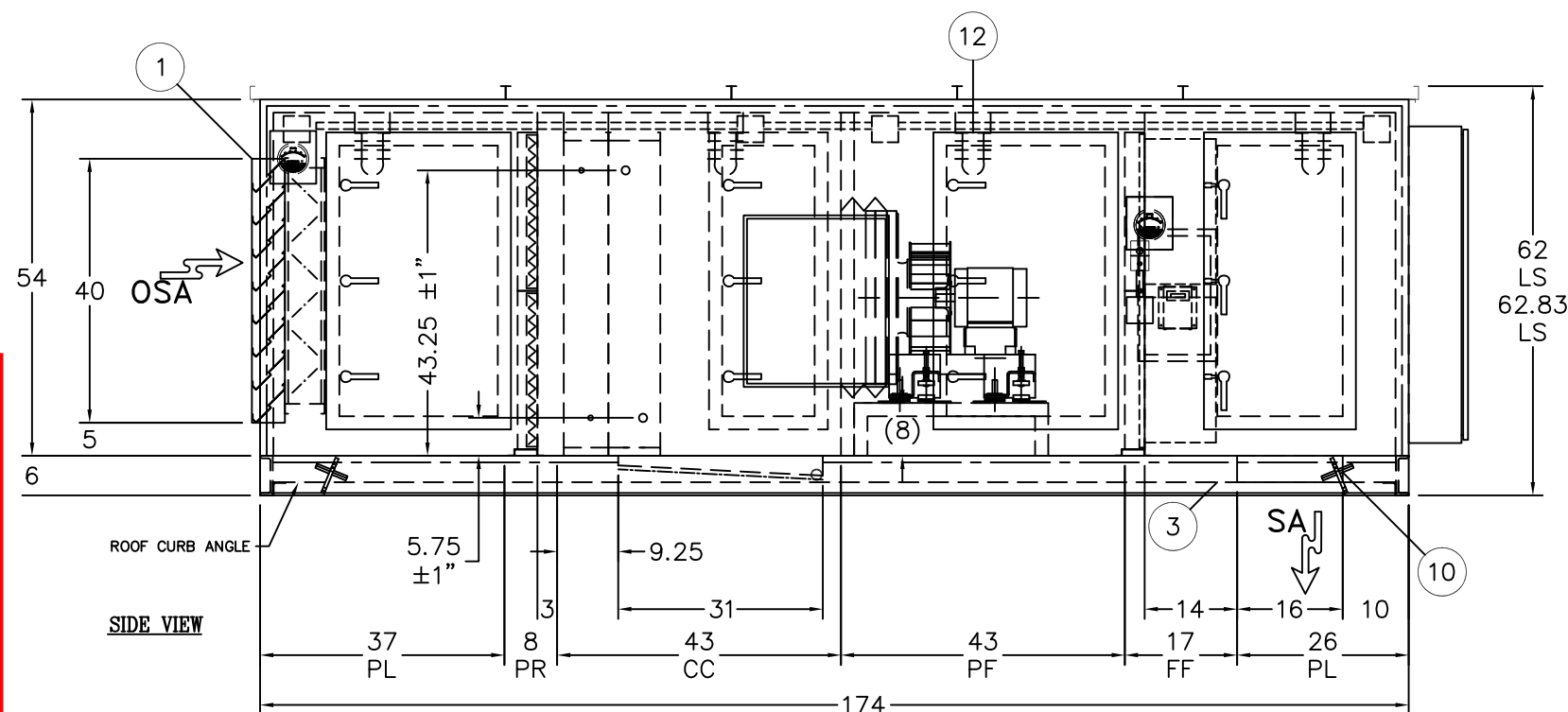


- 1 OSA Louver w/Damper (1 Actuator(s) by Others)
- 2 Removable Panel (Coil Removal)
- 3 SA Opening w/ Removable Walkway Grating & Collar equal to perimeter channel height minus 2"
- 4 24Wx48H TCP
- 5 Light Switch & GFCI outlet
- 6 J-Box For 120V Connection Point
- 7 Filter Gauge
- 8 1-1/4" MPT Drain Connection
- 9 22Wx26H Main Disconnect/ SF VFDs
- 10 Non-Removable Lifting Lugs
- 11 Ebtron Fan Monitor Probes and Controller (By DMGN To ELI For Mounting)
- 12 Marinelight w/Fluorescent Bulbs

UNIT INFORMATION/FOR SHIPPING PURPOSES						
OVERALL DIMENSIONS				WEIGHTS		
	LENGTH	HEIGHT	WIDTH	SHIPPING	OPERATING	Lbs/ft2
OVERALL	187	63	60	2900	2950	58

FOAM PANEL CONSTRUCTION

ROOF CURB WEIGHT = 645 Lbs



- LEGEND:
- OSA = Outside Air
RA = Return Air
NS = Near Side
HS = High Side
- SA = Supply Air
EA = Exhaust Air
FS = Far Side
LS = Low Side
- SECTIONS:
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CC = Cooling Coil
CU = Condensing Unit
DE = Direct Evaporative
DF = DWDI Fan
DX = DX Coil
EC = Economizer
FF = Final Filter
FU = Furnace
HC = Heating Coil
IE = Indirect Evaporative
- MB = Mixing Box
MS = Moisture Separator
MZ = Multizone
PF = Plenum Fan
PFF = Pre/Final Filter
PL = Plenum
PR = Pre-Filter
SC = Steam Coil
ST = Sound Trap
VF = Vee Filter
- NOTES:
1. All dimensions are in inches unless otherwise specified.
 2. Opening dimension tolerances are ± 0.50, all other cabinet dimension tolerances are ± 1.00.
 3. Lifting lug locations on mechanical drawings are for representation only. Actual lifting location will vary depending on Energy Labs Engineering review.

☐ REVIEWED - NO EXCEPTIONS TAKEN

☒ INCORPORATE COMMENTS IN CONSTRUCTION

☐ REVISE AS NOTED AND RESUBMIT

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Date: 12/01/2015 By: *[Signature]*

FMB FRANK M. BOOTH
DESIGN BUILD CO.

OUR PERFORMANCE BUILDS RELATIONSHIPS®

PROJECT ENGINEER: BW 8/20/15
DESIGN ENGINEER: KP 11/18/15
DESCRIPTION: MECHANICAL DRAWING
DRAWING NAME: SU-AHU-2-2-8858.dwg
JOB NUMBER: 8858



9651 AIRWAY RD. SUITE E
SAN DIEGO, CA 92154
(619) 671-0100

(1) ONE EACH

CFM: 2500

MODEL: C5440-FCH-L

JOB NAME:

Health Center
Emeryville

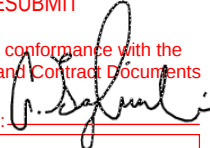
UNIT TAG:

AHU-2-2

NO.	DATE	REVISION	DWN	APP

- ☒ REVIEWED - NO EXCEPTIONS TAKEN
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Date: 12/01/2015 By: 

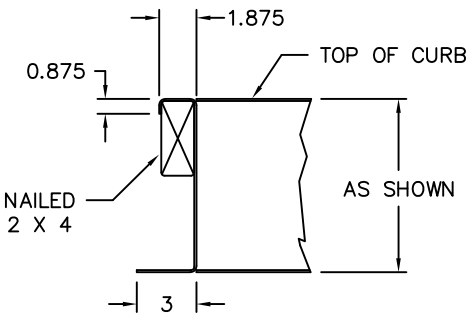
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DESIGN BUILD CO.

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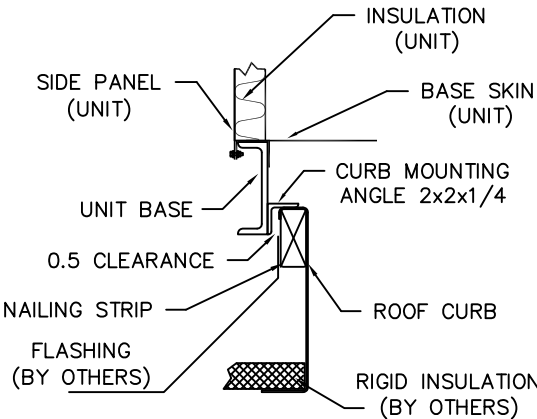
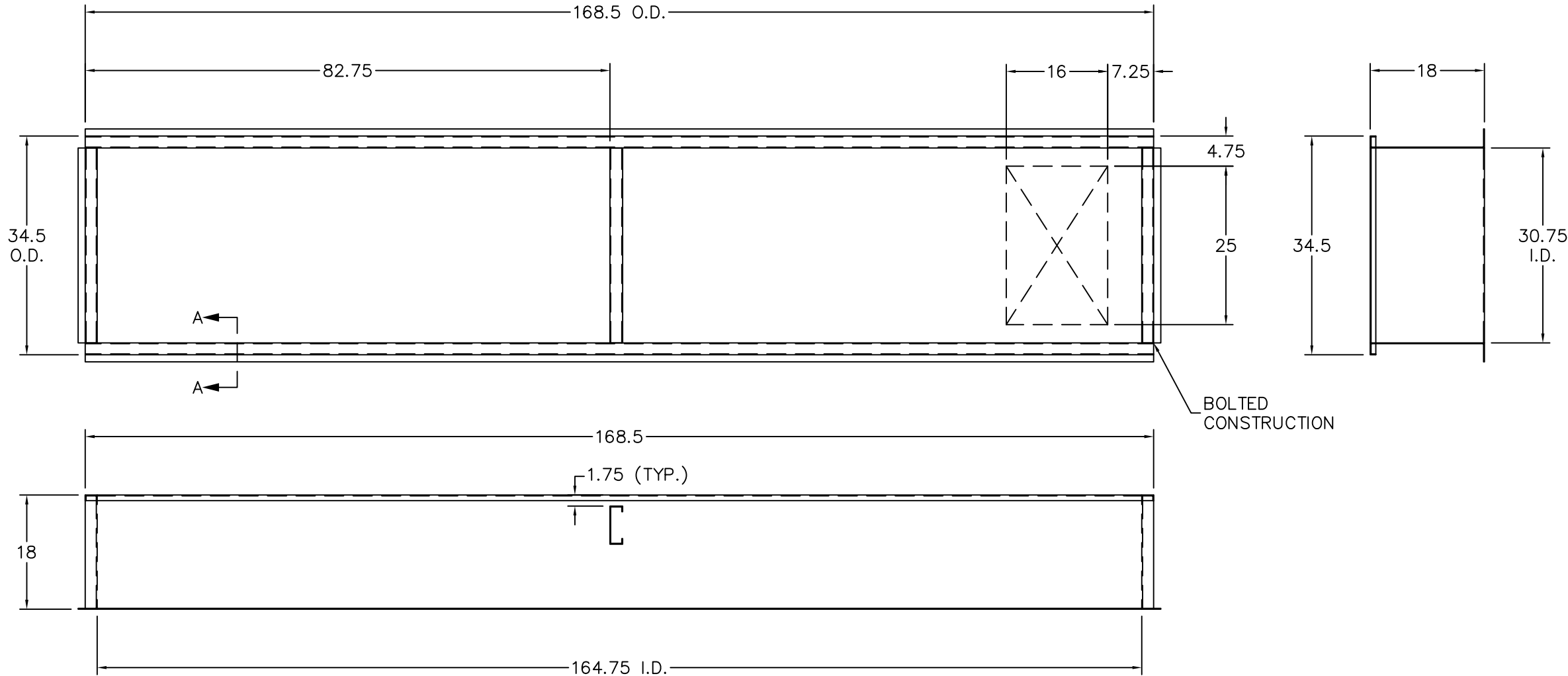
ROOF CURB DIMENSIONS ARE BASED ON A 40" WIDE X 174" LONG UNIT WITH 6" BASE CHANNEL.

ROOF CURB PROVIDED BY ENERGY LABS INC. FOR FIELD ASSEMBLY BY OTHERS.

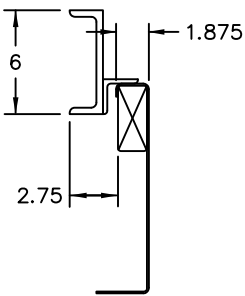
CURB WEIGHT = 700 Lbs



SECTION A-A



UNIT MOUNTING AND FLASHING DETAIL



UNIT/CURB SIZING

SUBMITTAL SHEET AND ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. MAINTAIN A MINIMUM OF 8" ABOVE FINISHED ROOF. CONFIRM PRIOR TO RELEASE.

- NOTES:
1. All dimensions are in inches unless otherwise specified.
 2. Curb dimension tolerances are $\pm .25"$.

					PROJECT ENGINEER: BW	8/20/15	 Energy Labs Inc	9651 AIRWAY RD. SUITE E SAN DIEGO, CA 92154 (619) 671-0100	JOB NAME: <i>Health Center Emeryville</i>	
					DESIGN ENGINEER: KP	11/18/15				
					DESCRIPTION: MECHANICAL DRAWING				CFM:	
					DRAWING NAME: CU-AHU-2-2-8858.dwg				MODEL:	
					JOB NUMBER: 8858				UNIT TAG: AHU-2-2	
NO.	DATE	REVISION	DWN	APP						

Air Handling Equipment

Submittal

HEALTH CENTER EMERYVILLE



9651 Airway Rd. Suite E.
San Diego CA 92154-7914
Ph. 619) 671 0100
Fax. 619) 671 0160

Sales Agency

DMG - Sacramento
10210 Systems Parkway #370
Sacramento, CA

Sales Agent

Claude Poiniski

Energy Labs:

Job Number
Sales Engineer
Revision Date

8858
Bill Willems
11/30/2015

Index

Project Summary

Revision Sheet

Testing Summary and Procedures

Unit Specifications

AHU-1-1

AHU-2-1

AHU-2-2

AHU-3-4-1

Construction Details

Energy Labs Warranty



Project Summary



| Project Summary

Unit Information								
Unit	Supply CFM	Return CFM	Location	Qty	Base Material	Paint	Color	Voltage
AHU-1-1	11000	8500	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-2-1	35000	24000	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-2-2	2500	0	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase
AHU-3-4-1	55000	42000	Outdoor w/ Roof Curb Angle	1	Steel	Polyurethane 3mil	Grey	460V / 3 Phase

* To see Cabinet Dimensions and Unit Weight, please refer to Mechanical Drawing.

Fans										Motor								
Unit	Type	Duty	Mfr	Size	Qty	CFM	SP	CL	Fan RPM	Max RPM	BHP	HP	RPM	Manuf.	Type	Eff.(%)	Encl.	Frame Encl.
AHU-1-1	Plenum Fan	Return	Energy Labs	182	2	4250	2.8	1	1775	2256	2.72	5	1800	Reliance	Premium	89.5	TEFC	184T
AHU-1-1	Plenum Fan	Supply	Energy Labs	182	2	5500	6	2	2527	2959	7.56	10	1800	Reliance	Premium	91.7	TEFC	215T
AHU-2-1	Optiline Fan	Return	Energy Labs	222	4	6000	3.83	2	1746	2413	5.37	10	1800	Reliance	Premium	91.7	TEFC	215T
AHU-2-1	Optiline Fan	Supply	Energy Labs	182	6	5833	7.5	3	2794	3735	10.12	15	1800	Reliance	Premium	92.4	TEFC	254T
AHU-2-2	Plenum Fan	Supply	Energy Labs	165	1	2500	4.35	2	2429	3100	2.67	5	1800	Reliance	Premium	89.5	TEFC	184T
AHU-3-4-1	Plenum Fan	Other	Energy Labs	300	2	10500	3.25	1	1127	1328	7.42	10	1200	Reliance	Premium	91	TEFC	256T
AHU-3-4-1	Plenum Fan	Other	Energy Labs	300	2	10500	3.25	1	1127	1328	7.42	10	1200	Reliance	Premium	91	TEFC	256T
AHU-3-4-1	Optiline Fan	Supply	Energy Labs	222	6	9167	6.75	2	2264	2413	14.12	20	1800	Reliance	Premium	93	TEFC	256T

Filters								
Unit	Manuf.	Type	Efficiency	Face Area (Sqft)	FV	Size/Qty	Depth (in)	Class
AHU-1-1	Flanders	Prepleat 40 LPD	30% - MERV 8	30	367	24x24(6), 12x24(3)	2	2
AHU-1-1	Flanders	Superflow V Minipleat	95% - MERV 14	30	367	24x24(6), 12x24(3)	12	2
AHU-2-1	Flanders	Prepleat 40 LPD	30% - MERV 8	80	438	24x24(20)	2	2
AHU-2-1	Flanders	Superflow V Minipleat	95% - MERV 14	80	438	24x24(20)	12	2
AHU-2-2	Flanders	Prepleat 40 LPD	30% - MERV 8	8	313	24x24(2)	2	2
AHU-2-2	Flanders	Superflow V Minipleat	95% - MERV 14	8	313	24x24(2)	12	2
AHU-3-4-1	Flanders	Prepleat 40 LPD	30% - MERV 8	126	437	24x24(28), 12x24(7)	2	2
AHU-3-4-1	Flanders	Superflow V Minipleat	95% - MERV 14	126	437	24x24(28), 12x24(7)	12	2

Roof Curb							
Unit	By ELI	Curb Tag		Construction	Slope	Insulation	Material
AHU-1-1	Yes	RCAHU-1-1		BOLTED	No	No	10 Ga. Bright Galv.
AHU-2-1	Yes	RCAHU-2-1		BOLTED	No	No	10 Ga. Bright Galv.
AHU-2-2	Yes	RCAHU-2-2		BOLTED	No	No	10 Ga. Bright Galv.
AHU-3-4-1	Yes	RCAHU-3-4-1		BOLTED	No	No	10 Ga. Bright Galv.

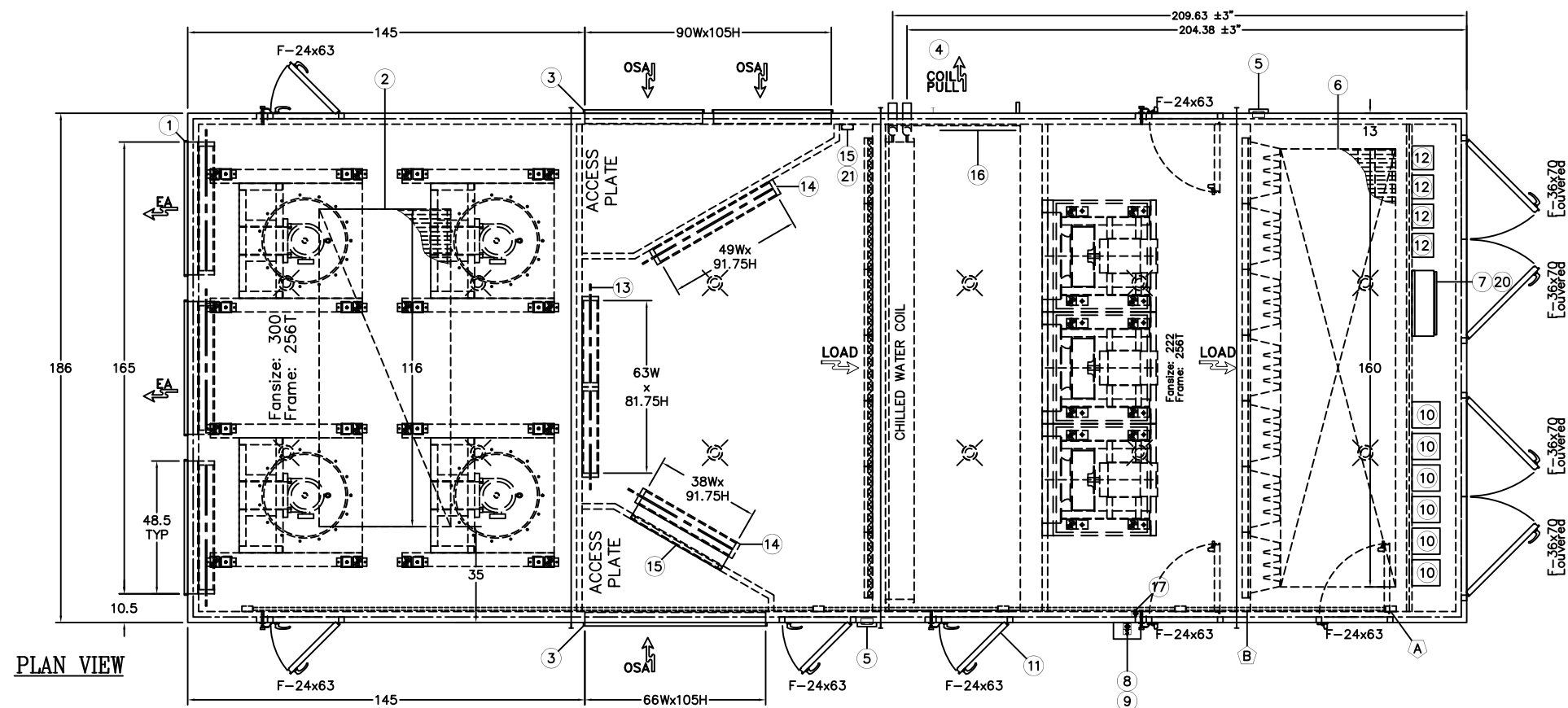
Testing Data Table							
Unit	Leakage (+)	Leakage (-)	Air Performance	Inlet SWL	Outlet SWL	Witnessed	Deflection
AHU-1-1	No	No	No	No	No	No	No
AHU-2-1	No	No	No	No	No	No	No
AHU-2-2	No	No	No	No	No	No	No
AHU-3-4-1	No	No	No	No	No	No	No

Unit Information

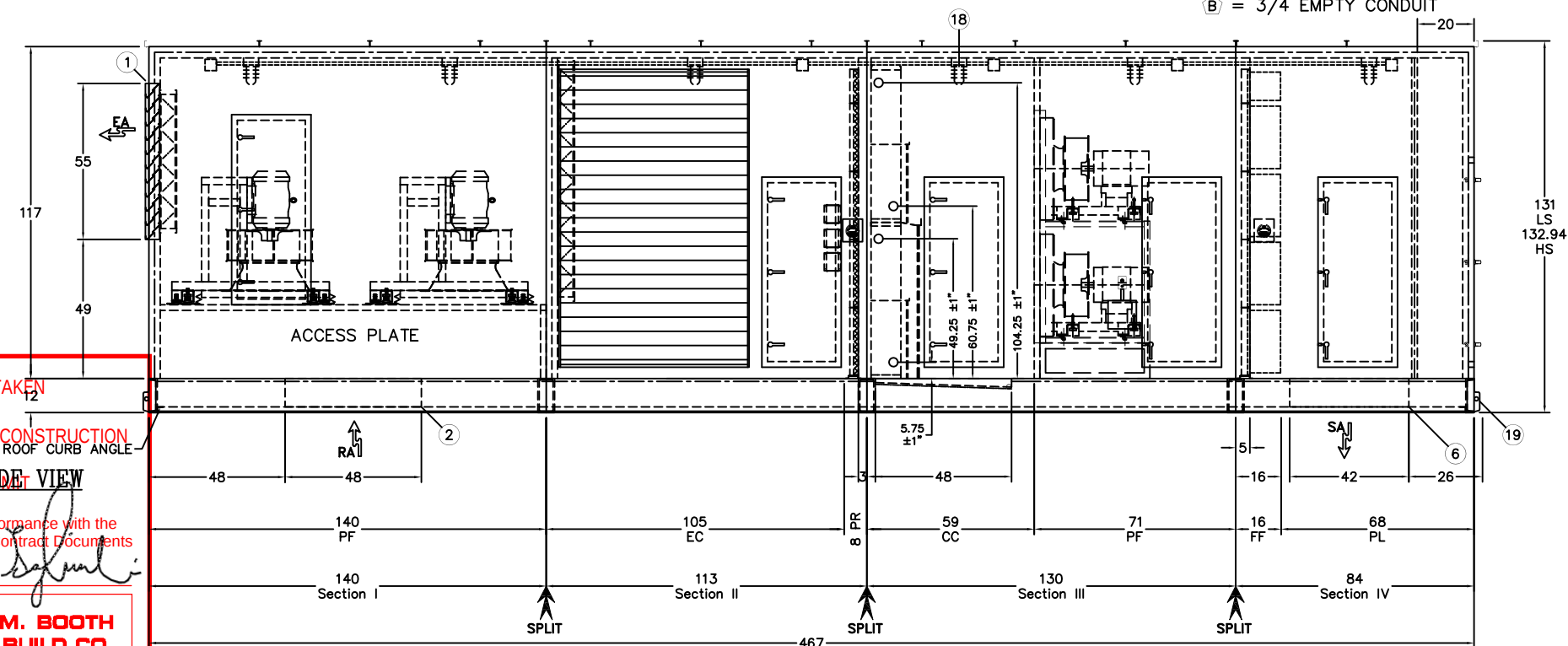


AHU-3-4-1





PLAN VIEW



A = EMPTY J-BOX FOR CONTROLS
B = 3/4 EMPTY CONDUIT

- 1 Exh Louver w/Damper (3 Actuator(s) by Others)
- 2 RA Opening w/ Removable Walkway Grating & Collar equal to perimeter channel height minus 2"
- 3 OSA Louver(s)
- 4 Removable Panel (Coil Removal)
- 5 Filter Gauge
- 6 SA Opening w/ Removable Walkway Grating & Collar equal to perimeter channel height minus 2"
- 7 24Wx48H TCP
- 8 Light Switch & GFCI outlet
- 9 12Wx12H J-Box For 120V Connection Point
- 10 (6) SF VFD – Surface Mount (No Enclosure)
- 11 1-1/4" MPT Drain Connection
- 12 RF VFD – Surface Mount (No Enclosure)
- 13 (4) RA Damper (2 Actuator(s) by Others)
- 14 OSA Damper (4 Actuator(s) by Others)
- 15 Ebtron OSA Monitor Probes and Controller (By DMG To ELI For Mounting)
- 16 Fan Blankoff Plate
- 17 GFCI Outlet
- 18 Marinelight w/Fluorescent Bulbs
- 19 Non-Removable Lifting Lugs
- 20 31Wx38H Main Disconnect Panel
- 21 Ebtron Fan Array Monitor Probes and Controller (By DMG To ELI For Mounting)

UNIT INFORMATION/FOR SHIPPING PURPOSES					
	OVERALL DIMENSIONS			WEIGHTS	
	LENGTH	HEIGHT	WIDTH	SHIPPING	OPERATING
SECTION I	143	133	200	9850	
SECTION II	117	133	193	5775	
SECTION III	134	133	200	14025	
SECTION IV	87	133	200	5800	
OVERALL				35450	35300

ROOF CURB WEIGHT = 3050 Lbs

LEGEND:

OSA = Outside Air
RA = Return Air
NS = Near Side
HS = High Side
SA = Supply Air
EA = Exhaust Air
FS = Far Side
LS = Low Side

SECTIONS:

AB = Air Blender
CC = Cooling Coil
CU = Condensing Unit
DE = Direct Evaporative
DF = DWDI Fan
DX = DX Coil
EC = Economizer
FF = Final Filter
FU = Furnace
HC = Heating Coil
IE = Indirect Evaporative
MB = Mixing Box
MS = Moisture Separator
MZ = Multizone
PF = Plenum Fan
PFF = Pre/Final Filter
PL = Plenum
PR = Pre-Filter
SC = Steam Coil
ST = Sound Trap
VF = Vee Filter

NOTES:

1. All dimensions are in inches unless otherwise specified.
2. Opening dimension tolerances are ± 0.50 , all other cabinet dimension tolerances are ± 1.00 .
3. Lifting lug locations on mechanical drawings are for representation only. Actual lifting location will vary depending on Energy Labs Engineering review.

FOAM PANEL CONSTRUCTION

☒ REVIEWED - NO EXCEPTIONS TAKEN

☐ INCORPORATE COMMENTS IN CONSTRUCTION

☐ REVISE AS NOTED AND RESUBMIT

Submittal was reviewed only for its conformance with the intent of the Design Development and Contract Documents

Date: 12/01/2015 By: *[Signature]*

FMB FRANK M. BOOTH DESIGN BUILD CO.

OUR PERFORMANCE BUILDS RELATIONSHIPS®

PROJECT ENGINEER: BW 8/20/15
DESIGN ENGINEER: KP 11/18/15
DESCRIPTION: MECHANICAL DRAWING
DRAWING NAME: SU-AHU-3-4-1-8858.dwg
JOB NUMBER: 8858



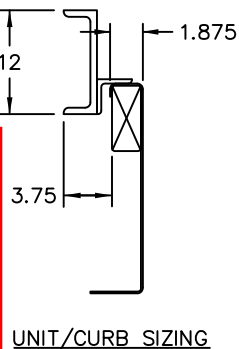
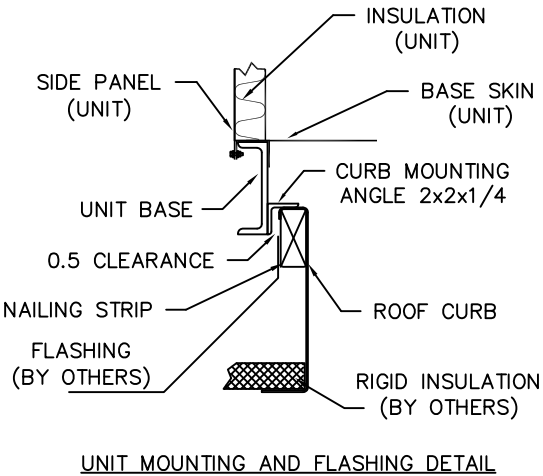
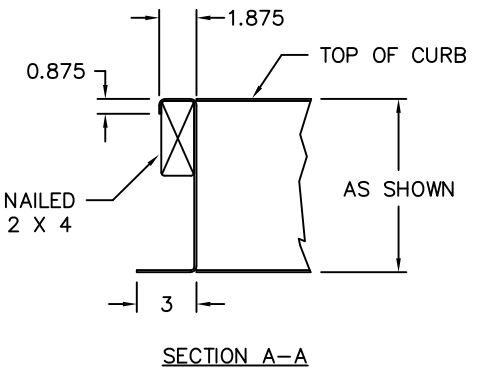
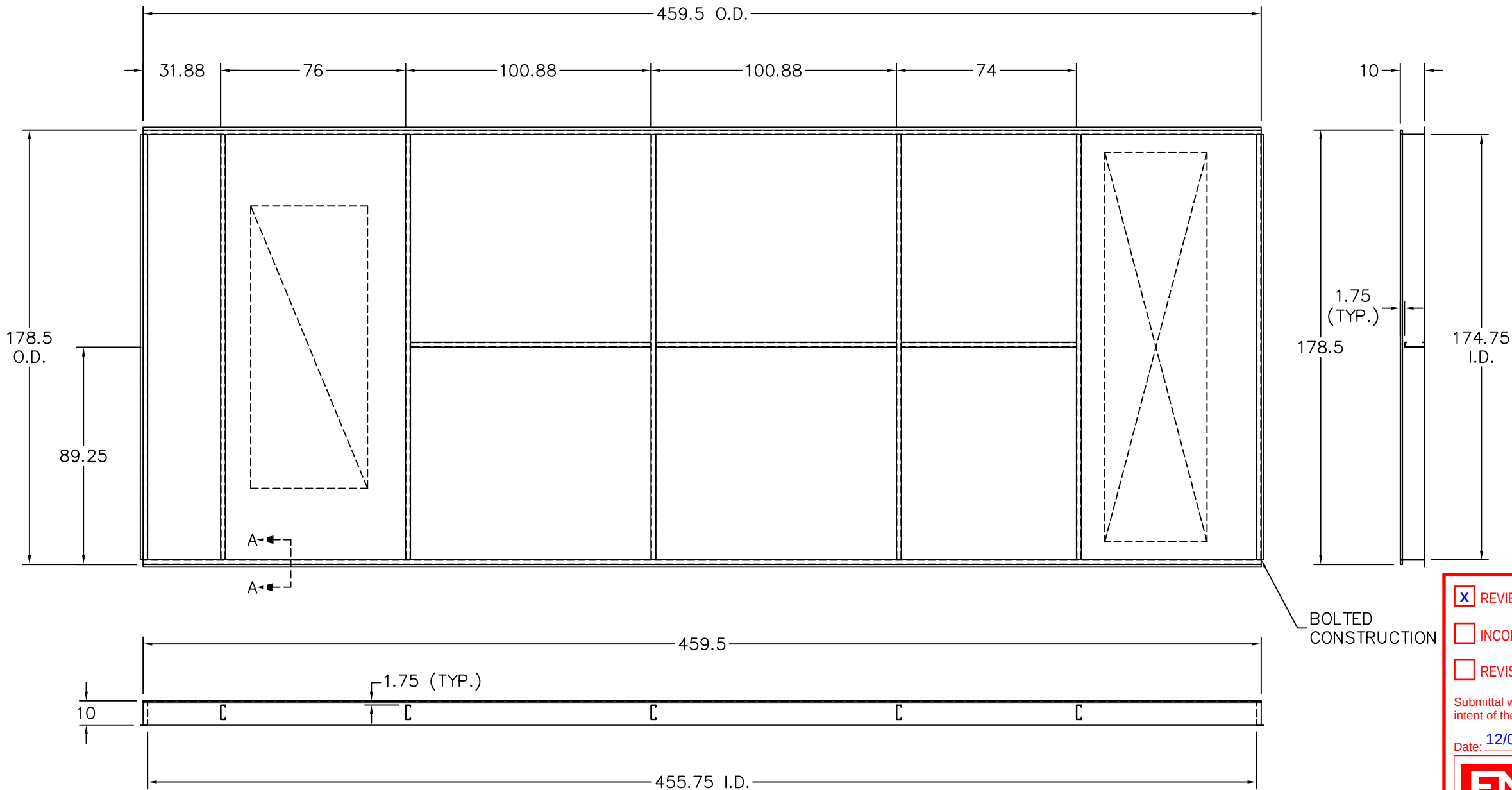
9651 AIRWAY RD. SUITE E
SAN DIEGO, CA 92154
(619) 671-0100

(1) ONE EACH
CFM: 55000/42000
MODEL: C117186-FC-L

JOB NAME: Health Center Emeryville
UNIT TAG: AHU-3-4-1

NO.	DATE	REVISION	DWN	APP

ROOF CURB DIMENSIONS ARE BASED ON A 186.00" WIDE X 467.00" LONG UNIT WITH 12" BASE CHANNEL.
ROOF CURB PROVIDED BY ENERGY LABS INC. FOR FIELD ASSEMBLY BY OTHERS.
CURB WEIGHT = 3050 Lbs



SUBMITTAL SHEET AND ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. MAINTAIN A MINIMUM OF 8" ABOVE FINISHED ROOF. CONFIRM PRIOR TO RELEASE.

☒ REVIEWED - NO EXCEPTIONS TAKEN

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FRANK M. BOOTH
DESIGN BUILD CO.

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- 1. All dimensions are in inches unless otherwise specified.
 - 2. Curb dimension tolerances are ± .25".

					PROJECT ENGINEER: BW	8/20/15	 9651 AIRWAY RD. SUITE E SAN DIEGO, CA 92154 (619) 671-0100	QTY: (1) ONE EACH	JOB NAME: Health Center Emeryville
					DESIGN ENGINEER: KP	11/18/15		CFM:	
					DESCRIPTION: MECHANICAL DRAWING				
					DRAWING NAME: CU-AHU-3-4-1-8858.dwg				
					JOB NUMBER: 8858				
NO.	DATE	REVISION	DWN	APP				MODEL:	UNIT TAG: AHU-3-4-1