APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0607

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: **Johnson Controls, Inc.**

Manufacturer's Technical Representative: Jeff Ronald

Mailing Address: 100 JCI Way, York, PA 17406

Telephone: 717.978.3326 Email: jeffrey.joseph.ronald@jci.com

Product Information

Product Name: **UVDI UV Light Grid for Solution YC Air Conditioning Units**

Product Type: Air Filters

Product Model Number: See Attachment 1
(List all unique product identification numbers and/or part numbers)

General Description: UV light grids; UV light control panels. Seismic enhancements made to the test units required to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Floor and ceiling mounted, rigid or isolated (UV light grids) and wall mounted, rigid or isolated (control panels). See Attachment 1 for limitations.

Applicant Information

Applicant Company Name: **Manwill Engineering LLC**

Contact Person: Derek Manwill, SE

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: 541.241.2102 Email: derek@manwillSE.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Date: 10/14/2020

Title: President Company Name: **Manwill Engineering LLC**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: **Manwill Engineering LLC**

Name: Derek Manwill, SE California License Number: S6266

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: 541.241.2102 Email: derek@manwillSE.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM-
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify):

Testing Laboratory

Company Name: Environmental Testing Laboratory

Contact Name: Jeremy Lange

Mailing Address: 11034 Indian Trail, Dallas, TX 75229

Telephone: 972.247.9657 Email: jeremy@etldallas.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.50 (S_{DS} = 2.00); 1.13 (S_{DS} = 2.50)

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1); 2.50 (z/h = 0)

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1 (S_{DS} = 2.00); 0 (S_{DS} = 2.50)

Equipment or Component Natural Frequencies (Hz) = N/A (equipment mounted)

Overall dimensions and weight (or range thereof) = See Attachments 1 & 2

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) =

S_{DS} (Design spectral response acceleration at short period, g) =

S_{D1} (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) =

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☒ Drawings ☐ Calculations ☐ Manufacturer's Catalog

☒ Other(s) (Please Specify): Attachments 1 & 2

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: M. Aliaari Date: October 19, 2020

Print Name: Mohammad Aliaari Title: Senior Structural Engineer

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable):

ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

DOCUMENT NO.: 18033CR1.1

TABLE 1 - FLOOR & CEILING MNT. UV LIGHT GRID

MANUFACTURER: JOHNSON CONTROLS, INC.

PRODUCT FAMILY: SOLUTION YC AIR HANDLING UNITS

MODEL NUMBER	DIMENSIONS (in) DEPTH	WIDTH	HEIGHT	MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
UVDI - V-MAX Grid UV System						
Carbon Steel Grid - 28x48	9	28	48	40		EXTRAP
Stainless Steel Grid - 28x48	9	28	48	40		EXTRAP
Interpolated sizes[1]						EXTRAP
Carbon Steel Grid - 97x144	9	97	144	350	1 column each 61", 21" bulbs	**UUT 1a,1b**
Stainless Steel Grid - 97x144	9	97	144	350	1 column each 61", 21" bulbs	**UUT 2a,2b**
Interpolated sizes[1]						EXTRAP
Carbon Steel Grid - 288x144	9	288	144	1030		EXTRAP
Stainless Steel Grid - 288x144	9	288	144	1030		EXTRAP

MOUNTING:	Floor & ceiling mounted in equipment. Grid sits within the AHU tunnel and attaches to floor and ceiling panels.	**SEISMIC LEVELS:**	S_{DS} = 2.00g for z/h = 1 S_{DS} = 2.50g for z/h = 0	I_P = 1.5
NOTES:	**Product Construction:** Carbon steel or stainless steel grid structure. **Options/Subcomponents:** See Table 3 for a list of certified subcomponents and options. **1.** Sizes are available in any dimension within the height and width limits of this table. Extrapolated widths maintain repeated construction and repeated top/bottom connections.			

TABLE 2 - WALL MNT. UV LIGHT CONTROL PANEL

MANUFACTURER: JOHNSON CONTROLS, INC.

PRODUCT FAMILY: SOLUTION YC AIR HANDLING UNITS

MODEL NUMBER	DIMENSIONS (in) DEPTH	WIDTH	HEIGHT	MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
Johnson Controls, Inc. - UV Light Control Panel						
025-39148-101	6.5	8	16	16	12A, 120V, NEMA 3R	**UUT 3a,3b**
025-39148-102	6.5	12	16	28	24A, 120V, NEMA 3R	INTERP
025-39148-103	6.5	12	16	34	48A, 120V, NEMA 3R	**UUT 4a,4b**

MOUNTING:	Wall mounted to equipment.	**SEISMIC LEVELS:**	S_{DS} = 2.00g for z/h = 1 S_{DS} = 2.50g for z/h = 0	I_P = 1.5
NOTES:	**Product Construction:** NEMA 3R carbon steel enclosure. **Options/Subcomponents:** No options are available other than amperage rating, which is identified by the model number. Subcomponents are uniquely identified by the model number.			

ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

TABLE 3 - UV LIGHT SUBCOMPONENTS

DOCUMENT NO.: 18033CR1.1

MANUFACTURER: JOHNSON CONTROLS, INC.

PRODUCT FAMILY: SOLUTION YC AIR HANDLING UNITS

MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
UVDI - V-RAY GRID UV System						
025-47407-001				6	21" fixture, no lamp	**UUT 1a,1b**
025-47407-002				7	33" fixture, no lamp	INTERP
025-47407-003				9	61" fixture, no lamp	**UUT 1a,1b**
025-47408-001				<1	21" lamp	**UUT 1a,1b**
025-47408-002				<1	33" lamp	INTERP
025-47408-003				<1	61" lamp	**UUT 1a,1b**
UVDI - V-MAX GRID UV System						
025-45318-001				6	21" fixture and lamp	**UUT 2a,2b**
025-45318-002				7	33" fixture and lamp	INTERP
025-45318-003				9	61" fixture and lamp	**UUT 2a,2b**
UVDI - Fixed Radiometer						
025-39151-001				<1	Fixed radiometer	**UUT 1a-2b**

MOUNTING:	Mounted within unit.	**SEISMIC LEVELS:**	S_{DS} = 2.00g for z/h = 1 S_{DS} = 2.50g for z/h = 0 I_P = 1.5
NOTES:	**Construction/Options:** Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.		

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

DOCUMENT NO.: 18033CR1.1

UUT 1a (Rigid)

MANUFACTURER:	JOHNSON CONTROLS, INC.
MODEL NUMBER:	CARBON STEEL GRID - 97X144
UNIT FUNCTION:	UV LIGHT
SERIAL NUMBER:	N/A

DIMENSIONS (in)			WEIGHT	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
9	97	144	350	N/A	N/A	N/A

BUILDING CODE	TEST CRITERIA	LAB REPORT NO.
2019 CBC	ICC-ES AC156	ETL 18033TR1

S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

IMPORTANCE FACTOR, I_P = 1.5

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

MOUNTING:	Floor & ceiling mounted to 16GA thick carbon steel panels using (28) 1/4" carbon steel sheet metal screws (7 in each flange of bulkhead on top and bottom, 14in o.c. spacing, starting 2in from end of bulkhead). Tested with fixture rigid mounted to the table.
CONSTRUCTION:	Carbon steel
SUBCOMPONENTS:	UVDI - 21" V-RAY fixture (025-47407-001), UVDI - 61" V-RAY fixture (025-47407-003), UVDI - 21" V-RAY lamp (025-47408-001), UVDI - 61" V-RAY lamp (025-47408-003), UVDI - fixed radiometer (025-39151-001)
TESTING NOTES:	Lamps are held by mounting clips on the glass only, not the ends.

UUT 1b (Isolated)

MANUFACTURER:	JOHNSON CONTROLS, INC.
MODEL NUMBER:	CARBON STEEL GRID - 97X144
UNIT FUNCTION:	UV LIGHT
SERIAL NUMBER:	N/A

DIMENSIONS (in)			WEIGHT	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
9	97	144	350	N/A	N/A	N/A

BUILDING CODE	TEST CRITERIA	LAB REPORT NO.
2019 CBC	ICC-ES AC156	ETL 18033TR1

S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

IMPORTANCE FACTOR, I_P = 1.5

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

MOUNTING:	Floor & ceiling mounted to 16GA thick carbon steel panels using (28) 1/4" carbon steel sheet metal screws (7 in each flange of bulkhead on top and bottom, 14in o.c. spacing, starting 2in from end of bulkhead). Tested with fixture isolated mounted to the table using (4) Mason SSLFHB 1000 spring isolators.
CONSTRUCTION:	Carbon steel
SUBCOMPONENTS:	UVDI - 21" V-RAY fixture (025-47407-001), UVDI - 61" V-RAY fixture (025-47407-003), UVDI - 21" V-RAY lamp (025-47408-001), UVDI - 61" V-RAY lamp (025-47408-003), UVDI - fixed radiometer (025-39151-001)
TESTING NOTES:	Lamps are held by mounting clips on the glass only, not the ends.

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

DOCUMENT NO.: 18033CR1.1

UUT 2a (Rigid)

MANUFACTURER:	JOHNSON CONTROLS, INC.
MODEL NUMBER:	STAINLESS STEEL GRID - 97X144
UNIT FUNCTION:	UV LIGHT
SERIAL NUMBER:	N/A

DIMENSIONS (in)			WEIGHT	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
9	97	144	350	N/A	N/A	N/A

BUILDING CODE	TEST CRITERIA	LAB REPORT NO.
2019 CBC	ICC-ES AC156	ETL 18033TR1

S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

IMPORTANCE FACTOR, I_P = 1.5

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

MOUNTING:	Floor & ceiling mounted to 16GA thick carbon steel panels using (28) 1/4" carbon steel sheet metal screws (7 in each flange of bulkhead on top and bottom, 14in o.c. spacing, starting 2in from end of bulkhead). Tested with fixture rigid mounted to the table.
CONSTRUCTION:	Stainless steel
SUBCOMPONENTS:	UVDI - 21" V-MAX fixture and lamp (025-45318-001), UVDI - 61" V-MAX fixture and lamp (025-45318-003), UVDI - fixed radiometer (025-39151-001)
TESTING NOTES:	Lamps are held by mounting clips on the glass only, not the ends.

UUT 2b (Isolated)

MANUFACTURER:	JOHNSON CONTROLS, INC.
MODEL NUMBER:	STAINLESS STEEL GRID - 97X144
UNIT FUNCTION:	UV LIGHT
SERIAL NUMBER:	N/A

DIMENSIONS (in)			WEIGHT	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
9	97	144	350	N/A	N/A	N/A

BUILDING CODE	TEST CRITERIA	LAB REPORT NO.
2019 CBC	ICC-ES AC156	ETL 18033TR1

S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

IMPORTANCE FACTOR, I_P = 1.5

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

MOUNTING:	Floor & ceiling mounted to 16GA thick carbon steel panels using (28) 1/4" carbon steel sheet metal screws (7 in each flange of bulkhead on top and bottom, 14in o.c. spacing, starting 2in from end of bulkhead). Tested with fixture isolated mounted to the table using (4) Mason SSLFHB 1000 spring isolators.
CONSTRUCTION:	Stainless steel
SUBCOMPONENTS:	UVDI - 21" V-MAX fixture and lamp (025-45318-001), UVDI - 61" V-MAX fixture and lamp (025-45318-003), UVDI - fixed radiometer (025-39151-001)
TESTING NOTES:	Lamps are held by mounting clips on the glass only, not the ends. See anomaly below.

TEST ANOMALY AND RESOLUTION:

During testing, 2 out of 7 cables disconnected from the lamp. To address the anomaly, the cable plug will be replaced with a rubber boot plug that fits over the end cap of the lamp and allows the cable to intersect the lamp at a 90-degree angle. This will eliminate any tension on the plug and ensure it stays connected to the lamp.

The replacement plug is UVDI part number 40-2030-01 and is made out of Santoprene. A picture is shown to the right. Note that the metal conduit will be present on production models and fits securely into the larger opening above the cable.

UUT 3a (Rigid), 3b (Isolated)

MANUFACTURER:	JOHNSON CONTROLS, INC.
MODEL NUMBER:	025-39148-101, 12A
UNIT FUNCTION:	UV LIGHT CONTROL PANEL
SERIAL NUMBER:	N/A

DIMENSIONS (in)			WEIGHT	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
6.5	8.0	16.0	16	N/A	N/A	N/A

BUILDING CODE	TEST CRITERIA	LAB REPORT NO.
2019 CBC	ICC-ES AC156	ETL 18033TR1

S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

IMPORTANCE FACTOR, I_P = 1.5
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

MOUNTING:	Wall mounted to 16GA thick carbon steel panel using (4) 3/8" Grade 2 bolts into standard rivet nuts. Tested with fixture mounted to the table **both** rigid and isolated using (4) Mason SSLFHB 1000 spring isolators.
CONSTRUCTION:	NEMA 3R carbon steel enclosure
SUBCOMPONENTS:	Subcomponents are uniquely identified by the model number.

UUT 4a (Rigid), 4b (Isolated)

MANUFACTURER:	JOHNSON CONTROLS, INC.
MODEL NUMBER:	025-39148-103, 48A
UNIT FUNCTION:	UV LIGHT CONTROL PANEL
SERIAL NUMBER:	N/A

DIMENSIONS (in)			WEIGHT	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
6.5	12	16	34	N/A	N/A	N/A

BUILDING CODE	TEST CRITERIA	LAB REPORT NO.
2019 CBC	ICC-ES AC156	ETL 18033TR1

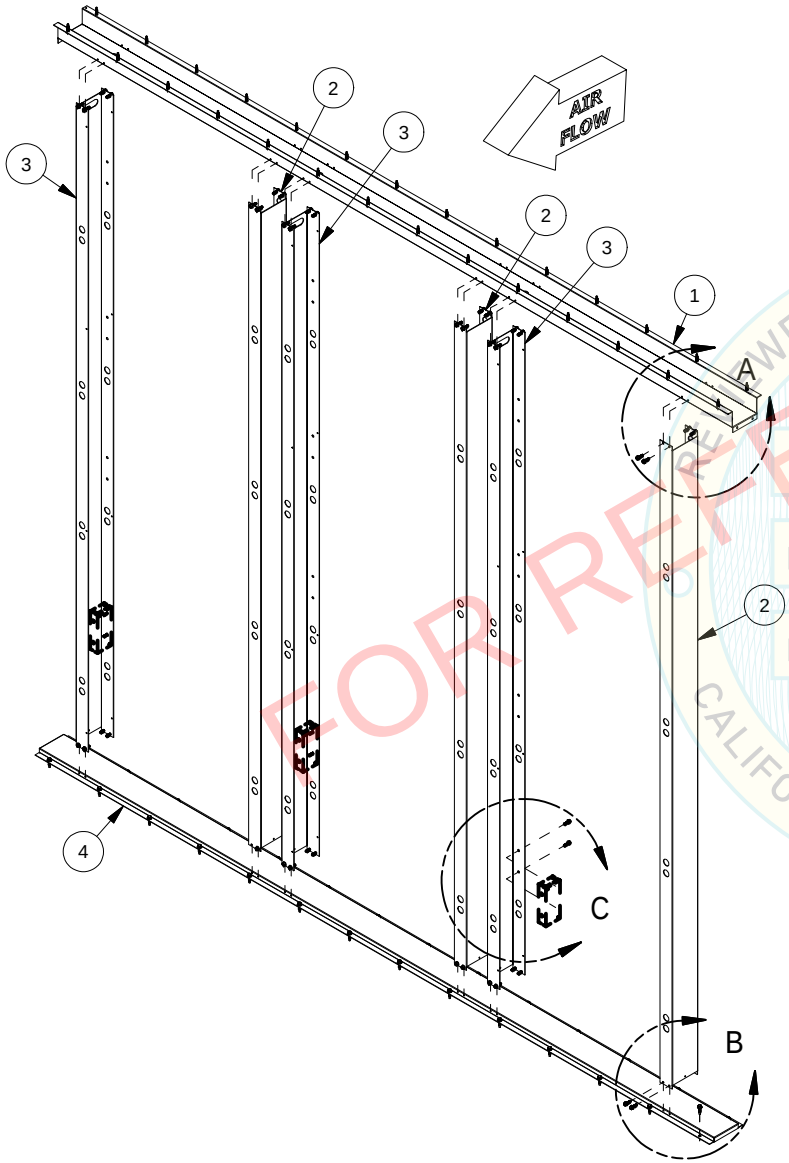
S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

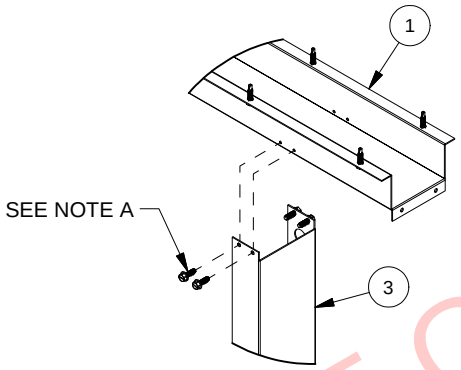
IMPORTANCE FACTOR, I_P = 1.5
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

MOUNTING:	Wall mounted to 16GA thick carbon steel panel using (4) 3/8" Grade 2 bolts into standard rivet nuts. Tested with fixture mounted to the table **both** rigid and isolated using (4) Mason SSLFHB 1000 spring isolators.
CONSTRUCTION:	NEMA 3R carbon steel enclosure
SUBCOMPONENTS:	Subcomponents are uniquely identified by the model number.

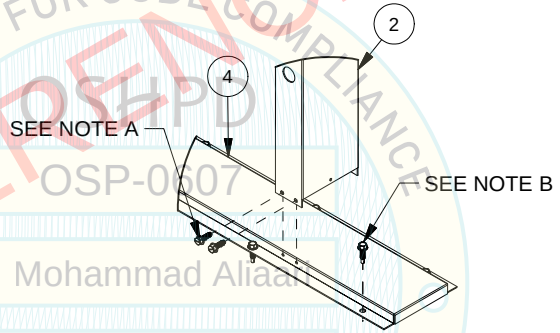
STEP 1: FIX TOP AND BOTTOM BULKHEAD WITH MIDDLE VERTICAL BULKHEADS AND PLACE BALLAST TO MIDDLE VERTICAL BULKHEADS.

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	SEE SPEC SHEET	TOP BULKHEAD, T1 BHD
2	SEE SPEC SHEET	MIDDLE LEFT BULKHEAD, MLV BHD
3	SEE SPEC SHEET	MIDDLE RIGHT BULKHEAD, MRV BHD
4	SEE SPEC SHEET	BOTTOM BULKHEAD, B1 BHD

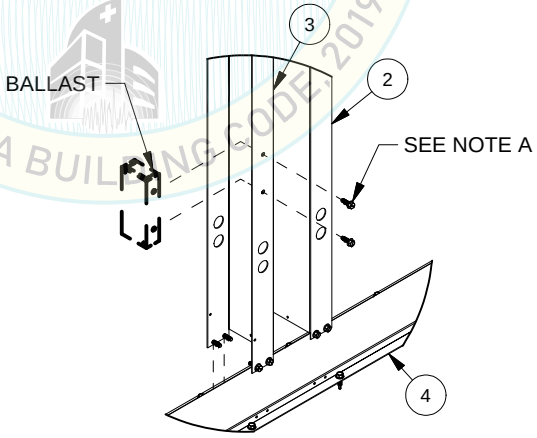




DETAIL A



DETAIL B



DETAIL C
ROTATED CW 90°

NOTES:

A. USE SCREW,TEK, PLTD,#10-16 x 0.75 **(021-17701-000)** FOR ATTACHING BULKHEADS FOR GALV. APPLICATIONS. **(021-19503-000)** SHOULD BE USED FOR ALL OTHER SST APPLICATIONS.

B. USE SCREW,TEK, PLTD, 0.25-14 x 1.00 **(021-30530-042)** FOR ATTACHING TOP & BOTTOM BULKHEADS TO UNIT FLOOR AND ROOF PANELS FOR GALV. APPLICATIONS. **(021-30530-142)** SHOULD BE USED FOR ALL OTHER SST APPLICATIONS **(DETAIL B).**

C. HOLE SPACING FOR BULKHEAD MOUNTING TO THE SHELL OF THE UNIT IS AS FOLLOWS:
MAXIMUM HOLE SPACING IS: 15" ON CENTER
MINIMUM HOLE SPACINIG IS: 4" ON CENTER

Johnson Controls

REV	DATE	DESCRIPTION	INIT.	ECN #
C	5/3/2019	NEW	DSS	-

OSP-0607

DIMENSIONS ARE IN INCHES
TOLERANCES: PER ENG. SPEC. M-282
WELDING: PER ENG. SPEC. M-30

UV SURFACE DECONT LESS THAN 138"

MATERIAL TYP: THICKNESS:
MASTER MODEL: 391-10006-011
SIZE A
DRAWING NUMBER 391-43201-001

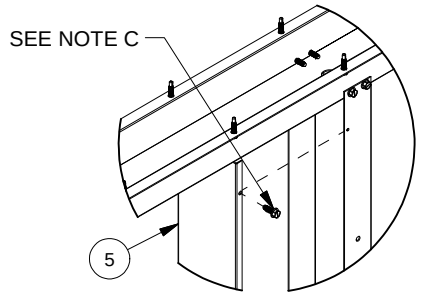
SHEET: 1 OF 2

STEP 2: FIX THE MIDDLE VERTICAL COVER WITH MIDDLE BULKHEAD AND PLACE BULB TO MIDDLE VERTICAL BULKHEADS.

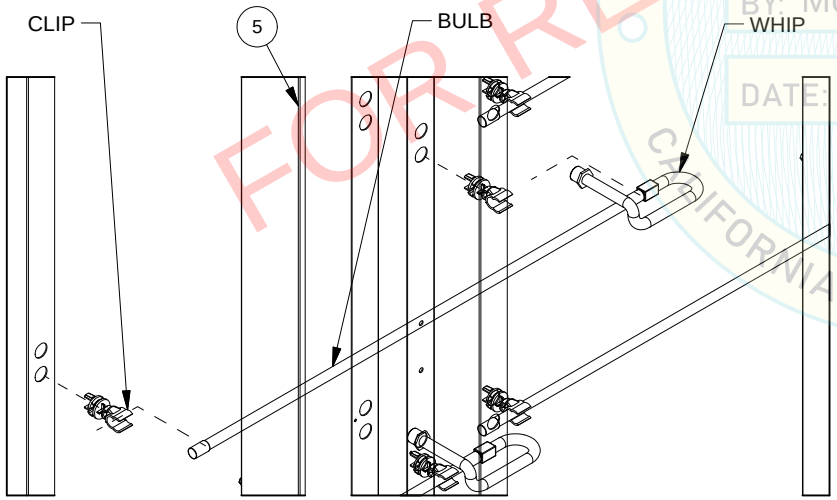
PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
5	SEE SPEC SHEET	MIDDLE VERTICAL COVER, MVC

NOTES:

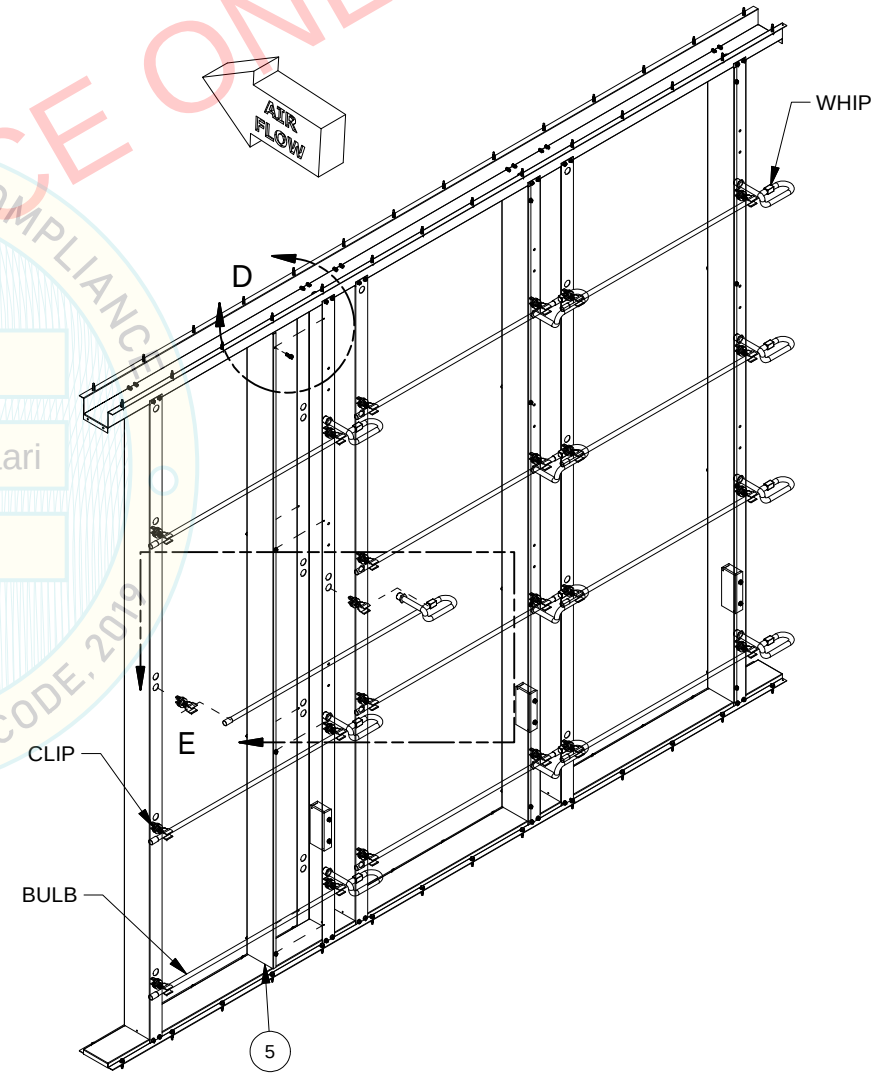
C. USE SCREW,TEK, PLTD,#10-16 x 0.75 **(021-17701-000)** FOR ATTACHING MIDDLE VERTCAL COVER WITH MIDDLE BULKHEAD FOR GALV. APPLICATIONS.**(021-19503-000)** SHOULD BE USED FOR ALL OTHER SST APPLICATIONS**.**



DETAIL D



DETAIL E



Johnson Controls

REV	DATE	DESCRIPTION	INIT.	ECN #
C	5/3/2019	NEW	DSS	-

OSP-0607

DIMENSIONS ARE IN INCHES

TOLERANCES: PER ENG. SPEC. M-282

WELDING: PER ENG. SPEC. M-30

UV SURFACE DECONT LESS THAN 138"

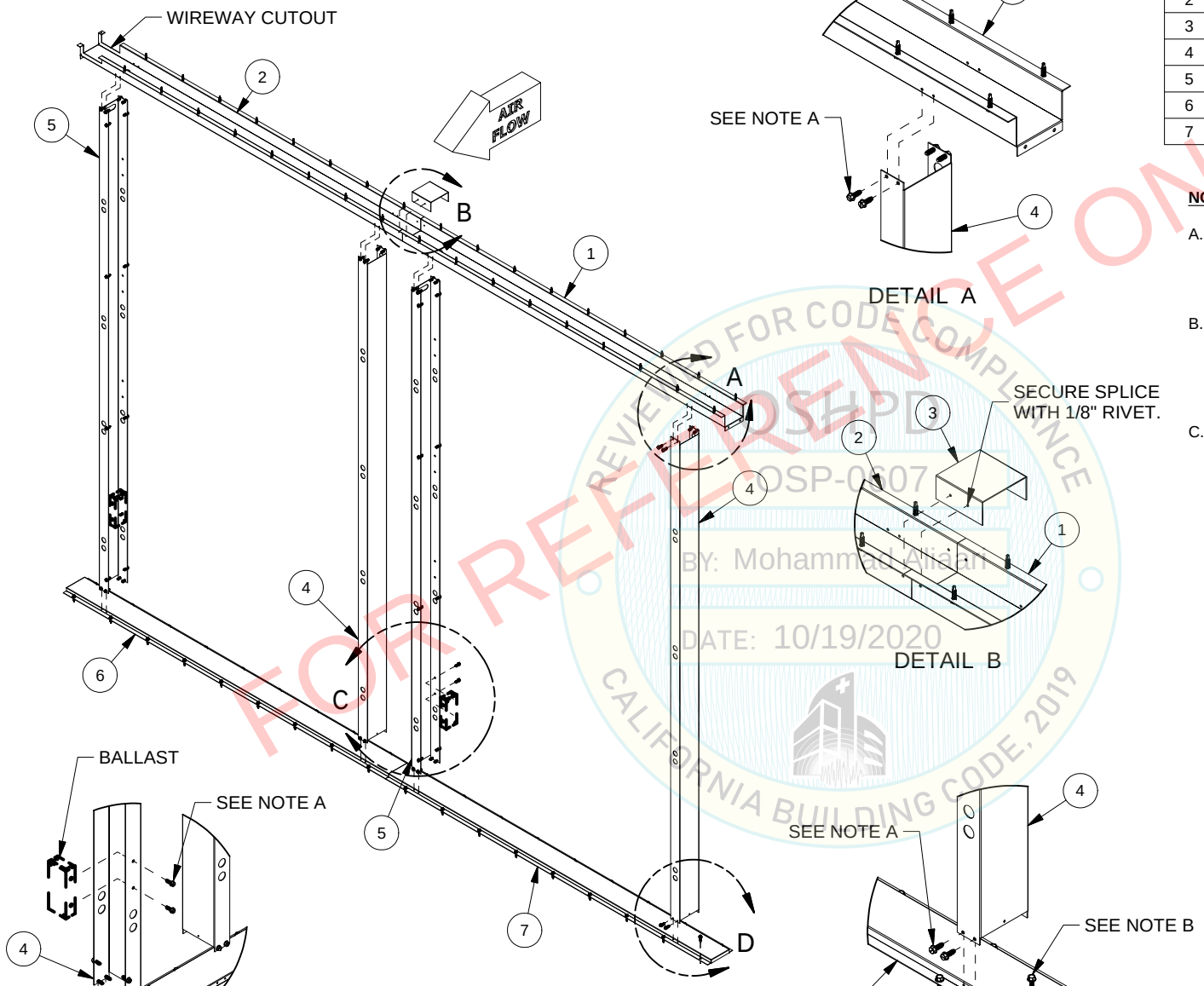
MATERIAL TYP: | THICKNESS:

MASTER MODEL: 391-10006-011

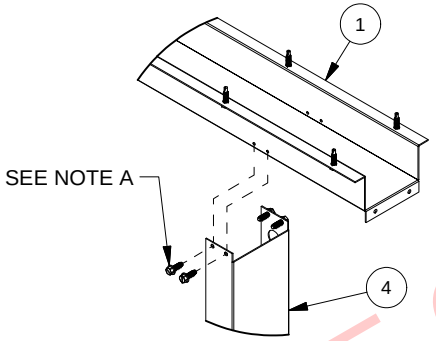
SIZE A | DRAWING NUMBER 391-43201-002

SHEET: 2 OF 2

STEP 1: FIX TOP AND BOTTOM BULKHEAD WITH MIDDLE VERTICAL BULKHEADS AND PLACE BALLAST TO MIDDLE VERTICAL BULKHEADS.

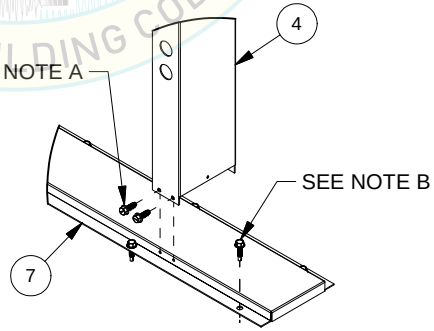


DETAIL C
ROTATED CW 90°



DETAIL A

DETAIL B



DETAIL D

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	SEE SPEC SHEET	TOP LEFT BULKHEAD, T3BHD
2	SEE SPEC SHEET	TOP RIGHT BULKHEAD, T2BHD
3	SEE SPEC SHEET	SPLICE, TOP, BHD
4	SEE SPEC SHEET	MIDDLE LEFT VERT. BULKHEAD, MLVBHD
5	SEE SPEC SHEET	MIDDLE RIGHT VERT. BULKHEAD, MRVBHD
6	SEE SPEC SHEET	BOTTOM RIGHT BULKHEAD, B2BHD
7	SEE SPEC SHEET	BOTTOM LEFT BULKHEAD, B3BHD

NOTES:

A. USE SCREW,TEK, PLTD,#10-16 x 0.75 **(021-17701-000)** FOR ATTACHING BULKHEADS FOR GALV. APPLICATIONS. **(021-19503-000)** SHOULD BE USED FOR ALL OTHER SST APPLICATIONS**.**

B. USE SCREW,TEK, PLTD, 0.25-14 x 1.00 **(021-30530-042)** FOR ATTACHING TOP & BOTTOM BULKHEADS TO UNIT FLOOR AND ROOF PANELS FOR GALV. APPLICATIONS**. (021-30530-142)** SHOULD BE USED FOR ALL OTHER SST APPLICATIONS **(DETAIL B).**

C. HOLE SPACING FOR BULKHEAD MOUNTING TO THE SHELL OF THE UNIT IS AS FOLLOWS:
MAXIMUM HOLE SPACING IS: 15" ON CENTER
MINIMUM HOLE SPACINIG IS: 4" ON CENTER

Johnson Controls

REV	DATE	DESCRIPTION	INIT.	ECN #
C	5/3/2019	NEW	DSS	-

OSP-0607

DIMENSIONS ARE IN INCHES
TOLERANCES: PER ENG. SPEC. M-282
WELDING: PER ENG. SPEC. M-30

UV SURFACE DECONT MORE THAN 138"

MATERIAL TYP: | THICKNESS:
MASTER MODEL: 391-10006-011
SIZE A | DRAWING NUMBER 391-43201-003

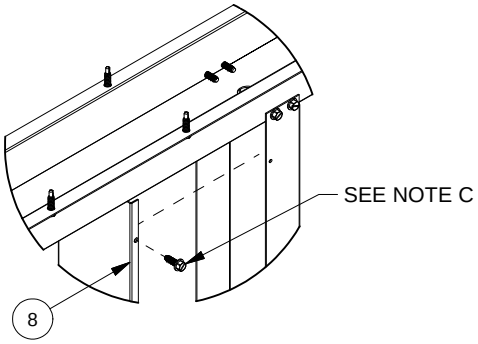
SHEET: 1 OF 2

STEP 2: FIX THE MIDDLE VERTICAL COVER WITH MIDDLE BULKHEAD AND PLACE BULB TO MIDDLE VERTICAL BULKHEADS.

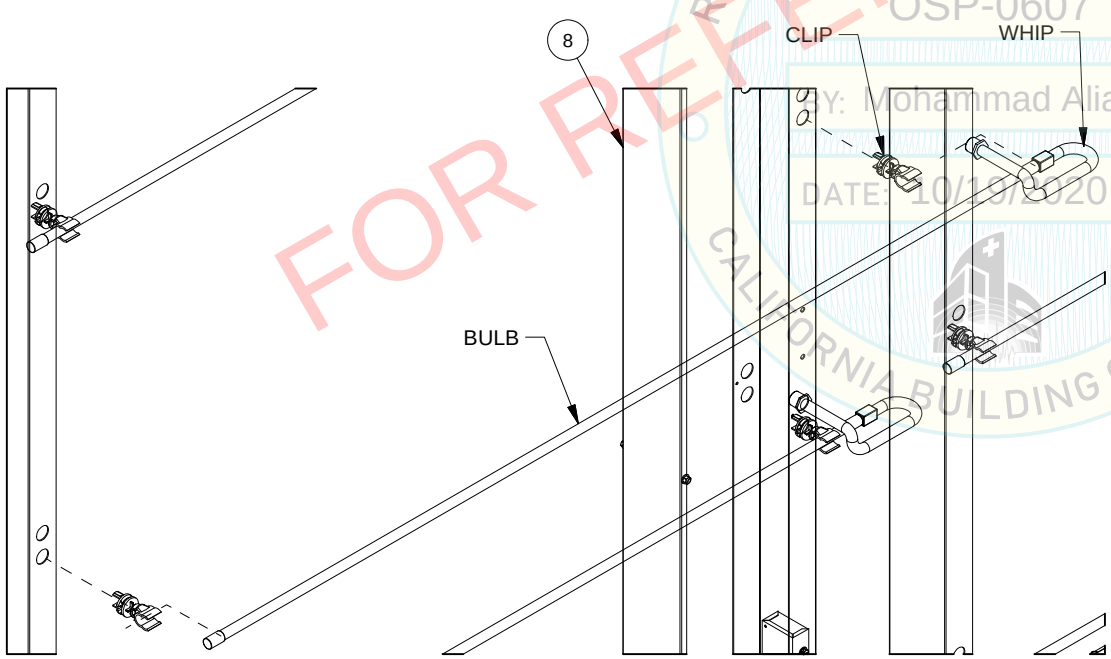
PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
8	SEE SPEC SHEET	MIDDLE VERT. COVER, MVC

NOTES:

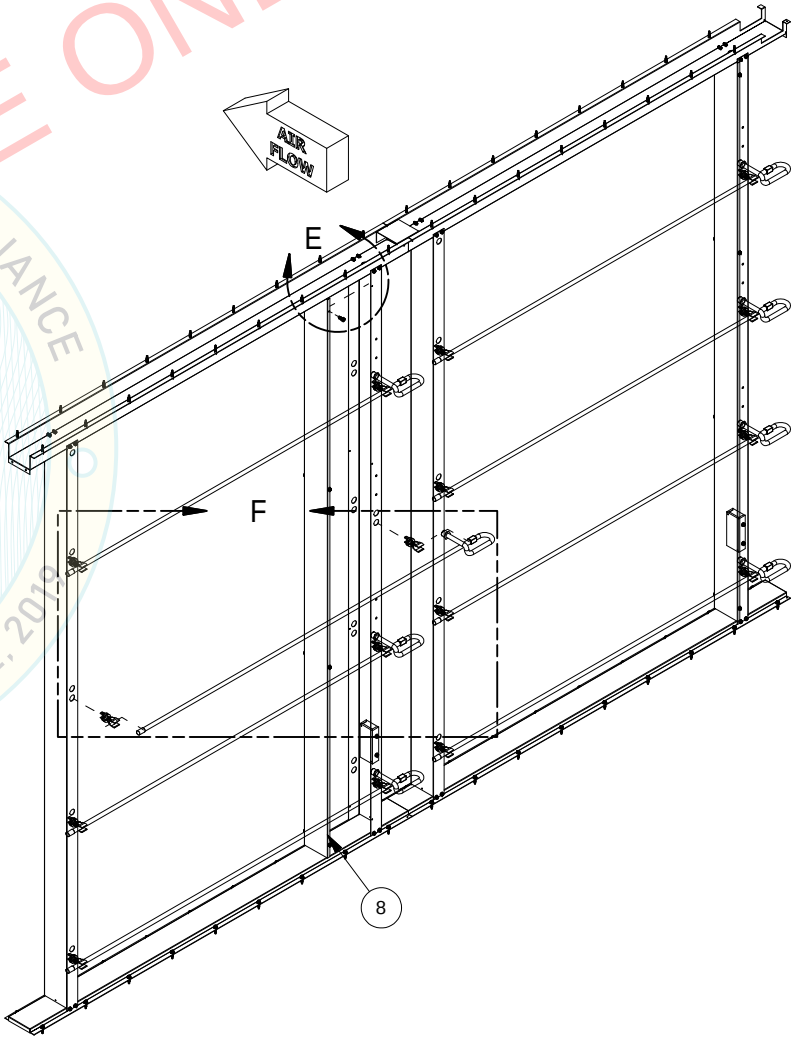
C. USE SCREW,TEK, PLTD,#10-16 x 0.75 **(021-17701-000)** FOR ATTACHING MIDDLE VERTCAL COVER WITH MIDDLE BULKHEAD FOR GALV. APPLICATIONS.**(021-19503-000)** SHOULD BE USED FOR ALL OTHER SST APPLICATIONS.



DETAIL E



DETAIL F



Johnson Controls

10/19/2020

REV	DATE	DESCRIPTION	INIT.	ECN #
C	5/3/2019	NEW	DSS	-

OSP-0607

DIMENSIONS ARE IN INCHES

TOLERANCES: PER ENG. SPEC. M-282

WELDING: PER ENG. SPEC. M-30

UV SURFACE DECONT MORE THAN 138"

MATERIAL TYP: | THICKNESS:

MASTER MODEL: 391-10006-011

SIZE A | DRAWING NUMBER 391-43201-004

SHEET: 2 OF 2