

CLIENT:

PROJECT TITLE: USP 797 / USP 800 CLEANROOMS

DESIGN / BUILD CLEANROOM MANUFACTURER:

CLEAN AIR TECHNOLOGY, INC.

41105 CAPITAL, CANTON, MI 48187
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FAX: (734) 459-9437
www.cleanairtechnology.com

PROJECT /JOB # 18-142

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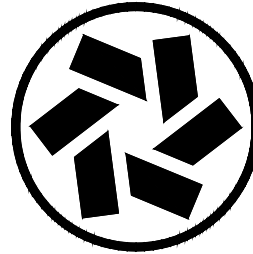
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FIRE PROTECTION

(FOR REFERENCE ONLY, DRAWING BY NORTHWEST FIRE PROTECTION, INC.)

CLEAN AIR ROOMS

CLEAN AIR TECHNOLOGY, INC.
Decades of Experience Building America's Cleanrooms
41105 Capital, Canton, MI 48187 Tel 734-459-6320 Fax 734-459-9437
www.cleanairtechnology.com



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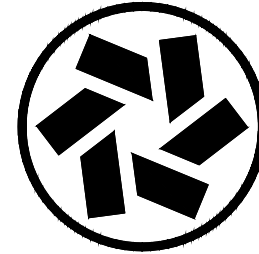
REV. NUM.	REV. DATE	REVISION DESCRIPTION	BY
A	05-10-18	REVISED	DWS
B	05-15-18	REVISED	DWS
C	07-11-18	BEGIN REDESIGN USING NEW COMPONENTS	DWS
D	07-25-18	REVISED	DWS
E	08-01-18	REVISED	DWS
F	08-22-18	REVISED	DWS
G	08-24-18	REVISED	DWS
H	08-26-18	REVISED	DWS
I	08-28-18	REVISED	DWS
J	08-28-18	REVISED	DWS
K	08-28-18	REVISED	DWS
L	09-07-18	REVISED	DWS
M	09-10-18	REVISED	DWS
N	09-11-18	ELECTRICAL REVISIONS	DWS
O	09-11-18	RELOCATED ELECTRICAL REVISIONS	DWS
P	09-20-18	RELOCATED ELECTRICAL REVISIONS (NO LOAD CHANGES)	DWS
00	09-21-18	ISSUED FOR CONSTRUCTION	DWS

DEFINITIONS OF STANDARD TERMINOLOGY USED IN THIS DRAWING PACKAGE:	
C.A.T. - CLEAN AIR TECHNOLOGY, INC. CLEANROOM - AN ENCLOSED CONTROLLED ENVIRONMENT, WITHIN WHICH, AIR IS FILTERED TO CONTAIN NO MORE THAN A SPECIFIED QUANTITY OF FOREIGN PARTICLES, AND MAY ALSO INCLUDE TEMPERATURE AND HUMIDITY CONTROL. S/A - SUPPLY AIR R/A - RETURN AIR M/A - MAKE-UP AIR RAHU - RECIRCULATING AIR HANDLING UNIT AHU - AIR HANDLING UNIT RF - RECIRCULATION FAN CHW - CHILLED WATER DX - DIRECT-EXPANSION REFRIGERANT HW - HOT WATER HEPA - HIGH EFFICIENCY PARTICULATE AIR (FILTER)	

LATEST REVISION(S) TO SET: 2/5/20

AS-BUILT DRAWING SET

CUSTOMER	
PROJECT TITLE USP 797 / USP 800 CLEANROOMS	
PROJECT LOCATION	
C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	05-08-18
DRAWN BY:	DWS
SCALE:	NONE
DESCRIPTION: TITLE PAGE INDEX TO DRAWINGS	
DRAWING #:	TITLE



CLEAN AIR TECHNOLOGY, INC.
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REV.	NUM.	DATE	DESCRIPTION	BY
00	01	02-25-18	ISSUED FOR CONSTRUCTION	DWS
01	01	07-26-19	AS-BUILT	DWS
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03	01			
04	01			
05	01			
06	01			
07	01			
08	01			
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26	01			
27	01			
28	01			
29	01			
30	01			

CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

C.A.T. JOB NUMBER 18-142

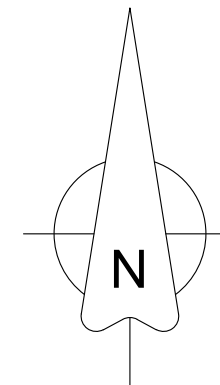
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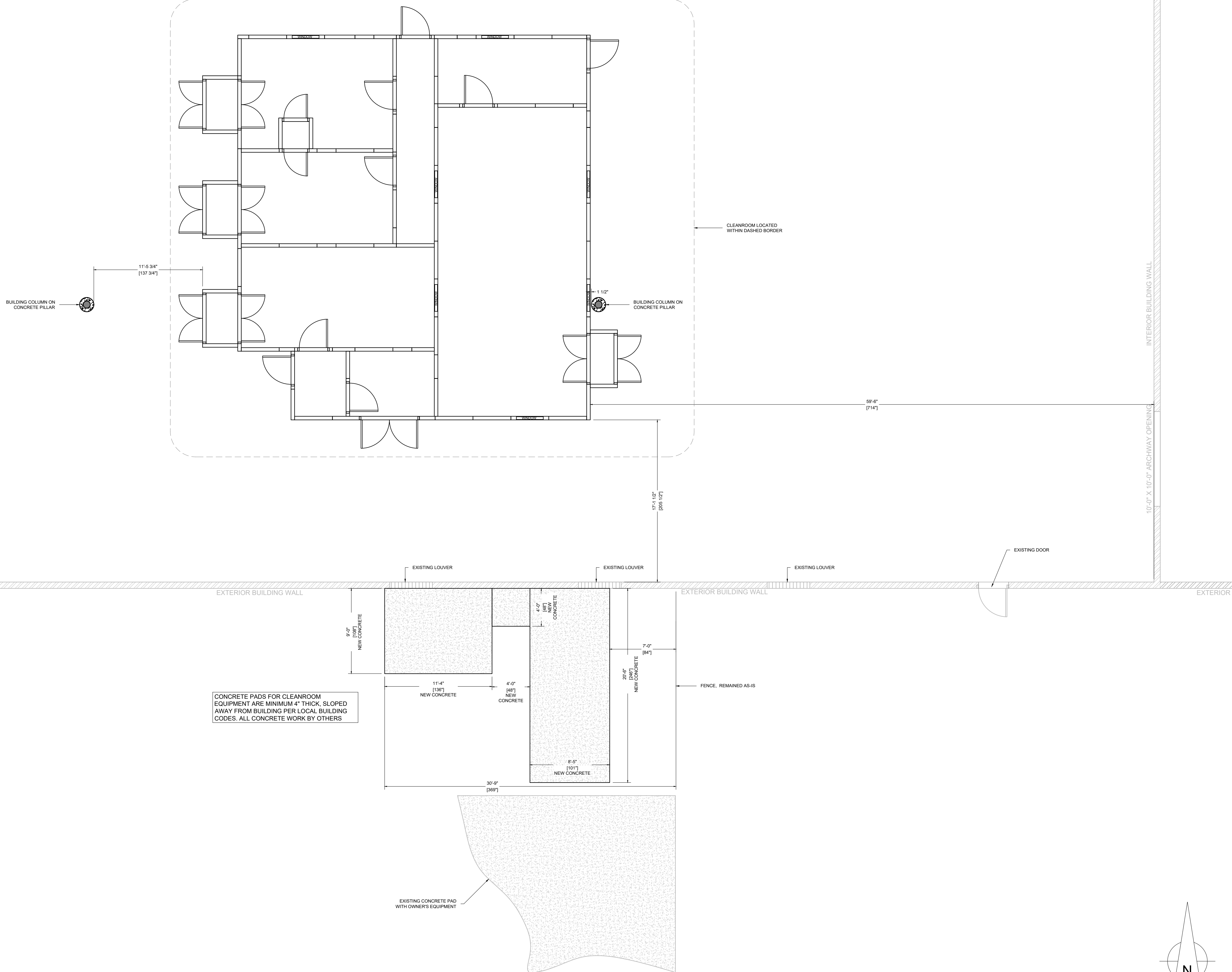
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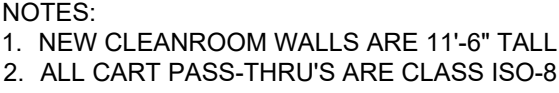
DESCRIPTION:
AREA OF CLEANROOM
CONSTRUCTION WITHIN
EXISTING BUILDING

DRAWING #: CR-001



AS-BUILT DRAWING SET





LEGEND	
	ILLUMINATED EXIT SIGN, WITH SIDE-MOUNTED SPOTLIGHTS, 90 MINUTE EMERGENCY BATTERY BACKUP
	36" X 36" DUAL-PANE WINDOW IN CLEANROOM WALL, CLEAR SAFETY GLASS.
	ANODIZED ALUMINUM AIR RETURN FACE GRILLE.
SEE CHART, THIS DRAWING, FOR QUANTITIES AND SIZES OF R/A GRILLES.	

Cleanroom Return air Data					
Room Name	Design Airflow Volume (CFM)	Wall Depth (in.)	Grille Size	Quantity	Velocity Up R/A Wall Chases (FPM)
Cream Room	4410	4	18x18	13	509
Cream Room Gownrom	560	4	10x18	2	420
Cart Pass-Thru-1	100	4	10x18	1	150
Sample Room	490	4	18x18*	2	368
Sample Room Gownroom	300	4	10x18	1	450
Gownroom	700	4	10x18	3	350
Concentrate Room	1755	4	18x18	5	527
V-Blend Room	1240	4	18x18	4	465
Fill/Pack Room	1395	4	18x18	4	523
Cart Pass-Thru-2	100	4	10x18	1	150
Cart Pass-Thru-3	100	4	10x18	1	150
Cart Pass-Thru-4	100	4	10x18	1	150

*= 1 @ 18x18 & 1 @ 10x18

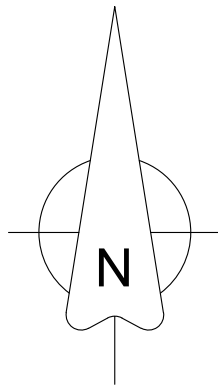
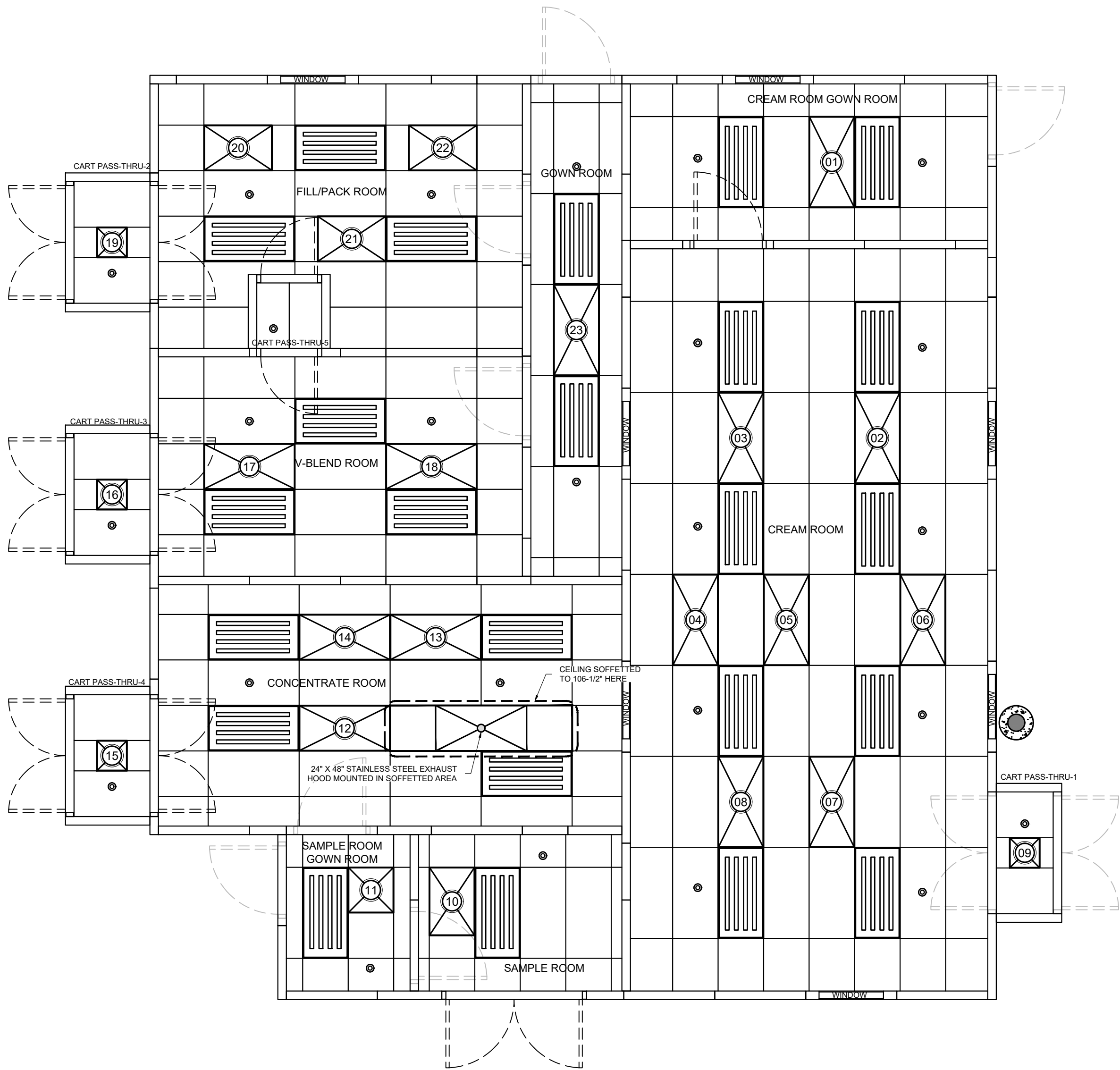
PRESSURE CHART	
Room Name	Pressure (" W.C.)
Cream Room	0.06
Cream Room Gownrom	0.03
Cart Pass-Thru-1	0.03
Sample Room	-0.01
Sample Room Gownroom	0.015
Gownroom	0.02
Concentrate Room	0.00
V-Blend Room	0.00
Fill/Pack Room	0.00
Cart Pass-Thru-2	0.01
Cart Pass-Thru-3	0.01
Cart Pass-Thru-4	0.01

18-142 DOOR SCHEDULE																			NEW OR RE-USED FROM MIAMI, FL FACILITY
DOOR NUMBER	WIDTH	HEIGHT	SWING	FRAME DEPTH	FINISH	HALF OR FULL GLASS	GLASS COLOR	HARDWARE TYPE	DUMMY CYLINDER	CLOSER ON ACTIVE LEAF	GASKETED FRAME STOPS	HINGE QUANTITY	SWEEP	THRESHOLD	MANUFACTURER	INTERLOCKED	ASTRAGAL ON INACTIVE LEAF	FLUSHBOLTS ON INACTIVE LEAF	
01	36"	84"	RH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	RE-USED
02	36"	84"	RH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	RE-USED
03	36"	84"	RH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	RE-USED
04	36"	84"	LH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	NEW
05	36"	84"	LH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	RE-USED
06	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 07	YES	NO	NEW
07	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 08	YES	NO	NEW
08	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 09	YES	NO	RE-USED
09	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 08	YES	NO	NEW
10	36"	84"	RH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	NEW
11	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 12	YES	NO	RE-USED
12	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 11	YES	NO	RE-USED
13	36"	84"	LH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	NEW
14	36"	84"	RH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	NO	N/A	N/A	NEW
15	30"	60"	LH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	YES, WITH 16	N/A	N/A	NEW
16	30"	60"	RH	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	3	YES	NO	RAMCO	YES, WITH 15	N/A	N/A	NEW
17	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 18	YES	NO	NEW
18	60"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	FULL-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	YES, WITH 17	YES	NO	NEW
19	72"	84"	DOUBLE	STANDARD	ALUMINUM ANODIZED	HALF-GLASS	CLEAR	PUSH-PULL HARDWARE	YES	YES	YES	6	YES	NO	RAMCO	NO	YES	YES	NEW

REV.	NUM.	DATE	REVISION DESCRIPTION	BY
	A	05-15-18	REVISED	DWS
	B	07-12-18	REDISIGN USING NEW COMPONENTS	DWS
	C	07-12-18	REVISED	DWS
	D	07-25-18	REVISED	DWS
	E	08-22-18	REVISED	DWS
	F	08-26-18	REVISED	DWS
	G	08-29-18	REVISED	DWS
	H	08-29-18	REVISED	DWS
	I	08-29-18	REVISED	DWS
	J	08-29-18	REVISED	DWS
	K	09-10-18	REVISED	DWS
	00	09-21-18	ISSUED FOR CONSTRUCTION	DWS
	01	01-28-19	AS-BUILT	DWS
	02	02-05-19	ADDED PRESSURE CHART	DWS
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<u>CUSTOMER</u>	
<u>PROJECT TITLE</u> USP 797 / USP 800 CLEANROOMS	
<u>PROJECT LOCATION</u>	
C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	05-08-18
DRAWN BY:	DWS
SCALE:	1/4" = 1'-0"
DESCRIPTION:	
CLEANROOM FLOOR PLAN	
DRAWING #:	CR-100

AS-BUILT DRAWING SET



- NOTES:
1. NEW CLEANROOM WALLS ARE 11'-6" TALL
 2. ALL CART PASS-THRU'S ARE CLASS ISO-8

LEGEND

24" X 48" SEALED 4-TUBE CLEANROOM GRADE FLUORESCENT LIGHT FIXTURE. 128W, .46A @ 277V, 1.1A @ 120V(DUAL VOLTAGE BALLAST)

CEILING GRID MOUNTED TERMINAL HEPA FILTER MODULE. SEE CHART, THIS DRAWING, FOR FILTER SIZES AND AIRFLOW SPECIFICS

● LOCATION OF FIRE-SUPPRESSION SPRINKLER HEAD

Cleanroom Area Volume and Supply air Data												
Room Name	Class	Area (sq')	Ceiling Height (in.)	Volume (Cu')	Target ACH	Target Airflow Volume (CFM)	HEPA Filter Size	HEPA Filter Quantity	Airflow Per Filter	Face Velocity (FPM)	Design Airflow Volume (CFM)	Design ACH
Cream Room	ISO-7	512	102.00	4,352	60	4,352	24 x 48	7	630	91.57	4,410	60.80
Cream Room Gownrom	ISO-8	108	96.00	864	30	432	24 x 48	1	560	81.40	560	38.89
Cart Pass-Thru-1	ISO-8	13	96.00	104	30	52	16 x 16	1	100	79.18	100	57.69
Sample Room	ISO-7	61	96.00	488	60	488	24 x 36	1	490	97.26	490	60.25
Sample Room Gownroom	ISO-7	37	96.00	296	60	296	24 x 24	1	300	93.93	300	60.81
Gownroom	ISO-7	87	96.00	696	60	696	24 x 48	1	700	101.74	700	60.34
Concentrate Room	ISO-7	216	96.00	1,728	60	1,728	24 x 48	3	585	85.03	1,755	60.94
V-Blend Room	ISO-7	154	96.00	1,232	60	1,232	24 x 48	2	620	90.12	1,240	60.39
Fill/Pack Room	ISO-7	174	96.00	1,392	60	1,392	24 x 36	3	465	92.30	1,395	60.13
Cart Pass-Thru-2	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67
Cart Pass-Thru-3	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67
Cart Pass-Thru-4	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67

18-142 HEPA FILTER SERIAL NUMBERS	
HEPA FILT. NUM.	SERIAL NUMBER
01	H095210-005
02	H095210-001
03	H095210-012
04	H095210-015
05	H095210-011
06	H095210-010
07	H095210-007
08	H095210-009
09	H093537-001
10	H095215-001
11	H090051-005
12	H095210-003
13	H095210-013
14	H095210-006
15	H093537-003
16	H093537-004
17	H095210-014
18	H095210-005
19	H093537-002
20	H095215-004
21	H095215-003
22	H095215-002
23	H095210-002

REV	NUM	REV DATE	REVISION DESCRIPTION
A	01	05-15-18	REDESIGN
B	02	07-12-18	REDESIGN USING NEW COMPONENTS
C	03	07-17-18	REDESIGN
00	04	09-21-18	ISSUED FOR CONSTRUCTION
01	05	09-21-18	ISSUED FOR CONSTRUCTION
02	06	09-31-20	AS-BUILT REVISIONS
03	07	02-05-20	AS-BUILT REVISIONS
04	08	02-05-20	AS-BUILT REVISIONS
05	09	02-05-20	AS-BUILT REVISIONS
06	10	02-05-20	AS-BUILT REVISIONS
07	11	02-05-20	AS-BUILT REVISIONS
08	12	02-05-20	AS-BUILT REVISIONS
09	13	02-05-20	AS-BUILT REVISIONS
10	14	02-05-20	AS-BUILT REVISIONS
11	15	02-05-20	AS-BUILT REVISIONS
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15	19	02-05-20	AS-BUILT REVISIONS
16	20	02-05-20	AS-BUILT REVISIONS
17	21	02-05-20	AS-BUILT REVISIONS
18	22	02-05-20	AS-BUILT REVISIONS
19	23	02-05-20	AS-BUILT REVISIONS

CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

C.A.T. JOB NUMBER18-142

ORIGINAL DATE:05-08-18

DRAWN BY:DWS

SCALE:1/4" = 1'-0"

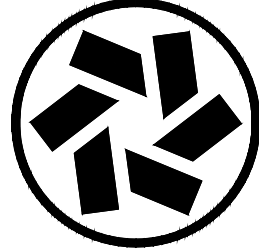
DESCRIPTION:
CLEANROOM REFLECTED
CEILING PLAN

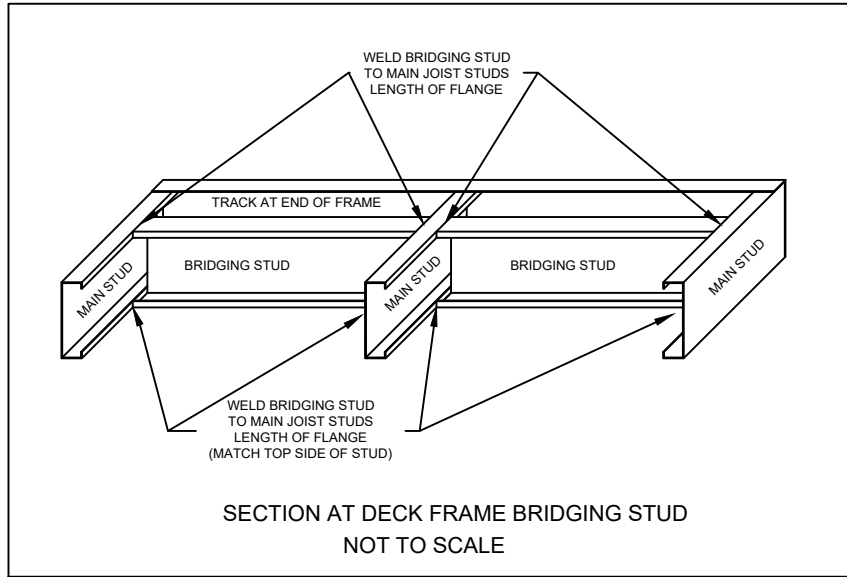
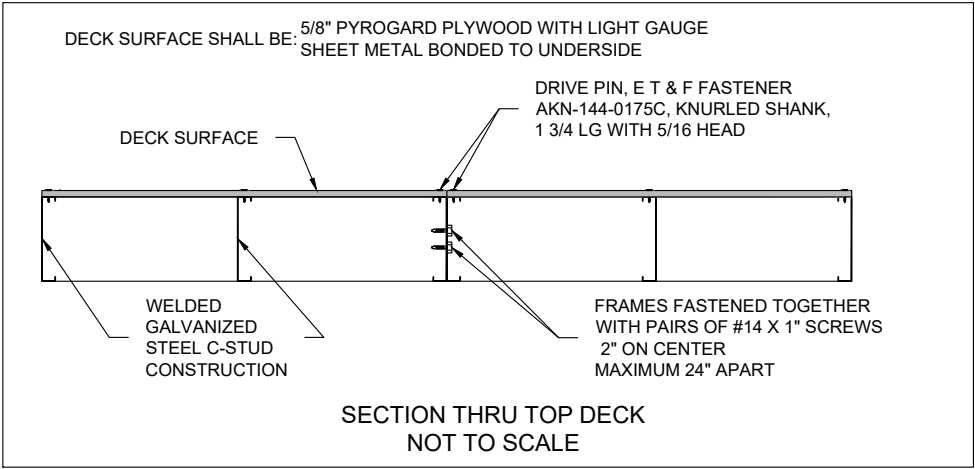
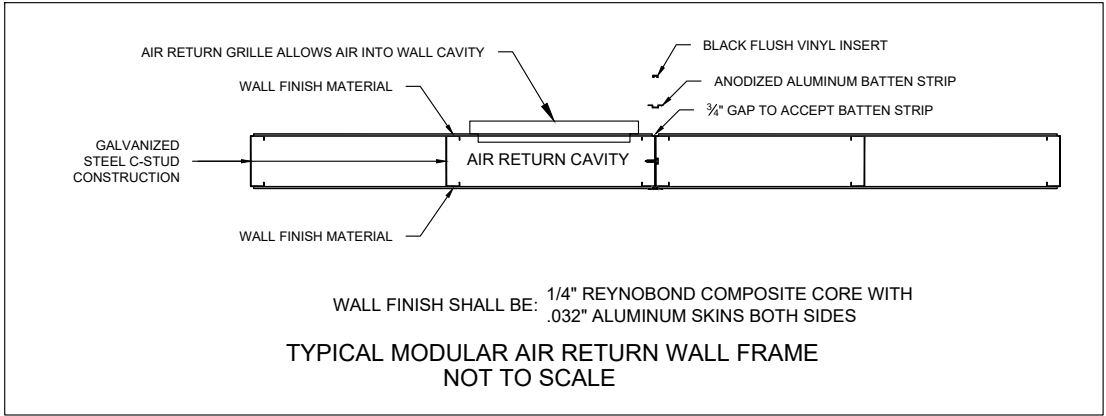
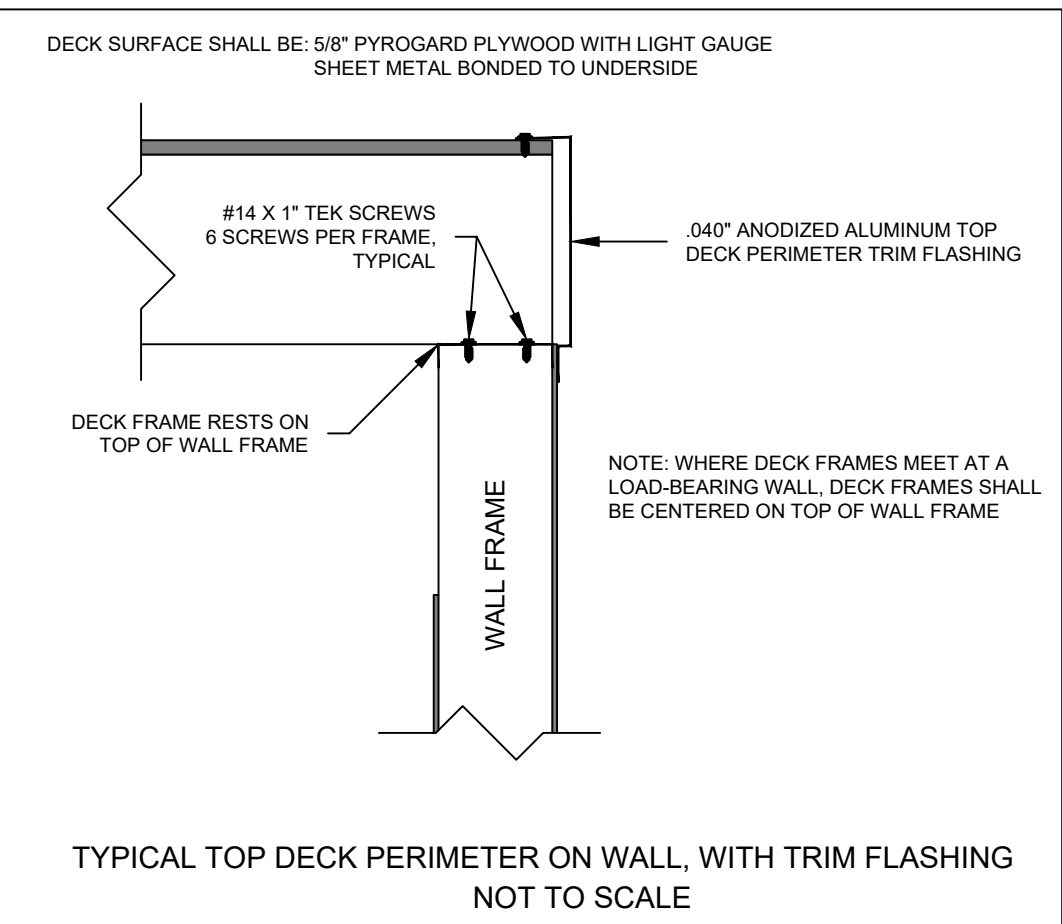
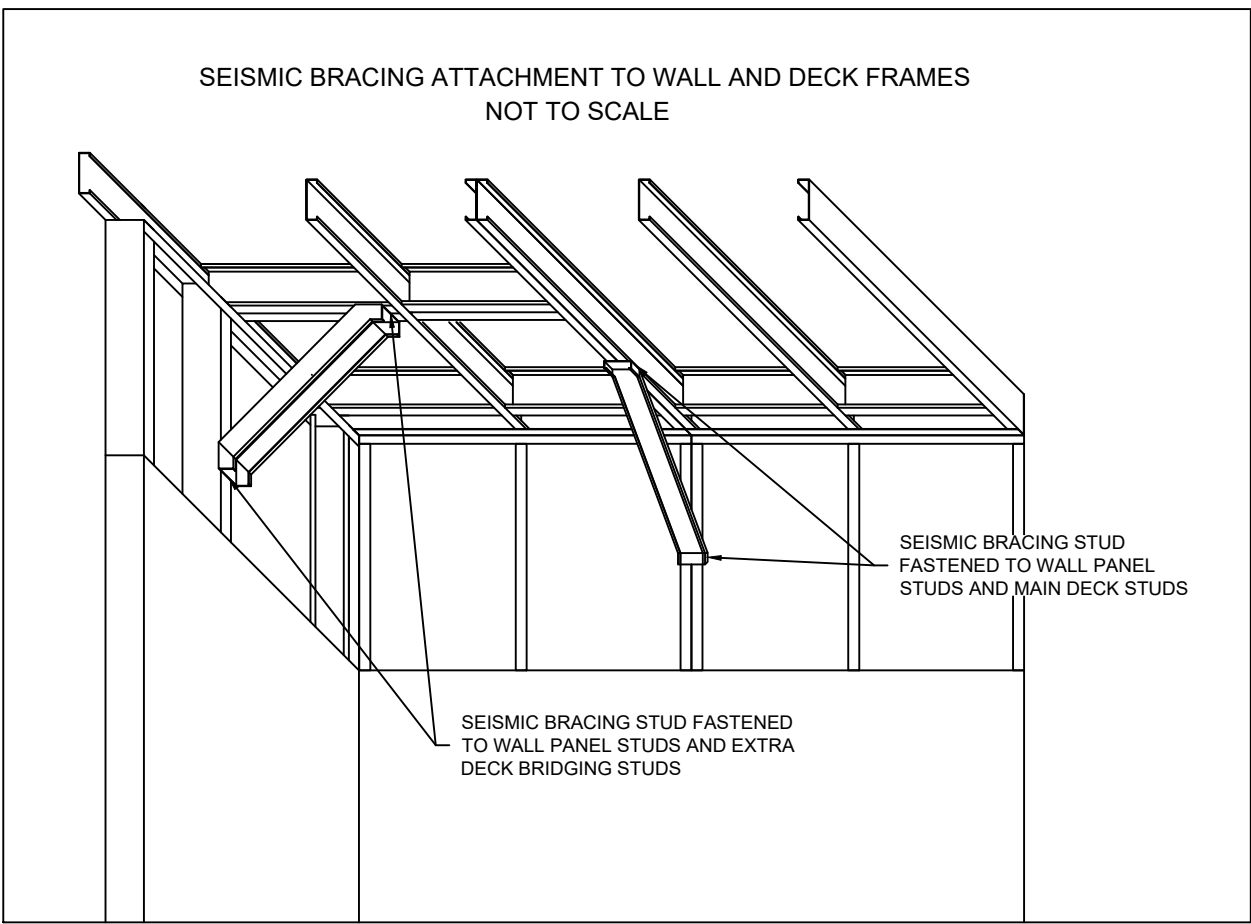
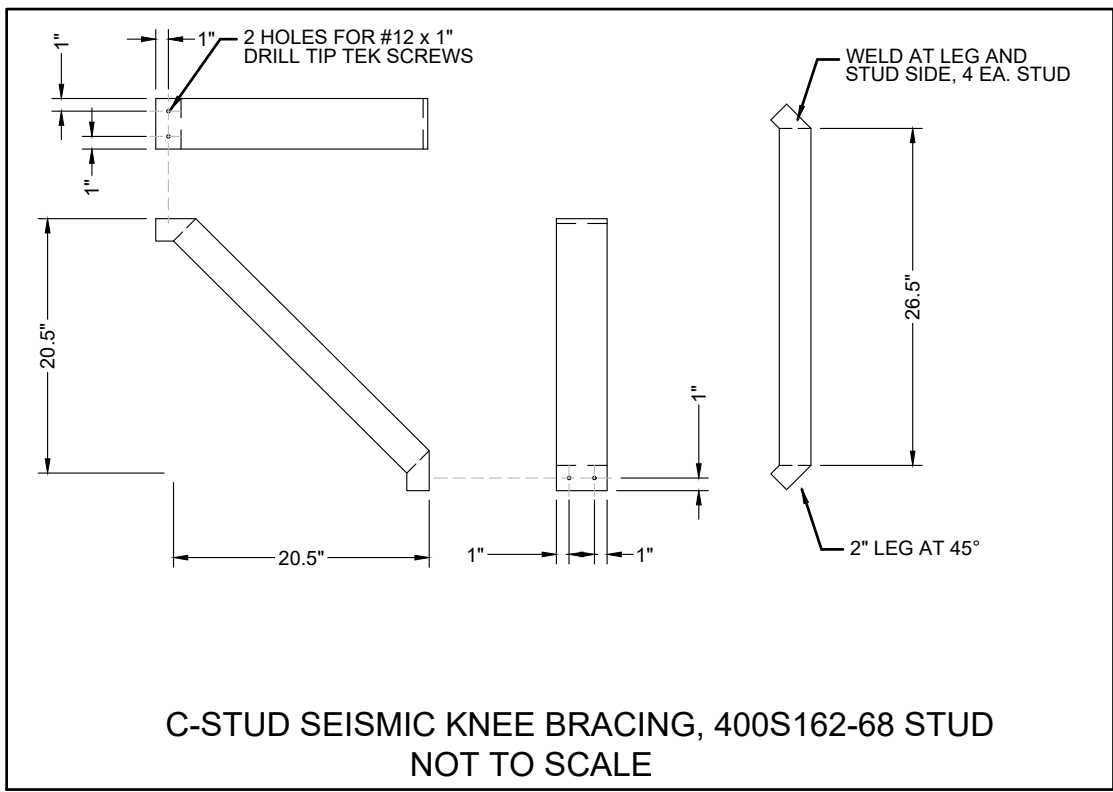
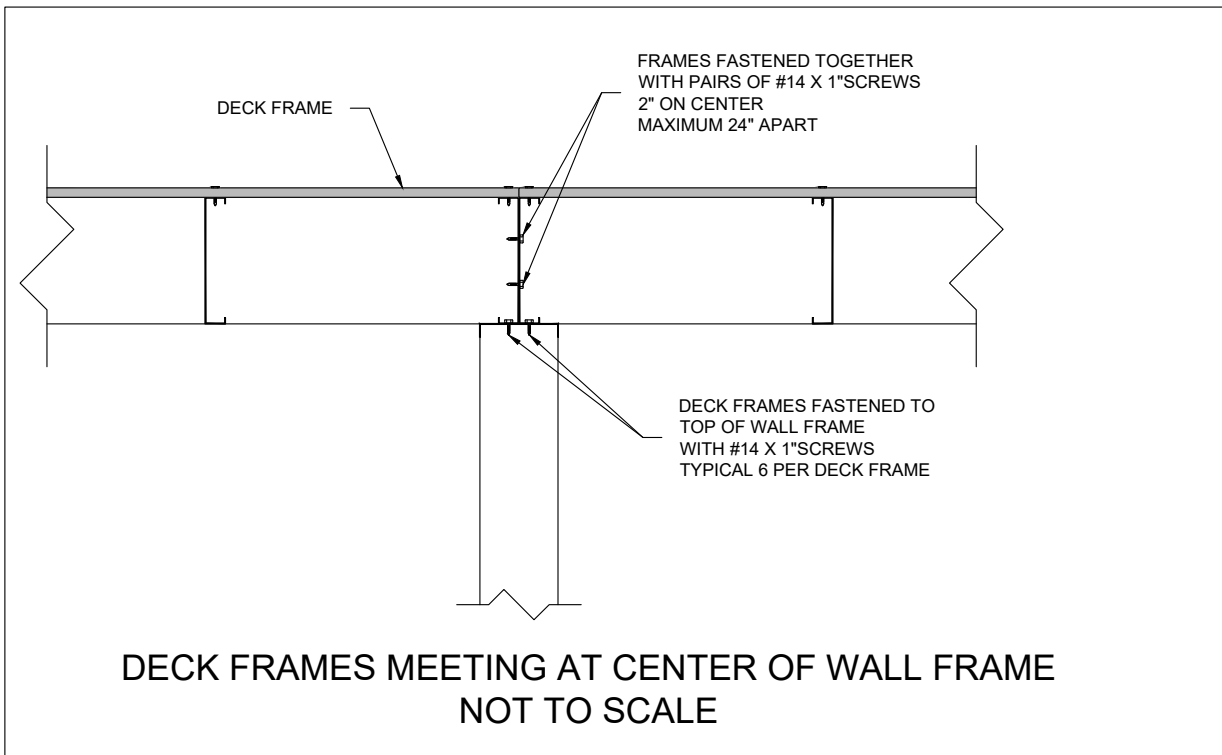
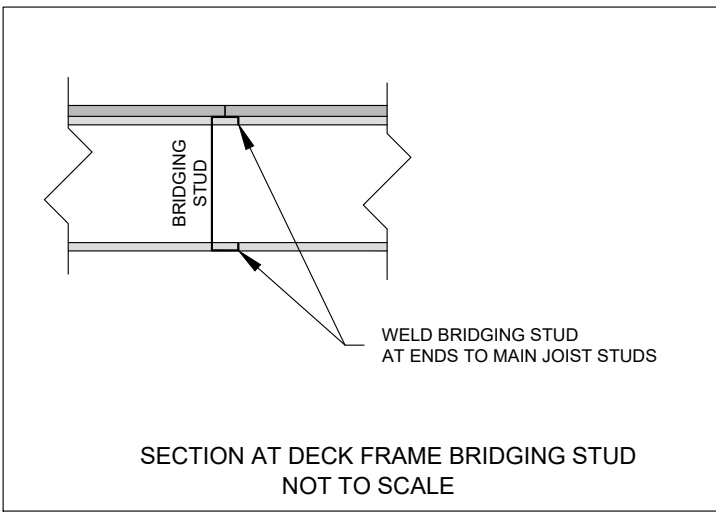
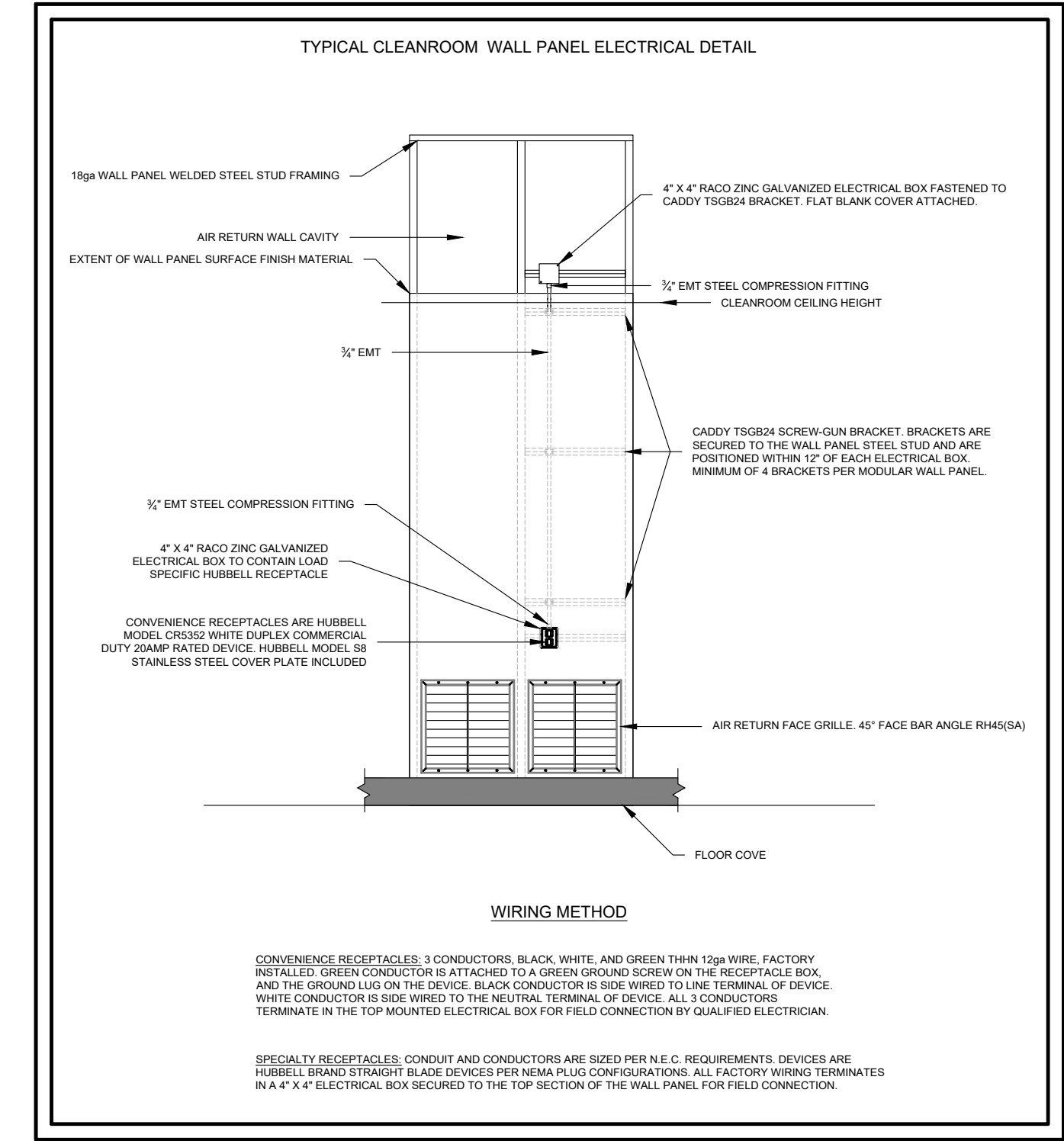
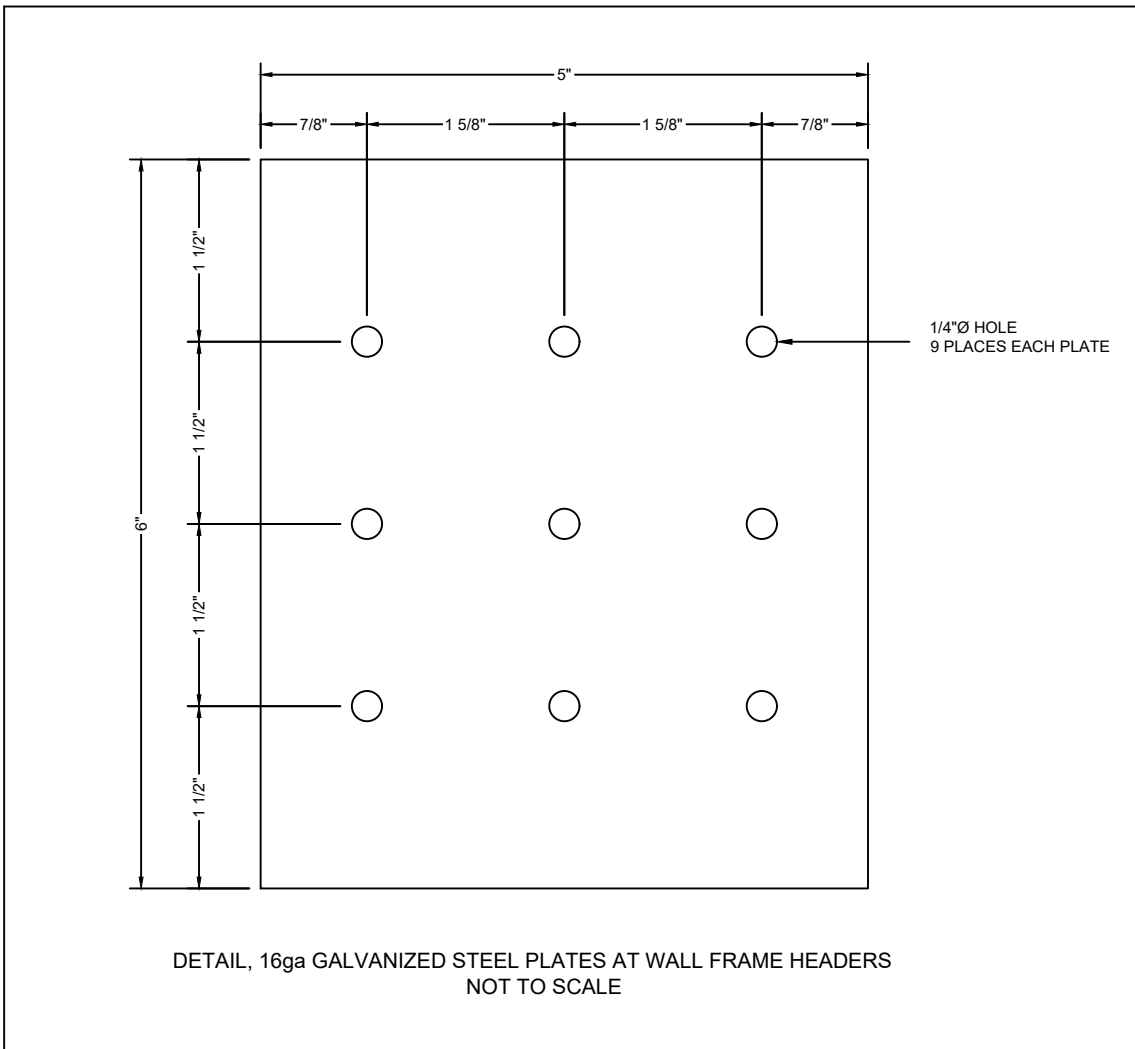
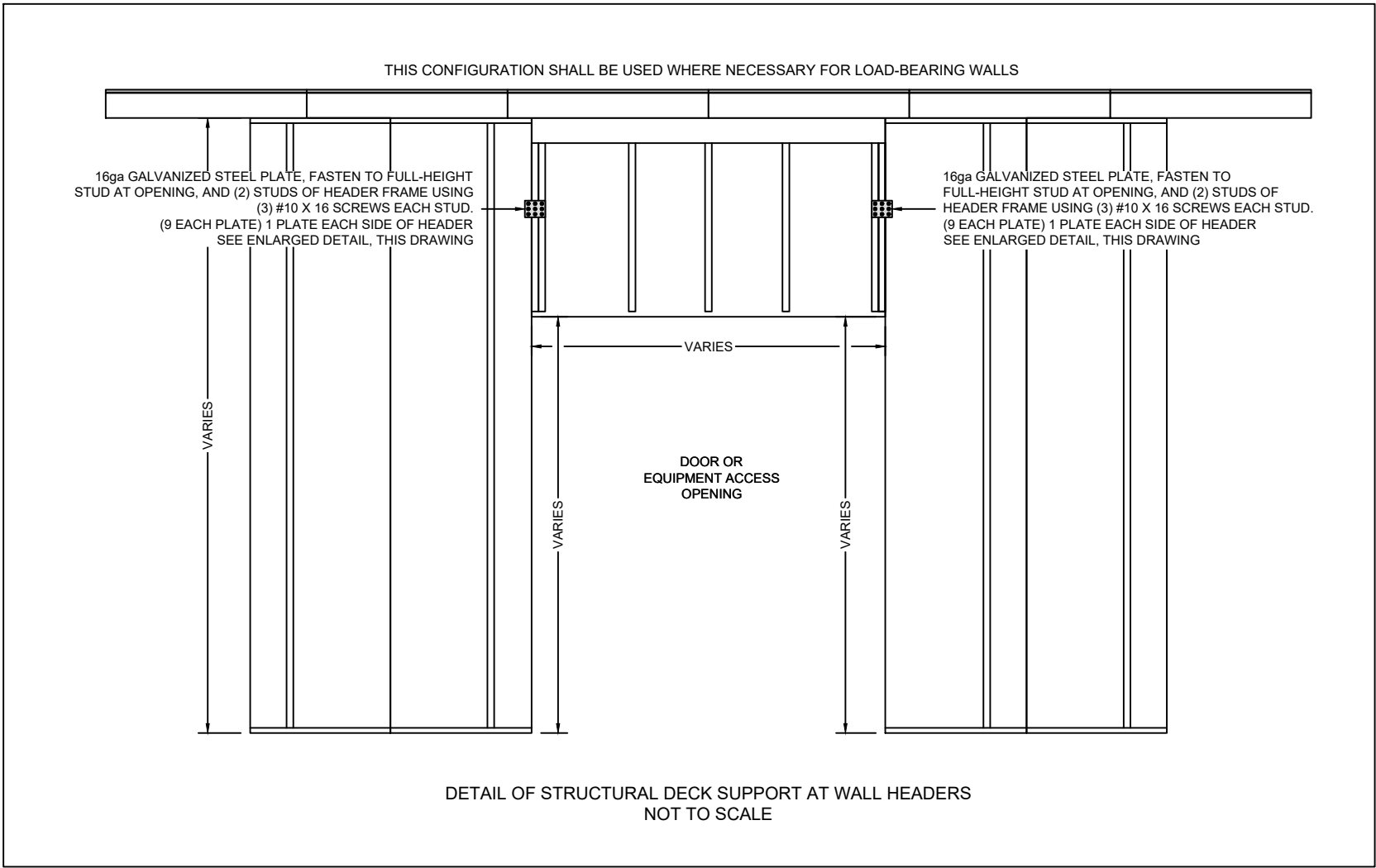
DRAWING #:CR-101

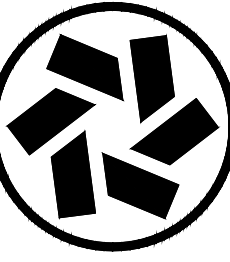
AS-BUILT DRAWING SET

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CLEAN AIR TECHNOLOGY, INC.
Decades of Experience Building America's Cleanrooms
41105 Capital, Canton, MI 48187 Tel 734-459-6320 Fax 734-459-9437
www.cleanairtechnology.com







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REV.	NUM.	DATE	DESCRIPTION	BY	CHKD	APP'D
01	01	07-18-18	ISSUED FOR CONSTRUCTION	DWS		
02	02	07-18-18	ISSUED FOR CONSTRUCTION	DWS		
03	03	07-18-18	ISSUED FOR CONSTRUCTION	DWS		
04	04	07-18-18	ISSUED FOR CONSTRUCTION	DWS		
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19	19	07-18-18	ISSUED FOR CONSTRUCTION	DWS		
20	20	07-18-18	ISSUED FOR CONSTRUCTION	DWS		

CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

C.A.T. JOB NUMBER
18-142

ORIGINAL DATE:
07-18-18

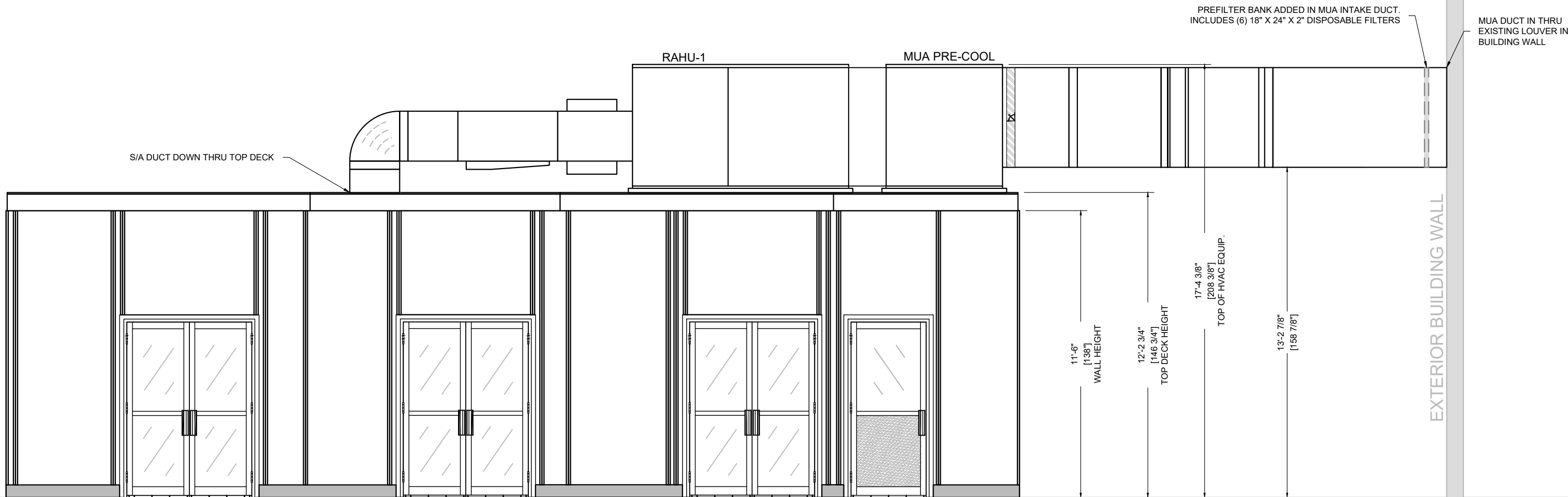
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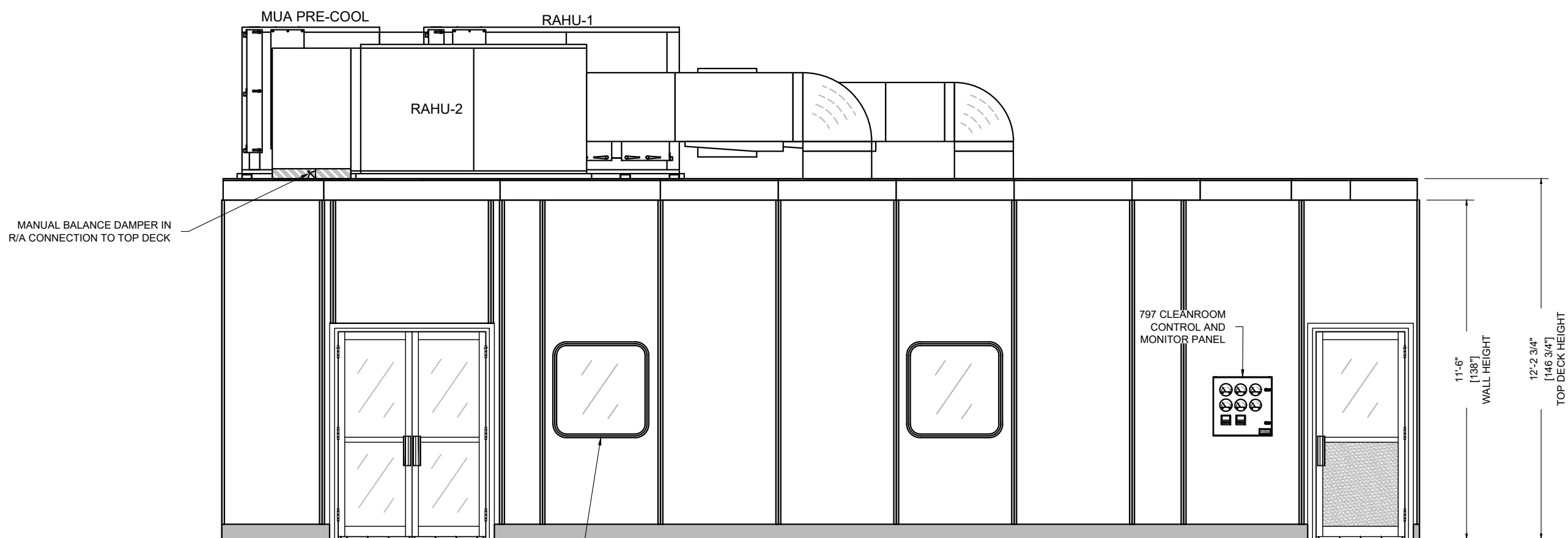
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TYPICAL CLEANROOM
CONSTRUCTION DETAILS

DRAWING #:
CR-110

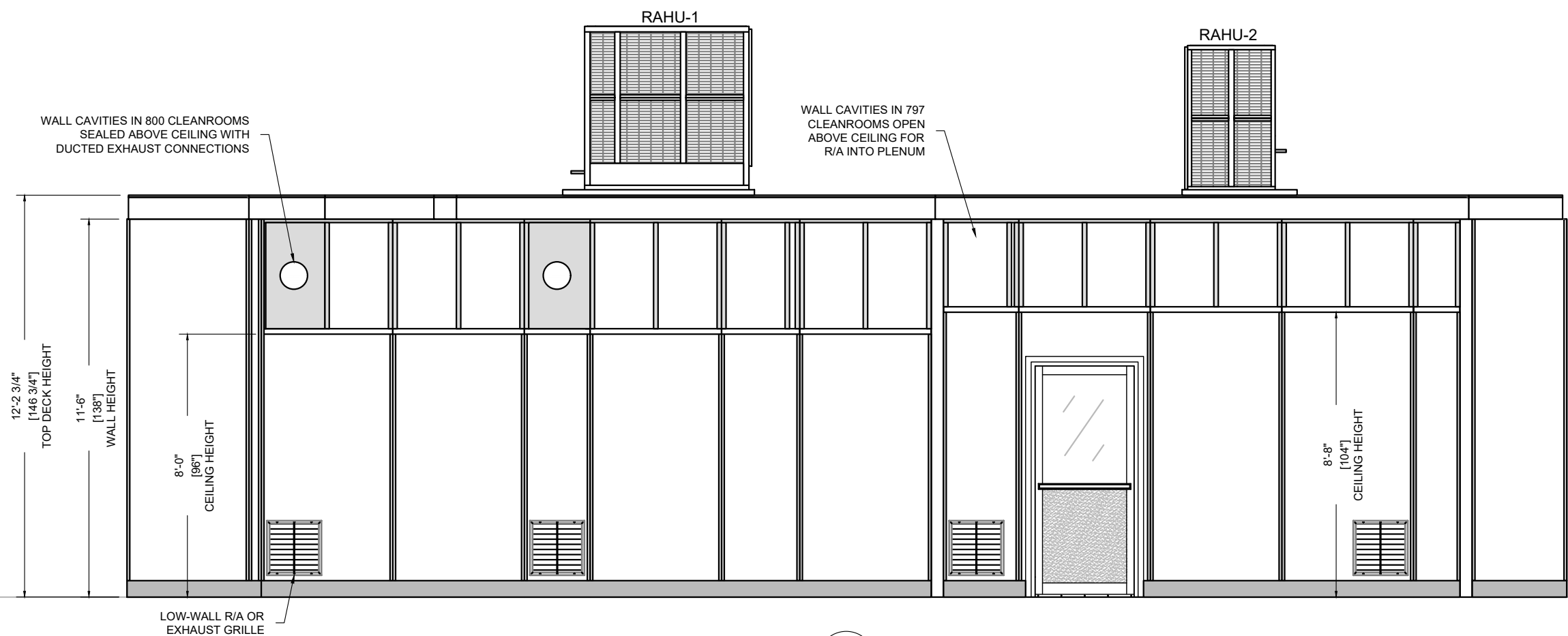
AS-BUILT DRAWING SET



A-A
CR-100, CR-300



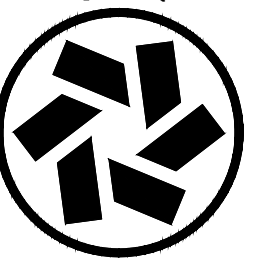
B-B
CR-100, CR-300



C-C
CR-100, CR-300

AS-BUILT DRAWING SET

CLEAN AIR TECHNOLOGY, INC.
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ACCOMPLISHED. CLEAN AIR TECHNOLOGY, INC. WILL ELECT TO
TAKE ALL NECESSARY ACTION TO ENFORCE ITS RIGHTS TO
THIS PROPRIETARY INFORMATION

REV.	NUM.	REV. DATE	REVISION DESCRIPTION	BY
A	01	02-25-18	REVISED	DWS
B	02	02-26-18	REVISED	DWS
C	03	02-26-18	REVISED	DWS
D	04	02-26-18	REVISED	DWS
E	05	02-26-18	REVISED	DWS
F	06	02-26-18	ISSUED FOR CONSTRUCTION	DWS
G	07	02-26-18	AS-BUILT	DWS
H	08	02-26-18	AS-BUILT REVISIONS	DWS
I	09	02-26-18	AS-BUILT REVISIONS	DWS
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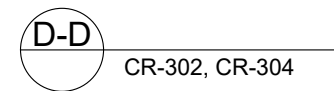
CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

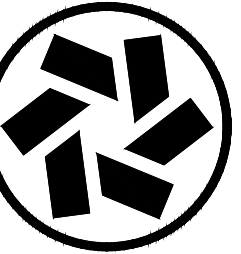
PROJECT LOCATION

C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	07-17-18
DRAWN BY:	DWS
SCALE:	1/4" = 1'-0"
DESCRIPTION:	CLEANROOM SECTION VIEWS

DRAWING #: CR-200



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REV. NUM.	REV. DATE	REVISED	REVISION DESCRIPTION	BY
A	08-22-18	REVISED		DWS
B	08-22-18	REVISED		DWS
C	09-24-18	REVISED		DWS
D	08-26-18	REVISED		DWS
E	08-26-18	REVISED		DWS
F	09-21-18	ISSUED FOR CONSTRUCTION		DWS
G	09-21-18	ISSUED FOR CONSTRUCTION		DWS
H	01-28-19	AS-BUILT		DWS
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CUSTOMER

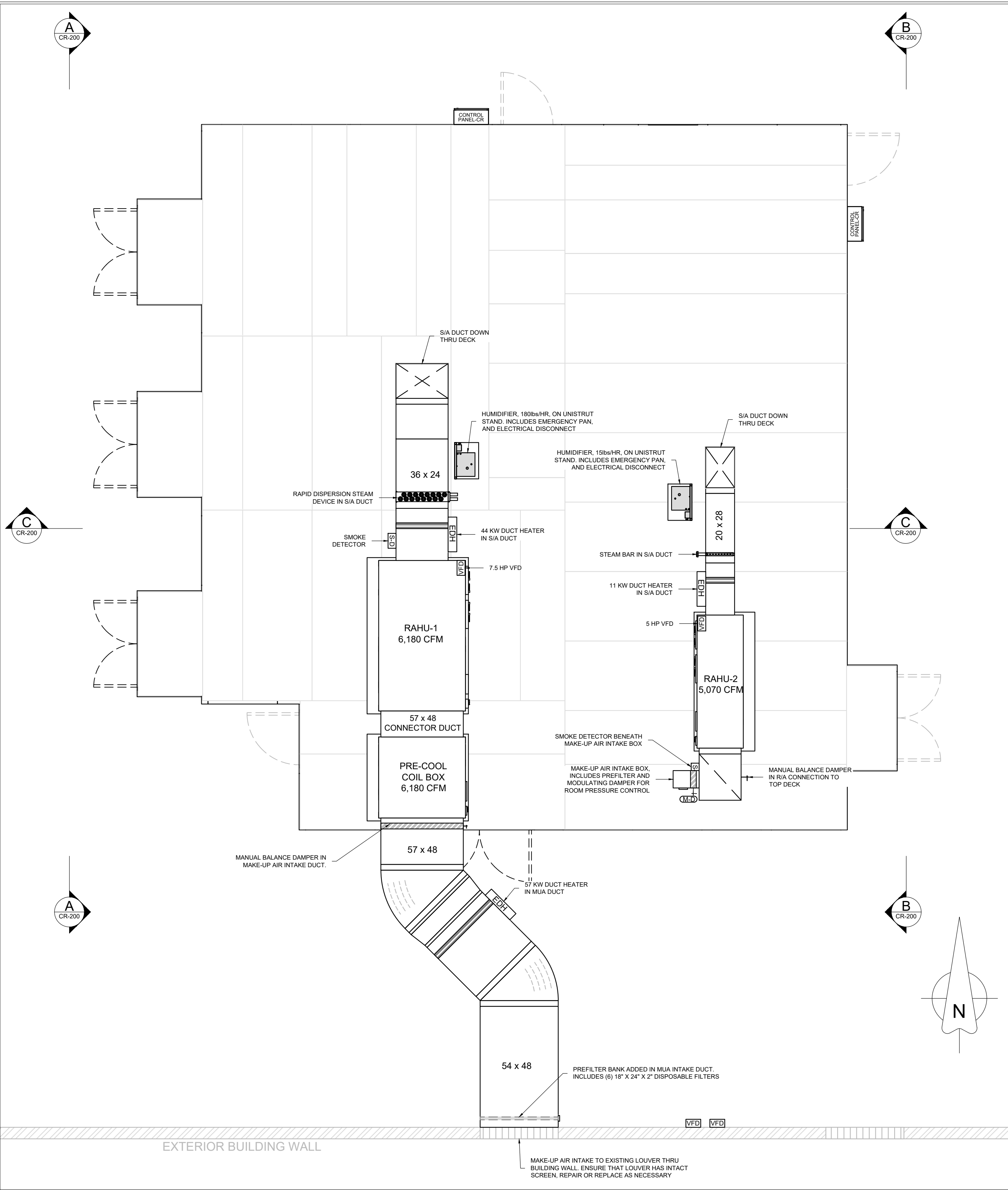
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JSP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

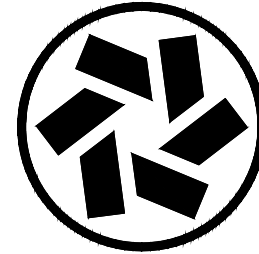
C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	07-20-18
DRAWN BY:	DWS
SCALE:	1/4" = 1'-0"

DESCRIPTION:
PARTIAL ELEVATION, SOUTH
EXTERIOR OF BUILDING

DRAWING #:	CR-201
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Cleanroom Area Volume and Supply air Data													
Room Name	Class	Area (sq')	Ceiling Height (in.)	Volume (Cu')	Target ACH	Target Airflow Volume (CFM)	HEPA Filter Size	HEPA Filter Quantity	Airflow Per Filter	Face Velocity (FPM)	Design Airflow Volume (CFM)	Design ACH	Make-up Air (Max. CFM)
Cream Room	ISO-7	512	102.00	4,352	60	4,352	24 x 48	7	630	91.57	4,410	60.80	256
Cream Room Gownrom	ISO-8	108	96.00	864	30	432	24 x 48	1	560	81.40	560	38.89	54
Cart Pass-Thru-1	ISO-8	13	96.00	104	30	52	16 x 16	1	100	79.18	100	57.69	100
Sample Room	ISO-7	61	96.00	488	60	488	24 x 36	1	490	97.26	490	60.25	490
Sample Room Gownroom	ISO-7	37	96.00	296	60	296	24 x 24	1	300	93.93	300	60.81	300
Gownroom	ISO-7	87	96.00	696	60	696	24 x 48	1	700	101.74	700	60.34	700
Concentrate Room	ISO-7	216	96.00	1,728	60	1,728	24 x 48	3	585	85.03	1,755	60.94	1755
V-Blend Room	ISO-7	154	96.00	1,232	60	1,232	24 x 48	2	620	90.12	1,240	60.39	1240
Fill/Pack Room	ISO-7	174	96.00	1,392	60	1,392	24 x 36	3	465	92.30	1,395	60.13	1395
Cart Pass-Thru-2	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67	100
Cart Pass-Thru-3	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67	100
Cart Pass-Thru-4	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67	100



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REV.	NUM.	REV. DATE	REVISION DESCRIPTION
A	01	05-15-18	REVISED
B	02	05-17-18	REVISED
C	03	05-26-18	REVISED
D	04	05-30-18	REVISED
E	05	06-01-18	REVISED
F	06	05-12-18	ISSUED FOR CONSTRUCTION
G	07	01-28-19	AS-BUILT
H	08	02-05-19	AS-BUILT REVISIONS
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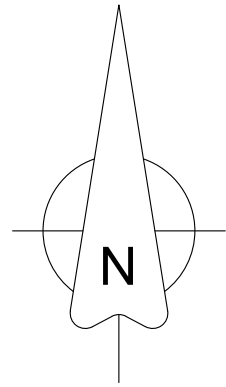
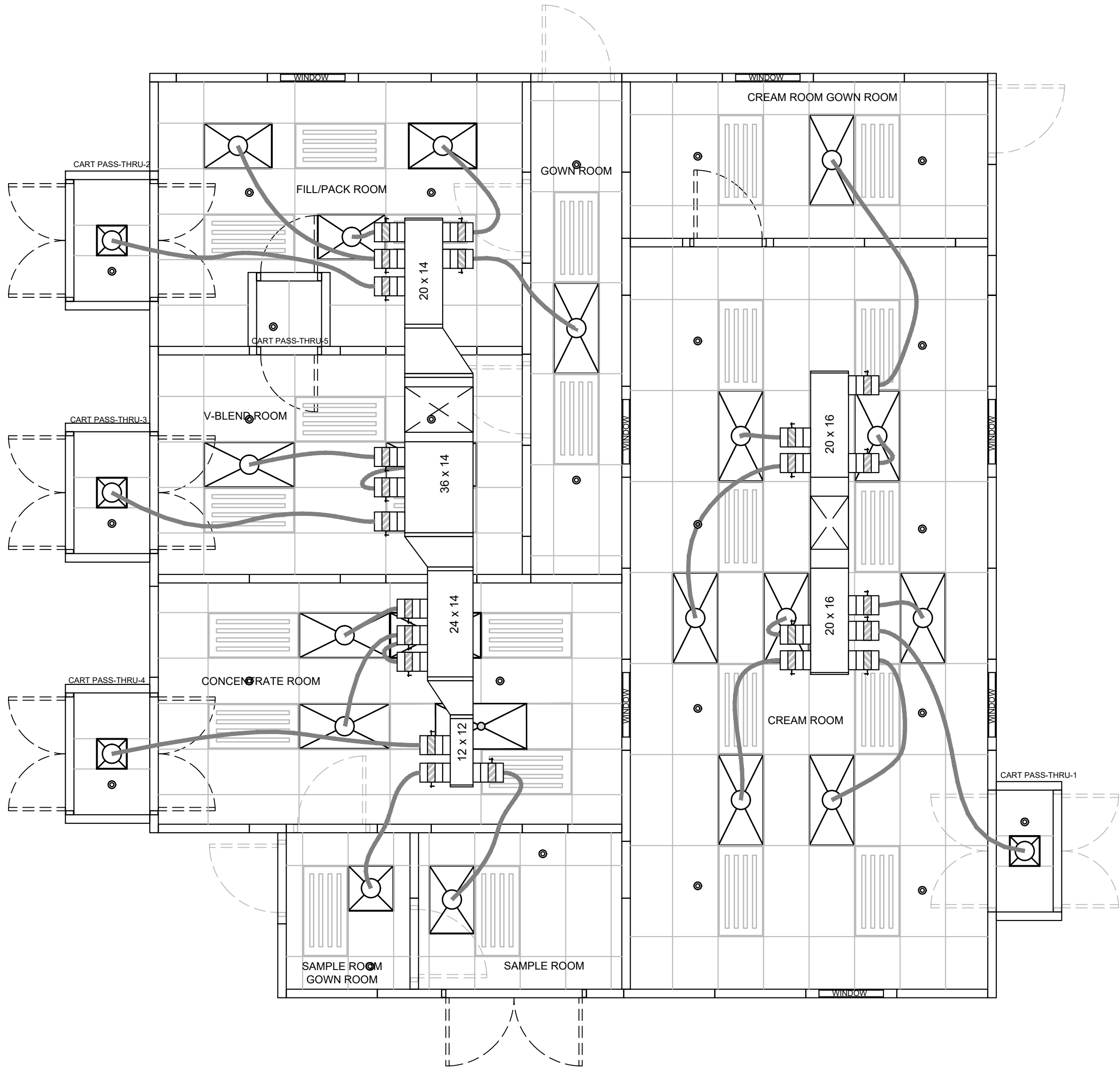
CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

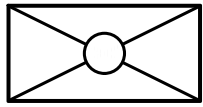
PROJECT LOCATION

C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	05-08-18
DRAWN BY:	DWS
SCALE:	1/4" = 1'-0"
DESCRIPTION:	MECHANICAL EQUIPMENT AND DUCTWORK
DRAWING #:	CR-300

AS-BUILT DRAWING SET



- NOTES:
- 1. NEW CLEANROOM WALLS ARE 11'-6" TALL
 - 2. ALL CART PASS-THRU'S ARE CLASS ISO-8



CEILING GRID MOUNTED TERMINAL HEPA FILTER MODULE. SEE CHART, THIS DRAWING, FOR FILTER SIZES AND AIRFLOW SPECIFICS

- LOCATION OF FIRE-SUPPRESSION SPRINKLER HEAD

Cleanroom Area Volume and Supply air Data												
Room Name	Class	Area (sq')	Ceiling Height (in.)	Volume (Cu')	Target ACH	Target Airflow Volume (CFM)	HEPA Filter Size	HEPA Filter Quantity	Airflow Per Filter	Face Velocity (FPM)	Design Airflow Volume (CFM)	Design ACH
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Sample Room Gownroom	ISO-7	37	96.00	296	60	296	24 x 24	1	300	93.93	300	60.81
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Cart Pass-Thru-2	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67
Cart Pass-Thru-3	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67
Cart Pass-Thru-4	ISO-8	18	96.00	144	30	72	16 x 16	1	100	79.18	100	41.67

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REV.	NUM.	DATE	DESCRIPTION
A	01	08-17-18	ISSUED FOR CONSTRUCTION
B	02	09-10-18	REVISED
C	03	09-12-18	ISSUED FOR CONSTRUCTION
D	04	09-12-18	REVISED
E	05	09-12-18	REVISED
F	06	09-12-18	REVISED
G	07	09-12-18	REVISED
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CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

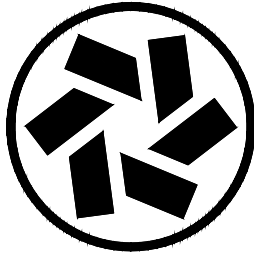
C.A.T. JOB NUMBER 18-142
ORIGINAL DATE: 07-18-18
DRAWN BY: DWS
SCALE: 1/4" = 1'-0"

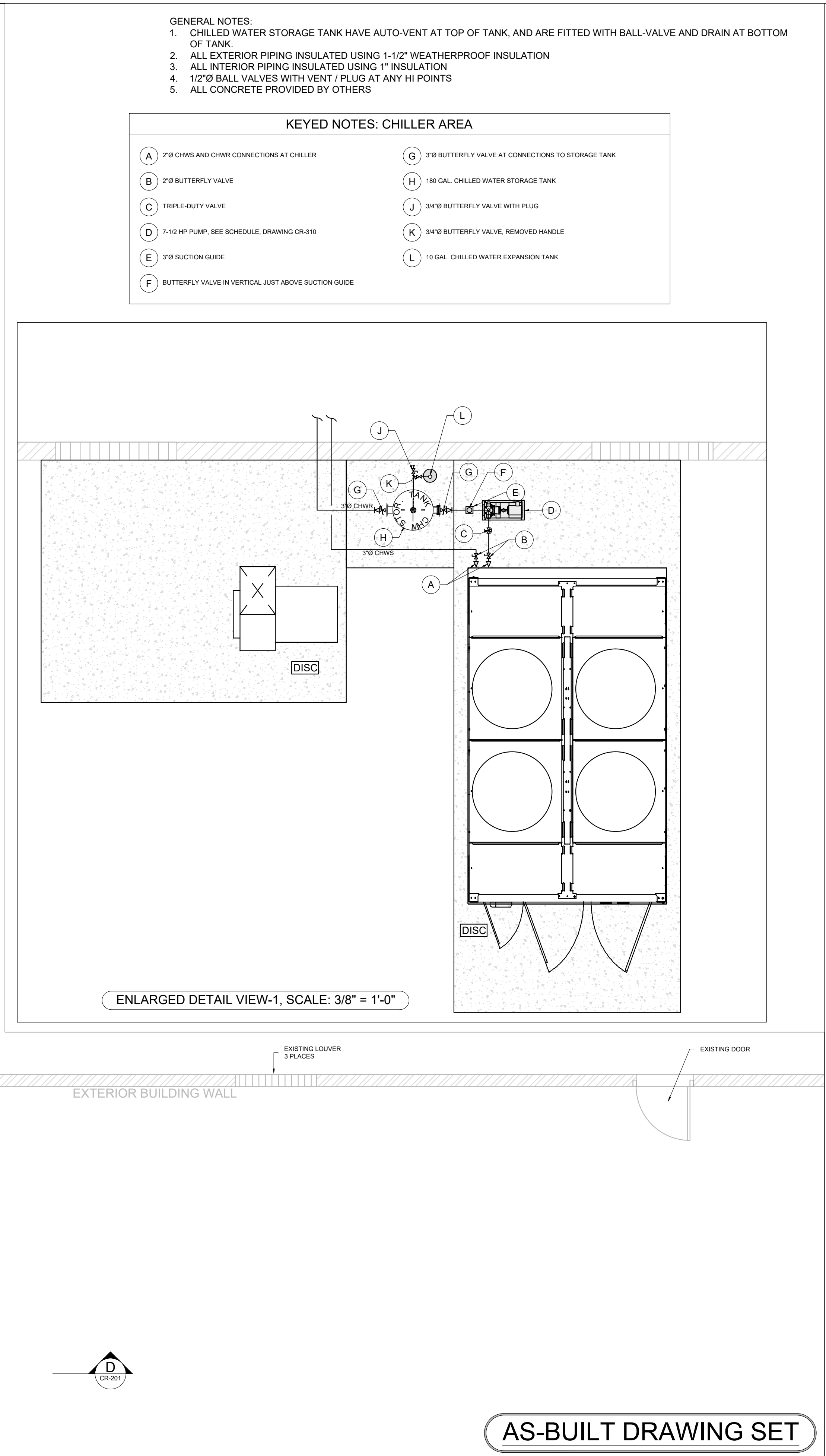
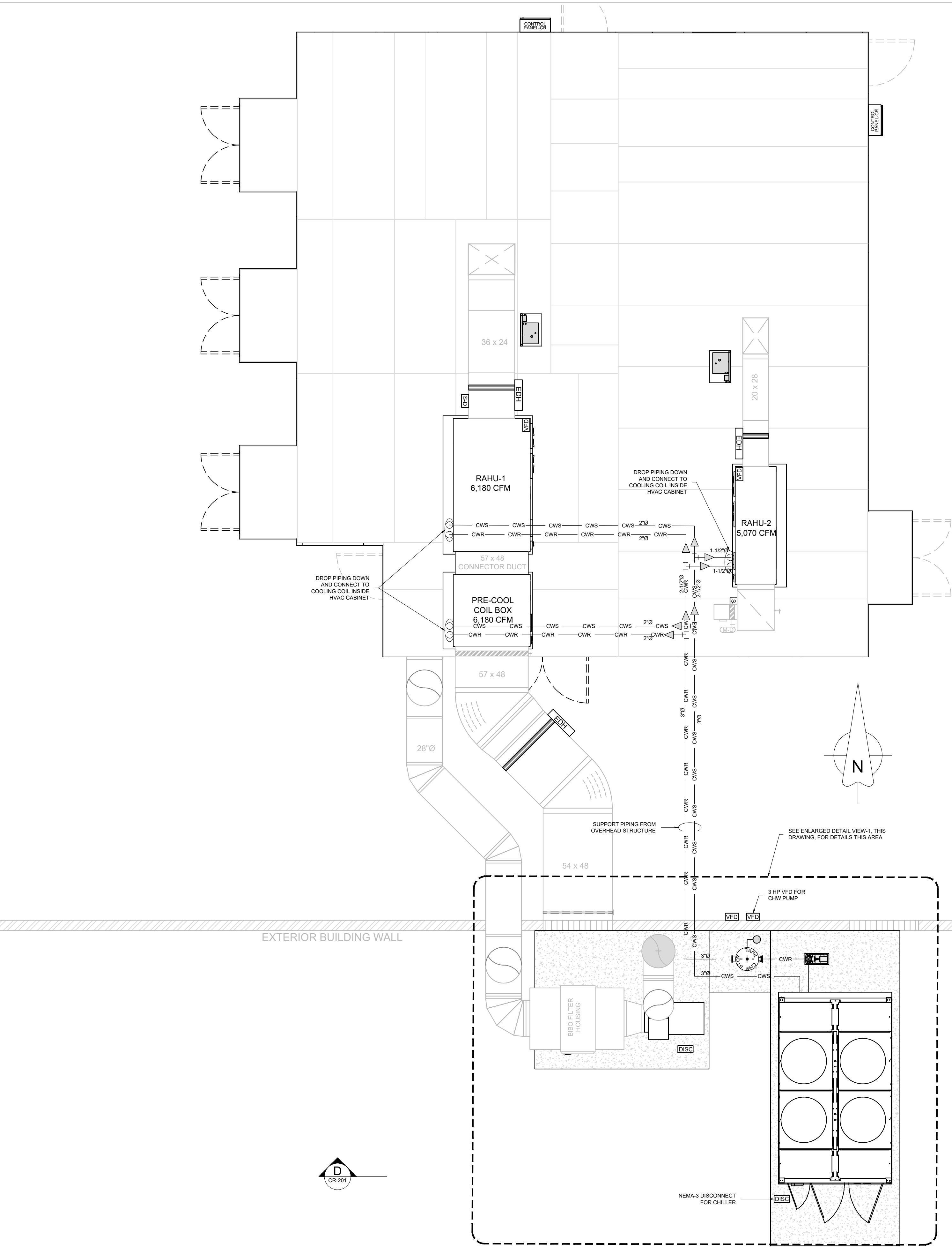
DESCRIPTION:
DUCTWORK BELOW
DECK IN PLENUM

DRAWING #: CR-301

AS-BUILT DRAWING SET

CLEAN AIR TECHNOLOGY, INC.
Decades of Experience Building America's Cleanrooms
41105 Capital, Canton, MI 48187 Tel 734-459-6320 Fax 734-459-9437
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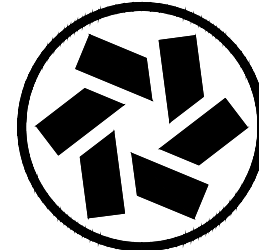




- GENERAL NOTES:
1. CHILLED WATER STORAGE TANK HAVE AUTO-VENT AT TOP OF TANK, AND ARE FITTED WITH BALL-VALVE AND DRAIN AT BOTTOM OF TANK.
 2. ALL EXTERIOR PIPING INSULATED USING 1-1/2" WEATHERPROOF INSULATION
 3. ALL INTERIOR PIPING INSULATED USING 1" INSULATION
 4. 1/2"Ø BALL VALVES WITH VENT / PLUG AT ANY HI POINTS
 5. ALL CONCRETE PROVIDED BY OTHERS

KEYED NOTES: CHILLER AREA

- | | |
|--|--|
| (A) 2"Ø CHWS AND CHWR CONNECTIONS AT CHILLER | (G) 3"Ø BUTTERFLY VALVE AT CONNECTIONS TO STORAGE TANK |
| (B) 2"Ø BUTTERFLY VALVE | (H) 180 GAL. CHILLED WATER STORAGE TANK |
| (C) TRIPLE-DUTY VALVE | (J) 3/4"Ø BUTTERFLY VALVE WITH PLUG |
| (D) 7-1/2 HP PUMP, SEE SCHEDULE, DRAWING CR-310 | (K) 3/4"Ø BUTTERFLY VALVE, REMOVED HANDLE |
| (E) 3"Ø SUCTION GUIDE | (L) 10 GAL. CHILLED WATER EXPANSION TANK |
| (F) BUTTERFLY VALVE IN VERTICAL JUST ABOVE SUCTION GUIDE | |

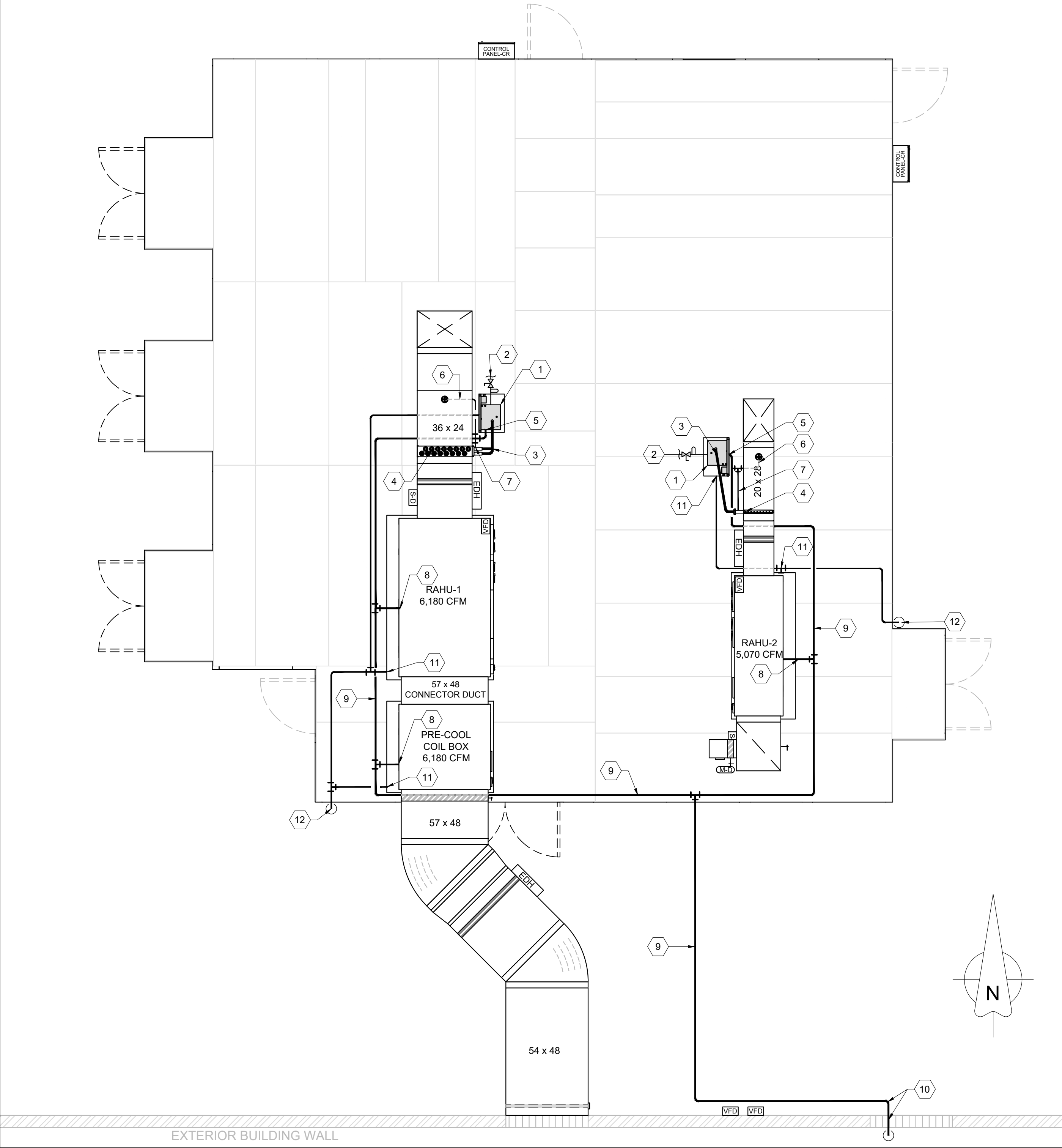


CLEAN AIR TECHNOLOGY, INC.
Decades of Experience Building America's Cleanrooms
41105 Capital, Canton, MI 48187 Tel 734-459-6320 Fax 734-459-9437
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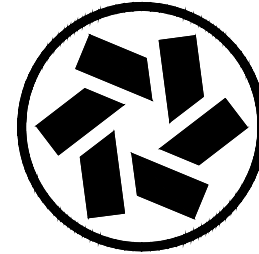
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B	08-20-18	REVISED	DWS
C	08-22-18	REVISED	DWS
D	08-24-18	REVISED	DWS
E	08-24-18	REVISED	DWS
F	08-10-18	REVISED	DWS
00	09-12-18	ISSUED FOR CONSTRUCTION	DWS
01	01-28-19	AS-BUILT	DWS
02	02-05-19	AS-BUILT REVISIONS	DWS
03			
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12			

CUSTOMER	
PROJECT TITLE USP 797 / USP 800 CLEANROOMS	
PROJECT LOCATION	
C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	05-08-18
DRAWN BY:	DWS
SCALE:	1/4" = 1'-0"
DESCRIPTION: CHILLED WATER PIPING AND CHILLER AREA	
DRAWING #:	CR-302



KEYED NOTES

- 1 HUMIDIFIER MOUNTED ON SUPPORT FRAME. SEE SCHEDULE, DRAWING CR-310 FOR SIZING.
NOTE: HUMIDIFIER SHALL HAVE FUSED ELECTRICAL DISCONNECT MOUNTED TO SUPPORT FRAME NEXT TO HUMIDIFIER
- 2 1/2"Ø WATER SUPPLY TO HUMIDIFIER, WITH IN-LINE FILTER AND SHUT-OFF VALVE.
- 3 INSULATED "MED L" COPPER STEAM SUPPLY PIPE FROM HUMIDIFIER TO STEAM DISPERSION BAR IN S/A DUCT, SIZED PER MANUFACTURER'S RECOMMENDATIONS FOR HUMIDIFIER SIZE. SEE DETAILS, DRAWING CR-310
- 4 STEAM DISPERSION DEVICE IN S/A DUCT
- 5 DRAIN LINE FROM HUMIDIFIER, 1-1/2"Ø COPPER, INCLUDE "CUP" FITTING AT HUMIDIFIER (1-1/2" X 4" INCREASER W/6" LEG UP OF 4"Ø COPPER).
- 6 3/8"Ø COPPER DRAIN LINE FROM CONDENSATE PAN BENEATH S/A DUCT. INCLUDE 1"Ø X 3/4"Ø INCREASER IN LEG UP, OPEN FOR AIR GAP AND TRAP FILLING
- 7 3/8"Ø COPPER DRAIN LINE FROM STEAM DEVICE. CONNECT TO 3/8"Ø DRAIN LINE FROM CONDENSATE PAN BENEATH DUCT, THEN RUN 1/2"Ø COPPER LINE TO CONNECTION AT MAIN CONDENSATE DRAIN.
- 8 CONDENSATE DRAIN, 1"Ø PVC, FROM CONDENSATE PAN INSIDE HVAC EQUIPMENT. SHALL INCLUDE 6" P-TRAP AT EXTERIOR OF CABINET.
- 9 MAIN CONDENSATE DRAIN, 1-1/2"Ø COPPER.
- 10 MAIN CONDENSATE DRAIN DROPS DOWN TO APPROX. 24" A.F.F., THEN OUT THRU BUILDING WALL.
- 11 3/4"Ø PVC DRAIN LINE FROM EMERGENCY PAN BENEATH EQUIPMENT
- 12 EMERGENCY DRAIN SHALL TURN DOWN FROM EDGE OF TOP DECK, AND RUN DOWN TO APPROX. 6" A.F.F.. EMERGENCY DRAINS SHALL BE LEFT OPEN AT BOTTOM TO ALERT OWNER TO PRESENCE OF WATER IN EMERGENCY PAN(S)



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REV	NUM	DATE	DESCRIPTION
BY	DWS		
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01	02	07-29-19	AS-BUILT
02	03		
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06	07		
07	08		
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CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

C.A.T. JOB NUMBER 18-142

ORIGINAL DATE: 07-18-18

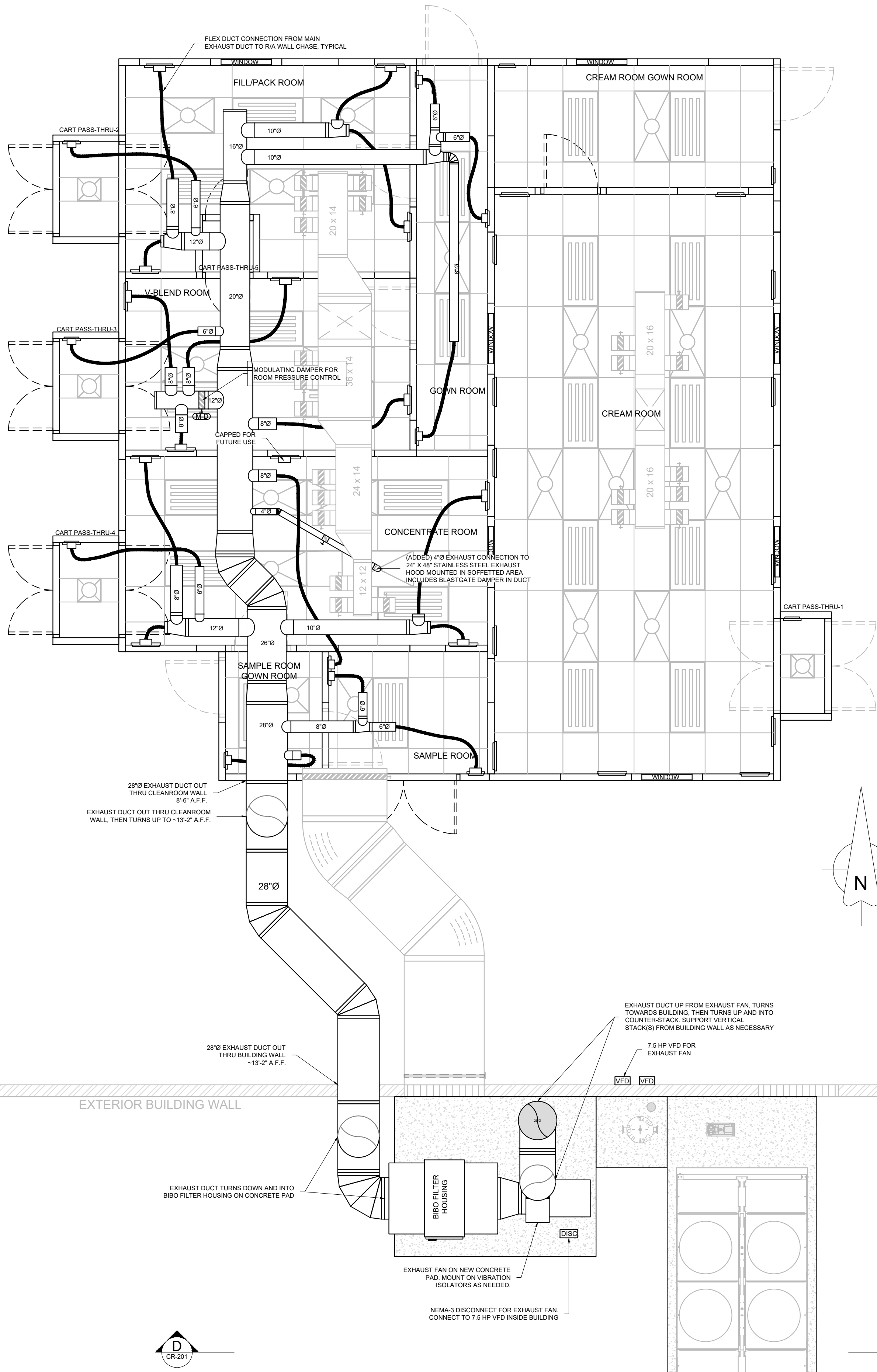
DRAWN BY: DWS

SCALE: 1/4" = 1'-0"

DESCRIPTION:
HUMIDIFIER AND DRAIN PIPING

DRAWING #: CR-303

AS-BUILT DRAWING SET



REV.	NUM.	REV. DATE	REVISION DESCRIPTION	BY
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B	02	08-24-18	REVISED	DWS
C	03	08-26-18	REVISED	DWS
D	04	08-26-18	REVISED	DWS
E	05	08-26-18	REVISED	DWS
F	06	08-26-18	ISSUED FOR CONSTRUCTION	DWS
G	07	11-20-18	REVISED DUCT, ADDED MOD. DAMPER	DWS
H	08	01-26-19	AS-BUILT	DWS
I	09	01-31-20	AS-BUILT REVISIONS	DWS
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CUSTOMER

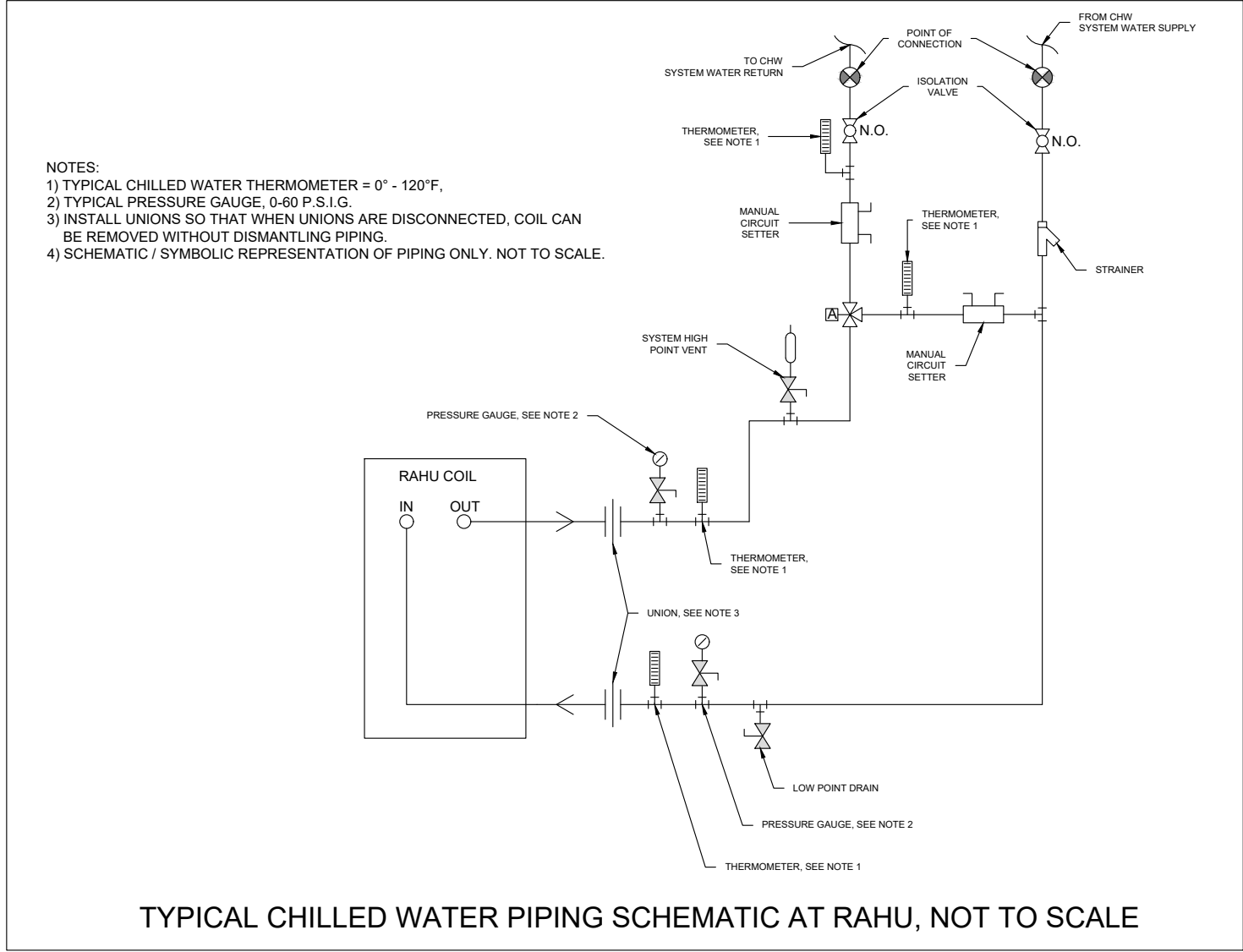
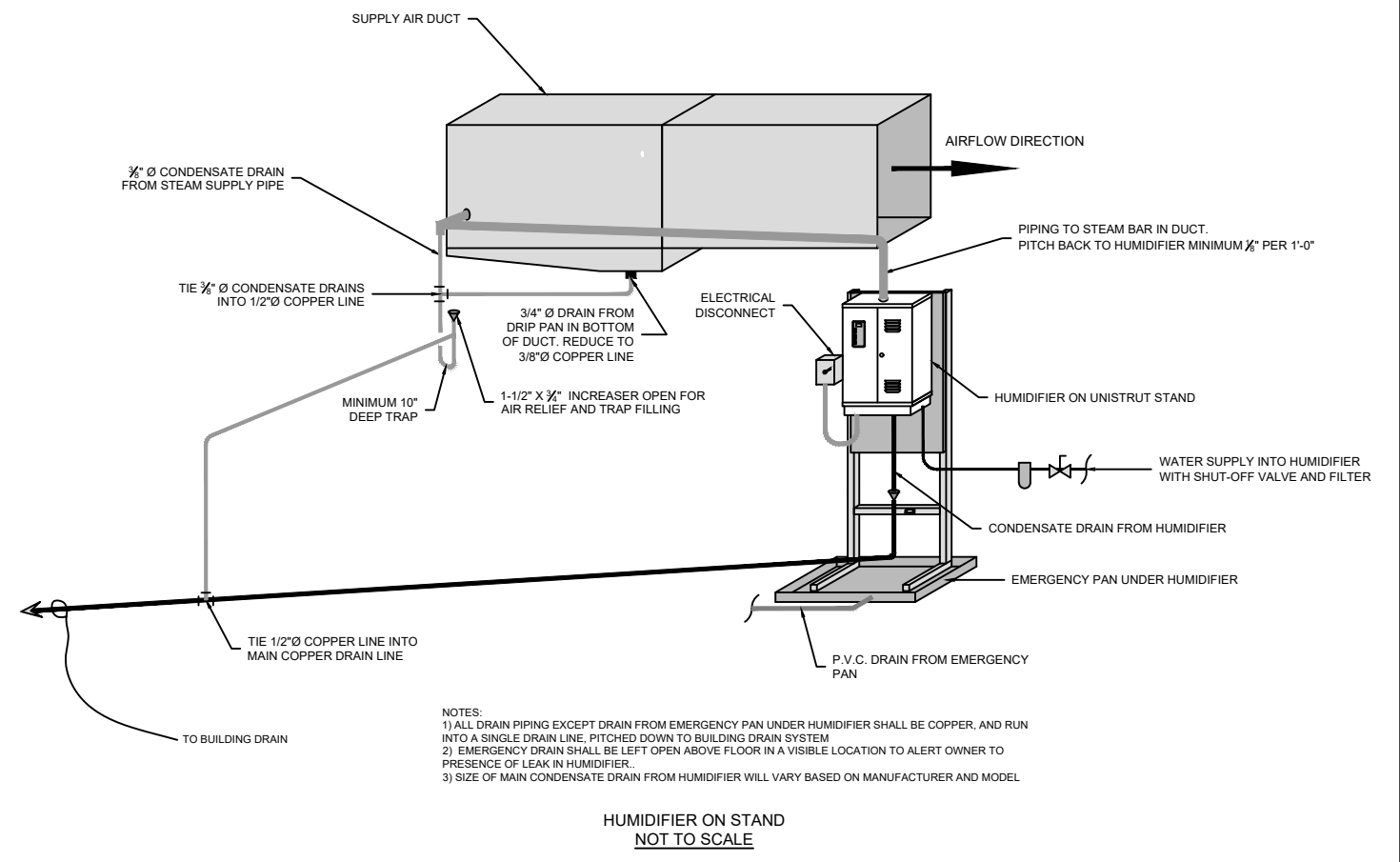
PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

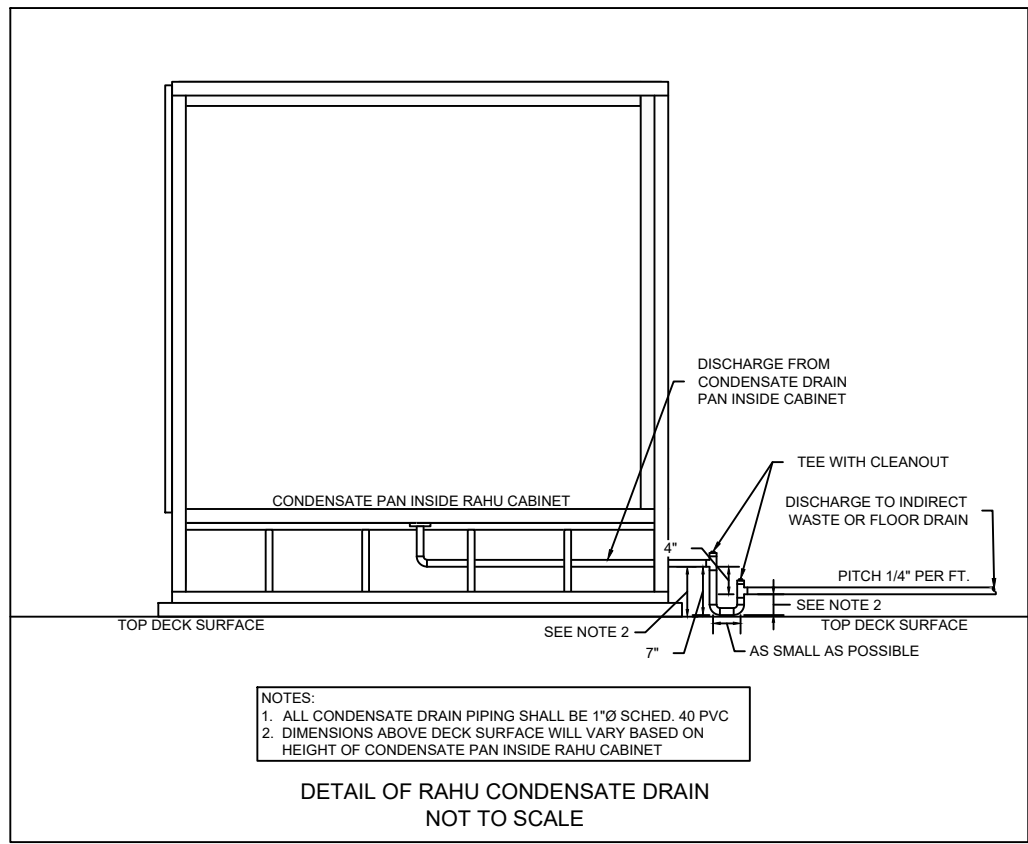
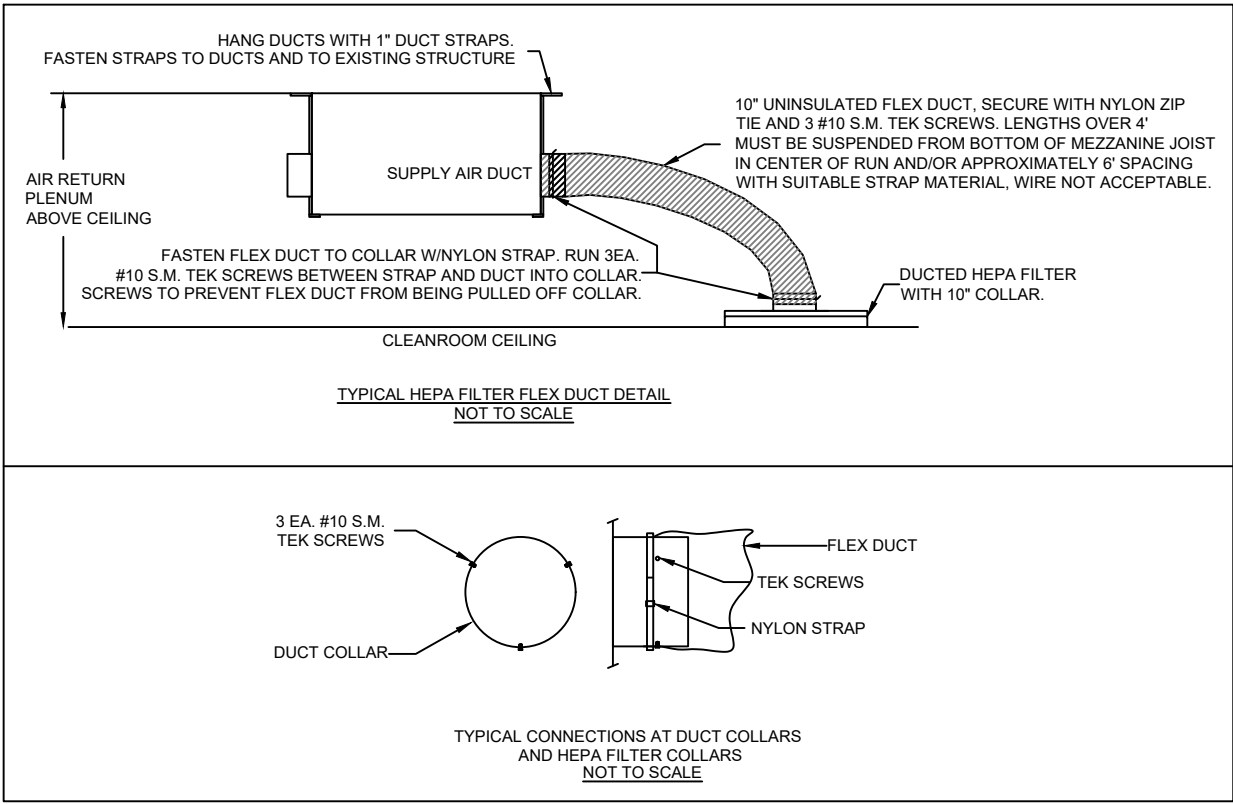
C.A.T. JOB NUMBER 18-142
ORIGINAL DATE: 07-18-18
DRAWN BY: DWS
SCALE: 1/4" = 1'-0"
DESCRIPTION:
800 AREA EXHAUST SYSTEM

DRAWING #: CR-304

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TYPICAL CHILLED WATER PIPING SCHEMATIC AT RAHU, NOT TO SCALE



ELECTRIC HUMIDIFIER SCHEDULE (NORTEC)							ELECTRIC DUCT HEATER SCHEDULE (INDEECO)				
UNIT #	LOCATION	MODEL #	STEAM OUTPUT	WATER CON. SIZE	ELECT POWER	F.L.A.	UNIT #	UNIT SERVED	KW	ELECT POWER	F.L.A.
1	ON CLEANROOM TOP DECK	RS-180	180lbs/HR	1/2"Ø	460v/3ø/60hz	77.3	1	RAHU-1	44.0	460v/3ø/60hz	55.29
2	ON CLEANROOM TOP DECK	RS-15	15lbs/HR	1/2"Ø	460v/1ø/60hz	10.0	2	RAHU-1	57.0	460v/3ø/60hz	71.63
							3	RAHU-2	11.0	460v/3ø/60hz	13.82
							NOTES: 1) UNITS SHALL HAVE INTEGRAL DISCONNECTS AND FUSES				

AIR HANDLING UNIT SCHEDULE (BY CLEAN AIR TECHNOLOGY, INC.)														
UNIT #	FAN TYPE	LOCATION	AREA SERVED	DESIGN SCFM	FAN SIZE	ESP	TSP	MOTOR HP	MOTOR RPM	ELECT. POWER	F.L.A.	UNIT WEIGHT (lbs)	COOLING TYPE	HEATING TYPE
1	FC	ON CLEANROOM TOP DECK	800 CLEANROOM AREA	6,180	915	2.0	3.75	7.5	1,800	460v/3ø/60hz	8.85	~1,600	CHILLED WATER	ELECTRIC
2	FC	ON CLEANROOM TOP DECK	797 CLEANROOM AREA	5,070	915	2.0	3.5	5	1,800	460v/3ø/60hz	6.12	~1,200	CHILLED WATER	ELECTRIC

PACKAGED AIR COOLED CHILLER SCHEDULE (TRANE)										
UNIT #	MANUFACTURER	MODEL NUMBER / SERIES	MCA / MOCP	CAPACITY (TONS)	MIN. OPERATING CAPACITY	UNIT WEIGHT (lbs)	COMPRESSOR CHARACTERISTICS			
							TYPE	ELECT. POWER	REFRIGERANT TYPE	
1	TRANE	CGAM	148/175	70		5,569	SCROLL	460v/3ø/60hz	R410A	
NOTES: 1).										

CHW Pump Schedule (Armstrong)													
Unit #	Model Number / Series	Model Size	Inlet	Discharge	Flow (GPM)	Total Head (FT)	Type	H.P.	RPM	Electric Power	Construction	Fluid Pumped	Fluid Temp
CHWP #1	4030	3x2x10	3"	2"	165	80	Base Mount	7.5	1770	460V/3ø / 60Hz	Cast Iron	Water/Glycol (25% Glycol)	42°

EXHAUST FAN SCHEDULE (DELHI)												
UNIT #	FAN TYPE	MANUFACTURER	LOCATION	AREA SERVED	DESIGN SCFM	FAN MODEL / SIZE	TSP	MOTOR HP	FAN RPM	ELECT. POWER	F.L.A.	UNIT WEIGHT
1	BACKWARD INCLINE	DELHI	ON CONCRETE PAD AT EXTERIOR OF BUILDING	800 AREA CLEANROOMS	6,180	BI-20	3.5	7.5	1,838	460V/3ø/60hz	8.85	356 lbs

VENTILATION CALCULATIONS, 797 CLEANROOM AREA

CODE REFERENCE: 2006 IMC, TABLE 403.3, SPACE DEFINED AS "LABORATORY"

MAXIMUM OCCUPANCY: 6 PERSONS TOTAL

VENTILATION REQUIRED BY REFERENCED CODE: 20cfm/PERSON = 120cfm

VENTILATION SUPPLIED SHALL BE NO LESS THAN 120cfm, WITH A MAXIMUM OF 340cfm SUPPLIED. VENTILATION (MAKE-UP AIR) SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM VALUES TO MAINTAIN CLEANROOM PRESSURE VALUES AS NECESSARY.

VENTILATION CALCULATIONS, 800 CLEANROOM AREA

CODE REFERENCE: 2006 IMC, TABLE 403.3, SPACE DEFINED AS "LABORATORY"

MAXIMUM OCCUPANCY: 6 PERSONS TOTAL

VENTILATION REQUIRED BY REFERENCED CODE: 20cfm/PERSON = 120cfm

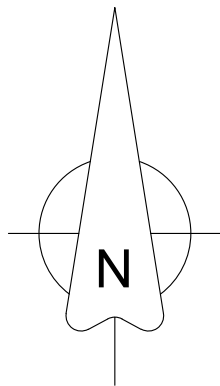
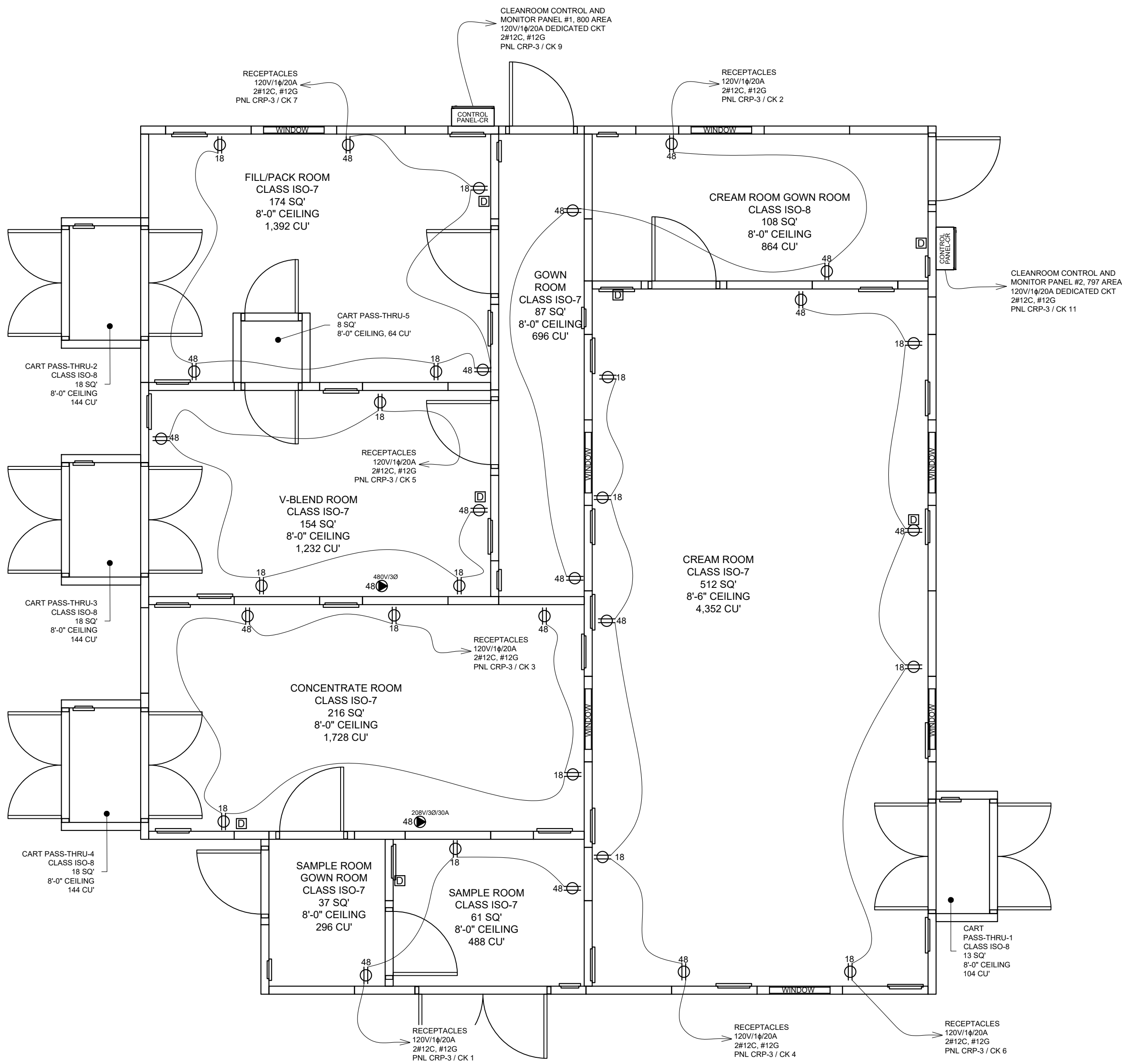
VENTILATION SUPPLIED SHALL BE NO LESS THAN 120cfm, WITH A MAXIMUM OF 6,180cfm SUPPLIED. VENTILATION (MAKE-UP AIR) SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM VALUES TO MAINTAIN CLEANROOM PRESSURE VALUES AS NECESSARY.

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REV.	NUM.	REV. DATE	REVISION DESCRIPTION
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B	1	07-25-18	REVISED
C	1	08-29-18	REVISED
D	1	08-30-18	REVISED
E	1	09-12-18	REVISED
F	1	09-12-18	ISSUED FOR CONSTRUCTION
G	1	01-28-19	AS-BUILT

CUSTOMER	
PROJECT TITLE	USP 797 / USP 800 CLEANROOMS
PROJECT LOCATION	
C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	07-18-18
DRAWN BY:	DWS
SCALE:	NONE
DESCRIPTION:	
MECHANICAL EQUIPMENT SCHEDULES AND TYPICAL MECHANICAL DETAILS	
DRAWING #:	CR-310

AS-BUILT DRAWING SET

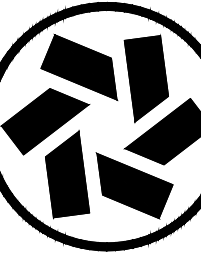


- GENERAL ELECTRICAL NOTES:
1. ALL ELECTRICAL WORK DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE N.E.C.
 2. ALL ELECTRICAL WORK PERFORMED BY LICENSED CONTRACTORS AND COMPLIES WITH ALL APPLICABLE FEDERAL STATE, AND LOCAL BUILDING CODES.
 3. ALL ELECTRICAL DEVICES AND COMPONENTS INSTALLED IN CLEANROOM WALLS OR PLENUM(S) ABOVE CLEANROOM CEILING(S) ARE PLENUM RATED.

LEGEND	
18	DUPLEX RECEPTACLE OUTLET, 120V/1Ø/20A, 18" A.F.F. ON CENTER
48	DUPLEX RECEPTACLE OUTLET, 120V/1Ø/20A, 48" A.F.F. ON CENTER
J	J-BOX WITH CONDUIT AND PULL-STRING FOR DATA TERMINAL, 36" A.F.F. ON CENTER, UNLESS NOTED OTHERWISE
V	SPECIAL RECEPTACLE OUTLET, TEXT IDENTIFIES VOLTAGE, 48" A.F.F. ON CENTER FED FROM EXISTING BUILDING POWER SOURCES, WIRING AND CONNECTIONS BY OTHERS

208/120 V PANEL CRP-3														
LOAD (KVA)			DESCRIPTION	WIRE SIZE	BRKR RAT'G	CKT. NO.		CKT. NO.	BRKR RAT'G	WIRE SIZE	DESCRIPTION	LOAD (KVA)		
A	B	C										A	B	C
0.54			RECEPTACLES	12	20/1	1		2	20/1	12	RECEPTACLES	0.72		
	1.08		RECEPTACLES	12	20/1	3		4	20/1	12	RECEPTACLES		0.90	
		1.08	RECEPTACLES	12	20/1	5		6	20/1	12	RECEPTACLES			0.90
1.08			RECEPTACLES	12	20/1	7		8	20/1	12	INTERLOCKS	0.60		
	0.48		CNTL RM PNL-1(800)	12	20/1	9		10	20/1	-	SPARE		0.00	
		0.48	CNTL RM PNL-2 (797)	12	20/1	11		12	20/1	-	SPARE			0.00
0.00			SPARE	-	20/1	13		14	20/1	12	TOP DECK RECPT	0.18		
	0.00		SPARE	-	20/1	15		16	20/1	12	CHILLER AREA RECPT		0.18	
		0.00	SPARE	-	20/1	17		18	20/1	-	SPARE			0.00
0.00			SPARE	-	20/1	19		20	20/1	-	SPARE	0.00		
		0.00	SPARE	-	20/1	21		22	20/1	-	SPARE		0.00	
		0.00	SPARE	-	20/1	23		24	20/1	-	SPARE			0.00
TYPE: BRANCH CIRCUIT			GROSS PHASE TOTALS					CONNECTED LOAD			22.8 AMPERES			
MOUNTING: SURFACE			A= 3.12 KVA					LIGHTING			0.00 KVA			
SUPPLY: 208/120V, 3-PH, 4W			B= 2.64 KVA					HEATING			0.00 KVA			
MAINS: 100 AMP			C= 2.46 KVA					A/C MOTORS & HEAT PUMPS			0.00 KVA			
SCIR: BY CONTRACTOR								AIR HANDLING & EXH FANS			0.00 KVA			
NOTES:								RECEPTACLES			6.30 KVA			
1. WITH GROUND BUS								ELECTRIC WATER HEATING			0.00 KVA			
2. WITH NEUTRAL BUS								ELEVATORS			0.00 KVA			
								FOOD PROCESSING			0.00 KVA			
								PROCESS			0.00 KVA			
								MISCELLANEOUS			1.92 KVA			
								TOTAL CONNECTED LOAD			8.22 KVA			
18-142 - FAGRON-HUMCO														
SCHEDULED BY: GWM														

CLEAN AIR TECHNOLOGY, INC.
Decades of Experience Building America's Cleanrooms
41105 Capital, Canton, MI 48187 Tel 734-459-6320 Fax 734-459-9437
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REV. NUM.	REV. DATE	REVISION DESCRIPTION	BY	CHKD	APP'D
A	02-25-18	REVISED	DWS		
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00	09-13-18	ISSUED FOR CONSTRUCTION	DWS		
02	01-26-19	AS-BUILT	DWS		
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CUSTOMER

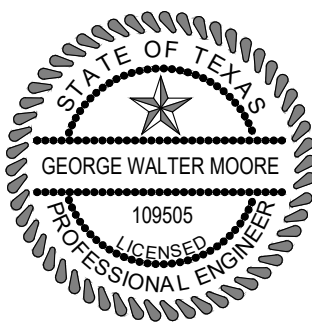
PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

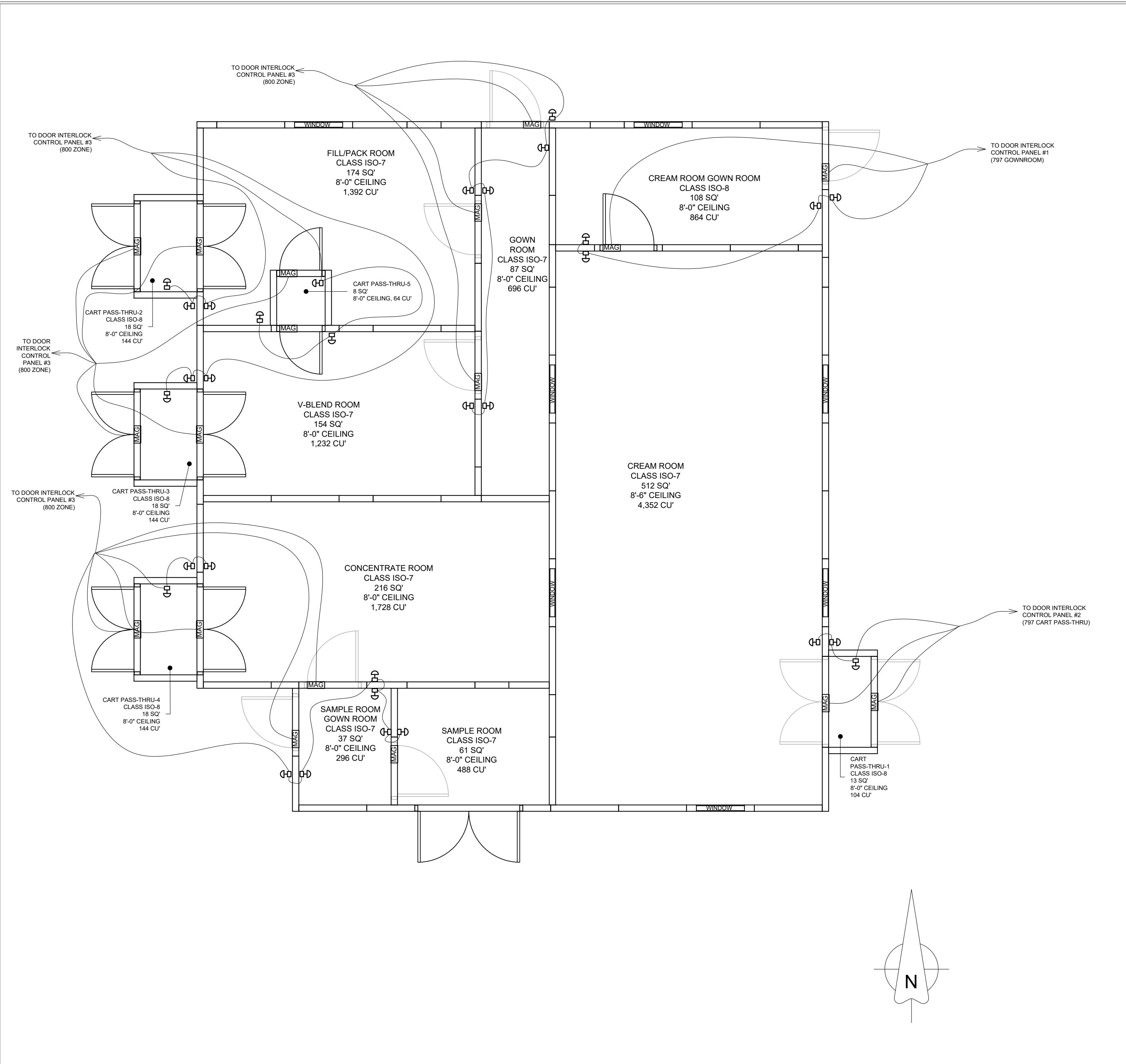
C.A.T. JOB NUMBER 18-142
ORIGINAL DATE: 07-18-18
DRAWN BY: DWS
SCALE: 1/4" = 1'-0"

DESCRIPTION:
ELECTRICAL FLOOR PLAN

DRAWING #: CR-400



AS-BUILT DRAWING SET



- GENERAL ELECTRICAL NOTES:
1. ALL ELECTRICAL WORK DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE N.E.C.
 2. ALL ELECTRICAL WORK PERFORMED BY LICENSED CONTRACTORS AND COMPLIES WITH ALL APPLICABLE FEDERAL STATE, AND LOCAL BUILDING CODES.
 3. ALL ELECTRICAL DEVICES AND COMPONENTS INSTALLED IN CLEANROOM WALLS OR PLENUM(S) ABOVE CLEANROOM CEILING(S) ARE PLENUM RATED.

LEGEND

MAG DOOR INTERLOCK MAGNET ON ACTIVE LEAF

DD PUSH-BUTTON SAFETY OVERRIDE FOR INTERLOCKED DOOR(S), 48" A.F.F. ON CENTER

NOTE:
DOOR INTERLOCK CONTROL PANELS MOUNTED TO FRAME ON TOP DECK
SEE DRAWING CR-403 FOR LOCATION OF INTERLOCK CONTROL PANELS

CLEAN AIR TECHNOLOGY, INC.
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UNDER THE TERMS OF A CONTRACT OR OTHERWISE, ARE TO
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ACCOMPLISHED. CLEAN AIR TECHNOLOGY, INC. WILL ELECT TO
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THIS PROPRIETARY INFORMATION

REV. NUM.	REV. DATE	REVISION DESCRIPTION	BY
A	02-25-18	REVISED	DWS
B	09-10-18	REVISED PER P.E. REVIEW	DWS
C	09-11-18	ISSUED FOR CONSTRUCTION	DWS
00	09-13-18	ISSUED FOR CONSTRUCTION	DWS
01	09-26-18	AS-BUILT REVISIONS	DWS
02			
03			
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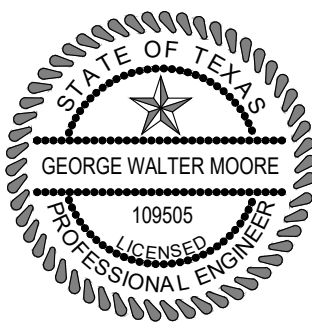
CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

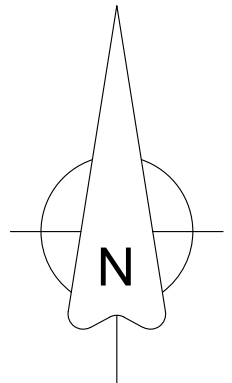
PROJECT LOCATION

C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	07-18-18
DRAWN BY:	DWS
SCALE:	1/4" = 1'-0"
DESCRIPTION:	DOOR INTERLOCKS

DRAWING #: CR-402



AS-BUILT DRAWING SET



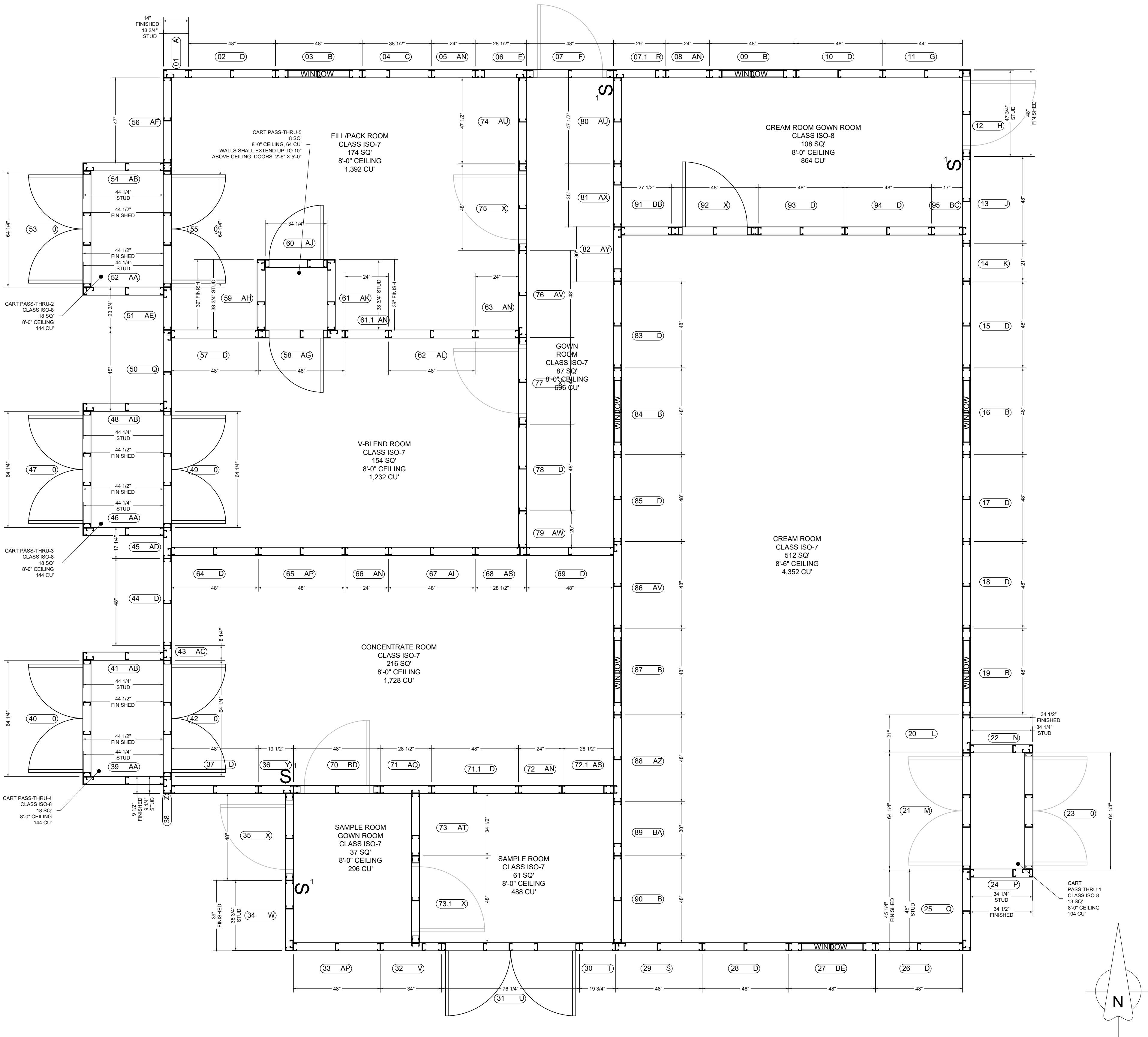
480/277 V PANEL CRP-1 (EXISTING)

18-142 - FAGRON- HUMCO

18-142 - FAGRON-HUMCO18-142 - FAGRON-HUMCO

	REV. NUM.	REV. DATE	REVISION DESCRIPTION	BY
	A	08-20-18	REVISED	DWS
	B	08-22-18	REVISED	DWS
	C	08-24-18	REVISED	DWS
	D	08-26-18	REVISED	DWS
	E	09-07-18	REVISED PER P.E. REVIEW	DWS
	F	09-11-18	REVISED PER P.E. REVIEW	DWS
	G	09-13-18	ISSUED FOR CONSTRUCTION	DWS
	H	01-28-19	AS-BUILT	DWS
	I	--	--	--
	J	--	--	--
	K	--	--	--
	L	--	--	--
	M	--	--	--
	N	--	--	--
	O	--	--	--
	P	--	--	--
	Q	--	--	--
	R	--	--	--
	S	--	--	--
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	V	--	--	--
	W	--	--	--
	X	--	--	--
	Y	--	--	--
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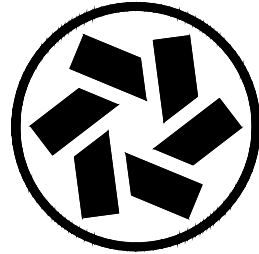
DRAWING #:	CR-403
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AS-BUILT DRAWING SET

18-142 WALL FRAME TABLE				
Frame Number	Letter Code	Width	Height	Stud
01	A	13-3/4"	138"	400S162-43
02	D	48"	138"	400S162-43
03	B	48"	138"	400S162-43
04	C	36-1/2"	138"	400S162-43
05	AN	24"	138"	400S162-43
06	E	28-1/2"	138"	400S162-43
07	F	48"	138"	400S162-43
07.1	R	29"	138"	400S162-43
08	AN	24"	138"	400S162-43
09	B	48"	138"	400S162-43
10	D	48"	138"	400S162-43
11	G	44"	138"	400S162-43
12	H	47-3/4"	138"	400S162-43
13	J	48"	138"	400S162-43
14	K	21"	138"	400S162-43
15	D	48"	138"	400S162-43
16	B	48"	138"	400S162-43
17	D	48"	138"	400S162-43
18	D	48"	138"	400S162-43
19	B	48"	138"	400S162-43
20	L	21"	138"	400S162-43
21	M	64-1/4"	51-3/4"	400S162-43
22	N	34-1/4"	138"	400S162-43
23	O	64-1/4"	51-3/4"	400S162-43
24	P	34-1/4"	138"	400S162-43
25	Q	45"	138"	400S162-43
26	D	48"	138"	400S162-43
27	AF	48"	138"	400S162-43
28	D	48"	138"	400S162-43
29	S	48"	138"	400S162-43
30	T	19-3/4"	138"	400S162-43
31	U	76-1/4"	51-3/4"	400S162-43
32	V	34"	138"	400S162-43
33	AP	48"	138"	400S162-43
34	W	38-3/4"	138"	400S162-43
35	X	48"	138"	400S162-43
36	Y	19-1/2"	138"	400S162-43
37	D	48"	138"	400S162-43
38	Z	9-1/4"	138"	400S162-43
39	AA	44-1/4"	138"	400S162-43
40	O	64-1/4"	51-3/4"	400S162-43
41	AB	44-1/4"	138"	400S162-43
42	O	64-1/4"	51-3/4"	400S162-43
43	AC	8-1/4"	138"	400S162-43
44	D	48"	138"	400S162-43
45	AD	17-1/4"	138"	400S162-43
46	AA	44-1/4"	138"	400S162-43
47	O	64-1/4"	51-3/4"	400S162-43
48	AB	44-1/4"	138"	400S162-43
49	O	64-1/4"	51-3/4"	400S162-43
50	Q	45"	138"	400S162-43
51	AE	23-3/4"	138"	400S162-43
52	AA	44-1/4"	138"	400S162-43
53	O	64-1/4"	51-3/4"	400S162-43
54	AB	44-1/4"	138"	400S162-43
55	O	64-1/4"	51-3/4"	400S162-43
56	AF	47"	138"	400S162-43
57	D	48"	138"	400S162-43
58	AG	48"	138"	400S162-43
59	AH	38-3/4"	106"	400S162-43
60	AJ	43-3/4"	9-1/2"	400S162-43
61	AK	38-3/4"	106"	400S162-43
61.1	AN	24"	138"	400S162-43
62	AL	48"	138"	400S162-43
63	AN	24"	138"	400S162-43
64	D	48"	138"	400S162-43
65	AP	48"	138"	400S162-43
66	AN	24"	138"	400S162-43
67	AL	48"	138"	400S162-43
68	AS	28-1/2"	138"	400S162-43
69	D	48"	138"	400S162-43
70	BD	48"	138"	400S162-43
71	AQ	28-1/2"	138"	400S162-43
71.1	D	48"	138"	400S162-43
72	AN	24"	138"	400S162-43
72.1	AS	28-1/2"	138"	400S162-43
73	AT	34-1/2"	138"	400S162-43
73.1	X	48"	138"	400S162-43
74	AU	47-1/2"	138"	400S162-43
75	X	48"	138"	400S162-43
76	AV	48"	138"	400S162-43
77	X	48"	138"	400S162-43
78	D	48"	138"	400S162-43
79	AW	20"	138"	400S162-43
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81	AX	35"	138"	400S162-43
82	AY	30"	138"	400S162-43
83	D	48"	138"	400S162-43
84	B	48"	138"	400S162-43
85	D	48"	138"	400S162-43
86	AV	48"	138"	400S162-43
87	B	48"	138"	400S162-43
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89	BA	30"	138"	400S162-43
90	B	48"	138"	400S162-43
91	BB	27-1/2"	138"	400S162-43
92	X	48"	138"	400S162-43
93	D	48"	138"	400S162-43
94	D	48"	138"	400S162-43
95	BC	17"	138"	400S162-43

CLEAN AIR TECHNOLOGY, INC.
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93	08-24-18	REVISED	DWS		
94	08-24-18	REVISED	DWS		
95	08-24-18	REVISED	DWS		

CUSTOMER

PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

C.A.T. JOB NUMBER 18-142

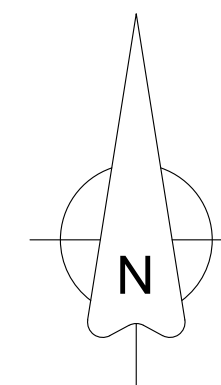
ORIGINAL DATE: 07-17-18

DRAWN BY: DWS

SCALE: 3/8" = 1'-0"

DESCRIPTION:
WALL FRAME
NUMBERING PLAN

DRAWING #: CR-900

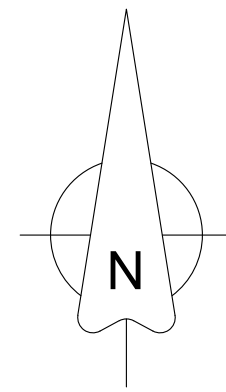


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A	09-17-18	REVISED			DWS
B	09-24-18	REVISED			DWS
C	09-30-18	REVISED			DWS
00	09-21-18	ISSUED FOR CONSTRUCTION			DWS
01	01-28-19	AS-BUILT			DWS
02	02-01-19	AS-BUILT			02
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05	02-01-19	AS-BUILT			02
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19	02-01-19	AS-BUILT			02
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DRAWING #: CR-901

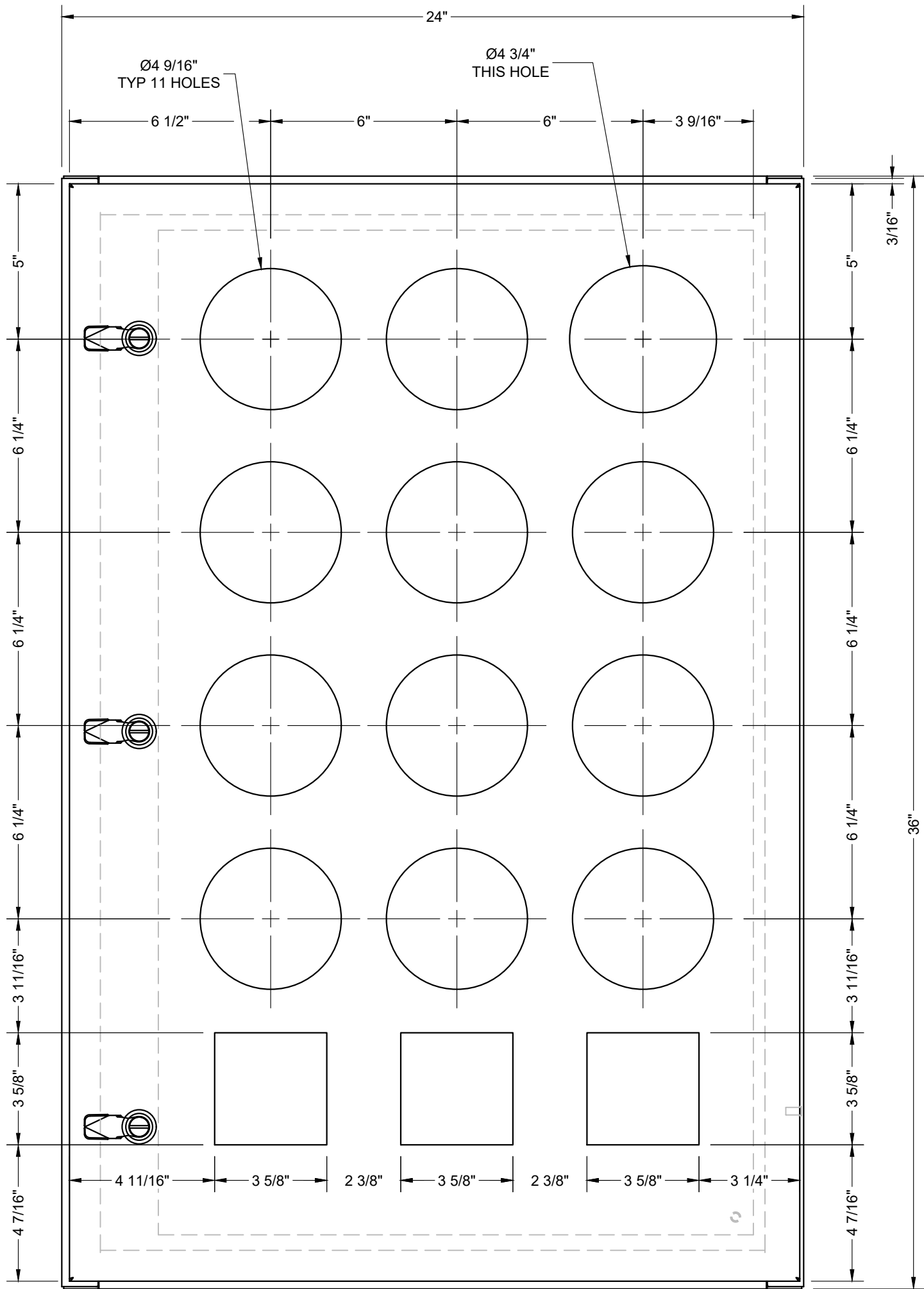
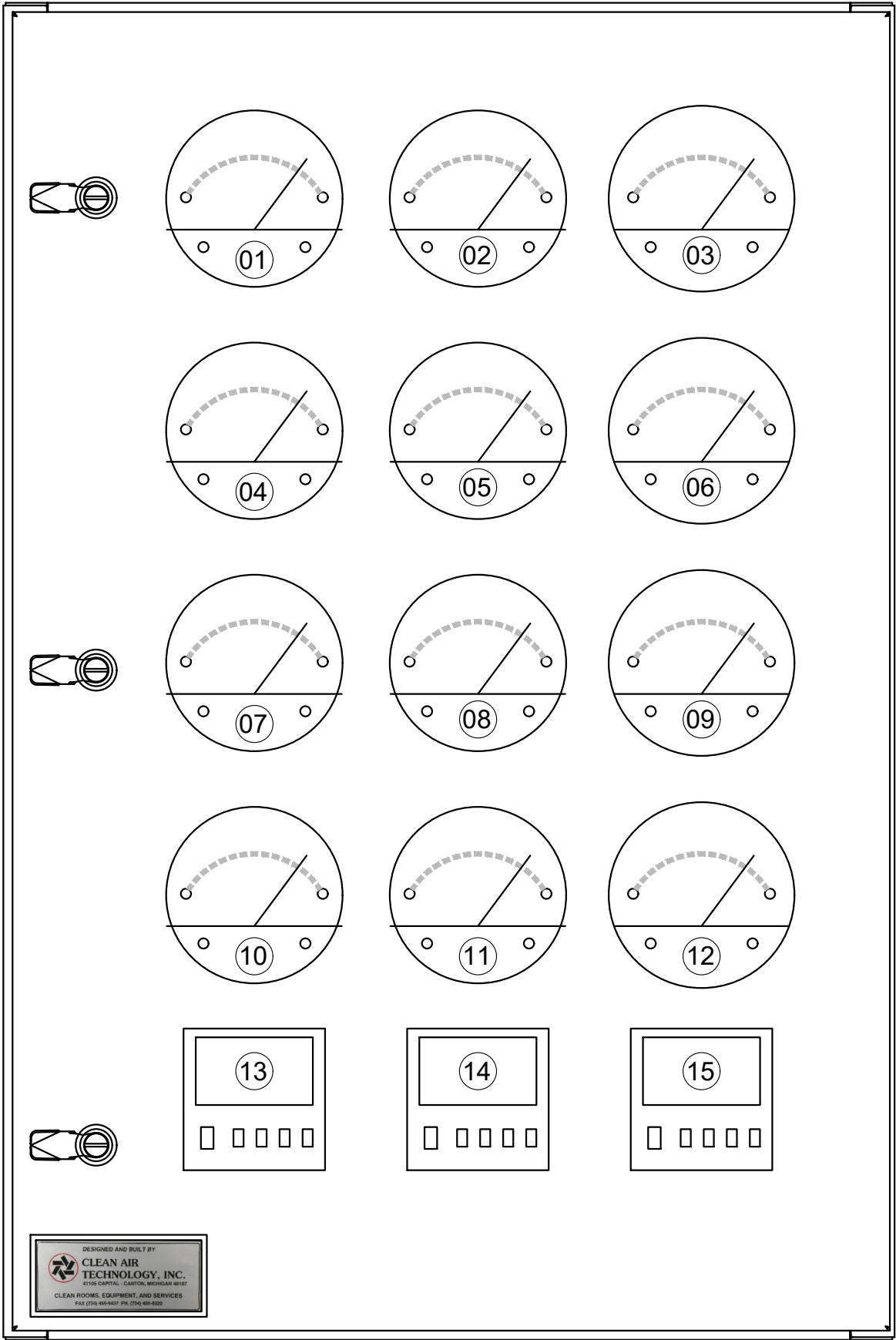
AS-BUILT DRAWING SET



AS-BUILT DRAWING SET

REV.	NUM.	REV. DATE	REVISION DESCRIPTION	BY
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DRAWING #:	CR-902
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18-142 (USP800) CONTROL PANEL LAYOUT LIST				
(Panel Size - 24" wide x 36" tall)				
CONTROL #	CONTROL NAME	CONTROL TYPE	VENDOR	VENDOR PART #
01	V-Blend Room	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
02	Gownroom	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
03	Concentrate Room	Digihelic Pressure Controller	Dwyer	DH3-013
04	Fill / Pack Room	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
05	Sample Room Gownroom	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
06	Sample Room	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
07	Cart Pass Thru-2	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
08	Cart Pass Thru-3	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
09	Cart Pass Thru-4	Digital Magnahelic Gauge	Dwyer	DM2112-LCD
10	RAHU-1 HEPA Supply	Digital Magnahelic Gauge	Dwyer	DM2105-LCD
11	RAHU-1 Pre-filter	Digital Magnahelic Gauge	Dwyer	DM2104-LCD
12	MUA-1 Pre-filter	Digital Magnahelic Gauge	Dwyer	DM2104-LCD
13	Temperature Controller	2-loop Controller	West	EC440R022MML99501
14	Humidity Controller	Single loop Controller	West	EC440R021MML99501
15	Make-up Air (MUA) Control	Single loop Controller	West	EC440R021MML99501

AS-BUILT DRAWING SET

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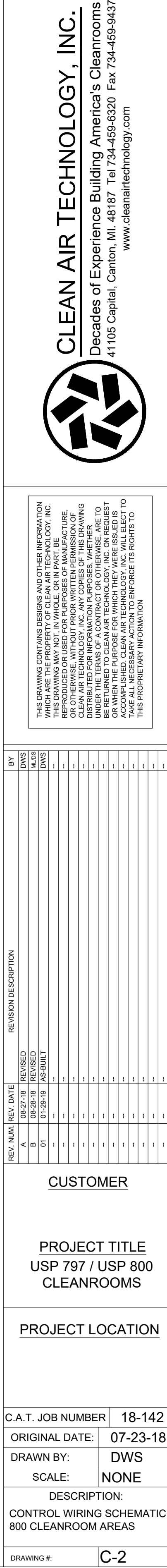
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CUSTOMER

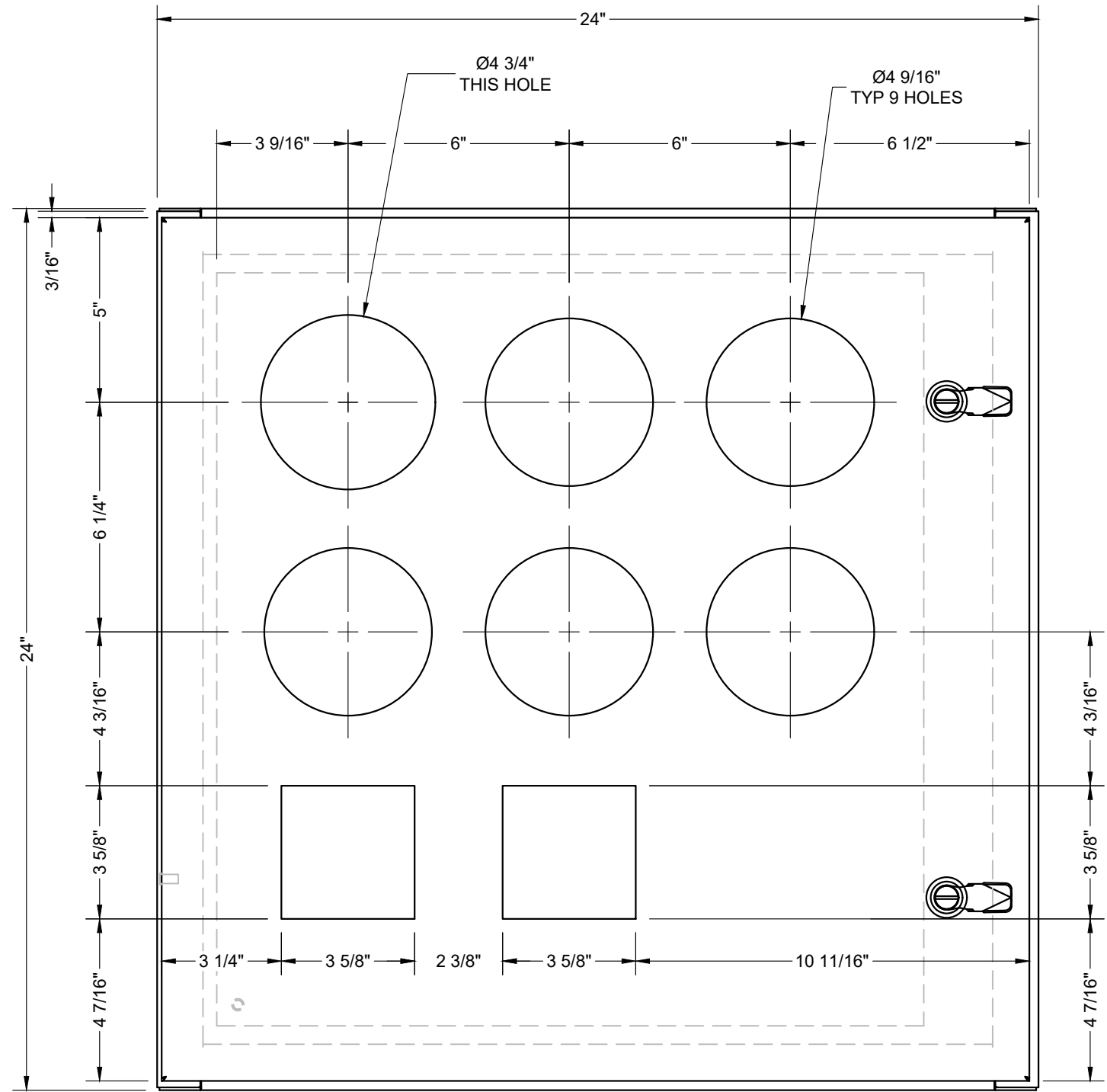
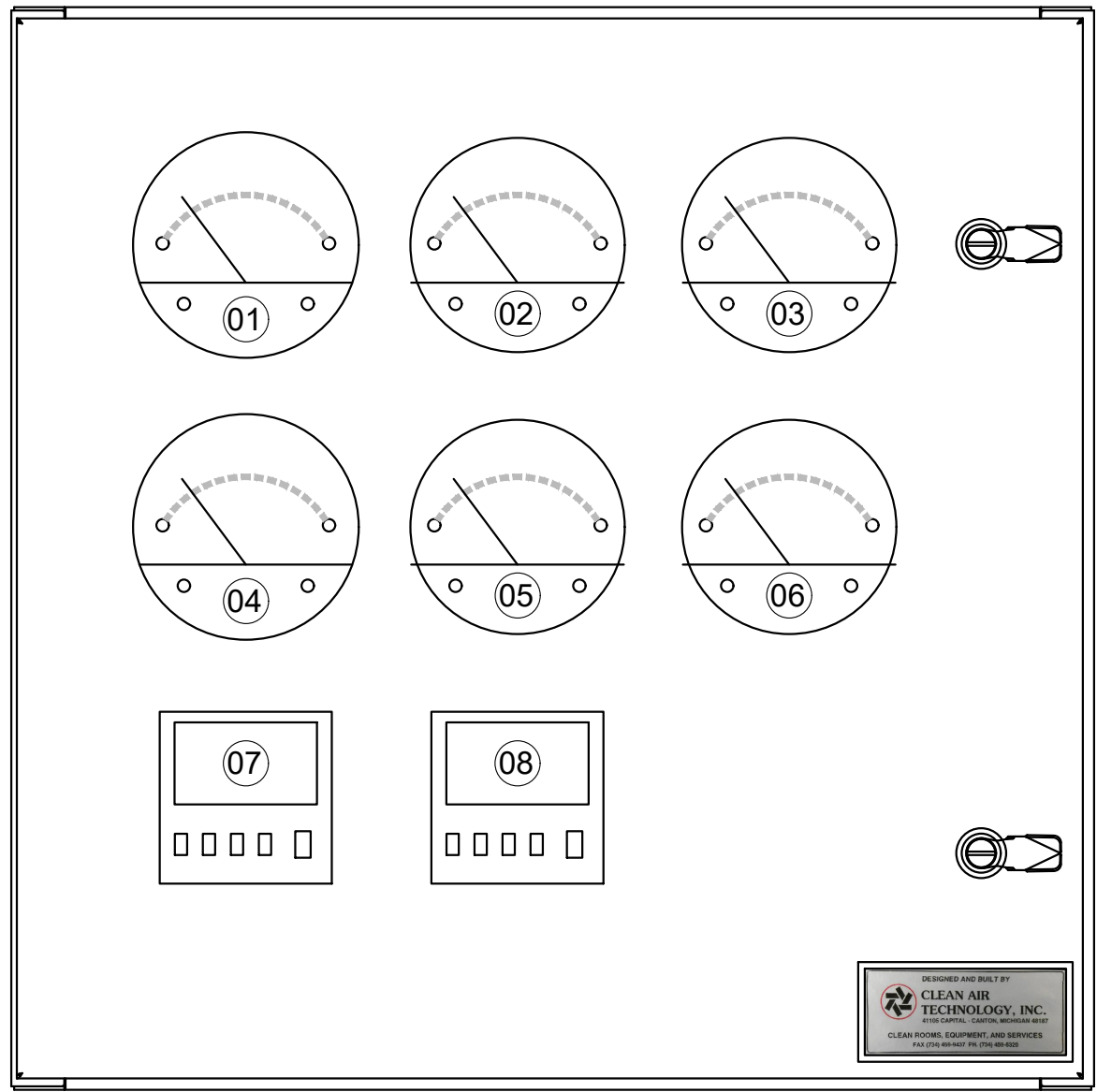
PROJECT TITLE
USP 797 / USP 800
CLEANROOMS

PROJECT LOCATION

C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	07-23-18
DRAWN BY:	DWS
SCALE:	3" = 1'-0"
DESCRIPTION: CONTROL DEVICE LAYOUT, HOLES IN PANEL FACE FOR DEVICES, 800 CLEANROOM AREAS	
DRAWING #:	C-1



AS-BUILT DRAWING SET



18-142 (USP797) CONTROL PANEL LAYOUT LIST				
(Panel Size - 24" wide x 24" tall)				
CONTROL #	CONTROL NAME	CONTROL TYPE	VENDOR	VENDOR PART
01	Creamroom	Digihelic Pressure Controller	Dwyer	DH3-002
02	Creamroom Gownroom	Digital Magnahelic Gauge	Dwyer	DM2102-LCD
03	Cart Pass Thru-1	Digital Magnahelic Gauge	Dwyer	DM2102-LCD
04	RAHU-2 HEPA Supply	Digital Magnahelic Gauge	Dwyer	DM2105-LCD
05	RAHU-2 Pre-filter	Digital Magnahelic Gauge	Dwyer	DM2104-LCD
06	RAHU-2 MUA Pre-filter	Digital Magnahelic Gauge	Dwyer	DM2104-LCD
07	Temperature Controller	Single Loop Controller	West	EC440R021MML99501
08	Humidity Controller	Single Loop Controller	West	EC440R021MML99501

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TAKE ALL NECESSARY ACTION TO ENFORCE ITS RIGHTS TO
THIS PROPRIETARY INFORMATION

REV.	NUM.	DATE	DESCRIPTION	BY
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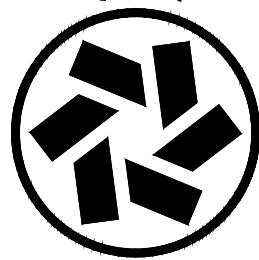
CUSTOMER	
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PROJECT LOCATION	
C.A.T. JOB NUMBER	18-142
ORIGINAL DATE:	07-23-18
DRAWN BY:	DWS
SCALE:	3" = 1'-0"
DESCRIPTION: CONTROL DEVICE LAYOUT, HOLES IN PANEL FACE FOR DEVICES, 797 CLEANROOM AREAS	
DRAWING #:	C-3

AS-BUILT DRAWING SET

[illegible]

C.A.T. JOB NUMBER:	18-142
ORIGINAL DATE:	08-27-18
DRAWN BY:	DWS
SCALE:	NONE
DESCRIPTION: CONTROL WIRING SCHEMATIC, 797 CLEANROOM AREAS	
DRAWING #:	C-4

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www.cleanarttechnology.com