#### DOOR SCHEDULE REMARKS

- BORROWED LIGHT ELEVATION BL-1A.
- 2. BORROWED LIGHT ELEVATION BL-4
- 3. BORROWED LIGHT ELEVATION BL-7A 4. BORROWED LIGHT ELEVATION BL-8B
- 5. BORROWED LIGHT ELEVATION BL-9 6. BORROWED LIGHT ELEVATION BL-10 7. BORROWED LIGHT ELEVATION BL-12
- 8. BORROWED LIGHT ELEVATION BL-13 9. PROVIDE 1/2" CLEAR UNDERCUT IN DOOR FOR AIR TRANSFER 10. PROVIDE 3/4" CLEAR UNDERCUT IN DOOR FOR AIR TRANSFER
- 11. ACOUSTIC SOUND RATED DOOR 12. EXTEND TRACK/FASCIA ACROSS ENTIRE WALL. REFER TO ELEVATION FOR EXTENTS.
- 13. GLASS BOARD GB-1 TO BE ADHERED TO EACH DOOR LEAF. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
- 14. VF-1 APPLIED TO DOOR GLAZING 15. SLIDING PANEL PARTITION, REFER TO OPERABLE PARTITION
- SYSTEMS SPECIFICATION. 16. VERTICAL OPERABLE PANEL PARTITION, REFER TO OPERABLE PARTITION SYSTEMS SPECIFICATION.

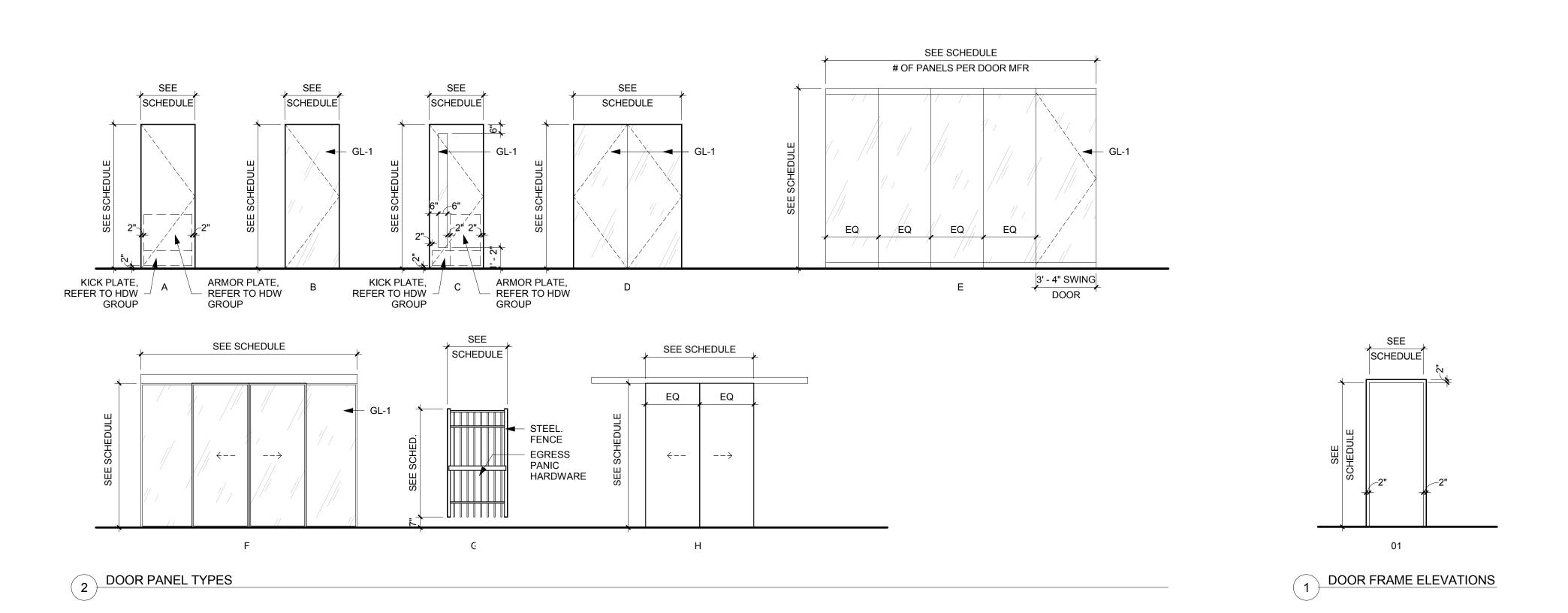
								DOOR SCHEDULE					
				F	PANEL			FRAME					
DOOR NUMBER	ROOM NAME	PANEL QUANTITY	PANEL TYPE		HEIGHT	PANEL MATERIAL	PANEL FINISH	FRAME TYPE	MATERIAL	FINISH	FIRE RATING	HARDWARE GROUP	REMARKS
102	LOBBY	1	F	13' - 0"	10' - 0"	GL-1	GL-1	PER MFR	ALUM	CLEAR ANOD		2	
103	PINNEY STUDIO	1	D	6' - 0"		GL-1		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD		5	1
103A	STUDIO STORAGE	1	Δ	3' - 6"	8' - 0"	WD-2		01	HM	PT-1		6	
104	MECH CLOSET	1	A	3' - 6"	8' - 0"	WD-2		01	HM	PT-1		1	11
105	SORTING / CIRC. WORK	1	A	3' - 6"	8' - 0"	WD-2		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD		17	2,14
109	STUDY ROOM	1	R	3' - 0"	8' - 0"	GL-1		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD			3, 10
110	STUDY ROOM	1	B	3' - 0"		GL-1			ALUM	CLEAR ANOD			3, 10
111	STUDY ROOM	1	<del> </del>	3' - 0"		GL-1		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD			4, 10
112	STUDY ROOM	1		3' - 0"		GL-1	GL-1	REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD			5, 10
113	ADULT QUIET READING	1	В	3' - 6"		GL-1		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD		2	6
114	COMMUNITY ROOM 1	1	C	3' - 6"	8' - 0"	WD-2		01	HM	PT-1		18	
114A.1	STORAGE	1	Δ	3' - 6"	8' - 0"	WD-2		01	HM	PT-1		4	
114A.2	STORAGE	1	Δ	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		4	
115.1	COMMUNITY ROOM 2	2	C	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		19	
115.2	COMMUNITY ROOM 2	1	C	3' - 6"	8' - 0"	WD-2		01	HM	PT-1		20	
115. <u>2</u> 115A	AV CLOSET	1	Δ	3' - 0"	8' - 0"	WD-2		01	HM	PT-1		6	
115B	AV CLOSET	PER MFR	PER MFR	24' - 0"	12' - 0"	PER MFR	AWP-1	PER MFR	PER MFR	PER MFR		PER MFR	16
	ADA TLT	1	Δ	3' - 0"	8' - 0"	WD-2		01	HM	PT-1		7	Q
116B	TLT	1	Δ	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7	0
	TLT	1	Δ	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7	0
116D	ADA TLT	1		3' - 0"	8' - 0"	WD-2		01	HM	PT-1		7	0
116E	ADA TLT	1	Λ	3' - 0"	8' - 0"	WD-2		01	HM	PT-1		7	0
116F	JANITORS CLOSET	1	Δ	3' - 0"	8' - 0"	WD-2		01	HM	PT-1		21	0
	CHILDREN'S PROGRAM ROOM	PER MFR	F	16' - 0"	10' - 0"	GL-1		PER MFR	ALUM	CLEAR ANOD		5	15
123.1		2	L	6' - 0"	8' - 2"	WD-2	PT-1	SLIDING DOOR, REFER TO HARDWARE SCHEDULE	ALUM	CLEAR ANOD		0	12, 13
123.2 123A	CHILDREN'S PROGRAM STORAGE		Δ	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		11	12, 10
123A 124	FAMILY STUDY ROOM	1	C	3' - 0"	8' - 0"	WD-2	STN	REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD			5, 10
125	ADA FAMILY RESTROOM	1	^	3' - 0"	8' - 0"	WD-2		01	HM	PT-1		7	10
126	ADA FAMILY RESTROOM	1	Α	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7	10
127	COMFORT ROOM	1	Α	3' - 0"		WD-2		01	HM	PT-1		24	10
	SHIPPING/ RECEIVING	1	Α	3' - 6"		WD-2		01	HM	PT-1		22	10
	IT ROOM	1	Α	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		23	
129 132	BREAK ROOM	1		3' - 6"	8' - 0"	WD-2		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD		23	7
		1		3' - 0"		WD-2						3	0
	SUPERVISOR'S OFFICE LIBRARIAN OFFICES	1		3' - 6"	8' - 0"	WD-2		REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD CLEAR ANOD		3	7
134		1						REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM			0	10
	ADA STAFF RESTROOM	1	Α	3' - 0" 3' - 6"	8' - 0"	WD-2 WD-2		01	HM	PT-1	60-MIN	12	10
	DRIVE-THRU BOOK RETURN	1	A		8' - 0"			01	HM		OU-IVIIIN	12	02
EX01	PINNEY STUDIO	1	EXISTING	3' - 0"	8' - 0"	ALUM		EXISTING	ALUM	CLEAR ANOD	ļ ,	16	ADD
EX02	CHILDREN'S COLLECTION	1		3' - 6"		ALUM		EXISTING PER PENCE DEL	ALUM	CLEAR ANOD	1	25	<i>V</i>
EX03.1	NORTH CARDEN/ PATIO	1	_	3' - 6"		STL	PER FENCE DTL		STL	PER FENCE DTL			
EX03.2	NORTH GARDEN/ PATIO	I	G	3' - 6"	6' - 2"	STL	PER FENCE DTL	PEK FENCE DIL	STL	PER FENCE DTL		14	

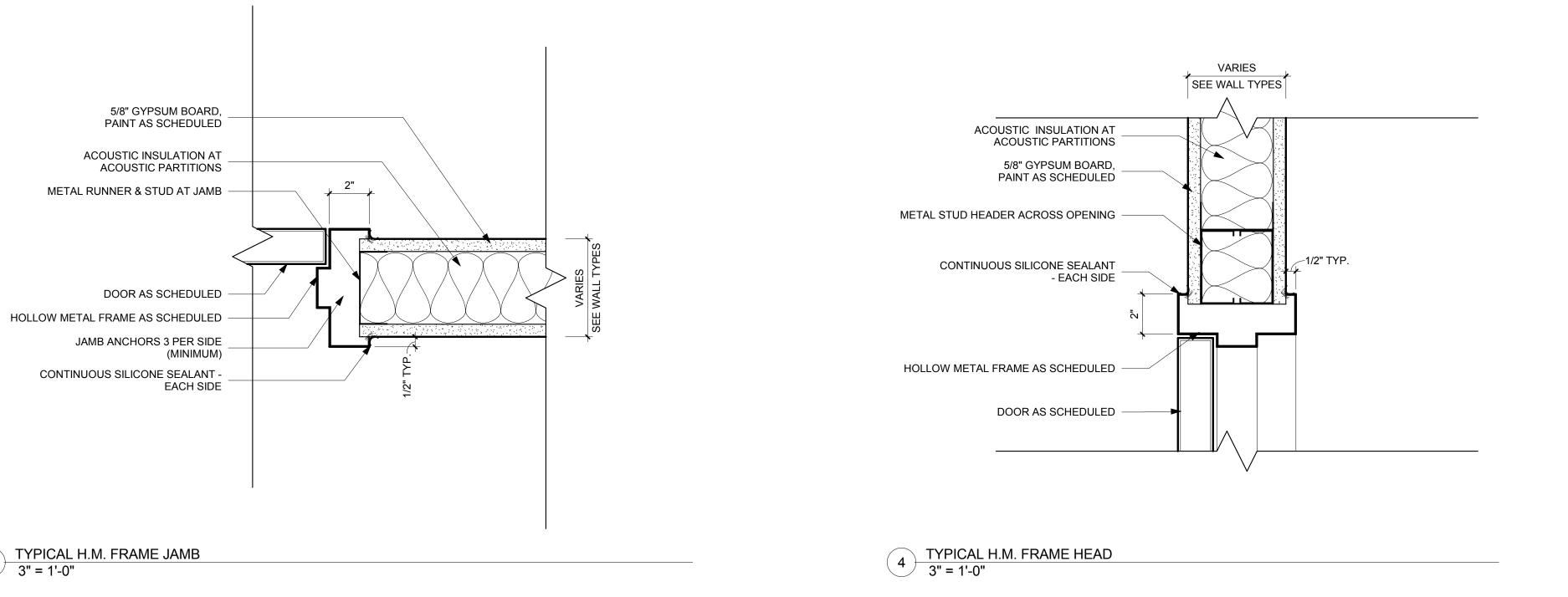
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 22 23 23 24 25 25

EXISTING 4' - 0" 7' - 0" HM

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25

SHIPPING/ RECEIVING





#### DOOR SCHEDULE NOTES

- SEE FRAME PLANS AND INTERIOR ELEVATIONS FOR DIMENSIONAL SIZES
- WITH MATERIALS OF FRAMES. PREPARE DOOR AND FRAME FOR PAINT - BONDO DENTS AND SAND
- SCRATCHES SMOOTH. 3. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO MANUFACTURING. BRING ALL DISCREPANCIES TO THE
- TO PROCEEDING. 4. REFER TO INTERIOR FINISH SPECIFICATION ON A600 AND GLAZING SPECIFICATION FOR GLASS TYPE INFORMATION.

ATTENTION OF THE ARCHITECT PRIOR



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Key Plan

ADDENDUM 02

City Contract No.

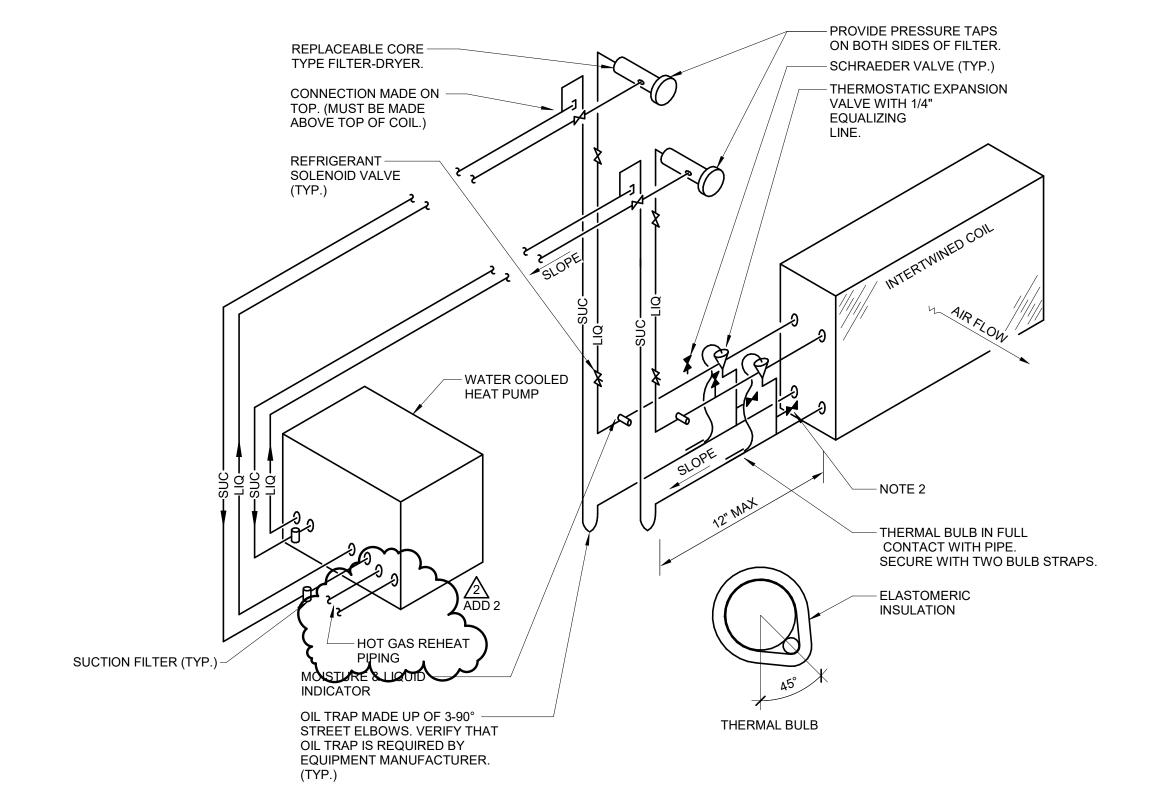
17609000 Sheet Issue Date

Sheet Name

OPN Project No.

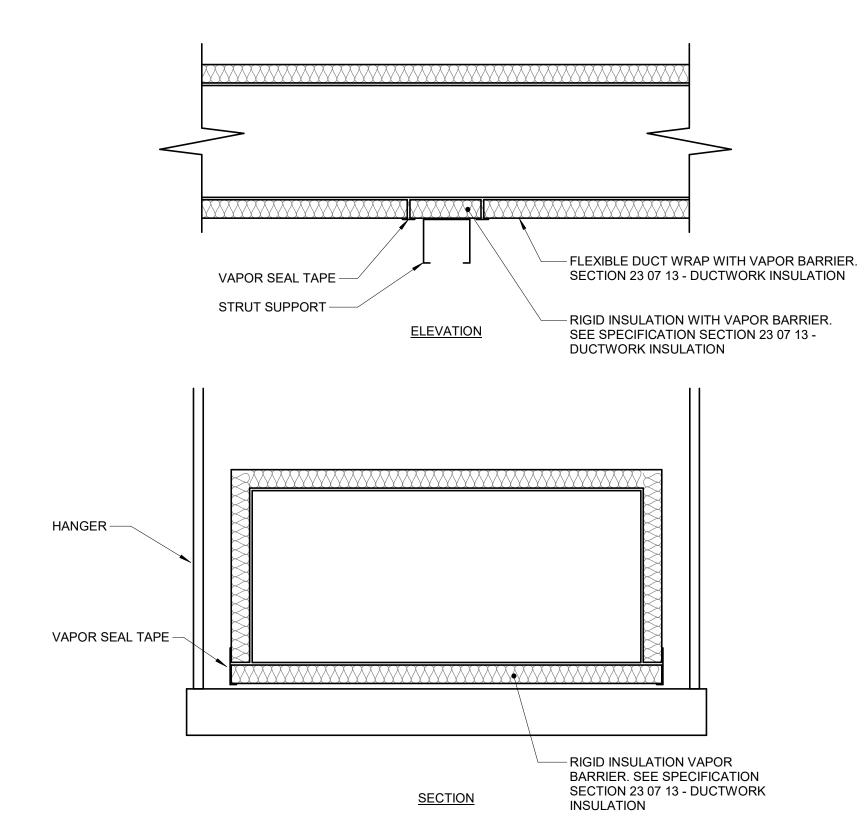
**DOOR SCHEDULE AND ELEVATIONS** Sheet Number

A601



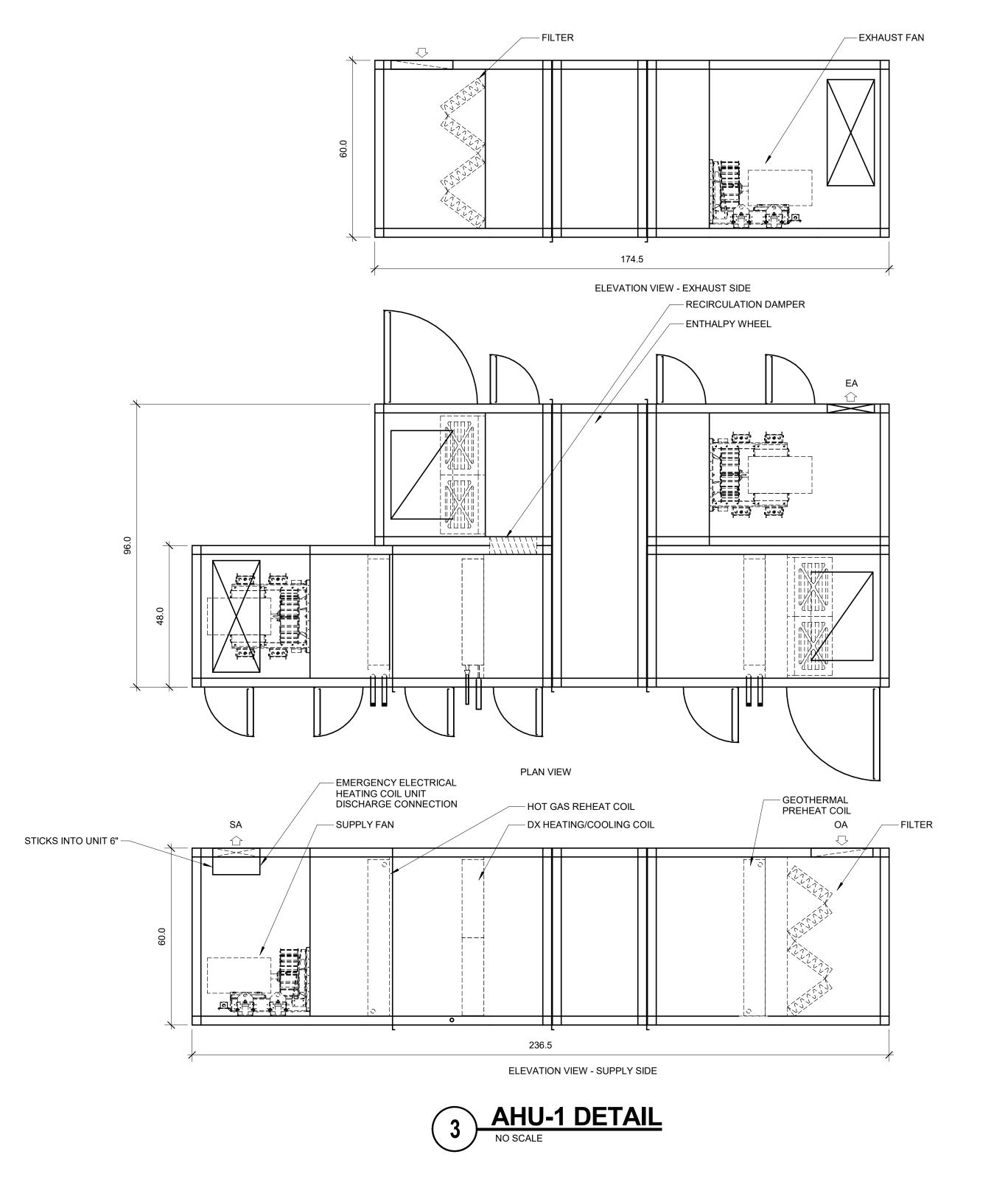
# 1 REFRIGERANT PIPING DETAIL (VERT. INTERTWINED) NO SCALE

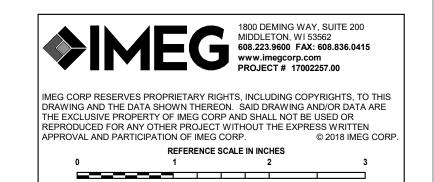
- 1. THIS DIAGRAM IS SCHEMATIC IN NATURE. UNIT MANUFACTURER SHALL SUBMIT DETAILED PIPING DIAGRAM SHOWING RECOMMENDED PIPING ARRANGEMENT IF DIFFERENT FROM ABOVE.
- INSTALL 1/4" SCHRAEDER VALVES TO MEASURE REFRIGERANT PRESSURE WITH REFRIGERANT GAUGES.
   PIPE SIZES, IF SHOWN ON DRAWINGS, ARE ONLY FOR THE CONVENIENCE OF THE BIDDERS. ACTUAL NUMBERS AND SIZES
- OF PIPES AND ANY ACCESSORIES SUCH AS ACCUMULATORS, RECEIVERS, SEPARATORS AND HEAT TRACING SHALL BE DETERMINED BY THE COIL SUPPLIER AND SUBMITTED AS SHOP DRAWINGS. NO COMPENSATION WILL BE MADE IF ACTUAL NUMBER OR SIZES OF PIPES EXCEED WHAT IS SHOWN.
- 4. QUANTITY OF COILS VARY PER UNIT, PROVIDE INTERTWINED COIL CONNECTIONS FOR STACKED COILS SO BOTH COILS HAVE EQUAL COOLING AT PART LOAD CONDITIONS.
- 5. PIPING DETAIL SHOWN IS FOR COOLING ONLY DX COIL. HEAT PUMP STYLE UNITS MAY REQUIRE ADDITIONAL ACCESSORIES FOR COMPLETE SYSTEM PER MANUFACTURER RECOMMENDATIONS.



TRAPEZE HANGER DUCT WRAP VAPOR SEAL DETAIL
NO SCALE

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 | 25 |





ARCHITECTS
301 N Broom St., Suite 100

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Project

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516 COTTAGE GROVE ROAD

MADISON, WI



Key Plan

Revision
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City Contract No.

OPN Project No.

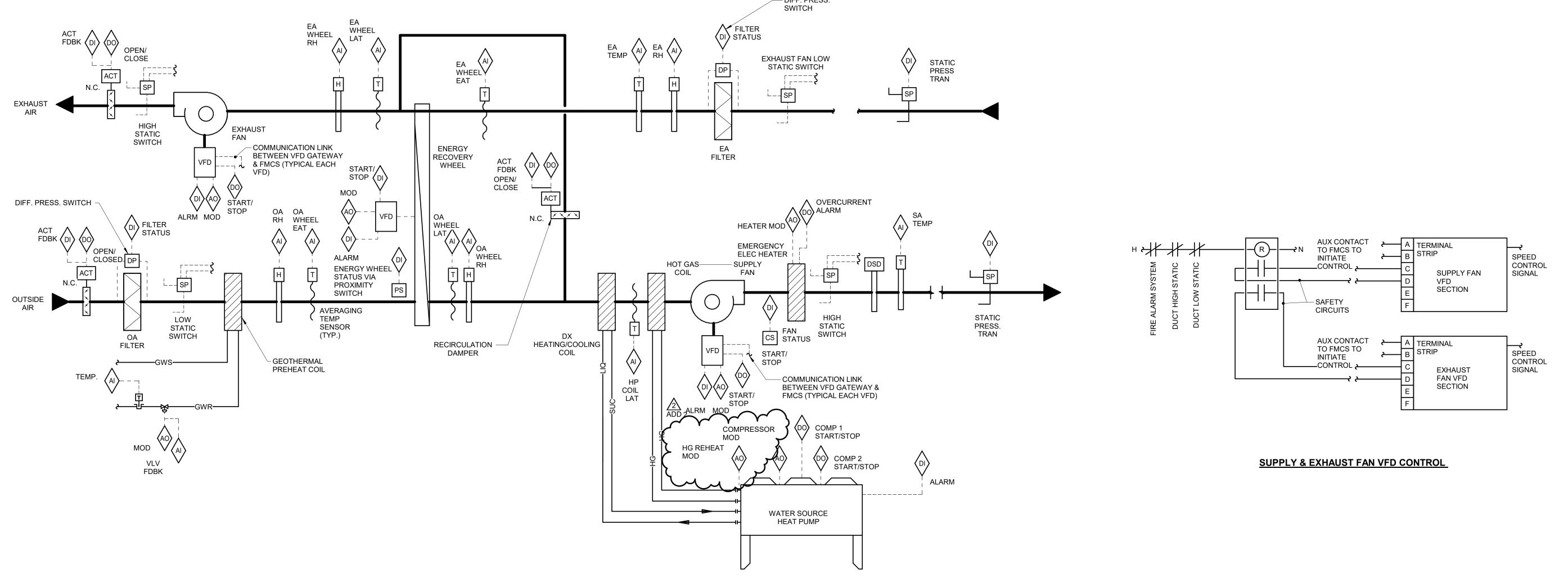
**17609000**Sheet Issue Date

BID DOCUMENTS 11/30,
Sheet Name

MECHANICAL DETAILS

Sheet Number

M400



**SEQUENCE OF OPERATION:** 

WHEN AHU IS INDEXED TO RUN, THE FOLLOWING SHALL OCCUR:

THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL OPEN AFTER A 30 SECOND (ADJ.) DELAY TO ALLOW STARTUP OF AHU-1. AFTER OUTSIDE AIR AND EXHAUST AIR DAMPERS ARE PROVEN OPEN THE SUPPLY FAN SHALL BE ENABLED TO RUN.

SUPPLY FAN OPERATION:
FMCS SHALL MODULATE SIGNAL TO SUPPLY FAN VFD AS REQUIRED TO MAINTAIN THE DUCT STATIC PRESSURE AS MEASURED BY STATIC PRESSURE TRANSMITTER NEAR THE END OF THE CRITICAL DUCT BRANCH.

EXHAUST FAN OPERATION:
EXHAUST FAN SHALL BE INDEXED TO RUN WHENEVER THE SUPPLY FAN IS INDEXED TO RUN. FMCS SHALL MODULATE SIGNAL TO EXHAUST FAN VFD AS REQUIRED TO MAINTAIN THE DUCT STATIC PRESSURE AS MEASURED BY STATIC PRESSURE TRANSMITTER NEAR THE END OF THE CRITICAL DUCT BRANCH.

DUCT STATIC PRESSURE RESET OPERATION:
FMCS SHALL RESET DUCT STATIC PRESSURE SETPOINT BELOW THE MAXIMUM SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE TAB DAMPER (SUPPLY OR EXHAUST SYSTEMS.)
FMCS SHALL RESET DUCT STATIC PRESSURE SETPOINT BELOW THE MAXIMUM SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE TAB DAMPER (SUPPLY AND EXHAUST SYSTEMS.)

GLYCOL WATER PRE-HEAT COIL CONTROL:

THE GLYCOL WATER PRE-HEAT COIL SHALL BE USED AS A FREE PRE-HEATER PRIOR TO OUTSIDE AIR ENTERING THE ENERGY RECOVERY WHEEL. THE GLYCOL WATER VALVE SHALL MODULATE TO A MINIMUM OF 10% (ADJ.) OPEN WHERE VALVE SHALL BE OVERRIDED AIR TEMPERATURES BELOW 10°F (ADJ.) IF OA WHEEL FAT SENSES AIR TEMPERATURES BELOW 10°F (ADJ.) IF OA WHEEL FAT SENSES AIR TEMPERATURES BELOW 10°F (ADJ.) IF OA WHEEL FAT SENSES AIR TEMPERATURE MEASUREMENT. OUTSIDE AIR TEMPERATURES ARE BETWEEN 30°F (ADJ.) AND 10°F (ADJ.) AND 10°F (ADJ.). THE GLYCOL WATER CONTRÓL VALVE SHALL BE OVERRIDEN TO 100% OPEN REGARDLESS OF GLOBAL OUTSIDE AIR TEMPERATURES BELOW 10°F (ADJ.). THE GLYCOL WATER CONTRÓL VALVE SHALL BE OVERRIDEN TO 100% OPEN REGARDLESS OF GLOBAL OUTSIDE AIR TEMPERATURE MEASUREMENT. DOWN AND ALARM TO OPERATOR INTERFACE.

**ENERGY RECOVERY WHEEL CONTROL** ENERGY RECOVERY WHEEL DISCHARGE AIR TEMPERATURE CONTROL: THE ENERGY RECOVERY WHEEL SHALL BE WODULATED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT SUBJECT TO THE FROST

DEFROST CONTROL: OVERRIDE THE HEATING WHEEL SPEED CONTROL TO LIMIT THE LEAVING EXHAUST AIR TEMPERATURE FROM THE WHEEL TO 15°F (ADJ.) AT A RETURN AIR RELATIVE HUMIDITY OF 30% RH AND RESET TO 5°F (ADJ.) AT 20% RH.

CONTROL OVERRIDE. THE ENERGY RECOVERY WHEEL SHALL BE INDEXED OFF WHENEVER THE OUTDOOR AIR TEMPERATURE IS LESS THAN THE EA WHEEL EAT AND THE DISCHARGE TEMPERATURE SETPOINT IS LESS THAN THE OUTDOOR AIR TEMPERATURE.

PURGE CONTROL: WHEN THE HEAT WHEEL IS DEACTIVATED, THE WHEEL SHALL RUN FOR 20 SECONDS AT MINIMUM SPEED EVERY 30 MINUTES TO KEEP THE ROTOR SURFACE CLEAN. BYPASS DAMPERS SHALL REMAIN OPEN DURING PURGE SEQUENCE.

DISCHARGE AIR TEMPERATURE AND DEHUMIDIFICATION CONTROL: INSTALL A TEMPERATURE SENSOR IN THE SUPPLY DUCT DOWNSTREAM OF THE SUPPLY FAN AND ALSO A TEMPERATURE SENSOR DOWNSTREAM OF THE HEAT PUMP HEATING/COOLING COIL

DISCHARGE AIR TEMPERATURE SETPOINT: DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET LINEARLY PER FOLLOWING SCHEDULE:

DISCHARGE AIR SETPOINT SHALL BE 63°F (ADJ.) WHEN OUTSIDE AIR TEMPERATURE IS ABOVE 80°F (ADJ.).

DISCHARGE AIR SETPOINT SHALL BE 70°F (ADJ.) WHEN OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJ.).

MAXIMUM HUMIDITY SETPOINT 55% (ADJ.). DUCT DISCHARGE TEMPERATURE SETPOINT.

THE ENERGY RECOVERY WHEEL AND WATER SOURCE HEAT PUMP (WSHP-1) DX COIL SHALL OPERATE IN SEQUENCE FOR MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT. WHEN IN COOLING MODE IF THE EXHAUST AIR RELATIVE HUMIDITY SENSORS OF ROOMA 114, 115, OR 123 EXCEEDS 55% RH (ADJ.) SETPOINT THE WSHP MAIN COIL COMPRESSORS SHALL MODULATE TO MAINTAIN A SUPPLY DUCT DISCHARGE AIR TEMPERATURE SETPOINT. WHEN IN HEATING MODE THE WSHP COMPRESSOR SHALL MODULATE TO MAINTAIN A SUPPLY DUCT DISCHARGE AIR TEMPERATURE SETPOINT. WHEN IN HEATING MODE THE WSHP COMPRESSOR SHALL MODULATE TO MAINTAIN A SUPPLY DUCT DISCHARGE AIR TEMPERATURE SETPOINT. WHEN IN HEATING MODE THE WSHP COMPRESSOR SHALL MODULATE TO MAINTAIN SUPPLY

EMERGENCY ELECTRIC HEATING COIL SHALL BE THE FINAL STAGE OF HEAT AND ONLY USED TO ACHIEVE DISCHARGE AIR TEMPERATURE SETPOINT. FMCS SHALL MODULATE SIGNAL TO ELECTRIC HEAT CONTROL PANEL TO MODULATE SCR CONTROLLED ELECTRIC HEATER. IF EMERGENCY ELECTRIC HEAT IS BEING USED AN NOTIFICATION SHALL ALERT TO OPERATOR INTERFACE TO ANNOCIATE THAT EMERGENCY ELECTRIC HEAT IS IN OPERATION.

THE DDC SYSTEM SHALL ALARM TO THE OPERATOR INTERFACE WHEN THE DISCHARGE AIR TEMPERATURE IS 10°F (ADJ.) FROM SETPOINT OR WHEN THE EXHAUST AIR RELATIVE HUMIDITY IS 10% FROM SETPOINT (ADJ.).

ALARMS, INTERLOCKS, AND SAFETIES:
WHEN FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION, AHU SHALL BE SHUTDOWN.

- THE FOLLOWING CONDITIONS SHALL SHUTDOWN THE AHU AND SHALL INDICATE AN ALARM CONDITION AT THE FMCS WORKSTATION: LOW STATIC PRESSURE SWITCH INDICATES EXHAUST DUCT PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS.
- HIGH STATIC PRESSURE SWITCH INDICATES EXHAUST DUCT STATIC PRESSURE GREATER THAN THE SPECIFIED DUCT PRESSURE CLASS. LOW STATIC PRESSURE SWITCH INDICATES OUTSIDE AIR SECTION PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS OF THE OUTSIDE AIR DUCTWORK.
- HIGH STATIC PRESSURE SWITCH INDICATES SUPPLY DUCT STATIC PRESSURE GREATER THAN THE SPECIFIED DUCT PRESSURE CLASS. ANY ALARM CONDITION AS NOTED IN GLYCOL WATER PRE-HEAT COIL CONTROL SEQUENCE.
- THE FOLLOWING CONDITIONS SHALL INDICATE AN ALARM AT THE FMCS, HOWEVER AHU SHALL CONTINUE TO OPERATE: AN ALARM IS INDICATED AT ANY SUPPLY FAN VFD OR EXHAUST FAN VFD.
- DIFFERENTIAL PRESSURE SWITCH ACROSS ANY MERV 8 FILTER BANK EXCEEDS 0.55 INCHES W.G. (ADJ.) OF IT ANY MERV 13 FILTER BANK EXCEEDS 0.6 INCHES W.G. (ADJ.) SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT FOR 10 MINUTES (ADJ.).
- THE HEAT WHEEL COMES WITH FACTORY EQUIPPED WITH A PROXIMITY SWITCH THAT SHALL PROVIDE A DRY CONTACT IN PUT TO THE DDC SYSTEM. IF THE WHEEL IS INDEXED TO RUN AND TWO SWITCH CLOSURES ARE NOT SEEN WITH 10 MINUTES, AN ALARM WILL BE SENT THROUGH THE DDC SYSTEM SIGNALING A WHEEL ROTATION FAILURE. SEND AN ALARM TO OPERATOR INTERFACE IS SUM OF SUPPLY AIR TERMINAL BOXES FALLS BELOW 10% OF SET POINT FOR MORE THAN 5 MINUTES (ADJ.) EMERGENCY ELECTRIC HEAT IS CALLED FOR OPERATION AND ELECTRIC HEAT OVERCURRENT ALARM CONTACT ON ELECTRIC HEATER CONTROL PANEL IS INDICATING AN ALARM CONDITION.

 $\mid$  IN THE EVENT SUPPLY FAN IS NOT RUNNING (AS INDICATED BY THE VFD MONITORING) EXHAUST AIR FAN SHALL BE DE-ENERGIZED.

WHENEVER AHU IS SHUTDOWN THE FOLLOWING SHALL OCCUR: THE OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER SHALL CLOSE. CONDENSING UNIT SHALL BE DENERGIZED.

SUPPLY FAN AND EXHAUST FAN VFDS SHALL BE DE-ENERGIZED ENERGY RECOVERY WHEEL SHALL STOP.

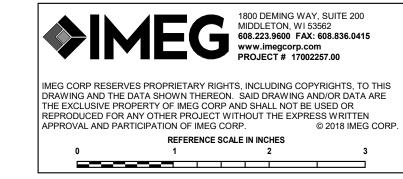
UNOCCUPIED MODE:
UNIT SHALL BE DISABLED DURING UNOCCUPIED HOURS. OCCUPIED/UNOCCUPIED HOURS SHALL BE COORDINATED WITH OWNER.

RECIRCULATION MODE:
UNIT CONTAINS A RECIRCULATION DAMPER SHALL BE CLOSED. DURING RECIRCULATION DAMPER SHALL BE CLOSED. DURING RECIRCULATION MODE SUPPLY FAN, HEATING/COOLING COIL, HOT GAS

ON THE PROPERTY OF COIL, AND EMERGENCY HEATING ELECTRIC COIL SHALL OPERATE UNDER NORMAL CONDITIONS. EXHAUST FAN AND ENERGY WHEEL SHALL BE DISABLED. ALL TERMINAL AIR BOXES SHALL CONTROL TO MAXIMUM SET POINTS. DISCHARGE AIR TEMPERATURE OF 70°F IN HEATING AND 74°F IN COOLING. RECIRCULATION MODE EMERGENCY OPERATION SHALL HAVE A SELECTABLE ENABLE/DISABLE POINT THRUOGH THE OPERATOR INTERFACE AND THROUGH A TOGGLE IN THE DDC CONTROL PANEL.

<u>GRAPHICAL DISPLAY:</u> DISPLAY THE GLOBAL OA TEMPERATURE ON AHU GRAPHIC PAGE.





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ADDENDUM 02

01/30/2019

City Contract No.

OPN Project No 17609000 Sheet Issue Date

> BID DOCUMENTS Sheet Name **CONTROL DIAGRAMS**

**MECHANICAL** Sheet Number M551

AIR HA	NDLING	UNIT (A	HU-1) PF	REHEAT	COIL						AIR HAN	IDLING	UNI	T (AHL	J-1) EME	RGEN	ICY ELE	CTRIC	HEATING	COIL
	TION IS BASED ( S AT LEAVING S														TH 0-10 VDC INPU			OUTPUT.		
	01.7/001.001	01.74001 00H	01,74001, 0011	01,7001,001		GLYCOL COIL	01.77001 0011	01.74001.0011			MINIMUM	MAXIMUM		LAT AT		ELE	CTRICAL		ELEC	TRICAL
CFM	GLYCOL COIL EAT DB	EWT	GLYCOL COIL GPM	LAT DB	LWT	STATIC PRESSURE	TOTAL MBH	GLYCOL COIL WPD	REMARKS		AIRFLOW	AIRFLOW		MAX	HEATING				DISCONNECT	CONTROLL
4,000 CFM	-15 °F	36 °F	16 GPM	6 °F	23 °F	0.07 in-wg	105	5 FT	NOTE 1,2,6	1	(CFM)	(CFM)	EAT	AIRFLOW	OUTPUT KW	PHASE	VOLTAGE	AMPS	BY	BY
4,000 CI W	-13 1	30 1	TO GEIM	0 1	20 1	0.07 III-wg	103	311	INOTE 1,2,0	J	2,690 CFM	4,000 CFM	55	70.8	20	3	208 V	55.5 A	MFR	MFR
										·										

VRF INDOOR UNIT SCHEDULE	
NOTES:  1.INDOOR UNITS SELECTED FOR SPACE PEAK LOADS. 2.PROVIDE 30% FILTERS FOR EACH UNIT. FILTER MAY BE INTEGRAL OR SUITABLE FOR FIELD INSTALLATION IN FABRICATED FILTER ANGLES. FILTER ANGLES PROVIDED BY M.C 3.UNIT SHALL BE PROVIDED WITH CONDENSATE PUMP. 4.REFER TO SPECIFICATION 23 81 45 FOR DESCRIPTION OF CONTROLS. 5.INDOOR UNIT CFM SELECTED AT HIGH CFM. INDOOR UNIT SHALL HAVE CAPABILITY TO ADJUST CFM FOR FINAL AIR BALANCING UP OR DOWN THROUGH FIELD ADJUSTMENT. 6.DUCTED CONCEALED UNITS SHALL BE PROVIDED WITH SUPPLY AND RETURN DUCT FLANGES. 7. UNIT SHALL INCLUDE AUXILLARY CONTACT TO ENABLE AUXILLARY HEAT EITHER NOW OR IN THE FUTURE.	

D			MAX.	DIMENS	SIONS						REFRIC	ERANT									ELECTRIC	CAL					
Р						<b>ASSOCIATED</b>				EXT.			DESIGN	DESIGN	COOLING	HEATING					DISCO	NNECT	CONTROLLI	ER/ STARTER			
	TAG	4554 655755	. =			VRF HEAT		<b>-</b> 0.10	0=14	S.P. IN.	7.05	MAX.	COOLING	HEATING	CAPACITY	CAPACITY	\(\(\alpha\)	D			BY	TYPE	BY	TYPE			
	NAME	AREA SERVED	_	-	HEIGHT	PUMP	CONFIGURATION	TONS		W.C.		CHARGE	TOTAL BTUH	TOTAL BTUH	BTUH	BTUH	VOLTAGE	PHASES			, ,	(NOTE B)	(NOTE A)	(NOTE C)	MANUFACTURER	MODEL	NOTES
_	IU-100 IU-101	LIB. MECH SUPERVISOR OFFICE 131	36	10	12 10	WCCU-100 WCCU-100	WALL MOUNTED DUCTED	1.25	415 495	0.6	R410A R410A	40.7 40.7	12000 15000	13500 17000	12000 15000	13500 17000	208	1	0.38	15 A 15 A	EC EC	-	MFR MFR	FV FV	MITSUBISHI MITSUBISHI	PKFY-P12NHMU-E PEFY-P15NMAU-E	, , , , , , , , , , , , , , , , , , ,
	IU-102	DRIVE THRU	29 29	40	10	WCCU-100	DUCTED	1.25	370	0.6	R410A	40.7	12000	13500	12000	13500	208	1	1.43	15 A	EC	_	MFR	FV FV	MITSUBISHI	PEFY-P13NMAU-E	·
	IU-103	LIB OFFICES	29	32	10	WCCU-100	DUCTED	0.75	300	0.6	R410A	40.7	8000	9000	8000	9000	208	1	1.05	15 A	EC	_	MFR	FV	MITSUBISHI	PEFY-P08NMAU-E	
	IU-104	STAFF OFFICE 129	29	32	10	WCCU-100	DUCTED	0.75	300	0.6	R410A	40.7	8000	9000	8000	9000	208	1	1.05	15 A	EC	_	MFR	FV	MITSUBISHI	PEFY-P08NMAU-E	·
J	IU-105	PROJECT WORK ROOM 128	29	40	10	WCCU-100	DUCTED	1	370	0.6	R410A	40.7	12000	13500	12000	13500	208	1	1.20	15 A	EC	_	MFR	FV	MITSUBISHI	PEFY-P12NMAU-E	
	IU-106	BREAK ROOM 130	29	40	10	WCCU-100	DUCTED	1	370	0.6	R410A	40.7	12000	13500	12000	13500	208	1	1.20	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P12NMAU-E	· '
	IU-107	CART STORAGE	29	32	10	WCCU-100	DUCTED	0.5	300	0.6	R410A	40.7	6000	6700	6000	6700	208	1	1.05	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P06NMAU-E	
	IU-108	IT ROOM	47	12	15	WCCU-100	WALL MOUNTED	2.5	915	0	R410A	40.7	26667	34000	30000	34000	208	1	0.63	15 A	EC	-	MFR	FV	MITSUBISHI	PKFY-P30NKMU-E	NOTES 1,6
_	IU-109	NEW MOMS 123	29	32	10	WCCU-100	DUCTED	0.5	300	0.6	R410A	40.7	6000	6700	6000	6700	208	1	1.05	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P06NMAU-E	NOTES 1,6
	IU-201	COMMUNITY ROOM 1	29	60	10	WCCU-200	DUCTED	3	1165	0.6	R410A	84.4	36000	40000	36000	40000	208	1	3.50	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P36NMAU-E	NOTES 1,6
	IU-202	MEDIA AND PUBLIC COMPUTING 119	29	48	10	WCCU-200	DUCTED	2	885	0.6	R410A	84.4	24000	27000	24000	27000	208	1	2.73	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P24NMAU-E	NOTES 1,6
	IU-203	FAMILY ROOM 122	29	32	10	WCCU-200	DUCTED	0.5	300	0.6	R410A	84.4	6000	6700	6000	6700	208	1	1.05	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P06NMAU-E	NOTES 1,6
Л	IU-204	ADULT QUIET READING	29	60	10	WCCU-200	DUCTED	3	1165	0.6	R410A	84.4	36000	40000	36000	40000	208	1	3.50	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P36NMAU-E	NOTES 1,6
<b>v</b> 1	IU-205	4P STUDY 112	29	32	10	WCCU-200	DUCTED	0.75	300	0.6	R410A	84.4	8000	9000	8000	9000	208	1	1.05	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P08NMAU-E	NOTES 1,6
	IU-206	CHILDRENS COLL EXTERIOR	44	54	19	WCCU-200	DUCTED	6	2540	1	R410A	84.4	72000	80000	72000	80000	208	1	7.70	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P72NMHSU-E	NOTES 1,6
	IU-207	AUDULT FICT EXT. WEST	29	40	10	WCCU-200	DUCTED	1	370	0.6	R410A	84.4	12000	13500	12000	13500	208	1	1.20	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P12NMAU-E	NOTES 1,6
_	IU-208	AUDULT FICT EXT. SOUTH	29	60	10	WCCU-200	DUCTED	4	1415	0.6	R410A	84.4	48000	54000	48000	54000	208	1	3.51	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P48NMAU-E	NOTES 1,6
	IU-209	CHILDRENS PROGRAM ROOM	29	60	10	WCCU-200	DUCTED	4	1410	0.6	R410A	84.4	48000	54000	48000	54000	208	1	3.51	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P48NMAU-E	NOTES 1,6,7
	IU-210	PLAY LAB 122	29	40	10	WCCU-200	DUCTED	1.25	495	0.6	R410A	84.4	15000	17000	15000	17000	208	1	1.45	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P15NMAU-E	NOTES 1,6
	IU-301	4P STUDY 110	29	40	10	WCCU-300	DUCTED	1.25	495	0.6	R410A	55.6	15000	17000	15000	17000	208	1	1.45	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P15NMAU-E	NOTES 1,6,7
	IU-302	SMALL UNCONFERENCE 109	29	40	10	WCCU-300	DUCTED	1.5	600	0.6	R410A	55.6	18000	20000	18000	20000	208	1	1.56	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P18NMAU-E	
=	IU-303	CREATOR SPACE	29	48	10	WCCU-300	DUCTED	2	885	0.6	R410A	55.6	24000	27000	24000	27000	208	1	2.73	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P24NMAU-E	NOTES 1,6,7
	IU-304	LOBBY 102	29	40	10	WCCU-300	DUCTED	1.25	495	0.6	R410A	55.6	15000	17000	15000	17000	208	1	1.45	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P15NMAU-E	NOTES 1,6
	IU-305	CIRCULATION 106	29	48	10	WCCU-300	DUCTED	2	885	0.6	R410A	55.6	24000	27000	24000	27000	208	1	2.73	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P24NMAU-E	NOTES 1,6
	IU-306	COMMUNITY ROOM 2	29	60	10	WCCU-300	DUCTED	3	1165	0.6	R410A	55.6	36000	40000	36000	40000	208	1	3.50	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P36NMAU-E	NOTES 1,6
_	IU-307	4P STUDY 111	29	40	10	WCCU-300	DUCTED	1.25	495	0.6	R410A	55.6	15000	17000	15000	17000	208	1	1.45	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P15NMAU-E	NOTES 1,6,7
	IU-308	AUDULT FICT INTERIOR	29	60	10	WCCU-300	DUCTED	4	1410	0.6	R410A	55.6	48000	54000	48000	54000	208	1	3.51	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P48NMAU-E	NOTES 1,6
	IU-309	CHILD COLLECTION	29	40	10	WCCU-300	DUCTED	1.25	495	0.6	R410A	55.6	15000	17000	15000	17000	208	1	1.45	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P15NMAU-E	·
	IU-310	SCHOOL AGE CHILD COLLECTION	29	40	10	WCCU-300	DUCTED	1.25	495	0.6	R410A	55.6	15000	17000	15000	17000	208	1	1.45	15 A	EC	-	MFR	FV	MITSUBISHI	PEFY-P15NMAU-E	NOTES 1,6
K	$\frown$	$ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	$\frown \frown$		$\sim$	$ \frown \!$	$\begin{picture}(60,0) \put(0,0){\line(1,0){10}} \put(0,0$	$\overline{}$		$\sim$	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$ \swarrow $	$\bigcirc \frown \bigcirc$	$\sim$		$\overline{}$	$ \swarrow $	<b>~</b>								

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HEA <sup>-</sup>	T PUMP	SCHE	DULE	- WAT	ER-TO	-DIREC	T EXP	<b>ANSION</b>	CO	IL										1
NOTES:	1. PROVIDE UI	NIT WITH DIG	GITAL SCRO													NIT SHALL HAVE HOT GA F AT LEAST 20,000 A.	AS REHEAT CIRCUIT W	ITH MODULA	TING HOT GAS	1 7
														H MODU						┪ ~
				NOMINAL	COOLING		HEATING	WATER						ELE	ECTRICAL					
TAG	REFRIGERANT	COOLING	HEATING	DESIGN	CAPACITY	MINIMUM	CAPACITY								DISCONNECT	CONTROLLER/START	ER			
NAME	TYPE	EWT	EWT	TONS	BTUH	EFFICIENCY	BTUH	COP AT OPER	GPM	WPD	VOLTAGE	PHASES	FLA	MOCP	BY (NOTE A)	BY (NOTE A)	MANUFACTURER	MODEL	REMARKS	-
WSHP-1	R-410A	90	36	23	277.2	14.01	202.2	3.40	52.5	9.3 FT	208	3	108.0	150	EC	MFR	CLIMATE MASTER	R TMW340	NOTE 1, 2, 3, 4	,] .
		•										•		•	•					_

VRF W	ATER	COO	LED CO	NDENS	SING U	INIT SC	HED	ULE								
NOTES: 1. 7	THE CONDE	NSING UNI	T IS SELECTED	WITH THE D	VERSITY. 2	. THE REFRIGI	ERANT (	CHARGE F	OR A CIRCUIT SHAL OF AT LEAST 20.		ROSS THE	REFRIGERANT	VOLUME LIMIT PER IMC 20	12, TABLE 1103.1.	3. UNIT SHALL HAVE S	SCCR RATING
				1					OI AI LLAGI 20,	700 A.				I		
				COOLING	HEATING						ELE	CTRICAL				
	COOLING	HEATING	NOMINAL			NUMBER OF						DISCONNECT	CONTROLLER/STARTER			
TAG NAME	EWT	EWT	DESIGN TONS	BTUH	BTUH	MODULES	<b>GPM</b>	WPD	VOLTAGE PHASES	MCA	MOCP	BY (NOTE A)	BY (NOTE A)	MANUFACTURER	MODEL	REMARKS
WCCU-100	90	36	8	96,000	108,000	1	25.4	11.2 FT	208 3	19.0	30	EC	MFR	MITSUBISHI	PQRY-P196TLMU-A	NOTE 1,2
WCCU-200	90	36	20	240,000	270,000	1	50.7	21.1 FT	208 3	79.0	125	EC	MFR	MITSUBISHI	PQRY-P1240TLMU-A	NOTE 1,2,3

PUMP SCHEDULE  NOTES: 1. PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13. 2. PUMP SHALL BE SELECTED BASED ON 25% PROPYLENE GLYCOL AND 36°F TEMPERATURE.  PUMP FT. MINIMUM  DISCONNECT  CONTROLLER/ STARTER										 
PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13.  PUMP SHALL BE SELECTED BASED ON 25% PROPYLENE GLYCOL AND 36°F TEMPERATURE.    CONTROLLER/	<b>UMP</b>	SCHED	ULE							
CONTROLLER/	PROVIDE S					FI	FCTRICAL (NO	TF 1)		

	OI IALL I	JE OLLLOTI	LD D/ (OLD OIV	2070110	OI ILLINE OL	YCOL AND 36°F	I CIVIF ENA I	UNE.									
										ELEC	CTRICAL (NOT	E 1)					
		PUMP FT.	MINIMUM								DISCO	NNECT		OLLER/ RTER			
TAG NAME	GPM	HEAD AT DESIGN	PUMP EFFICIENCY	INLET SIZE	IMPELLER SIZE	BRAKE HORSEPOWER	HP (NOTE E)	RPM	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	MANUFACTURER	MODEL	NO
P-1	180.0	105.00	67.1	3"	10.375	7.1	10	1800	208	3	TCC	VFD	TCC	VFD	B & G	E-150	NOT
P-2	180.0	105.00	67.1	3"	10.375	7.1	10	1800	208	3	TCC	VFD	TCC	VFD	B & G	E-150	NO

MOT	OR OF	PERA	TED	DAN	<b>IPE</b>	R SCHEDU	JLE						
NOTES: 1.COORE	INATE DAMF	PER ACTU	JATOR LOG	CATION	AND MO	DUNTING REQUIRE	MENTS WITH TEI	MPERATURE (	CONTROL CONTRA	CTOR.			
TAG	AREA	S	ZE	CF	M	BLADE	BLADE		ACTUATOR TYPE	ACTUATOR		POSITIVE POSITION	
NAME	SERVED	WIDTH	HEIGHT	MAX.	MIN.	CONFIGURATION	ORIENTATION	INSULATED	(NOTE 1)	STYLE	POWER FAILURE POSITION	FEEDBACK REQUIRED	NOTE
MOD-1	AHU-1 EA	16	32	3600	0	OPPOSED	HORIZONTAL	Yes	ELECTRIC	PROPORTIONAL	NORMALLY CLOSED (NC)	Yes	
MOD-2	AHU-1 OA	28	18	4000	0	OPPOSED	HORIZONTAL	Yes	ELECTRIC	PROPORTIONAL	NORMALLY CLOSED (NC)	Yes	

					ELECTRIC	CAL					
					DISCO	NNECT	CONTROLLER/				
TAG NAME	AREA SERVED	ELEMENT (WATTS)	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	STARTER BY (NOTE A)	CONTROL	MANUFACTURER	MODEL	NOTES
RCP-1	STAFF REST ROOM, DRIVE THROUGH BOOK RETURN	375	208	1	-	-	TCC	8/M550	THERMAL EQUIPMENT SALES	CP375	

GLY	COL FEE	D SYS	ТЕМ								
NOTES: 1.SEE 23	3 21 00 FOR ADDIT	ΓΙΟΝΑL SYST	EM REQUIREME	NTS.				FI FC	TRICAL		
TAG		TANK	SYSTEM FILL	PUMP					DISCONNECT BY	CONTROLLER/ STARTER	
NAME	AREA SERVED	VOLUME	PRESSURE	HEAD PSI	GPM	MHP	<b>VOLTAGE</b>	PHASES	(NOTE A)	BY (NOTE A)	NOTES
GFS-1	GLYCOL WATER	50.0	12	50	1.8	0.33	115	1	MFR	MFR	NOTE 1

	SCHEDULE GENERAL NOTES
KEY NAME	SCHEDULE GENERAL NOTES
A.	DISCONNECT AND CONTROLLER STARTER FURNISHED AND
	INSTALLED BY:
	MFR = MANUFACTURER
	EC = ELECTRICAL CONTRACTOR
	MC = FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED
	BY ELECTRICAL CONTRACTOR
	MFR/EC = FURNISHED LOOSE BY MANUFACTURER
	INSTALLED BY ELECTRICAL CONTRACTOR
	ATC = AUTOMATIC TEMPERATURE CONTROL CONTRACTOR
B.	DISCONNECT TYPE:
	F = FUSED
	NF = NON-FUSED
C.	CONTROLLER STARTER TYPE:
	FV = FULL VOLTAGE
	WYE = WYE-DELTA
	SS = SOLID STATE (SOFT START)
	MS = MANUAL STARTER
	VFD = VARIABLE FREQUENCY DRIVE
	VFD/B = VARIABLE FREQUENCY DRIVE WITH BYPASS
D.	FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE,
	WITH THE SCHEDULED WHEEL TYPE.
E.	NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR
	NAME PLATE RATING.
	MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

BRA	NCH S	ELEC	TOI	R BC	X SCHE	DULE			
			Е	LECTRIC	AL				
					DISCONNET	CONTROLLER			
SYMBOL	VOLTAGE	PHASES	MCA	MOCP	BY (NOTE A)	BY (NOTE A)	MANUFACTURER	MODEL	<b>REMARKS</b>
BS-100	208	1	1.6	15	EC	MFR	MITSUBISHI	CMB-P1010NU-HA1	
BS-200	208	1	1.1	15	EC	MFR	MITSUBISHI	CMB-P1013NU-GA1	
BS-300	208	1	1.6	15	FC	MFR	MITSUBISHI	CMB-P1010NU-HA1	

DESV NOTES 1

USING 5/8	R RADIATED NOR DISCHARGE SOU " 20-LB DENSITY MINERAL FIBER C ECIFICATION SECTION 23 09 00 FC	EILING TILE.				IC PRESSURE WHEN TE	STED PER AHR	RI STANDARD 885-
		CFM						
TAG NAME	AREA SERVED	COOLING MAX.	MIN.	MIN. INLET SIZE (IN.) DIA.	CONTROL TYPE (NOTE 2)	MANUFACTURER	MODEL	NOTES
TAB-S1	OPEN AREA	1015	1015	10"	3/M550	TITUS	DESV	NOTES 1
TAB-S2	OPEN AREA	1090	1090	10"	3/M550	TITUS	DESV	NOTES 1
TAB-S3	COMMUNITY ROOM 2	370	35	6"	2/M550	TITUS	DESV	NOTES 1
TAB-S4	COMMUNITY ROOM 1	240	60	4"	2/M550	TITUS	DESV	NOTES 1
TAB-S5	OPEN AREA & BACK OF HOUSE	585	585	10"	3/M550	TITUS	DESV	NOTES 1

TAB-S6 CHILDRENS PROGRAM ROOM 700 100

1.NEITHER	DADIATED MOD DISC	ED DADIATED MOD DIOQUADOS COUND LEVELO CUALL EVOEED NO CEATA SUNI ET CTATIO DESCOUDE WUEN TECTED DED AUDI CTANDADO COS										
	THER RADIATED NOR DISCHARGE SOUND LEVELS SHALL EXCEED NC 35 AT 1.5" INLET STATIC PRESSURE WHEN TESTED PER AHRI STANDARD 885-2008											
	NG 5/8" 20-LB DENSITY MINERAL FIBER CEILING TILE.											
2.SEE SPE	ECIFICATION SECTION	23 09 00 FOR	DESCRI	PTION OF CONT	ROL TYPE.							
		CFM										
TAG		COOLING		MIN. INLET	CONTROL							
					CONTINCE							
NAME	AREA SERVED	MAX.	MIN.		TYPE (NOTE 3)	MANUFACTURER	MODEL	NOTES				
	AREA SERVED OPEN AREA		<b>MIN.</b> 760			MANUFACTURER TITUS	MODEL DESV	NOTES 1				
NAME	7	MAX.		SIZE (IN.) DIA.	TYPE (NOTE 3)							
NAME TAB-E1	OPEN AREA	<b>MAX.</b> 2070	760	<b>SIZE (IN.) DIA.</b> 14"	<b>TYPE (NOTE 3)</b> 3/M552	TITUS	DESV	NOTES 1				

LOU	VER SO	CHED	ULE							
SELECTION	ON BY ARCHI	TECT. TYP	PE 4 - BAKE	D EPOXY F	INISH ON PRIME	COATED META		FINISH ON PRETREATED OLOR - SELECTION BY AI		STANDARD COLOR - PE 5 - DURANODIC BRONZ
LIGHT, IVI	EDIUM, DARK	. TYPE 6 -	· PVDF (KYI	NAR 500, HY	'LAR 5000, OR D	URANAR). STAN	DARD COLOR -	SELECTION BY ARCHITE	CT.	
TAG	AREA	. TYPE 6 -		NAR 500, HY NCHES)	LAR 5000, OR D	URANAR). STAN	DARD COLOR - FINISH	SELECTION BY ARCHITE	CT.	
	· ·	CFM		·	, 	URANAR). STAN S.P. IN. W.C.		SELECTION BY ARCHITE  MANUFACTURER	CT.  MODEL	NOTES
TAG	AREA		SIZE (I	NCHES)	FREE AREA	,	FINISH			NOTES
TAG NAME	AREA SERVED	CFM	SIZE (I	NCHES) HEIGHT	FREE AREA VELOCITY	S.P. IN. W.C.	FINISH (NOTE 1)	MANUFACTURER	MODEL	NOTES

<b>FAN</b>	<b>SOUND REQUIF</b>	REMEN	TS SCHI	EDULE						
NOTES:	(1) REFER TO AIR HANDLING U	INIT SCHEDUL		SHOWN ARE T	HE FAN INLET	SOUND.	SHOWN ARE TH		RGE SOUND.	(3) SOUND DATA
TAG	_		IV			NTER FREQUE		13		
NAME	FAN	63	125	250	500	1000	2000	4000	8000	REMARKS
AHU-1	SF - DUCTED DISCHARGE	81	76	82	80	79	76	73	71	NOTE 1, 2
AHU-1	EF - DUCTED INLET	70	72	83	74	69	68	66	65	NOTE 1, 3

IOTES: .CONTRA .ALL RUN . INSTALL	CTOR SHALL DE OUT DUCTWOR IN RAISED FLOO	TERMINE PROPER MARC IK TO DIFFUSERS SHALL DR SYSTEM. PROVIDE AC CTED INLET CONDITION.	SIN STYLE TO BE NECK SIZ	O MATCH CEI ZE UNLESS O	LING CONST	RUCTION.				
TAG NAME	MATERIAL	CONFIGURATION	MARGIN (NOTE 1)	INLET SIZE (IN.) (NOTE 2)	FACE SIZE (IN.)	VOLUME DAMPER REQUIRED	FINISH	MANUFACTURER	MODEL	NOTES
EG-1	STEEL	35 DEGREE DEFLECTION	1 1/4"	SEE DWG.	INLET +2	NO	WHITE	TITUS	350R	
EG-2	STEEL	PERFORATED FACE	LAY-IN	SEE DWG.	24x24	NO	WHITE	TITUS	PAR	
RG-1	STEEL	PERFORATED FACE	LAY-IN	SEE DWG.	24x24	NO	WHITE	TITUS	PAR	
RG-2	STEEL	35 DEGREE DEFLECTION	1 1/4"	SEE DWG.	INLET +2	NO	WHITE	TITUS	350R	
SD-1	STEEL	PANEL FACE	LAY-IN	SEE DWG.	24x24	NO	WHITE	TITUS	OMNI	FLUSH FACE PANEL
SD-2	ALUMINUM	DISPLACEMENT PATTERN	NOTE 3	SEE DWG	10"	NO	ALUMMINU M	PRICE	MFD-DP	NOTE 4
SG-1	STEEL	DOUBLE DEFLECTION	1 1/4"	SEE DWG.	INLET +2	NO	WHITE	TITUS	300R	FRONT BLADES VERTICAL UNLESS NOTED OTHERWIS

		_ 55		T DOODLE DE	LILLOTION	1 1/1   022	DVVO.   INCLE   12	110	VVIIII	11100	00011	THOM BEABLO VERY	110/12 0112200	THE TEN OTHER WINE
LINEA	R DIFFU	JSER SO	CHEDULE	<u> </u>										
.PROVIDE \ .DIFFUSERS . PROVIDE \	WITH CONCEA WITH MULTIPI UNIT WITH INTE	LED FASTENEF LE SLOTS SHAL EGRAL OPPOSE	L HAVE THE INNE	R MOST SLOT [ R THAT IS ACCE	DIRECTED TOW	ARDS THE INTE	RIOR OF THE BUILI HROUGH THE DIFI		JINING SHALL BE	DIRECTED TOWAR	RDS THE EXTER	IOR UNLESS NOTED OTH	IERWISE.2 – 3	4375
TAG NAME	MATERIAL	SLOT WIDTH	NO. OF SLOTS	WIDTH	LENGTH	PLENUM REQUIRED	PLENUM INSULATION TYPE	PLENUM INLET SIZE	PATTERN CONTROL REQUIRED	BALANCING DAMPER REQUIRED	FINISH	MANUFACTURER	MODEL	NOTES
LD-1	STEEL	1"	3	6"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	TITUS	TBD	NOTE 1, 2, & 3
LD-2	STEEL	1"	2	4"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	TITUS	TBD	NOTE 1, 2, & 3
LD-3	STEEL	1"	2	4"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	Yes	BLACK	TITUS	TBD	NOTE 1, 2, 3, & 4
LD-4	STEEL	1"	2	4"	4'-0"	No	N/A	SEE DWG.	No	No	WHITE	TITUS	TBR	NOTE 1, 2, & 5
LD-5	STEEL	1"	3	6"	4'-0"	No	N/A	SEE DWG.	No	No	WHITE	TITUS	TBR	NOTE 1, 2, & 5
LD-6	STEEL	1"	2	4"	4'-0"	No	N/A	SEE DWG.	No	No	BLACK	TITUS	TBR	NOTE 1, 2, & 3
LD-7	STEEL	1"	4	8"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	TITUS	TBD	NOTE 1, 2, & 3
LD-8	STEEL	1"	2	8"	4'-0"	No	N/A	SEE DWG.	No	No	WHITE	TITUS	TBR	NOTE 1, 2, & 3
LD-9	STEEL	1"	3	6"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	Yes	WHITE	TITUS	TBD	NOTE 1, 2, 3, & 4

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**MECHANICAL SCHEDULES** Sheet Number

City Contract No.

OPN Project No. 17609000

Sheet Issue Date

Sheet Name

**BID DOCUMENTS** 

M600

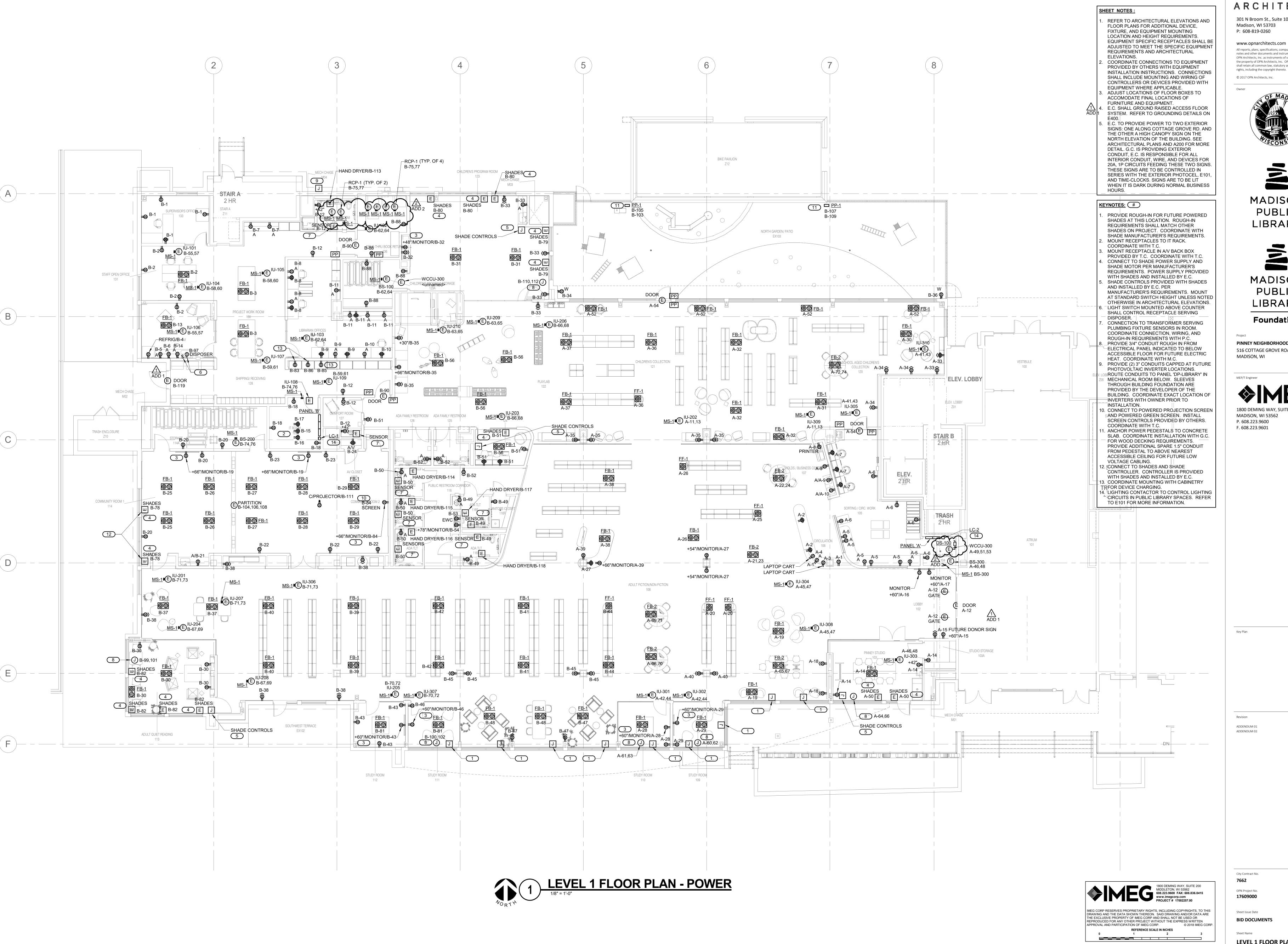
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 |





**E200** 

Sheet Number



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 21 | 22 | 23 | 24 | 25

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ADDENDUM 01 01/10/2019 01/30/2019 ADDENDUM 02

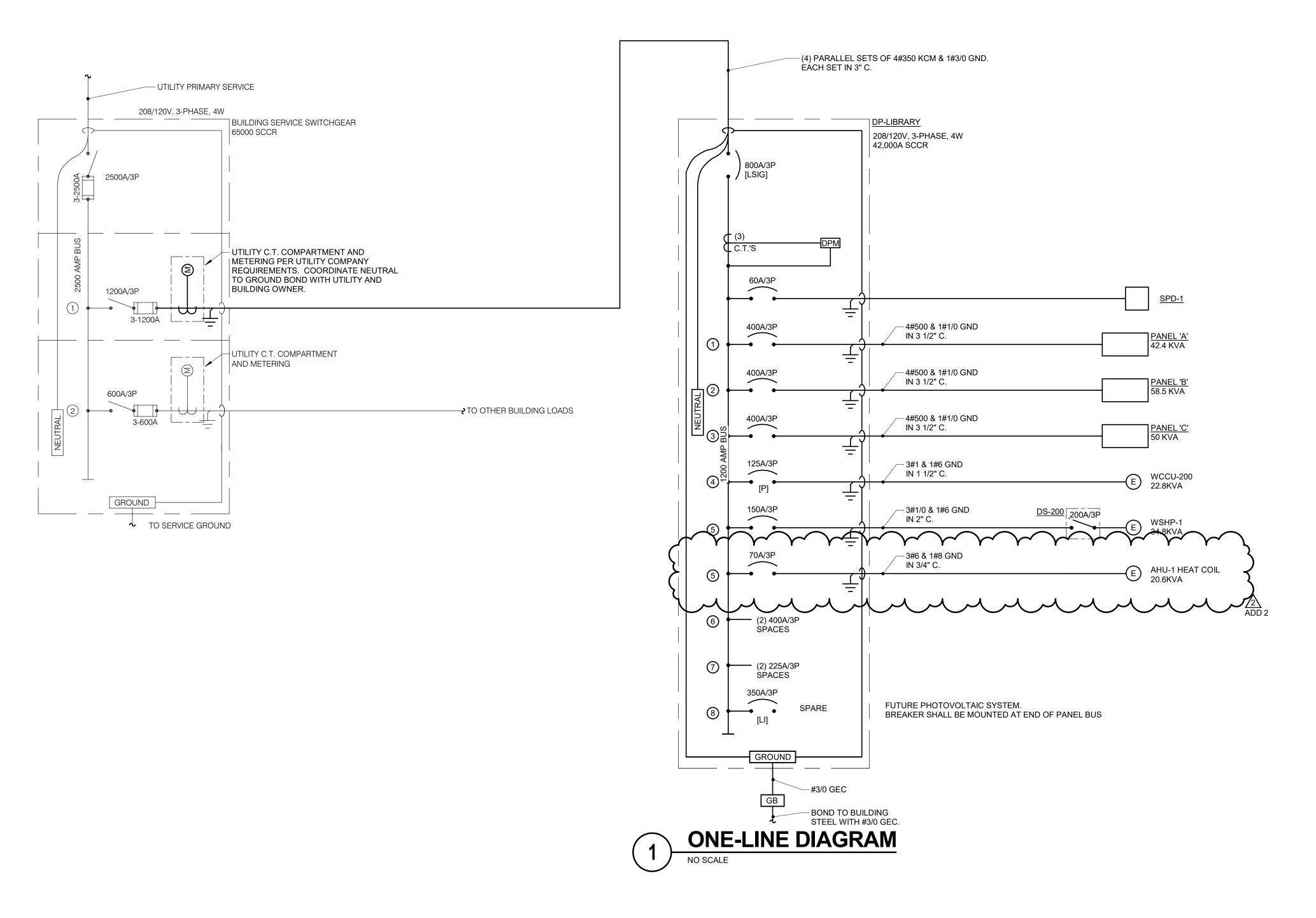
City Contract No.

OPN Project No. 17609000

> **POWER** Sheet Number

BID DOCUMENTS Sheet Name **LEVEL 1 FLOOR PLAN** 

**E201** 



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 | 25 |

#### ONE LINE DIAGRAM NOTES

- 1. AIC RATINGS LISTED FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUS BRACING AND DEVICE RATING. ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.
- 2. LINDICATES DIRECT CONNECTION OF GROUND CONDUCTOR TO GROUND BUS. SUBSCRIPT "I"
- INDICATES DIRECT CONNECTION OF ISOLATED GROUND CONDUCTOR TO ISOLATED GROUND BUS. INDICATES O.Z. GEDNEY OR EQUAL GROUND BUSHING BONDED TO GROUND BUS WITH CONDUCTOR SIZED TO MAXIMUM FEEDER GROUND CAPACITY.
- 4. INDICATES OVERLOADS SIZED PER MOTOR NAMEPLATE FULL LOAD AMPERES.
- 5. A INDICATES STARTER NEMA SIZE.
- 6. AF INDICATES MOLDED/INSULATED CASE BREAKER FRAME SIZE, FOR ADJUSTABLE TRIP BREAKERS.
- 7. AT INDICATES MOLDED/INSULATED CASE BREAKER TRIP UNIT RATING, FOR ADJUSTABLE TRIP
- [LSIG] INDICATES FEATURES PROVIDED WITH SOLID STATE CIRCUIT BREAKER. [LONG TIME (W/DELAY), SHORT TIME (W/DELAY), INSTANTANEOUS, GROUND FAULT].
- 9. GF INDICATES GROUND FAULT RELAY.
- 10. CONDUCTOR AND CONDUIT SIZES ON THE LINE AND LOAD SIDES OF ALL NON-FUSIBLE DISCONNECT SWITCHES SHALL BE IDENTICAL UNLESS NOTED OTHERWISE.
- 11. DPM INDICATES DIGITAL POWER MONITOR.
- 12. M INDICATES KILOWATT-HOUR METER AS SUPPLIED BY UTILITY COMPANY.
- 13. E INDICATES CURRENT TRANSFORMER, SIZE AS SPECIFIED.
- 14. [P] INDICATES PADLOCK HASP PROVIDED FOR BREAKER.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 | 25 |

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Key Plan

Revision

ADDENDUM 02

City Contract No.

OPN Project No. 17609000

Sheet Number

Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **ELECTRICAL ONE-LINE DIAGRAMS** 

**E500** 

01/30/2019

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	TYPE: BOLT-ON MOUNTING: RECESSED FED FROM: DP-LIBRARY						ID NEU					MAIN: 400A MCB VOLTS: 120/208 Wye PHASE: 3	
	SCCR: 18,000A LOCATION: MECH CLOSET	104										WIRE: 4 DEMAND: 39.06 kVA	
anel No	tes:												
KT NO.	LOAD DESCRIPTION	OVERC T PROT AMPS	ECTION	,	Α	I	В	(	C		CURREN ECTION AMPS	LOAD DESCRIPTION	CKT NO
A-1	Receptacles	20 A	1	0.36	0.72					1		Receptacles	A-2
A-3	Receptacles	20 A	1			0.18	0.18			1		Receptacles	A-4
A-5	Receptacles	20 A	1					1.08	0.9	1		Receptacles	A-6
A-7	Receptacles	20 A	1	1.08	0.18					1		Receptacles	A-8
A-9	Receptacles	20 A	1			0.36	0.18	0.43	0.45	1		Receptacles	A-10
A-11 A-13	IU-202, 309	15 A	2	0.43	0.72			0.43	0.45	1	20 A 20 A	LOBBY DOOR, GATE Receptacles	A-12 A-14
A-15	Receptacles	20 A	1	0.40	0.72	0.36	0.18			1		Receptacles	A-16
A-17	Receptacles	20 A	1			0.00	00	0.18	0.36	1		Receptacles	A-18
A-19	Receptacles	20 A	1	0.36	0.36					1		Receptacles	A-20
A-21	Receptacles	20 A	2			0.18	0.18			2	20 A	Receptacles	A-22
A-23								0	0				A-24
A-25	Receptacles	20 A	1	0.18	0.36					1		Receptacles	A-26
A-27	Receptacles	20 A	1			0.72	0.54	0.54	0.40	1		Receptacles	A-28
A-29 A-31	Receptacles Receptacles	20 A 20 A	1	0.18	0.54			0.54	0.18	1		Receptacles Receptacles	A-30 A-32
A-31	Receptacles	20 A	1	0.16	0.54	0.54	0.54			1	20 A	Receptacles	A-32 A-34
A-35	Receptacles	20 A	1			0.04	0.04	0.72	0.36	1		Receptacles	A-36
A-37	Receptacles	20 A	1	0.36	0.36			V	0.00	1		Receptacles	A-38
A-39	Receptacles	20 A	1			0.54	0.36			1		Receptacles	A-40
A-41	IU-305, 310	15 A	2					0.43	0.31	2		IU-301, 302	A-42
A-43				0.43	0.31								A-44
A-45	IU-304, 308	15 A	2			0.52	0.39			2	15 A	BS-300, IU-303	A-46
A-47								0.52	0.39				A-48
A-49	WCCU-300, #3 WIRE	90 A	3	5.2	0.6					1	20 A	SHADES	A-50
A-51						5.2	0.72			1	20 A	Receptacles	A-52
A-53								5.2	0.8	1	20 A	DOORS	A-54
A-55	Lighting	20 A	1	1.57	0.68					1	20 A	Lighting	A-56
A-57	Lighting	20 A	1			0.76	0.9			1	20 A		A-58
A-59	Lighting	20 A	1					0.36	0	2	20 A	FUTURE ELEC HEAT	A-60
A-61	FUTURE ELEC HEAT	20 A	2	0	0								A-62
A-63						0	0			2	20 A	FUTURE ELEC HEAT	A-64
A-65	Receptacles	20 A	2					0.18	0				A-66
A-67				0	0.18					2	20 A	Receptacles	A-68
A-69	Receptacles	20 A	2			0.18	0						A-70
A-71								0	0.18	2	20 A	Receptacles	A-72
A-73	SPARE	20 A	1	0	0								A-74
A-75	SPARE	20 A	1			0	0			1	20 A	SPARE	A-76
A-77	SPARE	20 A	1					0	0	1	20 A	SPARE	A-78
A-79	SPARE	20 A	1	0	0					1	20 A	SPARE	A-80
A-81	SPARE	20 A	1			0	0			1	20 A	SPARE	A-82
A-83	SPARE	20 A	1					0	0	1	20 A	SPARE	A-84
A-85	SPARE	20 A	1	0	0					1	20 A	SPARE	A-86
A-87	SPARE	20 A	1			0	0			1	20 A	SPARE	A-88
A-89	SPACE							0	0			SPACE	A-90
A-91	SPACE			0	0							SPACE	A-92
A-93	SPACE					0	0					SPACE	A-94
A-95	SPACE							0	0			SPACE	A-96
A-97	SPACE			0	0							SPACE	A-98
A-99	SPACE					0	0					SPACE	A-100
A-101	SPACE							0	0			SPACE	A-102
A-103	SPACE			0	0							SPACE	A-104
A-105	SPACE					0	0					SPACE	A-106
A-107	SPACE							0	0			SPACE	A-108
_			al Load:	15.16			1 kVA		7 kVA				·
		Tota	I Amps:	126	5.52	114	1.41	113	3.04				

		TYPE: BOLT-ON MOUNTING: SURFAC FED FROM: DP-LIBRA SCCR: 30,000A LOCATION: LIBRARY	E ARY					ID NEU					MAIN: 400A MLO VOLTS: 120/208 Wye PHASE: 3 WIRE: 4 DEMAND: 50.4 kVA	
	Panel N	otes:												
	CKT NO	. LOAD DESCRIPTION		URREN ECTION P		A		В		C		CURREN ECTION AMPS	LOAD DESCRIPTION	CKT N
	C-1	IU-100	15 A	2	0.04	2.27					3		WCCU-100, #10 WIRE	C-2
	C-3				0.01		0.04	2.27						C-4
	C-5	Receptacles	20 A	1					0.54	2.27				C-6
	C-7	DDC PANELS	15 A	1	0.8	3.73					3	70 A	P-1, #8 WIRE	C-8
*P	C-9	P-2, #8 WIRE	70 A	3			3.73	3.73						C-10
	C-11		<u> </u>	- <u>-</u>					3.73	3.73				C-12
	<b>V</b> c− <b>1</b> 3	~ ~ ~ ~ ~	<b>/ /</b> - <b>/</b>	<b>~</b> \	3.13	9					1	15 A	CP-1	C-14
	C-15	WH-1	30 A	2		<u> </u>	2.15	0.17			3	15 A	AHU-1 HEAT WHEEL	C-16
	C-17		A A			رر			2.15	0.17				C-18
<b>/</b>	C-19	AAU-1 SUPALY, #10-4MRE	25A		2.03	<b>6</b> .17	0.00	0.00					"40 1400	C-20
	C-21						2.03	2.03	2.02	2.02	3		AHU-1 EXHAUST, #10 WIRE	C-22
	C-23 C-25	Power	20 A		0.5	2.03			2.03	2.03			<del></del>	C-24
	C-25	Lighting	20 A	1	0.5	2.03	0	0.18			1	20 A	Receptacles	C-28
	C-27	Power	20 A	1			0	0.10	0.8	0.4	1		DDC PANELS	C-20
	C-31	SPARE	20 A	1	0				0.0	0.4	<u>'</u>	207	DOTANLES	C-32
	C-33	SPARE	20 A	1			0							C-34
	C-35	SPARE	20 A	1					0	0	1	20 A	SPARE	C-36
	C-37	SPARE	20 A	1	0	0					1		SPARE	C-38
	C-39	SPARE	20 A	1			0	0			1	20 A	SPARE	C-40
	C-41	SPARE	20 A	1					0	0	1	20 A	SPARE	C-42
	C-43	SPARE	20 A	1	0	0					1	20 A	SPARE	C-44
	C-45	SPARE	20 A	1			0	0			1	20 A	SPARE	C-46
	C-47	SPARE	20 A	1					0	0	1	20 A	SPARE	C-48
	C-49	SPACE			0	0							SPACE	C-50
	C-51	SPACE					0	0				-	SPACE	C-52
	C-53	SPACE							0	0		-	SPACE	C-54
	C-55	SPACE			0	0						-	SPACE	C-56
	C-57						0	0				-	SPACE	C-58
	C-59	SPACE						-	0	0		-	SPACE	C-60
	C-61	SPACE			0	0						-	SPACE	C-6
	C-63	SPACE					0	0				-	SPACE	C-64
	C-65								0	0			SPACE	C-66
	C-67	SPACE			0	0						-	SPACE	C-68
	C-69	SPACE					0	0				-	SPACE	C-70
	C-09	SPACE					U	U	0	0		-	SPACE	C-72
	U-/ I	OI AGE		 al Load:	16.2	1 k\/^	16.2	4 kVA	-	b kVA			OI ACL	U-12
				ıl Amps:		5.06		6.31		3.97	-			
	Kev*	*P = PADLOCK HASP	1016	, anps.	100	2.00	130	1	170					

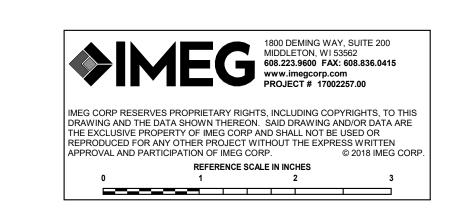
		SCCR: 18,000A											WIRE: 4	
	LOCA	ATION: IT ROOM 129											<b>DEMAND:</b> 120.97 kVA	
Panel Not	tes:													
			OVERC T PROT	URREN		Α		В		<b>.</b>		URREN		
CKT NO. B-1	LOAD [	DESCRIPTION	AMPS 20 A		0.9	0.9					P 1	AMPS	LOAD DESCRIPTION Receptacles	CKT N
B-3	Receptacles		20 A	1			0.36	0.18			1	20 A	REFRIGERATOR	B-4
	Receptacles Receptacles		20 A 20 A	1	0.36	1.08			0.18	0.18	1	20 A 20 A	Receptacles Receptacles	B-6 B-8
	Receptacles		20 A	1	0.30	1.00	0.9	0.54			1	20 A	Receptacles	B-10
B-11	Receptacles		20 A	1					1.08	1.1	1	20 A	Receptacles	B-12
	Receptacles		20 A	1	0.18	0.18	0.10	0.10			1	20 A	Receptacles	B-14 B-16
	Receptacles Receptacles		20 A 20 A	1			0.18	0.18	0.18	0.54	1	20 A 20 A	Receptacles Receptacles	B-16
	Receptacles		20 A	1	0.36	0.72					1	20 A	Receptacles	B-20
	Receptacles		20 A 20 A	1			0.18	0.54	0.26	0.18	1	20 A 20 A	Receptacles	B-22 B-24
	Receptacles Receptacles		20 A	1	0.36	0.36			0.36	0.16	1	20 A	Receptacles Receptacles	B-26
	Receptacles		20 A	1			0.36	0.36			1	20 A	Receptacles	B-28
	Receptacles		20 A	1	0.00	0.00			0.36	0.9	1	20 A	Receptacles	B-30
	Receptacles Receptacles		20 A 20 A	1	0.36	0.36	0.9	0.18			1	20 A 20 A	Receptacles Receptacles	B-32 B-34
	Receptacles		20 A	1					0.54	0.18	1	20 A	Receptacles	B-36
	Receptacles		20 A	1	0.36	0.9	0.00	0.00			1	20 A	Receptacles	B-38
	Receptacles Receptacles		20 A 20 A	1			0.36	0.36	0.36	0.36	1	20 A 20 A	Receptacles Receptacles	B-40 B-42
	Receptacles		20 A	1	0.72	0.36			0.30	0.00	1		Receptacles	B-42
	Receptacles		20 A	1			0.72	0.36			1		Receptacles	B-46
	Receptacles	_	20 A	1					0.54	0.36	1	20 A	Receptacles	B-48
	Receptacles		20 A	1	0.74	0.84					1	20 A	Receptacles	B-50
	Receptacles EWC		20 A 20 A	1			1.38	0.54	0.18	0.18	1	20 A 20 A	Receptacles	B-52 B-54
	IU-101, 106		15 A	2	0.28	0.72			0.18	0.18	1	20 A	Receptacles Receptacles	B-54
					0.20	0.72	0.28	0.23			2		IU-105, 107	B-58
B-59	IU-107, 109		15 A	2					0.22	0.23				B-60
50.					0.22	0.35					2	15 A	BS-100, IU-102, 103	B-62
	IU-209, 210		15 A	2			0.52	0.35	0.50	0.04				B-64
2 00	 IU-204, 208		15 A	2	0.73	0.91			0.52	0.91	2	15 A 	IU-203, 206	B-66 B-68
B-69			15 A		0.73	0.91	0.73	0.26			2		IU-205, 307	B-70
	IU-201, 207, 306		15 A	2			00	0.20	0.86	0.26				B-72
B-73					0.86	0.18					2	15 A	BS-200, IU-108	B-74
	RCP-1		15 A	2			1.13	0.18						B-76
J					0.0	0.0			1.13	0.6	1		SHADES	B-78
	SHADES Receptacles		20 A 20 A	1	0.6	0.9	0.36	1.2			1	20 A 20 A	SHADES SHADES	B-80 B-82
-	Receptacles		20 A	1			0.50	1.2	0.18	0.68	1	20 A	SCREEN	B-84
	Receptacles		20 A	1	0.18	0.18					1		Receptacles	B-86
	Lighting		20 A	1			0.96	0.9			1	20 A	Receptacles	B-88
B-89	I took the se		20 A	1	0.4	0.04			0.65	8.0	1		DOORS	B-90
	Lighting Lighting		20 A 20 A	1	0.4	0.81	1.06	1.47			1	20 A 20 A	Lighting Lighting	B-92 B-94
	Lighting		20 A	1			1.00	1.47	0.7	1.23	1	20 A	Lighting	B-96
B-97	DISPOSER		15 A	1	1.6	1.21					1	20 A	Lighting	B-98
B-99	FUTURE ELEC HEA	Т	20 A	2			0	0			2	20 A	FUTURE ELEC HEAT	B-10
	<u></u>								0	0				B-10
B-103 B-105	PP-1		20 A 20 A	1	0.4	0.53	0.4	0.53			3	20 A	PARTITION, 4#10 & 1#10 GND	B-10 B-10
	PP-1		20 A	1			0.4	0.55	0.4	0.53				B-10
B-109			20 A	1	0.4	0			-	0.00	2	20 A	Power	B-11
B-111	PROJECTOR		20 A	1			0.6	0						B-11
B-113			20 A	1					12	12	1	20 A	Power	B-11
	Power		20 A	1	12	12	40	40			1	20 A	Power	B-11
_	Power Power		20 A 20 A	1			12	12	0.25		1	20 A	Power	B-11 B-12
B-119			2017	'					5.20					B-12
	SPARE		20 A	1			0	0			1	20 A	SPARE	B-12
	SPARE		20 A	1					0	0	1		SPARE	B-12
	SPARE		20 A	1	0	0		_			1		SPACE	B-12
	SPACE SPACE						0	0	0	0			SPACE SPACE	B-130 B-133
	SPACE SPACE				0	0			U	U			SPACE	B-13
	SPACE						0	0					SPACE	B-13
B-137	SPACE								0	0			SPACE	B-13
	SPACE				0	0							SPACE	B-140
	SPACE						0	0		^			SPACE	B-142
	SPACE SPACE				0	0			0	0			SPACE SPACE	B-14
	SPACE SPACE				U	U	0	0					SPACE	B-14
	SPACE								0	0			SPACE	B-15
	SPACE				0	0							SPACE	B-15
	SPACE						0	0					SPACE	B-15
B-155	SPACE								0	0			SPACE	B-15
D 1	SPACE				0	0	0	0					SPACE SPACE	B-158
	SPACE		1	I –									U. 110L	D-100
	SPACE SPACE								0	0			SPACE	B-16

**PANEL NAME: B** 

TYPE: BOLT-ON

CONNECTED 131.1 kVA

MAIN: 400A MCB



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City Contract No.

OPN Project No.

17609000 Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **ELECTRICAL PANEL SCHEDULES** Sheet Number

**E700** 

	<b>CONTRACTOR ABBREVIATION KEY</b>
ABBR:	DESCRIPTION:
A.V.C.	AUDIO/VISUAL CONTRACTOR
C.C.	CIVIL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
S.C.	SECURITY CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
TCC	TEMPERATURE CONTROLS CONTRACTOR

(DARK SHORT DASHED LINE)

	1 - 011	NOLOGI STWIBOL LIST							
SYMBOL:	EQUIPMENT TAG:	DESCRIPTION:	NOTE						
CR	AC-CR-W	ACCESS CONTROL CREDENTIAL READER	2.						
AESS A	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	CONTROLLED SECHENTY SCHEME SCHEMULEUDENTIFIER	<b>4.</b>						
CM1	AV-CM1-W	AUDIO/VIDEO CONFERENCE CAMERA - TYPE 1							
	AV-MPZ-C	MICROPHONE (CEILING) TYPE Z	بمر						
RS	AV-RS-W	ROOM SCHEDULER (WALL) - TYPE 1							
SP1)	AV-SP1-C	PERFORMANCE AUDIO SPEAKER (CEILING) - TYPE 1							
SP1	AV-SP1-W	PERFORMANCE AUDIO SPEAKER (WALL) - TYPE 1							
TP	AV-TP-W	AUDIO/VIDEO TOUCH PANEL (WALL)							
WP1	AV-WP1-W	AUDIO/VISUAL FACEPLATE (WALL) - TYPE 1							
©C#-WAP	SC-IO-CWAP	WIRELESS ACCESS POINT INFORMATION OUTLET (CEILING)	1.						
© <sup>C#</sup>	SC-IO-C	INFORMATION OUTLET (CEILING)	1.						
C# ▼	SC-IO-W	INFORMATION OUTLET (WALL)	1.						
<b>©</b> C#	SC-IO-F	INFORMATION OUTLET (FLOOR)	1., 4.						
<b>©</b> C#	N/A	ELECTRICAL FLOOR BOX WITH TECHNOLOGY	1., 4.						
НН	N/A	HANDHOLE							
CAM ## - ##	N/A	CLOSED CIRCUIT TELEVISION (CCTV) SURFACE CAMERA	3.						
(CAM) ## - ##	N/A	CLOSED CIRCUIT TELEVISION (CCTV) CEILING CAMERA	3.						
WIDTH X	HEIGHT	CABLE TRAY, CHANNEL TRAY, BASKET TRAY							
WIDTH X	HËIGHT	LADDER RACK							
DIAME	ΓERø C <del></del>	CONDUIT							
	<del>э</del>	CONDUIT DOWN							
	<b></b> 0	CONDUIT UP OR UP/DOWN							
<u> </u>	<del></del> =	CONDUIT SLEEVE							
<b>S</b>		CONTINUATION							

| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

**TECHNOLOGY SYMBOL LIST** 

#### **GENERAL NOTES:**

- ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT. REFER TO THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR MORE COMPLETE
- DESCRIPTION AND ITEMS. ALL SYMBOLS AND ABBREVIATIONS REFER TO TECHNOLOGY SHEETS ONLY AS DEFINED ON
- INFORMATION. ALL SYMBOLS LISTED ABOVE ARE FOR REFERENCE ONLY. REFER TO PLANS AND LINE TYPE KEY FOR NEW, EXISTING TO REMAIN AND TO BE REMOVED ITEMS FOR ADDITIONAL

THE SHEET INDEX. REFER TO THE GENERAL TECHNOLOGY NOTES FOR ADDITIONAL

#### TECHNOLOGY SYMBOL NOTES:

"C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION.

INFORMATION.

ADDITIONAL INFORMATION.

HH

HANDHOLE

- REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE ON T601 FOR ADDITIONAL INFORMATION. REFER TO CINDIVIDUAL CAMERA (CCTV) REQUIREMENTS SCHEDULE ON T601 AND CCTV CAMERA TYPE SCHEDULE ON T601 FOR ADDITIONAL INFORMATION. SYMBOL SUBSCRIPT
- MOUNTING THE CAMERA ON THE CEILING. REFER TO THE INDIVIDUAL CAMERA SCHEDULE AND THE INDIVIDUAL CAMERA TYPE SCHEDULE FOR ADDITIONAL INFORMATION. INFORMATION OUTLET INSTALLED IN E.C. PROVIDED FLOOR BOX. "C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. REFER TO THE TECHNOLOGY FLOOR PLANS AND GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON SHEET T602 FOR

FROM THE FLOOR TO THE CENTER OF THE CAMERA LENS. NO HEIGHT REFERS TO

INDICATES FLOOR NUMBER-CAMERA NUMBER. A CAMERA HEIGHT IDENTIFIES THE HEIGHT

TECHNOLOGY ABBREVIATION KEY				
ABBR:	DESCRIPTION:			
AFF	ABOVE FINISHED FLOOR			
BFC	BELOW FINISHED CEILING			
С	CONDUIT			
J-BOX	JUNCTION BOX			
SIM	SIMILAR			
TYP	TYPICAL			
UNO	UNLESS NOTED OTHERWISE			
+#	MOUNTING HEIGHT ABOVE FINISHED FLOOR			
EF-#	ENTRANCE FACILITY			
MC-#	MAIN CROSS-CONNECT			
TR-#	TELECOMMUNICATIONS ROOM			
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED			
OFOI	OWNER FURNISHED, OWNER INSTALLED			
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED			

DEVICE AT 44" ABOVE

FINISHED FLOOR.

ADA GUIDELINES - FRONT ACCESS

FINISHED FLOOR.

10" MAX. 10"-24" MAX.  INSTALL ABOVE COUNTER INSTALL ABOVE COUNTER INSTALL DEVICE AT 18" INSTALL DEVICE AT 44" INSTALL DEVICE AT 42"  DEVICE AT 44" APRIL OF AT 45" APRIL OF THE PROPERTY OF A PROPERT	20" MAX. The state of the state	20"-25" MAX. <sup>↑</sup>	15" MIN. 48" MAX.	48" MAX.	
DEVICE AT 44" ABOVE DEVICE AT 40" ABOVE ABOVE BINISHED ELOOR ABOVE EINISHED ELOOR ABOVE EINISHED ELOOR ABOVE EINISHED ELOOR	INSTALL ABOVE COUNTER DEVICE AT 44" ABOVE	INSTALL ABOVE COUNTER DEVICE AT 40" ABOVE	INSTALL DEVICE AT 18" ABOVE FINISHED FLOOR.		

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ADA STANDARDS FOR ACCESSIBLE DESIGN

ADA GUIDELINES - SIDE ACCESS

#### **TECHNOLOGY GENERAL NOTES:**

1. ###-### INDICATES GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ITEM LABELED AS "EQUIPMENT TAG"

2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.

TECHNOLOGY MOUNTING SUBSCRIPT KEY:

MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH

MOUNT ORIENTED HORIZONTALLY MOUNT IN CASEWORK

SUGGESTED MATRIX OF RESPONSIBILITY

T-SERIES

T-SERIES

T-SERIES

T-SERIES

T-SERIES

T-SERIES

T-SERIES

E-SERIES

ARCH SPEC

T-SERIES

T-SERIES

T-SERIES

SUGGESTED MATRIX OF RESPONSIBILITY NOTES

BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS. ALL REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE

ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS, AND POWER REQUIRED BECAUSE OF

THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER OR FROM SYSTEM

FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR

REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS AND SWITCHBOARDS SHOWN IN THE TECHNOLOGY BONDING RISER DIAGRAM AND TYPICAL TELECOM ROOM BONDING FLOW

TELECOM ROOM REFERENCES

FLOOR PLAN

REFERENCE

1/T101

ARCH ROOM NUMBER

129

IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN.

INCLUDES ALL CONDUCTORS, GROUND BARS, AND TERMINATIONS FOR THE COMPLETE

CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR SHALL BE INCLUDED

OUTLET SYMBOLS ON THE DRAWINGS. REFER TO THE TECHNOLOGY SYMBOL LIST FOR

INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS

INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE

LOCATIONS OF TELECOMMUNICATIONS ROUGH-INS SHALL BE INDICATED BY THE INFORMATION

E.C.

E.C.

T & E SERIES E.C. E.C.

TECHNOLOGY ROUGH-IN, REFER TO

GENERAL TECHNOLOGY EQUIPMENT

DEFINITION

DRAWINGS)

OF SYSTEM)

ROUGH-IN

LADDER RACK

GROUND SYSTEM

GREATER)

MANHOLES

**I**EQUIPMENT

SCHEDULE AND SPECIFICATIONS FOR

INFORMATION OUTLET FACEPLATES,

CONDUIT SLEEVES (WHEN SHOWN ON

CONDUIT SLEEVES (NOT SHOWN BUT

REQUIRED FOR PROPER INSTALLATION

TELECOMMUNICATION SYSTEMS

CABLING, AND TERMINATIONS

TRAY) REFER TO SPECIFICATION

SECTION 27 05 28 FOR DEFINITION

GROUNDING LUGS ON TECHNOLOGY

BONDING SYSTEM FOR TECHNOLOGY

BONDING SYSTEM TO THE ELECTRICAL

SYSTEM, REFER TO SPECIFICATION

SECTION 27 05 26 FOR DEFINITION

LINE VOLTAGE POWER (+120V OR

LINE VOLTAGE POWER FOR DOOR

CABLE HANGERS AND SUPPORTS OR

OTHER CABLE ROUTING METHODS

(OTHER THAN CONDUIT AND CABLE

TECHNOLOGY SERVICE ENTRANCE

ADDITIONAL INFORMATION.

CONTRACT DOCUMENTS.

INSTALLATION IN THE FIELD.

TELECOM ROOM

MC-1

UNLESS TRADE RULES DICTATE OTHERWISE.

BONDING SYSTEM REQUIRED BY THE SPECIFICATIONS.

**DETAIL / SHEET** 

REFERENCE 1/T300

CONDUITS, HANDHOLES, AND

FLOOR BOX (ROUGH-IN)

BUT REQUIRED FOR PROPER

HARDWARE POWER SUPPLIES

LOW VOLTAGE CABLING FOR

TECHNOLOGY SYSTEMS

INSTALLATION OF SYSTEM)

LINE VOLTAGE POWER (NOT SHOWN

CONNECTION OF TECHNOLOGY

TELECOMMUNICATION EQUIPMENT.

CABLE TRAY (INCLUDING WIRE BASKET

JACKS, AND TERMINATIONS

BY:

E.C.

E.C.

E.C.

E.C.

NOTES:

2. 4.

2. 4.

MOUNT IN MODULAR FURNITURE MOUNT IN SURFACE RACEWAY

A SLASH IS USED BETWEEN TWO SUBSCRIPTS, E.G., A/H.

# **TECHNOLOGY INSTALLATION NOTES:**

1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION. 2. CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, IN FLOOR SLAB, ETC.

UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN MECHANICAL ROOMS AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON BUILDING STRUCTURE. BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM

OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-THE-WALL" BOXES SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. 4. VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH

ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS, PRIOR TO MAKING THE ACTUAL TELECOMMUNICATIONS INSTALLATION, ADJUST OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT. 5. TELECOMMUNICATIONS EQUIPMENT SHALL BE MOUNTED TO ALLOW ACCESS TO

ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TELECOMMUNICATION DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR. 6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE

EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS. 7. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF

THROUGH-PENETRATION FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING. 8. REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF TELECOMMUNICATIONS WORK THAT IS OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION.

REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR. 9. ALL LADDER RACK AND CABLE TRAY SIZES ARE AS DEFINED ON THE DRAWINGS. REFER TO

SPECIFICATION SECTIONS 27 05 28 AND 27 11 00 FOR APPROVED MANUFACTURERS AND INSTALLATION REQUIREMENTS. 10. FLUSH MOUNT ALL TELECOMMUNICATION OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.

### **TECHNOLOGY OUTSIDE PLANT NOTES**

1. THE LOCATION OF THE CONDUIT, HAND HOLES, AND MAINTENANCE HOLES SHOWN ARE APPROXIMATE LOCATIONS. FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIVATE AND/OR PUBLIC PRIOR TO THE INSTALLATION OF THE COMPONENT. FIELD COORDINATE THE FINAL

LOCATION WITH THE OWNER AND ENGINEER PRIOR TO INSTALLATION. POTHOLING TO LOCATE EXISTING UNDERGROUND UTILITIES, IF APPLICABLE, SHALL BE INCLUDED IN THE CONTRACTOR'S BID. CONTRACTOR IS RESPONSIBLE FOR FINAL PLACEMENT OF HANDHOLES MAINTENANCE HOLES AND SHALL NOTIFY THE ENGINEER OF FINAL LOCATIONS PRIOR TO INSTALLATION.

3. HAND HOLES MAINTENANCE HOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE FRAME WILL BE FLUSH WITH THE GROUND LINE. 4. REMOVAL AND REPLACEMENT OF THE EXISTING UNDERGROUND UTILITIES THAT ARE

REQUIRED TO COMPLETE THE INSTALLATION SHALL BE INCLUDED IN THE CONTRACTOR'S

5. CONTRACTOR SHALL INCLUDE WITHIN THEIR BID ANY REMOVAL AND REPLACEMENT OF EXISTING SIDEWALK, PAVEMENT, GRASS, SHRUBS, TREES, ETC. THAT WILL BE IMPACTED BY THE INSTALLATION OF THE NEW CONDUITS SHOWN ON THE DRAWINGS, IF TREES ARE REQUIRED TO BE REMOVED THE CONTRACTOR SHALL CONTACT THE OWNER AND DISCUSS OPTIONS PRIOR TO CUTTING DOWN ANY TREE OR SHRUB OVER 5' IN HEIGHT.

6. NO ADDITIONAL COST SHALL BE APPROVED FOR PLACING CONDUITS DEEPER THAN REQUIRED MINIMUM DEPTH TO AVOID EXISTING UNDERGROUND UTILITIES.

PROVIDE A MINIMUM OF 25'-0" SLACK LOOP WITHIN EACH HAND HOLE MAINTENANCE HOLES. SLACK LOOP SHALL BE SECURE SO COPPER OR FIBER IS NOT RESTING ON EARTH AFTER FINAL INSTALLATION.

## **TECHNOLOGY SHEET INDEX**

T000 TECHNOLOGY COVER SHEET

T050 SITE PLAN - TECHNOLOGY

T100 LEVEL 0 FLOOR PLAN - WEST - TECHNOLOGY T101 LEVEL 1 FLOOR PLAN - TECHNOLOGY

T300 ENLARGED PLANS - TECHNOLOGY TECHNOLOGY DETAILS

T500 TECHNOLOGY DIAGRAMS

TECHNOLOGY DIAGRAMS

TECHNOLOGY DIAGRAMS TECHNOLOGY SCHEDULES

TECHNOLOGY SCHEDULES

T602 GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

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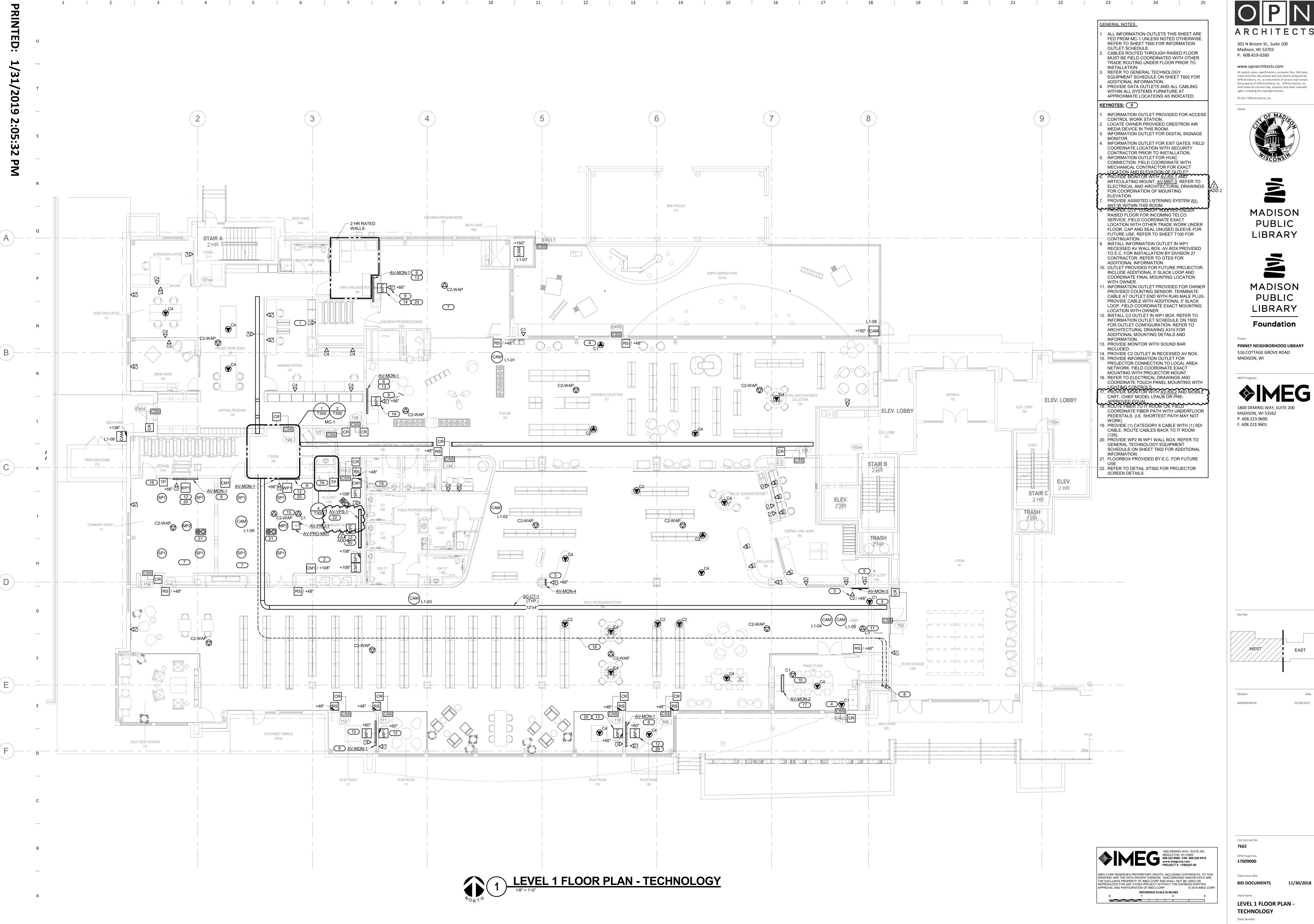
Sheet Issue Date **BID DOCUMENTS** 

17609000

Sheet Name TECHNOLOGY COVER SHEET

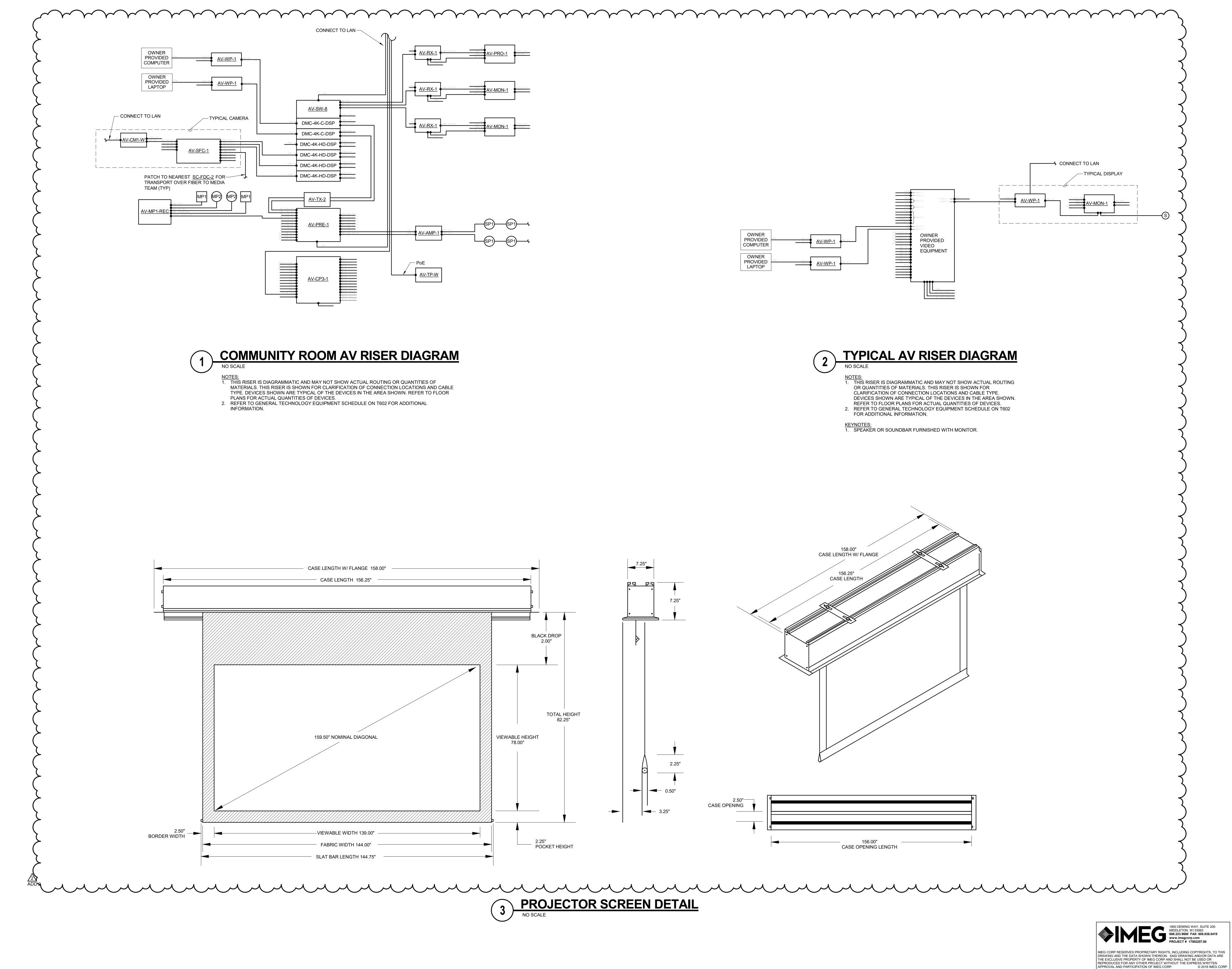
Sheet Number

01/30/2019



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T101



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Sheet Name

**TECHNOLOGY DIAGRAMS** 

Sheet Number

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T502

#### GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

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THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM. CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT TAG	EQUIPMENT LIST DESCRIPTION  ACCESS CONTROL DUAL DROVIMITY AND KEYDAD BEADER, WALL MOUNTED, INTEGRATED DROVIMITY AND KEYDAD BEADER	EQUIPMENT LIST MANUFACTURER AND MODE
AC-CR-W	ACCESS CONTROL DUAL PROXIMITY AND KEYPAD READER, WALL MOUNTED. INTEGRATED PROXIMITY AND KEYPAD READER. OCCUPIES ONE READER PORT ON KEYSCAN ACCESS CONTROL SYSTEMS. SUITABLE FOR OUTDOOR USE IN ALL WEATHER CONDITIONS. NMOUNTS TO A SINGLE GANG WALL BOX. BLUE BACKLIGHTING FOR USE IN LOW LIGHT AREAS. LIFETIME WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	KEYSCAN K-KPR OR PRE-APPROVED EQUAL
AC-PSP-1 AC-SEC-1	REFER TO T601 FOR CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL. REFER TO 2/T500 FOR CABLING REQUIREMENTS.  ACCESS CONTROL LOW VOLTAGE DOOR POWER SUPPLY. 16 PTC PROTECTED OUTPUTS, 24 VDC @ 8 AMP TOTAL OUTPUT.  BUILT-IN CHARGER FOR LEAD ACID OR GEL TYPE BATTERIES. PROVIDE WITH (2) 12AH BATTERIES. AC FAIL SUPERVISION AND LOW  BATTERY SUPERVISION FORM C CONTACT CLOSURES. UL 294 AND 1481 LISTED FOR ACCESS CONTROL AND FIRE SIGNALING.  ACCESS CONTROL SECURITY CONTROL PANEL. REFER TO SPECIFICATION 28 13 00 FOR COMPLETE INFORMATION AND MODEL	*
	NUMBER.	
AV-AMP-1	COMMERCIAL AMPLIFIER, REAR TO FRONT FAN COOLED, TWO XLR/TERMINAL BLOCK INPUTS, 2 X 300 WATTS @ 70V PER CHANNEL: 1 KHZ 1% THD, (2) RU SPACE, 3.5" H X 19" W X 14 D.	QSC CX302V CROWN ATLAS
AV-ANT-W	2-CHANNEL ASSISTED LISTENING ROOM TRANSMITTER ANTENNA, IR TRANSMISSION TECHNOLOGY FOR MEDIUM TO LARGE ROOMS, BALANCED CABLING ROUTES SIGNAL INPUT FROM AV HEAD END THROUGH AV-WP1-W RECESSED DISPLAY BOX, MOUNTS ABOVE DISPLAY.	
AV-AT-1	4 CHANNEL DANTE NETWORK INTERFACE, ONE 10/100 LAN PORT, 4 MIC INPUTS, INSTALL UNDER LECTERN FOR CONNECTION OF AV-MP1-S AS SHOWN ON DRAWINGS.	SHURE ANI4IN OR PRE-APPROVED EQUAL
AV-CAB-W	A/V CABINET, 26 RACK UNIT, WINDOW DOOR TYPE, WALL MOUNT. 37.7"W X 48"H WITH EIA/ECA-310-E INDUSTRY STANDARAD.	HUBBELL HSQ4826 OR PRE-APPROVED EQUAL
AV-CM1-W	AV PTZ CAMERA FOR VIDEO CONFERENCE, 10/100 LAN INTERFACE, HDMI OUTPUTS, WALL MOUNTED AS SHOWN ON DRAWING,	PANASONIC
AV-CP3-1	MOUNT USING VADDIO 535-2000-243 STEEL SHELF (OR SIMILAR). PROVIDE CAMERA IN WHITE.  CONTROL PROCESSOR FOR SINGLE OR DIVISIBLE ROOM A/V CONTROL, SUPPORTS 7" WALL TOUCH PANEL INTERFACE AND HANDHELD HARD BUTTON RF REMOTE CONTROL, LOCAL AREA NETWORK CONTROL AND PROGRAMMING INTERFACE AND RS232, CONTACT CLOSURE AND INFRARED CONTROL FOR COMMERCIAL AND CONSUMER A/V DEVICES, 1 RU HEIGHT, REFER TO A/V	AW-UE70 CRESTRON CP3
AV-DC-S	RISERS ON T502 FOR CONTROL PORT REQUIREMENTS.  OWNER FURNISHED, CONTRACTOR INSTALLED DOCUMENT CAMERA, SURFACE OR TABLE MOUNT, FULL HD RESOLUTION, 16X OPTICAL ZOOM, LED LIGHTING AND ADJUSTABLE FREE ANGLE CAMERAARM, HDMI AND VGA OUTPUTS, COLLABORATIVE ANNOTATION AND INTEGRATION CAPABILITY.	ELMO P30HD EPSON
AV-DMP-1	OWNER FURNISHED, CONTRACTOR INSTALLED NETWORK DIGITAL SIGNAGE PLAYER, DECODES AND PRESENTS IMAGES AND VIDEO FROM A LOCAL SSD DRIVE OR NETWORK STORE, (1) 100/1000 RJ-45 LAN CONNECTION AND (1) HDMI OUTPUT, SMALL FORMAT FOR REAR MOUNTING BEHIND A DISPLAY, 6.5" X 4.5" X 1.5" DIMENSIONS.	LS423
AV-MC-1	SCALING PRESENTATION SWITCHER AND CONTROLLER, 8 INPUTS INCLUDING MINIMUM 2 HDMI, 2 HDBASET, AND ANALOG RCA AUDIO, 2 SWITCHED HDMI AND 2 SWITCHED HDBASET OUTPUTS AND 1 ANALOG AUDIO OUTPUTS WITH INTEGRATED 70V AMPLIFIER, INPUT SCALING TO 1080P AND WUXGA (1920 X 1200) OUTPUT, LAN OR RS232 CONTROL OF AUDIO VIDEO EQUIPMENT, 3 RU HEIGHT.	OR PRE-APPROVED EQUAL CRESTRON DMPS3-4K-350-C
AV-MNT-1	TILTING WALL-MOUNTED DISPLAY MOUNT, TILTS +5 TO -12 DEGREES, FITS SCREEN SIZES 60" TO 80", ADJUSTABLE LATERAL SHIFT, MAXIMUM WEIGHT 200 LBS.	CHIEF XTM1U
AV-MNT-2	TILTING WALL-MOUNTED DISPLAY MOUNT, TILTS +5 TO -12 DEGREES, FITS SCREEN SIZES 50" TO 70", ADJUSTABLE LATERAL SHIFT, MAXIMUM WEIGHT 150 LBS.	PREMIER PEERLESS  CHIEF LTM1U  PREMIER
AV-MNT-3	ARTICULATING WALL-MOUNTED DISPLAY MOUNT, TILTS +5 TO -12 DEGREES, FITS SCREEN SIZES 40" TO 60", ADJUSTABLE LATERAL SHIFT, MAXIMUM WEIGHT 100 LBS.	PEERLESS CHIEF PNRUB
AV-MNT-4	TILTING WALL-MOUNTED MONITOR MOUNT, TILTS +5 TO -12 DEGREES, ABILITY TO LOCK MOVEMENT, VESA 100x100.	PREMIER PEERLESS  CHIEF K0W100B  PREMIER
AV-MON-1	LED/LCD DISPLAY MONITOR, 80", 16:9 ASPECT RATIO, 3840x2160 PIXEL RESOLUTION, 5000:1 CONTRAST RATIO, 3 HDMI IN,	PEERLESS SAMSUNG
AV-IVION-1	DISPLAYPORT INPUT, DVI-D INPUT, RJ45 AND DB9 SERIAL RS-232 IN AND OUT. PROVIDE MONITOR WITH MOBILE MOUNT, CHIEF MODEL LPAUB OR PRE-APPROVED EQUAL.	QM-D SERIES  SHARP OR PRE-APPROVED EQUAL
AV-MON-2	LED/LCD DISPLAY MONITOR, 65", 16:9 ASPECT RATIO, 3840x2160 PIXEL RESOLUTION, 5000:1 CONTRAST RATIO, 3 HDMI IN, DISPLAYPORT INPUT, DVI-D INPUT, RJ45 AND DB9 SERIAL RS-232 IN AND OUT.	SAMSUNG QM-H SERIES SHARP
AV-MON-3	LED/LCD DISPLAY MONITOR, 55", 16:9 ASPECT RATIO, 3840x2160 PIXEL RESOLUTION, 5000:1 CONTRAST RATIO, 3 HDMI IN, DISPLAYPORT INPUT, DVI-D INPUT, RJ45 AND DB9 SERIAL RS-232 IN AND OUT.	OR PRE-APPROVED EQUAL SAMSUNG QM-H SERIES SHARP
AV-MON-4	WALL MOUNT 22" LED TOUCH ENABLED PC DISPLAY.	OR PRE-APPROVED EQUAL SAMSUNG LH22DBDPTGC
AV-MP1-REC	STANDARD DIVERSITY WIRELESS MICROPHONE RECEIVER WITH HANDHELD MIC, PROGRAMMABLE CHANNELS, MIC AND LINE OUTPUTS, DETACHABLE AND REMOTE LOCATABLE 1/2 WAVE ANTENNA, RACK MOUNTABLE IN 1 RU.	OR PRE-APPROVED EQUAL SHURE ULX AKG
AV-MP1-S	SURFACE MOUNT GOOSENECK MICROPHONE WITH BASE. PROVIDE TO OWNER TO FACILITATE FUTURE LARGE GROUP PANEL DISCUSSIONS.	TELEX SHURE MX412
AV-MP2-C	CEILING MOUNTED ACTIVE MICROPHONE ARRAY WITH DANTE CONNECTIVITY, 1 RJ-45 LAN CONNECTION, FITS 2x2 ACT GRID.	AKG SHURE
AV-PRE-1	DANTE ENABLED DIGITAL PREAMP AND MIC/LINE MIXER WITH EIGHT MIC/LINE INPUTS AND MINIMUM TWO OUTPUTS WITH PARAMETRIC EQ, COMPRESSOR AND INPUT DUCKING, CONTROL INTERFACE VIA RS232 OR LAN WITH FULL DISCRETE COMMAND SET FOR ZONE VOLUME, INPUT LEVELS AND INPUT SWITCHING, 2 RU HEIGHT.	MXA910 BIAMP TESIRAFORTE
AV-PRO-1	VIDEO PROJECTOR: 6000 LUMENS 1 CHIP DLP, LASER DIODE PROJECTOR, WUXGA (1,920 x 1,200) RESOLUTION. HDMI AND DIGITAL LINK. POWERED ZOOM, POWERED FOCUS AND POWERED LENS SHIFT. VERIFY LENS REQUIRED FOR THROW DISTANCE TO PROVIDE FULL SCREEN IMAGE FILL.	
AV-PRO-MNT	VERIFY AND COORDINATE MOUNTING POSITION FOR THROW DISTANCE TO FULL DISPLAY IMAGE IN 16:10 FORMAT. COORDINATE LOCATION WITH POWER OUTLETS, AV CABLE OUTLET AND MANAGE CABLE NEATLY.  VIDEO PROJECTOR MOUNT. THIS BRACKET IS A SPECIAL MOUNT BRACKET WITH A 6-AXIS ADJUSTMENT MECHANISM WHICH IS	OR PRE-APPROVED EQUAL PANASONIC
AV-RS-W	USEFUL FOR INSTALLING THE PANASONIC PROJECTORS TO ENABLE SHORT FOCAL-LENGTH PROJECTION.  ROOM SCHEDULER, WALL MOUNT. PROVIDE ROOM SCHEDULER SOFTWARE WITH 7" TOUCH SCREEN SCHEDULING PADS AND	ET-PKD130H CRESTRON
AV-RX-1	ROOM AVAILABILITY LIGHTBAR/STATUS INDICATORS.  JUNCTION BOX MOUNT 4K DIGITAL MEDIA HDBASET RECEIVER AND DISPLAY CONTROLLER, ONE DM TWISTED PAIR INPUT, ONE HDMI OUPUT AND RS-232/INFRARED CONTROL OUTPUT, WHITE COLOR, MOUNT IN AV-WP1-W DISPLAY CONNECTIVITY BOX UNLESS OTHERWISE NOTED.	TSS-7-W-S-LB KIT CRESTRON DM-RMC-4K-100-C-1G
AV-RX-2	NETWORK BASED AUDIO VIDEO RECEIVER WITH DANTE, CAPABLE OF DECODING NETWORK AUDIO AND 4K VIDEO WITH LESS THAN ONE FRAME (17ms) TOTAL ENCODE/DECODE LATENCY, ONE GIGABIT NETWORK CONNECTION, ONE HDMI AND LINE LEVEL AUDIO OUTPUT, RS232 CONTROL CAPABILITY.	EXTRON CRESTRON DM-NVX-352
AV-SFC-1	HD-SDI/3G-SDI TO FIBER CONVERTER TRANSCEIVER, FOR EXTENDING AV-CM1-W VIDEO SIGNAL OVER SINGLE MODE FIBER TO OWNER MEDIA TEAM, BNC HD-SDI/3G-SDI INPUTS, LC SINGLE MODE FIBER INPUTS/OUTPUTS, HDMI LOOP OUTPUTS USED TO SEND VIDEO TO AV SWITCHER AND/OR VIDEO CONFERENCING CODEC.	OR PRE-APPROVED EQUAL BLACKMAGIC ATEM CONVERTER SERIES
AV-SP1-C	PERFORMANCE AUDIO SPEAKER, RECESSED CEILING MOUNTED, PERFORMANCE AUDIO, 50 WATTS CONTINUOUS POWER HANDLING WITH 200 WATTS PEAK, 65Hz-20kHz ±3dB FREQUENCY RESPONSE, SENSITIVITY: 92dB@ 1 WATT/METER, 2100 Hz CROSSOVER FREQUENCY, 1" ALUMINUM DOME COMPRESSION DRIVER TWEETER, 5.25" IMG CONE/CAST POLYMER FRAME WOOFER.	
AV-SP1-W	PERFORMANCE AUDIO SPEAKER, RECESSED WALL MOUNTED, PERFORMANCE AUDIO, 50 WATTS CONTINUOUS POWER HANDLING	OR PRE-APPROVED EQUAL  JBL PRO
	WITH 200 WATTS PEAK, 65Hz-20kHz ±3dB FREQUENCY RESPONSE, SENSITIVITY: 92dB@ 1 WATT/METER, 2100 Hz CROSSOVER FREQUENCY, 1" ALUMINUM DOME COMPRESSION DRIVER TWEETER, 5.25" IMG CONE/CAST POLYMER FRAME WOOFER.	25AV OR PRE-APPROVED EQUAL
AV-SW-8	8X8 HDMI MATRIX CARD FRAME SWITCH WITH MINIMUM TWO HDBASET TWISTED PAIR INPUTS, FOUR HDMI INPUTS, FIVE HDBASET TWISTED PAIR OUTPUTS, ONE HDMI OUTPUT.	CRESTRON DM SERIES
		EXTRON
		+

7" LED CAPTIVE EDGE TO EDGE GLASS TOUCH SCREEN, WALL MOUNT. POE NETWORK POWER SUPPORT.

OR PRE-APPROVED EQUAL

#### **GENERAL TECHNOLOGY EQUIPMENT SCHEDULE**

THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM. CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

<b>EQUIPMENT TAG</b> AV-TVT-1	OWNER PROVIDED, CONTRACTOR INSTALLED HIGH DEFINITION IPTV TUNER WITH ONE 10/100 LAN INPUT, ONE DVI/HDMI AND COAXIAL OR OPTICAL DIGITAL AND ANALOG RCA OUTPUTS, INFRARED CONTROL WITH FULL DISCRETE COMMAND SET FOR POWER	EQUIPMENT LIST MANUFACTURER AND MOD
AV-TX-2	AND CHANNEL SELECTION, 1 RU MOUNTING HEIGHT.  NETWORK BASED AUDIO VIDEO TRANSMITTER WITH DANTE, CAPABLE OF ENCODING NETWORK AUDIO AND 4K VIDEO WITH LESS THAN ONE FRAME (17ms) TOTAL ENCODE/DECODE LATENCY, ONE GIGABIT NETWORK CONNECTION, ONE HDMI/VGA AND LINE LEVEL AUDIO INPUT, RS232 CONTROL CAPABILITY.	*
AV-VCC-1	VIDEO CONFERENCING CODEC WITH LAN CONNECTION AND MINIMUM ONE HDMI/DVI AND ANALOG AUDIO INPUT, ONE HDMI/DVI AND ANALOG AUDIO OUTPUT, RS-232 FOR SYSTEM CONTROL PROVIDE POLYCOM DIGITAL EXTENDER WHERE NECESSARY, RACK MOUNTABLE.	POLYCOM GS SERIES
AV-VPS-1	A/V PROJECTOR SCREEN. MATTE WHITE SCREEN SURFACE, 78" X 139" (159" DIAGONAL / 139" VIEWABLE AREA WIDTH) WITH 220V MOTOR, CASE, LOW VOLTAGE CONTROLS AND BOTTOM BORDER.	DA-LITE ADVANTAGE DELUXE
AV-VWP-1 AV-WMA-1		OR PRE-APPROVED EQUAL  * CRESTRON
AV (WP4 W	RJ-45 LAN CONNECTION, SMALL FORM FACTOR 6" X 2.4" X 1" FOR DISCRETE MOUNTING IN AV-WP1-W OR BEHIND DISPLAY.	CCS-FF-2 EXTRON
AV-WP1-W	A/V DISPLAY CONNECTIVITY BOX (FSR PWB-250 WHITE) 14.25" X 7" X 4" WALL RECESSED BOX WITH TWO SINGLE GANG AND ONE 1-1/4" KNOCKOUTS:	FSR PWB-250
SC-CPW-1	INSTALL ONE 3/4" CONDUIT FOR POWER, PROVIDE SINGLE GANG JUNCTION BOX AND DUPLEX RECEPTACLE. INSTALL ONE 1" CONDUIT TO NEAREST CABLE TRAY OR PATHWAY FOR INFORMATION OUTLET. INSTALL ONE 1-1/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR ADDITIONAL LOW VOLTAGE CABLING, FINISH WITH NYLON BUSHING. INSTALL AT 60" OC AFF UNO.  FIRE RATED PATHWAY. 2"W X 4-5/8" H X12" L, BUILT IN SMOKE SEALING SYSTEM THAT AUTOMATICALLY ADJUSTS TO THE AMOUNT OF CABLES INSTALLED, ORANGE PAINT.	OR PRE-APPROVED EQUAL  EZ-PATH 33
SC-CT-1	CABLE TRAY, WIRE MESH TYPE, 4" LOADING DEPTH, 12" WIDTH, COMPLETE WITH ALL FITTINGS AND MOUNTING HARDWARE. PROVIDE TRAPEZE SUPPORT WITH PLASTIC RETAINER. CUTTING OF THE MESH CABLE TRAY SHALL BE DONE WITH OFFSET BOLT CUTTERS ONLY. 10' MAXIMUM SUPPORT SPAN. EITHER SPLICE WASHERS OR TERMINAL GROUND SUPPORT AND JUMPER WIRE SHALL BE USED TO ATTAIN GROUNDING CONTINUITY THROUGHOUT. Z-BRACKETS SHALL BE USED FOR WALL MOUNTED APPLICATIONS. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS AND SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL INFORMATION.	OR PRE-APPROVED EQUAL COOPER B-LINE FLEXTRAY FT4x12x10  MONO-SYSTEMS CABLOFIL
SC-ER-1	EQUIPMENT RACK. 84"H X 20.25"W X 15"D TWO-POST CONFIGURATION.	HUBBELL HP284RR-20
SC-FDC-1	PROVIDE COMPLETE WITH TWO (2) TWO-SIDED VERTICAL WIRE MANAGERS PER RACK, EACH WITH MINIMUM 6" X 6" CAPACITY FRONT AND REAR, AND WITH LADDER RACK CONNECTION HARDWARE ACCESSORIES AND RADIUS DROP LADDER RACK.  OPTICAL FIBER DISTRIBUTION CABINET, COMBINATION SHELF, 24 FIBER CAPACITY, SLIDE OUT RAILS TO FACILITATE FRONT ACCESS, JUMPER TROUGHS IN CONNECTOR PANELS TO REDUCE MOUNTING SPACE, PROVIDE WITH CLAMP AND GROUNDING KIT, COUPLING PANELS, [ST][SC][MT-RJ] CONNECTORS, COUPLINGS AND JUMPERS. REQUIRES (2) 1.75" MOUNTING SPACES.	OR PRE-APPROVED EQUAL HUBBELL FCR SERIES COMMSCOPE
SC-GND-1	WALL-MOUNT GROUND BAR. MINIMUM 4" H X 12" L X 1/4" D COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO MOUNTING BRACKETS. PROVIDE UNIT CONFIGURED WITH SIXTEEN (16) SETS OF 5/16" HOLES SPACED 5/8" ON CENTER TO ACCOMMODATE "A" SPACED TWO-HOLE COMPRESSION LUGS AND THREE (3) SETS OF 7/16" HOLES SPACED 1" ON CENTER TO ACCOMMODATE "C" SPACED TWO-HOLE COMPRESSION LUGS. ANSI/EIA/TIA-607 AND BICSI COMPLIANT. UL LISTED. REFER TO 2/T400 FOR ADDITIONAL INFORMATION.	PANDUIT OR PRE-APPROVED EQUAL CHATSWORTH PRODUCTS 40153-012 ERICO HARGER
SC-GND-2	RACK MOUNT GROUND BAR. MINIMUM 3/16" D X 3/4" H X 19" W COPPER, CONFIGURED WITH MINIMUM EIGHT (8) #6-32 TAPPED HOLES AND MINIMUM FOUR (4) 5/16" UNTAPPED HOLES. UL LISTED AND ANSI/EIA/TIA-607 AND BICSI COMPLIANT. REQUIRES ONE (1) 1.75" RACK MOUNTING SPACE.	10610-019 ERICO
SC-HWM-1	HORIZONTAL CABLE MANAGEMENT, FINGER DUCT STYLE, 3" X 3" CAPACITY FRONT, 2" X 5" CAPACITY REAR. REMOVABLE FRONT AND REAR COVERS. PASS THROUGH HOLES TO FACILITATE FRONT TO REAR CABLING. REQUIRES (2) 1.75" MOUNTING SPACES.	HARGER OR PRE-APPROVED EQUAL HUBBELL HC219CC3P COMMSCOPE
		PANDUIT OR PRE-APPROVED EQUAL
SC-IO-C	INFORMATION OUTLET, CEILING MOUNT. 2 PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.  "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS.	FACEPLATE: HUBBELL IFP14EI
	INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING (MINIMUM 6" BEYOND BACK BOX).	CAT6 JACK: HUBBELL HXJ6EI BLANK:
		HUBBELL SFB10
SC-IO-CWAP	WIRELESS ACCESS POINT EQUIPMENT OUTLET, CEILING MOUNT. 2 PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET	OR PRE-APPROVED EQUAL FACEPLATE:
	SCHEDULE ON DRAWING T600.  "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION	HUBBELL IFP12EI SERIES
	OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS.  INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING (MINIMUM 6" BEYOND BACK BOX).	OR PRE-APPROVED EQUAL
SC-IO-F	PROVIDE (2) TWO CATEGORY 6A CABLES AND JACKS PER WAP.  INFORMATION OUTLET, FLOOR MOUNT. 2 OR 4-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.	FACEPLATE: HUBBELL IFP14EI
	"C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS, ADDITIONAL INFORMATION AND REQUIREMENTS.	CAT6 JACK: HUBBELL HXJ6EI
	POWER/DATA RECESSED FLOOR BOX WITH HINGED COVER AND DIVIDED COMPARTMENT FOR AC POWER. BOX IS BY ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATIONS FOR CABLE LENGTHS. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION ABOUT BOXES AND CONDUITS.	BLANK: HUBBELL SFB10
SC-IO-W	INFORMATION OUTLET, WALL MOUNT. 2 OR 4-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.	OR PRE-APPROVED EQUAL FACEPLATE: HUBBELL
	"#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS.  INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING. REFER TO 1/T400	IFP14EI CAT6 JACK: HUBBELL HXJ6EI
	FOR TECHNOLOGY ROUGH-IN MOUNTING DETAIL.  PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED FACEPLATE PORTS.	BLANK: HUBBELL SFB10 OR PRE-APPROVED EQUAL
SC-LR-1	LADDER RACK. 18" WIDE TUBULAR STEEL CONSTRUCTION, RUST RESISTANT BLACK ENAMEL FINISH, UL LISTED. PROVIDE COMPLETE WITH ALL NECESSARY ADAPTERS, SUPPORT HARDWARE, AND FITTINGS, TO INCLUDE RADIUS DROPS. REMOVE SHARP BURRS FROM LADDER RACK AND REPAINT ALL AREAS THAT HAVE BEEN FIELD MODIFIED, CUT OR EXPOSED.	CHATSWORTH PRODUCTS 11275-718 B-LINE
	MODULAR PATCH PANEL. FORTY EIGHT (48) MODULAR CAT 6 RJ-45 SNAP-IN JACKS. WELDED STEEL CONSTRUCTION, BLACK	HOFFMAN HUBBELL CAT 6:
SC-MPP-1	POWDER COAT FINISH, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK. REQUIRES (2) 1.75" MOUNTING SPACES.	P6E48U
SC-MPP-1		



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17609000

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