

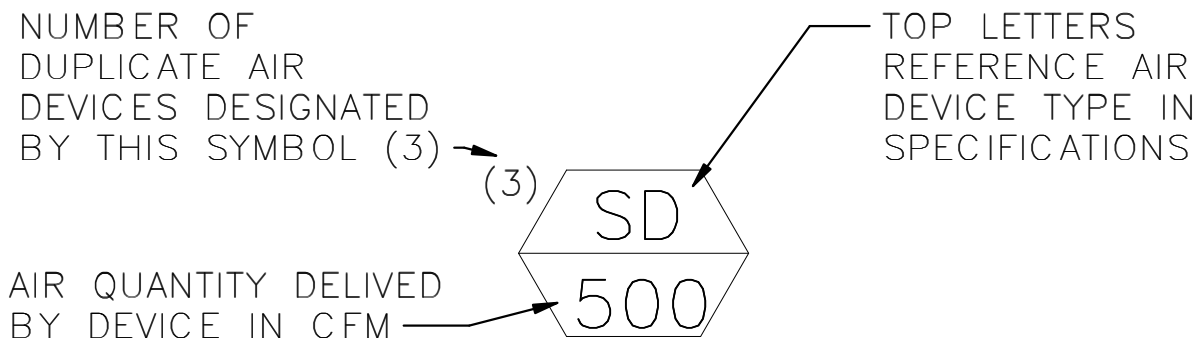
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MECHANICAL ABBREVIATIONS					
AAD	AUTOMATIC AIR DAMPER	FLEX	FLEXIBLE	PHW	PUMP, HOT WATER
ACR	AIR CONDITIONER, REFRIGERANT	*F	DEGREES FAHRENHEIT	PSI	POUNDS PER SQUARE INCH
ACT	AIR CURTAIN			PSIA	POUNDS PER SQUARE INCH – ABSOLUTE
AD	ACCESS DOOR	GAL	GALLONS	PSIG	POUNDS PER SQUARE INCH – GAUGE
AFF	ABOVE FINISHED FLOOR	GMU	GLYCOL MAKE-UP UNIT	PV	PUMP, VACUUM
AMB	AMBIENT	GPM	GALLONS PER MINUTE	PVC	POLYVINYL CHLORIDE
AMS	AIR FLOW MEASURING STATION	GRD	GRILLE, REGISTER, DIFFUSER, OR LOUVER		
AP	ACCESS PANEL			RA	RETURN AIR
		HC-W	HEATING COIL – WATER	RAG	RETURN AIR GRILLE
BHW	BOILER	HD	HEAD	RUA	CONDENSING UNIT
BOD	BOTTOM OF DUCT	HWR	HEATING HOT WATER RETURN	RG	RETURN GRILLE
BTUH	BRITISH THERMAL UNIT PER HOUR	HWS	HEATING HOT WATER SUPPLY	RH	RELATIVE HUMIDITY
		HP	HORSEPOWER	RHC-W	REHEAT COIL – WATER
C	CONDENSATE	HR	HOURLY	RPM	REVOLUTIONS PER MINUTE
CA	COMPRESSOR, AIR	HUW	HEATER UNIT, AIR, WATER		
CCW	COUNTER CLOCKWISE	HUE	HEATER UNIT, ELECTRIC	SA	SUPPLY AIR / SOUND ATTENUATOR
CC-W	COOLING COIL – WATER	HVA	HEATING VENTILATION AIR CONDITIONING UNIT	SAD	SUPPLY AIR DIFFUSER
CFM	CUBIC FEET PER MINUTE	HVAC	HEATING, VENTILATING & AIR CONDITIONING	SF	SUPPLY FAN
CWR	CHILLED WATER RETURN	HWG	HEATER, WATER, GAS	SD	SMOKE DAMPER
CWS	CHILLED WATER SUPPLY			SP	STATIC PRESSURE
CL	CENTER LINE	ID	INSIDE DIAMETER OR ISOLATION DAMPER	SPT	SET POINT
CONT.	CONTINUOUS	IN	INCHES	SR	SUPPLY REGISTER
CU FT	CUBIC FEET			SS	STAINLESS STEEL
CHW	CHILLER	KW	KILOWATT		
				T	THERMOSTAT
D	DRAIN / DAMPER	LBS	POUNDS	TCA	TANK, COMPRESSED AIR
DB	DRY BULB	LB/HR	POUNDS PER HOUR	TOD	TOP OF DUCT
DDC	DIRECT DIGITAL CONTROLS	LDB	LEAVING DRY BULB TEMPERATURE	TP	TOTAL PRESSURE
DEG	DEGREE	LWB	LEAVING WET BULB TEMPERATURE	TV	TANK, VACUUM
DIA	DIAMETER	LWT	LEAVING WATER TEMPERATURE	TWC	TANK, WATER, CHILLED
DN	DOWN			TWD	TANK, WATER, DEIONIZED
DWG	DRAWING	MAX	MAXIMUM	TYP	TYPICAL
		MBH	BTU (THOUSANDS) PER HOUR		
EAG	EXHAUST AIR GRILL	MECH	MECHANICAL	V	VENT, VOLTAGE
EA	EACH	MFR	MANUFACTURER	VAV	VARIABLE AIR VOLUME
EDB	ENTERING DRY BULB TEMPERATURE MIN		MINIMUM	VD	VOLUME DAMPER
EFF	EFFICIENCY	MS	MASS SPECTROMETER	VEL	VELOCITY
EJ	EXPANSION JOINT	MTR	MOTOR	VENT	VENTILATION
EL	ELEVATION			VERT	VERTICAL
ELEC	ELECTRIC	NC	NORMALLY CLOSED / NOISE CRITERIA	VOL	VOLUME
ELL	ELBOW	NTS	NOT TO SCALE	VP	VELOCITY PRESSURE
EWB	ENTERING WET BULB TEMP.				
EW	ENTERING WATER TEMP.:RATURE	OA	OUTSIDE AIR	W	WIDTH OR WATT
EXH	EXHAUST	OAI	OUTSIDE AIR INTAKE	WBT	WET BULB TEMPERATURE
EXST	EXISTING	OD	OUTSIDE DIAMETER	WC	WATER COLUMN
		ODT	OUTSIDE DRY BULB TEMPERATURE	WG	WATER GAUGE
FD	FIRE DAMPER / FLOOR DRAIN	OWT	OUTSIDE WET BULB TEMPERATURE	WT	WEIGHT
FE	FAN, EXHAUST				
FPM	FEET PER MINUTE	PCW	PUMP, CHILLED WATER		
FT	FEET, FOOT	PH	PHASE		

MECHANICAL LEGEND			
	INSIDE DUCT SIZE (FIRST DIMENSION LISTED ON DUCT SIZE IS THE DIMENSION IN VIEW)		GATE VALVE (OPEN)
	DUCT SECTION, POSITIVE PRESSURE		MOTORIZED CONTROL VALVE (TWO WAY)
	DUCT SECTION, NEGATIVE PRESSURE		BALANCE VALVE
	ACOUSTICAL DUCT LINING		BALL VALVE (OPEN)
	FLEXIBLE DUCT CONNECTION		PRESSURE REDUCING VALVE
	FLEXIBLE DUCT		RELIEF VALVE OUTLET
	TURNING VANES		BUTTERFLY VALVE
	TRANSITION		CHECK VALVE
	DAMPER ** AD-AUTOMATIC DAMPER ** BDD-BACKDRAFT DAMPER ** FD-FIRE DAMPER ** SD-SMOKE DAMPER ** VD-MANUAL VOLUME DAMPER		PRESSURE REDUCING VALVE
	SUPPLY RECTANGULAR CEILING DIFFUSER		BACKFLOW PREVENTER
	SUPPLY ROUND CEILING DIFFUSER		THERMOSTAT
	SUPPLY SIDEWALL CEILING DIFFUSER		IN-LINE PUMP
	LINEAR SLOT DIFFUSER		PRESSURE INDICATOR
	RETURN,RELIEF, OR EXHAUST REGISTER OR GRILLE		UNION
	RETURN, RELIEF, OR EXHAUST SIDEWALL REGISTER OR GRILLE		AUTOMATIC AIR VENT
	KEY NOTE REFERS TO SPECIFIC LOCATION		FLOW INDICATOR
	DUCT SMOKE DETECTOR		HORIZONTAL CENTRIFUGAL PUMP
	CENTRIFUGAL FAN		FLOW DIRECTION
			HIDDEN OR BURIED
			CARBON DIOXIDE SENSOR
			HUMIDISTAT
			OXYGEN SENSOR
			THERMOSTAT
			ROOM TEMPERATURE SENSOR

	DETAIL CALL OUT
	ELEVATION MARK
	SECTION MARK

AIR DEVICE LEGEND



INDOOR / OUTDOOR DESIGN CONDITIONS			
OUTDOOR SUMMER	INDOOR SUMMER	OUTDOOR WINTER	INDOOR WINTER
93.0°F DB / 78.0°F WB	72°F DB / 63°F WB 50% TO 55% RELATIVE HUMIDITY	28°F DB / 23.6°F WB	70°F DB / 59.0°F WB

GENERAL NOTES:

- THE INTENT OF THESE DRAWINGS ARE SUCH THAT THE CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT, TRANSPORTATION, PERMITS, FEES, LICENSES AND PROPER SUPERVISION NECESSARY TO INSTALL AND COMPLETE THE NECESSARY WORK AS SHOWN ON THE DRAWING.
- WORK NOT SPECIFICALLY COVERED ON THE DRAWINGS, BUT THAT IS REASONABLY INFERABLE AS BEING NECESSARY TO PRODUCE THE INTENDED RESULTS SHALL BE QUOTED AND/OR PERFORMED AS IF SPECIFICALLY DETAILED HEREIN.
- THE DRAWINGS ARE INDICATIVE OF THE CHARACTER AND SCOPE OF WORK AND ARE NOT INTENDED TO SHOW ALL INCLUSIVE MEANS AND METHODS OF CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
- DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. WHERE INTERNAL INSULATION IS CALLED FOR, DIMENSIONS SHALL BE INCREASED BY THE THICKNESS OF INSULATION.
- PORTIONS OF THE DUCTS VISIBLE THROUGH GRILLES AND REGISTERS IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.
- WHERE DUCTWORK IS LINED, NO THERMAL INSULATION IS REQUIRED. WHERE UNLINED DUCT AND LINED DUCT CONNECT, THE INSULATION SHALL OVERLAP LINED SECTION AT LEAST 4".
- EXACT LOCATION OF ALL CEILING DIFFUSERS, GRILLES, REGISTERS, AND CEILING CASSETTES SHALL BE COORDINATED WITH THE LIGHTING LAYOUT AND THE REFLECTED CEILING PLAN. SEE THE ARCHITECTURAL REFLECTED CEILING PLAN.
- CONTRACTOR TO COORDINATE VOLTAGE AND PHASE OF EACH EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE ORDERING.
- COORDINATE THE LOCATION OF ALL PENETRATIONS OF THE STRUCTURE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE ADEQUATE ACCESS TO ALL EQUIPMENT.
- ALL MECHANICAL EQUIPMENT AND CONTROLS SHALL BE LABELED FOR FUNCTION AND IDENTIFICATION.
- VERIFY CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
- PROVIDE NECESSARY OFFSETS IN PIPING, ELECTRICAL CONDUIT, AND DUCTWORK AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL ALLOW FOR ANY CONFLICTS ENCOUNTERED.
- DUCTWORK IS TO BE INSTALLED ABOVE THE CEILING AND BELOW THE STRUCTURE UNLESS NOTED OTHERWISE.
- MOUNT THERMOSTATS AND SENSORS 4'-0" ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION WITH ARCHITECT.
- ALL THERMOSTATS ON EXTERIOR WALL MUST BE LOCATED ON AN INSULATED BASE.
- COORDINATION SHOP DRAWINGS SHALL BE PREPARED FOR THE ENTIRE PROJECT DRAWN TO 1/16" = 1'-0" SCALE (MINIMUM). DRAWINGS SHALL BE FULLY DIMENSIONED, INCLUDING ELEVATIONS OF DUCTWORK AND PIPING SHOWING CEILING GRIDS, LIGHTING LAYOUT, PIPING UNDER OTHER DIVISIONS, CABLE TRAYS, AND MAJOR ELECTRICAL CONDUIT (2 INCHES IN DIAMETER AND LARGER).



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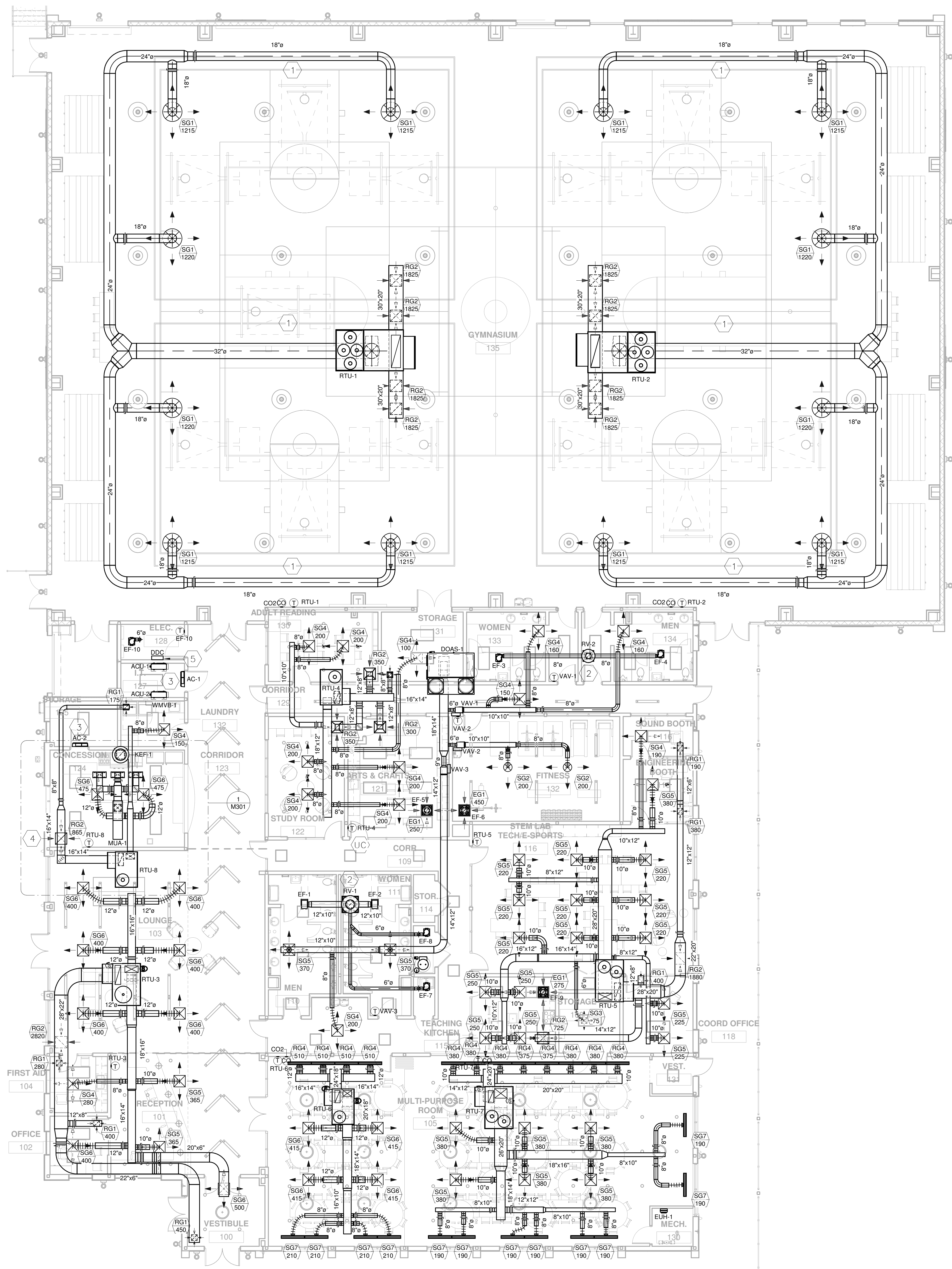
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SHEET TITLE:
LEGENDS, NOTES,
ABBREVIATIONS AND
DETAILS - HVAC

SHEET NUMBER:

M001

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GENERAL NOTES:

1. UNINSULATED EXTERIOR ROUND DUCT TO BE DOUBLE WALLED INTERIOR INSULATED SPIRAL DUCT.
2. OUTSIDE AIR TO UNITS TO BE CONTROLLED BY ECONOMIZER.
3. ALL STATS LOCATED IN GYM TO HAVE PROTECTIVE WIRE CAGE TYPE ENCLOSURE.

KEY NOTES:

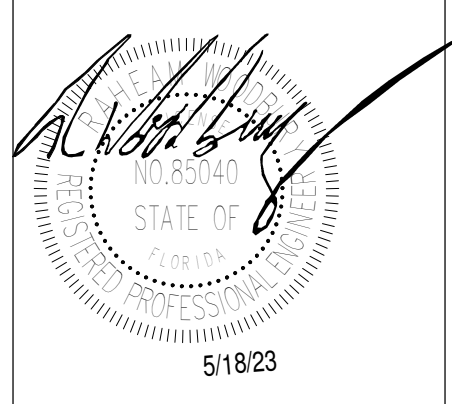
- 1 DUCT TO BE INSTALLED CLOSE TO THE BOTTOM OF STRUCTOR.
- 2 EXHAUST DUCT UP TO ROOF VENTILATOR.
- 3 AC-1 & 2 TO CONNECT TO ACU-1 & 2 ON ROOF. CONDENSATE FROM AC-1 & 2 TO ROUTE TO WMVB-1 INSIDE WALL AND TO HAVE 1" AIR GAP ABOVE SANITARY ENTRY.
- 4 MOTORIZED DAMPER TO BE INCLUDED IN RETURN DUCT TO CONCESSION AREA. WHEN CONCESSION HOOD IS ACTIVATED, DAMPER TO CLOSE OFF 250 CFM AND ECONOMIZER TO INCREASE 250 CFM.
- 5 DDC BUILDING CONTROL BOX.



FIRST FLOOR PLAN - HVAC

1/8" = 1'-0"

0 2' 4' 8' 16'



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FIRST FLOOR PLAN - HVAC

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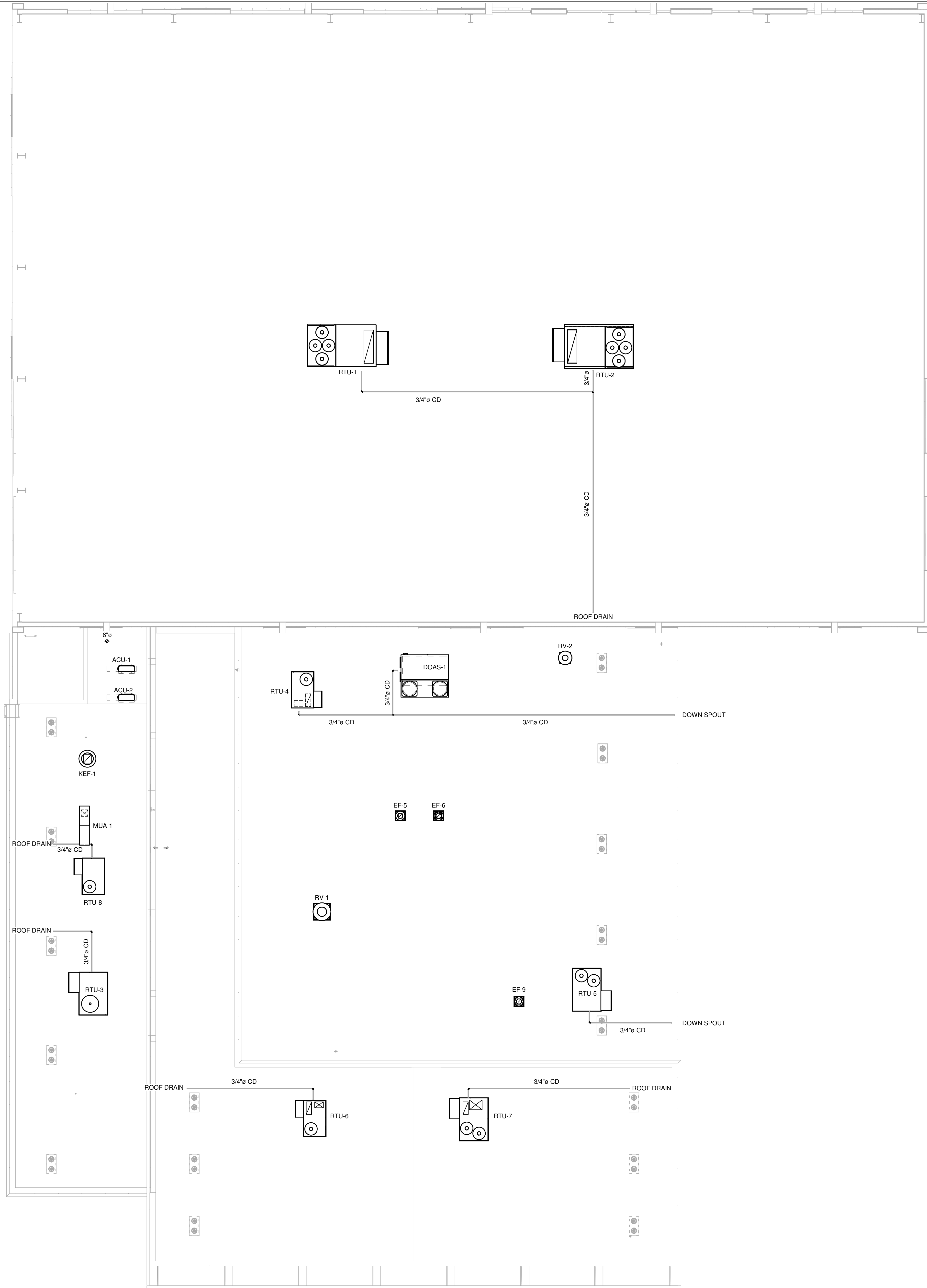
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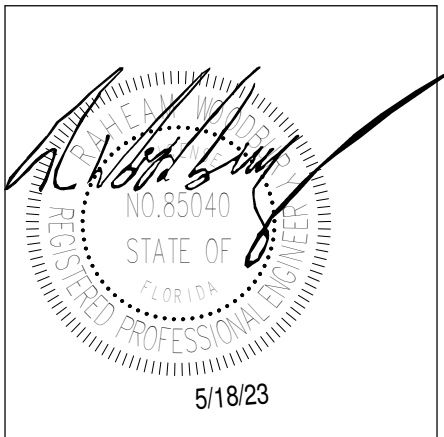
ROOF - HVAC

1/8" = 1'-0"



GENERAL NOTES:

- CONDENSATE LINES ROUTING TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR NEAREST DOWNSPOUTS / ROOF DRAIN. SEE OUTDOOR GAS / CONDENSATE PIPING SUPPORT DETAIL 1/M402. SUPPORTS TO BE A MAXIMUM 5' A PART.



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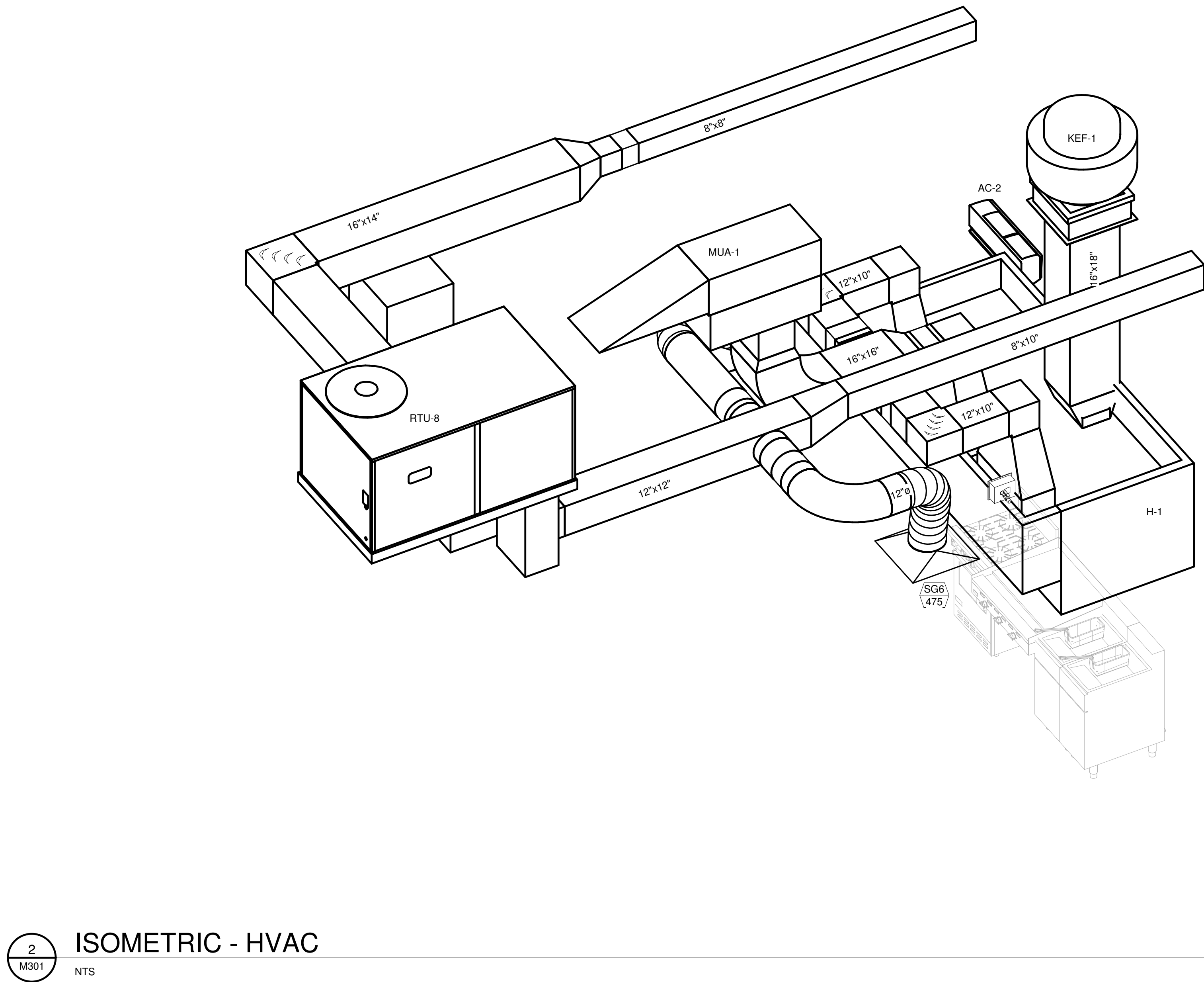
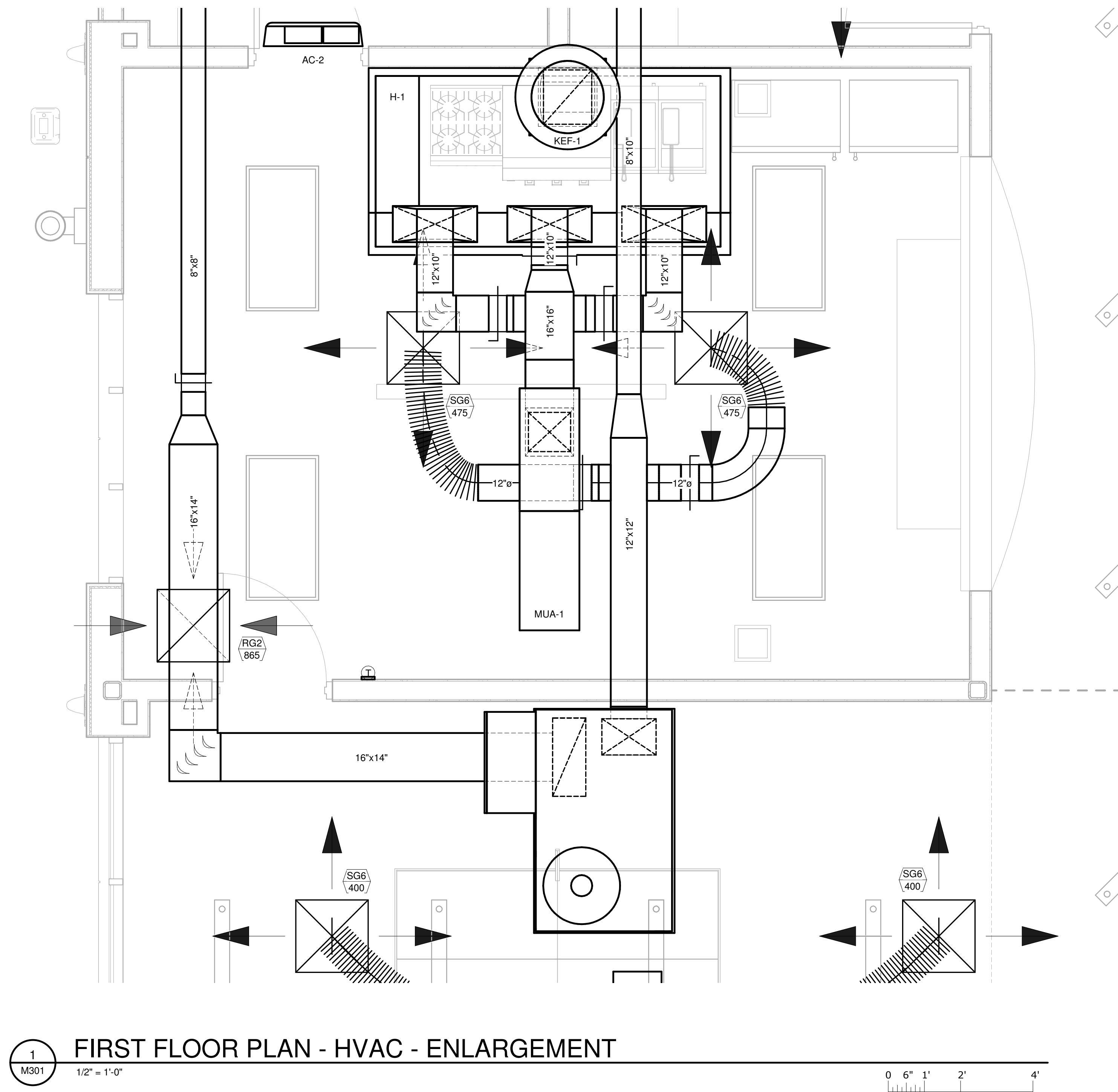
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ROOF - HVAC

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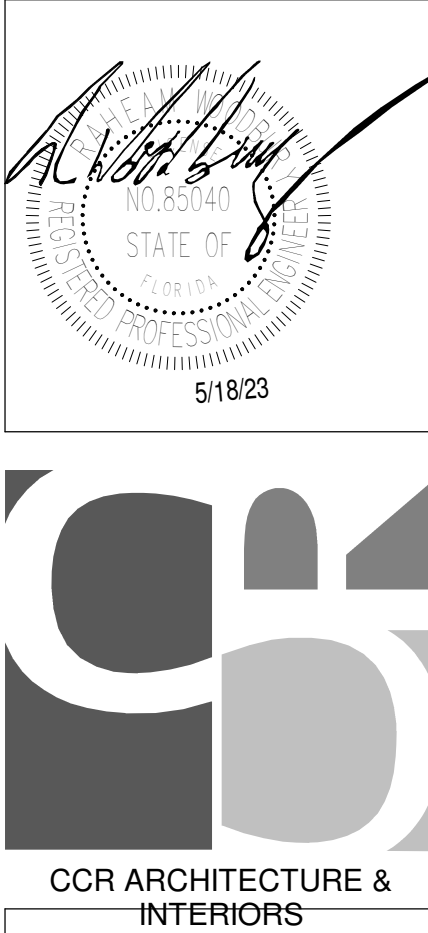
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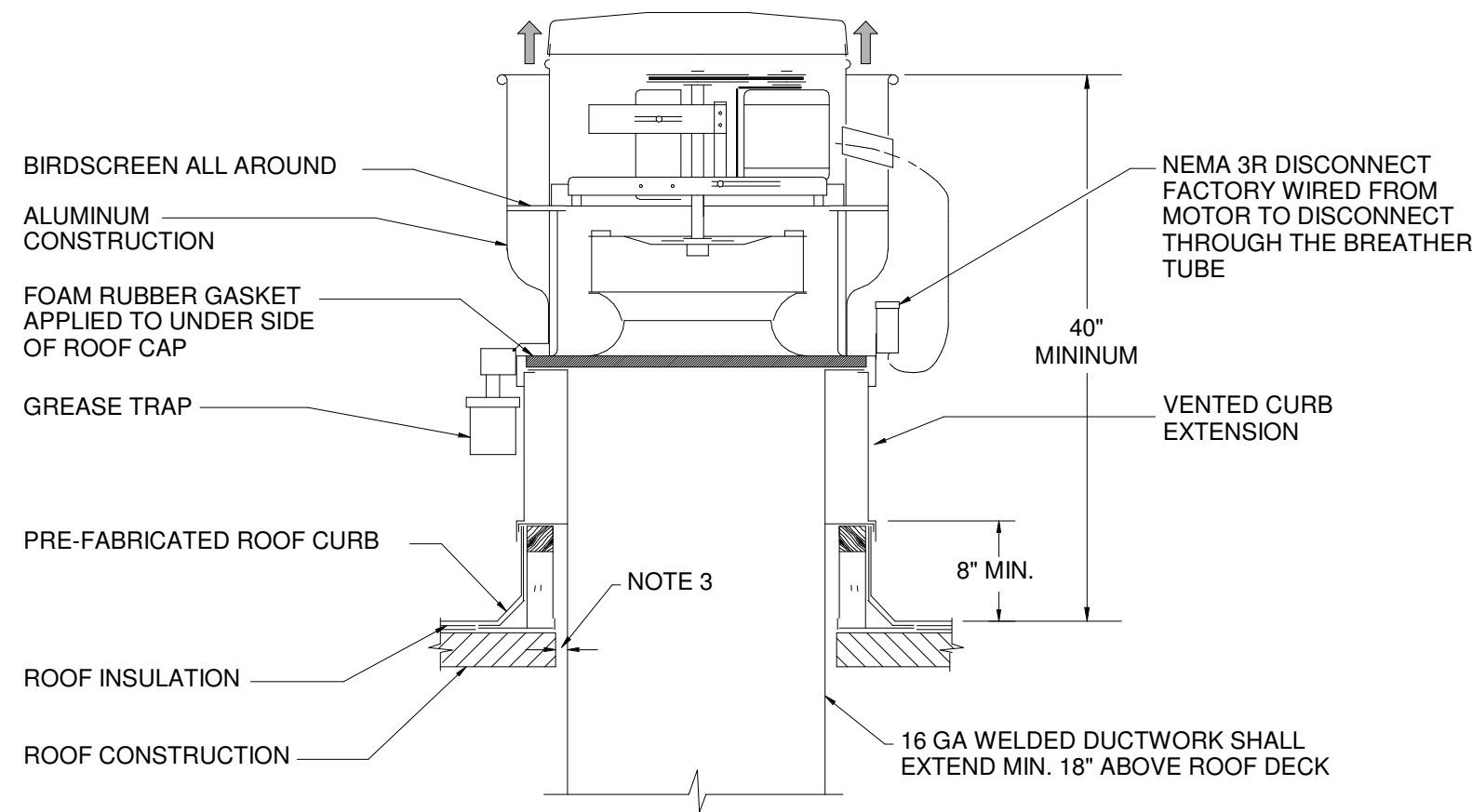


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SHEET NUMBER: M301	

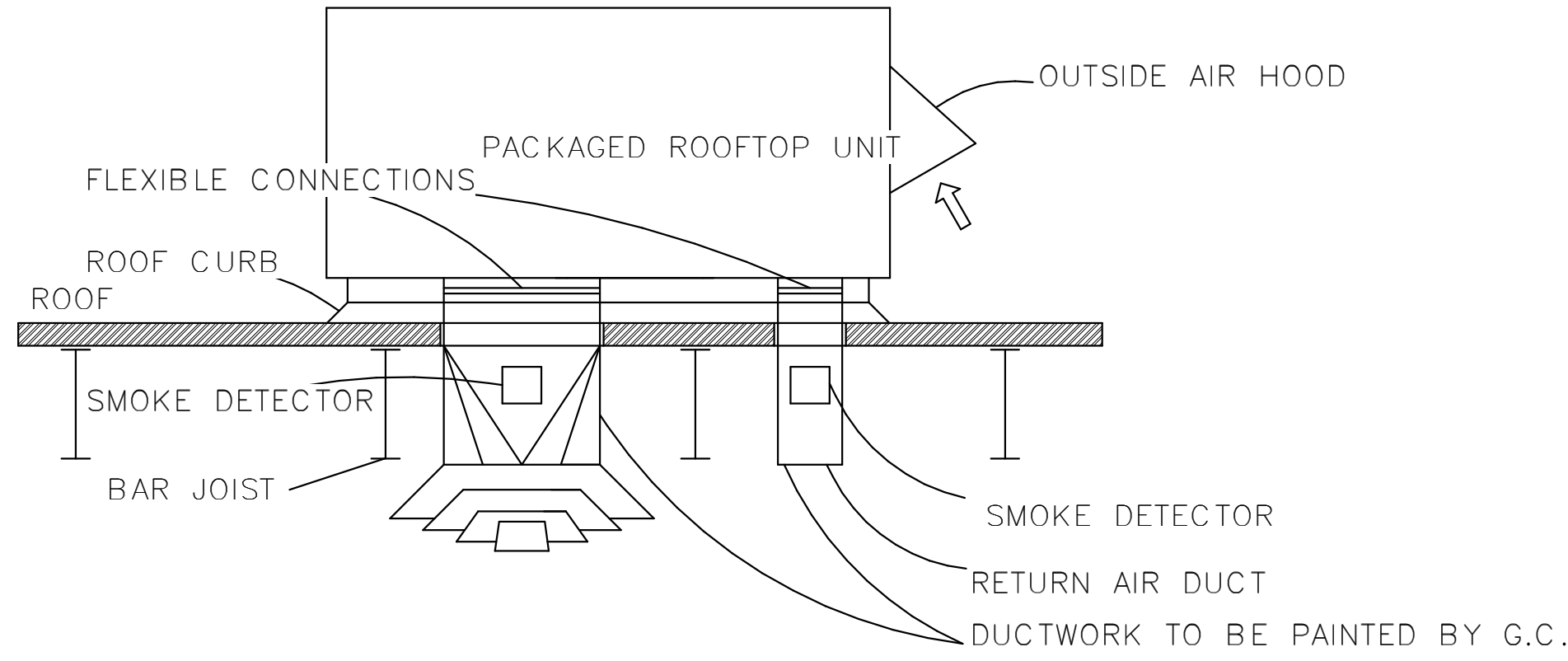


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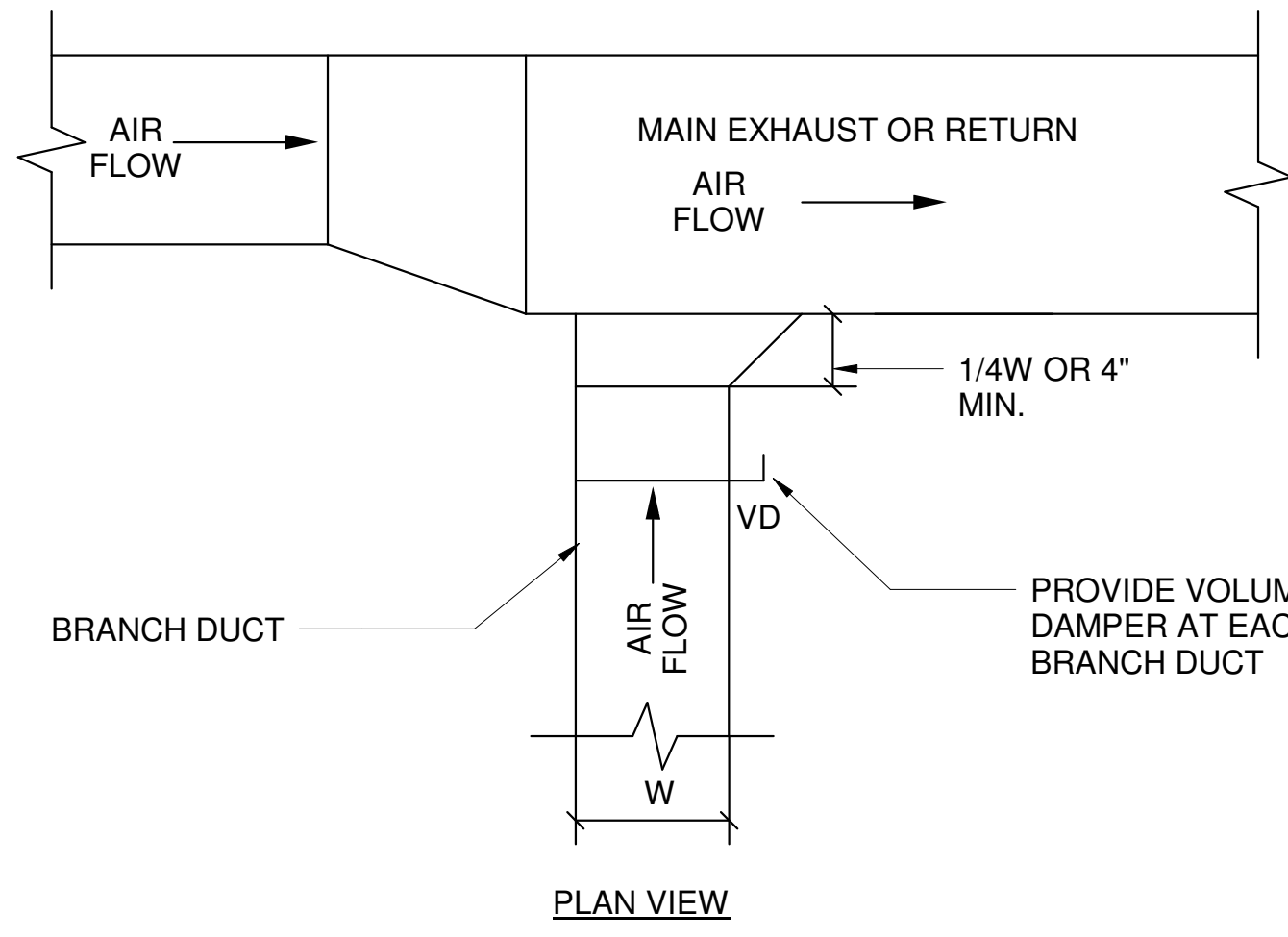
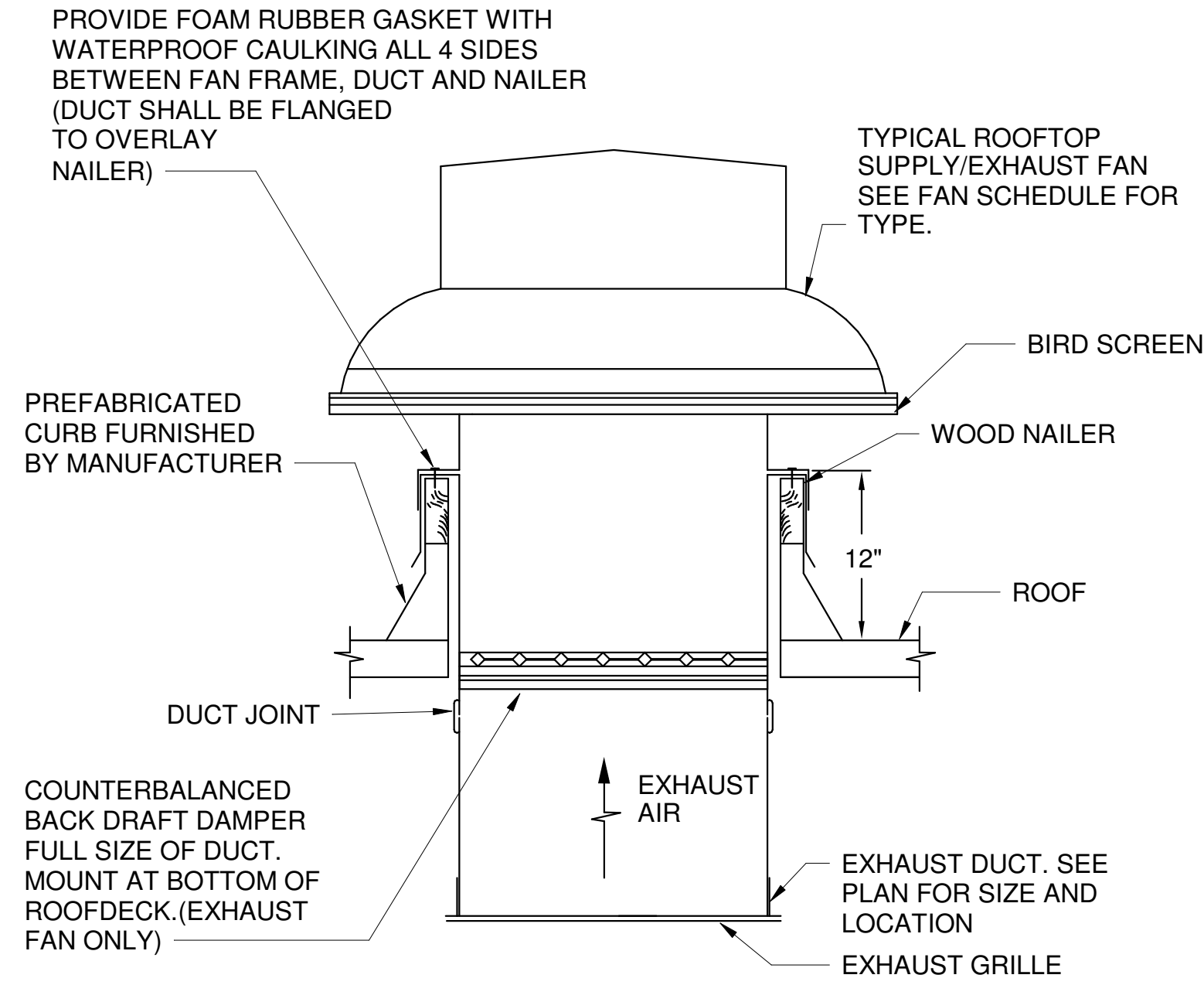
GENERAL NOTES:

1. PREFABRICATED ROOF CURB INSULATION SHALL BE NOT LESS THAN 1 1/2 IN. THICK.
2. SEE EXHAUST FAN SCHEDULE FOR PERFORMANCE CRITERIA.
3. EXHAUST DUCT SHALL MAINTAIN A CLEARANCE OF 18 INCHES TO COMBUSTIBLE MATERIALS. 3 INCHES TO COMBUSTIBLE MATERIALS PROTECTED WITH MATERIALS AS APPROVED FOR 1 HOUR FIRE RESISTANCE ON THE DUCT SIDE.



NOTE:

1. LOCATE THERMOSTAT AS SHOWN ON DRAWING AT 4' AFF.

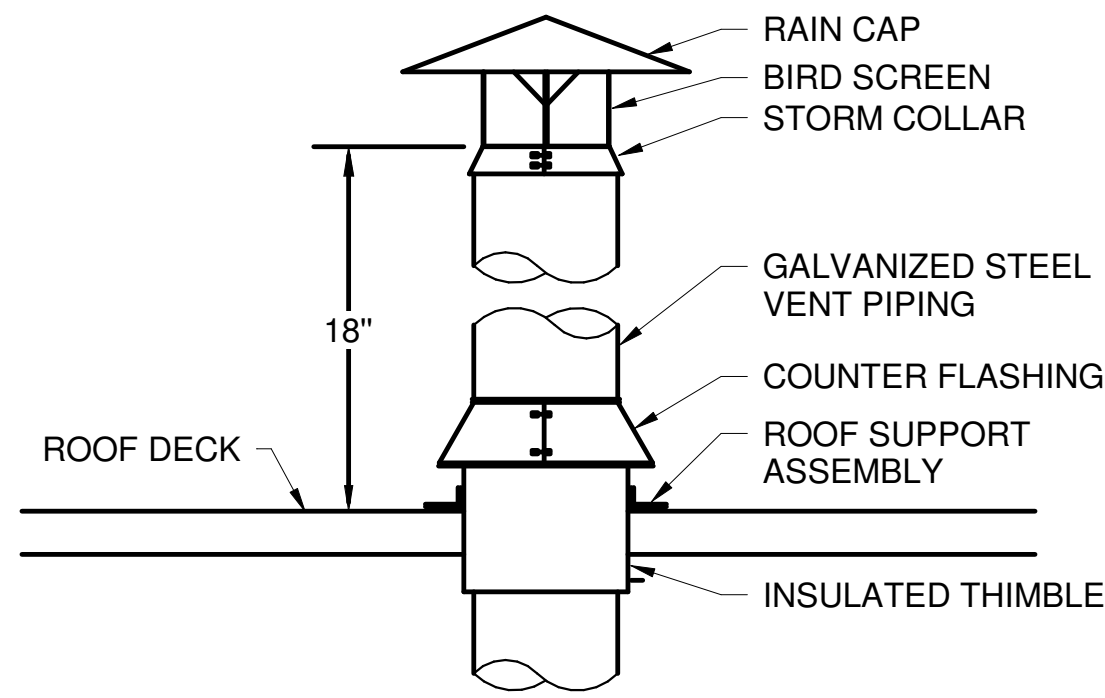
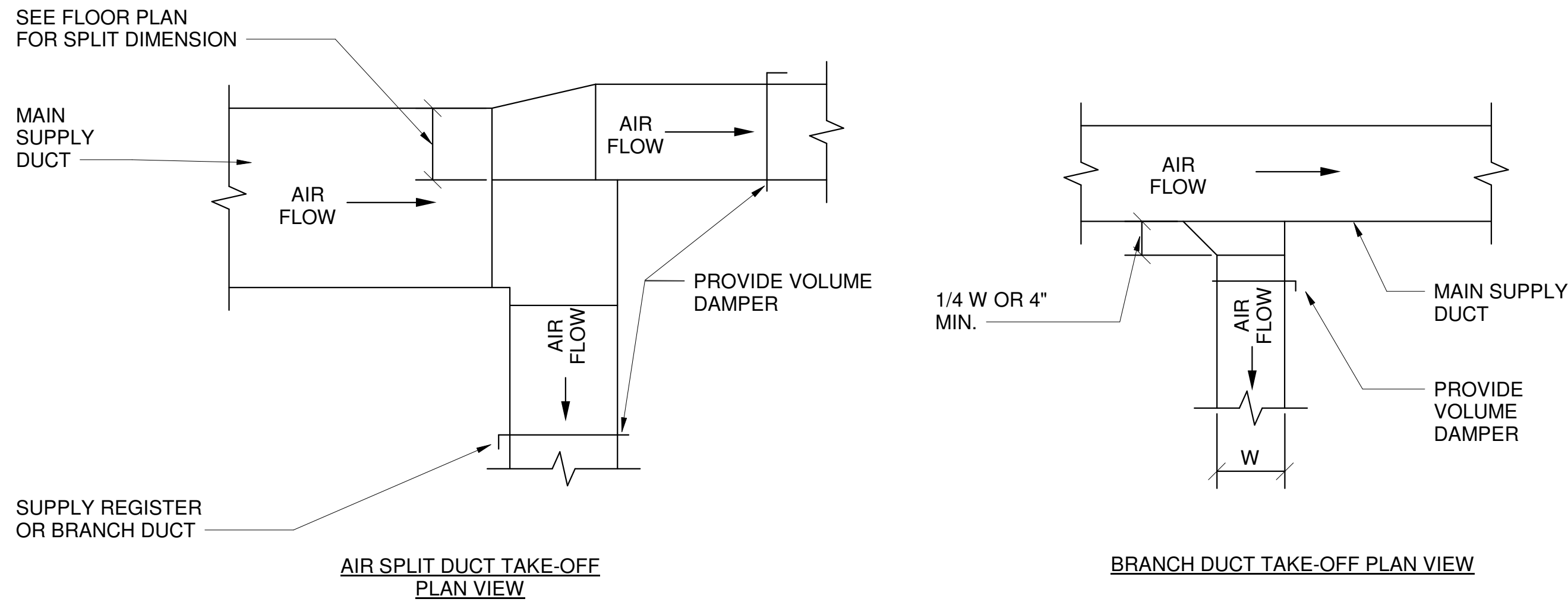
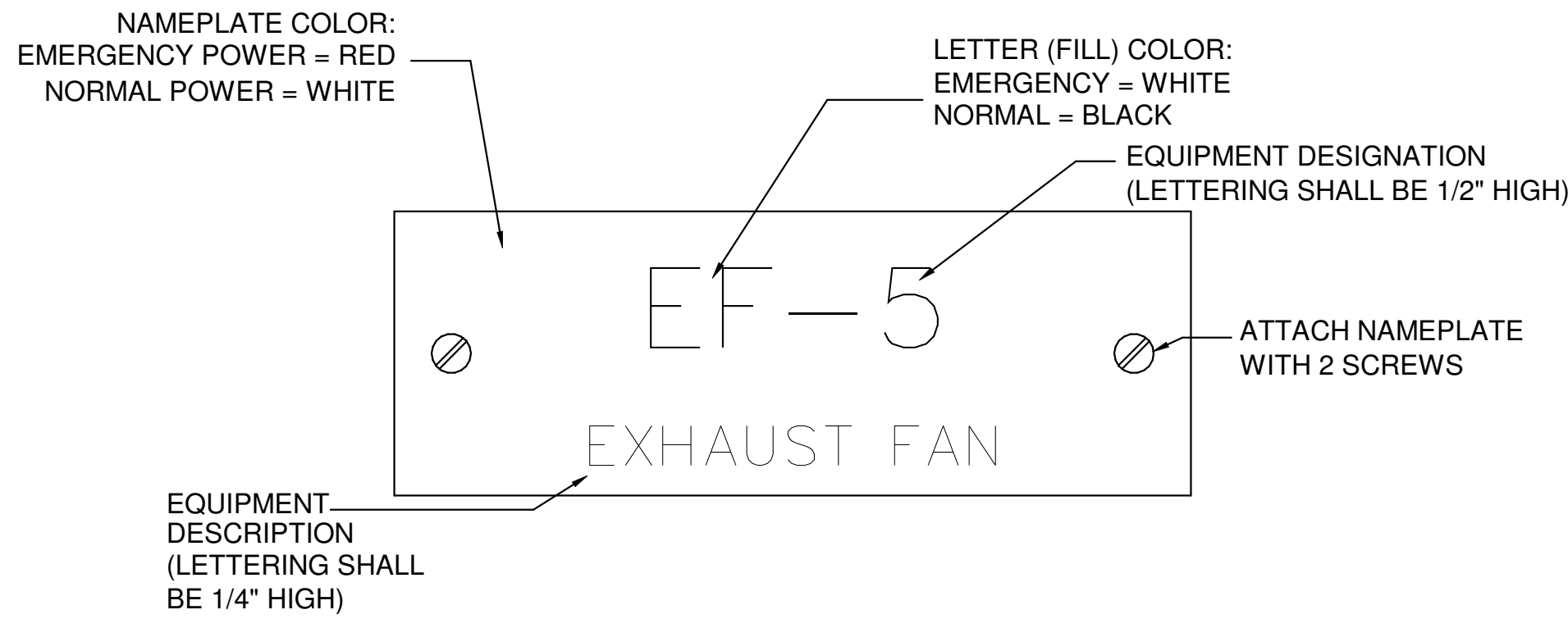


8 KITCHEN HOOD EXHAUST FAN DETAIL
M401 NTS

7 TYPICAL ROOFTOP UNIT SECTION DETAIL
M401 NTS

4 ROOF TOP EXHAUST FAN DETAIL
M401 NTS

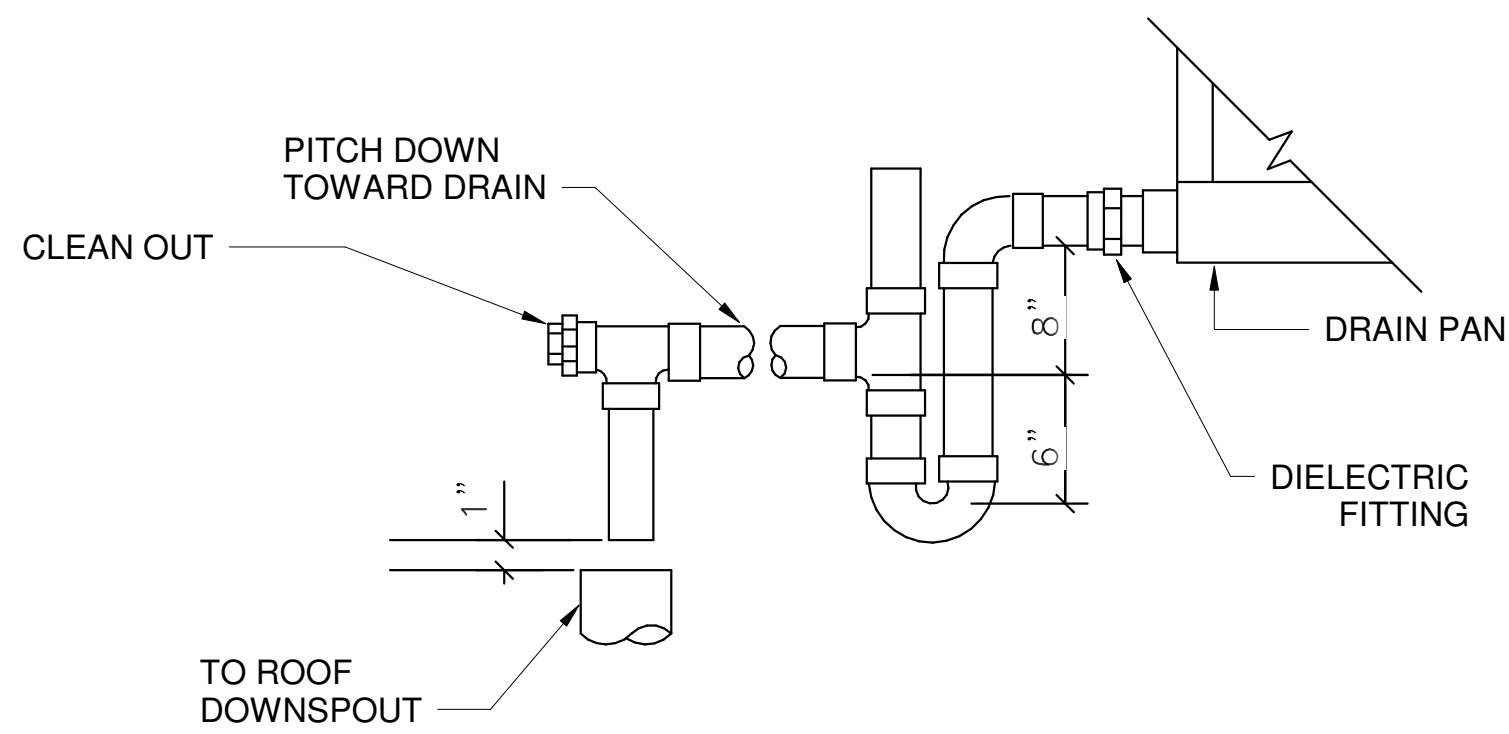
1 EXHAUST OR RETURN BRANCH DUCTWORK DETAIL
M401 NTS



9 MECHANICAL EQUIPMENT NAMEPLATE DETAIL
M401 NTS

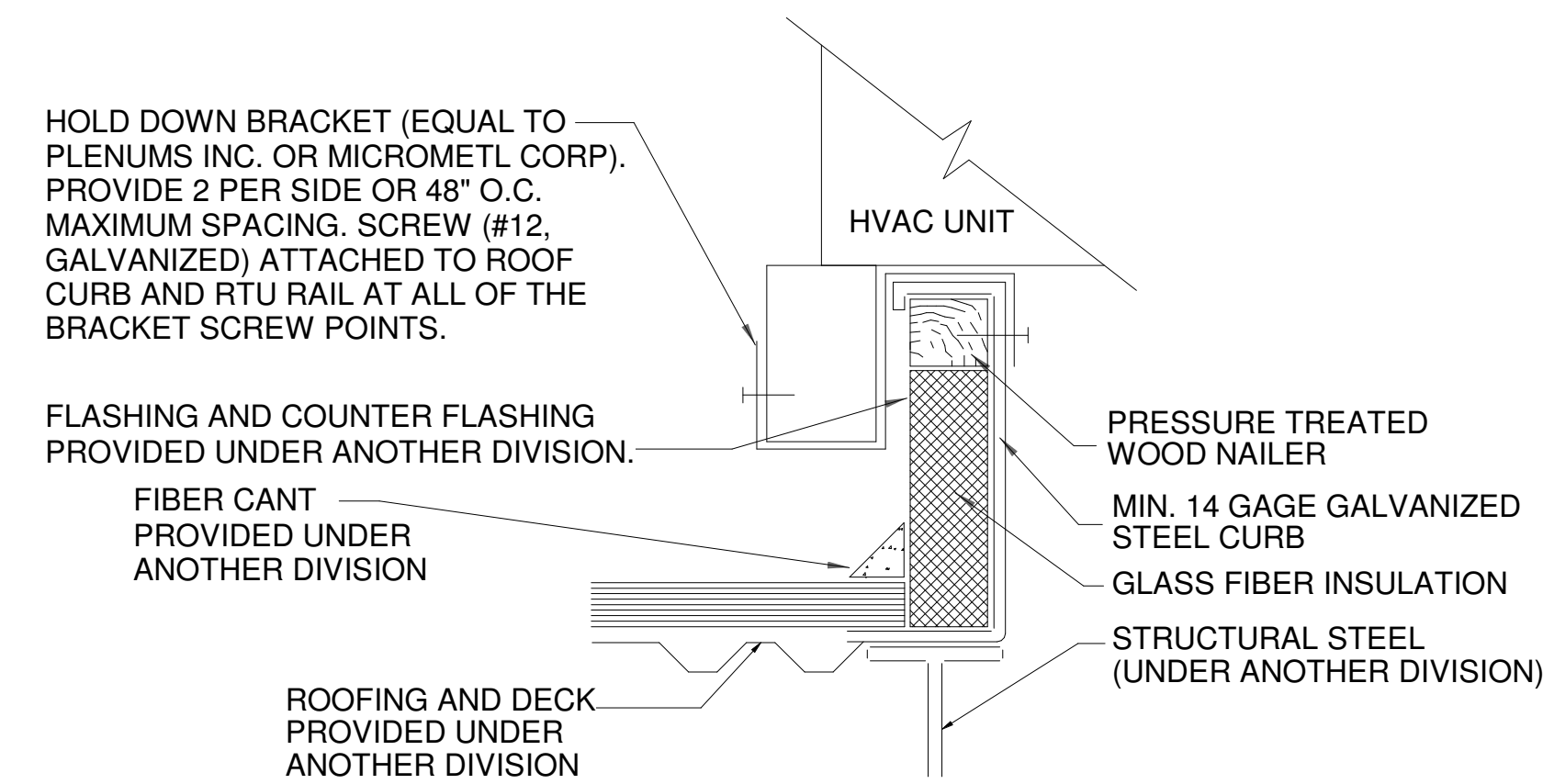
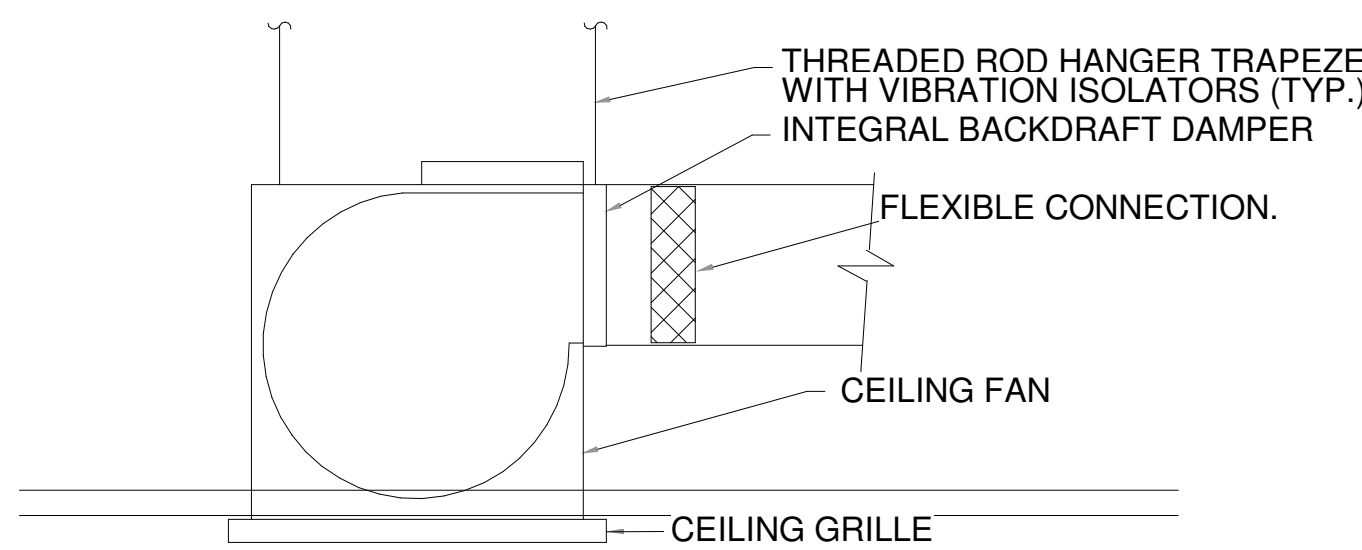
5 SUPPLY DUCTWORK TAKE-OFFS DETAIL
M401 NTS

2 EXHAUST VENT THROUGH ROOF DETAIL
M401 NTS



GENERAL NOTES:

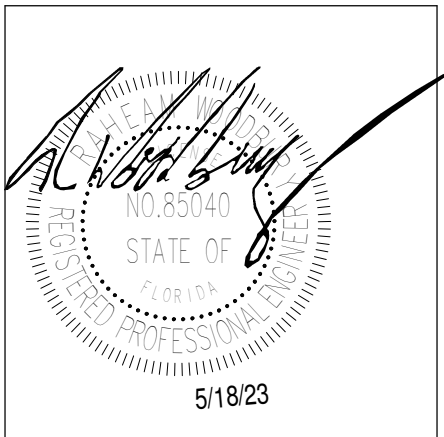
1. DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.
2. DRAIN LINE TO BE AT LEAST THE SAME SIZE AS THE NIPPLE ON THE DRAIN PAN. PIPING SHALL BE RIGID COPPER TYPE L OR TYPE M.



10 AIR HANDLING UNIT DRAIN TRAP DETAIL
M401 NTS

6 TYPICAL CEILING MOUNTED FAN INSTALLATION DETAIL
M401 NTS

3 HVAC EQUIPMENT ROOF CURB DETAIL
M401 NTS



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DETAILS - HVAC

SHEET NUMBER:

M401

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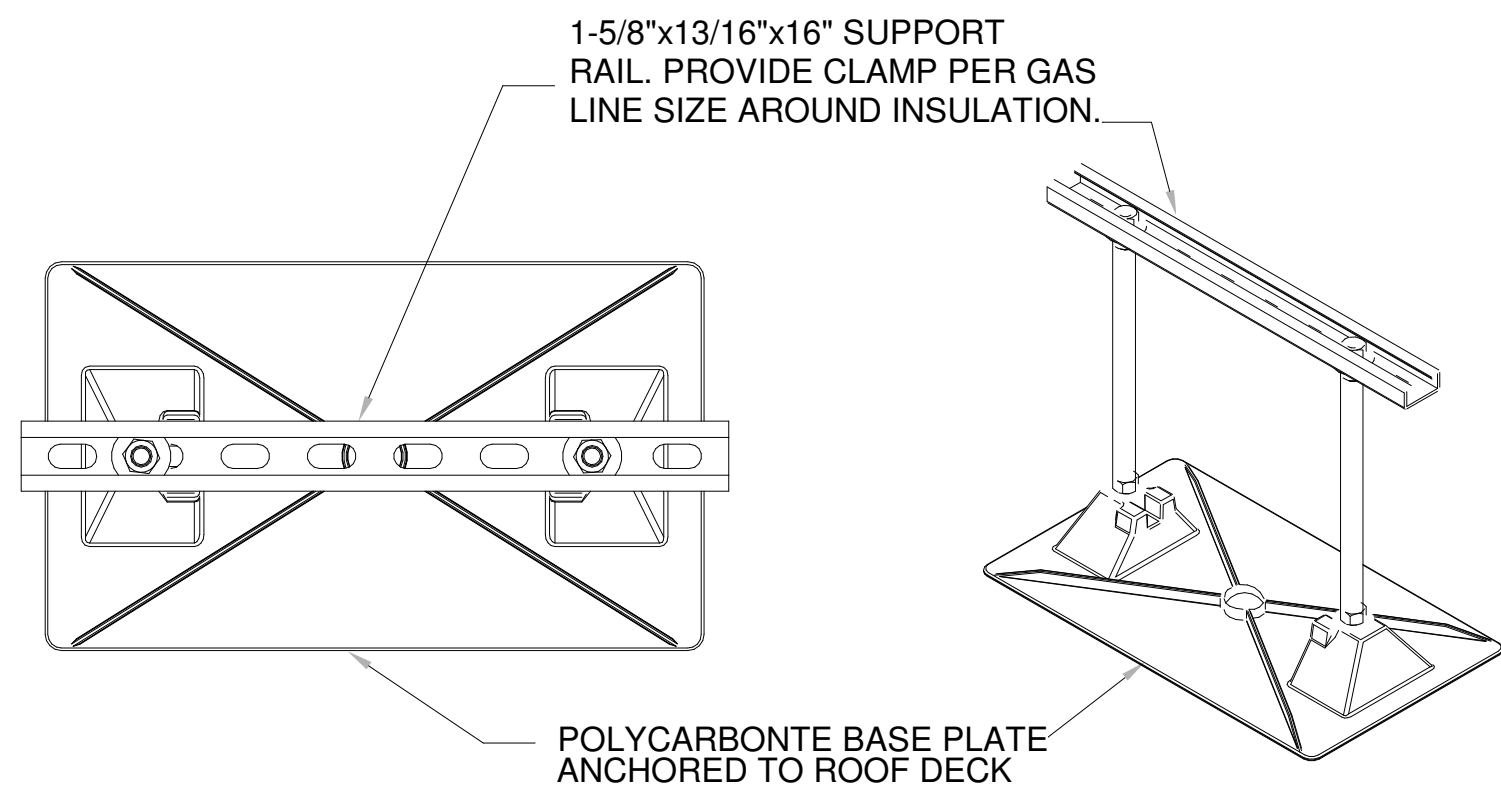
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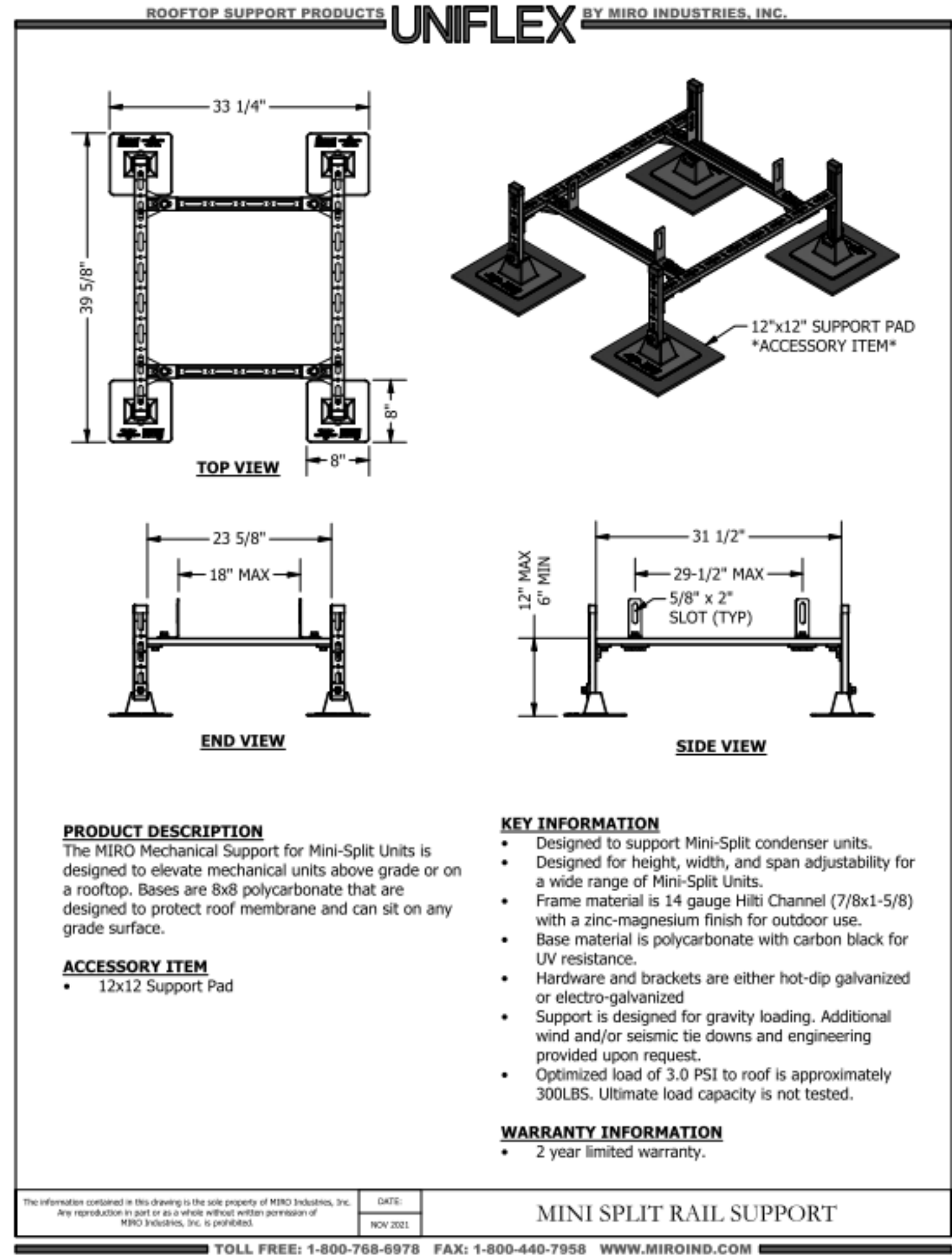
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PROVIDE SUPPORT EQUAL TO MIRO INDUSTRIES MODEL 16-BASE STRUT-12
SUPPORTS TO BE 5' MAX FROM EACH OTHER THROUGHOUT ENTIRE PIPE RUN.
APPLICABLE FOR CONDENSATE LINES AS WELL.

1 OUTDOOR GAS / CONDENSATE PIPING SUPPORT DETAIL

NTS



2 MINI SPLIT RAIL SUPPORT

NTS

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GENERAL NOTE: HVAC EQUIPMENT MODELS ARE BASIS OF DESIGN ONLY. SEE SPECIFICATIONS FOR EQUALS.

DOA UNIT SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	LOCATION	SERVICE	COOLING (CFM)	OUTDOOR AIR (CFM)	ESP (IN W.C.)	SENS. CAP. (MBH)	TOTAL CAP. (MBH)	COOLING EAT DB/WB (°F)	COOLING LAT DB/WB (°F)	COOLING AMBIENT TEMP (°F)	REHEAT (MBH)	REHEAT RH%	REHEAT LAT DB	FUEL TYPE	HEATING INPUT (MBH)	ACCESSORY HEATING (KW)	HEATING LAT DB (°F) RISE	HEATING AMBIENT TEMP °F	FILTER TYPE	REFRIG.	V/PH/HZ	SINGLE CIRCUIT ELECT. MCA	ELECT. MOCP	MINIMUM IEER	WEIGHT (LBS)	REMARKS
DOAS-1	CAPTIVEAIRE	CASRTU3-I.150-15-15T-DOAS	ROOF	RESTROOMS / FITNESS	1810	1810	0.64	56.9	186.0	84.6/81.5	55.4/52.2	95	129.6	49	70 °F	NATURAL GAS	113.2	N/A	44	47	MERV 8	R410a	208/3/60	57.1	60	12.2	2442	1, 2, 3, 4, 5, 6, 7, 8

REMARK

1. SMOKE DETECTORS TO BE LOCATED IN THE SUPPLY AND RETURN SECTION INSIDE THE UNIT.
2. PROVIDE WITH ELECTRICAL OUTLET (GFI) FOR SERVICING UNIT.
3. PROVIDE WITH FACTORY VFD FAN CONTROL. UNIT TO CONNECT TO VAVs, WITH FITNESS ROOM SET POINT FOR HEATING / COOLING.
4. PROVIDE WITH SINGLE POINT POWER CONNECTION.
5. COOLING ONLY UNIT WITH GAS HEATING.
6. ECOATING ON EVAPORATOR AND CONDENSER COILS.
7. WIND RATED CURB TO BE INCLUDED. CURB SELECTED TO BE ENGINEERED STAMPED. CDI MODEL C2-00XX-4158 OR EQUAL.
8. HUMIDITY SENSOR TO BE LOCATED IN FITNESS ROOM.

ROOF TOP UNIT SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	LOCATION	SERVICE	COOLING (CFM)	OUTDOOR AIR (CFM)	ESP (IN W.C.)	SENS. CAP. (MBH)	TOTAL CAP. (MBH)	COOLING EAT DB/WB (°F)	COOLING LAT DB/WB (°F)	AMBIENT TEMP (°F)	FUEL TYPE	HEATING INPUT MBH	V/PH/HZ	HEATING (KW)	HEATING LAT DB (°F)	HEATING AMBIENT TEMP °F	FILTER TYPE	REFRIG.	SINGLE CIRCUIT ELECT. MCA	ELECT. MOCP	MINIMUM EER	WEIGHT (LBS)	REMARKS
RTU-1	CARRIER	48FCFN28J2Q5-3V3Q0	GYM ROOF	GYM	7300	2400	1.0	195.13	283.74	81.4 / 67.8	57.3/55.8	95	NATURAL GAS	400.0	208/3/60	N/A	100.0	47	30%	R410a	141	175	9.8	2887	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
RTU-2	CARRIER	48FCFN28J2Q5-3V3Q0	GYM ROOF	GYM	7300	2400	1.0	195.13	283.74	81.4 / 67.8	57.3/55.8	95	NATURAL GAS	400.0	208/3/60	N/A	100.0	47	30%	R410a	141	175	9.8	2887	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
RTU-3	CARRIER	48FCEN12J3Q5-3W3T0	ROOF	LOBBY	4310	360	1.0	92.14	123.69	76.6/65.0	56.8/55.6	95	NATURAL GAS	224.0	208/3/60	N/A	98.9	47	30%	R410a	51	60	11.0	1080	1, 2, 3, 4, 5, 7, 8, 9, 10
RTU-4	CARRIER	48FCDB06J2Q5-3W3T0	ROOF	ARTS & CRAFTS	1300	200	1.0	29.58	45.31	78.0/65.8	56.9/54.4	95	NATURAL GAS	67.0	208/3/60	N/A	98.5	47	30%	R410a	26	30	14 SEER	708	1, 2, 3, 5, 7, 8, 9, 10
RTU-5	CARRIER	48FCEN12J3Q5-3W3T0	ROOF	STEM LAB	4075	550	1.0	92.95	123.66	77.8 / 65.6	56.7/55.7	95	NATURAL GAS	224.0	208/3/60	N/A	101.1	47	30%	R410a	51	60	11.0	1080	1, 2, 3, 4, 5, 7, 8, 9, 10
RTU-6	CARRIER	48FCDB06J2Q5-3W3T0	ROOF	MULTI-PURPOSE	2500	460	1.0	57.98	84.62	78.6/66.0	57.1/55.0	95	NATURAL GAS	125.0	208/3/60	N/A	98.1	47	30%	R410a	39	50	11.0	817	1, 2, 3, 4, 5, 7, 8, 9, 10
RTU-7	CARRIER	48FCEN12J3Q5-3W3T0	ROOF	MULTI-PURPOSE	3800	770	1.0	91.48	123.16	78.8/66.2	56.5/55.7	95	NATURAL GAS	224.0	208/3/60	N/A	104.1	47	30%	R410a	51	60	11.0	1080	1, 2, 3, 4, 5, 7, 8, 9, 10
RTU-8	CARRIER	48FCDB04J2Q5-3W3T0	ROOF	CONCESSION	1100	60	1.0	21.83	32.57	76.2/64.8	57.3/55.0	95	NATURAL GAS	67.0	208/3/60	N/A	105.5	47	30%	R410a	20	30	14 SEER	647	1, 2, 3, 5, 7, 8, 9, 10

REMARK

1. SMOKE DETECTORS (BY OTHERS) TO BE LOCATED IN THE SUPPLY AND RETURN SECTION BY THE UNIT.
2. PROVIDE WITH ELECTRICAL OUTLET (GFI) FOR SERVICING UNIT.
3. PROVIDE WITH SINGLE POINT POWER CONNECTION.
4. ECONOMIZER TO BE INCLUDED WITH HUMIDITY SENSORS.
5. COOLING ONLY UNIT WITH GAS HEATING.

REMARK

6. POWERED EXHAUST TO BE INCLUDED.
7. ECOATING ON EVAPORATOR AND CONDENSER COILS.
8. WIND RATED CURB TO BE INCLUDED. CURB SELECTED TO BE ENGINEERED STAMPED. CDI MODEL C2-00XX-4158 OR EQUAL.
9. ADAPTIVE DEHUMIDIFICATION SYSTEM OPTION TO BE SELECTED. HUMIDITY SENSOR TO BE LOCATED WITH THERMOSTAT.
10. WALL MOUNTED COMMUNICATING TOUCHSCREEN THERMOSTAT.

MECHANICAL EQUIPMENT

MARK	DESCRIPTION	BASIS OF DESIGN MANUFACTURER	MODEL	SERVICE	CFM	TOTAL COOLING CAPACITY MBH	TOTAL HEATING CAPACITY MBH	POWER	UNIT CIRCUITS AMPS	V/PH/HZ	REMARKS
AC-1	COOLING ONLY INDOOR UNIT HIGH WALL DUCTLESS SYSTEM	CARRIER	40MHHC12-A3	IT 127	191	12.0	---	---	0.1	208/1/60	1, 2, 3
AC-2	COOLING ONLY INDOOR UNIT HIGH WALL DUCTLESS SYSTEM	CARRIER	40MHHC12-A3	STORAGE 125	191	12.0	---	---	0.1	208/1/60	1, 2, 3
ACU-1	OUTDOOR UNIT SINGLE ZONE COOLING ONLY DUCTLESS SYSTEM	CARRIER	38MHRCC12AA3	AC-1	---	12.0	---	---	9.0	208/1/60	1
ACU-2	OUTDOOR UNIT SINGLE ZONE COOLING ONLY DUCTLESS SYSTEM	CARRIER	38MHRCC12AA3	AC-2	---	12.0	---	---	9.0	208/1/60	1

REMARK

1. INDOOR UNIT POWERED FROM OUTDOOR UNIT.
2. CONDENSATE PUMP TO BE INCLUDED.
3. INTERNAL THERMOSTAT TO BE USED. IF INTERNAL THERMOSTAT IS NOT AVAILABLE, WIRED THERMOSTAT TO BE USED.

VENTILATION EXHAUST FAN

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	SERVICE	MAX CFM	ESP	DRIVE	POWER	MOTOR HP	INTERCONNECTION	V/PH/HZ	FAN RPM	WEIGHT (LB)	REMARKS
EF-1	COOK	GC-642	RESTROOM	420	0.2	DIRECT	141 W	---	LIGHT SWITCH	115/1/60	1191	27	4
EF-2	COOK	GC-642	RESTROOM	420	0.2	DIRECT	141 W	---	LIGHT SWITCH	115/1/60	1191	27	4
EF-3	COOK	GC-186	RESTROOM	210	0.2	DIRECT	88 W	---	LIGHT SWITCH	115/1/60	1051	15	4
EF-4	COOK	GC-186	RESTROOM	210	0.2	DIRECT	88 W	---	LIGHT SWITCH	115/1/60	1051	15	4
EF-5	COOK	90C15DH	ARTS & CRAFTS	250	0.2	DIRECT	59 W	1/8	LIGHT SWITCH	115/1/60	1550	23	---
EF-6	COOK	90C15DH	FITNESS	450	0.2	DIRECT	90 W	1/8	LIGHT SWITCH	115/1/60	1550	23	4
EF-7	COOK	GC-128	JANITOR	50	0.2	DIRECT	24 W	---	CONTINUOUS	115/1/60	632	13	---
EF-8	COOK	GC-128	JANITOR	50	0.2	DIRECT	24 W	---	CONTINUOUS	115/1/60	632	13	---
EF-9	COOK	90C15DH	TEACHING KITCHEN	275	0.2	DIRECT	63 W	1/8	CONNECT TO RTU-5	115/1/60	1004	23	5
EF-10	COOK	GC-148	ELECTRICAL ROOM	100	0.2	DIRECT	37 W	---	THERMOSTAT	115/1/60	855	14	6
KEF-1	ACCUREX	XCUBE-160-10	CONCESSION	1900	0.95	DIRECT	0.55 HP	1	HOOD CONTROL PANEL	115/1/60	1725	174	1, 2, 3
RV-1	COOK	20 PR	RESTROOM	1220	0.05	---	---	---	---	---	---	30	---
RV-2	COOK	12 PR	RESTROOM	445	0.05	---	---	---	---	---	---	14	---

REMARK

1. UL 762 LISTED
2. UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE KITCHEN HOOD EXHAUST FAN (KEF-1) SHALL START/CONTINUE TO RUN.
3. PROVIDE WITH ROOF CURB, VENTED EXTENSION, GREASE TRAP, AND HEAT BAFFLE.
4. INTERLOCK WITH LIGHT SWITCH AND VAV BOX SERVING THE SPACE. FAN TO TURN ON TO EITHER OR.
5. INTERLOCK WITH LIGHT SWITCH AND RTU SERVING THE SPACE. FAN TO TURN ON TO EITHER OR.
6. LINE VOLTAGE THERMOSTAT TO BE SET AT 85 DEGREES.

VAV CONTROL UNIT SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	SERVICE	TYPE	MIN CFM	MAX CFM	INLET DIA. (INCHES)	REHEAT (MBH)	CONTROL	MAX KW	MCA	MOCP	V/PH/HZ	REMARKS
VAV-1	TITUS	DESV	RESTROOM	6E	300	470 CFM	6	---	THERMOSTAT	3.0	22	50	208/3/60	SCR CAPACITY CONTROL WITH MODULATING HEAT.
VAV-2	TITUS	DESV	FITNESS	6E	220	400 CFM	6	---	THERMOSTAT	3.0	22	50	208/3/60	SCR CAPACITY CONTROL WITH MODULATING HEAT.
VAV-3	TITUS	DESV	RESTROOM	09	480	940 CFM	9	---	THERMOSTAT	6.0	45	50	208/3/60	SCR CAPACITY CONTROL WITH MODULATING HEAT.

MAKE-UP AIR UNIT SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	LOCATION	SERVICE	SUPPLY CFM	ESP	MOTOR (HP)	HEATING LAT DB	HEATING LAT DB	HEATING TYPE	HEATING INPUT MBH	FILTER TYPE	MCA	MOCP	V/PH/HZ	WEIGHT	REMARKS
MUA-1	ACCUREX	XKSF8-109-H15-01	ROOF	KITCHEN HOOD	1530 CFM	0.42	1/2	---	---	---	---	ALUMINUM	12.3	20	115/1/60	208	1, 2

REMARK

1. PROVIDE WITH WEATHERHOOD, BOTTOM DISCHARGE, INLET DAMPER, INSULATED ROOF CURB, AND CONTROL CENTER.
2. UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE MAKE-UP AIR UNIT SHALL SHUT-DOWN.

KITCHEN HOOD

MARK	BASIS OF DESIGN MANUFACTURER	EXHAUST CFM	ESP	OVERALL DIMENSION LENGTH	WIDTH	HEIGHT	REMARKS
H-1	ACCUREX	1900	0.95	108"	48"	2' - 0"	1, 2, 3, 4, 5, 6

REMARK

1. BAFFLE FILTER, WALL TYPE WITH 5 INCANDESCENT/CFL MARINE LIGHTS.
2. 430 STAINLESS STEEL CONSTRUCTION W/ EXTERNAL SUPPLY PLENUM.
3. INTEGRAL TEMPERATURE SENSOR TO START THE EXHAUST FAN AND MAKE-UP AIR FAN.
4. PROVIDE WITH FUEL AND ELECTRICAL SHUT-OFF DEVICES; AND (1) MANUAL PULL-STATION.
5. PROVIDE REMOTE UTILITY CABINET FOR ANSUL FIRE SUPPRESSION SYSTEM.
6. PROVIDE ANSUL FIRE SUPPRESSION SYSTEM BASED ON THE UNDER HOOD EQUIPMENT.



CCR ARCHITECTURE &
INTERIORS

MARTIN LUTHER KING JR. RECREATION CENTER

705 14TH COURT EAST
PANAMA CITY, FL 32401

JOB NUMBER:
21109

DATE:
05/18/23

PRINTED / REVISIONS
DESCRIPTION DATE

SHEET TITLE:
SCHEDULE - HVAC

SHEET NUMBER:

M501



MARTIN LUTHER KING JR. RECREATION CENTER
705 14TH COURT EAST
PANAMA CITY, FL 32401

PRINTED / REVISIONS	
# DESCRIPTION	DATE

SHEET NUMBER:

M502

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
129 Gym	1	16008.0	250.0	13902.3	0.00	0.30	0.0	0.0	4802.46
Totals (incl. Space Multipliers)				13902.3					4802.46

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM/person)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
100 Vestibule	1	160.0	0.0	503.8	5.00	0.06	0.0	0.0	9.6
101 Reception	1	565.0	4.0	731.2	5.00	0.06	0.0	0.0	53.9
102 Office	1	101.0	2.0	396.2	5.00	0.06	0.0	0.0	16.1
103 First Aid	1	3.0	100.0	278.4	5.00	0.06	0.0	0.0	10.0
104 Lounge	1	1344.0	20.0	2412.6	7.50	0.06	0.0	0.0	230.5
122 Corridor	1	525.0	0.0	193.8	0.00	0.06	0.0	0.0	31.5
136 Storage	1	65.9	0.0	28.7	5.00	0.06	0.0	0.0	4.0
Totals (incl. Space Multipliers)				4544.7					361.7

Zone Name / Space Name	Floor Area (sq ft)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1	Mult.							
117 Arts / Craft	1	384.0	10.0	381.7	5.00	0.06	0.0	73.0
116 Study Reading Room	1	274.0	8.0	464.3	5.00	0.06	0.0	56.4
123 Adult Reading Room	1	234.0	7.0	428.5	5.00	0.06	0.0	49.0
124 Storage	1	174.0	0.0	64.2	5.00	0.06	0.0	10.4
Totals (incl. Space Multipliers)				1338.7				189.0

Zone Name / Space Name	Mult.	Floor Area (sq ft)	Maximum Occupants	Maximum Supply (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/sq ft)	Required (CFM)	Required (% of supply)	Uncovered Outdoor (CFM)
Zone 1									
109 Good Studio	1	158.0	2.0	453.5	5.00	0.06	0.0	0.0	19.5
110 Storage	1	140.0	0	51.7	5.00	0.06	0.0	0.0	8.4
111 Teaching Kitchen	1	191.0	5.0	1103.5	7.50	0.12	0.0	0.0	60.0
115 Stem Lab	1	992.0	25.0	1964.4	10.00	0.18	0.0	0.0	428.6
116 Sound Booth	1	83.1	2.0	190.7	5.00	0.06	0.0	0.0	15.0
128 Engineering Booth	1	130.5	2.0	394.1	5.00	0.06	0.0	0.0	23.8
Totals (incl. Space Multipliers)				4148.0					540.7

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
108 Multi-Purpose Room-a	1	858.0	54.0	2470.3	7.50	0.06	0.0	0.0	456.5
Totals (Multi-Purpose Multipliers)				2470.3					456.5

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
108 Multi-Purpose Room-b	1	1579.0	90.0	3836.6	7.50	0.06	0.0	0.0	769.7
Totals (incl. Space Multipliers)				3836.6					769.7

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/R²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
119 Concession	1	396.0	4.0	879.4	5.00	0.06	0.0	0.0	43.8
120 Storage	1	93.1	0.0	58.6	5.00	0.06	0.0	0.0	5.6
132 Laundry	1	87.8	0.0	158.7	5.00	0.12	0.0	0.0	10.5
Totals (incl. Space Multipliers)				1096.7					59.9

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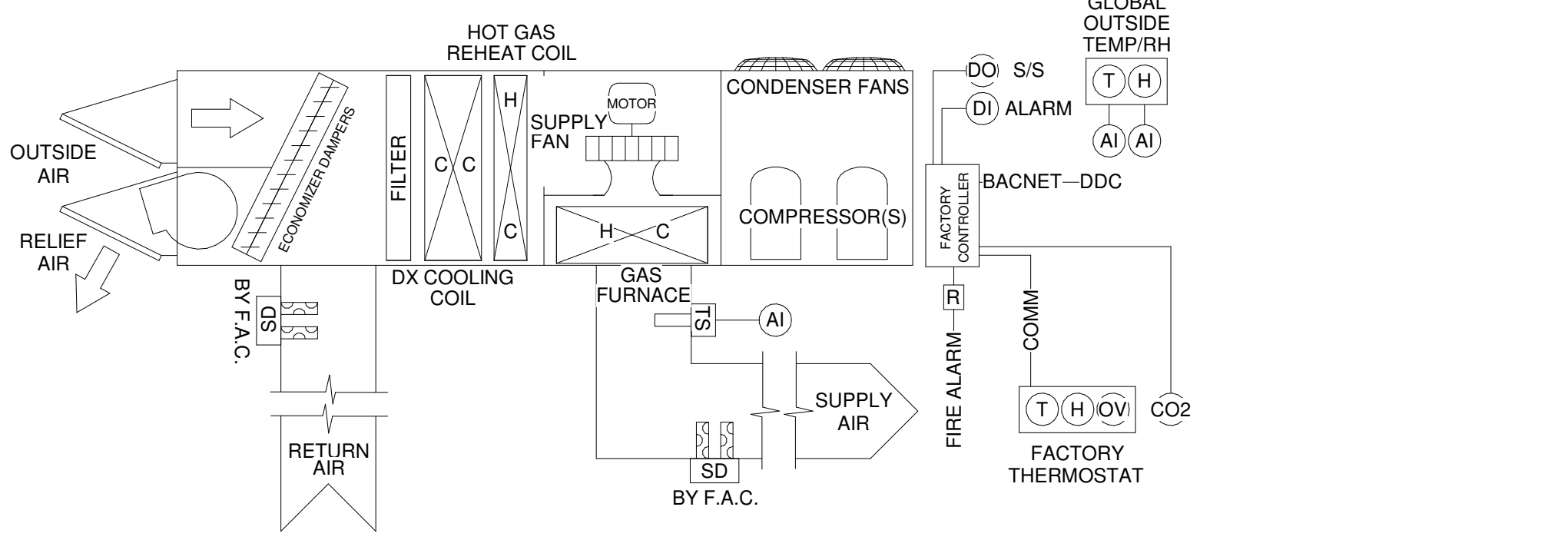
GENERAL DDC SYSTEM NOTES AND REQUIREMENTS:

- DDC SYSTEM SHALL BE PROVIDED BY SIEMENS (DDC CONTRACTOR) IN ACCORDANCE WITH ALL NOTES AND REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS. THE BUILDING SHALL HAVE A BUILDING DDC CONTROLLER EQUAL TO A DESIGO PXC CONTROLLER. SPECIFIC SERIES AS DETERMINED BY THE DDC CONTRACTOR TO ACCOMPLISH THE DESIGN INTENT.
- ALL CONTROL WIRING SHALL BE INSTALLED IN CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO THE STRUCTURE. ALL CONDUIT AND WIRING SHALL COMPLY WITH THE APPLICABLE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS.
- THE DDC CONTRACTOR SHALL BE CONTRACTED DIRECTLY UNDER THE GENERAL CONTRACTOR AS A FIRST-TIER SUBCONTRACTOR PER THE ALLOWANCE AS DEFINED IN THE PROJECT MANUAL. THE DDC CONTRACTOR WILL COORDINATE ALL SYSTEM REQUIREMENTS WITH THE MECHANICAL, ELECTRICAL, AND OTHER SUBCONTRACTORS.
- BUILDING DDC SYSTEM SHALL BE INTEGRATED OVER THE OWNER'S WIDE AREA NETWORK TO THE EXISTING SIEMENS DESIGO ENTERPRISE SOFTWARE LOCATED AT THE OWNER'S FACILITY.
- ALL EQUIPMENT WITH FACTORY CONTROLLERS SHALL BE INTEGRATED TO THE SIEMENS BUILDING CONTROLLER VIA BACNET-MSTP COMMUNICATION PROTOCOL.
 - ROOFTOP HVAC UNITS: RTU-1,2,3,4,5,6,7,8
 - ROOFTOP OUTSIDE AIR UNIT: DOAS-1
- THE DDC CONTRACTOR SHALL INSTALL, WIRE, AND CONFIGURE ALL FIELD-INSTALLED ACCESSORIES WHICH ARE PROVIDED WITH THE HVAC SYSTEMS. THE DDC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION BETWEEN THE MECHANICAL CONTRACTOR FOR THE ACTUAL EQUIPMENT TO BE FURNISHED AND THEIR DDC SYSTEM FOR A COMPLETE SYSTEM WHICH SHALL ACCOMPLISH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
- THE DDC CONTRACTOR SHALL COORDINATE WITH THE FACTORY EQUIPMENT START-UP FOR CONFIGURATION OF COMMUNICATION AND THE SETTING OF ALL SYSTEM CONFIGURATION OPTIONS AND VALUES TO ACCOMPLISH THE SEQUENCE OF OPERATION AS DOCUMENTED.
- THE DDC SYSTEM SHALL CONTAIN A SIMPLIFIED GRAPHICAL USER INTERFACE FOR THE BUILDING WHICH IS ACCESSIBLE VIA HTTP BROWSER FROM ANY CONNECTED NETWORK. THIS SIMPLIFIED USER INTERFACE IS INTENDED FOR BUILDING USER MANAGEMENT AND SHALL CONTAIN THE FOLLOWING MINIMUM ELEMENTS:
 - GRAPHICAL REPRESENTATION OF BUILDING FLOORPLAN – VIEW
 - GRAPHICAL REPRESENTATION OF INDIVIDUAL HVAC SYSTEMS
 - BASIC OPERATING STATUS AND DATA – VIEW
 - SPACE TEMPERATURE OPERATING SETPOINTS – VIEW / EDIT
 - BUILDING OCCUPANCY SCHEDULES – VIEW / EDIT / OVERRIDE
- THE DDC SYSTEM SHALL ALSO CONTAIN AN ADVANCED USER INTERFACE INTENDED FOR FACILITY MAINTENANCE TECHNICIANS. THIS ADVANCED USER INTERFACE SHALL CONTAIN THE FOLLOWING MINIMUM ELEMENTS:
 - GRAPHICAL REPRESENTATION OF BUILDING FLOORPLAN – VIEW / EDIT
 - GRAPHICAL REPRESENTATION OF INDIVIDUAL HVAC SYSTEMS
 - BASIC OPERATING STATUS AND DATA – VIEW / EDIT
 - SPACE TEMPERATURE OPERATING SETPOINTS – VIEW / EDIT
 - ADVANCED OPERATING DATA – VIEW / EDIT
 - BUILDING OCCUPANCY SCHEDULES – VIEW / EDIT / OVERRIDE
 - EQUIPMENT OPERATION SUMMARY PAGE
 - SPACE TEMPERATURE OPERATING SETPOINTS – VIEW / EDIT
- THE DDC CONTRACTOR SHALL CONFIGURE THE DESIGO SYSTEM TO PROVIDE AUTOMATED DAILY TREND REPORTING DELIVERED VIA EMAIL ATTACHMENT TO THE EMAIL ADDRESS IDENTIFIED BY THE COMMISSIONING PROVIDER. ALSO SEE PROJECT MANUAL SPECIFICATION SECTIONS 019113 AND 230800 FOR FURTHER RESPONSIBILITIES FOR THE DDC CONTRACTOR FOR COMMISSIONING.
- THE DDC SYSTEM SHALL HAVE THE FOLLOWING SCHEDULE GROUPINGS FOR THE BUILDING WHICH ARE CONFIGURABLE AS 7-DAY SCHEDULES WITH EXCEPTION SCHEDULING CAPABILITIES:
 - MASTER – ALL EQUIPMENT
 - GYMNASIUM – RTU-1,2
 - COMMUNITY CENTER – RTU-3,4,5,6,7,8

DDC CONTRACTOR TO COORDINATE WITH OWNER'S REPRESENTATIVES TO SET THE INITIAL OCCUPANCY SCHEDULES PRIOR TO OWNER TRAINING. AT OWNER TRAINING THE DDC CONTRACTOR SHALL ILLUSTRATE HOW TO EDIT SCHEDULES AND HOW TO CREATE EXCEPTION EVENTS IN THE DDC SCHEDULING INTERFACE.

- FINAL SEQUENCES OF OPERATION MAY DIFFER FROM THAT SHOWN BASED ON ACTUAL EQUIPMENT TO BE FURNISHED AND AFTER CONDITIONS DISCOVERED DURING TAB AND COMMISSIONING. IF ANY CHANGES ARE MADE TO THE SEQUENCES DURING PRE-CONSTRUCTION OR CONSTRUCTION THE CHANGES SHALL BE DOCUMENTED IN THE DDC SYSTEM PROJECT-SPECIFIC SHOP DRAWINGS / AS-BUILTS. A HARD COPY OF THE FINAL DDC SYSTEM DRAWINGS / AS-BUILTS SHALL BE LEFT IN THE DDC PANEL ENCLOSURE ON THE PROJECT SITE.
- DDC CONTRACTOR SHALL PROVIDE EIGHT TOTAL HOURS OF TRAINING ON THE CONTROL SYSTEMS OF THE NEW BUILDING IN TWO SEPARATE FOUR HOUR COURSES WHICH SHALL BE SCHEDULED IN COORDINATION WITH THE OWNER'S FACILITIES AND MAINTENANCE PERSONNEL.

RTU CONTROL DIAGRAM



PACKAGED ROOFTOP UNIT CONTROL DIAGRAM

DX COOLING WITH GAS FURNACE AND ECONOMIZER

NO SCALE

SYSTEM POINT SUMMARY NOTES:

DO	DIGITAL OUTPUT	AV	ANALOG VALUE
DI	DIGITAL INPUT	DV	DIGITAL VALUE
AO	ANALOG OUTPUT	DDC	PHYSICAL DDC POINT
AI	ANALOG INPUT	COMM	COMMUNICATED POINT FROM RTU

REPRESENTATIVE POINTS LIST, FINAL POINTS LIST TO BE DETERMINED DURING EQUIPMENT AND DDC SYSTEM SUBMITTAL REVIEW PROCESS.

DDC SYSTEM POINT SUMMARY						
POINT NAME	TYPE	DDC / COMM	UNITS	DEFAULT		
START/STOP	DO	DDC	ON/OFF	ON		
ALARM	DI	DDC	ON/OFF	OFF		
SUPPLY AIR TEMP	AI	DDC	DEG F			
RETURN AIR TEMP	AV	COMM	DEG F	-		
RETURN AIR HUMIDITY	AV	COMM	%RH	-		
SUPPLY AIR TEMP	AV	COMM	DEG F	-		
SPACE TEMP	AI	COMM	DEG F	-		
SPACE HUMIDITY	AI	COMM	%RH	-		
SPACE CO2	AI	COMM	PPM	-		
COOL COOL SPT	AV	COMM	DEG F	72		
COOL HEAT SPT	AV	COMM	DEG F	70		
COOL HUMIDITY SPT	AV	COMM	%RH	60		
UNCOOL HUM SPT	AV	COMM	%RH	65		
UNCOOL COOL SPT	AV	COMM	DEG F	65		
UNCOOL HEAT SPT	AV	COMM	DEG F	55		
OVERIDE	DV	COMM	ON/OFF	OFF		
MAX SPT	AV	COMM	DEG F	75		
MIN SPT	AV	COMM	DEG F	64		
MAX HEAT SPT	AV	COMM	DEG F	70		
MIN COOL SPT	AV	COMM	DEG F	72		
REHEAT DEMAND	AV	COMM	%			
ECON ENABLE	DV	DDC	ON/OFF	OFF		
OA ENTHALPHY	AV	DDC	BTU/LB	-		
OA TEMP	AI	DDC	DEG F	-		
OA HUMIDITY	AI	DDC	%RH	-		
SYSTEM MODE	MV	COMM				
ECONOMIZER ORR	AV	COMM	%OPEN	0%		
SUPPLY FAN STATUS	DV	COMM	ON/OFF			
RELIEF FAN STATUS	DV	COMM	ON/OFF	-		
COOLING DEMAND	AV	COMM	%			
HEATING DEMAND	AV	COMM	%			
COMPRESSOR STATUS	DV	COMM	ON/OFF	-		
CONDENSATE ALARM	DV	COMM	ON/OFF	-		
DIRTY FILTER ALARM	DV	COMM	ON/OFF	-		
ALARM RESET	DV	COMM	ON/OFF	-		

DEHUMIDIFICATION MODE:

THE FACTORY CONTROLLER SHALL UTILIZE THE SPACE HUMIDITY VALUE FROM THE COMMUNICATING THERMOSTAT TO ENABLE AND DISABLE DEHUMIDIFICATION MODE. THE UNOCCUPIED DEHUMIDIFICATION MODE SETPOINT SHALL BE 60%RH (ADJ.) AND THE UNOCCUPIED DEHUMIDIFICATION SETPOINT SHALL BE 65%RH (ADJ.). DEHUMIDIFICATION MODE SHALL BE DISABLED WHEN THE SPACE HUMIDITY DROPS 5%RH BELOW THE RESPECTIVE SETPOINT. THE SPECIFIC SYSTEM RESPONSE TO A CALL FOR DEHUMIDIFICATION WILL VARY DEPENDING UPON THE CURRENT OPERATING MODE OF THE SYSTEM. IF DEHUMIDIFICATION IS CALLED FOR WHEN THERE IS NO COOLING DEMAND THEN THE SYSTEM WILL OPERATE IN HOT GAS REHEAT DEHUMIDIFICATION MODE. IF DEHUMIDIFICATION IS CALLED FOR DURING COOLING MODE OR COOLING DURING DEHUMIDIFICATION THEN THE SYSTEM WILL OPERATE IN SUBCOOLING DEHUMIDIFICATION MODE.

HEATING MODE: 2-STAGE FURNACE

THE FACTORY CONTROLLER SHALL UTILIZE THE SPACE TEMPERATURE VALUE FROM THE COMMUNICATING THERMOSTAT AND THE CURRENT EFFECTIVE HEATING SETPOINT AS INPUTS TO A PID DEMAND LOOP TO CONTROL THE TWO STAGES OF HEAT PROVIDED BY THE GAS FURNACE. IF HEATING IS REQUIRED THEN THE DEMAND LOOP SHALL ENABLE AND DISABLE STAGES OF HEAT IN ORDER TO SATISFY THE HEATING DEMAND. THE FACTORY CONTROLLER SHALL ALSO UTILIZE THE FACTORY MOUNTED SUPPLY AIR TEMPERATURE TO LIMIT FURNACE OUTPUT BASED ON THE MAXIMUM SUPPLY AIR TEMPERATURE SETPOINT. THE SUPPLY AIR FAN SPEED DURING HEATING MODE OF OPERATION SHALL BE VARIABLE AND SHALL INCREASE SPEED AS NEEDED IF THE SUPPLY AIR TEMPERATURE APPROACHES THE MAXIMUM SETPOINT. THE FAN SPEED SHALL NEVER BE GREATER THAN THAT DETERMINED BY TEST, ADJUST, BALANCE TO PROVIDE THE SCHEDULED MAXIMUM AIRFLOW.

ECONOMIZER MODE: OUTDOOR ENTHALPHY-BASED GLOBAL ENABLE BY DDC

THE SYSTEM SHALL INCLUDE A FACTORY INSTALLED ECONOMIZER PACKAGE INCLUDING A MODULATING OUTSIDE AIR DAMPER AND A POWERED EXHAUST FAN. ONCE THE ECONOMIZER MODE IS ALLOWED TO BE UTILIZED BY THE DDC SYSTEM THEN THE FACTORY SYSTEM CONTROLLER SHALL BE IN COMPLETE CONTROL OF THE ASSOCIATED SYSTEM DAMPERS AND FANS. THE ECONOMIZER MODE OF OPERATION FOR THE ENTIRE BUILDING SHALL BE DETERMINED GLOBALLY BY THE DDC SYSTEM. THE DDC SYSTEM SHALL PROVIDE A HIGH-ACCURACY OUTSIDE AIR TEMPERATURE / HUMIDITY SENSOR MOUNTED ON THE NORTH EXTERIOR OF THE BUILDING (COORDINATE EXACT LOCATION DURING SUBMITTALS) TO CALCULATE THE CURRENT OUTSIDE AIR ENTHALPHY. THE DDC SYSTEM SHALL ENABLE THE GLOBAL ECONOMIZER POINT WHEN THE OUTSIDE AIR ENTHALPHY IS LESS THAN 18.7 BTU/LB (55F / 55%RH, ADJ.) AND SHALL DISABLE IT WHEN THE OUTSIDE AIR ENTHALPHY IS GREATER THAN 2 BTU/LB (ADJ.) ABOVE THE ENABLE SETPOINT. THE STATE OF THE GLOBAL ECONOMIZER POINT SHALL BE COMMUNICATED TO THE FACTORY SYSTEM CONTROLLERS VIA BACNET. THERE SHALL BE A MINIMUM ENABLED TIME OF 15 MIN (ADJ.) TO PREVENT SHORT-CYCLING OF THE ECONOMIZER ENABLE POINT. ECONOMIZER SHALL BE LOCKED OUT IF THE OUTSIDE AIR TEMPERATURE IS ABOVE THE HIGH ECON LOCKOUT SETPOINT OF 75F (ADJ.). IF THE GLOBAL ECONOMIZER POINT IS ENABLED THEN THE INDIVIDUAL FACTORY SYSTEM CONTROLLERS SHALL CALCULATE AN ECONOMIZER / OUTSIDE AIR DAMPER POSITION OR TARGET SUPPLY AIR TEMPERATURE BASED ON THE CURRENT SPACE TEMPERATURE, EFFECTIVE COOLING SETPOINT, AND OPERATING SUPPLY FAN SPEED. WHILE ENABLED THE ECONOMIZER CAPACITY SHALL MODULATE TO CONTROL SPACE TEMPERATURE TO THE EFFECTIVE COOLING SETPOINT. DAMPER POSITIONS SHALL NOT CLOSE FURTHER THAN THE MINIMUM OUTSIDE AIR DAMPER POSITION DETERMINED BY TEST, ADJUST, BALANCE. THE SUPPLY AIR TEMPERATURE DURING ECONOMIZER OPERATION SHALL NOT BE ALLOWED TO DROP BELOW THE MINIMUM SUPPLY AIR TEMPERATURE SETPOINT.

SAFETIES / ALARMS:

STARTING OF THE SYSTEM SHALL BE SUBJECT TO THE FIRE ALARM RELAY AND ALL OTHER SAFETIES AND OVERLOADS. IF THE BUILDING FIRE ALARM ENTERS ALARM MODE (OR EITHER OF THE SUPPLY OR RETURN SMOKE DETECTOR IS TRIPPED) THEN A FIRE ALARM RELAY SHALL INTERRUPT THE SAFETY CIRCUIT OF THE SYSTEM AND IT SHALL BE SHUT DOWN AND ALL DAMPERS SHALL CLOSE. IN ADDITION TO FACTORY SYSTEM ALARMS COMMUNICATED TO THE DDC SYSTEM VIA BACNET THERE SHALL ALSO BE A HARD-WIRED GENERAL SYSTEM ALARM INSTALLED FROM THE SYSTEM FACTORY CONTROLLER TO THE DDC SYSTEM.

RTU-1,2 (GYMNASIUM) 6.7 (MULTIPURPOSE RM) SEQUENCE OF OPERATIONS

1. GENERAL SYSTEM DESCRIPTION:

SINGLE-ZONE CONSTANT AIR VOLUME PACKAGED ROOFTOP SYSTEM WITH 2-STAGE DX COOLING, 2-STAGE GAS FURNACE, ECONOMIZER, DEMAND VENTILATION, ADAPTIVE DEHUMIDIFICATION

2. SYSTEM CONTROLS:

STANDARD SEQUENCE.

3. OCCUPANCY:

STANDARD SEQUENCE.

4. SPACE TEMPERATURE SETPOINT:

STANDARD SEQUENCE.

5. FAN OPERATION:

STANDARD SEQUENCE.

6. COOLING MODE:

STANDARD SEQUENCE.

7. DEHUMIDIFICATION MODE:

STANDARD SEQUENCE.

8. HEATING MODE:

STANDARD SEQUENCE.

9. OUTSIDE AIR CONTROL: DEMAND VENTILATION

THE DDC CONTRACTOR SHALL PROVIDE A WALL-MOUNTED CO2 (CARBON DIOXIDE) SENSOR IN THE SPACE WHERE INDICATED ON THE DRAWINGS TO PERFORM DEMAND VENTILATION CONTROL. THE CO2 SENSOR SHALL PROVIDE AN ANALOG INPUT TO THE FACTORY SYSTEM CONTROLLER. DURING OCCUPIED PERIODS THE FACTORY SYSTEM CONTROLLER SHALL BE CONFIGURED TO OPEN THE OUTSIDE AIR DAMPER TO THE POSITION ALLOWING FOR MINIMUM SCHEDULED OUTSIDE AIR WHEN THE SPACE CO2 IS 400PPM OR LESS AND SHALL OPEN THE OUTSIDE AIR DAMPER TO THE POSITION ALLOWING FOR MAXIMUM SCHEDULED OUTSIDE AIR WHEN THE SPACE CO2 IS 1100PPM OR ABOVE. THE MINIMUM AND MAXIMUM DAMPER POSITION SETPOINTS SHALL BE DETERMINED DURING TEST, ADJUST, BALANCE ACTIVITIES AND SET IN THE SYSTEM CONTROLLER. OUTSIDE AIR DAMPER POSITION SHALL BE LINEAR BETWEEN THE MINIMUM AND MAXIMUM SETPOINTS.

RTU-1,2: MAX OA: 2,400 CFM MIN OA: 525 CFM

RTU-6: MAX OA: 460 CFM MIN OA: 55 CFM

RTU-7: MAX OA: 770 CFM MIN OA: 95 CFM

DURING UNOCCUPIED OPERATION THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED.

10. ECONOMIZER MODE:

STANDARD SEQUENCE.

11. SAFETIES / ALARMS:

STANDARD SEQUENCE.

RTU-3,4,5 SEQUENCE OF OPERATIONS

1. GENERAL SYSTEM DESCRIPTION:

SINGLE-ZONE CONSTANT AIR VOLUME PACKAGED ROOFTOP SYSTEM WITH TWO-STAGE DX COOLING (RTU-4 IS SINGLE-STAGE COOLING) WITH 2-STAGE GAS FURNACE, ECONOMIZER, ADAPTIVE DEHUMIDIFICATION

2. SYSTEM CONTROLS:

STANDARD SEQUENCE.

3. OCCUPANCY:

STANDARD SEQUENCE.

4. SPACE TEMPERATURE SETPOINT:

STANDARD SEQUENCE.

5. FAN OPERATION:

STANDARD SEQUENCE.

6. COOLING MODE:

STANDARD SEQUENCE.

7. DEHUMIDIFICATION MODE:

STANDARD SEQUENCE.

8. HEATING MODE:

STANDARD SEQUENCE.

9. OUTSIDE AIR CONTROL: FIXED MINIMUM VENTILATION

DURING OCCUPIED PERIODS THE FACTORY SYSTEM CONTROLLER SHALL BE CONFIGURED TO OPEN THE OUTSIDE AIR DAMPER TO THE POSITION ALLOWING FOR MINIMUM SCHEDULED OUTSIDE AIR THE MINIMUM DAMPER POSITION SETPOINT SHALL BE DETERMINED DURING TEST, ADJUST, BALANCE ACTIVITIES AND SET IN THE SYSTEM CONTROLLER. DURING UNOCCUPIED OPERATION THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED.

10. ECONOMIZER MODE:

STANDARD SEQUENCE.

11. SAFETIES / ALARMS:

STANDARD SEQUENCE.

RTU-8 (CONCESSION) SEQUENCE OF OPERATIONS

1. FACTORY SYSTEM CONTROLS:

SINGLE-ZONE CONSTANT AIR VOLUME PACKAGED ROOFTOP SYSTEM WITH SINGLE-STAGE DX COOLING WITH 2-STAGE GAS FURNACE, ECONOMIZER, ADAPTIVE DEHUMIDIFICATION

2. SYSTEM CONTROLS:

STANDARD SEQUENCE.

3. OCCUPANCY:

STANDARD SEQUENCE.

4. SPACE TEMPERATURE SETPOINT:

STANDARD SEQUENCE.

5. FAN OPERATION:

STANDARD SEQUENCE.

6. COOLING MODE:

STANDARD SEQUENCE.

7. DEHUMIDIFICATION MODE:

STANDARD SEQUENCE.

8. HEATING MODE:

STANDARD SEQUENCE.

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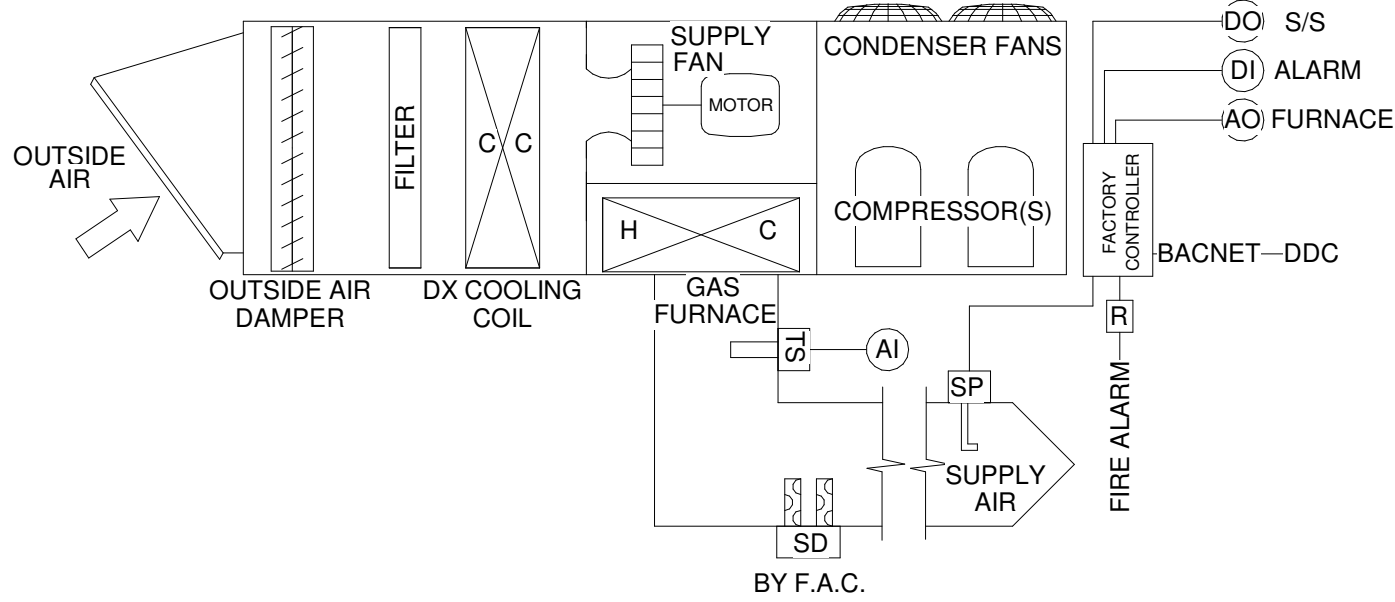
SHEET TITLE:
CONTROLS - HVAC

SHEET NUMBER:

M701

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9. **OUTSIDE AIR CONTROL:** FIXED MINIMUM VENTILATION / EXHAUST HOOD INTERLOCK
DDC CONTRACTOR SHALL SUPPLY MODULATING CONTROL DAMPER IN THE RETURN DUCT TO ROOM 124 (CONCESSION) – SEE LOCATION AND NOTES ON SHEET M701. RETURN GRILLE TO THIS ROOM SHALL BE BALANCED FOR 865 CFM BY MANUAL VOLUME DAMPER WITH THE CONTROL DAMPER BEING 100% OPEN. DDC CONTRACTOR AND TEST, ADJUST, BALANCE CONTRACTOR SHALL COORDINATE TO DETERMINE THE CONTROL DAMPER %OPEN SETTING CORRESPONDING TO RETURN FLOW OF 615 CFM.
DURING OCCUPIED PERIODS THE FACTORY SYSTEM CONTROLLER SHALL BE CONFIGURED TO OPEN THE OUTSIDE AIR DAMPER TO THE POSITION ALLOWING FOR MINIMUM SCHEDULED OUTSIDE AIR (60 CFM). WHEN THE HOOD EXHAUST FAN IS OPERATING THE OUTSIDE AIR DAMPER SHALL BE OPENED FURTHER TO ALLOW 310 CFM OF OUTSIDE AIR. THE DDC CONTRACTOR AND TEST, ADJUST, BALANCE CONTRACTORS SHALL COORDINATE TO DETERMINE THIS HIGHER AIRFLOW DAMPER SETPOINT. DDC CONTRACTOR SHALL COMMAND THIS SETPOINT TO THE SYSTEM CONTROLLER VIA BACNET COMMAND BY OVERRIDING THE DEFAULT MINIMUM OPEN POSITION SETPOINT.
THE MINIMUM OUTSIDE AIR DAMPER POSITION SETPOINT SHALL BE DETERMINED DURING TEST, ADJUST, BALANCE ACTIVITIES AND SET IN THE SYSTEM CONTROLLER.
DURING UNOCCUPIED OPERATION THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED.
10. **ECONOMIZER MODE:**
STANDARD SEQUENCE.
11. **SAFETIES / ALARMS:**
STANDARD SEQUENCE.
- DOAS CONTROL DIAGRAM**



DDC SYSTEM POINT SUMMARY					
POINT NAME	TYPE	DDC / COMM	UNITS	DEFAULT	
START/STOP	DO	DDC	ON/OFF	ON	
ALARM	DI	DDC	ON/OFF	OFF	
SUPPLY AIR TEMP	AI	DDC	DEG F	-	
OUTSIDE AIR TEMP	AV	COMM	DEG F	-	
OUTSIDE AIR HUMIDITY	AV	COMM	%RH	-	
SUPPLY AIR TEMP	AV	COMM	DEG F	-	
SUPPLY AIR HUMIDITY	AV	COMM	%RH	-	
SUPPLY AIR SPT	AV	COMM	DEG F	-	
FURNACE OUTPUT	AO	DDC	%	-	
SUPPLY FAN SPEED	AV	COMM	%	-	
SUPPLY STATIC PRESS	AV	COMM	%	-	
SYSTEM MODE	MV	COMM	-	-	
OUTSIDE AIR DAMPER	AV	COMM	%OPEN	0%	
SUPPLY FAN STATUS	DV	COMM	ON/OFF	-	
COOLING DEMAND	AV	COMM	%	-	
HEATING DEMAND	AV	COMM	%	-	
COMPRESSOR STATUS	DV	COMM	ON/OFF	-	
CONDENSATE ALARM	DV	COMM	ON/OFF	-	
DIRTY FILTER ALARM	DV	COMM	ON/OFF	-	
ALARM RESET	DV	COMM	ON/OFF	-	

SYSTEM POINT SUMMARY NOTES:

DO	DIGITAL OUTPUT	AV	ANALOG VALUE
DI	DIGITAL INPUT	DV	DIGITAL VALUE
AO	ANALOG OUTPUT	DDC	PHYSICAL DDC POINT
AI	ANALOG INPUT	COMM	COMMUNICATED POINT FROM RTU

REPRESENTATIVE POINTS LIST. FINAL POINTS LIST TO BE DETERMINED DURING EQUIPMENT AND DDC SYSTEM SUBMITTAL REVIEW PROCESS.

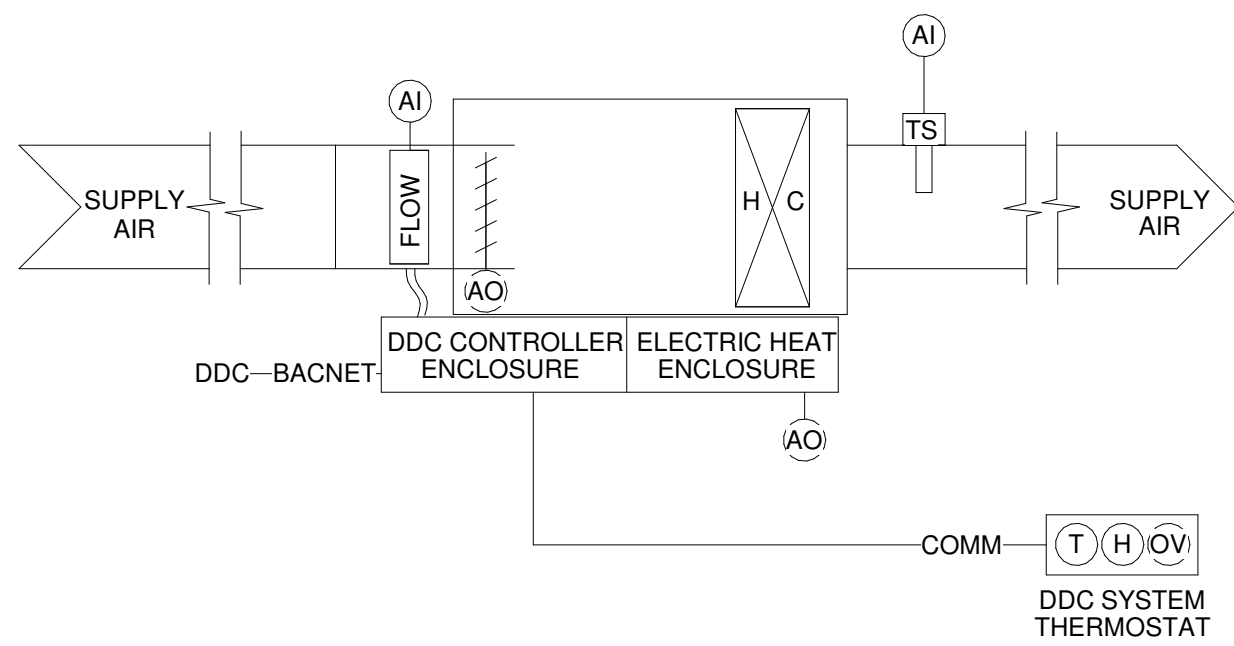
DOAS-1 SEQUENCE OF OPERATIONS

1. **GENERAL SYSTEM DESCRIPTION:**
PACKAGED VARIABLE AIR VOLUME ROOFTOP DEDICATED OUTSIDE AIR SYSTEM WITH DX COOLING WITH GAS FURNACE SERVING VARIABLE AIR VOLUME TERMINAL UNITS WITH ELECTRIC REHEAT COILS.
2. **SYSTEM CONTROLS:**
THE DOAS SHALL BE FURNISHED WITH A FACTORY INSTALLED DIGITAL PROGRAMMABLE CONTROLLER WHICH SHALL CONTROL ALL FUNCTIONS OF THE SYSTEM AS DESCRIBED – FUNCTIONALITY SHALL BE EQUAL TO BASIS-OF-DESIGN CAPTIVEAIRE. THE DOAS FACTORY CONTROLLER SHALL BE INTEGRATED TO THE BUILDING DDC SYSTEM VIA BACNET-MSTP COMMUNICATION. SPECIFIC POINTS TO BE INTEGRATED SHALL BE AT MINIMUM THOSE SHOWN ON THE SYSTEM DIAGRAM BUT SHALL BE SPECIFICALLY IDENTIFIED DURING THE SUBMITTAL REVIEW PROCESS FOR EQUIPMENT TO BE FURNISHED.
3. **OCCUPANCY:**
THE SYSTEM SHALL BE CONSIDERED TO BE IN 'OCCUPIED' MODE IF ANY SCHEDULE IN THE DDC SYSTEM IS TRUE. WHEN OCCUPIED THE DOAS SHALL ACTIVATE THE SUPPLY FAN, ENABLE OUTSIDE AIR VOLUME CONTROL, AND ENABLE SUPPLY AIR TEMPERATURE CONTROL. THE DDC SYSTEM SHALL ENABLE THE SYSTEM BY MEANS OF A HARD-WIRED OCCUPANCY INPUT SIGNAL TO THE FACTORY CONTROLLER.
AN OVERRIDE BUTTON ON EACH TERMINAL UNIT THERMOSTAT WHEN ACTIVATED BY THE USER WILL ENABLE THE DOAS ONLY TO OPERATE IN OCCUPIED MODE FOR A 2-HOUR (ADJ.) PERIOD.
4. **OUTSIDE AIR VOLUME CONTROL:**
THE DOAS HAS A VARIABLE SPEED FAN AND SHALL CONTROL THE TOTAL AMOUNT OF OUTSIDE AIR PROVIDED TO THE TERMINAL UNITS BY MODULATING THE SPEED OF THE SUPPLY AIR FAN TO SATISFY THE DUCT STATIC PRESSURE SETPOINT. THE CONTROL OF THE SUPPLY FAN SPEED SHALL BE PERFORMED BY THE FACTORY CONTROLLER. THE STATIC PRESSURE PROBE SHALL BE FIELD INSTALLED BY THE DDC CONTRACTOR AND CONNECTED TO THE FACTORY CONTROLLER. THE DDC CONTRACTOR SHALL COORDINATE WITH THE TEST, ADJUST, BALANCE CONTRACTOR TO DETERMINE THE STATIC PRESSURE SETPOINT WHICH WILL SATISFY THE TERMINAL UNITS AT MAXIMUM AIRFLOW.
5. **SUPPLY AIR SETPOINT CONTROL: COOLING MODE**
IF THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 50F (ADJ.) THE DDC SYSTEM SHALL CONSIDER THE DOAS TO BE IN COOLING MODE OF OPERATION. THE DDC SYSTEM SHALL MONITOR THE COOLING DEMAND POINT AND THE SPACE HUMIDITY OF ALL THE TERMINAL UNITS. THE SUPPLY AIR SETPOINT SHALL BE RESET INCREMENTALLY UP / DOWN BY 2F (ADJ.) EVERY 15 MIN (ADJ.). THE SUPPLY AIR SETPOINT SHALL BE DETERMINED BASED ON THE LOWEST OF TWO RESET LOOPS:
COOLING DEMAND: AS THE MAXIMUM TERMINAL UNIT COOLING DEMAND RANGES FROM 0% TO 100% THE SUPPLY AIR SETPOINT SHALL BE SET FROM 55F (ADJ.) TO 70F (ADJ.).
SPACE HUMIDITY: AS THE MAXIMUM SPACE HUMIDITY RANGES FROM 50% TO 60% THE SUPPLY AIR SETPOINT SHALL BE SET FROM 70F (ADJ.) TO 55F (ADJ.).
6. **COOLING CONTROL:**
THE DOAS FACTORY CONTROLLER SHALL CONTROL THE COOLING CAPACITY OF THE UNIT TO MEET THE CURRENT SUPPLY AIR SETPOINT BEING COMMANDED TO THE DOAS BY THE DDC SYSTEM.
7. **SUPPLY AIR SETPOINT CONTROL: HEATING MODE**
IF THE OUTSIDE AIR TEMPERATURE IS LESS THAN 50F (ADJ.) AND ALL OF THE TERMINAL UNITS HAVE 0% COOLING DEMAND THEN THE DDC SYSTEM SHALL CONSIDER THE DOAS TO BE IN HEATING MODE OF OPERATION. AS THE MAXIMUM TERMINAL UNIT HEATING LOOP RANGES FROM 0% TO 100% THE DOAS SUPPLY AIR TEMPERATURE SETPOINT SHALL RANGE FROM 50F (ADJ.) TO 70F (ADJ.).
8. **HEATING CONTROL:**
THE DDC SYSTEM SHALL SEND AN ANALOG SIGNAL (0-10Vdc) TO THE FACTORY DOAS CONTROLLER TO MODULATE THE FURNACE OUTPUT TO ACHIEVE THE CURRENT SUPPLY AIR TEMPERATURE SETPOINT.

VARIABLE AIR VOLUME OUTSIDE AIR TERMINAL UNITS:

1. **GENERAL SYSTEM DESCRIPTION:**
PRESSURE-INDEPENDENT VARIABLE AIR VOLUME TERMINAL UNITS WITH MODULATING ELECTRIC REHEAT COILS.
2. **TERMINAL UNIT CONTROLS:**
THE TERMINAL UNIT SHALL BE FURNISHED WITH A MULTI-POINT AIRFLOW SENSOR, FACTORY MOUNTED AND WIRED CONTROL POWER TRANSFORMER, AND A FACTORY MOUNTED AND WIRED SCR FULLY MODULATING ELECTRIC HEAT CONTROLLER WHICH SHALL ACCEPT AN ANALOG SIGNAL FROM THE TERMINAL UNIT CONTROLLER. THE TERMINAL UNIT DIGITAL CONTROLLER SHALL BE FURNISHED BY THE DDC CONTRACTOR AND SHALL BE FIELD-MOUNTED IN THE FACTORY TERMINAL UNIT CONTROL ENCLOSURE.
THE DDC CONTRACTOR SHALL PROVIDE AND INSTALL A WALL-MOUNTED THERMOSTAT FOR EACH TERMINAL UNIT LOCATED WHERE INDICATED ON THE DRAWINGS WITH MINIMUM FUNCTIONALITY OF:
a. SPACE TEMPERATURE AND SPACE HUMIDITY SENSOR
b. SPACE COOLING SETPOINT / HEATING SETPOINT ADJUSTMENT (WITH RANGE LIMITS)
c. SYSTEM OCCUPANCY OVERRIDE FUNCTION
3. **SPACE TEMPERATURE SETPOINT CONTROL:**
THE TERMINAL UNIT THERMOSTAT SHALL BE CAPABLE OF COOLING AND HEATING SETPOINT ADJUSTMENT BY THE USER WITHIN THE ALLOWABLE RANGE OF 72-76F (ADJ.) FOR COOLING AND 64-70F (ADJ.) FOR HEATING WHILE THE SYSTEM IS IN OCCUPIED MODE. THE THERMOSTAT SETPOINT USER ADJUSTMENT CAPABILITY SHALL BE ENABLED / DISABLED BY THE DDC SYSTEM FROM THE GRAPHICAL USER INTERFACE.
4. **AIRFLOW CONTROL:** TWO-SETPOINT / EXHAUST MONITORING
THE TERMINAL UNIT SHALL MEASURE THE AIRFLOW AND MODULATE THE PRIMARY AIR DAMPER TO MAINTAIN EITHER THE SCHEDULED MINIMUM OR MAXIMUM AIRFLOW SETPOINT. WHEN THE SYSTEM IS OCCUPIED AND THE EXHAUST FAN ASSOCIATED WITH THE SPACE IS OFF (AS INDICATED BY CURRENT TRANSFORMER) THEN THE TERMINAL UNIT SHALL MAINTAIN THE MINIMUM AIRFLOW SETPOINT. IF THE SYSTEM IS OCCUPIED AND THE EXHAUST FAN ASSOCIATED WITH THE SPACE IS ON THEN THE TERMINAL UNIT SHALL MAINTAIN THE MAXIMUM AIRFLOW SETPOINT.
WHEN THE DOAS IS IN UNOCCUPIED MODE THE AIR TERMINAL UNIT DAMPER SHALL BE COMMANDED CLOSED.
5. **ELECTRIC REHEAT COIL CONTROL:**
THE DDC CONTROLLER SHALL MODULATE THE ELECTRIC REHEAT COIL CAPACITY AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE AT THE HEATING SETPOINT. THE ELECTRIC REHEAT COIL CONTROL SHALL ALWAYS BE ACTIVE ANY TIME THE DOAS IS OPERATING.

VAV CONTROL DIAGRAM



DDC SYSTEM POINT SUMMARY					
POINT NAME	TYPE	DDC / COMM	UNITS	DEFAULT	
SUPPLY AIRFLOW	AI	DDC	CFM	-	
SUPPLY AIRFLOW SPT	AV	DDC	CFM	-	
AIR DAMPER	AO	DDC	%OPEN	-	
HEAT COMMAND	AO	DDC	%	-	
SUPPLY AIR TEMP	AI	DDC	DEG F	-	
SPACE TEMP	AI	DDC	DEG F	-	
SPACE HUMIDITY	AI	DDC	%RH	-	
DDC COOL SPT	AV	DDC	DEG F	72	
DDC HEAT SPT	AV	DDC	DEG F	70	
OVERRIDE	DV	DDC	ON/OFF	OFF	
MAX SPT	AV	DDC	DEG F	76	
MIN SPT	AV	DDC	DEG F	64	
MAX HEAT SPT	AV	DDC	DEG F	70	
MIN COOL SPT	AV	DDC	DEG F	72	
COOLING DEMAND	AV	DDC	%	-	
HEATING DEMAND	AV	DDC	%	-	

MISCELLANEOUS SYSTEMS:

CONCESSION EXHAUST HOOD / MAKE-UP AIR FANS:

THE DDC SYSTEM SHALL MONITOR THE STATUS OF THE CONCESSION HOOD EXHAUST FAN AND THE MAKE-UP AIR FAN VIA CURRENT TRANSFORMERS ON FAN POWER CIRCUITS. STARTING AND STOPPING OF BOTH THE EXHAUST FAN AND MAKE-UP AIR FAN SHALL BE CONTROLLED BY THE HOOD CONTROLLER.

EXHAUST FAN INTERLOCKS AND MONITORING:

THE DDC SYSTEM SHALL MONITOR THE STATUS OF ALL EXHAUST FANS WITH CURRENT TRANSFORMER RELAYS.

TEMPERATURE / HUMIDITY MONITORING ONLY:

THE DDC SYSTEM SHALL PROVIDE A WALL MOUNTED TEMPERATURE / HUMIDITY SENSOR IN THE FOLLOWING LOCATIONS FOR SPACE CONDITION MONITORING AND ALARMING ONLY. THESE SPACES SHALL BE CONDITIONED BY STAND-ALONE SYSTEMS NOT CONNECTED TO THE DDC SYSTEM.

- ROOM 127 (I.T. ROOM)
- ROOM 125 (CONCESSION STORAGE)

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M702

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PLUMBING LEGEND SYMBOLS AND ABBREVIATIONS					
	DOMESTIC COLD WATER		BALL VALVE	ABV	ABOVE
	EXISTING DOMESTIC COLD WATER TO BE REMOVED		VALVE IN VERTICAL	AFF	ABOVE FINISHED FLOOR
	EXISTING DOMESTIC COLD WATER TO REMAIN		CAP ON END OF PIPE	INV	INVERT
	DOMESTIC HOT WATER		CLEANOUT - FLOOR TYPE	BFF	BELOW FINISHED FLOOR
	EXISTING DOMESTIC HOT WATER TO BE REMOVED		CLEANOUT - WALL TYPE	CW	COLD WATER
	EXISTING DOMESTIC HOT WATER TO REMAIN		P-TRAP	DN	DOWN
	DOMESTIC HOT WATER RETURN		PIPE TURNING DOWN	EX	EXISTING
	EXISTING DOMESTIC HOT WATER RETURN TO BE REMOVED		PIPE TURNING UP	HW	HOT WATER
	EXISTING DOMESTIC HOT WATER RETURN TO REMAIN		TEE DOWN	WS	WASTE STACK
	SANITARY VENT		TEE UP	VS	VENT STACK
	EXISTING SANITARY VENT TO BE REMOVED		TIE NEW INTO EXISTING	AC	ABOVE CEILING
	EXISTING SANITARY VENT TO REMAIN		PLUMBING FIXTURE NUMBER	WHA	WATER HAMMER ARRESTOR
	STORM DRAINAGE		RISER NUMBER	BFG	BELOW FINISHED GRADE
	EXISTING STORM DRAINAGE TO BE REMOVED		WATER HAMMER ARRESTOR	TMV	THERMOSTATIC MIXING VALVE
	EXISTING STORM DRAINAGE TO REMAIN		PLUG TYPE CLEANOUT	TP	TRAP PRIMER
	SANITARY WASTE		BALANCING VALVE		
	EXISTING SANITARY WASTE TO BE REMOVED		CHECK VALVE		
	EXISTING SANITARY WASTE TO REMAIN		GATE VALVE		
	SHEET MATCH LINE		REDUCED PRESSURE ZONE BFP		
	CONSTRUCTION DUST PARTITION		THERMOSTATIC MIXING VALVE		
	2 PSI GAS LINE		FLOOR SINK		
	EXISTING 2 PSI		FLOOR DRAIN		
	ROOF DRAIN/OVERFLOW DRAIN		ROOF DRAIN/OVERFLOW DRAIN		

PLUMBING SPECIFICATION - GENERAL

SECTION 220001 - PLUMBING GENERAL
PART 1-GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Section, Apply to this Section.
1.2 SUMMARY
A. Work Included:
1. Submittals
2. Electrical Requirements
3. Excavation & Backfilling
4. Painting
5. Cleaning
6. Testing
1.3 SUBMITTALS
A. The Contractor shall submit for review by the Architect data of materials and equipment to be incorporated in the work. Submittals shall be supported by descriptive material, catalogs, cuts, diagrams, performance curves, and charts published by the manufacturer to show conformance to specification and drawing requirements; model numbers alone will not be acceptable.
B. Plumbing Fixtures - The contractor shall verify the characteristics of equipment submittals comply with electrical service provided for the specified items of equipment.
C. Upon receipt of the Contractor of reviewed submittals for equipment provided under this Division, the Contractor shall coordinate the electrical service requirements, i.e., motor horsepower and full load amps, electrical service characteristics (voltage and phase), and number of services for each item of equipment requiring electrical connections with the electrical drawings and specifications. The Contractor shall furnish to the Architect a complete typewritten list of electrical requirements for each item of equipment to be installed.
F. Items on or projecting through the ceiling shall be coordinated with other items and shall be shown on the reflected ceiling plan shop drawings submitted for the Architect's review. Such items shall follow the reflected ceiling plan shop drawings and shall not be install until reviewed by the Architect with no exceptions taken.
1.4 QUALITY ASSURANCE
A. The mechanical equipment and installation shall conform to the applicable codes.
B. Permits
1. Obtain all permits and inspections for the installation of this work and pay all charges incident thereto. Deliver to the Owner all certificates of said inspection issued by authorities having jurisdiction.
C. Workmanship and Materials
1. The workmanship and materials covered by these specifications shall conform to all ordinates and regulations of the City, county and/or other authorities having jurisdiction.
1.5 OPERATION AND MAINTENANCE INSTRUCTIONS
A. Refer to Division 1 for Detail Requirements.
B. Printed Materials: Provide required printed material for binding in operation and maintenance manuals.
C. Instructions of Owner personnel:
1. Before final inspection, at a time designated by the Architect, provide a representative with knowledge of the building systems to instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems under this division of the specifications. For equipment requiring seasonal operation, perform instructions for other seasons within six months unless requested otherwise.
2. Use operation and maintenance manuals as basis of instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
3. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.
1.6 RECORD DOCUMENTS
A. Refer to Division 1 for record documents and related submittals.
1.7 CONTRACT DRAWINGS
A. Drawings are diagrammatic and indicate general arrangement of systems and work.
B. Follow drawings in laying out work and check drawings of other disciplines relating to work to verify space conditions. Do not scale drawings.

C. Equipment layout is based on one manufacturer's product. Where equipment selected by the Contractor for use on the job differs from layout, the Contractor shall be responsible for coordinating space requirements and connection arrangements.
1.8 GUARANTY
A. The components of the plumbing systems furnished under this division of the specifications shall be guaranteed for a period of one year from the date of acceptance thereof, either for beneficial use or final acceptance whichever is earlier, against defective materials, design, and workmanship. Upon receipt of notice from the Architect of failure of any part of the equipment during the guaranty period, the affected part or parts shall be replaced promptly which includes removing the defective part or parts, replacing and installing the new part or parts, at the expense of the Contractor.
PART 2 PRODUCTS
2.1 ELECTRICAL WORK
A. All electrical equipment furnished under this Division of these Specifications shall comply with the electrical system characteristics indicated on the electrical and mechanical drawings.
B. Power wiring (i.e., feeders to motors, water heaters, and electric heaters) and tapes including final connection to equipment shall be provided under Division 25 - Electrical.
PART 3 EXECUTIONS
3.1 PAINTING
A. Factory painted equipment that has been scratched or marred shall be repainted to match Original color.
B. Steel equipment hangers and supports and uninsulated black steel pipe exposed to sight inside the building which are not provided with a factory applied prime coat shall be cleaned of rust, grease and scale. After cleaning hangers, supports and pipe, a field-applied prime coat shall be provided. In addition, such items in finished spaces shall also be provided with two coats of finish paint in a color to match adjacent surface.
C. Steel equipment hangers and supports:
1. uninsulated black steel pipe, and black steel pipe support exposed to sight outside the building which are not provided with factory prime coat shall be cleaned of rust, grease and scale. After cleaning hangars, supports and pipe, a field-applied prime coat and two coats of bituminous aluminum paint shall be provided. Insulated pipes outside the building shall be cleaned of rust, grease and scale, and shall be provided with a field-applied prime coat before installing insulation.
D. All painting shall conform to the requirements of the PAINTING Section.
3.2 CLEANING AND ADJUSTING
A. All equipment, pipe, valves and fittings shall be cleaned of grease, oil, and paint spots, metal cuttings, sludge, and construction debris.
B. Ducts, plenums and casings shall be cleaned of all debris and blown free of all particles
1. Of rubbish and dust before installing outlet faces.
C. Bearings shall be lubricated as recommended by the equipment manufacturer.
D. Temporary filters shall be provided for fans that are used during construction. At the time of starting the balancing of the air distribution system, new filters shall be installed.
3.3 TESTING PIPE SYSTEM
A. General: Concealed piping and insulated piping shall be tested in place before concealing or covering. Piping located underground shall be tested before backfilling. Equipment, materials, and instruments for testing shall be furnished by the Contractor without additional cost to the Owner. System components not rated for the respective test pressure shall be isolated from the system during the test.
B. Observation: The Contractor shall notify the owner's representative two days prior to a scheduled test. The owner's representative, at this option, has the right to witness the test.
C. Sanitary, Waste, and Vent System
1. The hydrostatic test shall be performed before installing fixtures. Water tests shall be applied to each system (s) either in its entirety or in sections. If the test is applied to the entire system, all openings in the piping shall be closed except the highest opening, and the system shall be filled with water and tested with at least a 10 ft. head of water. In testing successive sections, at least the upper 10 ft. of the next preceding section shall be tested so that each joint or pipe in the building except the uppermost 10 ft. of the system has been submitted to a test of at least a 10 ft. head of water. The water shall be kept in the system, or in the portion under test for at least 2 hours before inspection starts. The system shall be tight at all joints.
END OF SECTION

PLUMBING GENERAL NOTES:

- ALL HORIZONTAL PRESSURE PIPING SHALL BE RUN ABOVE CEILING ON THE PLAN ON WHICH SHOWN UNLESS OTHERWISE NOTED.
- ALL HORIZONTAL GRAVITY PIPING SHALL BE RUN BELOW FLOOR ON THE PLAN ON WHICH SHOWN UNLESS OTHERWISE INDICATED. ALL HORIZONTAL VENT PIPING SHALL BE RUN ABOVE FLOOR ON THE PLAN ON WHICH SHOWN UNLESS OTHERWISE INDICATED.
- COORDINATE ROUTING OF PIPING TO AVOID CONFLICTS WITH STRUCTURAL, MECHANICAL, AND ELECTRICAL WITHIN THE BUILDING PRIOR TO INSTALLATION.
- COORDINATE LOCATION OF VENT STACKS PENETRATING ROOF (VTRS) WITH MECHANICAL, TO AVOID CONFLICTS WITH OUTSIDE AIR INTAKES.

DRAWING GENERAL NOTES:

- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
- CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, MECHANICAL, STRUCTURAL AND ARCHITECTURAL WORK IS CRITICAL FOR COMPLETE PIPING INSTALLATION. CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS IN NEW AND EXISTING PIPING AND ELECTRICAL CONDUIT AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL ALLOW FOR ANY CONFLICTS ENCOUNTERED.
- PIPING LAYOUTS ARE DIAGRAMMATIC AND DO NOT SHOW ALL ELEMENTS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES ON DIRECTION, ELEVATION AND MINOR OFFSETS NECESSARY FOR COMPLETE INSTALLATION OF ELEMENTS SHOWN.
- ALL WASTE PIPING SHOWN IS BELOW THE FINISHED FLOOR UNLESS OTHERWISE NOTED. ALL VENT PIPING SHOWN IS ABOVE THE CEILING UNLESS OTHERWISE NOTED.
- REFER TO ARCHITECTURAL FLOOR PLANS FOR ALL DIMENSIONS.

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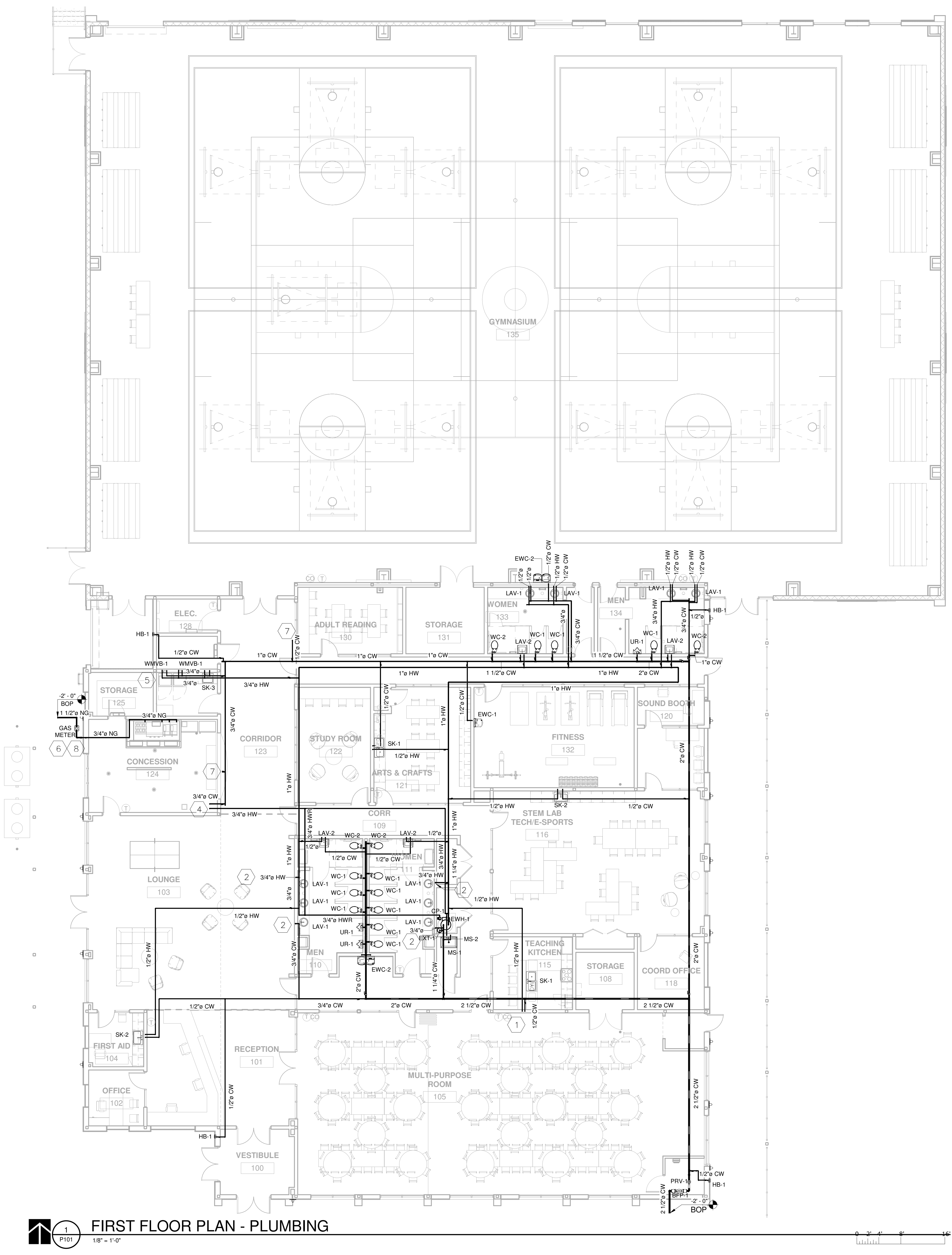
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SHEET TITLE:
LEGENDS, NOTES, AND
ABBREVIATIONS -
PLUMBING

SHEET NUMBER:

P001

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1
P101
FIRST FLOOR PLAN - PLUMBING
1/8" = 1'-0"

- GENERAL NOTES:**
1. 1"Ø DOMESTIC COLD WATER LINE TO EACH WATER CLOSET.
 2. 3/4"Ø DOMESTIC COLD WATER LINE TO EACH URINAL.
 3. SHUT-OFF VALVES TO BE INCLUDED ON ALL DOMESTIC WATER AND GAS LINE BRANCHES FROM MAIN LINE.

- KEY NOTES:**
1. 1/2"Ø COLD AND HOT WATER LINES TO ROUTE DOWN WALL AND UNDER COUNTER TO SINK.
 2. 3/4"Ø COLD AND HOT WATER LINES TO ROUTE DOWN WALL AND CONNECT TO LAVATORIES.
 3. SEE CIVIL FOR CONTINUATION.
 4. 3/4"Ø COLD AND HOT WATER LINES TO ROUTE INTO CONCESSION AREA AND CONNECT TO SINKS AND REQUIRED EQUIPMENT. SEE KITCHEN CONSULTANT FOR CONTINUATION.
 5. 1/2"Ø COLD AND HOT WATER LINES TO ROUTE DOWN WALL AND CONNECT TO WASHING MACHINE VALVE BOX.
 6. GAS METER BY OTHERS:
2# SYSTEM
TOTAL CFH: 2263
LONGEST LENGTH: 260'
 7. 1/2"Ø COLD WATER LINE TO ROUTE UP AND CONNECT TO HOSE BIBB ON SIDE WALL OF ROOF.
 8. GAS LINE TO ROUTE UP EXTERIOR OF BUILDING AND SPLIT INTO TWO LINES. ONE LINE TO ROUTE INTO THE BUILDING ABOVE THE CEILING AND CONNECT TO THE KITCHEN EQUIPMENT. THE SECOND LINE TO CONTINUE TO THE ROOF AND CONNECT TO THE ROOFTOP EQUIPMENT.

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FIRST FLOOR PLAN - PLUMBING

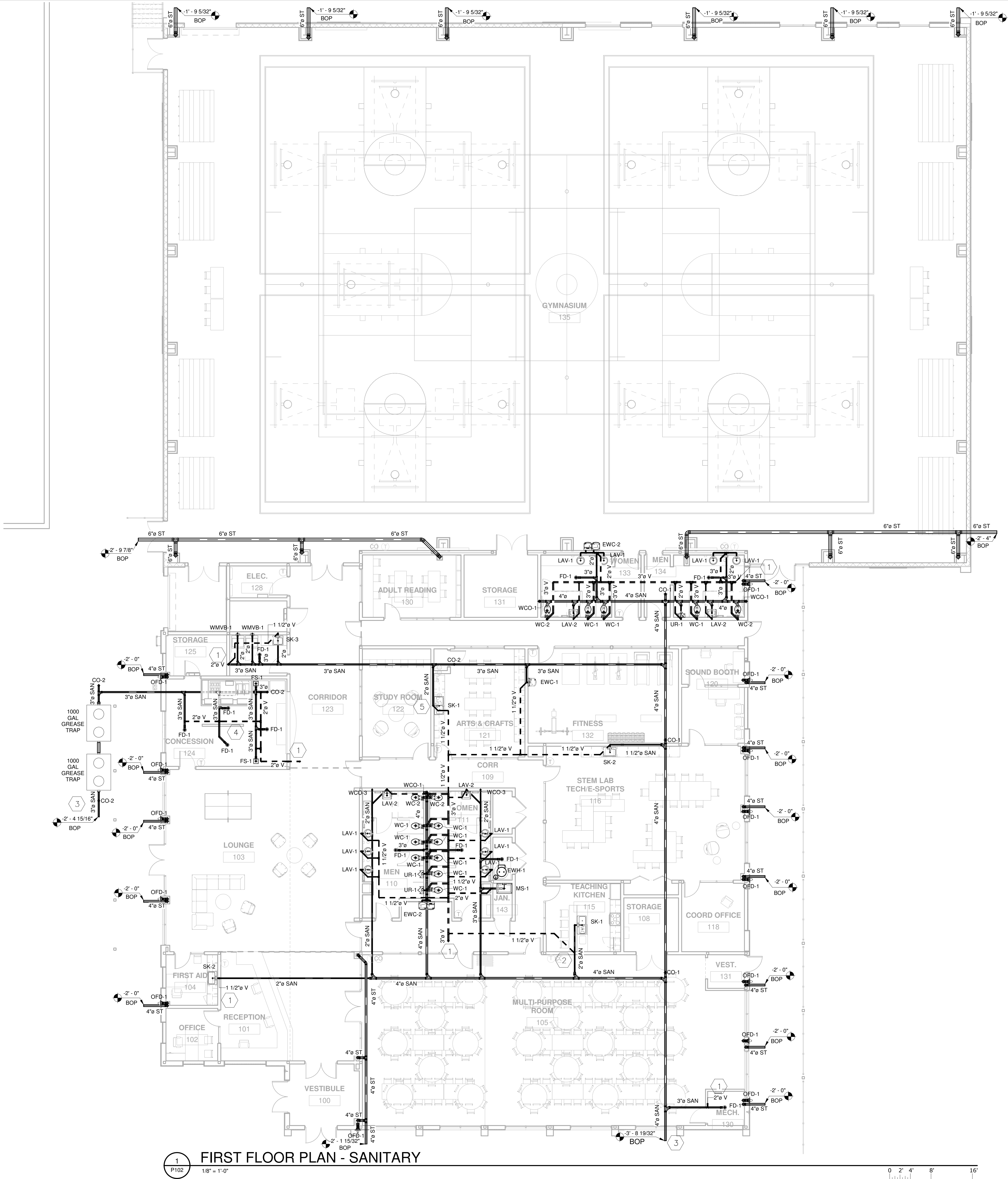
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P101

GENERAL NOTES:

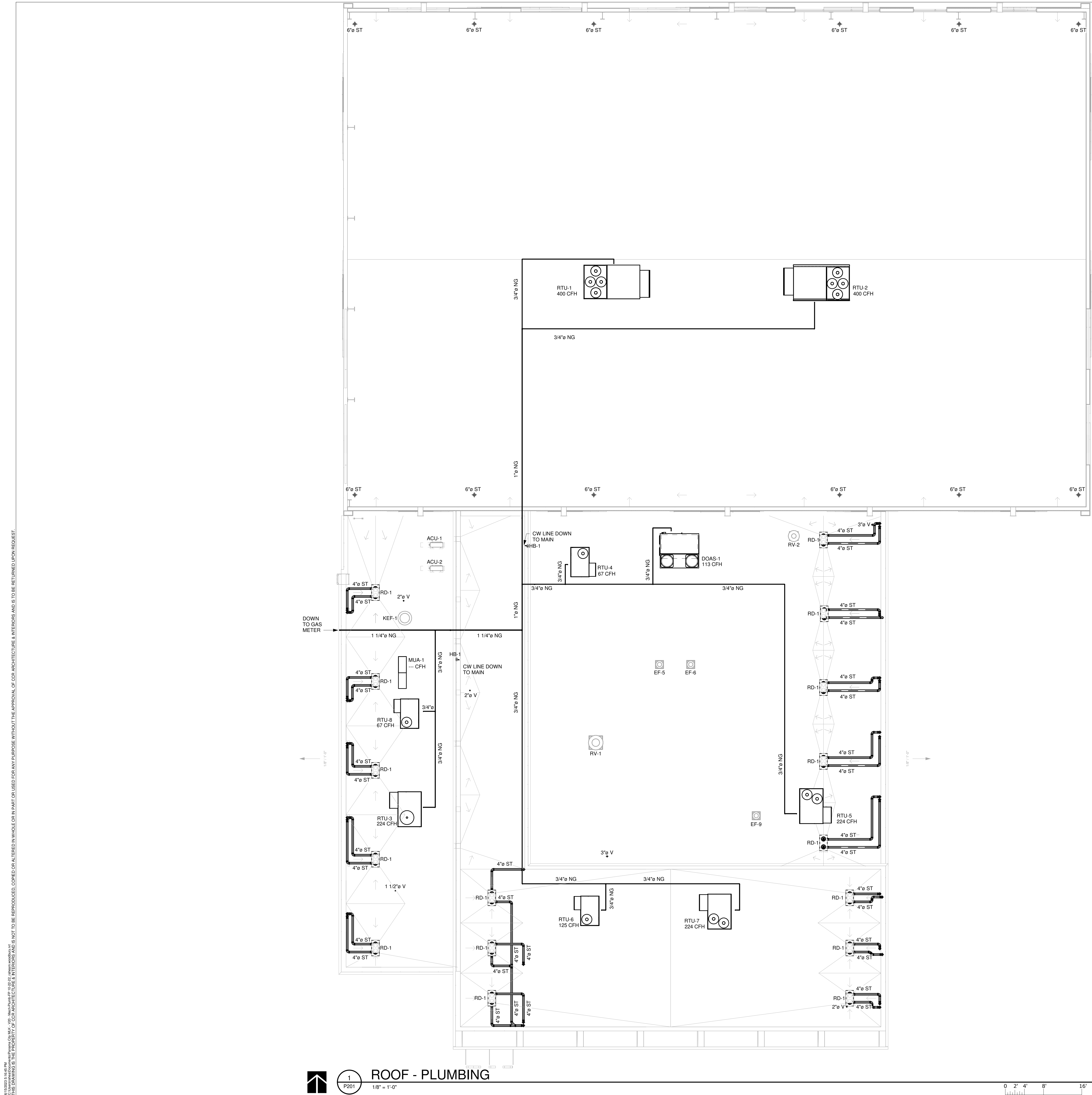
1. PLUMBING CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS BEFORE WORK AND COORDINATE WITH OTHER DISCIPLINES.
2. COORDINATE ROOF DRAINS AND STORM LINES WITH ARCHITECTURAL AND CIVIL.

KEY NOTES:

- 1 VENT LINE TO ROOF.
- 2 VENT LINE TO ROUTE UNDER COUNTER AND UP IN WALL.
- 3 CONTINUE TO CIVIL.
- 4 VENT LINE TO ROUTE UNDER FLOOR.
- 5 SOLIDS INTERCEPTOR TO BE INSTALLED UNDERCOUNTER TO SINK IN LIEU OF P-TRAP. FOR ABOVE THE FLOOR INSTALLATION.



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GENERAL NOTES:

1. VENT LINES TO BE A MINIMUM OF 24" ABOVE ROOF FLOOR. ADJUST AS NEEDED. AND MINIMUM OF 10' FROM FRESH AIR INTAKE.
2. SHUT-OFF VALVES TO BE INCLUDED ON ALL GAS LINE BRANCHES FROM MAIN LINE.
3. COORDINATE ROOF DRAINS AND STORM LINES WITH ARCHITECTURAL AND CIVIL.

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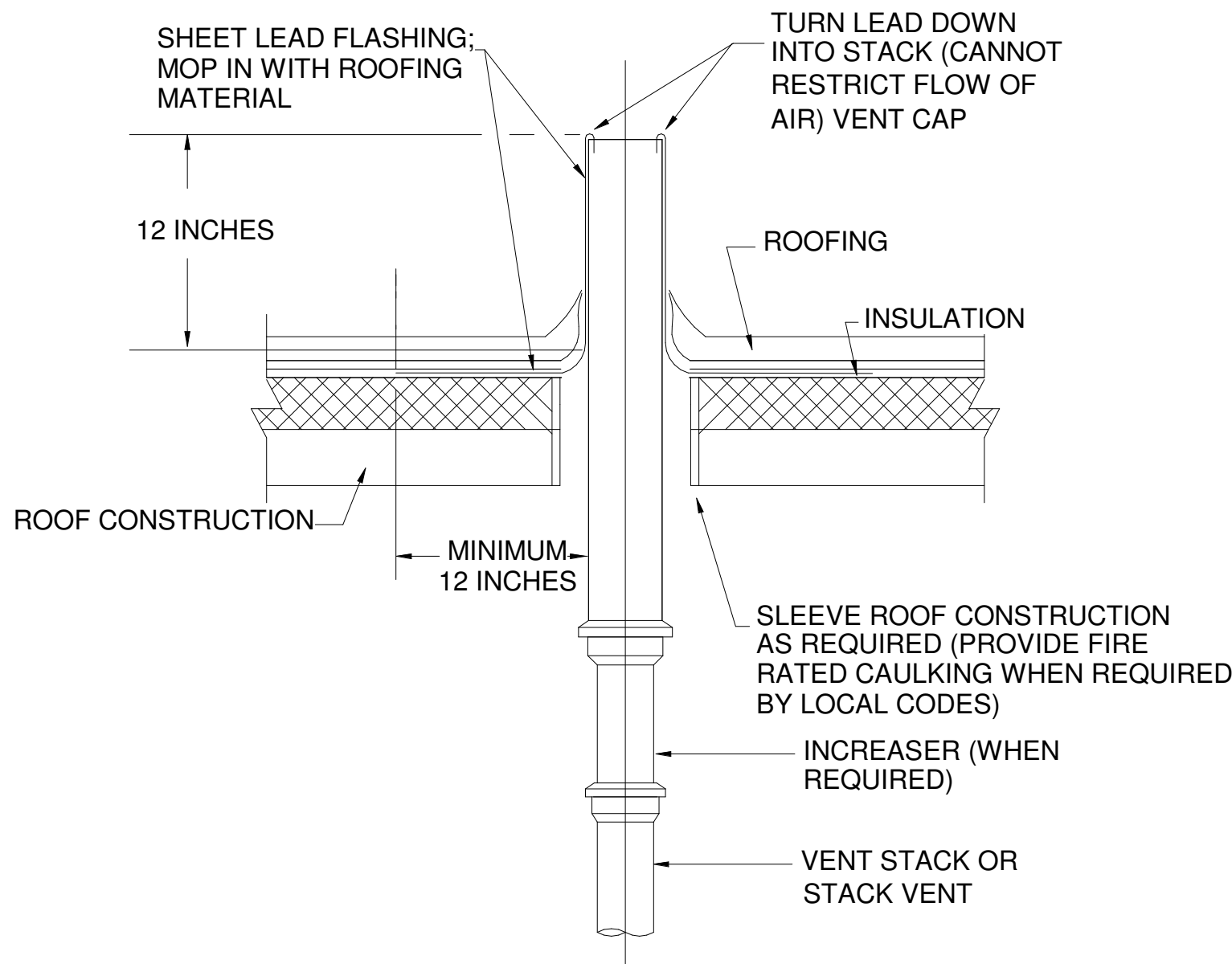
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ROOF - PLUMBING

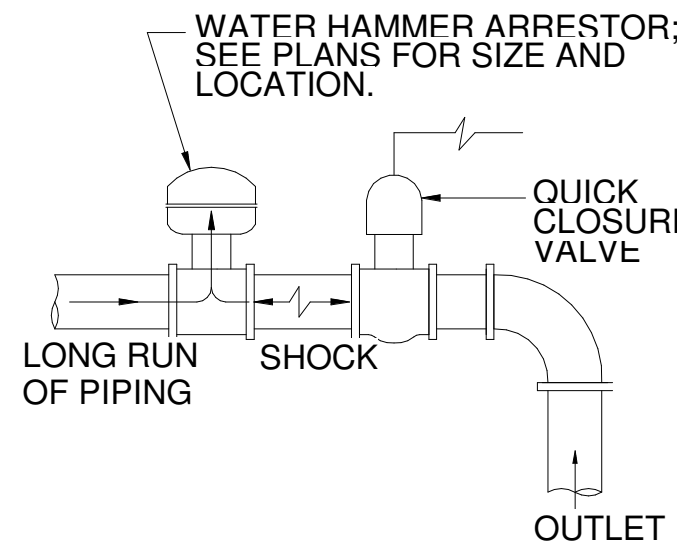
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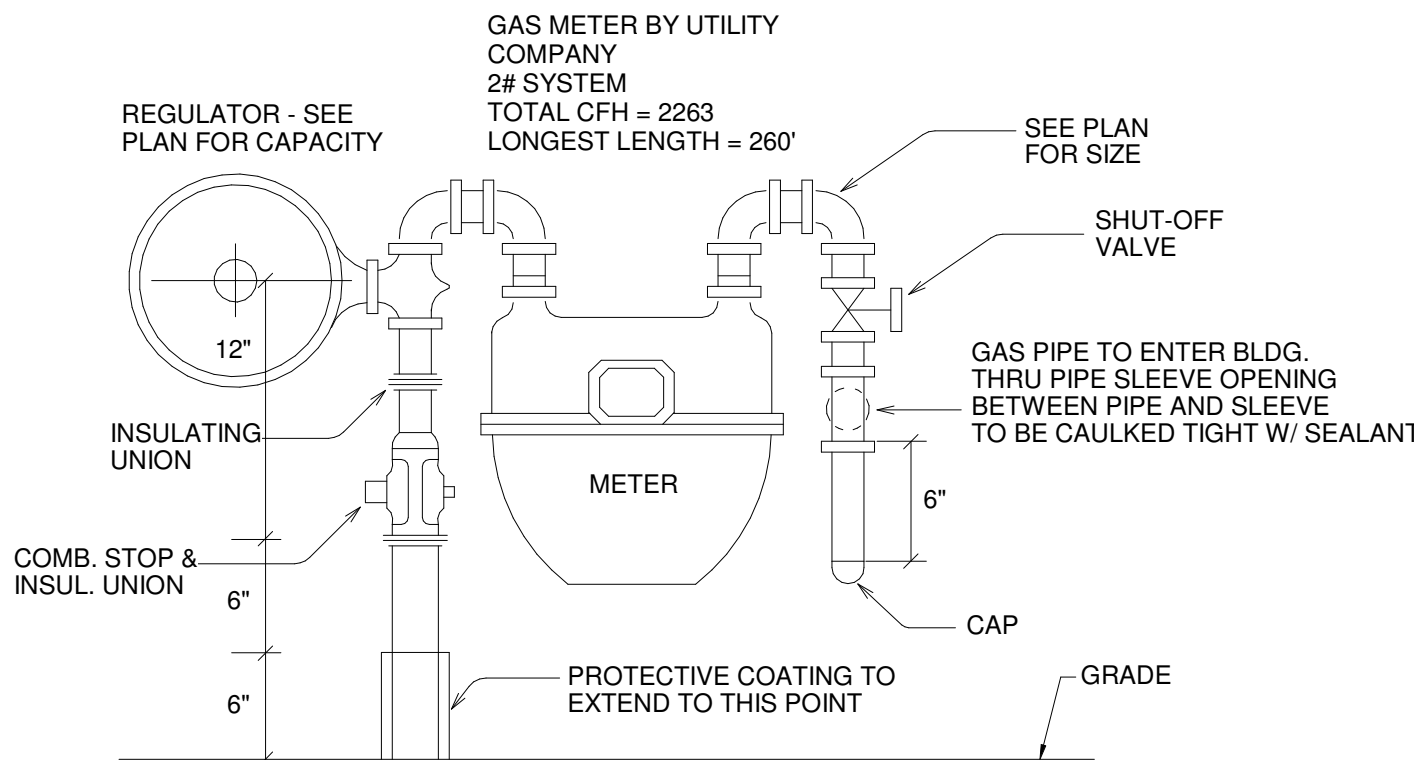
7 VENT THROUGH ROOF DETAIL
P401 NTS

WATER HAMMER ARRESTOR SCHEDULE						
MARK	A	B	C	D	E	F
MAXIMUM FIXTURE UNITS	11	32	60	133	154	330
MAXIMUM PRESSURE RATING	65 PSI					

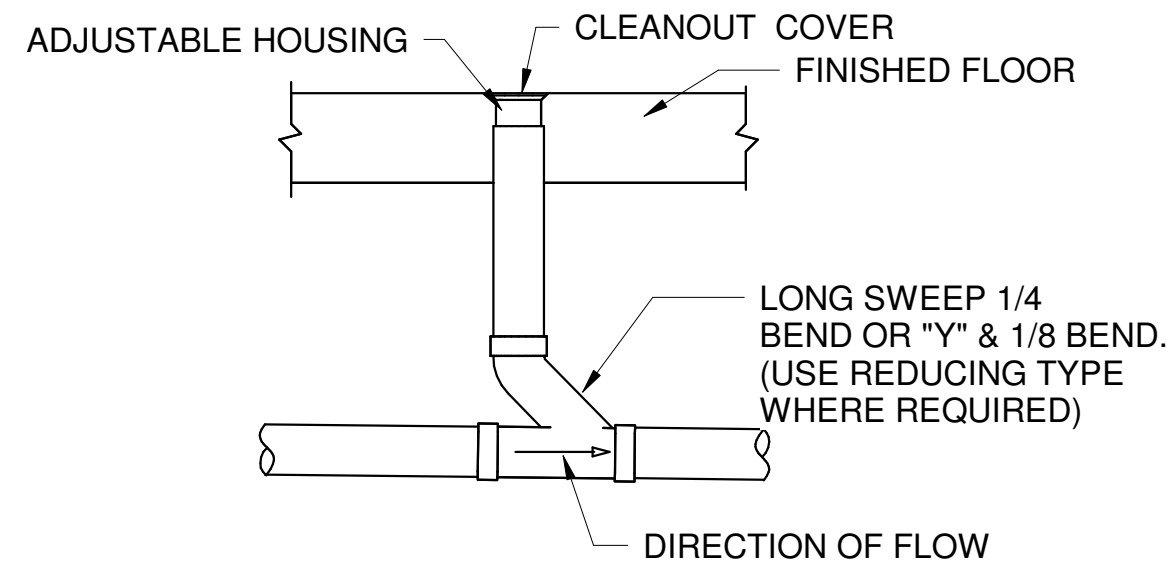


- NOTES:
1. WATER HAMMER ARRESTOR SIZED ACCORDING TO PLUMBING AND DRAINAGE INSTITUTE (PDI) RATING.
 2. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

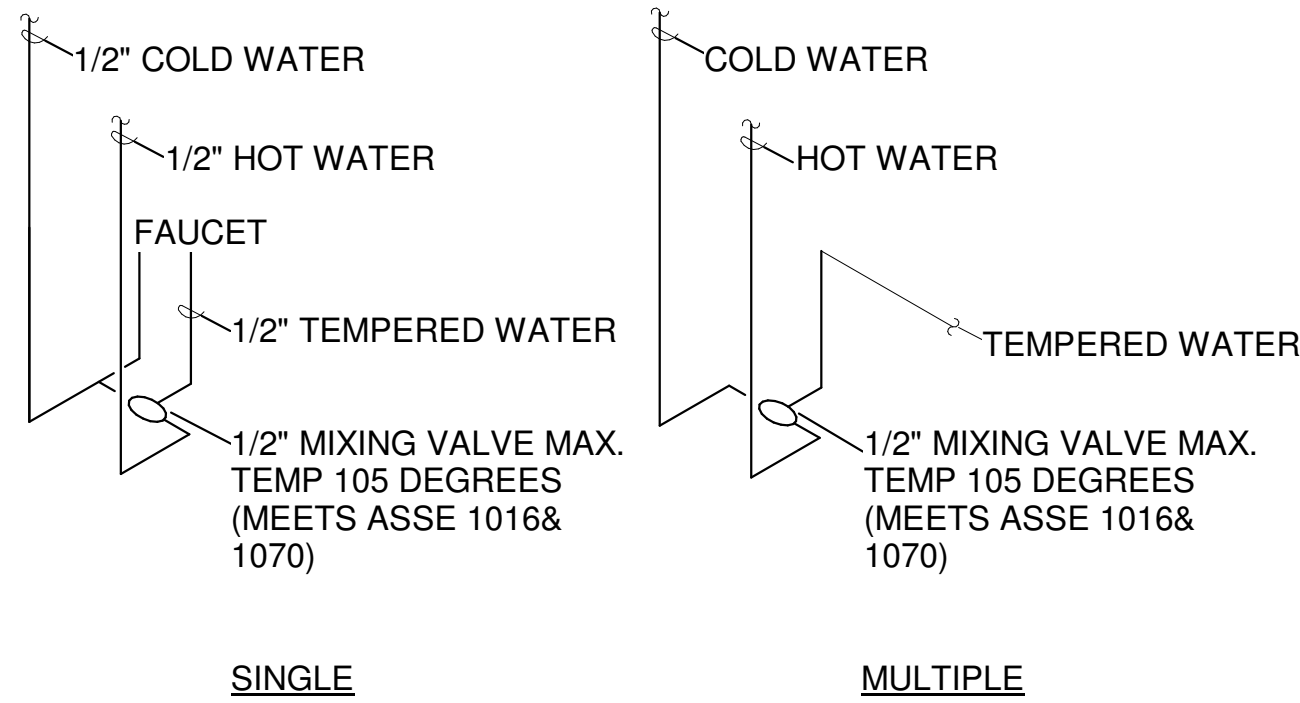
8 WATER HAMMER ARRESTOR DETAIL
P401 NTS



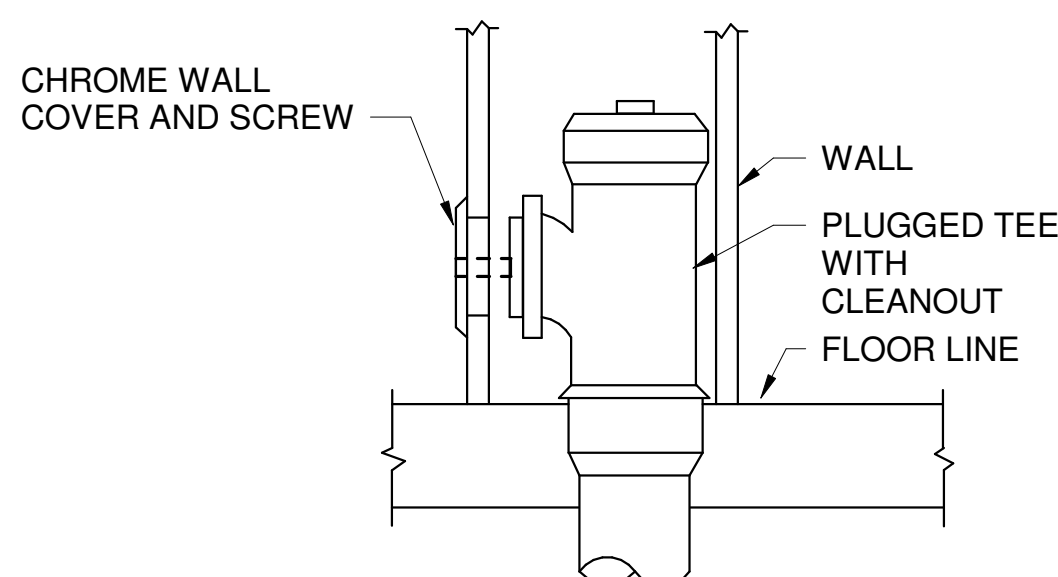
9 GAS METER DETAIL
P401 NTS



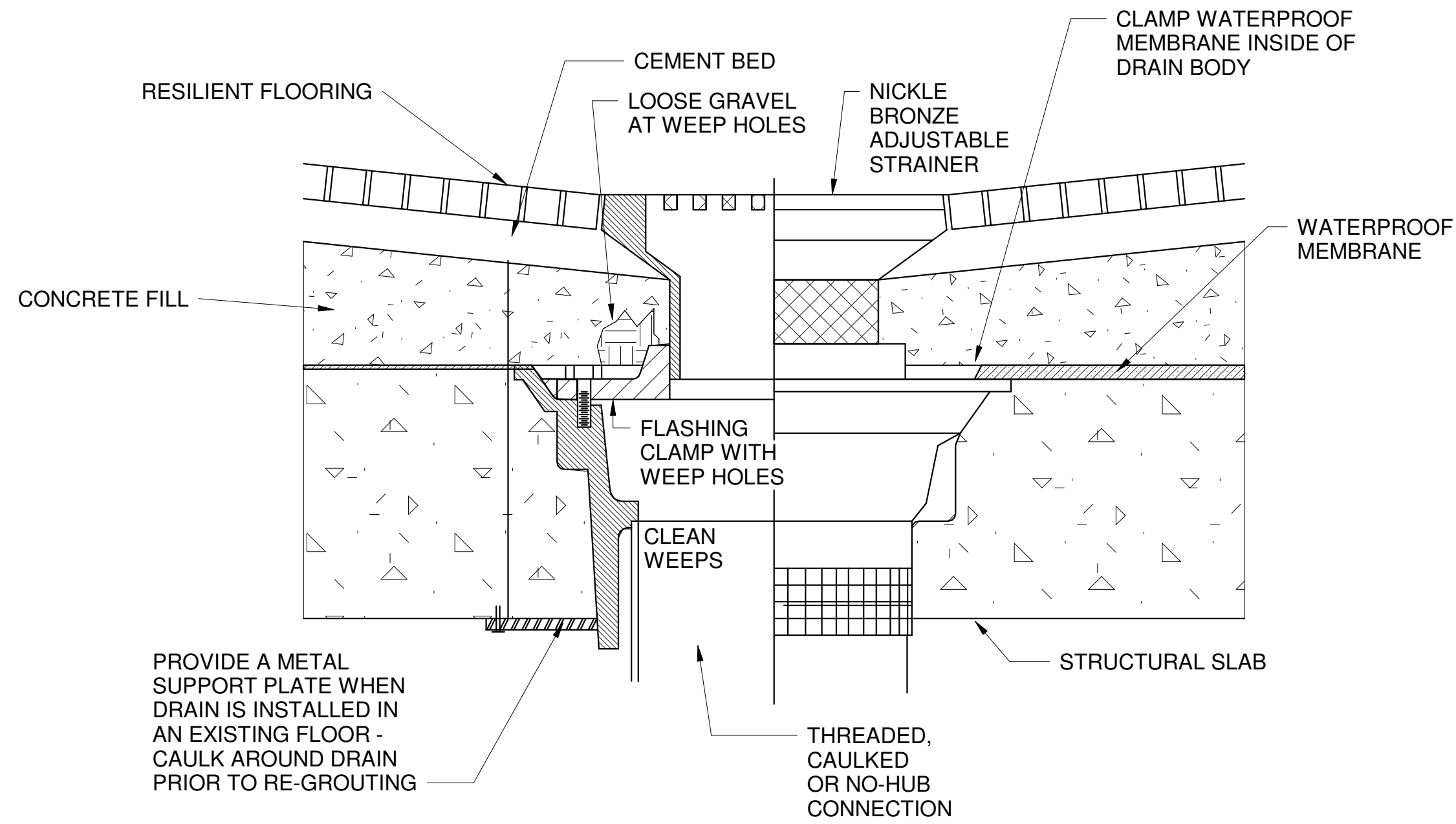
4 TYPICAL FLOOR CLEANOUT DETAIL
P401 NTS



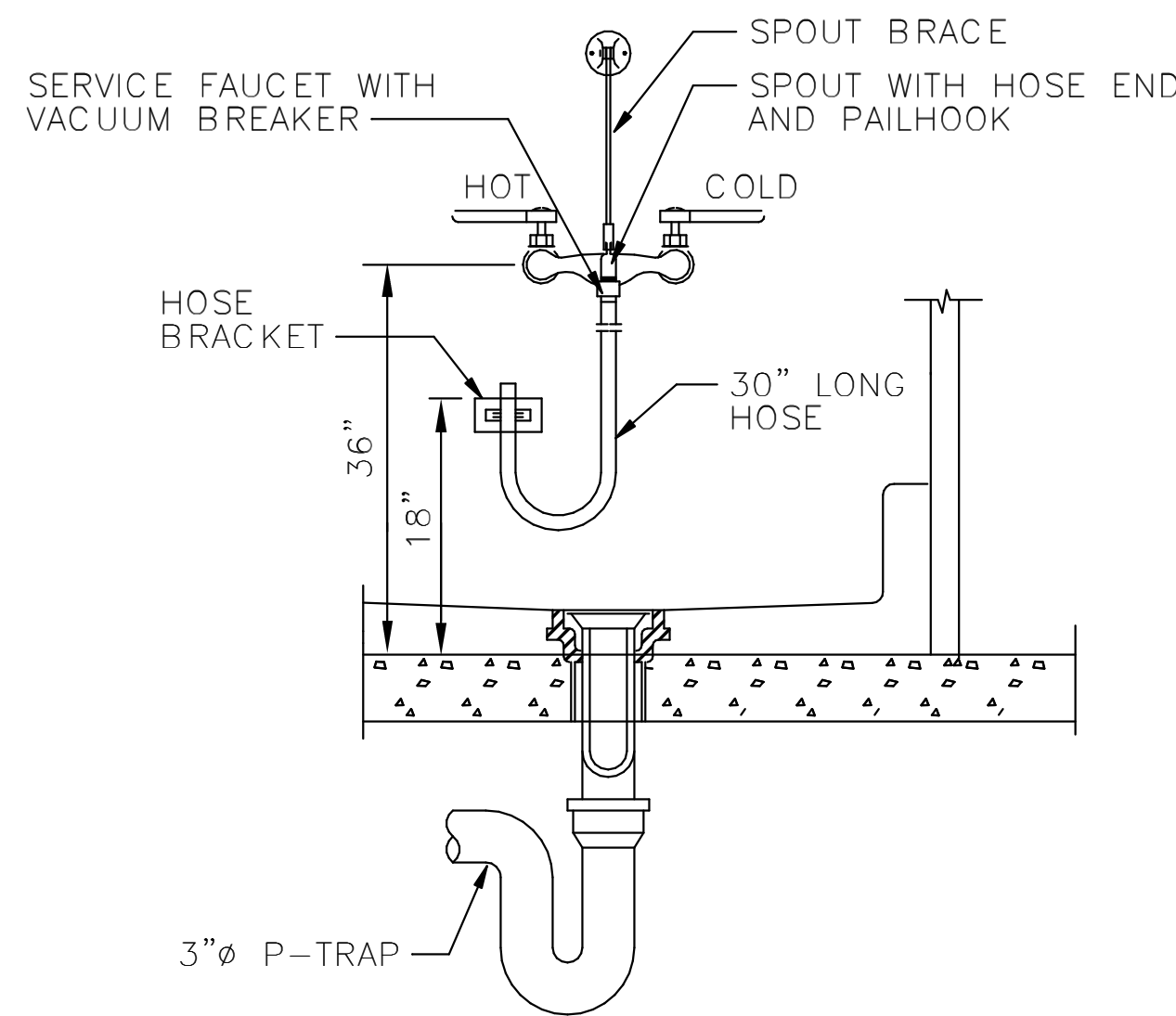
5 TYPICAL LAVATORY MIXING VALVE DETAIL
P401 NTS



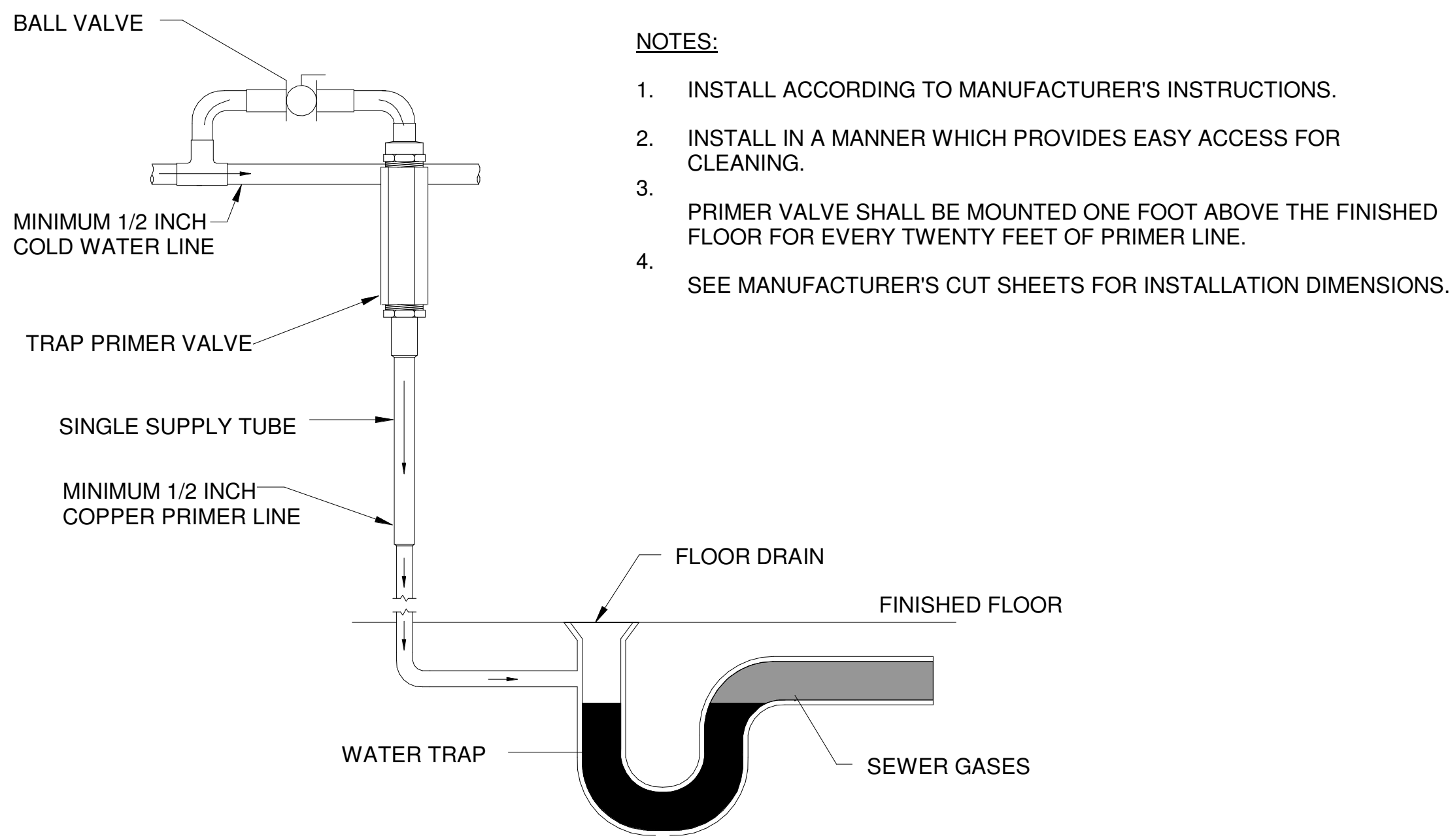
6 TYPICAL WALL CLEANOUT DETAIL
P401 NTS



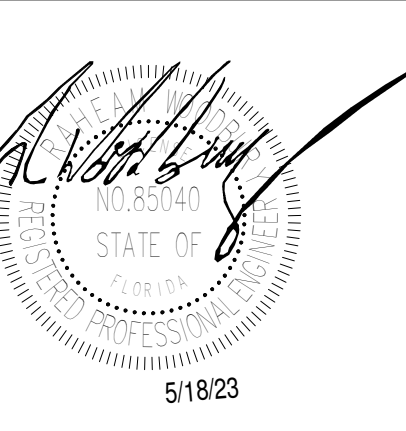
1 FLOOR DRAIN DETAIL
P401 NTS



2 SANITARY SINK WATER OUTLET DETAIL
P401 NTS



3 TRAP PRIMER UNIT
P401 NTS



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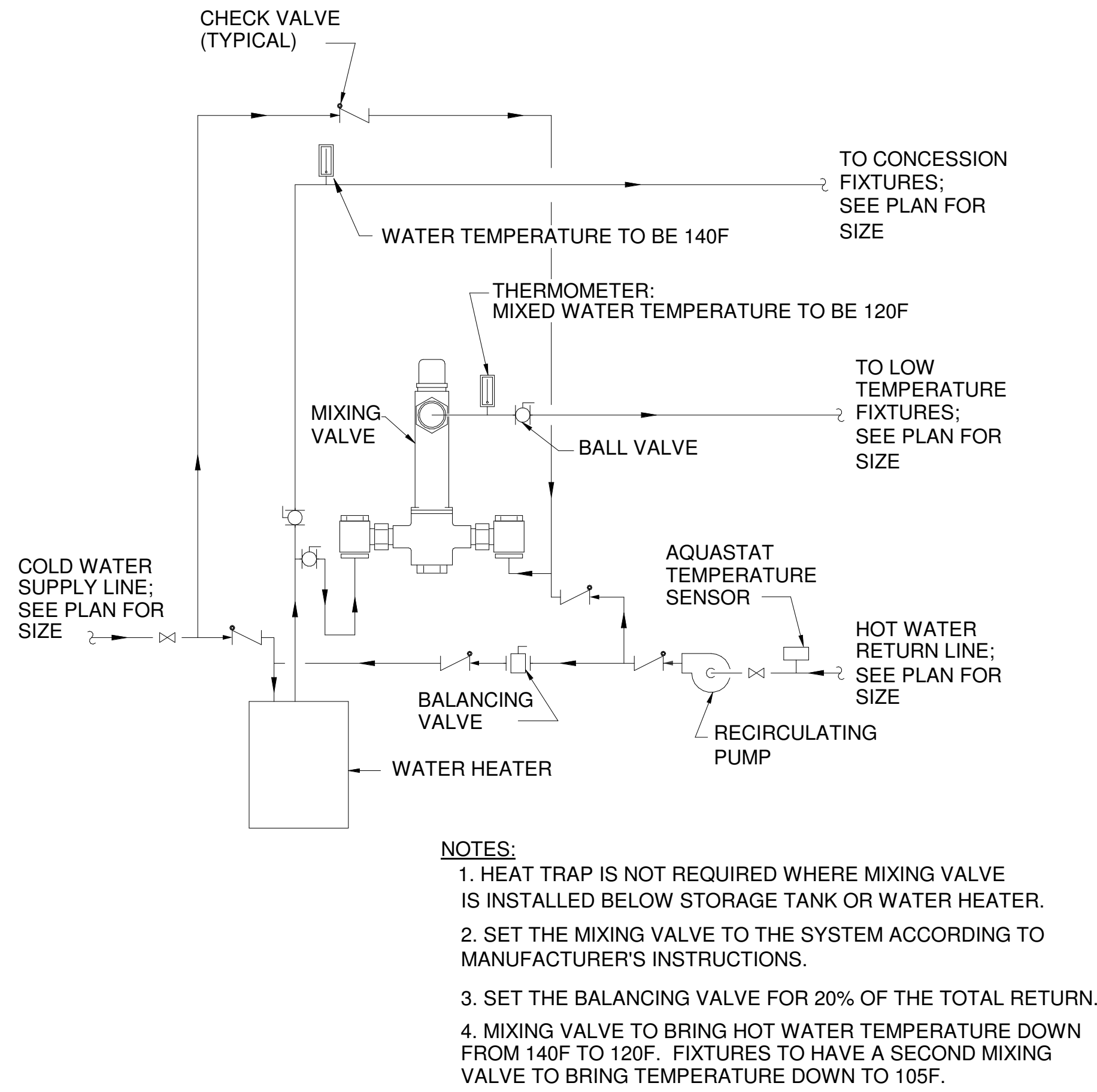
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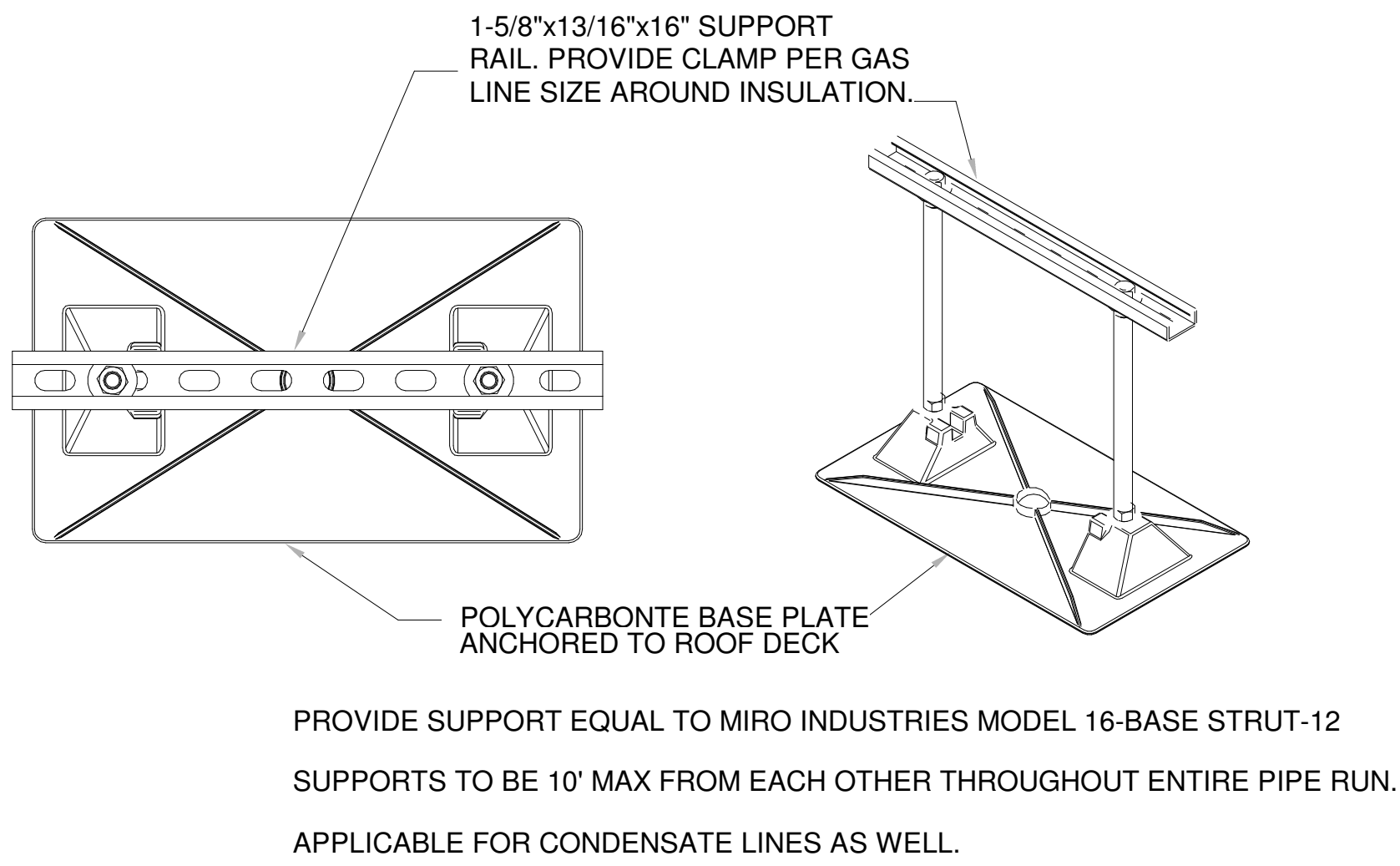
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DETAILS - PLUMBING

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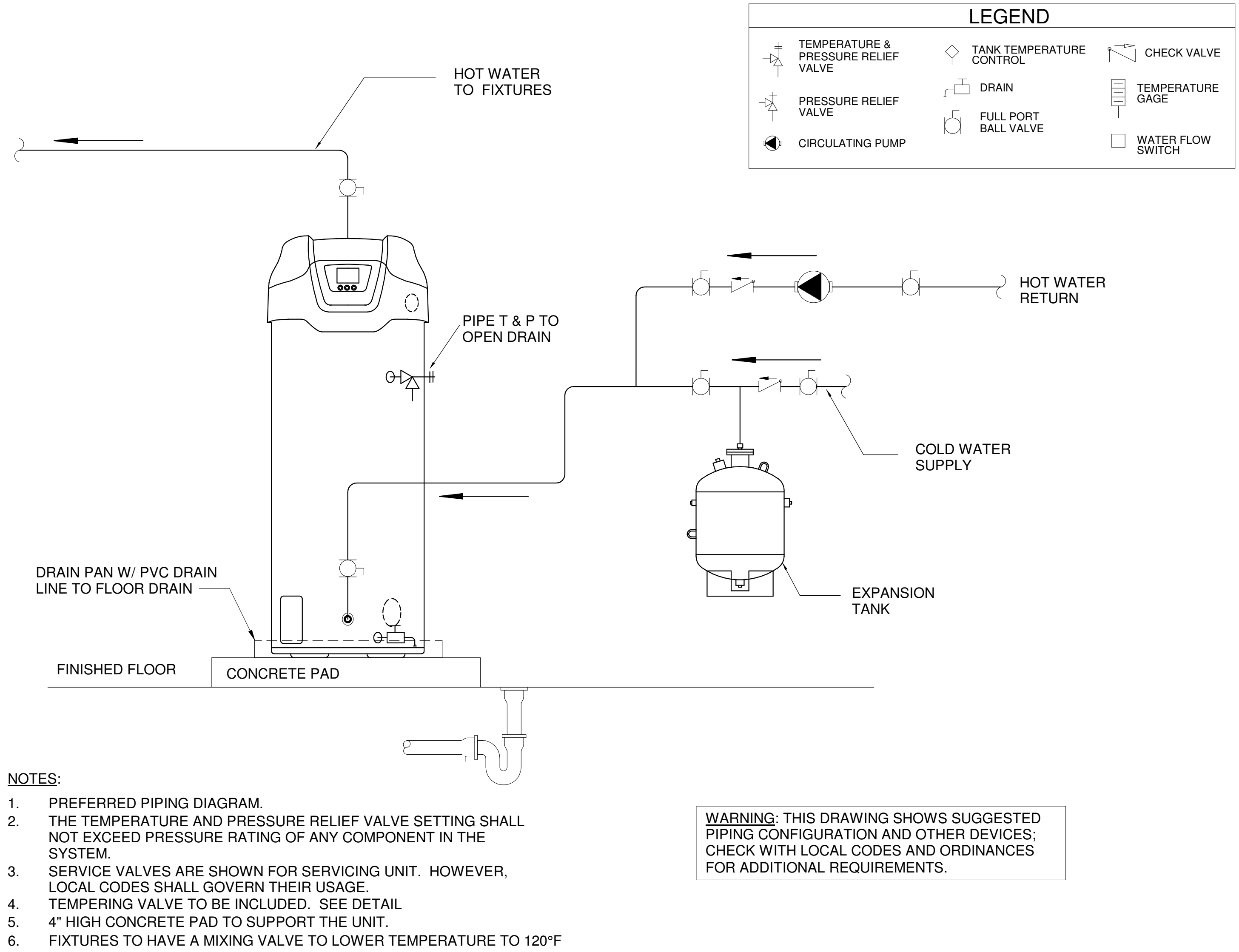
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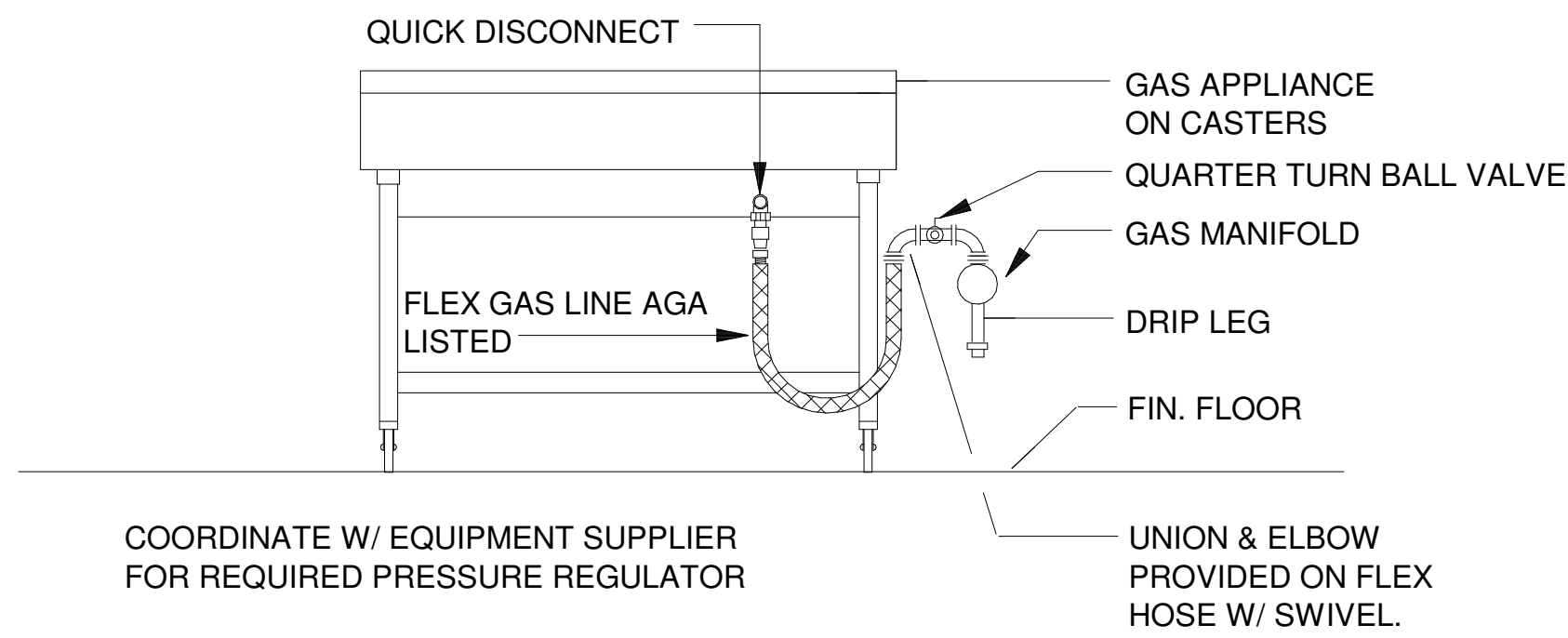
4 P402 HOT WATER HEATER MIXING VALVE DETAIL NTS



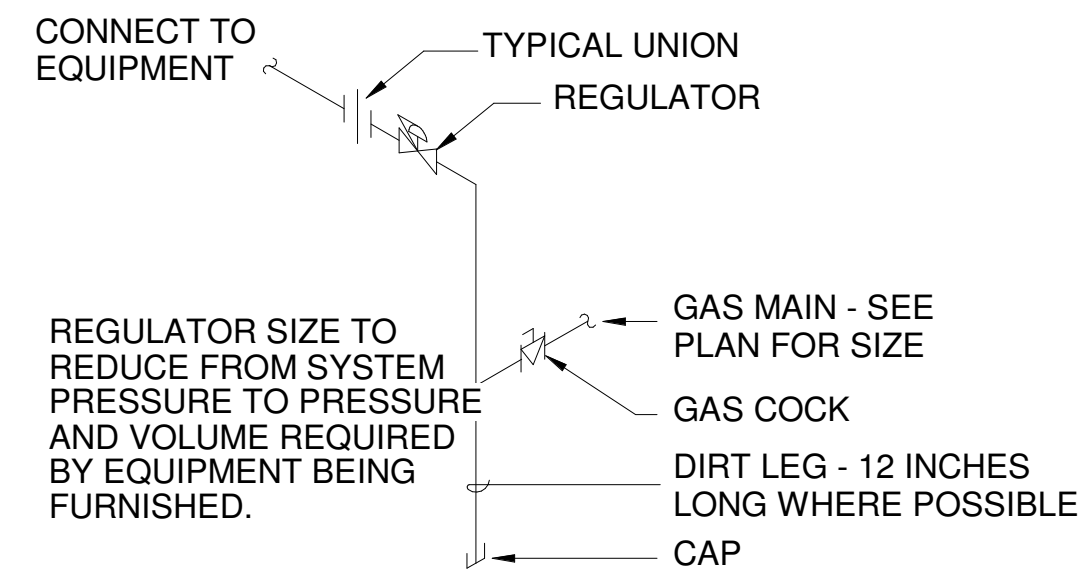
5 P402 OUTDOOR GAS / CONDENSATE PIPING SUPPORT DETAIL NTS



1 P402 WATER HEATER DETAIL NTS



2 P402 TYPICAL GAS APPLIANCE CONNECTION NTS



3 P402 TYPICAL GAS CONNECTION DETAIL NTS

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GENERAL NOTE: PLUMBING FIXTURE MODELS ARE BASIS OF DESIGN ONLY. SEE SPECIFICATIONS FOR EQUALS.

PLUMBING FIXTURE SCHEDULE								
MARK	DESCRIPTION	MANUFACTURER	MODEL	HOT WATER	COLD WATER	WASTE	VENT	REMARKS
1000 GAL GREASE TRAP	1000 GAL GREASE TRAP	---	---	---	---	3"	2"	---
BFP-1	DOUBLE CHECK VALVE BACKFLOW ASSEMBLY	WATTS	LF007-NRS	---	2-1/2"	---	---	---
CO-1	FLOOR CLEANOUT WITH HEAVY DUTY ROUND TOP	WATTS	CO-204-RX	---	---	4"	---	---
CO-2	FLOOR CLEANOUT WITH HEAVY DUTY ROUND TOP	WATTS	CO-203-RX	---	---	3"	---	---
EW-C1	ELECTRIC WATER COOLER WITH BOTTLE FILLER	ELKAY	LZSG8WSLK	---	1/2"	1-1/2"	1-1/2"	115V/60HZ
EW-C2	BI-LEVEL ELECTRIC WATER COOLER WITH BOTTLE FILLER	ELKAY	LZSTLG8WSLK	---	1/2"	1-1/2"	1-1/2"	115V/60HZ
FD-1	FLOOR DRAIN	JAY R SMITH	2005	---	1/2"	3"	2"	NICKEL BRONZE TYPE "B" ADJUSTABLE TOP. 1/2" TRAP PRIMER CONNECTION.
FS-1	FLOOR SINK	JAY R SMITH	3009	---	1/2"	3"	2"	FIXTURES ROUTED TO FLOOR SINK TO HAVE MINIMUM 1" AIR GAP TO SURFACE OF FLOOR SINK.
GAS METER	GAS METER BY OTHERS	---	---	---	---	---	---	---
HB-1	HEAVY COMMERCIAL WALL HYDRANT WITH LOCK AND KEY	PRIER	C-634BX1	---	3/4	---	---	24" AFF. BACKLOW PREVENTION, FREEZELESS, NICKEL LOCKING BOX.
LAV-1	COUNTERTOP LAVATORY	ZURN	ZS110	1/2"	1/2"	1-1/2"	2"	FAUCET - ZURN Z81101-XL. 4" CENTERSET. TEMPERING VALVE TO BE INCLUDED.
LAV-2	WALL HUNG LAVATORY	ZURN	ZS350	1/2"	1/2"	1-1/2"	2"	FAUCET - ZURN Z81101-XL. 4" CENTERSET. TEMPERING VALVE TO BE INCLUDED.
MS-1	MOP SINK	STERN-WILLIAMS	MTB-3624	---	---	3"	2"	MOP BASIN WITH BUMPER GAURDS, MOP HANGERS, AND SS SPLASH PANELS.
MS-2	MOP SINK FAUCET	STERN-WILLIAMS	T-10-VB	1/2"	1/2"	---	---	MOP SINK FAUCET WITH HOSE.
OFD-1	OVERFLOW DOWNSPOUT NOZZLE	JAY R SMITH	1770	---	---	4"	---	24" MAX AFF. A PREFINISH METAL (COW TONGUE) DOWNSPOUT NOZZLE WITH ESCUTCHEON FITTING 4" DIAMETER PVC ELBOW. COLOR TO BE EITHER WHITE TO MATCH WHITE METAL WALL PANELS OR CLEAR ANODIZED SILVER.
PRV-1	HIGH CAPACITY WATER PRESSURE REDUCING VALVE WITH STRAINER	WATTS	LFN223B-S	---	2-1/2"	---	---	SET AT 60 PSI
RD-1	ROOF DRAIN AND OVERFLOW DRAIN	JAY R SMITH	1850	---	---	4"	---	---
SK-1	DOUBLE BOWL SINK	ELKAY	LR4322	1/2"	1/2"	2"	2"	FAUCET TO BE - ELKAY: LKD2439BHC. TEMPERING VALVE TO BE INCLUDED.
SK-2	SINGLE BOWL SINK	ELKAY	LRAD312265	1/2"	1/2"	2"	2"	FAUCET TO BE - ELKAY: LKD2439BHC. TEMPERING VALVE TO BE INCLUDED.
SK-3	SINGLE BOWL SINK	ELKAY	PLA252212	1/2"	1/2"	2"	2"	FAUCET TO BE - ELKAY: LK2000CR. TEMPERING VALVE TO BE INCLUDED.
SOLID INTERCEPTOR	SOLIDS INTERCEPTOR	ZURN	Z1180	---	---	2"	1-1/2"	INTERCEPTOR TO BE USED IN LIEU OF P-TRAP, FOR ON-FLOOR INSTALLATION.
UR-1	URINAL	ZURN	Z5750	---	3/4	2"	2"	WALL MOUNTED, MANUAL FLUSH VALVE (0.5 GPF) ZURN Z60003AV-WS1.
WC-1	WATER CLOSET	KOHLER	4406	---	1"	4"	3"	FLOOR MOUNTED, MANUAL FLUSH VALVE: KOHLER - K-13517
WC-2	WATER CLOSET - ADA COMPLIANT	KOHLER	4406	---	1"	4"	3"	FLOOR MOUNTED, MANUAL FLUSH VALVE: KOHLER - K-13517
WCO-1	EXPANABLE LINE CLEANOUT WITH WALL ACCESS COVER	JAY R. SMITH	4510	---	---	4"	3"	PROVIDE WITH STAINLESS STEEL COVER. VENT WHERE APPLICABLE.
WCO-2	EXPANABLE LINE CLEANOUT WITH WALL ACCESS COVER	JAY R. SMITH	4510	---	---	3"	2"	PROVIDE WITH STAINLESS STEEL COVER. VENT WHERE APPLICABLE.
WCO-3	EXPANABLE LINE CLEANOUT	JAY R. SMITH	4510	---	---	2"	2"	PROVIDE WITH STAINLESS STEEL COVER. VENT WHERE APPLICABLE.
WMVB-1	WASHING MACHINE VALVE BOX	IPS CORPORATION	W4700	1/2"	1/2"	2"	2"	GUY GRAY OR APPROVED EQUAL

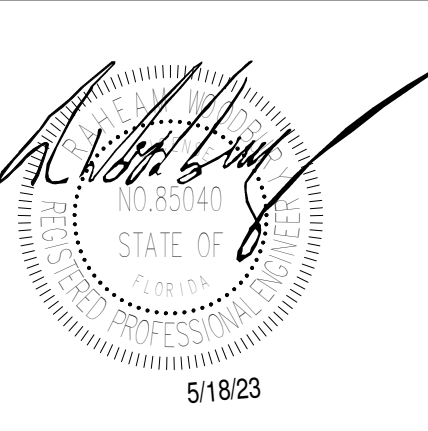
ELECTRIC WATER HEATER SCHEDULE													
MARK	MANUFACTURER	MODEL	EFF (%)	ENTERING WATER TEMP	LEAVING WATER TEMP	RECOVERY RATE (GPH) @ 100°F	STORAGE CAPACITY (GAL)	TANK HEIGHT	TANK WIDTH / DIAMETER	V/PH/HZ	KILOWATTS	WEIGHT	REMARKS
EW-H-1	A. O. SMITH	DRE-52-15	96	50 °F	140 °F	61	50	55.25"	21.75"	208/3/60	15.0	260	---

PUMP SCHEDULE												
MARK	MANUFACTURER	MODEL	SERVICE	PUMP TYPE	FLOW RATE	DISCH HEAD (FT)	RPM	MOTOR STARTER	POWER	V/PH/HZ	REMARKS	
CP-1	Bell & Gossett	NBF-45	HW RECIRCULATION	IN-LINE CIRCULATOR	5 GPM	15	3300	INTERGRAL	270 W	115/1/60	1	

REMARKS:

1. PROVIDE TIME CLOCK/TIMER TO OPERATE DURING OCCUPIED PERIODS.

EXPANSION TANK SCHEDULE									
MARK	MANUFACTURER	MODEL	SERVICE	ORIENTATION	TYPE	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	PRE-CHARGE PRESSURE (PSI)	REMARKS
EXT-1	WATTS	DETA 5	HOT WATER	VERTICAL	BLADDER	3.5	2.3	40	CONNECT TO EWH-1



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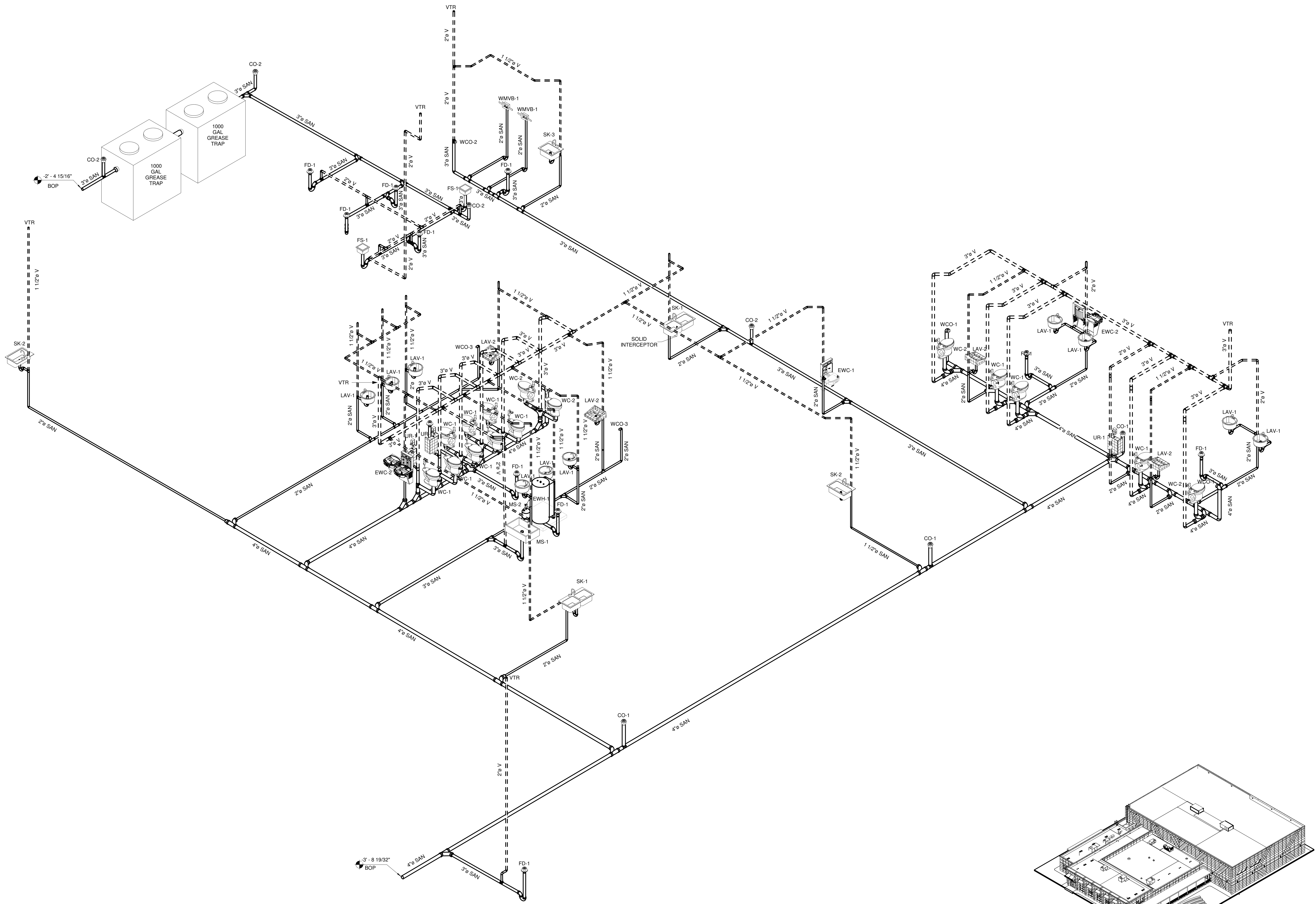
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SCHEDULE - PLUMBING

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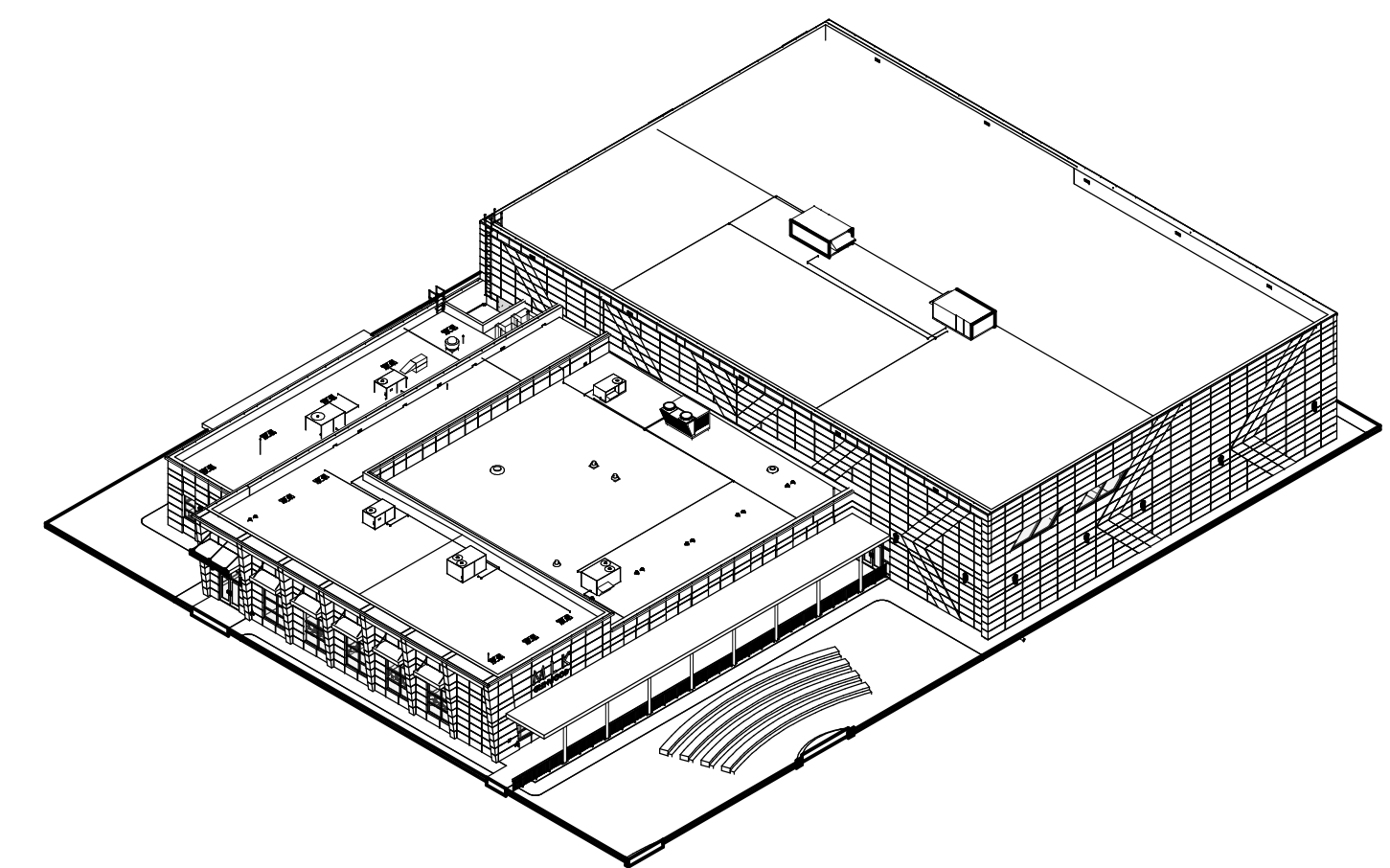
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P601

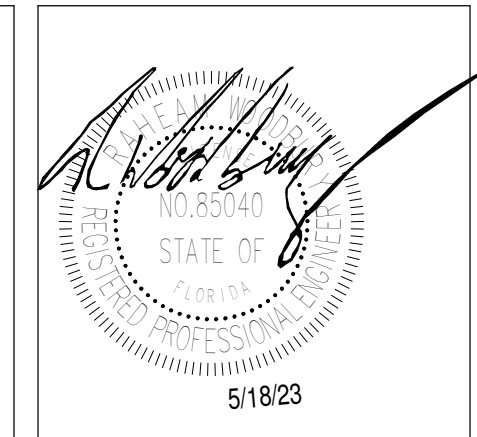
ISOMETRIC -SANITARY

NTS



KEYPLAN

N.T.S.



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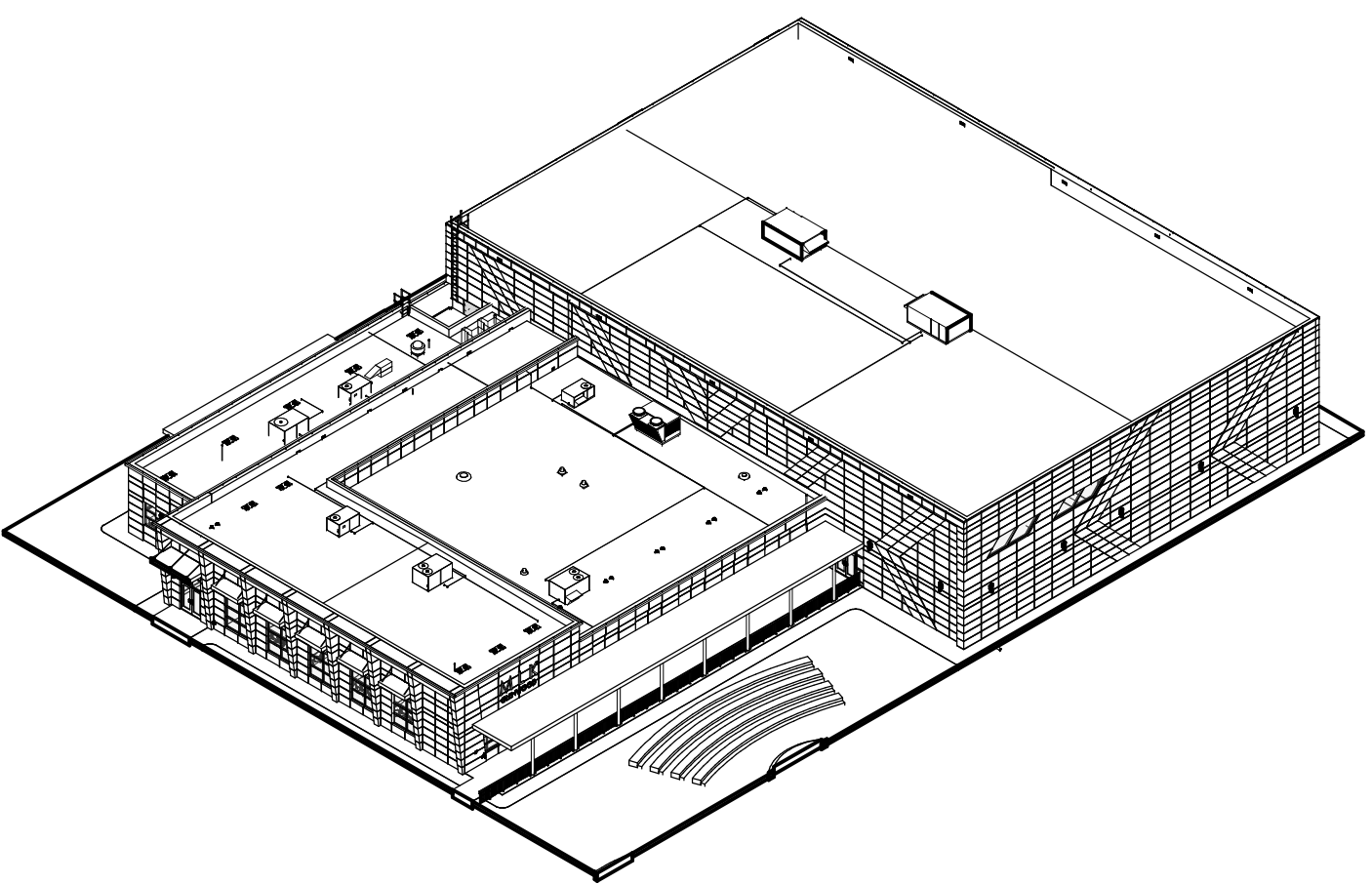
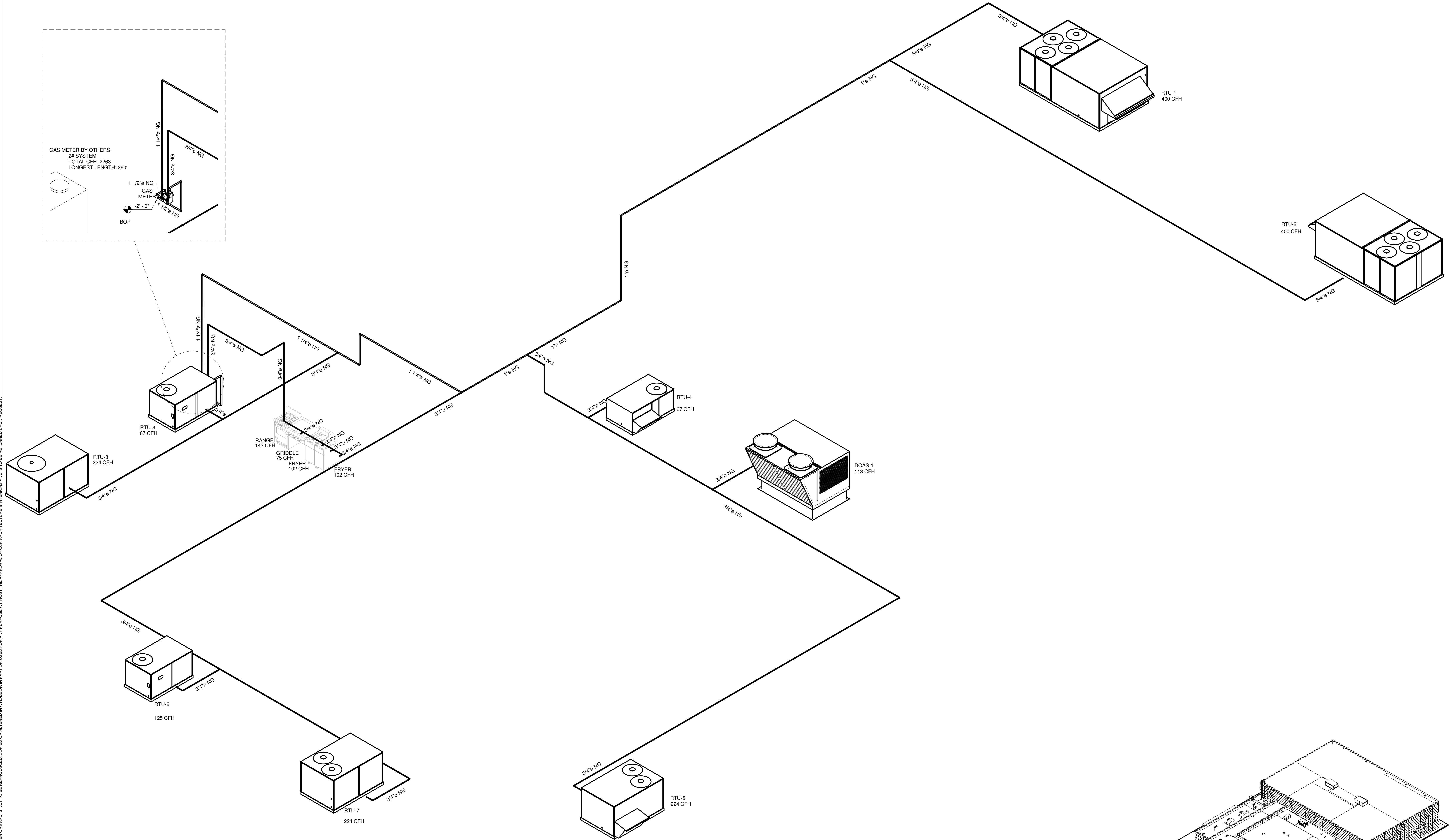
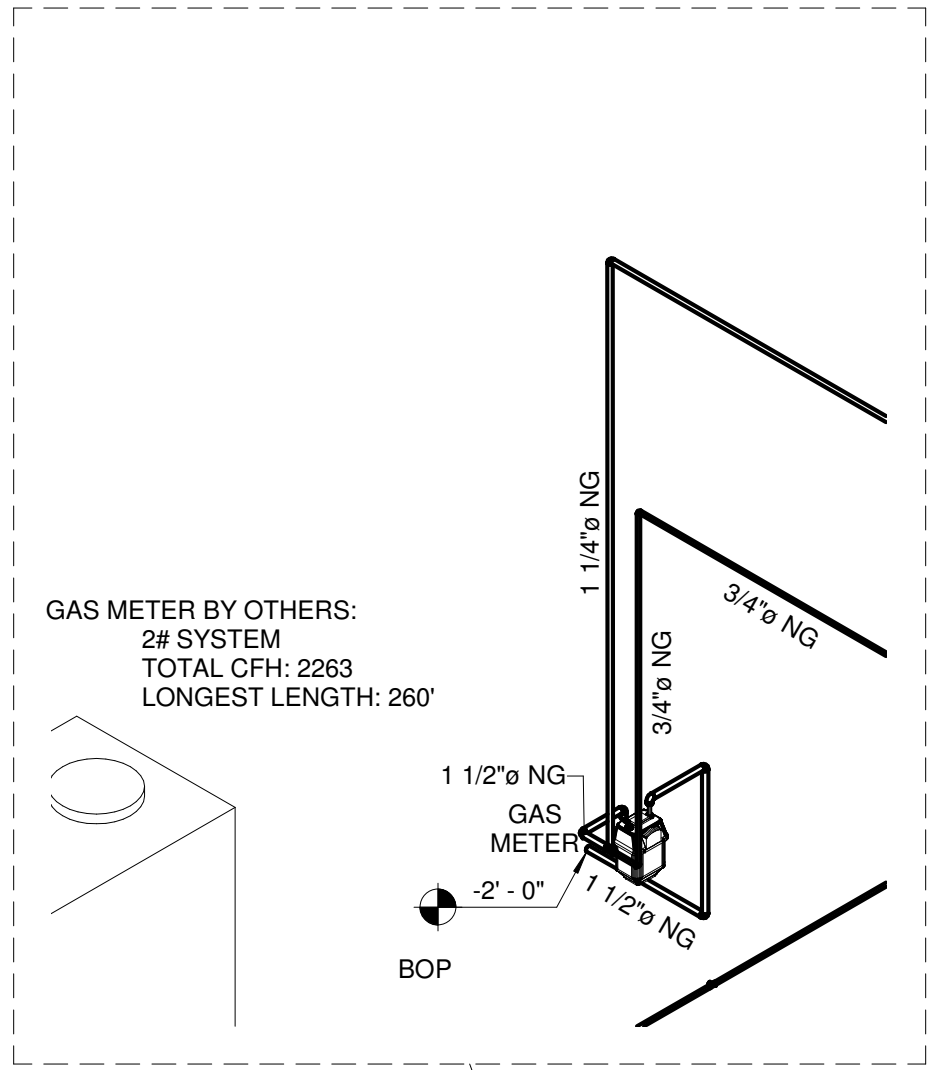
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ISOMETRIC - GAS

SHEET NUMBER:
P602



KEYPLAN
N.T.S.

FIRE PROTECTION LEGEND

- FP — FIRE PROTECTION PIPING
- ↑ FLOW SWITCH
- INSPECTOR'S TEST VALVE
- VALVE WITH TAMPER SWITCH
- PENDENT SPRINKLER HEAD
- CONCEALED SPRINKLER WITH WHITE COVER PLATE
- SEMI-RECESSED SPRINKLER HEAD
- UPRIGHT SPRINKLER HEAD

HAZARD CLASSIFICATION

LIGHT HAZARD EXCEPT FOR THE FOLLOWING LOCATIONS: ELECTRICAL CLOSETS, MECHANICAL ROOMS, KITCHEN, SERVING LINE, AND DISHWASHING ROOM WHICH IS ORDINARY HAZARD.

FIRESTOP NOTES:

- PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS FOR PIPING AND CONDUIT PENETRATIONS THROUGH FIRE-RESISTANCE-RATED ASSEMBLIES:
 - FLOORS
 - ROOFS
 - WALLS AND PARTITIONS
- FIRESTOP SYSTEMS PROVIDED SHALL RESIST SPREAD OF FIRE, RESIST PASSAGE OF SMOKE AND OTHER GASES, AND MAINTAIN ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY PENETRATED. WHERE RATING OF EXISTING BUILDING COMPONENT PENETRATED IS NOT KNOWN CONTACT ARCHITECT FOR DETERMINATION.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SMOKE WALLS WHERE PROVIDED.

SPRINKLER NOTES:

- PROVIDE SPRINKLER COVERAGE FOR BUILDING IN ACCORDANCE WITH NFPA 13 AND SPECIFICATION SECTION 211313 REQUIREMENTS.
- ROUTE WET SYSTEM MAIN PIPING OUTSIDE ELECTRICAL AND TELECOM ROOMS. SPRINKLERS IN ELECTRICAL AND TELECOM ROOMS SHALL BE SUPPLIED BY PIPING THAT TERMINATES IN THE ROOM AND DOES NOT PASS DIRECTLY OVER ELECTRICAL PANELS (TYPICAL FOR ALL).
- ALL BRANCH LINES SHALL BE RUN IN JOIST SPACE WHERE POSSIBLE. COORDINATE WITH MECHANICAL.
- ALL WET SYSTEM PIPING SHALL BE INSTALLED WITHIN THE HEATED ENVELOPE OF THE BUILDING.
- FIRE STOP AND SEAL ALL PENETRATIONS IN RATED WALLS IN ACCORDANCE WITH SPECIFICATIONS.
- ALL MATERIALS, WORKMANSHIP AND TESTING SHALL MEET THE REQUIREMENTS OF APPLICABLE STATE/LOCAL CODES.
- PROVIDE DRY-SIDEWALL/DRY-PENDENT SPRINKLERS FOR PROTECTION OF EXTERIOR BALCONIES AND GROUND FLOOR PATIOS WHERE REQUIRED BY 2009 IBC.

SECTION 211313 - WET-PIPE SPRINKLER SYSTEMS

- QUALITY ASSURANCE
 - Quality Standards: NFPA 13 and NFPA 70.
- PIPING MATERIALS
 - Standard-Pressure, Wet-Pipe Sprinkler System:
 - Schedule 40, black-steel pipe with threaded ends and uncoated, gray-iron fittings.
 - Schedule 40, black-steel pipe and welding fittings.
 - SPRINKLER MATERIALS
 - Sprinkler Types:
 - Rooms without Ceilings: Upright sprinklers.
 - Rooms with Suspended Ceilings: Concealed sprinklers.
 - Wall Mounting: Sidewall sprinklers.
 - Spaces Subject to Freezing: Pendent, dry sprinklers.
 - Sprinkler Finishes:
 - Concealed Sprinklers: Rough brass, with factory-painted white cover plate.
 - Upright Sprinklers: Chrome plated in finished spaces exposed to view; rough bronze in unfinished spaces not exposed to view; wax coated where exposed to acids, chemicals, or other corrosive fumes.
 - LISTED FIRE-PROTECTION VALVES
 - Ball Valves:
 - Valves: Bronze body with threaded ends or ductile-iron body with grooved ends.
 - Bronze butterfly valves.
 - Iron butterfly valves.
 - Check valves.
 - Bronze OS&Y gate valves.
 - Iron OS&Y gate valves.
 - Indicating-type butterfly valves.
 - Valves NPS 2 and Smaller: Ball or butterfly.
 - Valves NPS 2-1/2 and Larger: Butterfly.
- TRIM AND DRAIN VALVES
 - Angle valves.
 - Ball valves.
 - Globe valves.
 - Plug valves.
- SPRINKLER SPECIALTY PIPE FITTINGS
 - Branch outlet fittings.
 - Flow detection and test assemblies.
 - Branch line testers.
 - Sprinkler inspector's test fittings.
 - Adjustable drop nipples.
 - Sprinkler Escutcheons:
 - Ceiling Mounting: Plastic, white finish, one piece, flat.
 - Sidewall Mounting: Chrome-plated steel, one piece, flat.
 - Sprinkler guards.

GENERAL NOTES:

- FIRE PROTECTION LAYOUTS SHOWN ON PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. IT IS THE INTENT OF THESE DRAWINGS TO INDICATE AREAS OF COVERAGE, TYPES OF SPRINKLER HEADS AND FINISHES TO BE USED, TYPES OF FIRE PROTECTION SYSTEMS TO BE INSTALLED AND LOCATIONS OF MAJOR EQUIPMENT AND COMPONENTS. THE FIRE PROTECTION CONTRACTOR SHALL DESIGN A FULL AND COMPLETE FIRE PROTECTION SYSTEM BASED ON HYDRAULIC INFORMATION, LAYOUT OF PIPING SYSTEM AS COORDINATED WITH OTHER TRADES AND SPECIFIC COMPONENTS USED IN FIRE PROTECTION SYSTEM. ALL DESIGNS SHALL BE PER NFPA-13.
- PIPING LAYOUT SHOWN IS DIAGRAMMATIC AND NOT INTENDED TO SHOW ALL OFFSETS AND CHANGES IN ELEVATION NECESSARY FOR COMPLETE INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO SUBMITTING BID.
- CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS IN NEW AND EXISTING PIPING AND ELECTRICAL CONDUIT AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL ALLOW FOR ANY CONFLICTS ENCOUNTERED.
- REFER TO ARCHITECT'S REFLECTED CEILING PLAN FOR LOCATION OF LIGHTS, DIFFUSERS, GRILLES AND ALL OTHER CEILING MOUNTED DEVICES. COORDINATE WITH THE REFLECTED CEILING PLAN TO DETERMINE ACTUAL LOCATION OF SPRINKLERS.
- ALL NEW FIRE PROTECTION PIPING SHALL BE INSTALLED AS CLOSE TO STRUCTURE ABOVE AS POSSIBLE.
- ALL UNUSED FIRE PROTECTION PIPING, WHETHER NEW OR EXISTING, SHALL BE REMOVED. ALL SPRINKLER HEADS INSTALLED UNDER THIS CONTRACT SHALL BE NEW.
- SPACE ABOVE CEILING IS LIMITED. CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, PLUMBING, STRUCTURE, PNEUMATIC TUBE, AND ARCHITECTURAL TRADES IS CRITICAL TO COMPLETE INSTALLATION.
- COORDINATION SHOP DRAWINGS SHALL BE PREPARED FOR THE ENTIRE PROJECT DRAWN TO 1/4" = 1'-0" SCALE (MINIMUM). DRAWINGS SHALL BE FULLY DIMENSIONED, INCLUDING ELEVATIONS OF DUCTWORK, PIPING, MAJOR HANGER SUPPORTS, PNEUMATIC TUBING AND MAJOR ELECTRICAL CONDUIT (2" AND LARGER). CEILING COORDINATION PLANS SHALL ALSO SHOW CEILING GRID, LIGHTING LAYOUT, SPRINKLER LAYOUT AND MECHANICAL GRILLES.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION VERIFICATION AND SUBMITTAL OF SHOP DRAWINGS TO OWNER, ARCHITECT AND ENGINEER.
- SYSTEM DESIGN AND INSTALLATION SHALL COMPLY WITH NFPA 72 AND NFPA 13.
- WHERE REFERENCED SYSTEM SHALL COMPLY WITH NFPA 70 AND NFPA 13.
- ALL SPRINKLERS WITHIN THE SCOPE OF THIS PROJECT SHALL BE QUICK RESPONSE TYPE.
- CONTRACTOR SHALL PROVIDE TEST AND DRAIN CONNECTION IN ACCORDANCE WITH NFPA-13. DRAIN SHALL DISCHARGE TO A LOCATION CAPABLE OF ACCEPTING FULL FLOW UNDER NORMAL SYSTEM PRESSURE WITHOUT CAUSING WATER DAMAGE.

CONTRACTOR SHALL PROVIDE FIELD CONDUCTED FLOW TEST:

LOCATION: _____

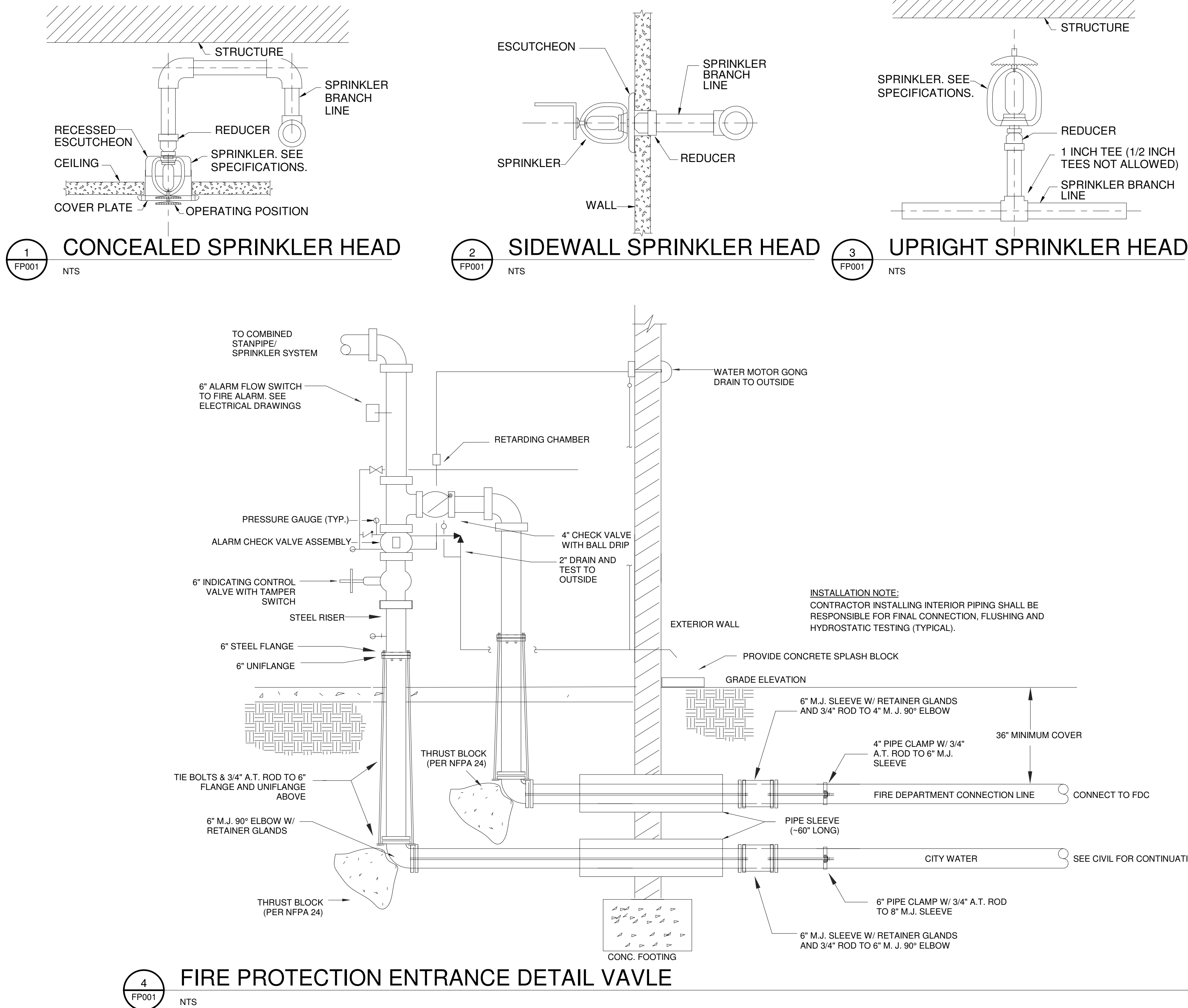
STATIC PRESSURE: _____

RESIDUAL PRESSURE: _____

FLOWING: _____ G.P.M.

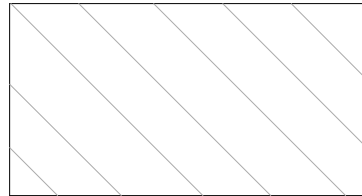
DATE OF TEST: _____

TIME OF DAY: _____

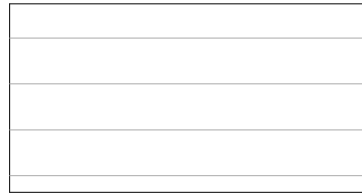


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LEGEND:



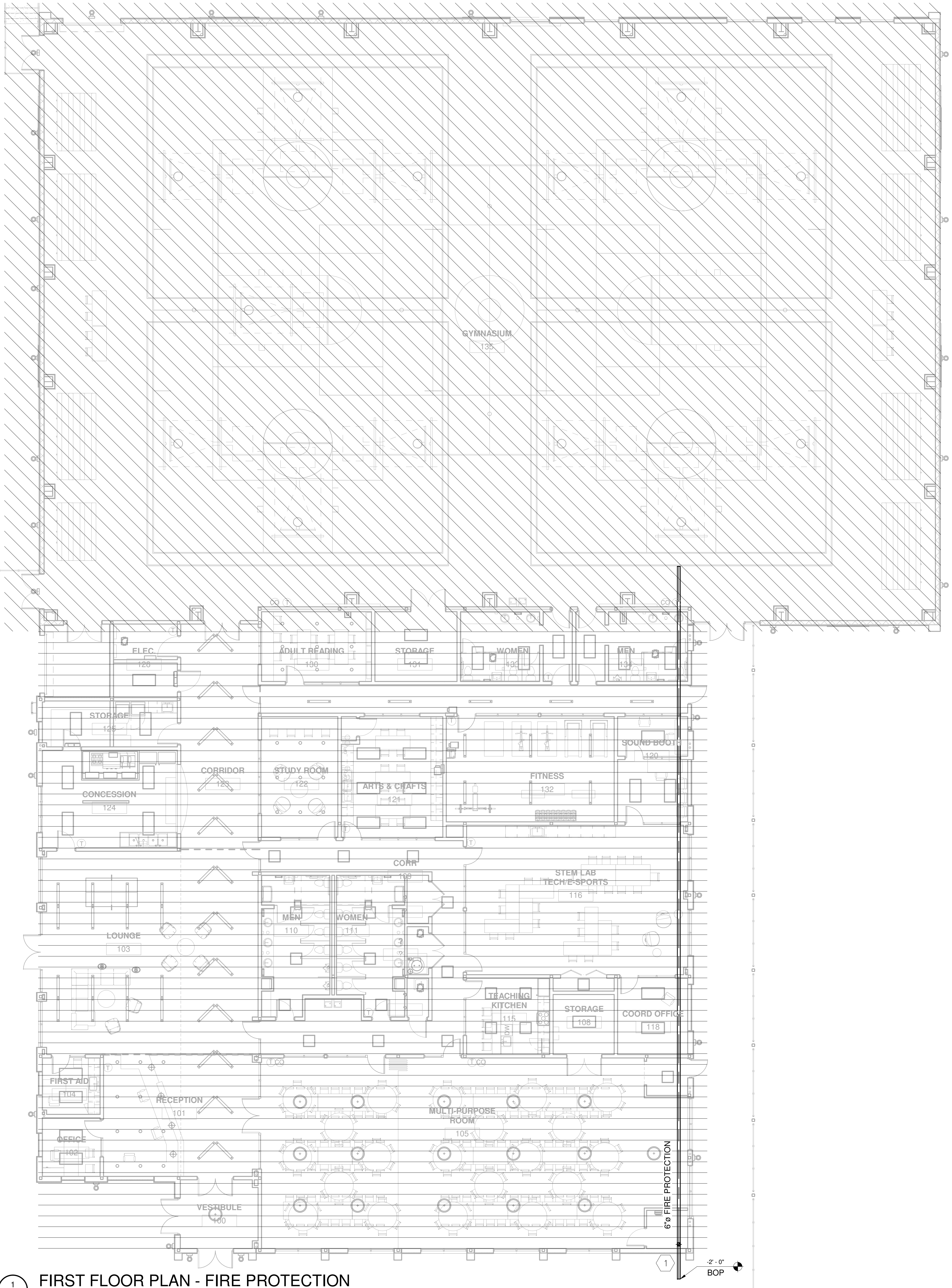
GYM



COMMUNITY CENTER

GYMNASIUM SPRINKLER SYSTEM:
PROVIDE LIGHT HAZARD SPRINKLER SYSTEM
THROUGHOUT ENTIRE GYM PER DENSITY
LISTED IN SPECS.

COMMUNITY CENTER SPRINKLER SYSTEM:
PROVIDE LIGHT HAZARD AND ORDINARY
HAZARD SPRINKLER SYSTEM THROUGHOUT
ENTIRE COMMUNITY CENTER PER DENSITY
LISTED IN SPECS.



1
FP101

FIRST FLOOR PLAN - FIRE PROTECTION

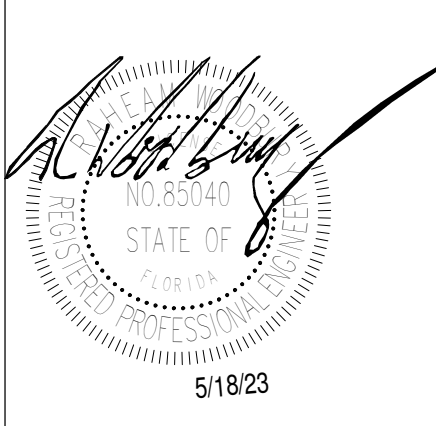
1/8" = 1'-0"

GENERAL NOTES:

1. 6" FIRE PROTECTION SERVICE. INSTALL MAIN SHUT-OFF AND ALARM CHECK.
2. THE SPRINKLER MAINS ARE SHOWN ON THIS DRAWING IS A SUGGESTED PIPING LAYOUT. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR DESIGNING THE ENTIRE FIRE PROTECTION SPRINKLER PIPING LAYOUT AND PIPE SIZES IN ACCORDANCE WITH THE HYDRAULIC CALCULATION. THE SYSTEM SHALL BE DESIGNED TO PROVIDE FIRE PROTECTION FOR THE ENTIRE BUILDING.
3. THE FIRE PROTECTION SPRINKLER CONTRACTOR SHALL PROVIDE A SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 13 AND THE LOCAL FIRE MARSHAL AND JURISDICTION.
4. CONTRACTOR TO VERIFY WATER PRESSURE AND SUPPLY, AND TO NOTIFY ARCHITECT/OWNER IF INSUFFICIENT PRESSURE/SUPPLY IS PRESENT.
5. FIRE PROTECTION DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

KEY NOTES:

1. 6" FIRE WATER SERVICE LINE TO BUILDING. BACKFLOW PREVENTER TO BE LOCATED WITHIN THE MECHANICAL ROOM. SEE DETAIL 4/FP001 FOR SPRINKLER SYSTEM RISER DETAIL. SEE CIVIL FOR CONTINUATION.



MARTIN LUTHER KING JR. RECREATION CENTER

705 14TH COURT EAST
PANAMA CITY, FL 32401

JOB NUMBER:
21109

DATE:
05/18/23

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DESCRIPTION DATE

SHEET TITLE:
FIRST FLOOR PLAN -
FIRE PROTECTION

SHEET NUMBER:

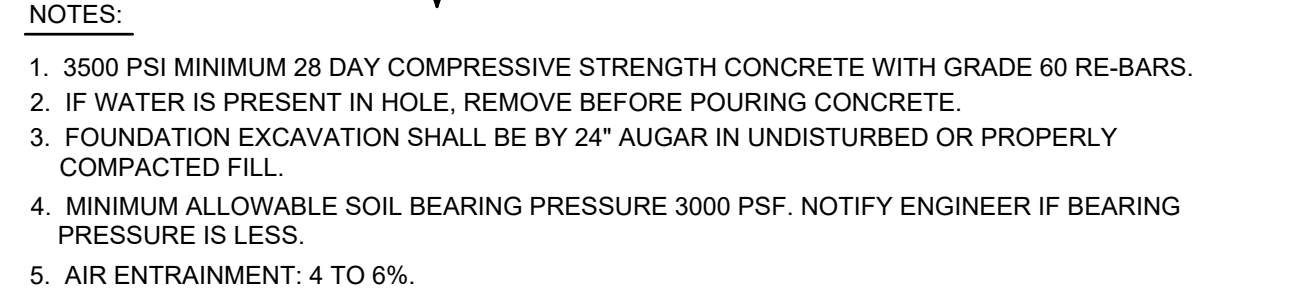
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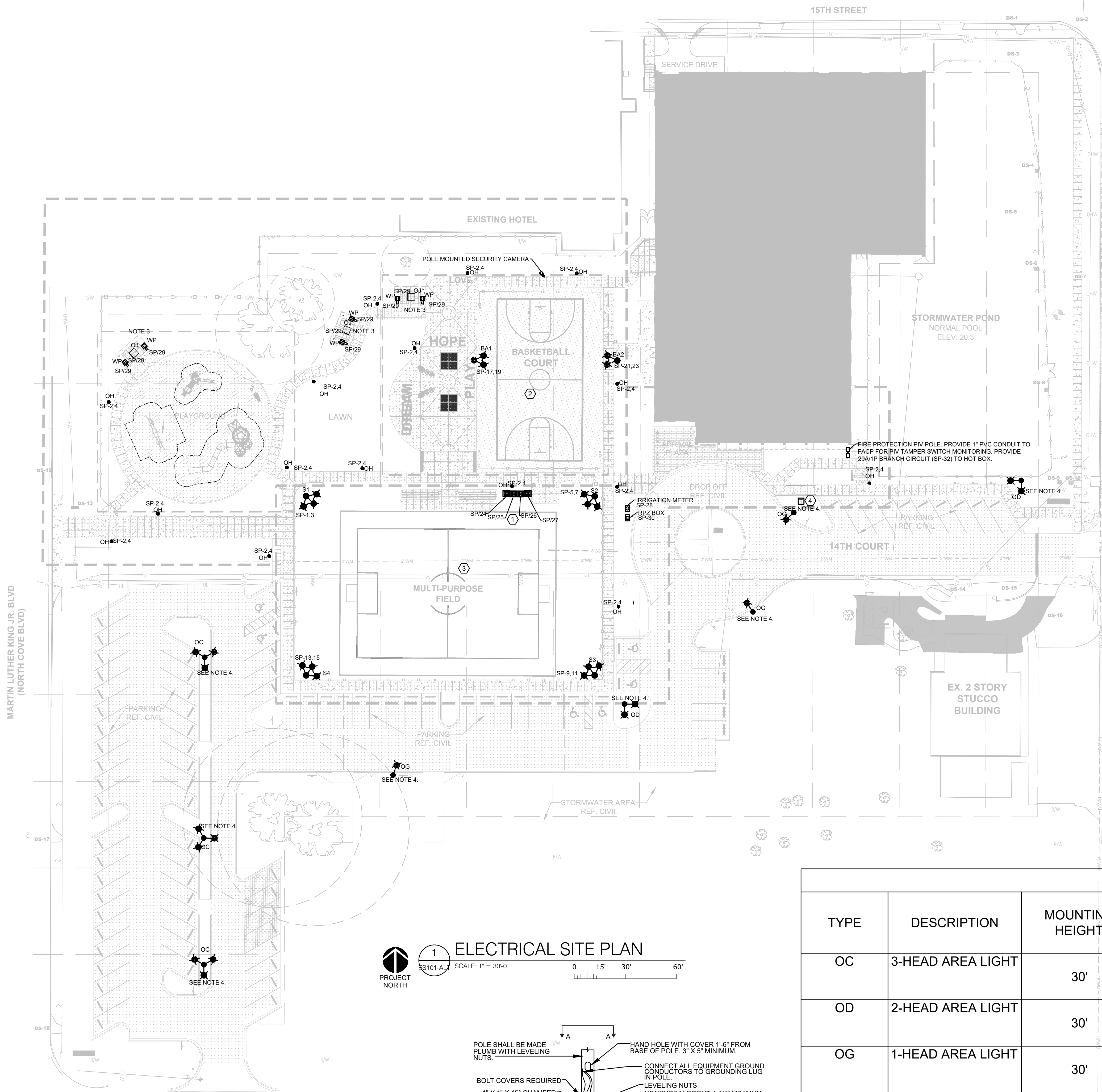
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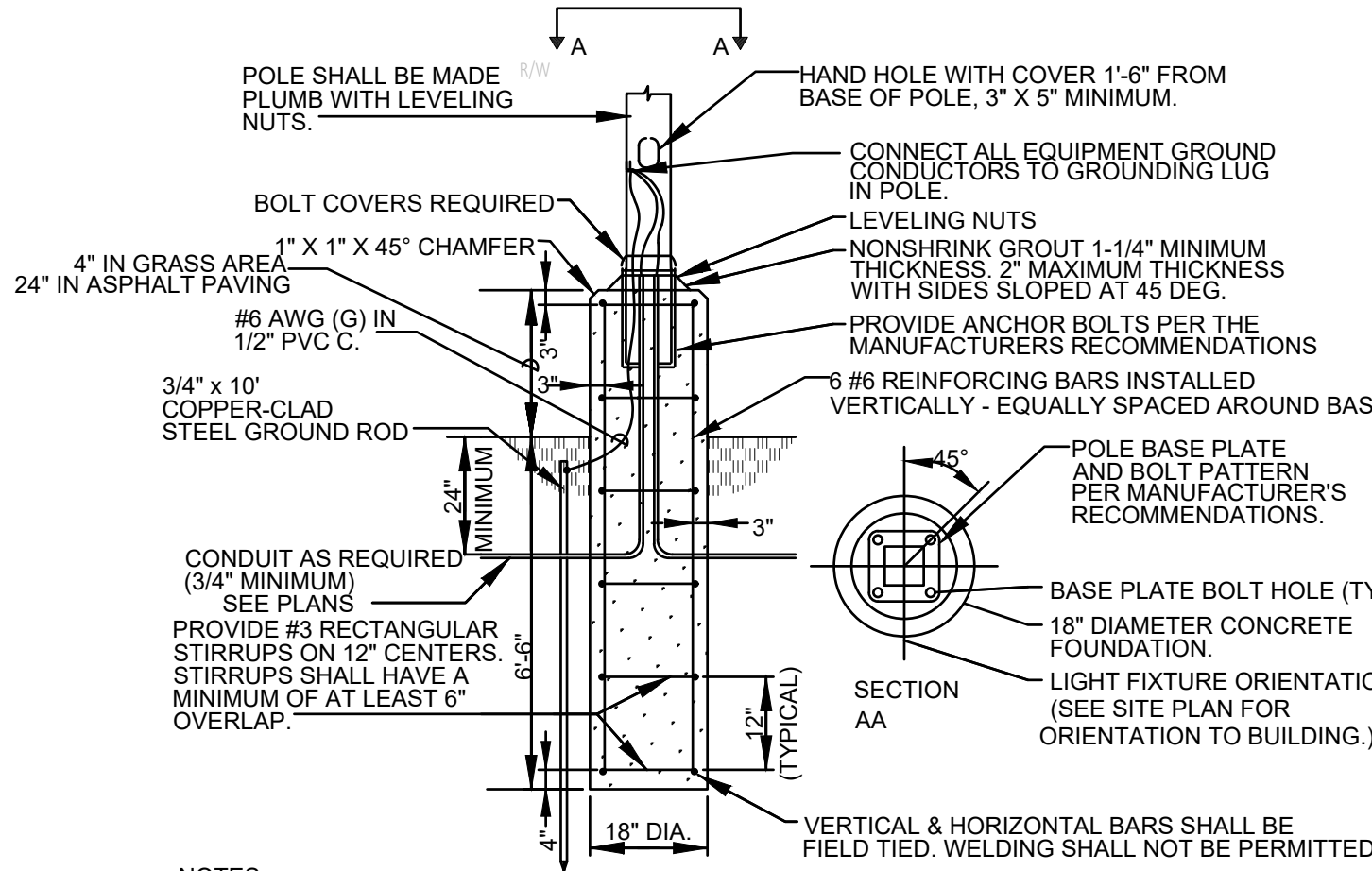
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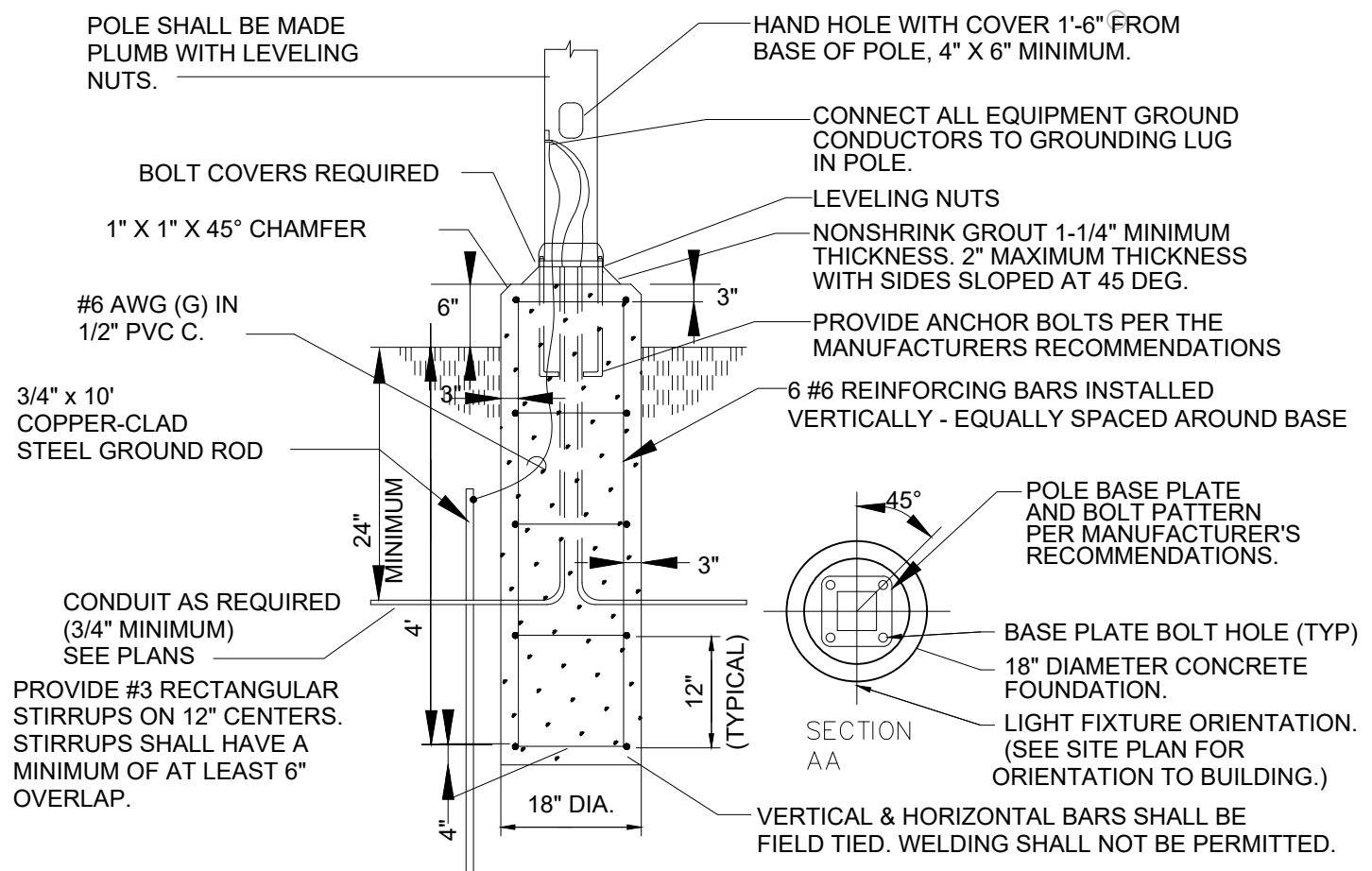
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1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"



2 POLE MOUNT DETAIL - OC, OD, OG
SCALE: NOT TO SCALE



3 POLE OH BASE DETAIL
SCALE: NOT TO SCALE

SHEET NOTES:

- ALL SITE LIGHTING (SOCCER FIELD, BASKETBALL COURT, PEDESTRIAN AND PLAYGROUND) SHALL BE POWERED FROM 'SP' PANEL INSIDE ELECTRICAL ROOM AND BE CONNECTED TO 20A/2P BRANCH CIRCUIT BREAKERS AS INDICATED. ALL SITE LIGHTING WIRING SHALL BE 2#10 AWG, 1#12 (G) IN 1" SCHEDULE 40 PVC UNDERGROUND CONDUITS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF THE SITE LIGHTING POLES WITH THE CIVIL ENGINEER AND REFER TO CIVIL DRAWINGS FOR EXACT LOCATION OF SITE LIGHTING POLES PRIOR TO INSTALLING LIGHT POLE FOUNDATIONS.
- PAVILION LIGHTING AND RECEPTACLES ARE POWERED FROM SP PANEL INSIDE THE ELECTRICAL ROOM. RUN 2#10 AWG, 1#12 (G), IN A 1" SCH. 40 PVC UNDERGROUND CONDUIT TO CONNECT TO A 20A/1P BREAKER IN PANEL. RECEPTACLES TO BE TAMPER RESISTANT, WEATHERPROOF, INSTALLED IN CONDUIT OUTLET FS TYPE CAST BOX WITH 3/4" HUB, MOUNTED 24" AFG AND SUPPORTED FROM PAVILION POST. CONDUIT STUB UP FOR RECEPTACLES TO BE PAINTED TO MATCH PAVILION POST COLOR. LIGHT FIXTURES TO BE VANDAL RESISTANT, WEATHERPROOF LED, 4000K, 3500 LUMENS, LENSED AND GASKETED SELF CONTAINED MOTION OCCUPANCY SENSORS, SURFACE MOUNTED UNDER PAVILION ROOF AND SUPPORTED FROM ROOF STRUCTURAL MEMBERS.
- ALL SITE LIGHTING FIXTURES (OC, OD, OG) AND LIGHT POLES FOR THE ROADWAYS (PARKING LOTS) SHALL BE PROVIDED, INSTALLED, WIRED, AND CONTROLLED BY THE UTILITY COMPANY FROM PAD MOUNTED TRANSFORMER PEDESTAL DISTRIBUTION SYSTEM AS SHOWN ON DRAWINGS. ROADWAY LIGHTING FIXTURES SHALL BE PROVIDED WITH PHOTOCELL AT EACH FIXTURE TO CONTROL TURNING LIGHT FIXTURES "ON" ALL NIGHT LONG (DUSK/DAWN CONTROL).
- ALL WALKWAY LIGHT FIXTURES TYPE OH AND LIGHT POLES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND WIRED BACK TO OWNER'S ELECTRICAL DISTRIBUTION AS SHOWN ON DRAWINGS. WALKWAY LIGHT FIXTURES SHALL BE EQUIPPED WITH PHOTOCELL AT EACH FIXTURE TO CONTROL TURNING LIGHT FIXTURES "ON" ALL NIGHT LONG (DUSK/DAWN CONTROL).

KEY NOTES:

- PROVIDE TAMPER RESISTANT, WEATHERPROOF GFCI QUAD OUTLETS FOR OUTDOOR FOOD CONCESSION AREA, CONNECTED TO SP PANEL AS INDICATED. RUN 2#10 AWG, 1#12 (G) IN A 1" SCH. 40 PVC UNDERGROUND CONDUIT TO CONNECT EACH OUTLET TO A 20A/1P BREAKER IN PANEL. RECEPTACLES TO BE INSTALLED IN CONDUIT OUTLET FS TYPE CAST BOX WITH 3/4" HUB. COORDINATE EXACT LOCATIONS OF THE OUTLET STUB UPS AND MOUNTING HEIGHT REQUIREMENTS WITH THE ARCHITECT/OWNER PRIOR TO ROUGHING.
- LIGHTING FOR THE BASKETBALL COURT TO BE CONTROLLED BY THE LIGHTING CONTACTOR LC-1 AND ASTRONOMIC TIME CLOCK PER THE OWNER'S REQUIREMENTS. SEE SHEET E-504 FOR DETAILS.
- LIGHTING FOR THE MULTI-PURPOSE FIELD TO BE CONTROLLED BY THE LIGHTING CONTACTOR LC-2 AND ASTRONOMIC TIME CLOCK PER THE OWNER'S REQUIREMENTS. SEE SHEET E-504 FOR DETAILS.
- TENTATIVE LOCATION (PROPOSED) FOR THE UTILITY PAD MOUNTED TRANSFORMER INDICATED. CONTRACTOR SHALL COORDINATE WITH THE CITY AND THE UTILITY COMPANY FOR THE FINAL LOCATION OF THE UTILITY PAD MOUNTED TRANSFORMER PRIOR TO ROUGHING OF THE UNDERGROUND SERVICE ENTRANCE CONDUCTORS.

SYMBOL	TYPE
	OC
	OD
	OG
	OH
	S1-S4
	BA1-BA2
	OJ

SITE LIGHTING SYMBOLS LEGEND

SITE LIGHTING SCHEDULE							BASIS OF DESIGN OR EQUAL	
TYPE	DESCRIPTION	MOUNTING HEIGHT	LAMP	VOLT	WATT	BASIS-OF-DESIGN MFR	COLOR TEMP.	CATALOG NUMBER
OC	3-HEAD AREA LIGHT	30'	LED	208	210	LITHONIA	4000K	EQUAL TO: DSX1 LED P2 40K T3M MVOLT SPA PER HS DDBXD DLL127F 1.5 JU
OD	2-HEAD AREA LIGHT	30'	LED	208	140	LITHONIA	4000K	EQUAL TO: DSX1 LED P2 40K T3M MVOLT SPA PER HS DDBXD DLL127F 1.5 JU
OG	1-HEAD AREA LIGHT	30'	LED	208	70	LITHONIA	4000K	EQUAL TO: DSX1 LED P2 40K T3M MVOLT SPA PER HS DDBXD DLL127F 1.5 JU
OH	POST TOP	13'	LED	208	96	COOPER	3500K	BAA-ARB-B4-LED-D1-T5-BZ-8035-PC-PER
POLE	SQUARE STRAIGHT STEEL POLE	-	-	-	-	LITHONIA	-	SSS 30 6G
POLE OH	POST TOP MOUNT 13'	-	-	-	-	COOPER	-	
BA1, BA2	2-HEAD SPORT LIGHT	50'	LED	208	2000	PacLIGHTS	5700K	FFHS/2-1000 4H4V
S1 - S4	3-HEAD SPORT LIGHT	60'	LED	208	1740	MUSCO LIGHTING	5700K	TLC-LED-600
OJ	SURFACE, VANDAL RESISTANT	-	LED	120	15	LITHONIA	3500K	LVP1212 MIN1 15W 35K MVOLT CLP BLK WL

PROFESSIONAL ENGINEER
STATE OF FLORIDA
No. 53519
06/18/2023

CCR ARCHITECTURE & INTERIORS

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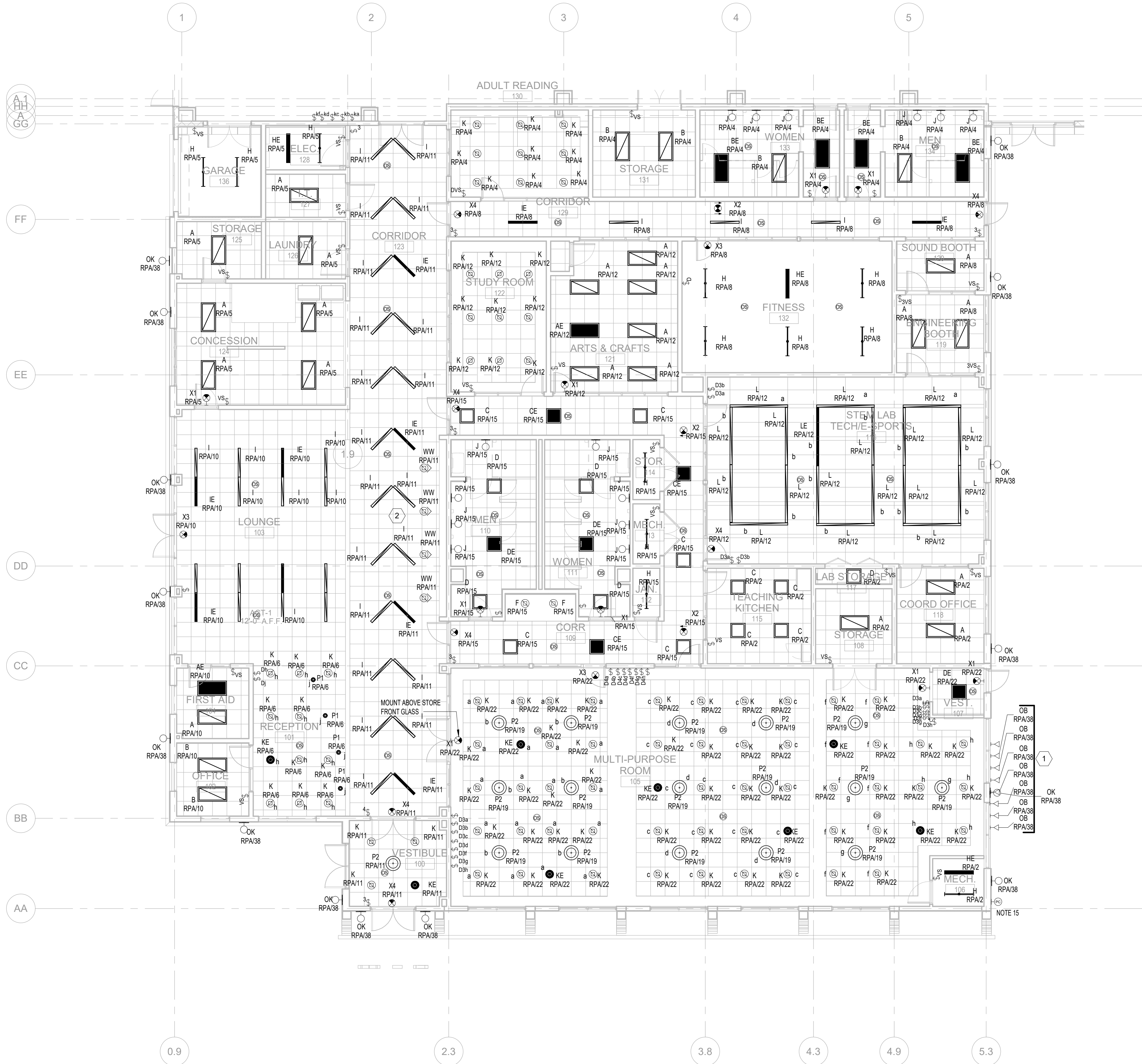
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SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET NUMBER:
ES101-ALT

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LIGHTING PLAN - ZONE A

1/8" = 1'-0"

0' 2' 4' 8' 16'

MULTI-PURPOSE ROOM 105 DIMMER SWITCHES

DIMMER SWITCH	ID LABEL (ROOM)
SD3a SD3b	ROOM 105 WEST
SD3c SD3d	ROOM 105 MIDDLE
SD3f SD3g	ROOM 105 EAST

DIMMER SWITCH	ID LABEL (ROOM)
SD4a SD4b	ROOM 105 WEST
SD4c SD4d	ROOM 105 MIDDLE
SD4f SD4g	ROOM 105 EAST

BASIS OF DESIGN OR EQUAL- LIGHT FIXTURE SCHEDULE

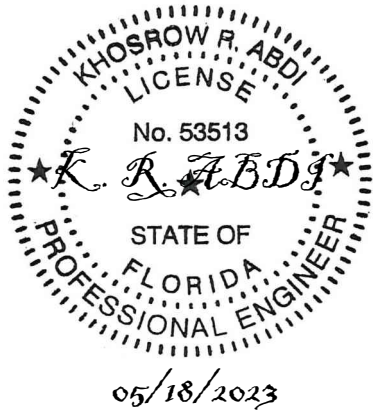
TYPE	DESCRIPTION	LENS-LOUVER	MOUNTING	LAMP	BALLAST/DRIVER	VOLT	WATT	MFR	COLOR TEMP	CATALOG SERIES	REMARKS
A	2X4 RECESSED FIXTURE		RECESSED	LED		120 V	40 W	COOPER LIGHTING	3500 K	24CZ2-50-S-UNV-L835-CD1-U	
AE	2X4 RECESSED WBATTERY PACK		RECESSED	LED		120 V	39 W	COOPER LIGHTING	3500 K	24CZ2-50-S-UNV-EL1W-L835-CD1-U	
B	2X4 RECESSED FIXTURE		RECESSED	LED		120 V	32 W	COOPER LIGHTING	3500 K	24CZ2-40-UNV-L835-CD1-U	
BE	2X4 RECESSED WBATTERY PACK		RECESSED	LED		120 V	30 W	LITHONIA	3500 K	2GT14 40L LP835	
C	2X2 RECESSED FIXTURE		RECESSED	LED		120 V	33 W	COOPER LIGHTING	3500 K	2GT12 48L LP835	
CE	2X2 RECESSED WBATTERY PACK		RECESSED	LED		120 V	33 W	COOPER LIGHTING	3500 K	22CZ2-44-UNV-EL14W-L835-CD1-U	
D	2X2 RECESSED FIXTURE		RECESSED	LED		120 V	16 W	COOPER LIGHTING	3500 K	2GT12 20L LP835	
DE	2X2 RECESSED WBATTERY PACK		RECESSED	LED		120 V	16 W	COOPER LIGHTING	3500 K	22CZ2-20-UNV-EL14W-L835-CD1-U	
F	6" DOWNLIGHT		RECESSED	LED		120 V	13 W	LITHONIA	3500 K	WF6 LED 35K MVOLT 90CRI MW	
H	48" LED LINEAR STRIP		SUSPENDED	LED		120 V	32 W	LITHONIA	4000 K	CLX L48 5000LM SEF LLENS WD MVOLT GZ10 40K 80CRI WH WGCLX48WH HC36	
HE	48" LED LINEAR STRIP WBATTERY PACK		SUSPENDED	LED		120 V	32 W	LITHONIA	4000 K	CLX L48 5000LM SEF LLENS WD MVOLT GZ10 40K 80CRI E10WLCP WH WGCLX48WH HC36	
I	CORELITE CONTINUUA SQ4		SUSPENDED	LED		120 V	33 W	COOPER LIGHTING	3500 K	SQ4 F OU 100D 835-1D-UNV-STD-W-AC48-UM-4	
IE	CORELITE CONTINUUA SQ4 WBATTERY PACK		SUSPENDED	LED		120 V	33 W	COOPER LIGHTING	3500 K	SQ4 F OU 100D 835-1D-UNV-STD-BSL6-W-AC48 UM-4	
J	BATHROOM VANITY LIGHT	FROSTED	WALL MOUNTED ABOVE MIRROR	LED		120 V	21 W	TECH LIGHTING	3000 K	700BCBND24B-LED930	
K	6" DOWNLIGHT WITH DIMMING CAPABLE DRIVER		RECESSED	LED		120 V	18 W	LITHONIA	3500 K	LDN6 35/15 L06 AR LSS MVOLT GZ10	
KE	6" DOWNLIGHT WBATTERY PACK		RECESSED	LED		120 V	13 W	LITHONIA	3500 K	LDN6 35/15 L06 AR LSS MVOLT GZ10 E10WCP	
L	CORELITE CONTINUUA SQ4		SUSPENDED AT 8' AFF	LED		120 V	33 W	COOPER LIGHTING	3500 K	SQ4 F OU 100D 835-1D-UNV-STD-W-AC48-UM-8	
LE	CORELITE CONTINUUA SQ4 WBATTERY PACK		SUSPENDED AT 8' AFF	LED		120 V	33 W	COOPER LIGHTING	3500 K	SQ4 F OU 100D 835-1D-UNV-STD-BSL6-W-AC48 UM-8	
OB	WALL-MOUNTED UPLIGHT		EXTERIOR WALL	LED		120 V	15 W	NUVO	3000 K	621993	
OF	OUTDOOR UP/DOWN WALL SCONCE, WET LOCATION RATED	-	WALL MOUNTED 15' AFF TO FIXT. CTR.	LED		120 V	32 W	PATHWAY LIGHTING	3500 K	C92 WV2035 M L5 2035 M L5 DW WL SA 2	
OK	OUTDOOR WALL SCONCE, WET LOCATION RATED	WHITE WT	8'-0" AFF TO FIXT. CTR.	LED		120 V	28 W	SPI LIGHTING	4000 K	SEW11287-L28WJAN08-120-277V-400K	
P1	BELL PENDANT, US VERSION	-	PENDANT	G9 LED		120 V	8 W	NORMANN COPENHAGEN/FINISH DESIGN SHOP	-	BELL PENDANT XS BLACK/NC503051	BULB NOT INCLUDED
P2	RING BLACK LED DIRECT ILLUMINATION WITH DIMMING CAPABLE DRIVER		SUSPENDED	LED		120 V	65 W	BETA-CALCO	3500 K	950000 D35 S1 BL PRO D1	
VW	6" DOWNLIGHT WALLWASH WIOPEN WALLWASH KICKER		RECESSED	LED		120 V	13 W	LITHONIA	3500 K	LDN6 35/15 LW6 AR LSS MVOLT GZ10	
X1	EXIT SIGN WALL MOUNTED	---	UNIVERSAL	LED		120 V	5 W	LITHONIA	-	LQM S W 3 R MVOLT EL N SD	
X2	EXIT SIGN CEILING MOUNTED	---	UNIVERSAL	LED		120 V	5 W	LITHONIA	-	LQM S W 3 R MVOLT EL N SD	
X3	EXIT SIGN CEILING MOUNTED W/STEM KIT	---	UNIVERSAL	LED		120 V	5 W	LITHONIA	-	LQM S W 3 R MVOLT EL N SD ELALQMUS36	
X4	EXIT SIGN CEILING MOUNTED W/STEM KIT	---	UNIVERSAL	LED		120 V	5 W	LITHONIA	-	LQM S W 3 R MVOLT EL N SD ELALQMUS24	

SHEET NOTES

- NUMERAL SHOWN NEXT TO EACH LIGHTING FIXTURE REPRESENTS LIGHTING BRANCH CIRCUIT NUMBER IN RP-1 PANEL. ALL LIGHTING BRANCH CIRCUITS SHALL BE HOMERUN TO RP-1 PANEL UNLESS OTHERWISE NOTED.
- LOCATION OF ALL SENSORS IS APPROXIMATE. REVIEW INSTALLATION INSTRUCTIONS BEFORE INSTALLING SENSORS. NO MORE THAN 1000 SQUARE FEET SHALL BE CONTROLLED BY ANY ONE SENSOR.
- TO PREVENT FALSE ACTIVATION, ULTRASONIC CEILING MOUNT SENSORS SHOULD BE MOUNTED AWAY FROM THE PATH OF STRONG AIR TURBULENCE. IN NORMAL AIRFLOW CONDITIONS SENSORS SHOULD BE MOUNTED FOUR TO SIX FEET AWAY FROM SOURCE. FOR TYPICAL PLACEMENT, REFER TO LOCATION DIAGRAMS. IN LOCATIONS WITH STRONG AIR TURBULENCE A PIR CEILING SENSOR SHOULD BE CONSIDERED.
- CONTRACTOR IS RESPONSIBLE FOR PROPER TIME DELAY AND SENSITIVITY ADJUSTMENTS WHEN APPLICABLE.
- CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED PLACEMENT OF MOTION OCCUPANCY SENSORS AND VERIFY CIRCUITS WITH RESPECT TO SWITCHPACKS NEEDED IN THE FIELD.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF THE NUMBER OF SWITCHPACKS NEEDED. ONE SWITCHPACK PER CIRCUIT.
- MULTIPLE CIRCUITS MAY BE CONTROLLED BY ONE SENSOR BY USING ADDITIONAL SWITCHPACKS, MAXIMUM OF TEN SWITCHPACKS PER SENSOR.
- LAY-IN LIGHT FIXTURES SHALL BE INDIVIDUALLY SERVED FROM AN INDIVIDUAL JUNCTION BOX DIRECTLY OVER LIGHT FIXTURES WITH 3/4" FLEXIBLE METAL CONDUIT AT LEAST 4'-0" BUT NOT EXCEEDING 6'-0" IN LENGTH.
- LIGHT FIXTURES IN TELECOM ROOMS SHALL BE INSTALLED A MINIMUM OF 9 FEET AFF AND SHALL CLEAR THE CABLE TRAY BY 12" MINIMUM.
- CONTRACTOR SHALL INSTALL CEILING MOUNTED LIGHT FIXTURES AND MOTION OCCUPANCY SENSORS IN FULL COORDINATION WITH THE FIRE PROTECTION SPRINKLER HEADS, HVAC DUCTWORK, FIRE ALARM DETECTION DEVICES AND THE HVAC SUPPLY AND RETURN DIFFUSERS.
- CONNECT EXTERIOR BUILDING MOUNTED FIXTURES VIA PHOTOCELL AND TIME CLOCK.
- LIGHTING BRANCH CIRCUIT CONDUIT SHALL CONTAIN NO MORE THAN 2 BRANCH CIRCUIT PHASE CONDUCTORS AND SHALL BE OF OPPOSITE PHASES. A DEDICATED NEUTRAL CONDUCTOR SHALL BE PROVIDED FOR EACH BRANCH CIRCUIT REQUIRING A NEUTRAL CONDUCTOR. SHARED NEUTRALS SHALL NOT BE PERMITTED.
- PROVIDE CEILING MOUNTED MOTION OCCUPANCY SENSORS IN THE LARGE RESTROOMS TO "SEE" INTO STALLS.
- CONNECT EXIT SIGNS AND EMERGENCY LIGHT FIXTURES AHEAD OF ALL SWITCHING AND LIGHTING CONTROL DEVICES.
- MOUNT PHOTOCELL ABOVE ROOF, AIMING TOWARDS THE NORTH SKY. RUN #12 AWG IN A 3/4" CONDUIT TO CONNECT THE PHOTOCELL TO LIGHTING CONTRACTOR INSIDE ELECTRICAL ROOM.
- WALL MOUNTED DIMMER SWITCHES IN VARIOUS SPACES SHALL BE COMPATIBLE WITH THE LED DRIVERS OF THE LIGHT FIXTURES BEING CONTROLLED.

KEYNOTES

- EIGHT UPLIGHT FIXTURES (OB) LOCATED UNDER THE "GLENNWOOD" SIGNAGE ABOVE THE CANOPY. TURN LIGHT FIXTURE UPWARD TOWARDS SIGN COORDINATE MOUNTING LOCATIONS WITH THE ARCHITECT PRIOR TO ROUGHING.
- INSTALL 4 RECESSED WALL WASHERS TO ILLUMINATE THE ART WALL. COORDINATE WITH THE ARCHITECT FOR EXACT LOCATION AND SPACING OF WALL WASHERS PRIOR TO ROUGHING.



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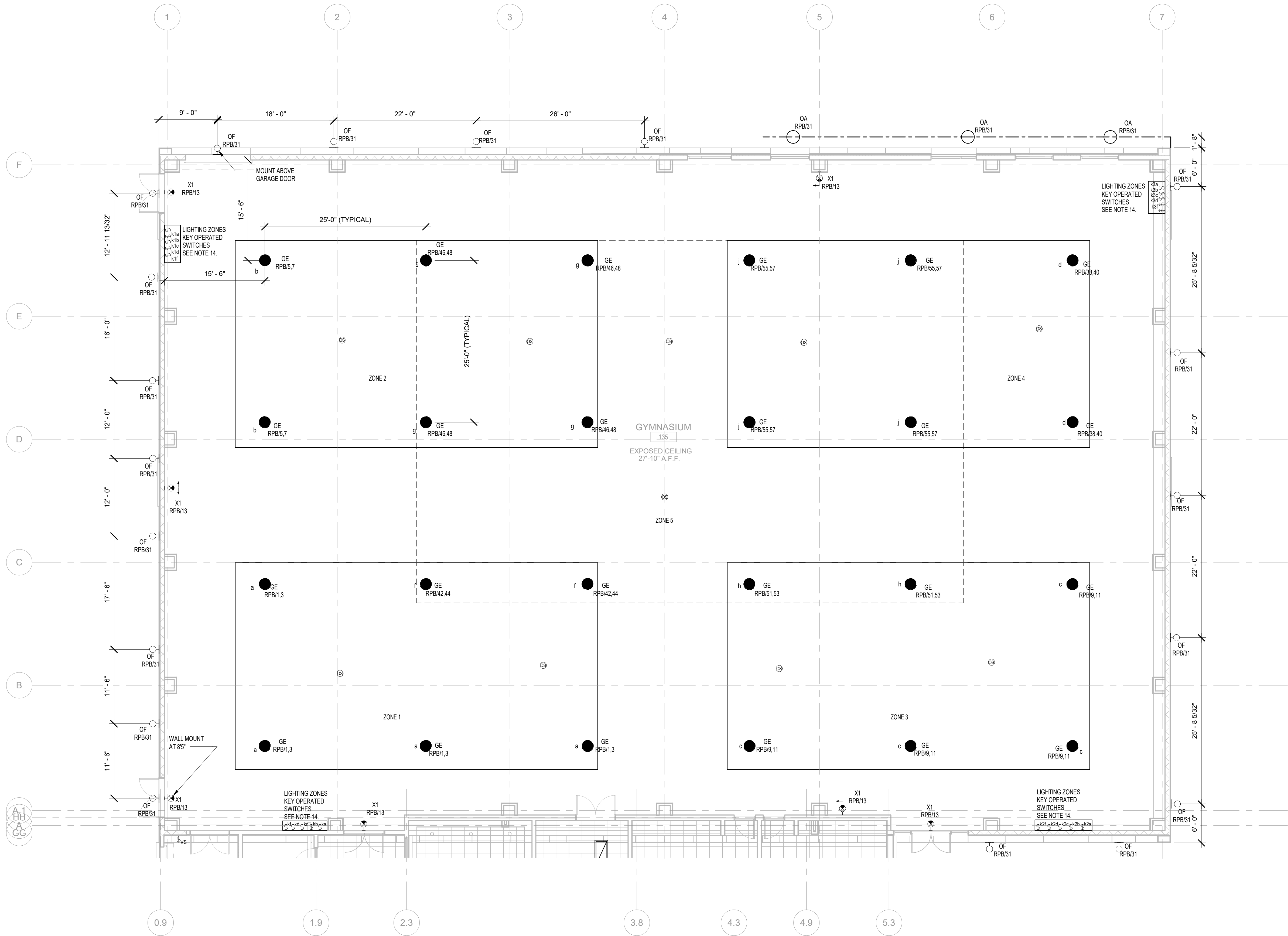
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SHEET TITLE:
LIGHTING PLAN - ZONE A

SHEET NUMBER:

EL101

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1
EL102

LIGHTING PLAN - ZONE B

1/8" = 1'-0"

0 2' 4' 8' 16'

BASIS OF DESIGN OR EQUAL- LIGHT FIXTURE SCHEDULE- GYM

TYPE	Description	LENS-LOUVER	MOUNTING	LAMP	BALLAST/DRIVER	VOLT	WATT	MFR	COLOR TEMP.	CATALOG SERIES	NOTE
GE	ROUND HIGH BAY W/ WIRE GUARD, DIMMABLE DRIVER AND BATTERY PACK	ACCR	SUSPENDED	LED		208 V	249 W	LITHONIA	4000 K	JCBL 36000LM ACCR 40K 90CRI E10WCP HK455 WG LAHOSZU	
OA	GROUND MOUNTED UPLIGHT		KNUCKLE	LED		120 V	54 W	LITHONIA	4000 K	TXF1 LED 40K MVOLT THK DDBXD	1
OF	OUTDOOR UP/DOWN WALL SCONCE, WET LOCATION RATED	-	WALL MOUNTED 15" AFF TO FIXT. CTR.	LED	-	120 V	32 W	PATHWAY LIGHTING LITHONIA	3500 K	C92 WV2035 M L5 2035 M L5 DW WL SA 2	
X1	EXIT SIGN WALL MOUNTED	---	UNIVERSAL	LED	---	120 V	5 W	LITHONIA	-	LQM S W 3 R MVOLT EL N SD	

FIXTURE SCHEDULE NOTES:

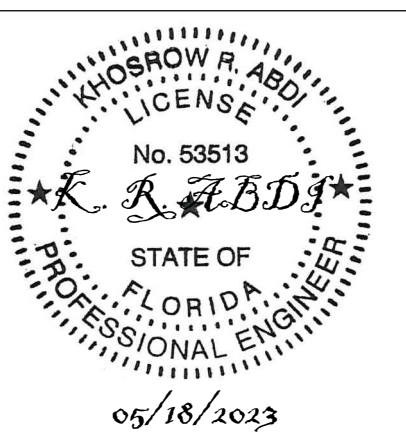
1. FIXTURE TO BE KNUCKLE-MOUNTED ON CONCRETE BASE AT THE GRADE LEVEL.

SHEET NOTES

- PROVIDE HIGH BAY MOTION OCCUPANCY SENSORS FOR GYM LIGHTING. COORDINATE MOUNTING LOCATIONS OF MOTION SENSORS WITH HVAC DUCTWORK TO PROVIDE 360 DEGREE UNOBSTRUCTED VISIBILITY THROUGHOUT THE GYM FLOOR AREA.
- NUMERAL SHOWN NEXT TO EACH LIGHTING FIXTURE REPRESENTS LIGHTING BRANCH CIRCUIT NUMBER IN RPB PANEL. ALL LIGHTING BRANCH CIRCUITS SHALL BE HOMERUN TO RPB PANEL UNLESS OTHERWISE NOTED.
- LOCATION OF ALL SENSORS IS APPROXIMATE. REVIEW MANUFACTURER INSTALLATION INSTRUCTIONS BEFORE INSTALLING SENSORS. NO MORE THAN 1000 SQUARE FEET SHELL BE CONTROLLED BY ANY ONE SENSOR.
- TO PREVENT FALSE ACTIVATION, ULTRASONIC CEILING MOUNT SENSORS SHOULD BE MOUNTED AWAY FROM THE PATH OF STRONG AIR TURBULENCE. IN NORMAL AIRFLOW CONDITIONS SENSORS SHOULD BE MOUNTED FOUR TO SIX FEET AWAY FROM SOURCE. FOR TYPICAL PLACEMENT, REFER TO LOCATION DIAGRAMS. IN LOCATIONS WITH STRONG AIR TURBULENCE A PIR CEILING SENSOR SHOULD BE CONSIDERED.
- CONTRACTOR IS RESPONSIBLE FOR SENSORS PROPER TIME DELAY AND SENSITIVITY ADJUSTMENTS WHEN APPLICABLE.
- CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED PLACEMENT OF MOTION OCCUPANCY SENSORS AND VERIFY CIRCUITS WITH RESPECT TO SWITCHPACKS NEEDED IN THE FIELD.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF THE NUMBER OF SWITCHPACKS NEEDED. ONE SWITCHPACK PER CIRCUIT.
- MULTIPLE CIRCUITS MAY BE CONTROLLED BY ONE SENSOR BY USING ADDITIONAL SWITCHPACKS, MAXIMUM OF TEN SWITCHPACKS PER SENSOR.
- CONTRACTOR SHALL INSTALL CEILING MOUNTED LIGHT FIXTURES AND MOTION OCCUPANCY SENSORS IN FULL COORDINATION WITH THE FIRE PROTECTION SPRINKLER HEADS, HVAC DUCTWORK, FIRE ALARM DETECTION DEVICES AND THE HVAC SUPPLY AND RETURN DIFFUSERS.
- CONNECT EXTERIOR BUILDING MOUNTED FIXTURES VIA PHOTOCCELL AND TIME CLOCK.
- LIGHTING BRANCH CIRCUIT CONDUIT SHALL CONTAIN NO MORE THAN 2 BRANCH CIRCUIT PHASE CONDUCTORS AND SHALL BE OF OPPOSITE PHASES. A DEDICATED NEUTRAL CONDUCTOR SHALL BE PROVIDED FOR EACH BRANCH CIRCUIT REQUIRING A NEUTRAL CONDUCTOR. SHARED NEUTRALS SHALL NOT BE PERMITTED.
- CONNECT EXIT SIGNS AND EMERGENCY LIGHT FIXTURES AHEAD OF ALL SWITCHING AND LIGHTING CONTROL DEVICES.
- PENDANT MOUNTED GYM LIGHT FIXTURES SHALL BE INSTALLED WITH BOTTOM OF FIXTURES 23'-0" AFF.
- GYM LIGHT FIXTURES SHALL BE CONTROLLED BY MANUALLY OPERATED KEY SWITCHES AND MOTION OCCUPANCY SENSORS. LIGHTS SHALL BE MANUALLY TURNED ON BY KEY OPERATED SWITCHES AND AUTOMATICALLY TURNED OFF BY MOTION OCCUPANCY SENSORS AFTER A PRESET TIME DELAY. KEY OPERATED SWITCHES SHALL BE EQUIPPED WITH DIMMER SWITCHES, COMPATIBLE WITH THE GYM LIGHT FIXTURES TYPE G LED DRIVERS. LIGHTING ZONES KEY OPERATED SWITCHES SHALL BE INSTALLED IN A PAD LOCKABLE METAL ENCLOSURE TO BE SECURED FROM PUBLIC ACCESS.

LIGHTING ZONES SCHEDULE

ZONE ID	KEY SW ID	SWITCH LEG DESIGNATION	CIR. NO.	REMARKS
1	\$ka	a	RPB/1,3	SEE PLAN
2	\$kb	b	RPB/5,7	SEE PLAN
3	\$kc	c	RPB/9,11	SEE PLAN
4	\$kd	d	RPB/38,40	SEE PLAN
5	\$kf	f	RPB/42,44	SEE PLAN
5	\$kf	g	RPB/46,48	SEE PLAN
5	\$kf	h	RPB/51,53	SEE PLAN
5	\$kf	j	RPB/55,57	SEE PLAN
1	\$ka	f	RPB/42,44	SEE PLAN
2	\$kb	g	RPB/46,48	SEE PLAN
3	\$kc	h	RPB/51,53	SEE PLAN
4	\$kd	j	RPB/55,57	SEE PLAN



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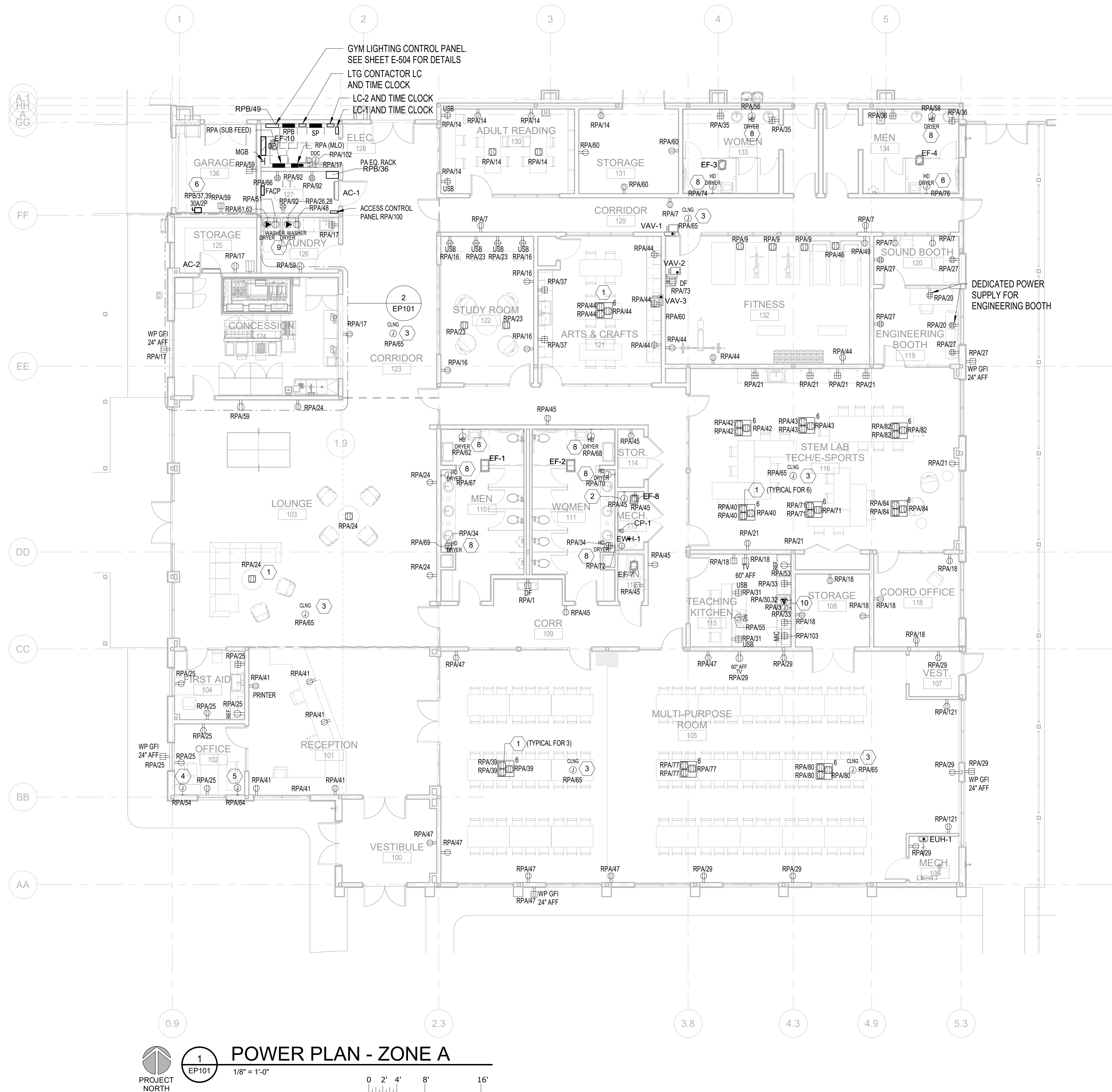
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SHEET TITLE:
LIGHTING PLAN - ZONE B

SHEET NUMBER:

EL102

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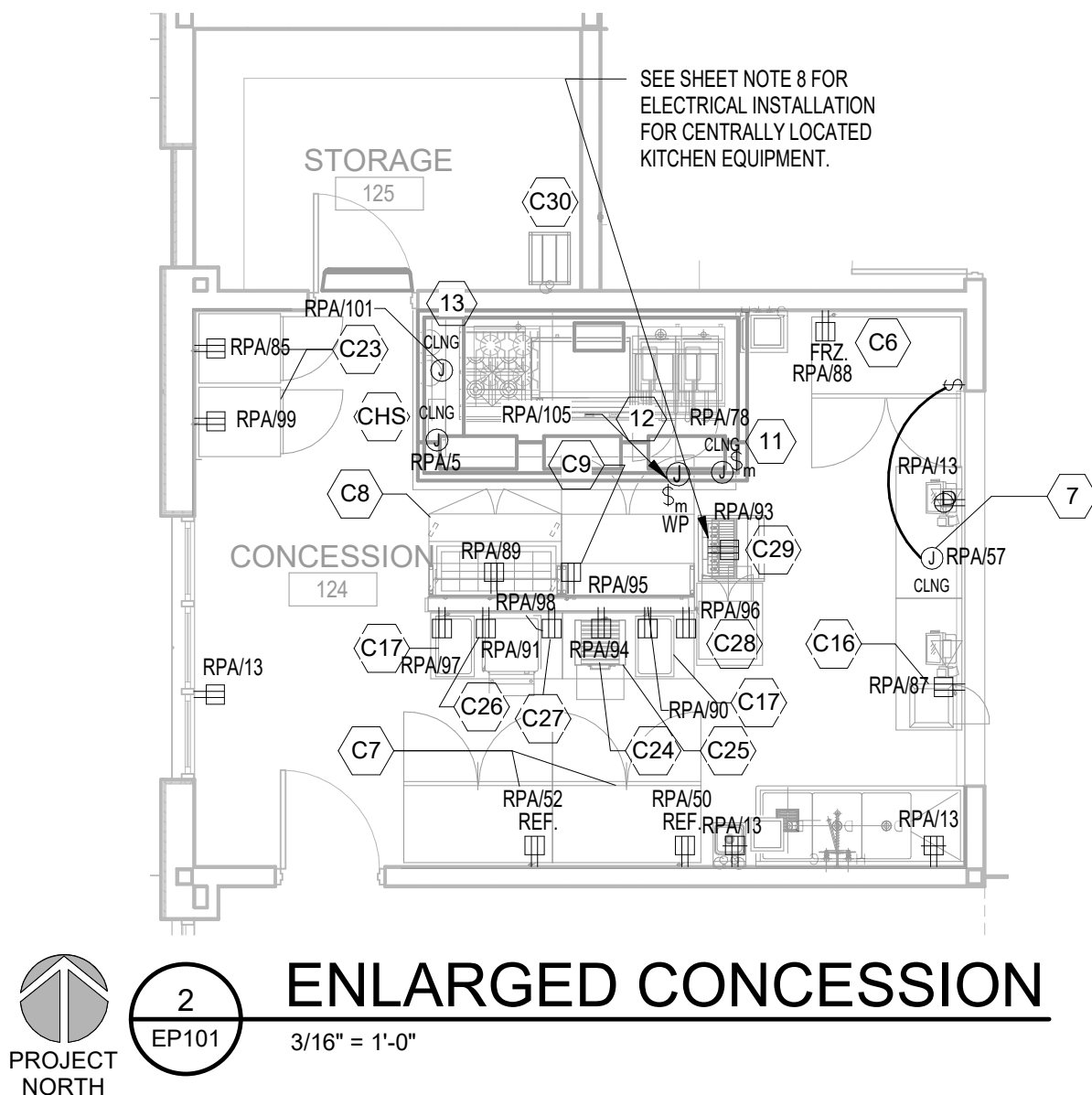
SHEET NOTES

- PROVIDE A MINIMUM OF 12 INCHES OF SEPARATION BETWEEN OUTLET BOXES LOCATED ON OPPOSITE SIDES OF THE COMMON WALLS.
- EXACT LOCATION OF IN-FLOOR POWER AND COMMUNICATIONS OUTLETS IN THE LOUNGE AND STEM LAB SHALL BE COORDINATED WITH THE INTERIOR DRAWINGS AND SYSTEMS FURNITURE PLANS PRIOR TO ROUGHING.
- IN TELECOM ROOM PROVIDE A DEDICATED 20A RECEPTACLE ADJACENT TO OR AT THE BASE OF EACH COMMUNICATIONS RACK.
- ENSURE ONE RECEPTACLE IS LOCATED WITHIN 6 INCHES FROM EACH VOICE/DATA OUTLET. REFER TO SHEET ET101.
- POWER SHALL BE DELIVERED TO THE FURNITURE UNITS (WORKSTATIONS) THROUGH WALL OR FLOOR MOUNTED JUNCTION BOXES. EXACT LOCATION OF WALL AND/OR FLOOR MOUNTED JUNCTION BOXES SHALL BE COORDINATED WITH THE WORKSTATION SYSTEMS FURNITURE APPROVED SHOP DRAWINGS PRIOR TO ROUGHING.
- ALL FLOOR BOX LOCATIONS SHALL BE COORDINATED WITH THE FURNITURE PLANS PRIOR TO ROUGHING. CONTRACTOR SHALL PROVIDE FINAL ELECTRICAL AND TELECOM CONNECTIONS FOR THE LOUNGE AND STEM LAB.
- ALL RECEPTACLES AND LOW VOLTAGE UTILIZATION EQUIPMENT BRANCH CIRCUITS ARE FED FROM RPA PANELBOARD AND ARE IDENTIFIED WITH BREAKER NUMBERS IN RPA PANELBOARD.
- PROVIDE WEATHERPROOF GFCI OUTLETS FOR KITCHEN EQUIPMENT IN OPEN SPACE WITH NO PARTITION WALLS IN THE CONCESSION ROOM 124. RUN UNDERGROUND CONDUIT TO THESE KITCHEN EQUIPMENT LOCATIONS AND STUB UP 12" AFF WITH RIGID GALVANIZED CONDUIT BEHIND THE EQUIPMENT. RUN WIRING IN A 1" SCHEDULE 40 PVC UNDERGROUND CONDUIT TO CONNECT EACH OUTLET TO A 15A/1P OR 20A/1P BREAKER IN PANEL AS SHOWN IN RPA PANEL BOARD SCHEDULES. RECEPTACLES SHALL BE INSTALLED IN CONDUIT OUTLET FS TYPE CAST BOX WITH 3/4" HUB, SUPPORTED FROM GRS CONDUIT STUB UP. PVC SHALL TRANSITION TO GRS UNDERGROUND BEFORE CONDUIT RISE UP. COORDINATE EXACT LOCATIONS OF THE OUTLETS STUB UPS AND MOUNTING HEIGHT REQUIREMENTS WITH THE KITCHEN EQUIPMENT SUPPLIER, THE ARCHITECT AND THE OWNER PRIOR TO ROUGHING.

KEYNOTES

- UNDERGROUND TELECOMMUNICATIONS CABLING FOR FLOOR MOUNTED TELECOM OUTLETS SHALL BE RATED FOR OUTDOORS INSTALLATION. PROVIDE RECESSED FLOOR BOX WITH POWER AND DATA. NUMERAL SHOWN NEXT TO BOX INDICATES NUMBER OF POWER OUTLETS AND DATA OUTLETS PER BOX. COORDINATE FLOOR BOX LOCATION WITH THE I.T. PERSONNEL AND THE ROOM FURNITURE LAYOUT PRIOR TO ROUGHING.
- JUNCTION BOX FOR THE HVAC DDC CONTROL PANEL. COORDINATE LOCATION WITH HVAC SUB PRIOR TO ROUGHING.
- PROVIDE A JUNCTION BOX WITH COVER PLATE ABOVE ACCESSIBLE CEILINGS FOR 120 VOLT POWER SUPPLY FOR WIRELESS EQUIPMENT FOR CELLULAR SIGNAL BOOSTER AND WI-FI SYSTEM. PROVIDE 2#12 AWG, 1#12(G), 3/4" CONDUIT FOR 120 VOLT BRANCH CIRCUIT. COORDINATE JUNCTION BOX LOCATIONS WITH THE WIRELESS EQUIPMENT VENDOR.
- PROVIDE A 120V/1P, 20 AMP CIRCUIT FOR PAGING SYSTEM EQUIPMENT RACK.
- PROVIDE A 120V/1P, 20 AMP CIRCUIT FOR SECURITY SURVEILLANCE SYSTEM HEA-END EQUIPMENT.
- PROVIDE DISCONNECT SWITCH FOR ROLL-UP DOOR ELECTRIC OPERATOR. RUN 2#10 AWG, 1#12 (G), 3/4" CONDUIT TO CONNECT DOOR OPERATOR TO DISCONNECT AND PANEL RPB. PROVIDE WIRE AND CONDUIT TO CONNECT DOOR CONTROLLER TO ELECTRIC OPERATOR.
- PROVIDE CIRCUIT WIRING IN JUNCTION BOX TO CONNECT CONCESSION STAND POWER DOOR AND DISCONNECT SWITCH
- PROVIDE CIRCUIT WIRING IN JUNCTION BOX TO CONNECT HAND DRYER.
- WASHER/DRYER STACKED. WASHER RCPT MOUNTED AT 18" AFF. DRYER RCPT MOUNTED AT 48" AFF
- JUNCTION BOX FOR FIRE SUPPRESSION SYSTEM INSIDE OVERHEAD CABINET ABOVE HOOD.
- JUNCTION BOX FOR KITCHEN HOOD EXHAUST FAN, COORDINATE LOCATION WITH KITCHEN HOOD CONSULTANT.
- JUNCTION BOX FOR CONCESSION MAU-1, COORDINATE LOCATION WITH KITCHEN HOOD CONSULTANT.
- JUNCTION BOX FOR FIRE SUPPRESSION SYSTEM INSIDE OVERHEAD CABINET ABOVE HOOD. KITCHEN HOOD FIRE SUPPRESSION SYSTEM SHALL BE INTERFACED WITH THE KITCHEN EXHAUST FAN (KEF-1), MAKE-UP AIR UNIT (MAU-1), THE GAS SUPPLY VALVE FOR THE STOVE UNDER THE KITCHEN HOOD, AND THE FIRE ALARM PANEL. ON ACTIVATION OF THE FIRE SUPPRESSION SYSTEM, POWER TO THE MAU-1 SHALL BE TURNED OFF AUTOMATICALLY BY SHUNT TRIP RELAY. THE GAS SUPPLY VALVE SHALL BE SHUTOFF, AND ACTIVATE FIRE ALARM NOTIFICATION DEVICES.

CONCESSION EQUIPMENT ELECTRICAL CONNECTION SCHEDULE										
ITEM #	EQUIP NAME	QUANTITY	VOLTAGE	AMPS	KW	HP	PANEL	REC. CONFIG	REC. TYPE	NOTES
C6	REACH-IN FREEZER	1	120V/1P	9.6		1	RPA	5-15R	GFCI	
C7	REACH-IN REFRIGERATOR	2	120V/1P	5.4		1/2	RPA	5-15R	GFCI	
C8	SANDWICH/SALAD PREP. REFRIG	1	120V/1P	5.8		1/3	RPA	5-15R	GFCI	
C9	REACH-IN UNDERCOUNTER FREEZER	1	120V/1P	3.2		1/2	RPA	5-15R	GFCI	
C16	MINI DISPLAY WARMER	1	120V/1P	3.9	0.47		RPA	5-15R	GFCI	
C17	FOOD WARMER, COUNTERTOP	2	120V/1P	8.3	1.0		RPA	5-15R	GFCI	
C23	MOBILE HEATED CABINET	2	120V/1P	16.7	2.0		RPA	5-20R	GFCI	
C24	HOT DOG BUN/ROLL WARMER	1	120V/1P	3.3	0.4		RPA	5-15R	GFCI	
C25	HOT DOG GRILL	1	120V/1P	7.9	0.95		RPA	5-15R	GFCI	
C26	NACHO CHEESE/CHIPS WARMER	1	120V/1P	9	1.08		RPA	5-15R	GFCI	
C27	HOT FOOD DISPENSER	1	120V/1P	8.5	1.0		RPA	5-15R	GFCI	
C28	POPCORN POPPER	1	120V/1P	8.7	1.053		RPA	5-15R	GFCI	
C29	SODA DISPENSER (BY OTHERS)	1	120V/1P	9.0	1.053		RPA	5-15R	GFCI	
C30	SODA DISPENSER (BY OTHERS)	1	120V/1P	9.0	1.053		RPA	5-15R	GFCI	
CHS	HOOD SYSTEM (LIGHTS)	1	120V/1P	20			RPA	J-BOX		



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POWER PLAN - ZONE A

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EP101



CCR ARCHITECTURE & INTERIORS

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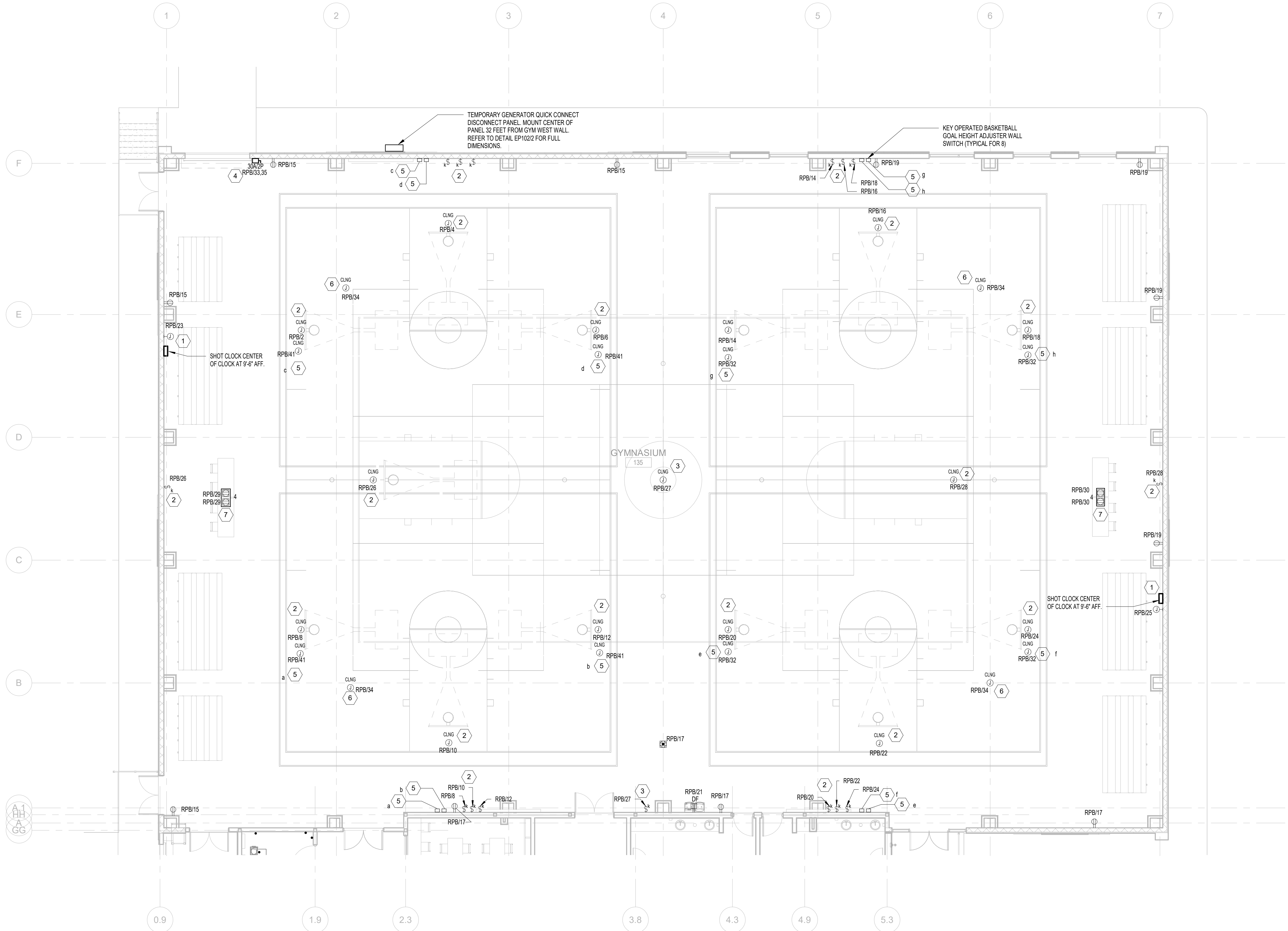
EP102

SHEET NOTES

- PROVIDE A MINIMUM OF 12 INCHES OF SEPARATION BETWEEN OUTLET BOXES LOCATED ON OPPOSITE SIDES ON COMMON WALLS.
- ALL RECEPTACLES AND LOW VOLTAGE UTILIZATION EQUIPMENT BRANCH CIRCUITS ARE FED FROM RP-1 PANELBOARD AND ARE IDENTIFIED WITH BREAKER NUMBERS IN RP-1 PANELBOARD.
- ALL FLOOR BOX LOCATIONS SHALL BE COORDINATED WITH THE FURNITURE PLANS PRIOR TO ROUGHING. CONTRACTOR SHALL PROVIDE FINAL ELECTRICAL AND TELECOM CONNECTIONS FOR THE LOUNGE AND STEM LAB.

KEYNOTES

- PROVIDE A JUNCTION BOX FOR POWER SUPPLY TO SCOREBOARD AND SHOT CLOCK COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF THE JUNCTION BOX WITH SCOREBOARD VENDOR PRIOR TO ROUGHING. INSTALL 2#10 AWG, 1#12 (G) IN A 3/4" CONDUIT TO CONNECT EACH SCOREBOARD ELECTRICAL CIRCUITRY TO RPB PANEL AND CONNECT TO 4/20A BRANCH CIRCUIT BREAKER.
- PROVIDE A JUNCTION BOX FOR POWER SUPPLY TO BASKETBALL BACKSTOP WINCH. RUN 2#10 AWG, 1#12 (G) IN A 3/4" CONDUIT TO CONNECT WINCH MOTOR AND MANUFACTURER PROVIDED KEY SWITCH OPERATOR TO PANEL RPB. COORDINATE JUNCTION BOX LOCATION AND MOUNTING LOCATIONS PRIOR TO ROUGHING. COORDINATE MOUNTING LOCATION OF KEY SWITCH OPERATOR WITH THE ARCHITECT PRIOR TO ROUGHING.
- PROVIDE A JUNCTION BOX FOR POWER SUPPLY TO RIDGE FOLD DIVIDER MOTOR. RUN 2#8 AWG, 1#10 (G) IN A 3/4" CONDUIT TO CONNECT FOLD DIVIDER MOTOR AND MANUFACTURER PROVIDED KEY SWITCH OPERATOR TO PANEL RPB. COORDINATE JUNCTION BOX LOCATION AND MOUNTING HEIGHT WITH RIDGE FOLD DIVIDER SUPPLIER PRIOR TO ROUGHING. COORDINATE MOUNTING LOCATION OF KEY SWITCH OPERATOR WITH THE ARCHITECT PRIOR TO ROUGHING. KEY SWITCH OPERATOR TO BE IN FULL VIEW OF BOTH SIDES OF CURTAIN DURING OPERATION. MOUNT KEY SWITCH ABOVE DRINKING FOUNDATION.
- PROVIDE DISCONNECT SWITCH FOR ROLL-UP DOOR ELECTRIC OPERATOR. RUN 2#10 AWG, 1#12 (G), 3/4" CONDUIT TO CONNECT DOOR OPERATOR TO DISCONNECT AND PANEL RPB. PROVIDE WIRE AND CONDUIT TO CONNECT DOOR CONTROLLER TO ELECTRIC OPERATOR.
- PROVIDE A JUNCTION BOX FOR POWER SUPPLY TO BASKETBALL GOAL HEIGHT ADJUSTER. RUN 2#10 AWG, 1#12 (G) IN A 3/4" CONDUIT TO CONNECT BASKETBALL GOAL ADJUSTER MOTOR AND MANUFACTURER PROVIDED KEY SWITCH OPERATOR TO PANEL RPB. COORDINATE JUNCTION BOX LOCATION AND MOUNTING HEIGHT WITH BASKETBALL BACKBOARD AND GOAL HEIGHT ADJUSTER LOCATIONS PRIOR TO ROUGHING. COORDINATE MOUNTING LOCATION OF KEY SWITCH OPERATOR WITH ARCHITECT PRIOR TO ROUGHING.
- PROVIDE A JUNCTION BOX WITH COVERPLATE ABOVE ACCESSIBLE CEILINGS FOR 120 VOLT POWER SUPPLY FOR WIRELESS EQUIPMENT FOR CELLULAR SIGNAL BOOSTER AND WI-FI SYSTEM. PROVIDE 2#12 AWG, 1#12 (G), 3/4" CONDUIT FOR 120 VOLT BRANCH CIRCUIT. COORDINATE JUNCTION BOX LOCATIONS WITH THE WIRELESS EQUIPMENT VENDOR.
- UNDERGROUND TELECOMMUNICATIONS CABLING FOR FLOOR MOUNTED TELECOM OUTLETS SHALL BE RATED FOR OUTDOORS INSTALLATION. PROVIDE RECESSED FLOOR BOX WITH POWER AND DATA. NUMERAL SHOWN NEXT TO BOX INDICATES NUMBER OF POWER OUTLETS AND DATA OUTLETS PER BOX. COORDINATE FLOOR BOX LOCATION WITH THE I.T. PERSONNEL AND THE ROOM FURNITURE PRIOR TO ROUGHING.

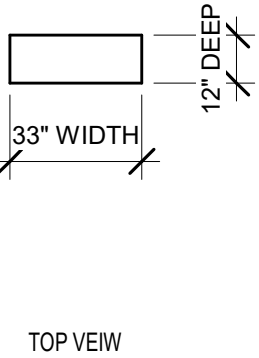
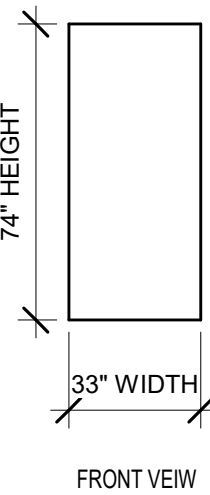


1 POWER PLAN - GYM

EP102

1/8" = 1'-0"

0 2' 4' 8' 16'



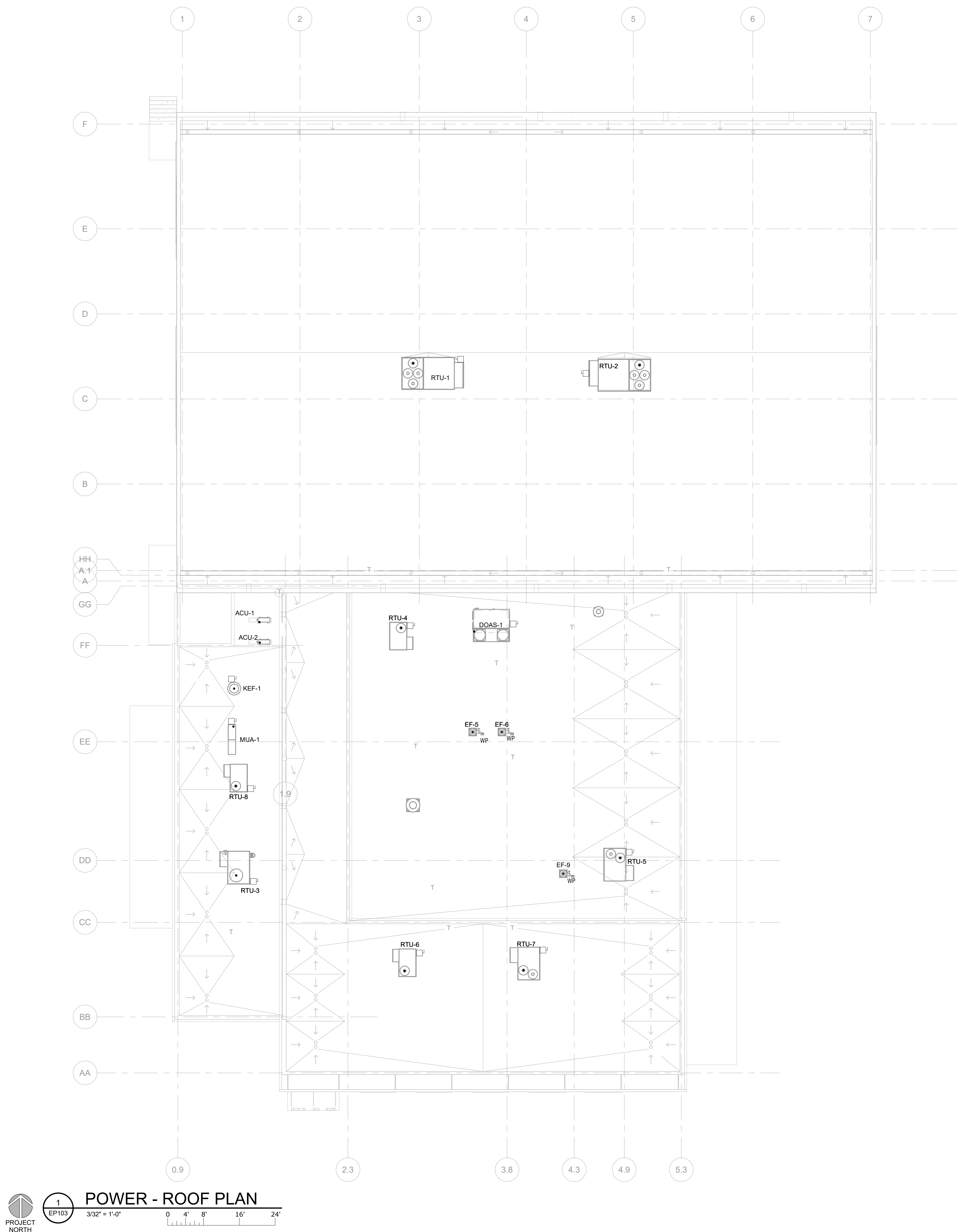
2 TEMPORARY GENSET DIMENSIONS

EP102

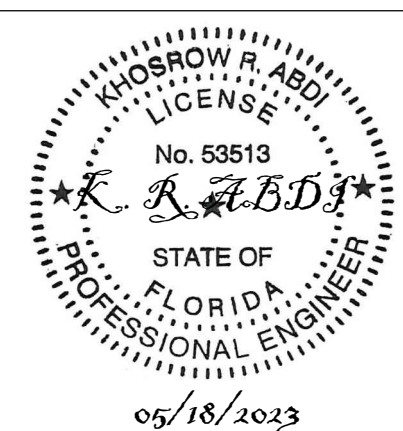
1/4\"/>

0 1' 2' 4' 8'

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POWER - ROOF PLAN
EP103
3/32" = 1'-0"
0 4' 8' 16' 24'



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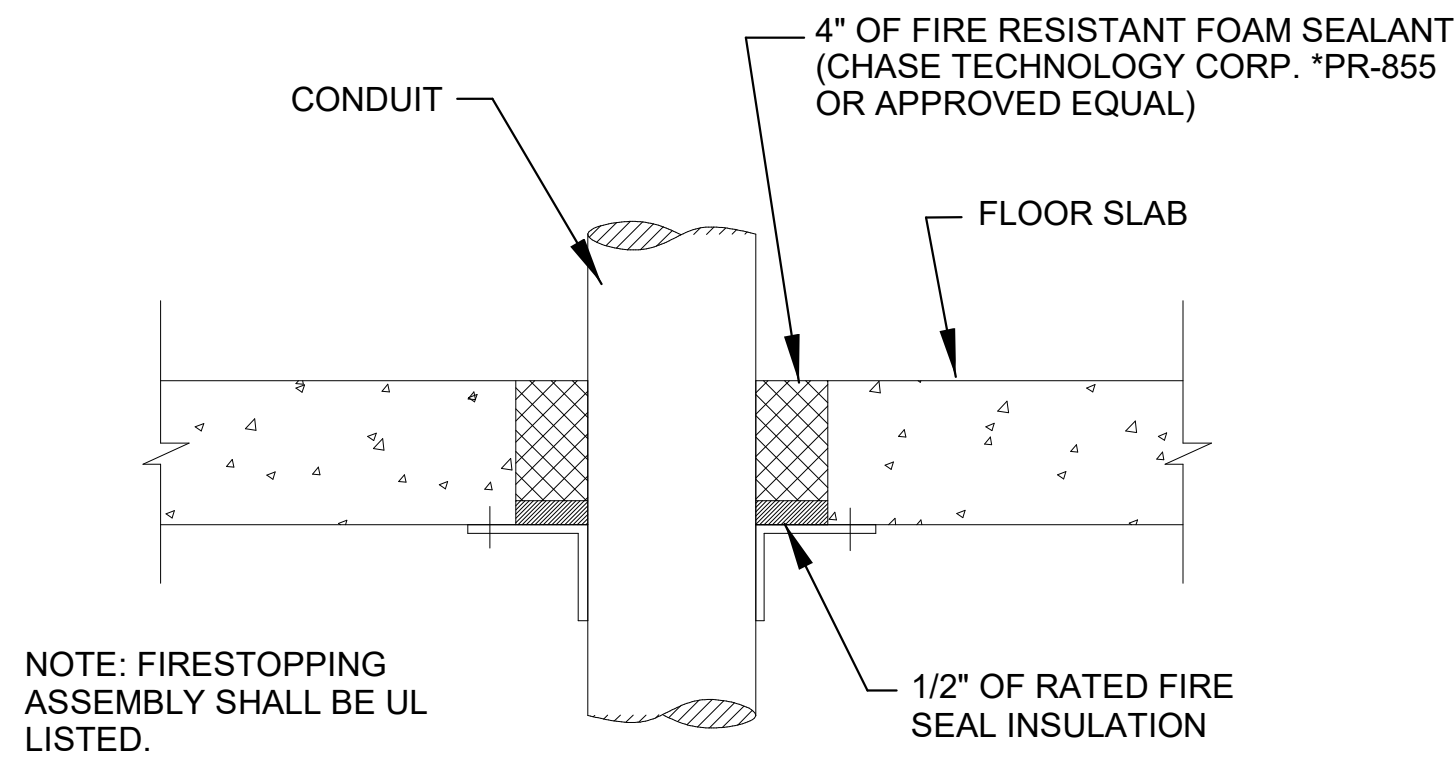
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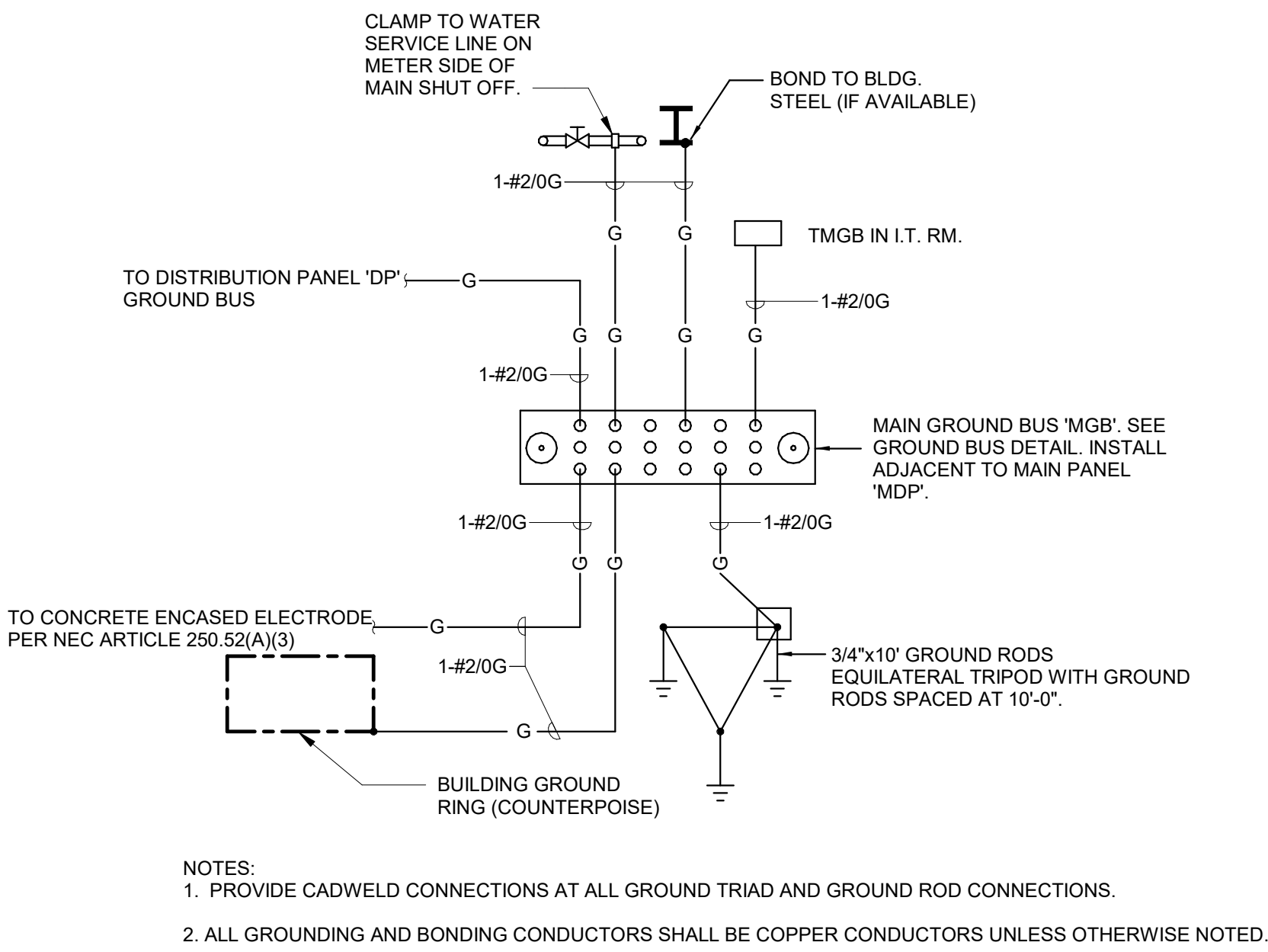
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POWER PLAN - ROOF

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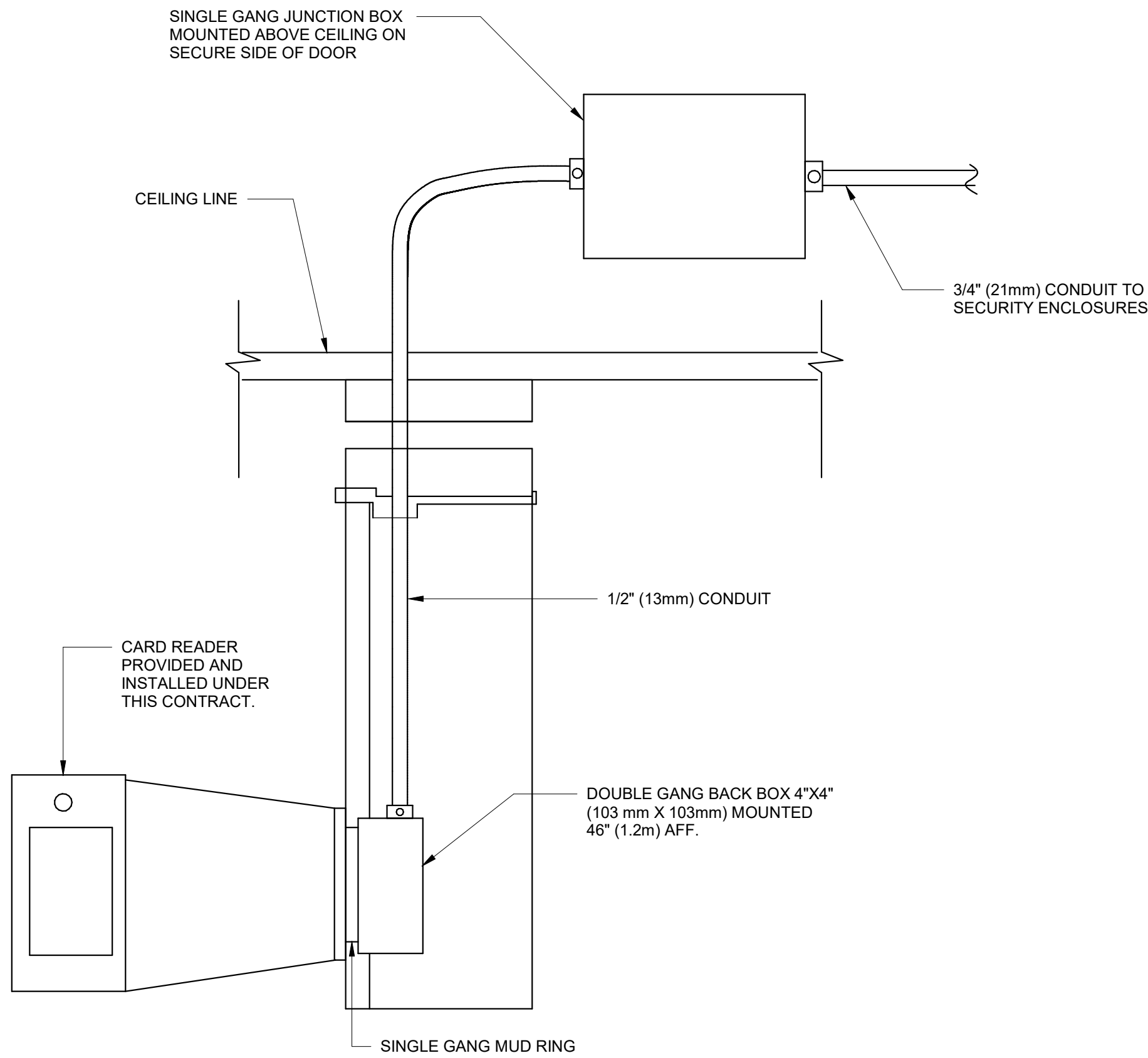
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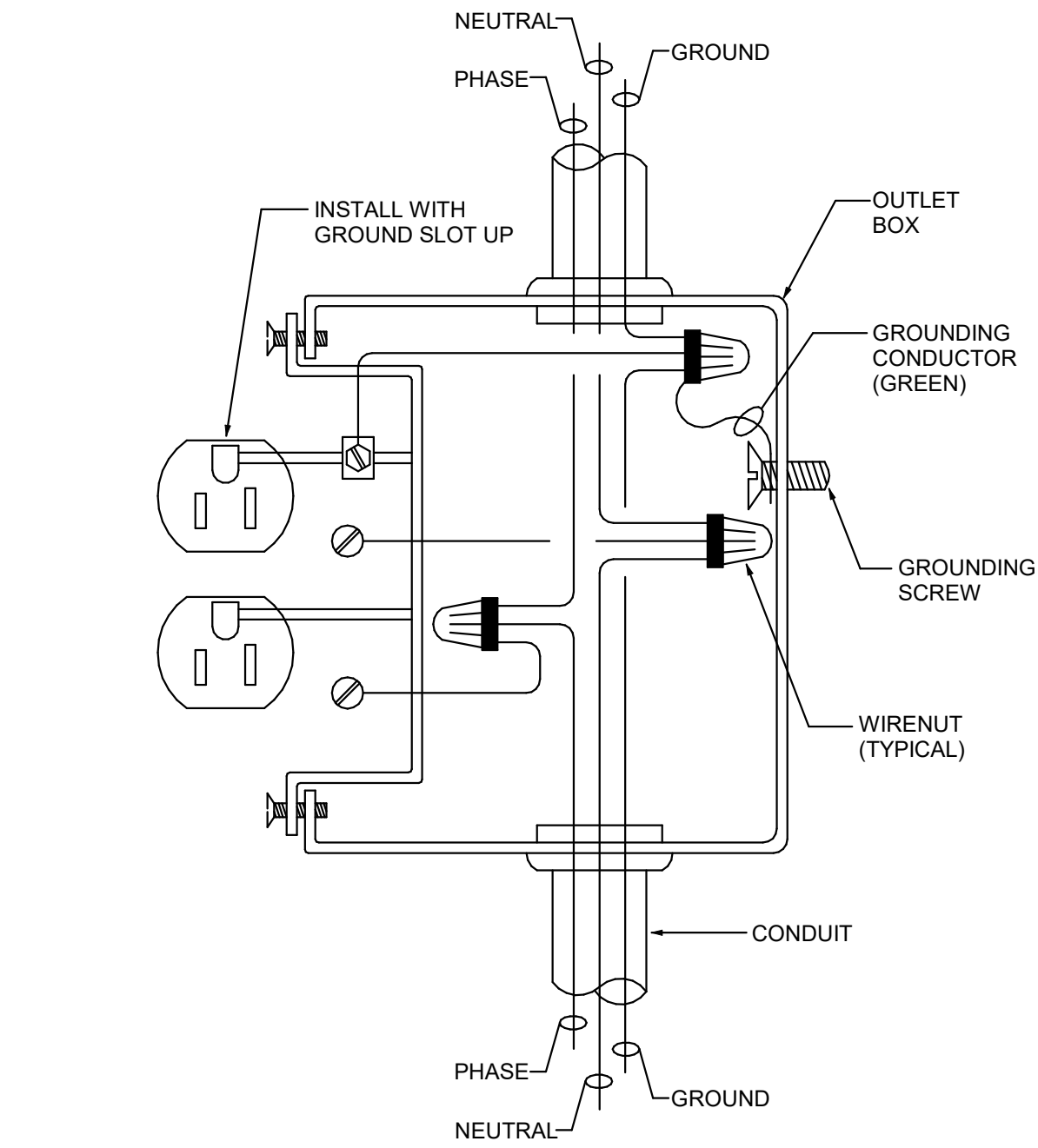
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NOT TO SCALE



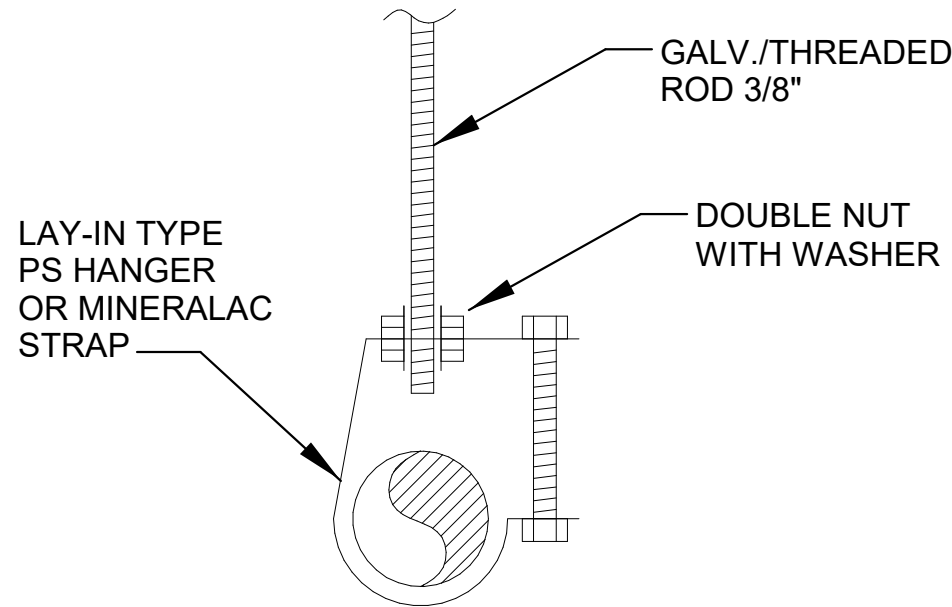
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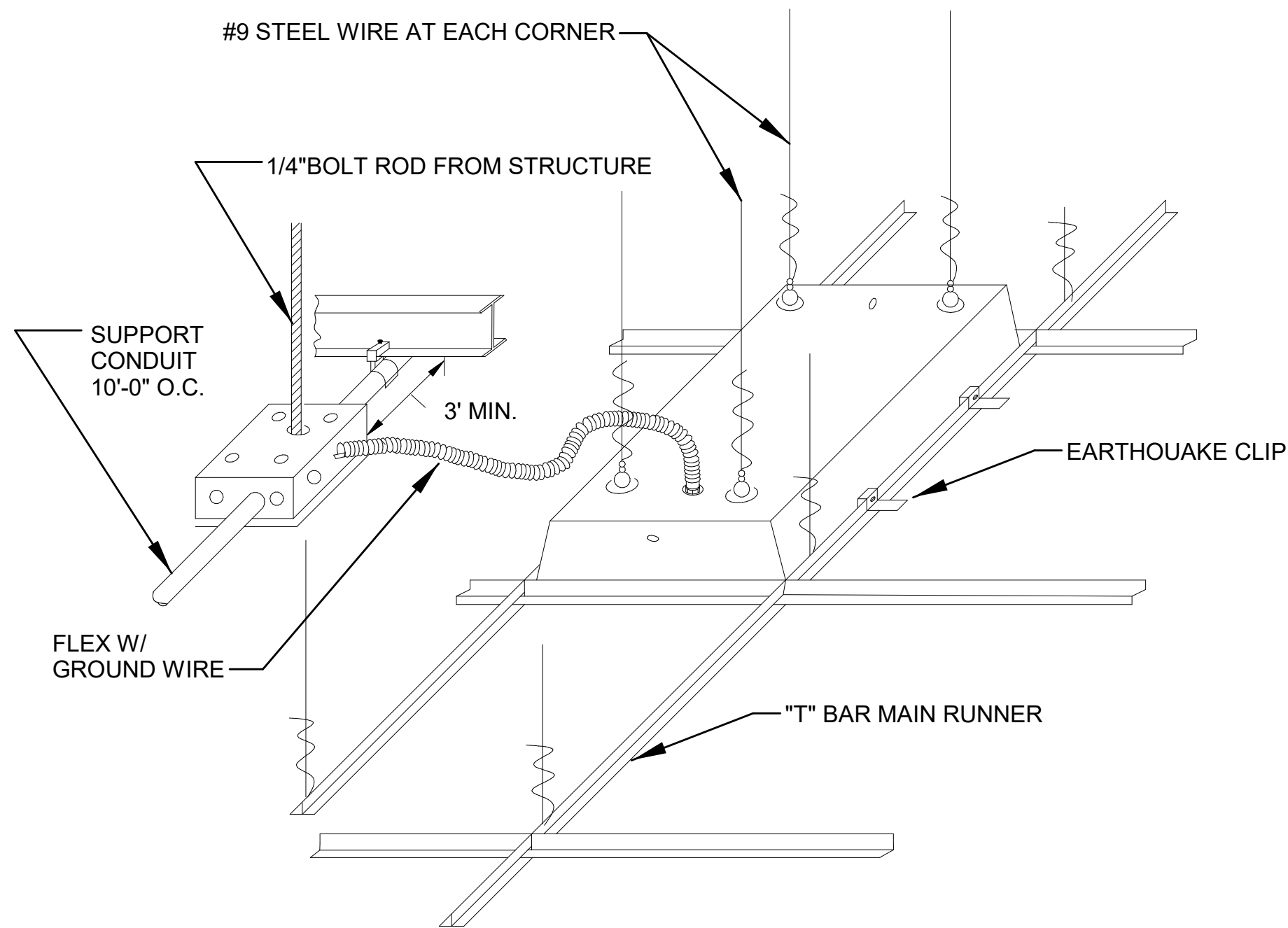
3 INFRASTUCURE PENETRATION FOR CARD READER
NOT TO SCALE



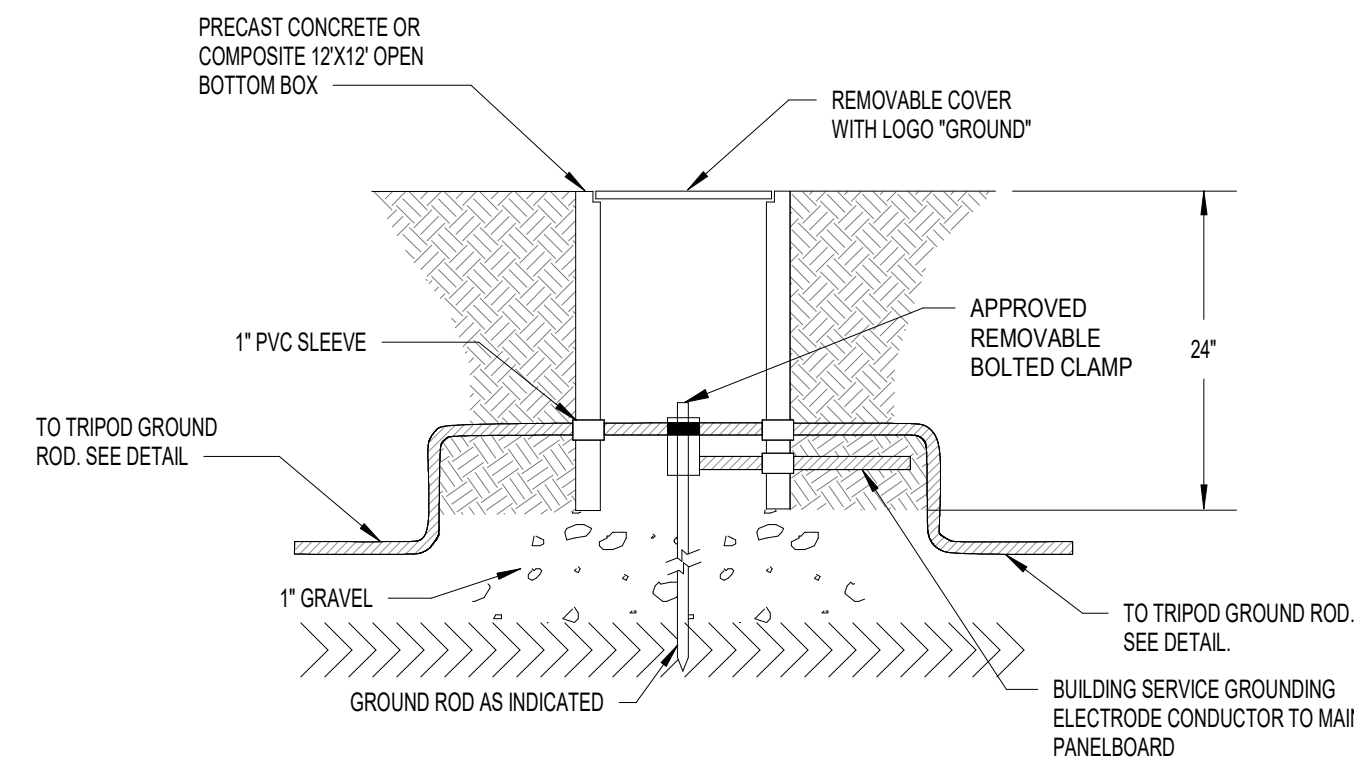
4 RECEPTACLE INSTALLATION
NOT TO SCALE



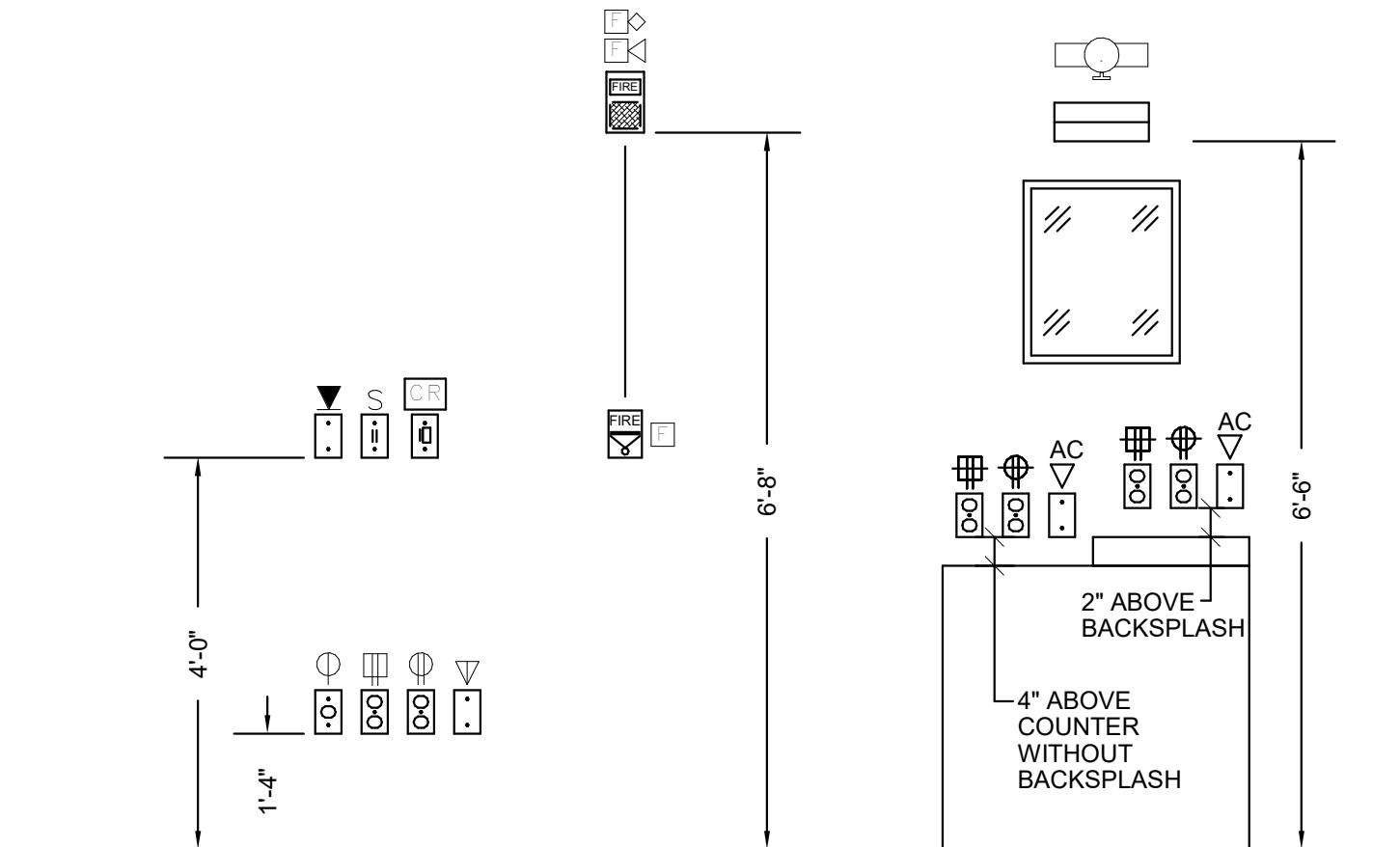
5 SINGLE CONDUIT SUPPORT DETAIL
NOT TO SCALE



6 LAY-IN FLUORESCENT FIXTURE WITH #9 STEEL WIRE DETAIL
NOT TO SCALE

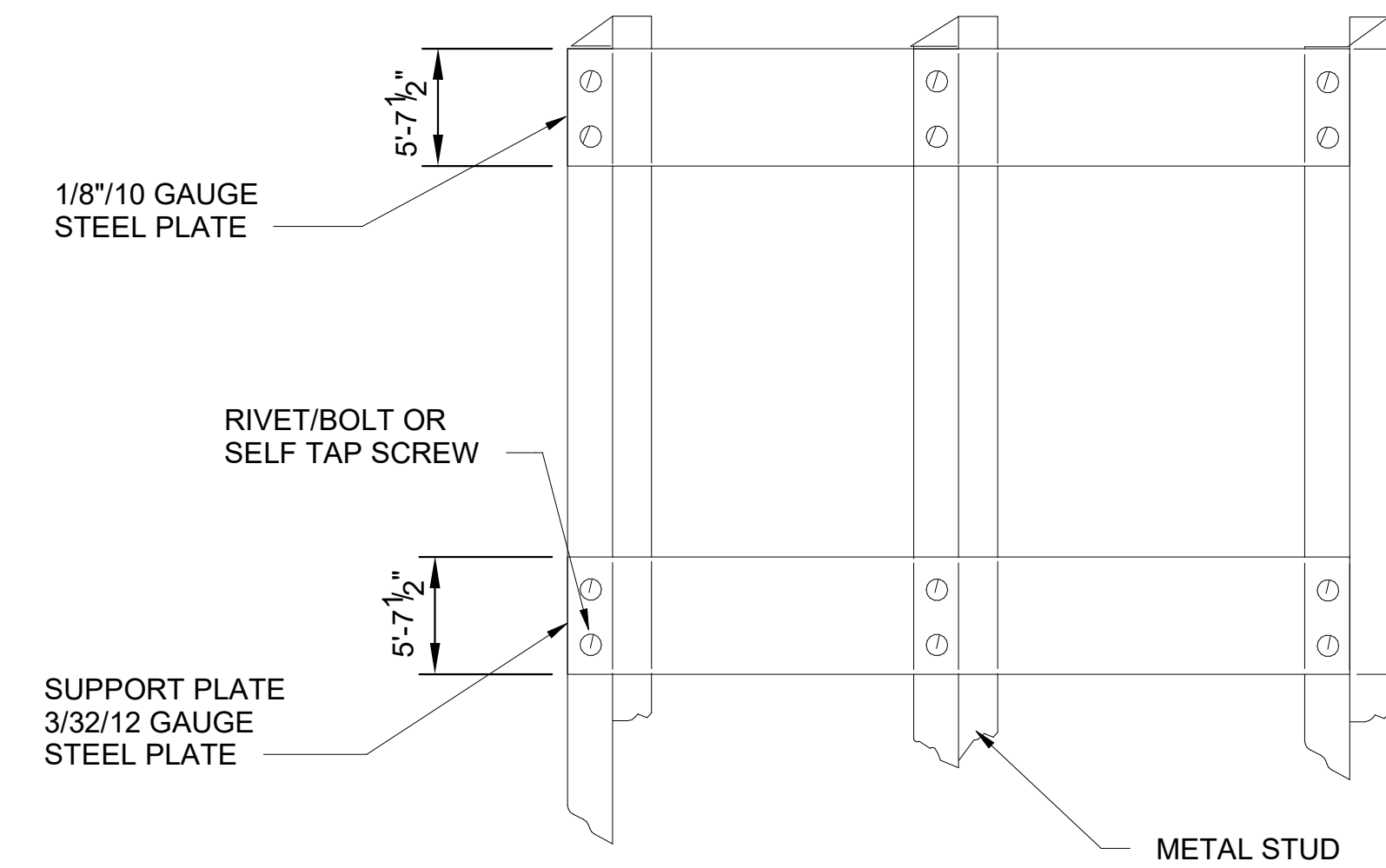


7 TEST WELL DETAIL
NOT TO SCALE

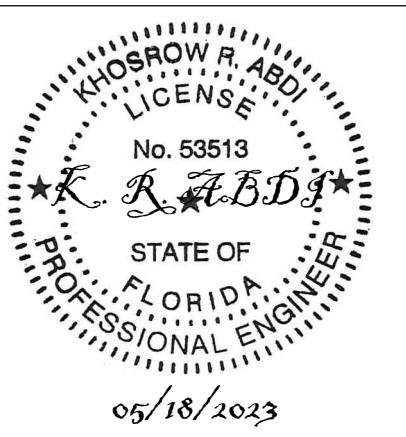


8 OUTLET LOCATION DETAIL
NOT TO SCALE

OUTLET LOCATION NOTES:
A. ALL DIMENSIONS ARE TO BOTTOM OF BOX.
B. WHERE OUTLETS ARE SHOWN TO BE MOUNTED ABOVE COUNTER (AC), THE E.C. SHALL REFERENCE THE ARCHITECTURAL AND/OR CASEWORK DRAWINGS AND TROUGH IN EACH DEVICE 6" ABOVE THE COUNTER SURFACE TO THE BOTTOM OF THE BOX.
C. SYMBOLS ON DRAWINGS AND MOUNTING HEIGHTS AS INDICATED ARE APPROXIMATE ONLY. THE EXACT LOCATIONS AND MOUNTING HEIGHTS MUST BE DETERMINED ON THE JOB AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL TRADES TO SECURE CORRECT INSTALLATION, I.E. OVER COUNTERS, IN OR ABOVE BACK SPLASHES, IN STOP WALLS, AND OTHER SPECIFIC CONSTRUCTION FEATURES. MOUNT ALL RECEPTACLES VERTICAL WITH GROUND SLOT FACING UP.



9 EQUIPMENT DRYWALL SUPPORT DETAIL
NOT TO SCALE



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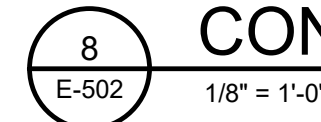
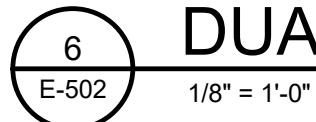
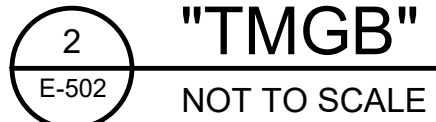
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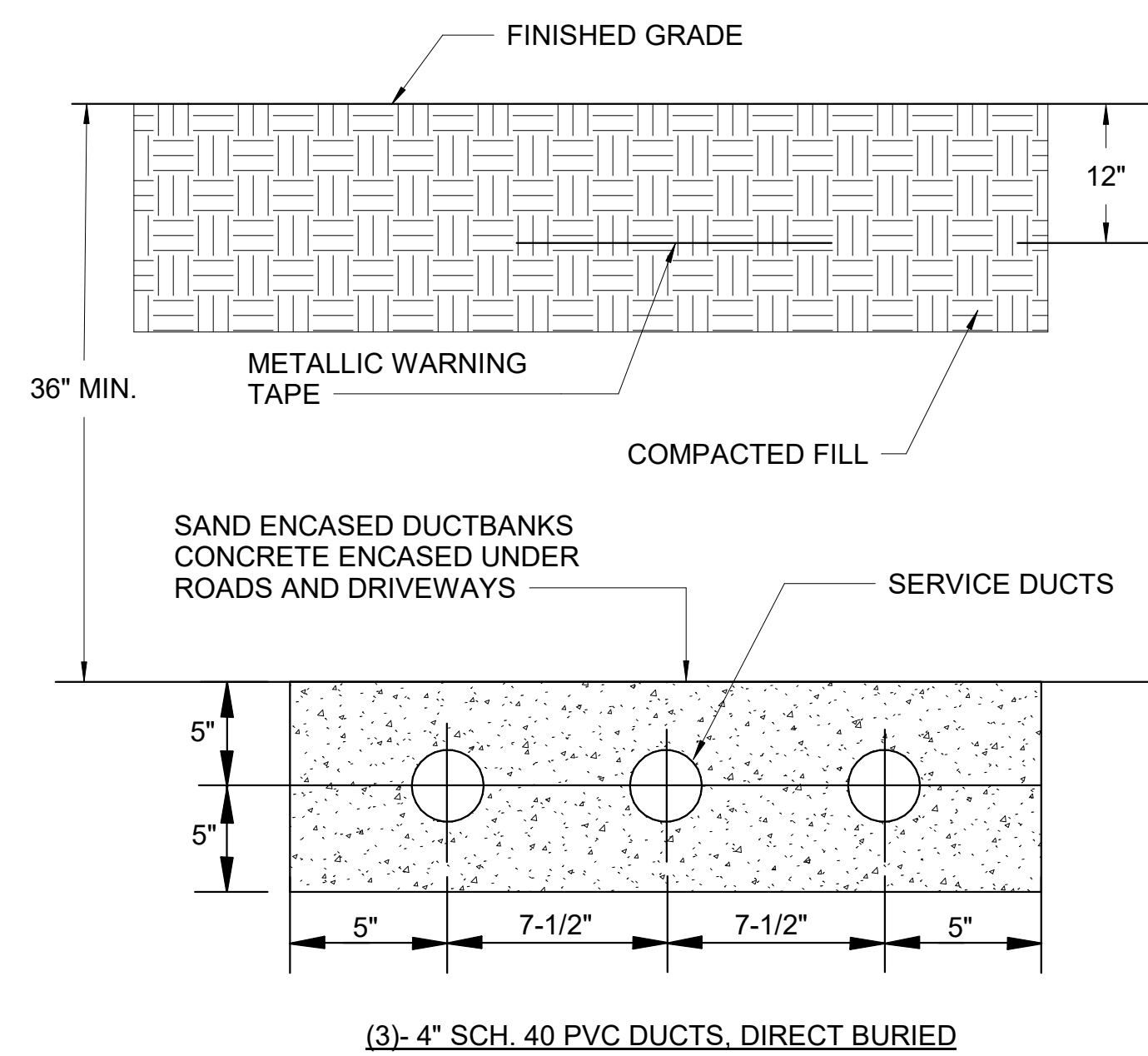
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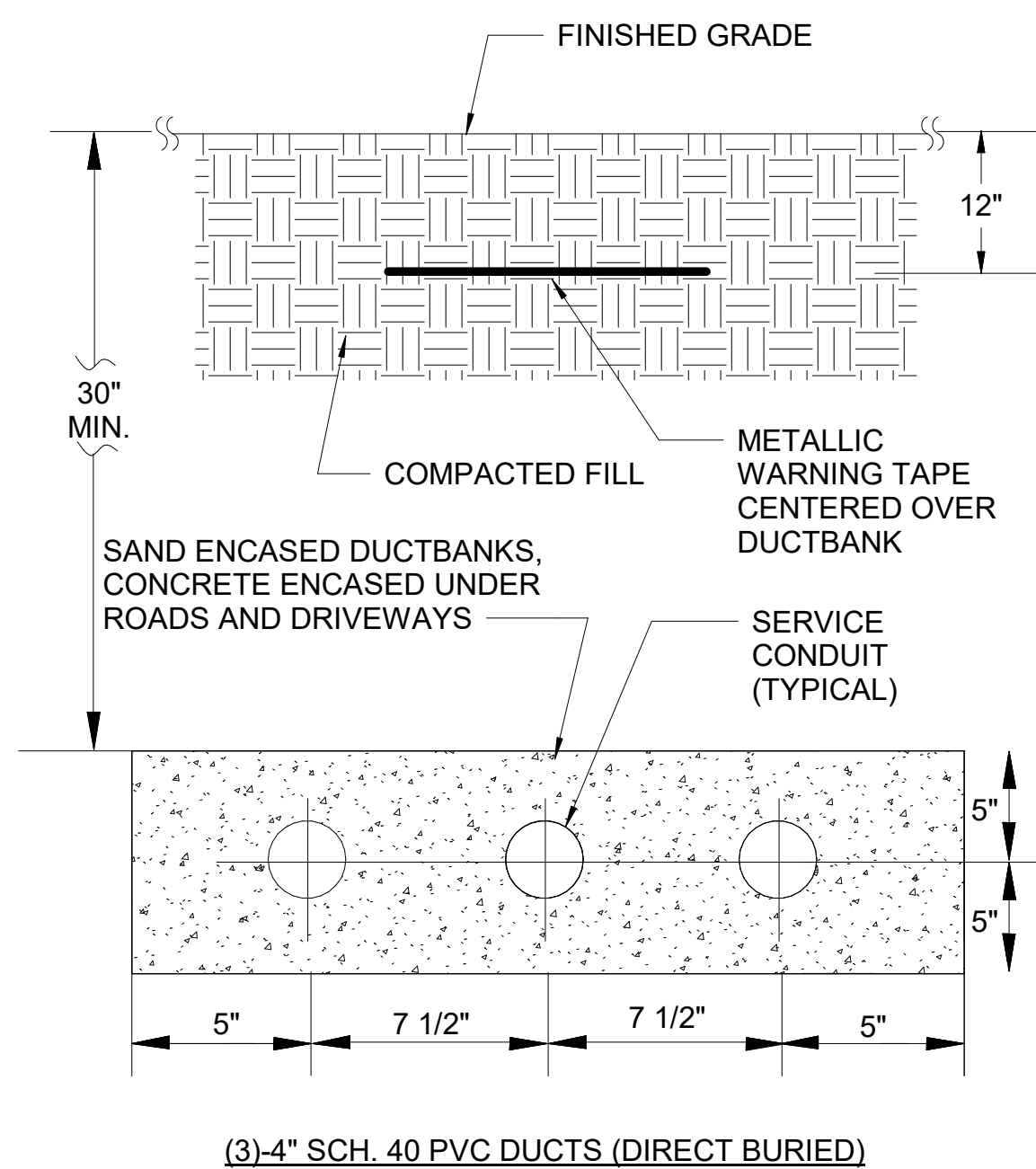


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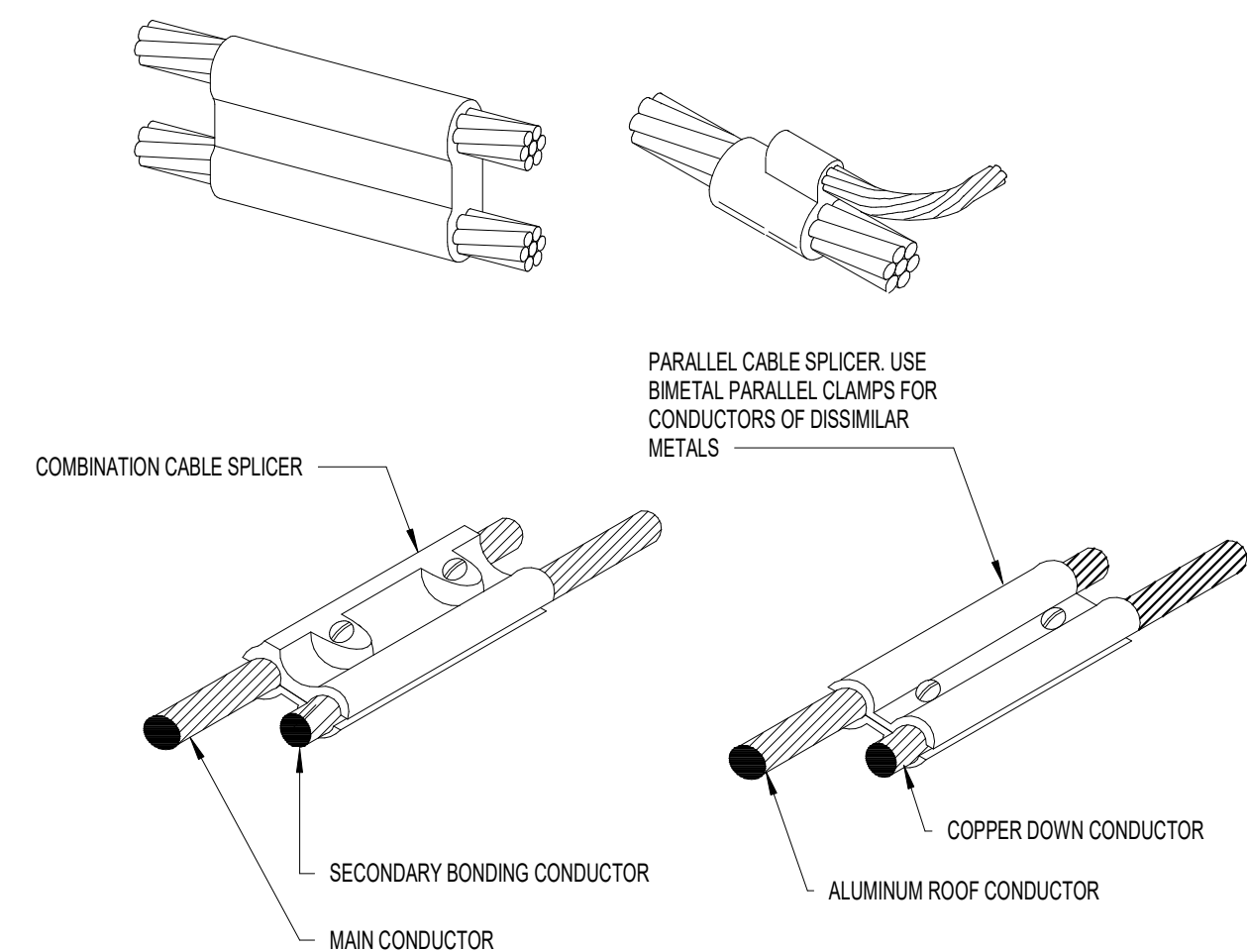




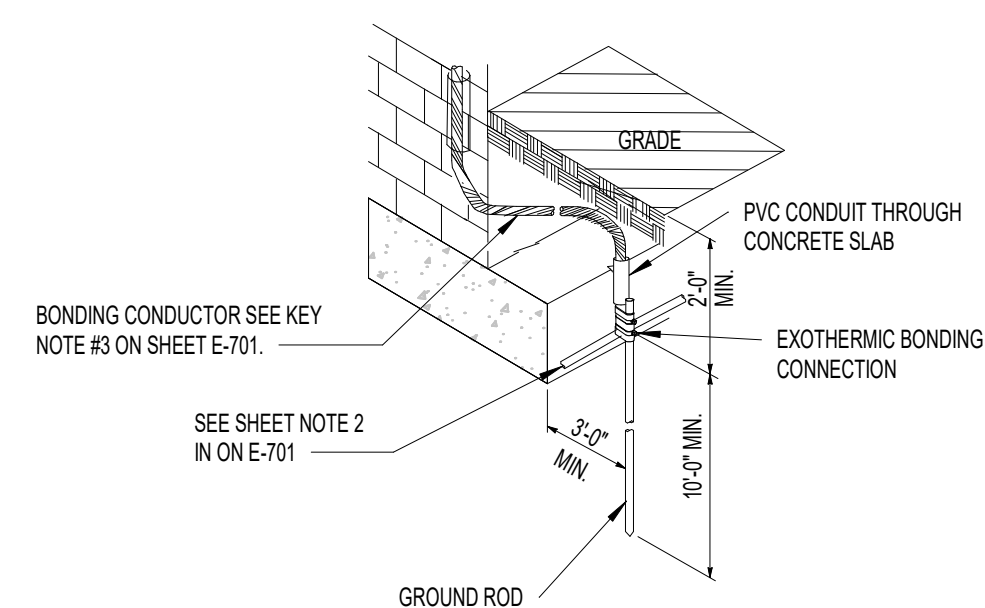
1 TEL/DATA/CATV DUCTBANK
E-503 NOT TO SCALE



2 SECONDARY DUCTBANK DETAIL
E-503 NOT TO SCALE



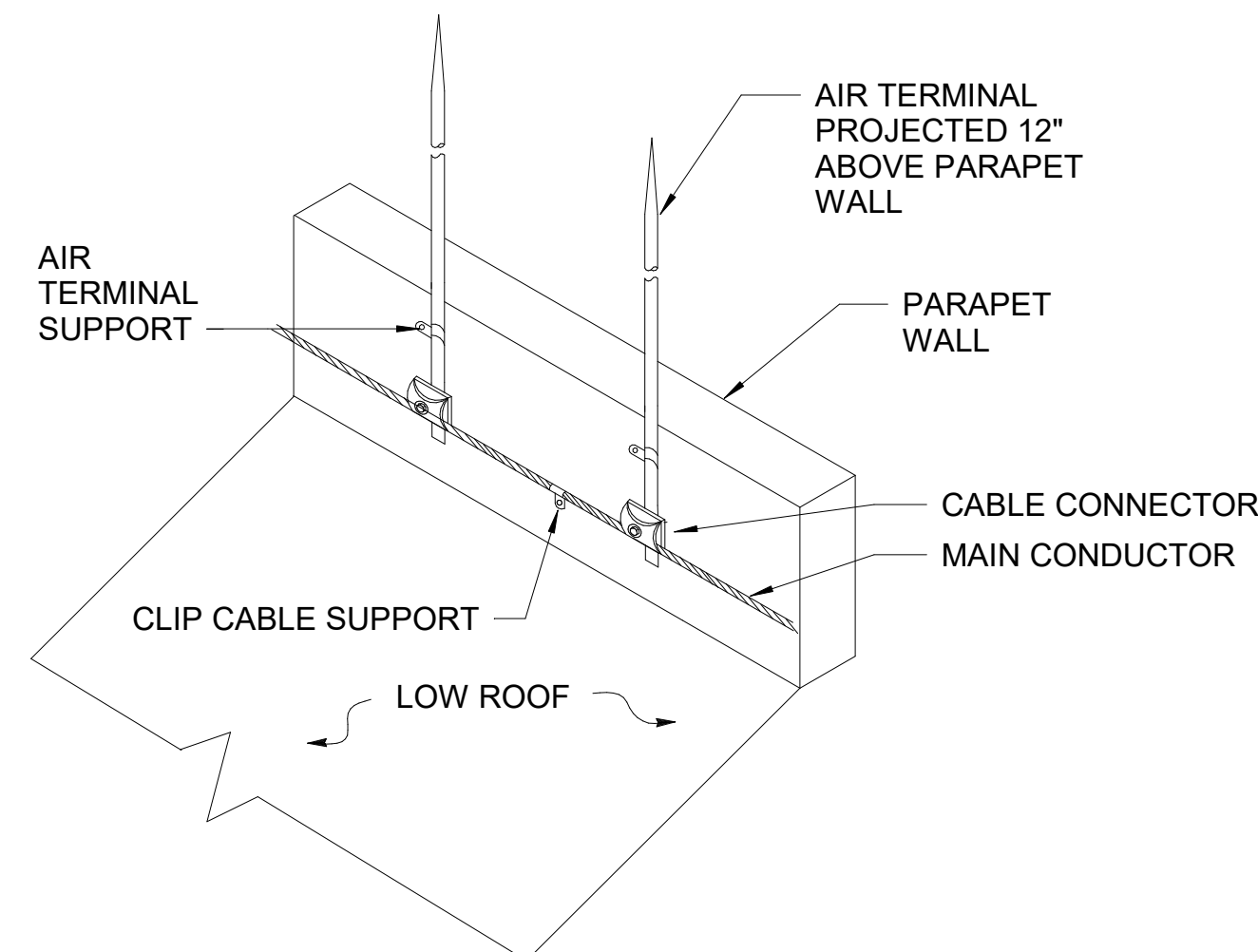
3 CABLE SPLICER DETAIL
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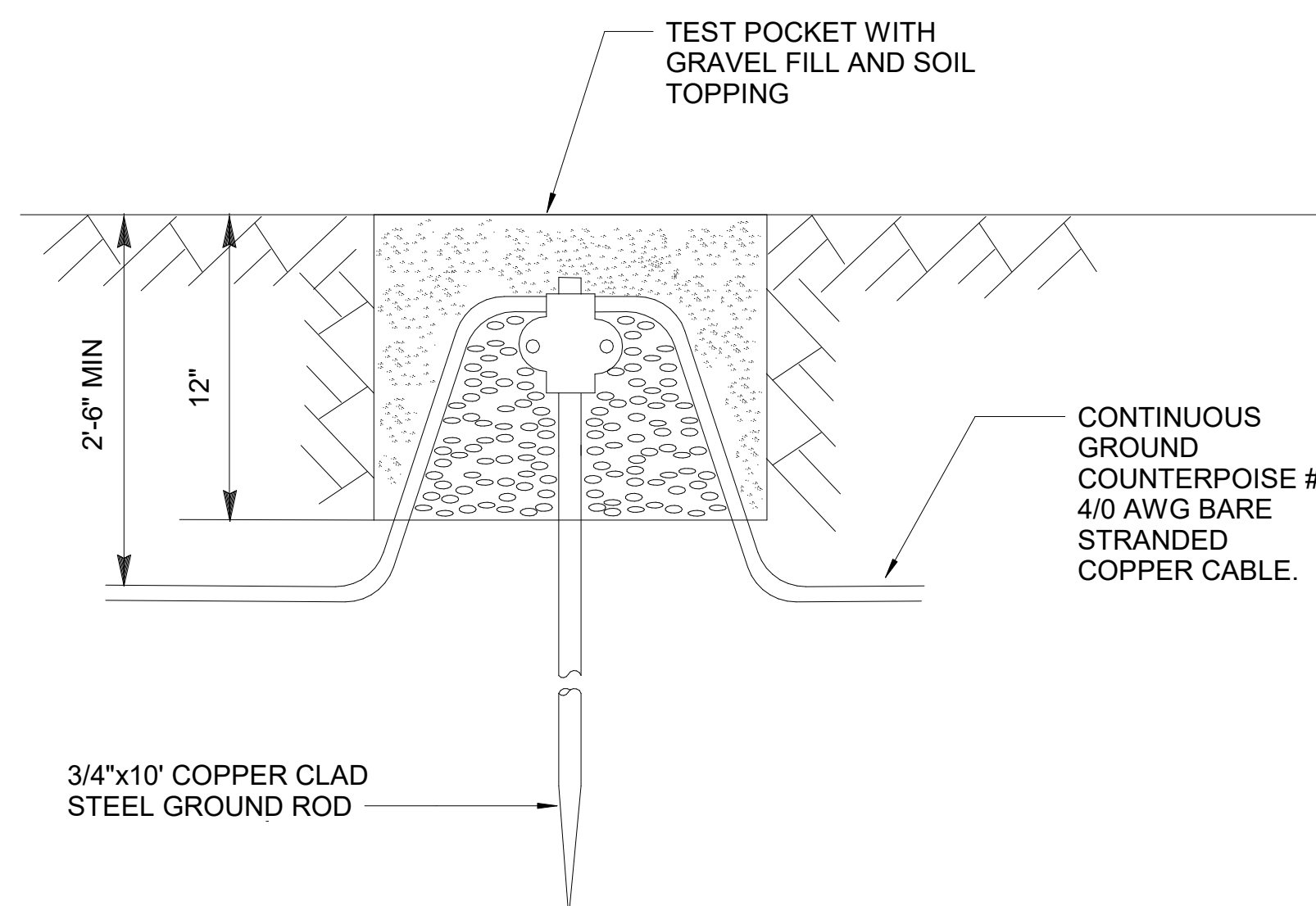
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E-503

GROUNDING DETAIL

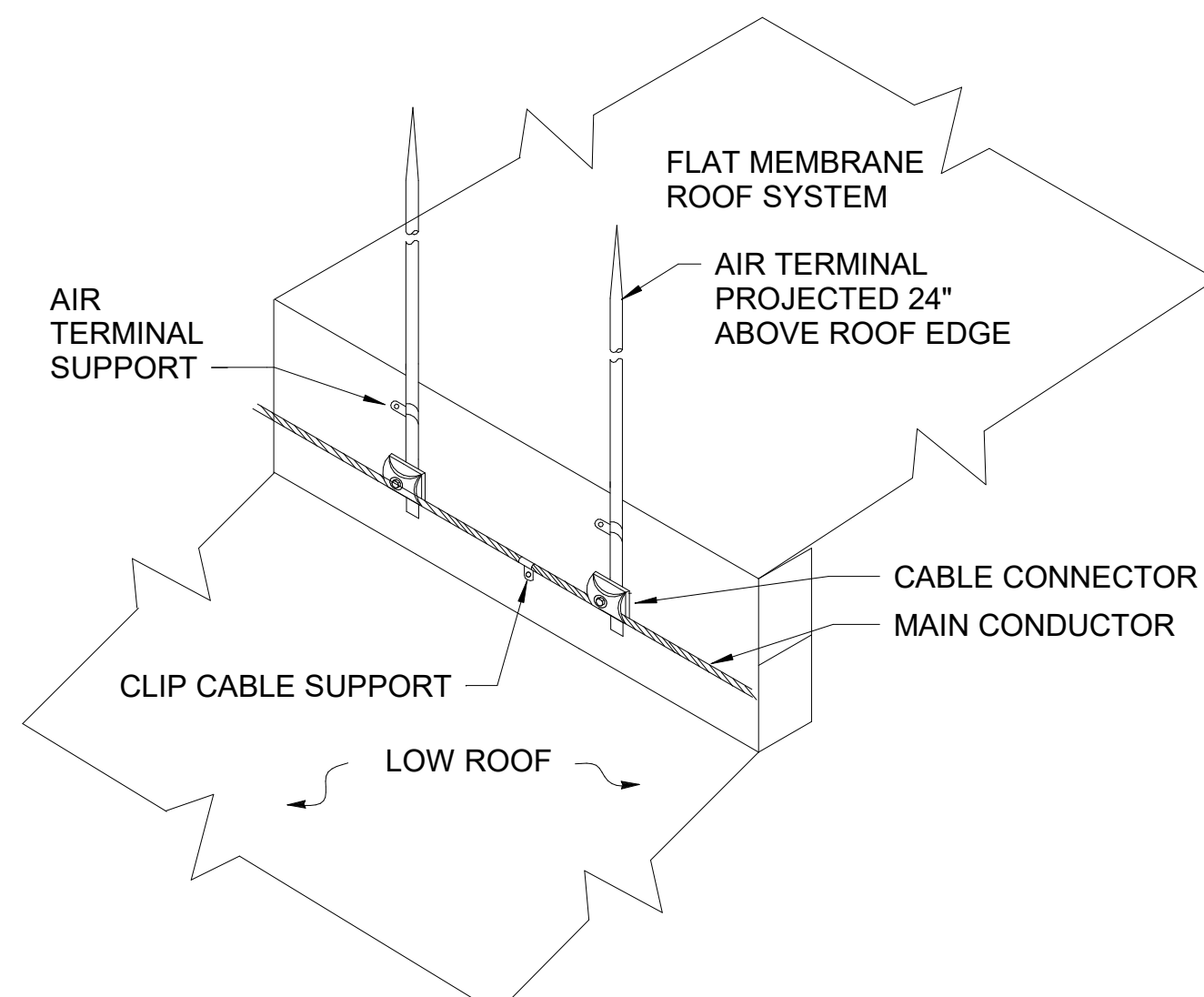
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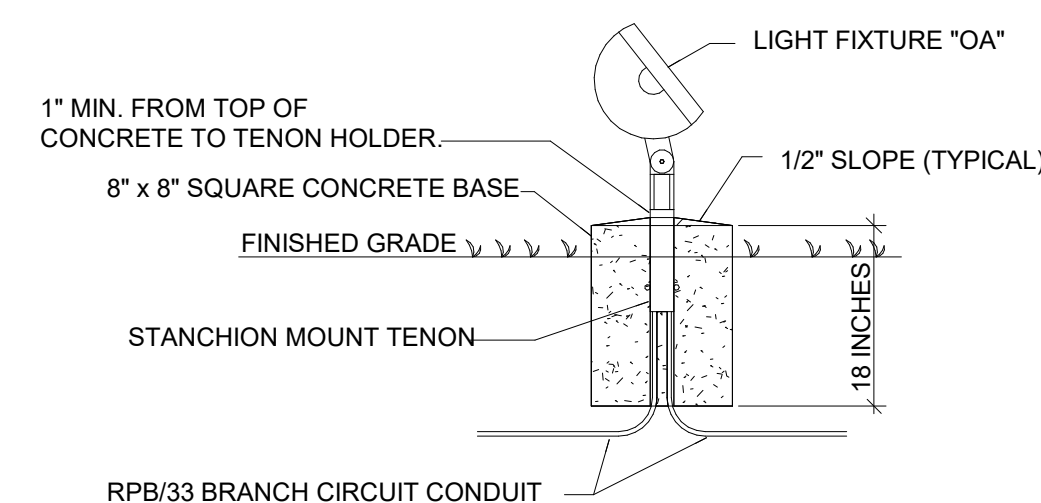
5 PERIMETER AIR TERMINAL INSTALLATION
E-503 NOT TO SCALE



6 TYPICAL GROUND ROD INSTALLATION



7 ROOF EDGE TRANSITION AIRE TERMINAL INSTALLATION



8
E-503

GROUND FIXTUR BASE DETAIL

NOT TO SCALE

EXHAUST FANS (EFs)											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
EF-1	1	120 V	1.18 A	-	-		\$	1	RPA	79	
EF-2	1	120 V	1.18 A	-	-		\$	1	RPA	79	
EF-3	1	120 V	0.73 A	-	-		\$	1	RPA	79	
EF-4	1	120 V	0.73 A	-	-		\$	1	RPA	79	
EF-5	1	120 V	0.49 A	1/8	-		\$	3R	RPA	79	
EF-6	1	120 V	0.75 A	1/8	-		\$	3R	RPA	86	
EF-7	1	120 V	0.20 A	-	-		\$	1	RPA	86	
EF-8	1	120 V	0.20 A	-	-		\$	1	RPA	86	
EF-9	1	120 V	0.52 A	1/8	-		\$	3R	RPA	86	CONNECT TO RTU-5
EF-10	1	120 V	0.42 A	-	-		\$	1	RPA	86	

ROOF TOP UNIT (RTUs)											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
RTU-1	3	208 V	110.0 A		-	SEE E-601 FEEDER SCH.	200A/3	3R	DP	4	
RTU-2	3	208 V	110.0 A		-	SEE E-601 FEEDER SCH.	200A/3	3R	DP	5	
RTU-3	3	208 V	43.8 A		-	SEE E-601 FEEDER SCH.	60A/3	3R	DP	8	
RTU-4	3	208 V	21.3 A		-	SEE E-601 FEEDER SCH.	30A/3	3R	DP	12	
RTU-5	3	208 V	44.3 A		-	SEE E-601 FEEDER SCH.	60A/3	3R	DP	9	
RTU-6	3	208 V	36.0 A		-	SEE E-601 FEEDER SCH.	60A/3	3R	DP	11	
RTU-7	3	208 V	47.3 A		-	SEE E-601 FEEDER SCH.	60A/3	3R	DP	10	
RTU-8	3	208 V	17.5 A		-	SEE E-601 FEEDER SCH.	30A/3	3R	DP	14	

DUCTLESS SPLIT SYSTEMS (ACUs/ACs)											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
AC-1	1	208 V	0.10 A			2#12 AWG, 1#12 (G), 3/4" C.			RPA	81.83	POWERED FROM OUTDOOR UNIT
AC-2	1	208 V	0.10 A			2#12 AWG, 1#12 (G), 3/4" C.			RPA	110.112	POWERED FROM OUTDOOR UNIT
ACU-1	1	208 V	9.00 A			2#12 AWG, 1#12 (G), 3/4" C.	30A/2	3R	RPA	81.83	
ACU-2	1	208 V	9.00 A			2#12 AWG, 1#12 (G), 3/4" C.	30A/2	3R	RPA	110.112	

ELECTRIC UNIT HEATER (EUHs)											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
EUH-1	3	208 V	8.3 A		3.0	3#12, 1#12 (G), 3/4" C.	30A/3	1	RPB	43,45,47	

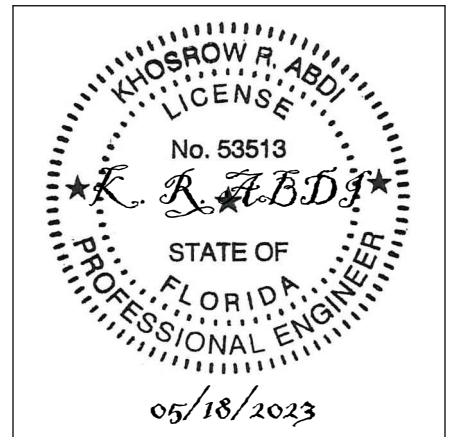
ELECTRIC WATER HEATER (EWH)											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
EWH-1	3	208 V	41.7 A		15	SEE E-601 FEEDER SCH.	60A/3	1	DP	13	

PUMP SCHEDULE (CP)												
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks	
CP-1	1	120 V	2.3 A			2#12 AWG, 1#12 (G), 3/4" C.	\$m	1	RPA	75		

DOAS UNIT SCHEDULE											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
DOAS-1	3	208 V	45.70 A			SEE E-601 FEEDER SCH.	60A/3	3R	DP	3	

VAV CONTROL UNITS SCHEDULE (VAVs)											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
VAV-1	3	208 V	13.90 A		5.0	3#12, 1#12 (G), 3/4" C.	30A/3	1	RPA	109,111,113	
VAV-2	3	208 V	13.90 A		5.0	3#12, 1#12 (G), 3/4" C.	30A/3	1	RPA	115,117,119	
VAV-3	3	208 V	13.90 A		5.0	3#12, 1#12 (G), 3/4" C.	30A/3	1	RPA	104,106,108	

KITCHEN EQUIPMENT HVAC											
Mark	Phases	Voltage	Amps	Fan HP (KW)	Heat KW	Feeder & Conduit Size	Disconnect Amps/Poles	NEMA Enclosure	Panel	Circuit Number	Remarks
KEF-1	1	120 V	16.00 A	1		2#12 AWG, 1#12 (G), 3/4" C.	30A/1	3R	RPA	78	
MUA-1	1	120 V	9.80 A	1/2		2#12 AWG, 1#12 (G), 3/4" C.	30A/1	3R	RPA	105	



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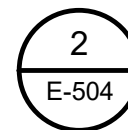
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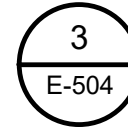
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DETAILS	

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E-503

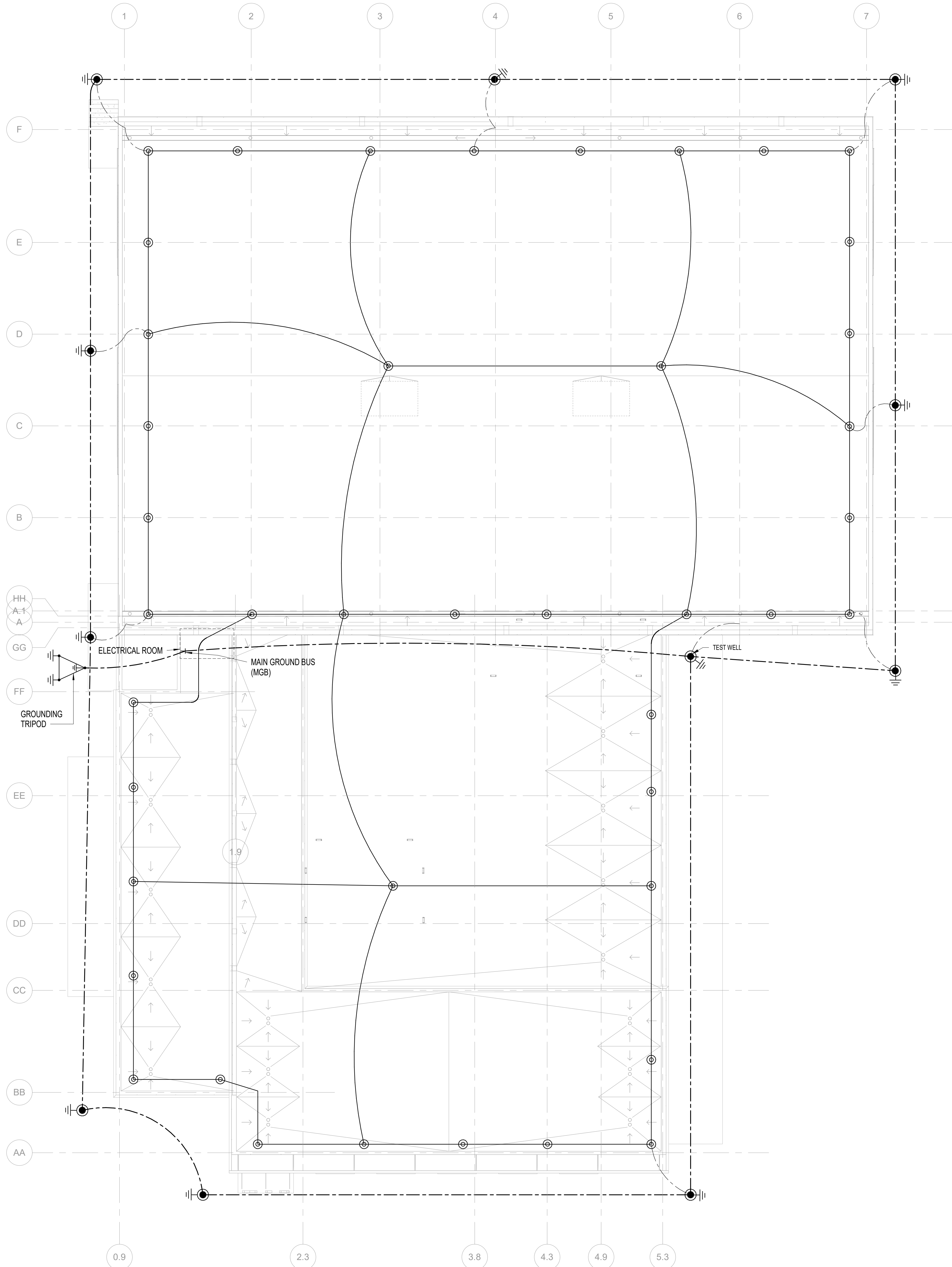


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LIGHTNING PROTECTION SYMBOLS LEGEND

- AIR TERMINAL CONNECTED TO ROOF (MAIN) CONDUCTOR
- GROUND ROD CONNECTED TO COUNTERPOISE EXOTHERMICALLY
- LIGHTNING PROTECTION ROOF (MAIN) CONDUCTOR
- GROUND RING (COUNTERPOISE) CONDUCTOR
- BONDING CONDUCTOR CONNECTED TO GROUND ROD AND BUILDING STEEL AT THE BOTTOM AND TO BUILDING STEEL AND AIR TERMINAL AND MAIN CONDUCTOR AT THE TOP



1
E-701
3/32" = 1'-0"
LIGHTNING PROTECTION PLAN



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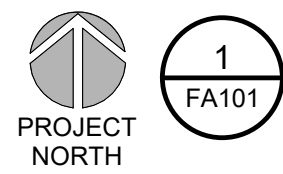
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LIGHTNING PROTECTION PLAN

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1
FA101

FIRE ALARM PLAN - ZONE A

1/8" = 1'-0"

0 2' 4' 8' 16'

FIRE ALARM SYMBOL LEGEND

HT AFF	SYMBOL	DESCRIPTION
96***		FIRE ALARM HORN W/STROBE (CANDELAS)
96***		FIRE ALARM STROBE (CANDELAS)
72***		FIRE ALARM REMOTE ANNUNCIATOR
8****		SMOKE DETECTOR (TYPE DENOTED)
		DUCT SMOKE DETECTOR (TYPE DENOTED)
48****		F.A. PULLSTATION (TYPE DENOTED)
		SPRINKLER FLOW SWITCH
		SPRINKLER VALVE TAMPER SWITCH

ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 48".

* DISTANCE ABOVE TOP OF DOOR FRAME

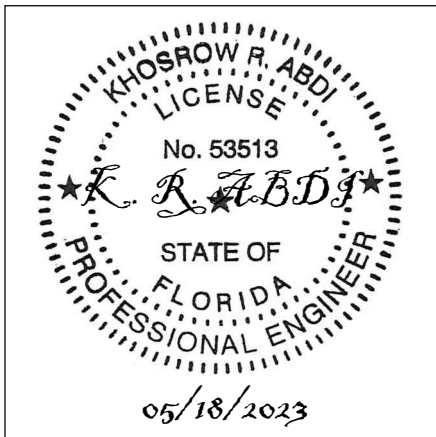
** DISTANCE TO TOP OF EQUIPMENT OR DEVICE

*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT

**** DISTANCE BELOW CEILING ***** DISTANCE TO BOTTOM OF DEVICE

SHEET NOTES

- PROVIDE AN EMERGENCY SHUTOFF SWITCH INTERLOCKED WITH THE HVAC CONTROL SYSTEM THROUGHOUT THE BUILDING. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL. PROVIDE LABEL AT SWITCH "HVAC SHUTDOWN".
- ROUTE FIRE ALARM POWER SUPPLY WIRING TO BREAKER SERVING FIRE ALARM CONTROL PANEL. LABEL BREAKER WITH RED NAMEPLATE "FIRE ALARM CONTROL PANEL." LABEL FIRE ALARM CONTROL PANEL WITH CIRCUIT NUMBER SERVING IT. PROVIDE BREAKER LOCK FOR CIRCUIT BREAKER.
- PROVIDE MONITOR MODULES AS REQUIRED FOR FLOW AND TAMPER SWITCHES LOCATED AT FIRE RISER.
- PROVIDE AND INSTALL FIRE ALARM SYSTEM CONTROL MODULE AND CONNECT TO LIGHTING OCCUPANCY SENSOR POWER PACK IN EGRESS PATH FOR OVERRIDE OF POWER PACK IN THE EVENT OF AN ALARM.
- (GENERAL) PROVIDE MONITOR MODULE FOR TAMPER SWITCH LOCATED AT POST INDICATOR VALVE.
- PROVIDE FA WIRING IN A 1" SCH. 40 PVC CONDUIT TO PIV TAMPER SWITCH FOR MONITORING CIRCUIT.
- MOUNT FIRE SPRINKLER ALARM BELL ON EXTERIOR WALL AS SHOWN, CONNECT WIRING DIRECTLY TO SPRINKLER SYSTEM FLOW SWITCH.
- PROVIDE SURGE PROTECTOR MODULES FOR FIRE ALARM CIRCUITS MONITORING FIRE ALARM DEVICES WHEN EXTENDING BEYOND THE BUILDING ENVELOPE.



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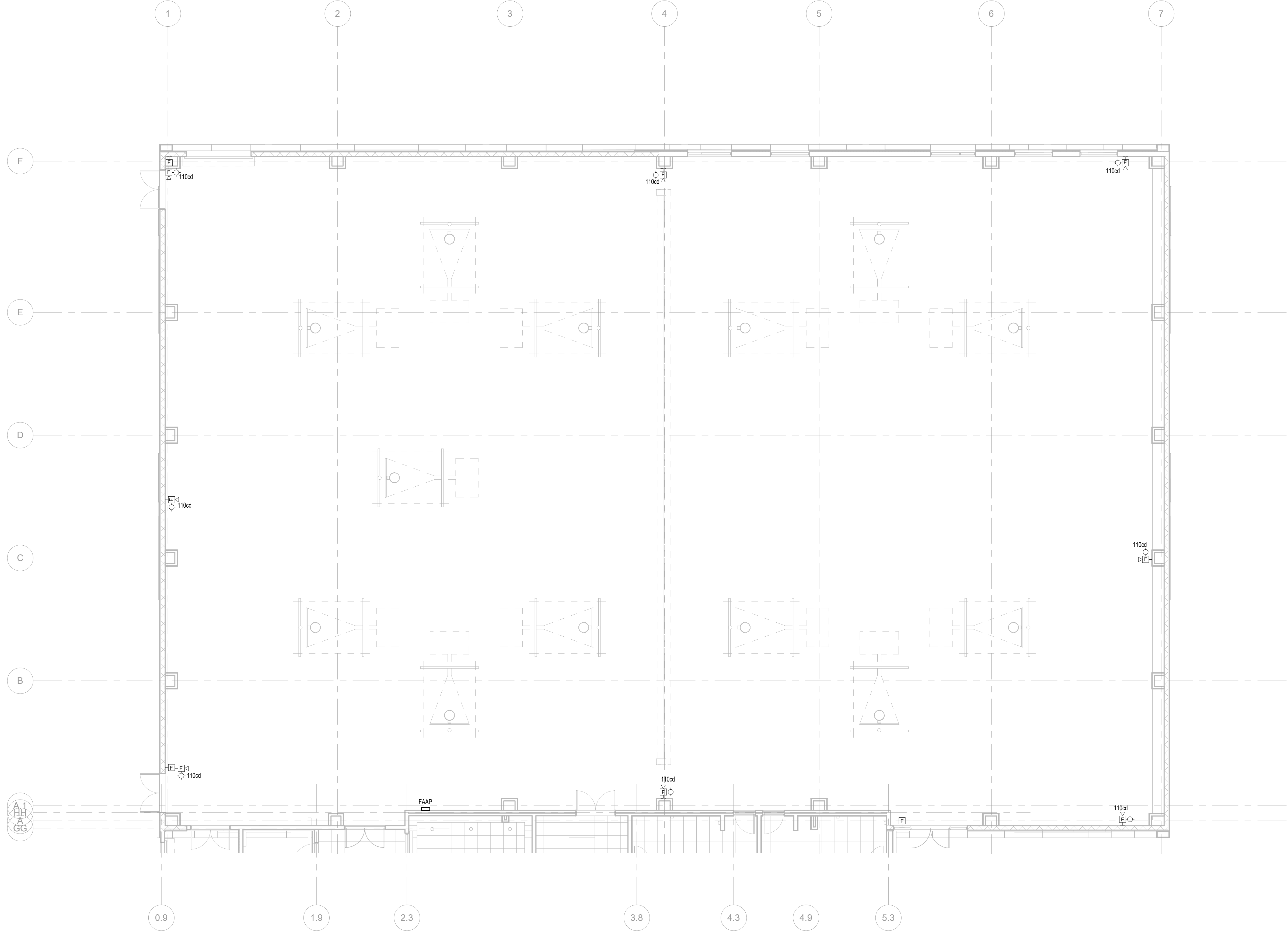
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SHEET TITLE:
FIRE ALARM PLAN - ZONE A

SHEET NUMBER:

FA101

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1
FA102

FIRE ALARM PLAN - ZONE B

1/8" = 1'-0"

0 2' 4' 8' 16'

FIRE ALARM SYMBOL LEGEND

HT/AFF	SYMBOL	DESCRIPTION
96"		FIRE ALARM HORN W/STROBE (CANDELAS)
96"		FIRE ALARM STROBE (CANDELAS)
72"		FIRE ALARM REMOTE ANNUNCIATOR
8"		SMOKE DETECTOR (TYPE DENOTED)
8"		DUCT SMOKE DETECTOR (TYPE DENOTED)
48"		F.A. PULLSTATION (TYPE DENOTED)
48"		SPRINKLER FLOW SWITCH
48"		SPRINKLER VALVE TAMPER SWITCH

ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 48".

* DISTANCE ABOVE TOP OF DOOR FRAME

** DISTANCE TO TOP OF EQUIPMENT OR DEVICE

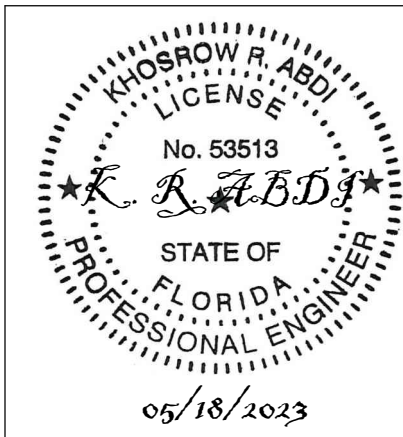
*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT

**** DISTANCE BELOW CEILING

***** DISTANCE TO BOTTOM OF DEVICE

SHEET NOTES

1. PROVIDE AN EMERGENCY SHUTOFF SWITCH INTERLOCKED WITH THE HVAC CONTROL SYSTEM THROUGHOUT THE BUILDING. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL. PROVIDE LABEL AT SWITCH "HVAC SHUTDOWN".



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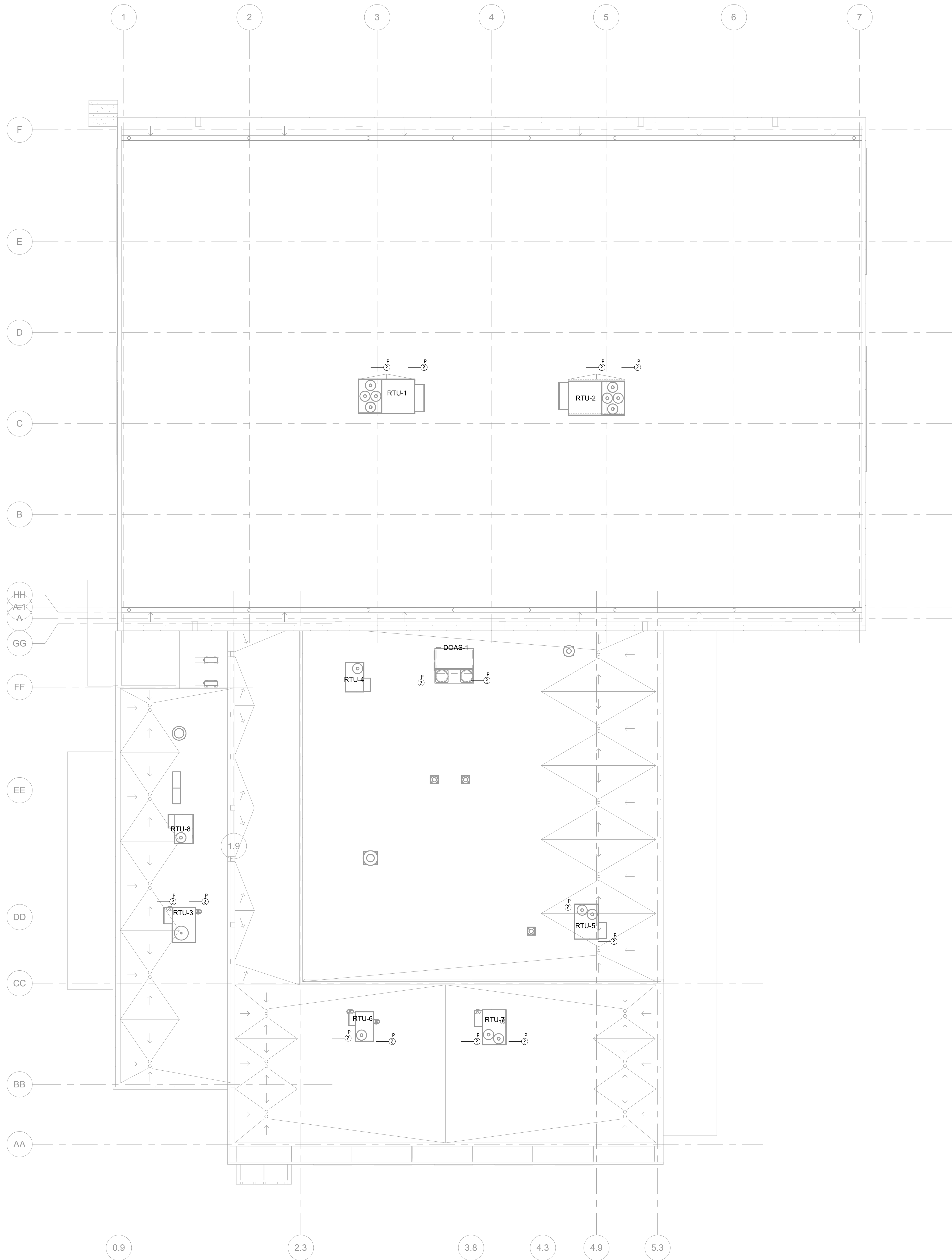
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SHEET TITLE:
FIRE ALARM PLAN -
ZONE B

SHEET NUMBER:

FA102

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FIRE ALARM SYMBOL LEGEND

HT AFF	SYMBOL	DESCRIPTION
96"		FIRE ALARM HORN W/STROBE (CANDELAS)
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48"		F.A. PULLSTATION (TYPE DENOTED)
		SPRINKLER FLOW SWITCH
		SPRINKLER VALVE TAMPER SWITCH

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* DISTANCE ABOVE TOP OF DOOR FRAME ** DISTANCE TO TOP OF EQUIPMENT OR DEVICE

*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT

**** DISTANCE BELOW CEILING

***** DISTANCE TO BOTTOM OF DEVICE

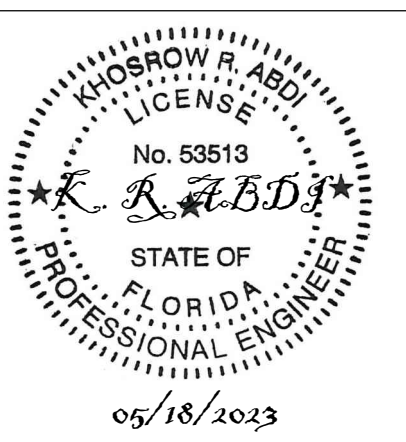


1
FA103

FIRE ALARM - ROOF PLAN

3/32" = 1'-0"

0 4' 8' 16' 24'



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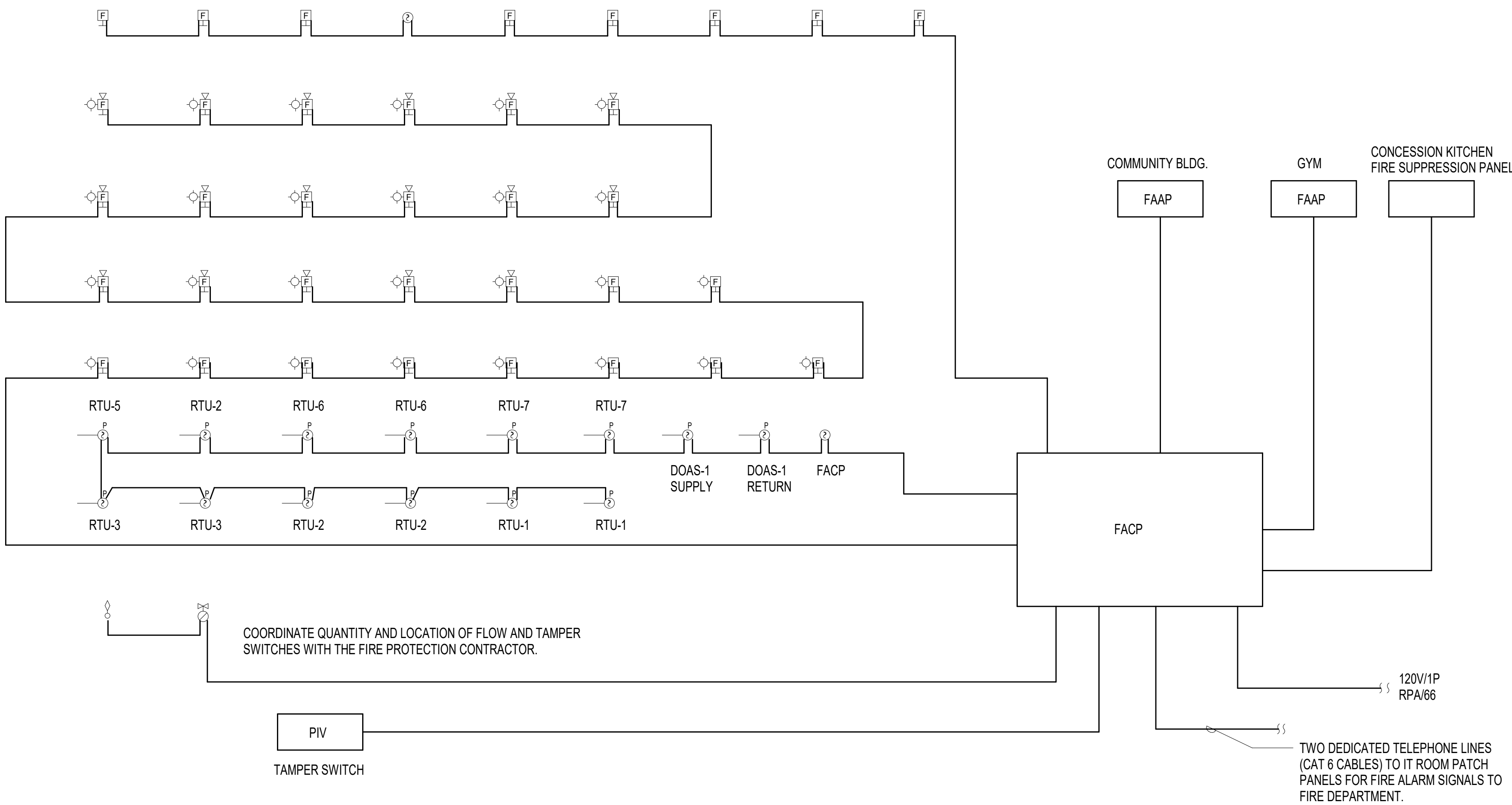
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FIRE ALARM PLAN - ROOF

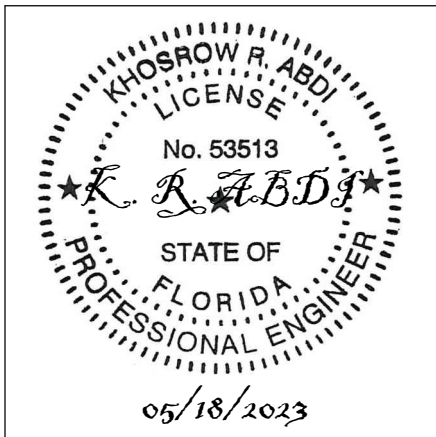
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FA103

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1 FIRE ALARM RISER DIAGRAM
FA601 NOT TO SCALE



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SHEET TITLE:
FIRE ALARM RISER
DIAGRAM

SHEET NUMBER:
FA601

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PROJECT NORTH

1 LV101 1/8" = 1'-0"

0 2' 4' 8' 16'

LOW VOLTAGE - ZONE A

LOW VOLTAGE LEGEND

HT AFF	SYMBOL	DESCRIPTION
48****	HCB	INDICATES ACCESS CONTROL DOOR HARDWARE W/PROXIMITY KEY FOB
AS NOTED	CCB	INDICATES WALL OR CEILING MOUNTED SECURITY CAMERA (CAMERA BY OWNER)
	CM	CCTV MONITOR

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* DISTANCE ABOVE TOP OF DOOR FRAME

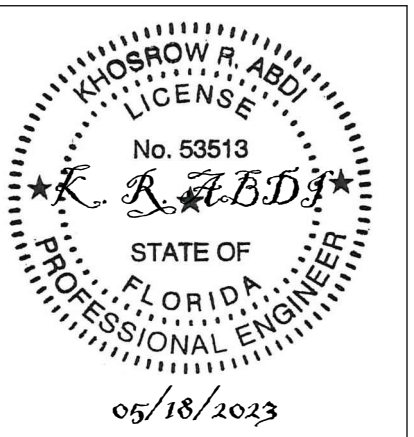
** DISTANCE TO TOP OF EQUIPMENT OR DEVICE

*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT

**** DISTANCE TO BOTTOM OF DEVICE **** DISTANCE BELOW CEILING

BASIS OF DESIGN OR EQUAL- SECURITY SURVEILLANCE CAMERA TYPE/DESCRIPTION

CAMERA TYPE	DESCRIPTION
HSM-D1-IR	2MP 2.0C-HSM-D1-IR INDOOR 90 DOME CAMERA, CEILING MOUNT
HSA-DP1-IR	8MP 8.0C-HSA-DP1-IR OUTDOOR 90 DOME CAMERA, WALL MOUNT
H4A-3MH-270	24MP 24C-H4A-3MH-270 OUTDOOR 270 DOME CAMERA, CORNER MOUNT
HSA-D01-IR	8MP 8.0C-HSA-D01-IR INDOOR 360 DOME CAMERA, CEILING MOUNT



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DATE:
05/18/2023

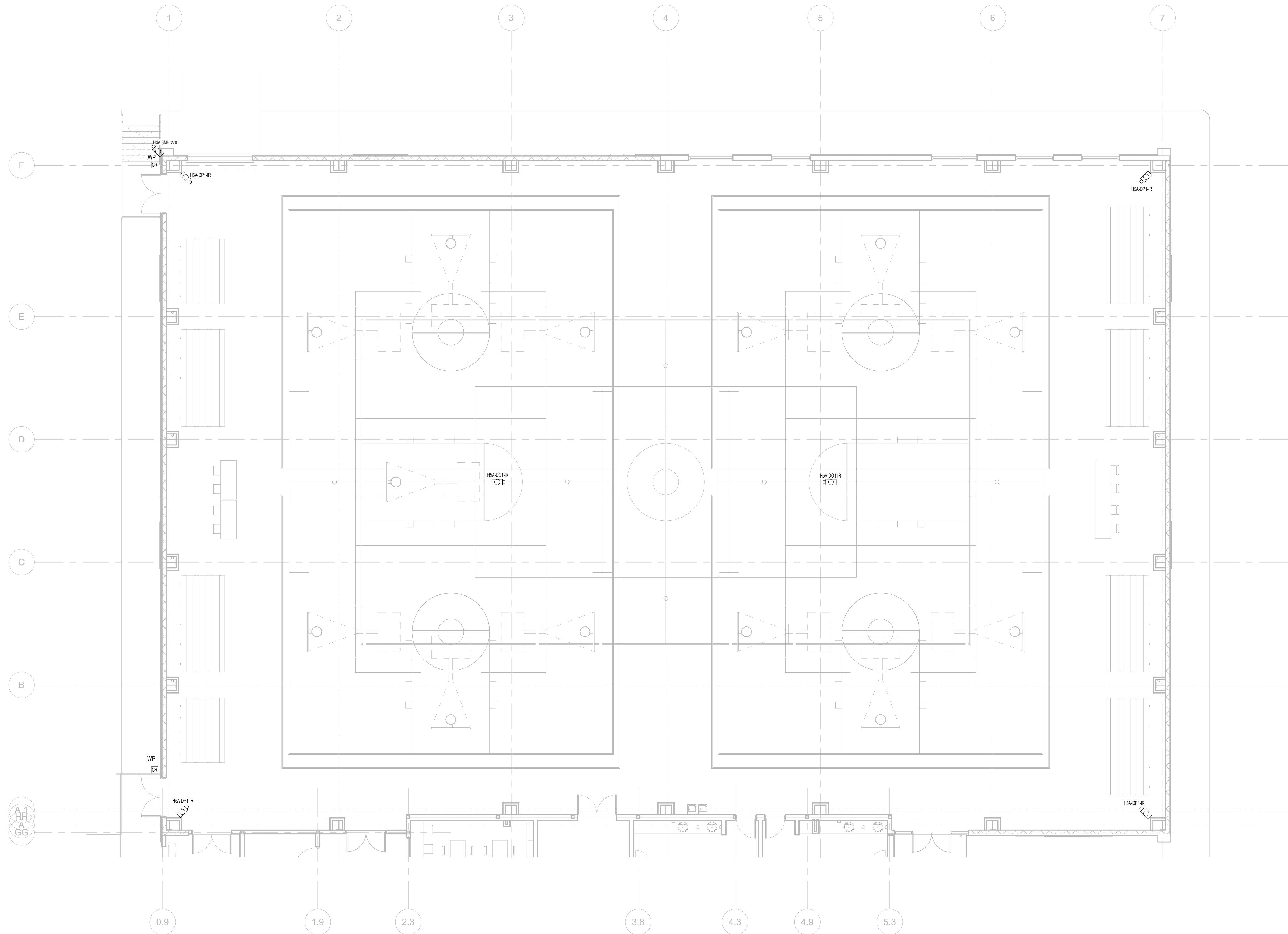
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DESCRIPTION DATE

SHEET TITLE:
LOW VOLTAGE - ZONE A

SHEET NUMBER:

LV101

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PROJECT
NORTH

1

LV102

1/8" = 1'-0"

0

2'

4'

8'

16'

LOW VOLTAGE LEGEND

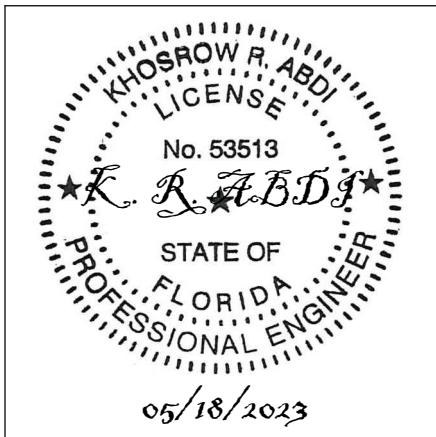
HT AFF	SYMBOL	DESCRIPTION
48****		INDICATES ACCESS CONTROL DOOR HARDWARE W/PROXIMITY KEY FOB
AS NOTED		INDICATES WALL OR CEILING MOUNTED SECURITY CAMERA (CAMERA BY OWNER)
		CCTV MONITOR

ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 48".

* DISTANCE ABOVE TOP OF DOOR FRAME
** DISTANCE TO TOP OF EQUIPMENT OR DEVICE
*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT
**** DISTANCE TO BOTTOM OF DEVICE ***** DISTANCE BELOW CEILING

BASIS OF DESIGN OR EQUAL- SECURITY SURVEILLANCE CAMERA TYPE/DESCRIPTION

CAMERA TYPE	DESCRIPTION
H6M-D1-IR	2MP 2.0C-H6M-D1-IR INDOOR 90 DOME CAMERA, CEILING MOUNT
H5A-DP1-IR	6MP 6.0C-H5A-DP1-IR OUTDOOR 90 DOME CAMERA, WALL MOUNT
H4A-3MH-270	24MP 24C-H4A-3MH-270 OUTDOOR 270 DOME CAMERA, CORNER MOUNT
H5A-D01-IR	8MP 8.0C-H5A-D01-IR INDOOR 360 DOME CAMERA, CEILING MOUNT



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PANAMA CITY, FL 32401

JOB NUMBER:
21109

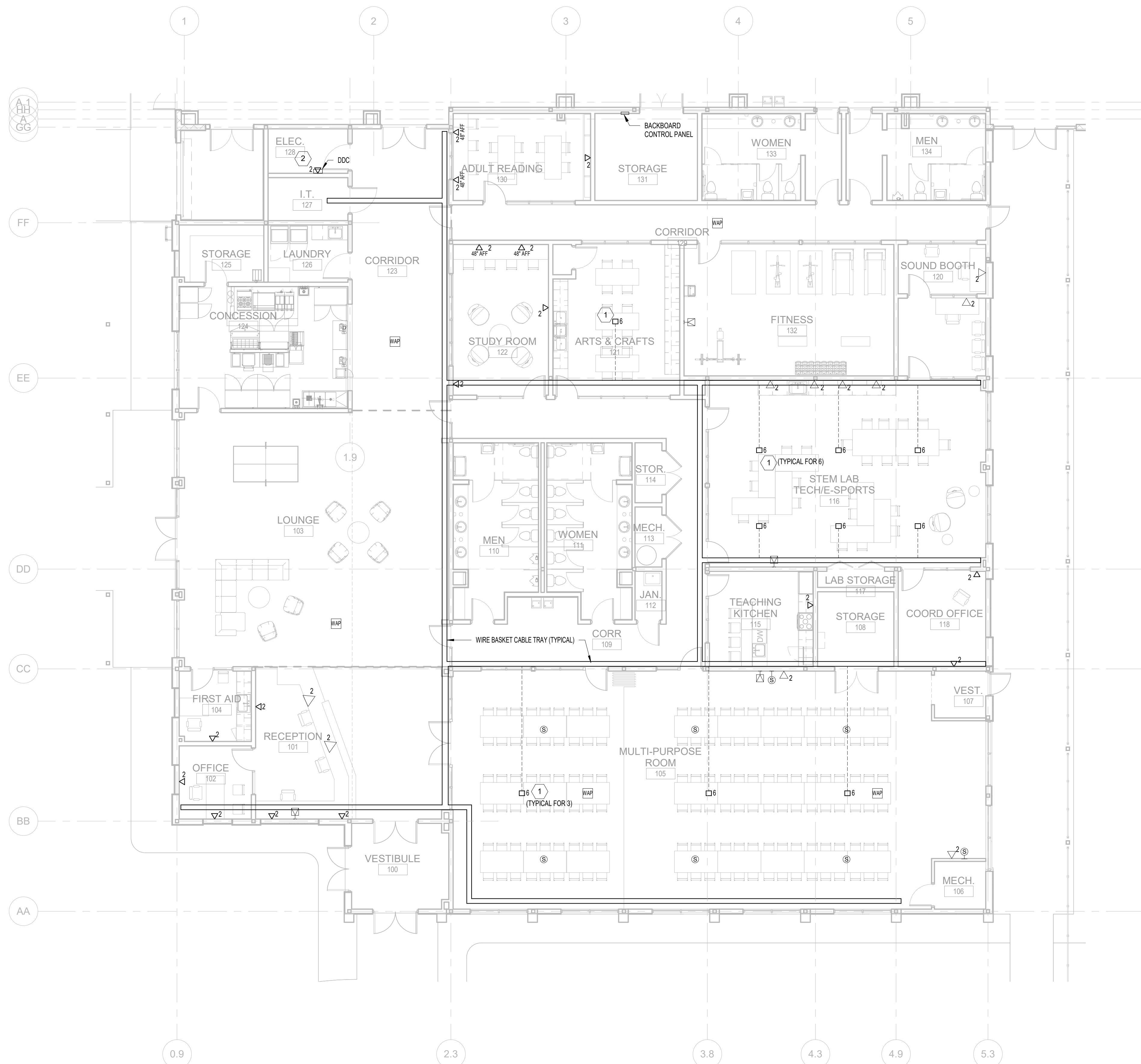
DATE:
05/18/2023

PRINTED / REVISIONS
DESCRIPTION DATE

SHEET TITLE:
LOW VOLTAGE - ZONE B

SHEET NUMBER:
LV102

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1
T-101

TELECOMMUNICATIONS PLAN - ZONE A

1/8" = 1'-0"

0 2' 4' 8' 16'

TELECOMMUNICATIONS SYMBOL LEGEND

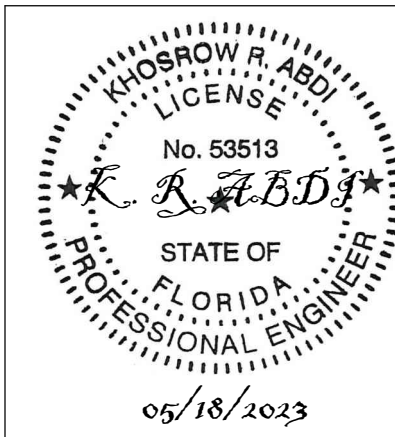
HT AFF	SYMBOL	DESCRIPTION
		CABLE TRAY (TYPE DENOTED)
		CONDUIT SLEEVE (SIZE DENOTED)
18"		TELEPHONE OUTLET (TYPE DENOTED)
48"***		WALL TELEPHONE OUTLET (TYPE DENOTED)
18"		INFORMATION OUTLET (TYPE DENOTED)
18"		TELEVISION OUTLET
		RECESSED FLOOR BOX WITH 6 POWER OUTLETS & 6 DATA OUTLETS PER BOX
		RECESSED FLOOR BOX WITH 4 POWER OUTLETS, 4 DATA OUTLETS & 2 XLR AUDIO JACKS PER BOX
18"		DATA OUTLET 2 PORTS, 2 RJ-45 CONNECTORS WALL MOUNTED
		CEILING OR WALL MOUNTED PA SPEAKERS
		WIRELESS ACCESS POINT ABOVE ACCESSIBLE CEILINGS. PROVIDE CAT 6 CABLE IN 3/4" CONDUIT AND RJ-45 CONNECTORS TO CONNECT WIRELESS ACCESS POINT TO WAP HEAD END EQUIPMENT IN I.T. ROOM. COORDINATE WAP LOCATIONS WITH THE SYSTEM SUPPLIER PRIOR TO ROUGHING.
		ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 48".
		* DISTANCE ABOVE TOP OF DOOR FRAME **** DISTANCE BELOW CEILING
		** DISTANCE TO TOP OF EQUIPMENT OR DEVICE ***** DISTANCE TO BOTTOM OF DEVICE
		*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT

SHEET NOTES

1. PROVIDE 8" WIDE BY 4" HIGH WIRE BASKET CABLE TRAY AS INDICATED.

KEYNOTES

1. UNDERGROUND TELECOMMUNICATIONS CABLING FOR FLOOR MOUNTED TELECOM OUTLETS SHALL BE RATED FOR OUTDOORS INSTALLATION. PROVIDE RECESSED FLOOR BOX WITH POWER AND DATA. NUMERAL SHOWN NEXT TO BOX INDICATES NUMBER OF POWER OUTLETS AND DATA OUTLETS PER BOX. COORDINATE FLOOR BOX LOCATION WITH THE I.T. PERSONNEL AND THE ROOM FURNITURE PRIOR TO ROUGHING.
2. PROVIDE DUPLEX ETHERNET OUTLET BOX (CAT 6 RJ-45 8 CONDUCTOR BISCUIT JACK) SURFACE MOUNTED INSIDE OF DDC SYSTEM ENCLOSURE. COORDINATE EXACT MOUNTING LOCATION INSIDE THE ENCLOSURE WITH THE CONTROLS CONTRACTOR.



CCR ARCHITECTURE & INTERIORS

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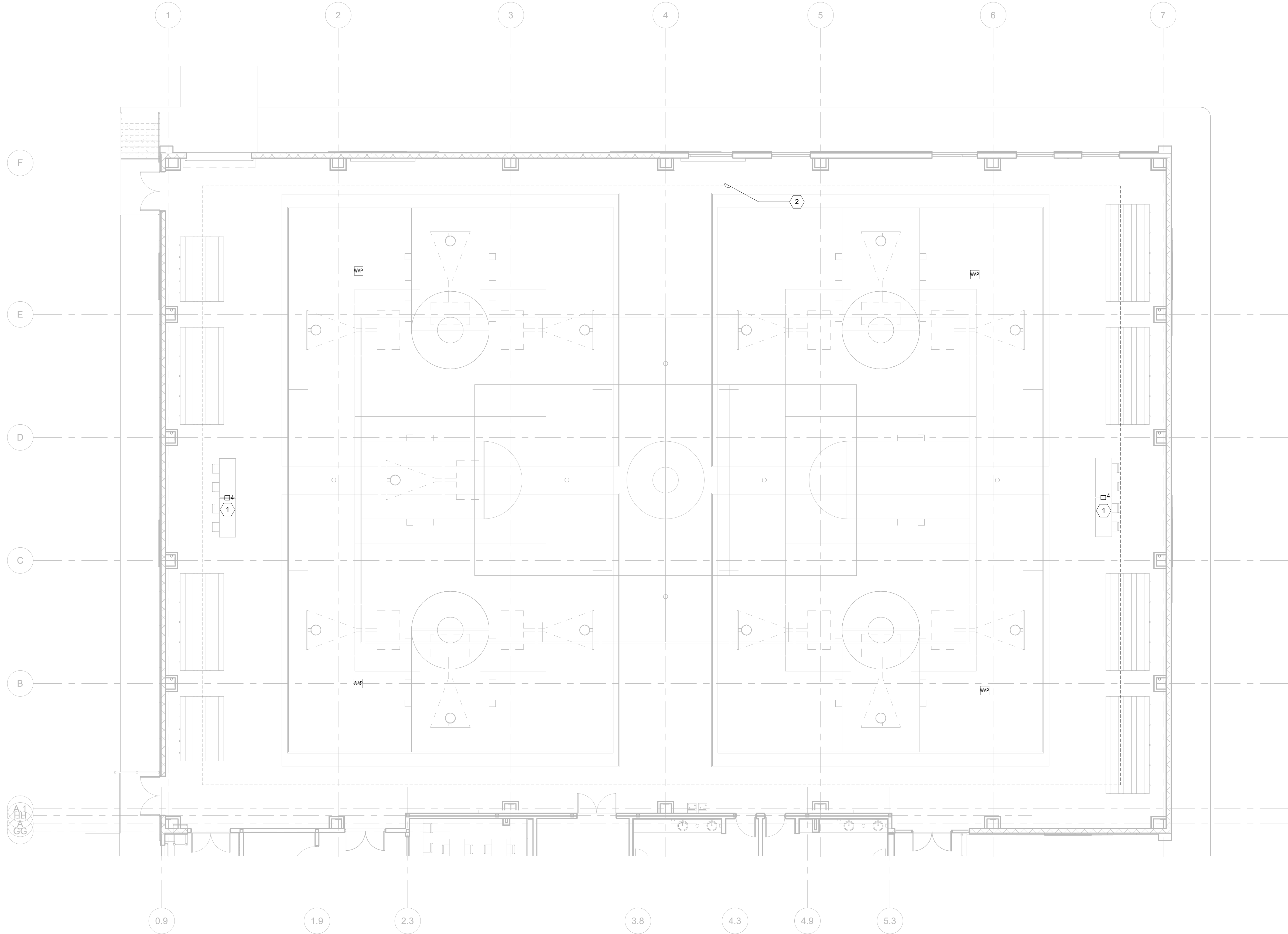
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SHEET TITLE:
TELECOMMUNICATION
PLAN - ZONE A

SHEET NUMBER:

T-101

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1
T-102

TELECOMMUNICATIONS PLAN - GYM

1/8" = 1'-0"

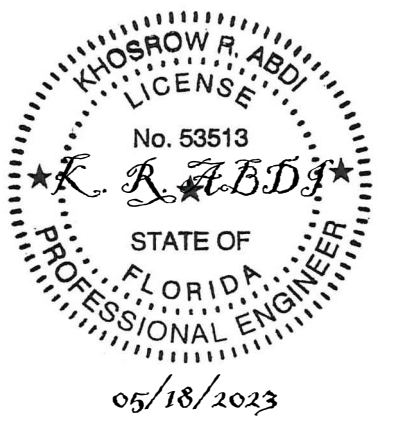
0 2' 4' 8' 16'

TELECOMMUNICATIONS SYMBOL LEGEND

HT AFF	SYMBOL	DESCRIPTION
		CABLE TRAY (TYPE DENOTED)
		CONDUIT SLEEVE (SIZE DENOTED)
18"		TELEPHONE OUTLET (TYPE DENOTED)
48****		WALL TELEPHONE OUTLET (TYPE DENOTED)
18"		INFORMATION OUTLET (TYPE DENOTED)
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18"		DATA OUTLET 2 PORTS, 2 RJ-45 CONNECTORS WALL MOUNTED
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		WIRELESS ACCESS POINT ABOVE ACCESSIBLE CEILINGS. PROVIDE CAT 6 CABLE IN 3/4" CONDUIT AND RJ-45 CONNECTORS TO CONNECT WIRELESS ACCESS POINT TO WAP. HEAD END EQUIPMENT IN I.T. ROOM. COORDINATE WAP LOCATIONS WITH THE SYSTEM SUPPLIER PRIOR TO ROUGHING.
ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 48".		
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** DISTANCE TO TOP OF EQUIPMENT OR DEVICE		***** DISTANCE TO BOTTOM OF DEVICE
*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT		

KEYNOTES

- UNDERGROUND TELECOMMUNICATIONS CABLING FOR FLOOR MOUNTED TELECOM OUTLETS SHALL BE RATED FOR OUTDOORS INSTALLATION. PROVIDE RECESSED FLOOR BOX WITH POWER AND DATA. NUMERAL SHOWN NEXT TO BOX INDICATES NUMBER OF POWER OUTLETS AND DATA OUTLETS PER BOX. COORDINATE FLOOR BOX LOCATION WITH THE I.T. PERSONNEL AND THE ROOM FURNITURE PRIOR TO ROUGHING.
- PROVIDE ALLOWANCE FOR A STRUCTURE MOUNTED GYMNASIUM SOUND SYSTEM TO PROVIDE FULL RANGE INTELLIGIBLE AUDIO WITHIN THE MARKED BOUNDARY.



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SHEET TITLE:
TELECOMMUNICATION
PLAN - ZONE B

SHEET NUMBER:

T-102