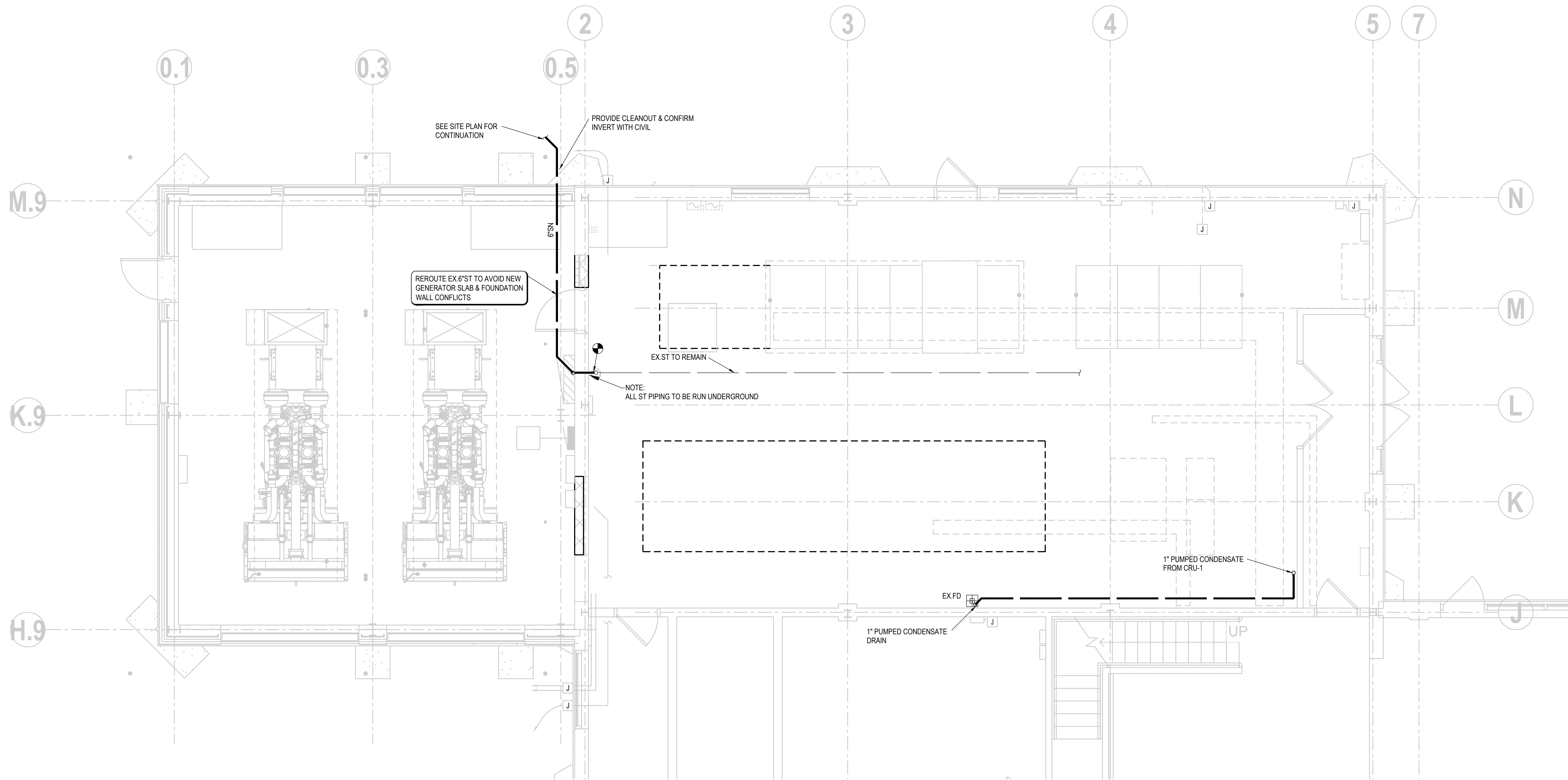
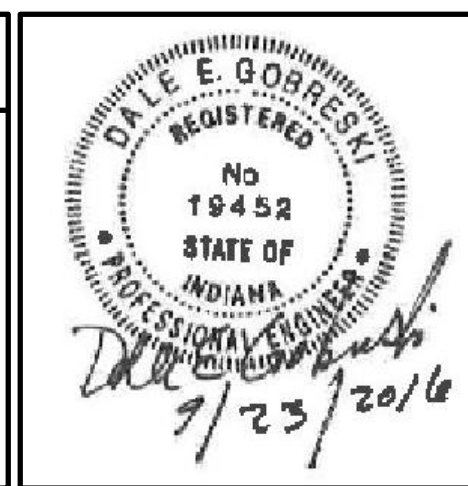


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one-eighth inch = one foot
one-quarter inch = one foot
one-half inch = one foot
three-eighths inch = one foot
one inch = one foot
one and one-half inch = one foot
three inches = one foot



100% BID DOCUMENTS FOR CONSTRUCTION	09-23-2016
Mark	Revisions:
	Date

DEVELOPER/CONTRACTOR:



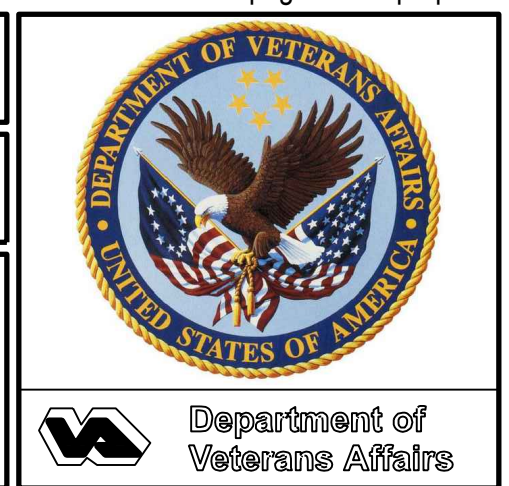
ARCHITECT/ENGINEERS:
URS
One Indiana Square, Suite 2100 Indianapolis, IN 46204 United States P: 317 532 5400 F: 317 532 5499 www.URScorp.com
PROJECT PRINCIPAL
PROJECT MANAGER
PROJECT ARCHITECT
LANDSCAPE ARCHITECT
STRUCTURAL ENGINEER
MECHANICAL ENGINEER
PLUMBING ENGINEER
ELECTRICAL ENGINEER

URS PROJECT NO. 25628031

Drawing Title
FIRST FLOOR PLAN - PLUMBING
Approved:

Project Title
INSTALL PRIMARY AND EMERGENCY POWER SYSTEMS
Location
INDIANAPOLIS, INDIANA
Date
09-23-2016
Checked
CDB
Drawn
BEA

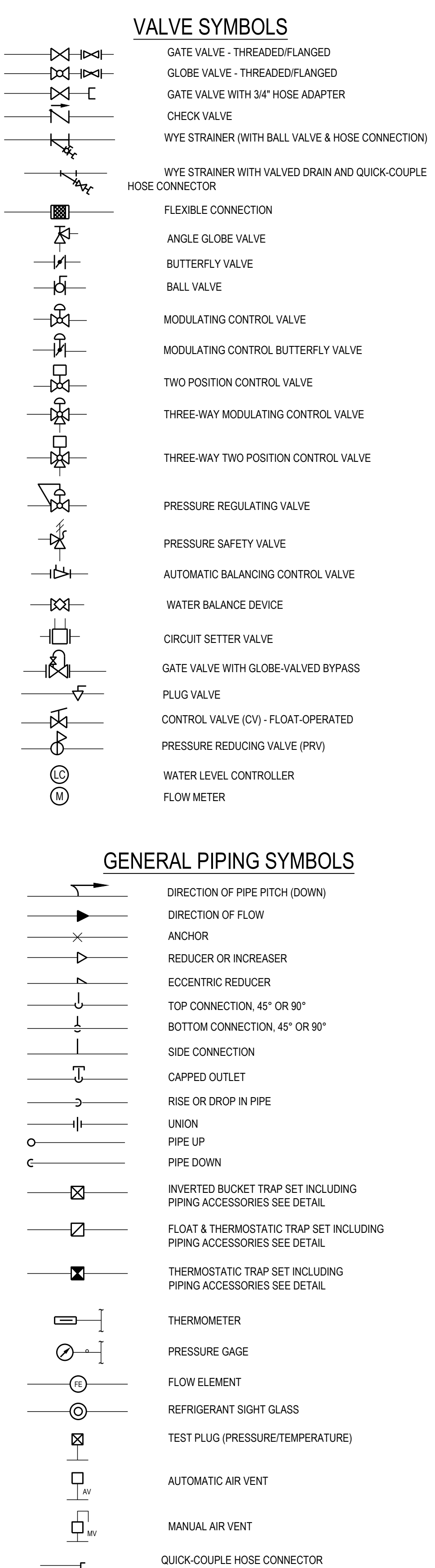
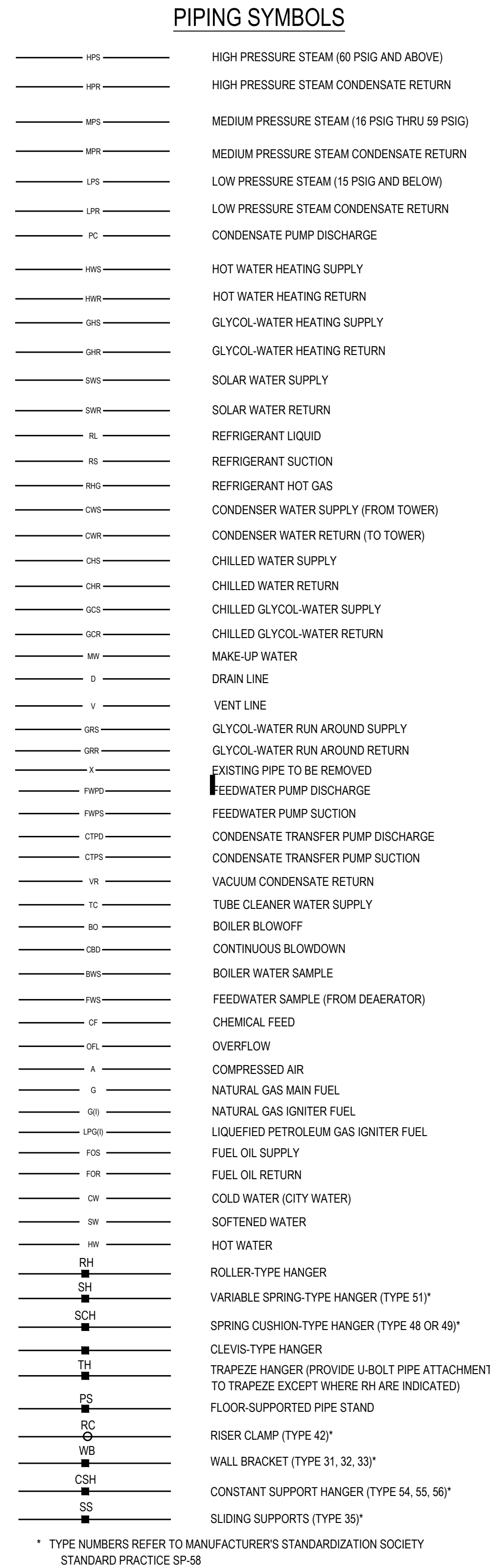
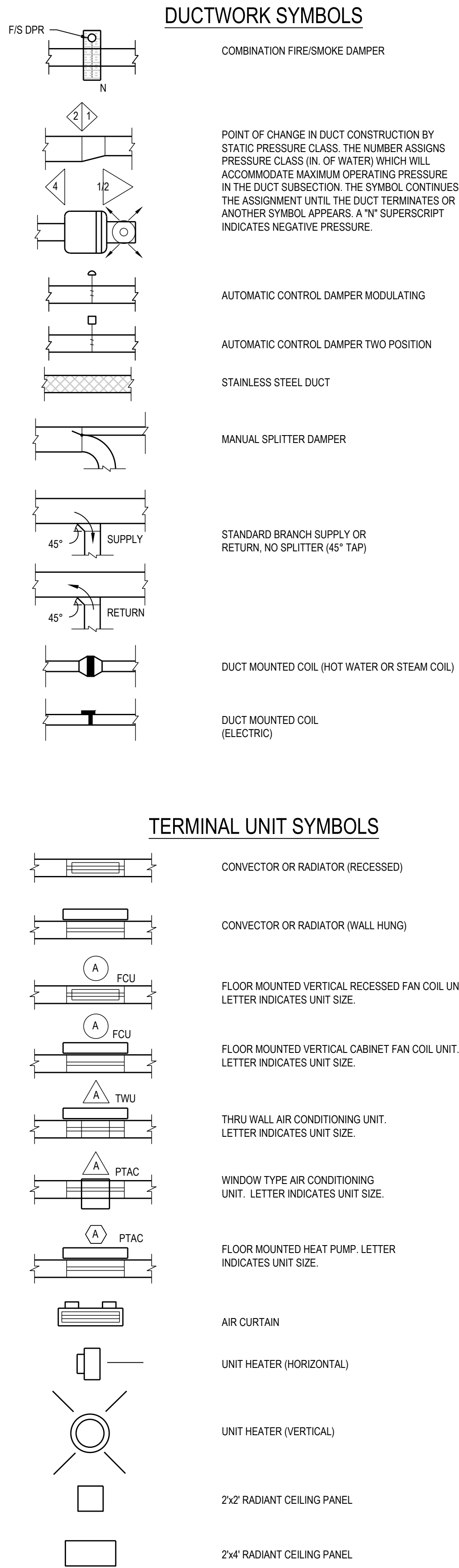
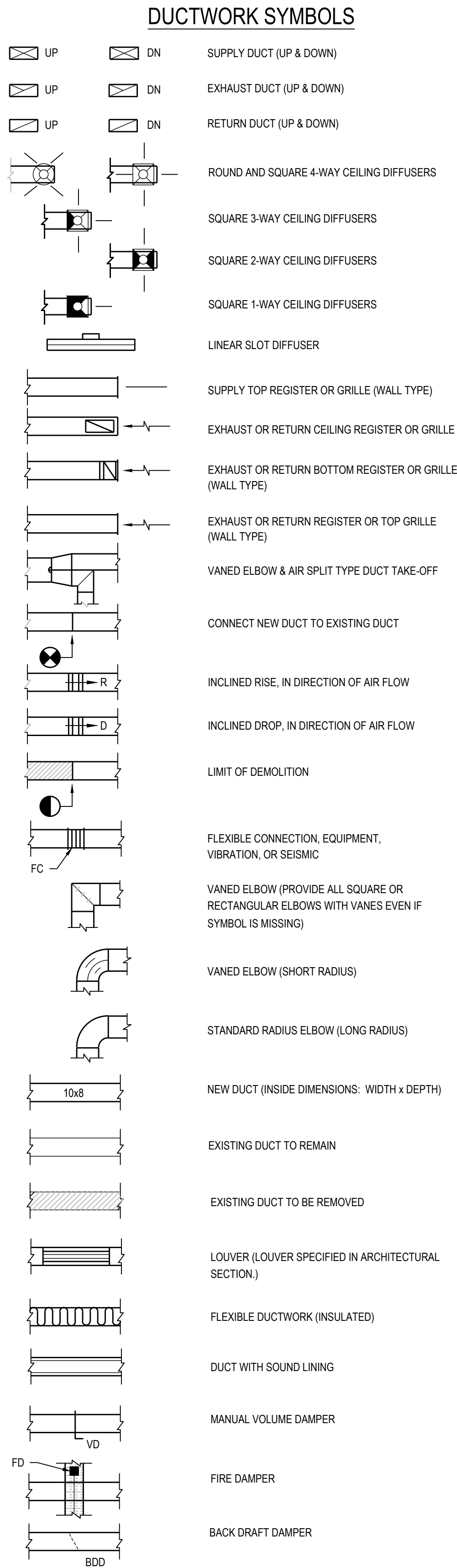
Project Number
583-15-102
Building Number
22
Drawing Number
PS101



PROJECT NORTH

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three inches = one foot
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one hundred inches = one foot

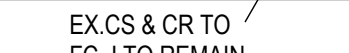


100% BID DOCUMENTS FOR CONSTRUCTION 09-23-2016		DEVELOPER/CONTRACTOR:		ARCHITECT/ENGINEERS: URS One Indiana Square, Suite 2100 Indianapolis, IN 46204 United States P: 317 532 5400 F: 317 532 5499 www.URScorp.com		Drawing Title MECHANICAL SYMBOLS & ABBREVIATIONS		Project Title INSTALL PRIMARY AND EMERGENCY POWER SYSTEMS		Project Number 583-15-102 Building Number 22	
Mark		Revisions:		Date		Approved:		Location INDIANAPOLIS, INDIANA		Drawing Number MH000	
Date		Checked CDB		Drawn BEA		Date 09-23-2016		Checked CDB		Drawn BEA	

VA FORM 08-6231

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Department of Veterans Affairs



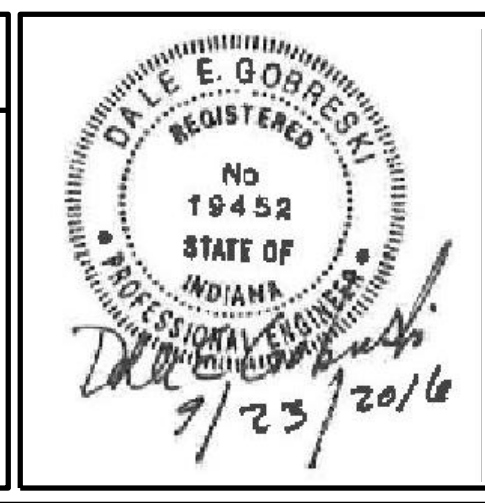
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100% BID DOCUMENTS FOR CONSTRUCTION	09-23-2016
Mark	Revisions: Date

DEVELOPER/CONTRACTOR:



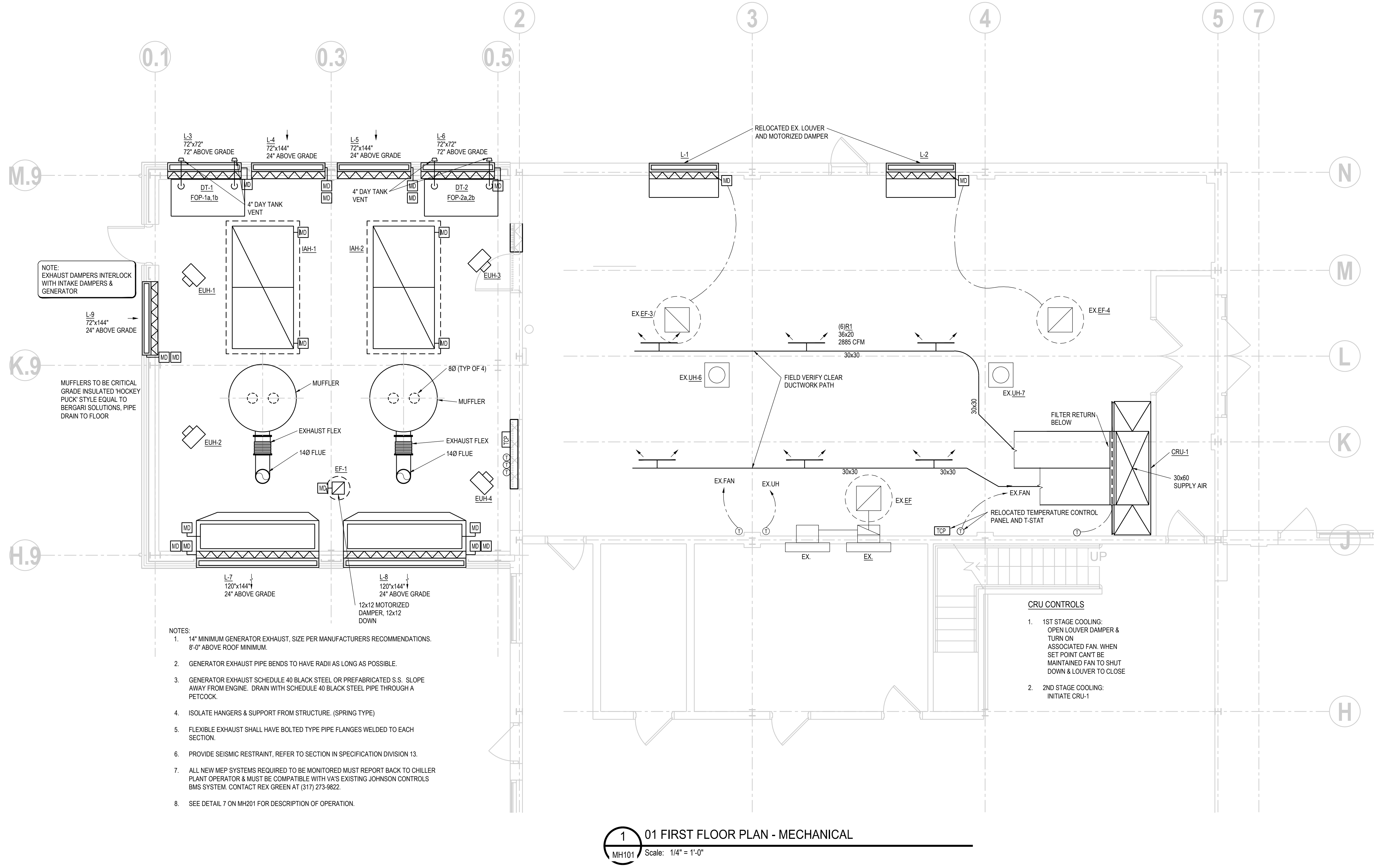
ARCHITECT/ENGINEERS:
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One Indiana Square, Suite 2100 Indianapolis, IN 46204 United States P: 317 532 5400 F: 317 532 5499 www.URScorp.com
PROJECT PRINCIPAL PROJECT MANAGER PROJECT ARCHITECT LANDSCAPE ARCHITECT STRUCTURAL ENGINEER MECHANICAL ENGINEER PLUMBING ENGINEER ELECTRICAL ENGINEER

URS PROJECT NO. 25628031

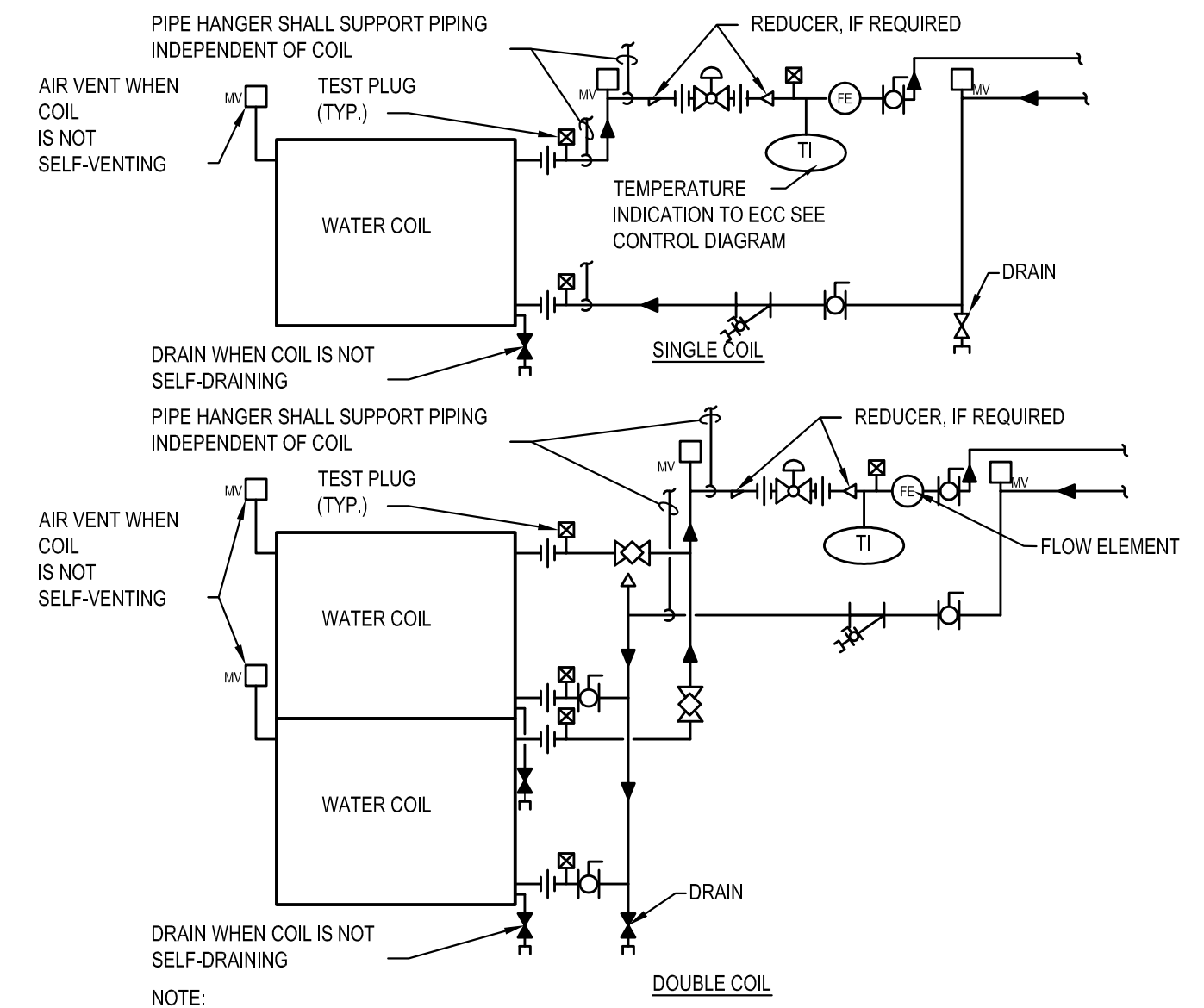
Drawing Title
FIRST FLOOR PLAN - MECHANICAL
Approved:

Project Title
INSTALL PRIMARY AND EMERGENCY POWER SYSTEMS
Location
INDIANAPOLIS, INDIANA
Date
09-23-2016
Checked
CDB
Drawn
BEA

Project Number
583-15-102
Building Number
22
Drawing Number
MH101



1 01 FIRST FLOOR PLAN - MECHANICAL
Scale: 1/4" = 1'-0"



MAXIMUM PIPE/TUBING SUPPORT SPACING																				
NOM. SIZE	IN. (mm)	THRU 3/4 THRU (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (51)	2 1/2 (63)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	14 (356)	16 (406)	18 (457)	20 (508)	24 (609)	
PIPE	FT. (mm)	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	2 [100]	
TUBING	FT. (mm)	5 FT [1500]	6 [1800]	7 [2100]	8 [2400]	8 [2400]	8 [2400]	8 [2400]	10 [3000]	12 [3700]	14 [4100]	16 [4900]	-	-	-	-	-	-	-	

NOTE: FOR TRAPEZE HANGER TIE SPACING OF SMALLEST SIZE ON TRAPEZE.

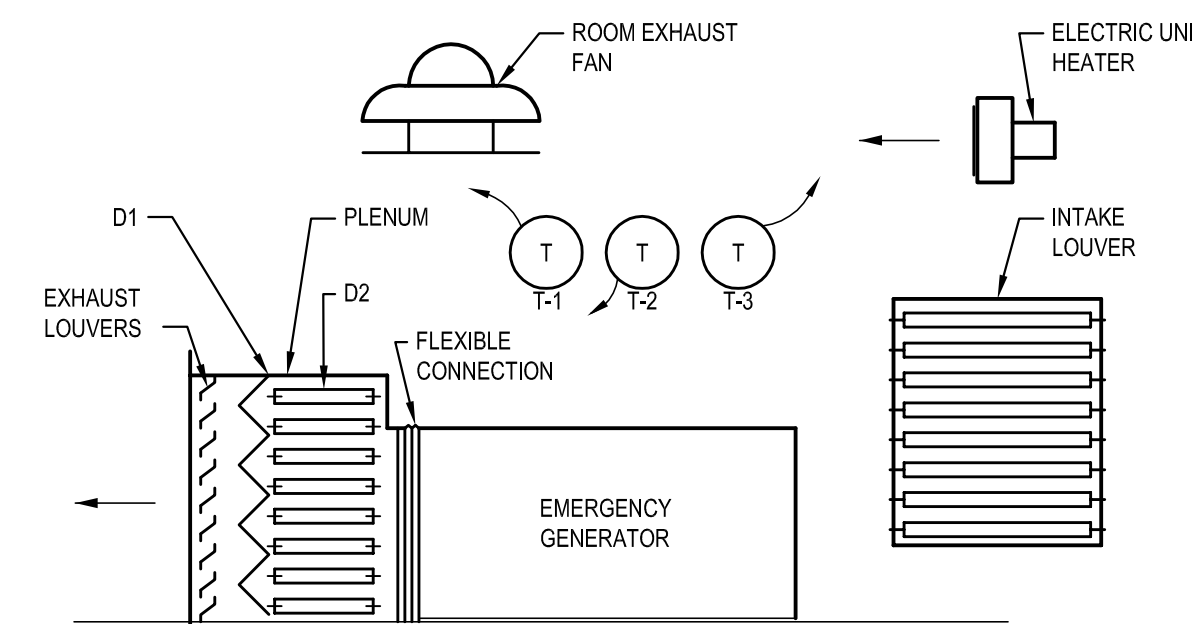
1 SUPPLY DUCTWORK TAKE-OFFS

NTS DESIGNER'S NOTES:

1. THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR UP TO 25% OF THE MAIN DUCT CFM. THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM [5.1 M/S] OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES AND MAY BE USED AT ANYTIME.
2. SHOW ALL VOLUME DAMPERS ON FLOOR PLANS.

EMERGENCY GENERATOR EXHAUST

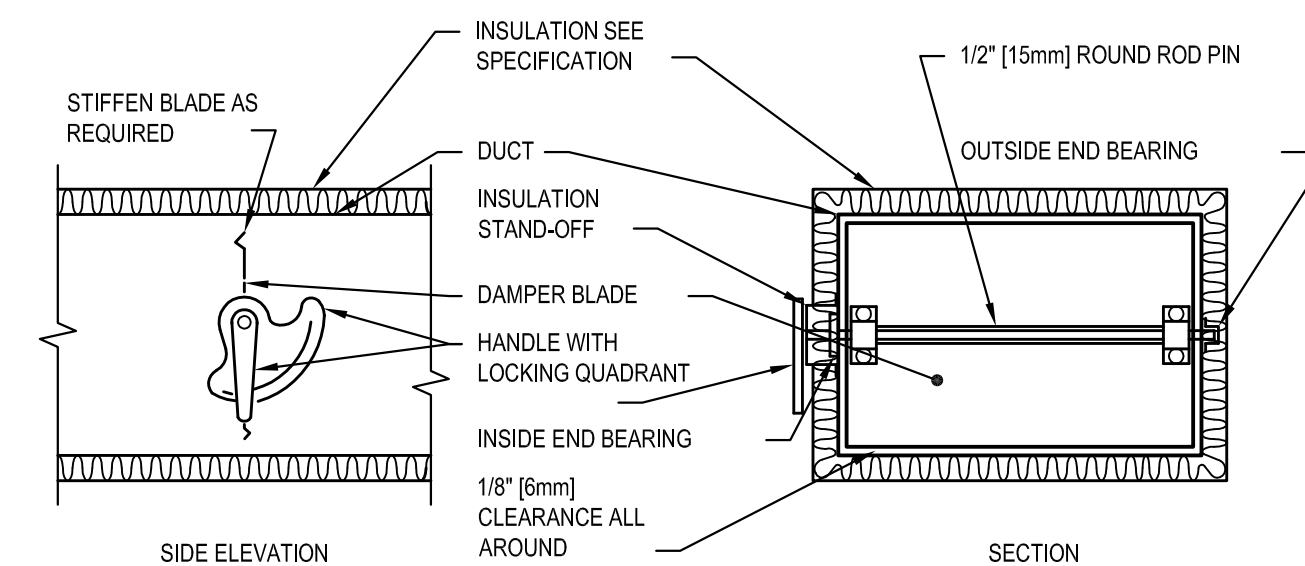
NTS



- NOTES:
1. EMERGENCY GENERATOR SHALL BE INTERLOCKED WITH D3. WHEN EMERGENCY GENERATOR IS ENERGIZED D3 SHALL OPEN. WHEN EMERGENCY GENERATOR IS DE-ENERGIZED D3 SHALL CLOSE. PROVIDED ROOM EXHAUST FAN IS OFF.
 2. ROOM EXHAUST FAN SHALL BE INTERLOCKED WITH D3 & ROOM THERMOSTAT T1. WHEN ROOM THERMOSTAT RISES ABOVE 80°F (27°C) THERMOSTAT T1 SHALL OPEN AND ROOM EXHAUST FAN SHALL START. WHEN ROOM THERMOSTAT DROPS BELOW 80°F (27°C) ROOM EXHAUST FAN SHALL STOP & D3 SHALL CLOSE. PROVIDED EMERGENCY GENERATOR IS DE-ENERGIZED. THERMOSTAT TO BE TIED THROUGH TRIP CONNECTED TO ROOM COMMAND FROM GENERATOR TO PROVIDE A TEMPERATURE CONTROLLED RUN UP TO 1 HOUR AFTER GENERATOR RUN. PROVIDE A MANUAL SWITCH TO ENGAGE EXHAUST FAN FOR 1 HOUR.
 3. POWER OPERATED, OPPOSED BLADE, DAMPERS D1 & D2 SHALL BE INTERLOCKED WITH ROOM THERMOSTAT T2. D1 SHALL OPEN UPON GENERATOR RUN COMMAND (COULD BE GRAVITY STYLE DAMPER). D2 SHALL BE A NORMALLY OPEN DAMPER AND SHALL BE TIED TO THERMOSTAT T2. WHEN TEMPERATURE RISES ABOVE 80°F (27°C) DAMPER SHALL CLOSE. WHEN TEMPERATURE IS 80°F (27°C) OR BELOW DAMPER SHALL OPEN ALLOWING RADIATOR EXHAUST TO RETURN TO THE ENGINE ROOM.
 4. ELECTRIC UNIT HEATER SHALL BE INTERLOCKED WITH ROOM THERMOSTAT T3 SET AT 45°F (7.2°C). ON A DROP IN ROOM TEMPERATURE BELOW 43°F (6.1°C) ELECTRIC UNIT HEATER SHALL BE ENERGIZED & ON A RISE IN ROOM TEMPERATURE ABOVE 47°F (8.3°C) INTERLOCK UNIT HEATERS SO AS NOT TO OPERATE WHEN GENERATORS ARE IN OPERATION.
 5. D1 RADIATOR EXHAUST DAMPERS ON L-7 & L-8. DAMPERS TO FAIL IN OPEN POSITION.
 6. D2 ROOM DAMPERS ON DUCTS AT GENERATOR 1 & GENERATOR 2 DAMPERS TO FAIL CLOSED.
 7. D3 INTAKE DAMPERS ON L-3, L-4, L-5, L-6 & L-9 ALSO ON IAH-1 & IAH-2 DAMPERS TO FAIL IN OPEN POSITION.
 8. TCC TO WIRE FROM TCC TO ALL DAMPERS AND T-STATS.

2 PIPE HANGERS

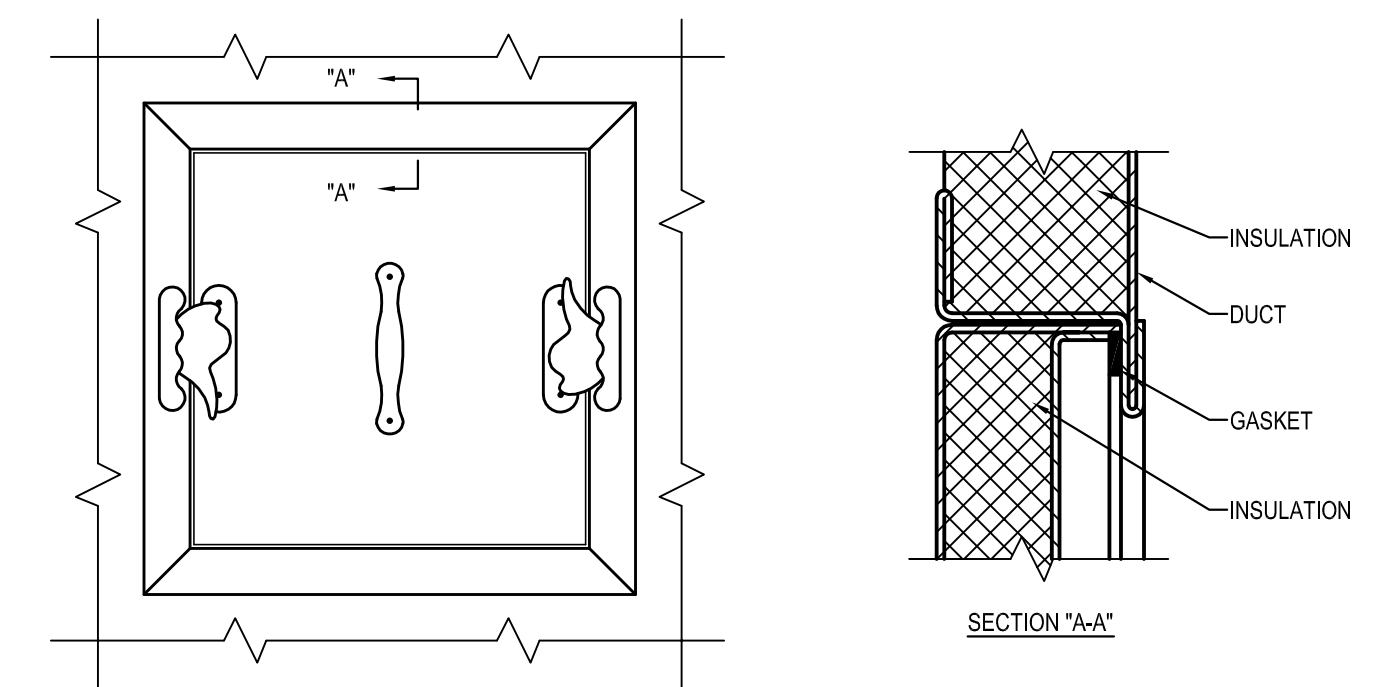
NTS



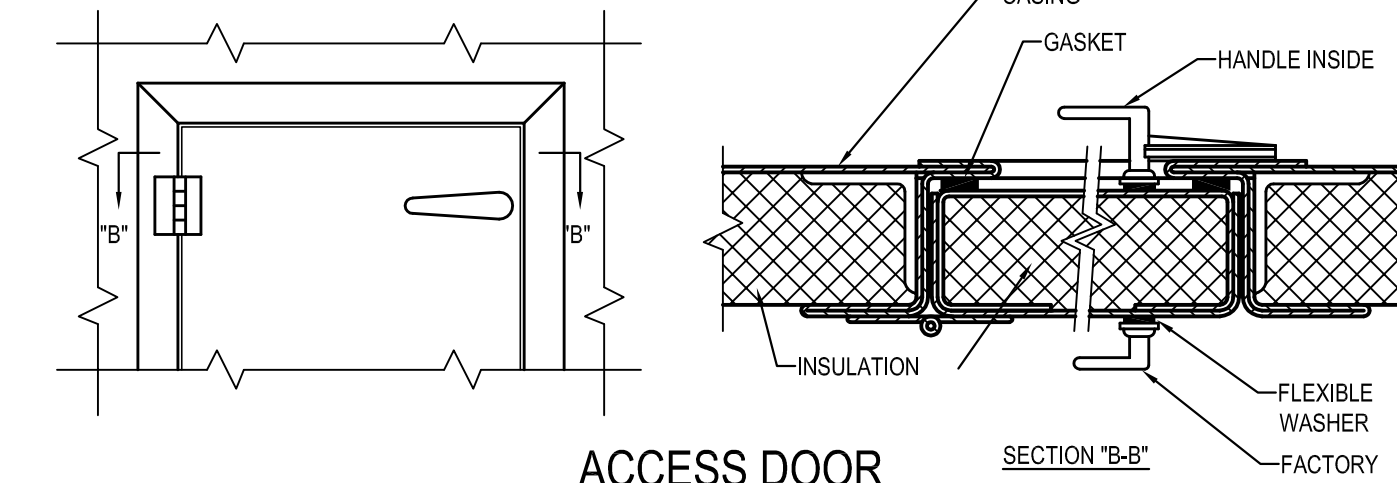
- NOTE:**
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
 2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

1 WATER COILS - PIPING CONNECTIONS

NTS



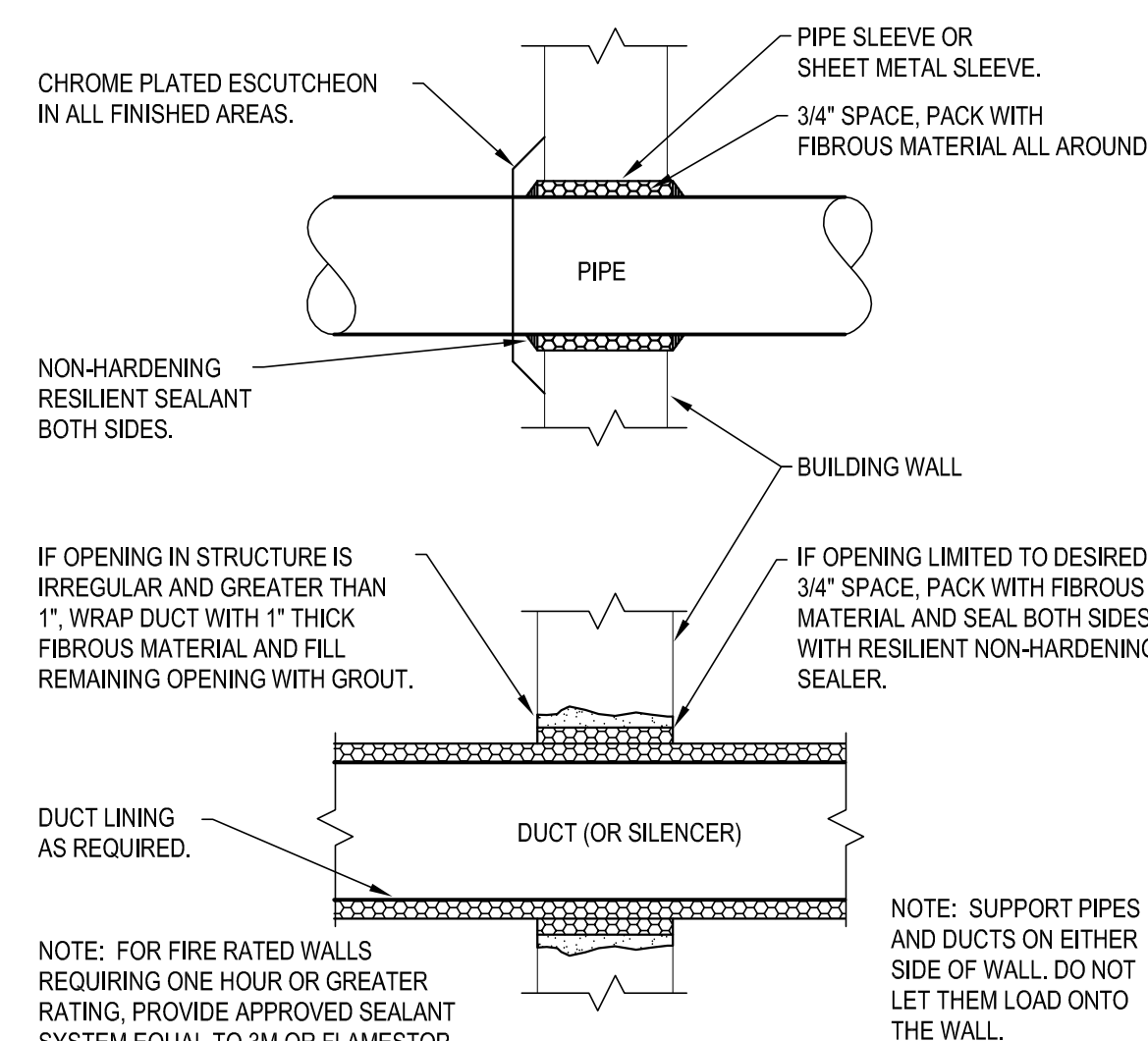
ACCESS PANEL



- NOTES:**
1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
 2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
 3. SEE SMACNA 2005, FIGURE 9-15

TYPICAL WALL PENETRATION DETAILS (FOR NON-FIRE-RATED WALLS)

NTS

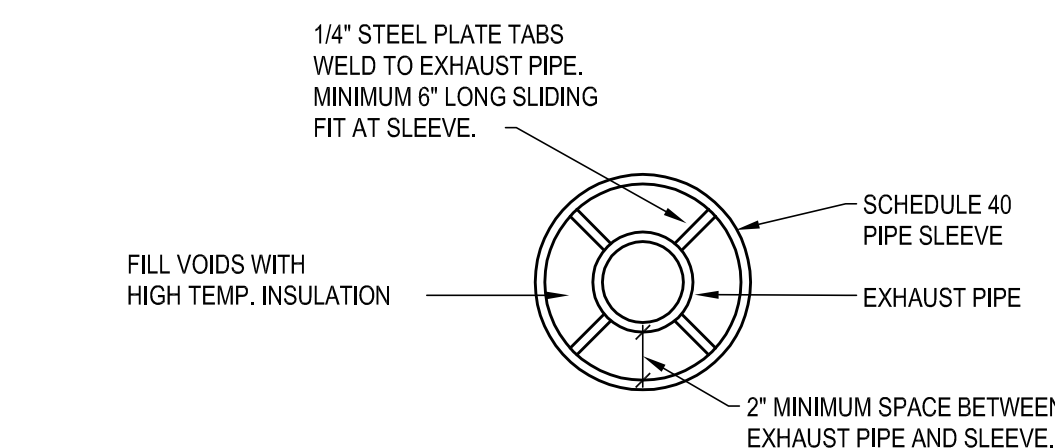


EMERGENCY GENERATOR ROOM CONTROLS

NTS

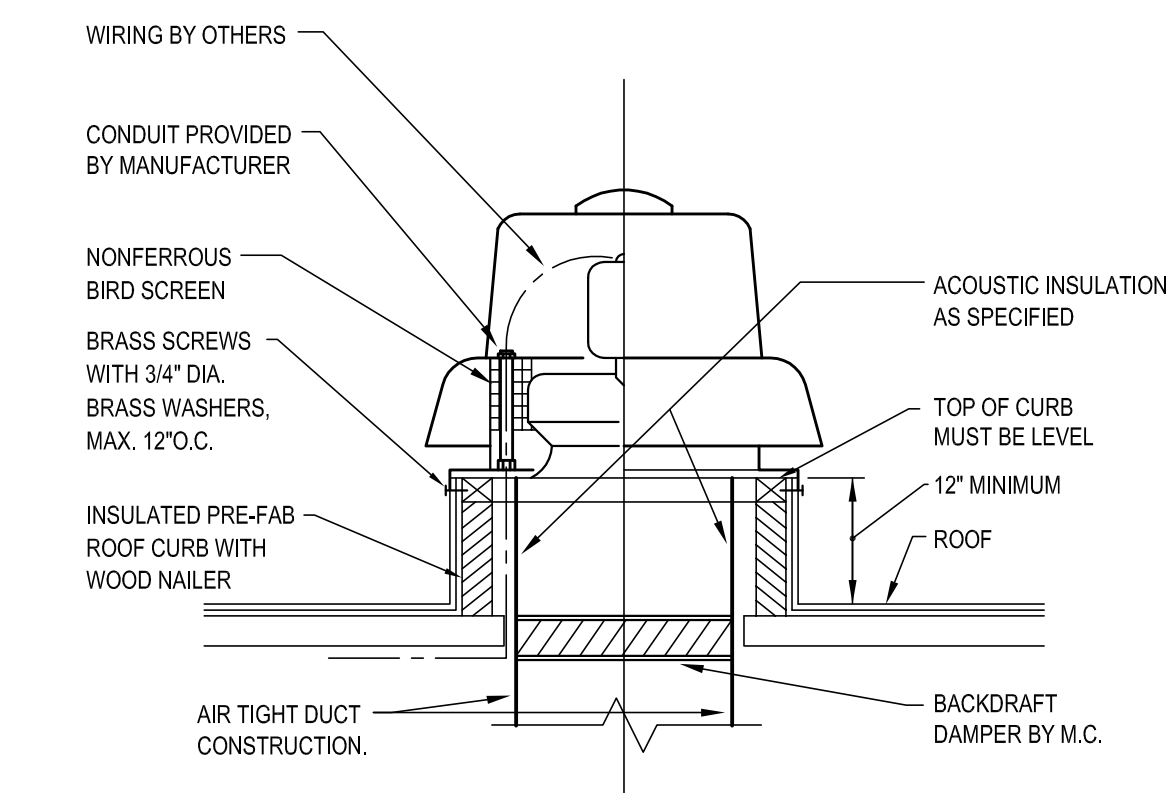
6 VOLUME DAMPER DETAIL

NTS



5 ACCESS PANEL AND DOOR DETAIL

NTS



9 TYPICAL ROOF EXHAUST FAN

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[illegible]

three inches = one foot
one and one-half inch = one foot
one inch = one foot
one-quarter inch = one foot
three-quarters inch = one foot
one-half inch = one foot
one-eighth inch = one foot
three-eighths inch = one foot
one-eighth inch = one foot

ELECTRICAL TRANSFORMER COOLING ROOM UNIT SCHEDULE													ELECTRICAL REQUIREMENTS																	
MARK	LOCATION	MODEL	SUPPLY AIR FAN					COOLING			GPM	PD (FT)	REMARKS	VOLTAGE & PHASE	CIRCUIT NO.	CIRCUIT PROTECTION DEVICE	CIRCUIT SIZE	CONTROLLER DISCONNECT				CONTROLLER				DISCONNECT AT MOTOR			REMARKS	MARK
			CFM	EXT	TOT	HP	RPM	TOT MBH	SEN MBH	FV								TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY		
CRU-1	ELECT	CW106	17300	0.4	-	(3) 4.2	1510 MAX	358	336	476	76.6	20.1	(1) (2) UPFLOW	480/3	22HOS	15/3 CB	3#12, #12G, 1/2"C.	--	--	DIV. 23	ON UNIT	--	--	DIV. 23	ON UNIT	SEE CONTROLLER DISCONNECT	--	--	--	CRU-1

(1) BASED ON LIEBERT, 45°F EWT, 10° T, EC FAN DIRECT DRIVE, ELECTRONICALLY COMMUTATED & VARIABLE SPEED.
(2) PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH.

ELECTRIC UNIT HEATER SCHEDULE										ELECTRICAL REQUIREMENTS																
MARK	LOCATION	MODEL	CFM	MBH	WATTS	RPM	ΔT	HP	REMARKS	VOLTAGE & PHASE	CIRCUIT NO.	CIRCUIT PROTECTION DEVICE	CIRCUIT SIZE	CONTROLLER DISCONNECT				CONTROLLER				DISCONNECT AT MOTOR			REMARKS	MARK
														TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY		
EUH-1	GENERATOR RM.	MUH 0541	350	17	5000	1600	45	1/100	(1) (2)	480/3	22HOS	15/3 CB	3#12, #12G, 1/2"C.	--	--	DIV. 23	AT UNIT	--	--	DIV. 23	AT UNIT	SEE CONTROLLER DISCONNECT	--	--	--	EUH-1
EUH-2	GENERATOR RM.	MUH 0541	350	17	5000	1600	45	1/100	(1) (2)	480/3	22HOS	15/3 CB	3#12, #12G, 1/2"C.	--	--	DIV. 23	AT UNIT	--	--	DIV. 23	AT UNIT	SEE CONTROLLER DISCONNECT	--	--	--	EUH-2
EUH-3	GENERATOR RM.	MUH 0541	350	17	5000	1600	45	1/100	(1) (2)	480/3	22HOS	15/3 CB	3#12, #12G, 1/2"C.	--	--	DIV. 23	AT UNIT	--	--	DIV. 23	AT UNIT	SEE CONTROLLER DISCONNECT	--	--	--	EUH-3
EUH-4	GENERATOR RM.	MUH 0541	350	17	5000	1600	45	1/100	(1) (2)	480/3	22HOS	15/3 CB	3#12, #12G, 1/2"C.	--	--	DIV. 23	AT UNIT	--	--	DIV. 23	AT UNIT	SEE CONTROLLER DISCONNECT	--	--	--	EUH-4
														--	--											

(1) BASED ON QMARK
(2) PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH, CONTRACTOR, 24V T-STAT, AND TRANSFORMER.

FUEL OIL PUMP SCHEDULE											ELECTRICAL REQUIREMENTS																		
MARK	LOCATION	SYSTEM AND/OR SERVICE	CAPACITY		OIL GRADE	OIL TEMP DEG F	VISCOSITY RANGE (SSU)	SUCTION LIFT		MOTOR		REMARKS	VOLTAGE & PHASE	CIRCUIT NO.	CIRCUIT PROTECTION DEVICE	CIRCUIT SIZE	CONTROLLER DISCONNECT				CONTROLLER				DISCONNECT AT MOTOR			REMARKS	MARK
			GPM	PSIG				IN HG	HP	(W)	TYPE						SIZE	BY	LOCATE	TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY			
FOP-3a, 3b	ABV. GRND. FUEL TANK	2 GEN'S. BLD 22	--	--	#2	60	104-45	-	-	-	(1)(2)		480/3	22HOS	15/3 CB	3#12, #12G, 1/2"C.	--	--	DIV. 26	NEAR TANK	--	--	DIV. 26	NEAR TANK	--	--	DIV. 26	(A)	FOP-3A & 3B
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

(1) SUBMERSIBLE, DUPLEX
(2) FUEL SYSTEM SUPPLIER TO MEET PERFORMANCE SPECIFICATION FOR COMPLETE WORKING SYSTEM. COORDINATE FINAL HP WITH ELECTRICAL TRADES.

(A) ELECTRICAL REQUIREMENTS ARE BASED UPON ESTIMATED 1 HP DUPLEX PUMP SIZE. VERIFY ACTUAL PUMP H.P. AND MODIFY CIRCUIT PROTECTION DEVICE AND WIRE SIZE AS REQUIRED.

DAY TANK FUEL PUMP SCHEDULE										ELECTRICAL REQUIREMENTS																
MARK	SERVICE	FLOW	PRESSURE DROP	MOTOR				FLUID	REMARKS	VOLTAGE & PHASE	CIRCUIT NO.	CIRCUIT PROTECTION DEVICE	CIRCUIT SIZE	CONTROLLER DISCONNECT				CONTROLLER				DISCONNECT AT MOTOR			REMARKS	MARK
				GPM	FT. HEAD	HP	RPM							TYPE	TYPE	TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY	LOCATE	TYPE			SIZE	BY
FOP-1a, 1b	RETURN	.	.	.	.	1750	BRONZE CLOSE CUPLD. ROTARY GEAR PMP	#2 FUEL OIL	(1)(2)(3)	480/3	22HOS	15/3 CB	3#12, #12G, 1/2".	--	--	DIV. 26	AT UNIT	--	--	DIV. 26	AT UNIT	--	--	DIV. 26	(A)	FOP-1A & 1B
FOP-2a, 2b	RETURN	.	.	.	.	1750	BRONZE CLOSE CUPLD. ROTARY GEAR PMP	#2 FUEL OIL	(1)(2)(3)	480/3	22HOS	15/3 CB	3#12, #12G, 1/2".	--	--	DIV. 26	AT UNIT	--	--	DIV. 26	AT UNIT	--	--	DIV. 26	(A)	FOP-2A & 2B

(1) DUPLEX PUMPS EACH TANK, 1 PUMP BACK-UP.
(2) INTAKE FOOT VALVE, CHECK VALVE, NC AND NO SOLENOID VALVES, ELECTRONIC CONTROLLER WITH DRY RUN PROTECTION, LOW VOLTAGE DETECTION, OPERATING LIGHT, DIAGNOSTIC LIGHTS, POWER ON LIGHT, HIGH VOLTAGE SURGE PROTECTION, AND PUMP FAILURE DETECTION. A SINGLE CONTROLLER CAN SERVE BOTH THE RETURN PUMPS.
(3) FUEL SYSTEM SUPPLIER TO MEET PERFORMANCE SPECIFICATION FOR COMPLETE WORKING SYSTEM. COORDINATE FINAL HP WITH ELECTRICAL TRADES.

(A) ELECTRICAL REQUIREMENTS ARE BASED UPON ESTIMATED 1/2 HP DUPLEX PUMP SIZE. VERIFY ACTUAL PUMP H.P. AND MODIFY CIRCUIT PROTECTION DEVICE AND WIRE SIZE AS REQUIRED.

FUEL OIL TANK SCHEDULE										ELECTRICAL REQUIREMENTS																
MARK	LOCATION	SYSTEM AND/OR SERVICE	QUANTITY	FUEL OIL TYPE	NOM. CAPACITY GAL	DIMENSIONS	ALARM SYSTEM	LEVEL INDICATOR	REMARKS	VOLTAGE & PHASE	CIRCUIT NO.	CIRCUIT PROTECTION DEVICE	CIRCUIT SIZE	CONTROLLER DISCONNECT				CONTROLLER				DISCONNECT AT MOTOR			REMARKS	MARK
														TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY		
FOT-1	SE CLG. TWR. ENCLOSURE	EMERG. GEN'S	1	NO. 2	10,000	--	REFER TO SPECS	REFER TO SPECS	(1)	120/1	22LOS-6	20/1 CB	2#10, #10G, 1/2".	--	--	--	--	--	--	--	--	--	--	(A)	FOT-1	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

(1) BASED ON DOUBLE WALL ABOVE GROUND FUEL STORAGE TANK, FIRE RATED

(A) ELECTRICAL CONNECTION AND POWER SUPPLY FOR FUEL STORAGE TANK LEAKAGE DETECTION AND LEVEL MONITORING SYSTEMS.

FAN SCHEDULE											ELECTRICAL REQUIREMENTS																
MARK	LOCATION	SERVICE	TYPE	MODEL	CFM	SP	RPM	HP	S ONE @ 5'	REMARKS	VOLTAGE & PHASE	CIRCUIT NO.	CIRCUIT PROTECTION DEVICE	CIRCUIT SIZE	CONTROLLER DISCONNECT				CONTROLLER				DISCONNECT AT MOTOR			REMARKS	MARK
															TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY	LOCATE	TYPE	SIZE	BY		
EF-1	GEN. ROOM	GEN. EXH.	ROOF	G-098	513	0.25	1315	1/6	7.4	(1) (2)	120/1	22LOS-1	15/1 CB	2#12, #12G, 1/2"C.	MMS	--	DIV. 26	RM. 103	T-STAT	--	DIV. 23	RM. 103	--	--	DIV. 23	.	EF-1
.

(1) BASED ON GREENHECK, PROVIDE CURB, REVERSE ACTING T-STAT, INTERLOCK TO OPEN INTAKE DAMPER. SEE DETAIL 7 ON MH-201.
(2) PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH.

MARK	LOCATION	SERVICE	CFM	HOOD DIMENSIONS			THROAT DIMENSIONS	REMARKS
				WIDTH	LENGTH	HEIGHT		
IAH-1	GENERATOR ROOF	GENERATOR	35000	76	136	55	60x120	(1)(2)
IAH-2	GENERATOR ROOF	GENERATOR	35000	76	136	55	60x120	(1)(2)
-	-	-	-	-	-	-	-	-

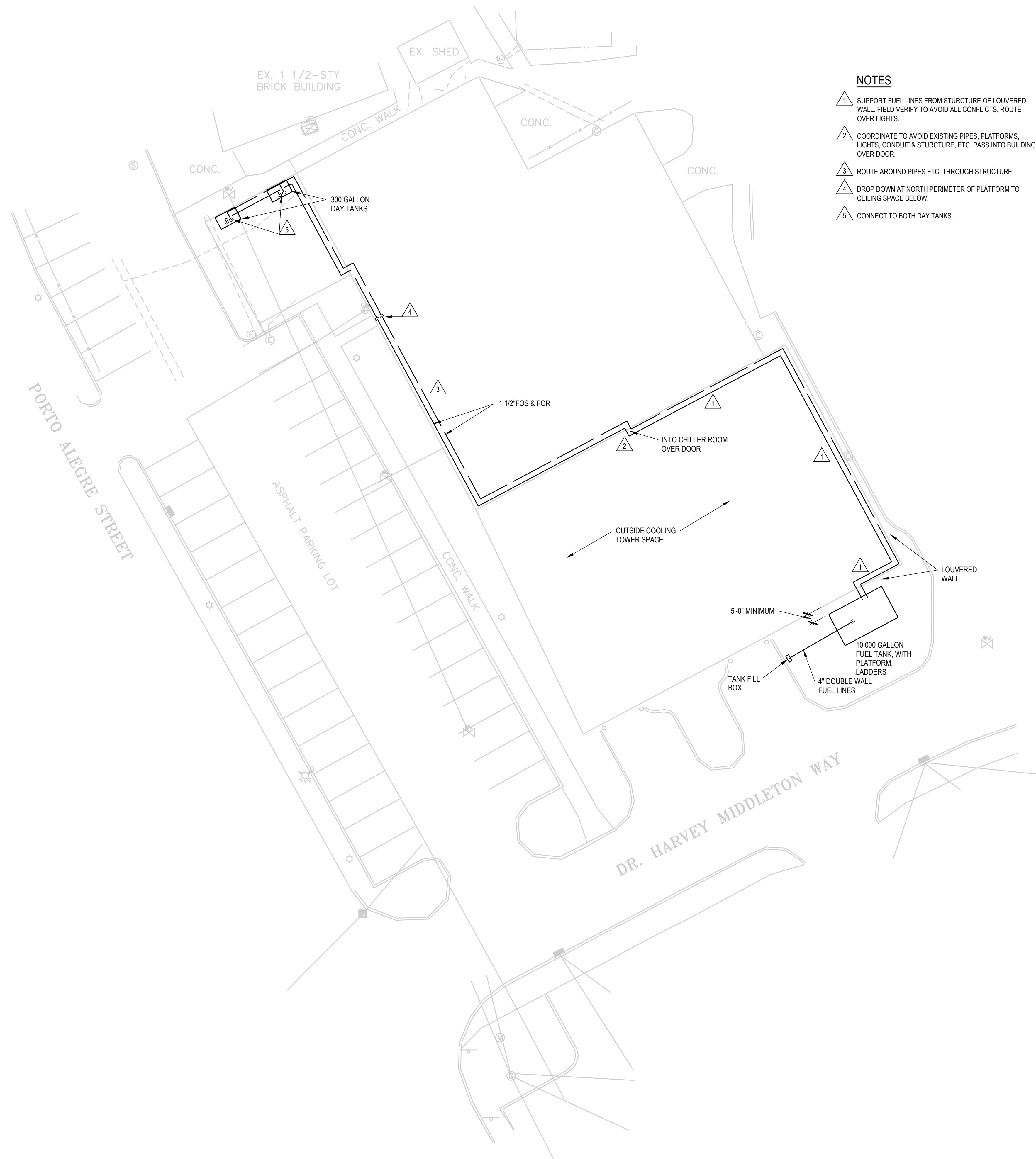
(1) BASED ON RUSKIN, PU811 MITERED CORNER PENTHOUSE, PROVIDE BIRDSCREEN & CURBS, COLOR PER ARCHITECT.
(2) PROVIDE CLEANABLE SCREEN FILTERS WITH 1/4" OPENINGS MOUNTED ON OUTSIDE OF LOUVER BLADE, CLIPS FOR EASY REMOVAL, SCREEN CAPABLE OF WITHSTANDING POWER WASHING.

MARK	RATED CAPACITY	WIDTH INCHES	DEPTH INCHES	HEIGHT (INC. ACCESSORIES)	RELIEF VENT	RUPTURE BASIN CONTAINMENT VENT	UL LISTED	CONTROLS ELECTRICAL		
								VOLTAGE	MCA	MOCP
DT-1	300	38	78	64	4	4	YES	120/1Ø	16	20
DT-2	300	38	78	64	4	4	YES	120/1Ø	16	20
-	-	-	-	-	-	-	-	-	-	-

MARK	TYPE	MODEL	CFM RANGE	FACE SIZE	VOLUME CONTROL DAMPER	FINISH	REMARKS
R1	DUCT SIDE WALL	300RL-HD	2500/3000	SEE PLANS	YES	WHITE	(1)
-	-	-	-	-	-	-	-

(1) BASED ON TITUS, DOUBLE DEFLECTION, HEAVY DUTY

LOUVER SCHEDULE											
MARK	LOCATION	SERVICE	MODEL	INTAKE/ EXHAUST	DIMENSIONS		FREE AREA SQ.FT.	CFM	S.P. DROP (W.G.)	FINISH	REMARKS
					LENGTH	HEIGHT					
L-1	ELEC	EF-3 & 4	EXIST.	INTAKE	--	--	--	--	--	--	(4) EXISTING TO BE RELOCATED
L-2	ELEC	EF-3 & 4	EXIST.	INTAKE	--	--	--	--	--	--	(4) EXISTING TO BE RELOCATED
L-3	GEN	INTAKE	(1)	INTAKE	72	72	21.53	-	-	-	(3) (1)(2)(4)
L-4	GEN	INTAKE	(1)	INTAKE	72	144	43.06	-	-	-	(3) (1)(2)(4)
L-5	GEN	INTAKE	(1)	INTAKE	72	144	43.06	-	-	-	(3) (1)(2)(4)
L-6	GEN	INTAKE	(1)	INTAKE	72	72	21.53	-	-	-	(3) (1)(2)(4)
L-7	GEN	RADIATOR	(1)	EXHAUST	120	144	35.3	-	-	-	(3) (1)
L-8	GEN	RADIATOR	(1)	EXHAUST	120	144	35.3	-	-	-	(3) (1)
L-9	GEN	INTAKE	(1)	INTAKE	72	144	43.06	-	-	-	(3) (1)(2)(4)
	-	-	-	-	-	-	-	-	-	-	-



- ## NOTES
- 1 SUPPORT FUEL LINES FROM STRUCTURE OF LOUVERED WALL. FIELD VERIFY TO AVOID ALL CONFLICTS. ROUTE OVER LIGHTS.
 - 2 COORDINATE TO AVOID EXISTING PIPES, PLATFORMS, LIGHTS, CONDUIT & STRUCTURE, ETC. PASS INTO BUILDING OVER DOOR.
 - 3 ROUTE AROUND PIPES ETC, THROUGH STRUCTURE.
 - 4 DROP DOWN AT NORTH PERIMETER OF PLATFORM TO CEILING SPACE BELOW.
 - 5 CONNECT TO BOTH DAY TANKS.

PERFORMANCE SPECIFICATION:

1. FUEL OIL SYSTEM SHALL INCLUDE PIPING, PUMPS, VALVES, TANKS, CONNECTIONS AND CONTROLS, AND SHALL BE COMPLETE WORKABLE SYSTEM IN ITS ENTIRETY. SYSTEM SHALL MEET CODES AND LOCAL REQUIREMENTS. COORDINATE ALL WORK WITH DIVISION 26 FOR COMPLETE SYSTEM INCLUDING CONTROLS, PUMPS, PIPING, VALVES, POWER, ETC.
2. DAY TANK / MAIN TANK AND FUEL PUMPING SYSTEM - PROVIDE A 300 GALLON DUAL WALL DAY TANK WITH TWO SOLENOID VALVES IN THE SUPPLY LINE. ONE NORMALLY CLOSED FOR SUPPLY CONTROL, WITH THE SECOND VALVE NORMALLY OPEN FOR SAFETY SHUTDOWN IN OVER FILLING OCCURS. THE TANK SHALL BE COMPLETE WITH ALARMS FOR LOW FUEL AND HIGH FUEL. IN ADDITION THERE SHALL BE ALARMS FOR SHUTDOWN OF THE ENGINE FOR CRITICAL LOW FUEL AND FOR RUPTURE BASIN ALARM. FOR CRITICAL HEIGHT FUEL ALARM THE SYSTEM SHALL ALARM AND SHUT THE NORMALLY CLOSED SOLENOID VALVE, ENGAGE A RETURN FUEL PUMP TO PUMP FUEL BACK TO THE MAIN FUEL TANK AND ENERGIZE AND CLOSE THE NORMALLY OPEN SOLENOID VALVE. FUEL IS TO ONLY RETURN TO MAIN TANK IF THE DAY TANK IS FULL. IF THE ENGINE IS RUNNING THE ENGINE SHOULD CONTINUE TO OPERATE NORMALLY. ONCE THE FUEL LEVEL RETURNS TO THE NORMAL LEVEL THE TANK SHOULD CLEAR THE ALARM AND CONTINUE TO OPERATE NORMALLY. DUAL SUBMERSIBLE PUMPS SHALL BE PROVIDED IN THE MAIN TANK AND PROVIDED WITH A CONTROLLER WHICH SHALL PROVIDE PUMP CONTROL AND ALLOW FOR ALTERNATION OF PUMPS. ENGAGE BOTH PUMPS IF ONE PUMP REQUIRES MORE FUEL THAN ONE PUMP CAN SUPPLY, AND ALLOW FOR FAILED PUMP AND LOSS OF POWER. THE FUEL SYSTEM SHALL CONNECT TO THE NEW FUEL TANK LOCATED ABOVE GROUND COMPLETE WITH CONTAINMENT. THE FUEL SYSTEM SHALL BE CONNECTED TO THE FUEL MONITORING SYSTEM IN BUILDING 1 TO PROVIDE COMPLETE ANNUNCIATION OF THE MAIN TANK.
3. DAY TANKS TO INCLUDE 3-POINT FLOAT SWITCH FOR MONITORING AND CONTROL OF TANK LEVELS & VISUAL TANK LEVEL INDICATOR.
4. ALL FUEL OIL PIPING SHALL BE CLEANED, PRIMED, PAINTED & LABELED. LABELS SHALL DENOTE SUPPLY OR RETURN & DIRECTION OF FLOW.
5. ALL VALVES SHALL HAVE LOCKING PROVISIONS TO LOCK IN BOTH OPEN & CLOSED POSITION.
6. DOUBLE WALL FUEL TANK PROVIDE 24" ACCESS MANWAYS, STAIRS, PLATFORM, HANDRAIL, 3" NORMAL FLOW EMERGENCY VENT, FILL DRAIN, GROUNDING CABLE AND ROD PER CODE FOR LIGHTNING PROTECTION, THROUGH TANK LEAK DETECTOR, COMMUNICATION PORT. UL LISTED 5-15 GALLON SPILL CONTAINMENT WITH FILL PORT, MONITORING PORT AND DRAIN VALVE. ANGLE CHECK / ANTI SIPHON VALVE. FOOT VALVE, STRAINERS. SEE SCHEMATIC AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. INCLUDE CONCRETE PAN, SADDLES & SUPPORTS. COMPLY WITH OSHA. INCLUDE PLATFORM, RAILS, LADDERS & HANDRAILS. COORDINATE WITH ENCLOSURE OPENING AND SHOP DRAWINGS TO ENSURE HOSE & FILL CAPABILITIES ARE NOT OBSTRUCTED.
7. FUEL PIPING - CARBON STEEL PRIMARY PIPE WITH BUTT WELD OR SOCKET WELD CONNECTIONS. SECONDARY PIPING SHALL BE CARBON STEEL PIPE MINIMUM 10 GAUGE, DOUBLE WALL PIPING FROM OUTDOOR TANK TO DAY TANKS.
8. PROVIDE TO SEISMIC RESTRAINT SYSTEM. REFER TO SPECIFICATION DIVISION 13.
9. A. "LOW CRITICAL FUEL LEVEL SHUTDOWN" - UPON SIGNAL OF LOW CRITICAL FUEL LEVEL - SIGNAL A LOCAL ALARM, AND THE ENGINE SHALL BE SHUT DOWN AND ALARM SHALL BE SENT TO PARALLELING GENERATOR/OPERATOR.
B. "LOW FUEL LEVEL" - UPON REACHING THE "LOW FUEL LEVEL" SIGNAL A LOCAL ALARM AND AND ALARM THE PARALLELING GENERATOR/OPERATOR.
C. "HIGH FUEL LEVEL" - UPON REACHING THE "HIGH FUEL LEVEL" SIGNAL A LOCAL ALARM AND ALARMS SHALL BE SENT TO THE PARALLELING GENERATOR/OPERATOR.
D. "HIGH CRITICAL FUEL LEVEL" - UPON REACHING THE HIGH CRITICAL FUEL LEVEL SIGNAL A LOCAL ALARM AND DE-ENERGIZE THE NORMALLY CLOSED FUEL FILL SOLENOID IF NOT ALREADY DE-ENERGIZED) AND ENERGIZE AND CLOSE THE NORMALLY OPEN SOLENOID VALVE IN THE FUEL FILL LINE. ENGAGE THE RETURN FUEL PUMP, AND MAINTAIN THE ENGINE RUN STATUS. IN ADDITION ALARM SHALL BE SENT TO THE PARALLELING GENERATOR/OPERATOR. ONCE FUEL LEVEL HAS RETURNED TO THE NORMAL FUEL LEVEL THE TANK SHOULD RETURN TO NORMAL STATUS. DE-ENERGIZE THE RETURN FUEL PUMP AND THE NORMALLY OPEN SOLENOID VALVE.
E. ALARM SHALL GO TO ENGINEERING CONTROL SYSTEM, BOILER PLANT WORK STATION AND PARALLELING GEN / OPERATOR.
10. TANK FILLING SYSTEM EMO. TO SIMPLEX FUEL PORT WITH ALL VALVES & FITTINGS REQUIRED FROM PUMPER TRUCK. LOCKABLE, WEATHERPROOF 20 GALLON SPILL CONTAINMENT BOB & STAND. QUICK DISCONNECT HOSE COUPLING WITH DUST PLUG. HAND PUMP FOR SPILL CONTAINMENT WITH SHUT OFF & CHECK VALVE.

1 BUILDING 22 - FUEL OIL AND PIPING PLAN
MS101 Scale: 1/16" = 1'-0"

[illegible]