

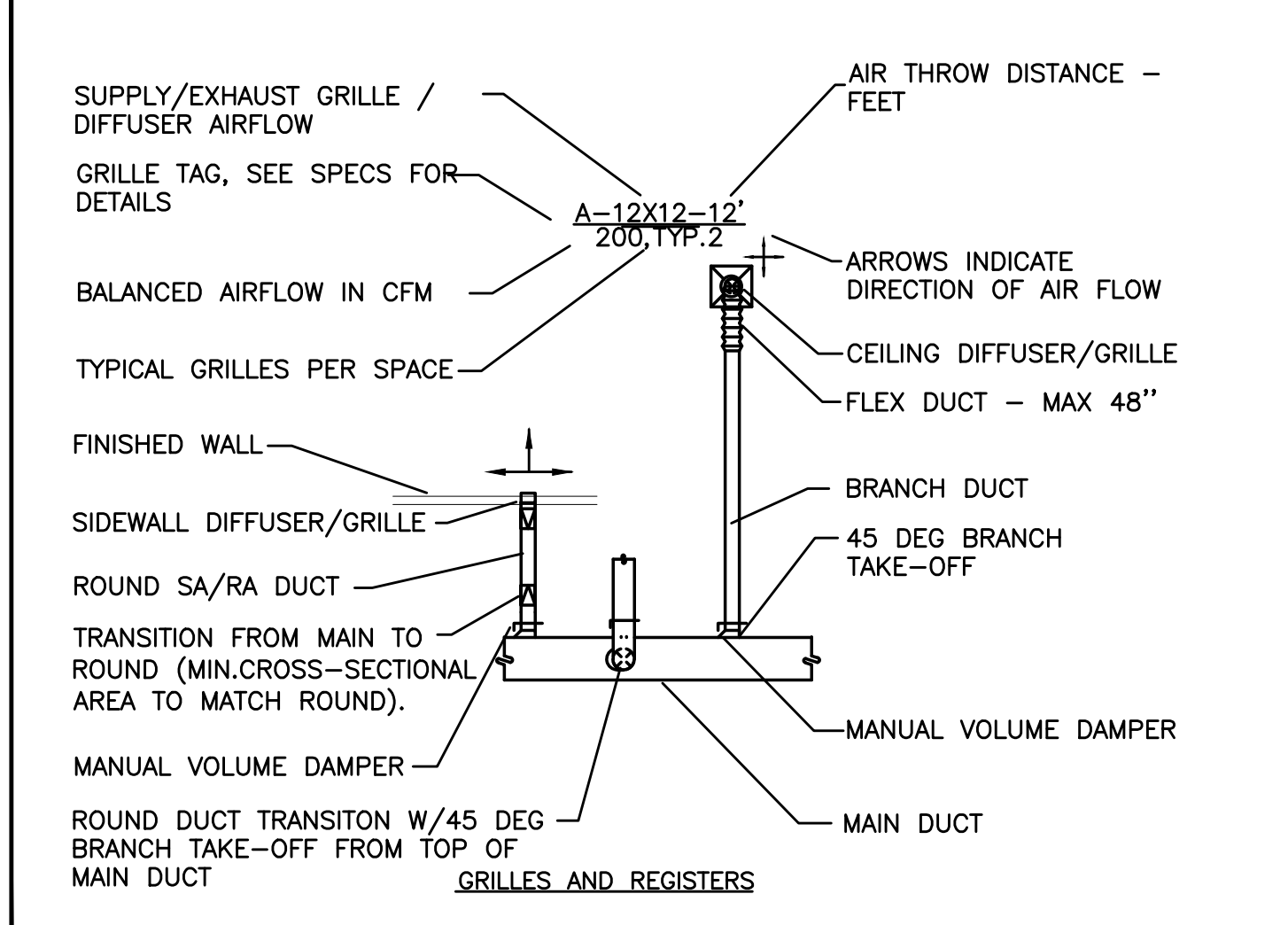
MECHANICAL LEGEND

	SUPPLY AIR DIFFUSER	AFB	ABOVE FINISH FLOOR
	RETURN AIR DIFFUSER	AHU	AIR HANDLING UNIT
	EXHAUST AIR DIFFUSER	B.D.	BOTTOM OF DUCT
	DIRECTIONAL AIR FLOW	BHP	BRAKE HORSEPOWER
	MANUAL VOLUME DAMPER	BOG	BOTTOM OF GRILLE
	SUPPLY/OUTSIDE AIR DUCT UP & DOWN	BTU	BRITISH THERMAL UNITS
	RETURN AIR DUCT UP & DOWN	CFM	CUBIC FEET PER MINUTE
	EXHAUST AIR DUCT UP & DOWN	CONN.	CONNECTION
	DEMOLISH	CONT.	CONTINUATION
	EXISTING	CW	DOMESTIC COLD WATER
	CONNECT TO EXISTING	DB	DRY BULB
	THERMOSTAT	DIA.	DIAMETER
	TEMPERATURE SENSOR	DIST.	DISTRIBUTION
	NOTE	EXH	EXHAUST AIR
	EQUIPMENT DESIGNATOR	EDB	ENTERING DRY BULB TEMPERATURE
	GATE VALVE/SHUT-OFF VALVE SEE SPECS	EWB	ENTERING WET BULB TEMPERATURE
	CHECK VALVE	EWT	ENTERING WATER TEMPERATURE
	BALANCING VALVE	FF	FINISH FLOOR
	FLOW CONTROL/LIMITING VALVE	FIXT.	FIXTURE
	THERMOMETER	F.O.B.	FLAT ON BOTTOM
	DIRECTION OF FLOW	FPM	FEET PER MINUTE
	PUMP	FPS	FEET PER SECOND
	STRAINER W/RAIN VALVE	FT.	FEET / FOOT
	PRESSURE GAUGE	GA.	GAUGE
	PET'S PLUG	GEXH	GREASE EXHAUST AIR DUCT
	DOUBLE CHECK ASSEMBLY	GPM	GALLONS PER MINUTE
	PRESSURE REDUCING VALVE	H	HEIGHT
	UNION	HP	HORSEPOWER
	2-WAY CONTROL VALVE	I.D.	INSIDE DIAMETER
	3-WAY CONTROL VALVE	IN.	INCHES
	TRIPLE DUTY VALVE	L	LENGTH
	CAP	LBS.	POUNDS
	MOTORIZED DAMPER	LDB	LEAVING DRY BULB
	MOTORIZED DAMPER	LWB	LEAVING WET BULB
	BALL/SHUT-OFF VALVE(SEE SPECS)	LWT	LEAVING WATER TEMPERATURE
	FIRE DAMPER	MA	MAKE UP AIR
	FIRE / SMOKE DAMPER	MAX.	MAXIMUM
	SMOKE DAMPER	MBH	THOUSANDS OF BTUs PER HOUR
	FAN MOTOR	MD	MOTORIZED DAMPER
		MIN.	MINIMUM
		MVD	MANUAL VOLUME DAMPER
		NC	NOISE CRITERIA
		N.C.	NORMALLY CLOSED
		N.I.M.	NOT IN MECHANICAL
		NO.	NUMBER
		N.O.	NORMALLY OPEN
		O.A.	OUTSIDE AIR
		P	PERSON
		PSI	POUNDS PER SQUARE INCH
		P/T	PRESSURE / TEMPERATURE
		R.A.	RETURN AIR
		RECT.	RECTANGULAR
		REQ'D	REQUIRED
		S.A.	SUPPLY AIR
		S.P.	STATIC PRESSURE
		SQ.	SQUARE
		TEMP.	TEMPERATURE
		TYP.	TYPICAL
		VAV	VARIABLE AIR VOLUME
		W	WIDTH
		WB	WET BULB
		WPD	WATER PRESSURE DROP
		Ø	DIAMETER
		(E)	EXISTING
		(D)	DEMOLISH
			NEW WORK
		G	(G) NATURAL GAS
		CD	(CD) CONDENSATE DRAIN
		RF	(RF) TWO OR THREE REFRIGERANT LINES
		HWS	(HWS) HEATING WATER SUPPLY
		HWR	(HWR) HEATING WATER RETURN
		CHS	(CHS) CHILLED WATER SUPPLY
		CHR	(CHR) CHILLED WATER RETURN
			EQUIPMENT MAINTENANCE CLEARANCE AND ACCESS

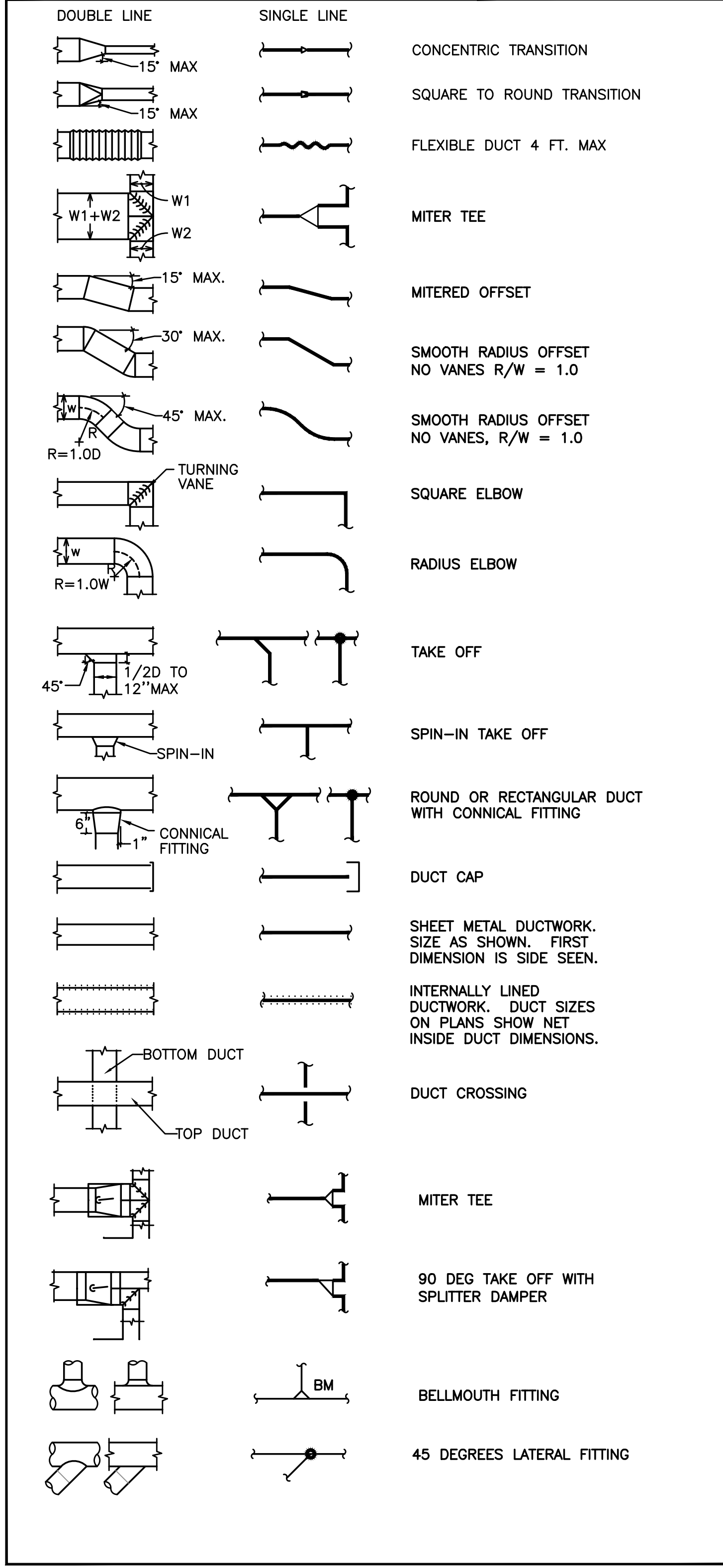
MECHANICAL GENERAL NOTES

- A. THE DRAWINGS ARE DIAGRAMMATIC. PROVIDE ALL MATERIAL (NEW AND UNDAMAGED) AND LABOR FOR A COMPLETE AND OPERABLE SYSTEM. VERIFY ALL BUILDING MEASUREMENTS DIMENSIONS AND EQUIPMENT LOCATIONS BEFORE PROCEEDING WITH ANY OF THE WORK.
- B. VERIFY ALL EXISTING CONDITIONS RELATIVE TO THE SCOPE OF WORK. REPORT DISCREPANCIES BACK TO THE ENGINEER.
- C. VERIFY INDICATED (E) DUCTWORK/PIPE SIZES PRIOR TO RECONNECTING NEW EQUIPMENT. EQUIPMENT SHALL NOT BE CONNECTED TO EXISTING DUCT/PIPE OF SMALLER DIAMETER THAN NEW DUCT/PIPE. REPORT DISCREPANCIES BACK TO ENGINEER.
- D. DO NOT FABRICATE EQUIPMENT SUPPORTS/BASES W/O CONFIRMING SPACE EXISTS AND THE BUILDING ATTACHMENT POINTS.
- E. REFER TO THE MECHANICAL SPECIFICATIONS FOR MATERIALS, EQUIPMENT, AND ADDITIONAL CONSTRUCTION INSTRUCTIONS NOT COVERED BY THESE PLANS.
- F. ALL INSTALLATIONS SHALL COMPLY WITH APPLICABLE FEDERAL AND STATE CODES INCLUDING, 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC) INCLUDING APPENDIX N FOR OREGON FIRE CODE REGULATIONS, 2021 OREGON PLUMBING SPECIALTY CODE (OPSC), 2019 OREGON MECHANICAL SPECIALTY CODE (OMSC), 2021 OREGON ENERGY EFFICIENCY SPECIALTY CODE (OEEESC)-BASED ON ASHRAE 90.1-2019, AND NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). WHERE TWO CODES DIFFER THE MORE STRICT OF THE TWO SHALL BE FOLLOWED.
- G. OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES HAVING JURISDICTION. SUBMIT ALL CERTIFICATES PRIOR TO ACCEPTANCE.
- H. COORDINATE ALL MECHANICAL AND CONTROL WORK WITH GENERAL CONTRACTOR, CONTROL CONTRACTOR, ELECTRICAL AND ARCHITECTURAL.
- I. COORDINATE OTHER TRADES FOR PATCH/REPAIR OF WALLS WHERE EXISTING SENSORS ARE REMOVED OR MODIFIED.
- J. PATCH & REPAIR WALLS / FLOORS / CEILING WHERE OLD DUCTWORK/PIPES HAVE BEEN REMOVED TO MATCH EXISTING FINISHES.
- K. COORDINATE WITH OTHER CRAFTS AS REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH CONSTRUCTION SCHEDULE.
- L. PROVIDE OWNER INSTRUCTION BY QUALIFIED PERSONNEL ON EQUIPMENT AND SYSTEMS AT OWNER'S REQUEST.
- M. ALL DUCTWORK SHALL BE GALVANIZED STEEL, UNLESS OTHERWISE INDICATED, CONFORMING TO LATEST SMACNA, ASHRAE, OMSC, NFPA, AND UL STANDARDS.
- N. MANUFACTURERS AND MODEL NUMBERS LISTED IN THE EQUIPMENT SCHEDULES ARE THE BASIS OF DESIGN.
- O. CUT WALLS FOR PROPER EQUIPMENT, DUCT OR PIPE INSTALLATION. FILL HOLES WHICH ARE CUT OVERSIZED FOR A TIGHT FIT AROUND OBJECTS PASSING THROUGH.
- P. PROVIDE UL LISTED FIRESTOP SYSTEM TO MAINTAIN THE CODE REQUIRED F AND T RATING OF THE CONSTRUCTION ASSEMBLY AT A DUCT/PIPE PENETRATION THROUGH A RATED BUILDING CONSTRUCTION.
- Q. INSTALL LABELS ON ALL MECHANICAL EQUIPMENT. SEE SPECIFICATIONS FOR CRITERIA.
- R. CONTROLS AND WIRING SHALL MEET ALL ELECTRICAL REQUIREMENTS OF APPLICABLE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS OF OWNER, BUILDING OFFICIALS AND EQUIPMENT SUPPLIERS OF EQUIPMENT INSTALLED ON PROJECT.
- S. ELECTRIC MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION OR BE PROTECTED EXTERNALLY WITH SEPARATE THERMAL OVERLOAD DEVICES, WITH LOW-VOLTAGE RELEASE OR LOCK OUT AS REQUIRED.
- T. ALL NEW EQUIPMENT, PIPING, CONDUIT, AND DUCTWORK SHALL BE INSTALLED PER CURRENT SEISMIC CODE REQUIREMENTS.
- U. PROVIDE LOW LEAK AUTOMATIC DAMPERS ON OUTSIDE AIR, EXHAUST AIR AND RELIEF AIR CONTROL DAMPERS WHERE THESE ARE INDICATED.

AIR DISTRIBUTION DETAILS



AIR DISTRIBUTION DETAILS



NOTES:

- THIS DETAIL COVERS MULTIPLE DISCIPLINES AND IS INTENDED TO COVER GENERAL INSTALLATION REQUIREMENTS. SEE SPECIFIC DISCIPLINE DRAWING AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. SEE PROJECT SPECIFIC FLOOR PLANS, ELEVATIONS AND SECTIONS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL SYSTEM UPON COMPLETION OF WORK.
- FUEL VENT DISCHARGE LOCATION SHALL BE 5' MIN. FROM BUILDING OPENINGS, 15' MIN. FROM OUTSIDE AIR INTAKES, AND 12' MIN ABOVE GRADE. NFPA 30.
- FLEX CONNECTIONS TO THE GENERATOR SHALL BE UTILIZED FOR ALL UTILITY CONNECTIONS, INCLUDING BUT NOT LIMITED TO: ENGINE EXHAUST, VENT PIPING, DUCTWORK, AND CONDUITS.
- DIESEL GEN-SETS IN SERVICE SHALL BE EXERCISED AT LEAST ONCE MONTHLY FOR A MINIMUM OF 30 MINUTES OR AS REQUIRED BY THE LOCAL A.H.J. NFPA 110
- NO OTHER EQUIPMENT OTHER THAN GENERATOR RELATED COMPONENTS SHALL BE ALLOWED IN THE GENERATOR ROOM.
- FUEL TANK SHALL BE SIZED AT A MINIMUM TO OPERATE THE GENERATOR AT FULL LOAD FOR 2 HOURS. NEC.
- HIGH TEMPERATURE SPRINKLER HEADS SHOULD BE INSTALLED IN THE GENERATOR ROOM. NFPA 13
- EMERGENCY POWER OFF (EPO) TO BE LOCATED EXTERIOR TO GEN-SET ROOM, NEAR EXIT DOOR. NFPA 110
- THE INITIAL FIRST FILL FOR THE GENERATOR DIESEL TANK IS REQUIRED TO BE WITNESSED BY THE FIRE MARSHAL'S OFFICE HAZARDOUS MATERIALS INSPECTOR, WHERE THE 90% ALARM AND 95% SHUT-OFF WILL BE VERIFIED.
- PRIOR TO REQUESTING A TANK FINAL, FIRE SPRINKLERS AND FIRE ALARMS SHALL BE FINALED OR THAT THE FIRE SPRINKLER SYSTEM IS WORKING, AND THAT THE ALARMS ARE CURRENTLY CENTRALLY MONITORED.
- ALL FUEL SUPPLY AND VENT PIPING SHALL BE LABELED.
- CALIBRATION CHART OF PERMANENT AND DURABLE CONSTRUCTION SHALL BE LOCATED AT THE REMOTE FILL.
- BEFORE BEING COVERED, ENCLOSED OR PLACED IN USE, DOCUMENTATION WILL BE PROVIDED IN ACCORDANCE WITH NFPA 30, 21.5.
- EACH TANK SHALL BEAR A PERMANENT NAMEPLATE OR MARKING INDICATING THE STANDARD USED AS THE BASIS OF DESIGN.

MECHANICAL SHEET INDEX

MG001	TITLE SHEET & MECHANICAL LEGEND
MG201	GENERATOR FLOOR PLAN - LEVEL 1
MG202	GENERATOR FLOOR PLAN - LEVEL 2
MG203	GENERATOR FLOOR PLAN - LEVEL 3
MG600	GENERATOR DETAILS
MG601	GENERATOR DETAILS

ARCHITECTS

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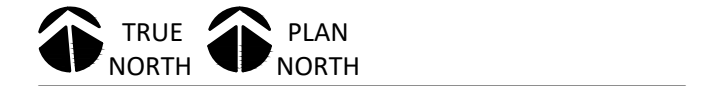
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REVISION NO. DATE

1	PLAN REVIEW #1	2-16-22
2	ASI 01	5-17-22
	ASI 02	6-13-22

KEY PLAN - (NTS)



SUNSHINE DAIRY APARTMENTS

801 NE 21ST AVE
PORTLAND, OR 97214

ISSUANCE PERMIT SET

PROJECT NUMBER 1834

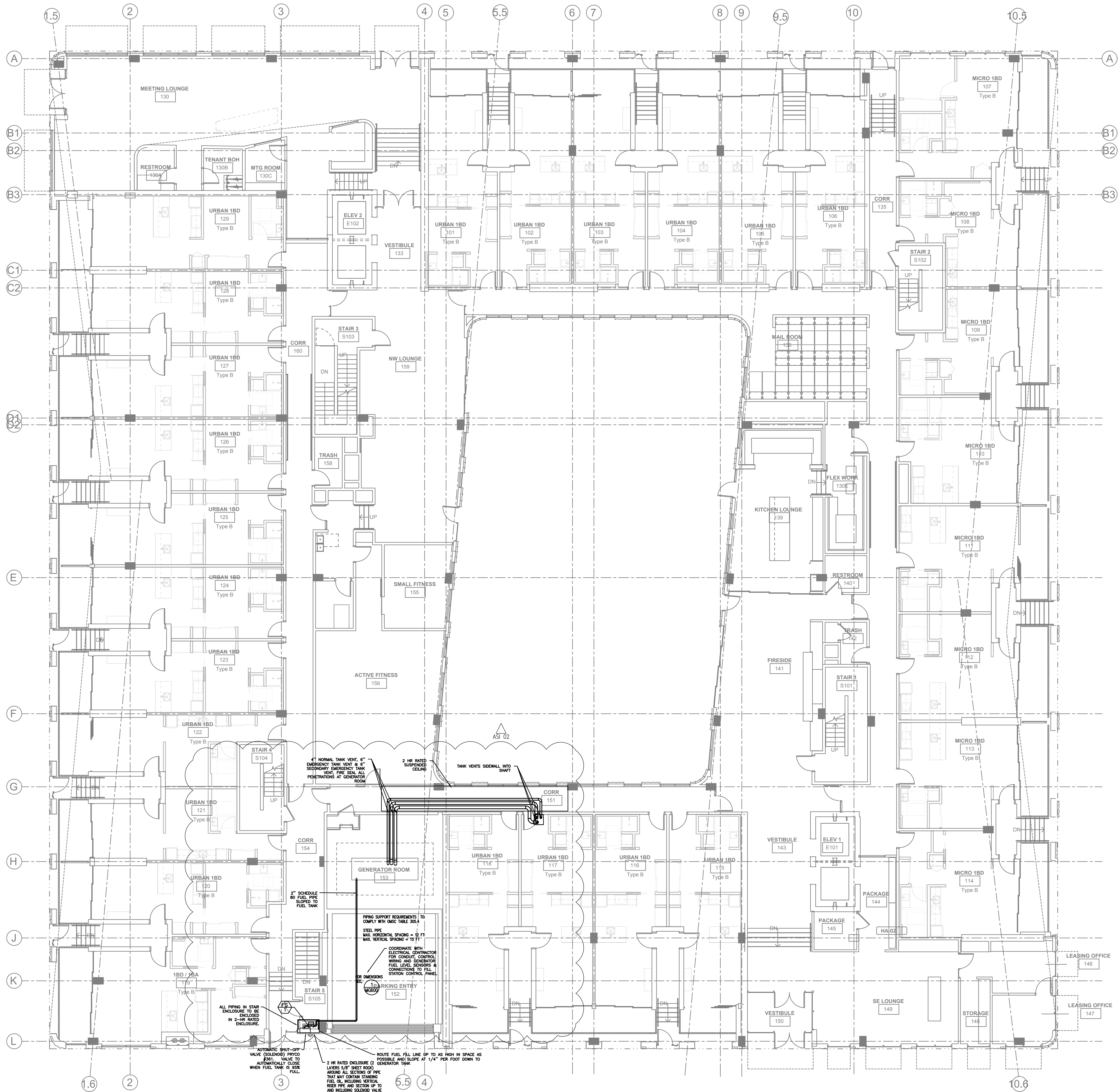
DATE DECEMBER 6, 2019

SCALE As indicated

DRAWING TITLE
TITLE SHEET & MECH LEGEND

SHEET NUMBER

MG001



1 FIRST FLOOR - GEN.
 MG201 SCALE: 1/8" = 1'-0"

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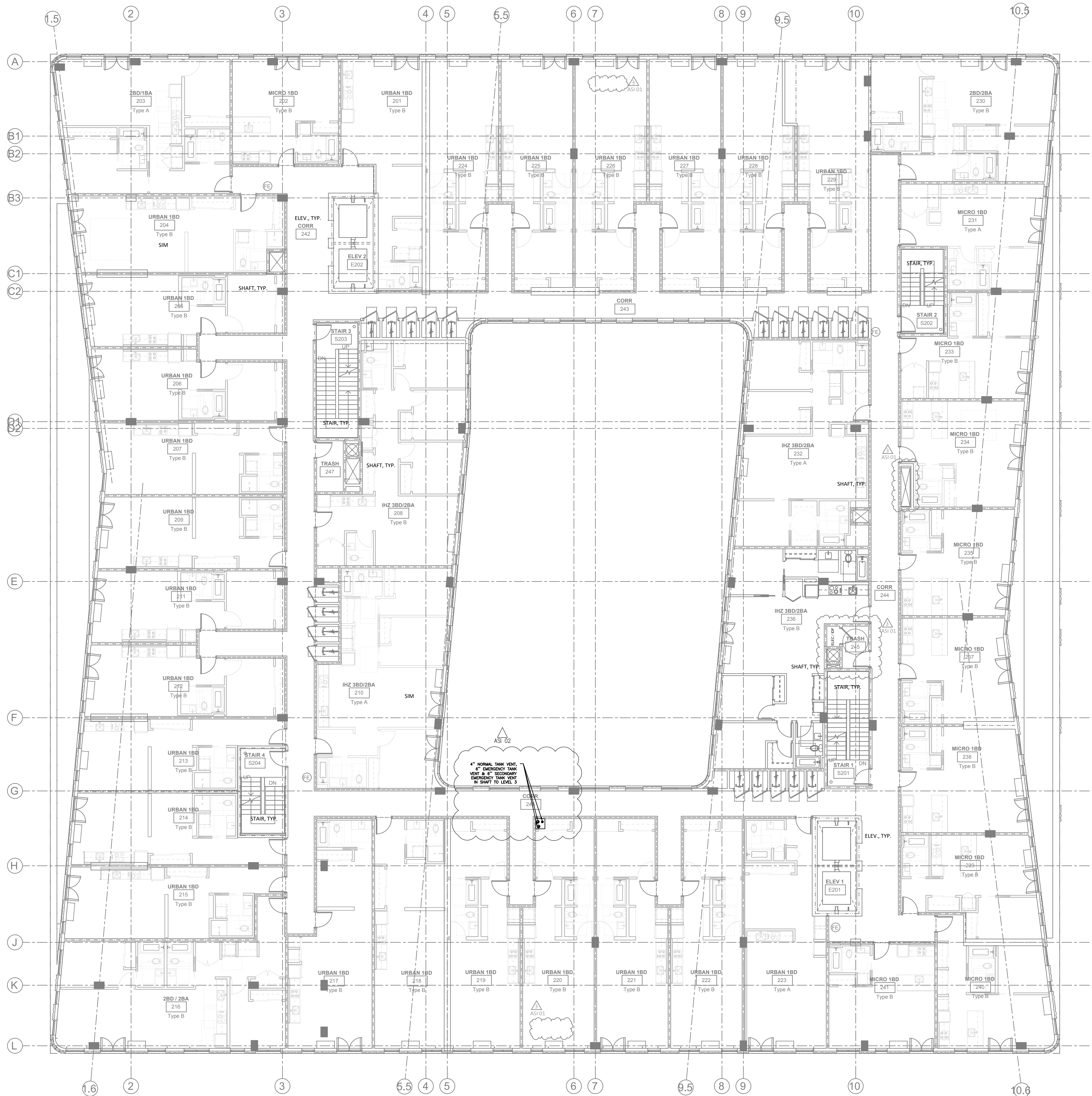
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TRUE PLAN NORTH
SUNSHINE DAIRY APARTMENTS

801 NE 21ST AVE
 PORTLAND, OR 97214
 ISSUANCE
 PERMIT SET
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 1834
 DATE
 DECEMBER 6, 2019
 SCALE
 As indicated
 DRAWING TITLE
 FIRST FLOOR - GEN.

SHEET NUMBER
MG201



1 SECOND FLOOR - MECH
 M202 SCALE: 1/8" = 1'-0"

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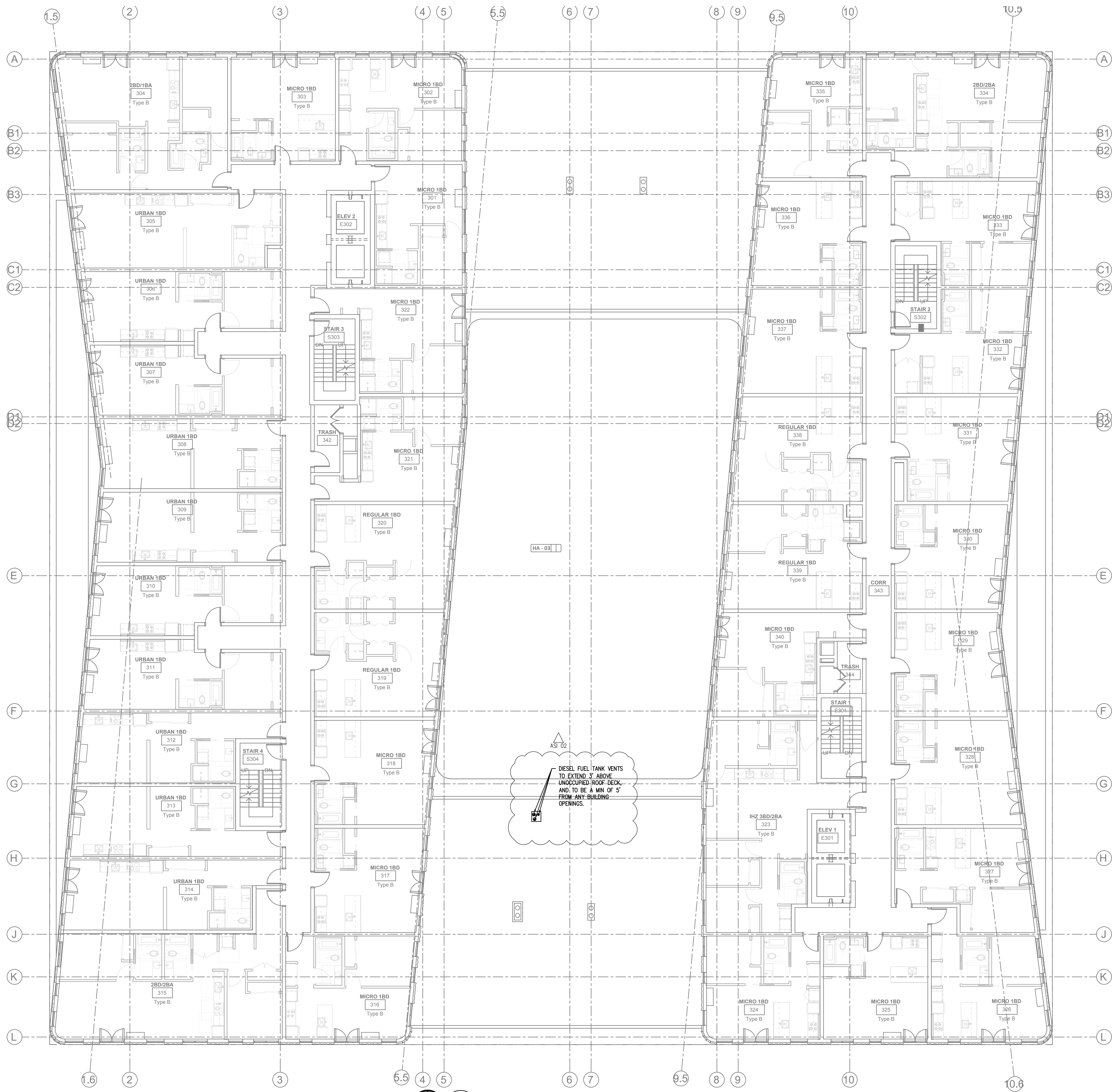
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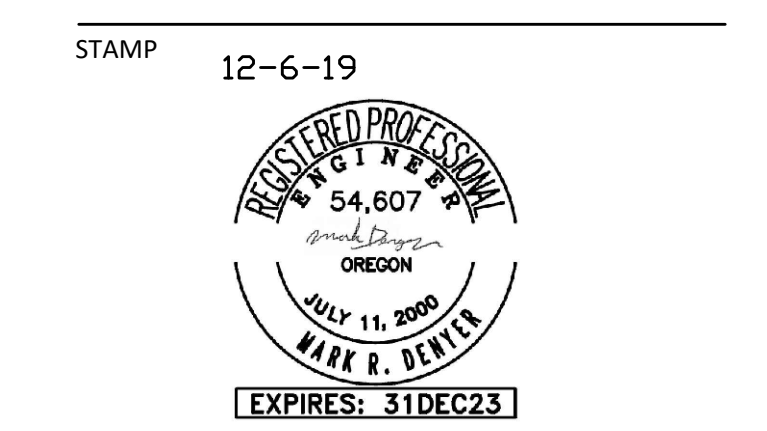
DRAWING TITLE
 SECOND FLOOR - GEN.

SHEET NUMBER
MG202



1 THIRD FLOOR - MECH
 M203 SCALE: 1/8" = 1'-0"

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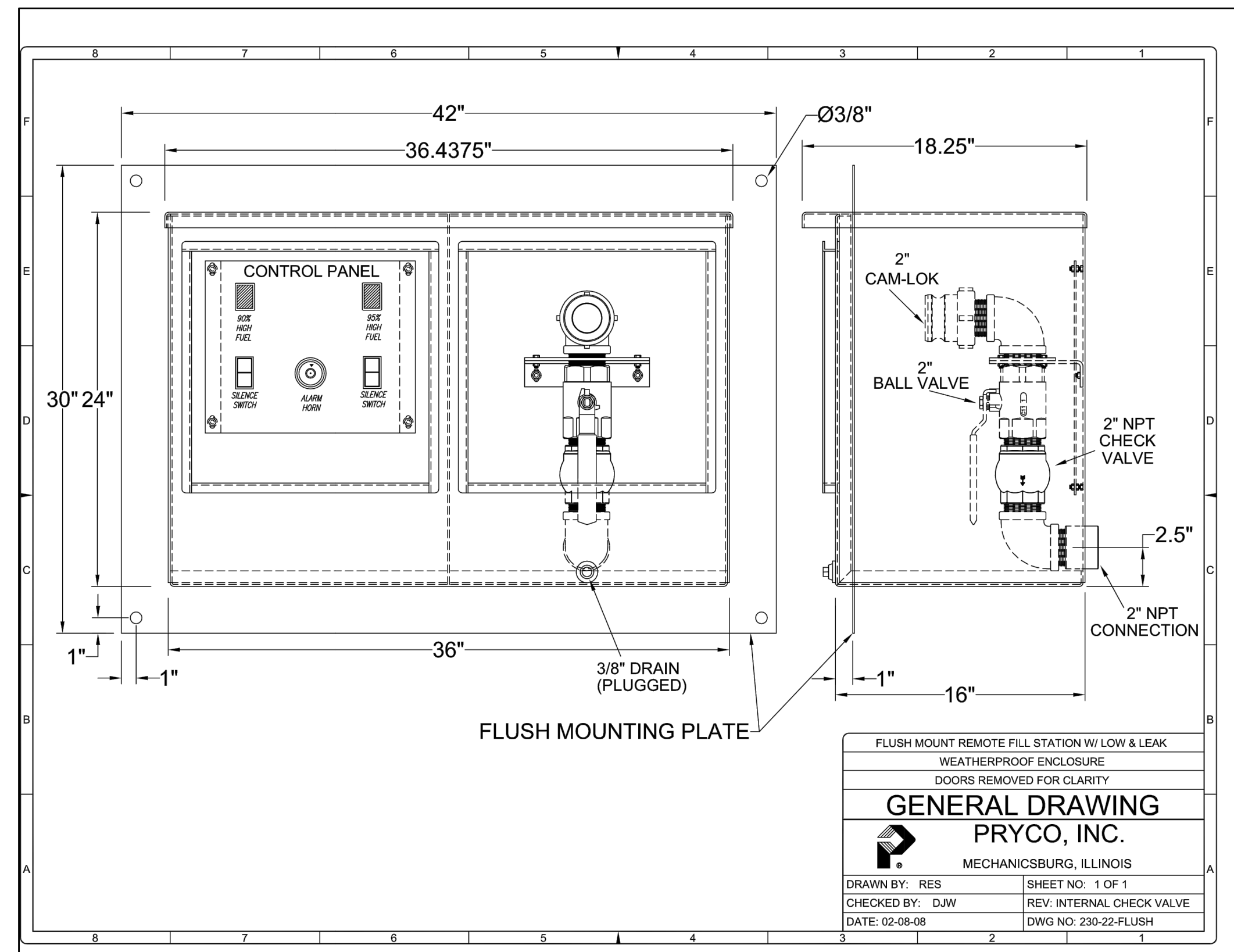
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KEY PLAN - (NTS)

TRUE NORTH PLAN NORTH
SUNSHINE DAIRY APARTMENTS

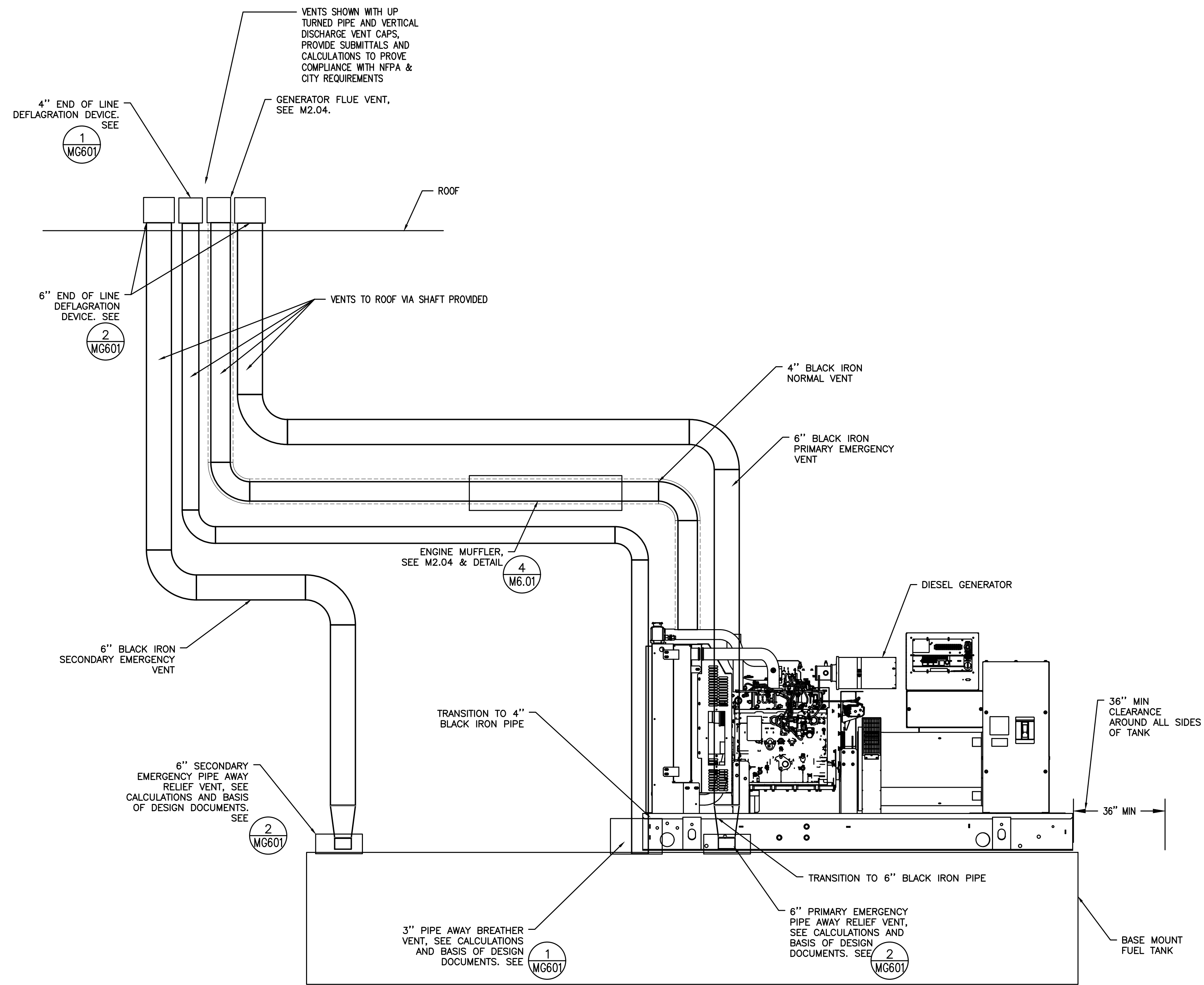
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 SCALE
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 DRAWING TITLE
 THIRD FLOOR - GEN.

SHEET NUMBER
MG203



FUEL FILL STATION	
NUMBER	FS 1
TYPE	WALL FLUSH MOUNT
INLET/OUTLET	2" Ø
CONTROL PANEL	SIDE MOUNT
ELECTRIC SHUT OFF	YES
CHECK VALVE	YES
QUICK CONNECT HOSE COUPLING	YES
MANUAL BALL VALVE	YES
OUTLET LOCATION	REAR
CONTROL POWER	115/1/60 -EMERGENCY
SPILL CONTAINMENT	7.5 GALLONS
CONTAINMENT SUMP DRAIN	YES
WEIGHT	325 LBS
HIGH LEVEL ALARM	90% TANK LEVEL
EMERGENCY SHUT-OFF	95% TANK LEVEL
BASIS OF DESIGN - PRYCO	230-22
	AUTOMATIC FUELPORT

1 GENERATOR FUEL FILL STATION (FS) 1
 MG600 SCALE: DETAIL



3 GENERATOR FUEL TANK PIPING SCHEMATIC
 MG600 SCALE: DETAIL

Cat® GC Integral Fuel Tanks

Integral Fuel Tank Base Useable Capacities with Fuel Tank Dimensions & Weights

Standby	Feature Code	Total Capacity		Useable Capacity	
		Litre	Gallon	Litre	Gallon
40-60	FTDW044	523	138.2	466	123.1
80-100	FTDW043	769	203.1	690	182.3
125-200	FTDW045	1511	399.2	1355	357.8

The heights listed above do not include lumber used during manufacturing and shipping.

A. Open Set & Sound Attenuated Enclosure

Standby	Feature Code	Tank Only				Overall Package Height with Tank							
		Dry Weight	Height 'H'	Length 'L'	Width	Open	Enclosure	Open	Enclosure				
40-60	FTDW044	387.5	853.2	365	14.4	2708	106.6	1100	43.3	1384	54.5	1496	58.9
80-100	FTDW043	462.5	1019.6	440	17.3	3035	119.5	1100	43.3	1583	62.3	1673	65.9
125-200	FTDW045	736.1	1622.8	555	21.9	3670	142.5	1300	51.2	1847	72.7	1925	75.8

LEHE2881-00 Page 2 of 3

2 DIESEL TANK - VENTING
 MG600 SCALE: DETAIL

DESIGN CRITERIA-GENERATOR FUEL TANK	
Tank Volume	404 gal
Tank Size	214.1"x67.9"x15"
Wetted Area	110.9 sq ft
Vapor Flow Rate	126,000 CFH
Normal Vent	2"
Primary E Vent	4"
Secondary E Vent	4"
Fill Rate	40 GPM (MAX 65)
Empty Rate	26.5 GPH
MAWP (Tank Pressure)	5.0 psig
E-vent Pressure	2.5 psig
Normal Vent Pres	1.0 psig
Vacuum pressure	0.5 psig
EQ Vent Pipe Length	130 ft

Conservation Breather Vent	
System	Normal Vent
Type	Pipe Away Breather Vent
Size	3"
Material	Ductile Iron
Pressure Set Point	1.0 psig
Vacuum Set Point	0.5 psig
Exh Flow Rate	35,000 CFH
Intake Flow Rate	17,500 CFH
Basis of Design	Protectoseal
Model	C18543D3
Quantity	1
Valve Pressure Drop	0.105 PSI
Vac Pressure Drop	0.107 PSI

Pressure Relief Vent (E-vent)	
System	Emergency Vent
Type	Pipe Away Relief Vent
Size	4"
Material	Ductile Iron
Pressure Set Point	2.5 psig
Exh Flow Rate	126,000 CFH
Basis of Design	Protectoseal
Model	C17804D4
Quantity	2
Valve Pressure drop	0.086 psi

Vent Pipe Pressure Drops	
System	Normal Vent
Size	4"
Vapor Flow Rate	35,000 CFH
Vapor Flow Rate	583 CFM
EQ Pipe Length	130 ft
Pressure Drop	0.827 psig

System-Tank Pressures	
System	Normal Vent
Pipe Pressure drop	0.827
Breather valve	0.105
Deflagration valve	0.201
Set point	1.000
Total Tank Pressure	2.133

4 TANK VENT SIZING CALCULATIONS
 MG600 SCALE: DETAIL

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DRAWING TITLE
 GENERATOR DETAILS

SHEET NUMBER

MG600

