

PLUMBING SYMBOLS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ANGLE VALVE		FIRE LINE
	BACKFLOW PREVENTER		FLANGE
	BACK WATER VALVE		FLOOR CLEAN OUT
	BALL VALVE		FLOOR DRAIN
	BASEBOARD RADIATION		FLOW MEASURING & BALANCING DEVICE
	BRASS UPRIGHT PENDENT TYPE SPRINKLER HEAD		FLOW MEASURING & BALANCING DEVICE WITH ISOLATION VALVE
	BUTTERFLY VALVE		FUEL OIL SUPPLY
	CHECK VALVE W/DIRECTION INDICATED		FUEL OIL RETURN
	CHILLED WATER SUPPLY		FUEL OIL VENT
	CHILLED WATER RETURN		GATE VALVE
	CHROME PLATTED RECESSED TYPE SPRINKLER HEAD		GLOBE VALVE
	CLEAN OUT		HIGH PRESSURE CONDENSATE
	COMPRESSED AIR LINE		HIGH PRESSURE STEAM SUPPLY
	CONDENSATE DRAINAGE		WALL HYDRANT
	CONDENSER WATER SUPPLY		HOSE BIBB
	CONDENSER WATER RETURN		HOT WATER (120°) (ABOVE GRADE)
	CONNECT TO EXISTING		HOT WATER (120°) (BELOW GRADE)
	CONTROL VALVE (2-WAY)		HOT WATER (140°)
	CONTROL VALVE (3-WAY)		HOT WATER RECIRCULATION PIPING (120°) (ABOVE GRADE)
	COLD WATER (ABOVE GRADE)		HOT WATER RECIRCULATION PIPING (120°) (BELOW GRADE)
	COLD WATER (BELOW GRADE)		HOT WATER HEATING SUPPLY
	COLD WATER - HARD		HOT WATER HEATING RETURN
	EXISTING (SAN, HW, CW, ETC.)		INTERRUPTIBLE GAS PIPING
	FIN TUBE RADIATION		LIQUID PROPANE GAS
	LOW PRESSURE CONDENSATE		SNOW MELTING SYSTEM SUPPLY
	LOW PRESSURE STEAM SUPPLY		STEAM TRAP
	MEDIUM PRESSURE CONDENSATE		STORM SEWER LINE (ABOVE GRADE)
	MEDIUM PRESSURE STEAM SUPPLY		STORM SEWER LINE (BELOW GRADE)
	OVERFLOW RAIN WATER LEADER		STRAINER
	OVERFLOW ROOF DRAIN		TEMPERATURE GAUGE
	OXYGEN PIPING		TEMPERED WATER
	PIPE ANCHOR		THREADED HOSE CONNECTION
	PIPE GUIDES		TRIPLE DUTY VALVE, WITH COMBINATION SHUT-OFF, BALANCING, AND CHECK VALVE WITH MEASURING CONNECTIONS
	PIPE CAP		UNION
	PIPE DOWN		VACUUM LINE
	PIPE UP		VENT
	PLUG VALVE		VERTICAL PENDENT TYPE WINDOW SPRINKLER HEAD
	PRESSURE GAUGE		WATER HAMMER ARRESTOR
	PRESSURE REDUCING VALVE WITH INLET AND OUTLET PRESSURE		WALL CLEAN OUT
	QUICK CLOSING, FUSIBLE LINK VALVE		WATER METER
	RAIN WATER LEADER		
	REDUCED PRESSURE BACKFLOW PREVENTOR		
	ROOF DRAIN		
	SIDEWALL PENDENT TYPE SPRINKLER HEAD		
	SANITARY SEWER LINE (ABOVE GRADE)		
	SANITARY SEWER LINE (BELOW GRADE)		
	SECURITY BARS		
	SNOW MELTING SYSTEM SUPPLY		

PLUMBING ABBREVIATIONS			
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AF	ABOVE FINISHED FLOOR	NG	NATURAL GAS
AFG	ABOVE FINISHED GRADE	OF	OWNER FURNISHED, CONTRACTOR INSTALLED
BWV	BACK WATER VALVE	FTR	FINNED TUBE RADIATION
BV	BALL VALVE	GM	GAS METER
BB	BASEBOARD RADIATION	G	GAS PIPING
BF	BUTTERFLY VALVE	GV	GATE VALVE
CV	CHECK VALVE	GLV	GLOBE VALVE
CWS	CHILLED WATER SUPPLY	HPC	HIGH PRESSURE CONDENSATE
CWR	CHILLED WATER RETURN	HPS	HIGH PRESSURE STEAM SUPPLY
CO	CLEAN OUT	H	WALL HYDRANT
CA	COMPRESSED AIR	HB	HOSE BIBB
CD	CONDENSATE DRAIN	HWFU	HOT WATER FIXTURE UNITS
CS	CONDENSER WATER SUPPLY	HW	HOT WATER
CR	CONDENSER WATER RETURN	HW-H	HOT WATER - HARD
CV	CONTROL VALVE	HWRC	HOT WATER RECIRCULATION
CW	COLD WATER	HWS	HOT WATER SUPPLY
CW-H	COLD WATER - HARD	HWR	HOT WATER RETURN
CWFU	COLD WATER FIXTURE UNITS	HWV	HOT WATER VALVE
DFU	DRAINAGE FIXTURE UNITS	IE	INVERT ELEVATION
E	EXISTING (SAN, HW, CW, ETC.)	LPC	LOW PRESSURE CONDENSATE
FFE	FINISH FLOOR ELEVATION	LPS	LOW PRESSURE STEAM SUPPLY
FL	FIRE LINE	LPG	LIQUID PROPANE GAS
FCO	FLOOR CLEAN OUT	MPC	MEDIUM PRESSURE CONDENSATE
FD	FLOOR DRAIN	MPS	MEDIUM PRESSURE STEAM SUPPLY
		NR	NATURAL GAS
		OF	OWNER FURNISHED, CONTRACTOR INSTALLED
		ORWL	OVERFLOW RAIN WATER LEADER
		ORD	OVERFLOW ROOF DRAIN
		OX	OXYGEN PIPING
		RWL	RAIN WATER LEADER
		RPZ	REDUCED PRESSURE BACKFLOW PREVENTOR
		R	GAS PRESSURE REGULATOR
		RD	ROOF DRAIN
		SAN	SANITARY SEWER
		SMS	SNOW MELTING SYSTEM SUPPLY
		SMR	SNOW MELTING SYSTEM RETURN
		SF	SQUARE FEET
		SFU	SUPPLY FIXTURE UNITS
		ST	STORM SEWER
		TW	TEMPERED WATER
		TYP.	TYPICAL
		DN	DOWN
		V	VENT
		VA	VACUUM LINE
		VTR	VENT THRU ROOF
		WCO	WALL CLEAN OUT
		WM	WATER METER
		YCO	YARD CLEAN OUT

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT

PLUMBING DRAWING LIST	
SHEET NUMBER	SHEET NAME
P001	PLUMBING SYMBOLS AND LEGEND
P200.1A	GROUND FLOOR PLUMBING PLAN - SANITARY/STORM
P200.1B	GROUND FLOOR PLUMBING PLAN - DOMESTIC WATER
P201	FIRST FLOOR PLUMBING PLAN
P202	SECOND FLOOR PLUMBING PLAN
P203	THIRD FLOOR PLUMBING PLAN
P301	PLUMBING ISOMETRICS
P302	PLUMBING ISOMETRICS
P701	PLUMBING DETAILS
P702	PLUMBING DETAILS
P801	PLUMBING SCHEDULES

GENERAL PLUMBING NOTES	
A.	THESE GENERAL NOTES SHALL APPLY TO ALL PLUMBING DRAWINGS.
B.	PLUMBING CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE 'AS-BUILT' CONDITIONS AND THESE DRAWINGS.
C.	ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH 2015 MINNESOTA PLUMBING CODE (SEE MINNESOTA RULES, CHAPTER 4714).
D.	EXISTING ITEMS TO REMAIN ARE SHOWN LIGHT. NEW ITEMS ARE SHOWN DARK.
E.	ANY WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THIS WORK SHALL BE REPAIRED TO EXISTING OR LIKE-NEW CONDITION.
F.	COORDINATE UNDERGROUND PIPING SYSTEMS WITH FOUNDATION CONTRACTOR PRIOR TO INSTALLATION.
G.	PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL EQUIPMENT AND PIPING TO FIT WITHIN THE SPACE ALLOWED BY ARCHITECTURAL AND STRUCTURAL CONDITIONS. PROVIDE PIPE OFFSETS AND TRANSITIONS AS REQUIRED TO ACCOMMODATE STRUCTURE AND ARCHITECTURE. CUTTING OR OTHERWISE ALTERING STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
H.	ALL PLUMBING EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
I.	A CLEANOUT SHALL BE PROVIDED AT THE BASE OF EACH WASTE OR SOIL STACK AND AS REQUIRED BY CODE.
J.	SEE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
K.	SEE SHEETS P301 & P302 FOR ALL DRAIN, WASTE, VENT, AND DOMESTIC WATER PIPING ISOMETRICS.
L.	COORDINATE ALL PLUMBING PIPING AND EQUIPMENT WITH HVAC, ELECTRICAL, AND FIRE SUPPRESSION.
M.	CHANGES IN DIRECTION IN DRAINAGE PIPING MUST BE MADE BY APPROPRIATE WYES AND BENDS. SANITARY TEES ARE NOT ALLOWED WHERE THE DIRECTION OF FLOW CHANGES FROM EITHER VERTICAL TO HORIZONTAL OR HORIZONTAL TO HORIZONTAL.
N.	ALL HORIZONTAL BRANCH DRAINS SHALL BE UNIFORMLY PITCHED AT 1/4-INCH PER FOOT (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 708.1).
O.	THE BUILDING SEWER MUST BE INSTALLED WITH A UNIFORM SLOPE OF AT LEAST 1/4-INCH PER FOOT (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 718.1). WHERE MUNICIPAL SEWER DEPTH, STRUCTURAL FEATURES, OR BUILDING ARRANGEMENT PRECLUDE THIS SLOPE, A SLOPE OF 1/8-INCH PER FOOT MINIMUM MAY BE UTILIZED IF APPROVED BY THE AUTHORITY HAVING JURISDICTION.
P.	PLUMBING DESIGN SHALL COMPLY WITH MINNESOTA RULES, CHAPTER 4714, SECTION 711.0 REGARDING SUDS RELIEF.
Q.	ALL SINKS, EXCEPT FOR LAVATORIES AND PRIVATE-USE BAR SINKS, MUST BE PROVIDED WITH 2-INCH MINIMUM VERTICAL FIXTURE DRAINS (SEE MINNESOTA RULES, CHAPTER 4714, TABLES 702.1 AND 703.2). LAUNDRY TUBS, DOMESTIC CLOTHES WASHERS, AND URINALS REQUIRE 2-INCH MINIMUM VERTICAL DRAINS.
R.	WATER SUPPLY CONNECTIONS TO FIXTURES OR EQUIPMENT WHICH HAVE INLETS BELOW THE SPILL LINE MUST BE PROVIDED WITH AN APPROVED BACKFLOW PREVENTER (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 602.3).
S.	DOMESTIC TYPE DISHWASHERS MUST DISCHARGE INDIRECTLY THROUGH AN ASSE 1021 OR IAPMO PS23-2006A LISTED AIR GAP FITTING (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 414.3 AND 807.4). THE DISCHARGE MAY BE ROUTED TO A WASTE RECEPTOR, TO A WYE BRANCH FITTING ON A KITCHEN SINK TAILPIECE, OR TO THE DISHWASHER CONNECTION OF A FOOD WASTE GRINDER. IF DISCHARGING TO A SINK TAILPIECE OR FOOD WASTE GRINDER, THE FLOOR LEVEL MARKING ON THE AIR GAP FITTING MUST BE AT OR ABOVE THE FLOOD LEVEL OF THE SINK OR DRAINBOARD, WHICHEVER IS HIGHER.
T.	ELEVATOR PIT DRAINS MUST BE DESIGNED TO DRAIN DRY AND MUST DISCHARGE INDIRECTLY TO THE SANITARY SEWER BY A CONNECTION PRECLUDING SEWAGE BACKUP INTO THE PIT (SEE MINNESOTA RULES, CHAPTER 4714, SECTIONS 418.6 AND 710.4).
U.	THE CONNECTION TO AN AUTOMATIC CLOTHES WASHER MUST BE PROTECTED BY THE USE OF AN AIR GAP OR AN APPROVED BACKFLOW PREVENTER (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 602.3). A CLOTHES WASHER MUST DISCHARGE INDIRECTLY TO A STANDPIPE OR LAUNDRY TUB (SEE MINNESOTA RULES, CHAPTER 4714, TABLE 702.1 AND SECTION 804.1).
V.	IN NO CASE SHALL WATER FROM A ROOF BE ALLOWED TO FLOW UPON THE PUBLIC SIDEWALK (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 1101.1).
W.	INSTALL CLEANOUTS LOCATED IN SIDEWALK, PAVED OR GREEN AREAS FLUSH WITH FINAL FINISHED SURFACE.
X.	WALL HYDRANTS MUST MEET ASSE STANDARD 1019 (SEE MINNESOTA RULES, CHAPTER 4714, TABLE 603.2).
Y.	FIXTURE VENTS MUST RISE WITHIN 45-DEGREES FROM THE VERTICAL AT LEAST 6-INCHES ABOVE THE FLOOD LEVEL BEFORE OFFSETTING HORIZONTALLY OR CONNECTING TO A BRANCH VENT (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 905.3).
Z.	ALL ISOLATION VALVES SHALL BE LOCATED IN ACCESSIBLE LOCATIONS.
AA.	LOCATE GAUGES AND THERMOMETERS FOR EASE OF OBSERVATION.
AB.	VALVES SHALL BE INSTALLED PERMITTING THE WATER SUPPLY TO EACH ROOM OR INDIVIDUAL FIXTURE TO BE SHUT OFF WITHOUT DISRUPTING ANY OTHER PORTION OF THE BUILDING.
AC.	PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALL STRUCTURES TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEMS. COORDINATE EXACT SIZES AND LOCATIONS OF ACCESS PANELS WITH ARCHITECT DURING THE SHOP DRAWING PROCESS.
AD.	PROVIDE HWRC BALANCING ASSEMBLIES AS REQUIRED TO MAINTAIN DOMESTIC HOT WATER FLOW TO ALL APPLICABLE PLUMBING FIXTURES AND AS SHOWN ON DRAWINGS.
AE.	INSULATE PIPING PER ENERGY CODE REQUIREMENTS.
AF.	VERIFY PLUMBING FIXTURE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
AG.	PLUMBING WORK SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT OR PANELS. COORDINATE WITH ELECTRICAL CONTRACTOR TO MAINTAIN ALL CODE REQUIRED ELECTRICAL CLEARANCES.
AH.	PAINT ALL VENTS FLAT BLACK AND TERMINATE NOT LESS THAN 12-INCHES ABOVE ROOF.
AI.	OFFSET VENT PIPING AS NEEDED TO BE LOCATED A MINIMUM OF 10-FEET AWAY OR 3-FEET ABOVE OUTSIDE AIR INTAKES AND AS REQUIRED BY CODE.
AJ.	A BUILDING'S VENT PIPES MUST HAVE A TOTAL CROSS-SECTIONAL AREA NOT LESS THAN THE AREA OF THE LARGEST REQUIRED BUILDING SEWER (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 904.1). VERIFY THAT THIS REQUIREMENT IS MET.
AK.	FLASH AND SEAL ALL ROOF PENETRATIONS TO MAKE WATER-TIGHT.
AL.	THE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PER MINNESOTA RULES, CHAPTER 4714, SECTION 609.9.
AM.	THE PLUMBING SYSTEM SHALL BE TESTED IN ACCORDANCE WITH MINNESOTA RULES, CHAPTER 4714, SECTIONS 609.4, 712.0, AND 1109.0.
AN.	ALL PLUMBING SYSTEMS SHALL COMPLY WITH THE CURRENT MINNESOTA COMMERCIAL ENERGY CODE. COMPLIANCE PATH SHALL BE VIA ASHRAE 90.1-2010 UNLESS NOTED OTHERWISE.
AO.	REFER TO ARCHITECTURAL DRAWINGS FOR ALTERNATES.



322 1st Ave N, Suite #600
 Minneapolis, MN 55401
 phone 612.746.4260
 Facsimile 612.746.4754
 www.jlgarchitects.com
 copyright © 2020



PRELIMINARY
 NOT FOR CONSTRUCTION

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

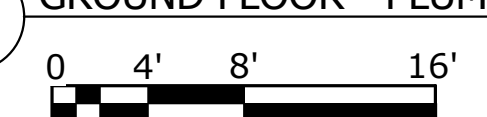
DATE	04/27/2020
PHASE	100% DESIGN DEVELOPMENT
PROJECT	02220002
SHEET	P001
PLUMBING SYMBOLS AND LEGEND	

THIS DRAWING AND THE INFORMATION THEREIN IS THE PROPERTY OF DESIGN TREE ENGINEERING INC. USE BY THE HOLDER OR DISCLOSURE TO OTHERS WITHOUT THE PERMISSION OF DESIGN TREE ENGINEERING INC. IS PROHIBITED. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION OF DESIGN TREE ENGINEERING INC. REPRODUCTION OF THE MATERIAL HEREIN WITHOUT WRITTEN PERMISSION OF DESIGN TREE ENGINEERING INC. VIOLATES THE COPYRIGHT LAWS OF THE UNITED STATES AND WILL SUBJECT THE VIOLATORS TO LEGAL PROSECUTION.
 COPYRIGHT © 2020 BY DESIGN TREE ENGINEERING

- KEYNOTES**
- ALL PIPING IN SHADED AREA TO MAINTAIN 8'-2" ADA CLEARANCES.
 - INSTALL WITHOUT P-TRAP.
 - SP-1 SHALL INDIRECTLY DISCHARGE INTO STANDPIPE WITH AIR GAP. VENT HAS TO BE A MINIMUM 6-INCHES ABOVE FLOOD RIM OF DRAIN BEFORE GOING HORIZONTAL.
 - SP-2 SHALL DIRECTLY DISCHARGE INTO THE SANITARY SEWER SYSTEM.
 - SPACE RESERVED FOR ELECTRICAL. DO NOT CROSS. COORDINATE PIPING WITH ELECTRICAL EQUIPMENT.
 - COORDINATE FLOOR DRAIN LOCATIONS WITH ARCHITECTURAL PLANS.
 - SAND INTERCEPTOR MUST MEET SECTION 1016 AND APPROVED BY THE ADMINISTRATIVE AUTHORITY: a.) CONSTRUCTION MUST BE BRICK, CONCRETE, PREFABRICATED COATED STEEL, OR OTHER APPROVED WATERTIGHT MATERIAL. b.) INLET AND OUTLET PIPES MUST BE AT LEAST 3-INCHES IN SIZE WITH A 6-INCH MINIMUM WATER SEAL. c.) AN INTERIOR BAFFLE MUST FULLY SEPARATE THE INTERCEPTOR INTO TWO SECTIONS. THE BAFFLE MUST HAVE TWO STAGGERED OPENING WITH THE SAME DIAMETER AND INVERT AS THE OUTLET PIPE. d.) THE INLET SECTION MUST HAVE ANY OPEN GRADE FLUSH WITH THE FINISHED FLOOR. A MINIMUM NET FREE OPENING OF 2 SQUARE FEET AND A MINIMUM DEPTH OF 2- FEET BELOW THE OUTLET INVERT ARE REQUIRED. FOR EACH 5 GALLONS PER MINUTE (GPM) OR FRACTION OVER 20 GPM, THE GRATE INLET AREA MUST BE INCREASED BY 1 SQUARE FOOT. e.) THE MINIMUM AREA OF THE OUTLET SECTION IS ONE-HALF OF THE INLET SECTION. f.) A REMOVABLE SOLID OUTLET SECTION COVER SUITABLE FOR EXPECTED WHEEL LOADINGS FLUSH WITH THE FLOOR.
 - 2" STANDPIPE FOR CONDENSATE DISPOSAL.
 - SP-3 SHALL DISCHARGE TO GRADE WITH SPLASH BLOCK.



1 GROUND FLOOR - PLUMBING PLAN - SANITARY SEWER / STORM PIPING

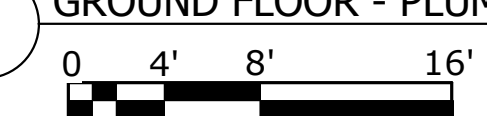


4/27/2020 8:21:36 AM

- KEYNOTES**
1. ALL PIPING IN SHADED AREA TO MAINTAIN 8'-2" ADA CLEARANCES.
 2. SPACE RESERVED FOR ELECTRICAL. DO NOT CROSS. COORDINATE PIPING WITH ELECTRICAL EQUIPMENT.
 3. TERMINATE FLUES PER CODE AND PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
 4. COORDINATE WITH GENERAL CONTRACTOR FOR HOUSEKEEPING PAD UNDER FLOOR MOUNTED PLUMBING EQUIPMENT.



1 GROUND FLOOR - PLUMBING PLAN - DOMESTIC WATER PIPING



4/27/2020 8:21:58 AM

KEYNOTES

1. INSTALL 18" ABOVE FINISHED GRADE.
- 2.



322 1st Ave N, Suite #600
 Minneapolis, MN 55401
 phone: 612.746.4260
 facsimile: 612.746.4754
 www.jlgarchitects.com
 copyright © 2020

DESIGN TREE
 engineering • land surveying
 4001 1st Avenue NE
 55412-1007

PRELIMINARY
 NOT FOR CONSTRUCTION

REVISION SCHEDULE

NO.	DESCRIPTION	DATE
1	Revision 1	Date 1



1 FIRST FLOOR - PLUMBING PLAN

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

DATE: **04/27/2020**
 PHASE: **100% DESIGN DEVELOPMENT**
 PROJECT: **02220002**
 SHEET: **P201**
FIRST FLOOR PLUMBING PLAN

4/27/2020 8:22:08 AM

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE
1	Revision 1	Date 1

KEYNOTES ○

1. 2" VENT SHALL BE INCREASED TO AT LEAST 3-INCHES IN SIZE AFTER A DEVELOPED LENGTH OF 40-FEET.



1 SECOND FLOOR - PLUMBING PLAN

0 4' 8' 16'

4/27/2020 8:22:17 AM

KEYNOTES

1. 2" VENT SHALL BE INCREASED TO AT LEAST 3-INCHES IN SIZE AFTER A DEVELOPED LENGTH OF 40-FEET.



322 1st Ave N, Suite #600
 Minneapolis, MN 55401
 phone: 612.746.4260
 facsimile: 612.746.4754
 www.jlgarchitects.com
 copyright © 2020

DESIGN TREE
 engineering • land surveying
 95 Chiswick Avenue, Suite 100
 Westborough, MA 01581

PRELIMINARY
 NOT FOR CONSTRUCTION

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE
1	Revision 1	Date 1

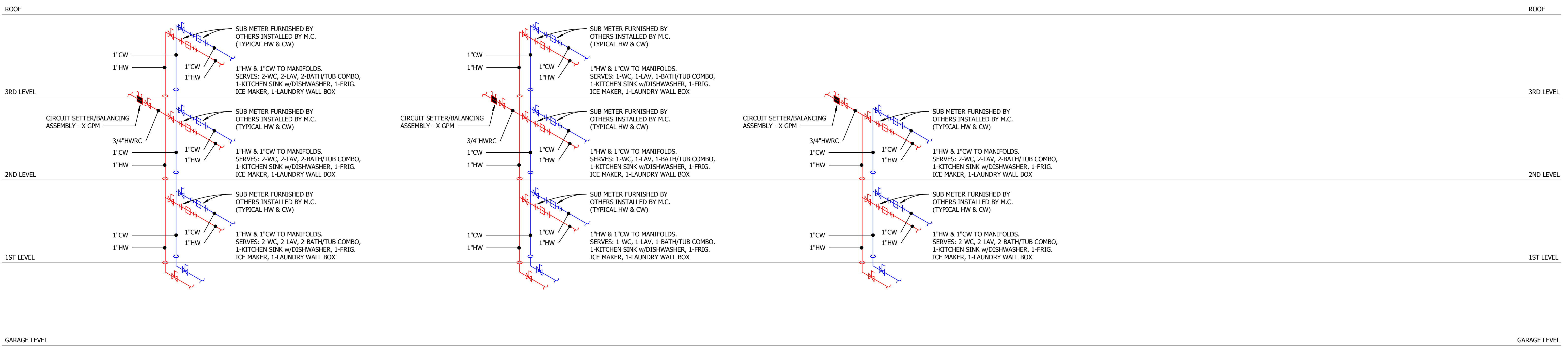


1 THIRD FLOOR - PLUMBING PLAN

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

DATE: 04/27/2020
 PHASE: 100% DESIGN DEVELOPMENT
 PROJECT: 02220002
 SHEET: **P203**
 THIRD FLOOR PLUMBING PLAN

04/27/2020 8:22:22 AM

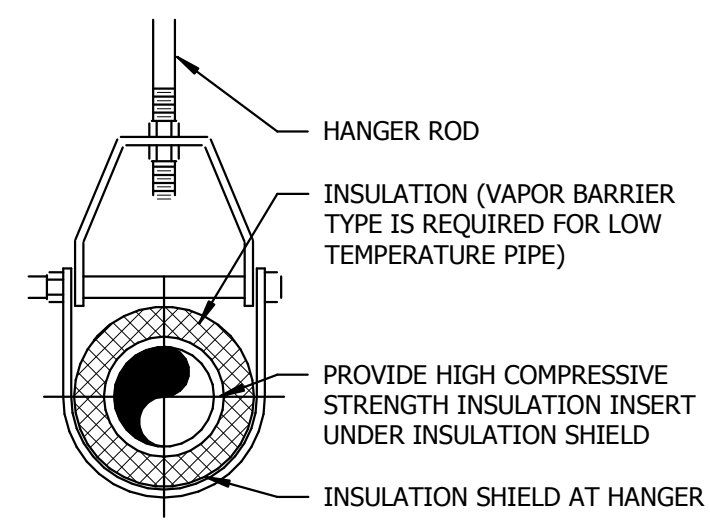


R-1
(XXX HWFU)
(XXX CWFU)

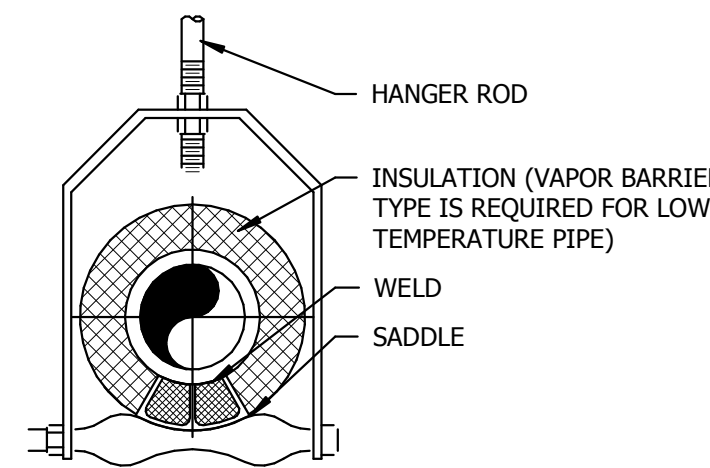
R-2
(XXX HWFU)
(XXX CWFU)

R-3
(XXX HWFU)
(XXX CWFU)

1 DOMESTIC WATER ISOMETRICS
NO SCALE

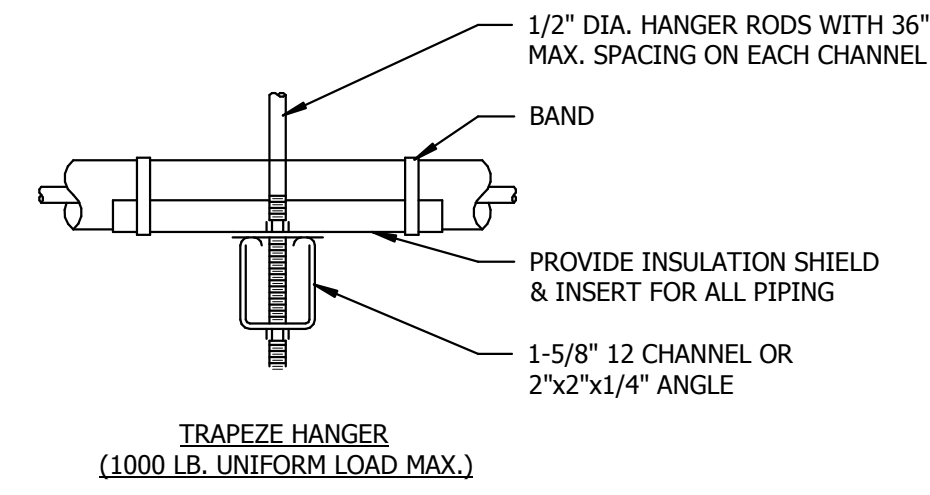


ADJUSTABLE CLEVIS HANGER

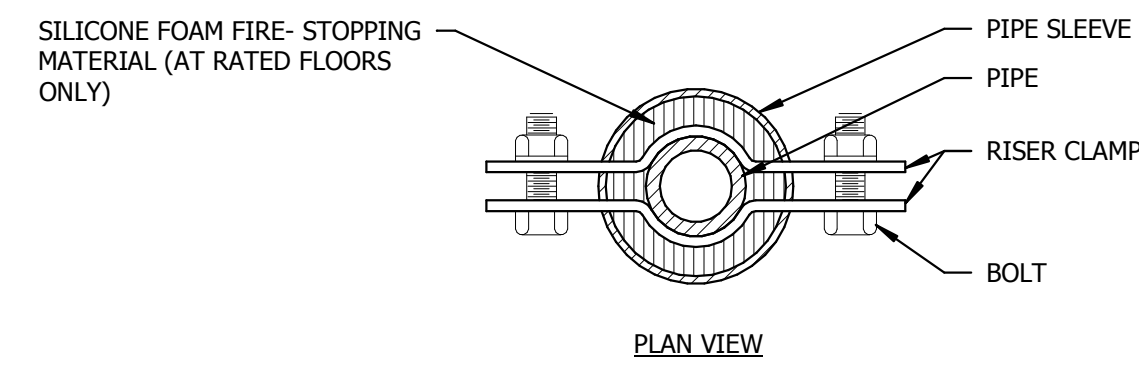


ADJUSTABLE ROLLER HANGER

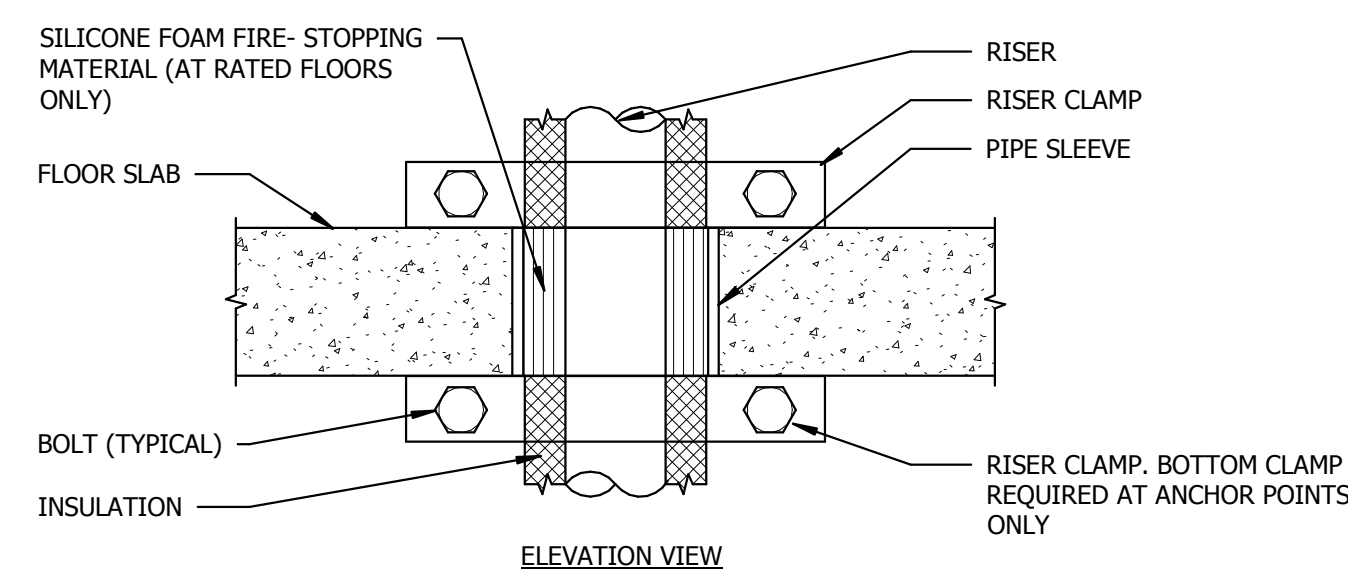
1 TYPICAL PIPE HANGER DETAIL
NO SCALE



TRAPEZE HANGER
(1000 LB. UNIFORM LOAD MAX.)

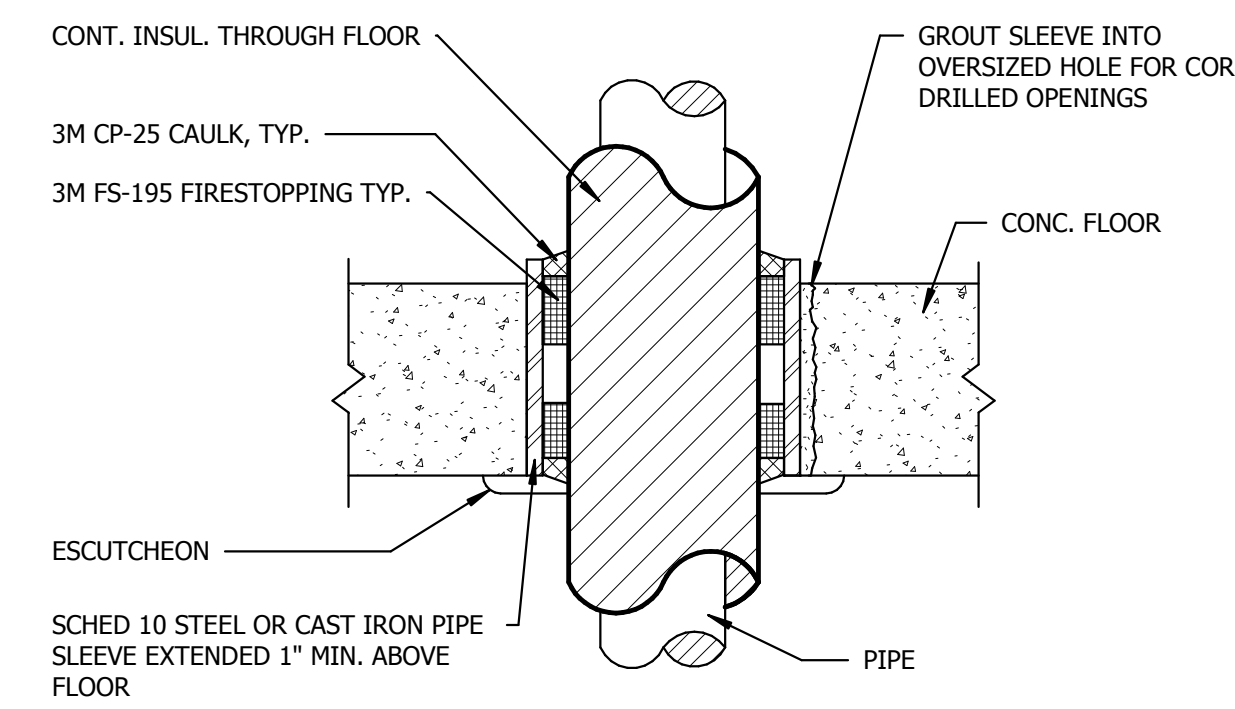


PLAN VIEW

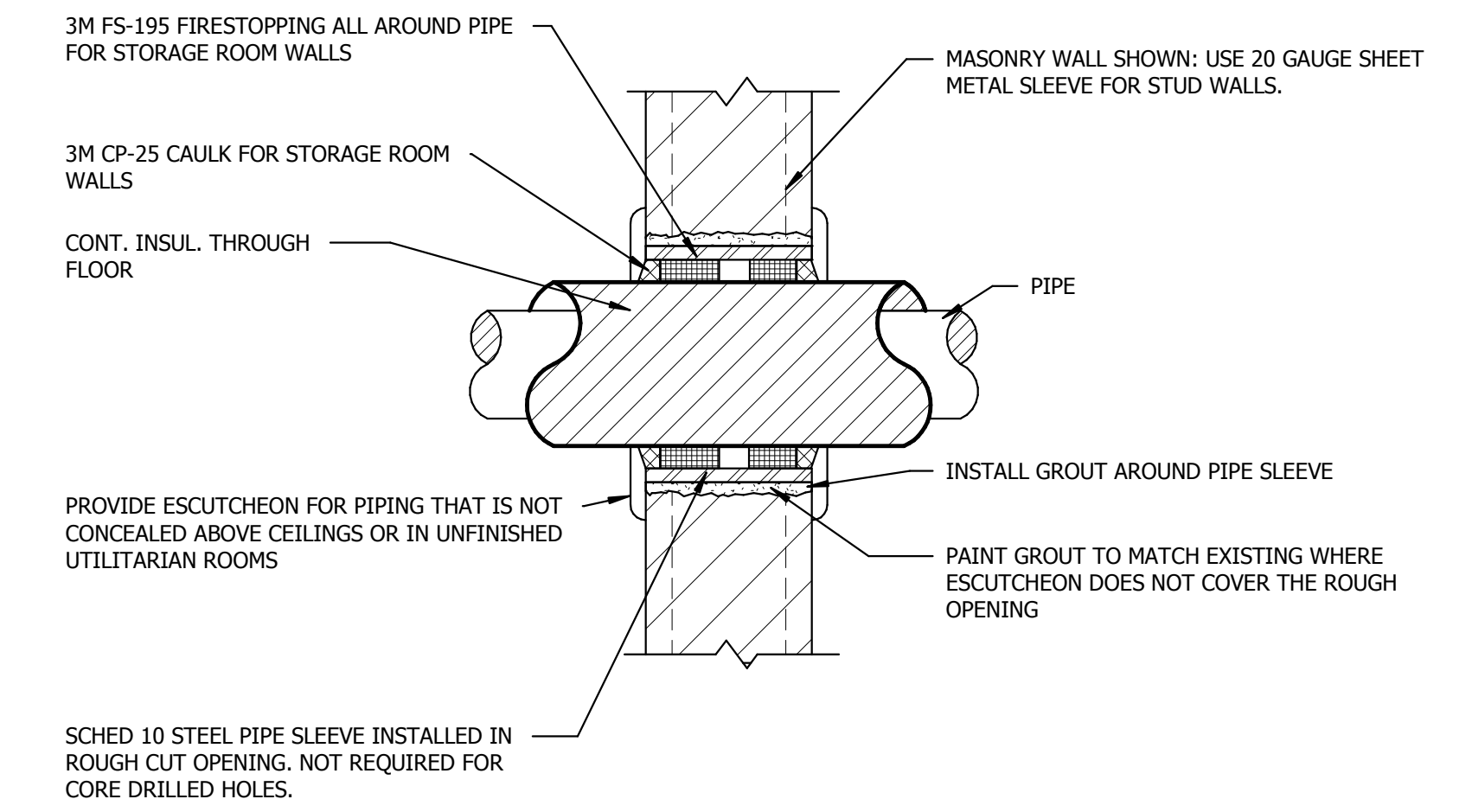


ELEVATION VIEW

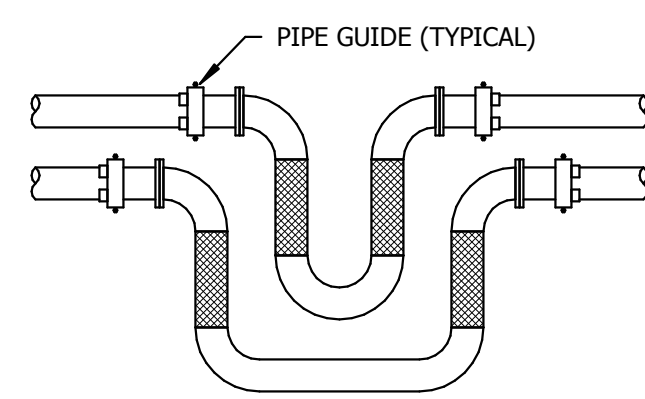
2 VERTICAL SUPPORT/ANCHOR FOR PIPE RISER DETAIL
NO SCALE



3 FLOOR PENETRATION
NO SCALE

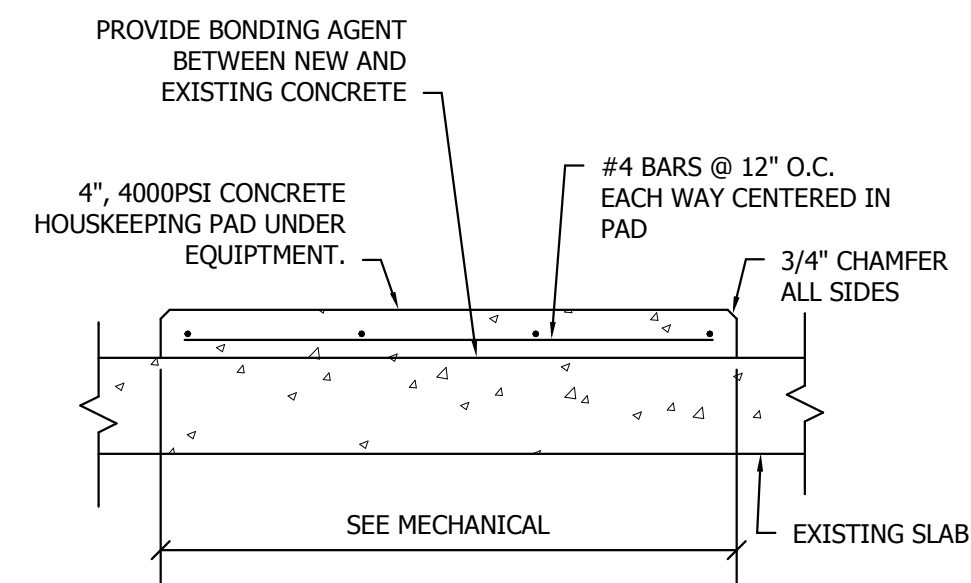


4 WALL PENETRATION
NO SCALE

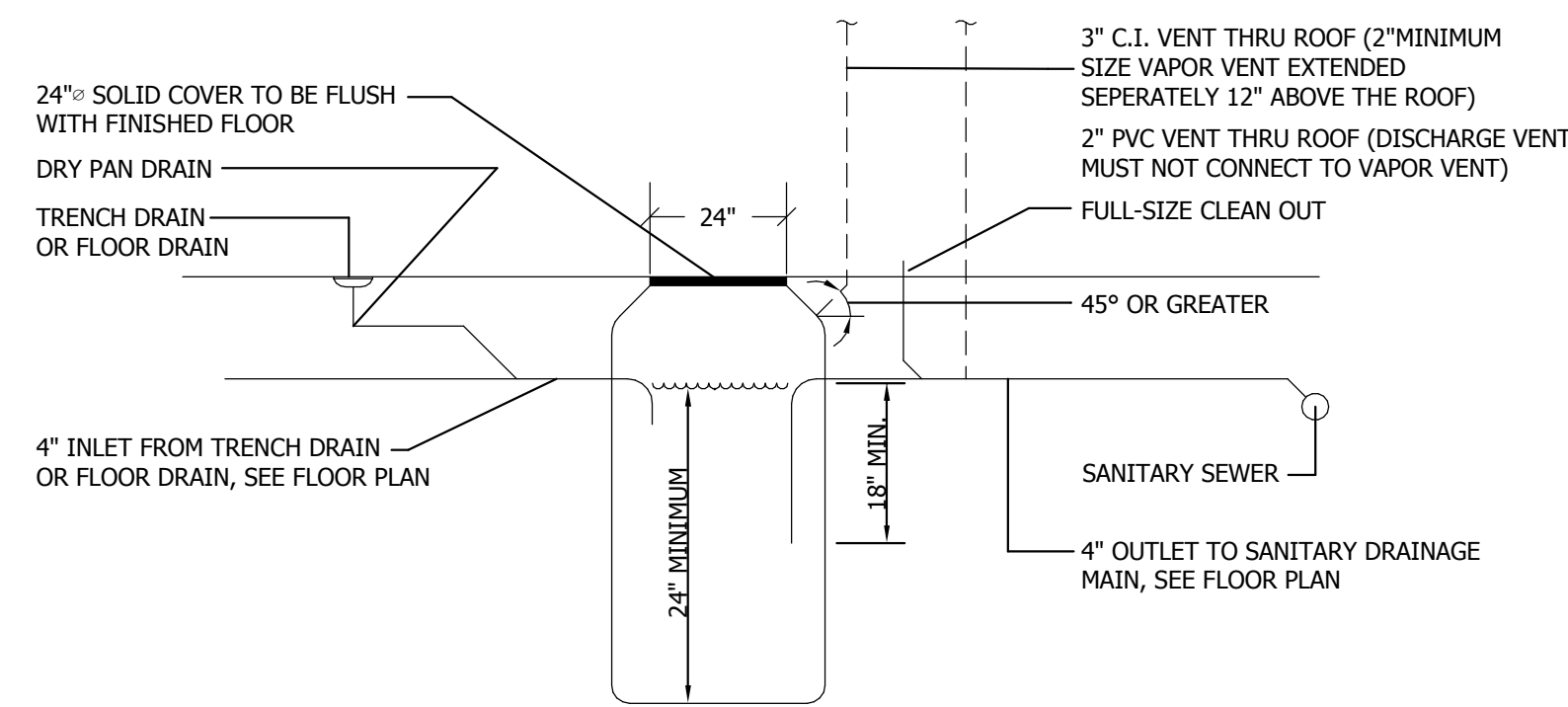


DETAIL NOTES:
1. INSTALL GUIDES AND ANCHOR POINTS AS PER FLEX LOOP MANUFACTURER.

5 EXPANSION LOOP DETAIL
NO SCALE

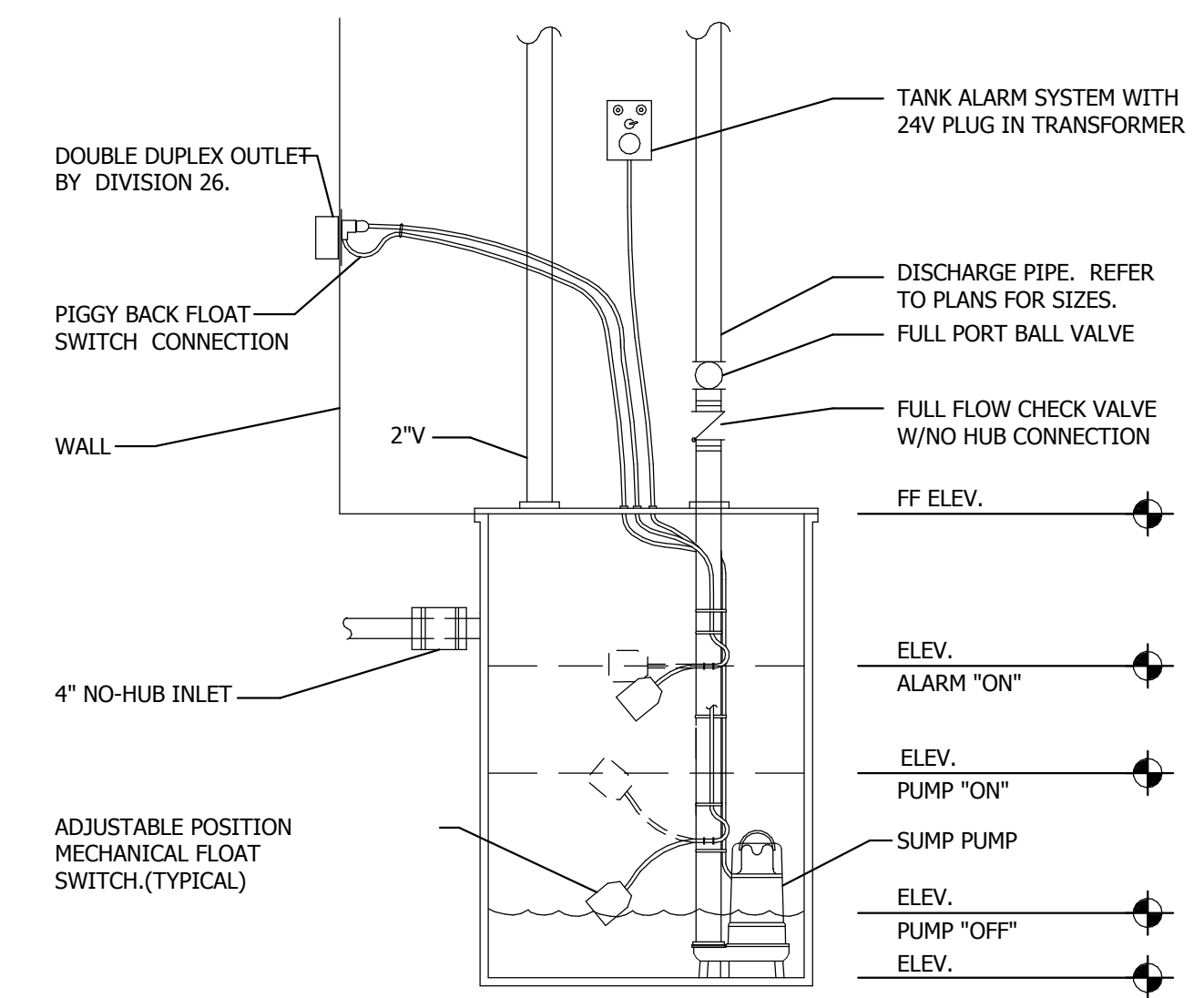


6 HOUSEKEEPING PAD
NO SCALE

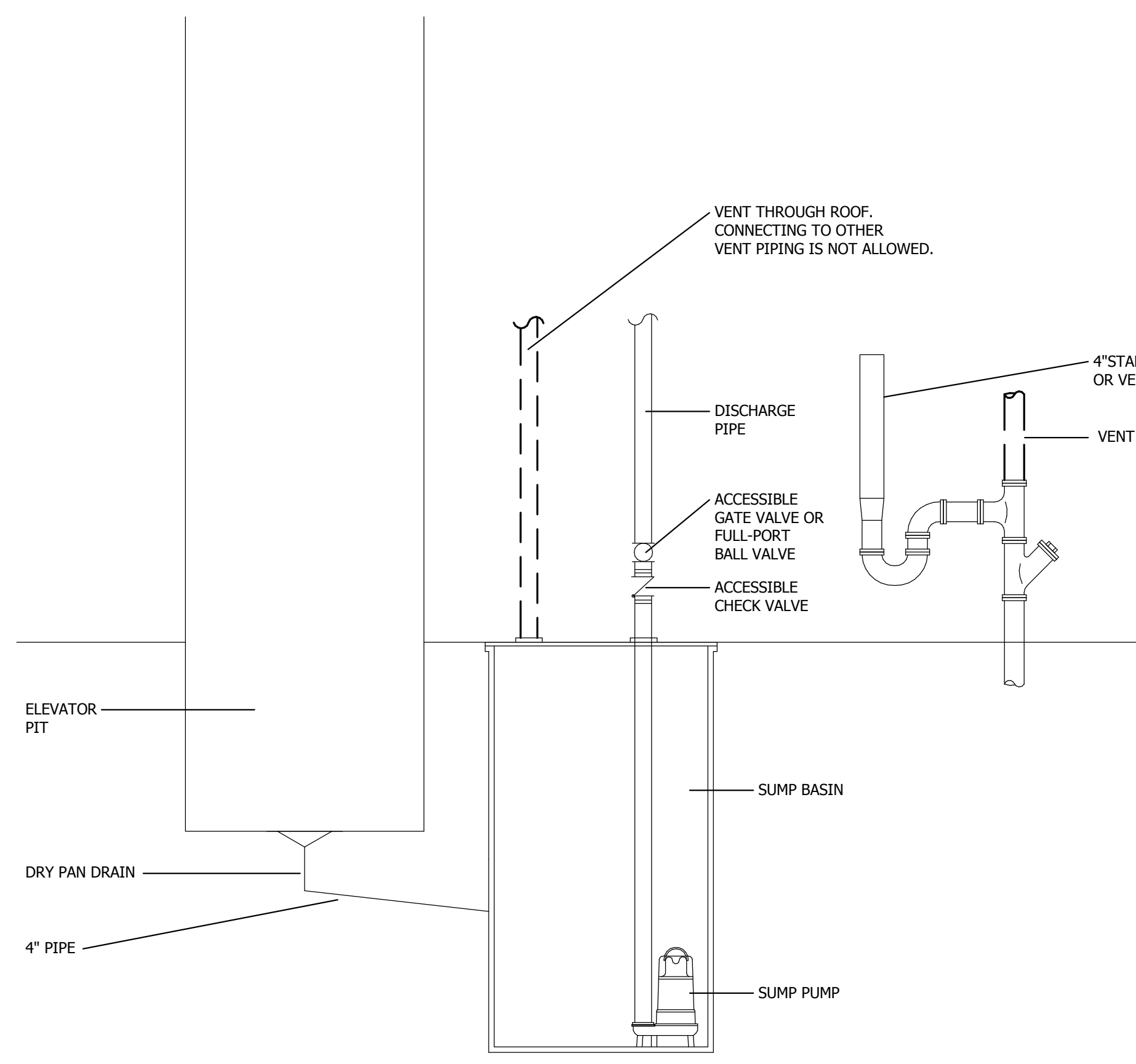


STORAGE AREA:
WHERE UP TO 3 MOTOR VEHICLES ARE STORED, THE INTERCEPTOR MUST HAVE A MINIMUM CAPACITY OF 6 CUBIC FEET. 1 CUBIC FOOT OF CAPACITY MUST BE ADDED FOR EACH VEHICLE UP TO 10 VEHICLES. FOR MORE THAN 10 VEHICLES, THE AUTHORITY HAVING JURISDICTION MUST DETERMINE THE SIZE OF THE INTERCEPTOR REQUIRED.
SERVICE AREA:
WHERE VEHICLES ARE SERVICED, THE INTERCEPTOR MUST BE SIZED A NET CAPACITY OF 1 CUBIC FOOT FOR EACH 100 SQUARE FEET OF SURFACE TO BE DRAINED INTO THE INTERCEPTOR, WITH A MINIMUM OF 6 CUBIC FEET.

7 FLAMMABLE WASTE INTERCEPTOR DETAIL
NO SCALE

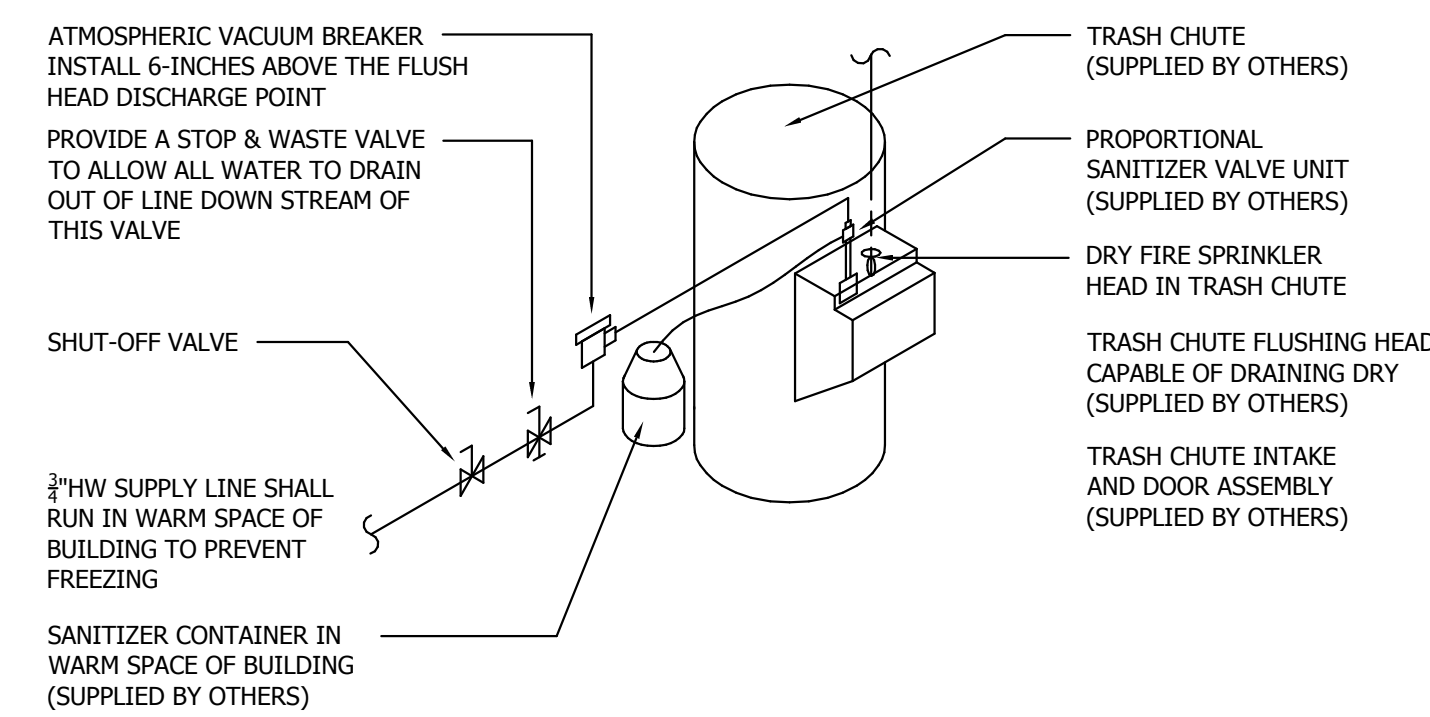


8 SUMP PUMP DETAIL
NO SCALE

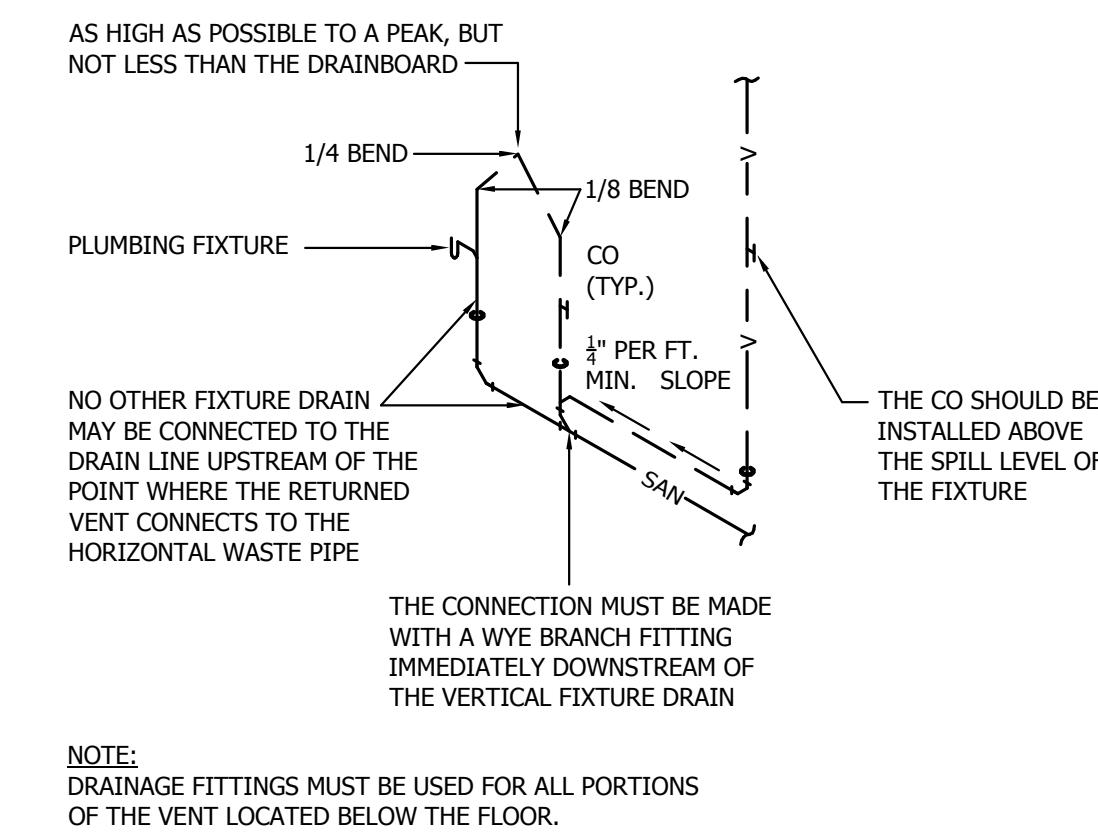


NOTES:
THE SUMP, PUMP AND DISCHARGE PIPING MUST COMPLY WITH THE REQUIREMENTS OF MINNESOTA RULES, CHAPTER 4714, SECTION 710.
MINNESOTA RULES, CHAPTER 4714, SECTION 418.6 AND MINNESOTA RULES PART 1307.0067:
• AN ELEVATOR PIT DRAIN MUST DISCHARGE TO THE SANITARY SEWER USING AN INDIRECT CONNECTION THAT PRECLUDES THE POSSIBILITY OF SEWAGE BACKUP INTO THE PIT. IF A SUMP IS USED, IT MUST BE LOCATED OUTSIDE OF THE PIT WITH A DRY PAN DRAIN FLOWING TO IT.
• SIZING OF PIT DRAINS AND SUMP PUMPS MUST BE AT LEAST 3,000 GALLONS PER HOUR (50 GALLONS PER MINUTE) FOR EACH ELEVATOR INTENDED FOR EMERGENCY FIRE SERVICE (SEE MINNESOTA RULES, CHAPTER 1307, AND ASME STANDARD A17.1 - 2010).

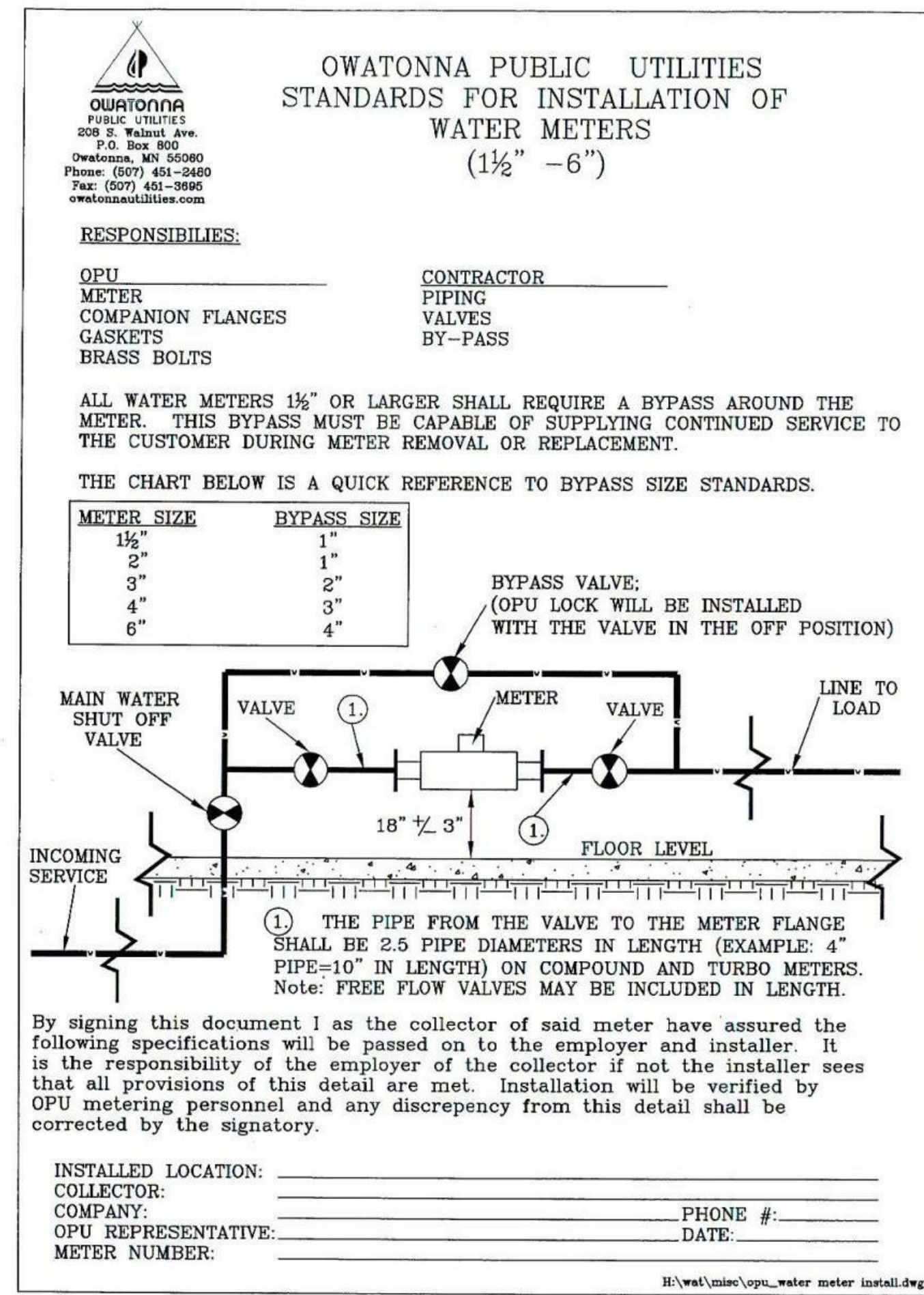
9 ELEVATOR PIT DRAIN DETAIL
NO SCALE



10 TRASH CHUTE WASHDOWN DETAIL
NO SCALE

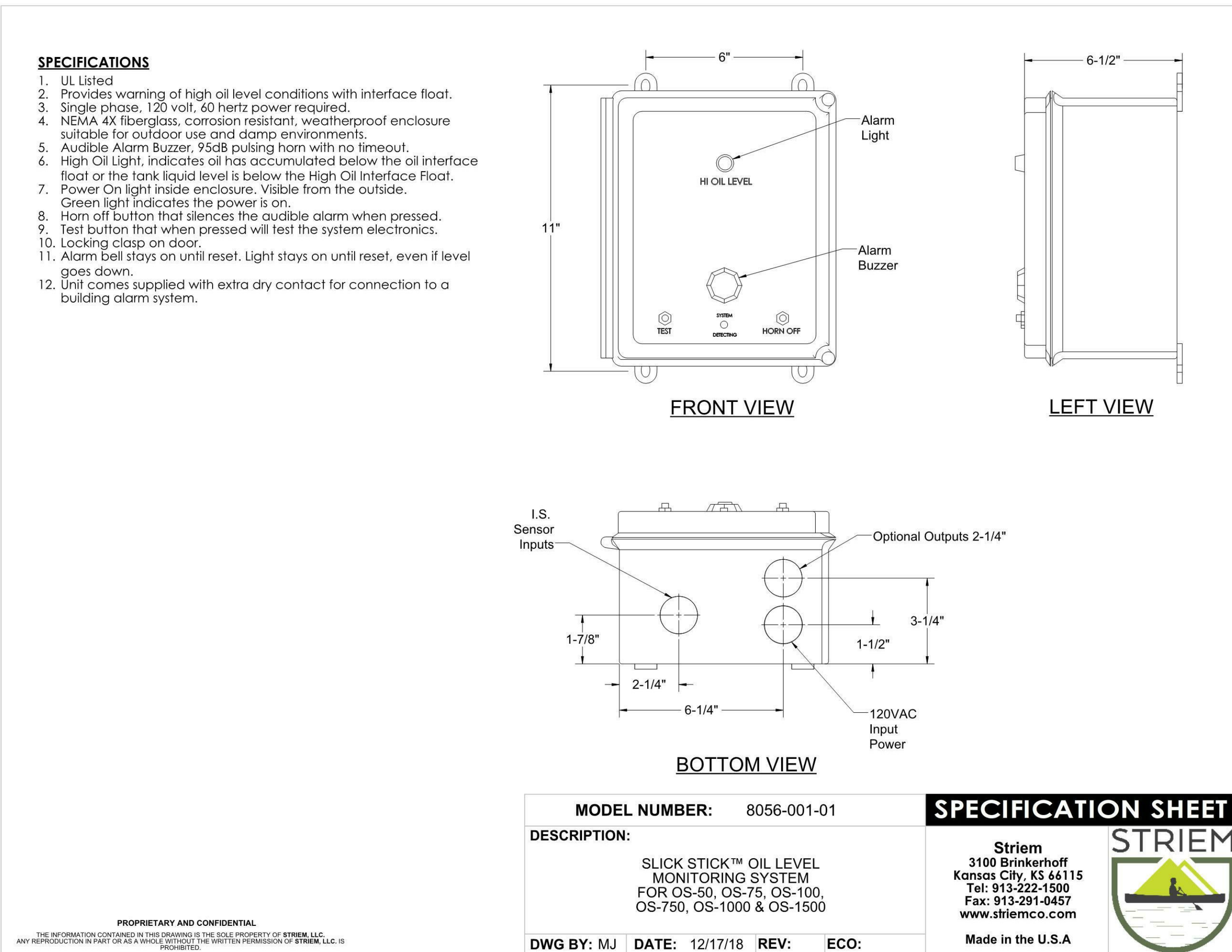
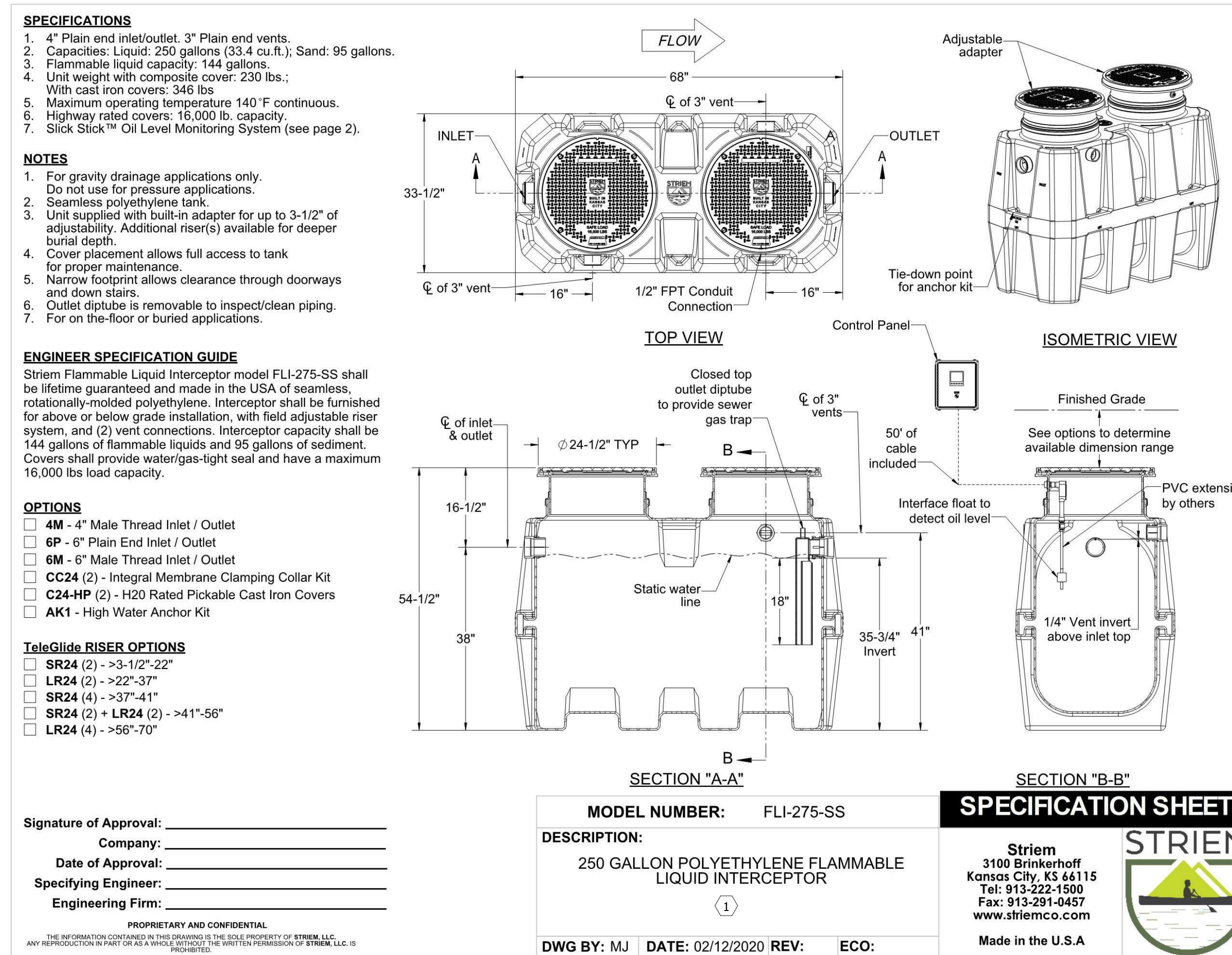


11 ISLAND VENTING DETAIL
NO SCALE



1 WATER METER DETAIL
NO SCALE

2 SAND/FLAM INTERCEPTOR SPEC
NO SCALE



3 SLICK STICK OIL LEVEL MONITORING SYSTEM SPEC
NO SCALE

KEYNOTES

- PROVIDE WITH SLICK STICK OIL LEVEL MONITORING SYSTEM.



DESIGN TREE
 engineering • land surveying
 300.201.5577

PRELIMINARY
 NOT FOR CONSTRUCTION

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

DATE: 04/27/2020
 PHASE: 100% DESIGN DEVELOPMENT
 PROJECT: 02220002
 SHEET: P702
 PLUMBING DETAILS

4/27/2020 8:22:23 AM

PLUMBING FIXTURE DEMAND SCHEDULE			
SANITARY SEWER DEMAND	-	-	658 TOTAL D.F.U.
DOMESTIC WATER DEMAND	428.5 HOT S.F.U.	585.5 COLD S.F.U.	715.5 TOTAL S.F.U.

GAS WATER HEATER SCHEDULE																
UNIT TAG	LOCATION	SERVES	MFGR.	MODEL	STORAGE CAPACITY (GAL.)	FUEL INPUT (BTUH)	THERMAL EFFICIENCY	FUEL TYPE	RECOVERY AT 100° F RISE (GPH)	SUPPLY TEMP (° F)	V/PH/HZ	MCA	MOP	DC SWITCH BY	SHIPPING WEIGHT (LBS)	NOTES
WH-1	UTILITY ROOM-GARAGE LEVEL	BLDG DHW	BOCK	OT199N	99	199,000	96.0%	NG	229	120	120/1/60	5.0	15	ELECTRICAL	670	1,2,3,4,5,6
WH-2	UTILITY ROOM-GARAGE LEVEL	BLDG DHW	BOCK	OT199N	99	199,000	96.0%	NG	229	120	120/1/60	5.0	15	ELECTRICAL	670	1,2,3,4,5,6

NOTES:
1. PROVIDE MOTOR STARTER AND CONVENIENCE OUTLET. COORDINATE WITH ELECTRICAL.
2. PROVIDE TEMPERATURE AND PRESSURE RELIEF VALVE. PIPE TO NEAREST FLOOR DRAIN.
3. PROVIDE 4-INCH THICK CONTINUOUS CONCRETE HOUSEKEEPING PAD UNDER ALL WATER HEATERS.
4. PROVIDE ELBI DXT-35 THERMAL EXPANSION TANK.
5. PROVIDE HEAT TRAP IF NOT PROVIDED BY MANUFACTURER.
6. PROVIDE CONDENSATE NEUTRALIZATION KIT.

PLUMBING FIXTURE SCHEDULE									
ITEM	DESCRIPTION	FIXTURE	TRIM	WASTE	VENT	HOT	COLD		
WC-1	TANK-TYPE WATER CLOSET, 1.28 GPF (STANDARD UNIT)	PROFLO PF5112HEWH TANK, PROFLO PF1401TWH BOWL	PROFLO PFTSE2000WH SEAT	4"	2"	-	1"		3,5
WC-2	TANK-TYPE WATER CLOSET, 1.28 GPF - ADA (ADA UNIT)	PROFLO PF5112HEWH TANK, PROFLO PF1403TWH BOWL	PROFLO PFTSE2000WH SEAT	4"	2"	-	1"		3,5
WC-3	TANK-TYPE WATER CLOSET, 1.28 GPF - ADA (COMMON AREAS)	PROFLO PF5112HEWH TANK, PROFLO PF1403TWH BOWL	PROFLO PFTSC0FE2000WH SEAT	4"	2"	-	1"		3
L-1	DROP-IN LAVATORY (STANDARD UNIT)	PROFLO PF20174	PROFLO PFWSC30165CP, 0.5 GPM	2"	2"	1/2"	1/2"		2,3,6,10,11
L-2	DROP-IN LAVATORY - ADA (ADA UNIT)	PROFLO PF20174	PROFLO PFWSC30165CP, 0.5 GPM	2"	2"	1/2"	1/2"		2,3,6,10,11
L-3	WALL HUNG LAVATORY - ADA (COMMON AREAS)	PROFLO PF5514WH	PROFLO PFWSC3006CP, 0.5 GPM	2"	2"	1/2"	1/2"		2,3,6,10,11
BT-1	TUB/SHOWER (STANDARD UNIT)	AQUATIC BATH 2603SGM	DELTA BT13410 TRIM, DELTA R10000UNWS VALVE, PROFLO PFSH304GCP (1.5 GPM SHOWERHEAD)	2"	2"	1/2"	1/2"		
BT-2	TUB/SHOWER - ADA (ADA UNIT)	AQUATIC BATH 2603SMT	DELTA T13H253 TRIM (1.5 GPM), DELTA R10000UNWS VALVE	2"	2"	1/2"	1/2"		
S-1	DOUBLE BOWL KITCHEN SINK (STANDARD UNIT)	PROFLO PFSR3321653	PROFLO PFX9011CP, LINCOLN PRODUCTS 103137 1.5 GPM AERATOR	2"	2"	1/2"	1/2"		3,21
S-2	DOUBLE BOWL KITCHEN SINK - ADA (ADA UNIT)	PROFLO PFSR3321653	PROFLO PFX9011CP, LINCOLN PRODUCTS 103137 1.5 GPM AERATOR	2"	2"	1/2"	1/2"		3,21
S-3	SINGLE BOWL KITCHEN SINK - ADA (COMMON AREAS)	PROFLO PFSR171963	PROFLO PFX9011CP, LINCOLN PRODUCTS 103137 1.5 GPM AERATOR	2"	2"	1/2"	1/2"		3,21
MS-1	MOP SINK	PROFLO PFM82424	CHICAGO 987-RCF	3"	2"	3/4"	3/4"		3,7,8
H-1	FREEZELESS WALL HYDRANT - EXTERIOR	WOODFORD 65	-	-	-	-	3/4"		3,7
HB-1	INTERIOR WALL FAUCET	WOODFORD 24	-	-	-	-	3/4"		3,7
FD-1	FLOOR DRAIN	JOSAM 30000-5A	-	2"	2"	-	-		3,4
IM-1	ICE MAKER BOX	IPS 88087	-	-	-	-	-		
WB-1	WASHER BOX	IPS 82133	-	2"	2"	3/4"	3/4"		3,19,20
WP-1	WASHER PAN	MUSTEE 99	-	-	-	-	-		
DW-1	DISHWASHER	PROVIDED BY OWNER	-	-	-	3/4"	-		3,9,13,14
DW-2	DISHWASHER - ADA	PROVIDED BY OWNER	-	-	-	3/4"	-		3,9,13,14

NOTES:
1. PIPE SIZING TO BE INDICATED IN SCHEDULE, UNLESS OTHERWISE NOTED ON PLAN.
2. ALL TRAP & WASTE SHALL BE INSULATED AND OFFSET TO BE ADA COMPLIANT.
3. VERIFY ROUGH-IN PRIOR TO PURCHASE OF PLUMBING FIXTURE.
4. SIZES SHOWN ON PLANS.
5. FLUSH HANDLE SHALL BE LOCATED TO MEET ADA REQUIREMENTS.
6. PROVIDE THERMOSTATIC MIXING VALVE THAT CONFORMS TO ASSE 1070 AND LIMITS TEMPERED WATER TO A MAX. 110-DEGREES F. (MODEL LEONARD 170A-5F)
7. FAUCETS EQUIPPED WITH THREADED HOSE CONNECTIONS MUST BE PROVIDED WITH APPROVED BACKFLOW PREVENTERS.
8. PROVIDE FAUCET, VACUUM BREAKER, HOSE END, PAIL HOOK, MOP HOLDER.
9. PROVIDE BACKFLOW PREVENTION AS REQUIRED.
10. PROVIDE WALL MOUNTED FIXTURE CARRIER.
11. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL.
12. MOUNT 6" BELOW HVAC UNIT. COORDINATE WITH HVAC EQUIPMENT. DISCHARGE SHALL BE THROUGH AIR BREAK.
13. VERIFY REQUIREMENTS WITH EQUIPMENT SUPPLIED BY OTHERS.
14. THE WATER SUPPLY CONNECTION TO A COMMERCIAL DISHWASHING MACHINE SHALL BE PROTECTED BY AN AIR GAP OR A BACKFLOW PREVENTION DEVICE IN ACCORDANCE WITH PLUMBING CODE.
15. SHOWERHEAD HEIGHT AT 7'-0" A.F.F. (TYPICAL)
16. A WATER SUPPLY LINE TO A HAND HELD SHOWER SPRAY SHALL BE PROTECTED AGAINST BACKFLOW BY THE USE OF AN IN-LINE VACUUM BREAKER.
17. SHOWERS AND COMBINATION SHOWER-BATHS SHALL BE EQUIPPED WITH ANTI-SCALD CONTROL VALVES. THESE VALVES MUST BE OF THE THERMOSTATIC OR PRESSURE BALANCE TYPE IN ACCORDANCE WITH ANSI/ASSE STANDARD 1016-96. THE INSTALLER MUST VERIFY THAT THE MAXIMUM TEMPERATURE SETTING FROM THE FACTORY IS SET OR ADJUSTED IN...
18. FOR ADA COMPLIANCE, PROVIDE GRAB BARS AND FOLD-UP SEAT.
19. WATER SUPPLY LINES TO AUTOMATIC CLOTHES WASHER MUST BE PROTECTED AGAINST BACKFLOW BY THE USE OF AN AIR GAP OR APPROVED VACUUM BREAKER. DISCHARGE THROUGH AIR BREAK.
20. MOUNT TOP OF WASHER BOX NO MORE THAN 42" A.F.F. COORDINATE WITH MANUFACTURER'S REQUIREMENTS.

PUMP SCHEDULE												
UNIT TAG	LOCATION	SERVES	MFGR.	MODEL	FLOW RATE (GPM)	HEAD (FT)	V/PH/HZ	HP	RPM	DC SWITCH BY	STARTER BY	NOTES
SP-1	GARAGE 011	ELEVATOR SUMP	ZOELLER	I188	50.0	15.0	208/1/60	1 1/2	3450	ELECTRICAL	ELECTRICAL	1,2
SP-2	GARAGE 011	FLAMMABLE WASTE / BLDG. LOWER LEVEL SEWER	ZOELLER	H137	44.0	20.0	208/1/60	1/2	1725	ELECTRICAL	ELECTRICAL	1,4
SP-3	GARAGE 011	BUILDING / ELEVATOR PIT DRAIN TILE	ZOELLER	H161	75.0	20.0	208/1/60	1/2	3450	ELECTRICAL	ELECTRICAL	1
HWCP-1	DOMESTIC WATER & FIRE RISER 013	DHW (120°F)	B&G	NBF-36	9	16.4	120/1/60	270 W	3300	ELECTRICAL	ELECTRICAL	3,5

NOTES:
1. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL 24"Ø x 108" HIGH POLYETHYLENE SUMP BASIN WITH COVER AND ALARM.
2. PUMP SHALL BE AN OIL FREE PUMP WITH SENSORS TO SHUT DOWN PUMP IN CASE OF OIL LEAKAGE.
3. PUMP SHALL BE CONTROLLED BY AQUASTAT SET AT 105°F.
4. PROVIDE WITH BRONZE IMPELLER AND CORROSION RESISTANT CONSTRUCTION.
5. PROVIDE BRONZE OR STAINLESS STEEL CONSTRUCTION.



322 1st Ave N, Suite #600
Minneapolis, MN 55401
phone 612.746.4260
facsimile 612.746.4754
www.jlgarchitects.com
copyright © 2020



PRELIMINARY
NOT FOR CONSTRUCTION

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

DATE	04/27/2020
PHASE	100% DESIGN DEVELOPMENT
PROJECT	02220002
SHEET	P801
PLUMBING SCHEDULES	

E

D

C

B

A

4/27/2020 8:22:23 AM