

PLUMBING SPECIFICATIONS

01 GENERAL CONDITIONS

GENERAL AND SPECIAL CONDITIONS ARE HEREBY MADE AN INTEGRAL PART OF THIS DIVISION OF THE SPECIFICATIONS IN THAT THEY ARE APPLICABLE TO THE WORK UNDER THIS DIVISION UNLESS OTHERWISE NOTED.

PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES.

PERMITS: APPLY FOR AND PAY FOR ALL NECESSARY PERMITS, FEES, AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, BOND PROPERTY ASSESSMENTS AND FACILITIES CHARGE ARE NOT TO BE CONSIDERED TO BE A PART OF THIS CONTRACT.

WARRANTY: PROVIDE ALL MATERIALS AND EQUIPMENT UNDER THIS SECTION OF THE SPECIFICATIONS WITH A ONE YEAR WARRANTY FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER.

THE CONTRACTOR SHALL TIE INTO CIVIL PROVIDED TAP AS INDICATED ON PLANS. ALL COSTS FOR THIS SERVICE SHALL BE PART OF HIS BID CONTRACT PRICE.

PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER PLATED.

PROTECT COPPER PIPING AGAINST CONTACT WITH ALL MASONRY. WHERE COPPER IS SLEEVED THROUGH MASONRY, PROVIDE COPPER OR RED BRASS SLEEVES.

MAKE SURE PROVISIONS ARE INSTALLED IN ALL PIPING SO NO STRAIN OR BREAKAGE RESULTS FROM EXPANSION OR CONTRACTION.

INSTALL WATER PIPING IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.

PITCH ALL WATER PIPES SO THAT ALL PARTS MAY BE DRAINED. THE FORMATION OF SACS AND TRAPS SHALL BE AVOIDED.

PROVIDE SHOCK ARRESTORS WHERE SHOWN ON PLANS FOR THE COMPLETE ELIMINATION OF WATER HAMMER.

STERILIZE DOMESTIC WATER PIPING IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.

SLOPE SANITARY WASTE PIPING 2.5" AND SMALLER AT 1/4" PER FOOT MIN. SLOPE SANITARY WASTE PIPING 3" AND LARGER AT 1/8" PER FOOT MINIMUM.

WHERE WASTE PIPING IS EXPOSED IN REST ROOM AREAS, PROVIDE CHROME PLATED BRASS PIPING, WITH MATCHING STOPS AND ESCUTCHEONS.

PROVIDE REMOVABLE TRAPS WITH INTEGRAL CLEAN-OUT PLUG FOR ALL LAVATOIRES. INSTALL CLEAN-OUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.

INSTALL CLEAN-OUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.

02 MATERIALS AND EQUIPMENT

ALL NEW WORK SHALL BE OF MATERIALS LISTED BELOW OR SHALL MATCH EXISTING. IF A CONFLICT EXISTS BETWEEN MATERIALS AND/OR EQUIPMENT, THE MORE STRINGENT SHALL APPLY AS ADJUDGED BY THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL VERIFY MATERIAL TYPE AND EQUIPMENT.

A. SANITARY SEWER PIPE AND FITTINGS - BELOW GRADE: SERVICE WEIGHT CAST IRON, HUB AND SPIGOT TYPE (ASTM A 74) WITH ELASTOMER COMPRESSION JOINTS. (ASTM C 564)

B. SANITARY SEWER/VENT PIPE AND FITTINGS - ABOVE GRADE: SERVICE WEIGHT CAST IRON, NO-HUB PIPING (ASTM A 888; CISPI 301) WITH HUBLESS COUPLINGS. (ASTM C 1277; CISPI 310)

C. STORM DRAINAGE PIPE AND FITTINGS - BELOW GRADE: SERVICE WEIGHT CAST IRON, HUB AND SPIGOT TYPE (ASTM A 74) WITH ELASTOMER COMPRESSION JOINTS. (ASTM C 564)

D. STORM DRAINAGE PIPE AND FITTINGS - ABOVE GRADE: SERVICE WEIGHT CAST IRON, NO-HUB PIPING (ASTM A 888; CISPI 301) WITH HUBLESS COUPLINGS. (ASTM C 1277; CISPI 310)

E. DOMESTIC WATER PIPING BELOW GRADE: SOFT ANNEALED SEAMLESS COPPER TUBING, TYPE 'K' (ASTM B 88) WITH NO JOINTS BELOW GRADE.

F. DOMESTIC WATER PIPING AND JOINTS ABOVE GRADE: HARD DRAWN SEAMLESS COPPER TUBING, TYPE 'L' (ASTM B 88) WITH 95-5 SILVER SOLDERED JOINTS (ASME B16.19/22) OR PRESSURE SEALED JOINTS WITH EPDM-RUBBER, O-RING SEAL (PROGRESS OR EQUAL).

03 INSULATION

INSULATE DOMESTIC WATER PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH PREFORMED FIBERGLASS OR ENGINEERED POLYMER FOAM INSULATION. FOLLOW THIS SCHEDULE:

SERVICE	PIPE SIZE	THICKNESS
DOMESTIC HOT WATER (105 -140 F)	ALL	1"
DOMESTIC HOT WATER RETURN	ALL	1"
DOMESTIC COLD WATER	ALL	1/2"

PIPEWORK INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY (ASTM E84/NFPA 255) METHOD.

INSULATE HORIZONTAL STORM DRAIN PIPING ABOVE GRADE AND ROOF DRAIN BODIES WITH 1.5" PREFORMED FIBERGLASS OR ENGINEERED POLYMER FOAM INSULATION.

04 VALVES

SHUT OFF VALVES: BRASS/BRONZE, BALL TYPE, FULL PORT, TWO-PIECE, 125 PSI WORKING PRESSURE, NSF 61 APPROVED.

CHECK VALVES: BRASS/BRONZE, SWING TYPE, 125 PSI WORKING PRESSURE, NSF 61 APPROVED.

INSTALL IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. PROVIDE ACCESS DOORS IF REQUIRED.

05 TESTS

ALL SOIL, WASTE, VENT AND WATER PIPING SHALL BE TESTED BY THE CONTRACTOR IN THE PRESENCE OF THE PLUMBING INSPECTOR AND SHALL BE APPROVED BY THE ENGINEER BEFORE ACCEPTANCE. ALL PIPING LOCATED UNDERGROUND OR CONCEALED IN BUILDING CONSTRUCTION SHALL BE TESTED BEFORE BACKFILLING OR CONCEALING PIPE. ALL TESTS REQUIRED FOR EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE OWNER.

06 SEISMIC REQUIREMENTS

PROPERLY SUPPORT AND BRACE VERTICALLY AND HORIZONTALLY ALL PIPING, APPARATUS, EQUIPMENT, ETC. IN ACCORDANCE WITH APPLICABLE CODES TO PREVENT EXCESSIVE MOVEMENT DURING SEISMIC CONDITIONS.

07 WARRANTY

THE CONTRACTOR SHALL GUARANTEE THE COMPLETE PLUMBING SYSTEM AGAINST DEFECTS DUE TO FAULTY MATERIALS, WORKMANSHIP OR MANUFACTURING NEGLIGENCE OF THE CONTRACTOR. THIS GUARANTEE SHALL EXTEND 12 MONTHS FROM DATE OF FINAL ACCEPTANCE. ALL SERVICE CALLS DURING THIS PERIOD SHALL BE PROVIDED BY THE CONTRACTOR.

PLUMBING LEGEND

NEW WORK	ABBREVIATIONS
--- E	A.A.V. AIR ADMITTANCE VALVE
--- RL	AC. ABOVE CEILING
--- SD	ADB. AUXILIARY DRAIN BOX
--- OW	AFF. ABOVE FINISH FLOOR
--- D	BF. BELOW FINISH FLOOR
--- P	BTUH. BRITISH THERMAL UNIT/HOUR
--- O	BS-1. BREAK ROOM SINK
--- U	BV. BALANCING VALVE
--- J	C. CENTER LINE
--- H	C-1. WATER COOLER/FOUNTAIN CLEANOUP
--- K	CV. CHECK VALVE
--- L	CW. COLD WATER
--- M	DC. DOWNSPOUT COVER
--- N	DN. DRAIN
--- O	DW. DISHWASHER
--- P	EC. ELECTRICAL CONTRACTOR
--- Q	ECO. EXISTING CLEANOUP
--- R	ET-1. THERMAL EXPANSION TANK
--- S	EX. EXISTING
--- T	FCO. FLOOR CLEANOUP
--- U	FD. FLOOR DRAIN
--- V	FFH. FREEZE PROOF HYDRANT
--- W	FS. FLOOR SINK
--- X	GC. GENERAL CONTRACTOR
--- Y	GCO. GRADE CLEANOUP
--- Z	HB. HOSE BIBB
--- AA	HCP. HANDICAP
--- AB	HW. HOT WATER
--- AC	HWR. HOT WATER RETURN
--- AD	INV. INVERT ELEVATION
--- AE	IMB. ICE MAKER BOX
--- AF	KW. KITCHEN WASTE
--- AG	L-1. LAVATORY
--- AH	MBH. MILLION BTU
--- AI	MC. MECHANICAL CONTRACTOR
--- AJ	MS-1. MOP SINK
--- AK	NIC. NOT IN CONTRACT
--- AL	PC. PLUMBING CONTRACTOR
--- AM	OD. OVERFLOW ROOF DRAIN
--- AN	ORL. OVERFLOW ROOF LEADER
--- AO	OW. OIL WASTE SANITARY
--- AP	OWS. OIL WASTE SEPARATOR
--- AQ	RCP-1. RECIRCULATION PUMP
--- AR	RD. ROOF DRAIN
--- AS	RL. ROOF LEADER
--- AT	S-1. SINK
--- AU	SA. SHOCK ARRESTOR
--- AV	SS. SANITARY
--- AW	SH-1. SHOWER
--- AX	SD. STORM DRAIN
--- AY	TD-1. TRENCH DRAIN
--- AZ	TP. TRAP PRIMER
--- BA	T&P. TEMPERATURE AND PRESSURE
--- BB	TW. TEMPERED WATER
--- BC	TYP. TYPICAL
--- BD	U-1. URINAL
--- BE	V. VENT
--- BF	VB. VACUUM BREAKER
--- BG	VS. VALVE
--- BH	VS. VENT STACK
--- BI	VP. VENT PIPE
--- BJ	VTR. VENT THRU ROOF
--- BK	W-1. WATER CLOSET
--- BL	WCO. WALL CLEANOUP
--- BM	WH-1. WATER HEATER
--- BN	WP. WASTE PIPE
--- BO	WS. WASTE STACK

SHOCK ARRESTOR TABLE

TAG	PDI WH201 DESIGNATION	FIXTURE UNITS	SELECTION BASED ON	REMARKS
SA#1	AA	1-3	SIoux CHIEF	660 NOTE 1
SA#2	A	4-11	SIoux CHIEF	652-A NOTE 1
SA#3	B	12-32	SIoux CHIEF	653-B NOTE 1
SA#4	C	33-60	SIoux CHIEF	654-C NOTE 1
SA#5	D	61-113	SIoux CHIEF	655-D NOTE 1

1. INSTALL ARRESTORS PER PDI WH201 AND MANUFACTURERS REQUIREMENTS.

PIPE LABEL LEGEND

PLAN DESIGNATION	PIPE LABEL
CW	DOMESTIC WATER
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
SD	STORM DRAINAGE
SS	SANITARY SEWER

NOTES:
1. ALL PIPING WITH THE DESIGNATIONS ABOVE WILL BE LABELED PER ANSI/ASME A13.1 NON-POTABLE SYSTEMS WILL BE LABELED PER PFC SECTION 608.8

PLUMBING DRAWING SCHEDULE

DRAWING NUMBER	DESCRIPTION	SCALE
P-001	LEGEND, DETAILS, & GENERAL NOTES	N/A
P-002	SCHEDULES & DETAILS	N/A
P-101	RETAIL AREA FLOOR PLAN - WASTE	3/16"=1'-0"
P-102	SHOP AREA FLOOR PLAN - WASTE	3/16"=1'-0"
P-103	RETAIL AREA FLOOR PLAN - WATER	3/16"=1'-0"
P-104	SHOP AREA FLOOR PLAN - WATER	3/16"=1'-0"
P-201	FLOOR PLAN - STORM DRAINAGE	1/8"=1'-0"
P-202	ROOF PLAN - PLUMBING	1/8"=1'-0"

PLUMBING NOTES

- ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ISSUE OF THE STATE PLUMBING CODE AND THE NATIONAL FIRE CODES WHICH APPLY.
- P.C. SHALL VERIFY EXACT LOCATION AND INVERT ELEVATIONS OF TIE-IN POINTS TO BUILDINGS EXISTING PLUMBING UTILITIES PRIOR TO ROUGH-IN. ANY CORRD. REQUIRED SHALL BE MADE BY THE CONTRACTOR IN THE FIELD.
- ALL PLUMBING PIPING SHALL BE CLOSELY COORDINATED WITH STRUCTURAL SYSTEM, MECHANICAL SYSTEM AND ELECTRICAL SYSTEM TO INSURE PROPER COMPLIANCE WITH CODES AND INSURE THAT ALL TRADES WILL NOT CONFLICT WITH EACH OTHER.
- IF ANY SUBSTITUTED EQUIPMENT IS SUBMITTED AND APPROVED WITH PLUMBING CONNECTIONS OTHER THAN THAT SHOWN ON THE DRAWINGS AND SCHEDULES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE PROPER PLUMBING CONNECTIONS TO THIS EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DOORS, WINDOWS, WALLS, PARTITIONS, ETC.
- ALL CLEANOUPS SHALL HAVE TOPS ESPECIALLY DESIGNED FOR SPECIFIC FLOOR FINISHES SUCH AS CARPET, TILE, ETC. UNLESS OTHERWISE SPECIFIED.
- ALL FLOOR CLEANOUP, FLOOR DRAIN AND CATCH BASIN TOPS SHALL BE COVERED DURING CONSTRUCTION TO PREVENT DAMAGE TO PARTITIONS.
- VENTS WILL BE COLLECTED ABOVE THE CEILING AND EXTENDED THROUGH THE ROOF AT AS FEW POINTS AS POSSIBLE. VENT PENETRATIONS SHALL AVOID MECHANICAL EQUIPMENT INTAKE AIR LOCATIONS PER CODE REQUIREMENTS.
- EXT. WHERE PIPE SPACE IS PROVIDED OTHERWISE OTHERWISE WORK SHALL SUPPLY WASTE AND VENT RISERS SHALL BE RUN IN WALLS AND PARTITIONS.
- PROVIDE ACCESS PANELS AS REQUIRED AT VALVE LOCATIONS TO PROVIDE ACCESS TO CONTROL VALVES. COORDINATE TYPE AND LOCATION WITH MECHANICAL CONTRACTOR.
- PROVIDE ACCESS TO ALL EQUIPMENT REQUIRING CLEANING OR ADJUSTMENTS.
- P.C. SHALL PROVIDE A PRESSURE REDUCING VALVE WHERE WATER MAIN ENTERS BUILDING IF PRESSURE EXCEEDS 80 PSI. SET PRV @ 75 PSI.
- CONTRACTOR TO LABEL ALL EXTERIOR AND INTERIOR PLUMBING. LETTERS SHALL BE A MINIMUM 4" INCHES HEIGHT.

OIL/WATER INTERCEPTOR

DRAINAGE LOCATION	DRAINAGE AREA
CAR CARE AREA	= 8,200 SQ/FT
	= 8,200 SQ/FT TOTAL AREA

OIL TRAP SIZE = 6 CU/FT FOR 1ST 100 SQ/FT DRAINED; 1 CU/FT PER 100 ADD SQ/FT
 8,200 SQ/FT - 100 SQ/FT = 8,100 SQ/FT; 100 SQ/FT = 6 CU/FT
 8,100 SQ/FT / 100 SQ/FT = 81 CU/FT
 TOTAL CU/FT = 87
 87 CU/FT * 7.48 (GALLONS PER CU/FT) = 651 GALLONS
 1,000 GALLONS = 33 GPM / 782 GALS. OIL CAP.

SIZED PER F.P.C. SECTION 1003.7.2 "GARAGES AND SERVICE STATIONS"

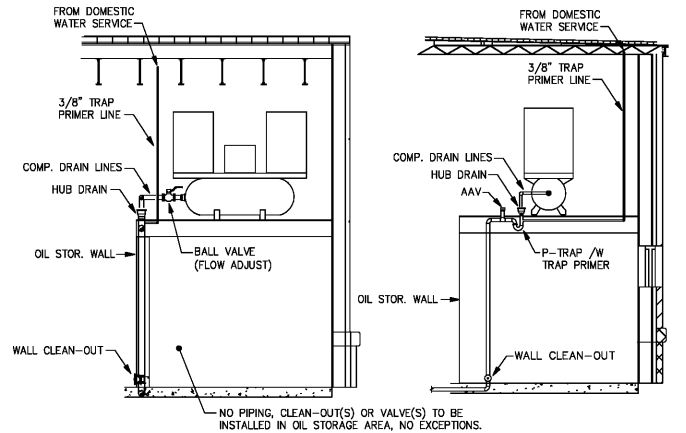
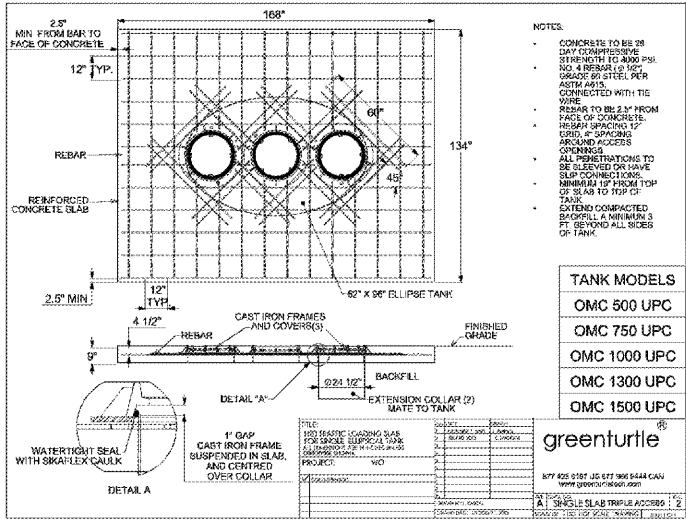
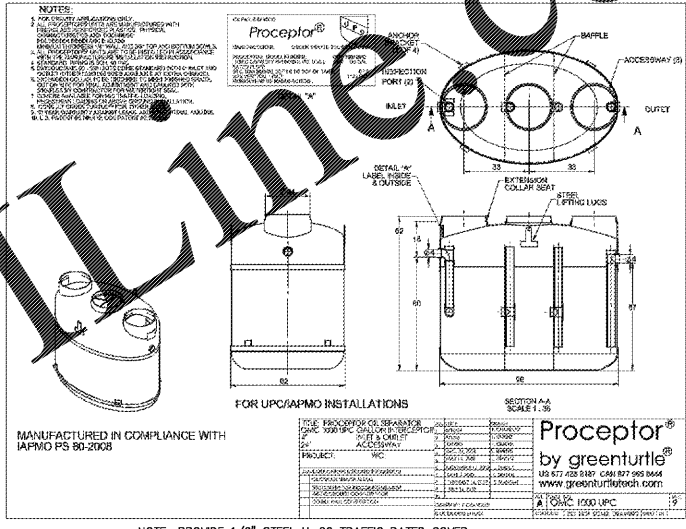
NOTES:
1. PLUMBING CONTRACTOR SHALL PROVIDE VENTS FROM INTERCEPTOR AS REQUIRED BY MANUFACTURER.
2. PLUMBING CONTRACTOR SHALL INSTALL OIL/WATER INTERCEPTOR MANHOLES FLUSH WITH FINISHED GRADE PER MANUFACTURERS REQUIREMENTS.



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1 AIR COMPRESSOR HUB DRAIN DETAIL

SCALE: NONE
NOTE:
CONTRACTOR SHALL SPILL AIR COMPRESSOR DRAIN LINE TO HUB DRAIN WITH A MINIMUM 2" AIR GAP.

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This item has been digitally signed and sealed by McMillan, Jones, P.C. on 06/22/2018 using a Digital Signature.

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ISSUANCE

REVISIONS
NO. DATE DESCRIPTION

FILE NUMBER 18030
PROJECT MANAGER
PROFESSIONAL DRAWN BY CLS
CHECKED BY MMS

LEGENDS, DETAILS, & GENERAL NOTES
P-001