

SECTION 232116

PIPE AND PIPE FITTINGS

PART 1 - GENERAL

1.1 DESCRIPTION: THE WORK INCLUDES BUT IS NOT LIMITED TO, PIPE AND PIPE FITTINGS, COMPLETE.

1.2 QUALITY ASSURANCE:

A. CODES AND STANDARDS: COMPLY WITH APPLICABLE CODES AS LISTED IN SECTION 01011 OF THE SPECIFICATIONS AND FOLLOWING STANDARDS:

1. ASTM - APPLICABLE STANDARDS.
2. ASME - APPLICABLE STANDARDS.
3. CISPI - APPLICABLE STANDARDS.
4. ANSI - APPLICABLE STANDARDS.
5. NCFI - APPLICABLE STANDARDS.
6. MANUFACTURER'S INSTALLATION STANDARDS.
7. NFPA 58.
8. CALIFORNIA TITLE 8.

1.3 SUBMITTALS:

A. SUBMITTALS REQUIRED FOR EACH MATERIAL.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. DELIVERY OF MATERIAL:

1. PIPING SHALL BE Banded, BEARING INTACT GRADE SEALS.
2. ALL CONTAINERS SHALL BE DRY AND CLEAN.
3. OPEN ENDS SHALL BE SEALED.

B. STORAGE OF MATERIAL:

1. MATERIAL SHALL BE PROTECTED FROM THE WEATHER AND DAMAGE.
2. STORE IN LOCATION TO MINIMIZE HANDLING.

1.5 JOB CONDITIONS:

A. PROTECTION: MATERIALS SET IN PLACE SHALL BE PROTECTED TO PRECLUDE DAMAGE.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING:

1. STEEL PIPE: U.S. STEEL, GRINNELL, OR EQUAL.
2. MALLEABLE IRON FITTINGS: WALWORTH, GRINNELL, OR EQUAL.
6. WELDED FITTINGS: TUBE-TURN, ALLIED PIPING, OR EQUAL.

2.2 REQUIREMENTS:

A. PRODUCTS: ALL ITEMS LISTED ABOVE SHALL BE FROM A SINGLE MANUFACTURER, WHERE APPLICABLE.

2.3 BLACK STEEL PIPING AND FITTINGS:

A. SEAMLESS SCHEDULE 80, SEAMLESS ASTM 106B PIPE.

1. FITTINGS: 400 LB. SWP, MALLEABLE IRON, SCHEDULE 80.
- A. THREADED, MALLEABLE IRON.
2. APPLICATION:
  - A. FUEL LINES.

2.4 PIPING PROTECTION:

- A. FACTORY COATED AND WRAPPED STEEL PIPES.
1. ONE COAT OF ASPHALT PRIMERS.
  2. TWO COATS OF HOT ASPHALT.
  3. ONE LAYER OF 15 POUND SATURATED FELT.
  4. ONE COAT OF HOT ASPHALT.
  5. ONE LAYER OF KRAFT PAPER.
  6. CLEAN AND WRAP FIELD JOINTS AND FITTINGS WITH TWO SEPARATE WRAPPINGS.
- B. FIELD WRAPPINGS: SAME AS FACTORY WRAP.
- C. PROVIDE ANODE PROTECTION IN ACCORDANCE WITH NFPA 58.
- D. APPLICATION: ALL FUEL PIPING AND FITTINGS BELOW GRADE.

2.5 FITTINGS:

- A. UNIONS:
1. STEEL PIPE: MALLEABLE IRON, 400 PSI.
- B. NIPPLES SHALL CONFORM TO REQUIREMENTS OF U.S. DEPARTMENT OF COMMERCE STANDARD CS-5 "PIPE NIPPLES, BRASS, COPPER, STEEL AND ALLOY". USE NIPPLES FROM PACKAGES WHICH BEAR MANUFACTURER'S LABELS OR TAG READING "GUARANTEED PIPE NIPPLES CONFORMING TO CS-5 MADE FROM NEW PIPE" OR OTHER WORDS TO THIS EFFECT. MAKE NIPPLES OF SAME MATERIALS AND WEIGHT AS PIPE WHERE ON USED. DO NOT USE CLOSE NIPPLES.
- C. JOINT COMPOUND: EVERSEAL 183 OR EQUAL.
- 2.6 VALVES AND STRAINER:
- A. PRESSURE CONTAINING PARTS OF VALVES SHALL BE OF STEEL OR MALLEABLE IRON.
- B. ALL MATERIALS, INCLUDING SEAT DISCS, PACKING, SEALS AND DIAPHRAGMS SHALL BE RESISTANT TO LP GAS.
- C. VALVES AND STRAINERS SHALL HAVE SERVICE RATING OF 400 PSI.
1. SHUT-OFF VALVE: HEAVY DUTY GLOBE VALVE REGO-A7505AP WITH 3127L RELIEF VALVE AND COMPACT GLOBE VALVE VALVE A7704P WITH 3127L RELIEF VALVE. (LP-GAS EQUIPMENT 651-646-1177)
  1. EXCESS FLOW VALVE: EXCESS FLOW VALVE FOR CONTINUOUS DUTY, TO MATCH TANK CONNECTIONS. (LP-GAS EQUIPMENT 651-646-1177)
  3. STRAINER: APOLLO 316 STAINLESS STEEL Y-STRAINER SERIES 612-03 (C533) MIN 400 PSI.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. GENERAL:
1. NO PIPING SHALL BE PERMANENTLY CLOSED UP, FURRED IN OR COVERED OVER BEFORE IT HAS BEEN TESTED AND INSPECTED.
  2. PIPE AND FITTINGS SHALL BE CLEANED AND INTERNAL SCALE, SAND, DIRT AND OTHER DEBRIS REMOVED BEFORE INSTALLATION.
  3. BUSHING AND SHORT NIPPLES WILL NOT BE PERMITTED.
  4. PIPING SUBJECT TO EXPANSION, CONTRACTION OR SETTLING SHALL BE ANCHORED IN A MANNER THAT PERMITS THE STRESS TO BE EVENLY DISTRIBUTED. RECOMMENDATIONS OF THE PIPE MANUFACTURER SHALL BE STRICTLY ADHERED TO. SWING JOINTS AND EXPANSION LOOPS SHALL BE INSTALLED AS RECOMMENDED BY PIPE MANUFACTURER AND AS INDICATED ON DRAWINGS.
  5. MAKE JOINTS SMOOTH AND UNOBSTRUCTED INSIDE. REAM CUT ENDS TO REMOVE BURRS. REMOVE OBSTRUCTIONS PRIOR TO FABRICATION AND INSTALLATION. CUT THREADS ACCURATELY, THE AXIS OF THE THREAD COINCIDENT WITH THE AXIS OF THE PIPE.
  6. PIPE AND FITTINGS: INSTALL PIPING AND FITTINGS IN ACCORDANCE WITH THE ANSI "CODE FOR PRESSURE PIPE".
  7. SCREWED JOINTS FOR STEEL PIPE: PIPING COMPOUND SHALL BE COMPATIBLE FOR FLUID TO BE CONTAINED WITHIN PIPE. USE PIPE JOINT COMPOUND, RECTORSEAL, OR EQUAL. DO NOT APPLY COMPOUND TO FEMALE THREADS IN FITTINGS AND VALVES.
  8. UNIONS: REQUIRED ON INLET AND OUTLET OF APPARATUS OR EQUIPMENT HAVING SCREWED AND SOLDERED CONNECTIONS 2 INCHES AND SMALLER (UNION SHALL MATCH PIPING MATERIAL).
  9. CHANGE IN PIPE SIZES: MAKE CHANGES IN PIPE SIZES WITH REDUCING ELBOWS, REDUCING TEES OR ECCENTRIC REDUCERS.
  10. TEST PIPING SYSTEMS PRIOR TO COVERING TO 400 PSI FOR 4-HOURS.
  11. ALL EXPOSED PIPING SHALL BE PAINTED. USE (1) BASE-PRIMER COAT AND (1) COAT OF EPOXY PAINT.
  12. PROTECT ABOVE GRADE PIPING FROM VEHICLE DAMAGE.

END OF SECTION

SPECIFICATIONS

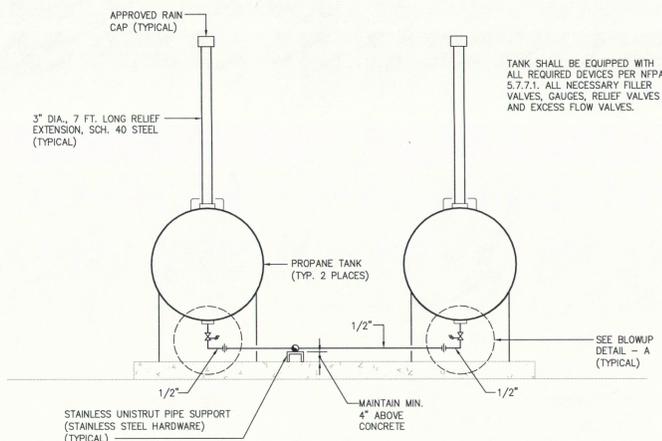
SCALE  
NONE

3

PLUMBING PARTIAL SITE PLAN

SCALE  
1"=20'

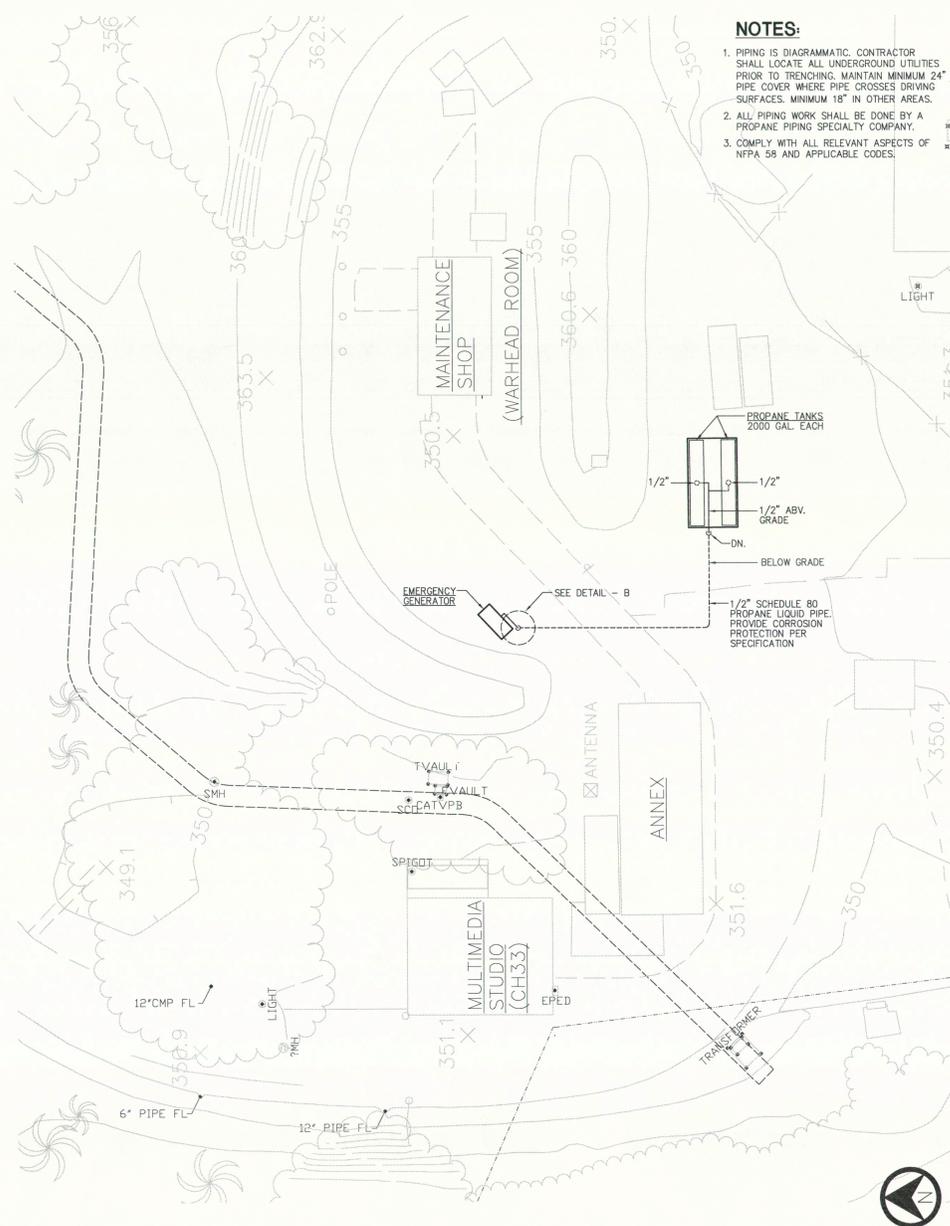
1



SCHEMATIC DIAGRAM AT TANKS

SCALE  
NONE

2



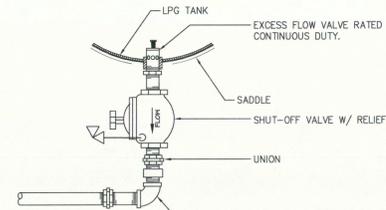
NOTES:

1. PIPING IS DIAGRAMMATIC. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO TRENCHING. MAINTAIN MINIMUM 24" PIPE COVER WHERE PIPE CROSSES DRIVING SURFACES. MINIMUM 18" IN OTHER AREAS.
2. ALL PIPING WORK SHALL BE DONE BY A PROPANE PIPING SPECIALTY COMPANY.
3. COMPLY WITH ALL RELEVANT ASPECTS OF NFPA 58 AND APPLICABLE CODES.

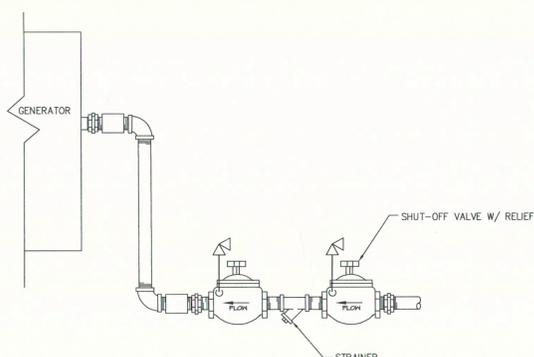
PLUMBING LEGEND		
SYMBOL	ABB	DESCRIPTION
—LP—	LP	LIQUIFIED PETROLEUM (PROPANE)
—SOV—	SOV	SHUT-OFF VALVE (PROPANE LIQUID SERVICE VALVE)
—DN—	DN	DOWN
—UP—	UP	RISER
—UN—	UN	UNION
—POC—	POC	POINT OF CONNECTION
—RV—	RV	RELIEF VALVE
—TYP—	TYP	TYPICAL
—W/—	W/	WITH
—BEL—	BEL	BELOW
—ABV—	ABV	ABOVE
—FLR—	FLR	FLOOR
—U.G.—	U.G.	UNDER GROUND
—A.F.F.—	A.F.F.	ABOVE FINISHED FLOOR
—CONT.—	CONT.	CONTINUATION
—STR—	STR	STRAINER

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE CODES.
2. PIPING SHOWN ON DRAWINGS IS SCHEMATIC ONLY. INSTALL ALL PIPING TO SUIT THE STRUCTURAL CONDITIONS AT SITE. PROVIDE ALL NECESSARY OFFSETS AS REQUIRED.
3. VERIFY EXACT LOCATION, DEPTH, SIZE, AND ADEQUACY OF ALL SERVICES PRIOR TO STARTING OF WORK.
4. ALL NEW POINT OF CONNECTIONS SHALL BE DONE IN SUCH A MANNER SO THAT THE EXISTING UTILITY SHALL BE KEPT IN OPERATION AT ALL TIMES.
5. PROVIDE ALL PROPANE RELIEF VALVES AS REQUIRED.
6. ALL VALVES, PIPING, UNIONS, ETC. SHALL BE SPECIFIC FOR PROPANE LIQUID PIPING.
7. BURIED PIPING SHALL BE WITH 6" SAND BEDDING AND MINIMUM 18" COVER. MAINTAIN MINIMUM 24" PIPE COVER WHERE PIPE CROSSES DRIVING SURFACES.
8. ALL PIPE SUPPORTS SHALL BE HORIZONTAL PIPING 4" OFF GROUND. PROVIDE UNISTRUT SECURED TO CONCRETE PAD, WHERE ABOVE GROUND POUR CONCRETE SUPPORT FOOTING.



DETAIL - A



DETAIL - B

Revisions

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Project No. 10012  
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Sheet Title:  
**PLUMBING  
 SITE PLAN,  
 SPECIFICATIONS  
 AND DETAILS**

Sheet No.  
**P-1.0**