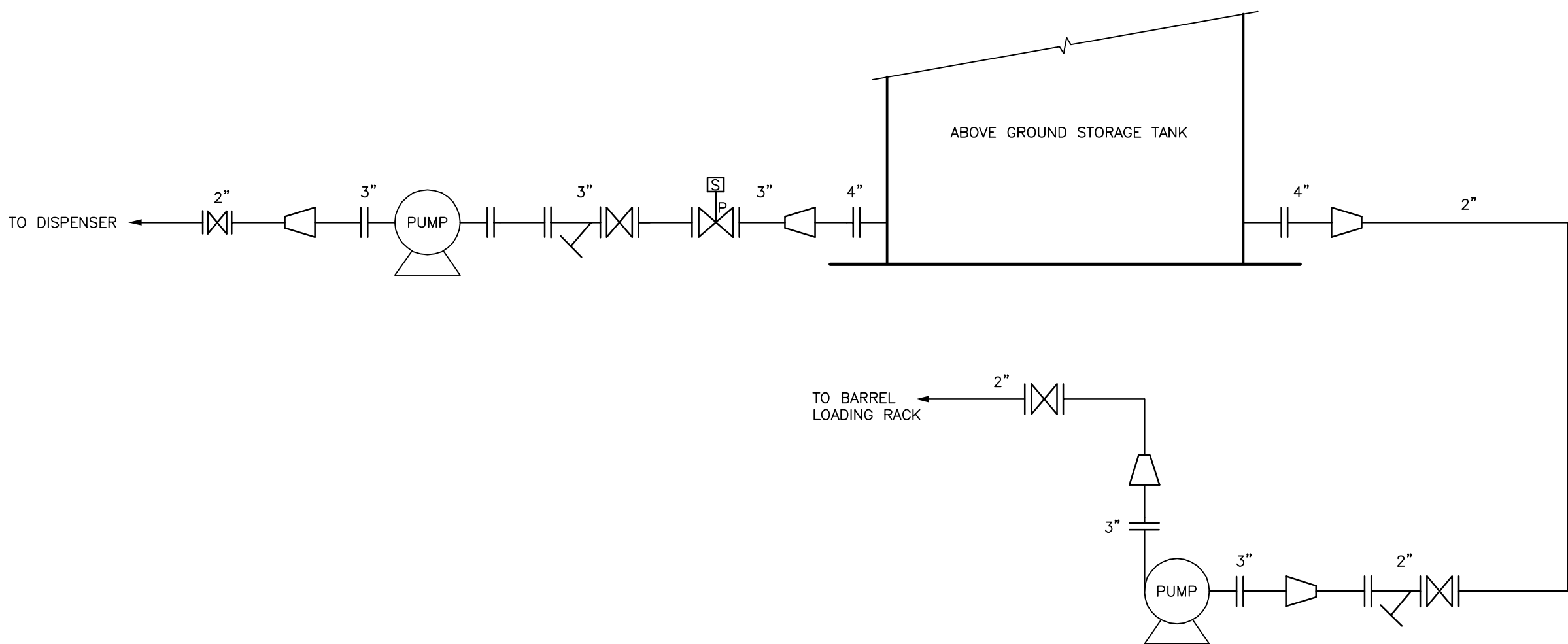
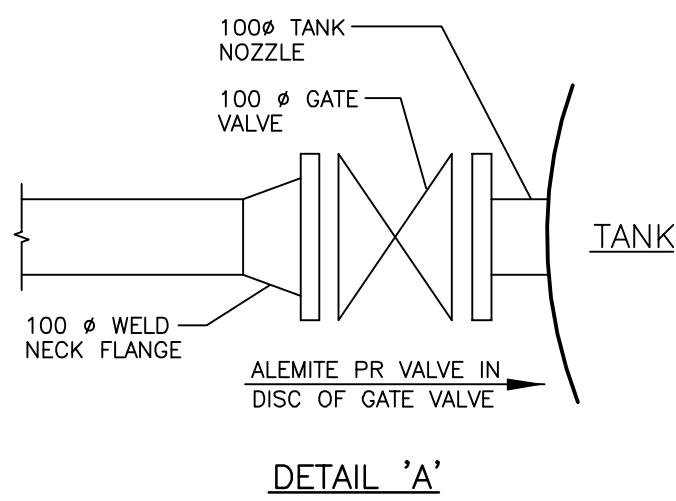


BULK PIPING SCHEMATIC
N.T.S.



CARDLOCK PIPING SCHEMATIC
N.T.S.



ABBREVIATIONS

API	AMERICAN PETROLEUM INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BE	BEVELED END
BLE	BEVELED LARGE END
BS	BRITISH STANDARD
BW	BUTT WELD
CS	CARBON STEEL
CONCN	CONCENTRIC
ELL	ELBOW
ERW	ELECTRIC RESISTANCE WELDED
FS	FORGED STEEL
GR	GRADE
LC	LONG
LR	LONG RADIUS
NPT	NATIONAL PIPE TAPER
OS&Y	OPEN SCREW & YOKE
PR	PRESSURE RELIEF
RF	RAISED FACE
S40	SCHEDULE 40
TSE	THREADED SMALL END
WN	WELDING NECK

ABOVE GROUND PIPE SPECIFICATION

ITEM	DESCRIPTION
PIPE:	
1 1/2" AND SMALLER	ASTM A53 GRADE A OR API 5L GRADE A, SCHEDULE 40, THREADED AND COUPLED.
2" AND LARGER	ASTM A53 GRADE A OR API 5L GRADE A, SCHEDULE 40, BEVELED ENDS. USE THREADED END WHERE NECESSARY TO CONNECT TO SCREWED EQUIPMENT.
FITTINGS:	
1 1/2" AND SMALLER	ASTM A197 MALLEABLE IRON, 150lb, SCREWED.
2" AND LARGER	ASTM A234 GRADE WPB, SCHEDULE 40, BUTT WELD, ELBOWS TO BE LR.
FLANGES:	
ALL	ASTM A181 GRADE 1, 150lb, RF, WN BORE TO SUIT PIPE.
ALL	ASTM A181 GRADE 1, 150 lb, LJ, WITH STUB END TO SUIT PIPE, WHERE NECESSARY TO USE FLANGED DEVICE IN SCREWED PIPING OR WHERE NECESSARY TO USE SCREWED DEVICE IN WELDED AND FLANGED PIPING. USE MINIMUM NUMBER OF LJ FLANGES TO PERMIT ASSEMBLY.
BOLTING:	
ALL	ASTM A193 GRADE B7 STUDS, ASTM A194 GRADE 2H NUTS.
GASKETS:	
ALL	STAINLESS STEEL SPIRAL WOUND W/ FLEXIBLE-GRAPHITE FILLER.
UNIONS:	
1 1/2" AND SMALLER	300 lb, SCREWED, ASTM A197 MALLEABLE IRON.
STRAINERS:	
1 1/2" AND SMALLER	300 lb, SCREWED, MALLEABLE IRON, 80 MESH SCREEN FOR GASOLINE, 49 MESH SCREEN FOR DIESEL.
2" AND LARGER	150 lb, RF, CS BODY, 80 MESH SCREEN FOR GASOLINE, 49 MESH SCREEN FOR DIESEL.
VALVES:	
GATE: 1 1/2" AND SMALLER	300 lb, SCREWED, MALLEABLE IRON, 13% CHROMIUM STEEL TRIM, ISRS.
2" AND LARGER	150 lb, RF, CS, 12% CHROMIUM STEEL TRIM, OS&Y. PROVIDE ALEMITE RELIEF VALVE IN VALVE DISK SET TO RELIEF AT 50 psi.
CHECK: 1 1/2" AND SMALLER	SWING-STYLE, 300 lb, SCREWED, MALLEABLE IRON.
2" AND LARGER	SWING-STYLE, 150 lb, RF, 12% CHROMIUM STEEL TRIM.
SOLENOID: 1 1/2" AND SMALLER	EXPLOSION PROOF SNAPTITE GREEN TOP STAINLESS STEEL SOLENOID VALVE, 120V COIL, NORMALLY CLOSED C/W HUNG PISTON
2" AND LARGER	EXPLOSION PROOF SNAPTITE GREEN TOP STAINLESS STEEL SOLENOID VALVE, 120V COIL, NORMALLY CLOSED C/W HUNG PISTON

BRANCHING TABLE

	1/2	3/4	1	1 1/4	1 1/2	2	3	4	6
1/2	T								
3/4	T	T							
1	T	T	T						
1 1/4	T	T	T	T					
1 1/2	T	T	T	T	T				
2	S	S	S	S	S	T			
3	S	S	S	S	S	W	T		
4	S	S	S	S	S	W	W	T	
6	S	S	S	S	S	W	W	W	T

T - TEE
S - SOCKOLET WITH THREADED NIPPLE AS REQUIRED
W - WELDOLLET OR REDUCING TEE

CARDLOCK EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	MODEL #	SUPPLY BY		INSTALL BY		COMMENTS
				CONT.	OWNER	CONT.	OWNER	
☒	SCREWED GATE VALVE	BONNEY FORGE	150# CS, 12% CHROME TRIM, OS&Y		X	X		
☒☒	FLANGED GATE VALVE	BONNEY FORGE	150# RF, CS, 12% CHROME TRIM, OS&Y		X	X		TANK NEST (SITE SPECIFIC)
☒	GATE VALVE	BONNEY FORGE	150# RF, CS, 12% CHROME TRIM, OS&Y		X	X		TANK NEST (SITE SPECIFIC)
☒	SWING/CHECK VALVE	BONNEY FORGE	150# RF, CS, 12% CHROME TRIM		X	X		REFER TO DWG. RP-STD-M005 (MATERIAL LIST)
☒☒	ACTUATED VALVE, SOLENOID PILOT ACTUATED.	SNAP-TITE	6214 SERIES, SOLENOID PILOT ACTUATED.		X	X		REFER TO RP-STD-C001
☒☒	VALVE WITH INTEGRAL THERMAL RELIEF	ALEMITE & FLOWSERVE	-----		X	X		REFER TO BULK PLANT_P02 ABOVE GROUND PIPE SPECIFICATION CHART
☒☒	STRAINER	FLEXICRAFT	150# RF STRAINER, CS BODY, 80 MESH SCREEN-GASOLINE 49 MESH SCREEN-DIESELS		X	X		ALTERNATIVE SPECIFICATION
☒☒	CONCENTRIC REDUCER	BONNEY FORGE	CONCN. REDUCER, BW, S40, CS, ASTM A-234, GR WPB	X		X		
☒☒	ELBOW 90°	BONNEY FORGE	LR ELL, BW, S40, CS, ASTM A-234, GR WPB	X		X		
☒☒	ELBOW 45°	BONNEY FORGE	LR ELL, BW, S40, CS, ASTM A-234, GR WPB	X		X		
☒☒	ELBOW 15°	BONNEY FORGE	LR ELL, BW, S40, CS, ASTM A-234, GR WPB	X		X		
☒☒	PUMPS	BLACKMER	REFER TO BULK PLANT_P01 PUMP SCHEDULE		X	X		

CONSULTANT



CTM DESIGN SERVICES LTD.

210, 340 Midpark Way S.E., Calgary, Alberta, T2X 1P1
Tel. 403.640.0990 • Fax 403.259.6506 • www.ctmdesign.ab.ca

FILE/DWG No. 27070

NUMBER

TITLE

REFERENCE DRAWINGS

NO.

DATE

DESCRIPTION

BY

APP'D

REVISIONS



HUSKY OIL MARKETING COMPANY
A Division of Husky Oil Limited

PIPING DETAILS & LEGEND
BULK PLANT PROTOTYPE

Husky

LOCATION NO.

0000

DRAWN BY

AK

SCALE

1:1

DATE

2007-08-02

FILE

P02

DRAWING NO.

BULK PLANT_P02

REV.