

CROYDON PIPE LINE COMPANY  
HILL TOP WELL #1  
2010

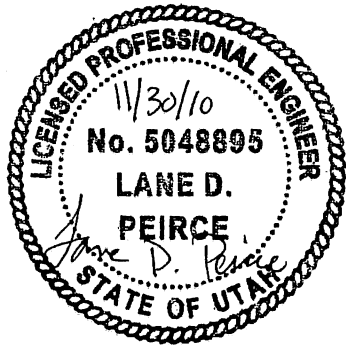
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BOARD MEMBERS

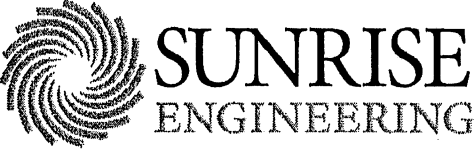
APPROVALS

STEVE PENTZ-----PRESIDENT  
LOGAN WILDE-----TREASURER  
CLINT THOMAS-----BOARD MEMBER  
PHIL TOONE-----BOARD MEMBER  
CHRIS SAVERS-----BOARD MEMBER  
MATT THOMPSON-----BOARD MEMBER

STEVE PENTZ, PRESIDENT DATE  
CROYDON PIPELINE COMPANY  
  
*Lane Peirce* 11/30/10  
LANE PEIRCE, P.E. DATE  
PROJECT MANAGER



PREPARED BY:  
SUNRISE ENGINEERING, INC.  
12227 SOUTH BUSINESS PARK DRIVE, SUITE 220  
DRAPER, UTAH 84020  
TEL (801) 523-0100  
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\*DESIGN CRITERIA

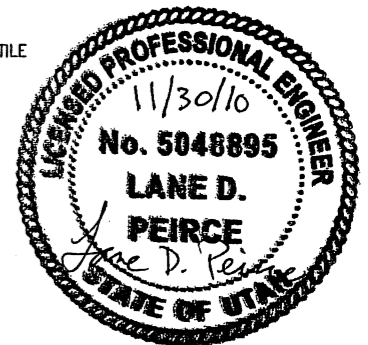
CROYDON HILL TOP WELL EST. PUMPING RATE=100 GPM  
 DISCHARGE PIPE SIZE=4" INCHES  
 EST. WELL HEAD ELEVATION=5509 FT  
 STATIC PRESSURE AT WELLHOUSE= 10 PSI


\*TOTAL DYNAMIC HEAD

EST. ELEVATION: WELLHEAD TO TANK=26 FT  
 EST. STATIC WATER LEVEL=400 FT  
 EST. WELL PUMPING RATE=150 GPM  
 EST. SYSTEM FRICTION LOSSES=16 FT  
 EST. TOTAL DYNAMIC HEAD=442 FT  
 PUMP MOTOR HORSE POWER=20 HP  
 \*WELL HAS NOT BEEN DRILLED THEREFORE ALL VALUES ARE ESTIMATES.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING TREES, WHERE APPLICABLE.
2. THE CONTRACTOR SHALL INSTALL ALL THRUST RESTRAINTS PER PLANS.
3. THE WORK IN CROYDON IS LOCATED WITHIN MORGAN COUNTY AND MUST COMPLY WITH MORGAN COUNTY STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL THE NECESSARY CONSTRUCTION PERMITS AND FEES.
4. THE CONTRACTOR SHALL NOT HAVE MORE THAN 500 FT. OF OPEN TRENCH AT ANY TIME DURING CONSTRUCTION, AND SHALL NOT HAVE ANY OPEN TRENCHES LEFT OVERNIGHT.
5. ALL MAIN LINE FLUSHING WILL BE SUPERVISED BY A RESIDENT INSPECTOR. THE PRESIDENT OF THE CROYDON PIPELINE COMPANY WILL BE NOTIFIED FOR TIME, TESTING AND DURATION OF ANY FLUSHING AND TESTING 48 HOURS IN ADVANCE.
6. WRAP ALL DUCTILE IRON PIPELINES WITH POLYETHYLENE WRAP.
7. THE CONTRACTOR SHALL NOT BEND PIPE JOINTS MORE THAN ALLOWABLE BY MANUFACTURER'S RECOMMENDATION.
8. THE CONTRACTOR SHALL PROPERLY GREASE ALL BOLTS AND PLASTIC WRAP ALL METAL TO THE MANUFACTURER'S & ENGINEERS SPECIFICATIONS.
9. ALL CONSTRUCTION WORK SHALL BE PERFORMED WITHIN EXISTING RIGHT-OF-WAYS, LEASED LAND, OR EASEMENTS OBTAINED FOR CONSTRUCTION PURPOSES.
10. THE APPROXIMATE LOCATION OF EXISTING UTILITIES IS SHOWN ON THE PLANS THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING BLUE STAKES FOR STAKING ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR HAS THE ULTIMATE RESPONSIBILITY TO LOCATE AND PROTECT ALL UTILITIES (ABOVE AND UNDERGROUND). ANY UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. THE EXISTING SYSTEM AND THE PROPOSED IMPROVEMENTS ARE SHOWN AS ACCURATELY AS POSSIBLE. ALL PIPELINE LOCATIONS AND SIZES ARE SHOWN ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER. HOWEVER, THE ACTUAL FIELD CONDITIONS MAY VARY. ADDITIONAL WORK MAY BE REQUIRED AND LIKEWISE PROPOSED WORK MAY BE ELIMINATED BASED ON FIELD CONDITIONS. SUCH WORK SHALL REQUIRE APPROVAL BY THE ENGINEER.
12. ALL DEBRIS RESULTING FROM WORK ON THE PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE APPROPRIATE ARRANGEMENTS FOR DISPOSAL SITES AT WHICH DEBRIS MAY BE LAWFULLY DISPOSED.
13. THE CONTRACTOR SHALL PROVIDE MEANS OF MANAGING ANY STORM WATER, GROUND WATER, OR NUISANCE WATER FROM INTERFERING WITH THE CONSTRUCTION OPERATION. COST OF CONTROLLING ALL WATER SHALL BE INCLUDED IN THE CONTRACT PRICE FOR RELATED BID ITEMS.
14. THE CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS DURING CONSTRUCTION.
15. THE WATER SYSTEM SHALL BE CONSTRUCTED TO CONFORM WITH THE STANDARDS SET FORTH IN THE "STATE OF UTAH RULES FOR PUBLIC DRINKING WATER SYSTEMS."
16. ALL PIPELINES SHALL BE INSTALLED AT A MINIMUM DEPTH TO TOP OF PIPE OF 6'-0" OR AS OTHERWISE DIRECTED BY THE ENGINEER AND OWNER. WATER LINE TO SEWER LINE SEPARATIONS OF A MINIMUM OF 10 FEET HORIZONTAL AND 18 INCHES VERTICAL SHALL BE MAINTAINED. WHERE NOT POSSIBLE, SPECIAL CONSTRUCTION IS REQUIRED IN ACCORDANCE WITH UTAH DEQ RULES R309-550-7. IN NO CASE SHALL WATER LINES BE CONSTRUCTED UNDER SEWER LINES WITHOUT SPECIAL CONSTRUCTION PER DEQ RULES.
17. EXISTING WATER SERVICE SHALL BE LEFT IN OPERATION DURING CONSTRUCTION PERIOD.
18. ALL DEBRIS RESULTING FROM THE PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR. FINAL GRADE OF DISTURBED AREA IS SUBJECT TO THE ENGINEERS APPROVAL AND IS TO BE DONE WITH NEAT WORKMANSHIP.
19. UPON THE COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT A COMPLETE AND LEGIBLE SET OF AS-BUILT PLANS TO THE ENGINEER.
20. ALL PVC PIPE SHALL BE AWWA C900, DR 18 PVC (CLASS 235) UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL FITTINGS SHALL BE DUCTILE IRON AND BE RESTRAINED PER TYPICAL DETAILS IN THIS PLAN SET.
21. ALL DUCTILE IRON PIPE SHALL BE (CLASS 350).
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SWPP REQUIREMENTS AND SHALL INCLUDE THIS PRICE IN THEIR BIDS
23. THE CONTRACTOR SHALL ABIDE BY ALL DAVIS-BACON WAGE AND OTHER REQUIREMENTS AS DISCUSSED IN THE SPECIFICATION BOOK.
24. THE CONTRACTOR SHALL COMPLETE ALL FORMS AS SHOWN IN THE SPEC BOOK ASSOCIATED WITH THE PROJECT OR THEIR BID WILL BE CONSIDERED INCOMPLETE.



REV. NO.	COMMENT	DATE
 <b>SUNRISE ENGINEERING</b> 12227 SOUTH BUSINESS PARK DRIVE, SUITE 220 DRAPER, UTAH 84020 TEL 801.523.0100 • FAX 801.523.0990 www.sunrise-eng.com		
<b>CROYDON PIPELINE COMPANY</b> <b>HILL TOP WELL #1</b>		
<b>DESIGN CRITERIA/CONSTRUCTION NOTES</b>		
SEI NO. 03562	DESIGNED LDP	DRAWN AAD
CHECKED LDP	SHEET NO. 3 of 30	G3

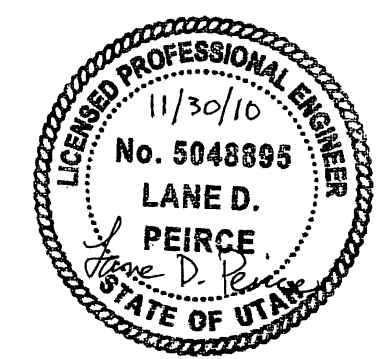
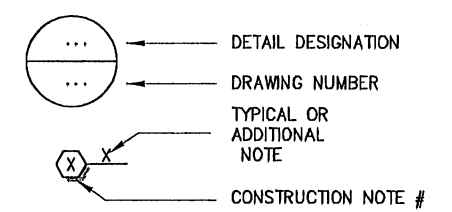
## ABBREVIATIONS

AB	ANCHOR BOLT	HB	HOSE BIB
AC-FT	ACRE FOOT	IN. OR "	INCH
ALUM.	ALUMINUM	ID	INSIDE DIAMETER
∠	ANGLE	INSUL.	INSULATION
APPROX.	APPROXIMATELY	INV.	INVERT
ASSY.	ASSEMBLY	IPS	IRON PIPE SIZE
⊙	AT	IRR	IRRIGATION
AV	ALTITUDE VALVE	LF	LINEAR FEET
B.M.	BENCH MARK	MH	MANHOLE
B.F.	BLIND FLANGE	MFR.	MANUFACTURER
B.W.	BOTH WAYS	MAX.	MAXIMUM
BTM.	BOTTOM	MECH.	MECHANICAL
BLDG.	BUILDING	MGD.	MILLION GALLONS PER DAY
BTV	BUTTERFLY VALVE	MIN.	MINIMUM
CI	CAST IRON	MJ	MECHANICAL JOINT
CL	CENTER LINE	MON	MONTH
CLR	CLEARANCE	NO. OR #	NUMBER
CONC.	CONCRETE	NPT	NATIONAL PIPE THREAD
CONN	CONNECTION	O.C.	ON CENTER
CMP	CORRUGATED METAL PIPE	OD	OUTSIDE DIAMETER
CPLG.	COUPLING	PL	PLATE
CFM	CUBIC FEET per MINUTE	PE	POLYETHYLENE
CFS	CUBIC FEET per SECOND	PVC	POLYVINYL-CHLORIDE
CY	CUBIC YARD	LB. OR #	POUND
DEG. OR °	DEGREE	PSI	POUNDS per SQUARE INCH
DIA. OR Ø	DIAMETER	PRV	PRESSURE REDUCING VALVE
DWG.	DRAWING	PSV	PRESSURE SUSTAINING VALVE
DI	DUCTILE IRON	R	PROPERTY LINE
EA.	EACH	RAD	RADIUS
E.F.	EACH FACE	REQ'D.	REQUIRED
ELL.	ELBOW	REV.	REVISION
ELEV.	ELEVATION	R/W	RIGHT-OF-WAY
ETC.	ETCETERA	SPEC.	SPECIFICATION
EXIST.	EXISTING	SQ.	SQUARE
E.W.	EACH WAY	SF	SQUARE FEET
FT OR'	FEET	SI	SQUARE INCHES
F.G.	FINISH GRADE	ST. STL.	STAINLESS STEEL
FTG.	FITTING	STD.	STANDARD
FLG	FLANGE	STA	STATION
FLEX.	FLEXIBLE	TYP.	TYPICAL
FRP	FIBER REINFORCED PLASTIC	UBC	UNTREATED BASE COURSE
GAL.	GALLON	VERT.	VERTICAL
GALV.	GALVANIZED	W/	WITH
GSP OR GS	GALVANIZED STEEL PIPE	W/O	WITHOUT
GI	GALVANIZED IRON PIPE		
GA.	GAUGE		
GPM	GALLONS per MINUTE		
GV	GATE VALVE		
HORIZ.	HORIZONTAL		

## LEGEND

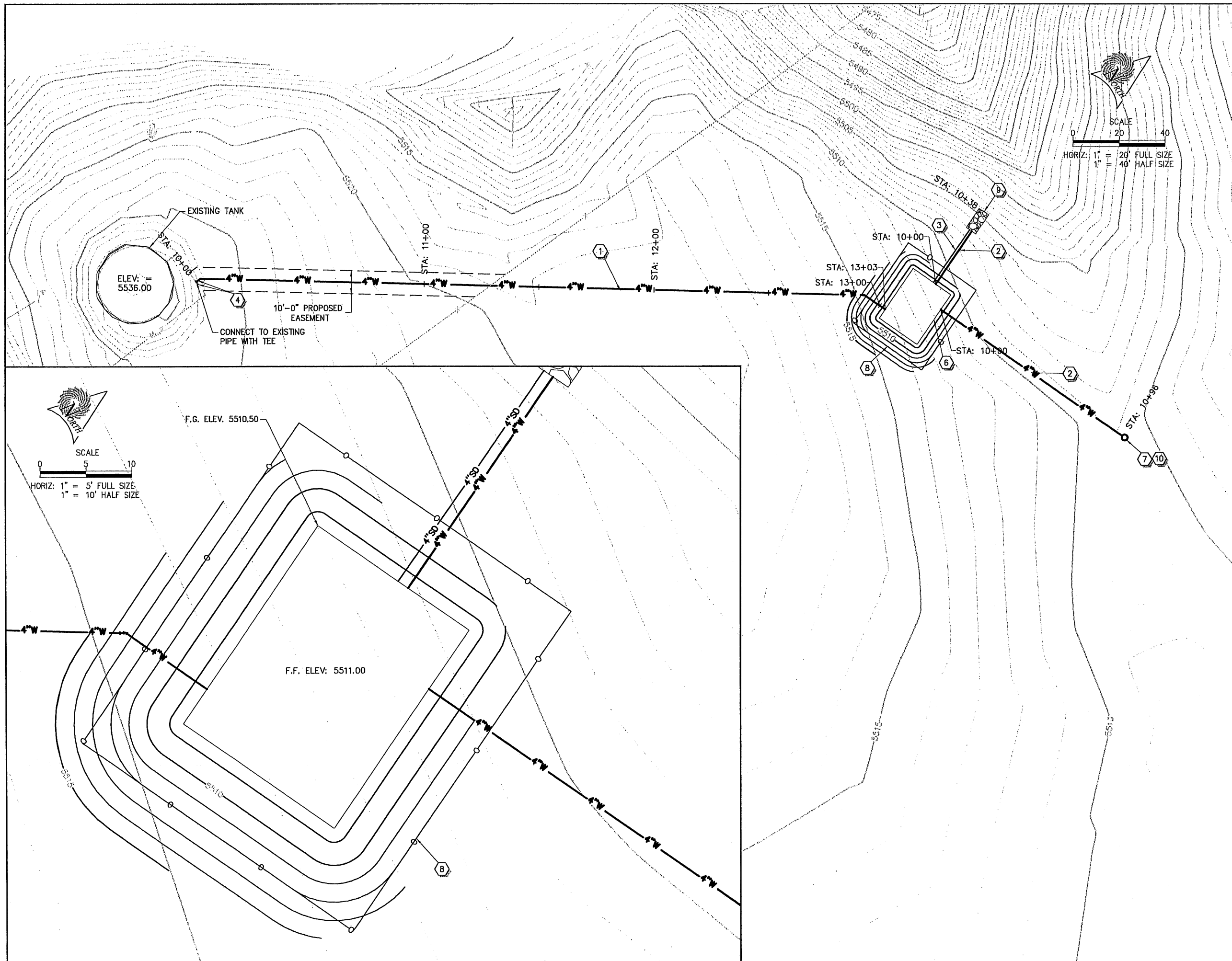
EXISTING	PROPOSED
ROAD	INDEX CONTOUR
EASEMENT	INTERMEDIATE CONTOUR
INDEX CONTOUR	EASEMENT
INTERMEDIATE CONTOUR	WATER TRANSMISSION LINE
WATER TRANSMISSION LINE	FENCE
FENCE	STORM DRAIN
	45° BEND
	GATE VALVE
	RIPRAP
	WELL HEAD

OTHERS
CROSS REFERENCING
CONSTRUCTION NOTES



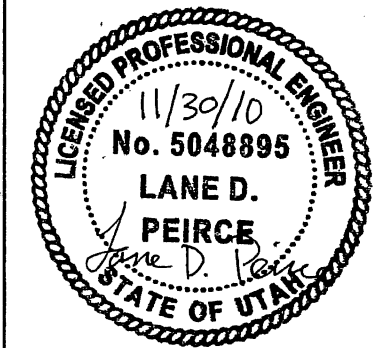
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<b>SUNRISE ENGINEERING</b> 12227 SOUTH BUSINESS PARK DRIVE, SUITE 220 DRAPER, UTAH 84020 TEL 801.523.0100 • FAX 801.523.0990 www.sunrise-eng.com		
<b>CROYDON PIPELINE COMPANY</b> <b>HILL TOP WELL #1</b> <b>ABBREVIATIONS &amp; LEGEND</b>		
SEI NO. 03562	DESIGNED LDP	DRAWN AAD
CHECKED LDP	SHEET NO. 4 of 30	<b>G4</b>

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CONSTRUCTION NOTES

- ① PROPOSED 4" PVC C900 DR18 (C/D2)
- ② PROPOSED 4" D.I. PIPE (CLASS 350) (C/D2)
- ③ PROPOSED 3" SCHEDULE 40 PVC
- ④ PROPOSED 4" GATE VALVE (C/D4)
- ⑤ NOT USED
- ⑥ PROPOSED WELL HOUSE
- ⑦ PROPOSED PITLESS ADAPTER (B/D2)
- ⑧ PROPOSED CHAINLINK FENCE W/ GATE (A/D4) (B/D4)
- ⑨ PROPOSED PUMP TO WASTE OUTLET DITCH (A/D2)
- ⑩ PROPOSED 20 HP. GRUNDFOSS 150S200-11 SUBMERSIBLE PUMP OR APPROVED EQUAL. SEE SPEC SP14117 SUBMERSIBLE WELL PUMP WITH PITLESS ADAPTER.



WELL HOUSE EXCAVATION:  
 ESTIMATED CUT: 95yd<sup>3</sup>  
 ESTIMATED FILL: 0yd<sup>3</sup>  
 NET FILL: 95yd<sup>3</sup>

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<b>CROYDON PIPELINE COMPANY</b> <b>HILL TOP WELL #1</b> <b>SITE PLAN</b>		
DESIGNED LDP	DRAWN AAD	CHECKED LDP
SET NO. 03562	SHEET NO. 5 of 30	SP