

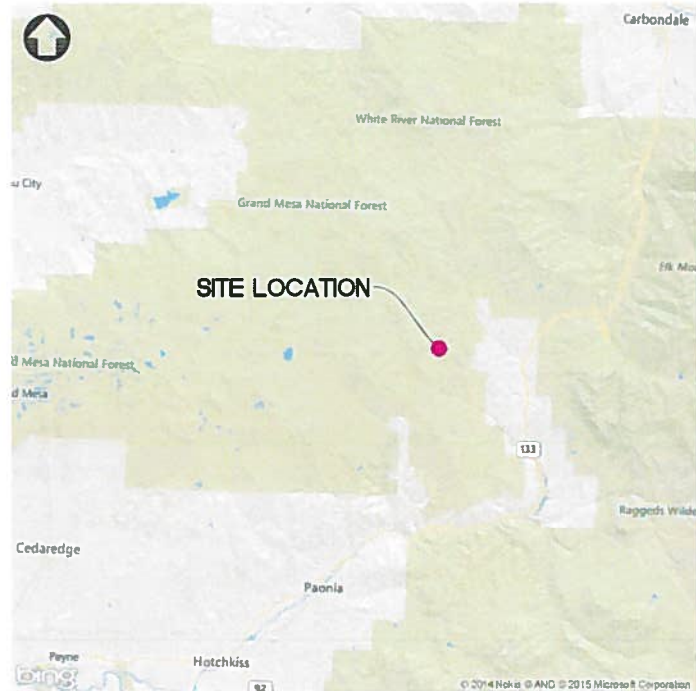
STATE MAP
NO SCALE



CONSTRUCTION PLANS FOR
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY, COLORADO



RECEIVED
JUN 24 2015
COGCC



VICINITY MAP
NO SCALE

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
<	LESS THAN
>	GREATER THAN
AMSL	ABOVE MEAN SEA LEVEL
AST	ABOVEGROUND STORAGE TANK
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BCF	BASE FLOOD ELEVATION
BMP(S)	BEST MANAGEMENT PRACTICES
BOP	BEGINNING OF PROJECT
BVCE	BEGINNING VERTICAL CURVE ELEVATION
BVCS	BEGINNING VERTICAL CURVE STATION
CBC	CONCRETE BOX CULVERT
CSP	CONSTRUCTION GENERAL PERMIT
CIP	COMPLETE IN PLACE
C _L	CENTERLINE
CMP	CORRUGATED METAL PIPE
CON	CONSTRUCTION
CONC	CONCRETE
CU FT	CUBIC FEET
CY	CUBIC YARD
DWG	DRAWING
E	EASTING COORDINATE
ELEC	ELECTRIC
ELEV	ELEVATION
EOP	END OF PROJECT
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FOD	FOREIGN OBJECT DAMAGE
FT	FEET
H V	HORIZONTAL VERTICAL
HAZMO	HAZARDOUS MATERIALS MANAGEMENT OFFICE
HP	HIGH POINT
IN	INCH
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
K	RATE OF VERTICAL CURVATURE
LF	LINEAR FEET
LP	LOW POINT

INDEX

NUMBER	SHEET	TITLE
1	C001	COVER
2	C002	SURVEY
3	C101	GENERAL SITE PLAN
4	C102A	STAKING PLAN
5	C102	GRADING PLAN
6	C103	STAKING PLAN
7	C104	STAKING TABLE
8	C105	NORTH PIT PLAN
9	C106	NORTH PIT SECTIONS
10	C107	MIDDLE PIT PLAN
11	C108	MIDDLE PIT SECTIONS
12	C109	SOUTH PIT PLAN
13	C110	SOUTH PIT SECTIONS
14	C111	DRAINAGE SWALE PLAN
15	C112	SOUTH SWALE PROFILE
16	C113	NORTH SWALE PROFILE
17	C114	NORTH SEDIMENT BASIN
18	C115	SOUTH SEDIMENT BASIN
19	C116	ACCESS ROAD PLAN AND PROFILE
20	C116A	EROSION CONTROL AT CULVERT OUTLETS
21	C117	FRENCH DRAIN PLAN AND PROFILE
22	C118	RISER PIPE AND DRAIN DETAILS
23	C119	ROAD AND LINER DETAILS
24	C120	FENCE PLAN
25	C121	PIPING SCHEMATIC
26	C122	P & ID
27	C123	WATERLINE PIPING PLAN AND PROFILE
28	C124	WATERLINE PIPING PLAN AND PROFILE
29	C125	NORTH AND MIDDLE PITS PIPING PLAN AND PROFILE
30	C126	SOUTH PIT PIPING PLAN AND PROFILE
31	C127	SOUTH PIT PIPING PLAN AND PROFILE
32	C128	PIPING DETAILS
33	C129	VALVE HOUSE
34	EC101	EROSION CONTROL PLAN - DURING CONSTRUCTION
35	EC102	EROSION CONTROL PLAN - POST CONSTRUCTION
36	EC103	EROSION CONTROL DETAILS

CONTACTS

OWNER
GUNNISON ENERGY LLC
1801 BROADWAY, SUITE 1200
DENVER, CO 80202

ENGINEER
WESTON SOLUTIONS, INC.
1435 GARRISON STREET, SUITE 100
LAKEWOOD, CO 80215

APPROVED FOR CONSTRUCTION:

PROJECT ENGINEER _____ DATE _____

GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

COLORADO



COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					

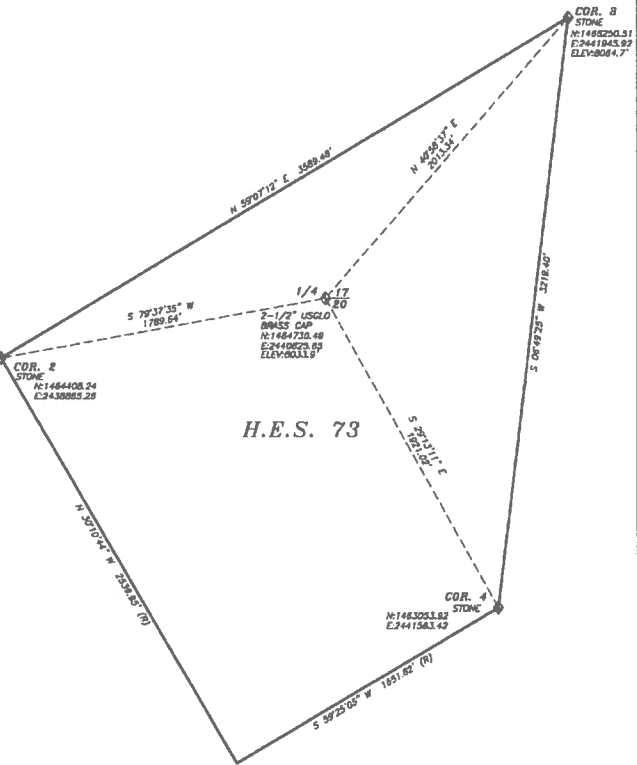


COVER

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C001	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	1	OF	36

SITE TOPO PREPARED FOR GUNNISON-ENERGY-SPADAFORA
WITHIN H.E.S. 73, SEC. 17 & 20, T.11S., R.90W., 6TH P.M.
GUNNISON COUNTY, COLORADO

OVERVIEW SCALE: 1"=400'



H.E.S. 73

COORDINATE SYSTEM:
U.S. STATE PLANE 1983
COLORADO CENTRAL ZONE
LAMBERT CONFORMAL CONIC
GEOID-CO-NAD 83
GPS OBSERVATION
SCALE 1"=100 U.S. SURVEY FEET
0 50 100 200

SURVEYOR'S CERTIFICATION
I, Kite Crawford, do hereby certify that the above described parcel has been surveyed by me and under my direct supervision and that such survey is accurately represented hereon, and is based upon my knowledge, information and belief, and is in accordance with applicable standards of practice and is not a guaranty or warranty, either expressed or implied.

Date: _____ Signed: _____
COLORADO PROFESSIONAL LAND SURVEYOR #38266

NOTE: According to Colorado law any land within a parcel shown on this map shall be surveyed within ten years after the date shown on the certificate hereon.

WILMORE & COMPANY
PROFESSIONAL LAND SURVEYING, INC.
408 Grand Avenue
P.O. Box 1982
Pacora, Colorado 81428
870.827-4300 PHONE
870.827-4302 FAX
www.wilmoreandsurveying.com
EMAIL: wilmoreandcompany@tds.net

FIELD CREW:
RAW,
KC
CHECKED BY:
RAW

SITE TOPO PREPARED FOR GUNNISON-ENERGY-SPADAFORA
WITHIN H.E.S. 73, SEC. 17 & 20, T.11S., R.90W., 6TH P.M.
GUNNISON COUNTY, COLORADO
J18189 22 OCTOBER 2013

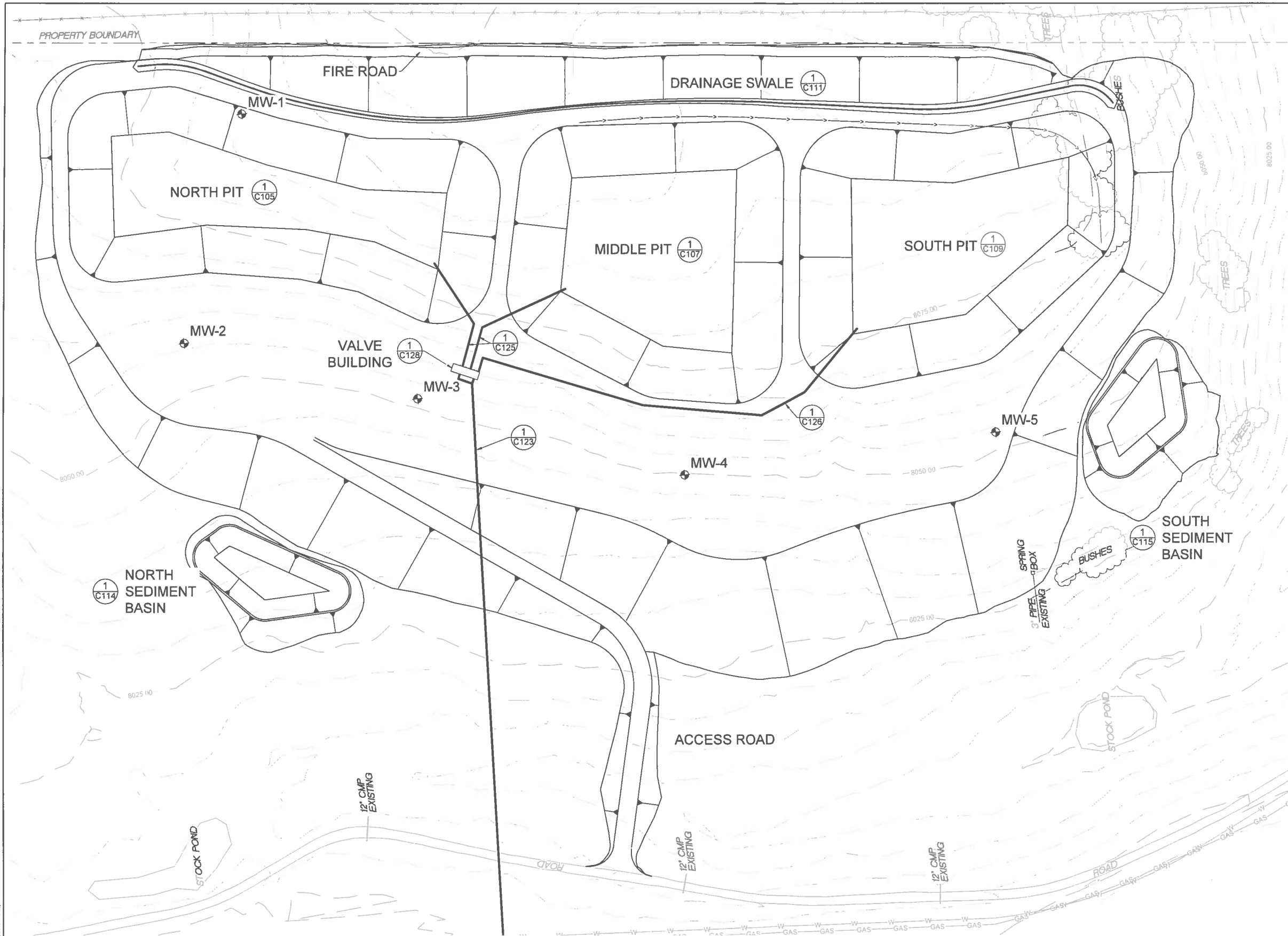
GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY COLORADO
WESTON SOLUTIONS
LAKEWOOD COLORADO

CHECKED	DB	DATE	CLIENT APPROVALS	DATE
DES. ENG.	DG	JUN15		
PROJ. ENG.	DG	JUN15		
PROJ. MGR.	KM	JUN15		
APPROVED				



SURVEY

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C002	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	2	OF	36



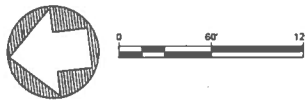
CONSTRUCTION NOTES

- A. TOTAL VOLUME OF THREE PITS 643,264 BARRELS
NORTH PIT VOLUME 209,056 BARRELS
MIDDLE PIT VOLUME 217,760 BARRELS
SOUTH PIT VOLUME 216,446 BARRELS

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING WATERLINE
- EXISTING GAS LINE
- PROPOSED MONITORING WELL
- BURIED PIPE ROUTING

5 FOOT CONTOUR INTERVAL



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY COLORADO
WESTON SOLUTIONS
LAKEWOOD COLORADO

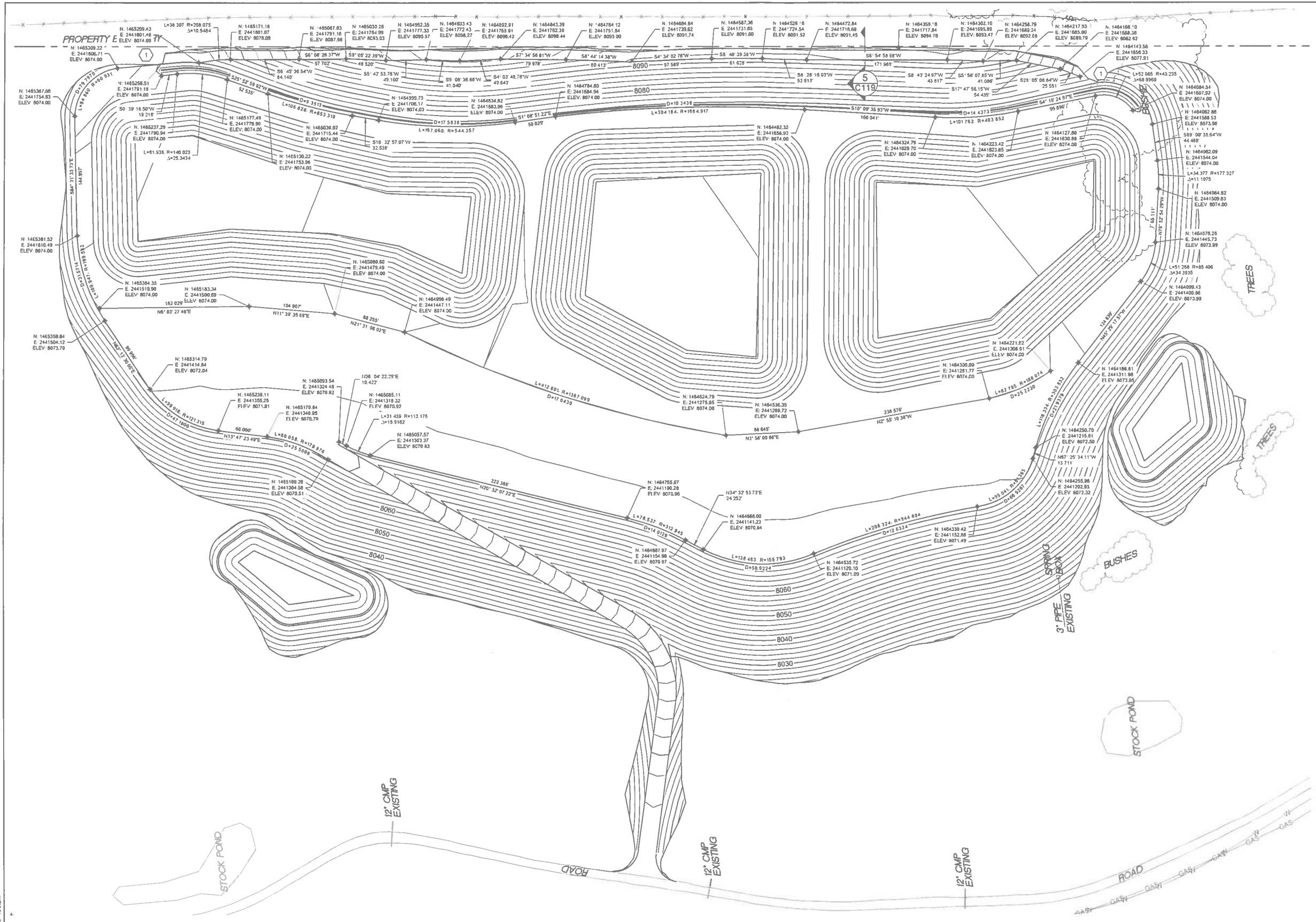
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DES. ENG.	DG	JUN15		
PROJ. ENG.	DG	JUN15		
PROJ. MGR.	KM	JUN15		
APPROVED				
APPROVED				



GENERAL SITE PLAN

DRAWN	CP	DATE	15JUN2015	ENG. NO.	C101	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	3	OF	36

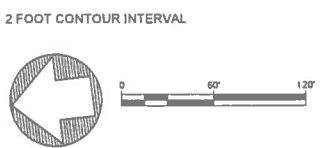
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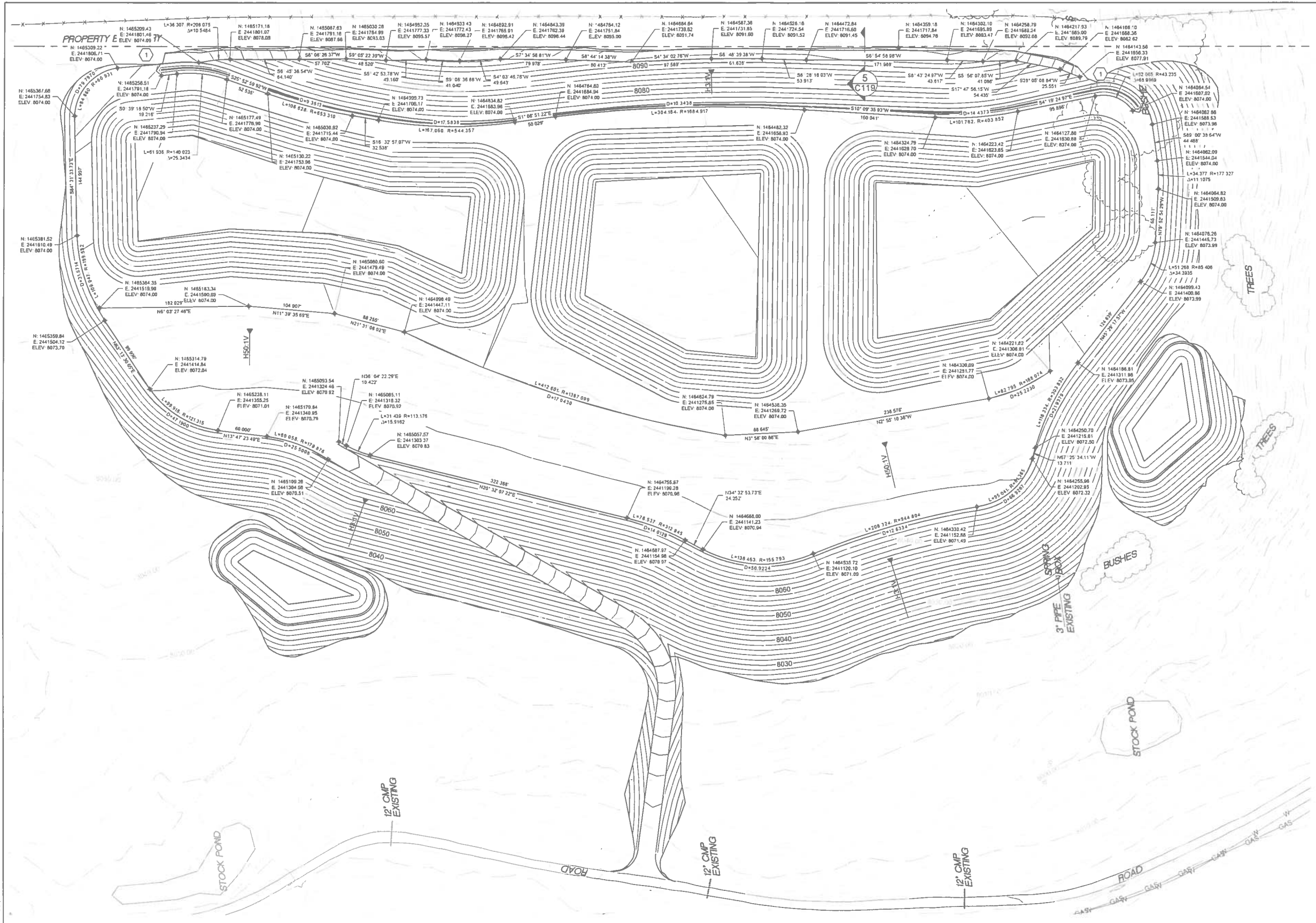
- KEYED NOTES**
- 1 SMOOTHLY GRADE TRANSITION OF FIRE ROAD TO EXISTING GROUND.

- CONSTRUCTION NOTES**
- A. CLEAR AND GRUB 10-FOOT FIRE ROAD NEXT TO PROPERTY BOUNDARY.
- B. CUT VOLUME = 287,520 CY
FILL VOLUME = 287,915 CY
- C. FILL VOLUME BASED ON COMPACTION OF FILL TO 0.85 THE CUT VOLUME.
- D. NO FILL WILL BE PLACED OUTSIDE THE DISTURBED AREA.

- LEGEND**
- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING WATERLINE
- EXISTING GAS LINE



										GUNNISON ENERGY LLC SPADAFORA WATER STORAGE FACILITY										CHECKED DB DATE JUN15 CLIENT APPROVALS DATE																				STAKING PLAN																													
										GUNNISON COUNTY COLORADO										DES. ENG. DG JUN15																																																	
																				PROJ. ENG. DG JUN15																																																	
																				PROJ. MGR. KM JUN15																																																	
																				APPROVED																																																	
										LAKEWOOD COLORADO										APPROVED																																																	
NO. DATE APPR. REVISION										NO. DATE APPR. REVISION										DRAWN CP DATE 15JUN2015 DWD. NO. C102A REV. NO. A										SCALE W.D. NO. 14798.001.001 SHT 4 OF 36																																							



KEYED NOTES

- 1 SMOOTHLY GRADE TRANSITION OF FIRE ROAD TO EXISTING GROUND.

CONSTRUCTION NOTES

- A. CLEAR AND GRUB 10-FOOT FIRE ROAD NEXT TO PROPERTY BOUNDARY.
- B. CUT VOLUME = 287,520 CY
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- D. NO FILL WILL BE PLACED OUTSIDE THE DISTURBED AREA.

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- W EXISTING WATERLINE
- GAS EXISTING GAS LINE

2 FOOT CONTOUR INTERVAL



GUNNISON ENERGY LLC SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

COLORADO



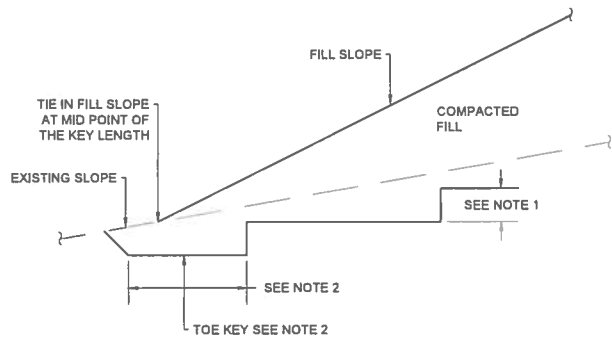
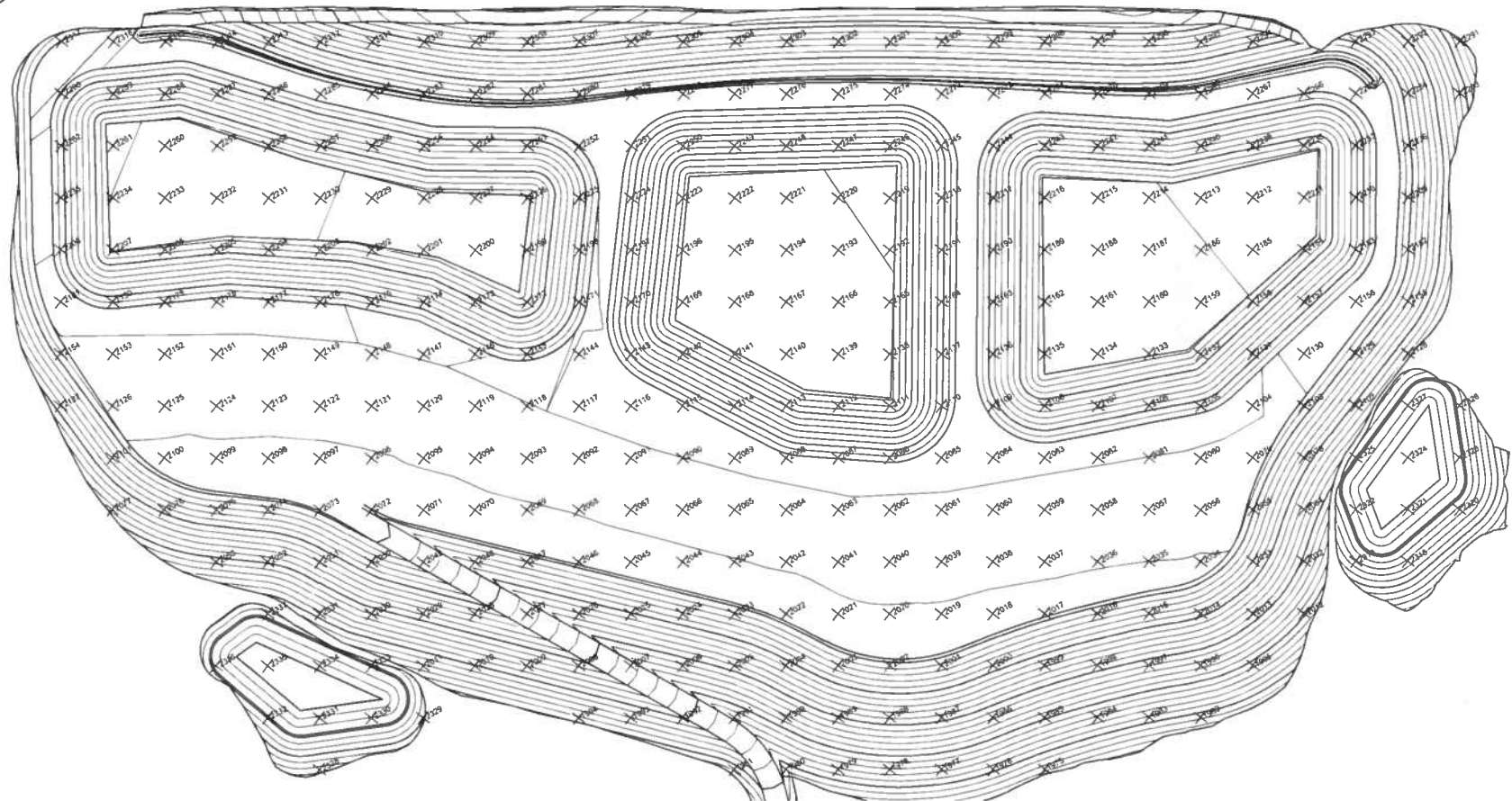
COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					



GRADING PLAN

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C102	REV. NO.	A
SCALE		W.O. NO.	14798.001.001	SHT	5	OF	36



NOTE 1: EXCAVATED INTO COMPETENT FOUNDATION MATERIAL (ESTIMATED 5 FEET MINIMUM). TO BE VERIFIED BY GEOTECHNICAL ENGINEER DURING CONSTRUCTION.

NOTE 2: TOE KEY LENGTH A MINIMUM OF 5 TIMES TOE KEY DEPTH (ESTIMATED 15 FEET MINIMUM).

1 TOE KEY AND BENCH CONCEPT NTS

Staking Table			
Point #	Elevation	Northing	Easting
1974	8026.88	1464725.49	2440973.32
1975	8024.86	1464471.31	2440993.22
1976	8030.76	1464520.96	2440999.17
1977	8034.73	1464570.60	2441005.12
1978	8035.67	1464620.25	2441011.06
1979	8033.51	1464669.89	2441017.01
1980	8028.56	1464719.54	2441022.96
1981	8028.50	1464769.18	2441028.91
1982	8028.55	1464316.43	2441025.02
1983	8031.76	1464366.07	2441030.97
1984	8035.71	1464415.72	2441036.92
1985	8040.59	1464465.36	2441042.86
1986	8046.36	1464515.01	2441048.81
1987	8051.18	1464564.65	2441054.76
1988	8052.32	1464614.30	2441060.71
1989	8049.65	1464663.94	2441066.66
1990	8043.35	1464713.59	2441072.61
1991	8036.13	1464763.23	2441078.55
1992	8040.15	1464812.88	2441084.50
1993	8035.88	1464862.52	2441090.45
1994	8031.60	1464912.17	2441096.40
1995	8038.71	1464260.84	2441068.72
1996	8044.88	1464310.48	2441074.66
1997	8048.05	1464360.13	2441080.61
1998	8051.80	1464409.77	2441086.56
1999	8056.43	1464459.42	2441092.51
2000	8061.89	1464509.06	2441098.46
2001	8067.47	1464558.71	2441104.41
2002	8068.97	1464608.35	2441110.35
2003	8065.53	1464658.00	2441116.30
2004	8058.28	1464707.64	2441122.25
2005	8051.74	1464757.29	2441128.20
2006	8047.44	1464806.93	2441134.15
2007	8046.72	1464856.58	2441140.10
2008	8048.34	1464906.22	2441146.04
2009	8044.07	1464955.87	2441151.99
2010	8039.79	1465005.51	2441157.94
2011	8035.52	1465055.15	2441163.89
2012	8040.66	1464205.24	2441112.41
2013	8052.30	1464254.89	2441118.36
2014	8060.94	1464304.53	2441124.31
2015	8064.41	1464354.18	2441130.26
2016	8067.96	1464403.82	2441136.21
2017	8071.32	1464453.47	2441142.15
2018	8071.54	1464503.11	2441148.10
2019	8071.79	1464552.76	2441154.05
2020	8071.83	1464602.40	2441160.00
2021	8071.62	1464652.05	2441165.95
2022	8071.11	1464701.69	2441171.90
2023	8067.67	1464751.34	2441177.84

Staking Table			
Point #	Elevation	Northing	Easting
2024	8063.63	1464800.98	2441183.79
2025	8059.68	1464850.63	2441189.74
2026	8055.72	1464900.27	2441195.69
2027	8057.02	1464949.92	2441201.64
2028	8056.53	1464999.56	2441207.59
2029	8052.26	1465049.21	2441213.53
2030	8047.89	1465098.85	2441219.48
2031	8041.26	1465148.50	2441225.43
2032	8049.20	1464199.29	2441162.06
2033	8063.92	1464248.94	2441168.01
2034	8071.84	1464298.58	2441173.95
2035	8072.00	1464348.23	2441179.90
2036	8072.15	1464397.87	2441185.85
2037	8072.35	1464447.52	2441191.80
2038	8072.52	1464497.16	2441197.75
2039	8072.74	1464546.81	2441203.70
2040	8072.78	1464596.45	2441209.64
2041	8072.62	1464646.10	2441215.59
2042	8072.23	1464695.74	2441221.54
2043	8071.92	1464745.39	2441227.49
2044	8071.61	1464795.03	2441233.44
2045	8071.30	1464844.68	2441239.39
2046	8071.00	1464894.32	2441245.33
2047	8067.96	1464943.97	2441251.28
2048	8064.01	1464993.61	2441257.23
2049	8067.11	1465043.26	2441263.18
2050	8063.65	1465092.90	2441269.13
2051	8056.07	1465142.55	2441275.08
2052	8050.47	1465192.19	2441281.02
2053	8048.80	1465241.84	2441286.97
2054	8054.91	1464193.35	2441211.70
2055	8070.47	1464242.99	2441217.65
2056	8072.85	1464292.64	2441223.60
2057	8072.98	1464342.28	2441229.55
2058	8073.17	1464391.93	2441235.50
2059	8073.34	1464441.57	2441241.44
2060	8073.51	1464491.22	2441247.39
2061	8073.69	1464540.86	2441253.34
2062	8073.73	1464590.51	2441259.29
2063	8073.64	1464640.15	2441265.24
2064	8073.41	1464689.80	2441271.19
2065	8073.13	1464739.44	2441277.13
2066	8072.80	1464789.09	2441283.08
2067	8072.49	1464838.73	2441289.03
2068	8072.12	1464888.38	2441294.98
2069	8071.82	1464938.02	2441300.93
2070	8071.55	1464987.66	2441306.88
2071	8071.24	1465037.31	2441312.82
2072	8070.90	1465086.95	2441318.77
2073	8070.65	1465136.60	2441324.72

Staking Table			
Point #	Elevation	Northing	Easting
2074	8067.01	1465186.24	2441330.67
2075	8065.16	1465235.89	2441336.62
2076	8061.08	1465285.53	2441342.57
2077	8052.72	1465335.18	2441348.51
2078	8062.58	1464187.40	2441261.35
2079	8073.35	1464237.04	2441267.29
2080	8073.76	1464286.69	2441273.24
2081	8073.99	1464336.33	2441279.19
2082	8074.00	1464385.98	2441285.14
2083	8074.00	1464435.62	2441291.09
2084	8074.00	1464485.27	2441297.04
2085	8074.00	1464534.91	2441302.99
2086	8072.49	1464584.56	2441308.93
2087	8073.70	1464634.20	2441314.88
2088	8074.00	1464683.85	2441320.83
2089	8074.00	1464733.49	2441326.78
2090	8073.99	1464783.14	2441332.73
2091	8073.65	1464832.78	2441338.68
2092	8073.24	1464882.43	2441344.62
2093	8072.92	1464932.07	2441350.57
2094	8072.53	1464981.72	2441356.52
2095	8072.20	1465031.36	2441362.47
2096	8071.86	1465081.01	2441368.42
2097	8071.65	1465130.65	2441374.37
2098	8071.58	1465180.30	2441380.31
2099	8071.64	1465229.94	2441386.26
2100	8071.57	1465279.59	2441392.21
2101	8065.00	1465329.23	2441398.16
2102	8059.31	1464131.80	2441305.04
2103	8072.48	1464181.45	2441310.99
2104	8074.00	1464231.09	2441316.94
2105	8071.74	1464280.74	2441322.89
2106	8068.46	1464330.38	2441328.84
2107	8065.18	1464380.03	2441334.78
2108	8062.08	1464429.67	2441340.73
2109	8071.42	1464479.32	2441346.68
2110	8069.80	1464528.96	2441352.63
2111	8055.83	1464578.61	2441358.58
2112	8057.07	1464628.25	2441364.53
2113	8059.96	1464677.90	2441370.48
2114	8067.63	1464727.54	2441376.42
2115	8074.00	1464777.19	2441382.37
2116	8074.00	1464826.83	2441388.32
2117	8074.00	1464876.48	2441394.27
2118	8073.94	1464926.12	2441400.22
2119	8073.50	1464975.77	2441406.17
2120	8073.12	1465025.41	2441412.11
2121	8072.86	1465075.06	2441418.06
2122	8072.69	1465124.70	2441424.01
2123	8072.60	1465174.35	2441429.96

GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

LAKEWOOD

WESTON SOLUTIONS

COLORADO

CHECKED	DB	DATE	CLIENT APPROVALS	DATE
DES. ENG.	DG	JUN15		
PROJ. ENG.	DG	JUN15		
PROJ. MGR.	KM	JUN15		
APPROVED				
APPROVED				



STAKING PLAN

DRAWN	CP	DATE	15JUN2015	ENG. NO.	C103	REV. NO.	A
SCALE		IN. TO 1/8"		SHEET	6	OF	36

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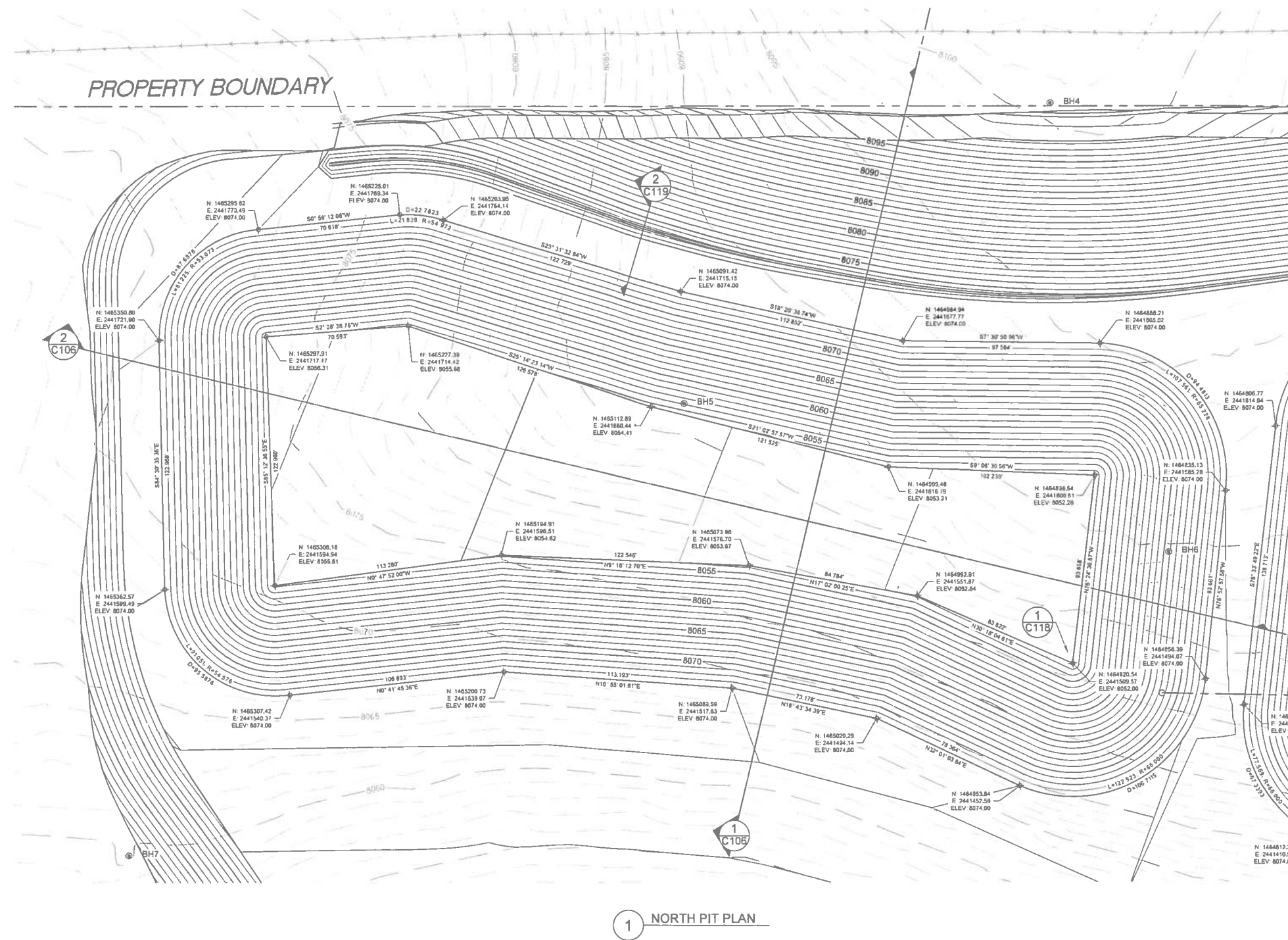
Staking Table			
Point #	Elevation	Northing	Easting
2124	8072.61	1465223.99	2441435.91
2125	8072.66	1465273.64	2441441.86
2126	8072.67	1465323.28	2441447.80
2127	8061.64	1465372.93	2441453.75
2128	8056.30	1464076.21	2441348.74
2129	8069.49	1464125.86	2441354.69
2130	8074.00	1464175.50	2441360.64
2131	8068.42	1464225.15	2441366.58
2132	8057.08	1464274.79	2441372.53
2133	8052.90	1464324.44	2441378.48
2134	8052.51	1464374.08	2441384.43
2135	8052.13	1464423.73	2441390.38
2136	8068.64	1464473.37	2441396.33
2137	8069.48	1464523.02	2441402.27
2138	8053.53	1464572.66	2441408.22
2139	8053.11	1464622.31	2441414.17
2140	8052.70	1464671.95	2441420.12
2141	8052.83	1464721.60	2441426.07
2142	8060.49	1464771.24	2441432.02
2143	8069.90	1464820.89	2441437.97
2144	8074.00	1464870.53	2441443.91
2145	8071.91	1464920.17	2441449.86
2146	8074.00	1464969.82	2441455.81
2147	8074.00	1465019.46	2441461.76
2148	8073.86	1465069.11	2441467.71
2149	8073.72	1465118.75	2441473.66
2150	8073.63	1465168.40	2441479.60
2151	8073.63	1465218.04	2441485.55
2152	8073.64	1465267.69	2441491.50
2153	8073.66	1465317.33	2441497.45
2154	8071.54	1465366.98	2441503.40
2155	8065.94	1464070.26	2441398.38
2156	8074.00	1464119.91	2441404.33
2157	8067.55	1464169.55	2441410.28
2158	8056.20	1464219.20	2441416.23
2159	8053.61	1464268.84	2441422.18
2160	8053.22	1464318.49	2441428.13
2161	8052.83	1464368.13	2441434.07
2162	8052.44	1464417.78	2441440.02
2163	8068.76	1464467.42	2441445.97
2164	8069.34	1464517.07	2441451.92
2165	8053.81	1464566.71	2441457.87
2166	8053.40	1464616.36	2441463.82
2167	8052.98	1464666.00	2441469.76
2168	8052.57	1464715.65	2441475.71
2169	8052.16	1464765.29	2441481.66
2170	8066.85	1464814.94	2441487.61
2171	8071.41	1464864.58	2441493.56
2172	8055.96	1464914.23	2441499.51
2173	8060.83	1464963.87	2441505.46

Staking Table			
Point #	Elevation	Northing	Easting
2174	8067.82	1465013.52	2441511.40
2175	8071.26	1465063.16	2441517.35
2176	8073.61	1465112.81	2441523.30
2177	8074.00	1465162.45	2441529.25
2178	8074.00	1465212.10	2441535.20
2179	8073.56	1465261.74	2441541.15
2180	8071.80	1465311.39	2441547.09
2181	8074.00	1465361.03	2441553.04
2182	8070.21	1464064.31	2441448.03
2183	8068.27	1464113.96	2441453.98
2184	8055.33	1464163.60	2441459.93
2185	8054.31	1464213.25	2441465.87
2186	8053.92	1464262.89	2441471.82
2187	8053.53	1464312.54	2441477.77
2188	8053.15	1464362.18	2441483.72
2189	8052.76	1464411.83	2441489.67
2190	8068.87	1464461.47	2441495.62
2191	8069.20	1464511.12	2441501.56
2192	8054.09	1464560.76	2441507.51
2193	8053.68	1464610.41	2441513.46
2194	8053.27	1464660.05	2441519.41
2195	8052.85	1464709.70	2441525.36
2196	8052.44	1464759.34	2441531.31
2197	8068.77	1464808.99	2441537.25
2198	8069.55	1464858.63	2441543.20
2199	8052.99	1464908.28	2441549.15
2200	8052.55	1464957.92	2441555.10
2201	8053.01	1465007.57	2441561.05
2202	8054.94	1465057.21	2441567.00
2203	8056.98	1465106.86	2441572.95
2204	8058.17	1465156.50	2441578.89
2205	8058.76	1465206.15	2441584.84
2206	8056.98	1465255.79	2441590.79
2207	8055.79	1465305.44	2441596.74
2208	8071.62	1465355.08	2441602.69
2209	8071.17	1464058.37	2441497.67
2210	8067.53	1464108.01	2441503.62
2211	8055.01	1464157.66	2441509.57
2212	8054.62	1464207.30	2441515.52
2213	8054.24	1464256.95	2441521.47
2214	8053.85	1464306.59	2441527.42
2215	8053.46	1464356.24	2441533.36
2216	8053.07	1464405.88	2441539.31
2217	8068.99	1464455.53	2441545.26
2218	8069.06	1464505.17	2441551.21
2219	8054.37	1464554.82	2441557.16
2220	8053.96	1464604.46	2441563.11
2221	8053.55	1464654.11	2441569.05
2222	8053.14	1464703.75	2441575.00
2223	8054.13	1464753.40	2441580.95

Staking Table			
Point #	Elevation	Northing	Easting
2224	8070.69	1464803.04	2441586.90
2225	8067.76	1464852.68	2441592.85
2226	8052.28	1464902.33	2441598.80
2227	8052.74	1464951.97	2441604.74
2228	8053.20	1465001.62	2441610.69
2229	8053.66	1465051.26	2441616.64
2230	8054.13	1465100.91	2441622.59
2231	8054.59	1465150.55	2441628.54
2232	8055.05	1465200.20	2441634.49
2233	8055.52	1465249.84	2441640.44
2234	8055.98	1465299.49	2441646.38
2235	8071.23	1465349.13	2441652.33
2236	8070.72	1464052.42	2441547.32
2237	8067.61	1464102.06	2441553.27
2238	8057.77	1464151.71	2441559.22
2239	8060.95	1464201.35	2441565.16
2240	8064.14	1464251.00	2441571.11
2241	8065.58	1464300.64	2441577.06
2242	8064.48	1464350.29	2441583.01
2243	8063.39	1464399.93	2441588.96
2244	8072.03	1464449.58	2441594.91
2245	8070.32	1464499.22	2441600.85
2246	8061.02	1464548.87	2441606.80
2247	8061.47	1464598.51	2441612.75
2248	8061.91	1464648.16	2441618.70
2249	8062.36	1464697.80	2441624.65
2250	8062.96	1464747.45	2441630.60
2251	8074.00	1464797.09	2441636.54
2252	8074.00	1464846.74	2441642.49
2253	8068.16	1464896.38	2441648.44
2254	8067.97	1464946.03	2441654.39
2255	8067.33	1464995.67	2441660.34
2256	8063.72	1465045.32	2441666.29
2257	8060.10	1465094.96	2441672.24
2258	8055.62	1465144.61	2441678.18
2259	8055.24	1465194.25	2441684.13
2260	8055.70	1465243.90	2441690.08
2261	8056.17	1465293.54	2441696.03
2262	8070.84	1465343.19	2441701.98
2263	8051.94	1463996.82	2441591.02
2264	8068.32	1464046.47	2441596.96
2265	8074.00	1464096.11	2441602.91
2266	8074.00	1464145.76	2441608.86
2267	8074.00	1464195.40	2441614.81
2268	8074.00	1464245.05	2441620.76
2269	8072.91	1464294.69	2441626.71
2270	8073.78	1464344.34	2441632.65
2271	8074.00	1464393.98	2441638.60
2272	8074.00	1464443.63	2441644.55
2273	8074.00	1464493.27	2441650.50











Staking Table			
Point #	Elevation	Northing	Easting
2274	8074.00	1464542.92	2441656.45
2275	8074.00	1464592.56	2441662.40
2276	8074.00	1464642.21	2441668.34
2277	8074.00	1464691.85	2441674.29
2278	8074.00	1464741.50	2441680.24
2279	8073.31	1464791.14	2441686.19
2280	8075.04	1464840.79	2441692.14
2281	8076.06	1464890.43	2441698.09
2282	8075.51	1464940.08	2441704.03
2283	8073.14	1464989.72	2441709.98
2284	8074.00	1465039.37	2441715.93
2285	8074.00	1465089.01	2441721.88
2286	8071.59	1465138.66	2441727.83
2287	8066.80	1465188.30	2441733.78
2288	8064.06	1465237.95	2441739.73
2289	8065.77	1465287.59	2441745.67
2290	8073.68	1465337.24	2441751.62
2291	8046.37	1463990.88	2441640.66
2292	8060.00	1464040.52	2441646.61
2293	8069.45	1464090.17	2441652.56
2294	8082.07	1464189.46	2441664.45
2295	8085.56	1464239.10	2441670.40
2296	8087.44	1464288.75	2441676.35
2297	8087.19	1464338.39	2441682.30
2298	8086.55	1464388.04	2441688.25
2299	8085.92	1464437.68	2441694.20
2300	8085.29	1464487.33	2441700.14
2301	8084.96	1464536.97	2441706.09
2302	8085.05	1464586.62	2441712.04
2303	8085.57	1464636.26	2441717.99
2304	8086.50	1464685.90	2441723.94
2305	8087.86	1464735.55	2441729.89
2306	8089.63	1464785.19	2441735.83
2307	8091.60	1464834.84	2441741.78
2308	8092.72	1464884.48	2441747.73
2309	8092.11	1464934.13	2441753.68
2310	8089.80	1464983.77	2441759.63
2311	8086.57	1465033.42	2441765.58
2312	8082.32	1465083.06	2441771.52
2313	8076.88	1465132.71	2441777.47
2314	8072.03	1465182.35	2441783.42
2315	8074.00	1465232.00	2441789.37
2316	8074.00	1465281.64	2441795.32
2317	8074.00	1465331.29	2441801.27
2318	8045.44	1464100.00	2441150.16
2319	8045.51	1464149.65	2441156.11
2320	8047.25	1464044.41	2441193.86
2321	8044.43	1464094.06	2441199.80
2322	8048.11	1464143.70	2441205.75
2323	8049.46	1464038.46	2441243.50

Staking Table			
Point #	Elevation	Northing	Easting
2324	8044.00	1464088.11	2441249.45
2325	8050.25	1464137.75	2441255.40
2326	8048.93	1464032.51	2441293.15
2327	8048.07	1464082.16	2441299.09
2328	8025.02	1465166.34	2441076.50
2329	8030.27	1465061.10	2441114.24
2330	8034.08	1465110.75	2441120.19
2331	8032.35	1465160.39	2441126.14
2332	8036.00	1465210.04	2441132.09
2333	8036.00	1465104.80	2441169.84
2334	8031.11	1465154.44	2441175.79
2335	8030.00	1465204.09	2441181.73
2336	8035.39	1465253.73	2441187.68
2337	8037.23	1465198.14	2441231.38

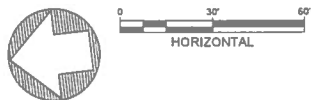


1 NORTH PIT PLAN

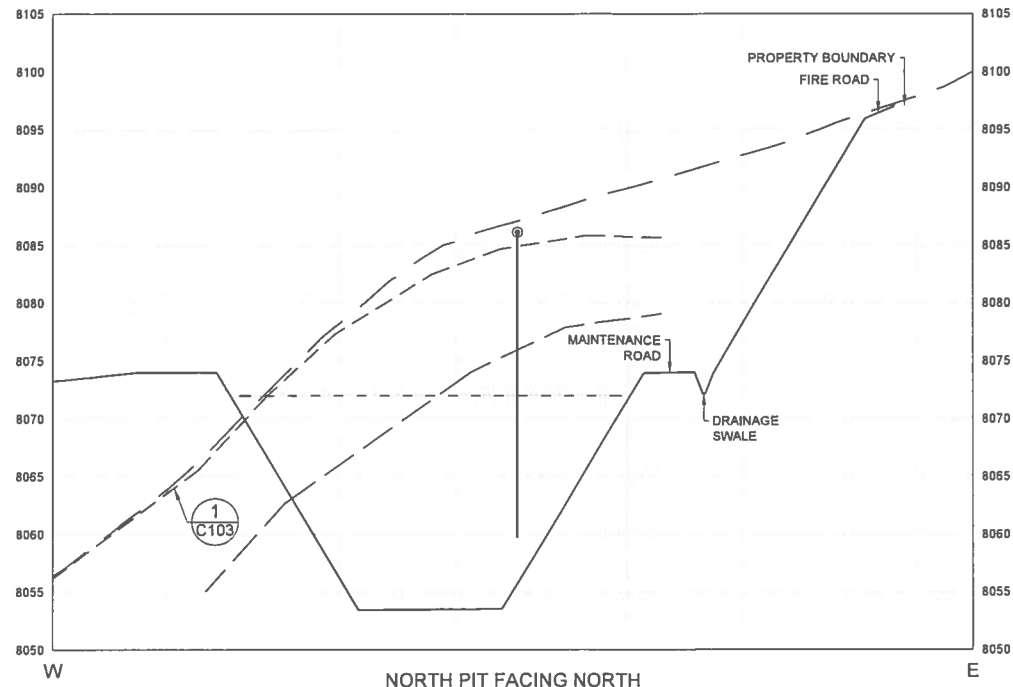
LEGEND

-  PROPERTY BOUNDARY
 EXISTING FENCE
 EXISTING WATERLINE
 EXISTING GAS LINE
 BOREHOLE
 CULVERT
 NEW MAJOR CONTOUR
 NEW MINOR CONTOUR
 EXISTING MAJOR CONTOUR
 EXISTING MINOR CONTOUR

1 FOOT CONTOUR INTERVAL



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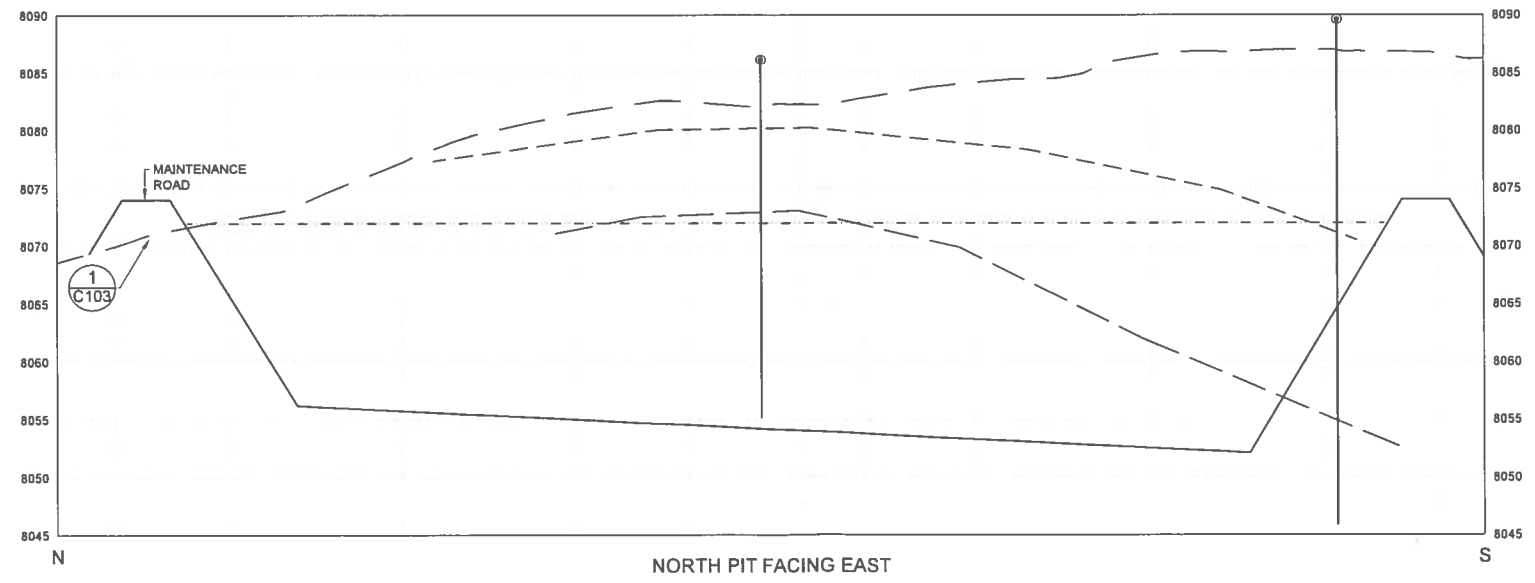
1 SECTION

CONSTRUCTION NOTES

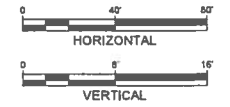
- A NOTE: BORE HOLES (BH) SHOWN IN BACKGROUND OR FOREGROUND OF CROSS SECTION FOR CLARITY.
- B CLAY AND SHALE INTERFACES ARE BASED ON DATA FROM 13 GEOTECHNICAL BOREHOLES. INTERFACES SHOWN ON SECTIONS ARE EXTENDED AS FAR AS DATA ALLOWS.

LEGEND

- EXISTING GROUND PROFILE
- FINISHED GROUND PROFILE
- TOP OF CLAY
- TOP OF SHALE
- 2' FREEBOARD WATER LEVEL

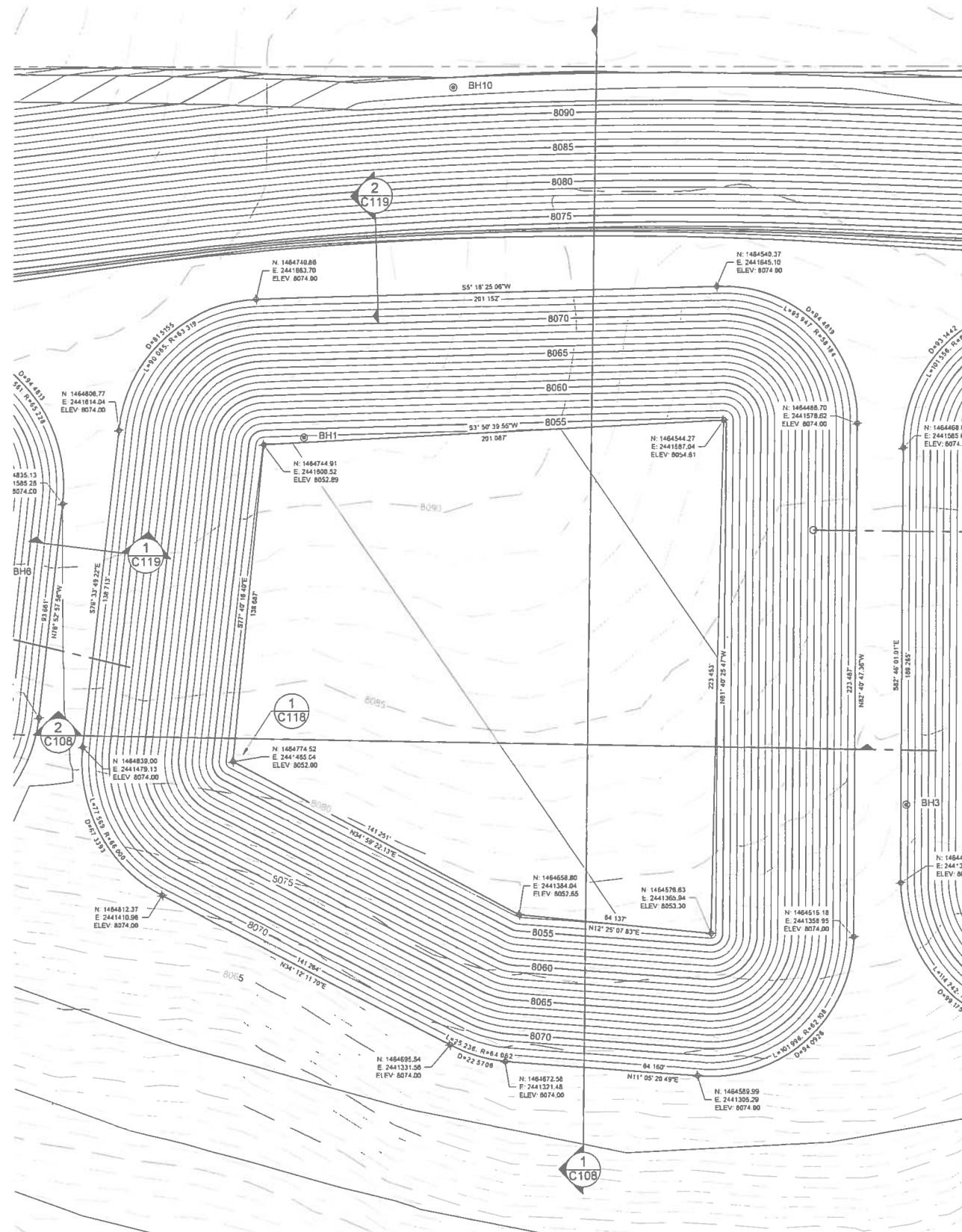


2 SECTION



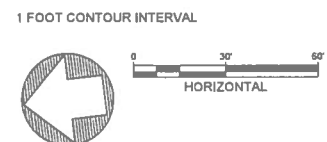
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				GUNNISON ENERGY LLC SPADAFORA WATER STORAGE FACILITY				<small>CHECKED DB DATE JUN15 CLIENT APPROVALS DATE</small>					NORTH PIT SECTIONS						
				<small>GUNNISON COUNTY COLORADO</small>				<small>DES. ENG. DG DATE JUN15</small>					<small>DRAWN CP DATE 15JUN2015 DWS. NO. C106 REV. NO. A</small>						
								<small>PROJ. ENG. DG DATE JUN15</small>					<small>SCALE W.D. NO. 14798.001.001</small>						
				<small>LAKWOOD COLORADO</small>				<small>PROJ. MGR. KM DATE JUN15</small>					<small>APPROVED</small>						
<small>NO. DATE APPR. REVISION</small>				<small>NO. DATE APPR. REVISION</small>				<small>APPROVED</small>				<small>APPROVED</small>							



1 MIDDLE PIT PLAN

- LEGEND**
- PROPERTY BOUNDARY
 - - - EXISTING FENCE
 - W EXISTING WATERLINE
 - GAS EXISTING GAS LINE
 - BH-1 BOREHOLE
 - CULVERT
 - 8060 NEW MAJOR CONTOUR
 - 8060 NEW MINOR CONTOUR
 - 8060 EXISTING MAJOR CONTOUR
 - 8060 EXISTING MINOR CONTOUR



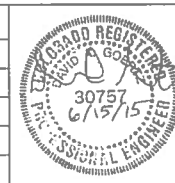
**GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY**

GUNNISON COUNTY COLORADO

WESTON SOLUTIONS

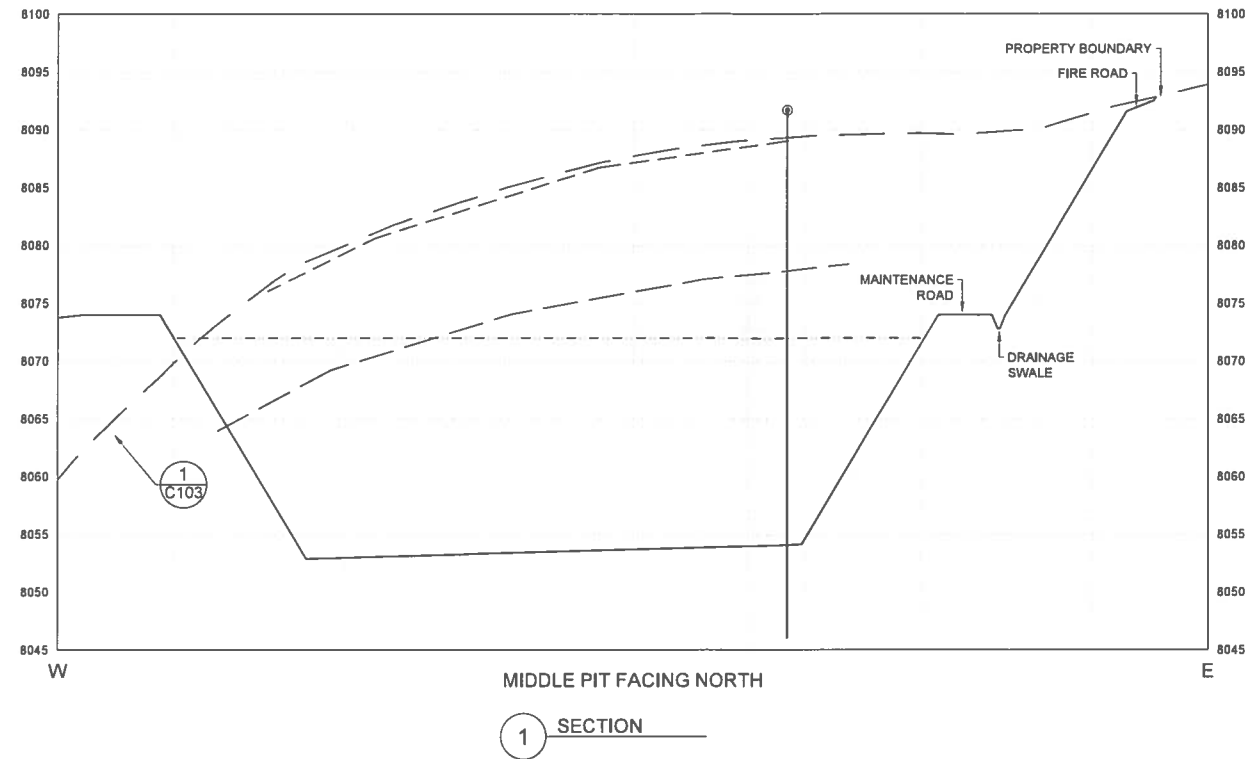
LAKEWOOD COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					



MIDDLE PIT PLAN

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C107	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	10	OF	36

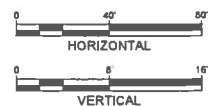
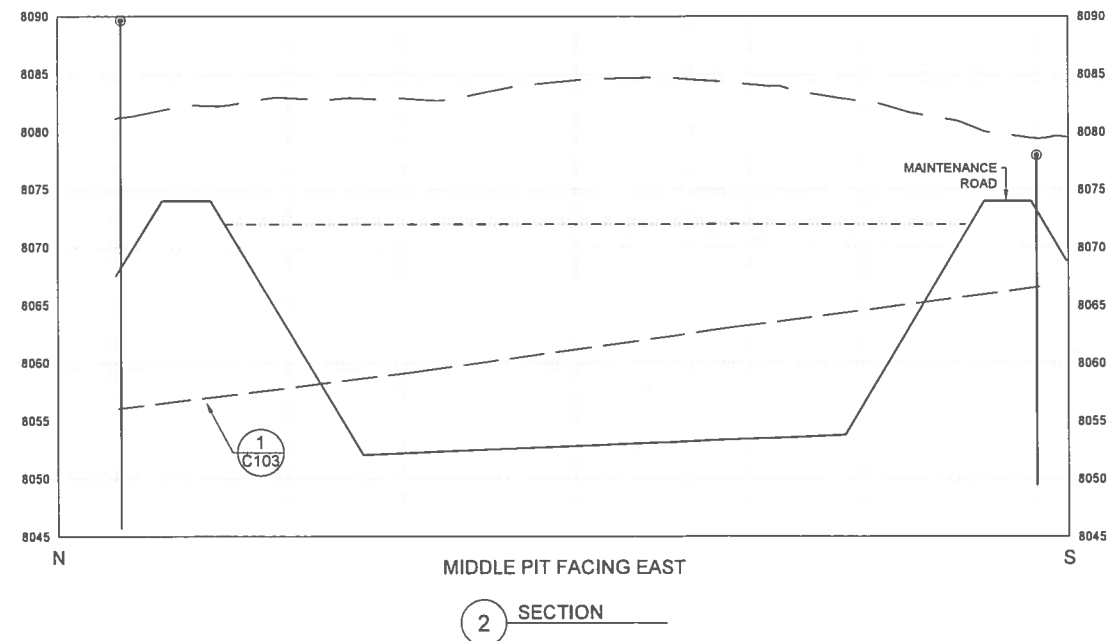


CONSTRUCTION NOTES

- A NOTE: BORE HOLES (BH) SHOWN IN BACKGROUND OR FOREGROUND OF CROSS SECTION FOR CLARITY.
- B CLAY AND SHALE INTERFACES ARE BASED ON DATA FROM 13 GEOTECHNICAL BOREHOLES. INTERFACES SHOWN ON SECTIONS ARE EXTENDED AS FAR AS DATA ALLOWS.

LEGEND

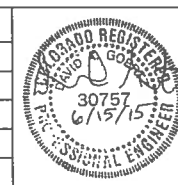
- EXISTING GROUND PROFILE
- FINISHED GROUND PROFILE
- TOP OF CLAY
- TOP OF SHALE
- 2' FREEBOARD WATER LEVEL



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY COLORADO

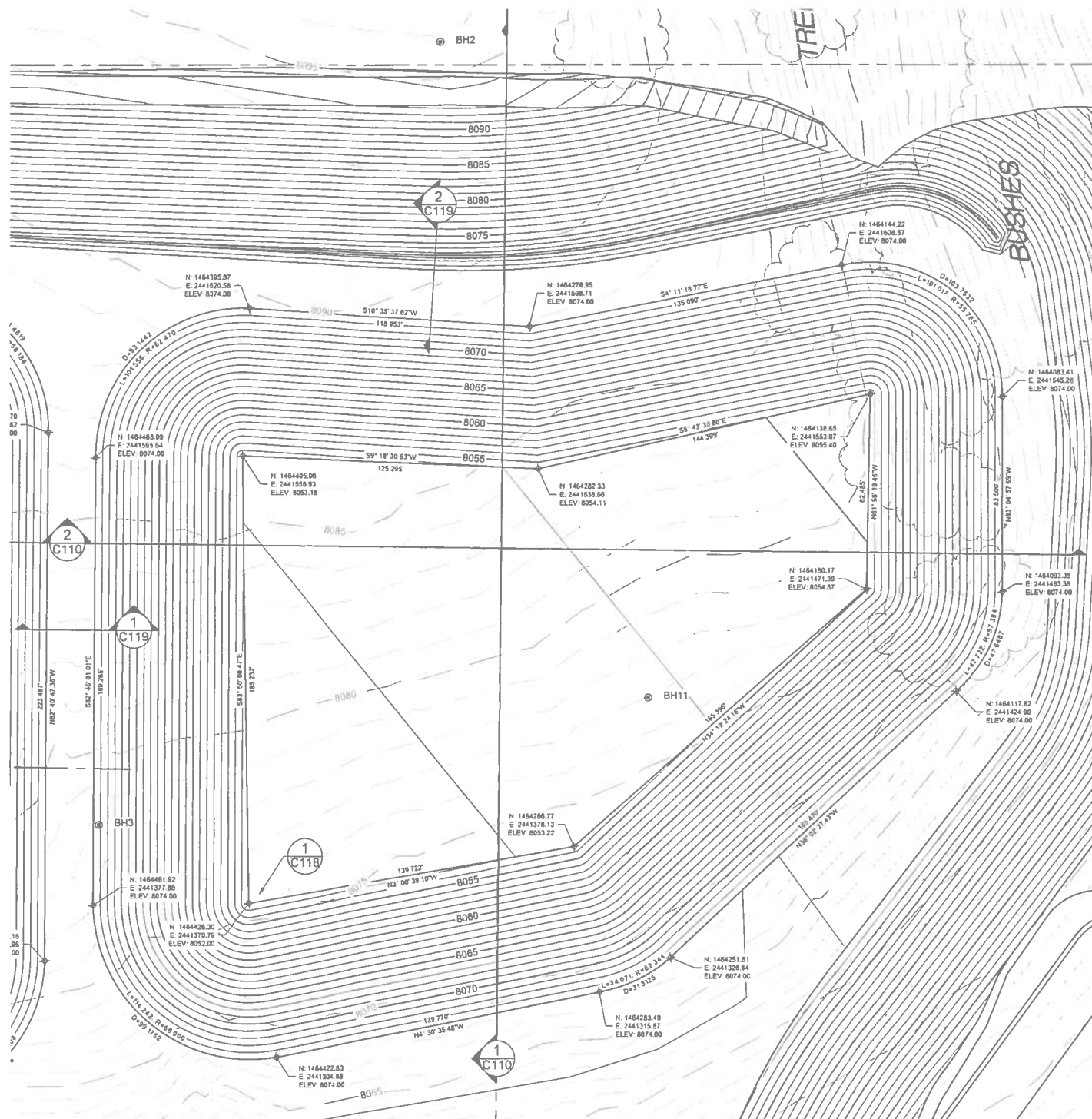


CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					



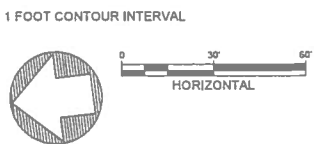
MIDDLE PIT SECTIONS

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C108	REV. NO.	A
SCALE		W.O. NO.	14758.001.001	SHT	11	OF	36



1 SOUTH PIT PLAN

- LEGEND**
- PROPERTY BOUNDARY
 - x-x-x- EXISTING FENCE
 - W EXISTING WATERLINE
 - GAS EXISTING GAS LINE
 - BH-1 BOREHOLE
 - == CULVERT
 - 8060 NEW MAJOR CONTOUR
 - NEW MINOR CONTOUR
 - 8050 EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR



**GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY**

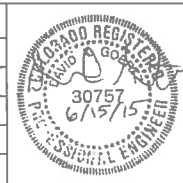
GUNNISON COUNTY

COLORADO



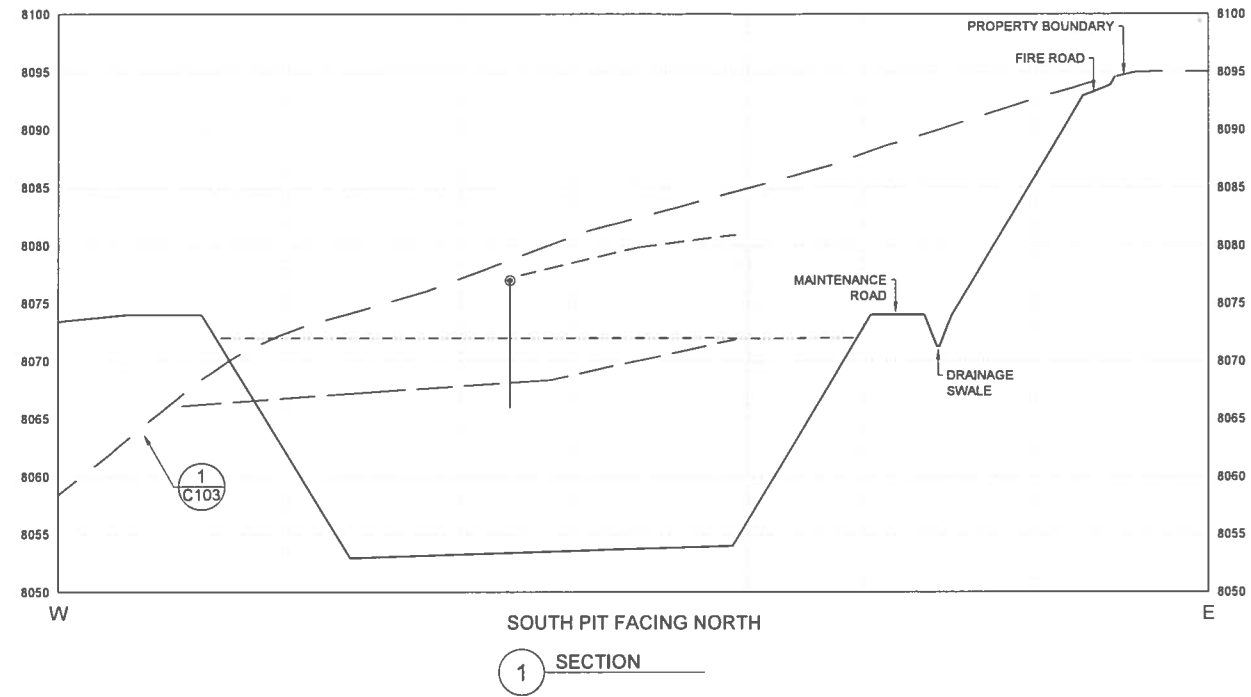
COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	JUN15			
PROJ. ENG.	DG	JUN15			
PROJ. MGR.	KM	JUN15			
APPROVED					
APPROVED					



SOUTH PIT PLAN

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C109	REV. NO.	A
SCALE		W.O. NO.	14798.001.001	SHT	12	OF	36

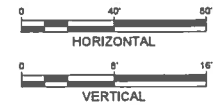
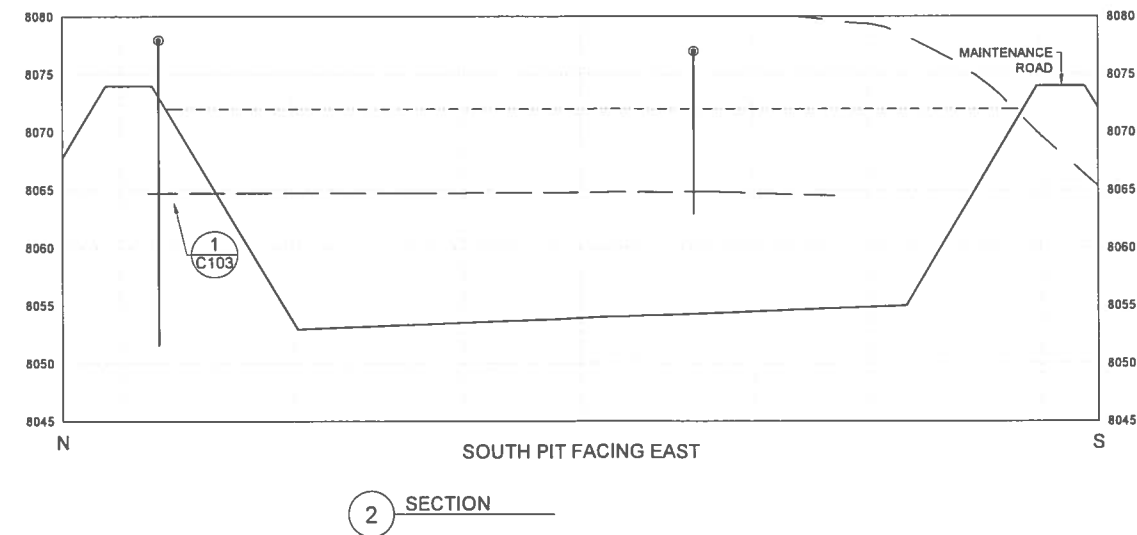


CONSTRUCTION NOTES

- A NOTE: BORE HOLES (BH) SHOWN IN BACKGROUND OR FOREGROUND OF CROSS SECTION FOR CLARITY.
- B CLAY AND SHALE INTERFACES ARE BASED ON DATA FROM 13 GEOTECHNICAL BOREHOLES. INTERFACES SHOWN ON SECTIONS ARE EXTENDED AS FAR AS DATA ALLOWS.

LEGEND

- EXISTING GROUND PROFILE
- FINISHED GROUND PROFILE
- TOP OF CLAY
- TOP OF SHALE
- 2' FREEBOARD WATER LEVEL



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY COLORADO

WESTON SOLUTIONS
LAKEWOOD COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					

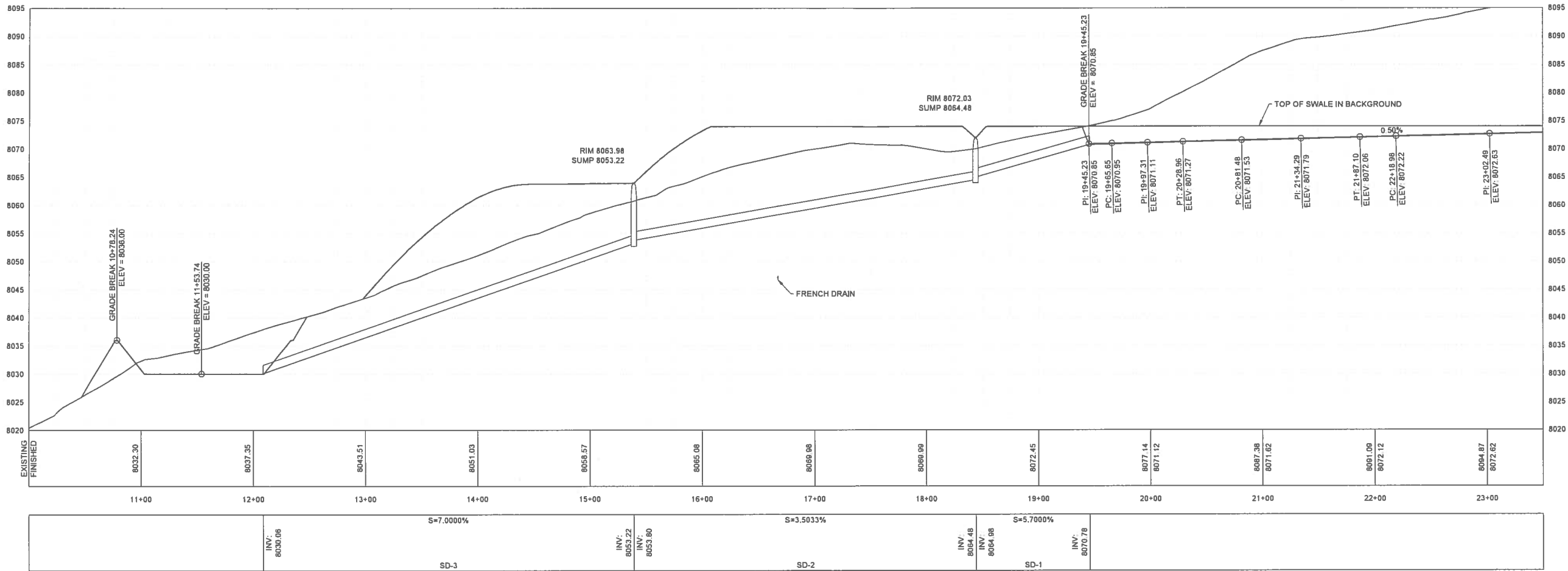


SOUTH PIT SECTIONS

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C110	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	13	OF	36



DRAWING	DATE	DWG. NO.	REV. NO.
CP	15JUN2015	C111	A
SCALE	WG. NO.		
	14798.001.001	14	36



CONSTRUCTION NOTES

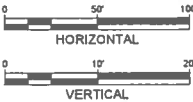
A. DRAINAGE CHANNEL FROM STATION 19+45 TO STATION 31.55 WILL BE ARMORED WITH RIPRAP WITH A D50 OF 3 INCHES.

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING WATERLINE
- EXISTING GAS LINE
- EXISTING GROUND PROFILE
- FINISHED GROUND PROFILE
- TOP OF SWALE IN BACKGROUND
- CULVERT
- RIPRAP PROTECTION

Culvert Table									
NAME	SIZE	LENGTH	SLOPE	START INVERT	END INVERT	START NORTHING	START EASTING	END NORTHING	END EASTING
SD-1	18"	101.74'	5.70%	8070.78	8064.98	1465255.72	2441798.14	1465357.23	2441791.23
SD-2	18"	304.80'	3.50%	8064.48	8053.80	1465357.23	2441791.23	1465384.16	2441487.53
SD-3	18"	330.80'	7.00%	8053.22	8030.06	1465384.16	2441487.53	1465222.38	2441198.99

1 NORTH SWALE PROFILE



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

COLORADO



LAKEWOOD

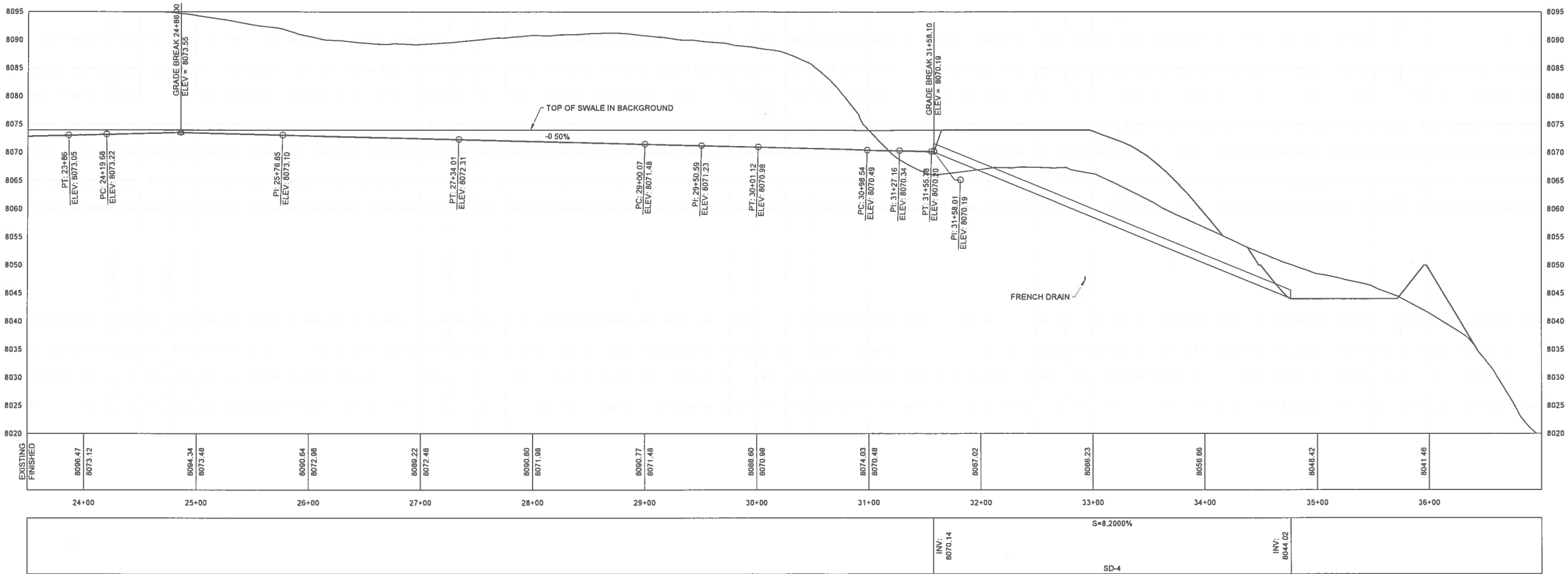
COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					



NORTH SWALE PROFILE

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C112	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	15	OF	36



CONSTRUCTION NOTES

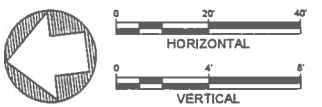
- A. DRAINAGE CHANNEL FROM STATION 19+45 TO STATION 31.55 WILL BE ARMORED WITH RIPRAP WITH A D50 OF 3 INCHES.

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING WATERLINE
- EXISTING GAS LINE
- EXISTING GROUND PROFILE
- FINISHED GROUND PROFILE
- TOP OF SWALE IN BACKGROUND
- CULVERT
- RIPRAP PROTECTION

Culvert Table									
NAME	SIZE	LENGTH	SLOPE	START INVERT	END INVERT	START NORTHING	START EASTING	END NORTHING	END EASTING
SD-4	18"	318.54'	8.20%	8070.14	8044.02	1464077.42	2441612.11	1464063.73	2441293.87

1 SOUTH SWALE PROFILE



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

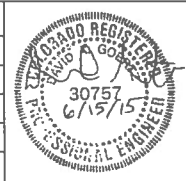
LAKEWOOD

COLORADO

WESTON SOLUTIONS

COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					












SOUTH SWALE PROFILE

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C113	REV. NO.	A
SCALE		W.O. NO.	14795.001.001	SHT	16	OF	36

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A. ALL RIPRAP GROUTED WITH D50 OF 6 INCHES.

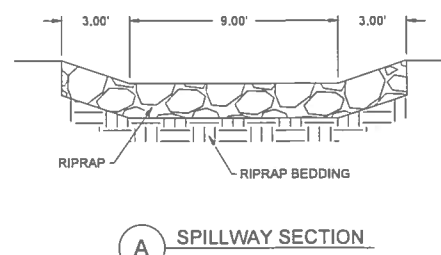
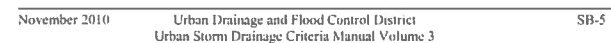
- # LEGEND
- | | |
|---|----------------------------|
|  | PROPERTY BOUNDARY |
|  | EXISTING FENCE |
|  | EXISTING WATERLINE |
|  | EXISTING GAS LINE |
|  | EXISTING GROUND PROFILE |
|  | FINISHED GROUND PROFILE |
|  | TOP OF SWALE IN BACKGROUND |
|  | CULVERT |
|  | RIPRAP PROTECTION |

2 FOOT CONTOUR INTERVAL



<div>GUNNISON ENERGY LLC SPADAFORA WATER STORAGE FACILITY</div> <div>GUNNISON COUNTY</div> <div>COLORADO</div>		<div>CHECKED DB</div> <div>DES. ENG. DG</div> <div>PROJ. ENG. DG</div> <div>PROJ. MGR KM</div> <div>APPROVED</div> <div>APPROVED</div>	<div>DATE JUN15</div> <div>JUN15</div> <div>JUN15</div> <div>JUN15</div> <div></div> <div></div>	<div>CLIENT APPROVALS</div> <div></div> <div></div> <div></div> <div></div> <div></div>	<div>DATE</div> <div></div> <div></div> <div></div> <div></div> <div></div>	<div></div>	<div>NORTH SEDIMENT BASIN</div>			
<div></div> <div>LAKEWOOD</div> <div>COLORADO</div>						<div>DRAWN C/P</div> <div>SCALE</div>	<div>DATE 15JUN2015</div> <div>W.D. NO. 14798.001.001</div>	<div>DWG. NO. C114</div> <div>SHT 17 OF 36</div>	<div>REV. NO. A</div>	

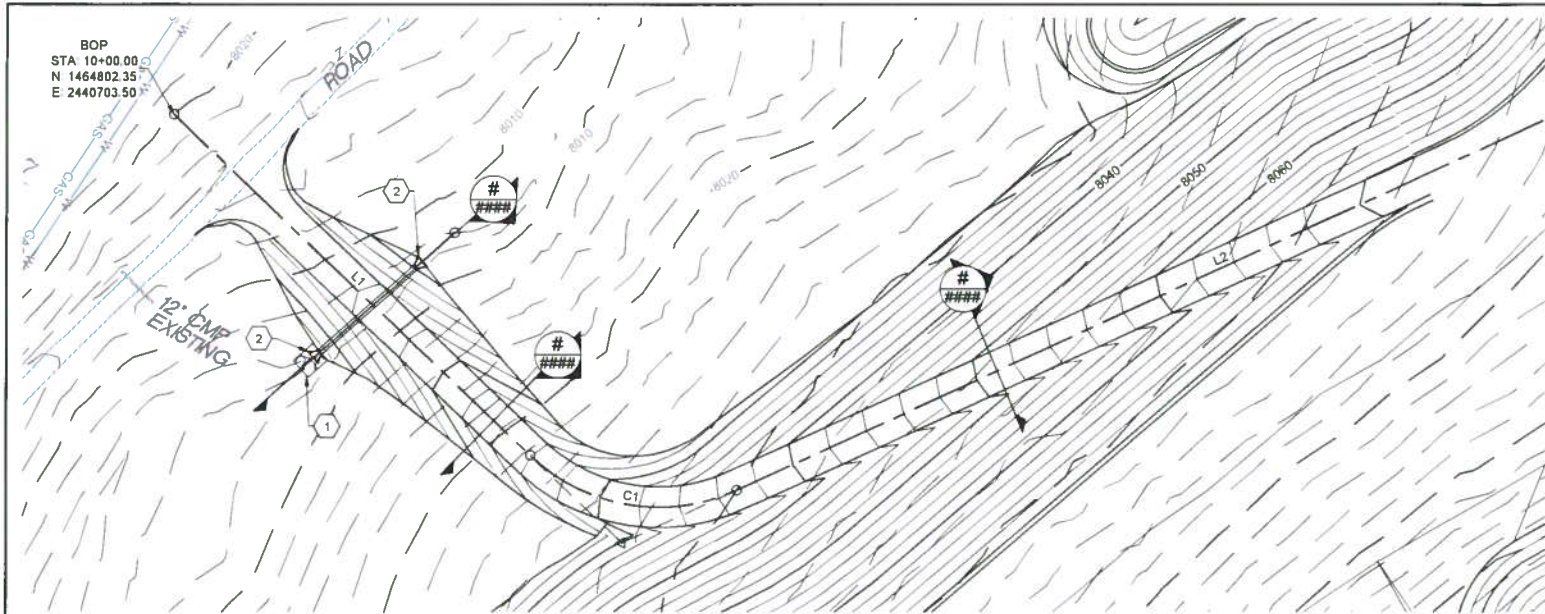
SC-7



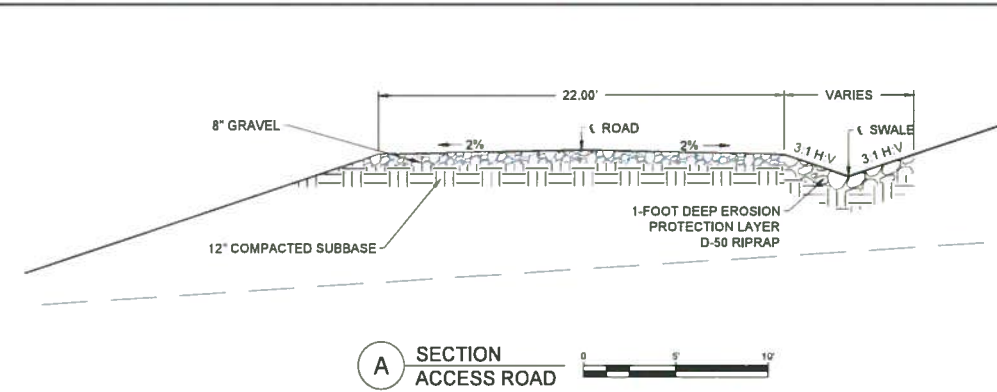
2 FOOT CONTOUR INTERVAL

The diagram illustrates a circular cross-section of a road. The road surface is represented by a shaded area, and the road width is indicated by a horizontal line. A scale bar below the road indicates a horizontal distance of 40 feet, with a 2-foot contour interval marked. The word "HORIZONTAL" is written below the scale bar.

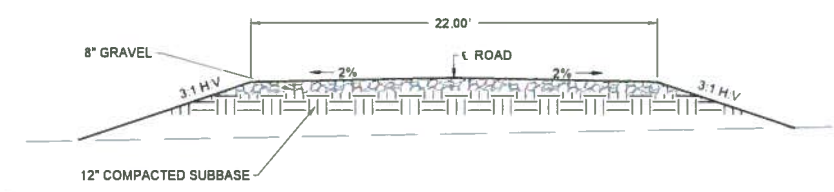
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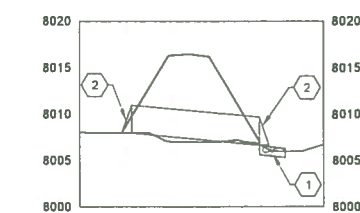
1 ACCESS ROAD PLAN



A SECTION ACCESS ROAD



B SECTION ACCESS ROAD



CULVERT				
SIZE	LENGTH	SLOPE	START INVERT	END INVERT
36"	69.01'	1.87%	8007.94	8006.65

C CULVERT SECTION

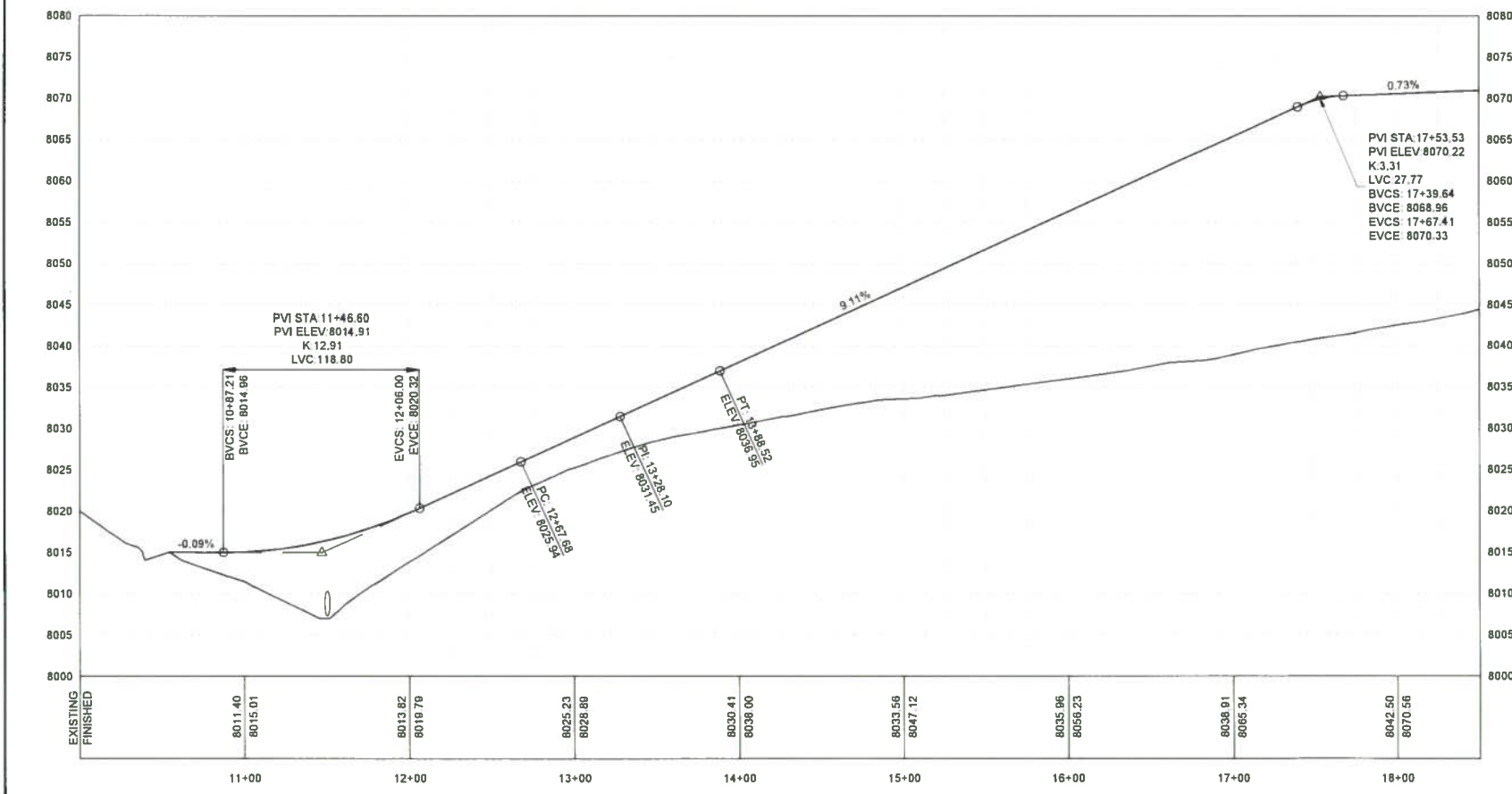
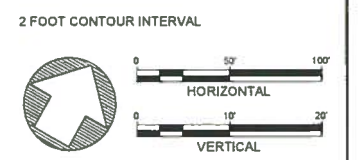
Line Table: Alignments						
Line #	Length	Direction	Start Northing	Start Easting	End Northing	End Easting
L1	267.68	S75° 28' 41.90"E	1464802.35	2440703.50	1464735.23	2440962.63
L2	582.03	N36° 27' 05.39"E	1464773.26	2441069.94	1465241.42	2441415.75

Curve Table: Alignments					
Curve #	Delta Angle	External Tangent	Radius	Degree of Curvature by Arc	Length
C1	68°04'13"	68.70	101.71	56.332	120.84

- KEYED NOTES**
- 12 FEET WIDE BY 14 FEET LONG LOOSE ROCK APRON, D50 OF 6 INCHES
 - MANUFACTURED END SECTION

- CONSTRUCTION NOTES**
- CULVERT DESIGN FLOW IS 27 CFS
 - DRAINAGE AREA FOR CULVERT 373 ACRES

- LEGEND**
- PROPERTY BOUNDARY
 - EXISTING FENCE
 - EXISTING WATERLINE
 - EXISTING GAS LINE
 - EXISTING GROUND PROFILE
 - FINISHED GROUND PROFILE
 - CULVERT
 - RIPRAP PROTECTION



2 ACCESS ROAD PROFILE

NO

DATE

APPR.

REVISION

NO

DATE

APPR.

REVISION

GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY
COLORADO

LAKEWOOD

WESTON
SOLUTIONS

COLORADO

CHECKED: DB
DES. ENG: DG
PROJ. ENG: DG
PROJ. MGR: KM
APPROVED:
APPROVED:

DATE: JUN15
DATE: JUN15
DATE: JUN15
DATE: JUN15
DATE:
DATE:

CLIENT APPROVALS:
DATE:

30757
6/15/15

REGISTERED PROFESSIONAL ENGINEER
STATE OF COLORADO

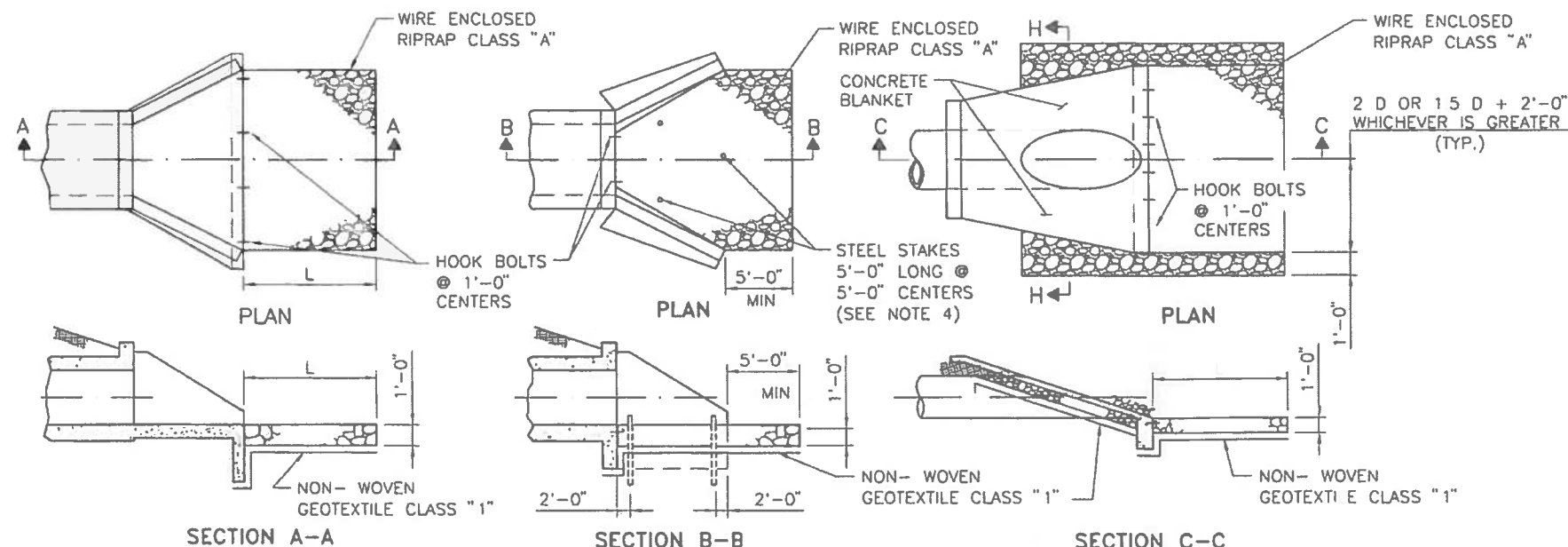
ACCESS ROAD PLAN AND PROFILE

DRAWN: CP
SCALE: 1"=40'

DATE: 15JUN2015
W.D. NO. 14798.001.001

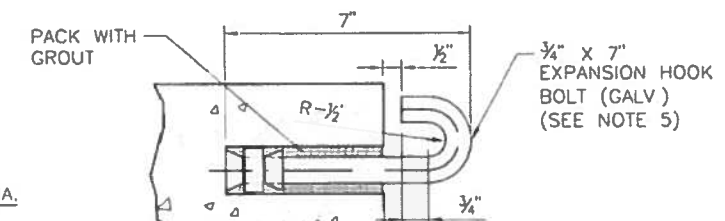
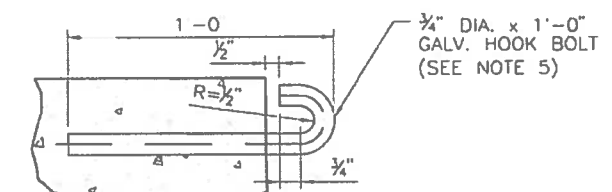
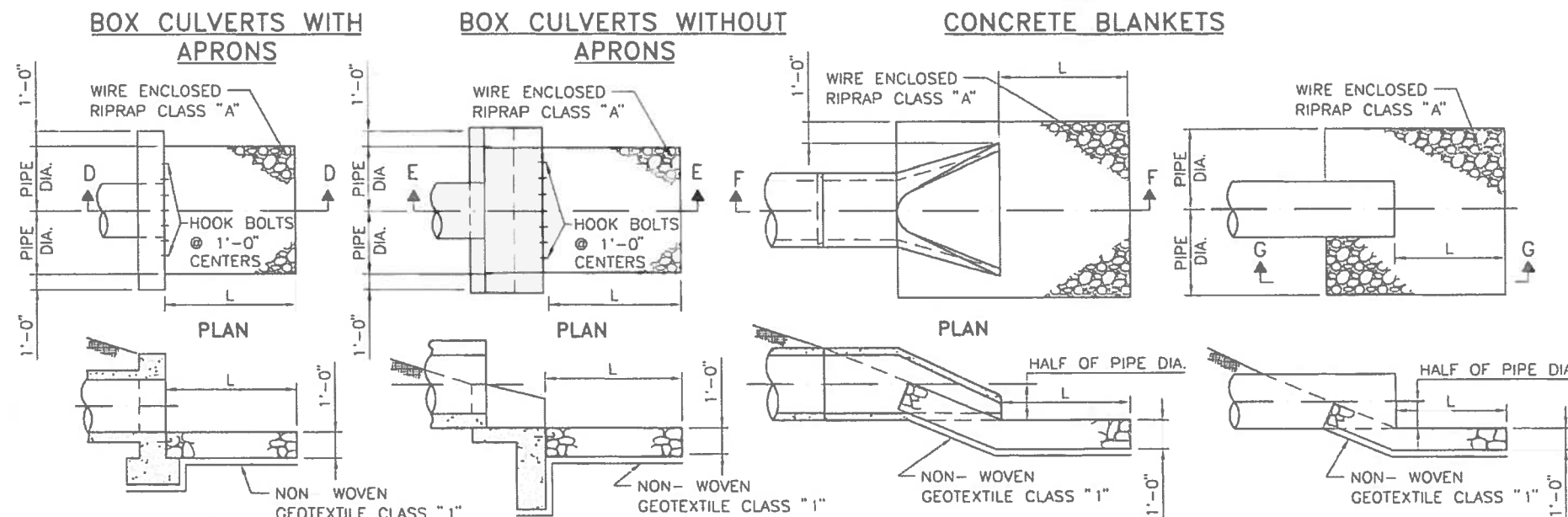
DWG. NO. C116
SHT. 19 OF 36

REV. NO. A



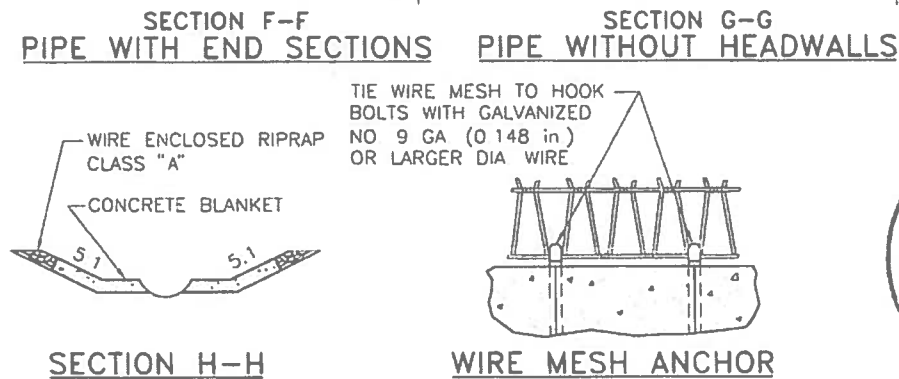
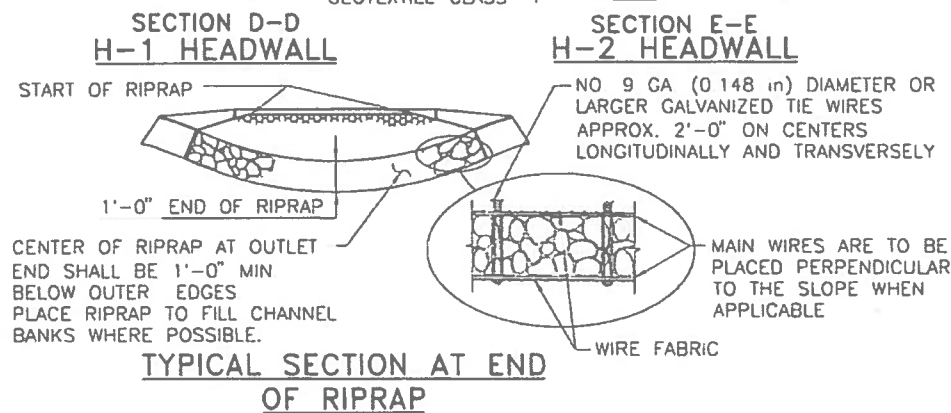
- ### GENERAL NOTES

1. ALL RIPRAP SHALL BE CLASS "A" UNLESS SPECIFIED OTHERWISE IN THE PLANS. DIMENSIONS OF RIPRAP CLASS "A" SHALL BE VERIFIED IN FIELD.
2. RIPRAP ON THIS STANDARD IS SHOWN FOR SINGLE PIPES AND CULVERTS ONLY. FOR MULTIPLE PIPE AND CULVERT INSTALLATIONS, EXTEND RIPRAP BEYOND OUTLET OPENING AS SHOWN IN PLAN DETAILS AND PLACE RIPRAP BETWEEN OUTLET OPENINGS AS SHOWN IN ELEVATION DETAILS.
3. SERIAL 602-02-1/1 MAY BE REFERENCED FOR DESCRIPTIONS OF WIRE MESH AND ALTERNATE PATTERNS
4. STEEL STAKES MAY BE RAILROAD RAILS WEIGHING NOT LESS THAN 30 LBS. PER YARD, 4" NOMINAL DIAMETER STANDARD STRENGTH GALVANIZED STEEL PIPE, OR L 4" X 4" X 3/8" STEEL ANGLES. STEEL STAKES SHALL PROJECT 6" ABOVE TOP OF RIPRAP. STEEL STAKES ARE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE WORK AND NO DIRECT MEASUREMENT OR PAYMENT WILL BE MADE THEREFORE.
5. CONTRACTOR MAY SUBSTITUTE CONCRETE CHEMICAL ANCHORS WITH HOOK GEOMETRY SHOWN, WHICH MEET REQUIREMENTS OF SECTION 522
6. TOE-IN OR PLACE EROSION CONTROL GEOTEXTILE UNDER FOOTINGS OR CUT-OFF WALL
7. $L (MIN) = 10'-0"$ OR $1.5 \times \text{DIAMETER OR RISE}$, WHICHEVER IS GREATER




ANCHOR TO EXISTING STRUCTURE


COST OF HOOK BOLT IN PLACE TO BE INCLUDED IN UNIT BID PRICE FOR RIPRAP.



NOTE SEE SHEET 602-01-1/1
FOR WIRE MESH SPLICE DETAILS

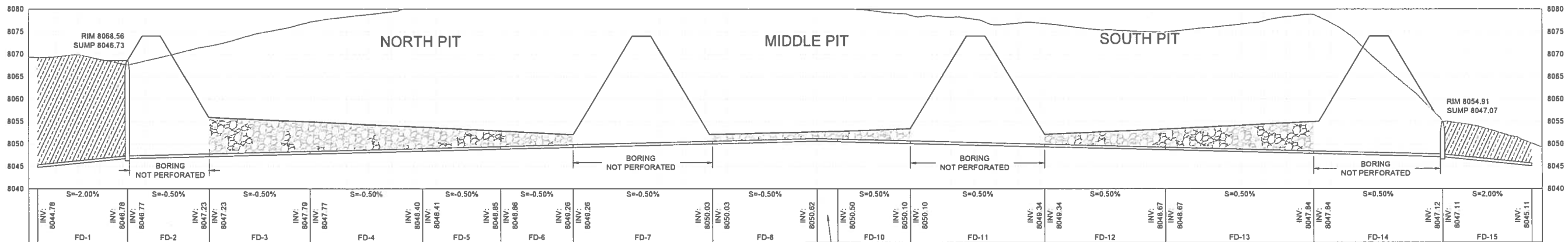
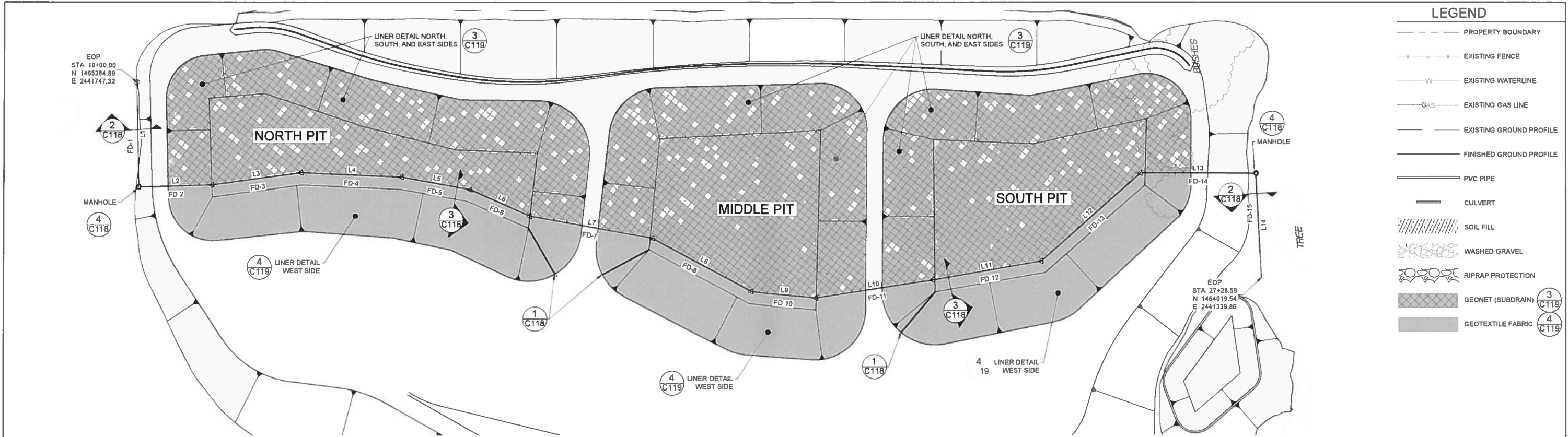
	8/09/09	YML	GENERAL REVISIONS
NO.	DATE	REV BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
<p style="text-align: center;">NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING</p>			
<p style="text-align: center;">EROSION CONTROL AT CULVERT OUTLETS</p>			
<p>DESIGNED BY <u>TM</u> DRAWN BY <u>SKL</u> CHECKED BY <u>YML</u></p>			
<p>602-02-1/1</p>			

1 of 1

<p align="center">GUNNISON ENERGY LLC SPADAFORA WATER STORAGE FACILITY</p>	
<p>GUNNISON COUNTY</p>	<p>CO</p>
<p align="center">  </p>	
<p>LAKEWOOD</p>	<p>CO</p>

	CHECKED	DB	DATE JUN15	CUSTOMER APPROVALS	DATE
	DES. ENG.	DG	JUN15		
DO	PROJ. ENG.	DG	JUN15		
	PROJ. MGR.	KM	JUN15		
	APPROVED				
DO	APPROVED				

<h1 style="text-align: center;">EROSION CONTROL AT CULVERT OUTLETS</h1>				
DRAWN <div style="text-align: center;">CP</div>	DATE <div style="text-align: center;">15JUN2015</div>	DWG. NO. <div style="text-align: center;">C116A</div>	REV. NO. <div style="text-align: center;">A</div>	
SCALE <div style="text-align: center;">14798.001.001</div>	W.O. NO. <div style="text-align: center;">20 36</div>			



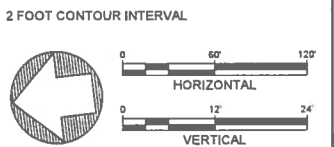
Line Table: Alignments				
Line #	Length	Direction	Start Point	End Point
L14	130.00	N86° 13' 25.16"W	E 2441469.58, N 1464010.98	E 2441339.86, N 1464019.54
L13	143.90	S6° 56' 30.59"W	E 2441486.97, N 1464153.82	E 2441469.58, N 1464010.98
L12	165.19	S34° 42' 51.99"E	E 2441392.90, N 1464289.60	E 2441486.97, N 1464153.82
L11	137.55	S2° 58' 04.53"E	E 2441385.78, N 1464426.97	E 2441392.90, N 1464289.60
L10	147.67	S1° 54' 12.50"E	E 2441380.87, N 1464574.56	E 2441385.78, N 1464426.97
L9	81.33	S12° 32' 31.51"W	E 2441398.53, N 1464653.94	E 2441380.87, N 1464574.56
L8	139.60	S35° 02' 09.85"W	E 2441478.68, N 1464768.25	E 2441398.53, N 1464653.94

Line Table: Alignments				
Line #	Length	Direction	Start Point	End Point
L7	155.83	S17° 01' 58.74"W	E 2441524.32, N 1464917.25	E 2441478.68, N 1464768.25
L6	81.03	S30° 39' 34.44"W	E 2441565.64, N 1464986.95	E 2441524.32, N 1464917.25
L5	87.10	S17° 12' 30.15"W	E 2441591.41, N 1465070.15	E 2441565.64, N 1464986.95
L4	125.68	S9° 18' 33.26"W	E 2441611.74, N 1465194.17	E 2441591.41, N 1465070.15
L3	112.50	S0° 55' 24.91"E	E 2441609.93, N 1465306.66	E 2441611.74, N 1465194.17
L2	91.22	S5° 01' 59.48"W	E 2441617.93, N 1465397.53	E 2441609.93, N 1465306.66
L1	130.00	N84° 25' 27.69"W	E 2441747.32, N 1465384.89	E 2441617.93, N 1465397.53

Pipe Table					
NAME	SIZE	LENGTH	SLOPE	START INVERT	END INVERT
FD-1	6"	99.94'	-2.00%	8044.78	8046.78
FD-2	6"	91.22'	-0.50%	8046.77	8047.23
FD-3	6"	112.49'	-0.50%	8047.23	8047.79
FD-4	6"	125.67'	-0.50%	8047.77	8048.40
FD-5	6"	87.12'	-0.50%	8048.41	8048.85
FD-6	6"	81.02'	-0.50%	8048.86	8049.26
FD-7	6"	155.83'	-0.50%	8049.26	8050.03
FD-8	6"	116.64'	-0.50%	8050.03	8050.62

Pipe Table					
NAME	SIZE	LENGTH	SLOPE	START INVERT	END INVERT
FD-9	6"	22.97'	0.50%	8050.62	8050.50
FD-10	6"	81.33'	0.50%	8050.50	8050.10
FD-11	6"	150.01'	0.50%	8050.10	8049.34
FD-12	6"	135.19'	0.50%	8049.34	8048.67
FD-13	6"	165.22'	0.50%	8048.67	8047.84
FD-14	6"	143.87'	0.50%	8047.84	8047.12
FD-15	6"	99.96'	2.00%	8047.11	8045.11

APPROXIMATE QUANTITIES (SQUARE FEET)			
	NORTH	MIDDLE	SOUTH
60-MIL HDPE LINER (PRIMARY LINER)	108257	100847	102960
200-MIL GEONET	108257	100847	102960
60-MIL HDPE LINER (SECONDARY LINER)	108257	100847	102960
200-MIL GEONET (SUBDRAIN)	70388	73831	71672
16 OZ GEOTEXTILE FABRIC	108257	100847	102960



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

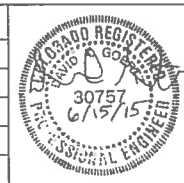
COLORADO



LAKEWOOD

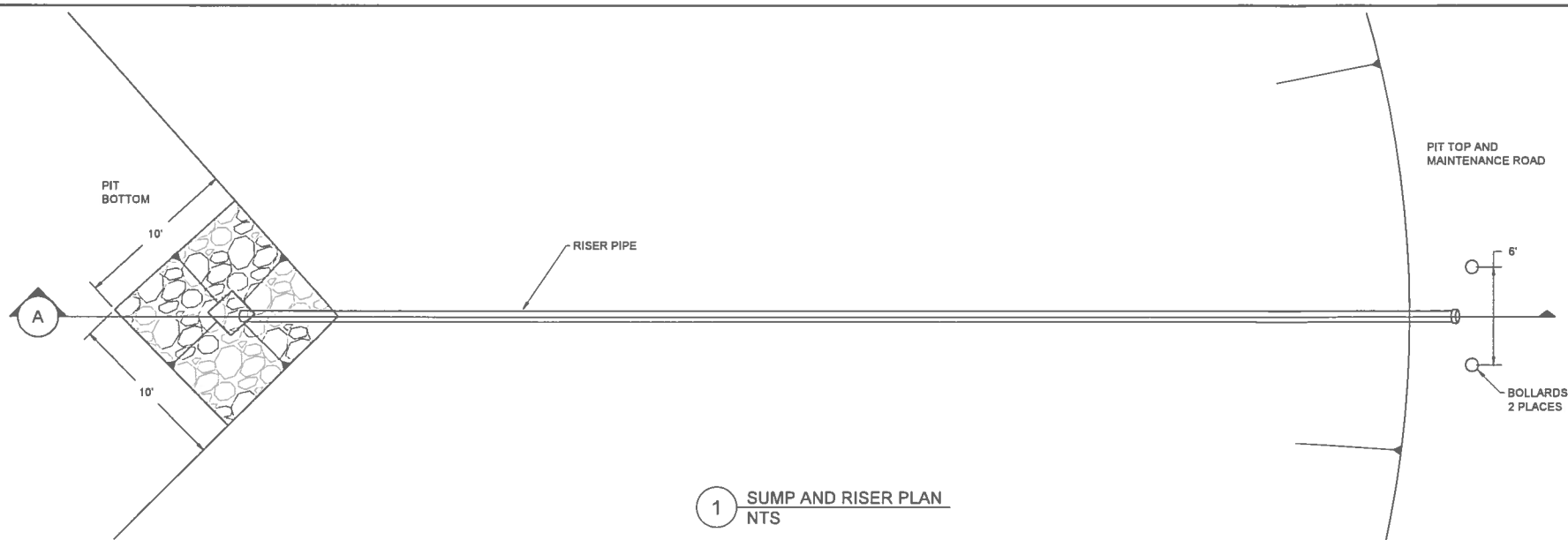
COLORADO

CHECKED	DB	DATE	CLIENT APPROVALS	DATE
DES. ENG.	DG	JUN15		
PROJ. ENG.	DG	JUN15		
PROJ. MGR.	KM	JUN15		
APPROVED				
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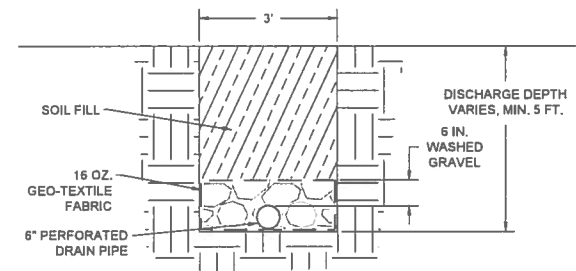


FRENCH DRAIN PLAN AND PROFILE

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C117	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	21	OF	36



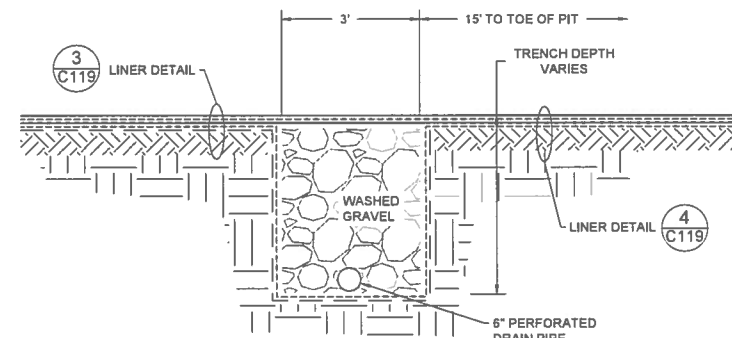
1 SUMP AND RISER PLAN
NTS



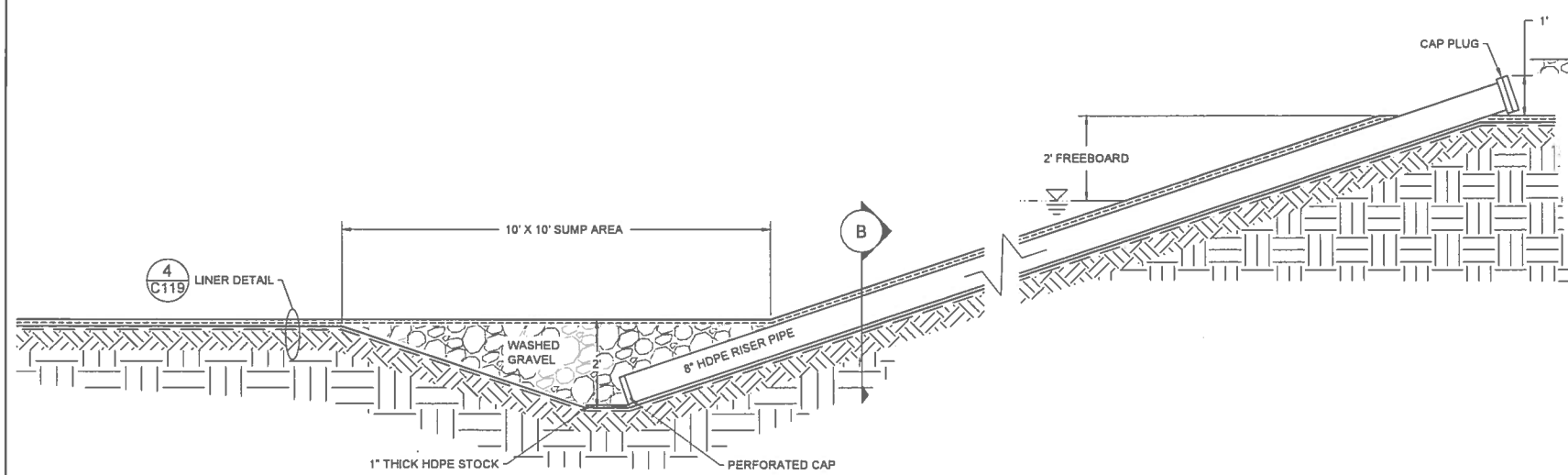
2 OUTLET SECTION

CONSTRUCTION NOTES

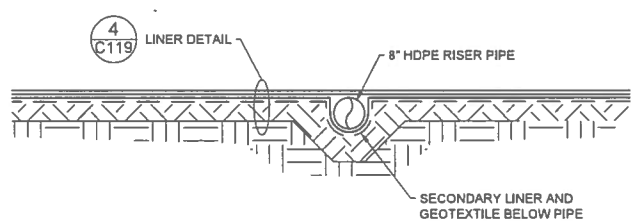
- A. ALL GEOSYNTHETICS AND LINERS SHALL BE ANCHORED, AS NECESSARY, DURING INSTALLATION TO PREVENT SLIPPAGE AS SPECIFIED BY MANUFACTURER.
- B. PIPELINE PENETRATION IN DETAIL A SHALL BE APPROVED BY ENGINEERS.



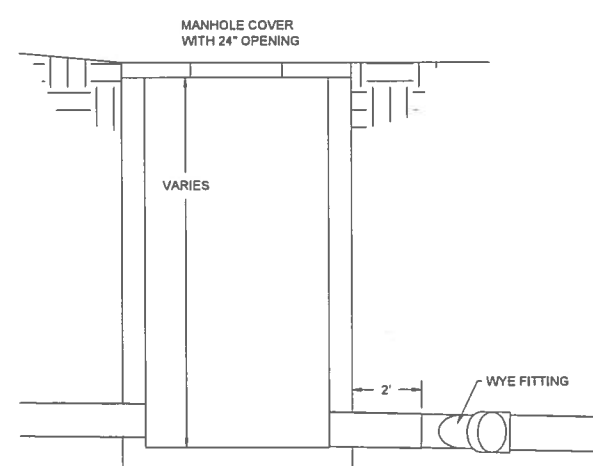
3 FRENCH DRAIN SECTION



A SUMP AND RISER PROFILE



B RISER SECTION



4 OUTLET MANHOLE



P:\Standard\1020DETAILS.dwg June 11, 2015 12:29pm

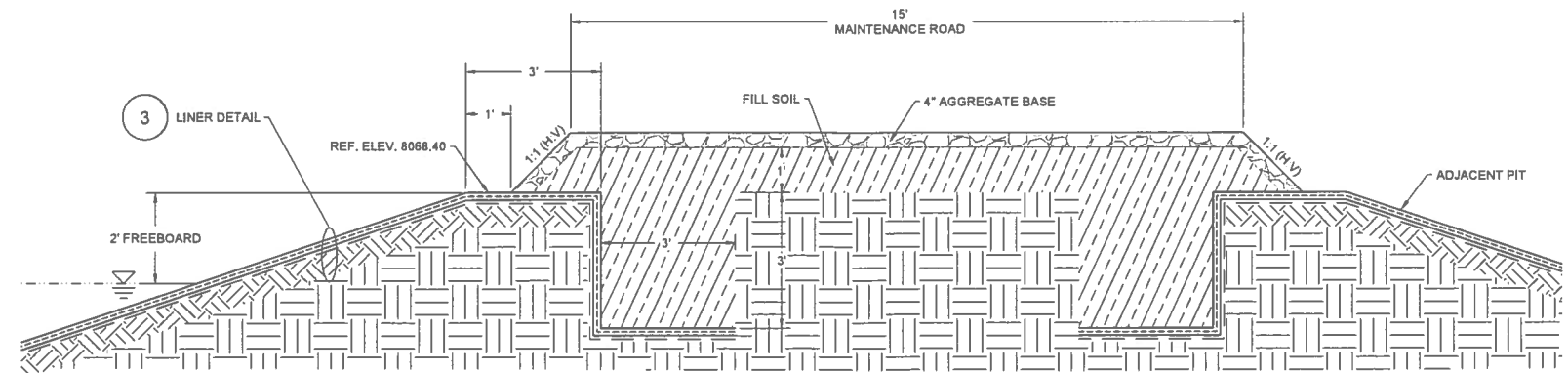
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KEYED NOTES

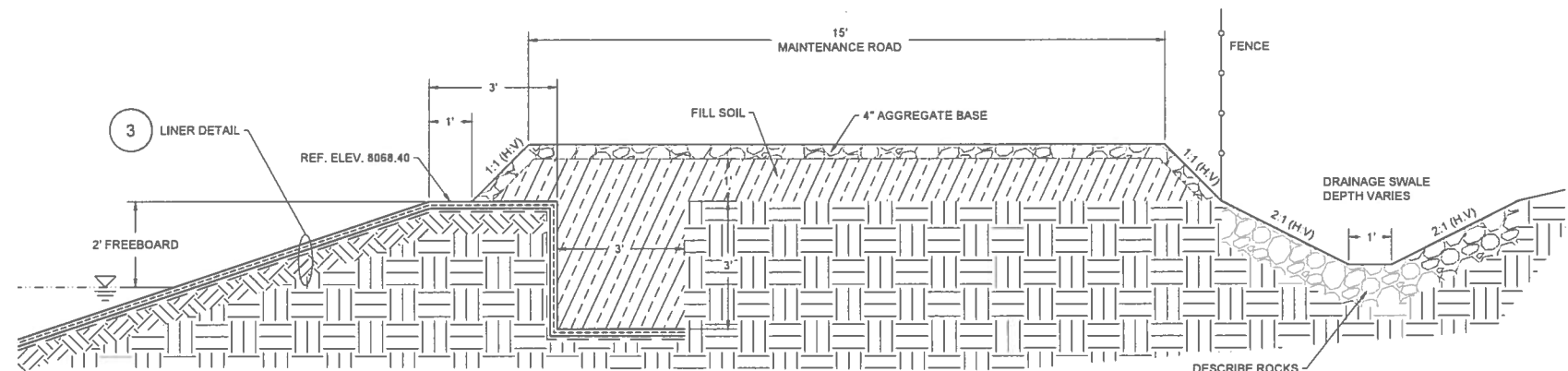
1 THE GEONET AND GEOTEXTILE MAY BE REPLACED WITH A BONDED GEONET AND GEOFABRIC AS APPROVED BY THE ENGINEER.

CONSTRUCTION NOTES

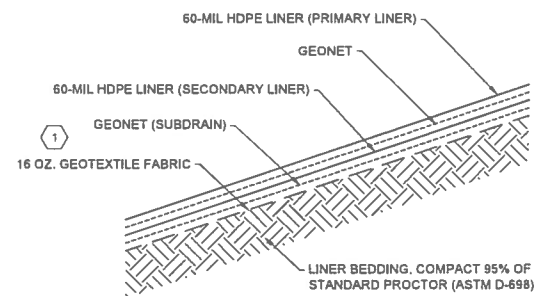
A ALL GEOSYNTHETICS AND LINERS SHALL BE ANCHORED, AS NECESSARY, DURING INSTALLATION TO PREVENT SLIPPAGE.



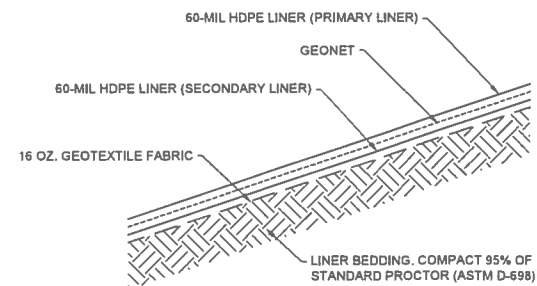
1 MAINTENANCE ROAD, LINER ANCHOR BETWEEN PITS



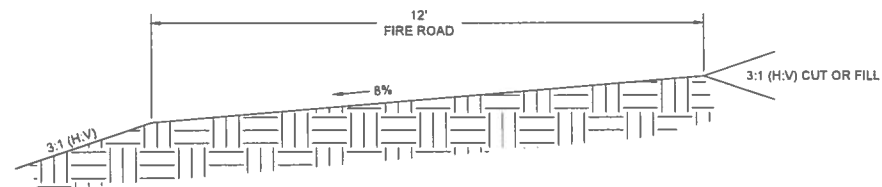
2 MAINTENANCE ROAD, LINER ANCHOR PERIMETER OF PITS



3 LINER WITH UNDER-DRAIN DETAIL NTS



4 LINER DETAIL NTS



5 FIRE ROAD DETAIL NTS



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

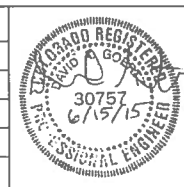
GUNNISON COUNTY

COLORADO



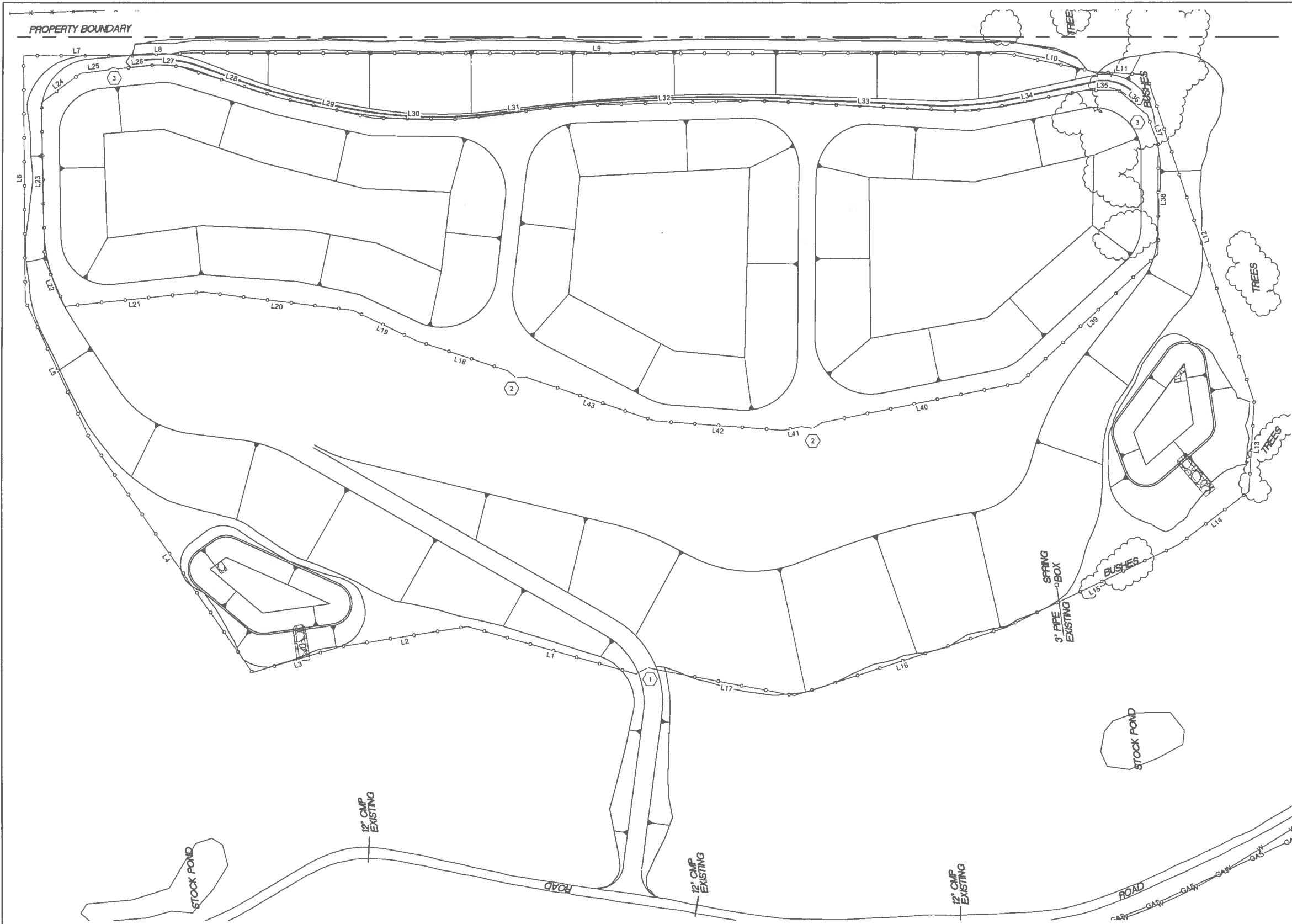
COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					



ROAD AND LINER DETAILS

DRAWN	CP	DATE	15JUN2015	SHEET NO.	C119	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	23	OF	36



Fence Line Table						
Line #	Length	Direction	Start Northing	Start Easting	End Northing	End Easting
L1	205.83	N22° 35' 02.20"E	1464749.54	2441011.56	1464939.59	2441090.61
L2	151.88	N2° 07' 47.95"W	1464939.59	2441090.61	1465091.37	2441084.97
L3	108.44	N9° 27' 19.29"W	1465091.37	2441084.97	1465198.33	2441067.15
L4	336.20	N61° 54' 37.22"E	1465198.33	2441067.15	1465356.63	2441363.75
L5	178.55	N71° 38' 55.15"E	1465356.63	2441363.75	1465412.85	2441533.22
L6	288.23	S83° 47' 03.28"E	1465412.85	2441533.22	1465381.64	2441819.76
L7	125.19	S6° 48' 38.68"W	1465381.64	2441819.76	1465257.33	2441804.91
L8	69.32	S4° 09' 17.91"W	1465257.33	2441804.91	1465188.19	2441799.89
L9	967.78	S6° 51' 56.19"W	1465188.19	2441799.89	1464227.35	2441684.20
L10	108.37	S18° 29' 41.95"W	1464227.35	2441684.20	1464124.57	2441649.82
L11	59.49	S9° 47' 43.64"W	1464124.57	2441649.82	1464065.95	2441639.70
L12	406.12	S78° 32' 01.05"W	1464065.95	2441639.70	1463985.21	2441241.68
L13	105.38	N79° 37' 23.34"W	1463985.21	2441241.68	1464004.19	2441138.03
L14	104.45	N30° 03' 13.12"W	1464004.19	2441138.03	1464094.60	2441085.71
L15	224.63	N18° 41' 32.63"W	1464094.60	2441085.71	1464307.39	2441013.72
L16	263.78	N10° 57' 27.07"W	1464307.39	2441013.72	1464566.35	2440963.58
L17	159.68	N17° 33' 30.70"E	1464566.35	2440963.58	1464718.59	2441011.76
L18	112.85	N25° 01' 42.68"E	1464857.13	2441384.24	1464959.38	2441431.98
L19	83.20	N32° 17' 12.14"E	1464959.38	2441431.98	1465029.71	2441476.42
L20	178.88	N13° 43' 39.00"E	1465029.71	2441476.42	1465203.48	2441518.87
L21	163.80	N0° 49' 14.91"E	1465203.48	2441518.87	1465367.26	2441521.22
L22	59.52	N73° 01' 04.66"E	1465367.26	2441521.22	1465384.65	2441578.14
L23	185.11	S84° 33' 11.42"E	1465384.65	2441578.14	1465367.08	2441762.42
L24	57.68	S30° 03' 22.95"E	1465367.08	2441762.42	1465317.15	2441791.31
L25	32.43	S0° 00' 31.48"W	1465317.15	2441791.31	1465284.73	2441791.31
L26	46.22	S1° 26' 53.42"W	1465271.73	2441791.41	1465225.52	2441790.24
L27	25.87	S10° 25' 12.00"W	1465225.52	2441790.24	1465200.08	2441785.56
L28	126.89	S24° 02' 45.73"W	1465200.08	2441785.56	1465084.20	2441733.86
L29	110.27	S18° 56' 38.71"W	1465084.20	2441733.86	1464979.90	2441698.06
L30	96.92	S7° 46' 58.35"W	1464979.90	2441698.06	1464883.88	2441684.94
L31	141.14	S0° 08' 03.12"W	1464883.88	2441684.94	1464742.74	2441684.61
L32	215.84	S5° 21' 29.90"W	1464742.74	2441684.61	1464527.84	2441664.45
L33	254.06	S9° 45' 11.15"W	1464527.84	2441664.45	1464277.46	2441621.41
L34	138.80	S3° 27' 51.62"E	1464277.46	2441621.41	1464138.91	2441629.80
L35	38.61	S7° 14' 40.24"W	1464138.91	2441629.80	1464100.61	2441624.93
L36	37.30	S47° 38' 46.56"W	1464100.61	2441624.93	1464075.48	2441597.37
L37	31.11	S76° 28' 26.11"W	1464069.02	2441596.17	1464061.75	2441555.92
L38	128.29	N83° 03' 08.40"W	1464061.75	2441555.92	1464077.26	2441428.58
L39	222.35	N36° 03' 05.14"W	1464077.26	2441428.58	1464257.03	2441297.72
L40	238.76	N4° 27' 57.35"W	1464257.03	2441297.72	1464495.07	2441279.13
L41	21.73	N4° 24' 46.92"W	1464520.03	2441277.14	1464541.69	2441275.47
L42	152.93	N11° 03' 58.13"E	1464541.69	2441275.47	1464691.78	2441304.82
L43	158.38	N25° 37' 30.21"E	1464691.78	2441304.82	1464834.58	2441373.32

KEYED NOTES

1. 12-FOOT SWING GATES (24-FOOT OPENING)

2. 8-FOOT SWING GATES (16-FOOT OPENING)

3. MAN GATE

LEGEND

PROPERTY BOUNDARY

EXISTING FENCE

EXISTING WATERLINE

EXISTING GAS LINE

GATE

FENCE

RIPRAP PROTECTION

CONSTRUCTION NOTES

A. FENCED AREA 21.14 ACRES

0 60' 120'

North Arrow

NO. DATE APPR. REVISION

NO. DATE APPR. REVISION

GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY COLORADO

WESTON SOLUTIONS

LAKEWOOD COLORADO

CHECKED DB DATE JUN15

DES. ENG. DG DATE JUN15

PROJ. MGR. KM DATE JUN15

APPROVED

APPROVED

CLIENT APPROVALS

DATE

30757
6/15/15
REGISTERED PROFESSIONAL ENGINEER

STATE OF COLORADO

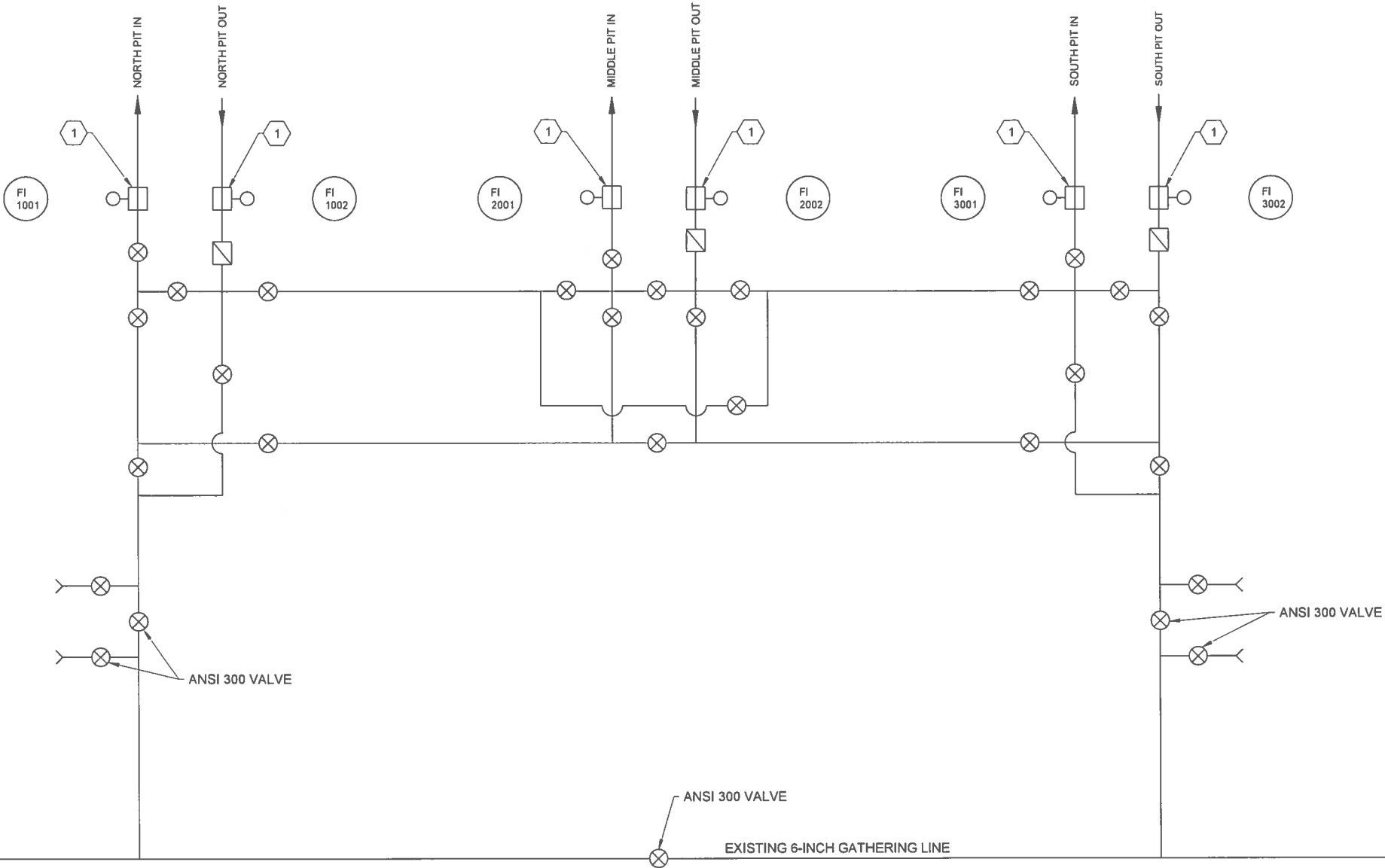
FENCE PLAN

DRAWN CP DATE 15JUN2015 DWS. NO. C120 REV. NO. A

SCALE W.O. NO. 14798.001.001 SH. 24 OF 36

P:\Spadafora\Gunnison\ENR\dwg - June 11, 2015 - 13:30pm

CONTINUES NEXT SHEET



- CONSTRUCTION NOTES
- A.

UNLESS OTHERWISE NOTED ALL VALVES ARE ANSI 150.
- B.

FLOW METERS SHALL HAVE A MINIMUM OF 10 DIAMETERS STRAIGHT PIPE UPSTREAM AND 5 DIAMETERS DOWNSTREAM.
- C.

PIPING AND VALVES BY OTHERS.

- LEGEND
- BALL VALVE
- ONE WAY VALVE
- FLOW METER

1 PIPING DETAIL

GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

COLORADO



LAKEWOOD

COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					









PIPING SCHEMATIC

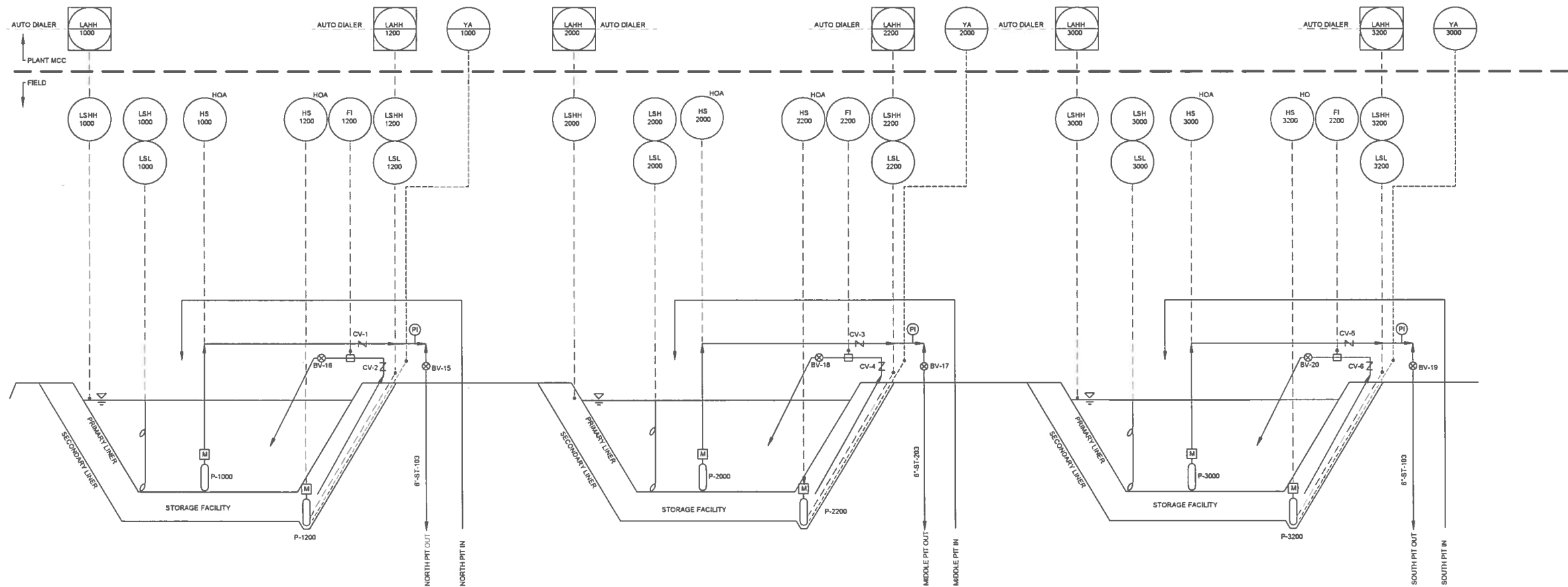
DRAWN	CP	DATE	15JUN2015	DWG. NO.	C121	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	25	OF	36

CONSTRUCTION NOTES

A. PUMPING SYSTEM ALARM AND LEVEL MONITORING BY OTHERS.

LEGEND

- ⊗ BALL VALVE
-  SUBMERSIBLE PUMP
-  LEVEL PROBE
-  CHECK VALVE (CV)
- E/T = ELECTRICAL TRACE
- EXIST = EXISTING
- HO = HAND ON-OFF
- HOA = HAND-OFF-AUTO
- HS = HAND SWITCH
- LAHH = LEVEL ALARM HIGH-HIGH
- LSH = LEVEL SWITCH HIGH
- LSHH = LEVEL SWITCH HIGH-HIGH
- LSL = LEVEL SWITCH LOW
- MCC = MOTOR CONTROL CENTER
- NC = NORMALLY CLOSED
- P-1000 = PUMP-DESIGNATION
- PI = PRESSURE INDICATOR
- ST = STEEL
- YA = EVENT (LEAK) ALARM
-  FIELD MOUNTED-DISCRETE INSTRUMENTATION
-  PRIMARY LOCATION MOUNTED-DISCRETE INSTRUMENTATION
-  PRIMARY LOCATION-SHARED DISPLAY/CONTROL



FROM PREVIOUS SHEET

1 PIPING DETAIL

GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

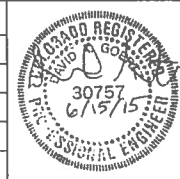
COLORADO



LAKEWOOD

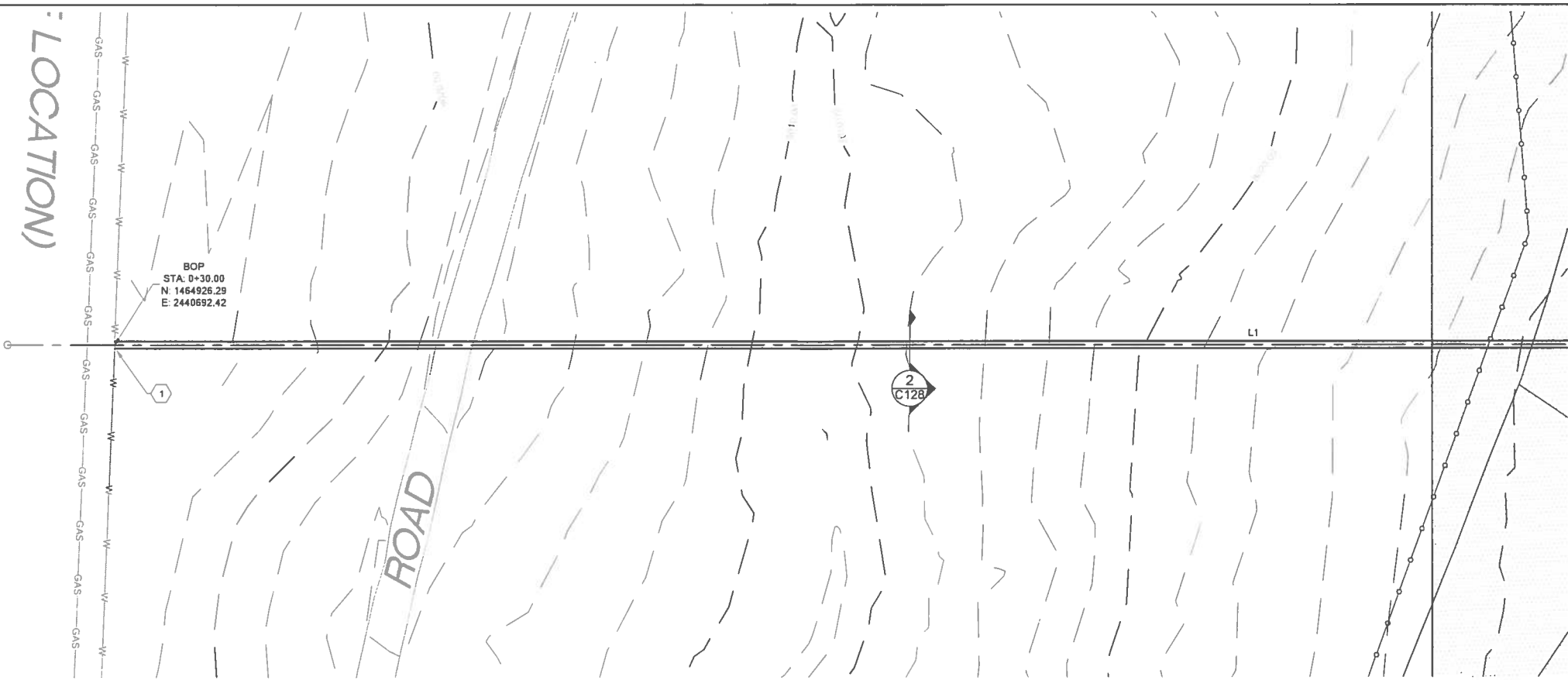
COLORADO

CHECKED	DB	DATE	CLIENT APPROVALS	DATE
DES. ENG.	DG	JUN15		
PROJ. ENG.	DG	JUN15		
PROJ. MGR.	KM	JUN15		
APPROVED				
APPROVED				



P & ID

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C122	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	26	OF	36



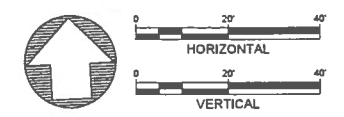
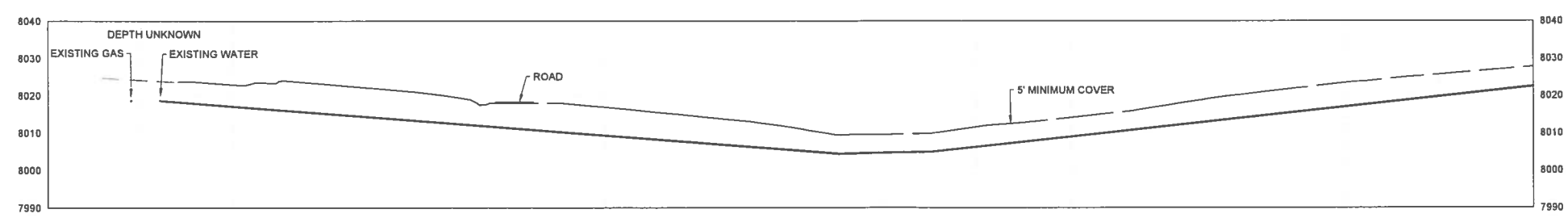
- KEYED NOTES**
- ANSI 300 VALVE TO BE INSTALLED ON EXISTING WATERLINE BETWEEN PROPOSED NEW LINE CONNECTIONS.

- CONSTRUCTION NOTES**
- A. ALL BURIED PIPE IS 6-INCH COATED STEEL

1 WATERLINE PIPING

Line Table: Alignments						
Line #	Length	Direction	Start Northing	Start Easting	End Northing	End Easting
L1	703.97	S87° 28' 17.32"E	1464927.62	2440662.45	1464896.56	2441365.74
L2	4.08	S64° 57' 24.44"E	1464896.56	2441365.74	1464894.83	2441369.44
L3	17.02	N25° 02' 35.56"E	1464894.83	2441369.44	1464910.26	2441376.64

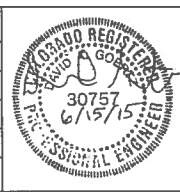
- LEGEND**
- PROPERTY BOUNDARY
 - EXISTING FENCE
 - EXISTING WATERLINE
 - EXISTING GAS LINE
 - PROPOSED PIPING



GUNNISON ENERGY LLC
SPADAFORA WATER STORAGE FACILITY
GUNNISON COUNTY
COLORADO

WESTON
SOLUTIONS
LAKEWOOD
COLORADO

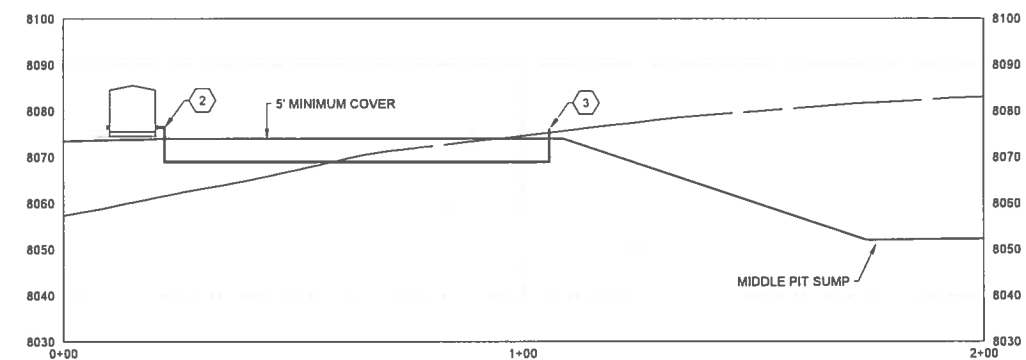
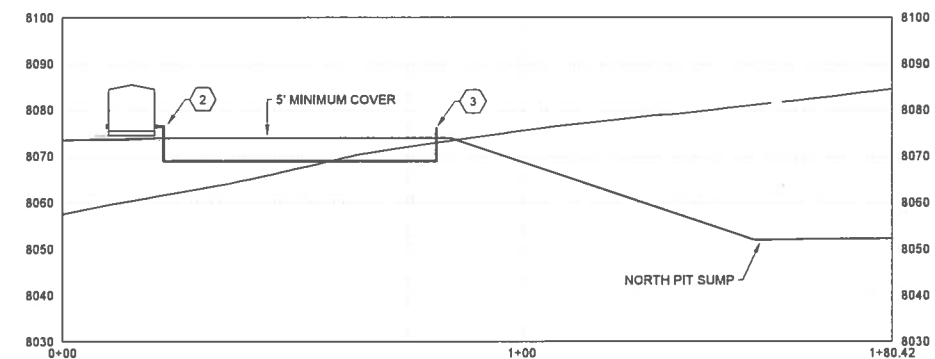
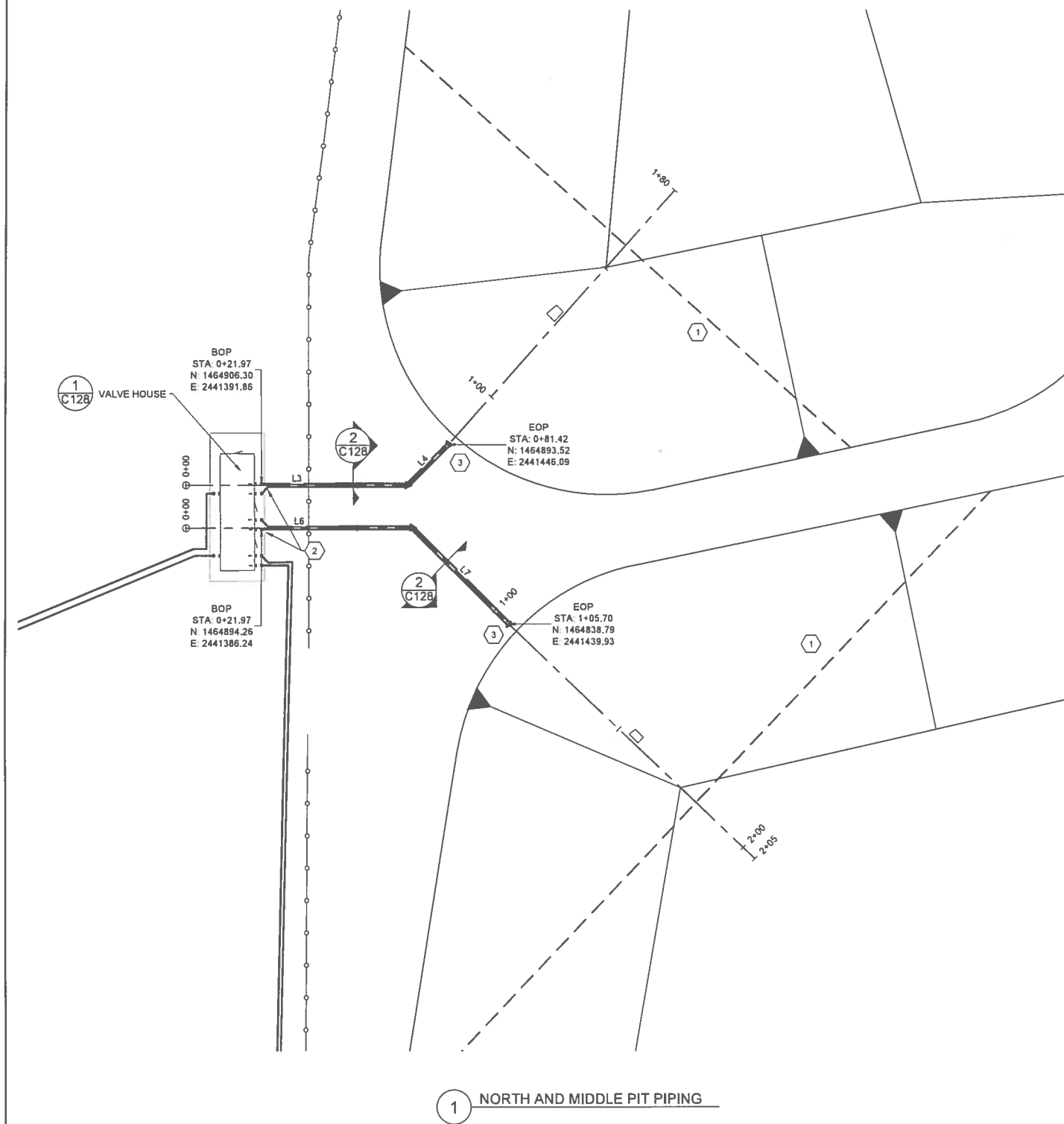
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DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					

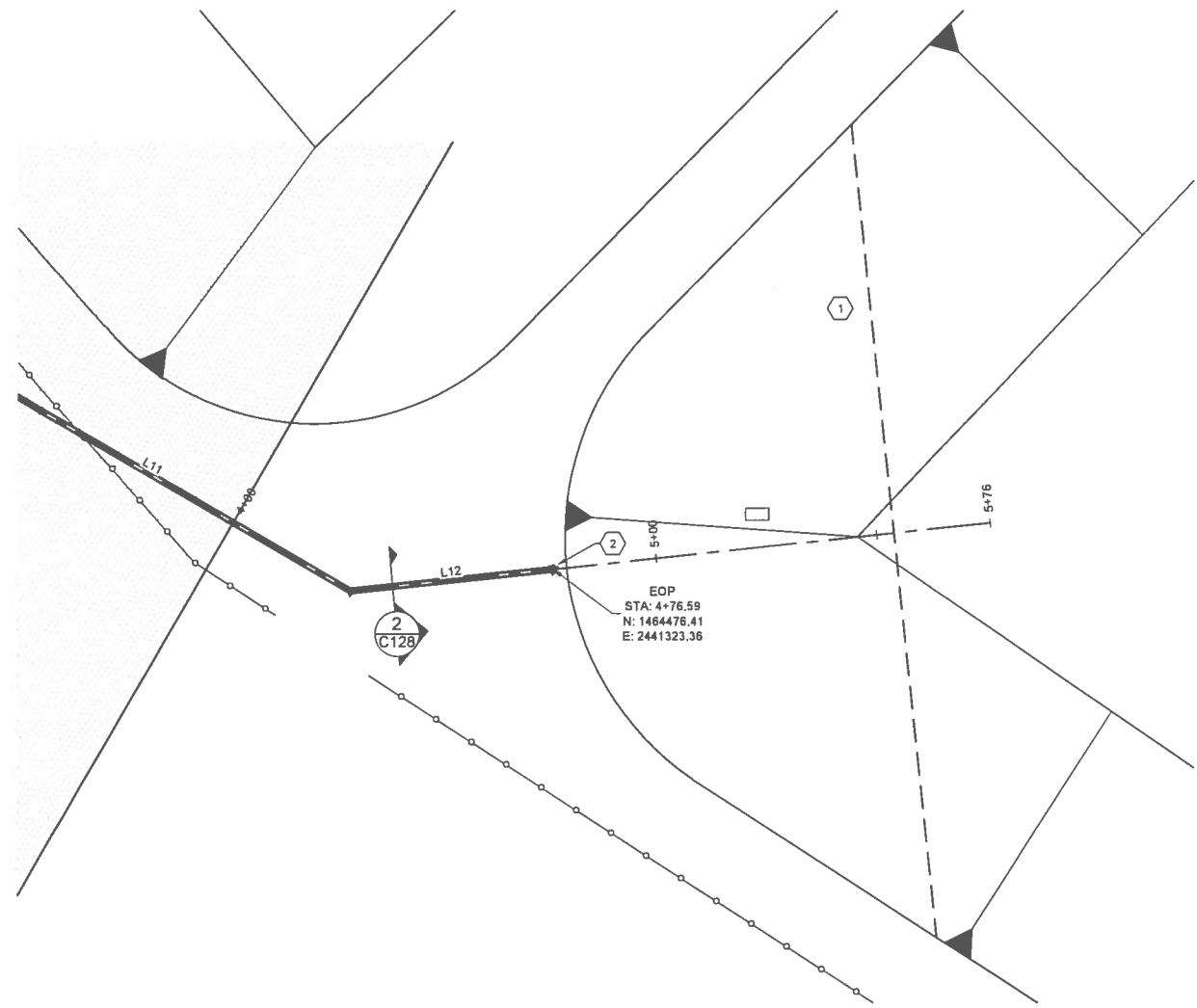


**WATERLINE PIPING
PLAN AND PROFILE**

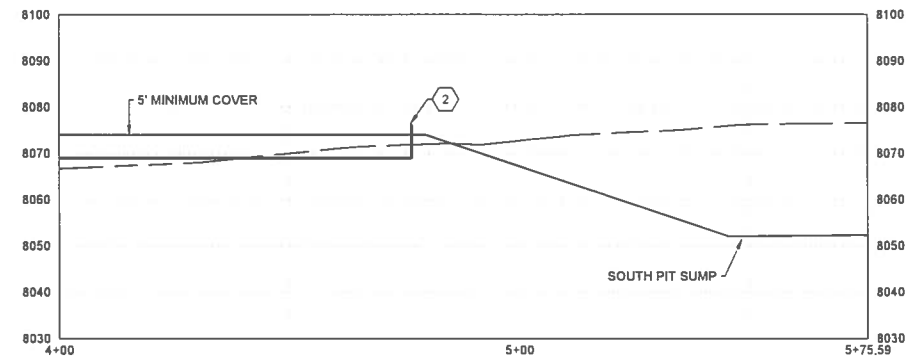
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SCALE		W.C. NO.	14798.001.001	SHT	27	OF	36

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1 SOUTH PIT PIPING

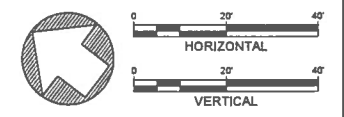


Line Table: Alignments						
Line #	Length	Direction	Start Northing	Start Easting	End Northing	End Easting
L9	30.35	S65° 07' 36.35"E	1464894.46	2441362.09	1464881.70	2441389.83
L10	259.41	S26° 29' 10.96"W	1464881.70	2441389.63	1464649.51	2441273.93
L11	140.81	S7° 15' 49.04"E	1464649.51	2441273.93	1464509.83	2441291.74
L12	46.01	S43° 25' 23.78"E	1464509.83	2441291.74	1464476.41	2441323.36

- KEYED NOTES**
- FLOATING CENTRIFUGAL PUMPS HELD IN POSITION BY DUAL CABLES BY OTHERS.
 - CONNECTION TO FLEXIBLE LINE TO PUMP TO BE COORDINATED WITH PUMP CONTRACTOR.

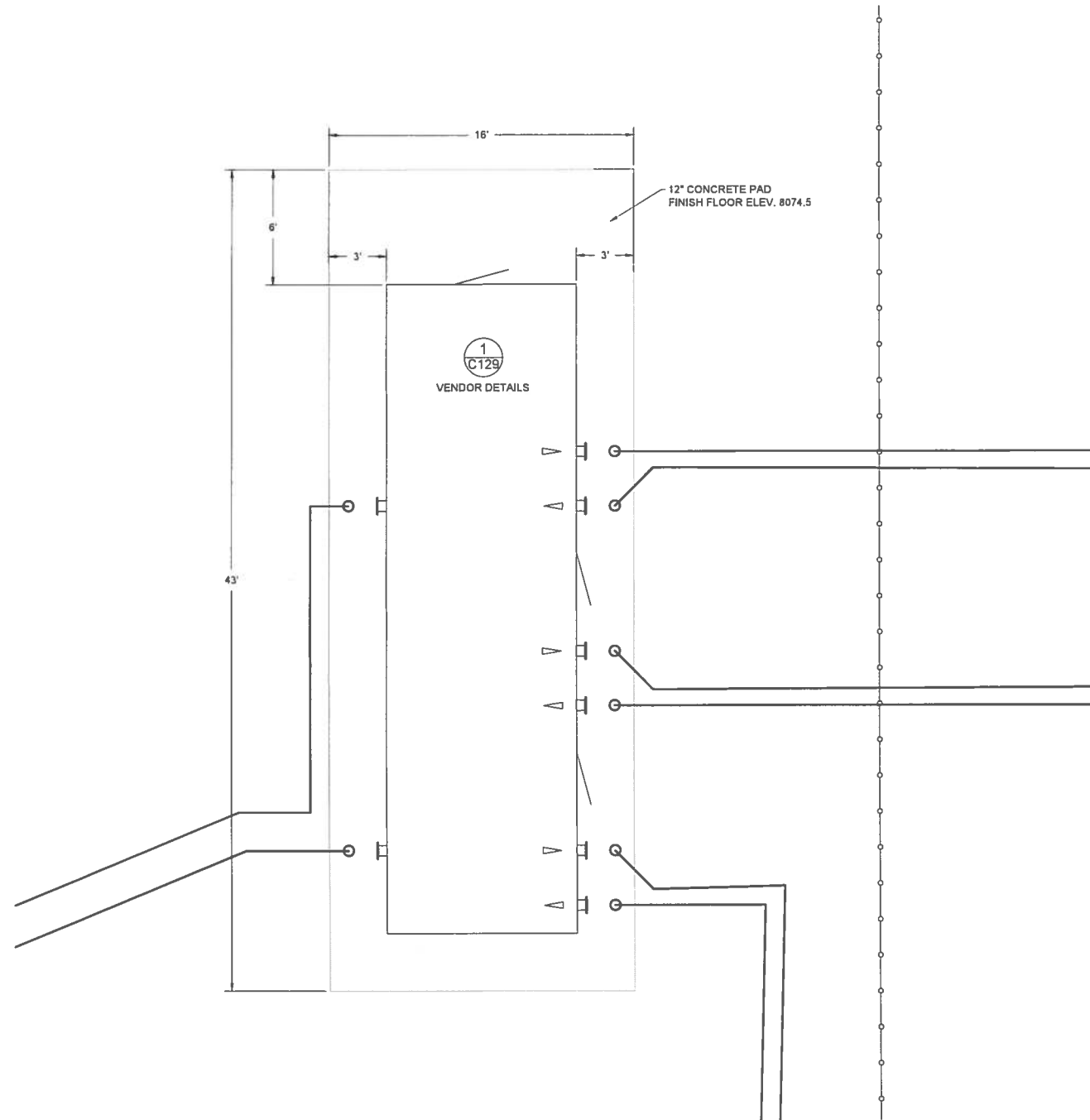
- CONSTRUCTION NOTES**
- ALL BURIED PIPE IS 6-INCH COATED STEEL.
 - VALVE HOUSE AND PUMP SYSTEM BY OTHERS.
 - LOCATION OF THE BURIED PIPE AT THE VALVE HOUSE MUST BE COORDINATED WITH THE VALVE HOUSE CONTRACTOR.

- LEGEND**
- PROPERTY BOUNDARY
 - EXISTING FENCE
 - EXISTING WATERLINE
 - EXISTING GAS LINE
 - PROPOSED PIPING

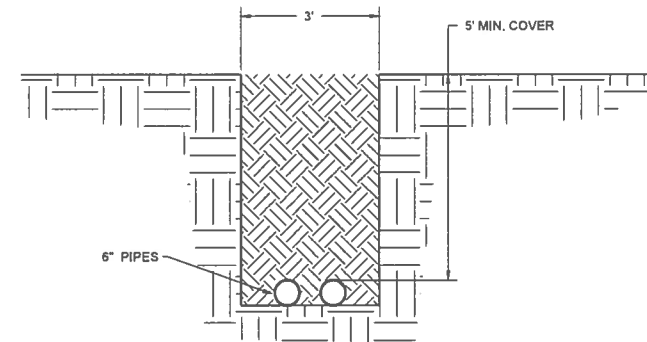


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				GUNNISON ENERGY LLC				CHECKED DB DATE JUN15		CLIENT APPROVALS		DATE			SOUTH PIT PIPING PLAN AND PROFILE								
				SPADAFORA WATER STORAGE FACILITY				DES. ENG. DG DATE JUN15															
				GUNNISON COUNTY				PROJ. ENG. DG DATE JUN15															
				COLORADO				PROJ. MGR. KM DATE JUN15															
								APPROVED															
								APPROVED															
NO. DATE APPR.				REVISION				NO. DATE APPR.				REVISION				DRAWN CP DATE 15JUN2015				SCALE W.D. NO. 14798.001.001		REV. NO. C127 A	
								LAKEWOOD				WESTON SOLUTIONS				COLORADO				SHEET 31 OF 36			



1 VALVE HOUSE



2 TRENCH DETAIL

CONSTRUCTION NOTES

- A. ALL BURIED PIPE IS 6-INCH COATED STEEL
- B. VALVE HOUSE AND PUMP SYSTEM BY OTHERS.
- C. LOCATION OF THE BURIED PIPE AT THE VALVE HOUSE MUST BE COORDINATED WITH THE VALVE HOUSE CONTRACTOR.

LEGEND

— PROPOSED PIPING



GUNNISON ENERGY LLC SPADAFORA WATER STORAGE FACILITY

GUNNISON COUNTY

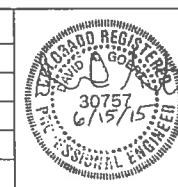
COLORADO



LAKEWOOD

COLORADO

CHECKED	DB	DATE	JUN15	CLIENT APPROVALS	DATE
DES. ENG.	DG	DATE	JUN15		
PROJ. ENG.	DG	DATE	JUN15		
PROJ. MGR.	KM	DATE	JUN15		
APPROVED					
APPROVED					



PIPING DETAILS

DRAWN	CP	DATE	15JUN2015	DWG. NO.	C128	REV. NO.	A
SCALE		W.D. NO.	14798.001.001	SHT	32	OF	36

