

DARK CANYON RECYCLE FACILITY

*E/2, SE/4, Section 23 - Township 23 South, Range 26 East,
N.M.P.M. Eddy County, New Mexico*

for



Index to Drawings

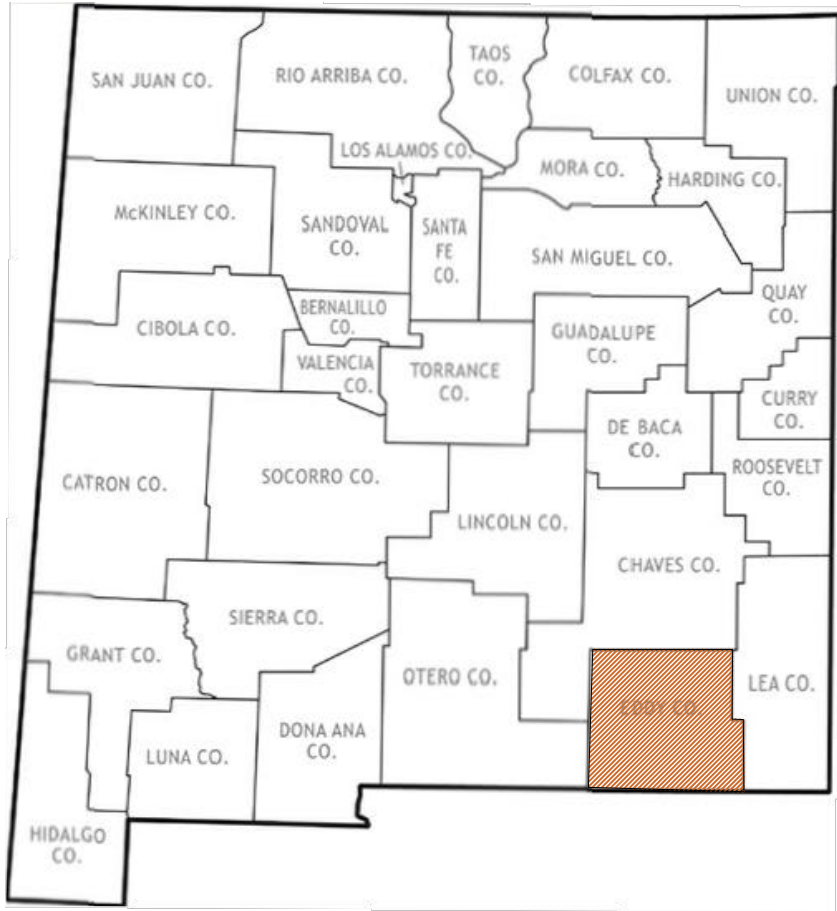
Sheet No.	Description
1.	Cover Sheet
2.	Project Location Plan
3.	Site Plan
4.	Site Prep / Staking Plan
5.	Cross Sections
6.	Sump Plan & Details
7.	Miscellaneous Details
8.	Miscellaneous Details

Contacts

3Bear Energy - Kevin Burns

Envirotech Engineering - Jimmy Stallings 580-234-8780
(Design Engineer)





Owner	3Bear Energy		
Site Name	Dark Canyon Recycle Facility Capacity		
	Top FB	Bottom	Max
Lagoon Features			Liq. Level
Side slope Ratio	3		3
Maximum Depth (ft)	14.5		11.5
Lagoon Top Width (ft)	450	363	426
Lagoon Top Length (ft)	485	398	461
Maximum Total Vol (ft³)	2,611,457		1,981,628
Maximum Total Vol (bbls)	465,088		352,919



Lagoon Liq Depth	Storage	Surface Area	Remaining Stor Vol	Gallons Storage	BBLs Storage	Percent of Total Volume	Vol in lagoon	Gallons Storage	Vol in Lagoon	Vol in Lagoon	Percent Total Vol
ft	ft	ac	ft3	gal	bbls	%	ft³	gal	bbls	ac-ft	%
14.5	0.0	5.01	-	-	-	0.0%	2,611,457	19,533,700	465,088	59.95	100%
14.0	0.5	4.95	72,809	544,613	12,967	2.8%	2,503,032	18,722,679	445,778	57.46	96%
13.5	1.0	4.88	146,769	1,097,832	26,139	5.6%	2,396,000	17,922,082	426,716	55.00	92%
13.0	1.5	4.82	221,888	1,659,724	39,517	8.5%	2,290,353	17,131,840	407,901	52.58	88%
12.5	2.0	4.76	298,176	2,230,356	53,104	11.4%	2,186,081	16,351,888	389,331	50.19	84%
12.0	2.5	4.69	375,641	2,809,797	66,900	14.4%	2,083,176	15,582,156	371,004	47.82	80%
11.5	3.0	4.63	454,293	3,398,112	80,907	17.4%	1,981,628	14,822,579	352,919	45.49	76%
11.0	3.5	4.57	534,140	3,995,369	95,128	20.5%	1,881,429	14,073,089	335,074	43.19	72%
10.5	4.0	4.51	615,192	4,601,636	109,563	23.6%	1,782,569	13,333,618	317,467	40.92	68%
10.0	4.5	4.45	697,457	5,216,980	124,214	26.7%	1,685,040	12,604,099	300,098	38.68	65%
9.5	5.0	4.39	780,945	5,841,469	139,083	29.9%	1,588,832	11,884,465	282,963	36.47	61%
9.0	5.5	4.33	865,664	6,475,169	154,171	33.1%	1,493,937	11,174,649	266,063	34.30	57%
8.5	6.0	4.27	951,624	7,118,148	169,480	36.4%	1,400,345	10,474,582	249,395	32.15	54%
8.0	6.5	4.21	1,038,833	7,770,473	185,011	39.8%	1,308,048	9,784,199	232,957	30.03	50%
7.5	7.0	4.15	1,127,301	8,432,211	200,767	43.2%	1,217,036	9,103,431	216,748	27.94	47%
7.0	7.5	4.09	1,217,036	9,103,431	216,748	46.6%	1,127,301	8,432,211	200,767	25.88	43%
6.5	8.0	4.03	1,308,048	9,784,199	232,957	50.1%	1,038,833	7,770,473	185,011	23.85	40%
6.0	8.5	3.98	1,400,345	10,474,582	249,395	53.6%	951,624	7,118,148	169,480	21.85	36%
5.5	9.0	3.92	1,493,937	11,174,649	266,063	57.2%	865,664	6,475,169	154,171	19.87	33%
5.0	9.5	3.86	1,588,832	11,884,465	282,963	60.8%	780,945	5,841,469	139,083	17.93	30%
4.5	10.0	3.81	1,685,040	12,604,099	300,098	64.5%	697,457	5,216,980	124,214	16.01	27%
4.0	10.5	3.75	1,782,569	13,333,618	317,467	68.3%	615,192	4,601,636	109,563	14.12	24%
3.5	11.0	3.69	1,881,429	14,073,089	335,074	72.0%	534,140	3,995,369	95,128	12.26	20%
3.0	11.5	3.64	1,981,628	14,822,579	352,919	75.9%	454,293	3,398,112	80,907	10.43	17%
2.5	12.0	3.58	2,083,176	15,582,156	371,004	79.8%	375,641	2,809,797	66,900	8.62	14%
2.0	12.5	3.53	2,186,081	16,351,888	389,331	83.7%	298,176	2,230,356	53,104	6.85	11%
1.5	13.0	3.48	2,290,353	17,131,840	407,901	87.7%	221,888	1,659,724	39,517	5.09	8%
1.0	13.5	3.42	2,396,000	17,922,082	426,716	91.7%	146,769	1,097,832	26,139	3.37	6%
0.5	14.0	3.37	2,503,032	18,722,679	445,778	95.8%	72,809	544,613	12,967	1.67	3%
0.0	14.5	3.32	2,611,457	19,533,700	465,088	100.0%	-	-	-	-	0%

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PROJECT LOCATION PLAN

DARK CANYON RECYCLE FACILITY

E/2, SE/4 Sec 23-T2S-R26E

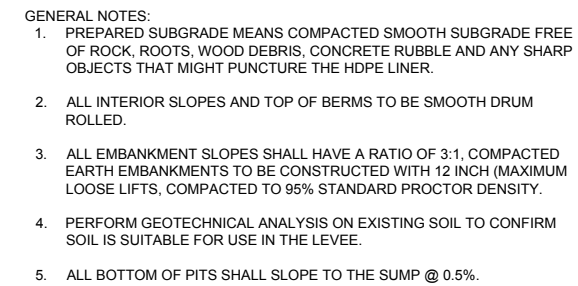
N.M.P.M. - Eddy County, New Mexico

Date:	September 2018
Scale:	N.T.S.
Designed by:	T. Williams
Drawn by:	M. Johnson
Checked by:	J. Stallings
Project No.	018183-00

Sheet No.

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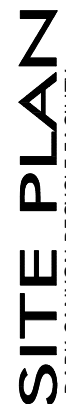
Preliminary Site Volume Table: Adjusted								
					Cut	Fill	NET	
Site	Stratum	Surface 1	Surface 2	Fill Factor	cubic yard	cubic yard	cubic yard	Method
Carlsbad 960 Facility	PIT, PAD, RAMP	Existing	Proposed	20%	79,535	76,860	2,675 (c)	Grid

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DARK CANYON RECYCLE FACILITY
E/2, SE/4 Sec 23-T23S-R26E

E/Z, SE/4 SEC 23-1 Z3S-K20E
N.M.P.M. - Eddy County, New Mexico

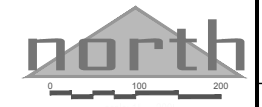
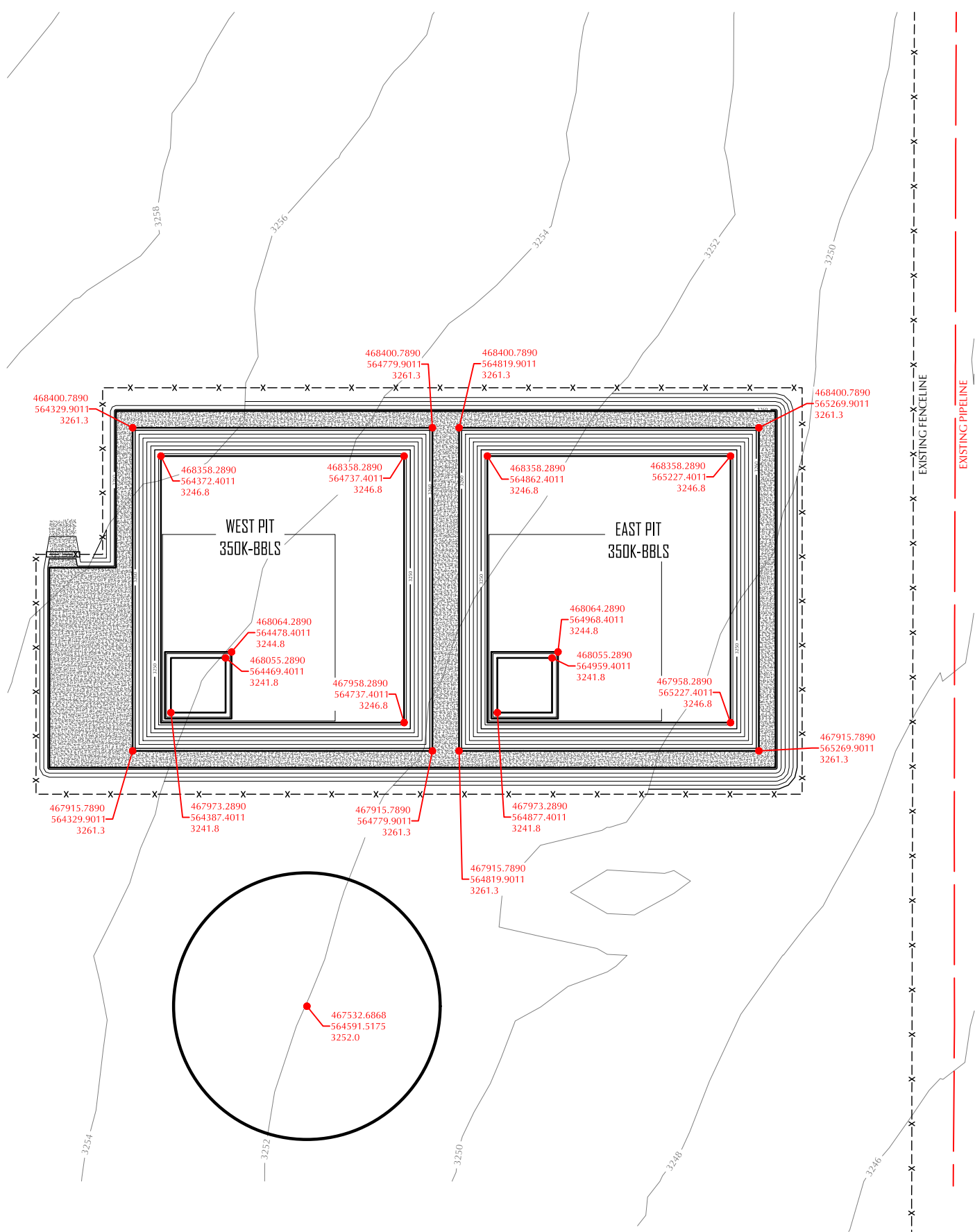
Scale: 1" = 200'

Drawn by: *M. Johnson*

Project No.	018183-00
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Project No. 018183-00

Sheet No.



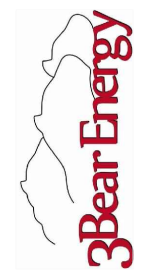
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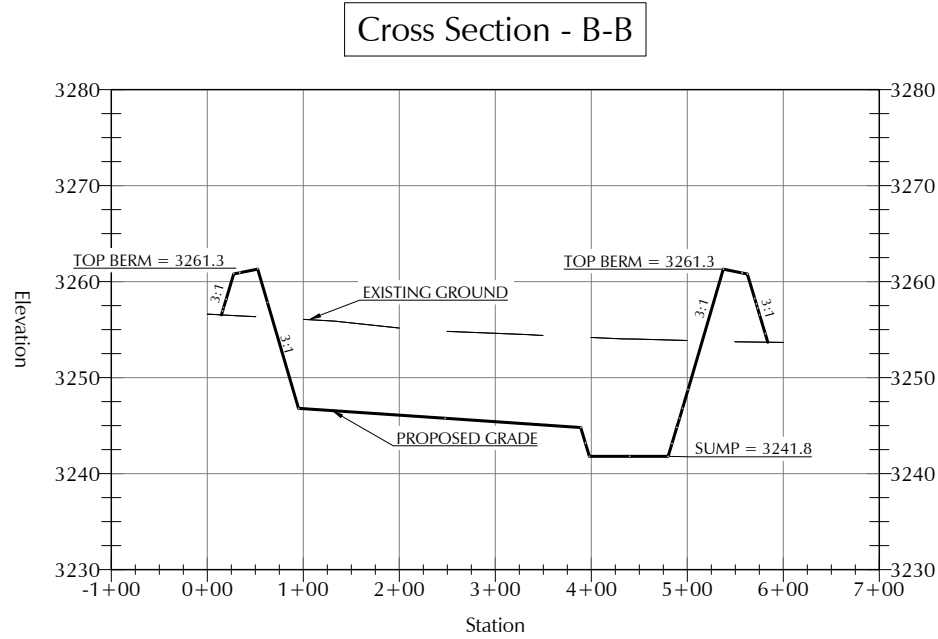
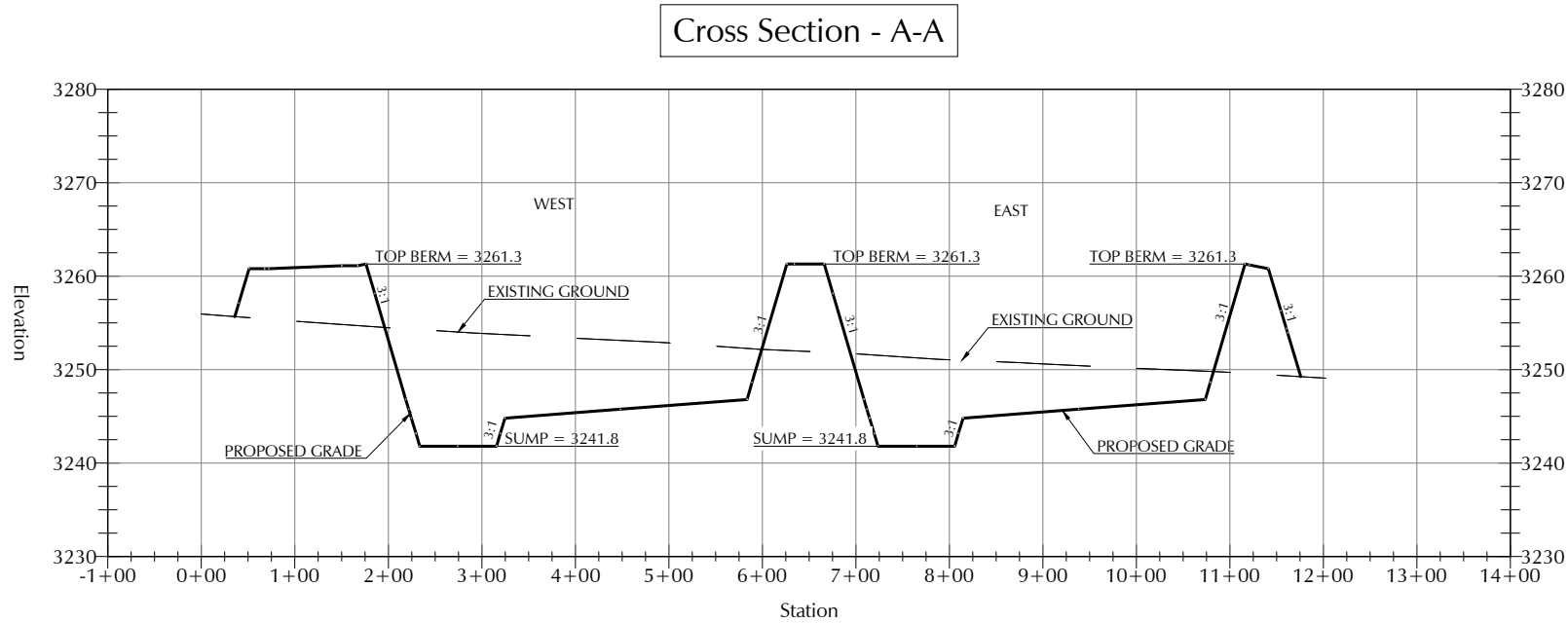
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SITE PREP / STAKING PLAN
DARK CANYON RECYCLE FACILITY
E/2, SE/4 Sec 23-T23S-R26E
N.M.P.M. - Eddy County, New Mexico

Date: September 2018
Scale: 1" = 200'
Designed by: T. Williams
Drawn by: M. Johnson
Checked by: J. Stallings
Project No. 018183-00

Sheet No. 4 of 8



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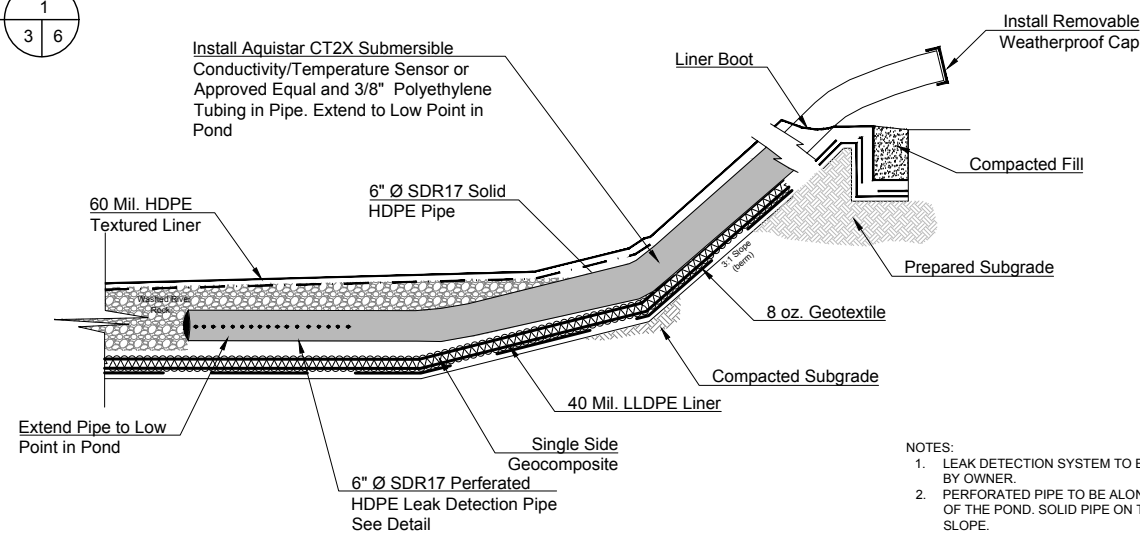
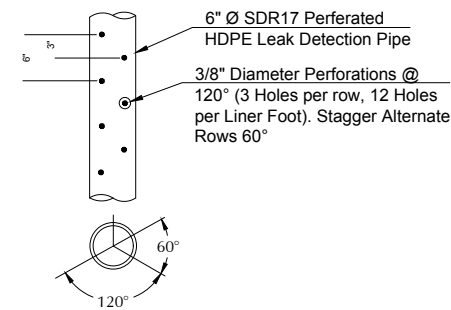
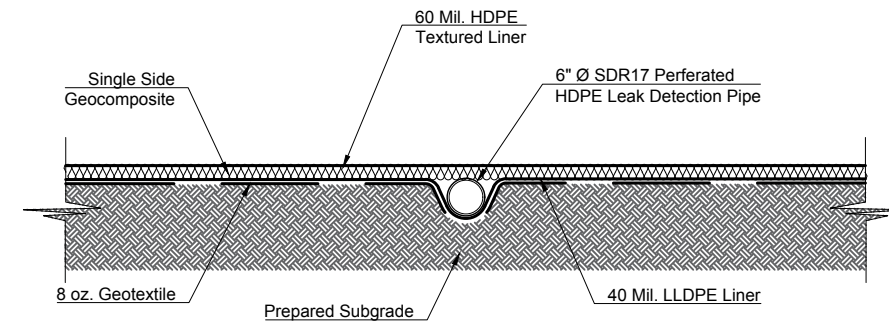
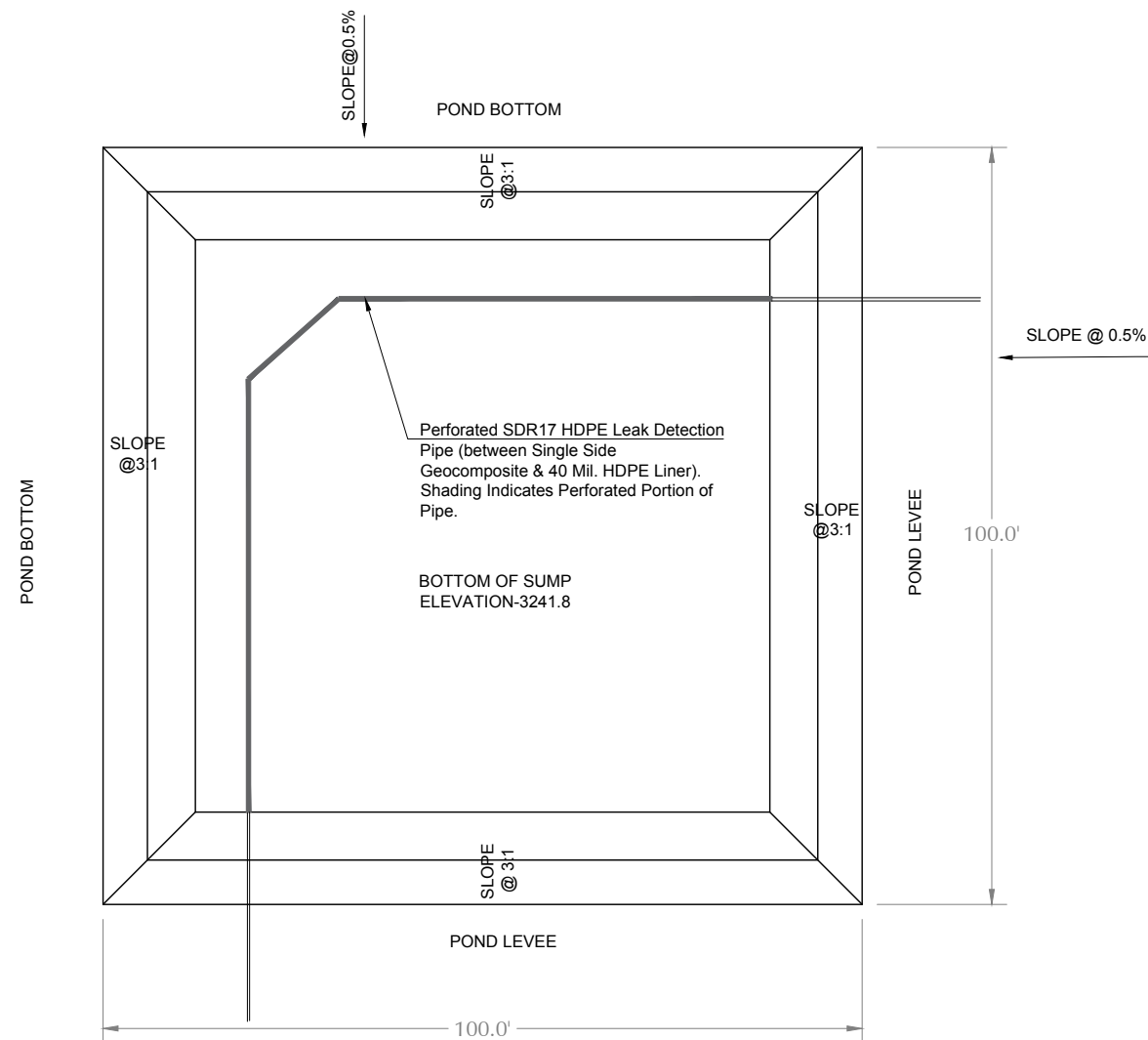


CROSS SECTIONS
DARK CANYON RECYCLE FACILITY
E/2, SE/4 Sec 23-T23S-R26E
N.M.P.M. - Eddy County, New Mexico

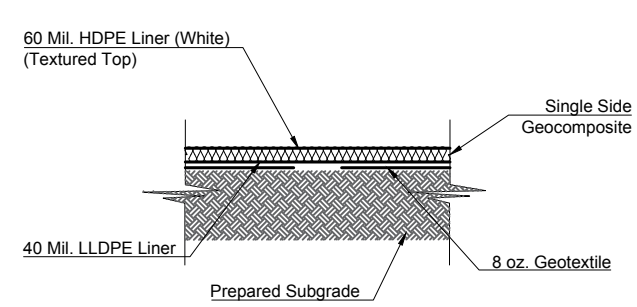
Date: September 2018
Scale: H:1"=200', V: 1"=20'
Designed by: T. Williams
Drawn by: M. Johnson
Checked by: J. Stallings
Project No. 018183-00

Sheet No.

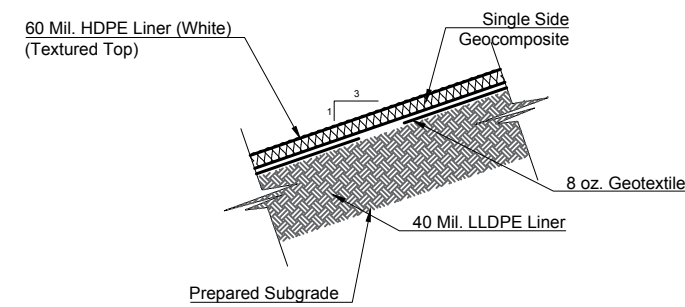
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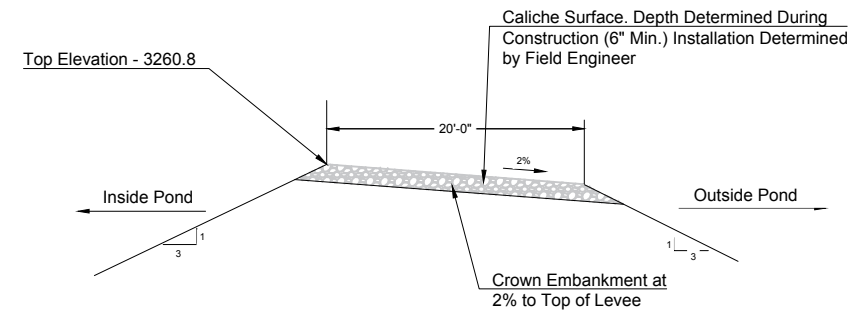
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LINER SYSTEM FLOOR DETAIL
Not to Scale

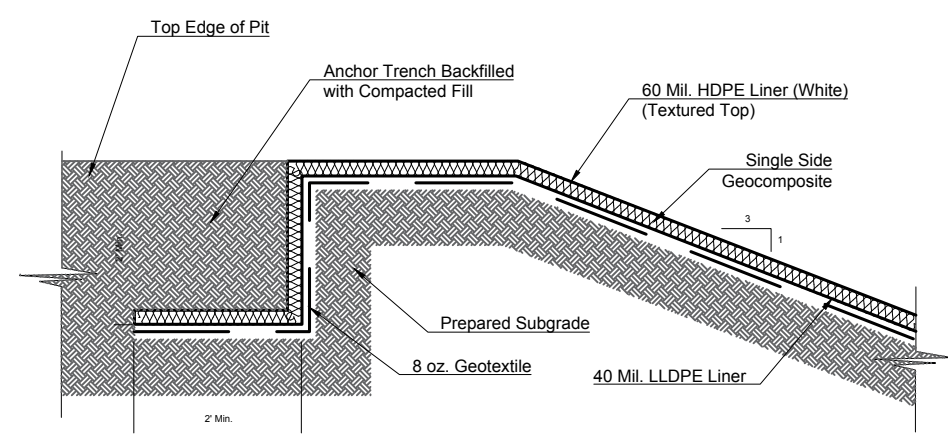


LINER SYSTEM SIDE SLOPE DETAIL
Not to Scale

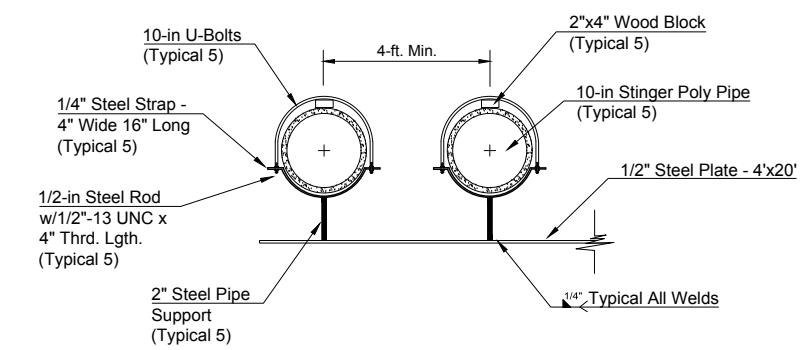


TYPICAL CREST DETAIL
Not to Scale

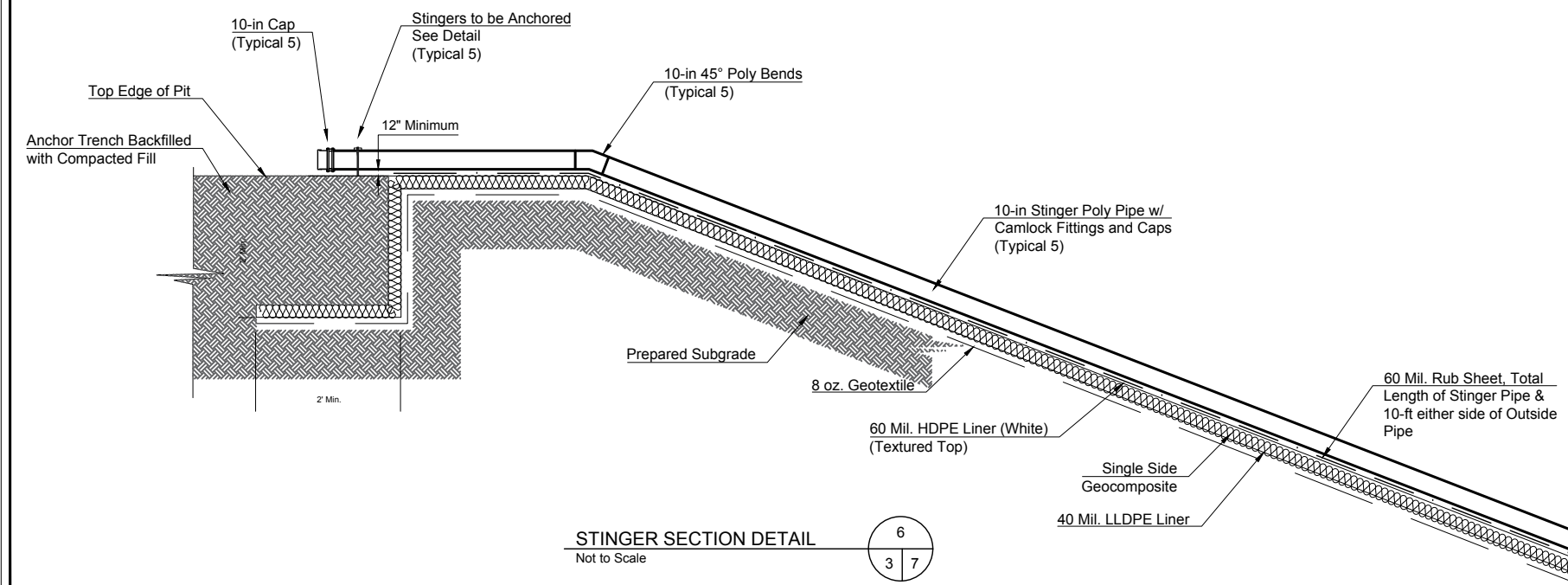
- GENERAL NOTES:**
1. PREPARED SUBGRADE MEANS COMPACTED SMOOTH SUBGRADE FREE OF ROCK, ROOTS, WOOD DEBRIS, CONCRETE RUBBLE AND ANY SHARP OBJECTS THAT MIGHT PUNCTURE THE HDPE LINER.
 2. ALL INTERIOR SLOPES AND TOP OF BERMS TO BE SMOOTH DRUM ROLLED.
 3. ALL EMBANKMENT SLOPES SHALL HAVE A RATIO OF 3:1, COMPACTED EARTH EMBANKMENTS TO BE CONSTRUCTED WITH 12 INCH (MAXIMUM LOOSE LIFTS, COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 4. PERFORM GEOTECHNICAL ANALYSIS ON EXISTING SOIL TO CONFIRM SOIL IS SUITABLE FOR USE IN THE LEVEE.
 5. ALL BOTTOM OF PITS SHALL SLOPE TO THE SUMP @ 0.5%.



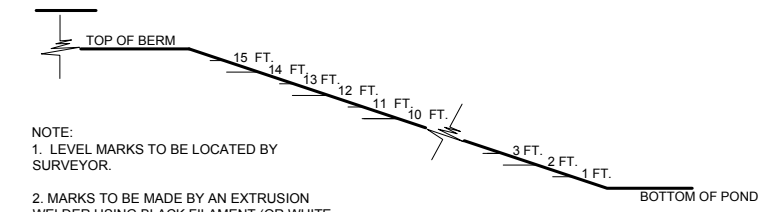
ANCHOR TRENCH DETAIL
Not to Scale



Stinger System Anchor Detail
Not to Scale



STINGER SECTION DETAIL
Not to Scale



- NOTE:**
1. LEVEL MARKS TO BE LOCATED BY SURVEYOR.
 2. MARKS TO BE MADE BY AN EXTRUSION WELDER USING BLACK FILAMENT (OR WHITE FILAMENT ON BLACK LINER).
 3. MARKS SHOULD REFERENCE LOWEST POINT ON BERM.

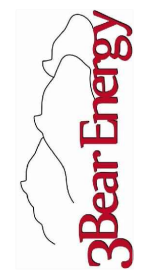
WATER LEVEL MARKS
Not to Scale

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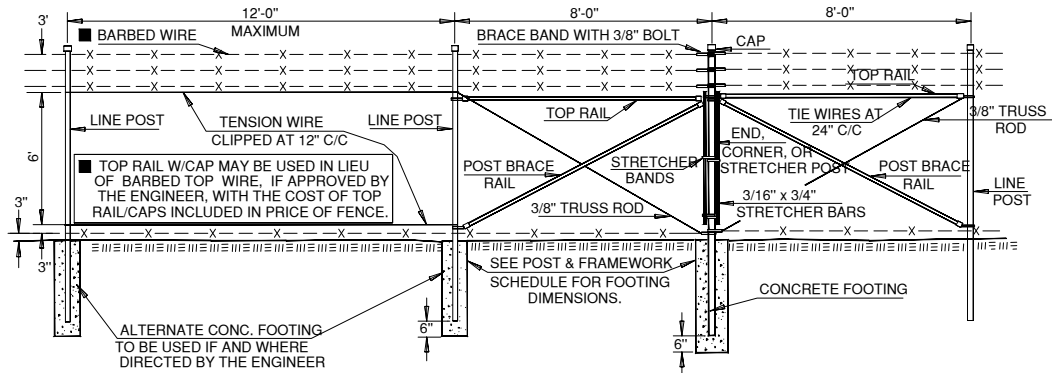
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MISCELLANEOUS DETAILS
DARK CANYON RECYCLE FACILITY
E/2, SE/4 Sec 23-T23S-R26E
N.M.P.M. - Eddy County, New Mexico

Date: September 2018	Scale: N.T.S.
Designed by: T. Williams	Drawn by: M. Johnson
Checked by: J. Stallings	Project No. 018183-00

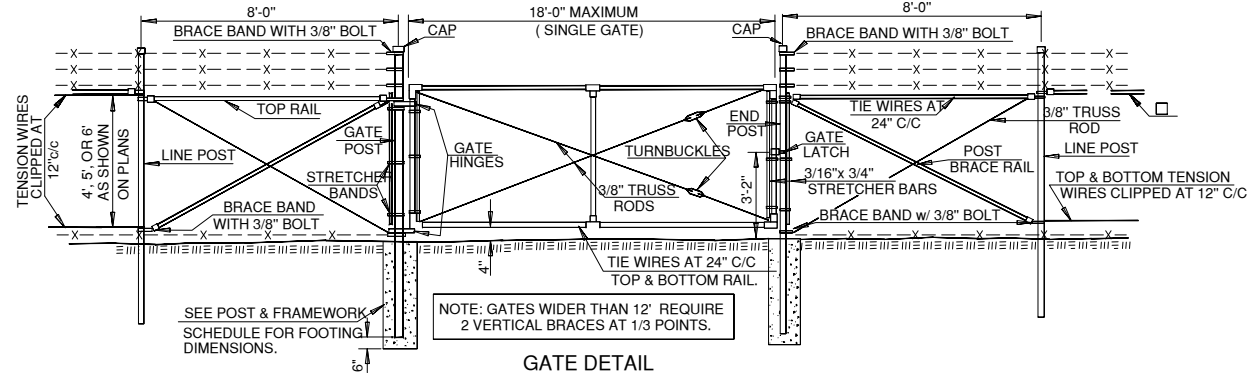


TYPICAL LINE POST DETAIL

END, CORNER, & STRETCHER DETAILS

NOTE: LINE POSTS MAY BE DRIVEN OR EARTH EMBEDDED. SEE SPECIFICATIONS.

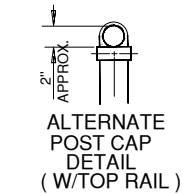
USE STRETCHER DETAILS AT ALL CORNERS, BENDS IN R/W, ON HILLTOPS, IN VALLEYS OR DEEP DEPRESSIONS, AND AT 500' MAXIMUM SPACING. (REQUIRES CONCRETE FOOTING)



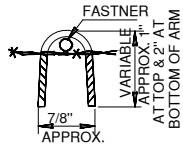
GATE DETAIL

SEE PLANS FOR SIZE AND LOCATION OF GATES. WHERE WIDTH GREATER THAN 18' IS REQUIRED, USE DOUBLE SWING GATES WITH MIDDLE LATCH.

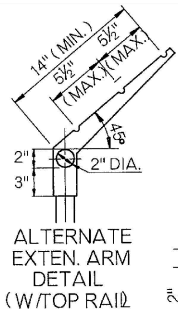
NOTE: Signage Provided by 3Bear Energy- Installed by Contractor



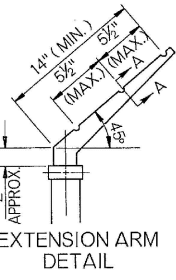
ALTERNATE POST CAP DETAIL (W/TOP RAIL)



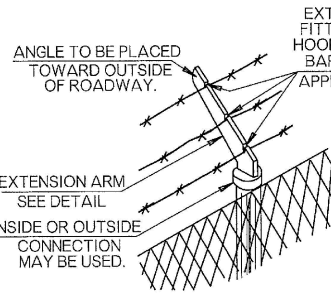
SECTION A-A



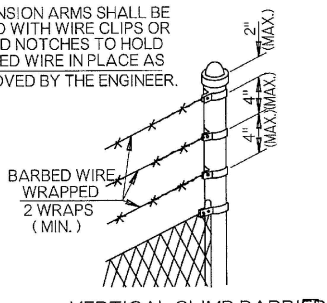
ALTERNATE EXTEN. ARM DETAIL (W/TOP RAIL)



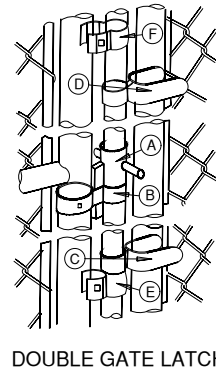
EXTENSION ARM DETAIL



ANGULAR CLIMB BARRIER FOR LINE POSTS



VERTICAL CLIMB BARRIER FOR END & GATE POSTS



DOUBLE GATE LATCH



SINGLE GATE LATCH

TYPICAL GATE LATCH DETAIL

ALTERNATE TYPE LATCH MAY BE USED IF APPROVED BY THE ENGINEER.

POST & FRAMEWORK SCHEDULE														
SHAPE	LINE POST				END, CORNER, OR STRETCHER POSTS		GATE POSTS 			TOP RAIL OR POST BRACE RAIL	GATE FRAMES			
														
NOMENCLATURE	1.5" PIPE	ROLL FORMED HEAVY "C"	ROLL FORMED STAND. "C"	"H" RAIL	2" PIPE	ROLL FORMED	2.5" PIPE	3.5" PIPE	5.0" PIPE	1 1/4" PIPE	ROLL FORMED	1 1/4" PIPE	1 1/2" PIPE	1 1/2" PIPE
DIMENSIONS	1.9" O.D. 1.6" I.D. 0.145" THK	2.25" x 1.7" 0.121" THK	1.875" x 1.7" 0.105" THK	2.25" x 1.7" 0.125" THK	2.38" O.D. 2.07" I.D. 0.154" THK	3.5" x 3.5" 1.625" I.D. 0.128" THK	2.88" O.D. 2.47" I.D. 0.203" THK	4.0" O.D. 3.55" I.D. 0.226" THK	5.563" O.D. 5.047" I.D. 0.258" THK	1.66" O.D. 1.44" I.D. 0.125" THK	1.625" x 1.25" 0.075" THK	1.66" O.D. 1.44" I.D. 0.11" THK	1.9" O.D. 1.67" I.D. 0.114" THK	1.9" O.D. 1.61" I.D. 0.145" THK
CRITICAL AXIS SEC. MODULUS	.326 IN. ³	.506 IN. ³	.368 IN. ³	.661 IN. ³	.561 IN. ³	1.00 IN. ³	1.06 IN. ³	2.39 IN. ³	5.45 IN. ³	0.195 IN. ³	0.165 IN. ³	0.195 IN. ³	0.270 IN. ³	0.326 IN. ³
WEIGHT	2.72 LBS./LIN. FT.	2.64 LBS./LIN. FT.	1.85 LBS./LIN. FT.	3.26 LBS./LIN. FT.	3.65 LBS./LIN. FT.	4.85 LBS./LIN. FT.	5.79 LBS./LIN. FT.	9.11 LBS./LIN. FT.	14.62 LBS./LIN. FT.	1.81 LBS./LIN. FT.	1.35 LBS./LIN. FT.	1.81 LBS./LIN. FT.	2.17 LBS./LIN. FT.	2.72 LBS./LIN. FT.
LENGTH FOR GIVEN FENCE FAB. H.	4' 6"-10" W/CONC. FOOTING; 7'-4" WHEN DRIVEN.	5' 8"-1' W/CONC. FOOTING; 8'-7" WHEN DRIVEN.				7'-4" W/CONC. FOOTING				7'-10"				
EMBEDMENT FOR GIVEN FENCE FAB. H.	6' 9'-4" W/CONC. FOOTING; 9'-10" WHEN DRIVEN.	24" IN CONC. FOOTING; 30" WHEN DRIVEN.				8'-7" W/CONC. FOOTING				9'-1"				
	5' 27" IN CONC. FOOTING; 33" WHEN DRIVEN.	30" IN CONC. FOOTING				9'-10" W/CONC. FOOTING				10'-4"				
	6' 30" IN CONC. FOOTING; 36" WHEN DRIVEN.	33" IN CONC. FOOTING				36" IN CONC. FOOTING				36"				
FOOTING DIM. IN EARTH	9" DIA.				9" DIA.		14" DIA.		12" DIA.		16" DIA.		18" DIA.	
FOOTING DIM. IN ROCK	36" DEEP													
	4" DIA.				4" DIA.		6" DIA.		5" DIA.		6" DIA.		8" DIA.	
	9" DEEP				9" DIA.		16" DIA.		12" DIA.		16" DIA.		24" DIA.	
 MAXIMUM WIDTH OF SINGLE SWING GATE TO DIAMETERS AS SHOWN ARE MINIMUM VALUES ARE MINIMUM FOR 6 FT. HIGH FENCE, AND														
 WIRE FABRIC TO BE WOVEN INTO LOCK LOCK														
 SECTION MODULUS AS SHOWN IS BASED UPON FORMULA ON CLASS 2 COLD FORMED STEEL														
 SECTION MODULUS AS SHOWN IS BASED UPON FORMULA ON CLASS 2 COLD FORMED STEEL														

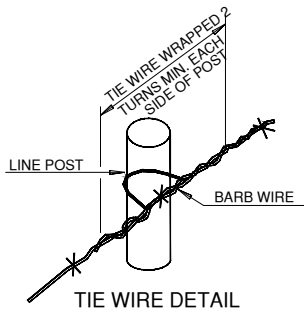
○ MAXIMUM WIDTH OF SINGLE SWING GATE TO BE 18 FT.; OPENING MAY BE UP TO 36 FT. WIDE

DIAMETERS AS SHOWN ARE MINIMUM VALUES. DEPTHS FOR ROCK ARE MINIMUMS. DEPTHS SHOWN FOR CONCRETE FOOTINGS IN EARTH ARE MINIMUM FOR 6 FT. HIGH FENCE, AND MAY BE REDUCED 3 IN. FOR EACH FOOT OF FENCE HEIGHT LESS THAN 6 FT. HIGH.

▲ WIRE FABRIC TO BE WOVEN INTO LOCK LOOPS FOR THE ENTIRE WIDTH OF THE FABRIC.

▼ SECTION MODULUS AS SHOWN IS BASED UPON ASTM A53, AND AASHTO M181. SEE SPECIFICATIONS FOR SUBSTITUTION FORMULA ON CLASS 2 COLD FORMED STEEL PIPE.

● SECTION MODULUS AS SHOWN IS BASED UPON ASTM A 501 AND AASHTO M 181. SEE SPECIFICATIONS FOR SUBSTITUTION FORMULA ON CLASS 2 COLD FORMED STEEL PIPE.



TIE WIRE DETAIL

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 1988 STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
- COST OF BARB WIRE AND EXTRA LENGTH POSTS FOR FAN TO BE INCLUDED IN PRICE BID FOR CHAIN LINK FENCE.
- ALL MISCELLANEOUS HARDWARE SHALL BE FURNISHED GALVANIZED OR ALUMINUM ALLOY.
- CLIMB BARRIER SHOWN INTENDED ONLY TO SHOW AN ACCEPTABLE TYPE. ALTERNATE CLIMB BARRIERS APPROVED BY THE ENGINEER PRIOR TO INSTALLATION MAY BE USED. FENCE POST EXTENSION ARM SHALL BE MADE OF PRESSED STEEL OR MALLEABLE IRON AND SHALL BE GALVANIZED AFTER FABRICATION.
- CHAIN LINK FABRIC MAY BE ACCEPTED KNUCKLED BOTH SELVAGES IN ALL WIDTHS. NO FABRIC WITH TWISTS AND BARBS ON BOTH SELVAGES WILL BE ACCEPTED.
- NOTE: CLASS A IN THE PAY ITEM DENOTES NO CLIMB BARRIER; CLASS B DENOTES CLIMB BARRIER. (CLASS A = NOBAR; CLASS B = BARR)
- STRETCHER POSTS TO BE USED IN GENERAL AT HILL TOPS AND AT BOTTOM OF VALLEYS AND AT A MAXIMUM OF 500 FEET APART.
- ALL POSTS WITH THE EXCEPTION OF LINE POSTS. FAN POSTS AND HEADWALL CONNECTION STRETCHER POSTS SHALL BE EMBEDDED IN CONCRETE WHEN FENCE IS BEING ERECTED ON EARTHEN FOUNDATIONS. OTHER POSTS MAY BE EMBEDDED IN CONCRETE IF AND AS DIRECTED BY THE ENGINEER TO SATISFY SPECIFIC FOOTING REQUIREMENTS.

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2500 North 11th Street - End, Oklahoma 73701
Phone (580) 234-8780, Fax (580) 237-4302
C.A. #950 - Expiration Date 6-30-2020
www.envirotechconsulting.com



MISCELLANEOUS DETAILS
DARK CANYON RECYCLE FACILITY

E/2, SE/4 Sec 23-T23S-R26E
N.M.P.M. - Eddy County, New Mexico

Date: September 2018	Scale: N.T.S.
Designed by: T. Williams	Drawn by: M. Johnson
Checked by: J. Stallings	Project No: 018183-00

Sheet No.

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