

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-09248

Exam Date: 2/24/2016

1. Current Owner:
BLACK ROCK UTILITIES INC C/O ASSOCIATION SERVICES INC 1250 IRONWOOD DR STE 226 COEUR
D ALENE ID 83814

2. Accompanied by: Aron Bennett
Phone No: 208-772-7867
Address: 3125 W. Hayden Ave. Hayden ID 83835
Relationship to Permit Holder: Water System Operator

3. SOURCE: GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point-of-diversion: None

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER L1 (NE¼NE¼) Sec. 9, Twp 48N, Rge 04W, B.M. KOOTENAI County
GROUND WATER L2 (NW¼NE¼) Sec. 9, Twp 48N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS and Maps. POD locations at (D0051994 – 116° 51.381, 47° 31.516 (A002001))
(D0039673 - 116° 51.233, 47° 31.466 (A002002))

2.

Method of Determination: GPS and maps.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

 Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

 X Aerial Photo Attached (required for irrigation of 10+ acres).

 X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0039673	FRANKLIN	7.5			
D0051994	FRANKLIN	5			

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: FLOW MEASUREMENT PERFORMED ON SYSTEM FLOW METERS. IDWR CONDUCTED FLOW MEASUREMENT ON EACH WELL FOR A DURATION OF 60 SECONDS. WELL D0039673 FLOWED AT 73 GPM AND WELL D0051994 FLOWED AT 34 GPM FOR A COMBINED TOTAL OF 107 GPM OR 0.24 CFS.

E. FLOW CALCULATIONS

Measured Method:

 Additional Computation Sheets Attached

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

FIELD EXAM SHOWED APPLICANT HAD MUNICIPAL SYSTEM HOOKED UP TO TWO WELLS INSTEAD OF THE ONE THAT WAS PERMITTED FOR. AMENDMENT OF PERMIT AT TIME OF LICENSING WILL BE SENT TO ADD 2ND POINT OF DIVERSION. SYSTEM HAD A 125,000 GALLON STORAGE TANK SUPPLIED BY BOTH WELLS. EACH WELL HAD FLOW METER ON AND IDWR PERFORMED FLOW MEASUREMENT OFF OF THOSE METERS. WELL 1 D0039673 PUMPED 73 GPM AND WELL 2 D0051994 PUMPED AT 34 GPM OR COMBINED 107 GPM OR 0.24 CFS. SYSTEM WAS ALL BUILT OUT WITH STUB INS TO ALL LOTS AND FIRE HYDRANTS.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

BENEFICIAL USE

MUNICIPAL

PERIOD OF USE

01/01 to 12/31

DIVERSION RATE

0.24 CFS

Totals:

0.240 CFS

2. Recommended Amendments

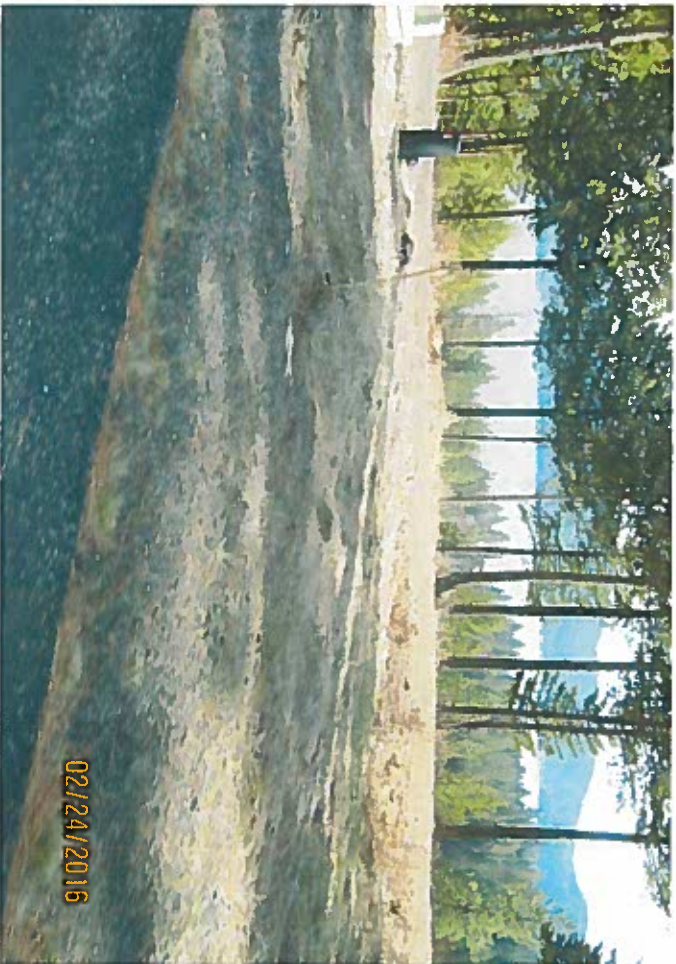
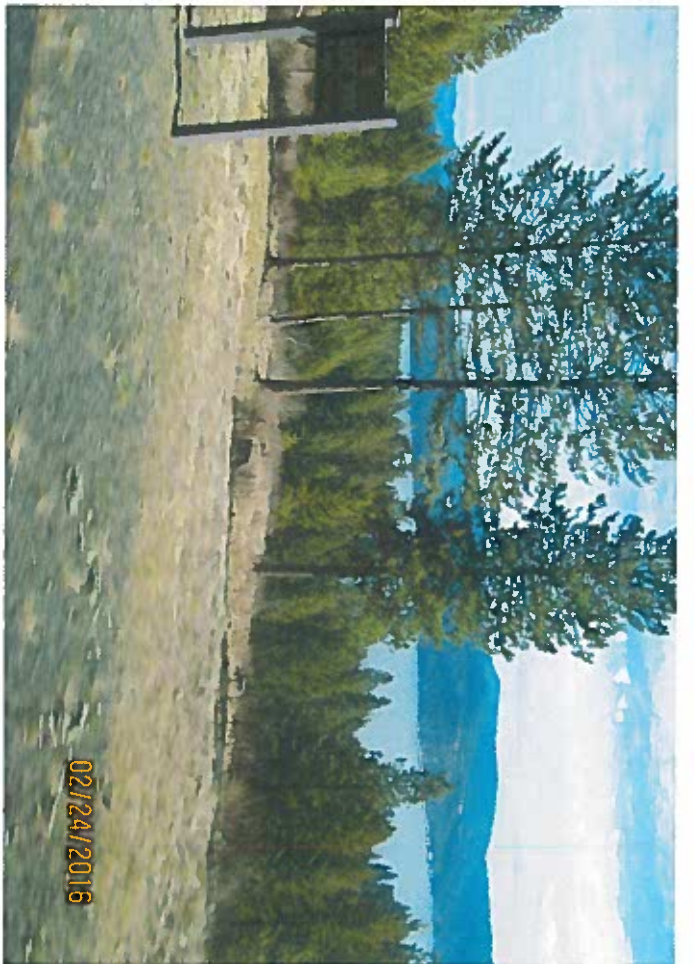
 Change P.D. as reflected above X Add P.D. as reflected above None

 Change P.U. as reflected above Add P.U. as reflected above X None

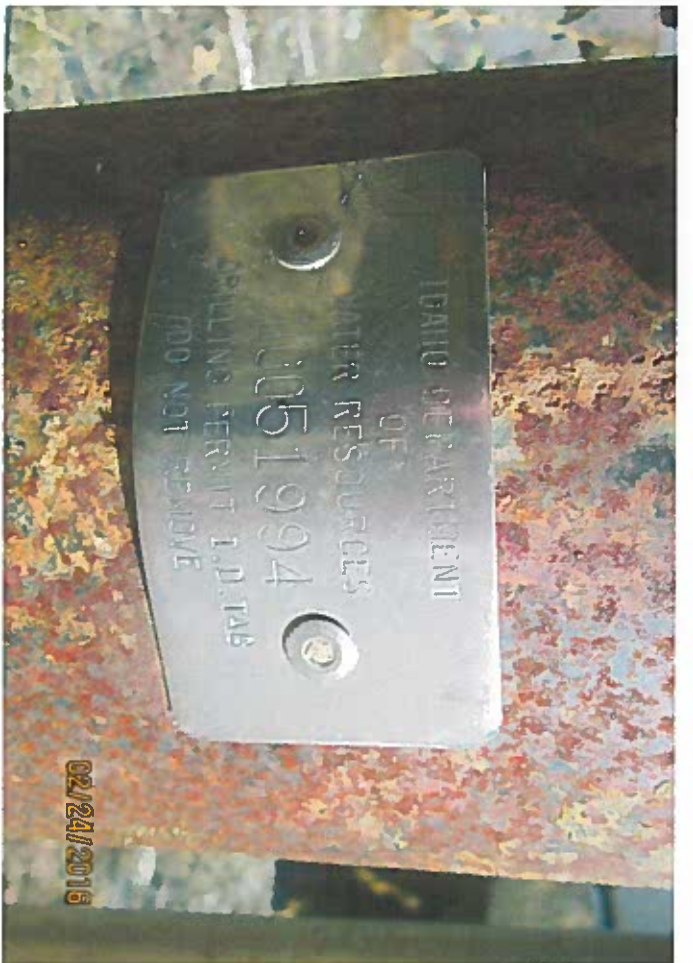
I. AUTHENTICATION

Field Examiner's Name Adam Finkbein Date 6-13-2016

Reviewer Morgan Case Date 7/8/2016



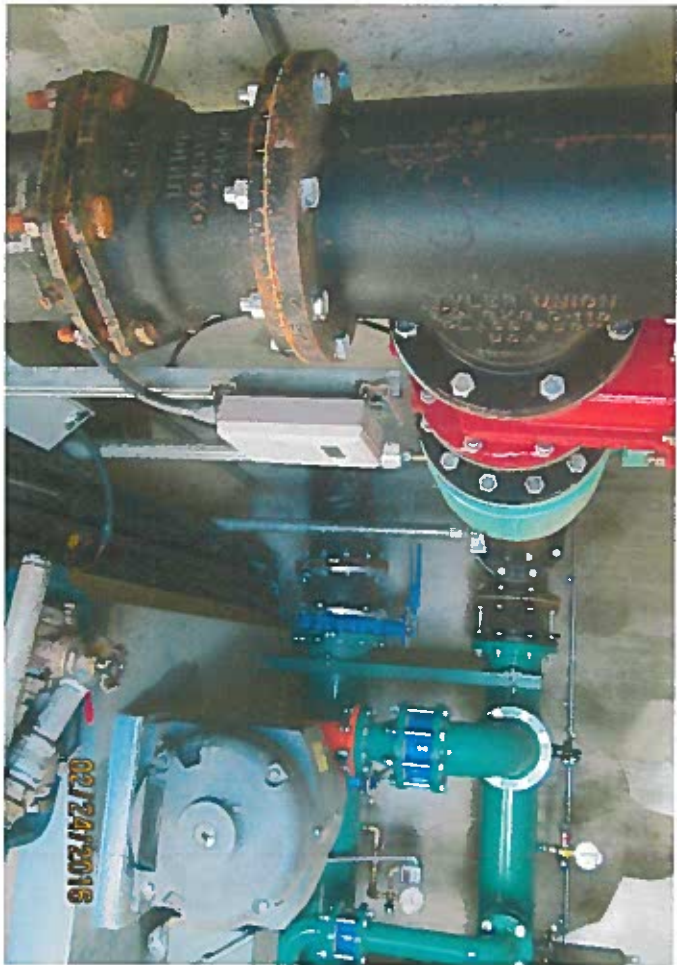
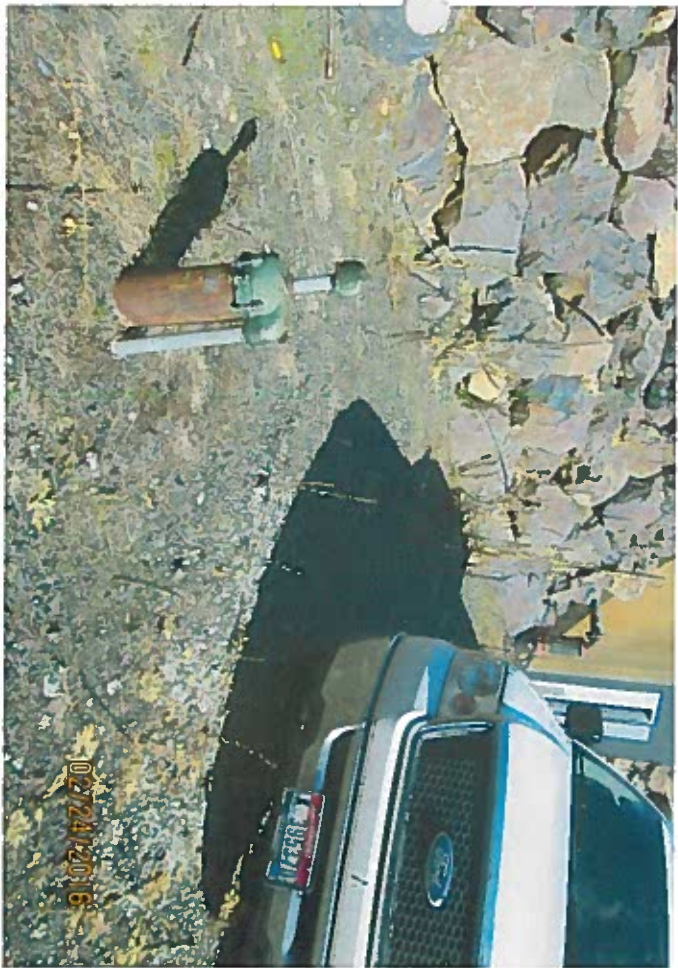
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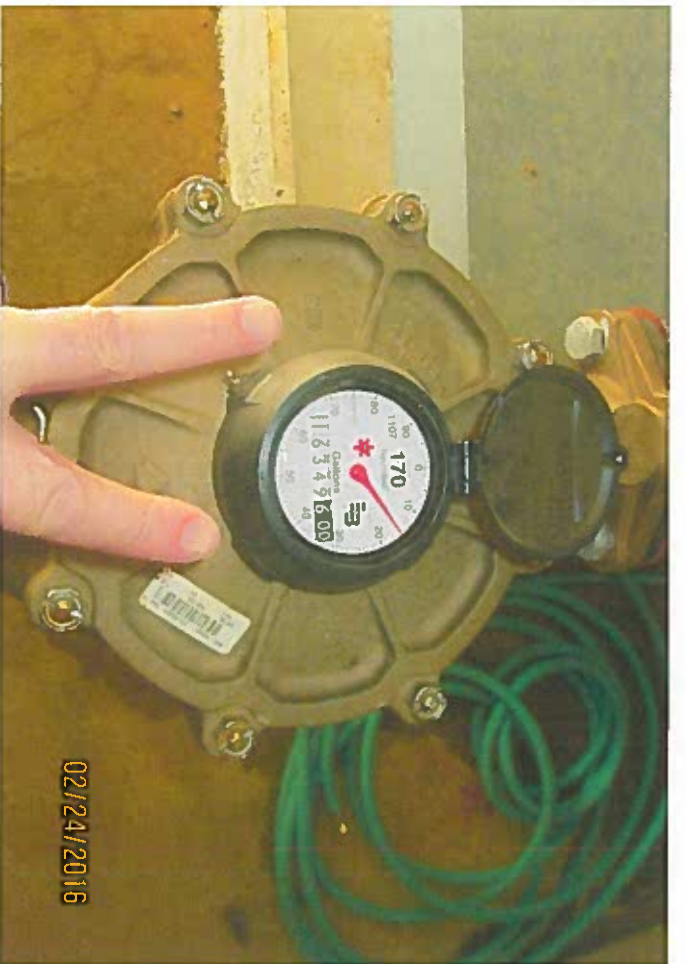
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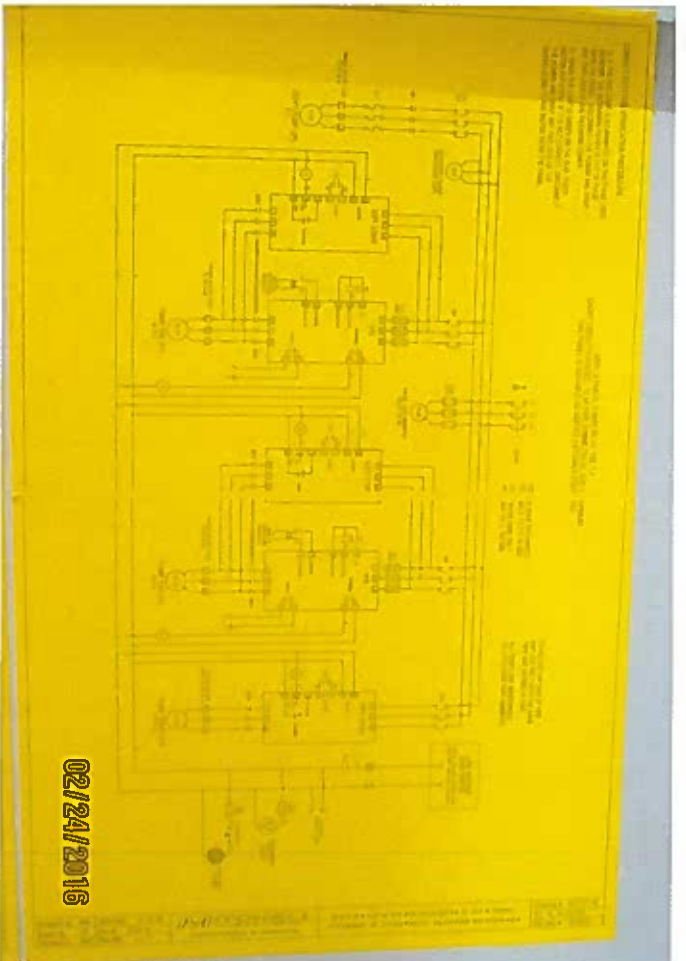
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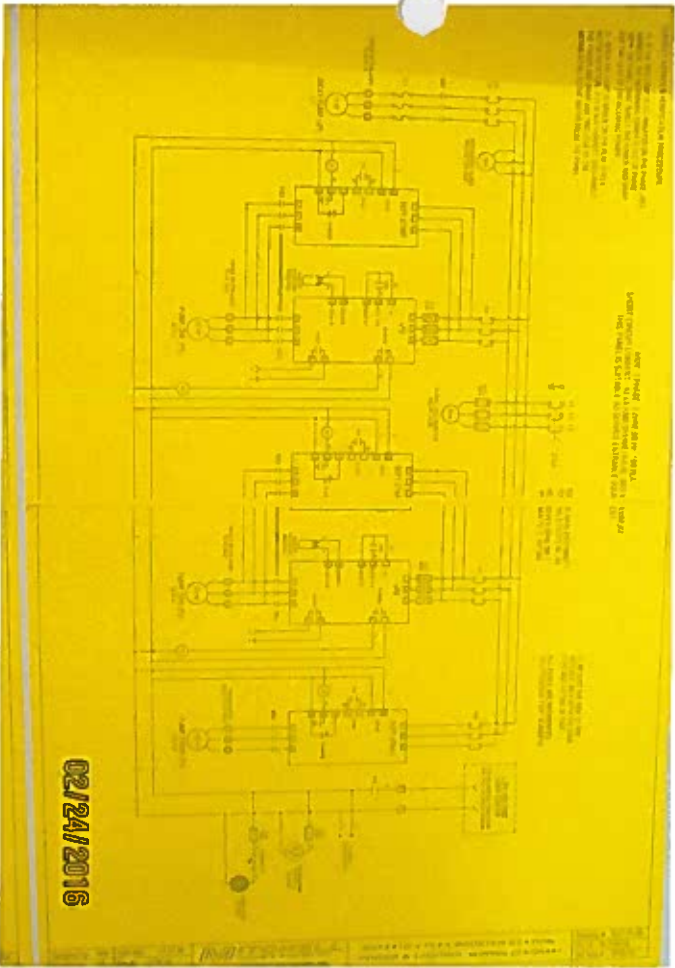
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8N69-56



9.5-9.147



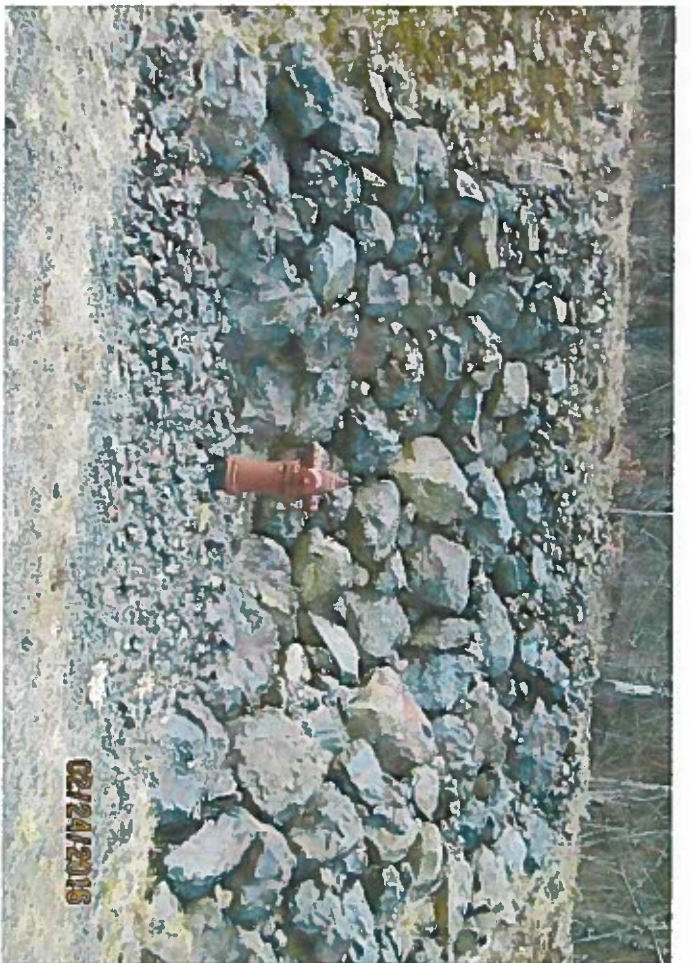
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02/24/2016



02/24/2016



02/24/2016



02/24/2016

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85-9248



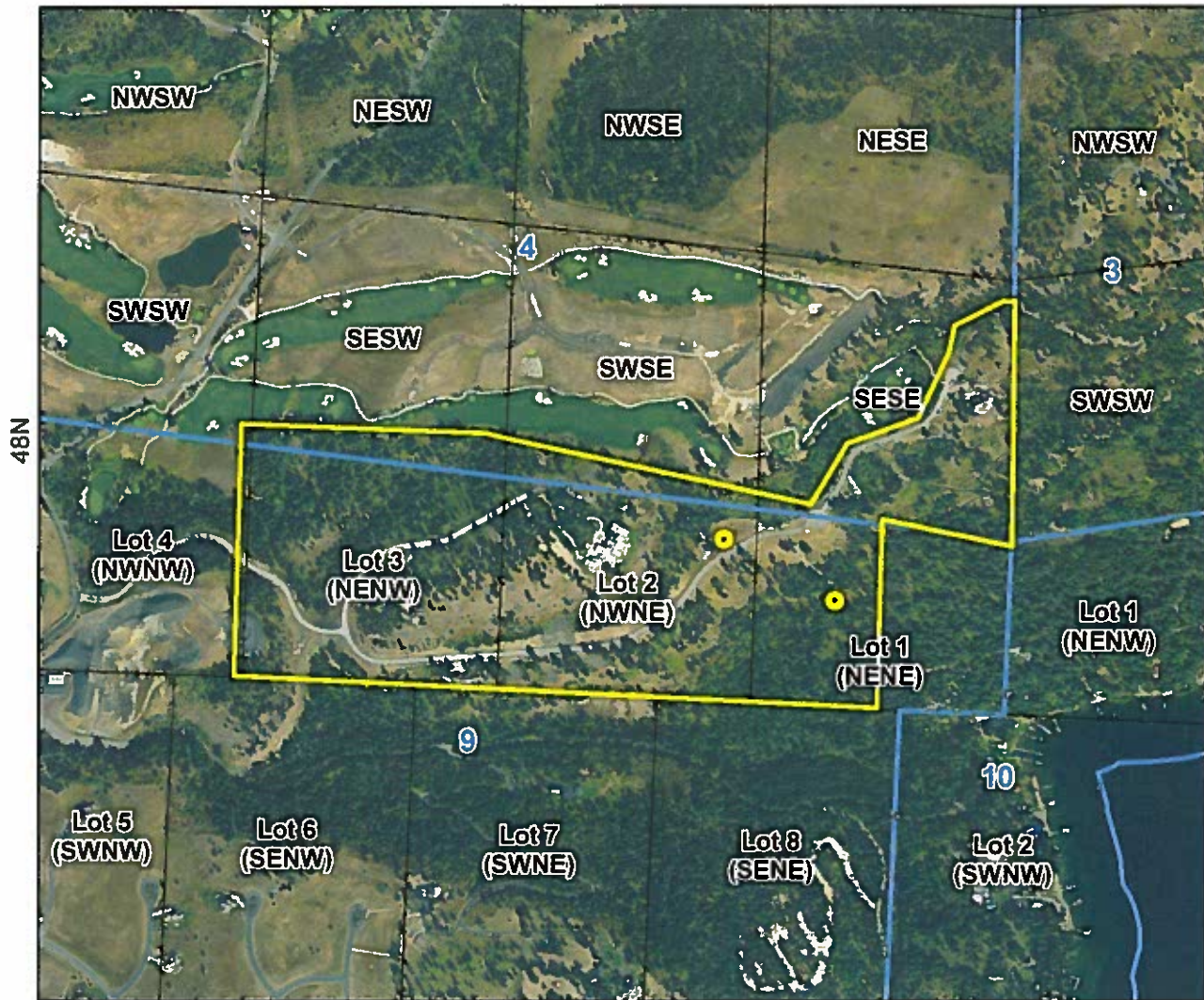
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Black Rock Utilities Inc

Water Right License

95-9248

04W



0 0.125 0.25 0.5 Miles

- Point of Diversion
- Water Service Area Boundary
- Townships
- PLS Sections





VICINITY MAP

2016 THE ESTATES



LEGEND

-  POLO CIELO
-  GOLF COTTAGES
-  THE VILLAGES & CABINS
-  ESTATES AT BLACK ROCK BAY

THE GOLF CLUB AT
BLACK ROCK



COPY

Form 238-7
3/95-C96IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	1/4
Lat	Long		

1. DRILLING PERMIT NO. _____
Other IDWR No. D 0039673

2. OWNER:

Name The Ridge at Black Rock Bay HomesAddress 10636 N. Government WayCity Hayden State ID Zip 83835

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location

N

W		E	Twp. <u>48</u> North ☒ or South ☐
			Rge. <u>4</u> East ☐ or West ☒
			Sec. <u>9</u> 1/4 NE 1/4 NE 1/4

Gov't lot _____ County Kootenai

Lat: _____ Long: _____

Address of Well Site Rockford Bay Road .5 miCity Coeur d'Alene

(Give at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____
5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	58	900#	dry granular

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 158'Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	158	280	Steel	☒	☐	☒	☐
4"	20	320	S 40	PVC	☐	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method saw cut 1/8" x 6" slot
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
300	320	1/8"	48	4"	PVC	☐	☒
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

 102 ft. below ground Artesian Pressure _____ lb
 Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
42	16'	118	24 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Cold & clearDepth first Water Encountered 162'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water				Y	N
Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.		
10"	0	12	Clay, tan	☒	☒
	12	38	Clay, tan, sand, tan	☒	☒
	38	49	Sand, clay tan, wet	☒	☒
	49	58	Clay, brown	☒	☒
8"	58	93	Clay, dark brown	☒	☒
	93	138	Clay, grey	☒	☒
	138	153	Clay, dark grey, basalt, broken	☒	☒
	153	158	Basalt, grey, vesicular	☒	☒
6"	158	173	Basalt, broken, 30 gpm	☒	☒
	173	188	Basalt, grey, medium	☒	☒
	188	196	Basalt, broken	☒	☒
	196	245	Basalt, black, medium	☒	☒
	245	292	Basalt, hard	☒	☒
	292	307	Basalt, grey, medium 5gpm	☒	☒
	307	315	Basalt, grey, broken 15 gpm	☒	☒
	315	318	Basalt, broken, with clay	☒	☒
	318	320	Clay, grey, soft, wet	☒	☒

Completed Depth: 320 (Measurable)
Date: Started 01/06/05 Completed 01/12/05

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name McCarthy Drilling & Pump IncFirm No. 586Firm Official [Signature]Date 2-11-05

Supervisor or Operator _____

Date _____

(Sign once if Firm Official & Operator)

Date: 2/11/2005 Time: 2:46:51 PM

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0051994
DRILLING PERMIT NO. 846997
Right or Injection Well No. 95-9248

2. OWNER:

Name Black Rock Development
Address P.O. Box 3070
City Coeur d'Alene State ID Zip 83816

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 48 North ☒ or South ☐
Rge. 4 East ☐ or West ☒
Sec. 9 1/4 NE 1/4 NE 1/4
Gov't Lot _____ County Kootenai
Lat: : : Long: : :
Address of Well Site Black Rock Road

(Give at least name of road + Distance to Road or Landmark)
City Coeur d'Alene
Lt. _____ Blk. _____ Sub. Name "Estates at Black Rock Bay"

4. USE:

☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	180	32 sack	Dry Pour

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____

Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+3	423	.28	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Torch Cut

Screen Type & Method of Installation _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
383	423	1/2 x 12	80	6	Steel	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
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11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

200 ft. below ground Artesian pressure _____ lb.

Depth flow encountered 275 ft. Describe access port or control devices: _____

Steel Cap Welded

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
100 GPM	100%	420 FT	2 Hours

Water Temp. Cold Bottom hole temp. Cold

Water Quality test or comments: Cold, Clear, No Smell

Depth first Water Encounter 195

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
12	0	2	Clay brown		X
12	2	12	Basalt cobbles		X
12	12	30	Clay brown firm		X
12	30	50	Clay tan with sand		X
12	50	58	Clay black with basalt		X
8	58	70	Clay black with basalt		X
8	70	185	Black basalt hard		X
8	185	195	Basalt broken trace of clay	X	
8	195	196	Sand quartz coarse		X
8	196	203	Clay gray firm		X
8	203	206	Clay green firm		X
8	206	221	Clay green w/ gray basalt		X
8	221	222	Sand quartz coarse		X
8	222	258	Clay gray/brown firm		X
8	258	420	Basalt black hard	X	
			Water Bearing		
			Fractures:		
			275 FT		
			290 FT		
			340 FT		
8	420	423	Clay brown hard		X
			- 6" x 8" Formation Packer		
			set at 266 FT -		

UNITED
PUMP & DRILLING
3125 W. Hayden Ave. Hayden, ID 83835
Office (800) 682-9641 (208) 772-7867

Completed Depth 423 FT (Measurable)

Date: Started 6-11-07 Completed 6-14-07

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name United Pump & Drilling Firm No. 636

Principal Driller Jason Beckham Date 6-14-07

and
Driller or Operator II [Signature] Date 6-14-07

Operator I _____ Date _____

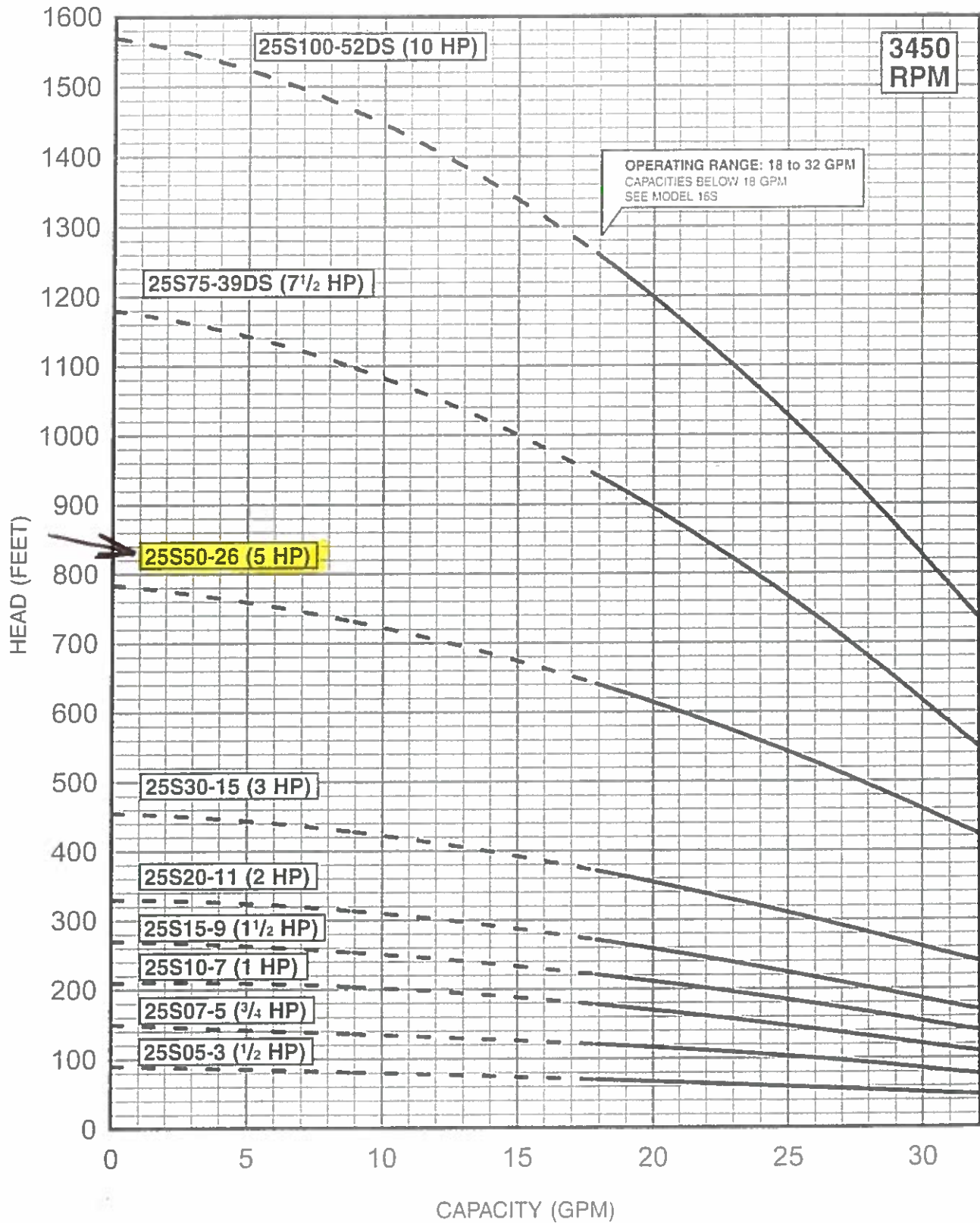
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II

** WELL #2*

FLOW RANGE: 18 -32 GPM

OUTLET SIZE: 1½" NPT

NOMINAL DIA. 4"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
4" MOTOR STANDARD, 5 -5 HP/3450 RPM
6" MOTOR STANDARD, 7.5 -10HP/3450 RPM

Performance conforms to ISO 9906: 1999 (E) Annex A
Minimum submergence is 2 feet.

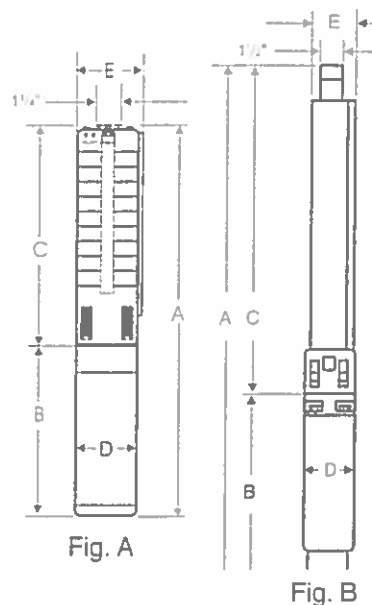
DIMENSIONS AND WEIGHTS

MODEL NO.	FIG.	HP	MOTOR SIZE	DISCH. SIZE	DIMENSIONS IN INCHES					APPROX. SHIP WT.
					A	B	C	D	E	
16S05-5	A	1/2	4"	1 1/4" NPT	19.7	9.5	10.2	3.8	3.9	27
16S07-8	A	3/4	4"	1 1/4" NPT	23.4	10.7	12.7	3.8	3.9	29
16S10-10	A	1	4"	1 1/4" NPT	26.2	11.8	14.4	3.8	3.9	32
16S15-14	A	1 1/2	4"	1 1/4" NPT	32.8	15.1	17.7	3.8	3.9	36
16S20-18	A	2	4"	1 1/4" NPT	36.0	15.1	20.9	3.8	3.9	40
16S30-24	A	3	4"	1 1/4" NPT	46.5	20.6	25.9	3.8	3.9	64
16S50-38	A	5	4"	1 1/4" NPT	61.1	23.6	37.5	3.8	3.9	94
16S75-56DS*	B	7 1/2	6"	1 1/4" MPT	93.0	24.2	68.8	5.4	4.6	220
16S100-75DS*	B	10	6"	1 1/4" MPT	109.9	25.4	84.5	5.4	4.6	245

NOTES: All models suitable for use in 4" wells, unless otherwise noted.

Weights include pump end with motor in lbs..

* Built into sleeve 1 1/4" MPT discharge, 6" min. well dia.



MATERIALS OF CONSTRUCTION

COMPONENT	SPLINED SHAFT (5-24 Stgs.)	CYLINDRICAL SHAFT (38 Stgs.)	DEEP SET (56-75 Stgs)
Check Valve Housing	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Check Valve	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Diffuser Chamber	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Impeller	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Suction Interconnector	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Inlet Screen	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Pump Shaft	304 Stainless Steel	431 Stainless Steel	431 Stainless Steel
Straps	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Cable Guard	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Priming Inducer	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Coupling	316/431 Stainless Steel	316/431 Stainless Steel	329/416 Stainless Steel**
Check Valve Seat	NBR/304 Stainless Steel	NBR/316 Stainless Steel	NBR/316 Stainless Steel
Top Bearing	NBR	NBR/316 Stainless Steel	NBR/316 Stainless Steel
Impeller Seal Ring	NBR/PBT (Valox®)	NBR/PPS (Ryton®)	NBR/PPS (Ryton®)
Intermediate Bearings	NBR	304 Stainless Steel	NBR/316 Stainless Steel
Shaft Washer	Not Required	LCP (Vectra®)	LCP (Vectra®)
Split Cone	Not Required	304 Stainless Steel	304 Stainless Steel
Split Cone Nut	Not Required	316 Stainless Steel	304 Stainless Steel
Sleeve	Not Required	Not Required	316 Stainless Steel
Sleeve Flange	Not Required	Not Required	304 Stainless Steel
Coupling Key	Not Required	Not Required	302/304 Stainless Steel**

NOTES: Specifications are subject to change without notice.

Valox® is a registered trademark of General Electric Co.

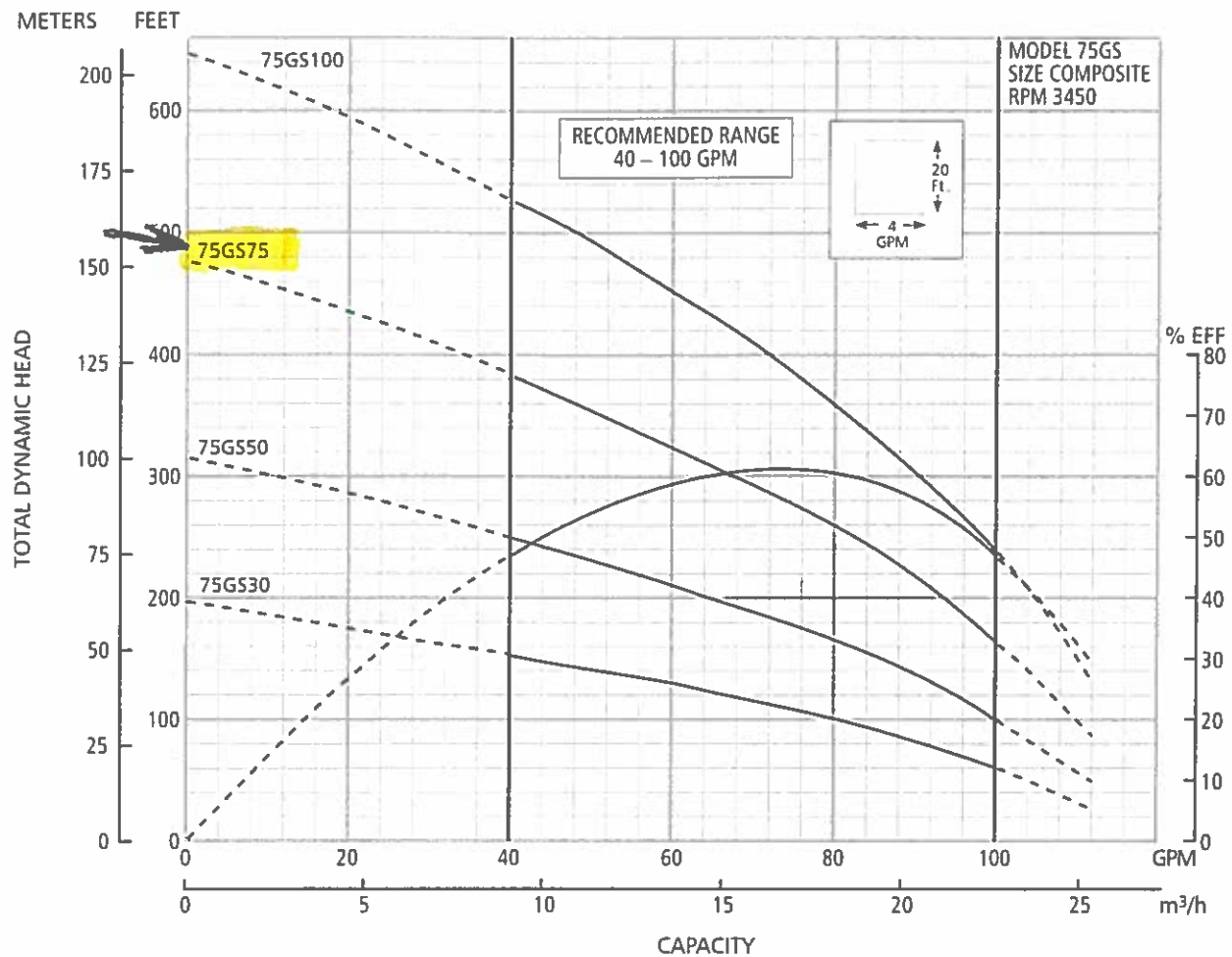
Vectra® is a registered trademark of Hoechst Calanese Corporation.

Ryton® is a registered trademark of Phillips 66.

*Stainless Steel option available.

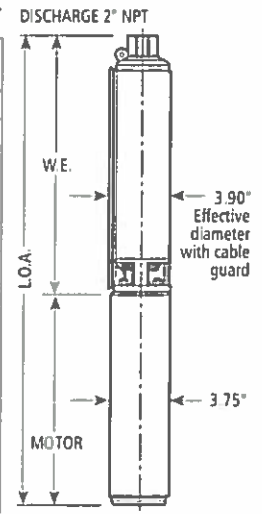
** If using 4" non-standard motors, refer to 329/420/431 Stainless Steel for coupling

A coupling key is not required.



DIMENSIONS AND WEIGHTS

HP	Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	W.E. ① Length	Motor Length	L.O.A. ②	W.E. Weight	Motor Weight	Total Weight
3	7	75GS30	S09940	1	230	24.1	19.1	43.2	14	41	55
			S09978	3	200	24.1	16.1	40.2	14	35	49
			S09970		230						
			S09975		460						
			S09979		575						
5	11	75GS50	S10940	1	230	34.8	28.2	63.0	19	70	89
			S10978	3	200	34.8	22.2	57.0	19	55	74
			S10970		230						
			S10975		460						
			S10979		575						
7½	16	75GS75	S119784	3	200	48.2	28.2	76.4	27	70	97
			S119704		230						
			S119754		460						
			S119794		575						
			S119794		575						
10	21	75GS100	S129724	3	460	63.8	30.4	94.2	35	75	110
			S129794		575						



NOTES:

For complete pump, order water end and motor.

① W.E. = water end or pump without motor.

② L.O.A. = length of assembly = complete pump – water end and motor.

SELECTION CHART

Horsepower Range 3 – 10, Recommended Range 40 – 100 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	520		
75GS30	3	0					80	67	52																					
		20			77	63	47																							
		30		75	61	45																								
		40	73	58	42																									
		50	56	39																										
		60	37																											
Shut-off PSI			77	69	60	51	43	34	25																					
75GS50	5	0							90	83	75	65	55	44																
		20						80	72	62	51	41																		
		30					79	70	60	50																				
		40				78	69	59	48																					
		50			77	67	57	47																						
		60		75	66	55	45																							
Shut-off PSI				120	111	102	94	85	76	68	59	50	42	33																
75GS75	7½	0													80	75	68	61	54	47	40									
		20											79	73	66	59	52	45												
		30										78	72	65	58	51	44													
		40								77	71	64	57	50	43															
		50							76	70	63	56	49	42																
		60						75	69	62	55	48	41																	
Shut-off PSI								146	137	129	120	111	103	94	85	77	68	59	51	42										
75GS100	10	0												100	97	95	92	88	85	81	76	72	67	62	56	51	45	40		
		20										99	96	94	91	87	84	79	75	70	65	60	55	49	44					
		30								99	96	94	91	87	83	79	74	69	64	59	54	48	43							
		40							98	96	93	90	86	82	78	74	69	64	58	53	48	42								
		50						98	95	92	89	86	82	77	73	68	63	57	52	47	41									
		60					100	97	95	92	89	85	81	77	72	67	62	57	51	46	40									
Shut-off PSI			272	263	254	246	237	228	220	211	202	194	185	176	168	159	150	142	133	124	116	107	98	90	81	72	64	55		

THE WEST HALF OF GOVERNMENT LOT 1 AND ALL OF GOVERNMENT LOTS 2 & 3
IN SECTION 9 TOWNSHIP 48 NORTH, RANGE 4 WEST B.M.
KOOTENAI COUNTY, IDAHO
JUNE 2007

JUNE 2007



RECEIVED



NO	DATE	DESCRIPTION	PR
01	01-01-2018	01-01-2018	01-01-2018
02	02-01-2018	02-01-2018	02-01-2018
03	03-01-2018	03-01-2018	03-01-2018
04	04-01-2018	04-01-2018	04-01-2018
05	05-01-2018	05-01-2018	05-01-2018
06	06-01-2018	06-01-2018	06-01-2018
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RECORD DRAWING
AUGUST 2010

1 OF 29

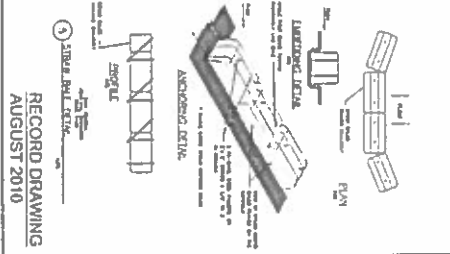
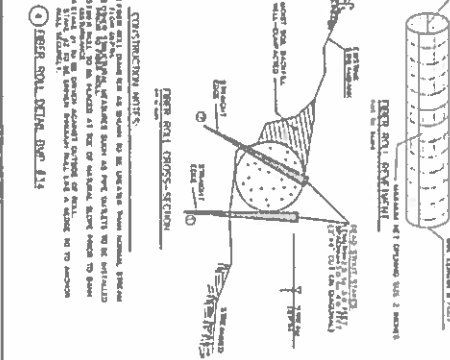
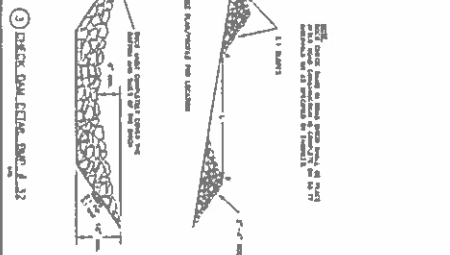
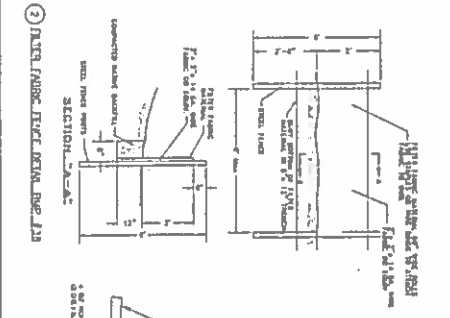
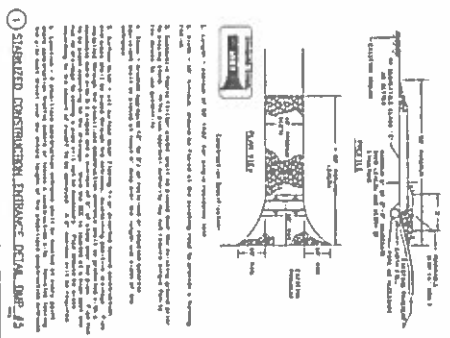
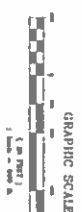
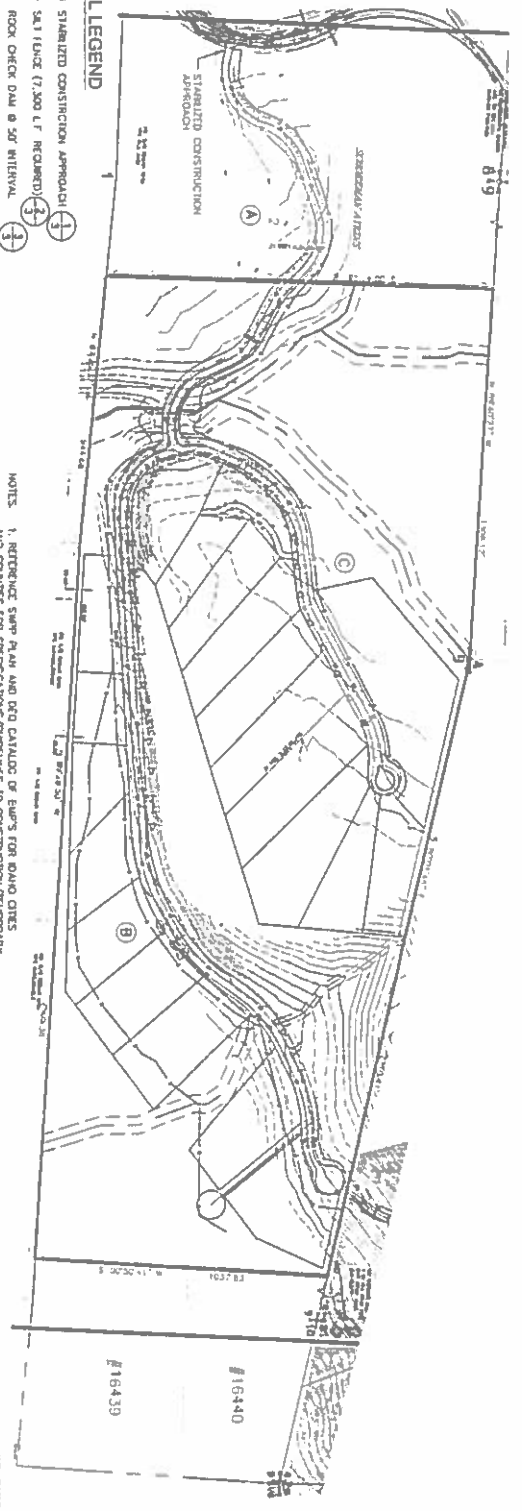
ESTATES AT BLACK ROCK BAY CONSTRUCTION PLANS

NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
870 W. BAYVIEW AVE.
SUITE 200, CHICAGO, ILLINOIS 60611
PH. (800) 798-6178 FAX (312) 752-6179

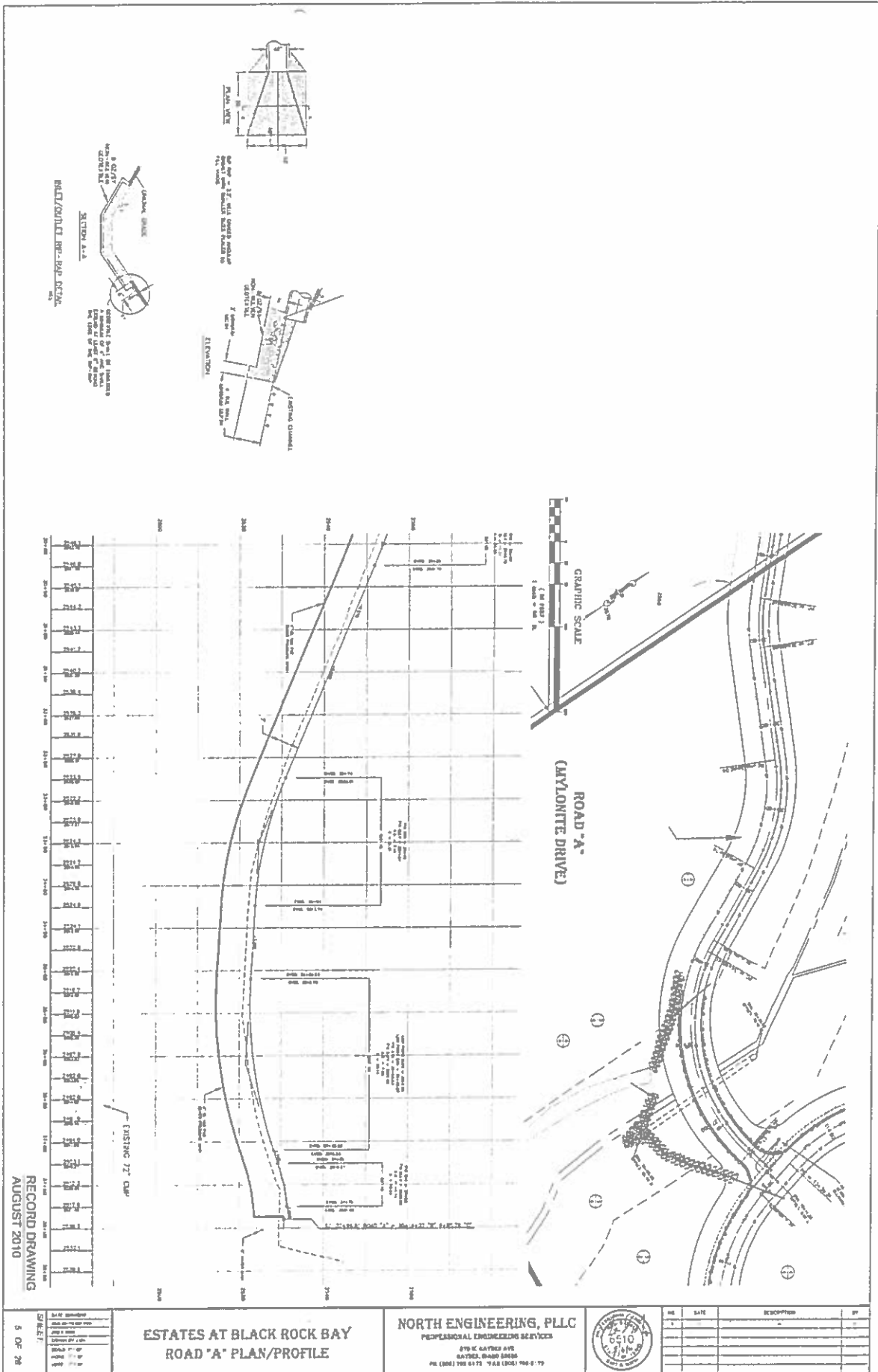
- SYMBOL LEGEND**
- STABILIZED CONSTRUCTION APPROACH
 - SALT FLUXES (7,500 L.F. REQUIRED)
 - ROCK CHECK DAM @ 50' INTERVAL
 - ROCK ROLL WARDING, HYDROSEEDING ON 50' INTERVALS
 - ROCK ROLL WARDING, HYDROSEEDING ON 50' INTERVALS

NOTES

1. RETROGRADE SWAMP PLANT AND DRG CATALOG OF SWP'S FOR DRAIN CITIES AND COUNTIES FOR SPECIFICATIONS/DETAILS TO CONSTRUCTION/TEMPORARY BMP'S.
2. STABLE BALE CHECK DAMS MAY NEED TO BE PLACED TO SLOPE UP SALT FLUX PERFORMANCE IN AREAS WHERE SLOPEWASH TRANSPORT OCCURS OR TO SERVE AS TEMPORARY CHECK DAMS.



[illegible]



DATE	DESCRIPTION
8/1/10	DESIGNED BY: [Signature]
8/1/10	CHECKED BY: [Signature]
8/1/10	APPROVED BY: [Signature]

ESTATES AT BLACK ROCK BAY
ROAD "A" PLAN/PROFILE

NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
215 N. GAYTHA AVE.
GAYTHA, MISSISSIPPI 39208
PH: (601) 790-6171 FAX: (601) 790-6172



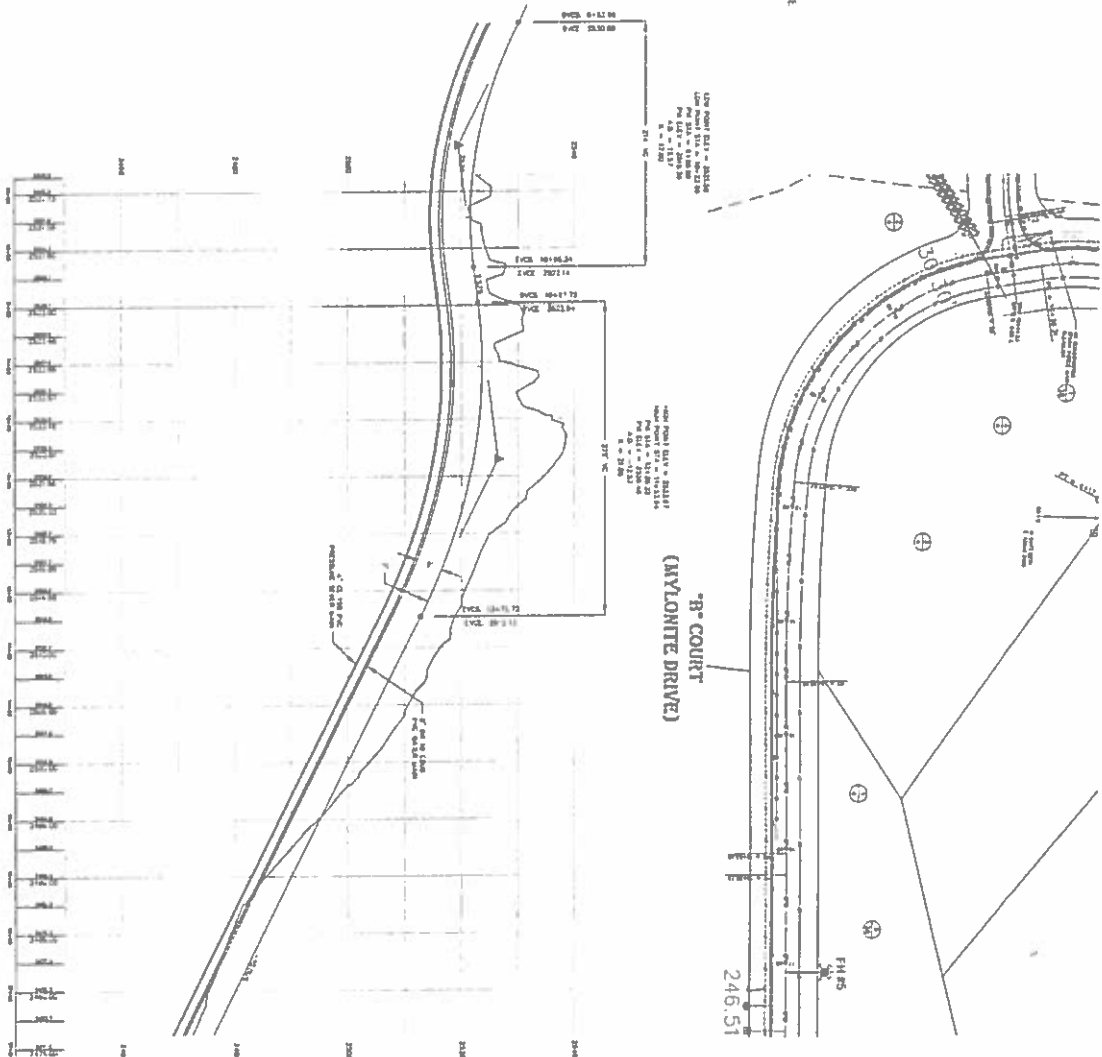
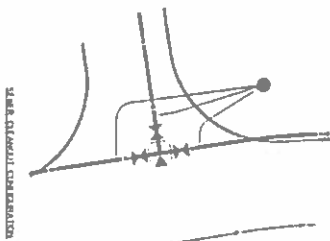
NO.	DATE	REVISION	BY
1	8/1/10	DESIGNED	[Signature]
2	8/1/10	CHECKED	[Signature]
3	8/1/10	APPROVED	[Signature]

LINE LEGEND

- PROPERTY LINES
- 60 FT ROAD R.O.W.
- UNDERGROUND POWER
- SEWAGE SANITARY FORCE MAIN
- WATER MAIN
- EDGE 2-FT GRAVEL SHOULDER
- EDGE PAVEMENT
- ROCK LINED DITCH

SYMBOL LEGEND

- DRY UTILITY SWEEP FOR 2 LOTS
- 2 INDIVIDUAL LOT WATER SERVICES
- INDIVIDUAL LOT SEWAGE SERVICE
- PRESSURE REDUCING VALVE WATER SERVICE
- FIRE HYDRANT ASSEMBLY
- TELEPHONE END OF LINE DISCONNECT
- VALVE
- BRUSH BOX
- TIE
- FLANGE FITTING
- MECHANICAL JOINT FITTING



RECORD DRAWING
AUGUST 2010

ESTATES AT BLACK ROCK BAY
"B" COURT PLAN/PROFILE
10+00 TO 17+00

NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
6700 E. 64TH AVE.
LAKEN, MINN 55000
PH: (612) 700-6172 FAX: (612) 700-6173



NO.	DATE	DESCRIPTION
1	10/10/10	ISSUED FOR RECORD

DESIGNED BY	DR. J. J. JENSEN
CHECKED BY	DR. J. J. JENSEN
DATE	10/10/10
SHEET	0 OF 28

100

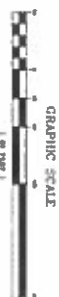
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LINE LEGEND

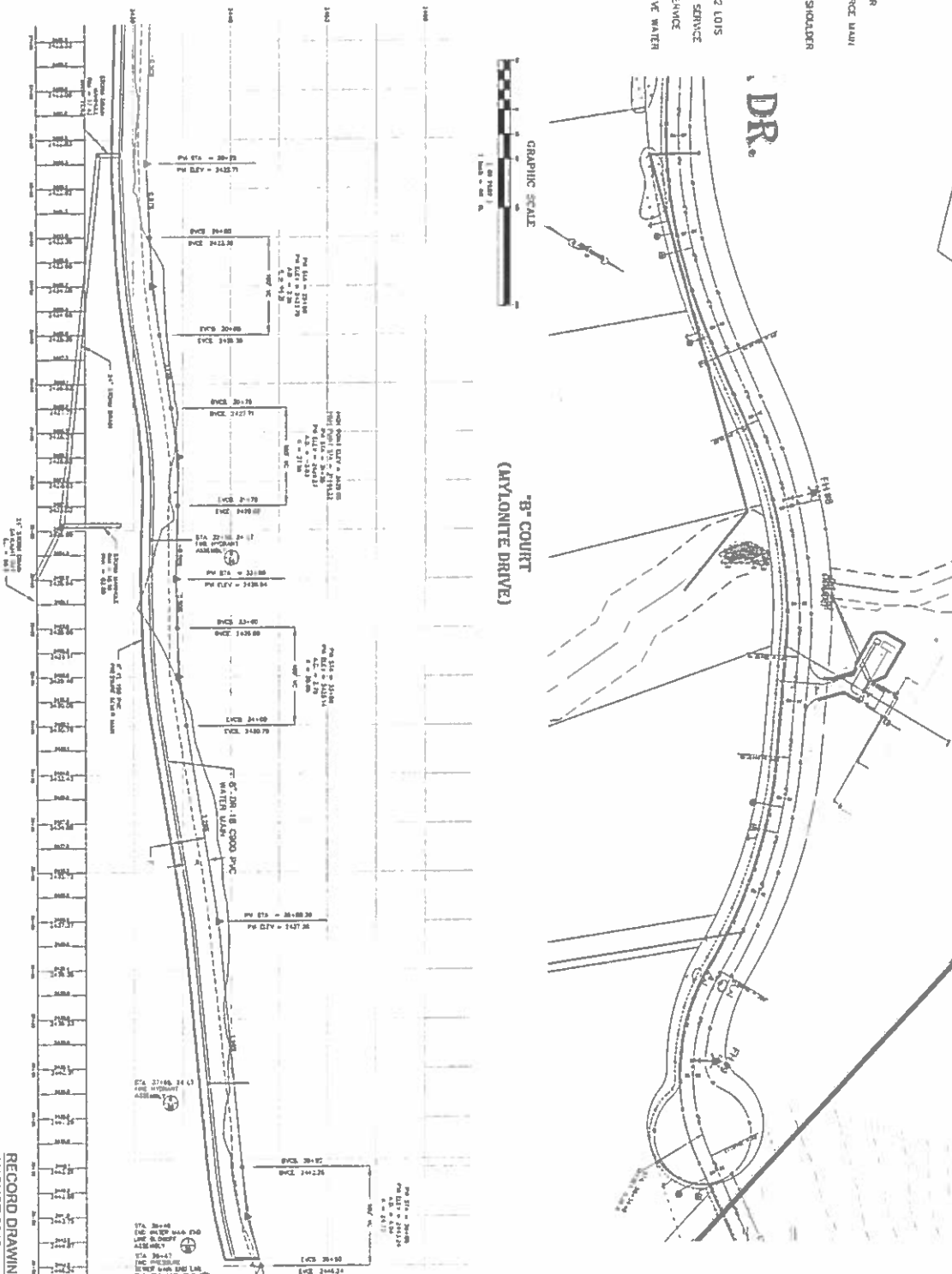
- PROPERTY LINES
- 60 FT ROAD R.O.W.
- UNDERGROUND POWER
- SEWAGE FORCE MAIN
- WATER MAIN
- EDGE 2-FT GRAVEL SHOULDER
- EDGE PAVEMENT

SYMBOL LEGEND

- DRY UTILITY SWEEP FOR 2 LOTS
- 2 INDIVIDUAL LOT WATER SERVICE
- INDIVIDUAL LOT SEWER SERVICE
- PRESSURE REDUCING VALVE WATER SERVICE
- PIPE HYDRANT
- ASSEMBLY
- END OF LINE
- BLOWOFF
- VALVE
- ROUST BLOCK
- TEC
- FLANGE FITTING
- MECHANICAL JUNIT
- WIRING



"B" COURT
(MAYLONITE DRIVE)



RECORD DRAWING
AUGUST 2010

ESTATES AT BLACK ROCK BAY
"B" COURT PLAN/PROFILE
29+00 TO 39+17.02

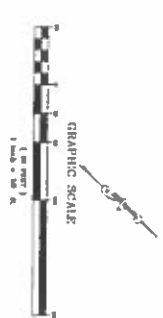
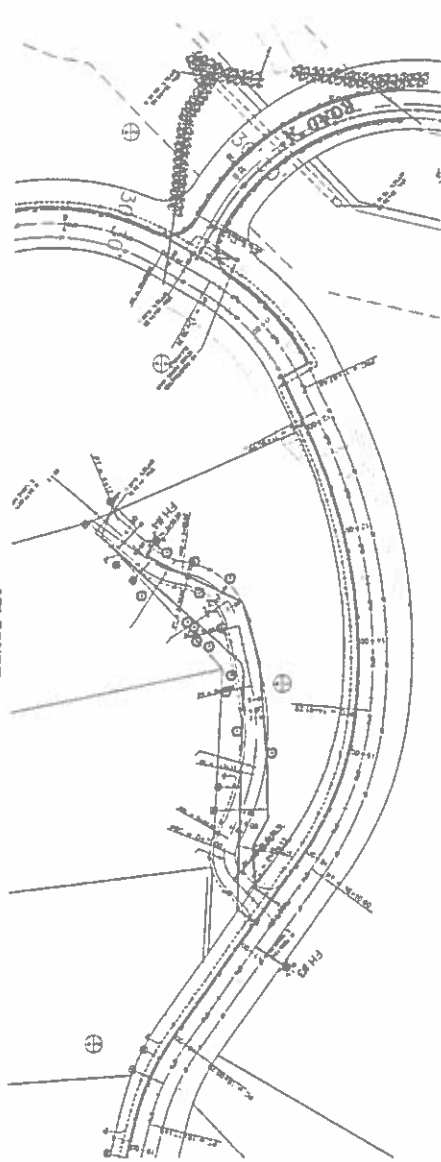
NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
6745 GAYLARD AVE
BAYVIEW, MICHIGAN 48064
PH: (586) 708-0170 FAX: (586) 708-0171



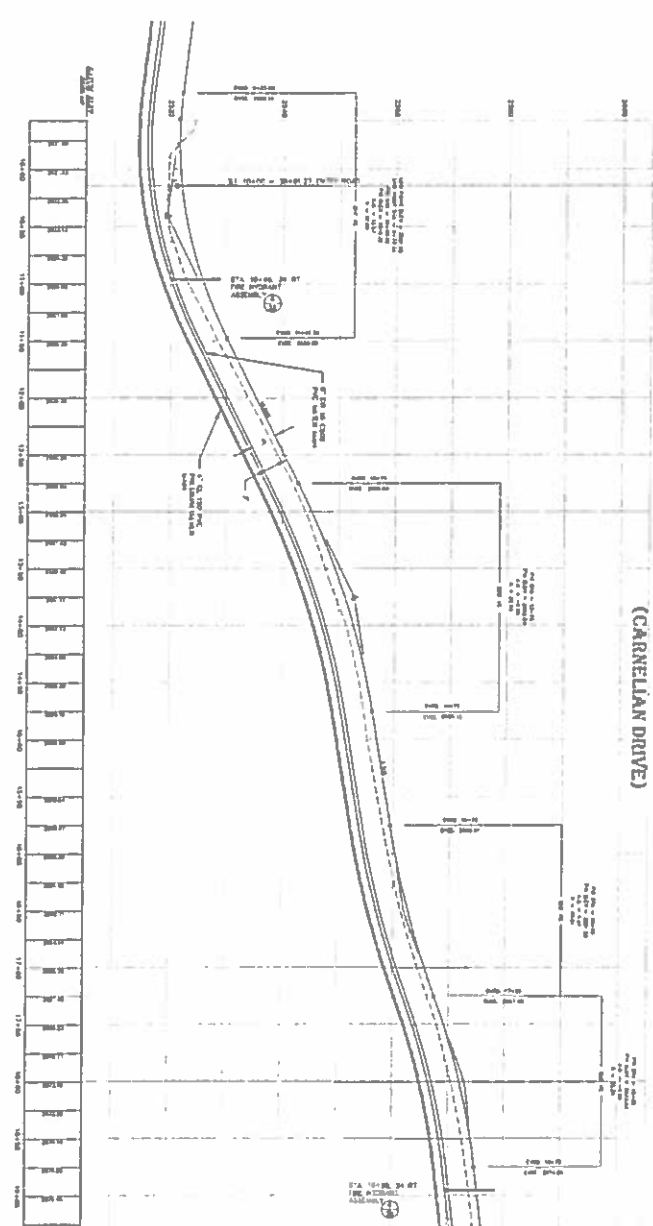
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8/2/10	REVISION 2
8/2/10	REVISION 3
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8/2/10	REVISION 5
8/2/10	REVISION 6
8/2/10	REVISION 7
8/2/10	REVISION 8
8/2/10	REVISION 9
8/2/10	REVISION 10

8 OF 28



C COURT
(CARNELLAN DRIVE)



LINE LEGEND

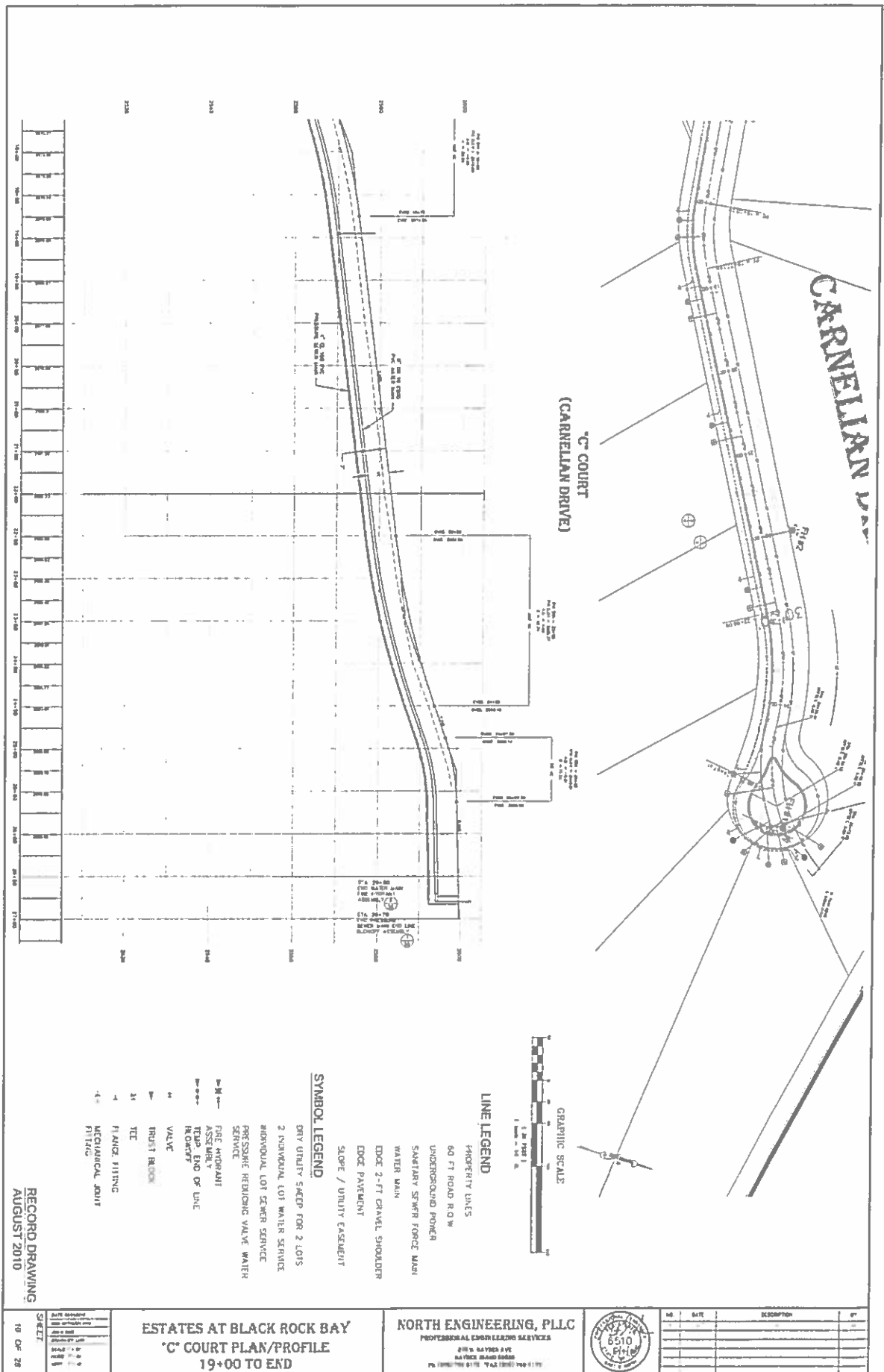
- PROPERTY LINES
- 60 FT ROAD R.O.W
- UNDERGROUND POWER
- SANITARY SEWER FORCE MAIN
- WATER MAIN
- EDGE 3'-11 GRAVEL SHOULDER
- EDGE PAVEMENT
- SLOPE / UTILITY EASEMENT

SYMBOL LEGEND

- DRY UTILITY SWEEP FOR 2 LOTS
- 2 INDIVIDUAL LOT WATER SERVICE
- INDIVIDUAL LOT SEWER SERVICE
- PRESSURE REDUCING VALVE WATER SERVICE
- FAIR HYDRAULIC ASSEMBLY
- END OF LINE
- FLOWER
- VALVE
- TRUST BLOCK
- TIE
- FLANGE FITTING
- MECHANICAL JOINT FITTING

RECORD DRAWING
AUGUST 2010

ESTATES AT BLACK ROCK BAY "C" COURT PLAN/PROFILE 10+00 TO 19+00	NORTH ENGINEERING, PLLC PROFESSIONAL ENGINEERING SERVICES 570 W. HAYWARD AVE. KATY, TEXAS 77605 PH: (281) 768-4175 FAX: (281) 768-4176		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION	BY																
NO.	DATE	DESCRIPTION	BY																				



ESTATES AT BLACK ROCK BAY
'C' COURT PLAN/PROFILE
19+00 TO END

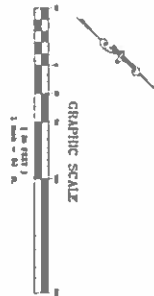
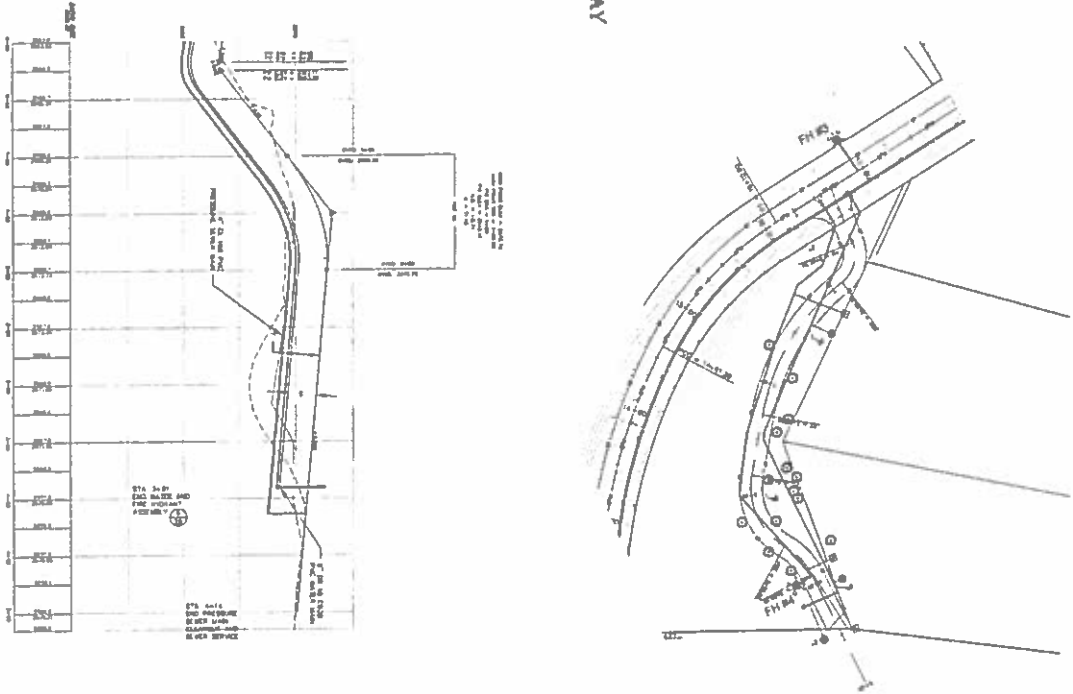
NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICE
210 N. GAYNES AVE.
SUITE 200
PO BOX 1000
TAMPA, FL 33601



NO.	DATE	DESCRIPTION

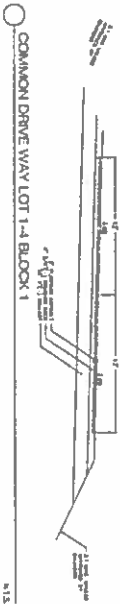
SHEET	NO.	OF	TOTAL
19	OF	28	

COMMON DRIVEWAY



SYMBOL LEGEND

- PROPERTY LINES
- 60 FT ROAD ROW
- UNDERGROUND POWER
- SANITARY SEWER FORCE MAIN
- WATER MAIN
- EDGE 2-FT GRAVEL SHOULDER
- EDGE PAVEMENT
- SLOPE / UTILITY EASEMENT
- DRY UTILITY SWEEP FOR 2 LOTS
- 2 INDIVIDUAL LOT WATER SERVICE
- INDIVIDUAL LOT SEWER SERVICE
- PRESSURIZED REDUCING VALVE WATER SERVICE
- FREE HYDRANT
- TELEPHONE
- TRUST BLOCK
- TE
- FLANGE FITTING
- WROUGHT JOINT
- FITTING



RECORD DRAWING
AUGUST 2010

ESTATES AT BLACK ROCK BAY
COMMON DRIVEWAY LOTS 1-4
BLOCK 1 PLAN/PROFILE

NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
775 N. GARDEN AVE.
SUITE 200, DALLAS, TEXAS 75202
PH (214) 760-6172 FAX (214) 760-6173

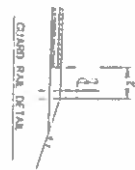


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11 OF 28

RECORD DRAWING
AUGUST 2010

DATE: 12 Oct 20 Drawn by: [blank] Checked by: [blank] Scale: 1" = 10'	RIDGE AT BLACK ROCK WELL #1 ACCESS ROAD PLAN/PROFILE	NORTH ENGINEERING, PLLC PROFESSIONAL ENGINEERING SERVICES 930 N. LAKEVIEW AVE. DAYTON, OHIO 45406 PH (937) 760-0175 FAX (937) 760-0179			<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">NO.</th> <th style="width: 15%;">DATE</th> <th style="width: 50%;">DESCRIPTION</th> <th style="width: 25%;">BY</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> </tr> </table>	NO.	DATE	DESCRIPTION	BY	1			
NO.	DATE	DESCRIPTION	BY										
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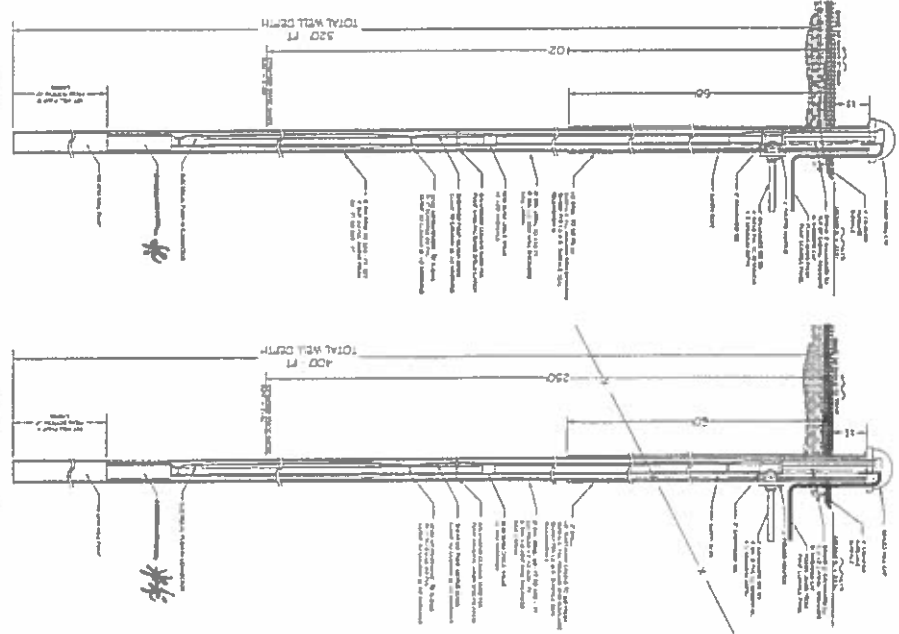
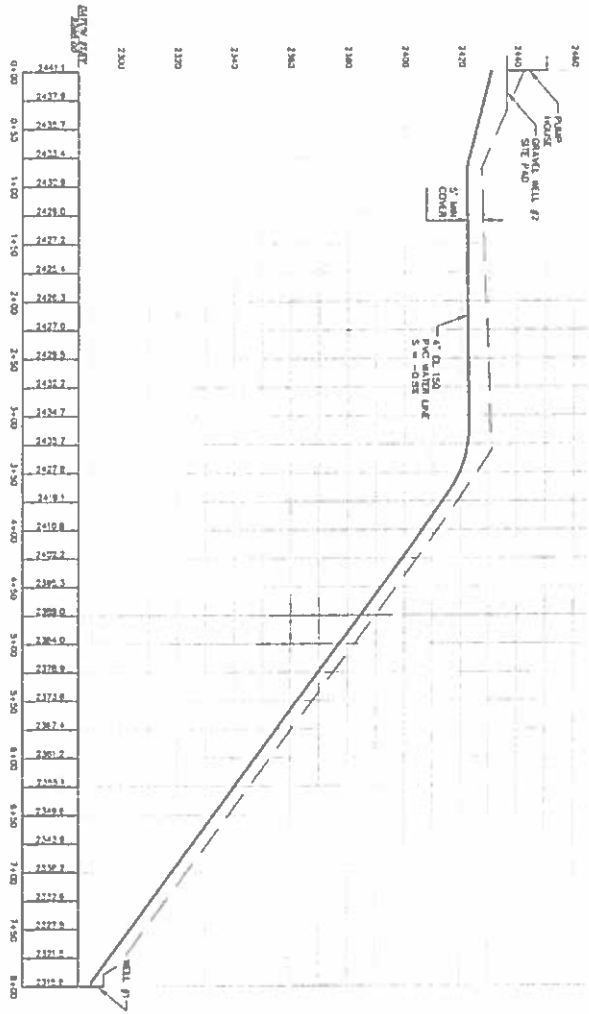
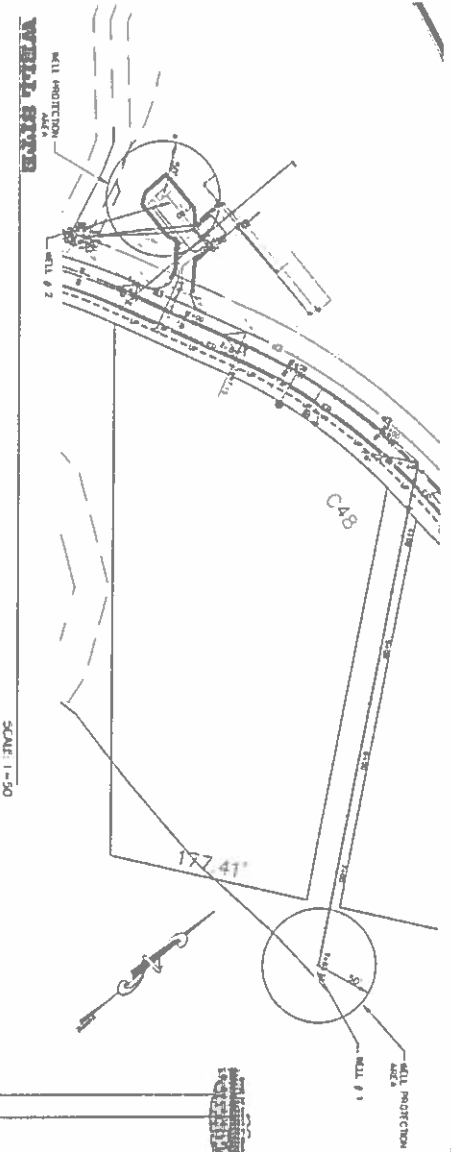


DATE	10 Oct 78
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NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
870 N. BAYVIEW AVE.
BAYVIEW MANOR DRIVE
PO. BOX 797 0119 YAK (206) 794 5119



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WELL #1
CONSTRUCTION
DETAIL
SCALE: 1/8\"/>

WELL #2
CONSTRUCTION
DETAIL
SCALE: 1/8\"/>

RECORD DRAWING
AUGUST 2010

DATE	DESCRIPTION
21	OF 28

**RIDGE AT BLACK ROCK
WELL #1 TO RESERVOIR
PIPING PLAN AND PROFILE**

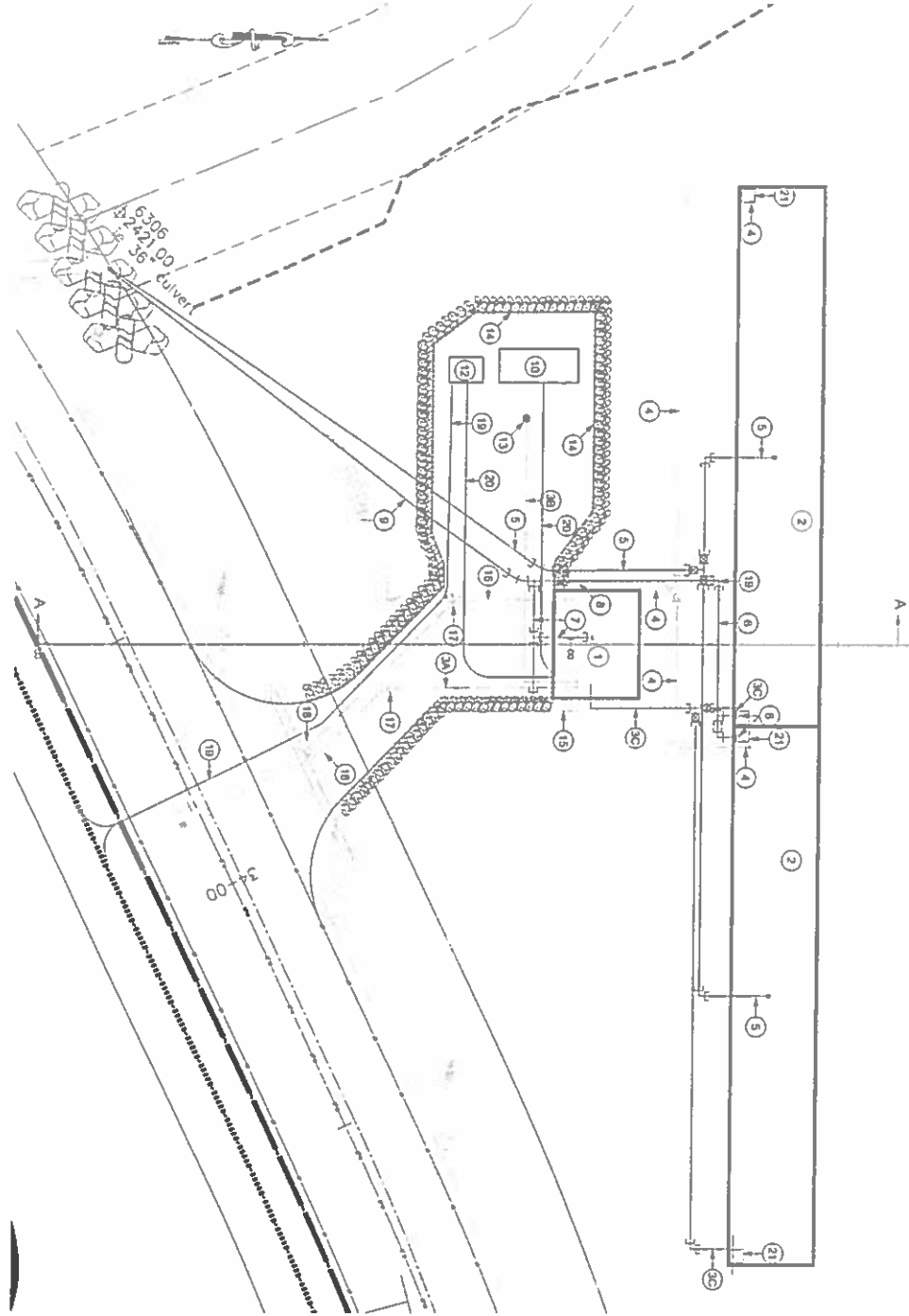
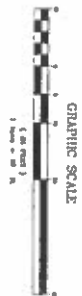
NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
270 N. BAYVIEW AVE
BAYVIEW, MI 48064
PH: (586) 762-5175 FAX: (586) 762-5176



NO.	DATE	DESCRIPTION
1		

RESERVOIR PIPING SCHEMATIC OVERVIEW

SCALE: 1" = 100'



SITE KEYNOTE LEGEND

- 1 15' FT. x 30' FT. PUMP TOWER, T = 35.0
- 2 150,000 GALLON TANK, T = 50.5
- 3 4" TEL. PIPING, 10' TO BUILDING
- 4 4" TEL. PIPING, 10' TO BUILDING
- 5 4" TEL. PIPING, 10' TO BUILDING
- 6 10' SECTION PIPING
- 7 10' SECTION PIPING
- 8 10' SECTION PIPING
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- 10 10' SECTION PIPING
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- 12 10' SECTION PIPING
- 13 10' SECTION PIPING
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RECORD DRAWING
AUGUST 2010

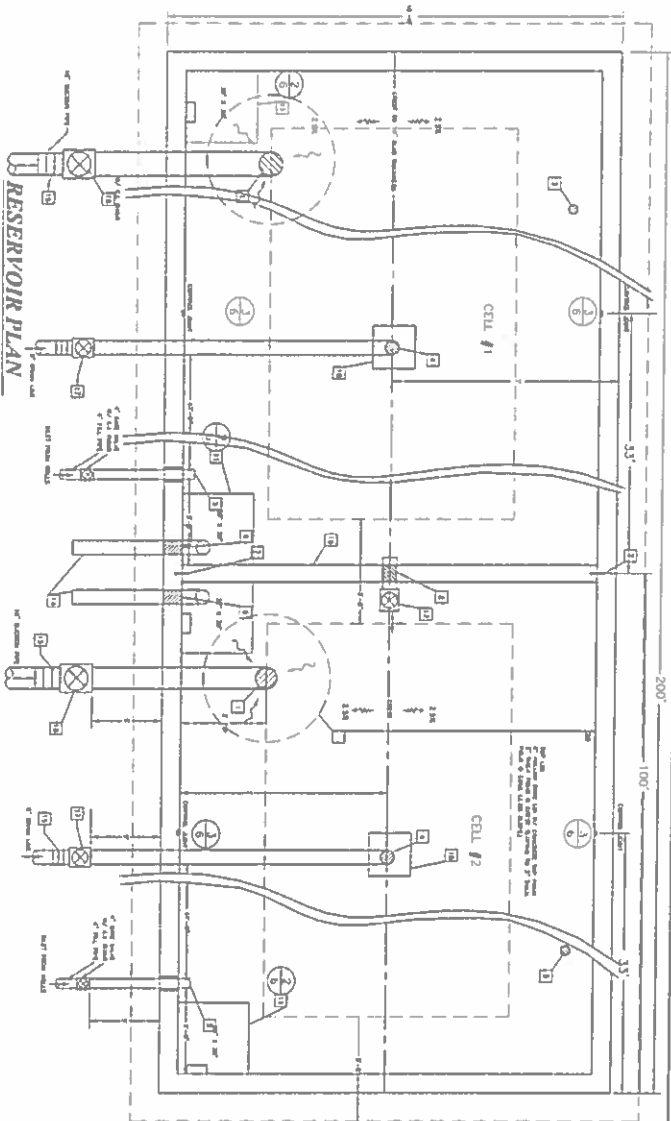
**RIDGE AT BLACK ROCK
RESERVOIR/BOOSTER PUMP STATION
SITE PLAN**

NORTH ENGINEERING, PLLC
 PROFESSIONAL ENGINEERING SERVICES
 4700 N. LAYTON AVE.
 SUITE 2000
 FORT COLLINS, CO 80501
 970.225.1111 FAX 970.225.1112

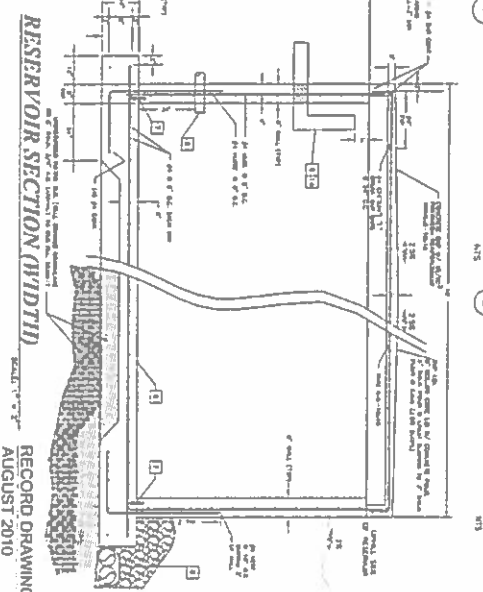
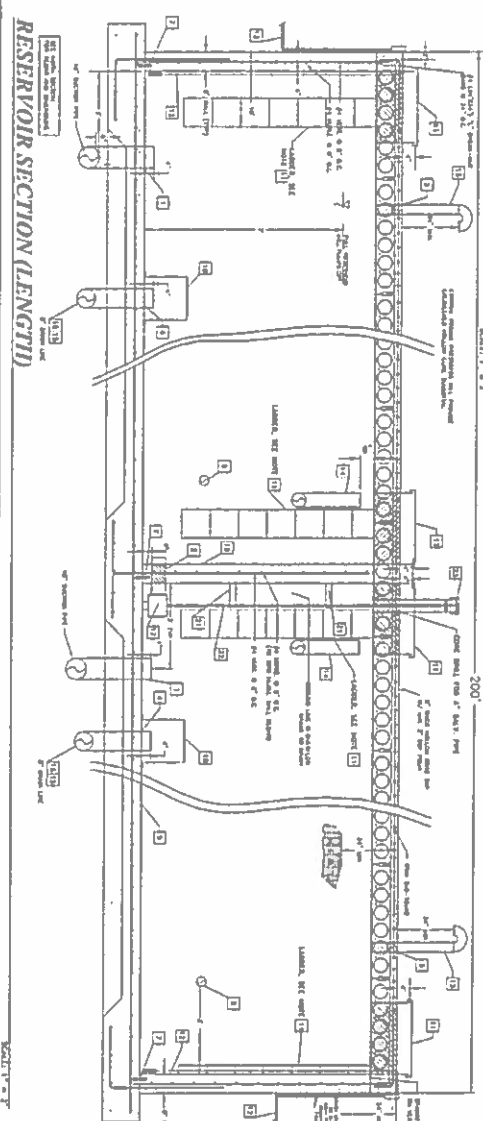
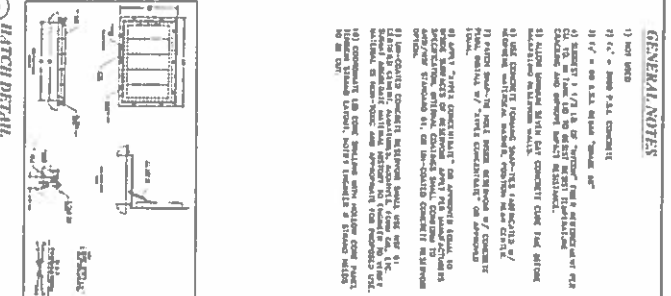


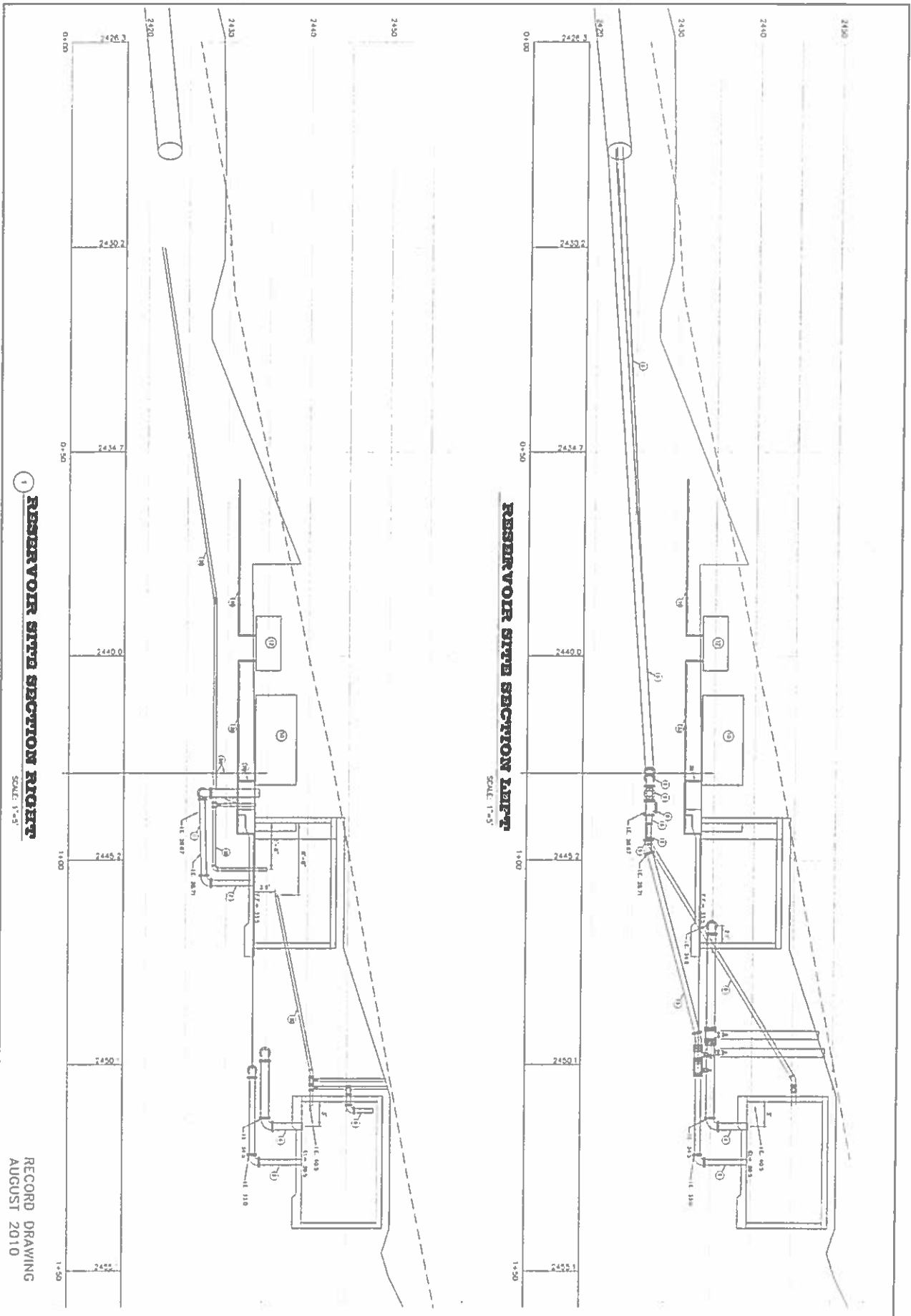
NO.	REV.	DESCRIPTION
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SHEET:
 22 OF 28



- ### KEYNOTE LEGEND
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 - 2) 1" DETAIL FROM WALL SECTION
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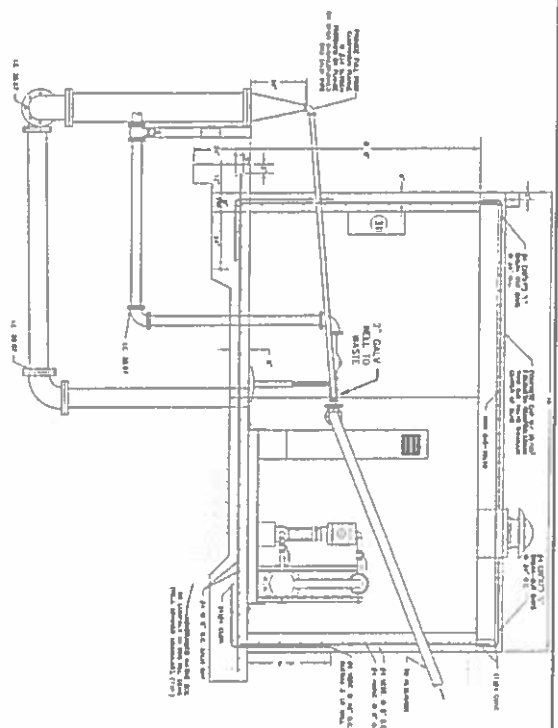
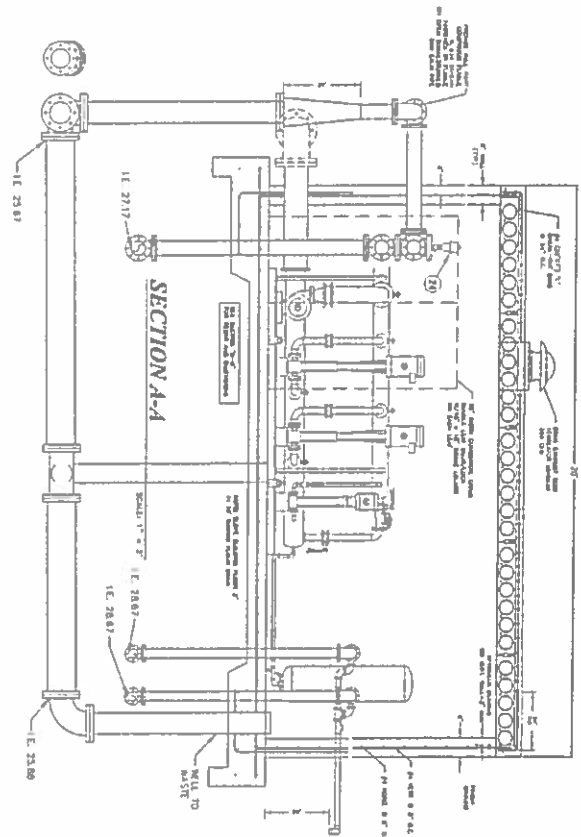




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SCALE: 1"=5'

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RECORD DRAWING
AUGUST 2010



SECTION B-B

MECHANICAL KEYNOTE LECTURE

- [illegible]

RECORD DRAWING
AUGUST 2010

AUGUST 2010

RIDGE AT BLACK ROCK BOOSTER PUMP STATION DETAILS

BOOSTER PUMP STATION DETAILS

NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES

PROFESSIONAL ENGINEERING SERVICES

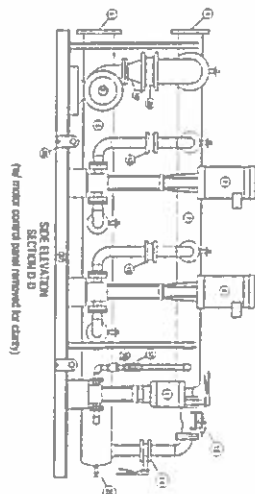
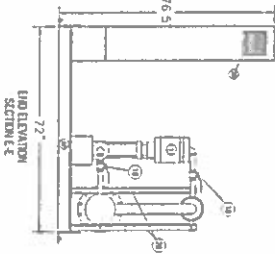
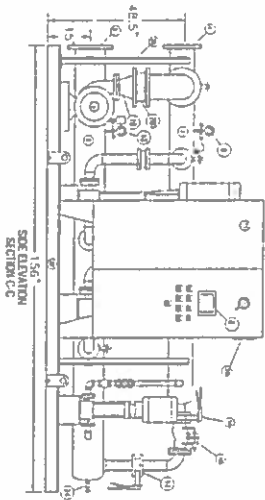
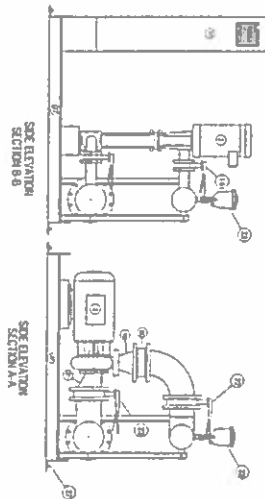
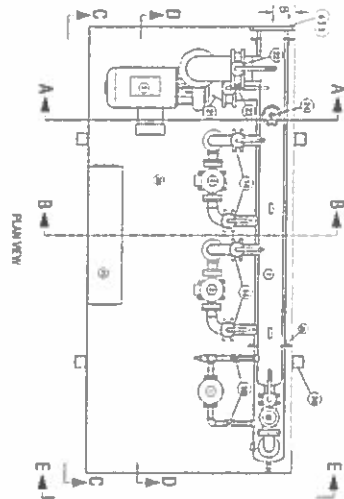
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TEL: (800) 791-8173 FAX: (800) 790-8173

TEL: (800) 791-8173 FAX: (800) 790-8173



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1	08/10/97	PGD RELEASE DOCUMENTS	pgd



MECHANICAL KEYNOTE LEGEND

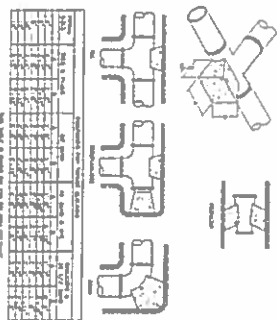
1. GRIFFIN BHA-150 3 HP Jockey Pump
2. DELBERT B32-0-2 25 HP WASH PUMP
3. REFRIGERY BATTERIES 100 HP WASH PUMP
4. 8" 150 # FLANGED SECTION CONNECTION
5. 10" 150 # FLANGED DISCHARGE CONNECTION
6. 10" EPoxy COATED STEEL SECTION HEADER
7. 8" EPoxy COATED STEEL DISCHARGE HEADER
8. PVC TUBING SECTION OPERATION INTERLOCK
9. 3-1/2" SECTION PRESSURE GAUGE & THERMOCOUPLER ASSEMBLY
10. 3-1/2" SECTION PRESSURE GAUGE & LOW PRESSURE SWITCH
11. 4" WASH CONTROL CHILIER
12. 3" WELL TO WASTE PIPING

13. 3" WATER STEEL NON-SLAM CHECK VALVE (1 OF 2)
14. 3" BUTTERFLY VALVE WITH LEVER HANDLE (1 OF 6)
15. 1/2" CHECK VALVE
16. 3" CYCLE STOP PRESSURE REDUCING VALVE
17. 1/2" CYCLE STOP PRESSURE REDUCING VALVE
18. 1/2" BALL VALVE
19. 8" x 4" EPoxy COATED STEEL COMPENSATING REDUCER
20. 8" WATER STEEL NON-SLAM CHECK VALVE
21. 10" x 5" EPoxy COATED STEEL ECCENTRIC REDUCER
22. 10" BUTTERFLY VALVE WITH LEVER HANDLE
23. 3" AUTOMATIC AIR RELEASE VALVE (SEE 8" DISCHARGE WAREHOUSE SHEET 27)

24. 1/2" TIGHT PRESSURE TANK CONNECTION
25. EPoxy COATED STEEL PIPING SUPPORTS
26. EPoxy COATED FRABRICATED STEEL BASE PLATE
27. HOLD DOWN BRACKET (1 OF 4)
28. RETURNED VENTILATION OUTLET

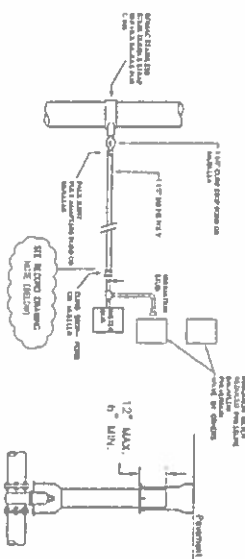
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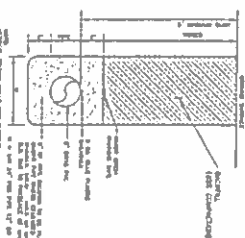


1 THRUST BLOCKING FOR WATER & SEWER MAIN FITTINGS

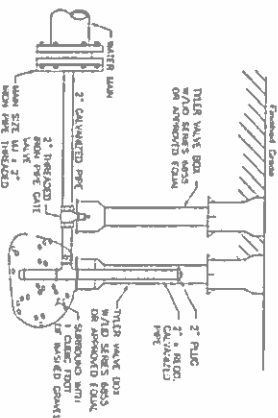
2 TYPICAL SINGLE WATER SERVICE DETAIL



3 VALVE BOX DETAIL

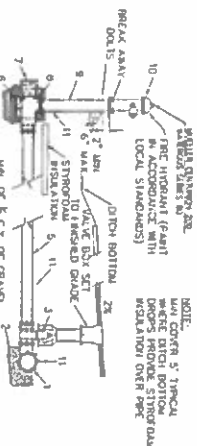


4 DITCH SECTION

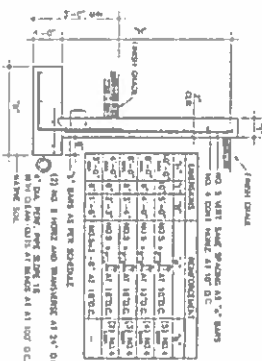


5 2" FROST FREE BLOWOFF ASSEMBLY

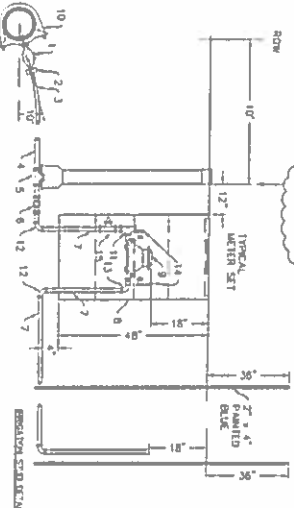
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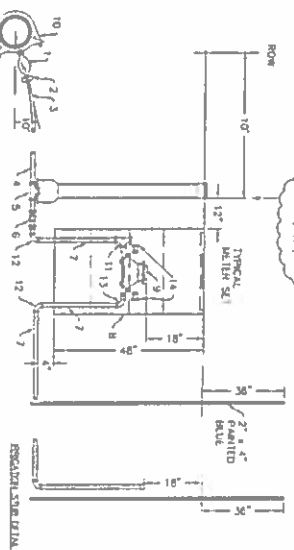
6 FIRE HYDRANT



7 RETAINING WALL



8 TYPICAL METER SET



9 TYPICAL METER SET

NO.	DESCRIPTION
1	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
2	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
3	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
4	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
5	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
6	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
7	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
8	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
9	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
10	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
11	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
12	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG

10 1-1/2" WATER SERVICE CONNECTION

NO.	DESCRIPTION
1	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
2	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
3	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
4	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
5	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
6	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
7	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
8	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
9	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
10	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
11	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
12	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG

11 1-1/2" WATER SERVICE CONNECTION

RECORD DRAWING
AUGUST 2010

27 OF 26

NORTH ENGINEERING, PLLC
PROFESSIONAL ENGINEERING SERVICES
675 N. BAYVIEW AVE.
GATHER, OHIO 44030
PH: (440) 762-6170 FAX: (440) 762-6171



NO.	DESCRIPTION
1	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
2	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
3	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
4	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
5	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
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11	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG
12	1" DIA. 10' LONG 1" DIA. 10' LONG 1" DIA. 10' LONG

