STATE OF COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

PVRE Pit #1 M-2017-009

Randy Schafer <randy.schafer@phillipscounty.co> Fri, May 12, 2017 at 8:32 AM
To: "Ebert - DNR, Jared" <jared.ebert@state.co.us>
Cc: R & J Schafer <RJSchafer@haxtuntel.net>

Jared,

Attached is an electronic version of the response letter and attachments. I have also attached soils information. I will put this in the mail today morning. I will also send a copy to the Logan County Clerk.

Randy Schafer

4 attachments

Response to adequacy letter dated April 3 2017(2).docx
25K

pvre1.pdf
112K

pvre.pdf
2744K

alernate_cost_estimate.pdf
40K

40586 Co. Road 21
Haxtun, CO 80731

May 11, 2017

Mr. Jared Ebert
Environmental Protection Specialist III
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

RE: PVRE Pit #1, M-2017-009, New 110 Construction Materials Reclamation Permit Application, Adequacy Review No. 1

Dear Mr. Ebert:

This response is made to your adequacy review dated April 3, 2017. Each response is addressed. All responses are in bold.

Rule 6.3.1. Exhibit A – Legal Description and Location Map

1) Please revise Exhibit A to also include the location of the main entrance to the mine site reported as latitude and longitude, or the Universal Transverse Mercator (UTM) Grid coordinates as determined from a USGS topographic map per Rule 6.3.1(1). Please specify coordinates of latitude and longitude in degrees, minutes and seconds or in decimal degrees to an accuracy of at least five decimal places (e.g., latitude 37.12345 N, longitude 104.45678 W). For UTM coordinates please specify the North American Datum (NAD) 1927, NAD 1983, or WGS 84, and the applicable zone, measured in meters.

The location of the main entrance is reported in the response to Question 11 (original application). The latitude is 40° 37' 13.0192, longitude is 103° 11'53.6594, NAD 1983.

2) Please revise Exhibit A to indicate the map required by this Exhibit has been made part of the series of maps submitted for Exhibit E.

Exhibit A is hereby revised as: "The pit area is approximately 9.9 acres in the SW 1/4 of the NW 1/4 of Section 33, T8N, R52W of the 6th P.M., Logan County, Colorado. Delineator boundary posts will be set to mark the pit areas as shown on the location map in Exhibit E."

3) Please verify who the surface owner of record is for the property to the south of the permit boundary. The Exhibit E maps do not show the name of the party.

Adjoining surface owners are now identified on Exhibit E – Aerial Phot Map. They are Roth H20, LLC and the City of Sterling.

Rule 6.3.2, Exhibit B – Site Description

4) The soils map submitted is difficult to read and the Division could not verify if the soil series discussed in Exhibit B exists at the site. Based on the location of the site and the information provided by the Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm), it appears the soils within the proposed permit area

are made up of two complexes, the Alda Loam (unit 3) and the Westplain-Alda complex (Unit 128). Based on the series description for these soil units, the A horizon material could be up to 14 to 17 inches in depth. Please revise the soils information provided in Exhibit B to accurately characterize the soil within the proposed permit area.

The original soil types were inaccurate. The soils map was too small to accurately read the soil types in the pit area. The NRCS Office in Logan County has now provided a readable soils map of Section 33, T8N, R52W which is attached. The soil unit covering the pit is the Alda Loam and the Westplain-Alda complex. The A horizon material is reported to extend up to 14 - 17 inches.

Rule 6.3.3. Exhibit C – Mining Plan

5) The mine plan indicates the life of the pit is indefinite. Given this, will this operation be an intermittent operation as defined by C.R.S. 34-32.5-103(11)(b), meaning that the affected lands are to be used for less than 180 days per year? If so, please revised Exhibit C, subpart A to indicate this.

The pit will operate on a year-round basis. The expected life of the pit is hereby changed to ten years.

6) The applicant proposes to salvage 5 inches of topsoil. Given the information found regarding the soils at the site, it appears up to 14 to 17 inches of topsoil is available to salvage at the site. Please revise the topsoil salvaging plan based on the revised soils information discussed above for Exhibit B.

The soil shown on the new NRCS soils map is Alda loam and the Westplain-Alda complex with topsoil up to 17 inches in depth. We will commit to replacement of 14 -17" of topsoil/overburden on those areas not under water during reclamation.

7) Subsection d) of Exhibit C indicates that the pit will likely fill with ground water and that all slopes will be no greater than 2H:1V. Per Rule 3.1.5(7), if an excavation will fill with water creating a pond, all slopes must be no steeper than 3H:1V from five feet above to 10 feet below the expected water line. Please revise subpart d) of this exhibit to commit to grading the pit slopes to a 3H:1V at a minimum five feet above and ten feet below the expected water line.

Slopes from five feet above to 10 feet below the expected water line are hereby revised and will be at a slope of 3H:1V.

8) As mining progresses, will the operator excavate the material and create a vertical highwall or will the operator mine at a particular slope angle? If you commit to mining at the final proposed pit slopes angle, this will limit the amount of financial warranty that must be held to backfill and grade the site. If not, please specify the angle at which the material will be excavated and the maximum length of an un-reclaimed slope to be created.

We are proposing to mine at the proposed pit slope angle of 3H:1V.

9) If a highwall or a lessor slope than the proposed final regarded slopes will be excavated, the Division recommends maintaining a setback from the permit boundary to leave enough room to grade the final pit slopes. If the operator chooses to mine at a lessor slope than the final regraded slope angle, please specify the setback that will be required to grade the pit slopes or specify how the operator will backfill the pit slopes to the proposed regrade angle.

As indicated in the previous response, we plan to mine at the proposed slope of 3H:1V.

10) Has "Jack's Lane" been constructed? If so, please provide a description of this road and a picture of this road and indicate if the road will be improved to support the mining operation. Based on the definition of "Affected Land" in Rule 1.1(3), roads must be included as affected land unless the road existed prior to the date on which a permit application was made to the Office and which was constructed for purposes unrelated to the proposed mining operation and which will not be substantially upgraded to support the mining operation. Also, per Rule 6.3.3(g), new or improved roads must be included as part of the permitted acreage. If the road does not exist, it must be included in permit acreage, and given that the proposed permit area is already 9.9 acres including this road would require the applicant to withdraw this 110 Limited Impact Operation application and submit a 112 application or reduce the proposed permit area below the 10 acre Limited Impact Operation threshold.

Jack's Lane is a new road which will service Platte Valley Industrial Park, a new subdivision which is currently being proposed by Platte Valley Real Estate LLC and is under review by Logan County. We would argue that the primary function of this roadway is to serve the new industrial lots being created in the Platte Valley Industrial Park subdivision. It will be in place and serve that function for many years above and beyond the life of this pit. A copy of the subdivision plat is attached. The gravel pit operation will simply be using a roadway built for the industrial property owners. The subdivision roadway has not been included in the 9.9 acres at this time.

Exhibit 6.3.4, Exhibit D – Reclamation Plan

11) Per Rule 6.3.4(1)(a), please specify at what point in the mining plan the overburden and topsoil will be replaced in relation to ongoing extraction.

Our assumption is that the final pit will fill with water. When mining reaches the outside edges of the four sides, topsoil and overburden will be replaced around the outer fringes of the pit.

12) Similar to item No. 6 above, please revise the topsoil replacement depth based on the revised soils information discussed in item No. 4 above.

The topsoil depths on the corrected soil types could extend up to 14 -17 inches. We are committed to replace an equal depth around the perimeter of the pit in all areas not under water during reclamation.

13) Please revise the reclamation plan to indicate that the pit slopes will be graded to a 3:1 horizontal to vertical ratio at least five feet above to ten feet below the water line if water will fill the pit excavation and that all other slopes will be no greater than a 2:1 slope per Rule 3.1.5(7) and Rule 6.3.4(1)(d).

The revised reclamation plan should reflect that the pit slopes will be graded to a 3H:1V slope at least five feet above to ten feet below the water line if water fills the excavation. All other slopes will be no greater than a 2:1 slopes.

14) Please indicate at what point in the mining plan when the site will be seeded per Rule 6.3.4(1)(c)(ii).

Seeding will occur on each of the four sides following replacement of overburden and topsoil and preparation of the soil. This will occur after mining has ceased from that side of the pit.

15) The Division has reviewed the reclamation cost estimate submitted. The backfilling and grading cost and topsoil replacement cost will depend on how you address the adequacy review items above. Also, please address the following issues:
a. The backfilling and grading cost is based on grading .42 feet of material over the perimeter of the excavation and 1 foot of material over a 2.4 acre area. These assumptions may be appropriate if the pit slopes are mined at the angle of the final reclamation slopes for finish grading activities. However if the operator will create a highwall or slopes during the excavation period that are at a lesser angle than the proposed reclaimed slopes, the volume necessary for backfilling will likely be greater than those estimated. The volume of material to be backfilled will be based on the angle of the slope the pit will be excavated at. Please confirm at what angle the pit will be mined and re-evaluate the volume to be backfilled if necessary.

The intent of the operation is to mine at the angle of the slope of 3H:1V.

b. The reclamation plan and mining plan narrative indicate that it is not clear if groundwater will be exposed and fill the pit area. Based on the Division's knowledge of the area and of a nearby mine site, it is very likely the operator will encounter ground water at shallow depths likely near the 7 foot depth. The cost estimate submitted is based on the assumption that a ground water pond will be created. In order to address the financial liability associated with the exposure of groundwater, the operator must first obtain a permanent augmentation plan from the Office of the State Engineer (SEO) prior to exposing ground water or the permittee may post a bond to either:
i. Option A: backfill the pit to at least two feet above the static ground water level.

ii. Option B: install an impervious clay liner or slurry wall to isolate the pit from the ground water table.
Either supply evidence a permanent plan for augmentation has been obtained for the exposure of groundwater or provide an estimated cost for either bonding for option A or B discussed above.

Or, you may commit to not exposing groundwater until a permanent plan for augmentation has been obtained for the entire projected area of exposed groundwater. If the latter option is chosen please revise the mining plan with this commitment.

We are currently in discussion concerning a permanent plan for augementation. To allow time to complete that plan, we are hereby committing not to exposing groundwater until a permanent plan for augmentation has been obtained for the entire projected area of exposed groundwater.

c. The reclamation plan indicates the entire pit area will have overburden and topsoil replaced. The cost estimate only estimates that cost to replace topsoil over 2.4 acres. Please revise the estimate for topsoil replacement to cover the entire 9.9 acre affected area with topsoil.

Assuming the pit's final disposition is a pond, it will be impossible to place overburden and topsoil on slopes under water. They will be placed around the perimeter and on any slope down to water's edge. Our estimate of that area is 2.4 acres. The cost estimated has been revised to include an increased depth of 17" (1.42') but does not reflect covering the entire 9.9 acres. I am also including a cost estimate showing top soil replacement for 9.9 acres but do not believe that will be the end result.

d. Please estimate the volume of overburden that will need to be replaced over the affected area and provide a cost for this activity.

The topsoil/overburden estimated to be replaced is shown on the revised cost estimate notes. It assumes at total depth of 17" (1.42 feet). It calculates to a total of 5,534 cubic yards for that area around the perimeter plus an additional 14 feet of exposed slope. Again, this is based on the expectation of a pond at the end of the life of the pit.

e. Please revise the estimate for revegetation for the entire 9.9 acre affected area.

We can provide an estimate for revegetation that would include the entire 9.9 acres, but that seems to fly in the face of facts. Looking at a google earth map of the immediate area (see attached) shows that any excavation that has occurred in this immediate area has resulted in a pond, The proximity to the South Platte River and the high water table almost make this a certainty.

Again, assuming the pit's final disposition is a pond, re-vegetation will not be possible for the entire 9.9 acres. The cost estimate is based on revegetation of that area projected to lie outside the pond. I am also including a cost estimate showing top soil replacement for 9.9 acres but do not believe that will be the end result.

Rule 6.3.5, Exhibit E-Map

16) Each map submitted with this exhibit; with the exception of the Mining Plan Map, Reclamation Plan Map and the Final Contour Map, have two scales depicted on the maps. There are several discrepancies between the two scales shown on each map. Please revise these maps to only show one scale and please insure the scale is correct and adequate.

The Exhibit E maps have been revised to indicate the correct scales.

17) Please revise the Mining Plan and Reclamation Plan map to clarify the post mine slopes to comply with Rule 3.1.5(7) and Rule 6.3.4(1)(d).

The Mining and Reclamation Plan maps have been revised to show that slopes five feet above to 10 feet below anticipated water level will be maintained at a slope of 3H:1V.

18) Please revise the reclamation plan to state the average thickness of topsoil and overburden to be replaced throughout the affected area.

The reclamation plan is hereby revised to indicate that the topsoil and overburden thickness shall be 14-17 inches throughout the affected areas above water level.

Rule 6.3.8, Exhibit H – Municipalities Within a Two-mile Radius

19) Please revise Exhibit H to list the mailing address and telephone number of the governing body for the City of Sterling.

Exhibit H is hereby revised to include the address of the City of Sterling which is P. O. Box 4000, Attention: Mr. Don Saling, Sterling city Manager, Sterling, CO 80751-0400

Rule 1.6.2 – Public Notice Procedures

20) Please submit proof the required publication was made in accordance with Rule 1.6.2(1)(d). Also, if necessary please provide evidence the notice required by Rule 1.6.2(1)(d) was mailed or personally served to all Owners of Record of the surface and mineral rights of the affected land and to the Owners of Record of all land surface within 200 feet of the boundary of the affected land.

Attached is proof of publication from the Sterling Journal Advocate and proofs of notice to the surface owner and the adjoining landowners within 200 feet of the boundary of the affected land.

We hope this responds to the questions and issues raised at this point. Please let us know if any additional information is needed.

Sincerely,

Randy Schafer

CC: Dan E. Long, Platte Valley Real Estate, LLC

Attachments:
Revised Exhibit E maps
Revised Calculation notes and Cost Estimate with increased topsoil/overburden
Revised Calculation notes and Cost Estimate for entire 9.9 acres
Proof of Publication
Proof of Notice to adjoining landowners and surface owner
Aerial map showing other ponds created by excavations in the immediate vicinity

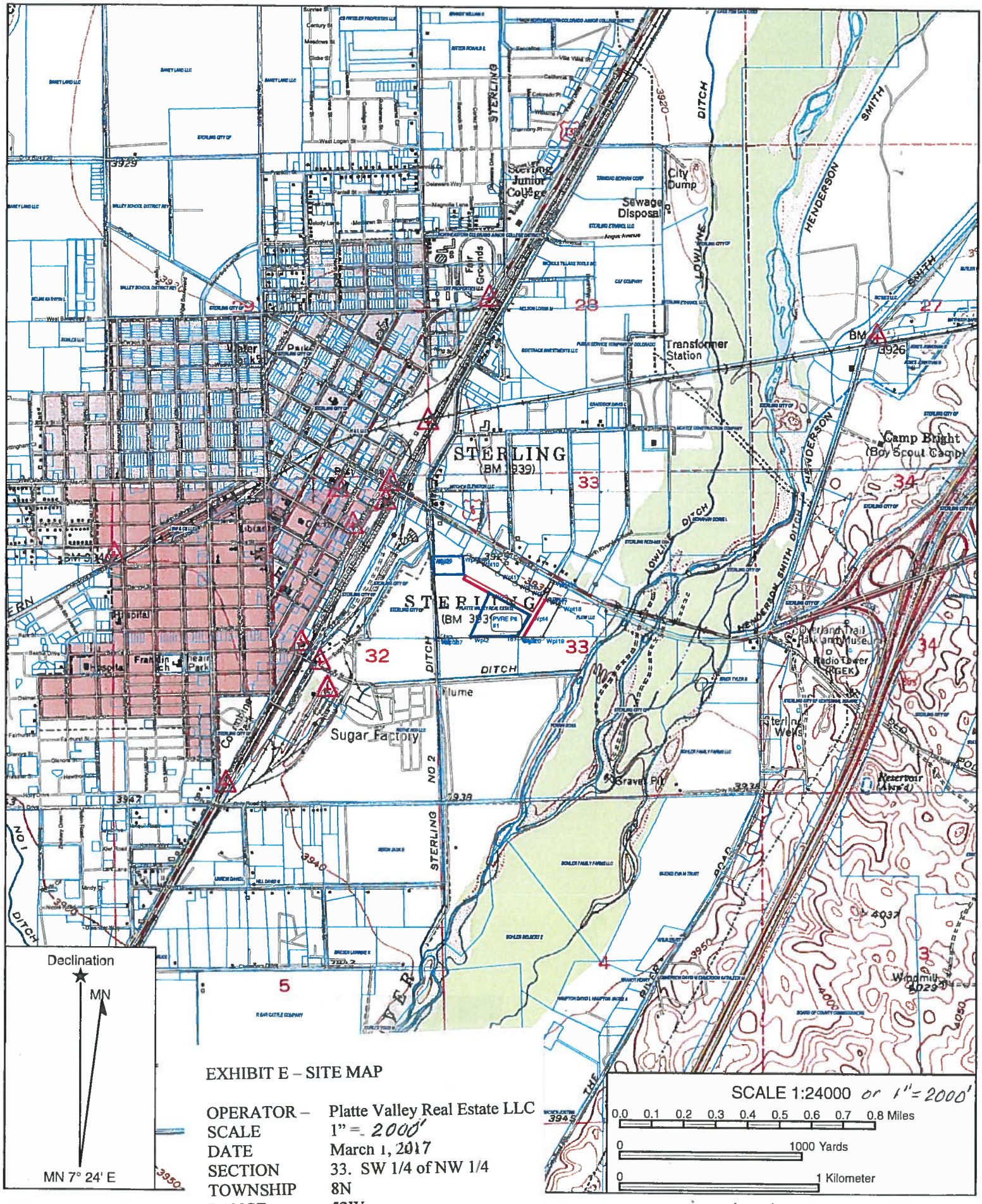


EXHIBIT E – SITE MAP

OPERATOR –	Platte Valley Real Estate LLC
SCALE	1" = 2000'
DATE	March 1, 2017
SECTION	33. SW 1/4 of NW 1/4
TOWNSHIP	8N
RANGE	52W
COUNTY	Logan County
PREPARED BY	Randy Schafer
	PVRE Pit #1

Revised 5/3/17
RS

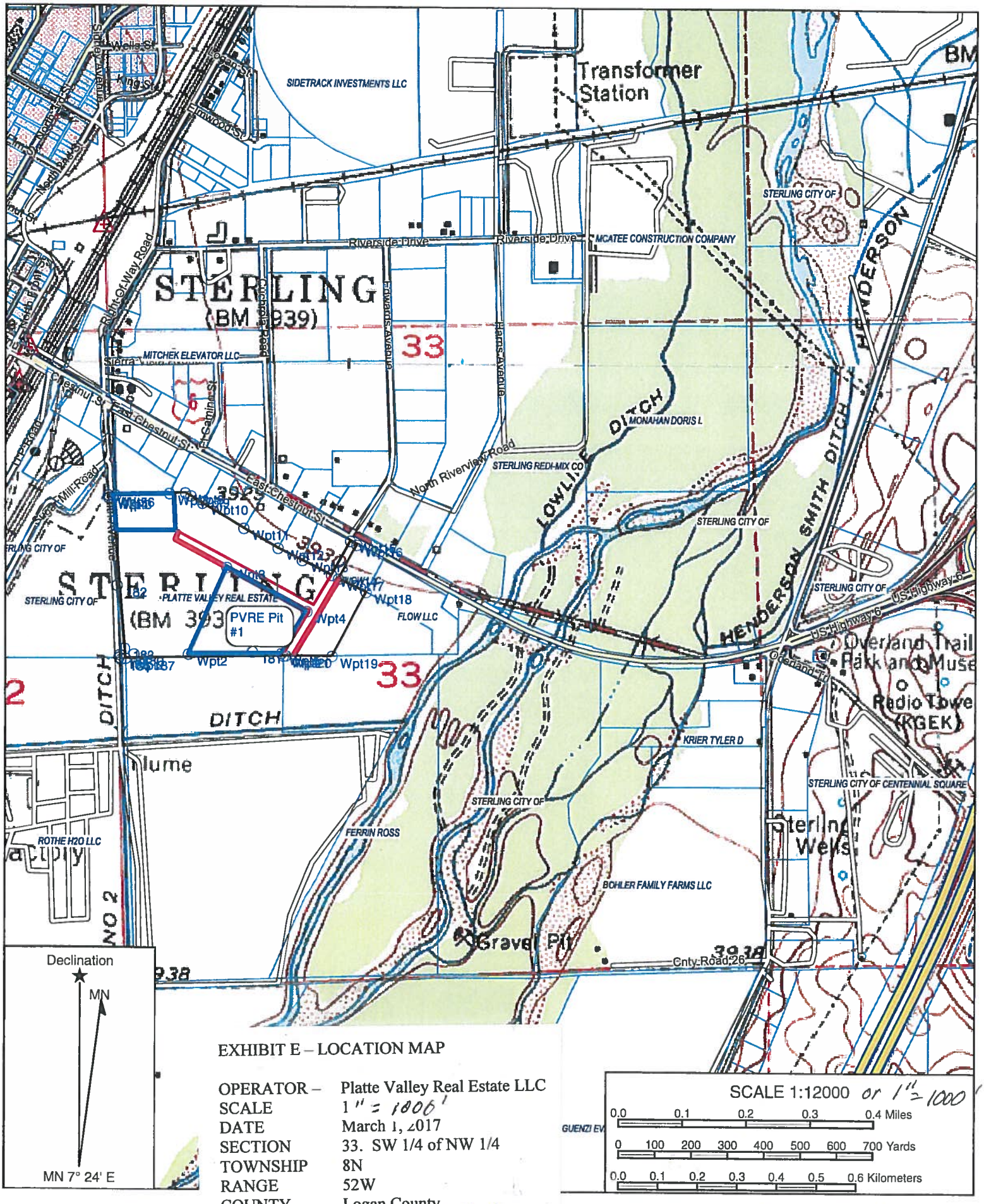
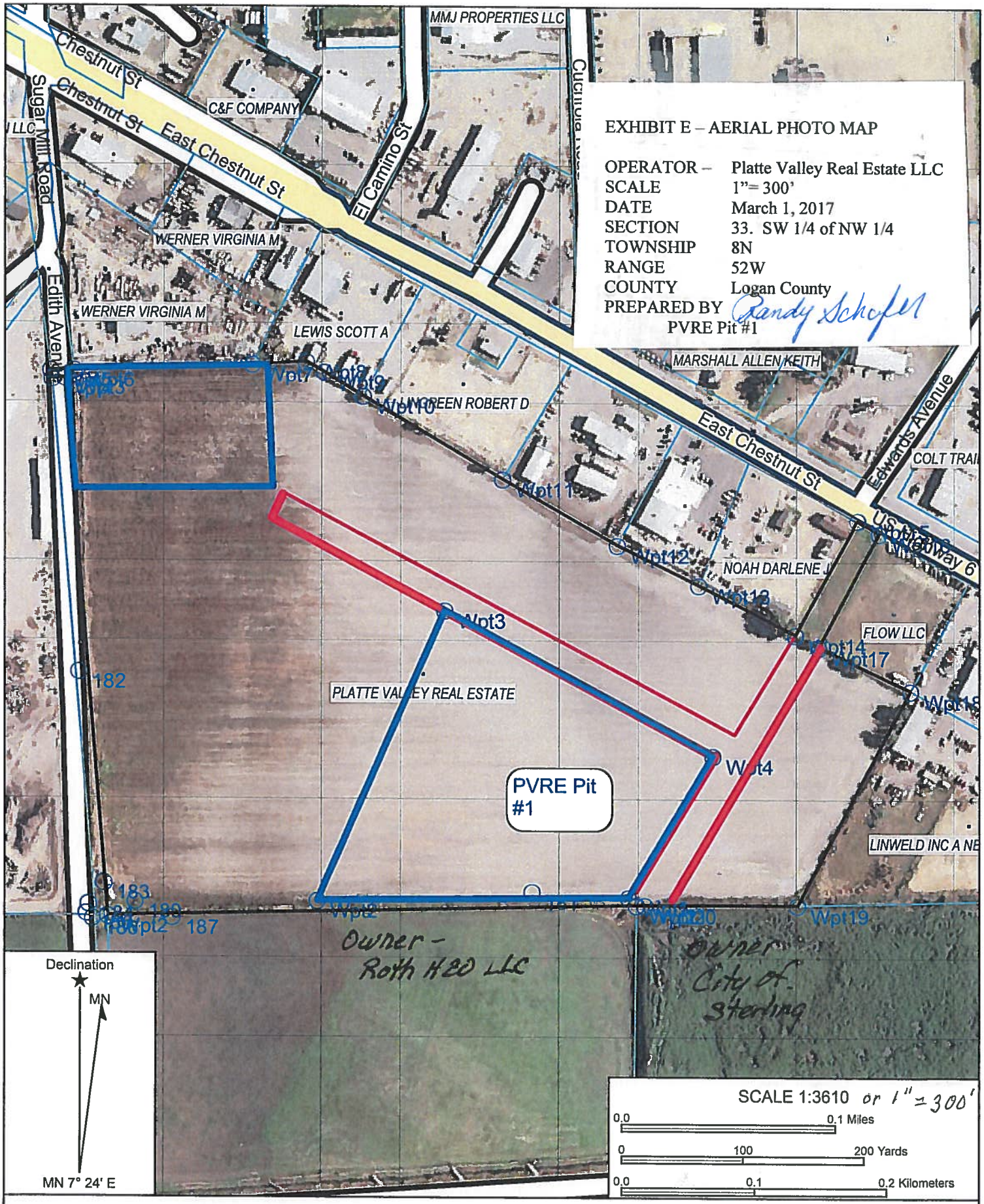


EXHIBIT E – LOCATION MAP

OPERATOR –	Platte Valley Real Estate LLC
SCALE	1" = 1000'
DATE	March 1, 2017
SECTION	33. SW 1/4 of NW 1/4
TOWNSHIP	8N
RANGE	52W
COUNTY	Logan County
PREPARED BY	Randy Schafer
	PVRE Pit #1

Revised 5/3/17



Name: STERLING SOUTH NW, CO
Date: 02/28/17
Scale: 1 inch = 300 ft.

Location: 040° 37' 13.5175" N, 103° 11' 52.2488" W
PVRE Pit #1

Revised 5/3/17 RS

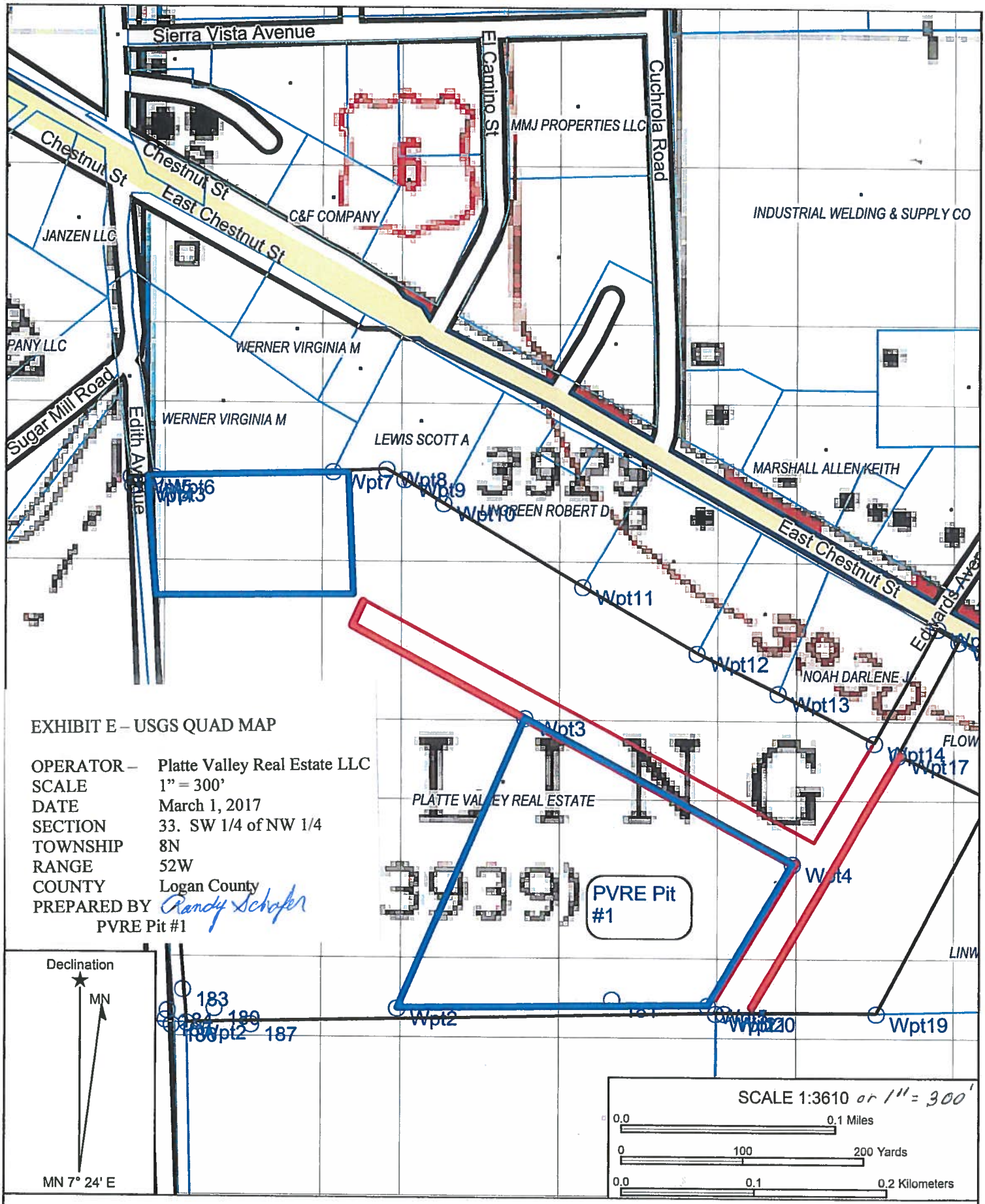


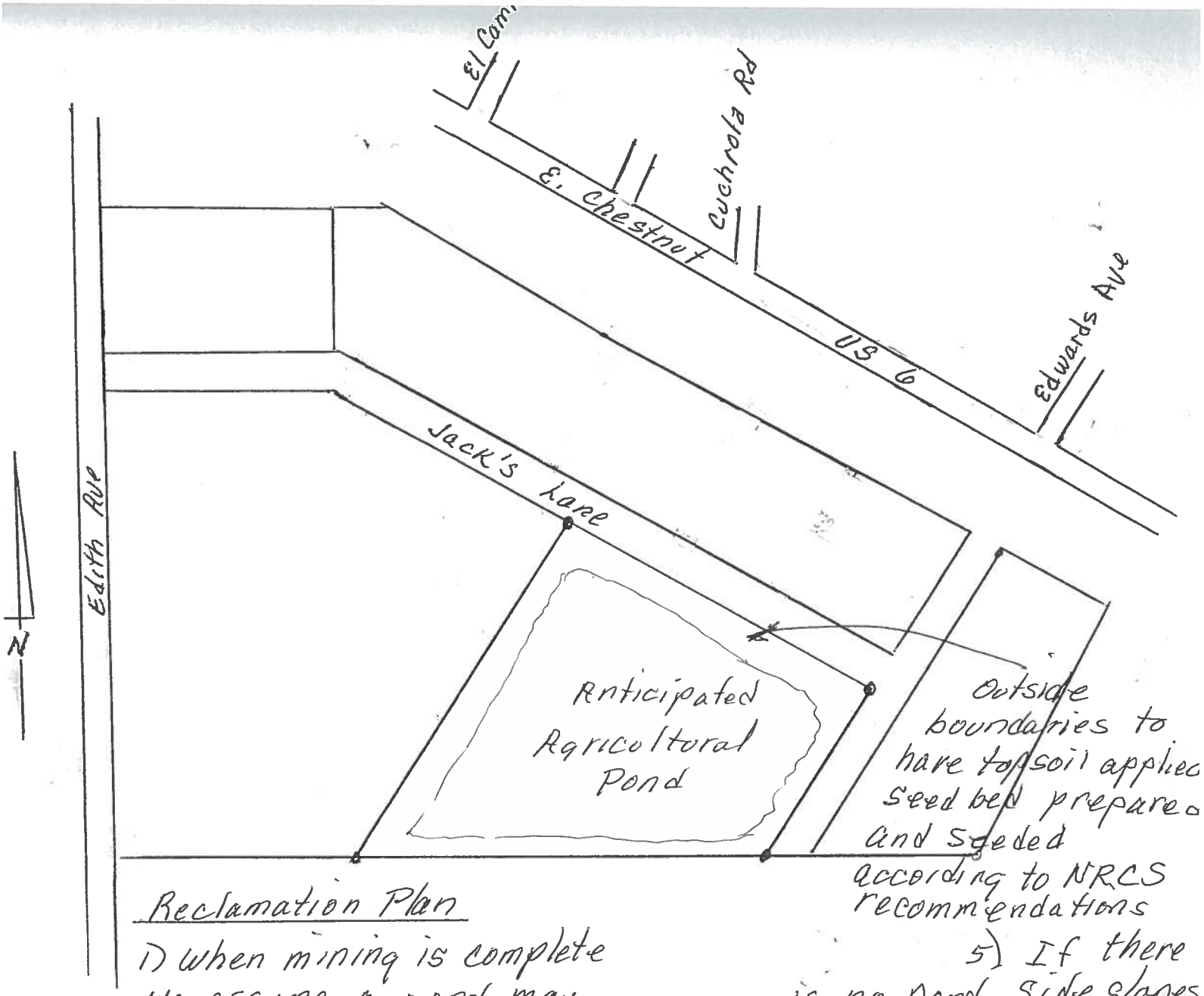
EXHIBIT E – USGS QUAD MAP

OPERATOR –	Platte Valley Real Estate LLC
SCALE	1" = 300'
DATE	March 1, 2017
SECTION	33. SW 1/4 of NW 1/4
TOWNSHIP	8N
RANGE	52W
COUNTY	Logan County
PREPARED BY	Randy Schafer
	PVRE Pit #1

Name: STERLING SOUTH
Date: 02/28/17
Scale: 1 inch = 300 ft.

Location: 040° 37' 16.1074" N, 103° 11' 54.7959" W
PVRE Pit #1

Revised 5/3/17



Reclamation Plan

1) When mining is complete we assume a pond may exist due to proximity to S. Platte River.

2) All areas outside any pond will have topsoil/overburden re-applied in same proportion it was removed.

3) Seedbed will be prepared and seeding occur as recommended by NRCS.

4) If pond results, all side slopes will be minimum of 3:1 from 5' above water to 10' below; below that line 2:1.

5) If there is no pond, side slopes will be 3:1 and fully seeded.

EXHIBIT E – RECLAMATION PLAN

OPERATOR –	Platte Valley Real Estate LLC
SCALE	1" = 300'
DATE	March 1, 2017
SECTION	33. SW 1/4 of NW 1/4
TOWNSHIP	8N
RANGE	52W
COUNTY	Logan County
PREPARED BY	Randy Schafer

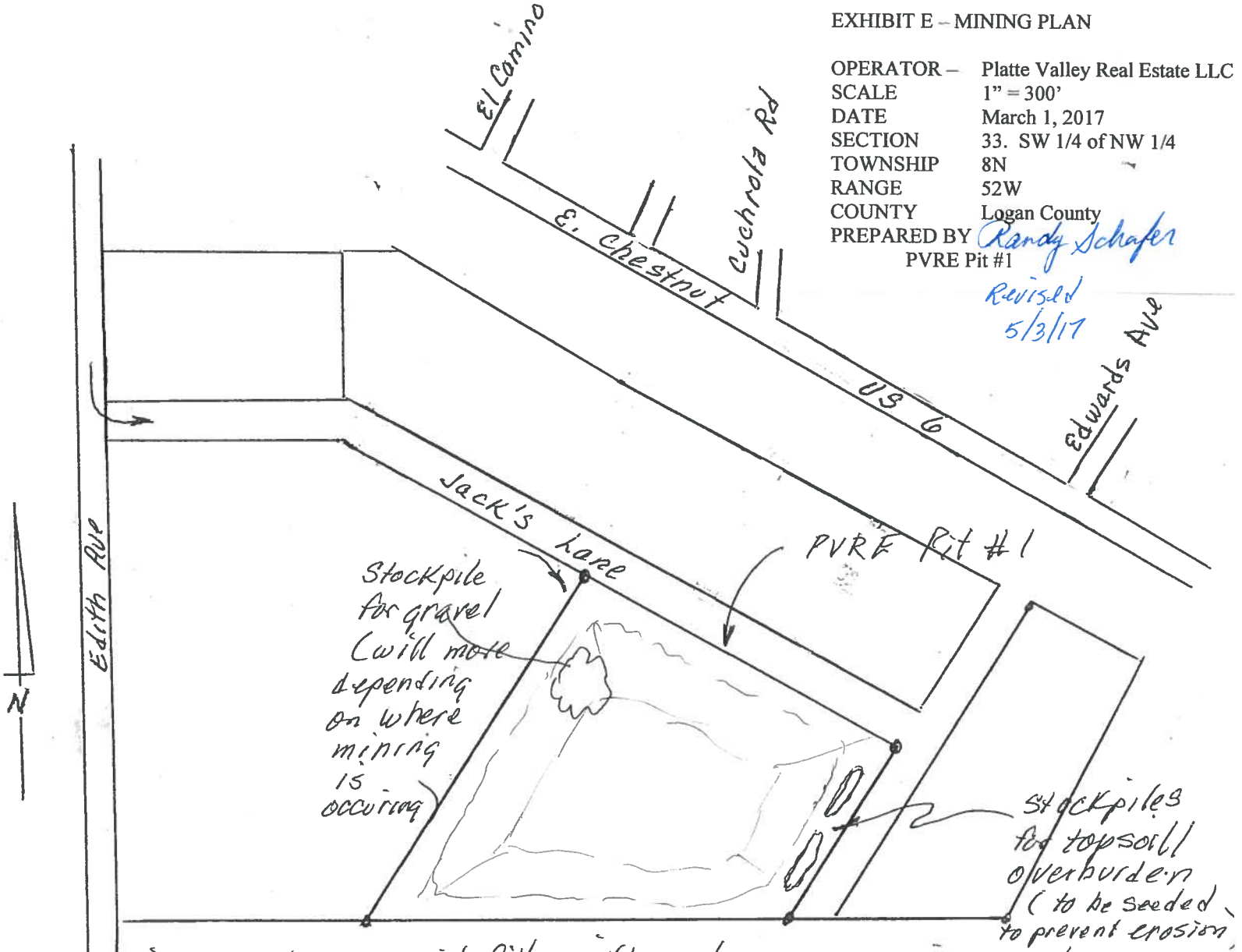
PVRE Pit #1

Revised 5/2/17

EXHIBIT E – MINING PLAN

OPERATOR –	Platte Valley Real Estate LLC
SCALE	1" = 300'
DATE	March 1, 2017
SECTION	33. SW 1/4 of NW 1/4
TOWNSHIP	8N
RANGE	52W
COUNTY	Logan County
PREPARED BY	Randy Schafer
	PVRE Pit #1

Revised 5/3/17



5) Assuming the pit fills with water all side walls 5' above water line to 10' below will be 3:1; slopes below that 2:1.
6) Mining is anticipated to a depth of 20-30'.
7) Augmentation will be provided by PVRE.
8) Processing may occur at the site.
9) Gravel may be stockpiled before removal to concrete plant.

Mining Plan

1) Access to pit by Jack's Lane (being built to serve new subdivision
2) All topsoil/overburden will be stripped and stockpiled prior to mining
3) We anticipate that groundwater may be encountered due to proximity to S. Platte Rive
4) Mining will commenc toward center and

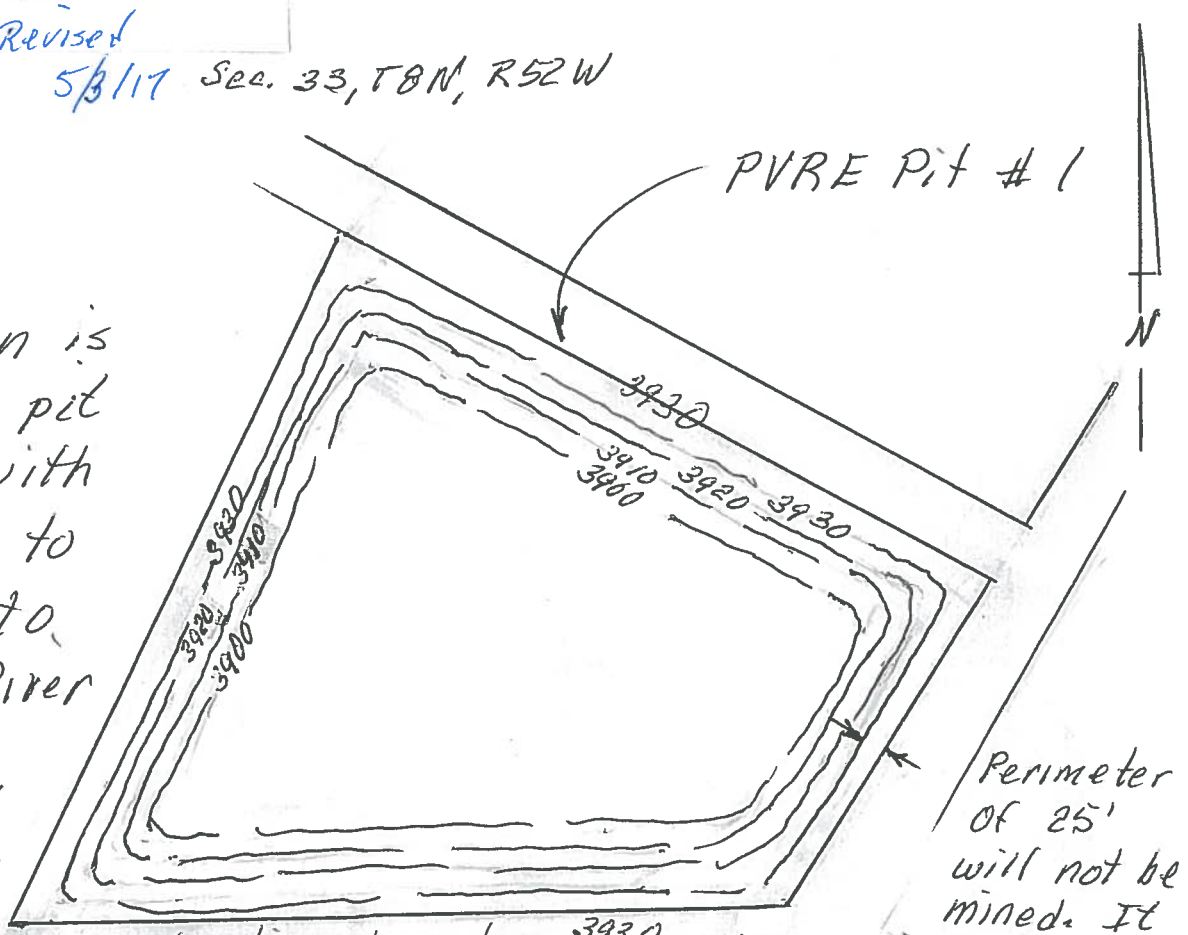
EXHIBIT E – FINAL CONTOUR

OPERATOR - Platte Valley Real Estate LLC
SCALE- 1" = 200'
DATE - March 3, 2017
SECTION - 33, SW ¼ of NW 1/4
TOWNSHIP - 8N
RANGE - 52W
COUNTY - Logan County
PREPARED BY – Randy Schafer

PVRE Pit #1

Revised 5/3/17

Sec. 33, T8N, R52W



Perimeter of 25' will not be mined. It will be reclaimed with seeding

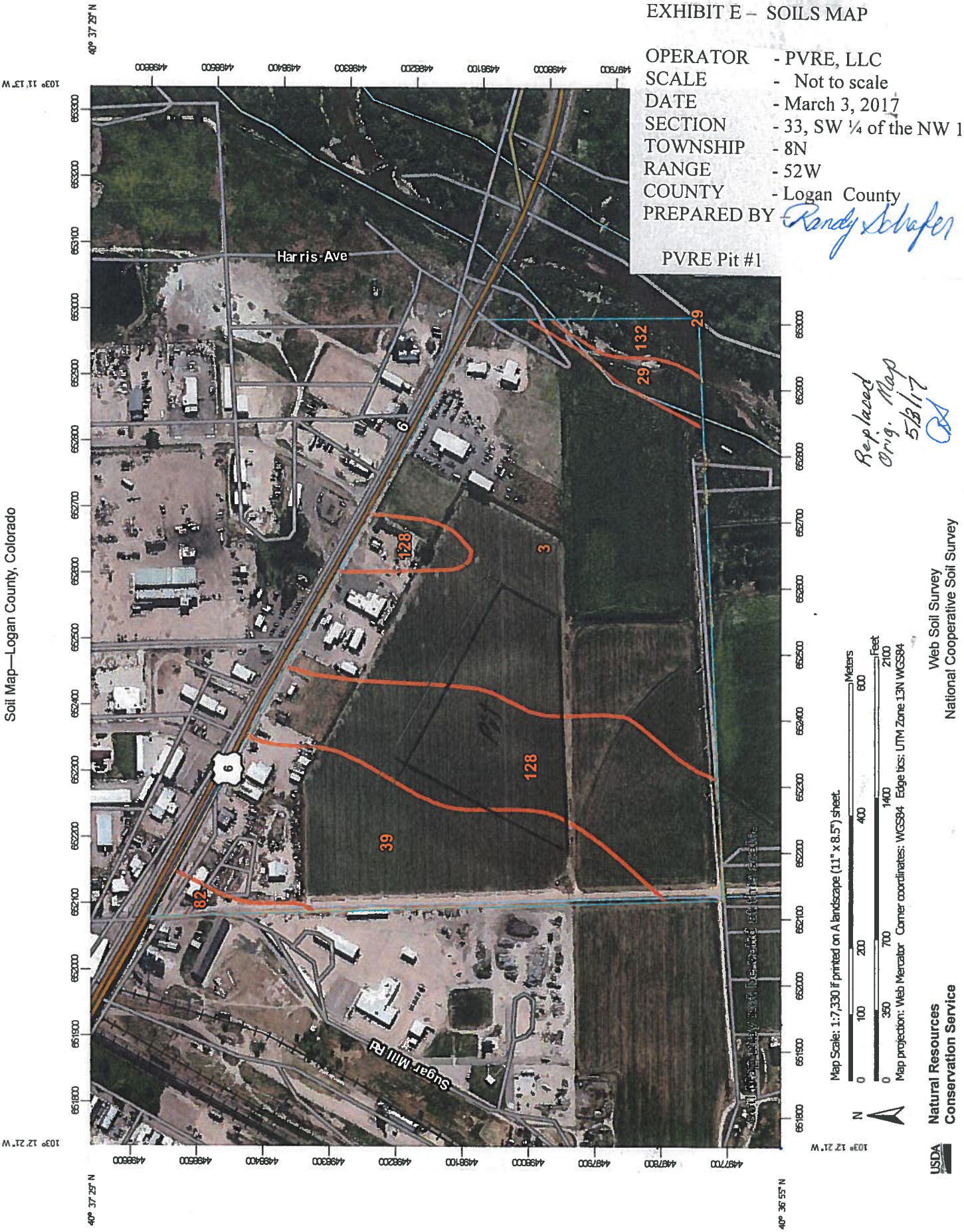
- Assumption is made that pit may fill with water dve to proximity to S. Platte River
- If pond exists, all slopes will be 3:1 5' above water line to 10' below water line; 2:1 below that point.
- If ponding does not occur, 3:1 slopes will be maintained.
- Seeding will occur on 25' perimeter and side slopes to pond edge.

EXHIBIT E – SOILS MAP

OPERATOR - PVRE, LLC
SCALE - Not to scale
DATE - March 3, 2017
SECTION - 33, SW ¼ of the NW 1/4
TOWNSHIP - 8N
RANGE - 52W
COUNTY - Logan County
PREPARED BY - Randy Schafer

PVRE Pit #1

Replaced orig. Map 5/31/17



PVRE Pit #1 Calculation Notes

Calclulations are based on work to an estimated 2.4 acres which lie outside and above the perimeter of the pond.
Groundwater measurements in the area show static water level around 7' below the surface.
The 2.4 acres includes a 25' permeter which has not been mined + approximately 14' of of exposed slope.

Backfilling and grading

2,698 ft.	Perimeter involved	x	39 ft.	(slope distance)	=	105,222 sq.ft.
105,222 sq.ft.		x	1.42 ft.	(depth)	=	149,415 cu.ft.
149,415 cu.ft.		/	27 cu.ft.		=	5,534 CY
2.4 0		x	43,560 sq.ft.	Area in Acre	=	104,544 sq.ft.
			Area previously calculated		+	105,222 sq.ft.
						209,766 sq.ft.
				Depth	x	1 ft.
						209,766 cu.ft.
209,766 cu.ft.		/	27 cu.ft.		=	7,769 CY
					+	5,534 CY
			Total Cubic Yards to move			13,303 CY

Dozer will move 795 CY/Hour

13,303 CY	/	795	CY/hour	=	16.7 Hrs.

Replace Topsoil/Overburden

1.42 ft. (inches of. topsoil)	x		104,544 (Total Area minus the pond)	=	148,452 cu.ft.
148,452 cu.ft.	/	27 cu.ft.		=	5,498 CY

Speedy Mover will move 117 CY/Hour

5,498 CY	/	117	CY/Hour	=	47.0 Hrs.

~~Assumes a Pond~~
Revised to show up to 17' topsoil/overburden

Cost Estimate for Reclamation

The estimated area in the PVRE Pit #1 that would require seeding is 2.4 acres. That is the area which is a 25 foot permimeter around the entire pit, plus 14 feet of 2:1 slope to the edge of the pond. There is 0-5"of topsoil at the site. Assuming a pond, the banks will be sloped 2:1 and seeded. The topsoil would be re-applied to the permimeter and the slope into the pond. We would attempt to start a cover crop on the 25 foot perimeter and the slope extening down to the pond edge. After the cover crop is established, the grass will be planted as recommended by the Natural Resource Conservation Service. The cost units below already include labor and fuel. The cover crop and grass seeding costs were obtained from the Natural Resource Cosnervation Service and habe been based on Conservation Reserve Program costs. The other unit costs were obtained from a local contractor who is equipped to perform reclamation if PVRE were to default on the reclamation plan.

PVRE Pit #1

Task	Volumes	Units	Unit Cost	Item Cost
Backfill and Grade	16.7	Hours	$115.00	$1,920.50
Replace Topsoil/Overburden				
Tractor/Speedy Mover	47	Hours	$75.00	$3,525.00
Revegetate Site				
Cover crop	2.4	Acres	$45.00	$108.00
Grass seeding	2.4	Acres	$45.00	$108.00
Seed	35.2	Lbs.	$10.75	$378.40
(2.4 acres x 14.67 # PLS/Acre)				
Mobilization				
Tractor/Speedy Mover	1	Hours	$75.00	$75.00
Dozer	1	Hours	$115.00	$115.00
TOTAL				$6,229.90

Assumes a Pond
Revised to show up to 17" topsoil / overburden

AFFIDAVIT OF PUBLICATION

STERLING JOURNAL-ADVOCATE

State of Colorado
County of Logan

I, the undersigned agent, do solemnly swear that **THE STERLING JOURNAL ADVOCATE** is a daily newspaper printed, in whole or in part, and published in the City of Sterling, County of Logan, State of Colorado, and which has general circulation there in Logan county; that said newspaper has been continuously and uninterruptedly published for a period of more than six months next prior to the first publication of the annexed legal notice of advertisement, that said newspaper has been admitted to the United States mails as second-class matter under the provisions of the Act of March 3, 1879, or any, amendments thereof, and that said newspaper is a daily newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado; that a copy of each number of said newspaper, in which said notice of advertisement was published, was transmitted by mail or carrier to each of the subscribers of said newspaper, according to the accustomed mode of business in this office.

The annexed legal notice or advertisement was published in the regular and entire edition of said daily newspaper once; and that one publication of said notice was in the issue of said newspaper dated **April 7, 2017.**

TERRY LOVE

Agent

Subscribed and sworn to before me this 10th day of **April, 2017** in the County of Boulder, State of Colorado.

Melissa L Najera

Notary Public

ACCOUNT # 1066266
AD # 1291969
FEE $45.60

MELISSA L NAJERA
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20064049936
MY COMMISSION EXPIRES DEC 11, 2018

LEGAL NOTICE

Platte Valley Real Estate, LLC, 116 Spruce Road, Sterling, CO (970-520-7800) has filed an application for a Limited Impact Construction Materials (110) Reclamation Permit with the Colorado Mined Land Reclamation Board under provisions of the Colorado Mined Land Reclamation Act for the extraction of construction materials. The proposed mine is known as the PVRE Pit #1and is located in the SW 1/4 of the NW 1/4 of Section 33, T8N, R52W of the 6th P.M., Logan County, Colorado. The proposed date of commencement is as soon as possible and the proposed date of completion is indefinite. The proposed future use of the land is for general agriculture. Additional information and tentative hearing date may be obtained from the Mined Land Reclamation Board, Room 215, 1313 Sherman Street, Denver, Colorado 80203 (303-866-3567), or the Logan County Clerk, Logan County Courthouse, 315 Main, Sterling, CO or the above named applicant. Written comments must be filed with the Mined Land Reclamation Board by 4:00 p.m. on Monday, April 17, 2017.

Published: Sterling Journal-Advocate April 7, 2017 - 1291969

Tracking Number: 70160910000126933389

Delivered

Product & Tracking Information

See Available Actions

Postal Product: First-Class Mail®

Features: Certified Mail™

Date & Time	Status of Item	Location
April 17, 2017, 1:31 pm	Delivered	STERLING, CO 80751
Your item was delivered at 1:31 pm on April 17, 2017 in STERLING, CO 80751.		
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April 14, 2017, 1:45 am	Departed USPS Facility	DENVER, CO 80266
April 12, 2017, 4:22 am	Arrived at USPS Facility	DENVER, CO 80266

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ican plum, purple willow, common chokecherry and redosier dogwood.

This is an important soil for wildlife because of its intensive use for cropland and its position in relation to the bottomlands of the South Platte River. Its primary value for wildlife species is in the food it produces, that wildlife utilize while using the riverbottom areas for cover. Wildlife utilizing this soil include mule and white-tailed deer, bobwhite, ducks, geese, and miscellaneous nongame species. Wildlife habitat can be provided and improved by tree and shrub plantings, planting grasses and legumes for undisturbed nesting cover, and providing wildlife travel lanes from riverbottom areas to feeding areas. Shallow water wetland areas can be developed to attract waterfowl with irrigation.

Where the soil is used for homesites and other urban developments, the primary limiting soil features are a water table at depths of 20 to 40 inches and a flooding hazard. Special sewage systems must be anticipated. Septic tank absorption fields will not function properly because of the high water table. In homesite and other urban development construction, compensating measures and designs are needed to overcome the water table and flooding hazard. Road designs are needed that will take into account the frost action of the soil. Capability subclass IIIw nonirrigated, IIIw irrigated.

4—Altvan-Eckley sandy loams, 3 to 5 percent slopes. These gently sloping soils are on upland ridges and side slopes in the northern part of the county. The average annual precipitation ranges from 15 to 19 inches. Altvan sandy loam, 3 to 5 percent slopes, makes up 50 percent of the unit and Eckley sandy loam, 3 to 5 percent slopes, about 30 percent. The Altvan soil is on foot slopes and at midslope. Eckley soils are on ridge crests and knobs.

About 20 percent of this unit is Chappell sandy loam and Wages loam, both having 3 to 5 percent slopes, and Dix gravelly sandy loam, 5 to 9 percent slopes. The Chappell and Wages soils are on footslopes and in concave positions. The Dix soil is on ridge crests and knobs.

The Altvan soil is a deep, well drained gravelly upland soil. It formed in calcareous, loamy alluvial and eolian deposits underlain by sand and gravel.

Typically the surface layer is a dark grayish brown sandy loam about 5 inches thick. The subsoil is a dark grayish brown heavy sandy loam and sandy clay loam about 18 inches thick. The substratum is light brownish gray, calcareous sandy clay loam about 18 inches thick over light brown coarse sand and gravel (fig. 4) that extends to 60 inches or more.

Permeability is moderate. Effective rooting depth is 60 inches or more. Available water capacity is moderate. Surface runoff is medium, and the erosion hazard is moderate.

The Eckley soil is a deep, well drained soil. It formed in stratified, reddish, gravelly alluvial materials of the Ogallala Formation.

Typically the surface layer is dark grayish brown sandy loam about 3 inches thick. The subsoil is dark brown and brown, gravelly sandy clay loam about 17 inches thick. The substratum is light brown gravelly coarse loamy sand and coarse sand to 60 inches or more.

Permeability is moderate. The effective rooting depth is 60 inches or more. Available water capacity is moderate. Surface runoff is medium, and the erosion hazard is moderate.

These soils are used for nonirrigated cropland, irrigated cropland and rangeland. Corn, alfalfa, sugar beets, and wheat are the principal crops in irrigated areas. Wheat is the main crop in nonirrigated cropland areas.

In nonirrigated cropland areas intensive management is needed to control soil erosion, conserve moisture and maintain soil productivity. Stubble mulch tillage and incorporating crop residues are essential in improving soil tilth, conserving moisture, and protecting the soil from erosion. Terracing and contour tillage are essential to reduce runoff and conserve moisture. Chiseling or subsoiling is effective in breaking up tillage pans and improving water penetration. Tillage should be kept to a minimum. Combinations of these practices are essential on these soils to maintain productivity and protect them from erosion.

In irrigated areas, special management is needed to protect these soils from erosion, to get uniform application and distribution of irrigation water and to maintain fertility. Contour ditch and contour furrow are irrigation methods best suited. Land smoothing is needed to obtain uniform distribution of water and control soil loss. Care must be taken to determine the maximum depth of cut on these soils because of their depth over sand and gravel. Some sacrifice acreage may be expected. Frequent irrigations with small amounts of water are required to reduce soil loss and obtain efficient use of irrigation water. Crop residue use and applications of manure and commercial fertilizers containing phosphorus and nitrogen are needed to maintain fertility.

Rangeland vegetation of the Altvan soil consists mainly of blue grama, buffalograss, western wheatgrass, and sedge. Rangeland vegetation of the Eckley soil consists mainly of blue grama, sideoats grama, little bluestem, buffalograss and sedge. Proper grazing use and planned grazing systems are the most important practices needed to maintain quantity and quality of desirable vegetation. Range seeding will speed revegetation of areas depleted by heavy grazing, cultivation, or other disturbances. Combinations of stockwater development, fencing and deferred grazing help improve grazing distribution and maintain range condition. Contour furrowing and pitting are practices that improve water infiltration and reduce runoff and are especially effective on rangeland areas in poor and fair condition on the Altvan soils.

Windbreaks and environmental plantings are difficult to establish on these soils. Depth to sand and gravel is the principal concern in establishing tree and shrub plantings. Special care consisting of summer fallow a year in advance of planting and continued cultivation for weed control is needed to insure establishment of plantings.

measurements made in many soil borings and on other observations during the soil mapping. The kind of bedrock and its hardness as related to ease of excavation are also shown. Rippable bedrock can be excavated with a single-tooth ripping attachment on a 200-horsepower tractor, but hard bedrock generally requires blasting.

Potential frost action refers to the likelihood of damage to pavements and other structures by frost heaving and low soil strength after thawing. Frost action results from the movement of soil moisture into the freezing temperature zone in the soil, which causes ice lenses to form. Soil texture, temperature, moisture content, porosity, permeability, and content of organic matter are the most important soil properties that affect frost action. It is assumed that the soil is not covered by insulating vegetation or snow and is not artificially drained. Silty and clayey soils that have a high water table in winter are most susceptible to frost action. Well drained very gravelly or sandy soils are the least susceptible.

Classification of the Soils

In this section, the soil series recognized in the survey area are described, the current system of classifying soils is defined, and the soils in the area are classified according to the current system.

Soil Series and Morphology

In this section, each soil series recognized in the survey area is described in detail. The descriptions are arranged in alphabetic order by series name.

Characteristics of the soil and the material in which it formed are discussed for each series. The soil is then compared to similar soils and to nearby soils of other series. Then a pedon, a small three-dimensional area of soil typical of the soil series in the survey area, is described. The detailed descriptions of each soil horizon follow standards in the Soil Survey Manual (*4*). Unless otherwise noted, colors described are for moist soil.

Following the pedon description is the range of important characteristics of the soil series in this survey area. Phases, or mapping units, of each soil series are described in the section "Soil Maps for Detailed Planning."

Albinas Series

The Albinas series consists of deep, well drained soils that formed in calcareous alluvial materials. Albinas soils are on upland flood plains and alluvial fans and in drainageways and have slopes of 0 to 3 percent. Average annual precipitation ranges from 13 to 19 inches and mean annual temperature is about 48 degrees F.

Albinas soils are similar to the Satanta and Haxtun soils. They are near the Satanta, Rago, Kuma, and Keith soils. Satanta and Keith soils have dark colored surface layers extending to less than 20 inches. Haxtun, Rago and Kuma soils have buried sola within 40 inches.

A typical pedon of Albinas loam is located 72 feet west and 240 feet south of the northeast corner of section 28, T.12N., R.51W.

Ap—0 to 6 inches, grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, friable; neutral (pH 7.0); abrupt smooth boundary. (4 to 8 inches thick)

B1—6 to 12 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic parting to moderate subangular blocky structure, hard, friable; very thin patchy clay films on faces of peds; neutral (pH 7.2); clear smooth boundary (3 to 6 inches thick)

B21t—12 to 18 inches, grayish brown (10YR 5/2) light clay loam, very dark grayish brown (10YR 3/2) moist, moderate medium prismatic parting to moderate subangular blocky structure, hard, friable; thin patchy clay films on faces of peds; neutral (pH 7.2); clear smooth boundary. (6 to 10 inches thick)

B22t—18 to 29 inches; grayish brown (10YR 5/2) light clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable; thin patchy clay films on faces of peds; neutral (pH 7.2); clear smooth boundary (8 to 14 inches thick)

B3ca—29 to 32 inches, gray (10YR 6/1) loam, dark grayish brown (10YR 4/2) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable, thin patchy clay films on ped faces, calcareous; mildly alkaline (pH 7.8); clear smooth boundary. (3 to 5 inches thick)

C1ca—32 to 43 inches; light gray (10YR 7/2) loam, light brownish gray (10YR 6/2) moist; massive; hard, very friable; calcareous with thin lime seams and streaks, moderately alkaline (pH 8.2); gradual smooth boundary. (9 to 14 inches thick)

C2—43 to 52 inches, light brownish gray (10YR 6/2) very fine sandy loam, brown (10YR 5/3) moist, massive; slightly hard, very friable; calcareous, mildly alkaline (pH 7.8); clear smooth boundary. (9 to 17 inches thick)

IIC3—52 to 60 inches; yellowish brown (10YR 5/4) gravelly coarse sand, brown (10YR 5/2) moist; single grained, loose, dry and moist; calcareous; mildly alkaline (pH 7.6).

Thickness of the mollic epipedon ranges from 20 to 40 inches. Depth to horizons of calcium carbonate accumulations is 20 to 30 inches. Contrasting C horizons are common below depths of 40 inches.

The A horizon has color value of 4 or 5 dry, 2 or 3 moist and chroma of 2 or 3. It is a loam or fine sandy loam. Texture of the B2t horizon is loam, clay loam or sandy clay loam. Texture of the C horizon is a loam, silt loam or fine sandy loam.

Alda Series

The Alda series consists of deep, somewhat poorly drained soils that formed in calcareous, stratified alluvium underlain by a mixture of sand and gravel. Alda soils are on low terraces and bottomlands and have slopes of 0 to 1 percent. Average annual precipitation ranges from 13 to 19 inches and the mean annual temperature is about 49 degrees F.

Alda soils are similar to the Loveland soils. They are near the Loveland, Hayford and Westplain soils. Loveland soils have loam and light clay loam underlying layers. Hayford soils have heavy clay loam or clay B2t horizons. Westplain soils have sand and gravel at depths less than 20 inches.

A typical pedon of Alda loam is located 690 feet west and 500 feet north of the SE corner of section 33, T.10N., R.50W.

A11—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure, soft, very friable; calcareous, mildly alkaline (pH 7.4); clear smooth boundary. (3 to 5 inches thick)

A12—3 to 10 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, calcareous; mildly alkaline (pH 7.8); clear smooth boundary. (7 to 12 inches thick)

AC—10 to 17 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, very friable, calcareous, moderately alkaline (pH 8.0); clear smooth boundary. (5 to 9 inches thick)

C1ca—17 to 22 inches; light gray (10YR 7/2) loam, grayish brown (10YR 5/2) moist, with few fine prominent mottles of light olive brown (2.5Y 5/6) moist; massive, hard, friable; calcareous moderately alkaline (pH 8.4); gradual smooth boundary. (5 to 12 inches thick)

C2g—22 to 27 inches, light gray (2.5Y 7/2) fine sandy loam, grayish brown (2.5Y 5/2) moist, with common fine prominent mottles of light olive brown (2.5Y 5/6) and dark brown (7.5YR 4/4) moist; massive; hard, very friable; calcareous; moderately alkaline (pH 8.2); clear smooth boundary. (4 to 8 inches thick)

C3g—27 to 34 inches; light yellowish brown (2.5Y 6/4) loamy sand, light olive brown (2.5Y 5/4) moist, with many medium prominent mottles of light olive brown (2.5Y 5/6) and yellowish brown (10YR 5/8) moist; massive; hard, very friable; calcareous; mildly alkaline (pH 7.8); gradual smooth boundary

IIC4g—34 to 60 inches; light gray (2.5Y 7/2) coarse sand and gravel, light brownish gray (2.5Y 6/2) moist; single grained; loose dry and moist; neutral (pH 7.3).

Depth to underlying sand and gravel ranges from 20 to 40 inches. The water table fluctuates from 20 inches to below 60 inches.

The A horizon has 10YR hue, value of 4 or 5 dry, 2 or 3 moist and chroma of 2 or 3. It is a loam or sandy loam. The C horizon is stratified. It is commonly a loam, but ranges from loam to loamy sand.

Altvan Series

The Altvan series consists of deep, well drained soils that formed in calcareous loamy eolian and alluvial materials underlain by coarse sand and gravel. Altvan soils are on upland ridges, knobs and valley sides. Slopes are 3 to 25 percent. Average annual precipitation ranges from 15 to 19 inches and mean annual temperature is about 48 degrees F.

Altvan soils are similar to Ascalon and Dacono soils. They are near the Eckley, Dacono, Dix, and Wages soils. Ascalon and Wages soils lack sand and gravel within depths of 40 inches. Dacono soils have clay loam and clay B2t horizons. Eckley and Dix soils have sand and gravel at depths of less than 20 inches.

A typical pedon of Altvan sandy loam is located 300 feet south and 800 feet west of the north quarter corner of section 17, T.11N., R.52W.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; hard, very friable; neutral (pH 7.0), clear smooth boundary. (4 to 9 inches thick)

B1—5 to 8 inches; dark gray (10YR 4/1) sandy loam, very dark brown (10YR 2/2) moist, weak coarse subangular blocky structure; hard, very friable; very thin patchy clay films on faces of peds; neutral (pH 7.0); clear smooth boundary. (2 to 5 inches thick)

B21t—8 to 13 inches; dark grayish brown (10YR 4/2) heavy sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure; hard, friable; very thin patchy clay films on faces of peds, neutral (pH 7.2), clear smooth boundary. (4 to 7 inches thick)

B22t—13 to 19 inches; dark grayish brown (10YR 4/2) sandy clay loam, very dark grayish brown to dark brown (10YR 3/3) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable; thin nearly continuous clay films on faces of peds; neutral (pH 7.2); gradual smooth boundary. (5 to 9 inches thick)

B3—19 to 23 inches; grayish brown (10YR 5/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; weak medium prismatic structure; hard, friable; thin, patchy clay films; mildly alkaline (pH 7.6); gradual smooth boundary. (2 to 5 inches thick)

C1ca—23 to 30 inches; light brownish gray (10YR 6/2) sandy clay loam, grayish brown (10YR 5/2) moist; massive; hard, friable, 10 percent lime coated gravel; calcareous with lime occurring as concretions and as thin seams and streaks; moderately alkaline (pH 8.2); clear smooth boundary.

IIC2—30 to 60 inches; light brown (7.5YR 6/4) coarse sand and gravel, brown (7.5YR 5/4) moist; massive; soft, very friable; moderately alkaline (pH 8.2).

Thickness of solum ranges from 16 to 30 inches. Depth to coarse sand and gravel ranges from 20 to 40 inches. Coarse fragments range from 0 to 15 percent throughout the solum.

The A horizon has color value of 4 or 5 dry, 2 or 3 moist, and chroma of 2 or 3. It is commonly a sandy loam but ranges to loam. The texture of the B2t horizon is dominantly sandy clay loam, clay loam, or loam but ranges to heavy sandy loam.

Arvada Series

The Arvada series consists of deep, well drained soils that formed in calcareous, eolian and alluvial materials derived from sedimetary rocks. Arvada soils are on upland alluvial fans and in swales and depressions. Slopes are 0 to 3 percent. Average annual precipitation ranges from 13 to 17 inches and the mean annual temperature is about 48 degrees F.

Arvada soils are similar to the Manzanola soils. They are near the Manzanola and Mitchell soils. Manzanola soils lack the strongly alkaline subsoil. Mitchell soils lack B2t horizons.

A typical pedon of Arvada silt loam is located 580 feet south and 260 feet west of the north quarter corner of section 22, T.11N., R.54W.

A1—0 to 2 inches; light brownish gray (10YR 6/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, very friable; mildly alkaline (pH 7.4); clear smooth boundary. (0 to 4 inches thick)

A2—2 to 4 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); abrupt smooth boundary. (1 to 4 inches thick)

B21t—4 to 7 inches; grayish brown (10YR 5/2) heavy silty clay loam, dark grayish brown (10YR 4/2) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; very hard, firm; thin, nearly continuous clay films on faces of peds; calcareous; strongly alkaline (pH 9.0); clear smooth boundary. (3 to 5 inches thick)

B22t—7 to 11 inches; light brownish gray (10YR 6/2) silty clay loam, grayish brown (10YR 5/2) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable; thin nearly continuous clay films on faces of peds; calcareous; very strongly alkaline (pH 9.2); gradual smooth boundary. (3 to 8 inches thick)

B3ca—11 to 15 inches; light gray (10YR 7/2) silt loam, light brownish gray (10YR 6/2) moist; weak medium prismatic structure; hard, friable; thin patchy clay films on faces of peds; calcareous, lime accumulations occur as concretions and thin seams and streaks; very

Weld Series

The Weld series consists of deep, well drained soils that formed in calcareous, eolian loamy materials. Weld soils are on upland tablelands and have slopes of 0 to 3 percent. Average annual precipitation ranges from 13 to 17 inches and the mean annual temperature is about 47 degrees F.

Weld soils are similar to the Platner and Iliff soils. They are near the Rago and Platner soils. Platner soils have B2t horizons with more than 15 percent fine sand or coarser. Rago soils have dark colored surface layers extending below 20 inches and buried subsoils. Iliff soils have bedrock at depths of less than 40 inches.

A typical pedon of Weld loam is located 60 feet west and 130 feet south of the east quarter corner of section 7, T.8N., R.53W.

A11—0 to 4 inches, grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable; neutral (pH 7.0); clear smooth boundary (3 to 6 inches thick)

A12—4 to 7 inches, grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; hard, friable; neutral (pH 7.0); clear smooth boundary. (2 to 3 inches thick)

B21t—7 to 10 inches; grayish brown (10YR 52) heavy silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic parting to moderate medium subangular blocky structure, hard, firm; common thin clay films on faces of peds, and in root channels and pores, mildly alkaline (pH 7.2); clear smooth boundary. (3 to 8 inches thick)

B22t—10 to 16 inches; brown (10YR 5/3) heavy silty clay loam, dark brown (10YR 3/3) moist; strong medium and fine prismatic parting to strong fine angular blocky structure; very hard, firm; continuous thin clay films on faces of peds, in root channels and pores; mildly alkaline (pH 7.4); clear smooth boundary. (4 to 8 inches thick)

B3ca—16 to 18 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable; thin patchy clay films on faces of peds, in root channels and pores; calcareous; moderately alkaline (pH 8.0), clear smooth boundary. (2 to 6 inches thick)

C1ca—18 to 32 inches; light gray (2.5Y 7/2) loam, light brownish gray (2.5Y 6/2) moist; massive, slightly hard, very friable; calcareous visible secondary calcium carbonate occurring as concretions and in thin seams and streaks; moderately alkaline (pH 8.4); clear smooth boundary (8 to 24 inches thick)

C2—32 to 41 inches; light gray (2.5Y 7/2) fine sandy loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable; calcareous; moderately alkaline (pH 8.4); gradual smooth boundary (8 to 20 inches)

C3—41 to 60 inches; very pale brown (10YR 8/3) sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable; calcareous; moderately alkaline (pH 8.4).

Contrasting IIC horizons consisting of gravelly coarse sand can occur below depths of 40 inches.

The A horizon has a color value of 4 or 5 dry, 2 or 3 moist, and chroma of 2 or 3. It is commonly loam or very fine sandy loam. Texture of the B2t horizon includes clay loam, silty clay loam or clay. Texture of the C horizon is silt loam, loam, fine sandy loam or sandy loam.

Westplain Series

The Westplain series consists of deep, somewhat poorly drained soils that formed in calcareous, clayey alluvium underlain by mottled sand and gravel and deposited by the South Platte River. Westplain soils are on bottomlands and concave parts of low terraces. Slopes are 0 to 3 percent. Average annual precipitation ranges from 13 to 19 inches, and the mean annual temperature is about 47 degrees F.

Westplain soils are near the Alda and Hayford soils. The Alda soils have mottled sand and gravel at depths of 20 to 40 inches. The Hayford soils have B2t horizons and mottled sand and gravel at depths of 20 to 40 inches.

A typical pedon of Westplain silty clay loam is located 70 feet north and 1,495 feet east of the west quarter corner of section 7, T.10N., R.48W.

A11—0 to 8 inches, dark gray (10YR 4/1) heavy silty clay loam, black (10YR 2/1) moist; moderate medium granular structure, slightly hard, friable, sticky, plastic; calcareous, moderately alkaline (pH 8.0); gradual wavy boundary. (6 to 10 inches thick)

A12—8 to 14 inches; dark gray (10YR 4/1) heavy clay loam, black (10YR 2/1) moist; weak medium subangular blocky structure, hard, firm, sticky and plastic; calcareous; moderately alkaline (pH 8.0), clear wavy boundary. (6 to 10 inches thick)

AC—14 to 17 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist, with common medium distinct strong brown (7.5YR 5/6) mottles, massive, hard, friable; 50 percent gravel; calcareous; moderately alkaline (pH 7.9); abrupt wavy boundary (0 to 6 inches thick)

IICg—17 to 60 inches, light gray (10YR 7/2) very gravelly sand, light brownish gray (10YR 6/2) moist, with many large prominent strong brown (7.5YR 5/6) mottles; single grained; loose dry and moist, 50 percent gravel; mildly alkaline (pH 7.6).

The mollic epipedon ranges from 7 to 20 inches thick. Depth to the sand and gravel substratum ranges from 14 to 20 inches These soils are calcareous in the upper part, but the substratum materials are commonly noncalcareous.

The A horizon has a color value of 4 or 5 dry, 2 or 3 moist and chroma of 1 or 2. Texture of the A horizon is commonly a clay loam ranging to silty clay loam or clay.

Classification

The system of soil classification currently used was adopted by the National Cooperative Soil Survey in 1965. Readers interested in further details about the system should refer to the latest literature available (*5*).

The system of classification has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. In this system the classification is based on the different soil properties that can be observed in the field or those that can be inferred either from other properties that are observable in the field or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 16, the soils of the survey area are classified according to the system. Categories of the system are discussed in the following paragraphs.

ORDER. Ten soil orders are recognized as classes in the system. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each

of desirable rangeland vegetation. Range seeding will speed the revegetation of areas depleted by heavy grazing, cultivation or other disturbances. Combinations of stockwater development, fencing and deferred grazing help improve grazing distribution and maintain range condition. Contour furrowing and pitting are practices that improve water infiltration and reduce runoff and are especially effective on rangeland areas in poor and fair condition.

Windbreak and environmental plantings are suited on this soil. The main concern is limited moisture. Summer fallow a year prior to planting, supplemental water during planting and early stages of growth, and continued cultivation for weed control are needed to insure establishment and survival of plantings. Trees best suited and having best survival are Rocky Mountain juniper, eastern redcedar, ponderosa pine, Siberian elm, Russian-olive and hackberry. Shrubs best suited are skunkbush sumac, lilac, Siberian peashrub and American plum.

Openland wildlife such as pheasant, cottontail rabbit and mourning dove are suited to this soil. In cropland areas favorable habitat can be developed by establishing areas for nesting and escape cover. For pheasants, undisturbed nesting cover is vital and should be included in plans for habitat development. Tree and shrub plantings along fence lines, irrigation ditches, roadsides and streambanks also help encourage wildlife. Rangeland wildlife, including antelope and jackrabbits, can be encouraged by water developments and types of fencing to permit unrestricted antelope movement.

High shrink-swell potential and slow permeability are the primary limiting soil features for homesites and other urban developments. These limitations can be modified by special engineering design and measures such as backfilling with desirable materials. Capability subclass IIIc nonirrigated, IIIe irrigated.

127—**Westplain silty clay loam.** This is a deep, somewhat poorly drained soil on bottomlands and concave parts of low terraces. It formed in a thin mantle of clayey alluvium overlying sand and gravel deposited by the South Platte River. The average annual precipitation ranges from 13 to 19 inches. Slopes are nearly level.

Included in this unit are small areas of Alda loam and Fluvaquentic Haplaquolls, both having slopes of 0 to 1 percent. The Alda loam soils are in higher lying positions bordering the concave areas.

Typically the surface layer is dark gray, calcareous heavy silty clay loam about 14 inches thick. The underlying layer is mottled brown, calcareous very gravelly clay loam about 3 inches thick over light gray, mottled sand and gravel extending to 60 inches or more.

Permeability is slow. Effective rooting depth is 60 inches or more. Available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. A fluctuating water table occurs between 12 and 24 inches during the winter and spring months. This soil is subject to frequent flooding in spring.

This soil is used for irrigated cropland and grazing. Alfalfa and corn are the main crops.

In irrigated areas the main concerns of management are proper use of irrigation water, flooding and fertility maintenance. Special care is required on this soil in applying irrigation water. Irrigation methods that are suitable are furrows, borders or sprinkler. Land leveling is difficult because this soil is shallow to sand and gravel. Short irrigation runs and frequent irrigations are needed to control the fluctuating water table. Drainage ditches may also be required. Flood control dikes can be used to protect the soil from damage. Applications of manure and commercial fertilizer containing nitrogen and phosphorus are important to maintain fertility. Incorporating crop residues reduces soil loss and improves soil tilth.

Rangeland vegetation consists mainly of alkali sacaton, inland saltgrass, switchgrass, western wheatgrass, sedge, and rush. Key forage grasses need to be maintained by proper grazing use and grazing management that includes deferment during the growing season at well-timed intervals. These soils can be seeded to rangeland species or adapted introduced grasses such as tall wheatgrass. Fencing and livestock watering developments are effective in obtaining more uniform distribution of grazing.

Windbreaks and environmental plantings are suited to this soil. The high fluctuating water table, abundant competing vegetation and depth to sand and gravel are the principal concerns in establishing tree and shrub plantings. Summer fallow, continued cultivation for weed control and selection of adapted plants are needed to insure establishment and survival of plantings. Trees best suited and having good survival are plains cottonwood, golden willow, Colorado blue spruce, Rocky Mountain juniper and eastern redcedar. Shrubs best suited are American plum, purple willow, common chokecherry and redosier dogwood.

This is an important soil for wildlife because of its use for cropland and its proximity to the South Platte River. Under irrigation, it is important for food production for wildlife such as waterfowl, pheasants and deer utilizing crop residues that occur as aftermath following harvest. Wildlife values can be enhanced on this soil by habitat developments such as tree and shrub plantings and an undisturbed nesting cover consisting of grasses and legumes. In the presence of a water supply, waterfowl can be attracted to the area by development of shallow water areas.

Frequent flooding, seepage and a water table at 12 to 24 inches limit use of these soils for homesites and other urban developments. Intensive and costly engineering design and measures are needed in order to overcome these conditions. Capability subclass VIw nonirrigated, IVw irrigated.

128—**Westplain-Alda complex.** These are nearly level, somewhat poorly drained soils on low terraces and bottomlands along the South Platte River. The average annual precipitation ranges from 13 to 19 inches. Westplain silty clay loam, 0 to 1 percent slopes, makes up about 55 percent of the mapping unit and Alda loam, 0 to 1 percent slopes, about 35 percent. The Westplain soils are in

swales and old channel areas. The Alda soils are on the raised terraces of the area.

About 10 percent of this unit is Fluvaquentic Haplaquolls, also having 0 to 1 percent slopes.

The Westplain soil is a deep, somewhat poorly drained soil. It formed in a thin mantle of clayey alluvium overlying mottled and stratified sand and gravel deposited by the South Platte River.

Typically the surface layer is dark gray, calcareous heavy silty clay loam about 14 inches thick. The underlying layer is mottled, brown, calcareous very gravelly clay loam about 3 inches thick over light gray mottled sand and gravel extending to 60 inches or more.

Permeability is slow. Effective rooting depth is 60 inches or more. Available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. This soil is subject to frequent flooding in spring. A fluctuating water table occurs between 12 to 24 inches during the winter and spring months.

The Alda soil is a deep, somewhat poorly drained soil. It formed in calcareous, stratified loamy alluvium overlying mottled sand and gravel deposited by the South Platte River.

Typically the surface layer is dark grayish brown loam about 10 inches thick. The underlying layers are light brownish gray and light gray, calcareous loam and fine sandy loam mottled in the lower part and about 24 inches thick over mottled coarse sand and gravel extending to 60 inches or more.

Permeability is moderate. Effective rooting depth is 60 inches or more. Available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. A fluctuating water table occurs between 24 and 60 inches during the winter and spring months. This soil is subject to occasional flooding during late spring and early summer months.

These soils are used for irrigated cropland and grazing. Alfalfa, corn, and sugar beets are the principal crops.

In irrigated areas the main concerns of management are proper use of irrigation water, wetness, flooding and fertility maintenance. Special care is required on this soil in applying irrigation water to avoid raising the fluctuating water table. Irrigation methods suitable are furrows, borders or sprinklers. Land leveling is difficult because the Westplain soil is shallow to sand and gravel. Short irrigation runs and frequent irrigations are needed to control the fluctuating water table. Drainage ditches may also be required. Flood control dikes can be used to protect the soil from flooding. Applications of manure and commercial fertilizer containing nitrogen and phosphorus are important to maintain fertility. Incorporating crop residues reduces soil loss and improves soil tilth.

Rangeland vegetation on both of these soils consists mainly of alkali sacaton, inland saltgrass, switchgrass, western wheatgrass, sedge and rush. Key forage grasses need to be maintained by proper grazing use and grazing management that includes deferment during the growing season at well-timed intervals. These soils can be seeded to rangeland species or adapted introduced grasses such as tall wheatgrass. Fencing and livestock water developments are effective in obtaining more uniform distribution of grazing.

Windbreak and environmental plantings are generally well suited to these soils. The high water table, abundant competing vegetation, and depth to sand and gravel are the principal concerns in establishing tree and shrub plantings. Summer fallow, continued cultivation for weed control and selection of adapted plants are needed to insure establishment and survival of plantings. Trees best suited and having good survival are plains cottonwood, golden willow, Colorado blue spruce, Rocky Mountain juniper and eastern redcedar. Shrubs best suited are American plum, purple willow, common chokecherry and redosier dogwood.

This is an important soil for wildlife because of its use for cropland and its proximity to the South Platte River. Under irrigation, it is important for food production for wildlife such as waterfowl, pheasants and deer utilizing crop residues occurring as aftermath following harvest. Wildlife values can be enhanced on this soil by habitat developments such as tree and shrub plantings and undisturbed nesting cover consisting of grasses and legumes. In the presence of a water supply, waterfowl can be attracted to the area by development of shallow water areas.

Flooding, seepage and a high water table are the primary limiting soil features where these soils are used for homesites and other urban developments. Intensive and costly engineering design and measures are needed to overcome these conditions. Capability subclass VIw nonirrigated, IVw irrigated.

Use and Management of the Soils

The soil survey is a detailed inventory and evaluation of the most basic resource of the survey area—the soil. It is useful in adjusting land use, including urbanization, to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in uses of the land.

While a soil survey is in progress, soil scientists, conservationists, engineers, and others keep extensive notes about the nature of the soils and about unique aspects of behavior of the soils. These notes include data on erosion, drought damage to specific crops, yield estimates, flooding, the functioning of septic systems, and other factors affecting the productivity, potential, and limitations of the soils under various uses and management. In this way, field experience and measured data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section is useful in planning use and management of soils for crops and pasture, rangeland, and woodland, and as sites for buildings, highways and other transportation systems, sanitary facilities, parks

Efficient use of irrigation water and fertility maintenance are the main concerns of management in irrigated areas. Irrigation methods suitable are furrows or borders, depending on the crop. Land leveling and good irrigation water management are needed for uniform application and efficient use of water. Short irrigation runs and more frequent irrigations are needed on this soil because of the depth to the underlying sand and gravel and the sandy loam surface layer. Incorporating crop residues reduces soil blowing and improves soil tilth. Applications of manure and commercial fertilizer containing nitrogen and phosphorus are important to maintain fertility.

Rangeland vegetation consists mainly of sand bluestem, little bluestem, sand reedgrass, switchgrass, indiangrass, prairie cordgrass, western wheatgrass and sedge. Key forage grasses need to be maintained by proper grazing use and planned grazing systems that include deferment during the growing season at well-timed intervals. These soils can be seeded to rangeland species or adapted introduced grasses such as tall wheatgrass. Fencing and livestock water developments are effective in obtaining more uniform distribution of grazing.

Windbreaks and environmental plantings are generally well suited to this soil. The high water table and abundant competing vegetation are the principal concerns in establishing tree and shrub plantings. Special care consisting of summer fallow, continued cultivation for weed control, and selection of water tolerant plants is needed to insure establishment and survival of plantings. Trees best suited and having good survival are plains cottonwood, golden willow, Colorado blue spruce, Rocky Mountain juniper and eastern redcedar. Shrubs best suited are American plum, purple willow, common chokecherry and redosier dogwood.

This is an important soil for wildlife because of its intensive use for cropland and its position in relation to the bottomlands of the South Platte River. Its primary value for wildlife species lies in the food it produces, that wildlife utilize while using the riverbottom areas for cover. Wildlife utilizing this soil include mule and white-tailed deer, bobwhite, ducks, geese, and miscellaneous nongame species. Wildlife habitat can be provided and improved on this soil by tree and shrub plantings, planting grasses and legumes for undisturbed nesting cover, and providing wildlife travel lanes from riverbottom areas to cropland or feeding areas. Shallow water wetland areas can be developed with irrigation water.

Where areas are used for homesites and other urban development, the primary limiting soil feature is a water table at 20 to 40 inches. Special sewage systems must be anticipated. Septic tank absorption fields will not function properly because of the high water table. If sewage lagoons are used they must have special designs to compensate for seepage. In homesite and urban development construction, compensating measures are needed to offset the high water table. Road designs are needed that will take into account the frost action of the soil. Capability subclass IIIw nonirrigated, IIIw irrigated.

3—Alda loam. This is a deep, somewhat poorly drained soil on low terraces and bottomlands. It formed in calcareous, stratified, loamy alluvium overlying mottled sand and gravel deposited by the South Platte River. The average annual precipitation ranges from 13 to 19 inches. Slopes are nearly level.

Included in this unit are small areas of Loveland loam, Alda sandy loam and Westplain silty clay loam. The Westplain soil is in swale and low lying areas. In leveled areas exposures of the underlying sand and gravel are common.

Typically the surface layer is dark grayish brown loam about 10 inches thick. The underlying layer is stratified light brownish gray and light gray, calcareous loam and fine sandy loam. It is mottled in the lower part and is about 14 inches thick over mottled coarse sand and gravel that extends to 60 inches or more.

Permeability is moderate. Effective rooting depth is 60 inches or more. Available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. A fluctuating water table occurs between 20 and 40 inches during the winter and spring months. This soil is subject to occasional flooding during late spring and early summer months.

This soil is used mainly as irrigated cropland. Small areas are used for grazing. Alfalfa, corn, sugar beets and small grains are the principal crops grown.

Efficient use of irrigation water and fertility maintenance are the main concerns of management in irrigated areas. Irrigation methods suitable are furrows or borders, depending on the crops. Land leveling and irrigation water management are needed for uniform application and efficient use of water. Short irrigation runs and frequent irrigations are needed on this soil because of the depth to underlying sand and gravel. Incorporating crop residues reduces soil loss and improves soil tilth. Applications of manure and commercial fertilizer containing nitrogen and phosphorus are important to maintain fertility.

Rangeland vegetation consists mainly of sand bluestem, little bluestem, sand reedgrass, switchgrass, indiangrass, prairie cordgrass, western wheatgrass and sedge. Key forage grasses need to be maintained by proper grazing use and planned grazing use that includes deferment during the growing season at well-timed intervals. These soils can be seeded to rangeland species or adapted introduced grasses such as tall wheatgrass. Fencing and livestock water developments are effective in obtaining uniform distribution of grazing.

Windbreaks and environmental plantings are generally well suited to this soil. The high water table and abundant competing vegetation are the principal concerns in establishing tree and shrub plantings. Special care consisting of summer fallow, continued cultivation for weed control, and selection of water tolerant plants is needed to insure establishment and survival of plantings. Trees best suited and having good survival are plains cottonwood, golden willow, Colorado blue spruce, Rocky Mountain juniper and eastern redcedar. Shrubs best suited are Amer-

PVRE Pit #1 Calculation Notes
Alternative Cost Estimate
Calclulations are based on work to an estimated 9.9 acres.

Backfilling and grading

43,560 sq.ft. Area	x	9.9 Ac.		=	431,244 sq.ft.
431,244 sq.ft.	x	1 ft.	(depth)	=	431,244 cu.ft.
431,244 cu.ft.	/	27 cu.ft.		=	15,972 CY
9.9 Ac/	x	43,560 sq.ft.	Area in Acre	=	431,244 sq.ft.
					431,244 sq.ft.
			Depth	x	1 ft.
					431,244 cu.ft.
431,244 cu.ft.	/	27 cu.ft.		=	15,972 CY
				+	15,972 CY
		Total Cubic Yards to move			31,944 CY

Dozer will move 795 CY/Hour

31,944 CY	/	795	CY/hour	=	40.2 Hrs.

Replace Topsoil/Overburden

1.42 ft. (inches of. topsoil)	x		431,244	=	612,366 cu.ft.
612,366 cu.ft.	/	27 cu.ft.		=	22,680 CY

Speedy Mover will move 117 CY/Hour

22,680 CY	/	117	CY/Hour	=	193.8 Hrs.

Cost Estimate for Reclamation
Alternative Cost Estimate

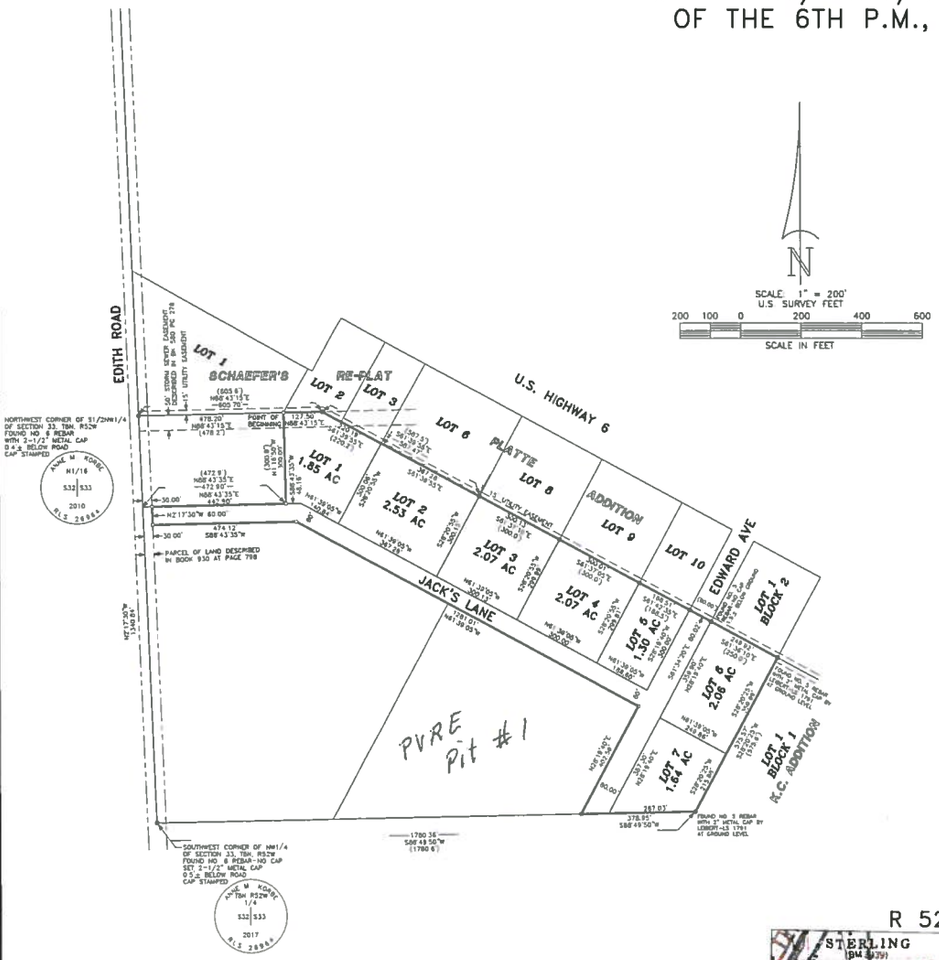
The estimated area in the PVRE Pit #1 that would require seeding is 9.9 acres.
There is 14-17"of topsoil at the site. We would attempt to start a cover crop on the entire area.
After the cover crop is established,
the grass will be planted as recommended by the Natural Resource Conservation Service.
The cost units below already include labor and fuel. The cover crop and grass seeding costs were obtained from the Natural Resource Cosnervation Service and habe been based on Conservation Reserve Program costs.
The other unit costs were obtained from a local contractor who is
equipped to perform reclamation if PVRE were to default on the reclamation plan.

PVRE Pit #1

Task	Volumes	Units	Unit Cost	Item Cost
Backfill and Grade	40.2	Hours	$115.00	$4,623.00
Replace Topsoil/Overburden				
Tractor/Speedy Mover	193.8	Hours	$75.00	$14,535.00
Revegetate Site				
Cover crop	9.9	Acres	$45.00	$445.50
Grass seeding	9.9	Acres	$45.00	$445.50
Seed	145.23	Lbs.	$10.75	$1,561.22
(9.9 acres x 14.67 # PLS/Acre)				
Mobilization				
Tractor/Speedy Mover	1	Hours	$75.00	$75.00
Dozer	1	Hours	$115.00	$115.00
TOTAL				$21,800.22

PLATTE VALLEY INDUSTRIAL PARK

IN THE S1/2NW1/4 OF SECTION 33, T8N, R52W
OF THE 6TH P.M., LOGAN COUNTY, COLORADO



VICINITY MAP
NOT TO SCALE

SURVEYOR'S STATEMENT

I, ANNE M. KORBE, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY STATE THAT THE SURVEY REPRESENTED BY THIS PLAT WAS MADE BY ME OR UNDER MY SUPERVISION, AND THIS PLAT ACCURATELY REPRESENTS SAID SURVEY BASED UPON MY KNOWLEDGE, INFORMATION, AND BELIEF. I FURTHER STATE THAT THE SURVEY AND THIS PLAT COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, AND LAWS OF THE STATE OF COLORADO, STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED

BY: ANNE M. KORBE
FOR AND ON BEHALF OF
LEIBERT-McATEE & ASSOCIATES, INC
R.L.S. NO. 29864

PRELIMINARY

CERTIFICATE OF DEDICATION, OWNERSHIP, AND MAINTENANCE

KNOW ALL MEN BY THESE PRESENTS THAT PLATTE VALLEY REAL ESTATE, LLC BEING THE OWNER OF THE FOLLOWING DESCRIBED PROPERTY

A PARCEL OF LAND IN THE SOUTH HALF OF THE NORTHWEST QUARTER (S1/2NW1/4) OF SECTION 33, TOWNSHIP 8 NORTH, RANGE 52 WEST OF THE SIXTH PRINCIPAL MERIDIAN, LOGAN COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID S1/2NW1/4 OF SECTION 33, SAID POINT BEING THE SOUTHWEST CORNER OF SCHAEFER'S RE-PLAT OF LOT 1, LOT 5, AND A PART OF LOT 6, ALL IN BLOCK 1 OF PLATTE ADDITION, CITY OF STERLING, COUNTY OF LOGAN, STATE OF COLORADO. THENCE NORTH 89°43'15" EAST ALONG THE SOUTH LINE OF SAID SCHAEFER'S RE-PLAT A DISTANCE OF 478.20 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 89°43'15" EAST ALONG THE SOUTH LINE OF SAID SCHAEFER'S RE-PLAT A DISTANCE OF 127.50 FEET; THENCE SOUTH 81°39'56" EAST ALONG THE SOUTH LINE OF SAID SCHAEFER'S RE-PLAT AND ALONG THE SOUTH LINE OF PLATTE ADDITION TO THE CITY OF STERLING COUNTY OF LOGAN, STATE OF COLORADO A DISTANCE OF 567.47 FEET; THENCE SOUTH 81°37'10" EAST ALONG THE SOUTH LINE OF SAID PLATTE ADDITION A DISTANCE OF 300.13 FEET; THENCE SOUTH 81°37'05" EAST ALONG THE SOUTH LINE OF SAID PLATTE ADDITION A DISTANCE OF 300.01 FEET; THENCE SOUTH 81°42'35" EAST ALONG THE SOUTH LINE OF SAID PLATTE ADDITION A DISTANCE OF 166.91 FEET; THENCE SOUTH 81°34'29" EAST ALONG THE SOUTH LINE OF SAID PLATTE ADDITION A DISTANCE OF 80.02 FEET; THENCE SOUTH 81°36'16" EAST ALONG THE SOUTH LINE OF SAID PLATTE ADDITION A DISTANCE OF 249.92 FEET TO THE SOUTHEAST CORNER OF LOT 1, BLOCK 2 OF SAID PLATTE ADDITION, SAID POINT BEING ALSO THE NORTHWEST CORNER OF LOT 1, BLOCK 1, K.C. ADDITION TO THE CITY OF STERLING, LOGAN COUNTY, COLORADO; THENCE SOUTH 28°20'25" WEST ALONG THE WEST LINE OF SAID LOT 1, K.C. ADDITION A DISTANCE OF 575.57 FEET TO A POINT ON THE SOUTH LINE OF SAID S1/2NW1/4 OF SECTION 33; THENCE SOUTH 89°49'50" WEST ALONG THE SOUTH LINE OF SAID S1/2NW1/4 OF SECTION 33 A DISTANCE OF 378.95 FEET; THENCE NORTH 25°19'40" EAST A DISTANCE OF 402.59 FEET; THENCE NORTH 61°39'00" WEST A DISTANCE OF 1281.01 FEET; THENCE SOUTH 88°43'35" WEST A DISTANCE OF 474.12 FEET TO A POINT ON THE EAST LINE OF A PARCEL OF LAND DESCRIBED IN BOOK 930 AT PAGE 798 OF THE LOGAN COUNTY RECORDS; THENCE NORTH 2°17'30" WEST ALONG THE EAST LINE OF SAID PARCEL OF LAND DESCRIBED IN BOOK 930 AT PAGE 798 A DISTANCE OF 60.00 FEET; THENCE NORTH 88°43'35" EAST A DISTANCE OF 442.80 FEET; THENCE NORTH 1°18'50" WEST A DISTANCE OF 300.00 FEET TO THE POINT OF BEGINNING AND CONTAINING 17.32 ACRES, MORE OR LESS, SUBJECT TO EDITH ROAD ALONG THE WEST LINE OF SAID S1/2NW1/4 OF SECTION 33

HAVE BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS AND BLOCKS UNDER THE NAME AND STYLE OF PLATTE VALLEY INDUSTRIAL PARK IN THE S1/2NW1/4 OF SECTION 33, T8N, R52W OF THE 6TH P.M., LOGAN COUNTY, COLORADO, AND DOES HEREBY DEDICATE TO THE PUBLIC ALL WAYS AND OTHER PUBLIC RIGHTS-OF-WAY AND EASEMENTS FOR PURPOSES SHOWN HEREON. IT IS UNDERSTOOD AND AGREED TO BY THE OWNER THAT THE DEDICATED ROADWAYS SHOWN ON THIS PLAT WILL NOT BE MAINTAINED BY THE COUNTY UNTIL AND UNLESS THE OWNER OR HIS ASSIGNS CONSTRUCTS THE STREETS IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS IN EFFECT AT THE DATE OF THE RECORDING OF THIS PLAT

EXECUTED THIS _____ DAY OF _____, 20___.

PLATTE VALLEY REAL ESTATE, LLC

_____
DAN E. LONG

STATE OF COLORADO)
COUNTY OF LOGAN) ss

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 20___.

WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES _____

PLANNING COMMISSION CERTIFICATE

THIS PLAT APPROVED BY THE LOGAN COUNTY PLANNING COMMISSION
THIS _____ DAY OF _____, A.D. 20_____

_____
CHAIRPERSON

CERTIFICATE OF APPROVAL BY THE BOARD OF COUNTY COMMISSIONERS

APPROVED BY THE BOARD OF COUNTY COMMISSIONERS OF LOGAN COUNTY, STATE OF COLORADO.

_____
CHAIRPERSON

WITNESS MY HAND AND THE CORPORATION SEAL OF LOGAN COUNTY
THIS _____ DAY OF _____, A.D. 20_____

ATTEST

_____
COUNTY CLERK AND RECORDER

RECORDER'S CERTIFICATE

THIS PLAT WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF LOGAN COUNTY AT _____ O'CLOCK ____ M. ON THE _____ DAY OF _____, A.D. 20_____, IN BOOK _____
PAGE NO. _____, MAP _____, RECEPTION NO. _____

_____
COUNTY CLERK AND RECORDER

BY _____
DEPUTY

PLAT NOTE

LOGAN COUNTY HAS ADOPTED A RIGHT TO FARM AND RANCH POLICY RESOLUTION #99-58 RECORDED SEPTEMBER 21, 1999, IN BOOK 825 AT PAGE 430 OF THE LOGAN COUNTY RECORDS PLEASE READ IT AND BE AWARE OF ITS PROVISIONS.

NOTES

EASEMENT INFORMATION AS PER _____

BEARINGS FOR THIS SURVEY ARE BASED ON THE ASSUMPTION THAT THE WEST LINE OF THE S1/2NW1/4 OF SECTION 33, T8N, R52W BEARS NORTH 2°17'30" WEST. THE SOUTHWEST CORNER AND THE NORTHWEST CORNER OF SAID S1/2NW1/4 OF SECTION 33 ARE MONUMENTED AS SHOWN

FOUND NO. 5 REBARS WITH I.D. CAPS STAMPED "BURR D. LEIBERT RLS 17911" 0.6'± - 1.7'± BELOW GROUND AT THE POINTS SHOWN THUS ●, UNLESS OTHERWISE NOTED.

SET NO. 5 REBARS 24" LONG WITH YELLOW PLASTIC I.D. CAPS AT GROUND LEVEL STAMPED "ANNE M. KORBE RLS 29864" AT THE POINTS SHOWN THUS ○, UNLESS OTHERWISE NOTED.

DISTANCES IN PARENTHESES ARE DEED AND PLATTED DISTANCES

———— INDICATES EXISTING FENCE LINE

SIGNIFICANT VARIANCES IN THE LOCATION OF THE LOT LINES WITH CURRENT FENCE LINES ARE SHOWN ON THIS ABOVE PLAT. SINCE THIS SURVEY HAS NO JURISDICTION OVER ADJOINING LAND OWNERS, ANY PERSON MOVING, REMOVING, OR REPLACING ANY OF THESE CURRENT FENCE LINES WILL BE DOING SO AT HIS OWN RISK.

NOTICE

ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON

REVISIONS	LEIBERT-McATEE & ASSOCIATES, INC.	
	P.O. BOX 442 615 SOUTH TENTH AVENUE STERLING, CO 80751 970-522-1960	
	TITLE: PLATTE VALLEY INDUSTRIAL PARK IN THE S1/2NW1/4 OF SECTION 33, T8N, R52W OF THE 6TH P.M., LOGAN COUNTY, COLORADO	
	SCALE: 1" = 200'	DR. BY: MH
	DATE: 4-4-17	PROJ. NO.: 329-17
		DRAWING NO. SHEET 1 OF 1