



DEVELOPMENT APPLICATION FORM

Application Type:

<input type="checkbox"/> Conceptual Review	<input type="checkbox"/> Preliminary PUD	<input type="checkbox"/> Temporary Use
<input type="checkbox"/> Subdivision, Preliminary	<input type="checkbox"/> Final PUD	<input type="checkbox"/> Variance
<input type="checkbox"/> Subdivision, Final	<input type="checkbox"/> Rezone	<input checked="" type="checkbox"/> Conditional Use
<input type="checkbox"/> Plat Correction/ Vacation	<input type="checkbox"/> Special Use	<input type="checkbox"/> Other: _____

PROJECT NAME: Henderson Aggregates Pit Expansion

APPLICANT

Name(s): Henderson Aggregates, Ltd Phone #: 303-289-1837
Address: P.O. Box 700
City, State, Zip: Henderson, Colorado 80640-0700
2nd Phone #: 303-913-6532 Email: bfrei@albertfreiansons.com

OWNER

Name(s): Henderson Aggregates, Ltd Phone #: 303-289-1837
Address: P.O. Box 700
City, State, Zip: Henderson, Colorado 80640-0700
2nd Phone #: 303-913-6532 Email: bfrei@albertfreiansons.com

TECHNICAL REPRESENTATIVE (Consultant, Engineer, Surveyor, Architect, etc.)

Name: Mark Molen Phone #: 303-450-1600
Address: 2090 E 104th Avenue #205
City, State, Zip: Thornton, Colorado 80233
2nd Phone #: 303-519-7877 Email: mark@molenandassociates.com

DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor Parcel Number:

Existing Zoning:

Existing Land Use:

Proposed Land Use:

Have you attended a Conceptual Review? YES NO

If Yes, please list PRE#:

I hereby certify that I am making this application as owner of the above described property or acting under the authority of the owner (attached authorization, if not owner). I am familiar with all pertinent requirements, procedures, and fees of the County. I understand that the Application Review Fee is non-refundable. All statements made on this form and additional application materials are true to the best of my knowledge and belief.

Name: Date:

Owner's Printed Name

Name:

Owner's Signature

CUP Application Item 3
Written Explanation of Project

CONDITIONAL USE PERMIT PLAN REQUEST EXPLANATION

This is an application for expanding the permitted mining operation at 50000 E 72nd Avenue, Bennett Colorado since the original mining application in 2001. An approval for the application to extend the mining Conditional Use Permit (CUP) for an additional 5 years to 2021 and supplement it with the importation of inert fill was granted RCU2015-00041 without public opposition. The existing approximately 43 acre mining site has two adjacent parcels 0181502100002 and 0181500000337 approximately 25 and 35 acres respectively that would be included into the existing permit.

This is a dry alluvial mining operation with no exposure of groundwater. The mining operation conforms to all requirements of Section 11.340 of the Zoning Regulations, and the original permit was approved by the Division of Reclamation, Mining and Safety (DRMS). The expanded mining operations have been applied for at DRMS and the permit application is included with this application and found in Sup Item 3.

The site has an air permit, and a stormwater permit. The drainage is retained on site in the mining pit. Inert filling operations is described in this application and will be done in compliance with the DRMS mining permit and conditions set by Adams County with this CUP application. A traffic study was performed by an independent traffic engineering company and a copy of the draft report is included with this application. Traffic flow is predominantly northbound on SH79 to 72nd Avenue then east to the site entrance. The applicant has agreed to enter into a roadway maintenance agreement with Adams County.

This request expands the size and life of the mining operations. Final grades and reclamation of the mine are included in the DRMS permit application. A decision from DRMS on the mine permit is expected in August 2019. The expanded mine will need less inert materials for backfilling and is limited in scope compared to the previous CUP (RC2015-00041). Acceptance of inert fill will be done following the Inert Fill Plan in the mining permit.

Other aspects of the proposed development plan are:

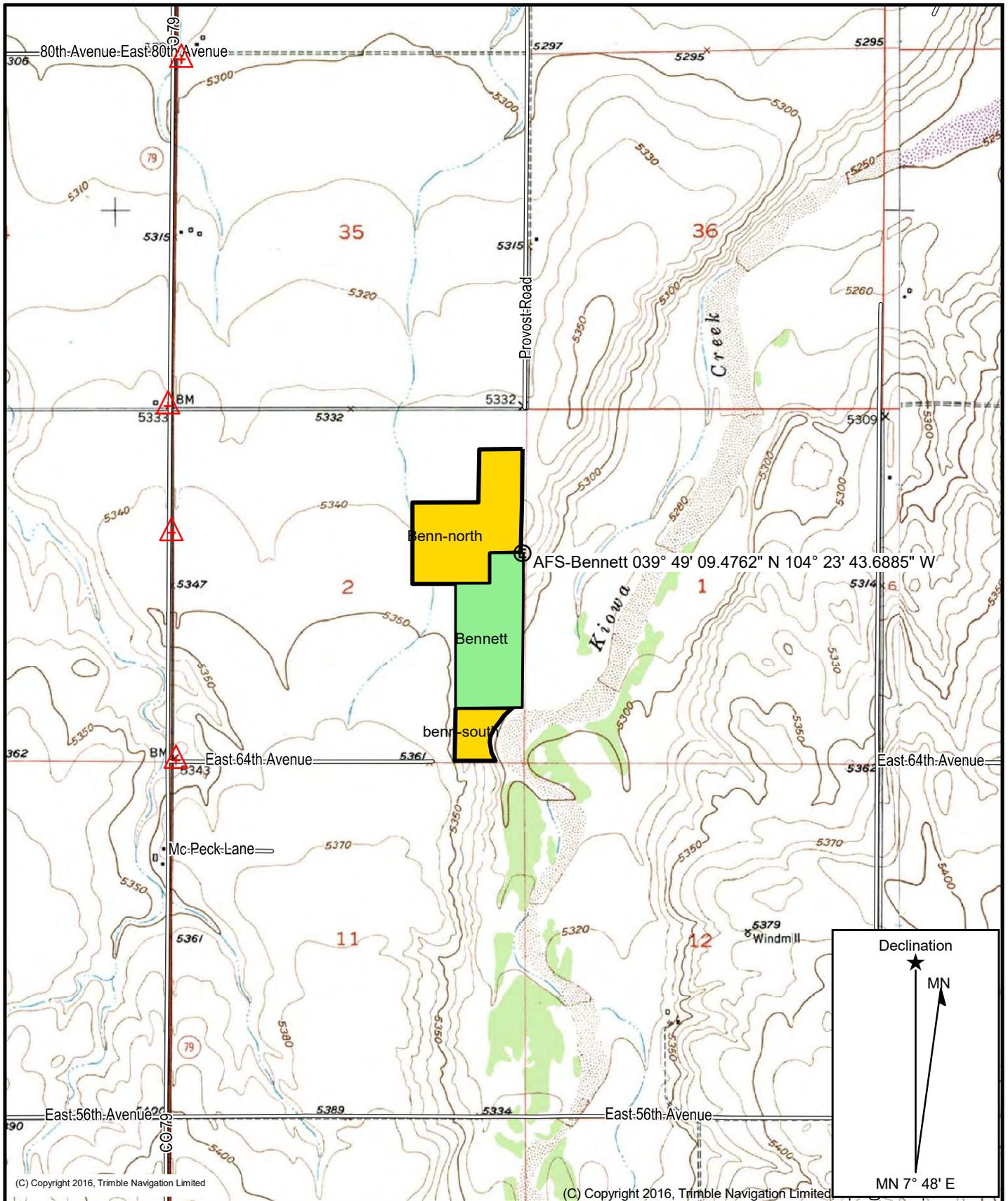
- Proof of Ownership with a Warranty Deed
- Proof of Water and Sewer Services – Water from well permit #83410-F is used on site. Portable toilets are used at the facility for site personnel and drivers.
- Proof of Electricity and Gas services is shown by the utility bill provided in Item 7 attached
- Legal descriptions found in Item 8 attached
- Certificate of Taxes Paid are found in Item 9 attached
- Certificate of Notice to Mineral Estate Owners/and Lessees are found in Item 10 attached.

PRE#: 2019-00027
Henderson Aggregates, Ltd.

Supplemental items include:

1. Traffic Study – A draft traffic study for existing conditions at the property and the proposed expansion was performed by LSC Transportation Consultants, Inc. The draft traffic study concluded that the existing roadway can accommodate the proposed expansion with the construction of a right-hand deceleration lane on Kiowa-Bennett Road. The draft traffic study is attached with this proposal and will be reviewed with Adams County engineering prior to finalizing the study.
2. A neighborhood meeting summary.

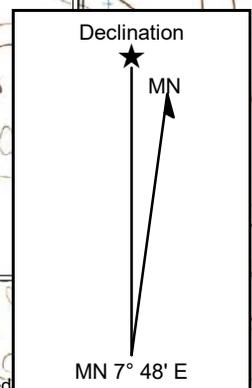
CUP Application Item 4
**Site Location Map and Plans Showing Proposed
Development**



Name: BENNETT
 Date: 01/29/19
 Scale: 1 inch = 2,000 ft.

Parts of the NE/4NE/4, SE/4NE/4,
 SW/4NE/4, NE/4SE/4, & SE/4SE/4, SEC. 2,
 T-3-S, R-63-W, 6TH P.M., ADAMS
 COUNTY, COLORADO

Albert Frei and Sons, Inc.
AFS- Bennett Pit
MAP EXHIBIT B-1 - VICINITY MAP



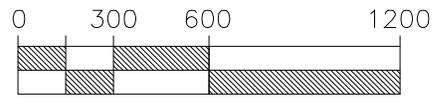
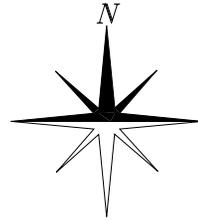
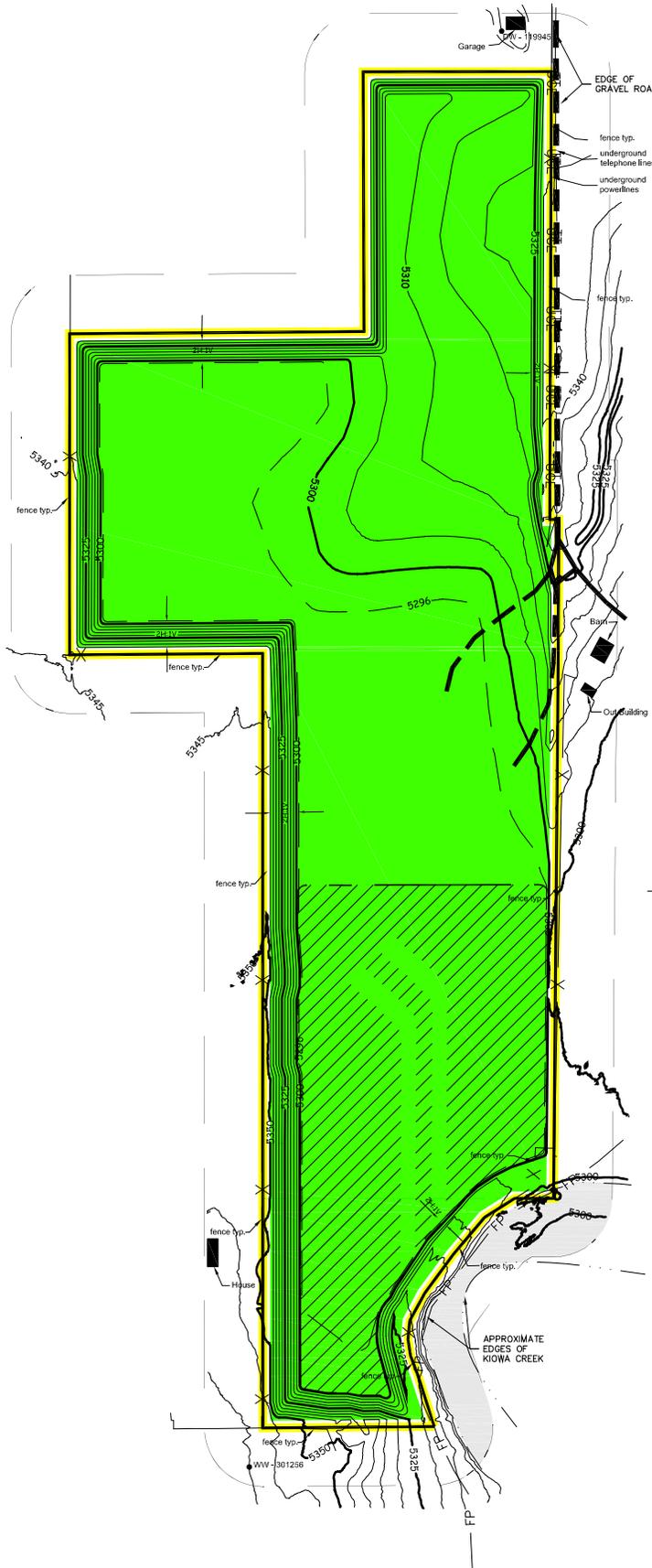
(C) Copyright 2016, Trimble Navigation Limited

(C) Copyright 2016, Trimble Navigation Limited

AFS

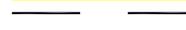
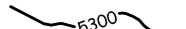
ALBERT FREI & SONS

P.O. BOX 700 | Henderson, Colorado 80640
phone: (303) 287-4656 | fax: (303) 289-2865
AFS- BENNETT PIT - M-2001-038
Map Exhibit E-1 - Reclamation Plan Map (Revised 1-24-19)



SCALE 1"=600'

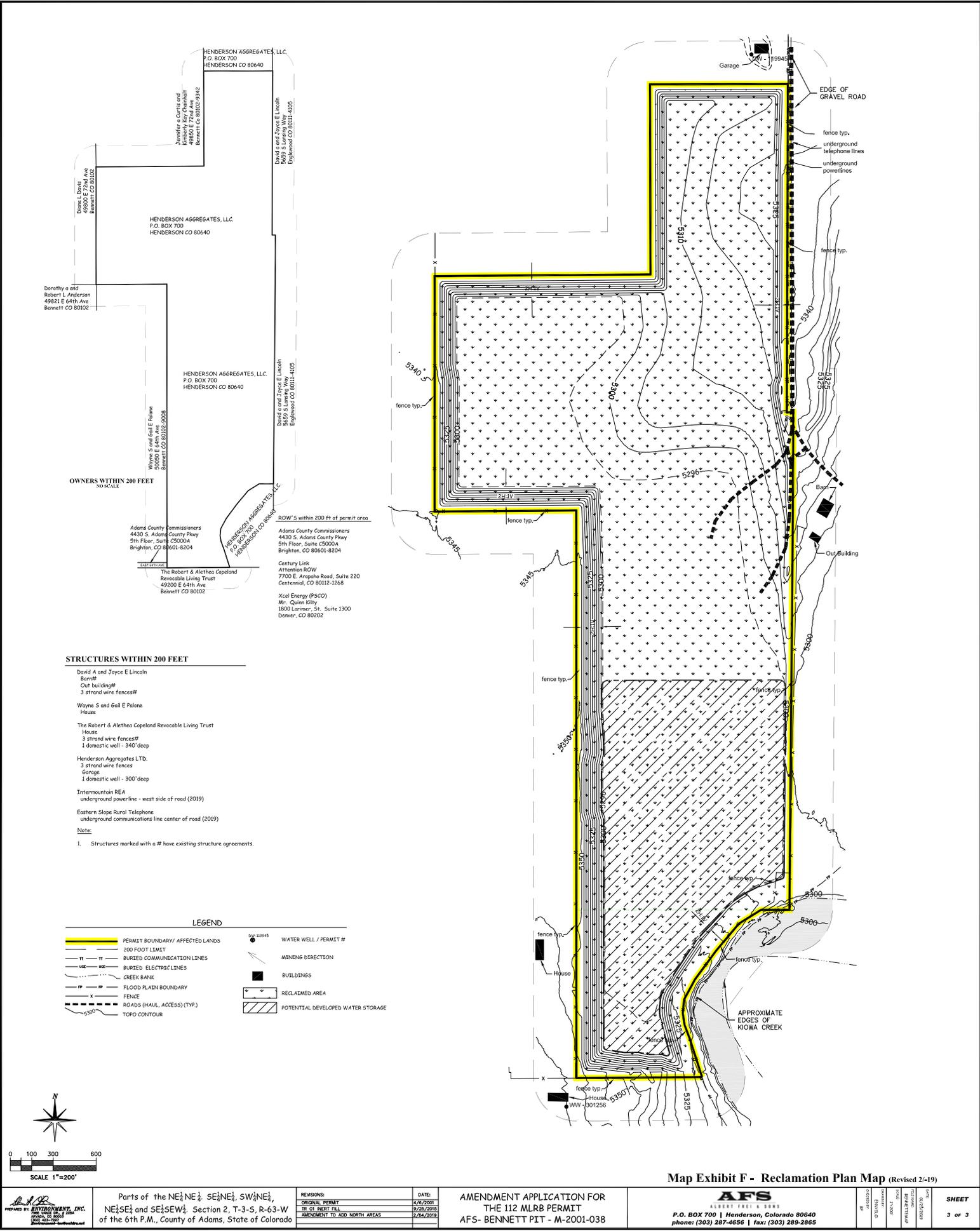
LEGEND

-  PERMIT BOUNDARY/ AFFECTED LANDS
-  200 FOOT LIMIT
-  BURIED COMMUNICATION LINES
-  BURIED ELECTRIC LINES
-  CREEK BANK
-  FLOOD PLAIN BOUNDARY
-  FENCE
-  ROADS (HAUL, ACCESS) (TYP.)
-  TOPO CONTOUR

-  WATER WELL / PERMIT #
-  MINING DIRECTION
-  BUILDINGS
-  RECLAIMED AREA
-  POTENTIAL DEVELOPED WATER STORAGE


PREPARED BY: ENVIRONMENT, INC.
7985 VANCE DR., # 205A
ARVADA, CO 80003
(303) 423-7297
Environment-inc@outdrs.net

Parts of the NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$,
NE $\frac{1}{4}$ SE $\frac{1}{4}$ and SE $\frac{1}{4}$ SEW $\frac{1}{4}$, Section 2, T-3-S, R-63-W
of the 6th P.M., County of Adams, State of Colorado



HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

Daniel Carter and
Jennifer M. Chastain
49820 E 75th Ave
Bennett CO 80102-9942

Daniel and Joyce E Lincoln
3049 S Lansing Way
Englewood CO 80111-4105

Daniel and Joyce E Lincoln
3049 S Lansing Way
Englewood CO 80111-4105

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

Wayne S and Gail E Patone
Bennett CO 80102-9028

OWNERS WITHIN 200 FEET
NO SCALE

Adams County Commissioners
4430 S. Adams
County Pkwy
5th Floor, Suite C5000A
Brighton, CO 80601-8204

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

ROW'S within 200 Ft of permit area

Adams County Commissioners
4430 S. Adams County Pkwy
5th Floor, Suite C5000A
Brighton, CO 80601-8204

The Robert & Althea Copeland
Revocable Living Trust
49200 E 64th Ave
Bennett CO 80102

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

Century Link
Attention ROW
7700 E Arapaho Road, Suite 220
Centennial, CO 80112-1268

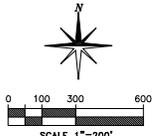
Xcel Energy (PSCO)
Mr. Quinn Kelly
1800 Larimer, St., Suite 1300
Denver, CO 80202

STRUCTURES WITHIN 200 FEET

- David A and Joyce E Lincoln
Barn#
Out building#
3 strand wire fences#
 - Wayne S and Gail E Patone
House
 - The Robert & Althea Copeland Revocable Living Trust
House
3 strand wire fences#
1 domestic well - 340' deep
 - Henderson Aggregates LTD.
3 strand wire fences
Garage
1 domestic well - 300' deep
 - Intermountain REA
underground powerline - west side of road (2019)
 - Eastern Slope Rural Telephone
underground communications line center of road (2019)
- Note:
1. Structures marked with a # have existing structure agreements.

LEGEND

- PERMIT BOUNDARY / AFFECTED LANDS
- 200 FOOT LIMIT
- BURIED COMMUNICATION LINES
- BURIED ELECTRIC LINES
- CREEK BANK
- FLOOD PLAIN BOUNDARY
- FENCE
- ROADS (MAIL, ACCESS) (TYP)
- TOPO CONTOUR
- WATER WELL / PERMIT #
- MINING DIRECTION
- BUILDINGS
- RECLAIMED AREA
- POTENTIAL DEVELOPED WATER STORAGE



Map Exhibit F - Reclamation Plan Map (Revised 2-19)

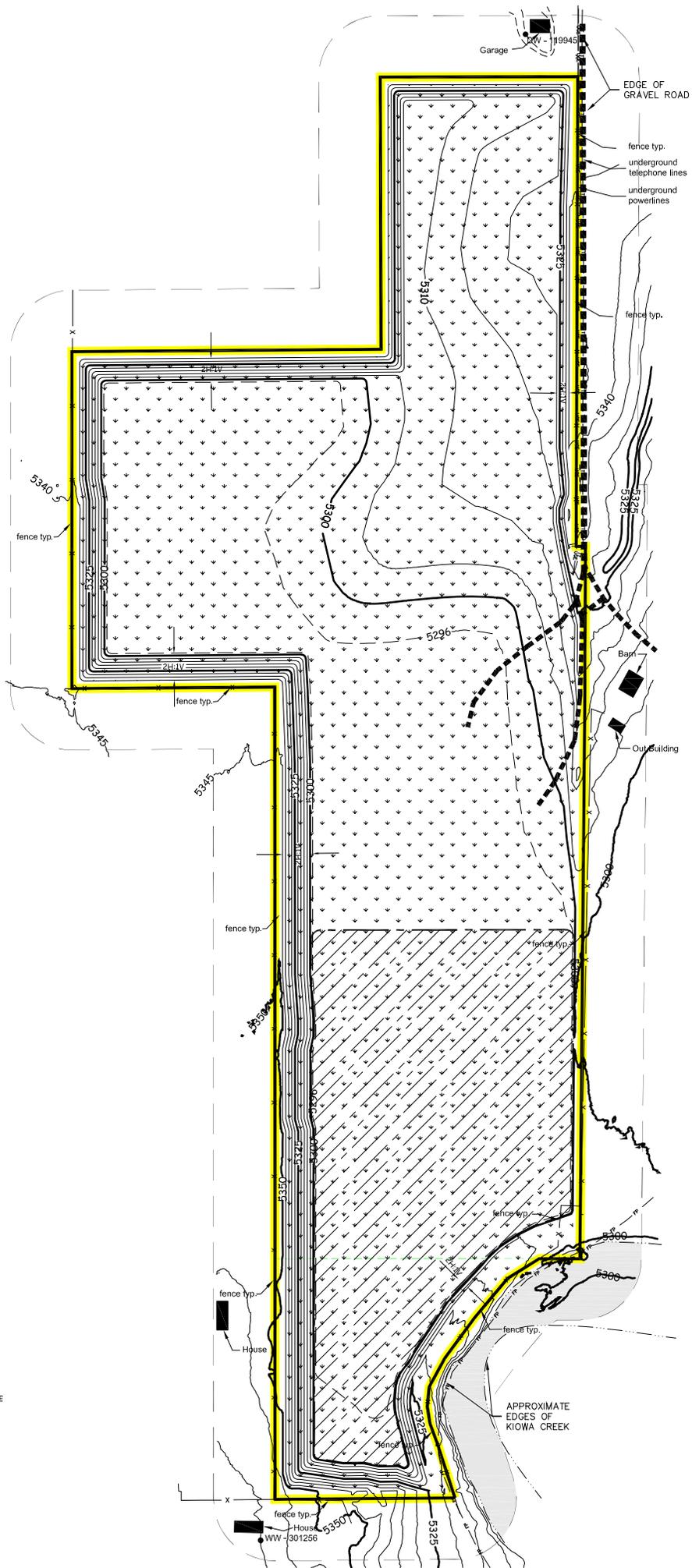
Parts of the NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$,
NE $\frac{1}{4}$ SE $\frac{1}{4}$ and SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 2, T-3-S, R-63-W
of the 6th P.M., County of Adams, State of Colorado

REVISED:	DATE:
ORIGINAL PERMIT	4/8/2001
TIN OF INERT FILL	8/25/2010
AMENDMENT TO ADD NORTH AREAS	2/24/2019

AMENDMENT APPLICATION FOR
THE 112 MLRB PERMIT
AFS- BENNETT PIT - M-2001-038

AFS
AGGREGATE FUEL & SAND
P.O. BOX 700 | Henderson, Colorado 80640
phone: (303) 287-4656 | fax: (303) 289-2865

NO.	DATE	BY	REVISION	SHEET
1	2/24/2019	AFS	AMENDMENT TO ADD NORTH AREAS	3 of 3



Henderson Aggregates

Expansion of Conditional Use as
Gravel Mining and Inert Filling

Legend

-  Existing CUP Henderson Aggregates
-  Expansion Parcels
-  Hwy 79 and 72nd Ave

Hwy 79 and 72nd Ave

E 72nd Ave

35

Provost Rd

79

Kiowa-Bennett Rd

E 64th Ave

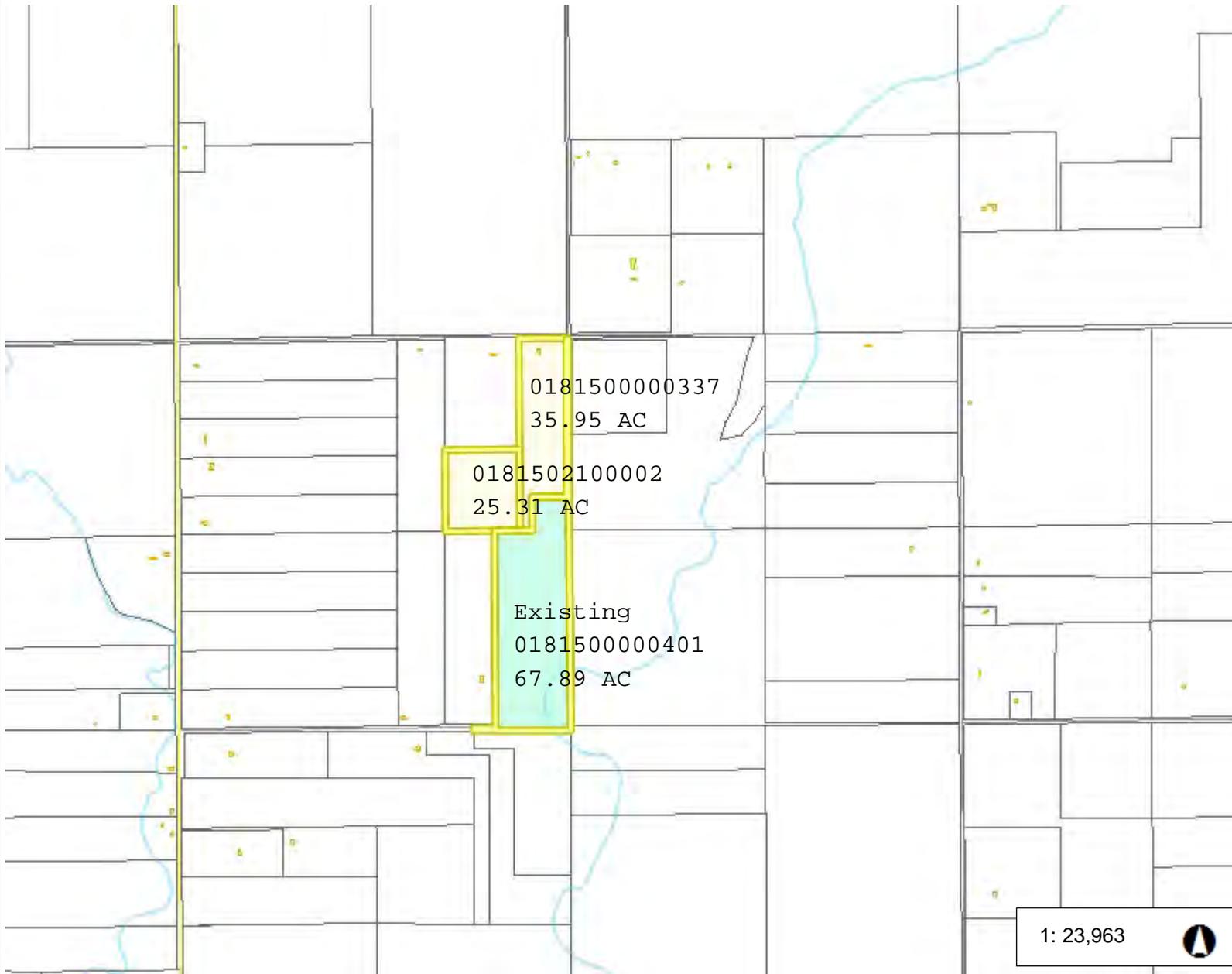
Mc Peck Ln

Google Earth

© 2018 Google

3000 ft

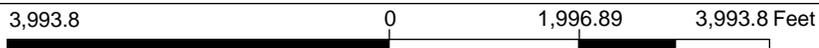




Legend

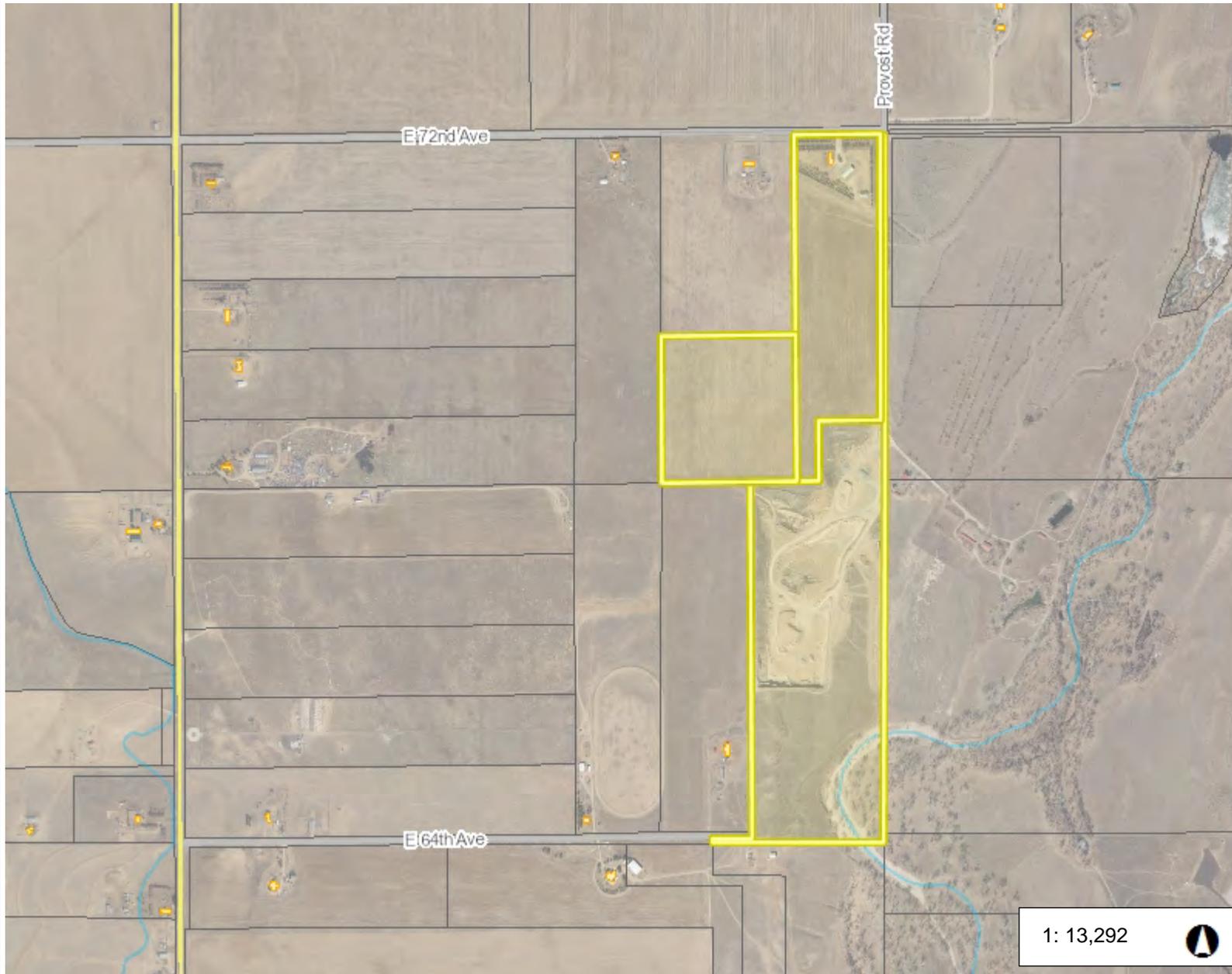
- Lake
- River
- Parks and Open Space
- Highways**
- Highways (< 20,000)**
- Interstate
- Highway
- Tollway
- Streets**
- Streets (20,000 - 50,000)**
- Streets
- Ramp
- Parcels
- Building
- County Boundary
- City**
- Arvada
- Aurora
- Bennett
- Brighton
- Commerce City
- Federal Heights
- Lochbuie
- Northglenn
- Thornton
- Westminster

1: 23,963



Notes

Henderson Aggregates, Ltd Mining CUP Application Area



Legend

- Lake
- Lake
- River
- Parks and Open Space
- Highways**
- Highways (10,000 - 20,000)
- Interstate
- Highway
- Tollway
- Streets**
- Streets (10,000 - 20,000)
- Streets
- Ramp
- Parcels
- Building
- County Boundary
- City**
- Arvada
- Aurora
- Bennett
- Brighton
- Commerce City
- Federal Heights
- Lochbuie
- Northglenn
- Thornton

1: 13,292



2,215.3 0 1,107.64 2,215.3 Feet

Notes

South parcel mining permitted.
Northern two parcels are included in mining permit application

CUP Application Item 5
Proof of Ownership

When Recorded Please Return to:
Berg Hill Greenleaf & Ruscitti LLP
Becky J. Rigo, Esq.
1712 Pearl Street
Boulder, CO 80302

State Documentary Fee
Date
\$ 150.00

SPECIAL WARRANTY DEED

THIS DEED, made effective this 31st day of May, 2017, between, **David A. Lincoln and Joyce E. Lincoln**, as individuals, whose street address is 5659 South Lansing Way, Englewood, CO 80111 ("Grantors"), and, **Henderson Aggregate, LTD.**, a Colorado limited partnership, whose street address is 7321 East 88th Avenue, Suite 100, Henderson, CO 80640 ("Grantee");

WITNESSETH, that Grantors, for and in consideration of the sum of One Million, Five Hundred Thousand, and 00/100 Dollars (\$1,500,000.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, have granted, bargained, sold, and conveyed, and by these presents do grant, bargain, sell, convey, and confirm, unto Grantee and Grantee's successors, and assigns forever, all the real property together with improvements situate, lying, and being in the County of Adams, and State of Colorado, described as follows:

SEE EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF;

which, along with other real property not conveyed hereunder, is also known by street and number as: **50500 East 72nd Avenue, Bennett, Colorado 80102-9302** (the "Property");

TOGETHER with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof, and all the estate, right, title, interest, claim, and demand whatsoever of Grantors, either in law or equity, of, in, and to the above bargained premises, with the hereditaments and appurtenances;

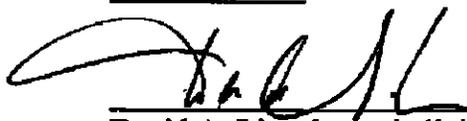
TO HAVE AND TO HOLD the said premises above bargained and described with the appurtenances, unto Grantee, and Grantee's successors and assigns forever. Grantors, for Grantors and Grantors' heirs, successors, and assigns, do covenant and agree that Grantors shall and will **WARRANT AND FOREVER DEFEND** the above bargained premises in the quiet and peaceable possession of Grantee, and Grantee's heirs, successors, and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under Grantors, **SUBJECT** to those specific exceptions set forth on **EXHIBIT B** attached hereto and incorporated herein.

[Remainder of Page Intentionally Left Blank; Signature Page to Follow]

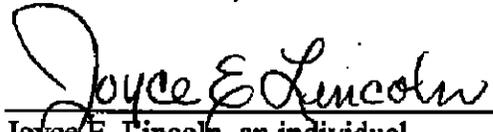
 70531569

IN WITNESS WHEREOF, Grantors have executed this deed on the date set forth above.

GRANTORS:



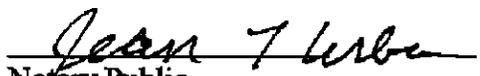
David A. Lincoln, an individual



Joyce E. Lincoln, an individual

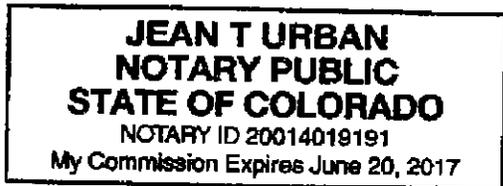
STATE OF COLORADO)
) :ss
COUNTY OF)
Boulder

The foregoing instrument was acknowledged before me this 31 day of May, 2017, by David A. Lincoln.



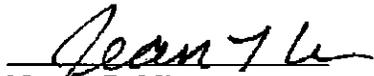
Notary Public

My Commission expires: 6/20/17



STATE OF COLORADO)
) :ss
COUNTY OF)
Boulder

The foregoing instrument was acknowledged before me this 31 day of May, 2017, by Joyce E. Lincoln.



Notary Public

My Commission expires: 6/20/17

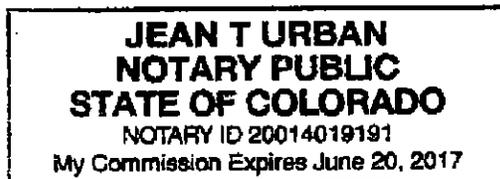


EXHIBIT A
Legal Description

PARCEL A:

ALL THAT PORTION IN THE NORTHEAST QUARTER OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, CONTAINED IN DEED RECORDED JANUARY 21, 2004 AT RECEPTION NO. C1267893, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 2 AND CONSIDERING THE NORTH LINE OF THE NORTHEAST QUARTER TO BEAR NORTH 89 DEGREES 32 MINUTES 15 SECONDS EAST WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO;

THENCE NORTH 89 DEGREES 32 MINUTES 15 SECONDS EAST, ALONG THE NORTH LINE OF SAID NORTHEAST QUARTER, A DISTANCE OF 972.95 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 89 DEGREES 32 MINUTES 15 SECONDS EAST, ALONG SAID NORTH LINE, A DISTANCE OF 998.74 FEET TO A POINT 675.68 FEET WEST OF THE NORTHEAST CORNER OF SAID SECTION 2, SAID POINT BEING THE NORTHWEST CORNER OF THAT PARCEL DESCRIBED IN DEED RECORDED JUNE 06, 1983 AT RECEPTION NO. B440790;

THENCE SOUTH 00 DEGREES 02 MINUTES 00 SECONDS EAST, ALONG THE WEST LINE OF SAID PARCEL DESCRIBED IN DEED AT RECEPTION NO. B440790, A DISTANCE OF 2616.91 FEET TO A POINT ON THE EAST-WEST CENTERLINE OF SAID SECTION 2 THAT IS 659.16 FEET WEST OF THE EAST QUARTER CORNER OF SAID SECTION 2, SAID POINT BEING THE SOUTHWEST CORNER OF THAT PARCEL DESCRIBED IN DEED RECORDED JUNE 06, 1983 AT RECEPTION NO. B440790;

THENCE SOUTH 89 DEGREES 31 MINUTES 50 SECONDS WEST, ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 2, A DISTANCE OF 998.74 FEET TO A POINT THAT IS 981.22 FEET EAST OF THE CENTER QUARTER CORNER OF SAID SECTION 2;

THENCE NORTH 00 DEGREES 02 MINUTES 00 SECONDS WEST, A DISTANCE OF 2617.06 FEET TO THE POINT OF BEGINNING,

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN DEED RECORDED AUGUST 20, 2007 UNDER RECEPTION NO. 2007000079980.

PARCEL A (AS SURVEYED):

A PORTION OF LAND LOCATED IN THE NORTHEAST 1/4 OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, ALL THAT PORTION OF WHICH IS CONTAINED IN DEED RECORDED AT RECEPTION #C1267893, EXCEPTING THEREFROM THAT PORTION DESCRIBED IN DEED RECORDED AT RECEPTION #2007000079980 AND ALSO EXCEPTING THEREFROM THAT PORTION DESCRIBED IN RECEPTION #B440790, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH 1/4 CORNER OF SAID SECTION 2; THENCE ON THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 2, THE BASIS ON WHICH ALL BEARINGS HEREON ARE BASED, N89°32'15"E, A DISTANCE OF 974.98 FEET; THENCE S00°00'21"E, A DISTANCE OF 1520.74 FEET TO THE POINT OF BEGINNING;

THENCE N89°32'37"E, A DISTANCE OF 1004.47 FEET; THENCE S00°09'39"E, A DISTANCE OF 1096.11 FEET; THENCE ON THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 2, S89°31'58"W, A DISTANCE OF 1007.44 FEET; THENCE N00°00'21"W, A DISTANCE OF 1096.32 FEET TO THE POINT OF BEGINNING;

COUNTY OF ADAMS,
STATE OF COLORADO

LEGAL DESCRIPTION PREPARED BY:

ROBERT E. HARRIS, P.L.S. 37601
FOR & ON BEHALF OF:
GILLIANS LAND CONSULTANTS
P.O. BOX 746358
ARVADA, CO 80006-6358

PARCEL B:

THAT PART OF THE EAST ONE-HALF OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, DESCRIBED AS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 2;
THENCE N89°33'35"E ALONG THE SOUTH LINE OF SAID SECTION 2, A DISTANCE OF 4,278.78 FEET TO THE TRUE POINT OF BEGINNING;
THENCE ALONG THE LINE PROLONGED OF N89°33'35"E ALONG SAID SOUTH LINE A DISTANCE OF 982.41 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 2;
THENCE N00°31'00"E ALONG THE EAST LINE OF SAID SECTION 2 A DISTANCE OF 2,643.58 FEET TO THE EAST ONE-QUARTER CORNER OF SAID SECTION 2;
THENCE N00°13'07"E ALONG THE EAST LINE OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 2 A DISTANCE OF 449.21 FEET;
THENCE S89°31'50"W PARALLEL WITH THE NORTH LINE OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 2 A DISTANCE OF 495.55 FEET;
THENCE S00°02'00"E A DISTANCE OF 449.18 FEET TO A POINT ON THE NORTH LINE OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 2;
THENCE S89°31'50"W ALONG SAID NORTH LINE A DISTANCE OF 514.21 FEET;
THENCE S00°02'00"E A DISTANCE OF 2,642.78 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL B (AS SURVEYED):

A PARCEL OF LAND LOCATED IN THE EAST 1/2 OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST 1/4 CORNER OF SAID SECTION 2, FROM WHENCE THE NORTH 1/4 CORNER OF SAID SECTION 2 BEARS S89°32'15"W, A DISTANCE OF 2650.83 FEET, AND ON WHICH ALL BEARINGS HEREBON ARE BASED; THENCE ON THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 2, S00°11'26"W, A DISTANCE OF 2617.01 FEET TO THE POINT OF BEGINNING;

THENCE ON THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 2, S00°29'37"W, A DISTANCE OF 2643.60 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 2; THENCE ON THE SOUTH LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 2, S89°31'48"W, A DISTANCE OF 984.07 FEET; THENCE, N00°01'19"W, A DISTANCE OF 2643.36 FEET; THENCE ON THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 2, N89°31'58"E, A DISTANCE OF 514.88 FEET; THENCE N00°10'26"W, A DISTANCE OF 449.18 FEET; THENCE N89°32'01"E, A DISTANCE OF 465.84 FEET; THENCE ON THE WEST LINE OF THE LAND DESCRIBED IN BOOK 3927, PAGE 224, A LINE 30.00 FEET WEST OF, AND PARALLEL TO, THE EAST LINE OF SAID NORTHEAST 1/4 OF SAID SECTION 2, S00°11'26"W, A DISTANCE OF 449.20 FEET; THENCE ON THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 2, N89°31'58"E, A DISTANCE OF 30.00 FEET TO THE POINT OF BEGINNING;

COUNTY OF ADAMS,
STATE OF COLORADO

LEGAL DESCRIPTION PREPARED BY:
ROBERT E. HARRIS, P.L.S. 37601
FOR & ON BEHALF OF:
GILLIANS LAND CONSULTANTS

P.O. BOX 746358
ARVADA, CO 80006-6358

PARCEL C: (AKA PROVOST ROAD EXTENSION)

THE EAST 30 FEET OF THE NORTHEAST QUARTER OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF ADAMS, STATE OF COLORADO, BY THE DEED RECORDED JUNE 8, 2016 UNDER RECEPTION NO. 2016000044789, COUNTY OF ADAMS, STATE OF COLORADO.

PARCEL D: (AKA E. 64TH AVENUE EXTENSION)

THE NORTH 30 FEET OF THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO.

EXHIBIT B
Exceptions

1. TAXES AND ASSESSMENTS FOR THE YEAR 2017 AND SUBSEQUENT YEARS, A LIEN NOT YET DUE OR PAYABLE.
2. WATER RIGHTS, CLAIMS OR TITLE TO WATER.
3. RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS RESERVED IN UNITED STATES PATENT NO. 193081 DATED APRIL 27, 1911 FOR THE NORTHEAST 1/4 SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, STORED IN OUR RECORDS AS ESI 32121139. (AFFECTS PARCELS A, B AND C)
4. RESERVATIONS BY THE UNION PACIFIC LAND COMPANY OF:
 - (1) ALL OIL, COAL AND OTHER MINERALS UNDERLYING SUBJECT PROPERTY,
 - (2) THE EXCLUSIVE RIGHT TO PROSPECT FOR, MINE AND REMOVE OIL, COAL AND OTHER MINERALS, AND
 - (3) THE RIGHT OF INGRESS AND EGRESS AND REGRESS TO PROSPECT FOR, MINE AND REMOVE OIL, COAL AND OTHER MINERALS, ALL AS CONTAINED IN DEED RECORDED JANUARY 31, 1902, IN BOOK A64 AT PAGE 488. (AFFECTS PARCEL D)
5. ANY TAX, LIEN, FEE, OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE BENNETT FIRE PROTECTION DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED OCTOBER 02, 1962, IN BOOK 1018 AT PAGE 159. (AFFECTS PARCELS A, B, C AND D)
6. ANY TAX, LIEN, FEE, OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE NORTH KIOWA-BIYOU GROUND WATER MANAGEMENT DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED APRIL 27, 1967, UNDER RECEPTION NO. 809148. (AFFECTS PARCELS A, B, C AND D)
7. OIL AND GAS LEASE BETWEEN IRMA FRANCES CALLAHAM, LESSOR, AND ROY A. SHARP, LESSEE, RECORDED JULY 11, 1969 IN BOOK 1529 AT PAGE 459, AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN. (AFFECTS PARCELS A, B AND C)
8. AN UNDIVIDED 97 1/2% INTEREST IN ALL MINERALS, OIL, GAS AND OTHER HYDROCARBONS, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS TO EXPLORE FOR, PRODUCE, EXTRACT AND MINE THE SAME, AS RESERVED UNTO ROBERT J. CALLAHAM AND LOREN DOW, TRUSTEES, IN THE DEED RECORDED JANUARY 8, 1975 IN BOOK 1972 AT PAGE 532, AND ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN. (AFFECTS PARCELS A, B AND C)
9. RESERVATION OF "ALL MINERAL RIGHTS, IF ANY" AS CONTAINED IN DEED RECORDED APRIL 9, 1979 IN BOOK 2334 AT PAGE 640, AND ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN. (AFFECTS PARCEL A)
10. TERMS, CONDITIONS AND PROVISIONS OF NOTICE OF AREA OF PANHANDLE EASTERN PIPE LINE COMPANY RECORDED JUNE 25, 1986 IN BOOK 3162 AT PAGE 961. (AFFECTS PARCELS A, B, C AND D)
11. TERMS, CONDITIONS, PROVISIONS, RESTRICTIONS AND COVENANTS SET FORTH IN DEED RECORDED JULY 10, 1992 IN BOOK 3927 AT PAGE 224 AND DEED RECORDED JULY 24, 1992 IN BOOK 3931 AT PAGE 757, AS FOLLOWS: "FOR ROAD PURPOSES ONLY." (AFFECTS PARCELS C AND D)
12. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN FINDINGS AND ORDER OF THE COLORADO GROUND WATER COMMISSION RECORDED MAY 05, 1994 IN BOOK 4312 AT PAGE 469. (AFFECTS PARCELS B AND C)
13. THE EFFECT OF ZONING HEARING DECISION - CASE #PRJ2000-00025 BENNETT PARK & RECREATION DISTRICT, RECORDED AUGUST 15, 2000, IN BOOK 6222 AT PAGE 563. (AFFECTS PARCEL A)

14. REQUEST FOR NOTIFICATION OF SURFACE DEVELOPMENT AS EVIDENCED BY INSTRUMENT RECORDED MAY 20, 2002 UNDER RECEPTION NO. C0971878. (AFFECTS PARCEL D)
15. ANY TAX, LIEN, FEE, OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE BENNETT PARK AND RECREATION DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED OCTOBER 09, 2008, UNDER RECEPTION NO. 2008000080754. (AFFECTS PARCEL A)
16. OIL AND GAS LEASE BETWEEN MARY FRANCES HARWARD AND GORDON W. HARWARD, LESSORS AND CHESAPEAKE EXPLORATION, LLC, AN OKLAHOMA LIMITED LIABILITY COMPANY, LESSEE, AS MEMORIALIZED BY MEMORANDUM OF LEASE RECORDED FEBRUARY 02, 2011 UNDER RECEPTION NO. 2011000007831 AND RE-RECORDED FEBRUARY 9, 2012 UNDER RECEPTION NO. 2012000009526, FOR AN INITIAL TERM OF FIVE YEARS WITH AN OPTION TO EXTEND AN ADDITIONAL FIVE YEARS, AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN. (AFFECTS PARCELS A, B AND C)
17. OIL AND GAS LEASE BETWEEN HOME MINERALS, LLC, BY AND THROUGH E.B. O'HARA AS MANAGER, LESSOR AND CHESAPEAKE EXPLORATION, LLC, AN OKLAHOMA LIMITED LIABILITY COMPANY, LESSEE, AS MEMORIALIZED BY MEMORANDUM OF LEASE RECORDED JUNE 21, 2011 UNDER RECEPTION NO. 2011000039256, AND RE-RECORDED FEBRUARY 14, 2012 UNDER RECEPTION NO. 2012000010646, FOR AN INITIAL TERM OF THREE YEARS WITH AN OPTION TO EXTEND AN ADDITIONAL THREE YEARS, AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN. (AFFECTS PARCELS A, B AND C)
18. OIL AND GAS LEASE BETWEEN ROBIN VAN BERGEN, LESSOR AND CHESAPEAKE EXPLORATION, LLC, LESSEE, RECORDED JUNE 24, 2011 UNDER RECEPTION NO. 2011000040309, AND RE-RECORDED FEBRUARY 14, 2012 UNDER RECEPTION NO. 2012000010564, FOR AN INITIAL TERM OF THREE YEARS WITH AN OPTION TO EXTEND AN ADDITIONAL THREE YEARS, AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN. (AFFECTS PARCELS A, B AND C)
19. OIL AND GAS LEASE BETWEEN GARY SANDLIN, LESSOR AND CHESAPEAKE EXPLORATION, INC., LESSEE, RECORDED SEPTEMBER 08, 2011 UNDER RECEPTION NO. 2011000057817, AND RE-RECORDED FEBRUARY 15, 2012 UNDER RECEPTION NO. 2012000010864, FOR AN INITIAL TERM OF THREE YEARS WITH AN OPTION TO EXTEND AN ADDITIONAL THREE YEARS, AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN. (AFFECTS PARCEL B)
20. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN AND IMPOSED BY RESOLUTION NO. 2016-144 RECORDED MARCH 11, 2016 UNDER RECEPTION NO. 2016000018709. (AFFECTS PARCELS A, B, C AND D)
21. OIL AND GAS LEASE BETWEEN MARY FRANCES HARWARD, LESSOR, AND KIOWA CREEK RESOURCES, LLC, A COLORADO LIMITED LIABILITY COMPANY, RECORDED FEBRUARY 22, 2017 UNDER RECEPTION NO. 2017000016309 AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN. (AFFECTS PARCELS A, B AND C)
22. ANY RIGHTS OR INTERESTS OF THIRD PARTIES WHICH EXIST OR ARE CLAIMED TO EXIST IN AND OVER THE PRESENT AND PAST BED, BANKS OR WATERS OF KIOWA CREEK AS SHOWN ON ASSESSOR'S MAP (STORED IN OUR RECORDS AS ESI 32125628). (AFFECTS PARCELS B AND D)
23. ANY FACTS, RIGHTS, INTERESTS OR CLAIMS WHICH MAY EXIST OR ARISE BY REASON OF THE FOLLOWING FACTS SHOWN ON LAND SURVEY PLAT CERTIFIED APRIL 19, 2017 PREPARED BY GILLIANS, JOB #17033: SAID DOCUMENT STORED AS ESI 32752090
 - A. THE FENCE LINE ALONG THE EAST AND NORTH BOUNDARIES OF PARCEL B DO NOT COINCIDE WITH SAID BOUNDARY LINES.

[Remainder of Page Intentionally Left Blank]

Approval of Deed, Bill of Sale and Tenancy

The undersigned **HENDERSON AGGREGATE, LTD., A COLORADO LIMITED PARTNERSHIP** Buyer(s) hereby acknowledge that they intend to take title to the following described property:

THAT PART OF THE NORTHEAST ONE-QUARTER OF SECTION 2, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, ADAMS COUNTY, COLORADO, DESCRIBED AS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 2; THENCE NORTH 89 DEGREES 32 MINUTES 15 SECONDS EAST ON AN ASSUMED BEARING ALONG THE NORTH LINE SAID SECTION 2 A DISTANCE OF 1971.69 FEET TO A POINT 675.68 FEET WEST OF THE NORTHEAST CORNER OF SAID NORTHEAST ONE-QUARTER; SAID POINT BEING THE TRUE POINT OF BEGINNING;

THENCE SOUTH 00 DEGREES 02 MINUTES 00 SECONDS EAST A DISTANCE OF 2616.94 FEET TO A POINT ON THE SOUTH LINE SAID NORTHEAST ONE-QUARTER;

THENCE NORTH 89 DEGREES 31 MINUTES 50 SECONDS EAST ALONG SAID SOUTH LINE A DISTANCE OF 166.45 FEET TO A POINT 492.71 FEET WEST OF THE EAST ONE-QUARTER CORNER SAID SECTION 2;

THENCE NORTH 00 DEGREES 02 MINUTES 00 SECONDS WEST PARALLEL WITH THE WEST LINE SAID SECTION 2 A DISTANCE OF 449.18 FEET TO A POINT 2167.74 FEET SOUTH OF THE NORTH LINE SAID NORTHEAST ONE-QUARTER;

THENCE NORTH 89 DEGREES 31 MINUTES 50 SECONDS EAST PARALLEL WITH THE EAST-WEST CENTERLINE OF SAID SECTION 2 A DISTANCE OF 495.55 FEET TO THE EAST LINE OF SAID NORTHEAST ONE-QUARTER;

THENCE NORTH 00 DEGREES 19 MINUTES 42 SECONDS EAST ALONG SAID EAST LINE A DISTANCE OF 2167.83 FEET TO THE NORTHEAST CORNER OF SAID NORTHEAST ONE-QUARTER;

THENCE SOUTH 89 DEGREES 32 MINUTES 15 SECONDS WEST ALONG THE NORTH LINE OF SAID NORTHEAST ONE-QUARTER A DISTANCE OF 675.68 FEET TO THE TRUE POINT OF BEGINNING, EXCEPT THE EAST 30.00 FEET THEREOF AND ANY PART LYING WITHIN THE RIGHT OF WAY FOR EAST 72ND AVENUE, COUNTY OF ADAMS, STATE OF COLORADO.

As Joint Tenants Tenants in Common Other ENTITY _____

Whose mailing address is: **PO BOX 700, HENDERSON, CO 80640**

They have reviewed the **PERSONAL REPRESENTATIVE'S DEED** and **Bill of Sale** dated **May 7th, 2018** from **THE ESTATE OF WAYNE E. HEITZMAN, DECEASED** to **HENDERSON AGGREGATE, LTD., A COLORADO LIMITED PARTNERSHIP** and by their signature hereto approve the deed and confirm that it correctly reflects the choice of tenancy, if applicable.

Date: **May 11, 2018**

HENDERSON AGGREGATE, LTD., A COLORADO LIMITED PARTNERSHIP

By: FREI MANAGEMENT LLC, A COLORADO LIMITED LIABILITY COMPANY, GENERAL PARTNER

By: 
ALBERT R. FREI, JR., MANAGER



CUP Application Item 6
Proof of Water and Sewer Services



ORIGINAL PERMIT APPLICANT(S)

HENDERSON AGGREGATE LTD

APPROVED WELL LOCATION

Water Division: 1 Water District: 1
 Designated Basin: KIOWA-BIJOU
 Management District: NORTH KIOWA-BIJOU
 County: ADAMS
 Parcel Name: N/A
 Physical Address: N/A
 SE 1/4 NE 1/4 Section 2 Township 3.0 S Range 63.0 W Sixth P.M.

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: 551709.0 Northing: 4407773.0

PERMIT TO CONSTRUCT A NEW WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT
CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-90-107(7) and the Findings and Order of the Colorado Ground Water Commission dated June 27, 2019, for Determination of Water Right No. 3696-BD. In the event the well is not operated in accordance with the conditions of this determination, it will be subject to administration, including orders to cease diverting water.
- 4) The pumping rate of this well shall not exceed 100 GPM (as requested).
- 5) The annual withdrawal of ground water from this well shall not exceed 17.6 acre-feet, subject to the total annual withdrawal limitations and conditions as specified by the above referenced Order of the Commission.
- 6) The use of ground water from this well is limited to the following beneficial uses: domestic, commercial, industrial, irrigation, stock watering and replacement purposes. The place of use shall be limited to the 129.15 acre land area claimed in the above described Order of the Commission.
- 7) This well must be constructed to withdraw water from only the Lower Arapahoe aquifer. The top of the Lower Arapahoe aquifer is located approximately 545 feet below the ground surface. The bottom of the Lower Arapahoe aquifer is located approximately 760 feet below the ground surface. Plain casing must be installed and grouted to prevent the diversion of water from other aquifers and the movement of water between aquifers.
- 8) The entire length of the hole shall be geophysically logged as required by Rule 9 of the Statewide Nontributary Ground Water Rules prior to installing casing.
- 9) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 10) A totalizing flow meter or Commission approved measuring device must be installed on this well and maintained in good working order. Permanent records of all diversions must be maintained by the well owner (collected at least annually) and submitted to the North Kiowa-Bijou Ground Water Management District and the Ground Water Commission upon request.
- 11) No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.
- 12) This well shall be located within 200 feet of the location specified on this permit. This well shall not be located within 600 feet of another large-capacity well completed in the Arapahoe aquifer.

NOTE: The ability of this well to withdraw its authorized amount of water from this non-renewable aquifer may be less than the 100 years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.

NOTE: This well is located within the North Kiowa Bijou Ground Water Management District where local District Rules apply which may further limit the withdrawal and use of designated ground water as authorized under this permit.

WELL PERMIT NUMBER 83410-F

RECEIPT NUMBER 3692395

NOTE: This well will be completed in a Type I aquifer overlain by multiple confining layers and must be constructed with solid steel casing and grouted in accordance with Well Construction Rule 10.4.5.2 (2 CCR 402-2).



Date Issued: 7/23/2019

Issued By IOANA COMANICIU

Expiration Date: 7/23/2020

CUP Application Item 7
Proof of Utilities (electricity and gas)



**Intermountain
Rural Electric
Association**

5496 N. U.S. Highway 85 | Sedalia, CO 80135



Customer Service (7-7 M-F)
1-800-332-9540



Email
CustomerContact@irea.coop



Twitter
@IREAColorado



Outages (24/7)
1-844-IREA-FIX



Online
www.IREA.coop



Facebook
IntermountainREA

Account Information **Account Summary** **Account # 95584561**

Account Number 95584561
Customer Name
ALBERT FREI AND SONS INC
Service Address
50501 E 72ND AVE
Cycle 04 Rate B District 6

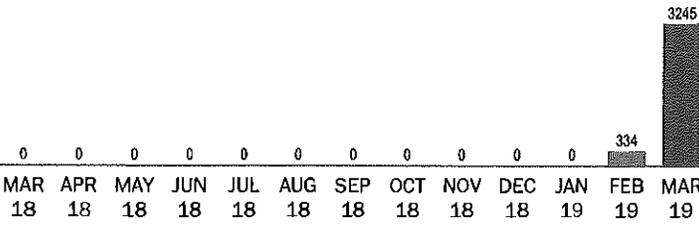
Bill Date 03/06/19
Previous Bill \$151.96
Total Payments -\$151.96
Current Bill \$402.65
Total Amount Due \$402.65

Total Amount Due
by 03/27/19
\$402.65

Amount Due will be automatically deducted from your bank account on the Due Date, regardless of any payments or credits made prior.

Usage Profile **Important Billing Information**

Last Year	Last Month	This Month
0 kWh	334 kWh	3245 kWh



Avg Cost per day:
\$14.91
Avg kWh per day:
120.19 kWh

Thank you for participating in Automatic Bill Pay. Have you considered using our eBill program? You will receive your bills faster and help IREA keep costs low. For more information or to sign up, visit www.irea.coop.

Additional bill details on back

Message Board

We are refunding capital credits this month. If you are eligible for a refund, you will see a bill credit or receive a check. If you are on a payment arrangement, your capital credit refund will not be applied to your balance due until the arrangement ends.

PLEASE RETURN THIS PORTION WITH YOUR CHECK TO ENSURE PROPER CREDIT TO YOUR ACCOUNT

CYCLE: 04



**Intermountain Rural
Electric Association**
P.O. DRAWER A
SEDALIA, CO 80135

Bill Date 03/06/19
Due Date 03/27/19
Account Number 95584561

Total Amount Due \$402.65

AUTOMATIC PAYMENT

MAKE CHECKS PAYABLE TO: IREA

Check box to **update contact info**, sign up for **paperless billing** or contribute to **Energy Outreach Colorado**.
Fill out information on reverse side



3505 1 AB 0.412 0109251-IRE5119972-ST.1GRP-003505
ALBERT FREI AND SONS INC
PO BOX 700
HENDERSON CO 80640-0700

T:16



INTERMOUNTAIN RURAL ELECTRIC ASSOCIATION
P.O. BOX 6437
CAROL STREAM IL 60197-6437

0095584561 00040265 00040265 0095584561 2

01000001

Meter	Read Dates	Days	Previous Read	Current Read	Mult.	Actual Use	Details
59974985	02/05/19 - 03/04/19	27	334	3579 10.83	1 1	3245 10.830 46.24	kWh kW Load Factor %



My Billing Snapshot

HI ALBERT FREI AND SONS INC,

See how this bill's electric spending compares to the same month last year.

This Bill ██████████ \$402.65

Last Year's Bill \$0.00

Year To Date Charges: \$529.75

Current Charges

Description	Amount
Energy Charge (3245 X 0.06363)	\$206.48
Demand Charge (10.830 X 14.00)	\$151.62
Basic Service Charge	\$30.00
Total Sales Tax	\$14.55
Total Current Charges	\$402.65



Automatic Bill Pay

If remembering to pay your electric bill every month is another task you'd like to scratch off of your to-do list, then Automatic Bill Payment is the perfect solution for you! This service is free of charge. Visit www.irea.coop/payment-options to download the form.



Energy Assistance

If you would like to help IREA members stay warm, safe, and healthy in their homes throughout the year, you can contribute directly via your IREA bill. Fill out the form below to contribute, or visit Energy Outreach Colorado at www.energyoutreach.org for more info.



Budget Billing

Helps you equalize your monthly service budget. For more information, please visit www.irea.coop/billing.



Paperless Billing

Convenience at its best! Receive your bill securely via your email inbox rather than through postal mail. Fill out the form below to sign up, or visit www.irea.coop/billing to learn more.

I would like to update my contact information: *You must check the box on the front of the stub to activate changes.

Name _____

Mailing Address _____

City _____ State _____ ZIP _____

Primary Phone Number _____ Alternate Phone Number _____

I would like to receive my bill via email (eBilling): *You must check the box on the front of the stub to activate changes.

Email Address (required) _____

I would like to help IREA assist struggling families in Colorado via Energy Outreach Colorado:

One-Time Contribution: \$ _____ OR Monthly Contribution: \$5 \$10 \$20 Other \$ _____

Signature _____ Date _____

CUP Application Item 8
Legal Description

Adams County

Producing Mine Property Profile

Parcel Number: 018150000401

Owners Name and Address:	Property Address:
HENDERSON AGGREGATE LTD 7321 E 88TH AVE STE 100 HENDERSON CO 80640-8137	50000 E 72ND AVE CO

Account Summary

Legal Description

BENNET SAND AND GRAVEL PIT #2 M-2001-038 SECT,TWN,RNG:2-3-63 DESC: PARCEL B (AS SURVEYED) PARCEL IN THE E2 OF SEC 2 DESC AS FOLS BEG AT THE NE 1/4 COR OF SD SEC 2 FROM WHENCE THE N 1/4 COR OF SD SEC 2 BRS S 89D 32M 15S W 2650/83 FT AND ON WHICH ALL BRNGS HEREON ARE BASED TH ON THE E LN OF THE NE4 OF SD SEC 2 S 00D 11M 26S W 2617/01 FT TO THE POB TH ON THE E LN OF THE SE4 OF SD SEC 2 S 00D 29M 37S W 2643/60 FT TH ON THE S LN OF THE SE4 OF SD SEC 2 S 89D 31M 48S W 984/07 FT TH N 00D 01M 19S W 2643/36 FT TH ON THE S LN OF THE NE4 OF SD SEC 2 N 89D 31M 58S E 514/88 FT TH N 00D 10M 26S W 449/18 FT TH N 89D 32M 01S E 465/84 FT TH ON THE W LN OF THE LAND DESC IN B3927 P224 A LN 30 FT W OF AND // TO THE E LN OF SD NE4 OF SD SEC 2 S 00D 11M 26S W 449/20 FT TH ON THE S LN OF THE NE4 OF SD SEC 2 N 89D 31M 58S E 30 FT TO THE POB TOG WITH PARCEL C (AKA PROVOST RD EXT)THE E 30 FT OF THE NE4 OF SEC 2 EXC THAT PORT CONVEYED TO COUNTY OF ADAMS (REC NO 2016000044789) TOG WITH PARCEL D (AKA E 64TH AVE EXT) THE N 30 FT OF THE E2 NE4 OF SEC 11/3/63 67/89A

Subdivision Plat

N/A

Account Summary

Account Numbers	Date Added	Tax District	Mill Levy
R0082402	On or Before 01/01/1996	381	75.860

Permits

Permit Cases

1993-063-C EXG2001-00004 EXG2005-00006 PRE2001-00047 PRE2014-00060 PRE2019-00027 RCU2015-00041 RCU2017-00027 VIO2019-00823
--

Sales Summary

Sale Date	Sale Price	Deed Type	Reception Number	Book	Page	Grantor	Grantee	Doc. Fee	Doc. Date
05/31/2017	\$1,500,000.00	BLK	2017000046541			LINCOLN DAVID A AND, LINCOLN JOYCE E	HENDERSON AGGREGATE LTD	\$150	05/31/2017

Click [here](#) to go to Clerk / Recorder search page

Valuation Summary

Land Valuation Summary

Account Number	Land Type	Unit of Measure	Number of Units	Fire District	School District	Vacant/Improved	Actual Value	Assessed Value
R0082402	Producing Mine	Acres	67.8900	FIRE DISTRICT 7 BENNETT	School District 29-Bennett	V	\$703,923.00	\$204,140.00
Land Subtotal:							\$703,923.00	\$204,140.00

Improvements Valuation Summary

Account Number	Actual Value	Assessed Value
R0082402	0	0
Improvements Subtotal:		0

Total Property Value	\$703,923.00	\$204,140.00
-----------------------------	---------------------	---------------------

Building Summary

NO BUILDING RECORDS FOUND

Tax Summary

Click [here](#) to go to Treasurer's search page

Enterprise Zone Summary

Property within Enterprise Zone

False

Precincts and Legislative Representatives Summary

Precinct

247

Commissioner Representative

Commissioner District	Link to Representative
5	Click Here

State House Representative

House District	Link to Representative
56	Click Here

State Senate Representative

Senate District	Link to Representative
25	Click Here

US Congress Representative

Congressional District	Link to Representative
4	Click Here

Zoning Summary

Zoning Summary

Zoning Authority	Zoning
Adams County	A-3

Note: Data is updated daily. Above data was updated as of: 07/26/19

Legal Disclaimer: Although every reasonable effort has been made to ensure the accuracy of the public information data and graphic representations, Adams County cannot be responsible for consequences resulting from any omissions or errors contained herein. Adams County assumes no liability whatsoever associated with the use or misuse of this data

Adams County

Residential Property Profile

Parcel Number: 018150000337

Owners Name and Address:	Property Address:
HENDERSON AGGREGATE LTD PO BOX 700 HENDERSON CO 80640-0700	49950 E 72ND AVE CO

Account Summary

Legal Description

SECT,TWN,RNG:2-3-63 DESC: PART OF THE NE4 OF SEC 2 DESC AS FOLS BEG AT N4 COR SEC 2 TH N 89D 32M 15S E 1971/69 FT TO A PT 675/68 FT W OF NE COR SD NE4 SD PT BEING THE TRUE POB TH S 00D 02M 00S E 2616/94 FT TO A PT ON S LN SD NE4 TH N 89D 31M 50S E 166/45 FT TO A PT 492/71 FT W OF E4 COR SD SEC TH N 00D 02M 00S W 449/18 FT TO A PT 2167/74 FT S OF N LN NE4 TH N 89D 31M 50S E 495/55 FT TO E LN NE4 TH N 00D 19M 42S E 2167/83 FT TO NE COR NE4 TH S 89D 32M 15S W ALG N LN NE4 675/68 FT TO THE TRUE POB EXC E 30 FT THEREOF AND EXC RD 35/95A

Subdivision Plat

N/A

Account Summary

Account Numbers	Date Added	Tax District	Mill Levy
R0082355	On or Before 01/01/1996	429	83.212

Permits

Permit Cases

[BDP16-0176](#)
[BDP18-5076](#)
[PRE2019-00027](#)

Sales Summary

Sale Date	Sale Price	Deed Type	Reception Number	Book	Page	Grantor	Grantee	Doc. Fee	Doc. Date
05/30/1997	\$60,000.00	WD	C0286616	5022	557-558	BICKFORD HAROLD A II/EDITH L	HEITZMAN WAYNE E AND HEITZMAN	\$6	06/04/1997
11/19/1997	\$10.00	WD	C0359639	5221	961-965	HEITZMAN WAYNE E AND HEITZMAN	COUNTY OF ADAMS	\$0	02/02/1998
10/15/2001	\$10.00	DTH	04001035970	2004	1015	HEITZMAN WAYNE E AND	HEITZMAN WAYNE E	\$0	10/15/2004
05/09/2018	\$575,000.00	PRD	2018000038406			HEITZMAN WAYNE E	HENDERSON AGGREGATE LTD	\$57.5	05/11/2018
06/18/2018	\$0	OTH	2018000048727			HEITZMAN WAYNE E	HEITZMAN WAYNE E	\$0	06/18/2018

Click [here](#) to go to Clerk / Recorder search page

Valuation Summary

Land Valuation Summary

Account Number	Land Type	Unit of Measure	Number of Units	Fire District	School District	Vacant/Improved	Actual Value	Assessed Value
R0082355	Residential	Acres	35.9472	FIRE DISTRICT 7 BENNETT	School District 29-Bennett	I	\$93,463.00	\$6,730.00
Land Subtotal:							\$93,463.00	\$6,730.00

Improvements Valuation Summary

Account Number	Actual Value	Assessed Value
R0082355	\$379,802.00	\$27,350.00
Improvements Subtotal:	\$379,802.00	\$27,350.00

Total Property Value	\$473,265.00	\$34,080.00
-----------------------------	---------------------	--------------------

Building Summary

Building Number: 2

Individual Built As Detail

Built As:	Shed - Cattle
Year Built:	1987
Building Type:	Out Building
Construction Type:	
Built As SQ Ft:	2016
Number of Rooms:	0
Number of Baths:	0.00
Number of Bedrooms:	0
Attached Garage SQ Ft:	0
Detached Garage Square Ft:	0
Basement SQ Ft:	0
Finished Basement SQ Ft:	0

Building Number: 3

Individual Built As Detail

Built As:	Ranch 1 Story
Year Built:	1997
Building Type:	Residential
Construction Type:	Frame Siding
Built As SQ Ft:	1568
Number of Rooms:	6
Number of Baths:	2.00
Number of Bedrooms:	3
Attached Garage SQ Ft:	576
Detached Garage Square Ft:	0
Basement SQ Ft:	0
Finished Basement SQ Ft:	0

Tax Summary

Click [here](#) to go to Treasurer's search page

Enterprise Zone Summary

Property within Enterprise Zone

False

Precincts and Legislative Representatives Summary

Precinct

247

Commissioner Representative

Commissioner District	Link to Representative
5	Click Here

State House Representative

House District	Link to Representative
56	Click Here

State Senate Representative

Senate District	Link to Representative
25	Click Here

US Congress Representative

Congressional District	Link to Representative
4	Click Here

Zoning Summary

Zoning Summary

Zoning Authority	Zoning
Adams County	A-3

Note: Data is updated daily. Above data was updated as of: 07/26/19

Legal Disclaimer: Although every reasonable effort has been made to ensure the accuracy of the public information data and graphic representations, Adams County cannot be responsible for consequences resulting from any omissions or errors contained herein. Adams County assumes no liability whatsoever associated with the use or misuse of this data

Adams County

Agricultural Property Profile

Parcel Number: 0181502100002

<u>Owners Name and Address:</u>	<u>Property Address:</u>
HENDERSON AGGREGATE LTD 7321 E 88TH AVE STE 100 HENDERSON CO 80640-8137	CO

Account Summary

Legal Description

SECT,TWN,RNG:2-3-63 DESC: PARCEL A (AS SURVEYED) A PORT OF LAND LOCATED IN THE NE4 OF SEC 2 DESC AS FOLS COMMENCING AT THE N 1/4 COR OF SD SEC 2 TH ON THE N LN OF THE NE 1/4 OF SD SEC 2 THE BASIS ON WHICH ALL BRNGS HEREON ARE BASED N 89D 32M 15S E 974/98 FT TH S 00D 00M 21S E 1520/74 FT TO THE POB TH N 89D 32M 37S E 1004/47 FT TH S 00D 09M 39S E 1096/11 FT TH ON THE S LN OF THE NE4 OF SD SEC 2 S 89D 31M 58S W 1007/44 FT TH N 00D 00M 21S W 1096/32 FT TO THE POB AKA PT OF NE4 SEC 2 BEG AT N4 COR TH E 972/95 FT TO TRUE POB TH CONT E 1165/19 FT TO PT 509/23 FT W OF NE COR NE4 TH S // WITH W LN SEC 2 2616/92 FT TO PT ON E/W C/L SEC 2 SD PT BEING 492/71 FT W OF E4 COR TH W ALG E/W C/L 1165/19 FT TO PT 981/22 FT E OF CEN SEC 2 TH N 2617/06 FT TO POB EXC PARCS 25/310A

Subdivision Plat

N/A

Account Summary

Account Numbers	Date Added	Tax District	Mill Levy
R0175091	10/04/2007	429	83.212

Permits

Permit Cases

[PRE2019-00027](#)

Sales Summary

Sale Date	Sale Price	Deed Type	Reception Number	Book	Page	Grantor	Grantee	Doc. Fee	Doc. Date
01/16/2004	\$250,000.00	WD	C1267893			HARVEY JAMES AND	CEDAR VENTURES INVESTMENTS LLC	\$25	01/21/2004
08/30/2004	\$10.00	QC	2004001079360	2004	1027	CEDAR VENTURES INVESTMENTS LLC	LINCOLN DAVID A AND	\$0	10/27/2004
02/11/2005	\$225,200.00	WD	2005000168250	2005	0218	LINCOLN DAVID A AND	HOLLAND RANDALL L	\$22.52	02/18/2005
06/19/2007	\$0	QC	2007000079979	2007		HOLLAND RANDALL L	LINCOLN DAVID A AND	\$0	08/20/2007
05/31/2017	\$1,500,000.00	BLK	2017000046541			LINCOLN DAVID A AND, LINCOLN JOYCE E	HENDERSON AGGREGATE LTD	\$150	05/31/2017

Click [here](#) to go to Clerk / Recorder search page

Valuation Summary

Land Valuation Summary

Account Number	Land Type	Unit of Measure	Number of Units	Fire District	School District	Vacant/Improved	Actual Value	Assessed Value
R0175091	Agricultural	Acres	25.3100	FIRE DISTRICT 7 BENNETT	School District 29-Bennett	V	\$3,935.00	\$1,140.00
Land Subtotal:							\$3,935.00	\$1,140.00

Improvements Valuation Summary

Account Number	Actual Value	Assessed Value
R0175091	0	0
Improvements Subtotal:	0	0

Total Property Value	\$3,935.00	\$1,140.00
-----------------------------	-------------------	-------------------

Building Summary

NO BUILDING RECORDS FOUND

Tax Summary

Click [here](#) to go to Treasurer's search page

Enterprise Zone Summary

Property within Enterprise Zone

False

Precincts and Legislative Representatives Summary

Precinct

247

Commissioner Representative

Commissioner District	Link to Representative
5	Click Here

State House Representative

House District	Link to Representative
56	Click Here

State Senate Representative

Senate District	Link to Representative
25	Click Here

US Congress Representative

Congressional District	Link to Representative
4	Click Here

Zoning Summary

Zoning Summary

Zoning Authority	Zoning
Adams County	A-3

Note: Data is updated daily. Above data was updated as of: 07/26/19

Legal Disclaimer: Although every reasonable effort has been made to ensure the accuracy of the public information data and graphic representations, Adams County cannot be responsible for consequences resulting from any omissions or errors contained herein. Adams County assumes no liability whatsoever associated with the use or misuse of this data

CUP Application Item 9
Certificate of Taxes Paid



Statement Of Taxes Due

Account Number R0082402
Assessed To

Parcel 0181500000401
HENDERSON AGGREGATE LTD
7321 E 88TH AVE STE 100
HENDERSON, CO 80640-8137

Legal Description	Situs Address
BENNET SAND AND GRAVEL PIT #2 M-2001-038 SECT,TWN,RNG:2-3-63 DESC: PARCEL B (AS SURVEYED) PARCEL IN THE E2 OF SEC 2 DESC AS FOLS BEG AT THE NE 1/4 COR OF SD SEC 2 FROM WHENCE THE N 1/4 COR OF SD SEC 2 BR S 89D 32M 15S W 2650/83 FT AND ON WHICH ALL BRNGS HEREON ARE BASED TH ON THE E LN OF THE N... Additional Legal on File	0 BENNET SAND AND GRAVEL PIT #2 M-2001-038

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2018	\$1,171.28	\$0.00	\$0.00	(\$1,171.28)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 02/27/2019					\$0.00

Tax Billed at 2018 Rates for Tax Area 381 - 381

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6660000	\$56.60	AG DRY FARMING	\$3,249	\$940
FIRE DISTRICT 7	13.0120000	\$200.91	LAND		
GENERAL	22.6400000	\$349.56	EARTH/STONE LND	\$50,000	\$14,500
NORTH KIOWA BIJOU GROUND WA	0.0220000	\$0.34	Total	\$53,249	\$15,440
RETIREMENT	0.3140000	\$4.85			
ROAD/BRDGE	1.3000000	\$20.07			
DEVELOPMENTALLY DISABLED	0.2570000	\$3.97			
SD 29 BOND	9.9710000	\$153.95			
SD 29 GENERAL	22.3250000	\$344.70			
SOCIAL SERVICES	2.3530000	\$36.33			
Taxes Billed 2018	75.8600000	\$1,171.28			

Tax amounts are subject to change due to endorsement, advertising, or fees.
Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer
4430 S Adams County Parkway Suite C2436
Brighton, CO 80601
720-523-6160

NEW SATELLITE OFFICE

11860 Pecos Street
Westminster, CO 80234
Mon, Tue, Wed, Thur 7:30 am - 5 pm



Statement Of Taxes Due

Account Number R0175091

Parcel 0181502100002

Assessed To

HENDERSON AGGREGATE LTD
7321 E 88TH AVE STE 100
HENDERSON, CO 80640-8137

Legal Description

Situs Address

SECT.TWN.RNG:2-3-63 DESC: PARCEL A (AS SURVEYED) A PORT OF LAND LOCATED IN THE NE4 OF SEC 2 DESC AS FOLS COMMENCING AT THE N 1/4 COR OF SD SEC 2 TH ON THE N LN OF THE NE 1/4 OF SD SEC 2 THE BASIS ON WHICH ALL BRNGS HEREON ARE BASED N 89D 32M 15S E 974/98 FT TH S 00D 00M 21S E 1520/74 FT TO THE POB... Additional Legal on File

0 000000000

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2018	\$102.36	\$0.00	\$0.00	(\$102.36)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 02/27/2019					\$0.00

Tax Billed at 2018 Rates for Tax Area 429 - 429

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6660000	\$4.51	AG DRY FARMING	\$4,229	\$1,230
FIRE DISTRICT 7	13.0120000	\$16.01	LAND		
GENERAL	22.6400000	\$27.84	Total	\$4,229	\$1,230
NORTH KIOWA BIJOU GROUND WA	0.0220000	\$0.03			
RETIREMENT	0.3140000	\$0.39			
ROAD/BRDGE	1.3000000	\$1.60			
DEVELOPMENTALLY DISABLED	0.2570000	\$0.32			
SD 29 BOND	9.9710000	\$12.27			
SD 29 GENERAL	22.3250000	\$27.46			
SOCIAL SERVICES	2.3530000	\$2.89			
BENNETT PARK AND RECREATON	7.3520000	\$9.04			
Taxes Billed 2018	83.2120000	\$102.36			

Tax amounts are subject to change due to endorsement, advertising, or fees.

Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer
4430 S Adams County Parkway Suite C2436
Brighton, CO 80601
720-523-6160

NEW SATELLITE OFFICE

11860 Pecos Street
Westminster, CO 80234
Mon, Tue, Wed, Thur 7:30 am - 5 pm



Statement Of Taxes Due

Account Number R0082355

Parcel 0181500000337

Assessed To

HENDERSON AGGREGATE LTD
PO BOX 700
HENDERSON, CO 80640-0700

Legal Description

Situs Address

SECT.TWN,RNG:2-3-63 DESC: PART OF THE NE4 OF SEC 2 DESC AS FOLS BEG AT N4 COR SEC 2 TH N 89D 32M 15S E 1971/69 FT TO A PT 675/68 FT W OF NE COR SD NE4 SD PT BEING THE TRUE POB TH S 00D 02M 00S E 2616/94 FT TO A PT ON S LN SD NE4 TH N 89D 31M 50S E 166/45 FT TO A PT 492/71 FT W OF E4 COR SD SEC T... Additional Legal on File

49950 E 72ND AVE

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2018	\$2,469.74	\$0.00	\$0.00	(\$2,469.74)	\$0.00
Total Tax Charge					\$0.00
Grand Total Due as of 02/27/2019					\$0.00

Tax Billed at 2018 Rates for Tax Area 429 - 429

Authority	Mill Levy	Amount	Values	Actual	Assessed
RANGEVIEW LIBRARY DISTRICT	3.6660000	\$108.81	RES IMPRV LAND	\$93,463	\$6,730
FIRE DISTRICT 7	13.0120000	\$386.20	SINGLE FAMILY RES	\$309,767	\$22,300
GENERAL	22.6400000	\$671.95	1217	\$8,965	\$650
NORTH KIOWA BIJOU GROUND WA	0.0220000	\$0.65	Total	\$412,195	\$29,680
RETIREMENT	0.3140000	\$9.32			
ROAD/BRDGE	1.3000000	\$38.58			
DEVELOPMENTALLY DISABLED	0.2570000	\$7.63			
SD 29 BOND	9.9710000	\$295.94			
SD 29 GENERAL	22.3250000	\$662.61			
SOCIAL SERVICES	2.3530000	\$69.84			
BENNETT PARK AND RECREATON	7.3520000	\$218.21			
Taxes Billed 2018	83.2120000	\$2,469.74			

Tax amounts are subject to change due to endorsement, advertising, or fees.
Please call the office to confirm amount due after August 1st.

All Tax Lien Redemption payments must be made with cash or cashier's check.

Adams County Treasurer
4430 S Adams County Parkway Suite C2436
Brighton, CO 80601
720-523-6160

NEW SATELLITE OFFICE

11860 Pecos Street
Westminster, CO 80234
Mon, Tue, Wed, Thur 7:30 am - 5 pm

CUP Application Items 10 and 11
Certificate of Notice to
Mineral Estate Owners/and Lessees
Certificate of Surface Development

Document	Owner	Lessor / Grantor	Lessee / Grantee	Number	Expiration Date	Assessor Records Search	Notes
Deed	Robert J. Callaham and Loren Dow (No address listed)			Book 1972 at Page 532	None	Only Henderson Aggregate LTD shows up as an owner of Parcel 0181500000337	Reservation of undivided 97 ½ % interest in all minerals and right to produce
Deed		Robert J. Callaham and Loren Dow (No address listed)	Mary Frances Harward 7801 W. 39 th Ave, Wheat Ridge, CO 80033	Book 2393 at Page 208	None		An undivided ½ interest in 97 ½ % of all minerals
Deed		Robert J. Callaham and Loren Dow (No address listed)	Robert J. Calaham 184 Muriel Dr., Northglenn, CO 80233	Book 2393 at Page 209	None		An undivided ½ interest in 97 ½ % of all minerals
Deed	Robert C. Vickroy (No address listed)			Book 2529 at Page 170	None		Reserved mineral rights
Mineral Deed		Estate of Robert J. Callaham c/o 370 17 th Street, #1350, Denver, CO 80202	E.B. O'Hara Company 7475 Highland Dr., Lakewood, CO 80215	Book 3535 at Page 629	None		All interest in minerals

Memorandum of Oil and Gas Lease		Mary Frances and Gordon W. Harward 296 County Road 640, Granby, CO 80445-8710	Chesapeake Exploration, LLC P.O. Box 18496, Oklahoma City, OK 73154	2011000007831, 2012000009526	11/24/2020 if renewed		Objected that lease lapsed, still in Title Commitment
---------------------------------------	--	--	--	---------------------------------	--------------------------	--	--



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

Robert J. Calaham
184 Muriel Dr.
Northglenn, CO 80233

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 0181500000337 is located in the NE 1/4 of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

E.B. O'Hara Company
7475 Highland Dr.
Lakewood, CO 80215

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 018150000337 is located in the NE 1/4 of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

Mary Frances Harward
7801 W. 39th Ave
Wheat Ridge, CO 80033

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 018150000337 is located in the NE 1/4 of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

E.B. O'Hara Company
7475 Highland Dr.
Lakewood, CO 80215

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 018150000337 is located in the NE 1/4 of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant

Document	Owner	Lessor / Grantor	Lessee / Grantee	Number	Expiration Date	Assessor Records Search	Notes
Oil and Gas Lease		Irma Frances Calaham (no address listed)	Roy A. Sharp (no address listed)	Book 1529 at Page 459	Five years from 11/1/1968 and as long as producing	Only Henderson Aggregate LTD shows up as an owner of Parcel 0181500000401	
Request for Notification of Surface Development	RME Petroleum Company c/o Anadarko Petroleum Corporation P.O. Box 9149 The Woodlands, TX 77387-9147 And RME Land Corp. c/o Anadarko Petroleum Corporation P.O. Box 9149 The Woodlands, TX 77387-9147			C0971878	None		
Oil and Gas		Mary	Chesapeake	2011000007831,	11/24/2020		

Lease		Frances and Gordon W. Harward 296 County Road 640, Granby, CO 80446-8710	Exploration, LLC P.O. Box 18496, Oklahoma City, OK 73154	2012000009526	if renewed		
Oil and Gas Lease		Mary Frances Harward 296 County Road 640, Granby, CO 80446	Kiowa Creek Resources, LLC P.O. Box 370170, Denver, CO 80237	2017000016309	2/6/2022 and as long as producing		
Deed	Union Pacific Land Company (no address listed)			Book A64 at Page 488	None		Reservation of all mineral interest and exclusive right to prospect
Deed	Robert J. Calaham and Loren Dow (no address listed)			Book 1972 at Page 532	None		Reservation of undivided 97 ½% interest in all minerals and right to produce
Deed	Robert C. Vickroy (no address listed)			Book 2334 at Page 640	None		Reservation of all mineral rights, if any



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

Chesapeake Exploration, LLC
P.O. Box 18496
Oklahoma City, OK 73145

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 018150000401 is located in the E ½ of Section 2, Township 3 South, Range 63 West. Parcel number 0181502100002 is located in the NE ¼ of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

Mary Frances Harward
Gordon W. Harward
296 County Road 640
Granby, CO 80446-8710

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 0181500000401 is located in the E ½ of Section 2, Township 3 South, Range 63 West. Parcel number 0181502100002 is located in the NE ¼ of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

Kiowa Creek Resources, LLC
P.O. Box 370170
Denver, CO 80237

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 018150000401 is located in the E ½ of Section 2, Township 3 South, Range 63 West. Parcel number 0181502100002 is located in the NE ¼ of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant



Becky J. Rigo
Partner

BERG HILL
GREENLEAF RUSCITTI LLP

Email: bjr@bhgrlaw.com

NOTICE TO MINERAL ESTATE OWNER

July 25, 2019

Via Certified Mail

RME Petroleum Company
RME Land Corp.
c/o Anadarko Petroleum Corporation
P.O. Box 9149
The Woodlands, TX 77387-9147

Re: *Notice of Conditional Use Permit Application for Henderson Aggregates Pit Expansion submitted to Adams County Community & Economic Development Department*

Dear Mineral Estate Owner:

Pursuant to C.R.S. § 24-65.5-103, you are receiving this notice because you have been identified as a mineral estate owner as reflected in the records of the Adams County Assessor, or you have filed a request for notification of surface development with the Adams County Clerk and Recorder, with respect to property that is the subject of the referenced application.

You are hereby notified that on _____ [DATE] at _____ [TIME] at _____ [ADDRESS], the Adams County Planning Commission will hold a public meeting to consider a Conditional Use Permit Application submitted by Henderson Aggregates, Ltd. for expanded mining uses on its property located at 49950 E. 72nd Avenue in Bennett, Colorado, attached hereto as **EXHIBIT A**. The name of the project is Henderson Aggregates Pit Expansion. Parcel number 0181500000401 is located in the E ½ of Section 2, Township 3 South, Range 63 West. Parcel number 0181502100002 is located in the NE ¼ of Section 2, Township 3 South, Range 63 West. For more information or to submit public comments, please visit www.adcogov.org/planning/currentcases.

The list of mineral estate owners being notified of this application is supplied by the applicant and derived from the current records of the Adams County Assessor and the Adams County Clerk and Recorder. As those records are not always current, please feel free to notify any other party who may have an interest in the minerals beneath the surface of the subject property.

Sincerely,

Becky Jo Rigo
Attorney for Applicant

CUP Application
Supplemental Item 1
Traffic Impact Study



LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
FAX (303) 333-1107
E-mail: lsc@lscdenver.com

May 15, 2019

Mr. Bernard S. Frei
Albert Frei & Sons
PO box 700
Henderson, CO 80640

Re: Henderson Aggregates
Adams County, CO
LSC #190320

Dear Mr. Frei:

In response to your request, LSC Transportation Consultants, Inc. has prepared this Level 2 Traffic Impact Analysis for the proposed expansion of the existing Henderson Aggregates site. As shown on Figure 1, the site is located south of E. 72nd Avenue and east of Kiowa-Bennett Road (SH 79) in Adams County, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the site's traffic impacts.

LAND USE AND ACCESS

The site is an existing gravel mining facility. Full movement access exists to E. 72nd Avenue as shown in the conceptual site plan in Figure 2.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **E. 72nd Avenue** is an east-west, two-lane gravel road north of the site. The intersections with Kiowa-Bennett Road (SH 79) and Provost Road are stop-sign controlled. No speed limit is posted.

- **Kiowa-Bennett Road (SH 79)** is a north-south, two-lane state highway west of the site. The intersection with E. 72nd Avenue is stop-sign controlled with auxiliary turn lanes. It is classified as rural highway (R-B) by CDOT and has a posted speed limit of 65 mph in the vicinity of the site.
- **Provost Road** is a north-south, two-lane gravel roadway that connects the site and other area properties to E. 72nd Avenue. The intersection with E. 72nd Avenue is all-way stop-sign controlled. No speed limit is posted.

Existing Traffic Conditions

Figure 3 shows the existing traffic volumes, lane geometries, traffic controls, and posted speed limits in the vicinity of the site on a typical weekday. The weekday peak-hour traffic volumes on Kiowa-Bennett Road (SH 79) and the movements not impacted by the existing site are from the attached traffic counts conducted by Counter Measures in April, 2019. The movements impacted by the site and the daily traffic volume on E. 72nd Avenue were modified to reflect a heavy truck hauling day for the existing site.

2020 and 2040 Background Traffic

Figure 4 shows the estimated 2020 background traffic and Figure 5 shows the estimated 2040 background traffic based on an annual growth rate of one percent based on the CDOT 20-year growth factor of 1.22.

Existing, 2020, and 2040 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for unsignalized intersections.

The intersections in the study area were analyzed to determine the existing, 2020, and 2040 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **Kiowa-Bennett Road (SH 79)/E. 72nd Avenue:** All movements at this unsignalized intersection currently operate at LOS "B" or better during both morning and afternoon peak-hours and are expected to do so through 2040.
- **E. 72nd Avenue/Provost Road:** All movements at this all-way stop-sign controlled intersection currently operate at LOS "A" during both morning and afternoon peak-hours and are expected to do so through 2040.

TRIP GENERATION

Table 2 shows the estimated average weekday trip generation for the proposed expansion. The trip generation information detailed in Table 2 is based on information provided by the applicant.

The expansion is projected to generate about 120 additional one-way truck-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour of the site, which will generally occur for one hour between 6:30 and 8:30 a.m., about 6 additional trucks will enter and about 6 additional trucks will exit the site. During the afternoon peak-hour of the site, which will generally occur from 4:00 to 6:00 p.m., about 6 additional trucks will enter and about 6 additional trucks will exit the site.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; the site's proposed land use; and on feedback from the applicant.

TRIP ASSIGNMENT

Figure 7 shows the estimated additional site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the trip generation estimate (from Table 2). Figure 7 also shows the passenger car equivalent trips assuming each truck is equivalent to three passenger vehicles per the *State Highway Access Code*.

2020 and 2040 TOTAL TRAFFIC

Figure 8 shows the 2020 total traffic which is the sum of the 2020 background traffic volumes (from Figure 4) and the site-generated traffic volumes (from Figure 7). Figure 8 also shows the recommended 2020 lane geometry and traffic control. The passenger car equivalent turning volume for the northbound right-turn movement from Kiowa-Bennett Road (SH 79) to E. 72nd Avenue exceeds 25 vehicles so a right-turn deceleration lane is required per the *State Highway Access Code*.

Figure 9 shows the 2040 total traffic which is the sum of 2040 background traffic volumes (from Figure 5) and the site-generated traffic volumes (from Figure 7). Figure 9 also shows the recommended 2040 lane geometry and traffic control. The passenger car equivalent turning volume for the northbound right-turn movement from Kiowa-Bennett Road (SH 79) to E. 72nd Avenue exceeds 25 vehicles so a right-turn deceleration lane is required per the *State Highway Access Code*.

PROJECTED LEVELS OF SERVICE

The intersections in the study area were analyzed to determine the 2020 and 2040 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **Kiowa-Bennett Road (SH 79)/E. 72nd Avenue:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better during both morning and afternoon peak-hours through 2040.

- **E. 72nd Avenue/Provost Road:** All movements at this all-way stop-sign controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.

AUTO-TURN MOVEMENT

Figures 10 and 11 show the swept vehicle path for a WB-62 and a WB-50 truck turning right onto E. 72nd Avenue from SH 79 from the warranted right-turn deceleration lane. The figures assume widening of E. 72nd Avenue will be difficult due to existing utilities and other constraints. Additional information is provided on the figures.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The expansion is projected to generate about 120 additional one-way truck trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour of the site, about 6 additional trucks will enter and about 6 additional trucks will exit the site. During the afternoon peak-hour of the site, about 6 additional trucks will enter and about 6 additional trucks would exit the site.

Projected Levels of Service

2. All movements at the intersections analyzed are expected to operate at LOS “B” or better during both peak-hours through 2040.

Conclusions

3. The impact of the proposed expansion of the existing Henderson Aggregates site can be accommodated by the existing roadway network with the recommended improvements below.

Recommendations

4. A northbound right-turn deceleration lane is required on Kiowa-Bennett Road (SH 79) approaching E. 72nd Avenue because the projected turning volume is greater than 25 passenger car equivalent vehicles per hour. An appropriate length for the 65 mph posted speed limit is a 500-foot lane plus a transition taper of 300 feet. A four-foot wide paved shoulder is typically required adjacent to the deceleration lane. There is a large utility pole on the southeast corner of the intersection that could be impacted by these improvements.
5. This recommended improvement will require coordination with CDOT via the state highway access permit process.

* * * * *

We trust our findings will assist you in gaining approval of the proposed expansion of the Henderson Aggregates site. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By _____
Christopher S. McGranahan, PE, PTOE
Principal

CSM/wc

Enclosures: Tables 1 and 2
Figures 1 - 11
Traffic Count Reports
CDOT Straight Line Diagram for SH 79
Level of Service Definitions
Level of Service Reports

W:\LSC\Projects\2019\190320-HendersonAggregates\Report\Draft-HendersonAggregates.wpd

DRAFT

Table 2
ESTIMATED TRAFFIC GENERATION
Henderson Aggregate
Adams County, CO
LSC #190320; May, 2019

Trip Generating Category	Vehicle-Trips Generated				
	Average Weekday	AM Peak-Hour		PM Peak-Hour	
		In	Out	In	Out
CURRENTLY PROPOSED LAND USE					
Tractor Trailer One-Way Trips ⁽¹⁾	120	6	6	6	6

Notes:

(1) Trip data provided by client - 60 additional truck round trips are expected each day with about 10 percent of the trips occurring during each peak-hour.



North Arrow
Approximate Scale
Scale: 1"=5,000'

Figure 1

Vicinity Map

Henderson Aggregate (LSC #190320)

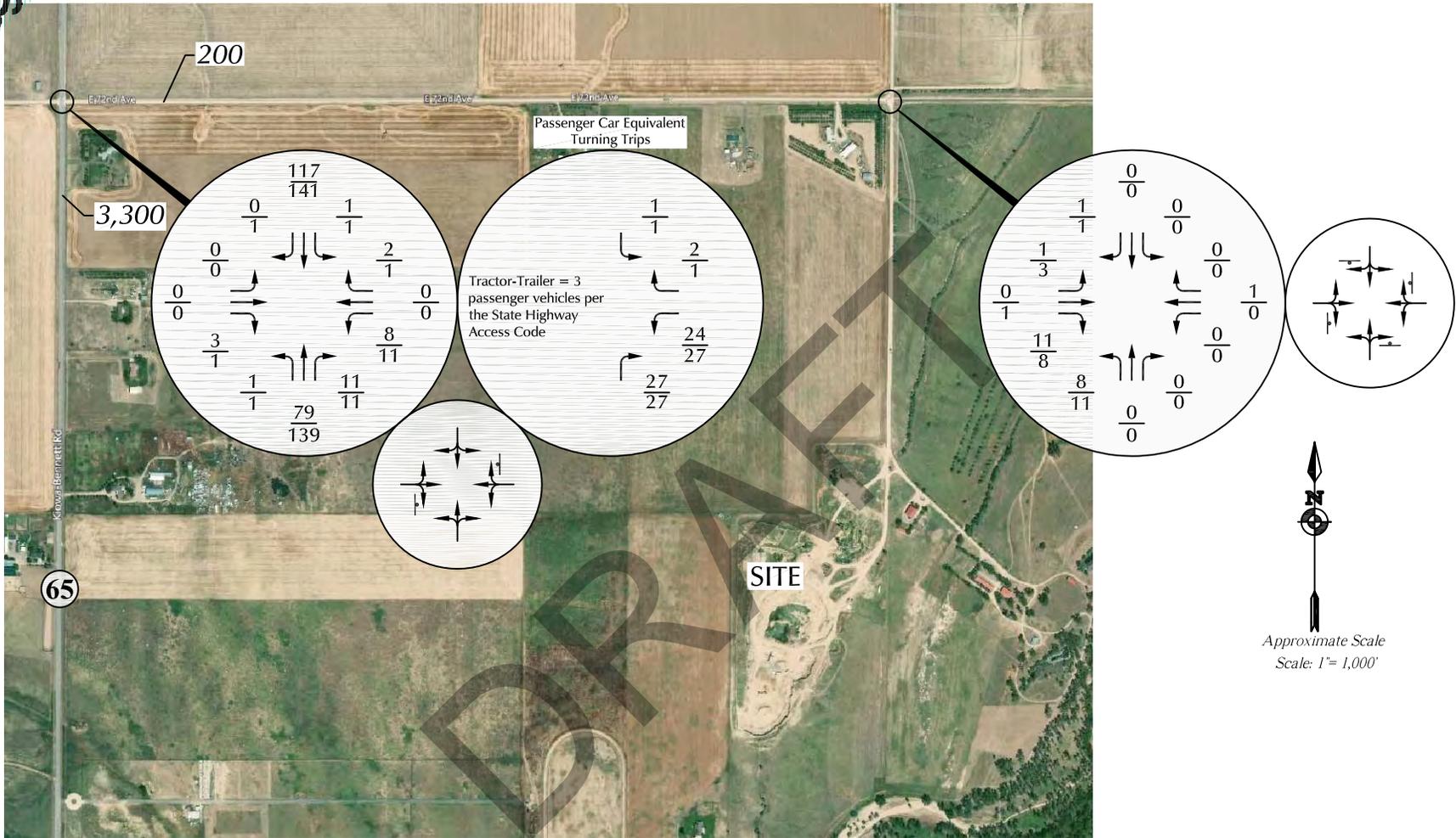
DRAFT



Approximate Scale
Scale: NTS

Figure 2
*Site
Plan*

Henderson Aggregate (LSC #190320)



LEGEND:

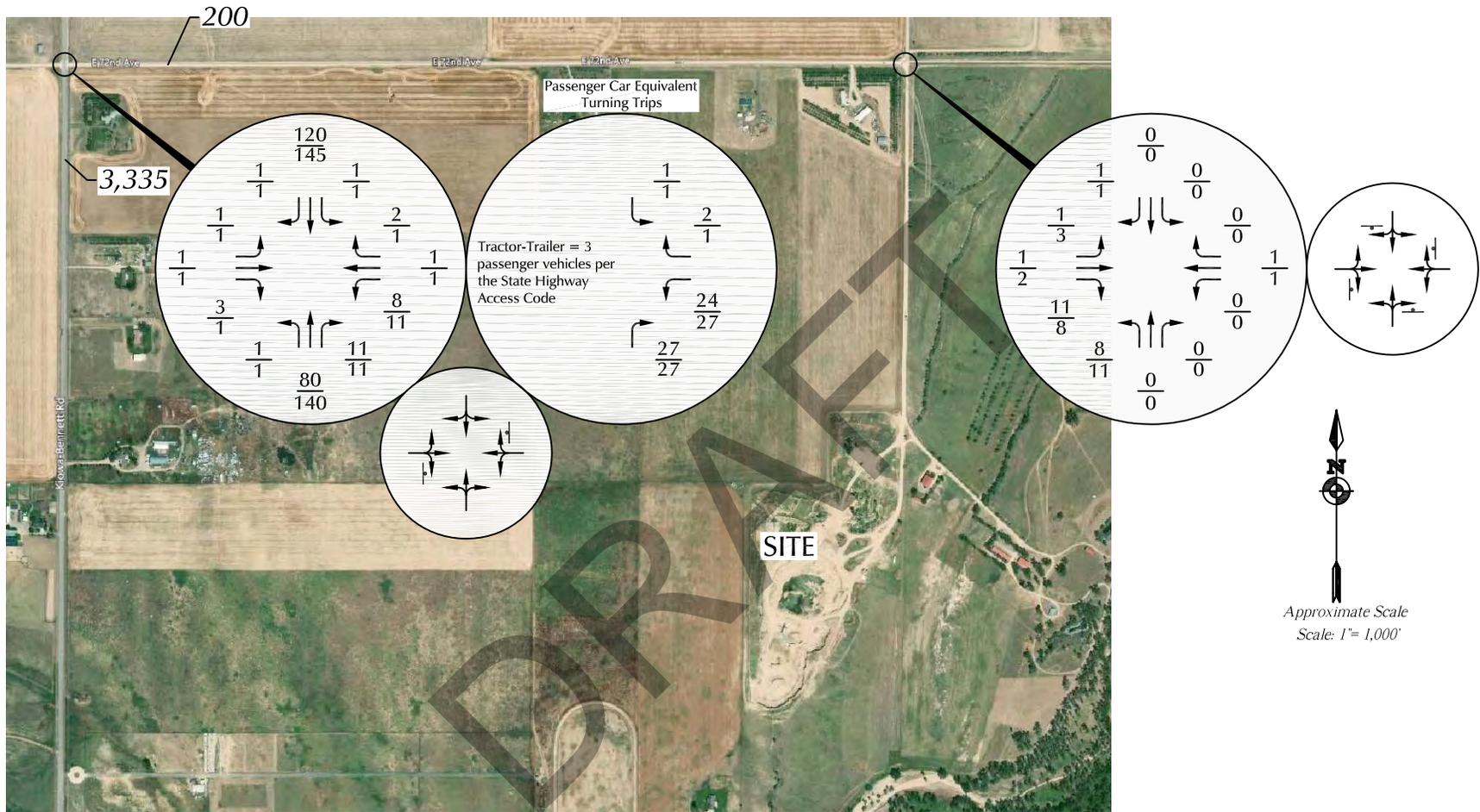
- † = Stop Sign
- (65) = Speed Limit
- $\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$
- 1,000 = Average Daily Traffic

Notes:

1. Assumes 80 existing truck round trips and five passenger vehicle round trips based on data from the applicant. 95 percent of these trips are oriented to/from the south on SH 79. Ten percent truck round trips and three passenger vehicle trips are expected to occur in each peak hour. The passenger vehicle trips enter in the morning peak hour and exit in the afternoon peak hour.
2. Through traffic on SH 79 was based on the peak hour traffic counts.

Figure 3
Existing Traffic, Lane Geometry and Traffic Control

Henderson Aggregate (LSC #190320)



Note: An annual growth rate of about one percent was used for SH 79 through traffic based on the CDOT 20-year growth factor of 1.22.

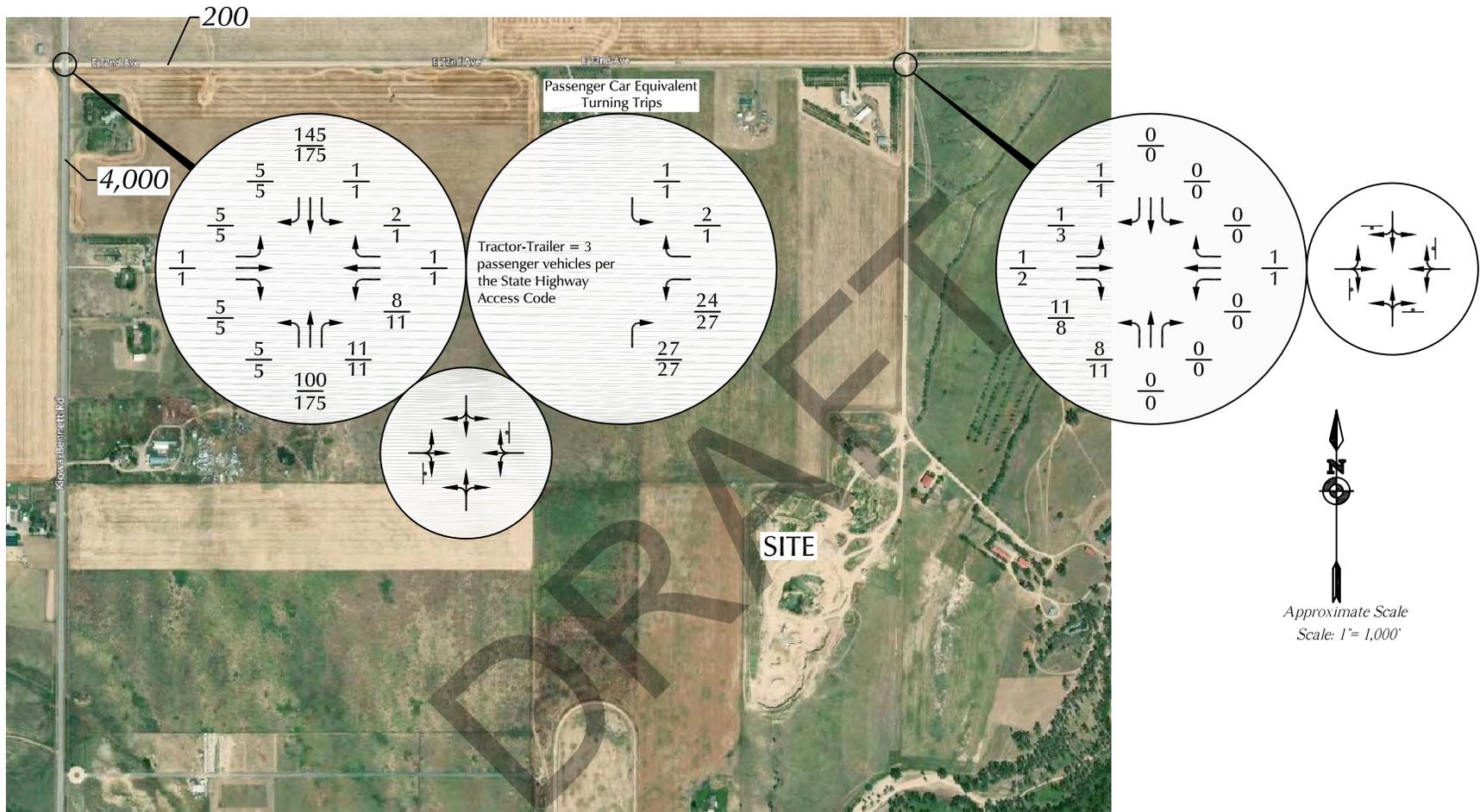
LEGEND:

- ⊥ = Stop Sign
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic

Figure 4

Year 2020 Background Traffic, Lane Geometry and Traffic Control

Henderson Aggregate (LSC #190320)



Note: An annual growth rate of about one percent was used for SH 79 through traffic based on the CDOT 20-year growth factor of 1.22.

LEGEND:

- ‡ = Stop Sign
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic

Figure 5
**Year 2040 Background Traffic,
Lane Geometry and Traffic Control**

Henderson Aggregate (LSC #190320)



LEGEND:



5% = Percent Directional Distribution

Figure 6
*Directional Distribution
of Site-Generated Traffic*

Henderson Aggregate (LSC #190320)



LEGEND:

- $\frac{26}{35}$ = AM Peak Hour Traffic
- $\frac{35}{35}$ = PM Peak Hour Traffic
- 1,000 = Average Daily Traffic

Figure 7
**Assignment of
Site-Generated Traffic**
Henderson Aggregate (LSC #190320)




 Approximate Scale
 Scale: 1" = 60'

Notes:

1. NB RT Deceleration Lane = 500 feet + 300-foot transition taper for 65mph posted speed limit.
2. Trucks will be able to wait in the north end of the deceleration lane in the rare occasion that a westbound vehicle is waiting at the stop bar preventing the AutoTurn movement shown above. Additional widening to prevent encroachment into the westbound lane of E. 72nd Avenue would be more likely to impact the large utility pole on the southeast corner of the intersection.

Figure 10

WB-62 AutoTurn Movement

Henderson Aggregate (LSC #190320)






 Approximate Scale
 Scale: 1" = 60'

Notes:

1. NB RT Deceleration Lane = 500 feet + 300-foot transition taper for 65mph posted speed limit.
2. Trucks will be able to wait in the north end of the deceleration lane in the rare occasion that a westbound vehicle is waiting at the stop bar preventing the AutoTurn movement shown above. Additional widening to prevent encroachment into the westbound lane of E. 72nd Avenue would be more likely to impact the large utility pole on the southeast corner of the intersection.

Figure 11

WB-50 AutoTurn Movement

Henderson Aggregate (LSC #190320)

COUNTER MEASURES INC.

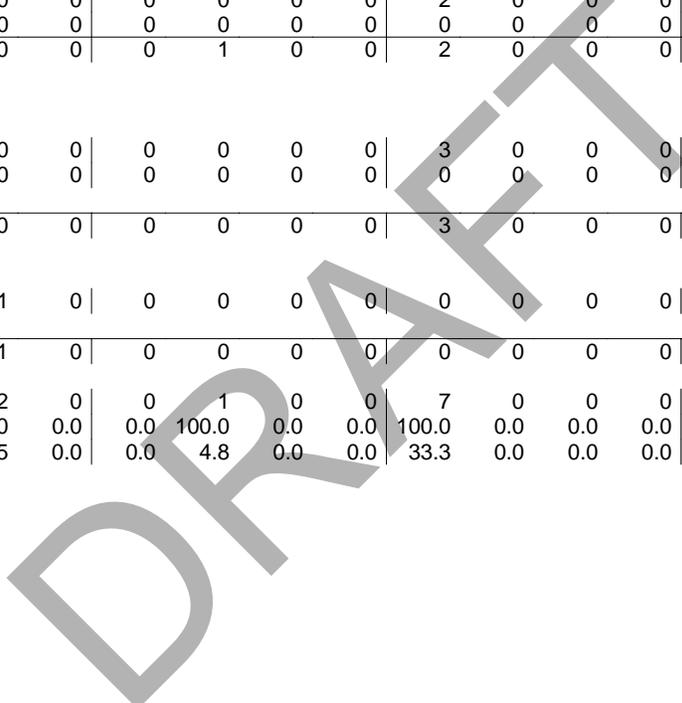
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CR-35
E/W STREET: 72ND AVE
CITY: BENNETT
COUNTY: ADAMS

File Name : CR-35 72ND
Site Code : 0000026
Start Date : 4/16/2019
Page No : 1

Groups Printed- VEHICLES

Start Time	CR-35 Southbound				72ND AVE Westbound				HENDERSON AGG. Northbound				72ND AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	3
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	0	5
07:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	1	0	0	2	0	0	0	0	0	3	0	6
04:15 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	4
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	4
Total	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	4
Grand Total	0	0	2	0	0	1	0	0	7	0	0	0	4	1	6	0	21
Apprch %	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	36.4	9.1	54.5	0.0	
Total %	0.0	0.0	9.5	0.0	0.0	4.8	0.0	0.0	33.3	0.0	0.0	0.0	19.0	4.8	28.6	0.0	



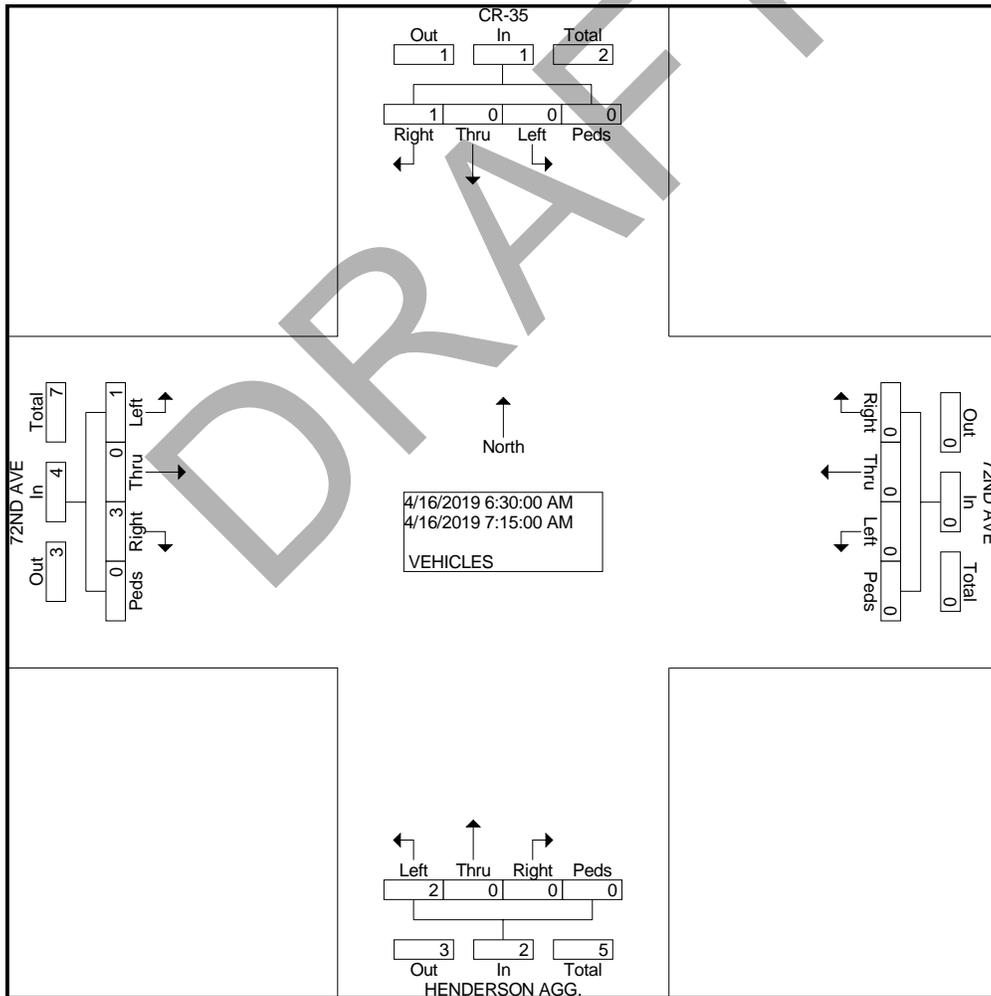
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CR-35
E/W STREET: 72ND AVE
CITY: BENNETT
COUNTY: ADAMS

File Name : CR-35 72ND
Site Code : 0000026
Start Date : 4/16/2019
Page No : 2

Start Time	CR-35 Southbound					72ND AVE Westbound					HENDERSON AGG. Northbound					72ND AVE Eastbound					Int. Total
	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	
Intersection	06:30 AM																				
Volume	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	1	0	3	0	4	7
Percent	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		25.0	0.0	75.0	0.0		
06:30 Volume	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
Peak Factor																					
High Int. Volume	06:30 AM					6:15:00 AM					07:00 AM					06:30 AM					
Peak Factor	0.25					0					0.50					0.50					0



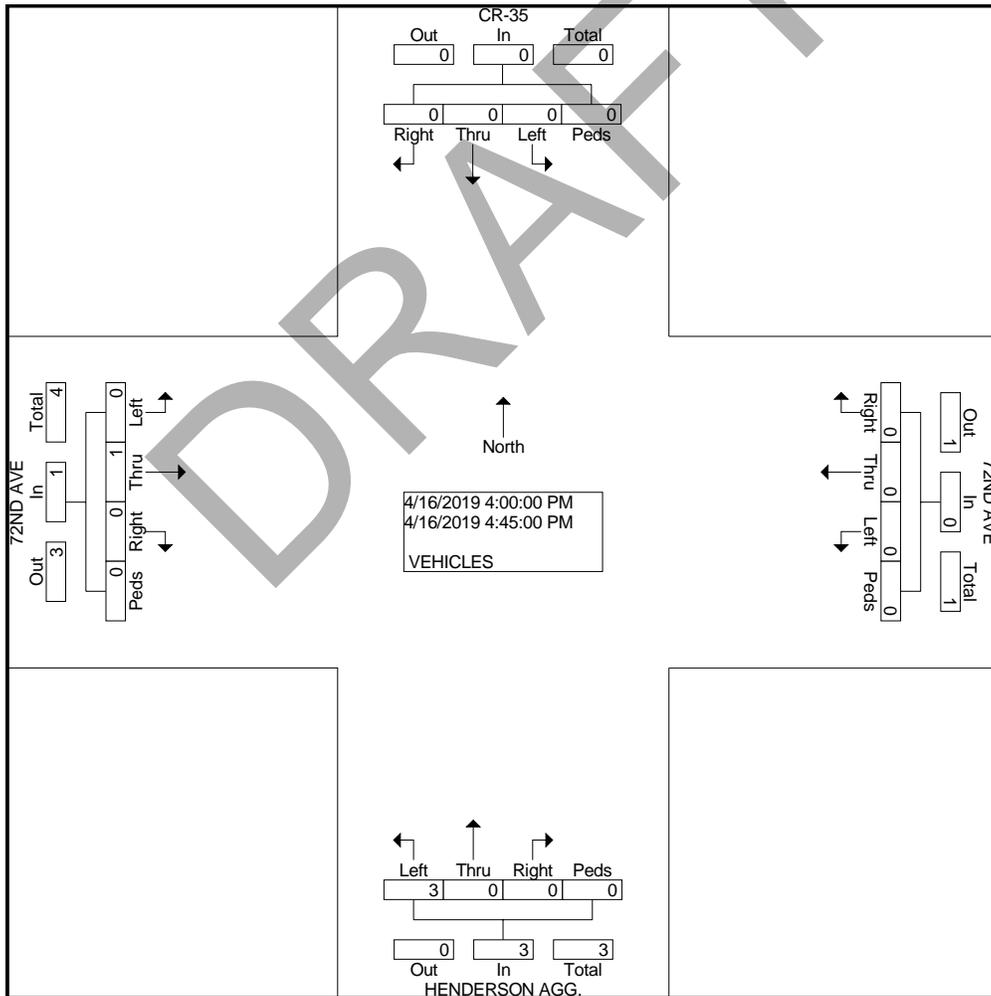
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CR-35
E/W STREET: 72ND AVE
CITY: BENNETT
COUNTY: ADAMS

File Name : CR-35 72ND
Site Code : 0000026
Start Date : 4/16/2019
Page No : 2

Start Time	CR-35 Southbound					72ND AVE Westbound					HENDERSON AGG. Northbound					72ND AVE Eastbound					Int. Total
	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	
Peak Hour From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Intersection	04:00 PM																				
Volume	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	1	0	0	1	4
Percent	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
04:15 Volume	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
Peak Factor																					
High Int. Volume	04:15 PM					04:15 PM					04:30 PM										
Peak Factor	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	1	0	0	1	0.25



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: KIOWA-BENNETT RD
E/W STREET: 72ND AVE
CITY: BENNETT
COUNTY: ADAMS

File Name : KIOW72ND
Site Code : 00000025
Start Date : 4/16/2019
Page No : 1

Groups Printed- VEHICLES

Start Time	KIOWA-BENNETT RD Southbound				72ND AVE Westbound				KIOWA-BENNETT RD Northbound				72ND AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	17	0	0	1	0	0	0	0	24	1	0	1	0	0	0	44
06:45 AM	0	21	0	0	1	0	0	0	0	18	2	0	0	0	0	0	42
Total	0	38	0	0	2	0	0	0	0	42	3	0	1	0	0	0	86
07:00 AM	0	21	0	0	0	0	0	0	0	20	0	0	1	0	1	0	43
07:15 AM	0	35	0	0	0	0	2	0	0	8	0	0	0	0	1	0	46
07:30 AM	0	34	0	0	0	0	0	0	0	18	0	0	0	0	0	0	52
07:45 AM	0	25	0	0	0	0	0	0	0	24	0	0	0	0	1	0	50
Total	0	115	0	0	0	0	2	0	0	70	0	0	1	0	3	0	191
08:00 AM	0	23	0	0	1	0	0	0	1	29	0	0	0	0	1	0	55
08:15 AM	1	18	0	0	0	0	0	0	0	16	0	0	0	0	0	0	35
Total	1	41	0	0	1	0	0	0	1	45	0	0	0	0	1	0	90
04:00 PM	0	27	0	0	0	0	1	0	0	28	0	0	0	0	1	0	57
04:15 PM	0	25	0	0	3	0	0	0	0	34	0	0	1	0	0	0	63
04:30 PM	0	22	0	0	1	0	0	0	0	20	1	0	0	0	0	0	44
04:45 PM	0	23	0	0	0	0	0	0	1	28	0	0	0	0	0	0	52
Total	0	97	0	0	4	0	1	0	1	110	1	0	1	0	1	0	216
05:00 PM	0	37	0	0	0	0	0	0	0	21	0	0	0	0	1	0	59
05:15 PM	0	21	0	0	0	0	0	0	0	37	1	0	0	0	0	0	59
05:30 PM	0	38	0	0	0	0	0	0	0	39	0	0	0	0	0	0	77
05:45 PM	0	45	1	0	0	0	0	0	1	42	1	0	0	0	0	0	90
Total	0	141	1	0	0	0	0	0	1	139	2	0	0	0	1	0	285
Grand Total	1	432	1	0	7	0	3	0	3	406	6	0	3	0	6	0	868
Apprch %	0.2	99.5	0.2	0.0	70.0	0.0	30.0	0.0	0.7	97.8	1.4	0.0	33.3	0.0	66.7	0.0	
Total %	0.1	49.8	0.1	0.0	0.8	0.0	0.3	0.0	0.3	46.8	0.7	0.0	0.3	0.0	0.7	0.0	

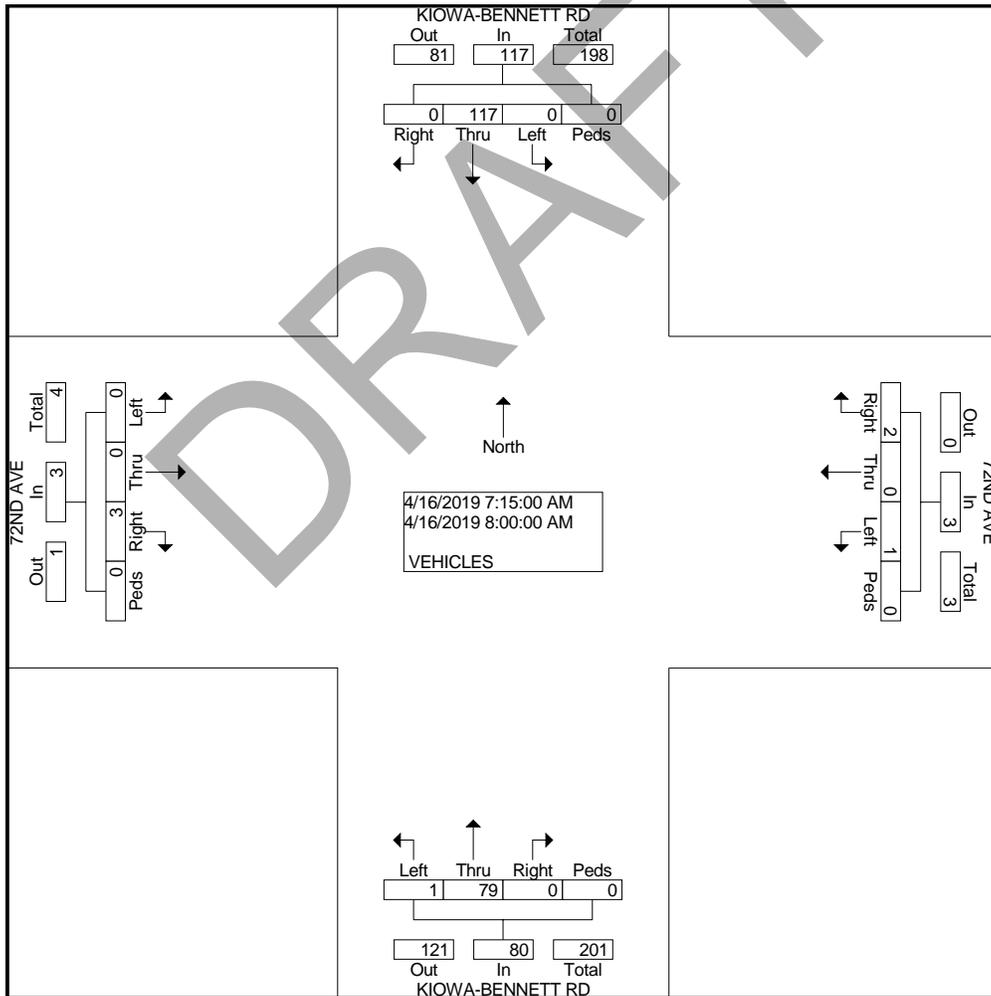
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: KIOWA-BENNETT RD
E/W STREET: 72ND AVE
CITY: BENNETT
COUNTY: ADAMS

File Name : KIOW72ND
Site Code : 00000025
Start Date : 4/16/2019
Page No : 2

Start Time	KIOWA-BENNETT RD Southbound					72ND AVE Westbound					KIOWA-BENNETT RD Northbound					72ND AVE Eastbound					Int. Total
	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	
Peak Hour From 06:30 AM to 08:30 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	117	0	0	117	1	0	2	0	3	1	79	0	0	80	0	0	3	0	3	203
Percent	0.0	100.0	0.0	0.0		33.3	0.0	66.7	0.0		1.3	98.8	0.0	0.0		0.0	0.0	100.0	0.0		
08:00 Volume	0	23	0	0	23	1	0	0	0	1	1	29	0	0	30	0	0	1	0	1	55
Peak Factor	0.923																				
High Int. Volume	07:15 AM																				
Peak Factor	0.83					0.37					0.66					0.75					0



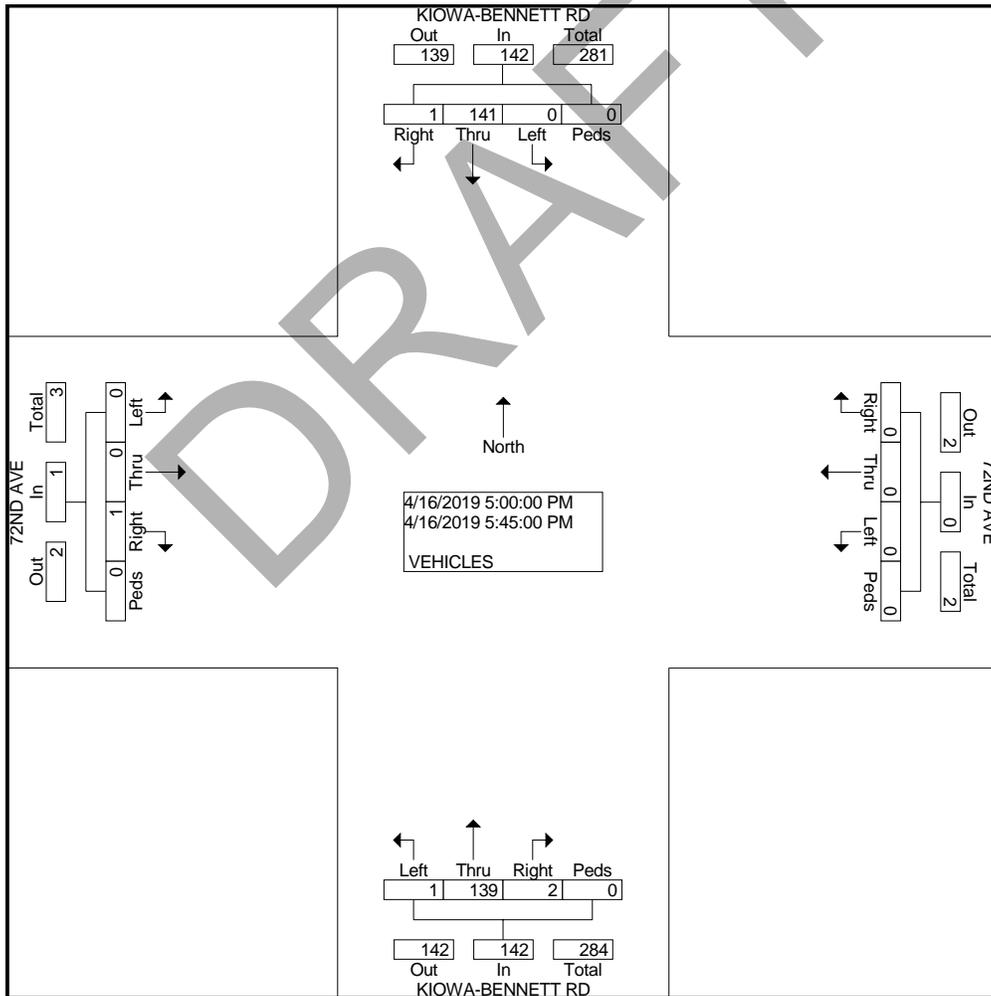
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: KIOWA-BENNETT RD
E/W STREET: 72ND AVE
CITY: BENNETT
COUNTY: ADAMS

File Name : KIOW72ND
Site Code : 00000025
Start Date : 4/16/2019
Page No : 2

Start Time	KIOWA-BENNETT RD Southbound					72ND AVE Westbound					KIOWA-BENNETT RD Northbound					72ND AVE Eastbound					Int. Total
	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	05:00 PM																				
Volume	0	141	1	0	142	0	0	0	0	0	1	139	2	0	142	0	0	1	0	1	285
Percent	0.0	99.3	0.7	0.0		0.0	0.0	0.0	0.0		0.7	97.9	1.4	0.0		0.0	0.0	100.0	0.0		
05:45 Peak Volume	0	45	1	0	46	0	0	0	0	0	1	42	1	0	44	0	0	0	0	0	90
Peak Factor	0.792																				
High Int. Volume	05:45 PM																				
Peak Volume	0	45	1	0	46	0	0	0	0	0	1	42	1	0	44	0	0	1	0	1	1
Peak Factor	0.772										0.807					0.250					



COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: 72ND AVE E/O KIOWA-BENNETT RD
 City: BENNETT
 County: ADAMS
 Direction: EASTBOUND-WESTBOUND

Site Code: 191508
 Station ID: 191508

Start Time	16-Apr-19 Tue	EB	WB	Total						
12:00 AM		0	0	0						
01:00		0	0	0						
02:00		0	0	0						
03:00		0	0	0						
04:00		0	0	0						
05:00		2	2	4						
06:00		5	2	7						
07:00		3	6	9						
08:00		1	1	2						
09:00		2	3	5						
10:00		0	2	2						
11:00		4	2	6						
12:00 PM		1	2	3						
01:00		5	6	11						
02:00		2	2	4						
03:00		0	3	3						
04:00		2	3	5						
05:00		4	1	5						
06:00		2	1	3						
07:00		1	1	2						
08:00		1	0	1						
09:00		0	0	0						
10:00		1	0	1						
11:00		0	0	0						
Total		36	37	73						
Percent		49.3%	50.7%							
AM Peak	-	06:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	5	6	-	-	-	-	-	-	9
PM Peak	-	13:00	13:00	-	-	-	-	-	-	13:00
Vol.	-	5	6	-	-	-	-	-	-	11

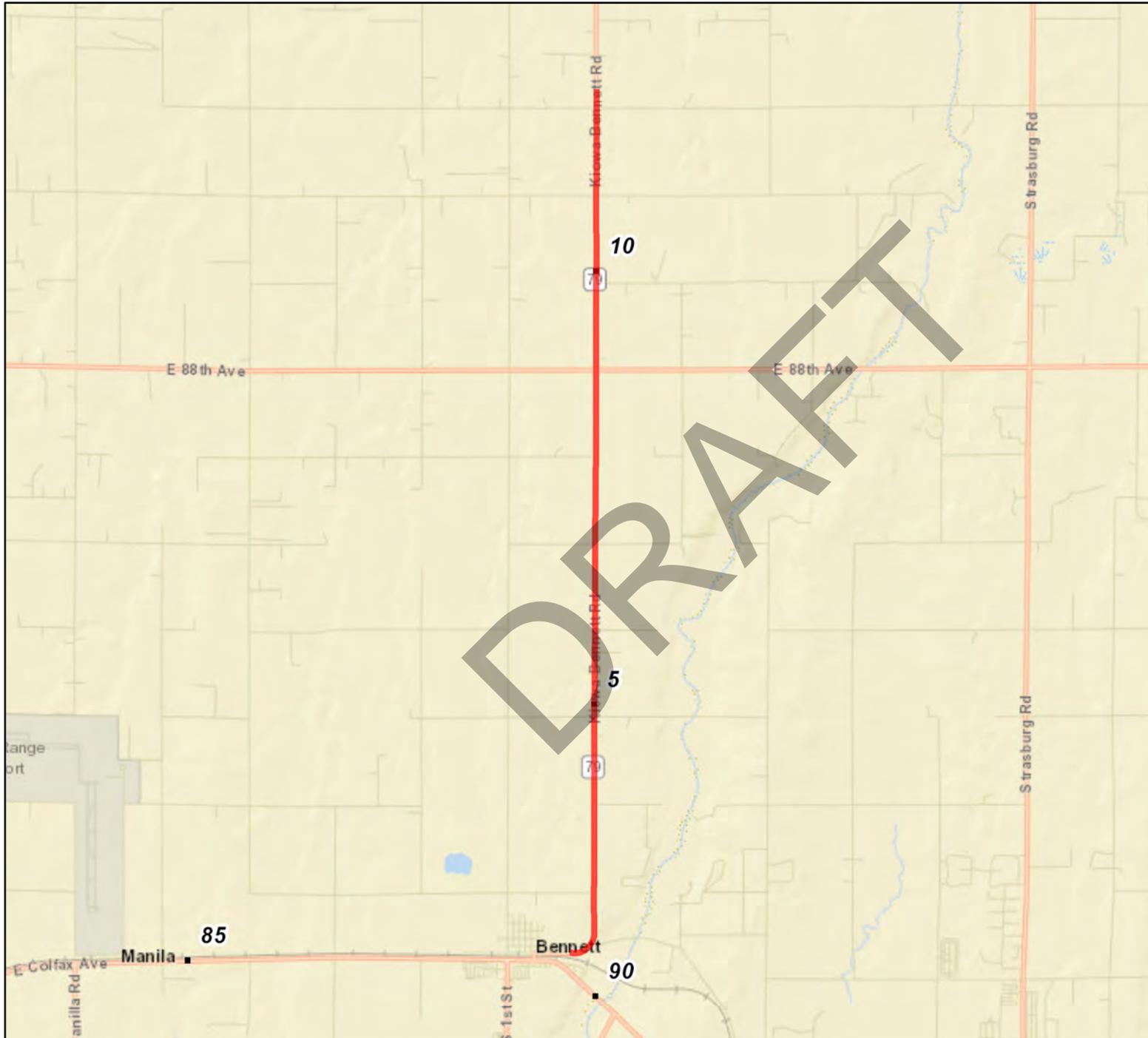
COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: 72ND AVE E/O KIOWA-BENNETT RD
 City: BENNETT
 County: ADAMS
 Direction: EASTBOUND-WESTBOUND

Site Code: 191508
 Station ID: 191508

Start Time	17-Apr-19 Wed	EB	WB	Total						
12:00 AM		0	0	0						
01:00		0	0	0						
02:00		0	0	0						
03:00		0	0	0						
04:00		0	0	0						
05:00		2	2	4						
06:00		6	4	10						
07:00		3	8	11						
08:00		1	1	2						
09:00		3	1	4						
10:00		2	2	4						
11:00		3	2	5						
12:00 PM		2	2	4						
01:00		5	8	13						
02:00		1	3	4						
03:00		2	4	6						
04:00		3	3	6						
05:00		2	1	3						
06:00		2	0	2						
07:00		0	0	0						
08:00		2	0	2						
09:00		0	0	0						
10:00		0	0	0						
11:00		0	0	0						
Total		39	41	80						
Percent		48.8%	51.3%							
AM Peak	-	06:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	6	8	-	-	-	-	-	-	11
PM Peak	-	13:00	13:00	-	-	-	-	-	-	13:00
Vol.	-	5	8	-	-	-	-	-	-	13

Route 079B From 2 to 12



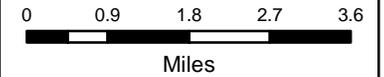
Legend

- Route
- Milepoint

Created:

Date: 5/5/2019

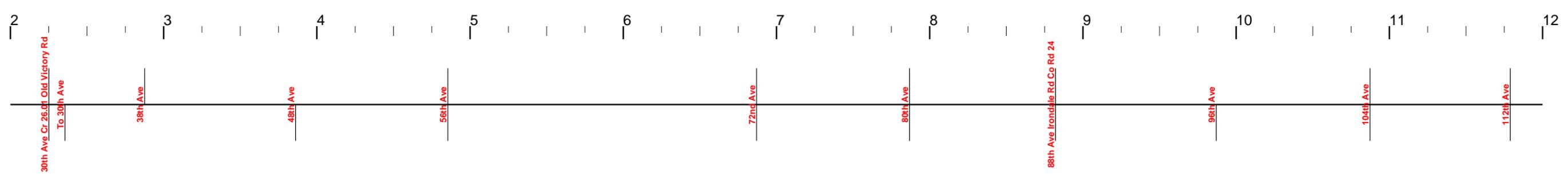
Time: 8:58:53 AM



The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".

Route 079B
From 2 To 12

-  Ramps
-  Overpass
-  Underpass
-  Structures



CLASSIFICATION

Access Control	NR-B: Non Rural Arterial	R-B: Rural Highway
----------------	--------------------------	--------------------

SAFETY

Primary Speed Limit	45	55	65
---------------------	----	----	----

TRAFFIC

AADT	3300	1500
Peak Truck Percentage	0.9	2.5
Year 20 Factor	1.22	1.2

It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.

DRAFT

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	<u>Operational Characteristics</u>
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>
D	25 to 35 seconds	<u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

HCM 6th TWSC
 3: Kiowa Bennett Road & E. 72nd Avenue

Existing
 AM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	3	8	0	2	1	79	11	1	117	0
Future Vol, veh/h	0	0	3	8	0	2	1	79	11	1	117	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	0	0	3	9	0	2	1	86	12	1	127	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	224	229	127	225	223	92	127	0	0	98	0	0
Stage 1	129	129	-	94	94	-	-	-	-	-	-	-
Stage 2	95	100	-	131	129	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	732	568	923	607	573	807	1459	-	-	1160	-	-
Stage 1	875	676	-	770	702	-	-	-	-	-	-	-
Stage 2	912	698	-	733	676	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	729	567	923	604	572	807	1459	-	-	1160	-	-
Mov Cap-2 Maneuver	729	567	-	604	572	-	-	-	-	-	-	-
Stage 1	874	675	-	769	701	-	-	-	-	-	-	-
Stage 2	909	697	-	730	675	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.9			10.8			0.1			0.1		
HCM LOS	A			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1459	-	-	923	636	1160	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.004	0.017	0.001	-	-				
HCM Control Delay (s)	7.5	0	-	8.9	10.8	8.1	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	11	0	1	0	8	0	0	0	0	1
Future Vol, veh/h	1	0	11	0	1	0	8	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	1	0	12	0	1	0	9	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	8%	0%	0%
Vol Thru, %	0%	0%	100%	0%
Vol Right, %	0%	92%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	12	1	1
LT Vol	8	1	0	0
Through Vol	0	0	1	0
RT Vol	0	11	0	1
Lane Flow Rate	9	13	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.013	0.012	0.001	0.001
Departure Headway (Hd)	5.402	3.419	3.962	3.366
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	667	1050	906	1068
Service Time	3.402	1.429	1.972	1.37
HCM Lane V/C Ratio	0.013	0.012	0.001	0.001
HCM Control Delay	8.5	6.5	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0	0

HCM 6th TWSC
3: Kiowa Bennett Road & E. 72nd Avenue

Existing
PM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	11	0	1	1	139	11	1	141	1
Future Vol, veh/h	0	0	1	11	0	1	1	139	11	1	141	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	0	0	1	12	0	1	1	151	12	1	153	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	316	321	154	315	315	157	154	0	0	163	0	0
Stage 1	156	156	-	159	159	-	-	-	-	-	-	-
Stage 2	160	165	-	156	156	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	637	499	892	525	504	738	1426	-	-	1091	-	-
Stage 1	846	656	-	706	654	-	-	-	-	-	-	-
Stage 2	842	649	-	709	656	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	635	498	892	523	503	738	1426	-	-	1091	-	-
Mov Cap-2 Maneuver	635	498	-	523	503	-	-	-	-	-	-	-
Stage 1	845	655	-	705	653	-	-	-	-	-	-	-
Stage 2	840	648	-	707	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	11.9	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1426	-	-	892	536	1091	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.024	0.001	-
HCM Control Delay (s)	7.5	0	-	9	11.9	8.3	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

HCM 6th AWSC
6: Provost Road & E. 72nd Avenue

Existing
PM Peak

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	8	0	0	0	11	0	0	0	0	1
Future Vol, veh/h	3	1	8	0	0	0	11	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	3	1	9	0	0	0	12	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	0	8.5	6.4
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	25%	0%	0%
Vol Thru, %	0%	8%	100%	0%
Vol Right, %	0%	67%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	12	0	1
LT Vol	11	3	0	0
Through Vol	0	1	0	0
RT Vol	0	8	0	1
Lane Flow Rate	12	13	0	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.013	0	0.001
Departure Headway (Hd)	5.4	3.607	3.968	3.367
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	667	994	0	1067
Service Time	3.402	1.621	1.982	1.374
HCM Lane V/C Ratio	0.018	0.013	0	0.001
HCM Control Delay	8.5	6.7	7	6.4
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0	0	0

HCM 6th TWSC
3: Kiowa Bennett Road & E. 72nd Avenue

2020 Background
AM Peak

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	3	8	1	2	1	80	11	1	120	1
Future Vol, veh/h	1	1	3	8	1	2	1	80	11	1	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	1	1	3	9	1	2	1	87	12	1	130	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	230	234	131	230	228	93	131	0	0	99	0	0
Stage 1	133	133	-	95	95	-	-	-	-	-	-	-
Stage 2	97	101	-	135	133	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	725	564	919	603	569	806	1454	-	-	1159	-	-
Stage 1	870	673	-	769	701	-	-	-	-	-	-	-
Stage 2	910	697	-	729	673	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	721	563	919	599	568	806	1454	-	-	1159	-	-
Mov Cap-2 Maneuver	721	563	-	599	568	-	-	-	-	-	-	-
Stage 1	869	672	-	768	700	-	-	-	-	-	-	-
Stage 2	905	696	-	725	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.9	0.1	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1454	-	-	778	625	1159	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.019	0.001	-
HCM Control Delay (s)	7.5	0	-	9.7	10.9	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	11	0	1	0	8	0	0	0	0	1
Future Vol, veh/h	1	1	11	0	1	0	8	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	1	1	12	0	1	0	9	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	8%	0%	0%
Vol Thru, %	0%	8%	100%	0%
Vol Right, %	0%	85%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	13	1	1
LT Vol	8	1	0	0
Through Vol	0	1	1	0
RT Vol	0	11	0	1
Lane Flow Rate	9	14	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.013	0.014	0.001	0.001
Departure Headway (Hd)	5.404	3.46	3.963	3.368
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	1038	906	1067
Service Time	3.406	1.47	1.973	1.374
HCM Lane V/C Ratio	0.014	0.013	0.001	0.001
HCM Control Delay	8.5	6.5	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0	0

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	1	11	1	1	1	140	11	1	145	1
Future Vol, veh/h	1	1	1	11	1	1	1	140	11	1	145	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	1	1	1	12	1	1	1	152	12	1	158	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	322	327	159	322	321	158	159	0	0	164	0	0
Stage 1	161	161	-	160	160	-	-	-	-	-	-	-
Stage 2	161	166	-	162	161	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	631	495	886	519	499	737	1420	-	-	1090	-	-
Stage 1	841	652	-	705	653	-	-	-	-	-	-	-
Stage 2	841	649	-	703	652	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	628	494	886	517	498	737	1420	-	-	1090	-	-
Mov Cap-2 Maneuver	628	494	-	517	498	-	-	-	-	-	-	-
Stage 1	840	651	-	704	652	-	-	-	-	-	-	-
Stage 2	838	648	-	700	651	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	12	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1420	-	-	632	528	1090	-
HCM Lane V/C Ratio	0.001	-	-	0.005	0.027	0.001	-
HCM Control Delay (s)	7.5	0	-	10.7	12	8.3	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	8	0	1	0	11	0	0	0	0	1
Future Vol, veh/h	3	2	8	0	1	0	11	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	3	2	9	0	1	0	12	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	23%	0%	0%
Vol Thru, %	0%	15%	100%	0%
Vol Right, %	0%	62%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	13	1	1
LT Vol	11	3	0	0
Through Vol	0	2	1	0
RT Vol	0	8	0	1
Lane Flow Rate	12	14	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.014	0.001	0.001
Departure Headway (Hd)	5.404	3.635	3.968	3.37
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	987	904	1066
Service Time	3.406	1.649	1.983	1.378
HCM Lane V/C Ratio	0.018	0.014	0.001	0.001
HCM Control Delay	8.5	6.7	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0	0

HCM 6th TWSC
3: Kiowa Bennett Road & E. 72nd Avenue

2020 Total
AM Peak

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	1	3	14	1	2	1	80	17	1	120	1
Future Vol, veh/h	1	1	3	14	1	2	1	80	17	1	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	1	1	3	15	1	2	1	87	18	1	130	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	233	240	131	224	222	87	131	0	0	105	0	0
Stage 1	133	133	-	89	89	-	-	-	-	-	-	-
Stage 2	100	107	-	135	133	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	722	559	919	608	573	813	1454	-	-	1152	-	-
Stage 1	870	673	-	775	706	-	-	-	-	-	-	-
Stage 2	906	692	-	729	673	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	718	558	919	604	572	813	1454	-	-	1152	-	-
Mov Cap-2 Maneuver	718	558	-	604	572	-	-	-	-	-	-	-
Stage 1	869	672	-	774	705	-	-	-	-	-	-	-
Stage 2	901	691	-	725	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	11	0.1	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1454	-	-	775	621	1152	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.03	0.001	-
HCM Control Delay (s)	7.5	0	-	9.7	11	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

HCM 6th AWSC
6: Provost Road & E. 72nd Avenue

2020 Total
AM Peak

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	17	0	1	0	14	0	0	0	0	1
Future Vol, veh/h	1	1	17	0	1	0	14	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	1	1	18	0	1	0	15	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	5%	0%	0%
Vol Thru, %	0%	5%	100%	0%
Vol Right, %	0%	89%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	19	1	1
LT Vol	14	1	0	0
Through Vol	0	1	1	0
RT Vol	0	17	0	1
Lane Flow Rate	15	21	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.02	0.001	0.001
Departure Headway (Hd)	5.414	3.438	3.979	3.383
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	1042	900	1061
Service Time	3.418	1.455	1.998	1.394
HCM Lane V/C Ratio	0.023	0.02	0.001	0.001
HCM Control Delay	8.5	6.5	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0

HCM 6th TWSC
3: Kiowa Bennett Road & E. 72nd Avenue

2020 Total
PM Peak

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	1	1	17	1	1	1	140	17	1	145	1
Future Vol, veh/h	1	1	1	17	1	1	1	140	17	1	145	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	1	1	1	18	1	1	1	152	18	1	158	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	325	333	159	316	315	152	159	0	0	170	0	0
Stage 1	161	161	-	154	154	-	-	-	-	-	-	-
Stage 2	164	172	-	162	161	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	628	491	886	524	504	743	1420	-	-	1083	-	-
Stage 1	841	652	-	711	657	-	-	-	-	-	-	-
Stage 2	838	645	-	703	652	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	625	490	886	522	503	743	1420	-	-	1083	-	-
Mov Cap-2 Maneuver	625	490	-	522	503	-	-	-	-	-	-	-
Stage 1	840	651	-	710	656	-	-	-	-	-	-	-
Stage 2	835	644	-	700	651	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	12.1	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1420	-	-	629	529	1083	-
HCM Lane V/C Ratio	0.001	-	-	0.005	0.039	0.001	-
HCM Control Delay (s)	7.5	0	-	10.8	12.1	8.3	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

HCM 6th AWSC
6: Provost Road & E. 72nd Avenue

2020 Total
PM Peak

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	14	0	1	0	17	0	0	0	0	1
Future Vol, veh/h	3	2	14	0	1	0	17	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	3	2	15	0	1	0	18	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	7	8.6	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	16%	0%	0%
Vol Thru, %	0%	11%	100%	0%
Vol Right, %	0%	74%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	19	1	1
LT Vol	17	3	0	0
Through Vol	0	2	1	0
RT Vol	0	14	0	1
Lane Flow Rate	18	21	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.028	0.02	0.001	0.001
Departure Headway (Hd)	5.414	3.558	3.982	3.384
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	1006	898	1059
Service Time	3.418	1.581	2.008	1.398
HCM Lane V/C Ratio	0.027	0.021	0.001	0.001
HCM Control Delay	8.6	6.7	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0

HCM 6th TWSC
 3: Kiowa Bennett Road & E. 72nd Avenue

2040 Background
 AM Peak

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	5	1	5	8	1	2	5	100	11	1	145	5
Future Vol, veh/h	5	1	5	8	1	2	5	100	11	1	145	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	5	1	5	9	1	2	5	109	12	1	158	5

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	290	294	161	285	284	109	163	0	0	121	0	0
Stage 1	163	163	-	119	119	-	-	-	-	-	-	-
Stage 2	127	131	-	166	165	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	662	519	884	551	526	788	1416	-	-	1135	-	-
Stage 1	839	651	-	745	683	-	-	-	-	-	-	-
Stage 2	877	674	-	700	649	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	657	516	884	544	523	788	1416	-	-	1135	-	-
Mov Cap-2 Maneuver	657	516	-	544	523	-	-	-	-	-	-	-
Stage 1	836	650	-	742	680	-	-	-	-	-	-	-
Stage 2	870	671	-	694	648	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	11.4	1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1416	-	-	723	574	1135	-	-
HCM Lane V/C Ratio	0.004	-	-	0.017	0.021	0.001	-	-
HCM Control Delay (s)	7.6	0	7.6	10.1	11.4	8.2	0	-
HCM Lane LOS	A	A	A	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	11	0	1	0	8	0	0	0	0	1
Future Vol, veh/h	1	1	11	0	1	0	8	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	1	1	12	0	1	0	9	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	8%	0%	0%
Vol Thru, %	0%	8%	100%	0%
Vol Right, %	0%	85%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	13	1	1
LT Vol	8	1	0	0
Through Vol	0	1	1	0
RT Vol	0	11	0	1
Lane Flow Rate	9	14	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.013	0.014	0.001	0.001
Departure Headway (Hd)	5.404	3.46	3.963	3.368
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	1038	906	1067
Service Time	3.406	1.47	1.973	1.374
HCM Lane V/C Ratio	0.014	0.013	0.001	0.001
HCM Control Delay	8.5	6.5	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0	0

HCM 6th TWSC
 3: Kiowa Bennett Road & E. 72nd Avenue

2040 Background
 PM Peak

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	5	11	1	1	5	175	11	1	175	5
Future Vol, veh/h	5	1	5	11	1	1	5	175	11	1	175	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	5	1	5	12	1	1	5	190	12	1	190	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	402	407	193	404	403	196	195	0	0	202	0	0
Stage 1	195	195	-	206	206	-	-	-	-	-	-	-
Stage 2	207	212	-	198	197	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	559	443	849	454	445	699	1378	-	-	1051	-	-
Stage 1	807	628	-	663	621	-	-	-	-	-	-	-
Stage 2	795	617	-	670	627	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	555	441	849	449	443	699	1378	-	-	1051	-	-
Mov Cap-2 Maneuver	555	441	-	449	443	-	-	-	-	-	-	-
Stage 1	804	627	-	660	619	-	-	-	-	-	-	-
Stage 2	789	615	-	664	626	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	13.1	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1378	-	-	641	461	1051	-
HCM Lane V/C Ratio	0.004	-	-	0.019	0.031	0.001	-
HCM Control Delay (s)	7.6	0	-	10.7	13.1	8.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	8	0	1	0	11	0	0	0	0	1
Future Vol, veh/h	3	2	8	0	1	0	11	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	3	2	9	0	1	0	12	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	23%	0%	0%
Vol Thru, %	0%	15%	100%	0%
Vol Right, %	0%	62%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	13	1	1
LT Vol	11	3	0	0
Through Vol	0	2	1	0
RT Vol	0	8	0	1
Lane Flow Rate	12	14	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.014	0.001	0.001
Departure Headway (Hd)	5.404	3.635	3.968	3.37
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	987	904	1066
Service Time	3.406	1.649	1.983	1.378
HCM Lane V/C Ratio	0.018	0.014	0.001	0.001
HCM Control Delay	8.5	6.7	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0	0

HCM 6th TWSC
 3: Kiowa Bennett Road & E. 72nd Avenue

2040 Total
 AM Peak

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	5	1	5	14	1	2	5	100	17	1	145	5
Future Vol, veh/h	5	1	5	14	1	2	5	100	17	1	145	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	5	1	5	15	1	2	5	109	18	1	158	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	293	300	161	285	284	109	163	0	0	127	0	0
Stage 1	163	163	-	119	119	-	-	-	-	-	-	-
Stage 2	130	137	-	166	165	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	659	514	884	551	526	788	1416	-	-	1128	-	-
Stage 1	839	651	-	745	683	-	-	-	-	-	-	-
Stage 2	874	670	-	700	649	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	654	511	884	544	523	788	1416	-	-	1128	-	-
Mov Cap-2 Maneuver	654	511	-	544	523	-	-	-	-	-	-	-
Stage 1	836	650	-	742	680	-	-	-	-	-	-	-
Stage 2	867	667	-	694	648	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	11.6	0.3	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1416	-	-	721	563	1128	-
HCM Lane V/C Ratio	0.004	-	-	0.017	0.033	0.001	-
HCM Control Delay (s)	7.6	0	-	10.1	11.6	8.2	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM 6th AWSC
6: Provost Road & E. 72nd Avenue

2040 Total
AM Peak

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	17	0	1	0	14	0	0	0	0	1
Future Vol, veh/h	1	1	17	0	1	0	14	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	1	1	18	0	1	0	15	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7	8.5	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	5%	0%	0%
Vol Thru, %	0%	5%	100%	0%
Vol Right, %	0%	89%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	19	1	1
LT Vol	14	1	0	0
Through Vol	0	1	1	0
RT Vol	0	17	0	1
Lane Flow Rate	15	21	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.02	0.001	0.001
Departure Headway (Hd)	5.414	3.438	3.979	3.383
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	1042	900	1061
Service Time	3.418	1.455	1.998	1.394
HCM Lane V/C Ratio	0.023	0.02	0.001	0.001
HCM Control Delay	8.5	6.5	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0

HCM 6th TWSC
3: Kiowa Bennett Road & E. 72nd Avenue

2040 Total
PM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	5	1	5	17	1	1	5	175	17	1	175	5
Future Vol, veh/h	5	1	5	17	1	1	5	175	17	1	175	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	70	2	70	70	70	2	2	70	70	2	2
Mvmt Flow	5	1	5	18	1	1	5	190	18	1	190	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	405	413	193	398	397	190	195	0	0	208	0	0
Stage 1	195	195	-	200	200	-	-	-	-	-	-	-
Stage 2	210	218	-	198	197	-	-	-	-	-	-	-
Critical Hdwy	7.12	7.2	6.22	7.8	7.2	6.9	4.12	-	-	4.8	-	-
Critical Hdwy Stg 1	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6.2	-	6.8	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.63	3.318	4.13	4.63	3.93	2.218	-	-	2.83	-	-
Pot Cap-1 Maneuver	556	439	849	458	449	705	1378	-	-	1045	-	-
Stage 1	807	628	-	669	625	-	-	-	-	-	-	-
Stage 2	792	613	-	670	627	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	552	437	849	453	447	705	1378	-	-	1045	-	-
Mov Cap-2 Maneuver	552	437	-	453	447	-	-	-	-	-	-	-
Stage 1	804	627	-	666	623	-	-	-	-	-	-	-
Stage 2	786	611	-	664	626	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	13.2	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1378	-	-	638	461	1045	-
HCM Lane V/C Ratio	0.004	-	-	0.019	0.045	0.001	-
HCM Control Delay (s)	7.6	0	-	10.8	13.2	8.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	14	0	1	0	17	0	0	0	0	1
Future Vol, veh/h	3	2	14	0	1	0	17	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	75	2	2	2	75	2	2	2	2	2
Mvmt Flow	3	2	15	0	1	0	18	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	7	8.6	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	16%	0%	0%
Vol Thru, %	0%	11%	100%	0%
Vol Right, %	0%	74%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	19	1	1
LT Vol	17	3	0	0
Through Vol	0	2	1	0
RT Vol	0	14	0	1
Lane Flow Rate	18	21	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.028	0.02	0.001	0.001
Departure Headway (Hd)	5.414	3.558	3.982	3.384
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	1006	898	1059
Service Time	3.418	1.581	2.008	1.398
HCM Lane V/C Ratio	0.027	0.021	0.001	0.001
HCM Control Delay	8.6	6.7	7	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0

CUP Application
Supplemental Item 2
Neighborhood Meeting Summary

AFS Bennett Pit 2, 49950 E. 72nd Rd, Bennett, CO

May 30, 2019 Neighborhood Meeting Summary

Attendance:

Ben Frei, AFS
Steve O'Brian, Environment, Inc
Mark Molen, Molen & Associates, LLC
Neighbors listed on Sign-in Sheet

Discussion items:

- General explanation of pit expansion to adjacent properties and outline the new shape of pit and what it will like after reclamation is finished.
- Entrance and exit of the pit will not change.
- Entrance from 72nd Ave and general roadway usage. Traffic study that was done and AFS will be following the requirements presented in the study. Maintenance of 72nd Ave with AFS watering and dragging the road to keep rutting and potholing minimized until the county takes control of maintenance. Consideration to supplementing Adams County maintenance with intermittent but regular dragging and watering with approvals.
- Described methods used by AFS to prevent trucks from stopping along the roadside along 72nd and leaving the Bennett Pit earlier than 7 AM. Described that truckers cannot be controlled by AFS and that they are signing information sheets acknowledging that they are aware of the rules.
- Dust conditions on 72nd are both traffic related and weather related. Somedays traffic is light but the weather conditions of dry, windy days are not easily controlled.
- Concerns about the hydro-vac trucks placing liquids in the pit and the impact they could have on the groundwater. Discussed that the primary use of these trucks is to pothole for utilities and removing native soil or utility company placed soils from the ground into the truck mixed with water. These types of liquids have not been shown to contain contaminants. Screening for hydrocarbon contamination are signs of a light oily sheen on the surface or a hydrocarbon odor. None have been observed during the hydro-vac truck delivery screening inspections by AFS personnel. Hydro-vac truck drivers give AFS the location of their jobs and the contractors have signed affidavits.
- The hydro-vac trucks have not impacted the alluvial groundwater monitoring wells at the site. Nearby groundwater wells water quality should not be impacted from the Bennett Pit activities because the water supply wells are not in the alluvium and all the wells are in the deep (over 200 feet below ground surface) aquifer.
- Groundwater observation wells are planned to be used for water elevations for the mining permit.
- Discussed the permitting process at the Division of Reclamation Mining and Safety for the mining permit and Adams County for the Conditional Use Permit.

- Discussed fencing compared to berms along the boundaries with neighbors. All preferred berms. AFS committed to a berm with a 3:1 slope and vegetated with appropriate seed mixture and a neighbor desired fence. The berms were discussed to be on the north and south sides of the property boundary in the buffer zone along the perimeter.
- Brief discussions about wildlife and mosquitos, both of which AFS shares an interest in not disturbing and controlling. The mosquitos would be controlled by occasional spraying of areas where they can be hatched along water's edge, temporary ponds, or standing water in the mine.

The meeting lasted about two hours and was attended by the people listed on the sign-in sheet. Additional meetings will be planned in the future.

Neighborhood meeting May 30, 2019

Print Name

Address

David S. Murphy

7414 W 79

Gary + Jamie Copeland

49990 E. 64th Ave

Alethea Copeland

50180

~~50050~~ E. 64th Ave

Vikki Katcher

7230 Provoost Rd

vkatcher@
yahoo.com

Mark Fabes

7230 Provoost Rd

Wayne + Gail Palone

50050 E. 64th Ave.

gailp@emerald
selfarms.com

Andrew Granger

7492 Provoost Rd.

Kelsey Magnusson

7490 Provoost Rd

magnu079@regis.edu

Chowin Smalder

7550 Provoost Rd

Jennifer Curtis

49850 E 72nd Ave

jenspeedracer@
hotmail.com

Jim Chamberlain

49850 E 72nd Ave

CUP Application
Supplemental Item 3
Mining Permit Application

Environment, Inc.

LARRY E. O'BRIAN
FOUNDER

STEVAN L. O'BRIAN
PRESIDENT

June 17, 2019

7985 VANCE DRIVE, SUITE 205A
ARVADA, COLORADO 80003
303-423-7297
FAX 303-423-7599

Mr. Jared Ebert
Division of Reclamation, Mining & Safety
1313 Sherman St., Suite 215
Denver, CO 80203

Dear Mr. Ebert;

RE: Albert Frei and Sons, Inc. - AFS-Bennett Pit
M-2001-038 - Adequacy Response 01

RECEIVED

JUN 17 2019

DIVISION OF RECLAMATION
MINING AND SAFETY

On behalf of my client Albert Frei and Sons, Inc, I am responding to your adequacy review letter dated April 12, 2019. I have included your review points that need to be addressed in the order presented so the questions and answers will be in this document for easy reference.

Rule 6.4.4, Exhibit D – Mining Plan

1. Page 6 of the mining plan indicates groundwater elevation under the southern part of the mine is approximately 5394 feet. Based on the Exhibit C Existing Conditions Map, the southern end of the permit area has a ground elevation ranging from 5350 feet to 5325 feet. Please clarify the depth of groundwater and the two foot maximum depth of excavation?

That is a typo on my part it should have read 5294. I have corrected the elevations noted on page 6 and provided a copy for the file.

2. Page 6 of the mining plan indicates the top of the shale on the north side of the property may be higher than 5394 feet. According to the Exhibit C, Existing Conditions Map, the ground elevation on the north side of the permit boundary is 5340 feet. Please clarify the depth of the shale layer on the north side of the permit area?

Again it was a typo and should have been 5294. The underlaying shale slopes to the south and west from a highpoint of 5315 to 5298 towards the mid part of the mine. This means it varies from 15 to 40 feet below the existing surface elevation in that area.

3. Page 6 of the mining plan indicates all stormwater will be collected on the site and treated before being released if it contacts the disturbed area. Please describe how the water will be treated? If storm water collection basins will be used or another type of impoundment, please depict these features on the Exhibit C-1 Mining Plan Map.

The treatment proposed consist of allowing the water to soak into the gravel layer that underlays the mine floor of the mine so it returns to the ground water table or the silt in the runoff will have settled enough to meet the discharge permit limits. Low spots on the mine floor collect the runoff so having designated basins is not needed.

4. Please describe the nature of the stratum immediately beneath the material to be mined.

The entire permit area is underlain by a claystone or siltstone that is gray to dark gray with some orange staining (iron). The claystone is listed as very stiff to hard and plastic, while the siltstone is sandy with low plasticity. Both are impervious, but tend to weather and get softer when exposed. We expect mining to reach this underlying bedrock on the northern two-thirds of the mine. In the south area where the Potential Developed Water Storage area is shown the floor will be sandy gravel until/if the liner is installed, then the floor of the reservoir would be the bedrock.

5. It does not appear, AFS is proposing to use explosives at the site? Please confirm. If so, please addressed the requirements of Rule 6.4.3(I).

No explosives will be used nor will blasting be done at this mine, the material is easily mined using conventual sand and gravel mining methods. I added this statement to Page 5.

6. Please clarify the type of processing that occurs at the site.

At this time the only processing taking is the screening of the raw materials, no washing or crushing takes place. This material requires no treatment with chemicals or hazardous materials.

Rule 6.4.5, Exhibit F – Reclamation Plan

7. Albert Frei and Sons (AFS) is proposing to continue to import inert fill into the site for use in backfilling the pit slopes and mine floor as stated on Page 6 of the reclamation plan as originally approved with Technical Revision No. 1 (TR01). TR01 specified a phased approach to backfilling and estimated the void volume to be filled. It does not appear mining and reclamation will be conducted in a phased approach based on the revised mining and reclamation plan. Please describe any revision to the timing and duration of the inert fill operation.

We took the phasing plan out because Albert Frei and Sons will mine the area faster then the original permit holder and staging is not conducive with their operating practices. The inert material will be piled, as it is delivered, along the final perimeters of the mine where the 3:1 slopes will be built. The plan is to follow mining on lope areas with placement of the inert material until enough is available to complete the final slope. Fill material will be accepted during the life of the mine until the volume needed to reclaim the slopes has been received or mining ends. Once sufficient fill, is in place along any section of slope it will be graded 3h to 1v, covered

with finer material, re-soiled and seeded. How fast this happens depends on how much material is available and this mine is not operated as an inert fill facility.

8. Please approximate the volume of inert fill to be used at the site given the revised mining and reclamation plan?

At this time Albert Frei and Sons, Inc. estimates that 600,000 yards ± of inert material would be accepted at the mine.

9. The current inert fill plan indicates the permanent slopes will be no steeper than a 3H:1V ratio. With AM01, the applicant is proposing final reclamation slopes of 2H:1V ratio. Please provide a general engineering plan stating how the material will be placed and stabilized in a manner to avoid unacceptable settling and voids.

Recent inter company discussions have lead to a decision to retain the 3h to 1v sloping plan around the area to be mined and remove references to 2h to 1v from the permit amendment. I have attached a revised Exhibit C-1-Mining Plan and Map Exhibit F - Reclamation Plan Map showing the 3h to 1v slopes and corrected Pages 5, 8, 9, 53, & 61 to remove any reference to 2:1 .

10. Page 10 and 11 of the reclamation plan state that a U.S. Army Corp of Engineers Permit will be obtained if wetlands or waters of the U.S. will be affected during the mining operation. Exhibit G and Exhibit M state that there are not wetlands or waters of the U.S. at the site. While on the pre-operation inspection, Ben Frei indicated a wetlands evaluation may be conducted at the site. If wetlands are identified within the permit area, please update the Exhibit C map to depict their location. If wetlands are identified, within the proposed mine area, please develop a protection plan for these wetlands until the required U.S. Army Corp Permits are in place if necessary.

A copy of the finalized environmental assessment report that was done for the mine area by ERO Resources is attached for the file. It reports that there are no wetlands or Waters of the U.S. in the permit area. Therefore, no U.S. Army Corps of Engineers permit will be required. The statement on Pages 10 and 11 was placed there to explain that a permit would be obtained if required. A copy of the ERO letter to eh U.S. Fish and Wildlife Service requesting concurrence on the lack of endangered species at the mine is attached. Once the USFWS confirmation letter is received a copy will be delivered to the Division for the file.

Rule 6.4.7, Exhibit G – Water Information

11. Page 14 of the Exhibit G states that off-site runoff is/or will be diverted around the disturbed area. Please revise the Exhibit C-1 Map to depict the diversion structures used to accomplish this. Please describe and provide a cross section of the diversion structures.

These diversion structures will be simple dirt ditches placed along the up gradient side of the mine's perimeter with the material from the ditch being placed along the pit side of the ditch. Usually a motor grader is used to create the ditch/berm. Their intent is to keep off site surface

flows of storm water from entering the disturbed area. I added a line and label showing their approximate location and a Typical Cross Section sketch of the proposed diversion structure.

12. Page 14 of Exhibit G implies the groundwater level is at 5094 feet. As discussed above, please clarify the depth of groundwater.

This is another typo it should have been 5294. I have fixed page 14 and included a copy for the file.

13. The applicant states storm water from the disturbed area will be retained on site. Based on the Exhibit C and F Maps, it appears the site will positively drain to the southeast during mining of the northern three quarters of the site. Please submit a brief statement or plan showing how water from runoff from disturbed areas, piled material and operating surfaces will be managed to protect against pollution offsite at the southeast end where surface run-off is likely to flow, both during and after the operation.

Nothing is needed on the lower end of the mine since any storm water that falls in the mine now collects on the mine floor where it evaporates or soaks into the ground. In the southeast corner of the mine the gravel is approximately 7 feet deep so there will never be a point where the mine floor will daylight out to the surface where it would run off the permit area. During the mining operation and until reclamation is complete the mine floor is graded to direct water runoff away from the active mining area so it soaks into the ground. No stormwater will be retained for more than 72 hours.

14. Given the nature of the mining operation described, the operator does not propose to conduct any dewatering? Please confirm.

No dewatering is planned at this time, we are committed to staying 2 feet above the groundwater table. If the developed water storage facility option is implemented then some dewatering may be necessary. Dewatering, its impacts and mitigation methods will be discussed in the Technical Revision that will be filed to allow the use of this option.

Rule 6.4.8, Exhibit H – Wildlife Information

15. The wildlife exhibit included the original wildlife statement from the 2001 permitting process. Since that time it is likely the threatened and endangered species list has been updated. Please evaluate the presence of any current threatened or endangered species at the site.

Albert Frei and Sons, Inc., retained ERO Resources to evaluate the mine site for wildlife issues and their report is attached. They found no habitat for Threatened or Endangered species on the mine area or in close proximity of the mine perimeter.

16. The reclamation plan indicates that temporary displacement of wildlife will result from the mining operation. In accordance with Rule 3.1.8, all aspects of the mining and reclamation plan shall take into account the safety and protection of wildlife on the mine site, at processing sites, and along all access roads to the mine site with special attention given to critical periods in the

life cycle of those species which require special consideration (e.g., elk calving, migration routes, peregrine falcon nesting, grouse strutting grounds). Please discuss the measures the operator will use to protect wildlife during the mining and reclamation operation.

We believe the Mining and Reclamation Plans do take into the impacts to wildlife. Because it is a continuation of an existing operation and the wildlife are likely acclimated to the noise and human activities. So the continuation of the mine will not increase the impacts already there. The speed limits in the mine, and the mining staff is directed to be aware of wildlife that may enter the mine operating hours and what to do if they find any on the active mining area that came on after hours limit impacts. Using wildlife friendly wire fencing, instead of chainlink allows the wildlife that enter the mine a way to safely leave instead of block their way. The impacts are temporary in nature during the active mining times as the area is open enough of so any wildlife can skirt the active areas or have use of other parts of the property where no activities are taking place. The ERO Resources report discusses impacts to wildlife on the mine and to paraphrase the report, when the vegetation is removed the area will no longer be desirable to wildlife until it is reclaimed. It also noted there are no wildlife corridors or other sensitive species that occur on the site that would be affected by the project. More information is provided starting on Page 6 of the ERO report.

ERO Resources made a recommendation to submit an endangered species habitat assessment to the U.S. Fish and Wildlife Service for concurrence with their findings, ERO to file that request on or around June 4, 2019 and once a reply is received it will be filed with the Division for the file. They also recommend doing a nest survey one week before disturbing any new area during the breeding season, April 1 to August 31. AFS will follow the recommendations for not removing vegetation during that time if raptor nests are found. Records of the inspection will be kept in the Company records for inspection, if needed.

The speed limit along the main access road and within the mine is limited to 10 mph to help mitigate the truck traffic entering and leaving the mine will have on the larger wildlife species. Prior to startup of daily activities the site is inspected to assure there are no wildlife in the mine that would be affected by the daily activities. Usually the larger animals that over night in the mine leave once humans enter the mine area, if this does not happen they are chased out of the active area.

Rule 6.4.12, Exhibit L – Reclamation Costs

17. The cost estimate submitted with the application covers 30 acres of affected land. Based on the proposed mining plan, no phasing of the mining is planned and page 4 indicates a maximum disturbance scenario will be used to allow flexibility for the mine to be developed from both ends of the deposit. If the applicant would like to use a phased 30-acre bonding approach, please revise the mining plan to accommodate this and define the phases accordingly, or provide an estimate for the maximum disturbance scenario.

That was not our intent on page 4, it was to allow for a plan that covers the existing and proposed disturbance area of 30 acres. During our review of that plan we realize that we are

close to the 30 acres currently bonded. For this reason I have revised Page 4 and Exhibit L Reclamation cost to increase the area to cover 60 acres. Under this plan mining and reclamation would run concurrently on the mine area as needed.. Under this plan we will bond for, existing and proposed disturbance areas rather than a maximum area, this means that we are not limited to 60 acres in the future. Rather that at this time the amount covered by the bond will be 60 acres, that includes areas that are actively being affected by mining, processing and partial reclamation areas that will have been mined, graded and vegetated but not yet ready for release. If this changes then Albert Frei and Sons, Inc., will file a Technical Revision to increase the amount of the bond prior to exceeding the 60 acres.

Rule 6.4.19, Exhibit S – Permanent Man-made Structures

18. For each of the permanent man-made structures within 200 feet of the affected land, please either provide:

a. provide a notarized agreement between the applicant and the person(s) having an interest in the structure, that the applicant is to provide compensation for any damage to the structure; or

Structure agreements were mailed on February 11, 2019 to the five structure owners around the mine. Henderson Aggregates is a subsidiary of Albert Frei and Sons, Inc. so that structure agreement was executed in house. We have one in place for the Lincoln's but sent a second as a precaution. Of the remaining 4 we have received 3 back. Only the Copeland Trust has not returned one as of this date. Attached are copies of the Executed Structure Agreements received.

b. where such an agreement cannot be reached, the applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or.

A Geotechnical analysis for the Copeland structures is provided since a structure agreement was not received from them.

c. where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility.

The Utilities within 200 feet returned signed agreements.

Rule 1.6.2 –Notice Requirements

19. Please submit the proof of publication of the required notice in accordance with Rule 1.6.2(1)(d) and Rule 1.6.5.

Attached is a copy of the Proof of Publication for this permit area. It was published in the Eastern Colorado News, the adjudicated paper of notice for eastern Adams County starting on April 19 and running once a week ending on May 10, 2019.

20. Please submit documentation a copy of the notice required in Rule 1.6.2(1)(d) was mailed or personally served immediately after the first publication of the notice to all Owners of Record of the surface and mineral rights of the affected land; and the Owners of Record of all land surface within 200 feet of the boundary of the affected land.

Attached are copies of the return receipt cards for the Owners of Record within 200 feet of the permit area. They are for the second notices mailed on April 19, 2019.

Additional information added to permit exhibits

Albert Frei and Sons, Inc. has added a section to **Exhibit C - Mining Plan** to address using some of the topsoil/overburden to install temporary sight berms along the mine boundary in two locations. These berms will not remain when reclamation is completed at the material will be used to resoil slopes. Another section as added to explain the mining setback change to the south line that was required after the *Geotechnical Analysis* was completed.

Frei install 4 ground water monitoring wells along the south boundary of the mine on June 4, 2019. Even though they do not plan to expose ground water at this time, the elevation data collected for the first 13 months and then once quarterly, will establish the historic ground water background data if needed in the future. In addition, throughout the life of the mine AFS is committed collecting a water quality sample, one time per year from the central most well. In other words one sample per year for one well. This data will be retained in the company office and can be inspected upon request.

These changes are shown on **Map Exhibit C-1 - Mining Plan Map**.

Agency Comments

The Division has received comments from the Colorado Division of Water Resources and the US Army Corp of Engineers. Enclosed are their comment letters for your review.

U.S. Army Corps of Engineers (rec. 3/26/19)

A wetland determination was prepared for the mine and it was determine no waters of the US will be affected by this operation nor will mining take place within the 100 floodplain of Kiowa Creek. The U.S. Fish and Wildlife Service will be contacted since mining will take place within 300 feet of Kiowa Creek. No fill will be placed in water of the US or wetlands therefore a 404 permit is not needed.

Division of Water Resources (rec. 3/18/19)

Albert Frei and Sons, Inc. understands the DWR's comments and agree with the four points they have raised. The application packet contains commitments to comply with each.

- 1 - The floor of the mine and mining will stay at least 2 feet above the groundwater table.
- 2 - Water used for industrial purposes will come for a source approved for that use.
- 3 - If the option to build developed water storage reservoir on the mine site is chosen the reservoir area will be constructed within the 1999 SEO Guidelines.

- 4 - Stormwater runoff intercepted by this operation will soak into the ground or be released to the stream system within the time required by DWR.

Public Objections

21. The Division has received public objections from the following people:

- a. Victoria Katchen and Mark Faber
- b. Alethea Copeland
- c. Jennifer Curtis and Kimberly Chainhalt
- d. Kelsey Magnuson
- e. Nancy Donaldson - added via email
- f. Elva & Joe Munzo - added via e-mail
- g. David Murphy 5/24/19
- h. Jennifer Curtis and Kimberly Chainhalt 5/24/19

Their objection letters are attached for your review. Concerns related to noise, truck traffic, hours of operation, visual impacts, affects on property values and other social or economic concerns are issues not subject to DRMS jurisdiction. However, please address any jurisdictional issues raised by the objectors.

Many of the objections raised, deal with items not subject to the Division of Mining, Reclamation and Safety jurisdiction as you noted. In addition, many of the objections listed have been addressed in the original amendment submittal or address in this adequacy review. For sake of brevity I will, whenever possible, refer to our response in this adequacy review or the page number in the amendment application when the answer can be found. Where each party raises a unique or different objection, it will be addressed directly. I will start with the unique letters first and then deal with the obvious form letters next.

Ms. Katchen and Mr. Faber raised 2 objections that are jurisdictional

Concerned dry up of areas water resources. - Frei has committed to staying 2 feet above any ground water surface to avoid impacting area water resources. See the information provided starting on page 14 of the application packet and our responses to items #11, thru 14 above.

Raised concern of water quality and quantity in the area. - According to the OSE records their well is owned by Linda Cook and is located approximately 1500 feet northeast of the NE corner of the mine at an estimated elevation of 5349 and is 280 feet deep with the static water level listed at 135 feet. The groundwater table is on the south end of the mine is 5294. This is approximately 5350 feet from their well. The floor is approximately 84 feet above the static water level reported in their well permit. There is no hydrologic connection between the surface and this deep water source. For this reason the mining operation cannot introduce sediments into the deep aquifer or influence their well flow characteristics.

Ms. Copeland raised 3 objections that are jurisdictional.

1. Impacts to wetlands - there are no wetlands on the mine site and Albert Frei and Sons will not disturb areas outside the permit boundary.

4. Reclamation to original standards - A mine site can not nor is an operator required to reclaim it to its previous conditions. Once the material is mined the land shape will always be different. Starting on page 8 of the amendment book Albert Frei and Sons, Inc. describes how the site will be reclaimed.
- 7 Wildlife concerns - This is an existing operation and any impacts to wild life occurred in the first year of operation. We addressed this concern in our response to items # 15, 16 & 17 above and have had a wildlife assessment done by ERO Resources showing that the mine will have a limited impact to wildlife in the area. This report will be included in the copy place for public review in the Adams County Clerks office.

Ms Curtis, Ms Chainhalt, Ms. Magnuson, Ms. Donaldson, Mr & Mrs Munzo and David Murphy raised 20 objections in common that are jurisdictional in my opinion for the Division of Mining, Reclamation and Safety . Since it appears for the dates that Ms. Curtis or Ms. Chainhalt wrote the base letter (4/6/19) and 3 of the other objectors copied it in part, I will use their numbering format for the objection responses. Following these responses I will respond to any other objections each party raised above what was presented in the list.

7. Unknown liquids and solid materials have been dumped the pit area.
We know of NO unknown liquids or solid material dumped in the permit area in the past. After Albert Frei and Sons, Inc. assumed reclamation responsibilities for the permit area, any material delivered to the mine is qualified as Inert Material according to Division of Mining, Reclamation and Safety and Adams County regulations.
10. Plan for noxious weed mitigation.
See Weed Control Plan starting on Page 63 of the permit application packet.
12. Will explosives be used in the mining operation?
No explosive will be used at the mine. See Response to Item #5 in this document.
13. Any chemicals used in the mining or processing of materials?
No chemical will be used in the mine for mining or processing nor are any needed.
14. Depth of the gravel and sand deposits and how deep will the pit dig to excavate the materials.
The depth is discussed on page 3, shown on the Reclamation Plan Map as varying from 5 to 45 feet deep. Also, see page 14 for numeral listing.
15. Will water be used in the process of excavating or processing the materials?
No, see page 14. Water used will be obtained from a sources approved dust contol and other approved uses.
17. Is there a Water Plan in place to ensure the quality and quantity of water the area currently uses is not affected by its operations?

Please see response to items # 11 thru 14. This is addressed also in the Mining and Reclamation Plan and Exhibit G Water information starting on page 14 of the amendment packet.

18. Is there a new Mining Plan?

No, starting on Page 3 of the application packet, we explain the operational changes for the expansion area.

19. Is there a new Site Description?

Yes. See amendment packet starting on Page 3 or the original permit application.

20. Is there a Reclamation Plan and Map?

Yes, see amendment packet starting on page 8.

21. Can neighbors see required Permits, Licenses and Inspection Reports?

Yes, this information was provided in the adjoining owner notices received by all owners within 200 feet of the permit area. A copy of the original amendment packet was placed for public review on 2/13/19 with the Adams County Clerks office. A copy of this response will be delivered to the same office after it is filed with the state.

22. Is there a Geotechnical Stability Exhibit?

This has been prepared and is submitted as part of addressing Adequacy response 18 above for the Copeland structure. All other structure owners have provided Structure Agreements.

23. A list of inert materials and liquids used to backfill the pit and inspections to ensure ground water, air and land non-toxicity?

Please see Inert Fill Technical Revision starting on page 66 of the amendment packet. The Inert Material by definition cannot contain toxic materials.

24. Original Permit for the sand and gravel pit.

Yes, one was issued in 2001.

25. How will the materials be processed?

Please see response to Item # 6 in this packet.

30. Engineering plan to describe how materials will be placed and stabilized to avoid settling and voids.

Refer to the Inert Fill plan starting on Page 66 of the amendment packet.

31. Water Plan to include if the pit will be lined and the use of dewatering techniques.

Not need at this time it will be filed when/if it is feasible to build the water reservoir.

34. Has AFS operated the sand and gravel pit under the original Permit?

Yes, they assumed the permit in Mid 2017.

35. Has AFS followed the provisions in the original Permit?

Yes, Last inspection show AFS is in compliance with all provisions of the permit.

36. Can a company be sold, and the original Permit be used by the purchasing company without amendments; i.e. name change, loads per day, road maintenance?

Yes, Only name a change of new operator and a replacement bond is required. Loads and road maintenance are county jurisdictional.

Ms. Magnuson

Raised concern of water quality and quantity in the area. - According to the OSE records the well is located approximately 3100 feet northeast of the NE corner of the mine at an estimated elevation of 5318 and is 300 feet deep with the static water level listed at 120 feet. The groundwater table is on the south end of the mine is 5294. This is approximately 1.3 miles from her well. The floor is approximately 98 feet above the static water level reported in her well permit. There is no hydrologic connection between the surface and this deep water source. For this reason the mining operation cannot introduce sediments into the deep aquifer or influence their well flow characteristics.

Ms. Donaldson and Mrs & Mr. Munoz

Raised concern of water quality and quantity in the area. - According to the OSE records the well is owned by Roger L. Hogan and is located approximately 3980 feet northeast of the NE corner of the mine at an estimated elevation of 5335 and is 365 feet deep with the static water level listed at 110 feet. The groundwater table is on the south end of the mine is 5294. This is approximately 1.4 miles from their well. The floor is approximately 71 feet above the static water level reported in their well permit. There is no hydrologic connection between the surface and this deep water source. For this reason the mining operation cannot introduce sediments into the deep aquifer or influence their well flow characteristics.

Mr. Murphy

Of the 11 concerns Mr. Murphy raised 7 would be considered jurisdictional issues. Six of them have been addressed in the responses to the group letters above. Only number 9 is different so I will address it separately. The question is; *Can I see the results of the groundwater quality and quantity?* As we noted in the **Additional information added to permit exhibits** 4 wells were installed and data collection will begin when complete. This data will be available at the company office in Henderson and will be available for inspection upon Mr. Murphy making arrangements to review them.

Ms Curtis & Ms Chainhalt - second letter 5/24/19

This letter expands on their pervious concerns and makes conjecture based on their impressions of the operation. I will address them in the order presented.

Paragraph 2 - This concerns the dumping of unknown liquids.

There are no unknown liquids being dumped at the mine. Especially "Drilling Mud", drilling mud refers to the muds and chemicals associated with oil and Gas drilling and because of the makeup of the material is not classified as "Inert Material" and can not, nor is it accepted at this mine. The mud accepted comes from vac trucks, and consists of dirt and water. Frei requires each person who delivers a load fill out a load ticket that contains information company and person making the delivery, the material being delivered, the location it was taken from and signing it saying nothing in the load is hazardous. Frei also inspects the load after dumber and if something is found to be questionable the delivering truck is told to clean it up and take it somewhere else. If this is found after the exit the mine that the material is isolated and when they return they are told to retrieve it. This can also lead to them being banned from future deliveries to the mine. We also point out that no material that does not meet the definition of Inert Fill will be accepted at the mine. Frei does not want anything that would be hazardous on their land and water either. As we have shown there is on direct connection between their water well and the mine in that the mine floor is a minimum of 71 feet above the static water levels in the objectors wells. Unless they have illegal water well that are drilled into the surface water table that are not listed in the SEO's records.

Paragraph 3 - Concern on Inert Material and testing.

Albert Frei and Sons, Inc. has been compliance with the requirements concerning the acceptance of Inert Materials since they took over the mine. There is no indication that they have accepted material other than what they committed to in the permit. Each load is inspected prior to delivery and any questionable loads are rejected. If unacceptable material is delivered because it was in the load that material is segregated and held until the delivering party returns to the mine where it is loaded back in their truck and they are given a warning that would ban them from delivering any material to the mine if it happens again. Visual inspection in the testing method use and is an industry wide practice, that has proven to be successful, in prevent unacceptable material from being delivered to a facility.

Paragraph 4 - Concern on annual report.

All annual reports have been filed since the mine opened in 2001. They are public records and as such available for review on the Divisions website under Imaged Documents.

Paragraph 5 - Concern Phasing and disturbed area.

As a reminder all discussion of Phasing has been removed from the Mining and Reclamation Plans in the amendment. Instead we went to a bonded plan that covers the existing and proposed disturbance area to cover 60 acres. In the 7/2019 annual report it was reported there was 28.8 acres disturbed, in the 9/2019 inspection report the bond was recalculated for 30 acres in increase. The Mined Land Reclamation act requires the operator to reclaim the disturbed parts of the mine and the reclamation bond provides the assurance that it will be completed.

Paragraph 6 - there is nothing jurisdictional to respond to, as it is all allegations and conjecture on their part.

The record shows that this permit is operating in compliance with the issued permit. There is no record of violations that support their contention that the permit amendment should be denied for "current or past behavior". The past operating record of Albert Frei and Sons, Inc. does not support the comment that the current or future activities will adversely impact the "environment, wildlife, air quality, water quantity/quality and impact on the quality of life of myself and affected neighbors is disheartening and threatens the health, safety and welfare of me, my neighbors and the community." Albert Frei and Sons operates all of their mines in compliance with all State and County permits as the record shows.

Revised Exhibits and other items attached

- Map Exhibit C-1 Mining Plan map revised
- Copy of revised Exhibit D - Mining Plan
- Copy of revised Exhibit E - Reclamation Plan
- Map Exhibit E-1 Reclamation Plan map Color revised
- Map Exhibit F Reclamation Plan map revised
- Copy of revised Exhibit G - Water
- Copy of revised Exhibit L - Reclamation costs.
- Copy of revised Exhibit S - Structure agreements
- Proof of Publication
- Adjoining owner notice receipts
- Geotechnical analysis.
- ERO Resources - Natural Resources Assessment report
- ERO - U.S. Fish and Wildlife Service Concurrence request packet

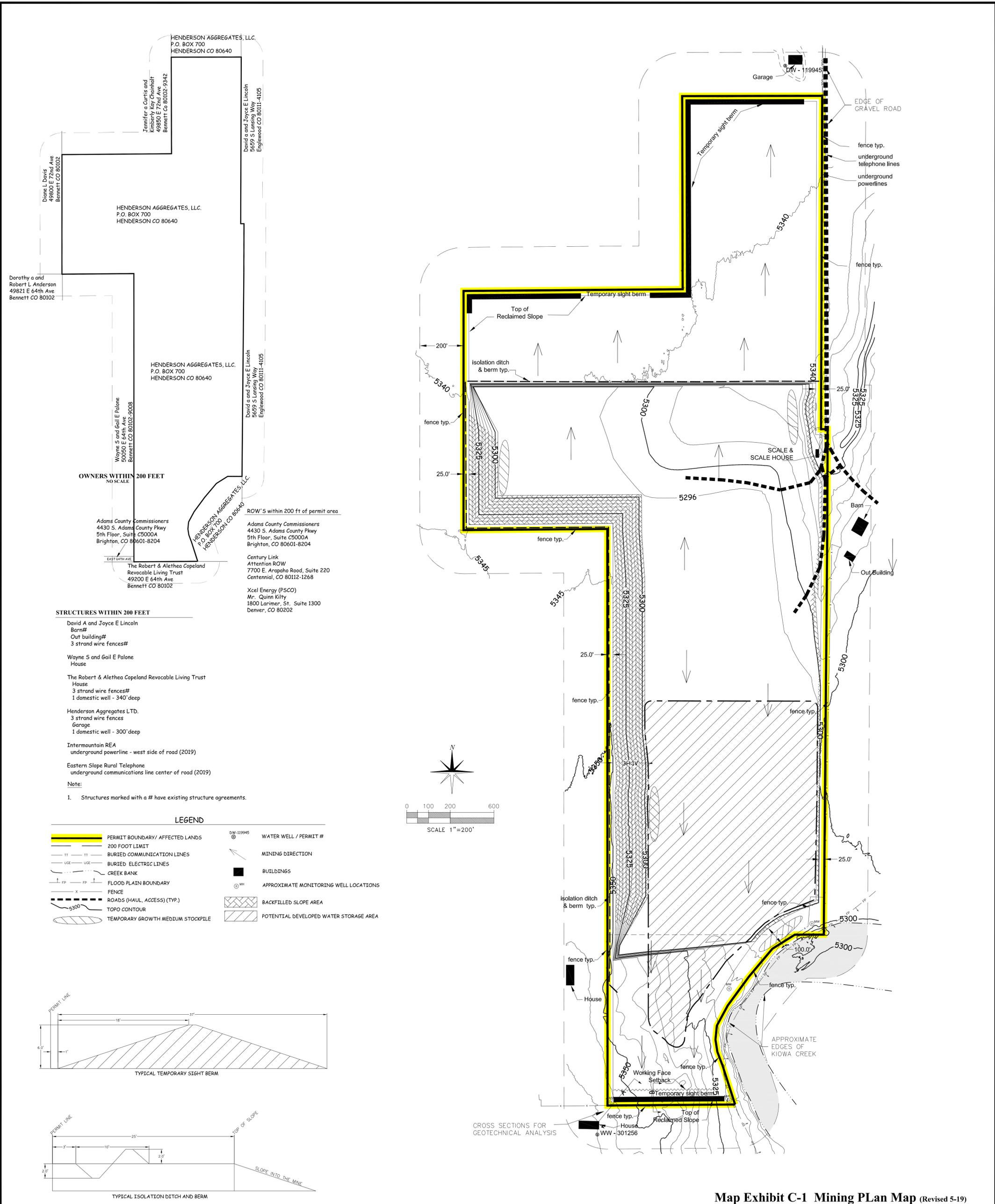
If you have more questions or need more information please call me at (303) 423-7297.

Sincerely,



Stevan L. O'Brian
Environment, Inc.

cc Albert Frei and Sons, Inc.
Jared Ebert - via e-mail
Adams County Clerk
file



HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

49850 E 72nd Ave
Bennett CO 80102-9342

49900 E 72nd Ave
Bennett CO 80102

49821 E 64th Ave
Bennett CO 80102

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

OWNERS WITHIN 200 FEET
NO SCALE

Adams County Commissioners
4430 S. Adams County Pkwy
5th Floor, Suite C5000A
Brighton, CO 80601-8204

The Robert & Alethea Copeland Revocable Living Trust
49200 E 64th Ave
Bennett CO 80102

David A and Joyce E Lincoln
5659 S Lansing Way
Englewood CO 80111-4105

David A and Joyce E Lincoln
5659 S Lansing Way
Englewood CO 80111-4105

Wayne S and Gail E Palone
80300 E 64th Ave
Bennett CO 80102-9008

Adams County Commissioners
4430 S. Adams County Pkwy
5th Floor, Suite C5000A
Brighton, CO 80601-8204

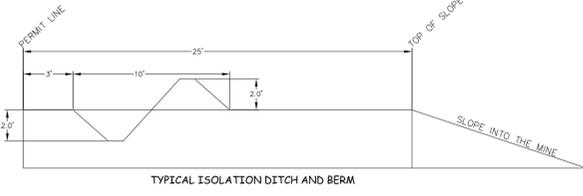
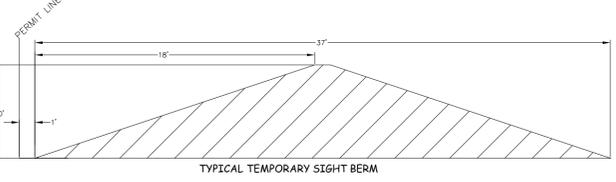
Century Link
Attention ROW
7700 E. Arapaho Road, Suite 220
Centennial, CO 80112-1268

Xcel Energy (PSCO)
Mr. Quinn Kilty
1800 Larimer, St., Suite 1300
Denver, CO 80202

- STRUCTURES WITHIN 200 FEET**
- David A and Joyce E Lincoln
Barn#
Out building#
3 strand wire fences#
 - Wayne S and Gail E Palone
House
 - The Robert & Alethea Copeland Revocable Living Trust
House
3 strand wire fences#
1 domestic well - 340' deep
 - Henderson Aggregates LTD.
3 strand wire fences
Garage
1 domestic well - 300' deep
 - Intermountain REA
underground powerline - west side of road (2019)
 - Eastern Slope Rural Telephone
underground communications line center of road (2019)
- Note:**
- Structures marked with a # have existing structure agreements.

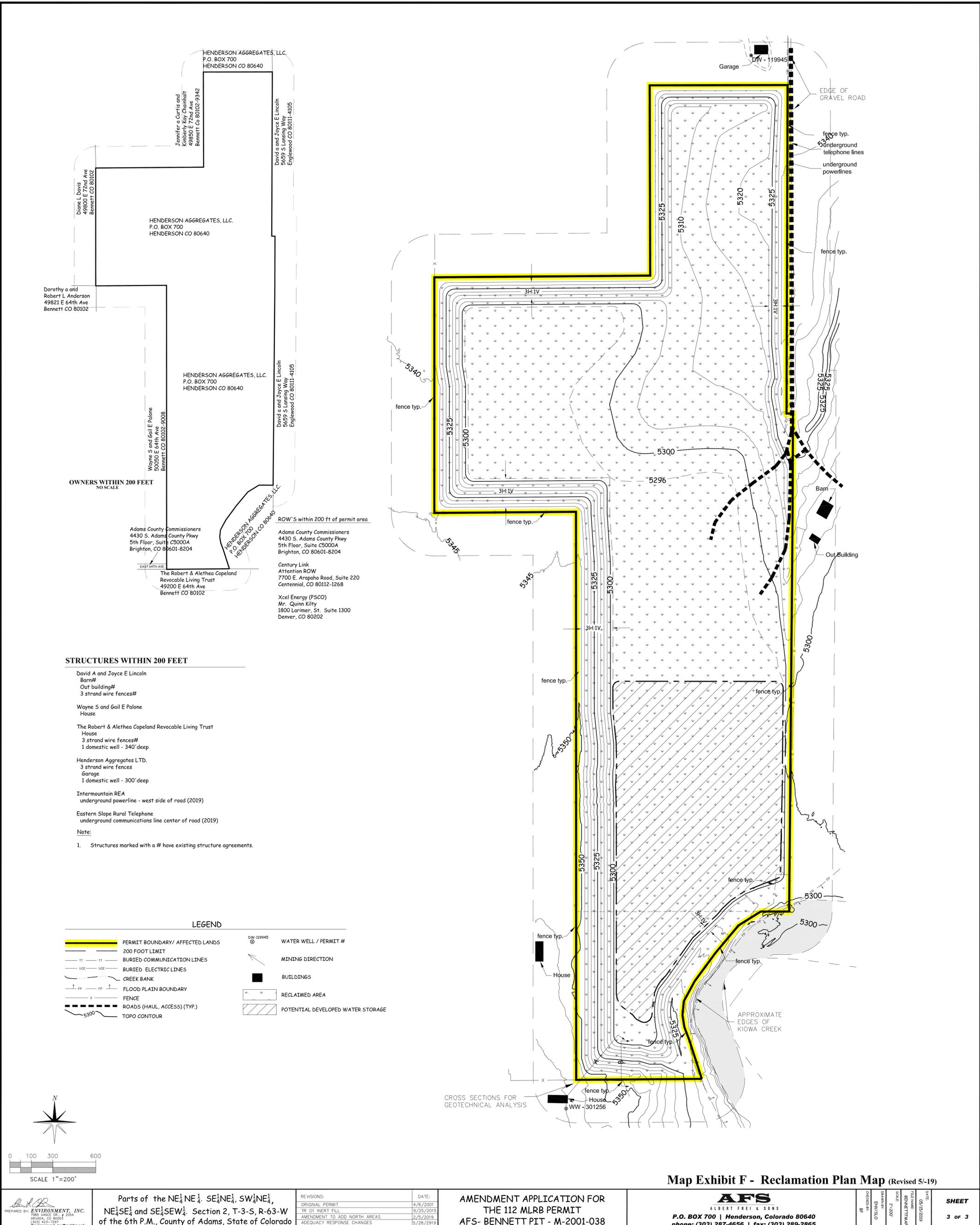
LEGEND

- PERMIT BOUNDARY/ AFFECTED LANDS
- 200 FOOT LIMIT
- BURIED COMMUNICATION LINES
- BURIED ELECTRIC LINES
- CREEK BANK
- FLOOD PLAIN BOUNDARY
- FENCE
- ROADS (HAUL, ACCESS) (TYP.)
- TOPO CONTOUR
- TEMPORARY GROWTH MEDIUM STOCKPILE
- WATER WELL / PERMIT #
- MINING DIRECTION
- BUILDINGS
- APPROXIMATE MONITORING WELL LOCATIONS
- BACKFILLED SLOPE AREA
- POTENTIAL DEVELOPED WATER STORAGE AREA



Map Exhibit C-1 Mining Plan Map (Revised 5-19)

MAY 31, 2019 - 10:06:27



HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

Jennifer a Curtis and Kimberly Kay Chainhalt
49850 E 72nd Ave
Bennett, Co 80102-9342

Diane L. Davis
49900 E 72nd Ave
Bennett CO 80102

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

Dorothy a and Robert L. Anderson
49821 E 64th Ave
Bennett CO 80102

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

Wayne S and Gail E Palone
50050 E 64th Ave
Bennett CO 80102-9008

OWNERS WITHIN 200 FEET
NO SCALE

Adams County Commissioners
4430 S. Adams County Pkwy
5th Floor, Suite C5000A
Brighton, CO 80601-8204

The Robert & Alethea Copeland Revocable Living Trust
49200 E 64th Ave
Bennett CO 80102

HENDERSON AGGREGATES, LLC.
P.O. BOX 700
HENDERSON CO 80640

ROW'S within 200 ft of permit area

Adams County Commissioners
4430 S. Adams County Pkwy
5th Floor, Suite C5000A
Brighton, CO 80601-8204

Century Link
Attention ROW
7700 E. Arapaho Road, Suite 220
Centennial, CO 80112-1268

Xcel Energy (PSCO)
Mr. Quinn Kilty
1800 Larimer, St. Suite 1300
Denver, CO 80202

David a and Joyce E Lincoln
5659 S Lansing Way
Englewood CO 80111-4105

STRUCTURES WITHIN 200 FEET

- David A and Joyce E Lincoln
Barn#
Out building#
3 strand wire fences#
- Wayne S and Gail E Palone
House
- The Robert & Alethea Copeland Revocable Living Trust
House
3 strand wire fences#
1 domestic well - 340' deep
- Henderson Aggregates LTD.
3 strand wire fences
Garage
1 domestic well - 300' deep
- Intermountain REA
underground powerline - west side of road (2019)
- Eastern Slope Rural Telephone
underground communications line center of road (2019)

Note:
1. Structures marked with a # have existing structure agreements.

LEGEND

- PERMIT BOUNDARY/ AFFECTED LANDS
- 200 FOOT LIMIT
- BURIED COMMUNICATION LINES
- BURIED ELECTRIC LINES
- CREEK BANK
- FLOOD PLAIN BOUNDARY
- FENCE
- ROADS (HAUL, ACCESS) (TYP.)
- TOPO CONTOUR
- WATER WELL / PERMIT #
- MINING DIRECTION
- BUILDINGS
- RECLAIMED AREA
- POTENTIAL DEVELOPED WATER STORAGE

CROSS SECTIONS FOR GEOTECHNICAL ANALYSIS

Map Exhibit F - Reclamation Plan Map (Revised 5/-19)

Parts of the NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$,
NE $\frac{1}{4}$ SE $\frac{1}{4}$ and SE $\frac{1}{4}$ SE $\frac{1}{4}$, Section 2, T-3-S, R-63-W
of the 6th P.M., County of Adams, State of Colorado

REVISIONS:	DATE:
ORIGINAL PERMIT	4/6/2001
TR 01 INERT FILL	9/25/2015
AMENDMENT TO ADD NORTH AREAS	2/5/2019
ADEQUACY RESPONSE CHANGES	5/28/2019

AMENDMENT APPLICATION FOR
THE 112 MLRB PERMIT
AFS- BENNETT PIT - M-2001-038

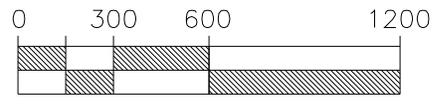
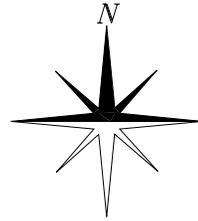
AFS
ALBERT FREI & SONS
P.O. BOX 700 | Henderson, Colorado 80640
phone: (303) 287-4656 | fax: (303) 289-2865

DATE	05/15/2019	SHEET	3 of 3
FILE NAME	BENNETTTRAMP		
SCALE	1"=200'		
DRAWN BY	ENV/SLO		
CHECKED BY	RF		

AFS

ALBERT FREI & SONS

P.O. BOX 700 | Henderson, Colorado 80640
 phone: (303) 287-4656 | fax: (303) 289-2865
AFS- BENNETT PIT - M-2001-038
 Map Exhibit E-1 - Reclamation Plan Map (Revised 5-19)



SCALE 1"=600'

LEGEND

- PERMIT BOUNDARY/ AFFECTED LANDS
- 200 FOOT LIMIT
- TT BURIED COMMUNICATION LINES
- UGE BURIED ELECTRIC LINES
- CREEK BANK
- FP FLOOD PLAIN BOUNDARY
- FENCE
- ROADS (HAUL, ACCESS) (TYP.)
- TOPO CONTOUR
- DW-119945 WATER WELL / PERMIT #
- MINING DIRECTION
- BUILDINGS
- RECLAIMED AREA
- POTENTIAL DEVELOPED WATER STORAGE

Environment, Inc.
 PREPARED BY: ENVIRONMENT, INC.
 7985 VANCE DR., # 205A
 ARVADA, CO 80003
 (303) 423-7297
 Environment-inc@outdrs.net

Parts of the NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$,
 NE $\frac{1}{4}$ SE $\frac{1}{4}$ and SE $\frac{1}{4}$ SEW $\frac{1}{4}$, Section 2, T-3-S, R-63-W
 of the 6th P.M., County of Adams, State of Colorado

MINING PLAN AND TIMETABLE

Unless specifically discussed below the methods described in the 2001 mining plans and Technical Revision filed in 9/25/2015 will remain unchanged. The current bond was set at \$110,860 on October 4, 2018 and a new reclamation cost estimate is presented in **EXHIBIT L** on page 53 of this application. Existing sloping, grading and shaping plans will apply to the new area since they are similar to the area now in the permit. The existing permit area is 47.75 acres and will be increased by 60.13 acres to 107.88 acres. This area is being added on the north end and extended to the south to the property line. We revised the 2001 approved Mining Plan as appropriate for adding the new area acreages, methods and timing.

LOCATION

The property is located in Adams County approximately 3.8 miles north of Bennett, Colorado. From Denver take I-70 East to the Bennett exit and follow Colorado State highway 79 north to E 72nd Ave. Then west 1.0 miles to a private driveway (a.k.a. Provost Road) on the south side of 72nd Ave. Follow the driveway south 0.4 miles to the entrance and scale house. The surrounding areas are mainly large tracts of rural residential sites and agricultural or rangeland. Please refer to **EXHIBIT B - VICINITY MAP** for the property configuration and the relationship to surrounding geological features.

CURRENT CONDITIONS

The current permit area covers 47.75± acres with a site elevation of approximately 5340 feet, sea level datum. Most of the existing mine area is partially mined and reclaimed. Growth medium has been placed around the mine area and some partial backfilling has been done on the mine floor to level area mined in the past.

The **PRE-MINING MAP-EXHIBIT C** shows how the area looks at this time. The gravel deposit is an alluvial deposit that averages 5 to 45 feet deep across the property. This deposit tends to thin from west to east. The deepest area is under the terrace area on the west. Drill logs indicate there is a section of the property that has gravel below the water table on the south end of the permit area.

MAP EXHIBIT C shows the outline of the mining area, the touching landowners, the 200 foot ownership, current topography, and hydro-logic features of the property. The land is presently used for

mining and agricultural purposes by the landowners. Most of the existing area is highly disturbed where mining is taking place. The new areas have been used for dry land crop production or rangeland.

Access to the site is via the existing driveway from the East 74th Avenue to the north and it will be maintained as needed and will remain when mining is complete. Since the driveway is an existing private road and will remain when reclamation ends, it is not included as part of the permit area.

MINING PLAN

The permit area is being expanded from 47.57 acres to 107.88 acres to extend the life of the mine and to continue the sand gravel and borrow material operations for the area. Along the affected lands/permit line the mining setback will be 25 feet. The exception to this is along the south permit line. In this area due to structures adjacent to the permit. In this area a working face setback of 70 feet staked from the Permit line. North of this line the working face will be worked approximately ½:1 but when mining reached this setback line mining will done on the final 3:1 grade. This will maintain at least a 1.5 factor of safety for the fence line. The geotechnical Analysis is based on this plan. The excavation will proceed both north and south from the area currently mined as a dry alluvial operation. A portion of the southern end of the existing mine and new south area has sand and gravel below the alluvial aquifer associated with Kiowa Creek. It may be feasible to mine this material as a dry source by placing a sealing liner around it. But until investigations can be completed as to the feasibility of obtaining replacement water for that area, then mining will only take place above the groundwater table.

At anyone time we may have 2 working faces extend across the property until an exterior limit is reached. **MAP EXHIBIT C-1-MINING PLAN** shows how this may look in the near future. There is not a dedicated Plant Site since processing takes place at the face being mined and piles of finished product are placed near the process equipment until it is hauled from the mine. The current plan calls for having 4 - 10 acre Mining Phases, but under this amendment the phasing is removed and a maximum disturbance scenario will be used to allow flexibility for the mine to be developed from both ends of the deposit. The material mined is damp so no unusual dust control problems exist.

Mining will expand out from the existing partially mined area to the south and north. Stripping will precede mining so only enough area is stripped to cover the next 6 to 12 months of mining. Reclamation will run concurrent with mining to limit the amount of area disturbed at any time. The maximum disturbed area will include partially reclaimed area, mined area, partially mined areas and stripped areas. Under the revised is plan mining and reclamation would run concurrently on the mine area as needed. Under this plan we will bond for the existing and proposed disturbance areas rather than a maximum area, this means that we are not limited to 60 acres in the future. Rather that at this time the limit covered by the bond will be 60 acres which includes areas that are actively being affected by mining, processing and partial reclamation areas that will have been mined, graded and vegetated but not yet ready for release. No mining will take place within 100 feet of the north bank of Kiowa Creek. Kiowa Creek is an ephemeral drainage that very seldom has water running thru it. No explosives will be used nor will blasting be done at this mine, the material is easily mined using conventual sand and gravel mining methods.

There is limited surface material that would qualify as topsoil. As noted in the original text, much of the surface on the existing permit area and newly added south area, has sand on the surface that is not classified as soil. Information for the new north area suggests that there is an average of 5 plus feet of a sandy-clay that is medium stiff to stiff. We will salvage the upper 12 inches of this material for resoiling that area. When the surface layer has some topsoil material it will be stripped and stored for later use in revegetation. As new area is stripped for excavation the soil will be salvaged and stored around the mine perimeter. There have been unusable overburden and/or lenses of clay materials in the sand deposit that will also be stripped and stored for later use in building slopes or backfilling the floor. Both overburden material and unusable clay lenses will be stored along the western portion of the mine for use in grading the final slope from the top to the floor. The salvaged topsoil may also be used on areas ready for resoiling.

A part of this material salvage plan a 6 foot high temporary sight berm will be placed along the northern part and on the south line of the mining area to screen the neighbors from noise generated by mining. The berm will have 3h to 1v slopes on each side and will be revegetated using the approved seed mix. When mining ends in

the area next to these berms, the material will be used to resoil the final slopes. **MAP EXHIBIT C-1 - MINING PLAN MAP** shows where the berms will be located. Their installation will take place before mining reaches these areas.

Mining will take place using scrapers, track hoes, frontend loaders, off road trucks and other equipment. Fuel stored on site is/or will be kept in self contained facilities capable of contain 110% of the capacity of the liquids stored.

The excavated material may be loaded directly into trucks for delivery to the plant or from the working face into the processing plant. If raw material is hauled to the plant it will be stock-piled for processing. All slopes will be left in a reasonably smooth condition and be a minimum of ½h to 1v and a maximum of 3 horizontal to 1 vertical during mining. Exterior sloping will take place as mining progresses thru the deposit.

Since this is a dry pit operation there will be not affect or injury to any water rights. The plan is to stay at lease 2 feet above the ground water table and should mining get into the water table it will be immediately backfilled with at least 2 foot of material. If that happens the floor will be temporally adjusted so it stays at lease 2 feet over the groundwater until the necessary permits can be obtained to cover evaporation losses prior to mining deeper. This will be done by either installing a slurry wall or compacted liner to isolate the mining area from the groundwater table, depending on the technology that will best serve the conditions found. Albert Frei and Sons, Inc. will file a Technical Revision once it is determined what type of liner is most appropriate, and how much area will be lined will be determined at that time. The Mining and Reclamation Plan Maps will be revised showing the location of liner and the end use for the area inside the liner.

The south working face will continue to be worked to the south on a elevation that is 2 feet above the ground water level in this area until the mine limits have been reached. Site investigations indicate the groundwater elevation under the southern part of the mine is approximately 5294. So the floor elevation will be mined at approximately 5296 across the property.

As mining goes into the north side it may be possible to mining to the top of the shale since it may be higher then 5294. If needed

water for washing and dust control will be purchased or the operator may also obtain a deep well permit for a well to provide water for the mines needs.

During mining all interior pit slopes will be into the mine so there will be no drainage off the affected land. This same slope management plan will prevent any offsite slides or other disruptions, and will also address some of the storm-water runoff questions arising from the Clean Water Act. Temporary isolation berms or ditches will be constructed within the setbacks around the mine to prevent stormwater from entering or leaving the site. No water will be discharged from the pit unless done so under a CPDS permit and all stormwater will be collected on the site and treated before being released if it comes in contact with disturbed areas as required. It will be held for less than 72 hours.

The current permit contains an Inert Fill provisions approved in **Technical Revision 01** that allows importation of fill material. If Albert Frei and Sons, Inc., imports inert fill it will be used for reconstruction of slopes or backfilling on the mine floor. A copy of the Technical Revision and approval are provided in the appendix for your review.

MINING TIMETABLE

The continuing uncertainty of economic conditions in the construction materials industry precludes an accurate forecast of demand during the life of the mine. This estimated mining timetable is based on an average year and it is expected that a specific year will vary widely from the average.

MINING TIMETABLE

MINING AREA	YEARS	ACRES ±		AVERAGE ANNUAL PRODUCTION TONS/YEAR
		TOTAL AREA	MINED AREA	
Mine	7-10	107.88	83.07	500,000

RECLAMATION PLAN AND TIMETABLE***RECLAMATION PLAN***

There are no plans at this time to change the future use for the mined areas for that approved in 2001. Currently the post mining land use is rangeland and the new areas will have the same designation. The approved reclamation plans, including resoiling, revegetation methods and grass species, for the existing permit area will be used for the amendment areas. We will use the revegetation and resoiling methods approved in the original application and the Technical Revisions, on the new areas. The current reclamation plan is laid out as a phased operation. Under the original submittal this made sense because the original operator was small. When Albert Frei and Sons, Inc. took it over the companies sales demands are higher so having a Phase Reclamation Plan is too restrictive for how fast the material is being mined. Instead, the Phasing is being removed and a maximum disturbance layout is proposed. The text below addresses changes that are needed to make this happens. The Reclamation Plan Map shows the area to be reclaimed.

Reclamation will be undertaken in the following manner for all parts of the mine. Except for the areas of the permanent private road, any stored overburden material and sand spoils from the plant's operation will be used to level the mines floor and rebuild side slopes. The final exterior slopes will be rebuilt and sloped 3H (horizontal) to 1V (vertical) and the floor will slope gently from north to south to preserve the natural drainage across the site. The current Reclamation Plan Map shows that some of the western part of the mine may be backfilled out from the west permit line so a long slope extends across the mine. The map shows the area as we feel it will be graded. Should excess waste material be encountered or a supply of inert fill material becomes available, Albert Frei and Sons will keep the option to do partial backfilling. Prior to this happening the Division will be notified and a Technical Revision will be filed to show what is planned. If the liner is installed on the southern area this area would be sloped, resoiled and seeded according to the reclamation plan and left as depression in the surrounding area.

In the area where the mine floor reached the underlying shale or has been backfilled with clay lenses or overburden it will be ripped and scarified prior to resoiling and seeding. Once sloping

is complete the salvaged soil will be spread over the area to be seeded an average of 12 inches deep on the north area. For the existing permit area and south, any soil salvaged from the south area will be respread for revegetation.

The plan calls for revegetating the mined area using the NRCS recommendations provided in the original permit **EXHIBIT I/J** (a copy is provided in the exhibit for reference). The NRCS recommended using a seed drill with 6.5 inch spacing and a planting depth of $\frac{1}{4}$ to $\frac{1}{2}$ inch from October 15 to May 20th of each year. No fertilizer or mulch was recommended and spring weed control using herbicides and/or mowing in spring to mid-summer.

The following seed mix was recommended and approved for use at the mine.

<u>Species</u>	<u>Lbs. PLS/Acre*</u>
Sand bluestem (Eida)	2.40
Prairie Sandreed (goshen)	0.88
Switchgrass (greenville)	0.50
Yellow Indian grass (Llano)	0.83
Little Bluestem (Pastura)	<u>0.35</u>
TOTAL	12.50

* If broadcast the seed rate is to be doubled

Under normal conditions, the operator will strive for a 20 to 40 percent cover rate on the revegetated areas when reclamation is complete. Careful analysis of the growth medium and salvageable soil will permit the operator to implement a soil additive program and to monitor the prescribed seeding plan to determine if the plan requires revision. Under normal weather conditions, an adequate moisture reserve will be present for establishment of the proposed seed mixture. No irrigation will be used during reclamation since the plan is to establish a vegetation cover that is not dependent on irrigation to survive.

RECLAMATION PERFORMANCE STANDARDS

The property will be mined in compliance with the Reclamation Performance Standards of Rule 6. Grading will be performed to create a final topography that is compatible with the intended final land use. Final external slopes will be graded no steeper than 3h to 1v as provided for in the Rules and Regulations. The **RECLAMATION PLAN MAP** shows how the area will be reclaimed.

Imported fill materials may be used to fill part of the excavated area and level the mine floor. This material may consist of broken concrete or other materials suitable for that purpose. It will be "Inert Material" as defined by the Colorado Department of Health. The pit will be reclaimed so that a suitable grade for drainage exists, all surface runoff will be directed so it remains on the mine site.

All grading will be done in a manner to control erosion and to protect areas outside the affected land from slides or other damage. Backfilling and grading will be completed as soon as feasible after mining is completed in a given area. All refuse will be hauled away or disposed of in a manner that will control unsightliness and protect the drainage system from pollution. There are no acid-forming or toxic materials involved in this operation. The minimal amounts of petroleum products stored at the site will be done as prescribed by applicable laws. The storage tanks have secondary containment features and a Spill Prevention and Containment Plan has been prepared for the fueling facility. There are no drill or auger holes on the land. Maximum slopes will be within the limits set forth in the Rules and Regulations of the Board and will be capable of being traversed by machinery.

The operator does not expect prevailing hydrologic conditions to be disturbed. We will comply with applicable Colorado water laws and regulations (as the operator understands them) governing injury to existing water rights in order to minimize any disturbance, which might occur to the prevailing hydrologic balance of the affected land and surrounding areas and to the quality of water in surface and ground-water systems both during and after the mining operation and during reclamation. In addition, the operator expects to comply with applicable Federal and Colorado water quality laws and regulations. Any water used in the operation or the processing plant will come from water owned by the operator or purchased from an outside agency that is approved for that use. **EXHIBIT G** contains specific information concerning impacts and uses of water at this mining operation.

This is not a dredge facility, so there are no temporary siltation structures involved in this operation and no mining will be done within the confines of the Kiowa Creek channel. If needed a U.S. Army Corp of Engineers Permit is required for mining in waters of the U.S. or wetlands on the site it will be obtained prior to

disturbing those areas. There will be no earthen dams on the mined area.

The mining and reclamation plans consider existing wildlife use of the site. This mine is located in a rural setting surrounded by large tracks of open lands where displaced wildlife can go. During mining and reclamation a few terrestrial mammals, amphibians and birds will be displaced. There is adequate habitat on surrounding properties for the displaced critters to go until reclamation is complete. Creation and management of wildlife habitat is not a specific part of the reclamation plan. A wildlife statement was provided by Colorado Division of Wildlife Northeast Region, in 2001, a copy is provided.

Topsoil in the area is minimal or of poor quality and very little exists in some areas that can be salvaged. The operator is committed to salvage whatever growth medium is available for use in reclamation. When growth medium/topsoil is removed to reach the mineral deposit, it will be segregated and stockpiled along the perimeter or floor where mining is complete. If the topsoil piles remain undisturbed for more than a year, the approved seed mix and rate recommend, per surface acre will be planted on the piles or other means will be employed to preserve the topsoil from wind and water erosion. This will keep it free of contaminants so that it remains useful for sustaining vegetation when reclamation begins. The topsoil will be handled as little as possible until it is replaced onto disturbed areas. Albert Frei & Sons will take measures necessary to insure the stability of the replaced topsoil on graded slopes and ensuring that it is spread as evenly a possible.

RECLAMATION TIMETABLE

Reclamation will begin once enough area has been opened so that any reclamation completed will not be disturbed as mining progresses. This may take one or more years depending on the economic conditions in the area and the amount of material mined. By the time mining is completed approximately 70% of the total mined land will be reclaimed. As mining ends only final slope backfilling, grading and shaping resoiling and seeding will be needed on the areas last mined. Final seeding will be done by the end of the second fall after grading is completed. The area will be monitored for success of revegetation until accepted by the Division for release. If revegetation failures occur prior to release, an analysis of the

site will be made and the area will be revegetated again as necessary.

RECLAMATION TIMETABLE

AREA	YEARS	ACRES ±				
		TOTAL	ROAD	BACKFILL AREA	REVEGET ATION	SET- BACKS
Mine	3-5	107.88	0.63	17.73	106.92	7.08

color map

WATER INFORMATION

It is the operators intent to minimize the disturbances to the prevailing hydrologic balance of the affected land, of the surrounding areas and to the quality and quantity of the surface and ground water system, both during and after mining and reclamation. Albert Frei and Sons, Inc. believes they will be in compliance with all state and federal laws and regulations governing water and water rights as they understand them.

Because of the geographic features around the mine, all offsite runoff is or will be diverted around the disturbed area. Any storm water runoff from the disturbed areas will be retained on the site and directed into the mining area where it will be held for no longer then 72 hours. No mining will take place within 100 feet of the north bank of Kiowa Creek channel. Kiowa Creek is an ephemeral drainage that very seldom has water running thru it. The creek flows only at such times when flooding upstream causes water to flow thru the Creek. Additionally in some years there are flows in Kiowa Creek from approximately May through June, generally from that time on any water encountered is only ground water associated with the creek. Under no circumstance will this proposed pit have any effect upon the ground water in the Kiowa, Bijou or Lost Creek Basins.

As explained in the revised Mining and Reclamation Plans most of the permit area is a terrace deposit of gravel. We do not expect to expose groundwater above 5294. The bedrock is above this elevation on approximately two-thirds of the mine farthest from Kiowa Creek. The southern one-third will be mined dry until the groundwater table is encountered. If that happens the floor will be backfilled so it stays at lease 2 feet over the groundwater table. Once the area has been mined an evaluations will be done to determine if mining below the water table is feasible as noted in the Mining Plan. If it provides feasible then a Technical Revision will be filed to provide the type of liner and it's design, the area to be lined and will include ground water monitoring and mitigation plan prior to installing the liner and mining the material.

Review of drill logs for the permit are indicated the groundwater lies on the southern apart of the area closest to the Kiowa Creek channel. It varies in depth from 9 feet near the east fence to an average of 50 feet along the west side. Four monitoring wells will be installed along the southern end of the mine as shown on Map

Exhibit C-1. Even though there is no plan to expose ground water at this time, The elevation data collected for the first 13 months and then once quarterly, will establish the historic ground water elevation data if needed in the future. In addition, throughout the life of the mine Frei is committed to collecting a water quality sample one time per year from the central most well. In other words one sample per year from one well. This data will be retained in the company office and can be inspected upon request.

TABLE G-1 shows the results of a record search of the Division of Water Resources well permits files. It indicates the four wells within 600 feet of the mine perimeter are 300 plus feet deep and no surface groundwater wells are listed for the surrounding area. A map showing the well locations according to the Office of the State Engineer data is also provided labeled **MAP EXHIBIT G - WELL MAP**.

We estimate dust control for the various parts of the operation, i.e., roads, crushing & screening, washing, etc. to be a maximum of 3-ac-ft per year. This water will be obtained from a source approved for that use. No water will be used for reclamation.

Kiowa Creek is the closest surface water drainage to the mine and is dry most of the time. The permit area lies above and outside the 100-year floodplain for Kiowa Creek. Its location is shown on the large Map Exhibits. There are no Waters of the US or wetlands are on the mine area. Mining and Reclamation will not affect the Kiowa Creek channel.

RECLAMATION COSTS

The following information is presented based on the Bond evaluations preformed by the Division of Reclamation Mining and Safety on September 14, 2018 Circes Reclamation Cost estimate. The current bond amount is \$110,860.00 which is current enough that it can be used as a base to set the bond for the amendment.

The bond is based on having no more then 60 acres needing resoiling and seeding and 3300 feet of cut/fill bank sloping, based on 3h to 1v.

The following information based on the layout of the CIRCES COST SUMMARY FORM the Division provided in September 2018. The numbers and sequencing were left in the order presented for ease of following this estimate. Only the costs associated with grading, shaping, resoiling and seeding increases are changed. At this mine it is not necessary to import fill material to complete reclamation on the site. The methodology for the reclamation did not change from the 2001 amendment.

Task Description	Direct Cost
001 - Grade all slopes (1300 on South & East and 1800' on West and North) 7896yds x 1.124= 8,872 cyds @ 23.8¢/yd	\$2,109.00
002 - Spread Topsoil - (60 ac - 12" deep) 96,800 cyds @ 96.2¢/yd	\$94,084.00
003 - Revegetation work - (60.0 acres seeding, includes dicing seed bed, mulch and secondary seeding) 60.0 ac @ \$1,011.95/ac +60x20%x\$329.66/ac	\$64,673.00
004 - Mob/demob	\$6,462.00
Total Direct costs	\$167,328.00
INDIRECT COSTS	
Liability insurance @ 2.02%	\$3,380.03
Performance bond @ 1.05%	\$1,756.97
Job Superintendent 228.00 hrs @ \$41.25/hr	\$9,405.00
Profit @ 10%	\$16,732.00
TOTAL INDIRECT COSTS	\$31,274.00
Financial warranty processing	\$500.00
Engineering work/bid preparation @ 4.25%	\$8,440.60
Reclamation Management @ 5%	\$9,930.10
Total bond	\$217,472.70

RECOMMEND BOND BE SET AT \$217,500.00

PERMANENT AND MAN-MADE STRUCTURES

The following list represents the permanent man-made structures within 200 feet of or on the mining areas. As the limits of the mine are reached, the slopes will be backfilled 3h to 1v to leave a stable slope. Along the property line the setback will be 25 feet from the permit line to the dig line. Our plan to mine the slopes at the natural angle of repose adjacent to any structure and place temporary backfill against them if they will be left for more than 3 months. This will eliminate any chance that these structures will be affected by mining. Structure agreements were mailed to the owners for which no agreements have been obtained as of February 21, 2019 and when or if they are received copies will be provided to the Division. Copies of the proof of mailings receipts are provided in the Appendix of this packet.

Please refer to **MAP EXHIBIT C - AFFECTED LAND MAP** for the location of the structures listed below;

Henderson Aggregates, LLC.

3 - strand wire fences
Garage
Water Well - 300 ft deep

David A and Joyce E Lincoln
Barn#
Out building#
Fences

Wayne S and Gail E Palone
House
Fences
Water Well - 340 ft deep

The Robert & Alethea Copeland Revocable Living Trust
Fences
Water Well - 340 ft deep

Eastern Slope Rural Telephone
1 underground phone line*

Intermountain REA
underground ground powerline*

Note

1. Structures marked with a # have existing structure agreements.
2. Structures marked with a * have been installed to service only the scale house and mine.

PERMITTEE/STRUCTURE OWNER AGREEMENT

State of Colorado, Mined Land Reclamation (MLR) law requires the permit applicant (operator/permittee) to agree to reimburse the owner of any permanent man-made structure(s) within 200 feet of the AFS-Bennett Pit (M-2001-038) permitted mining area, for damage done to the structure(s) as a result of the permitted operation.

Albert Frei and Sons, Inc. believes Eastern Slope Rural Telephone own the following structure(s), located within 200 feet of the permitted mining area: 1 underground phone line*

Albert Frei and Sons, Inc., agrees to reimburse you for any damage done to the listed structures as a result of the mining operation. Your acknowledging signature and a notary seal in the spaces provided below shall satisfy the MLR law requirement. Albert Frei and Sons, Inc. certifies this agreement as follows:

CERTIFICATION: The applicant Albert Frei and Sons, Inc. represented by Albert Frei, Jr. , as the President, does hereby certify that Eastern Slope Rural Telephone shall be compensated for any damage from the proposed mining operation to the above listed structure(s) located within 200 feet of the permitted mining area described in the MLR Permit for the AFS - Bennett Pit.

NOTARY FOR PERMIT APPLICANT

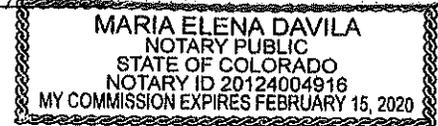
ACKNOWLEDGED BY:

Permit Applicant: Albert Frei and Sons, Inc., P.O. Box 700, Henderson, CO 80640

Representative: Albert Frei, Jr. phone 303-289-1837

Signature: [Signature] Date: 2/7/19

STATE OF Colorado)
) ss
COUNTY OF Adams)



The foregoing was acknowledged before me this 7th day of February, 2019, by Albert Frei, Jr. as the President of Albert Frei and Sons, Inc.

Notary Public: [Signature] My Commission Expires: 02-15-2020

NOTARY FOR STRUCTURE OWNER(s)

ACKNOWLEDGED BY:

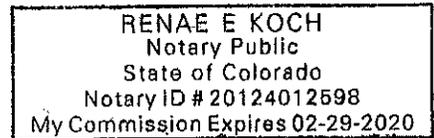
Structure Owner(s): Eastern Slope Rural Telephone

Contact name (print): Clint Felzien

Title: Operations Manager

Signature: [Signature] Date: 2-23-19

STATE OF Co)
) ss
COUNTY OF Adams)



The foregoing was acknowledged before me this 28 day of February, 19, by Clint Felzien.

Notary Public: Renae E Koch My Commission Expires: 2/29/2020

Addendum to Inert Fill Plan as approved on 10/9/2015

Inspection and Control Policy

This policy is intended to assure that all Inert Material delivered to the mine for use in reclamation meets the definition of acceptable material under Division of Mining, Reclamation and Safety Rule 1.1(20). The control begins as the material enters the permit area. Albert Frei and Sons, Inc. employees at the mine have been trained to recognize inert material and unacceptable inert materials as defined in the rule and are instructed to not allow it to be dumped if there is any questionable material in the load.

Monitoring Plan

As material is delivered to the mine the truck must stop at the scale house for inspection and screening. Employees check the load to see that it meets the permit guidelines. After the inspection a load delivery ticket is filled in and signed by the driver, and allowed to be placed in a designated area as long as it meets the acceptance criteria. After the truck is unloaded, and the equipment operator finds any unacceptable materials, they will segregate it to be returned, loaded back on to the customer's truck for disposal at site permitted for the materials. The complete inspection of the load is done prior to the load being combined with other inert fill on site. Notes are made on the ticket of the offending customer if trash or unacceptable materials are in the load so it can be discussed with them and appropriate actions can be taken. This way we have control over anyone who abuses our trust since they will not be allowed to use the facility in the future unless the problem is corrected.

Load log/tracking plan documentation

A load ticket for the delivered inert material contains information on

1. The Date and time the load was delivered.
2. The type and amount of material delivered to be backfilled into the pit.
3. The source of this material and address of origin
4. Each ticket has this statement - *"I certify that my load DOES NOT contain hazardous materials, garbage, wood, organic material or other unacceptable materials"*.
5. Signature line that certifies the material is clean and inert.

Record keeping plan

On a daily basis the load tickets will be transfer from the mine office to the company headquarters where they will be retained in the company records in electronic form and submitted to the Division of Mining, Reclamation and Safety (State) with annual reports. Load tickets will be kept at the corporate office in Henderson Colorado for inspection upon request.



Consultants in Natural Resources and the Environment

Natural Resources Assessment Albert Frei and Sons – Bennett Pit Bennett, Colorado

Prepared for—

Albert Frei and Sons, Inc.
PO Box 700
Henderson, Colorado 80640

Prepared by—

ERO Resources Corporation
1842 Clarkson Street
Denver, Colorado 80218
(303) 830-1188
ERO Project #10645

May 9, 2019

Contents

Executive Summary..... **ii**

Introduction **1**

Project Area Location **1**

Project Area Description **1**

Wetlands and Other Waters of the U.S. **4**

Background 4

Site Conditions and Regulations 5

Threatened, Endangered, and Candidate Species **6**

Preble’s Meadow Jumping Mouse..... 7

Colorado Butterfly Plant 8

Ute Ladies’-Tresses Orchid..... 8

Other Species of Concern **9**

Raptors and Migratory Birds..... 9

Other Wildlife..... **10**

References..... **11**

Tables

Table 1. Federally threatened, endangered, and candidate species potentially found in the project area or potentially affected by projects in the project area..... 6

Figures

Figure 1. Vicinity Map 2

Figure 2. Existing Conditions..... 3

Appendices

Appendix A Photo Log

Executive Summary

Albert Frei and Sons, Inc. (AFS) retained ERO Resources Corporation (ERO) to provide a natural resources assessment for the Bennett Pit property southwest of the intersection of East 72nd Avenue and Provost Road in Bennett, Adams County, Colorado (project area). ERO assessed the project area for potential wetlands and other waters of the U.S., threatened and endangered species habitat, and general wildlife use. Below is a summary of the resources found at the project area and recommendations or future actions necessary based on the current site conditions and federal, state, and local regulations.

The natural resources and associated regulations described in this report are valid as of the date of this report and may be relied upon for the specific use for which it was prepared by ERO under contract to AFS. Because of their dynamic natures, site conditions and regulations should be reconfirmed by a qualified consultant before relying on this report for a use other than that for which ERO was contracted.

Wetlands and Other Waters of the U.S. – Kiowa Creek is a tributary to the South Platte River and may be considered a jurisdictional water of the U.S. ***If any work is planned within Kiowa Creek, a jurisdictional determination should be requested from the U.S. Army Corps of Engineers (Corps).*** If Kiowa Creek is considered jurisdictional and work is planned within the creek, a Section 404 permit would be required from the Corps for the placement of fill or dredge material within wetlands or below the ordinary high water mark. If no work is planned in Kiowa Creek, no action is necessary regarding wetlands and other waters of the U.S.

Threatened and Endangered Species – The project area does not contain habitat for Mexican spotted owl. A viable population of Preble’s meadow jumping mouse (Preble’s) is unlikely to exist in the project area because the project area lacks riparian shrub habitat and the project area is extremely fragmented and continuously disturbed by human activity. The project area is not conducive to the establishment of Ute ladies’-tresses orchid or Colorado butterfly plant because no wetlands occur within the project area and the project area consists primarily of disturbed uplands dominated by introduced understory species. ***If project activities would encroach within 300 feet of the 100-year floodplain of Kiowa Creek, ERO recommends submitting a habitat assessment to the U.S. Fish and Wildlife Service (Service) requesting confirmation the project area lacks habitat for Preble’s and a presence/absence survey would not be required.***

Migratory Birds – No bird nests were observed during the 2019 site visit; however, trees, shrubs, and upland grasslands in the project area provide potential nesting habitat. The Denver Field Office of the Service (2009) and Colorado Department of Transportation (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring between April 1 and mid to late August. However, some birds, such as the red-tailed hawk and great horned owl, can nest as early as February or March. Because of variability in the breeding seasons of various bird species, ***ERO recommends a nest survey be conducted within one week prior to construction*** to determine if any active nests are present in the project area so they can be avoided. If active nests are found, any work that would destroy the nests could not be conducted until the birds have vacated the nests.

Other Wildlife – No wildlife corridors or other sensitive species occur within the project area that would be adversely affected by the proposed project. If the 100-foot setback from Kiowa Creek is maintained as proposed, impacts on other wildlife would be minimized.

Natural Resources Assessment Albert Frei and Sons – Bennett Pit Bennett, Colorado

May 9, 2019

Introduction

Albert Frei and Sons, Inc. (AFS) retained ERO Resources Corporation (ERO) to provide a natural resources assessment for the Bennett Pit property southwest of the intersection of East 72nd Avenue and Provost Road in Bennett, Adams County, Colorado (project area; Figure 1). On April 22, 2019, Steve Butler, a biologist with ERO, assessed the project area for natural resources (2019 site visit). During this assessment, activities included a review of potential wetlands and other waters of the U.S., identification of potential federally threatened and endangered species habitat, and identification of other natural resources. This report provides information on existing site conditions and resources, as well as current regulatory guidelines related to those resources. ERO assumes the landowner is responsible for obtaining all federal, state, and local permits for construction of the project.

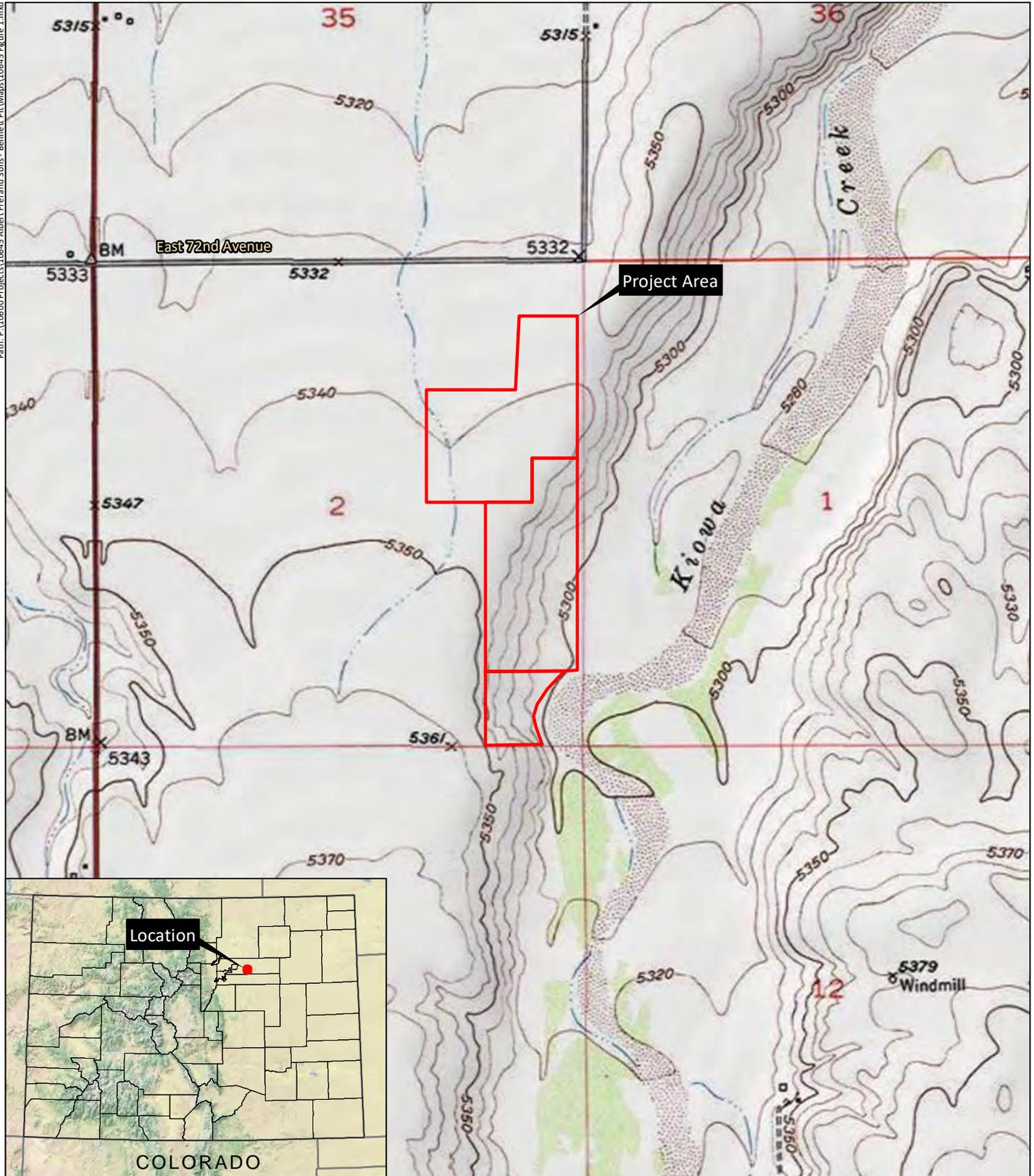
The natural resources and associated regulations described in this report are valid as of the date of this report and may be relied upon for the specific use for which it was prepared by ERO under contract to AFS. Because of their dynamic natures, site conditions and regulations should be reconfirmed by a qualified consultant before relying on this report for a use other than that for which ERO was contracted.

Project Area Location

The project area is in portions of Section 2, Township 3 South, Range 63 West of the 6th Principal Meridian in Adams County, Colorado (Figure 1). The UTM coordinates for the approximate center of the project area are 551594mE, 4407486mN, Zone 13 North. The longitude/latitude of the project area is 104.397185°W/39.815796°N. The elevation of the project area is approximately 5,320 feet above sea level. Photos of the project area are included in Appendix A.

Project Area Description

The project area is bounded by undeveloped land on all sides, except for a residential property to the west of the southern portion of the project area (Figure 2). The central portion of the project area consists of the active sand and gravel mine (Bennett Pit), while the northern and southern portions of the project area consist of undeveloped land (Figure 2). Kiowa Creek borders the project area to the southeast.



Bennett Pit

Section 2, T3S, R63W; 6th PM

UTM NAD 83: Zone 13N; 551594mE, 4407486mN

Longitude 104.397185°W, Latitude 39.815796°N

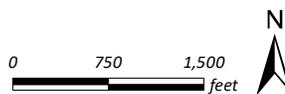
USGS Bennett, CO Quadrangle

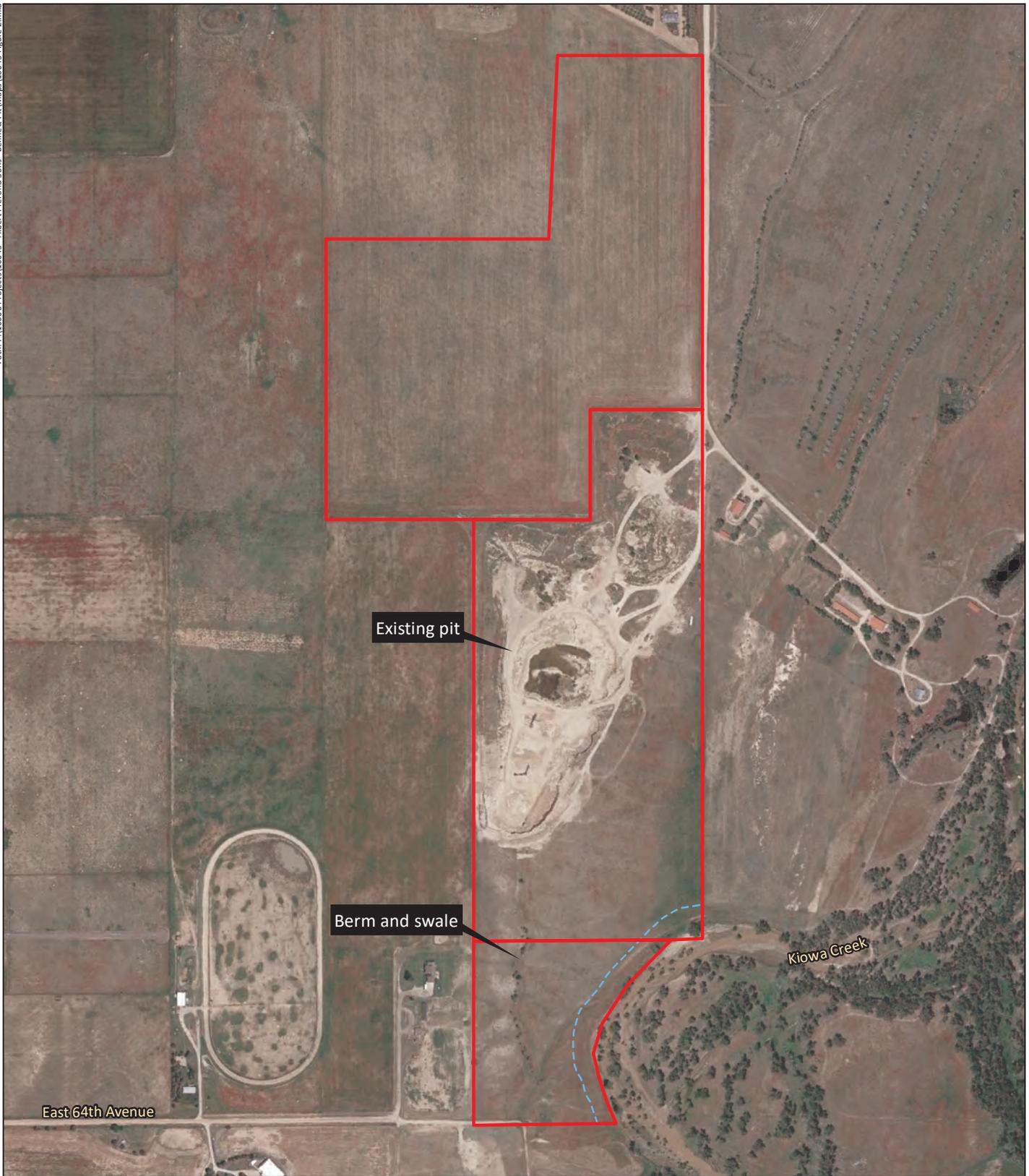
Adams County, Colorado

Copyright:© 2013 National Geographic Society, i-cubed

Figure 1
Vicinity Map

Prepared for: Albert Frei and Sons
File: 10645 Figure 1.mxd [dH]
May 6, 2019





Bennett Pit

-  Project Area
-  100 Feet from Edge of Creek



Figure 2
Existing Conditions

Prepared for: Albert Frei and Sons
File: 10645 Figure 2.mxd [dH]
May 9, 2019



The central portion of the project area is occupied by the Bennett Pit and lacks vegetation. The vegetation in the project area south of the pit consists of a mixture of native and introduced plants such as smooth brome (*Bromus inermis*), blue grama (*Bouteloua gracilis*), sand dropseed (*Sporobolus cryptandrus*), common mullein (*Verbascum thapsus*), prairie sage (*Artemisia ludoviciana*), fringed sage (*Artemisia frigida*), yucca (*Yucca glauca*), prickly pear (*Opuntia* sp.), diffuse knapweed (*Centaurea diffusa*), and musk thistle (*Carduus nutans*) (Photos 1 and 2). A constructed berm and swale run from north to south at the southern end of the project area. A few scattered cottonwood trees (*Populus deltoides*) occur along the swale.

Kiowa Creek flows along the southeastern edge of the project area (Photo 3). The creek has steep, nearly vertical banks, and the top of the east bank of the creek generally follows the edge of the project area. Vegetation along the creek consists mostly of cottonwood and peachleaf willow (*Salix amygdaloides*) trees with a sparse understory of grasses.

The portion of the project area north of the Bennett Pit is a formerly cultivated field, with sparse vegetation. Most of the grasses in this area were just beginning to grow and could not be reliably identified during the 2019 site visit. Vegetation that could be identified included kochia (*Bassia scoparia*), musk thistle, bindweed (*Convolvulus arvensis*), cheatgrass (*Bromus tectorum*), gray lovegrass (*Eragrostis cilianensis*), common dandelion (*Taraxacum officinale*), and curly dock (*Rumex crispus*).

Wildlife observed at the project area included American robins (*Turdus migratorius*), western meadowlarks (*Sturnella neglecta*), and a cottontail (*Sylvilagus audubonii*).

Wetlands and Other Waters of the U.S.

Background

The Clean Water Act (CWA) protects the chemical, physical, and biological quality of waters of the U.S. The U.S. Army Corps of Engineers' (Corps) Regulatory Program administers and enforces Section 404 of the CWA. Under Section 404, a Corps permit is required for the discharge of dredged or fill material into wetlands and other waters of the U.S. (streams, ponds, and other waterbodies). In 2007, the Corps issued guidance in response to the Supreme Court ruling in the consolidated cases of *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* stating that the Corps considers traditionally navigable waters (TNWs), wetlands adjacent to a TNW, and tributaries to TNWs that are relatively permanent waters (RPWs) and their abutting wetlands jurisdictional waters. Other wetlands and waters that are not TNWs or RPWs require a significant nexus evaluation to determine their jurisdiction. A significant nexus evaluation assesses the flow characteristics and functions of a tributary and its adjacent wetlands to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.

On May 31, 2016, the U.S. Supreme Court concluded that approved jurisdictional determinations are judicially reviewable under the Administrative Procedure Act and, therefore, can be appealed in court. The Corps has recommended that requests for both approved and preliminary jurisdictional

determinations be done using guidance outlined in Regulatory Guidance Letter 16-01 and that a jurisdictional form request be completed (Corps 2016). The Corps has indicated that jurisdictional determinations associated with a Section 404 CWA Permit request will preside over stand-alone jurisdictional determination requests. While ERO may provide its opinion on the likely jurisdictional status of wetlands and waters, the Corps makes the final determination.

Site Conditions and Regulations

ERO assessed the project area for potential isolated wetlands, jurisdictional wetlands, and other waters of the U.S. Kiowa Creek runs along the southeast edge of the project area. Kiowa Creek is an intermittent stream with a defined bed and bank and is a tributary to the South Platte River. As described above, Kiowa Creek has steep, nearly vertical banks, and the top of the east bank of the creek generally follows the fence line at the edge of the project area. The ordinary high water mark (OHWM) of the creek is just outside the project area, on the outside of the fence line that marks the edge of the project area. Vegetation along the creek consists mostly of cottonwood and peachleaf willow trees with a sparse understory of grasses. Kiowa Creek would likely be considered a jurisdictional water of the U.S. by the Corps. AFS has indicated to ERO that no work would occur within 100 feet of Kiowa Creek. If placing fill material or other work is proposed in Kiowa Creek, a jurisdictional determination should be requested from the Corps.

If Kiowa Creek is considered jurisdictional and work is planned within the creek, a Section 404 permit would be required for the placement of fill or dredge material below the OHWM. If the creek is determined nonjurisdictional, or if no work is planned within the creek, no action would be necessary.

No other wetlands or aquatic sites were identified within the project area. A review of data from the National Hydrography Dataset (NHD) shows an intermittent stream crossing the western edge of the project area, north of the existing pit. A site review found that no stream exists at this site, which is part of a recently cultivated field. Because the NHD data are based on aerial photography from the 1970s, it is likely the drainage no longer exists at this site.

A constructed berm and swale run from north to south at the southern end of the project area (Photo 4). A few scattered cottonwood trees occur along the swale. The swale lacks wetland vegetation, soils, and hydrology and, thus, is not a wetland. Vegetation at this swale is dominated by cottonwood trees and Kentucky bluegrass (*Poa pratensis*). No indicators of wetland hydrology or soils are present, and the swale does not connect to Kiowa Creek. This berm and swale may be the remains of an agricultural ditch that is no longer used.

At certain times, water may occur in the lower areas within the Bennett Pit. ERO did not review areas within the pit during the 2019 site visit. A review of aerial photography shows that any water within the pit would lack a surface connection to Kiowa Creek and would likely be considered isolated and nonjurisdictional.

Threatened, Endangered, and Candidate Species

ERO assessed the project area for potential habitat for threatened, endangered, and candidate species under the Endangered Species Act (ESA). Federally threatened and endangered species are protected under the ESA of 1973, as amended (16 United States Code 1531 et seq.). Significant adverse effects on a federally listed species or its habitat require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 or 10 of the ESA. The Service lists several threatened and endangered species with potential habitat in the project area, or that would be potentially affected by projects in the project area (Table 1).

Table 1. Federally threatened, endangered, and candidate species potentially found in the project area or potentially affected by projects in the project area.

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to be Affected by Project?
Mammals				
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	T	Shrub riparian/wet meadows	No
Birds				
Interior least tern**	<i>Sterna antillarum athalassos</i>	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No habitat and no depletions anticipated
Mexican spotted owl	<i>Strix occidentalis</i>	T	Closed canopy forests in steep canyons	No
Piping plover**	<i>Charadrius melodus</i>	T	Sandy lakeshore beaches and river sandbars	No habitat and no depletions anticipated
Whooping crane**	<i>Grus americana</i>	E	Mudflats around reservoirs and in agricultural areas	No habitat and no depletions anticipated
Fish				
Pallid sturgeon**	<i>Scaphirhynchus albus</i>	E	Large, turbid, free-flowing rivers with a strong current and gravel or sandy substrate	No habitat and no depletions anticipated
Plants				
Colorado butterfly plant	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	T	Subirrigated alluvial soils on level floodplains and drainage bottoms between 5,000 and 6,400 feet in elevation	No
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	No
Western prairie fringed orchid**	<i>Platanthera praeclara</i>	T	Moist to wet prairies and meadows	No habitat and no depletions anticipated

*T = Federally Threatened Species, E = Federally Endangered Species.

**Water depletions in the South Platte River may affect the species and/or critical habitat in downstream reaches in other counties or states.

Source: Service 2019.

The interior least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid are species that are affected by depletions to the Platte River system. Based on ERO's knowledge of the types of activities likely to be implemented as part of the project area, there would be no depletions to the Platte River system. If the project includes activities that deplete water in the South Platte River, such as diverting water from a stream or developing new water supplies, these species could be affected by the project and consultation with the Service may be required.

The proposed project would not directly affect the Mexican spotted owl because the project area lacks the closed canopy forest and canyon habitat required by the Mexican spotted owl. Because of the lack of habitat, no further action is necessary regarding this species.

Potential habitat for Preble's meadow jumping mouse (Preble's), Colorado butterfly plant (CBP), and Ute ladies'-tresses orchid (ULTO) is generally more prevalent in areas across the Front Range. Because these species are more likely to be addressed by counties and regulatory agencies such as the Corps, a more detailed discussion is provided below.

Preble's Meadow Jumping Mouse

Species Background

Preble's was listed as a threatened species on May 13, 1998. Typically, Preble's occurs below 7,600 feet in elevation, generally in lowlands with medium to high moisture along perennial or intermittent streams and canals (Meaney et al. 1997). Preble's occurs in low undergrowth consisting of grasses and forbs, in open wet meadows, in riparian corridors near forests, or where multilevel shrubs and low trees provide adequate cover (Service 1999; Meaney et al. 1997).

Potential Habitat and Effects

During the 2019 site visit, ERO assessed the project area for potential Preble's habitat. The riparian area along Kiowa Creek contains mature trees, such as cottonwoods and peachleaf willows, with a sparse understory of grasses. Kiowa Creek is an intermittent stream and lacks wetlands in the reach near the project area. No presence/absence surveys have been conducted along Kiowa Creek, although several projects in Elbert County, more than 20 stream miles from the project area, were evaluated but not trapped due to lack of suitable habitat (Service 2014). Because of the lack of perennial water and lack of shrub cover along the creek, the reach of Kiowa Creek along the southeastern edge of the project area is unlikely to support a population of Preble's.

Recommendations

The Service recommends that projects within 300 feet of 100-year floodplains associated with rivers, creeks, and their tributaries (and projects that may have potential secondary impacts on such areas) be assessed as to their potential to have direct and indirect impacts on Preble's and Preble's habitat. Under existing regulations, either a habitat assessment or a full presence/absence survey for Preble's is required for any habitat-disturbing activity within areas determined to be potential Preble's habitat. Although the project area includes areas with 300 feet of the 100-year floodplain of Kiowa Creek, ERO determined that Preble's is unlikely to be present in the project area because of the lack of adequate

shrub cover. ERO recommends submitting a habitat assessment to the Service requesting concurrence that the project area is not habitat for Preble's and that the proposed project would not adversely affect the continued existence of Preble's.

Colorado Butterfly Plant

Species Background

The CBP is a short-lived perennial herb adapted to stream channels that are periodically disturbed. It occurs on moist subirrigated alluvial soils on level or slightly sloping floodplains and drainage bottoms at elevations from 5,000 to 6,400 feet. Colonies are often found in low depressions or along bends in wide, active, meandering stream channels that are periodically disturbed. Typically, CBP occurs in moist areas intermediate between wetlands and upland shortgrass prairies, which are open without dense or overgrown vegetation. This species is federally listed as threatened under the ESA and is found within a small area in southeastern Wyoming, western Nebraska, and north-central Colorado (NatureServe 2019). Critical habitat for CBP has been designated in southeastern Wyoming (Service 2005). On June 8, 2018, the Service proposed to remove the CBP from the federal list of threatened and endangered species (83 Code of Federal Regulations 111); however, it currently remains listed as threatened.

Potential Habitat and Effects

The Service has not established official survey guidelines for CBP; however, habitat is not present within the project area because a suitable perennial stream with an active floodplain does not occur within the project area.

Recommendations

No action is necessary regarding CBP.

Ute Ladies'-Tresses Orchid

Species Background

ULTO is federally listed as threatened. ULTO occurs at elevations below 7,800 feet in moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil is seasonally saturated within 18 inches of the surface (Service 1992a). This species has also been found along irrigation canals, irrigated meadows, gravel pits, and other human-modified wetlands. Generally, the species occurs where the vegetative cover is relatively open and not overly dense or overgrazed. Once thought to be fairly common in low-elevation riparian areas in the interior western United States, ULTO is now rare (Service 1992a). The species' known range is from Nevada to British Columbia. The largest known populations occur in Utah, followed by Colorado (NatureServe 2019).

Potential Habitat and Effects

In Colorado, the Service requires surveys in suitable habitat within the 100-year floodplain segments of the South Platte River, Fountain Creek, and Yampa River and their perennial tributaries, or in any area with suitable habitat in Boulder and Jefferson Counties. Since the protocols were submitted in 1992, ULTO has been found along the Roaring Fork River. Therefore, surveys should be conducted within

suitable habitat in the floodplain of the Roaring Fork River and its tributaries. ULTO does not bloom until late July to early September (depending on the year) and timing of surveys must be synchronized with blooming (Service 1992b).

The project area was assessed for potential ULTO habitat. Because a perennial tributary to the South Platte River does not occur in the project area and the project area is in Adams County, the site does not fall within the Service's guidelines for ULTO surveys.

Recommendations

No action is necessary regarding ULTO.

Other Species of Concern

Raptors and Migratory Birds

Migratory birds, as well as their eggs and nests, are protected under the Migratory Bird Treaty Act (MBTA). The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Service 2003). The regulatory definition of a take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.

Under the MBTA, the Service may issue nest depredation permits, which allow a permittee to remove an active nest. The Service, however, issues few permits and only under specific circumstances, usually related to human health and safety. Obtaining a nest depredation permit is unlikely and involves a process that takes, at a minimum, 8 to 12 weeks. The best way to avoid a violation of the MBTA is to remove vegetation outside of the active breeding season, which typically falls between March and August, depending on the species. MBTA enforcement actions are typically the result of a concerned member of the community reporting a violation.

Potential Habitat and Effects

ERO did not observe any active or inactive migratory bird nests, including potential raptor nests, in the project area during the 2019 site visit. A review of Colorado Parks and Wildlife (CPW) data also did not find any known raptor or bald eagle nests within ½ mile of the project area (CPW 2018). Several robins and meadowlarks were observed and heard within the project area, mostly south of the Bennett Pit in the portion of the project area closest to Kiowa Creek. Ground-nesting and other birds could potentially nest in the grasslands, trees, and shrubs in the project area.

A potential raptor nest was observed in a large cottonwood tree on the east side of Kiowa Creek, about 0.4 mile east of the project area. The size and shape of the nest and its position in the tree suggests it is a raptor nest. Raptors such as red-tailed or Swainson's hawks could potentially use the observed nest. CPW recommends a ⅓- or ¼-mile buffer from active raptor nests, depending on the species (Colorado

Division of Wildlife 2008). The breeding season for most birds in Colorado is March through August, with the exception of a few species that begin breeding in February, such as great-horned owls. It is unknown if the nest is active or which species uses the nest. No raptors were observed near the nest. Because of the distance from the Bennett Pit, any raptors using the nest would unlikely be affected by activities at the pit. The nest is also closer to the pit than to the proposed expansion areas; therefore, any raptors using the nest would likely be acclimated to activity at the pit.

Recommendations

Although no nests were observed within the project area during the 2019 site visit, ground-nesting bird and arboreal nests are difficult to detect and may be present in the grasslands and trees in the project area. To avoid destruction of potential migratory bird nests, vegetation removal should be conducted outside of the April 1 through August 31 breeding season.

Both the Denver Field Office of the Service (2009) and the Colorado Department of Transportation (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring between April 1 and mid to late August. However, a few species such as bald eagles, great horned owls, and red-tailed hawks can nest as early as December (eagles) or late February (owls and red-tailed hawks). Because of variability in the breeding seasons of various bird species, ERO recommends that a nest survey be conducted within one week prior to construction to determine if any active nests are present in the project area so that they can be avoided. Additional nest surveys within the nesting season may also be warranted to identify active nesting species that may present additional development timing restrictions (e.g., eagles or red-tailed hawks).

If active nests are identified within or near the project area, activities that would directly affect the nests should be restricted. Habitat-disturbing activities (e.g., tree removal, grading, scraping, and grubbing) should be conducted in the nonbreeding season to avoid disturbing active nests, or to avoid a “take” of the migratory bird nests within the project area. Nests can be removed during the nonbreeding season, September 1 through March 31, to preclude future nesting and avoid violations of the MBTA. There is no process for removing nests during the nonbreeding season; however, nests may not be collected under MBTA regulations. If the construction schedule does not allow vegetation removal outside of the breeding season, a nest survey should be conducted immediately prior to vegetation removal to determine if the nests are active and by which species. If active nests are found, any work that would destroy the nests or cause the birds to abandon young in the nest cannot be conducted until the birds have vacated the nests.

Other Wildlife

When vegetation is removed from the project area for mining, these areas will no longer be available for use by wildlife as habitat, until the area is reclaimed. As with any human development, wildlife species sensitive to human disturbance are likely to decline in abundance or abandon the project area. The proposed project is an expansion and continuation of the ongoing mining activities at the Bennett Pit; therefore, any wildlife in the area is likely to be acclimated to the existing noise and human activity in

the project area. Kiowa Creek likely serves as a movement corridor for wildlife moving through the area. The most sensitive habitat along Kiowa Creek would be avoided by maintaining a 100-foot setback from the creek; therefore, no impacts on the creek or its riparian habitat are expected.

References

- Colorado Department of Transportation (CDOT). 2011. Work Sheet: 240pmbcdotb dated 02-03-11. <https://www.codot.gov/programs/environmental/wildlife/guidelines/Birdspeccontractorsbio.pdf>/view. Last accessed April 30, 2019.
- Colorado Division of Wildlife. 2008. Recommended buffer zones and seasonal restrictions for Colorado Raptor Nests. February.
- Colorado Parks and Wildlife (CPW). 2018. CPW Wildlife Shapefile Download. From: Species Activity Data Collection. Redlands, CA: ESRI. <http://www.arcgis.com/home/group.html?owner=rsacco&title=Colorado%20Parks%20and%20Wildlife%20-%20Species%20Activity%20Data>. Last accessed December 21, 2018.
- Meaney, C.A., A. Deans, N.W. Clippenger, M. Rider, N. Daly, and M. O’Shea-Stone. 1997. Third year survey for Preble’s meadow jumping mouse (*Zapus hudsonius preblei*) in Colorado. Under contract to Colorado Division of Wildlife. Boulder, CO.
- NatureServe. 2019. NatureServe Explorer. <http://www.natureserve.org/explorer/servlet/NatureServe>.
- U.S. Army Corps of Engineers (Corps). 2016. Regulatory Guidance Letter 16-01. http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl_6-01_app1-2.pdf?ver=2016-11-01-091706-840.
- U.S. Fish and Wildlife Service (Service). 1992a. Endangered and Threatened Wildlife and Plants: Final Rule to List the Plant *Spiranthes diluvialis* (Ute ladies’-tresses) as a Threatened Species. Federal Register 50 CFR Part 17, Volume 57, No. 12, Pages 2048-2054. January 17.
- U.S. Fish and Wildlife Service (Service). 1992b. Interim Survey Requirements for *Spiranthes diluvialis*.
- U.S. Fish and Wildlife Service (Service). 1999. Survey Guidelines for Preble’s Meadow Jumping Mouse. USFWS, Colorado Field Office. Last revised April 2004.
- U.S. Fish and Wildlife Service (Service). 2003. Migratory Bird Permit Memorandum. April 15.
- U.S. Fish and Wildlife Service (Service). 2005. Endangered and Threatened Wildlife and Plants: Designated Critical Habitat for Colorado Butterfly Plant, Final Rule. Federal Register, Volume 70, No. 7. January 11.
- U.S. Fish and Wildlife Service (Service). 2009. Personal communication between Pete Plage (U.S. Fish and Wildlife Service) and ERO Resources Corporation.
- U.S. Fish and Wildlife Service (Service). 2014. U.S. Fish and Wildlife Service Preble’s meadow jumping mouse trapping survey results, unpublished data.
- U.S. Fish and Wildlife Service (Service). 2019. Endangered, Threatened, Proposed and Candidate Species, Colorado Counties. <http://ecos.fws.gov/ipac/>. Last accessed April 25, 2019.

Appendix A Photo Log

ALBERT FREI AND SONS – BENNETT PIT
APRIL 22, 2019
PHOTO LOG



Photo 1 - Southern portion of the project area. View is to the north.



Photo 2 - Southern portion of the project area. View is to the south.

ALBERT FREI AND SONS – BENNETT PIT
APRIL 22, 2019
PHOTO LOG



Photo 3 - Kiowa Creek. View is to the south along the edge of the project area.



Photo 4 - Swale and cottonwood trees in the southern portion of the project area. View is to the south.