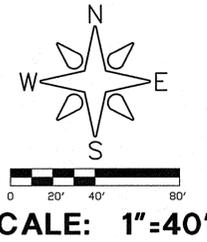


N 1/4 CORNER,
SECTION 34,
T. 5S., R. 69W.
POINT OF
COMMENCEMENT



LEGEND

- DENOTES: FOUND #4 REBAR & CAP, 'COSTIN' ILLEGIBLE
- DENOTES: FOUND #5 REBAR & CAP, L. S. 29546
- x-x-x DENOTES: FENCE LINE
- DENOTES: CONCRETE
- E—E—E DENOTES: BURIED ELECTRIC LINE PER MARKERS
- P—P—P DENOTES: OVER ELECTRIC LINE
- V—V—V DENOTES: BURIED WATER LINE
- ⊗ DENOTES: WATER VALVE

LEGAL DESCRIPTION: FROM TITLE COMMITMENT PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. NCS-660019-CO, EFFECTIVE DATE 08-19-2014 AT 5:00 P.M.

A PARCEL OF LAND BEING OWNERSHIP PARCEL G-2, FAIRVIEW HEIGHTS, PART OF BLOCKS 23, 24 AND 25, EXEMPTION SURVEY NO. 3, RECORDED AUGUST 4, 1982 AT RECEPTION NO. 82053414, ALL BEING A PART OF THE NORTHEAST 1/4 OF SECTION 34, TOWNSHIP 5 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF JEFFERSON, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 34, TOWNSHIP 5 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN; THENCE SOUTH 00°00'00" WEST (ASSUMED BEARING) ALONG THE NORTH-SOUTH CENTERLINE OF SAID SECTION 34 AND ALONG THE CENTERLINE OF SOUTH GARRISON STREET A DISTANCE OF 880.34 FEET; THENCE NORTH 90°00'00" EAST A DISTANCE OF 30.00 FEET TO A POINT ON THE EAST RIGHT OF WAY LINE OF SOUTH GARRISON STREET, SAID POINT ALSO BEING THE TRUE POINT OF BEGINNING; THENCE SOUTH 89°57'43" EAST A DISTANCE OF 638.27 FEET; THENCE SOUTH 00°02'17" WEST A DISTANCE OF 404.71 FEET TO A POINT ON THE NORTH RIGHT OF WAY LINE OF FAIRVIEW ROAD; THENCE SOUTH 89°27'29" WEST AND CONTINUING ALONG THE NORTH RIGHT OF WAY LINE OF SAID FAIRVIEW ROAD A DISTANCE OF 622.89 FEET TO A POINT OF CURVE; THENCE ON A CURVE TO THE RIGHT, AND DEPARTING SAID NORTH RIGHT OF WAY LINE OF FAIRVIEW ROAD, HAVING A CENTRAL ANGLE OF 90°32'30", A RADIUS OF 15.00 FEET, AND AN ARC LENGTH OF 23.70 FEET TO A POINT ON THE EAST RIGHT OF WAY LINE OF SOUTH GARRISON STREET; THENCE NORTH 00°00'00" EAST AND CONTINUING ALONG THE SAID EAST RIGHT OF WAY LINE OF SOUTH GARRISON STREET A DISTANCE OF 896.03 FEET TO THE TRUE POINT OF BEGINNING, COUNTY OF JEFFERSON, STATE OF COLORADO.

BASIS FOR BEARINGS:
FROM THE PLAT OF FAIRVIEW HEIGHTS, PART OF BLOCKS 23, 24 AND 25, EXEMPTION SURVEY NO. 3 RECORDED AUGUST 04, 1982, IN RECEPTION NO. 82008621, JEFFERSON COUNTY, COLORADO RECORDS; THE NORTH OF PARCEL G-2 BEARS SOUTH 89°57'43" EAST. ALL BEARINGS SHOWN IN THIS DRAWING ARE RELATIVE THERETO. MONUMENTS ARE AS SHOWN HEREON.

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

THE LINEAL UNITS USED AND SHOWN HEREON IS U.S. SURVEY FOOT. THE FENCE DIMENSION INDICATES ON WHICH SIDE OF THE LINE THE FENCE IS ON.
THE UTILITIES SHOWN ON THIS SURVEY WERE MADE BY VISIBLE EVIDENCE. THERE MAY BE BURIED UTILITIES ON OR ADJACENT TO THIS PROPERTY THAT ARE NOT SHOWN DUE TO INSUFFICIENT SURFACE EVIDENCE. NO STATEMENT IS MADE CONCERNING SUBSURFACE CONDITIONS OR THE EXISTENCE OF OVERHEAD OR UNDERGROUND CONTAINERS OR FACILITIES WHICH MAY AFFECT THE DEVELOPMENT OF THIS TRACT.

EXCEPT AS SHOWN OR SPECIFICALLY STATED, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: EASEMENTS, OTHER THAN POSSIBLE EASEMENTS WHICH WERE VISIBLE AT THE TIME OF MAKING THIS SURVEY; COMPATIBILITY OF THIS DESCRIPTION WITH THOSE OF ADJACENT TRACTS OF LAND OR RIGHTS-OF-WAY, BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE REGULATIONS, ANY OTHER FACTS.

ADDITIONAL TABLE A NOTES:
ITEM 4 - THIS PARCEL OF LAND CONTAINS 260,271 SQUARE FEET OR 5.975 ACRES MORE OR LESS.
ITEM 5 - BENCHMARK: PER THE NATIONAL GEODETIC SURVEY DATA SHEET FOR DESIGNATION: MARSTON, PID: KK1466, A 3-1/4" BRASS NSG LOGO CAP STAMPED: MARSTON, 1977, IN A 12" CONCRETE CASSON FLUSH WITH THE GROUND. ELEVATION: 5675.18 NAVD 1983 DATUM.
T.B.M.: THE NORTH POINT OF CURVE RETURN ALONG THE EAST RIGHT-OF-WAY LINE OF SOUTH GARRISON STREET THE TOP OF THE #5 REBAR AND CAP, L. S. 29546.
ELEVATION: 5654.50.

ITEM 7(B)(1) - THERE ARE NO BUILDINGS ON THIS SITE.
ITEM 8 - THERE ARE NO CONCRETE OR ASPHALT AREAS ON THIS SITE.
ITEM 11(A) - THERE MAY BE BURIED UTILITIES ON OR ADJACENT TO THIS PROPERTY THAT ARE NOT SHOWN DUE TO INSUFFICIENT SURFACE EVIDENCE. NO STATEMENT IS MADE CONCERNING SUBSURFACE CONDITIONS OR THE EXISTENCE OF OVERHEAD OR UNDERGROUND CONTAINERS OR FACILITIES WHICH MAY AFFECT THE DEVELOPMENT OF THIS TRACT.
ITEM 16 - NO OBSERVED EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITION ON THIS SITE AT THE TIME OF THE FIELD WORK.

EXCEPT AS SHOWN OR SPECIFICALLY STATED, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE REGULATIONS, ANY OTHER FACTS.
EXCEPT AS SHOWN OR SPECIFICALLY STATED IN FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. NCS-660019-CO, EFFECTIVE DATE: AUGUST 19, 2014 AT 5:00 P.M. THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE REGULATIONS, ANY OTHER FACTS.

FOR OWNERSHIP OF THIS TRACT OF LAND, EASEMENTS AND/OR ENCUMBRANCES AFFECTING THIS TRACT OF LAND, R.W. BAYER & ASSOCIATES RELIED UPON FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. NCS-660019-CO, EFFECTIVE DATE: AUGUST 19, 2014 AT 5:00 P.M.

THIS PARCEL SUBJECT TO THE EXCEPTIONS CONTAINED UNDER SCHEDULE B - SECTION 2:

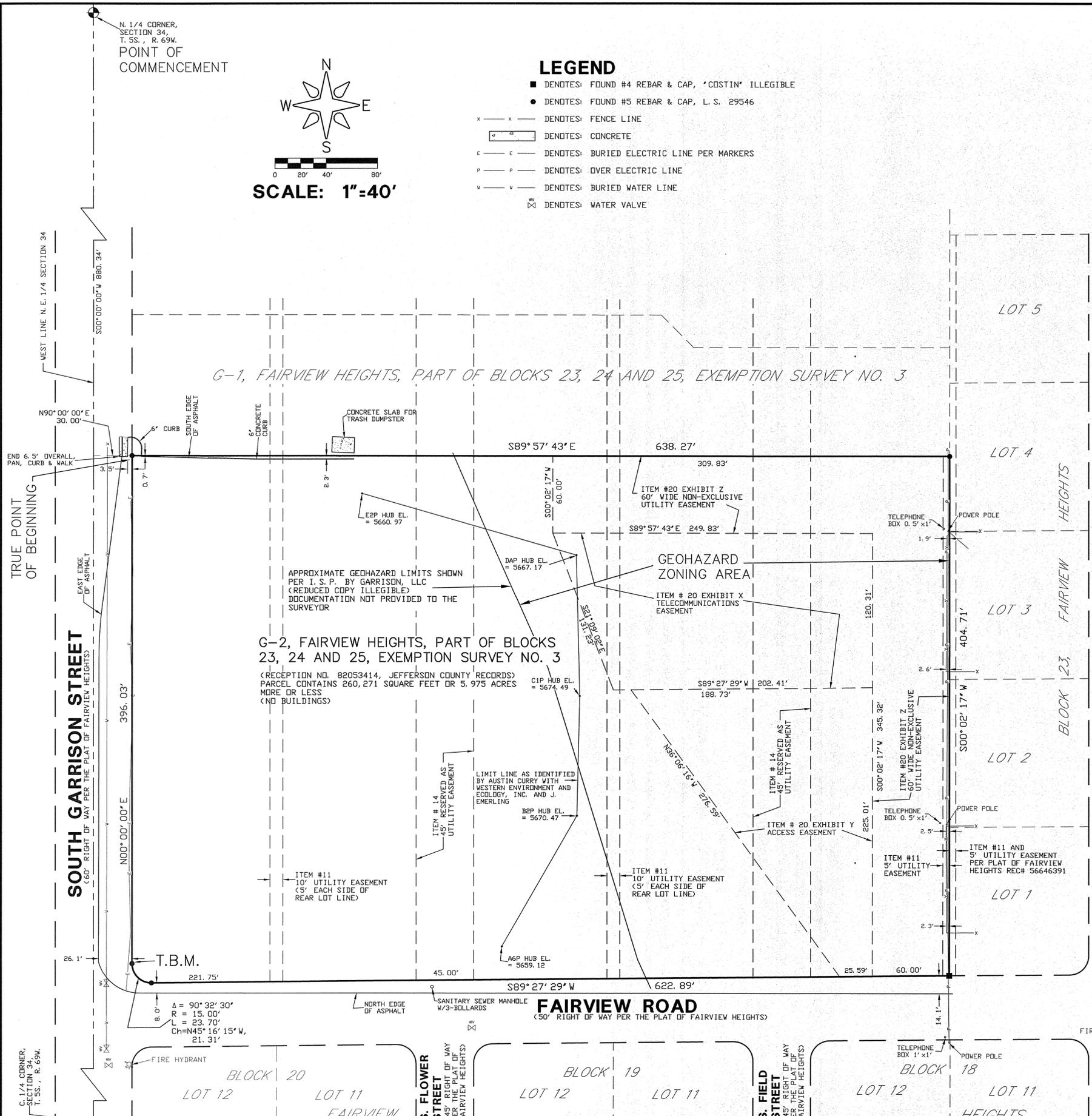
- ITEM DESCRIPTION (COMMENT BY BAYER & ASSOCIATES, INC. IN PARENTHESES)
- ANY FACTS, RIGHTS, INTERESTS OR CLAIMS WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS, BUT WHICH COULD BE ASCERTAINED BY AN INSPECTION OF THE LAND OR BY MAKING INQUIRY OF PERSONS IN POSSESSION THEREOF.
 - EASEMENTS, OR CLAIMS OF EASEMENTS, NOT SHOWN BY THE PUBLIC RECORDS.
 - DISCREPANCIES, CONFLICTS IN BOUNDARY LINES, SHORTAGE IN AREA, ENCROACHMENTS, AND ANY FACTS WHICH A CORRECT SURVEY AND INSPECTION OF THE LAND WOULD DISCLOSE, AND WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS.
 - ANY LIEN, OR RIGHT TO A LIEN, FOR SERVICES, LABOR OR MATERIAL HERETOFORE OR HEREAFTER FURNISHED, IMPOSED BY LAW AND NOT SHOWN IN THE PUBLIC RECORDS.
 - ANY AND ALL UNPAID TAXES, ASSESSMENTS AND UNREDEEMED TAX SALES.
 - UNPATENTED MINING CLAIMS; RESERVATIONS OR PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF.
 - EASEMENTS, NOTES, COVENANTS, RESTRICTIONS AND RIGHTS-OF-WAY AS SHOWN ON THE PLAT OF FAIRVIEW HEIGHTS, RECORDED JUNE 5, 1956 IN PLAT BOOK 16 AT PAGE 59 AND ON THE PLAT OF FAIRVIEW HEIGHTS BLOCK 24, AND PART OF BLOCKS 23 AND 25, EXEMPTION SURVEY NO. 2, RECORDED FEBRUARY 8, 1982 AT RECEPTION NO. 82008622. (SEE ITEM 18)
 - COVENANTS, CONDITIONS, RESTRICTIONS AND PROVISIONS AS SET FORTH IN HOME ASSOCIATION DECLARATION RECORDED MAY 13, 1955 IN BOOK 921 AT PAGE 458 AND IN AMENDMENT TO HOME ASSOCIATION DECLARATION RECORDED JUNE 5, 1956 IN BOOK 999 AT PAGE 264, BUT OMITTING ANY COVENANT OR RESTRICTION BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN, AND ANY AND ALL AMENDMENTS, ASSIGNMENTS, OR ANNEXATIONS THERETO.
 - COVENANTS, CONDITIONS, RESTRICTIONS AND PROVISIONS AS SET FORTH IN PROTECTIVE AND RESTRICTIVE COVENANTS FAIRVIEW HEIGHTS SUBDIVISION RECORDED JUNE 5, 1956 IN BOOK 999 AT PAGE 265, BUT OMITTING ANY COVENANT OR RESTRICTION BASED UPON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN, AND ANY AND ALL AMENDMENTS, ASSIGNMENTS, OR ANNEXATIONS THERETO.
 - TERMS, CONDITIONS, PROVISIONS, OBLIGATIONS AND AGREEMENTS AS SET FORTH IN THE ZONING RESOLUTION RECORDED JULY 18, 1956 IN BOOK 1007 AT PAGE 294.
 - AN EASEMENT FOR UTILITIES AND INCIDENTAL PURPOSES GRANTED TO COLORADO CENTRAL POWER COMPANY, AS SET FORTH IN AN INSTRUMENT RECORDED SEPTEMBER 11, 1956 IN BOOK 1017 AT PAGE 543. (EASEMENT SHOWN)
 - ANY TAX, LIEN, FEE OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE HOLIDAY HILLS WATER AND SANITATION DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED OCTOBER 21, 1963 IN BOOK 1048 AT PAGE 531.
 - ANY TAX, LIEN, FEE OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE MEADOWBROOK WATER DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED JUNE 2, 1977 IN BOOK 3012 AT PAGE 603.
 - RESERVATION OF EASEMENTS AS SET FORTH IN VACATION RESOLUTION V10-7-79 RECORDED AUGUST 27, 1979 AT RECEPTION NO. 79077680. (EASEMENTS SHOWN)
 - TERMS, CONDITIONS, PROVISIONS, OBLIGATIONS AND AGREEMENTS AS SET FORTH IN THE VACATION AGREEMENT RECORDED AUGUST 27, 1979 AT RECEPTION NO. 79077682.
 - TERMS, CONDITIONS, PROVISIONS, OBLIGATIONS AND AGREEMENTS AS SET FORTH IN THE PLATTING EXEMPTION AGREEMENT RECORDED FEBRUARY 8, 1982 AT RECEPTION NO. 82053413.
 - EASEMENTS, NOTES, COVENANTS, RESTRICTIONS AND RIGHTS-OF-WAY AS SHOWN ON THE PLAT OF FAIRVIEW HEIGHTS PART OF BLOCKS 23, 24 AND 25 EXEMPTION SURVEY NO. 3, RECORDED AUGUST 4, 1982 AT RECEPTION NO. 82053414.
 - ANY TAX, LIEN, FEE OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE FOOTHILLS METROPOLITAN RECREATION AND PARK DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED JUNE 30, 1983 AT RECEPTION NO. 83069805.
 - RESERVATION OF EASEMENTS AS SET FORTH IN SPECIAL WARRANTY DEED RECORDED JANUARY 18, 2001 AT RECEPTION NO. F1171691. (EASEMENTS SHOWN)
 - EXISTING LEASES AND TENANCIES. NOTE: UPON SATISFACTION OF THE REQUIREMENTS HEREIN SET FORTH, EXCEPTIONS NO. 22 THROUGH NO. 23 BELOW WILL BE DELETED AND WILL NOT APPEAR ON THE FINAL POLICY TO BE ISSUED HEREUNDER.
 - DEED OF TRUST FROM LARDO, LLC, TO THE PUBLIC TRUSTEE OF JEFFERSON COUNTY FOR THE USE OF EQUITY FUNDING, LLC, TO SECURE AN INDEBTEDNESS IN THE PRINCIPAL SUM OF \$137,922.72, AND ANY OTHER AMOUNTS AND/OR OBLIGATIONS SECURED THEREBY, DATED MARCH 13, 2008 AND RECORDED MARCH 17, 2008 AT RECEPTION NO. 2008024614. NOTE: ASSIGNMENT OF LEASE, RENT AND OTHER INCOME IN CONNECTION THEREWITH RECORDED MARCH 17, 2008 AT RECEPTION NO. 2008024615. NOTE: MODIFICATION OF DEED OF TRUST IN CONNECTION THEREWITH RECORDED APRIL 17, 2009 AT RECEPTION NO. 2009033630.
 - DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS, OR OTHER MATTERS, IF ANY ARE CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE OF THE COMMITMENT AND PRIOR TO THE EFFECTIVE DATE OF THE POLICY.

CERTIFICATE OF SURVEY:
I HEREBY CERTIFY TO: EQUITY FUNDING, LLC, A COLORADO LIMITED LIABILITY COMPANY, AND FIRST AMERICAN TITLE INSURANCE COMPANY:
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 4, 7(A), 8, 9, AND 11(A), AND 16 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JANUARY 15, 2016.

RAYMOND W. BAYER
REGISTRATION NO. 06979,
WITHIN THE STATE OF COLORADO
DATE: _____

COUNTY SURVEYOR'S CERTIFICATE:
DEPOSITED THIS _____ DAY OF _____, 20____, AT _____, M., IN BOOK _____ OF THE COUNTY SURVEYOR'S LAND SURVEY PLATS / RIGHTS OF WAY SURVEYS AT PAGE _____, RECEPTION NO. _____. THIS LAND SURVEY PLAT COMPLIES WITH SECTION 38-51-106, COLORADO REVISED STATUTES.

COUNTY SURVEYOR _____



SOUTH EVERETT STREET
BLOCK 23, FAIRVIEW HEIGHTS

R.W. BAYER & ASSOCIATES, INC.
2090 EAST 104TH AVENUE, SUITE 200
THORNTON, COLORADO 80233-4316
(303) 452-4433 rwbsurveying@hotmail.com

CAD FILE: D15245/D15245.DWG REVISIONS

ALTA/ACSM LAND TITLE SURVEY
OWNERSHIP PARCEL G-2, FAIRVIEW HEIGHTS, PART OF BLOCKS 23, 24 AND 25, EXEMPTION SURVEY NO. 3, BEING A PART OF THE NORTHEAST ONE-QUARTER OF SECTION 34, TOWNSHIP 5 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF JEFFERSON, STATE OF COLORADO.

SCALE: 1"=40'	DATE: JAN. 15, 2016	DRW BY: G.A.B.	CKD BY: R.B.	PROJ. NO: 2016-245
BOOK: 684	PAGE: 57	FILE NO: 34-5S.69-2L	SHEET: 1 OF 1	

WESTERN ENVIRONMENT AND ECOLOGY, INC

March 17th, 2016

Frank Orr
Equity Funding, LLC
5040 Acoma Street
Denver, Colorado 80216

Subject: Mine Subsidence Assessment Coal Sub-Crop Confirmation, Virginia Mine 9155 West Fairview Avenue, Littleton, Colorado. Western Environment and Ecology, Inc. Project Number 686-001-02.

Dear Mr. Orr:

At your request, Western Environment and Ecology, Inc. (Western Environment) is pleased to provide the following investigation of the above referenced property. This assessment was performed on November 2nd and 3rd, 2015, in accordance with Western Environment's Proposal (#P15-116) dated October 22, 2015. The purpose of the assessment was to confirm the western sub-crop which represents the boundary between Development Zones A and B.

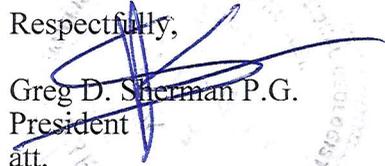
The subject property is a vacant 5.975 acre parcel located northeast of the intersection of West Fairview Avenue and Garrison Street in unincorporated Jefferson County, Colorado (Figure 1). Single family residential developments are located to the east, south and west of the property. A retail/commercial center is located to the north of the project and a small self service carwash is located adjacent to the northwest corner of the site (Figure 2). Several previous investigations have been performed on and surrounding the site. These include Subsidence Investigations performed by Amuedo and Ivey, Inc. dated July 7th, 1981 and Goodson & Associates, Inc. dated April 25th, 1983. A Western Environment report entitled "Preliminary Mine Subsidence Assessment Virginia Mine" dated September 15th 2015 recognized three development zones. Zone A was determined to be developable without restrictions, while Zones B and C had limits on potential construction.

Confirmation of the Zone A / Zone B border was performed by completing shallow geotechnical borings to identify the sub-crop of the coal seam of the Virginia Mine. Western Environment completed 43 shallow borings on a grid pattern utilizing 5 profile lines (A-E) across the suspected contact. These borings were completed using a 7730 Track Mounted GeoProbe equipped with 2 inch drive rods. Continuous soil samples were taken to a maximum depth of ten feet.

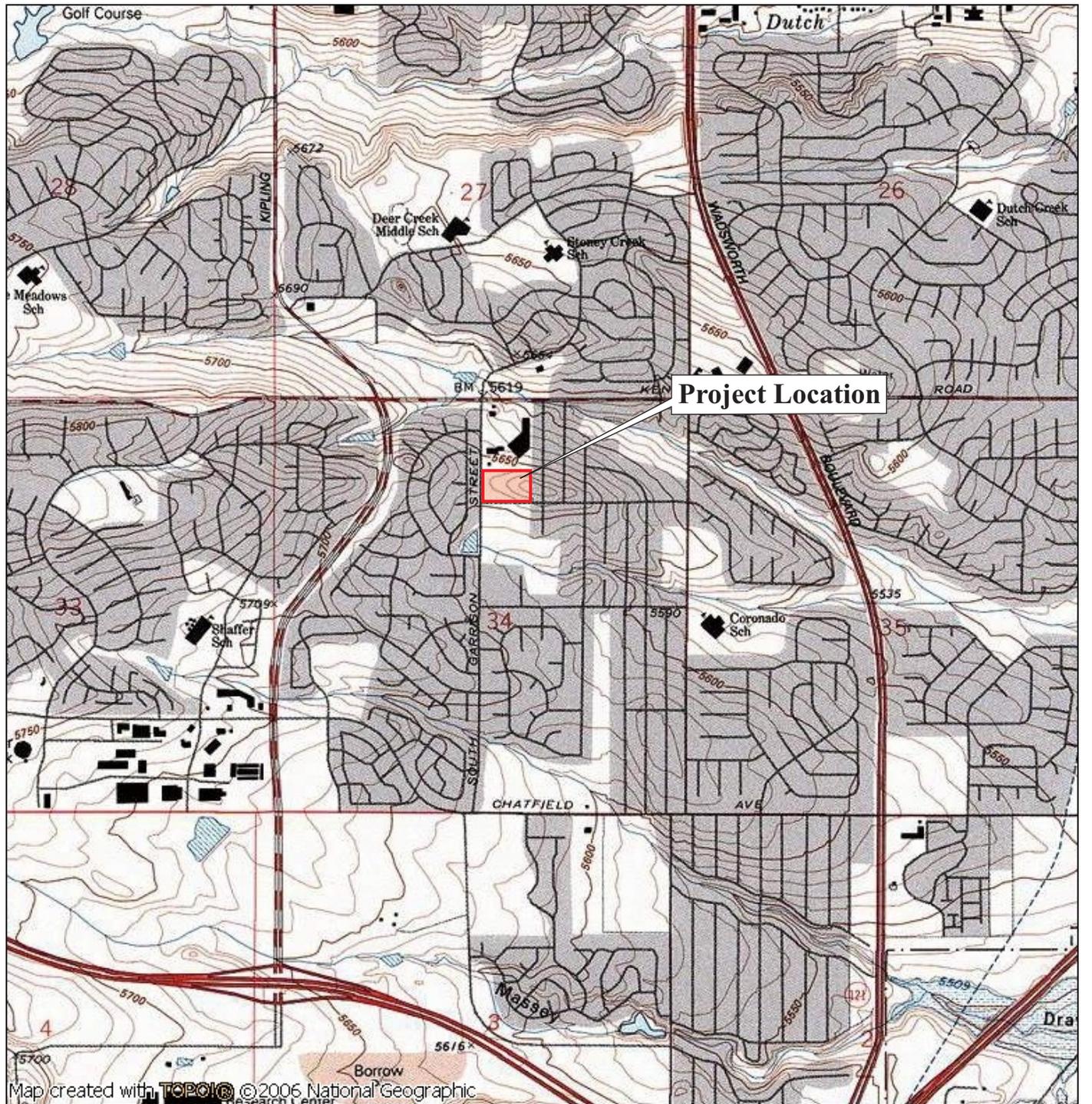
Boring logs were constructed for all the holes using the USCS soil classification system (attached). During the investigation no significant coal seam was encountered. This is likely due to the coal being thinner than the 11 feet reported in the Amuedo and Ivy and Goodson reports. Therefore, Western Environment choose to use the farthest west boring, within a profile, to contain carbon or minor coal seams as the sub-crop line. The five profile line borings determined to be the sub-crop contact were surveyed by R.W. Bayer and Associates on January 12th, 2016. This irregular border is shown on Figure 3. Further review of the boring logs determined that the approximately 3.07 acre Zone A is dominated by fine grained white quartzose sandstone of the Fox Hills Formation not the highly expansive claystone of the coal bearing Laramie Formation.

Thank you again for the opportunity to provide these assessments. I look forward to our continued involvement with this project. Please don't hesitate to contact us with any questions you may have.

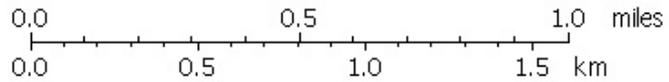
Respectfully,


Greg D. Sherman P.G.
President
att.

2217 WEST POWERS AVENUE * LITTLETON, COLORADO 80120
PHONE (303)730-3452 * FAX (303)730-3461
WWW.WESTERNENVIRONMENT.COM



Map created with TOPOIG ©2006 National Geographic Research Center



TN MN
8 1/2°
08/19/15

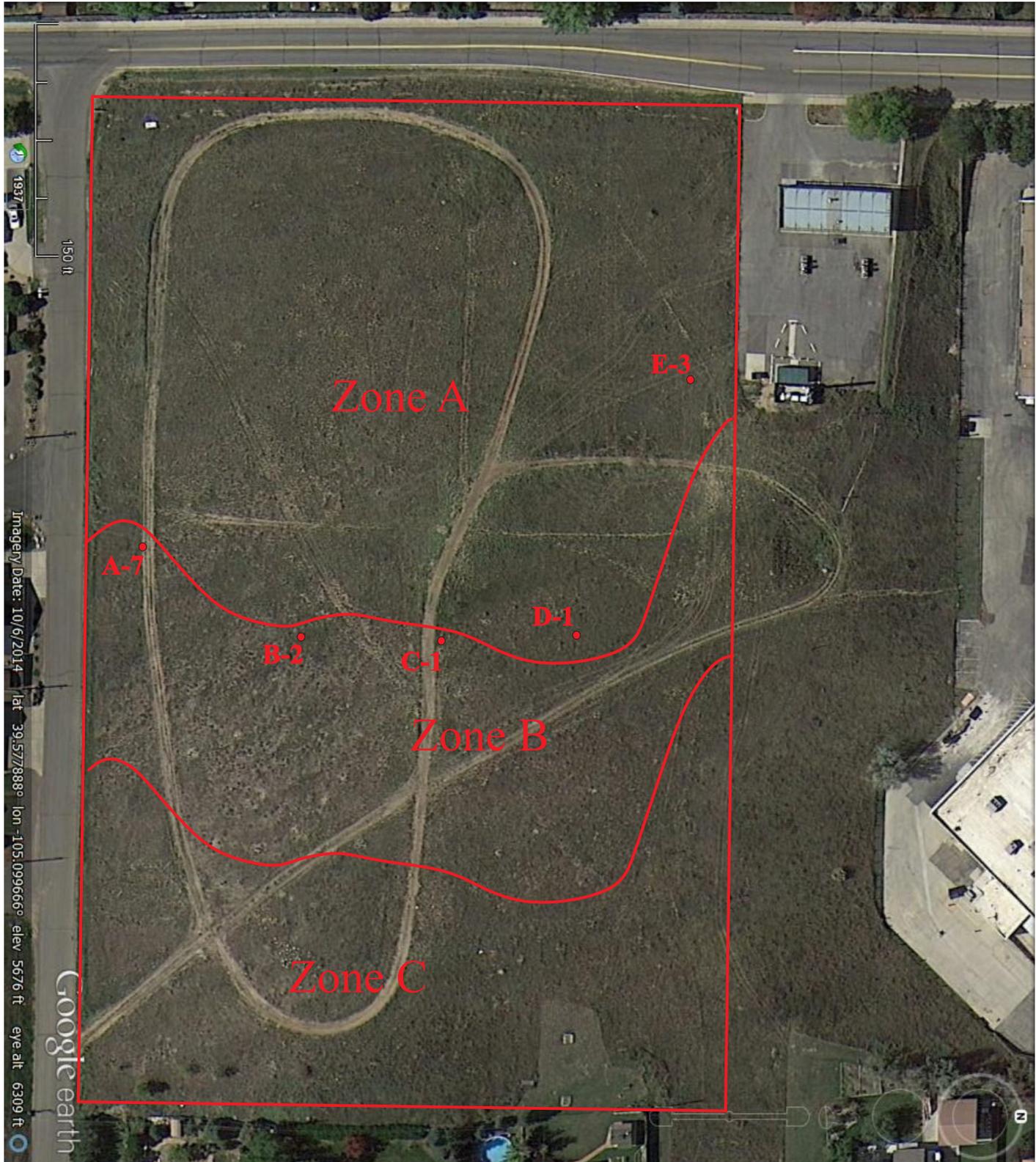
wester n enviro nment
and ecology inc.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 1 - Project Location Map
Virginia Mine
9155 West Fairview Avenue
Littleton, Colorado



wester n enviro nment
and ecol ogy inc.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 2 - Project Vicinity Map
Virginia Mine
9155 West Fairview Avenue
Littleton, Colorado



Scale in Feet

0

150

western environment
and ecology inc.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 3- Proposed Development Zones
Virginia Mine
9155 West Fairview Avenue
Littleton, Colorado

WESTERN ENVIRONMENT AND ECOLOGY, INC

September 15, 2015

Fred Orr
Equity Funding, LLC
5040 Acoma Street
Denver, Colorado 80216

Subject: Preliminary Mine Subsidence Assessment, Virginia Mine 9155 West Fairview Avenue, Littleton, Colorado. Western Environment and Ecology, Inc. Project Number 686-001-01.

Dear Mr. Orr:

In accordance with your request and following meetings between yourself, John Emmerling of DTZ Real Estate Advisors, and Western Environment and Ecology, Inc. (Western Environment) we are pleased to provide the following Preliminary Subsidence Assessment of the above referenced property. This assessment was performed following your July 14th authorization of Western Environment's Proposal (#P15-36) dated March 15th, 2015. The purpose of the assessment is to determine if the property can be developed and what use would be appropriate, based upon the mine subsidence risks.

The subject property is a vacant 5.975 acre parcel (# 59-341-06-023) located southeast of the intersection of West Ken Caryl Avenue and Garrison Street in unincorporated Jefferson, County, Colorado (Figure 1). Single family residential developments are located to the east, south and west of the property. A retail/commercial center is located to the north of the project and a small carwash facility is located adjacent to the northwest corner of the site (Figure 2). Several previous investigations have been performed on and surrounding the site. These include Subsidence Investigations performed by Amuedo and Ivey, Inc. dated July 7 1981, and Goodson & Associates, Inc. dated April 25, 1983.

Western Environment contacted Jill Carlson of the Colorado Geological Survey and Pat O Connell with the Jefferson County Planning and Zoning Department to acquire copies of these reports. Unfortunately, due to the age of the reports, complete documents including all appendices and figures, were not available. In particular, only five of the geophysical logs performed on the 24 borings completed for the studies were on file. Western Environment utilized the remaining available reports for the performance of the assessment.

The abandoned coal mine which is present beneath the site is referred to in the files of the Colorado Division of Mines as the Virginia Mine. This mine operated from 1933 to 1939 and produced 41,000 tons of sub-bituminous grade coal from the Cretaceous Age Laramie Formation. Entry to the mine was gained by an "incline" shaft located approximately 120 feet south of the project. The air shaft, also developed on an incline, is located 350 feet south of the site. The coal, which was sold as "lump" coal for heating, was mined from a seam reported to be between 5 and 11 feet thick. What makes this, and several other small coal mines in south Jefferson County, unique is that the seam is inclined at a dip to the northeast of approximately 65 degrees. The original mine maps and drilling performed during the previous investigation, have identified 3 mining levels. These levels are approximately 100, 200 and 350 feet beneath the surface.

The Virginia Mine received significant notoriety when on November 10th, 1985 a subsidence event occurred adjacent to the carwash northwest of the project (Figure 2). A report by Bruce Stover of the Colorado Mined Land Reclamation Board, described a hole 20 by 12 feet approximately 14 feet in depth had appeared. The event was first reported by children that were sledding on the hillside that separates the project from the commercial development to the north. Subsequently on November 11th, the Bancroft Fire Department responded to rescue a child that had fallen into the pit. This event, which received extensive news coverage, likely is one of the reasons the 5.975 acre property has not been developed.

To evaluate the potential for additional mine subsidence and provide recommendations, if possible, for future development, Western Environment reviewed the previously reference reports. The purpose of the review was to confirm the subsidence prediction models and procedures for the 1982 and 1983 reports. Particular emphasis was placed on the Goodson and Associates April 25th, 1983 project. This report concluded that “subsidence has already affected the surface in the area of the Virginia Mine. Further additional subsidence is inevitable resulting in continuing and new surface expressions.”

The Goodson assessment utilized the British National Coal Board’s (NCB) Graphical Strain Prediction Model. This empirical method incorporates observations of the effects of mining on existing structures. Factors determining the amount and severity of subsidence and the resultant strain, are in general: 1) depth to the mine, 2) thickness of the seam, and width of the mined interval. The depth of the individual mining levels used by Goodson were 82 to 132 feet for the Upper Level, 195 to 200 feet for the Middle Level and 310 to 352 feet for the Lower Level. The width of the workings varied from 75 to 101 feet and the maximum reported thickness of the seam, 11 feet, was used. The results of this prediction model were reported and shown on Plates 8 and 9 of the April 25th 1983 report (attached).

Western Environment choose to evaluate the efficacy of this assessment by first determining the volume of the predicted subsidence trough shown on Plate 8. This was done by determining the area within each contour and multiplying it by the reported thickness of the contour. The resulting predicted volume of the “theoretical trough” shown on Plate 8 was 956,334 ft³. Using the results of numerous density tests performed by Western Environment on coal from the Laramie Formation (85 lbs/ft³) the trough would contain 40,644 tons of coal. This volume is almost exactly what was the reported production (41,000 tons) from the mine.

This evaluation resulted in two conclusions: 1) little observable subsidence, of the magnitude predicted in the Goodson report, occurs above the Virginia Mine and 2) if little observable subsidence occurs either significant future subsidence is likely or some mechanism is acting to confine subsidence to discrete zones above the mined intervals.

The next step of Western Environment’s assessment was to evaluate the condition of the mine as indicated by the few remaining geo-physical logs provided in the Amuedo and Ivey 1982 report. This evaluation was to confirm or reject the input values used in the Goodson report’s NCB strain and subsidence assessment. Review of the logs was performed in-light of Western Environment’s 30 years of experience with mine subsidence prediction in Laramie Formation mines.

The logs confirmed, in general the depth of the 3 mined intervals. However, our interpretation indicated that the average depth to the tops of the caved stopes beneath the subject property was 41.5 feet, 138.0 feet and 219.0 feet for the 3 mining levels respectively. These values are significantly more shallow (conservative) than the Goodson values. However, they reflect substantial caving of the workings from the floor of the individual levels used in the Goodson report to the actual current top of the caved or rubble zone. To conservatively simplify our analysis, the width of the workings was taken as 1.4 times the depth which is a “super critical” mining panel that would result in the maximum amount of subsidence.

The only significantly different NCB input value was the thickness of the mined interval. The geo-physical logs, with one exception, indicated no open voids at the top of the caved stopes. The single exception was from hole DH-2 that encountered a 5 foot open void at 33.5 feet directly above the upper level. These results, voids in shallow less that 80 foot seams and complete collapse in deeper mines, are consistent with our thirty year plus observations of borings completed in Laramie Formation mines. To provide the final input value for the NCB analysis, Western Environment used the average interval of each boring that the caliper log indicated a hole diameter of greater than 9 inches for a 5.25 diameter drill bit. This resulted in a “theoretical void” of 4.5 feet, not the 11.0 feet used in the Goodson assessment.

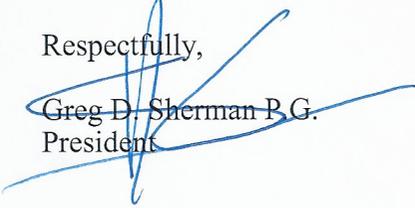
Using these input values, Western Environment performed the NCB analysis for the upper and lower mining levels. The middle level was not evaluated due to its limited extent beneath the subject project. The results of the analysis determined that the maximum strain and subsidence that would occur as a result of the collapse of the upper level is 0.077 % and 4.05 feet respectively. The maximum strain and subsidence resulting from collapse of the lower level was 0.0089 % and 2.91 feet.

Plotting these profiles, using the NCB adjustment to the center of the subsidence trough as a result of the steeply dipping seam, identified three development zones. These zones, shown on Figure 3, are: **A)** no mine subsidence related development restrictions, **B)** no development, and **C)** restrictions to development.

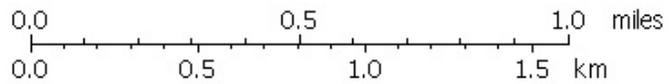
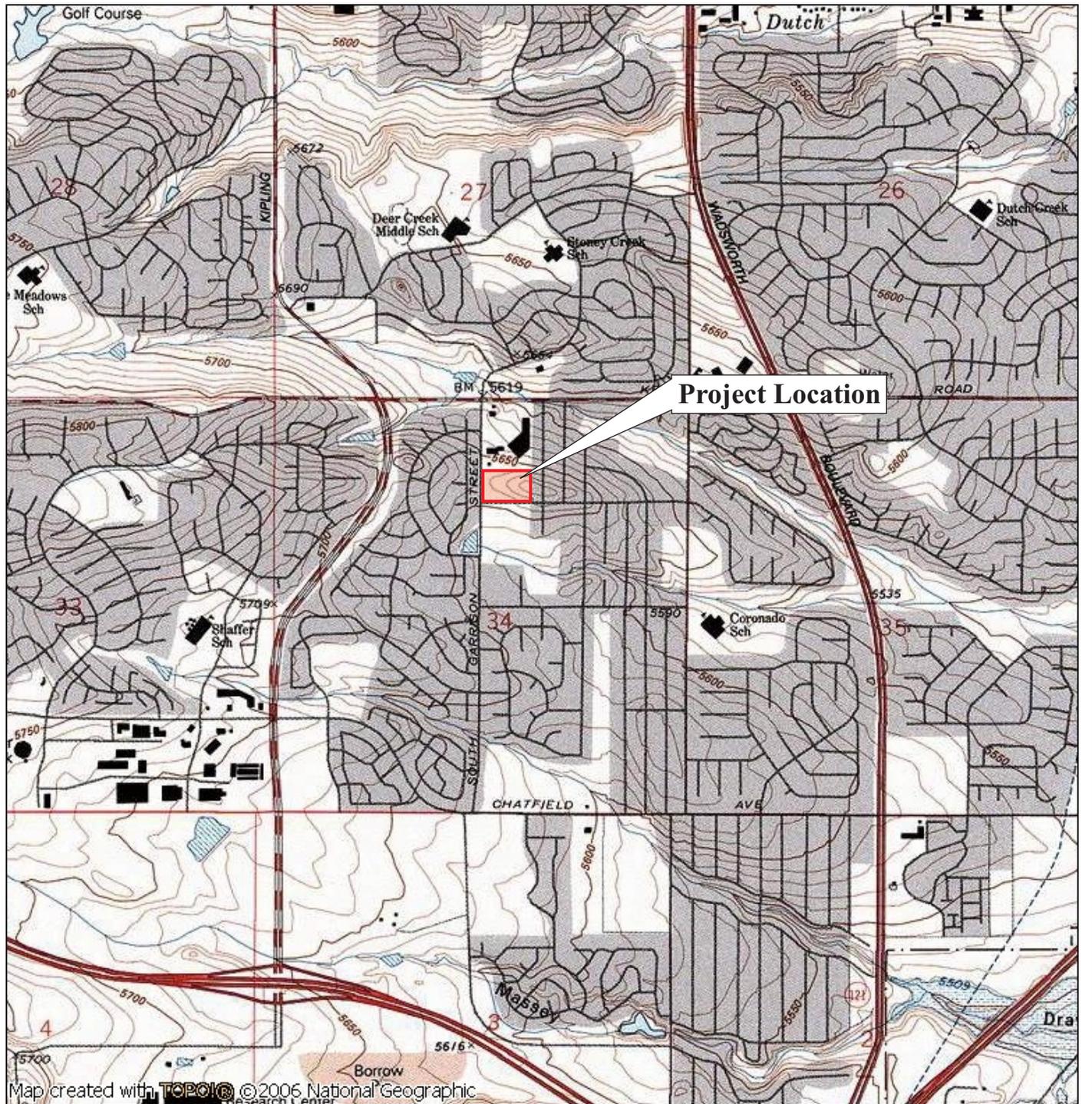
It is our opinion that, based upon the existing information, the approximately 3.037 acre **Zone A** could currently be developed without any mine subsidence restrictions following the confirmation of the subcrop of the coal seam. This confirmation should be performed by shallow geo-technical borings and surveys locating the western edge of the coal seam. This margin coincides with the western edge of the Zone B 0% strain and subsidence limit angle derived from the analysis. **Zone B** is located above the upper level workings area of influence. Existing borings and recent observed subsidence events preclude any use of the area. **Zone C**, totaling approximately 2.2 acres, could, following the successful results from additional investigations and architectural and geo-technical modifications, be developed for limited use. These potential uses could include mini storage units, covered and uncovered vehicle parking, and horse stables.

Thank you again for the opportunity to provide these assessments. I look forward to our continued involvement with this project. Please don't hesitate to contact us with any questions you may have.

Respectfully,


Greg D. Sherman P.G.
President

att.



TN MN
8 1/2°
08/19/15

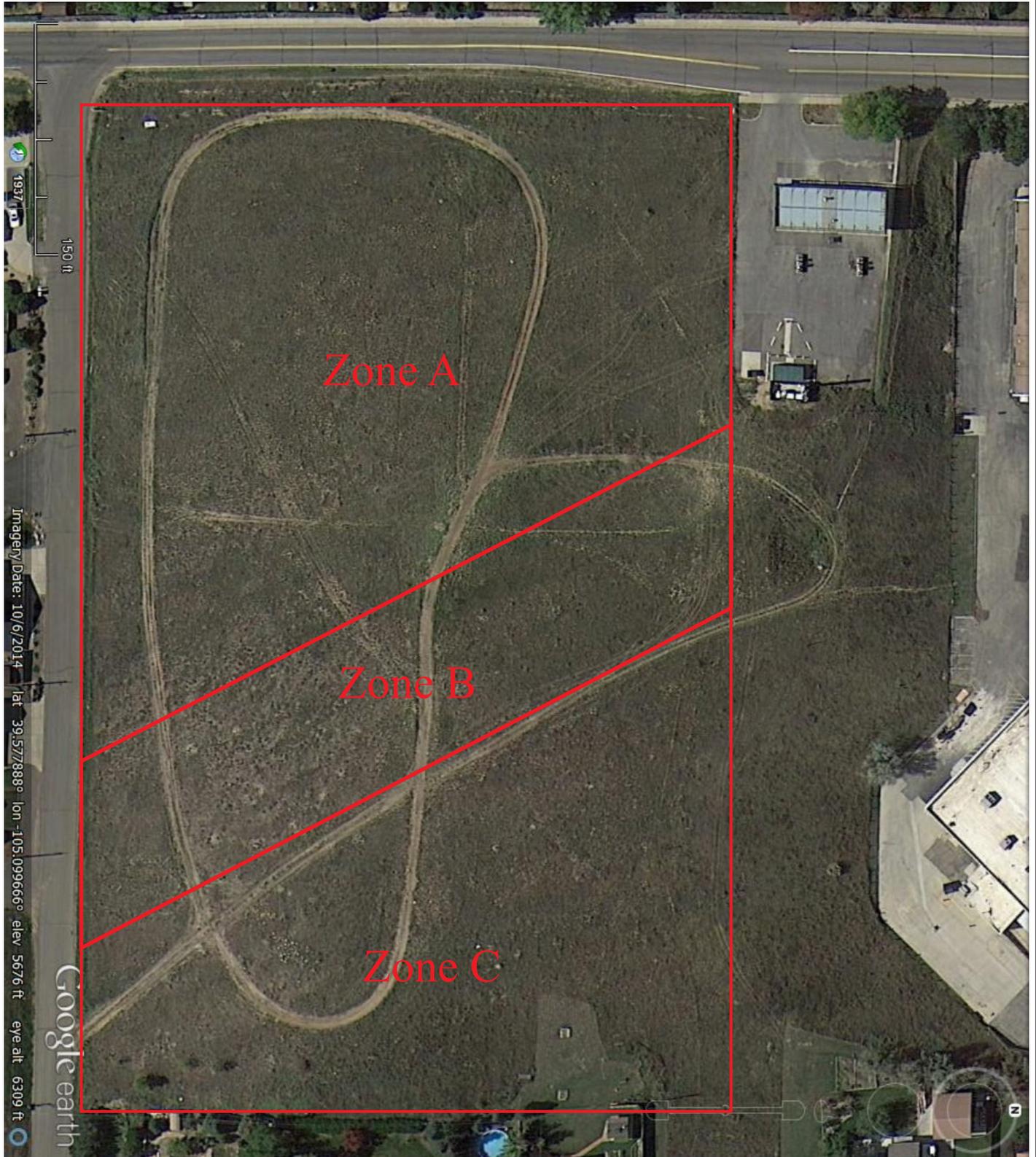
wester n enviro nment
and ecology inc.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 1 - Project Location Map
Virginia Mine
9155 West Fairview Avenue
Littleton, Colorado



wester n enviro nment
and ecol ogy inc.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 2 - Project Vicinity Map
Virginia Mine
9155 West Fairview Avenue
Littleton, Colorado



Scale in Feet

0

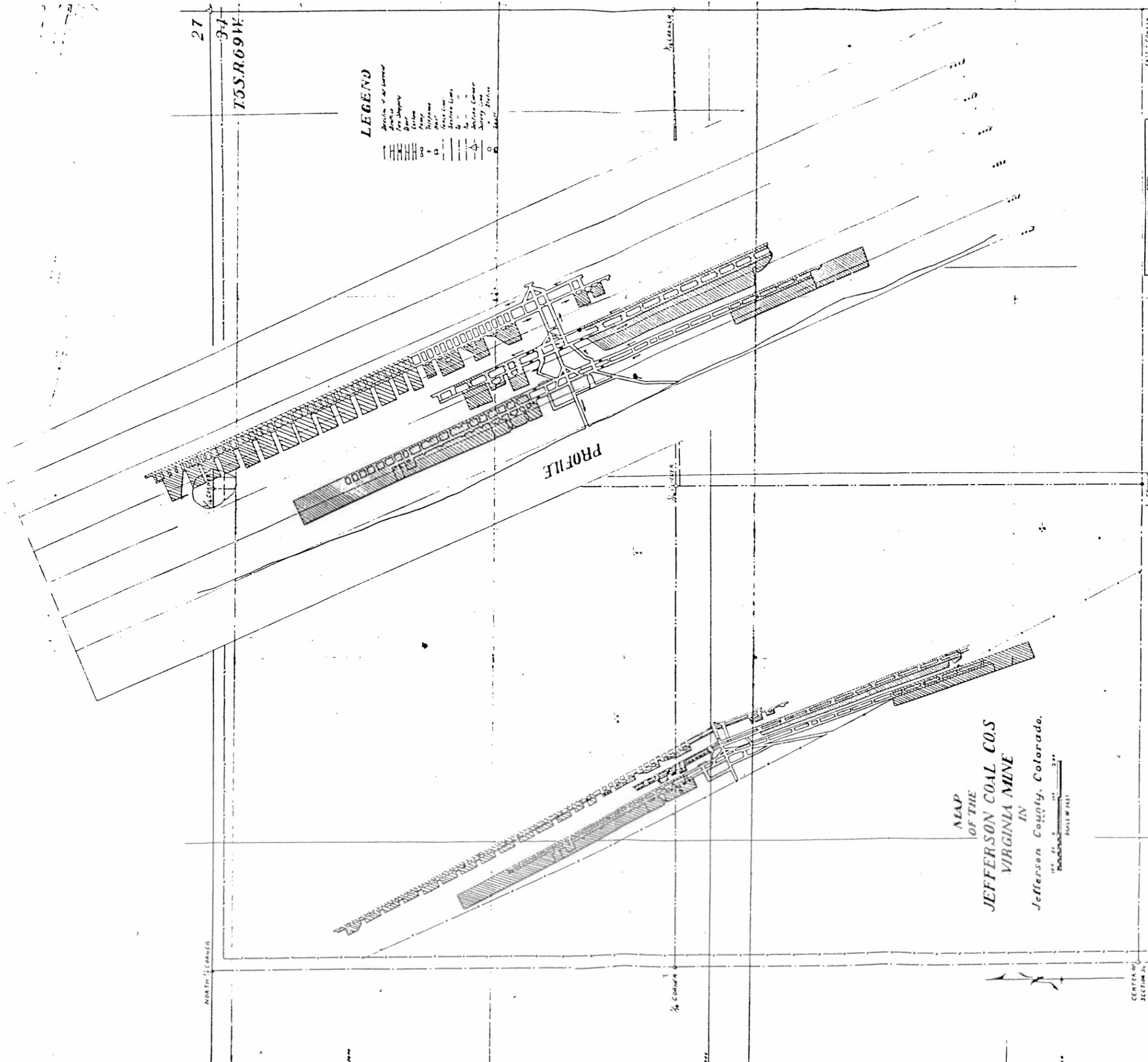
150

western environment
and ecology inc.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 3- Proposed Development Zones
Virginia Mine
9155 West Fairview Avenue
Littleton, Colorado

27
34
T.5S.R.69W.

- LEGEND**
- Section of the mine
 - Shaft
 - Drift
 - Track
 - Conveyer
 - Structure
 - Water
 - Power line
 - Telephone line
 - Electric line
 - Survey line
 - Section corner
 - Survey line
 - Section



MAP
OF THE
JEFFERSON COAL COS
VIRGINIA MINE
IN
Jefferson County, Colorado.

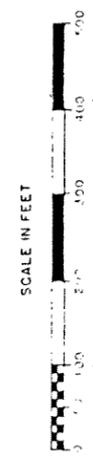
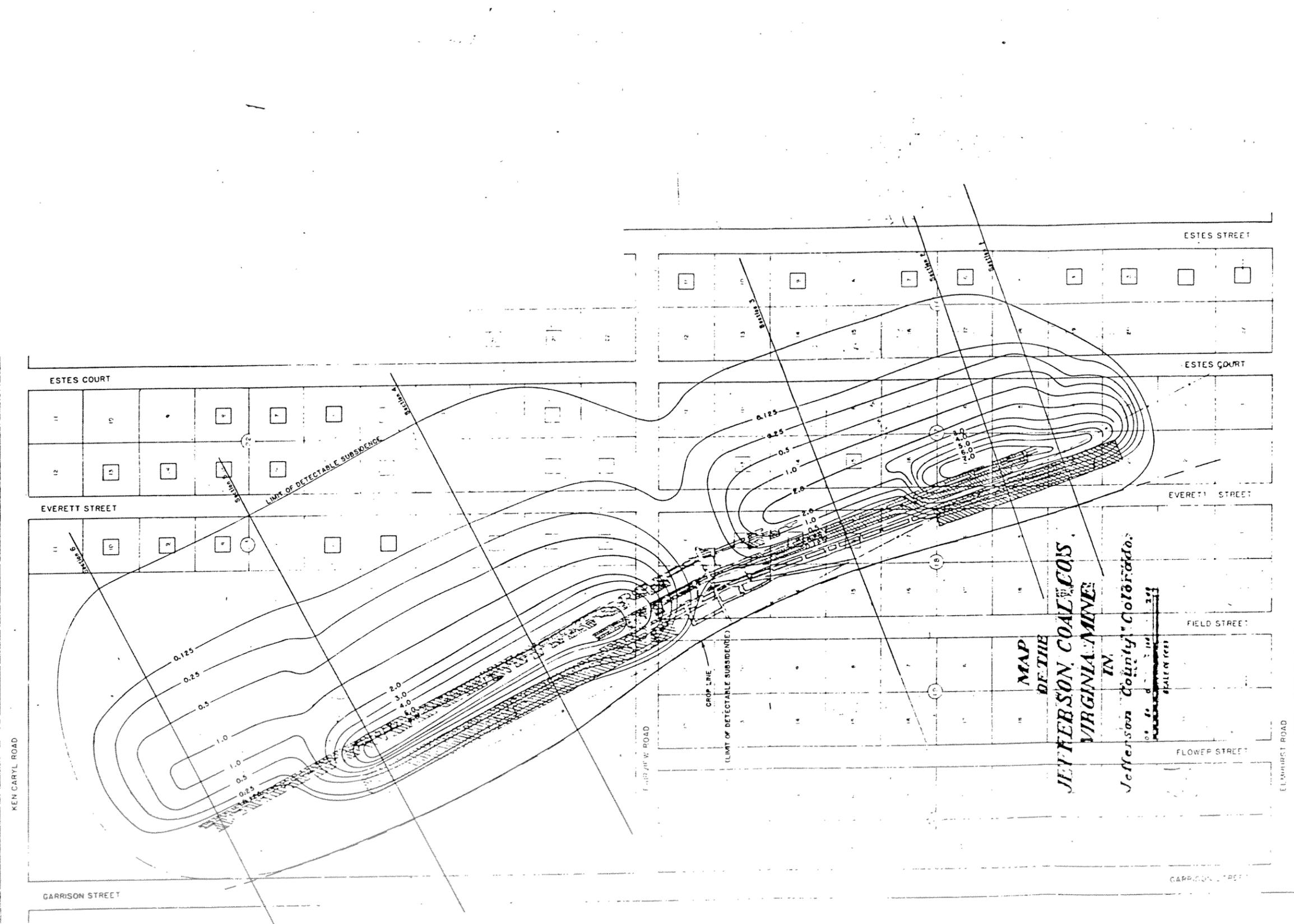
SCALE 1"=100'
DATE 1935

Surveyed	May, 1933	By	Thos J. Mill	Extended	Oct. 4, 1935	By	T. J. K.
Extended	June 5, 1933	"	"	"	Jan. 19, 1935	"	T. J. K.
"	Dec. 1, 1933	"	"	"	Jan.	"	"
"	June, 1934	"	"	"	May 12, 1935	"	L. A.
"	Dec, 1934	"	"	"	June	"	1936, L.R.
"	Feb, 1935	"	"	"	June	"	1939, L.R.

I hereby certify that the accompanying map accurately represents the underground workings of the Virginia Mine to the best of my knowledge and belief.
Thomas J. Mill
L. A. R.

G.A.F.
Goodson & Associates, Inc.
Consulting Engineers
1548 West Center Avenue Denver, Colorado 80202
SCALE: 1"=100'
DATE: 4-18-83
PROJECT NUMBER: 82-122

PLATE 1



- DEVELOPED PLATS
- EQUAL PREDICTED SUBSIDENCE
- PROFILES OF SUBSIDENCE COMPUTATIONS

LET. 10

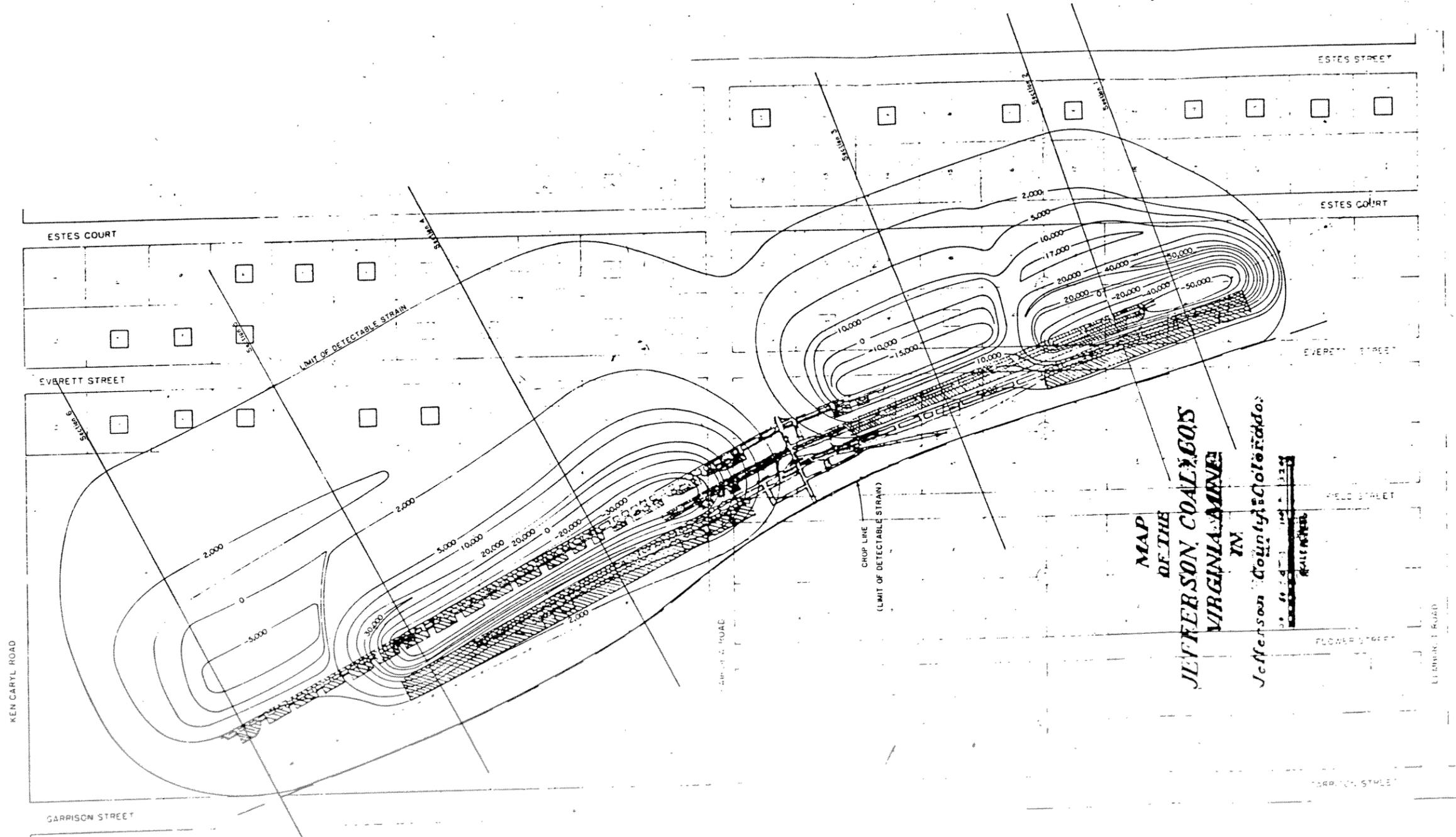


Goodson & Associates, Inc.
Company Number
11849 West Colfax Avenue, Denver, Colorado 80215 • (303) 733-2244

SUBSIDENCE PREDICTION MAP

VIRGINIA MINE, JEFFERSON COUNTY, COLORADO

PLATE: 8	DRAWN BY: R. LARND
SCALE: 1" = 100'	CHECKED BY: P. WOOD
PROJECT NUMBER: 82-122	DATE: 4-18-83



MAP OF THE
JEFFERSON COALFIELD
 IN
 Jefferson County, Colorado

GATI
 Goodson & Associates, Inc.
 Consulting Engineers
 1555 West Colfax Avenue, Denver, Colorado 80202 • P.O. 331724

HORIZONTAL STRAIN PREDICTION MAP
 VIRGINIA MINE, JEFFERSON COUNTY, COLORADO

PLATE: 9	DRAWN BY: J. J. J.
SCALE: 1" = 100'	CHECKED BY: H. AGUIRRE
PROJECT NUMBER: 82-122	DATE: 4-18-83



CONTOUR LINES OF EQUAL STRAIN
 IN MICROSTRAINS

PROFILES FOR STRAIN COMPUTATIONS

DEVELOPED PLATS

