Community & Economic
Development Department
www.adcogov.org

ADAMS COUNTY
COLORADO

4430 South Adams County Parkway
1st Floor, Suite W2000
Brighton, CO 80601-8204
PHONE 720.523.6800
FAX 720.523.6998

OUTDOOR STORAGE

CONDITIONAL USE PERMIT

Application submittals must include all documents on this checklist as well as this page. Please use the reference guide (pgs. 3-4) included in this packet for more information on each submittal item.

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8. ☑ Legal Description
9. ☑ Certificate of Taxes Paid
10. ☑ Certificate of Notice to Mineral Estate Owners/and Lessees(pg. 7)
11. ☑ Certificate of Surface Development (pg. 8-10)

Supplemental Items (if applicable) *Contact County staff for supplemental forms

1. Traffic Impact Study
2. Neighborhood Meeting Summary
3. Solid waste transfer station*
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OUTDOOR STORAGE

DEVELOPMENT APPLICATION FORM

Application Type:

☐ Conceptual Review	☐ Preliminary PUD	☐ Temporary Use
☐ Subdivision, Preliminary	☐ Final PUD	☐ Variance
☐ Subdivision, Final	☐ Rezone	☒ Conditional Use
☐ Plat Correction/ Vacation	☐ Special Use	☐ Other: _____

PROJECT NAME: Brannan Sand and Gravel Company, L.L.C. Pit R

APPLICANT

Name(s): Fred Marvel Phone #: 303-534-1231

Address: 2500 E. Brannan Way

City, State, Zip: Denver, CO, 80229

2nd Phone #: Email: fjmarvel@brannan1.com

OWNER

Name(s): Fred Marvel Phone #: 303-534-1231

Address: 2500 E. Brannan Way

City, State, Zip: Denver, CO, 80229

2nd Phone #: Email:

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

Name: Harris Kocher Smith Phone #: 303-623-6300

Address: 1120 Lincoln St

City, State, Zip: Denver, CO, 80203

2nd Phone #: Email: mwest@hkseng.com

DESCRIPTION OF SITE

Address:	2601 West 60th Ave.
City, State, Zip:	Unincorporated Adams County, CO 80221
Area (acres or square feet):	23.57 acres
Tax Assessor Parcel Number	0182508100041
Existing Zoning:	I-2, I-3
Existing Land Use:	Construction Materials Recycling
Proposed Land Use:	Construction Materials Recycling

Have you attended a Conceptual Review? YES [x] NO [ ]

If Yes, please list PRE#: 2018-00127

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: Fred Marvel, P.E. Date: 1-9-19

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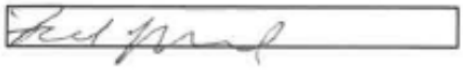
Name: 

Owner's Signature

(date of original application)

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OVERHEIGHT STOCKPILING

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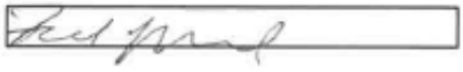
Name: 

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RECYCLING OPERATIONS

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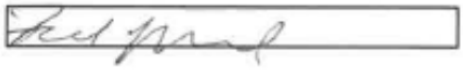
Name: 

Owner's Signature

(date of original application)

BRANNAN
Companies

26 April 2019

Adams County Economic and Community Development
4430 South Adams County Parkway
Brighton, Colorado 80601

Re: Submittal of Land Use Application, Pit 10, 2601 West 60th Avenue

Dear Adams County officials:

On behalf of Pit 10, LLC, please find under this cover an application related to 2601 W. 60th Avenue in unincorporated Adams County.

The Applicant, as Brannan Sand and Gravel, has operated in this area of Adams County for many years, and on the specific subject property for no less than 20 years. The property at 2601 W. 60th Avenue is zoned for industrial use, in the I-2 zone district with a small piece of I-3 zoning at its western edge. Based on Pit 10's recent work with Adams county related to this land -- including code enforcement communications and more recently a Conceptual Review Meeting in November 2018 – we agree that formal plan review will alleviate concerns about appropriate site improvements, the scope and timing of transition plans, and the application of County comprehensive plan aspirational goals for the general vicinity.

While the County staff and plans articulate a general desire to redevelop the area, and the Applicant has engaged with experts on this prospect, it is apparent that the regulatory status of 2601 West 60th Avenue as a jurisdictional floodplain is a substantial impediment to any change in the long-term economic use of this site. The site is currently undergoing floodplain analysis, both as part of a larger study of Clear Creek and on a site-specific basis. The immediate site-specific use of the property is under study by ICON Engineering and will be packaged as an Adams County floodplain use permit application as soon as available. The resolution of Clear Creek floodplain mapping is critical to effective long-term grading and drainage plans, as well as identification of riverbank stabilization and channelization opportunities in conjunction with Urban Drainage or other agencies.

The application process for the existing/proposed land use at 2601 West 60th Avenue is intended to define expectations for the immediate future of the site. It is not a redevelopment plan, nor does the Applicant intend to determine the appropriate future use of the property at this time. After careful deliberation, we believe that subdivision and other steps toward redevelopment are most appropriately addressed in a separate process. The current process is directed at assessing compliance with County industrial zoning standards and specifically reviewing operations that will enable and actively manage the transition to future land uses.

It is significant that the site has operated in more or less its present form for many years, with the involvement of Adams County officials along the way. That ongoing use informs our understanding of the terms and application of Adams County regulations, as noted in the attached narrative. But it is more importantly emblematic of Brannan's positive working relationship with the County, which we endeavor to continue. Based on Adams County direction, Brannan has invested nearly $2 million in grading and material processing work in the last two years, and we have modified operations to reduce stockpile footprint and height. The process envisioned by the enclosed application will allow us to continue in this direction, making operations more compact and compliant with zoning plans.

Thank you in advance for the work of Adams County staff and the boards and commissions.

Sincerely,

Fred Marvel, Manager
for Pit 10, LLC

2500 East Brannan Way | Denver | CO 80229 | 303.534.1231 Tel | 303.534.1236 Fax
www.brannan1.com

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

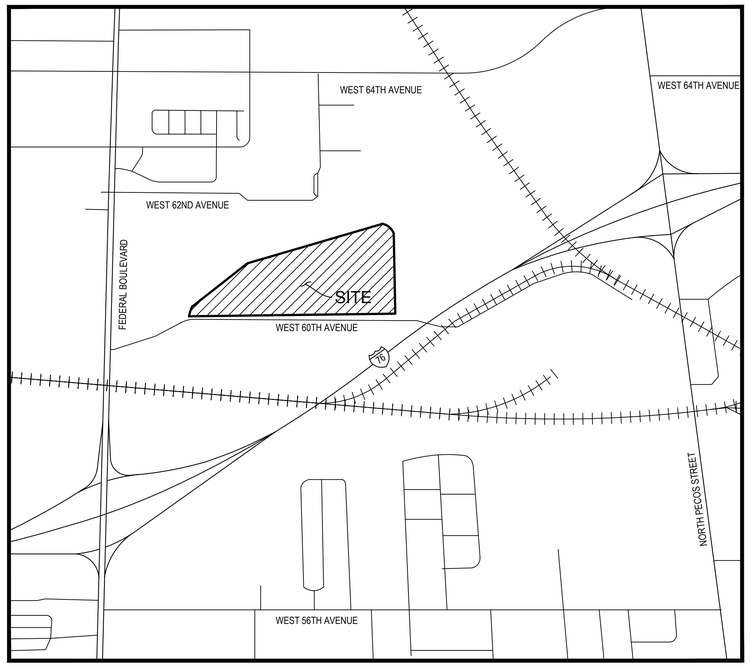
CONDITIONAL USE PERMIT - PIT R

BRANNAN SAND AND GRAVEL
2601 WEST 60TH AVENUE
SITUATED IN THE NORTHEAST CORNER OF SECTION 8,
TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH
PRINCIPAL MERIDIAN
COUNTY OF ADAMS, STATE OF COLORADO

PRIVATE IMPROVEMENT CONSTRUCTION PLANS

GENERAL NOTES:

1. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. TO SCHEDULE A PRE-CONSTRUCTION MEETING CONTACT THE ADAMS COUNTY CONSTRUCTION INSPECTOR SUPERVISOR AT 720-523-6965.
2. ALL CONCRETE CURB, GUTTER AND WALK MUST BE POURED MONOLITHICALLY USING 4,500 psi CONCRETE WITH FIBER MESH.
3. ALL MATERIAL SUBMITTALS MUST BE APPROVED, STAMPED AND SIGNED, BY THE ENGINEER OF RECORD AND, SUBMITTED TO THE ADAMS COUNTY CONSTRUCTION INSPECTOR FOR APPROVAL PRIOR TO CONSTRUCTION/INSTALLATION.
4. THE CONTRACTOR IS REQUIRED TO SUBMIT COPIES OF ALL CONCRETE AND ASPHALT TICKETS TO THE ADAMS COUNTY CONSTRUCTION INSPECTOR.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL TESTING AND, IS REQUIRED TO SUBMIT ALL TEST RESULTS TO THE ADAMS COUNTY CONSTRUCTION INSPECTOR.
6. THE CONTRACTOR IS REQUIRED TO REMOVE A MINIMUM OF TWO (2) FEET OF EXISTING ASPHALT FOR ALL CURB AND GUTTER REPLACEMENT.
7. ALL UTILITY CUTS IN EXISTING STREETS ARE REQUIRED TO BE BACKFILLED WITH FLOWFILL AND, PATCHED WITH A MINIMUM OF 9-INCH ASPHALT PATCH.
8. A COPY OF THE GEOTECHNICAL REPORT SPECIFYING THE PAVEMENT THICKNESS DESIGN MUST BE SUBMITTED FOR REVIEW.
9. PERMITS WILL BE REQUIRED FOR THE INSTALLATION OF ALL UTILITIES. THE DEVELOPER/CONTRACTOR/ENGINEER, MUST SUPPLY THE LINEAL FOOTAGES AND THE NUMBER OF SERVICE CUTS REQUIRED FOR ALL UTILITIES.
10. PERMITS WILL BE REQUIRED FOR THE INSTALLATION OF ALL CONCRETE AND ASPHALT FACILITIES. PRIOR TO THE ISSUANCE OF THESE PERMITS, THE DEVELOPER/CONTRACTOR/ENGINEER, MUST SUPPLY THE SQUARE YARDAGE/SQUARE FOOTAGES OF ALL CONCRETE AND ASPHALT BEING INSTALLED.
11. THE SIA MUST BE COMPLETED WITH APPROPRIATE COLLATERAL, ALONG WITH THE PROPOSED PLAT, PRIOR TO THE ISSUANCE OF ANY ROW ACCESS/CONSTRUCTION PERMIT.
12. NO C.O.'S WILL BE ISSUED FOR ANY BUILDING CONSTRUCTION UNTIL ALL ROW IMPROVEMENTS HAVE BEEN COMPLETED AND HAVE BEEN GRANTED PRELIMINARY ACCEPTANCE.
13. UPON COMPLETION OF ALL CONSTRUCTION, A DRAINAGE CERTIFICATION LETTER, AND APPROPRIATE AS-BUILT CONSTRUCTION DRAWINGS AND INFORMATION WILL BE REQUIRED. THIS LETTER WILL BE STAMPED AND SIGNED BY THE ORIGINAL DESIGN ENGINEER.



VICINITY MAP
SCALE: 1"=600'

BENCHMARK:

PER THE ADAMS COUNTY DATASHEET FOR WEST ADAMS COUNTY DENSIFICATION STATION NAME 95.0244, STATION NUMBER: 0244, A 3-1/4" ALUMINIUM DISK SET IN 6" PVC PIPE W/LOGO CAP, STAMPED "95.0244 1995 3S68W S17" LOCATED SOUTHWEST OF THE INTERSECTION WEST 56TH AVENUE AND ZUNI STREET. ELEVATION 5271.33 NAVD 1988 DATUM.

NOTE:

PUBLIC IMPROVEMENTS SHALL CONFORM TO ADAMS COUNTY STANDARDS AND SPECIFICATOINS AND LATEST EDITION OF COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

LEGEND

EX STORM INLET
EX STORM SEWER W/MH — ST
EX SANITARY SEWER W/MH — SS
EX WATER — W
EX OVERHEAD ELECTRIC — OE
EX UTILITY POLE
PROPERTY BOUNDARY
PR SIDEWALK
EX CONTOURS — 5221 — 5220
PR CONTOURS — 5220 — 5221

SHEET INDEX

1 COVER SHEET
2 EXISTING CONDITIONS SURVEY
3 SITE PLAN
4 DRAINAGE PLAN
5 EROSION CONTROL PLAN
6 PARKING PLAN

811 Know what's below. Call before you dig.

CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DEVELOPER:
BRANNAN SAND AND GRAVEL COMPANY, LLC
2500 EAST BRANNAN WAY
DENVER, CO 80229
T. 1-303-534-1231

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

ISSUE DATE: 11-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

Filepath: P:\190915\ENGINEERING\CONDITIONAL USE PERMIT\PRIVATE\PRIVATE COVER.DWG Layout: LAYOUT1
Plotted: WED 11/27/19 8:16:48A By: Pat Hedrhy
XREFS:

LEGAL DESCRIPTION: (FROM CLIENT)

A PARCEL OP LAND LYING IN THE NORTHEAST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 8, THENCE SOUTH OO DEGREES 07 MINUTES 03 SECONDS EAST, 1650.60 FEET ALONG THE EAST LINE OF SAID SECTION 8 TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS, SAID POINT BEING THE TRUE POINT OF BEGINNING;
THENCE SOUTH OO DEGREES 07 MINUTES 03 SECONDS EAST ALONG THE EAST LINE OF SAID SECTION 8 920.29 FEET TO A POINT ON THE NORTH LINE OF THAT PARCEL OP LAND AS DESCRIBED IN BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS,
THENCE SOUTH 86 DEGREES 54 MINUTES 2O SECONDS WEST ALONG SAID NORTH LINE 169.81 FEET;
THENCE SOUTH 78 DEGREES 58 MINUTES 16 SECONDS WEST ALONG SAID NORTH LINE 56.02 FEET TO THE NORTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS;
THENCE NORTH 89 DEGREES 58 MINUTES 13 SECONDS WEST ALONG SAID NORTH, LINE 1411.7O FEET;
THENCE SOUTH 49 DEGREES 53 MINUTES 18 SECONDS WEST ALONG THE NORTHWESTERLY LINE OF SAID PARCEL OF LAND DESCRIBED IN BOOK 3432, PAGE 154 A DISTANCE OF 77.56 FEET TO THE EAST-WEST CENTERLINE OF SAID SECTION 8;
THENCE NORTH 89 DEGREES 58 MINUTES 13 SECONDS WEST ALONG SAID EAST-WEST CENTERLINE 183.64 FEET MORE OR LESS TO THE SOUTHERLY LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS;
THENCE NORTHEASTERLY ALONG SAID SOUTHERLY LINE THE FOLLOWING SIX COURSES:
1. NORTH 49 DEGREES 25 MINUTES 25 SECONDS EAST, 122.50 FEET;
2. NORTH 47 DEGREES 42 MINUTES 36 SECONDS EAST, 356.79 FEET;
3. THENCE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 433.51 FEET AND A CENTRAL ANGLE OF 11 DEGREES 59 MINUTES 07 SECONDS;
4. NORTH 59 DEGREES 41 MINUTES 43 SECONDS FAST, 331.34 FEET;
5. NORTH 68 DEGREES 33 MINUTES 27 SECONDS EAST, 1080.62 FEET;
6. NORTH 72 DEGREES 24 MINUTES 16 SECONDS EAST, 155.30 FEET TO THE TRUE POINT OF BEGINNING.
NOTE: THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY SELLARDS & GRIGGS, INC. , JOB NO. 93-085-021,

BASIS FOR BEARINGS:

THE EAST LINE OF THE NORTHEAST ONE-QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEARS SOUTH OO°13'39" EAST (BY PUBLISHED COORDINATES), TAKEN FROM THE CDOT, RIGHT-OF-WAY PLANS PROJECT NO: STE CO120-019, ON FILE IN LAND SURVEY PLATS, BOOK 1, PAGE 4952, RECEPTION NO. 2017-187, ADAMS COUNTY RECORDS.
THIS DRAWING IS IN STATE PLANE COORDINATES (GROUND) NAD83 CENTRAL ZONE
THE COMBINED SCALE FACTOR IS: 0.99979199I (1/X=1.OOO2O852).
ALL BEARINGS SHOWN HEREON ARE RELATIVE (ROTATED) THERETO. MONUMENTS EXIST 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(S) INDICATE ON WHICH SIDE OF THE LINE THE FENCE IS ON.

THE CLIENT REQUESTED THAT RIGHT-OF-WAY BE SHOWN. THE CLIENT WAS MADE AWARE THAT EASEMENTS WOULD NOT BE SHOWN EXCEPT WHERE DOCUMENTATION WAS PROVIDED TO THE SURVEYOR. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY R.W. BAYER & ASSOCIATES, INC. OF THE PROPERTY SHOWN AND DESCRIBED HEREON TO DETERMINE OWNERSHIP, MINERAL INTEREST OWNERSHIP, COMPATIBILITY OF THIS DESCRIPTION WITH THOSE OF ADJACENT TRACTS OF LAND OR RIGHTS-OF-WAY, DEDICATIONS, EASEMENTS OR ENCUMBRANCES OF RECORD AFFECTING THIS TRACT OF LAND.

THIS MAP IS NOT INTENDED TO REPRESENT A BOUNDARY SURVEY OR LAND SURVEY PLAT. IT IS ONLY INTENDED TO DEPICT THE ATTACHED LEGAL DESCRIPTION.

THIS PARCEL OF LAND LIES WITHIN ZONE AE (FLOODWAY AND AREAS INUNDATED BY THE 1% ANNUAL CHANCE FLOODPLAIN (100 YEAR FLOOD) AS DELINEATED IN THE F.E.M.A., FLOOD INSURANCE RATE MAP, MAP NUMBER 08001C0592H, MAP REVISED MARCH 05, 2007. THE FLOODWAY AND FLOODPLAIN LINES SHOWN HEREON ARE FROM THE CAD FILE PREPARED BY ICON ENGINEERING, INC., CAD FILE NAME BRANNON-FW-RESULTS.dwg.

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N
W E
S
0 30' 60' 120'

SCALE: 1"=60'

LEGEND

x — x — DENOTES: FENCE LINE
DENOTES: CONCRETE
OHP — OHP — DENOTES: OVERHEAD POWER LINE

N. E. COR. SEC 8, T. 3S., R. 68W.
(NOT FOUND)

S00°13'39"E 1650.56'
S00°13'39"E 2640.85'

EAST LINE N.E.1/4 SEC. 8
(BASIS FOR BEARINGS)

BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS

ZONE AE (FLOODWAY)
CLEAR CREEK

N72° 17' 40"E
155. 30'

SOUTH LINE BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS

MANHOLE UNKNOWN RIM E. = 5198.10
MANHOLE UNKNOWN RIM E. = 5198.40
POWER POLE
GRAVEL ROAD

1080. 62'
N68° 26' 51"E

TOE OF BAR
TOP OF BERM
TOE OF BERM
TOE STOCKPILE

CONTOURS SHOWN ARE APPROXIMATE (STOCKPILE AREA)

CONTOURS SHOWN ARE APPROXIMATE (LARGE STOCKPILE AREA)

MANHOLE UNKNOWN RIM E. = 5198.65

S00°13'39"E 980.29'

N59° 35' 07"E 331.34'

Δ = 011° 59' 07"
R = 433.510'
L = 90.68'
Ch=N53° 35' 33"E
90.52' (D&M)

ZONE AE (100 YEAR FLOODPLAIN)

BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS

366. 79'
N47° 36' 00"E

FOUND 3-1/4" ALUMINUM CAP, CDOT, P.L.S. 24673

INV. = 5196.36
15" PVC
INV. = 5197.37

NORTH LINE BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS

NORTH LINE BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS (NOTE: THIS LINE DESCRIBED AS 50 FEET NORTH OF THE NORTH-SOUTH CENTERLINE SECTION 8)

6' CHAINLINK FENCE W/3-STRAND BARBED-WIRE

NOTE: FEATURES BETWEEN FENCE AND ROADWAY NOT FIELD LOCATED

S78°51' 40"W
55. 78'
S86° 47' 44"W 169. 81'

N49° 18' 49"E
121. 80'

S89° 56' 40"W 306. 60'

S49° 46' 42"W
77. 52'

S89° 56' 40"W
183. 57'

S89° 55' 55"W 1104. 85'

BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS

NORTH EDGE OF ROADWAY

WEST 60TH AVENUE

S89° 55' 55"W 1329. 34'

SOUTH LINE S.E. 1/4 N.E. 1/4 SEC. 8

BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS

MANHOLE UNKNOWN RIM E. = 5202. 23

1329. 25'

FOUND 2-1/2 ALUMINUM CAP, P.L.S. 28285, 0.2' BELOW GROUND

C-E 1/16 COR. SEC 8, T. 3S., R. 68W. (S.W. COR. S.E. 1/4 N.E. 1/4 SEC. 8) (FOUND 3-1/4" ALUMINUM CAP, P.L.S. 13258)

E. 1/4 COR. SEC 8, T. 3S., R. 68W. (S.E. COR. N.E. 1/4 SEC. 8) (FOUND #6 REBAR, UPGRADED W/ 3-1/4" ALUMINUM CAP, BAYER, P.L.S. 6973, 2017, 0.4' BELOW GROUND)

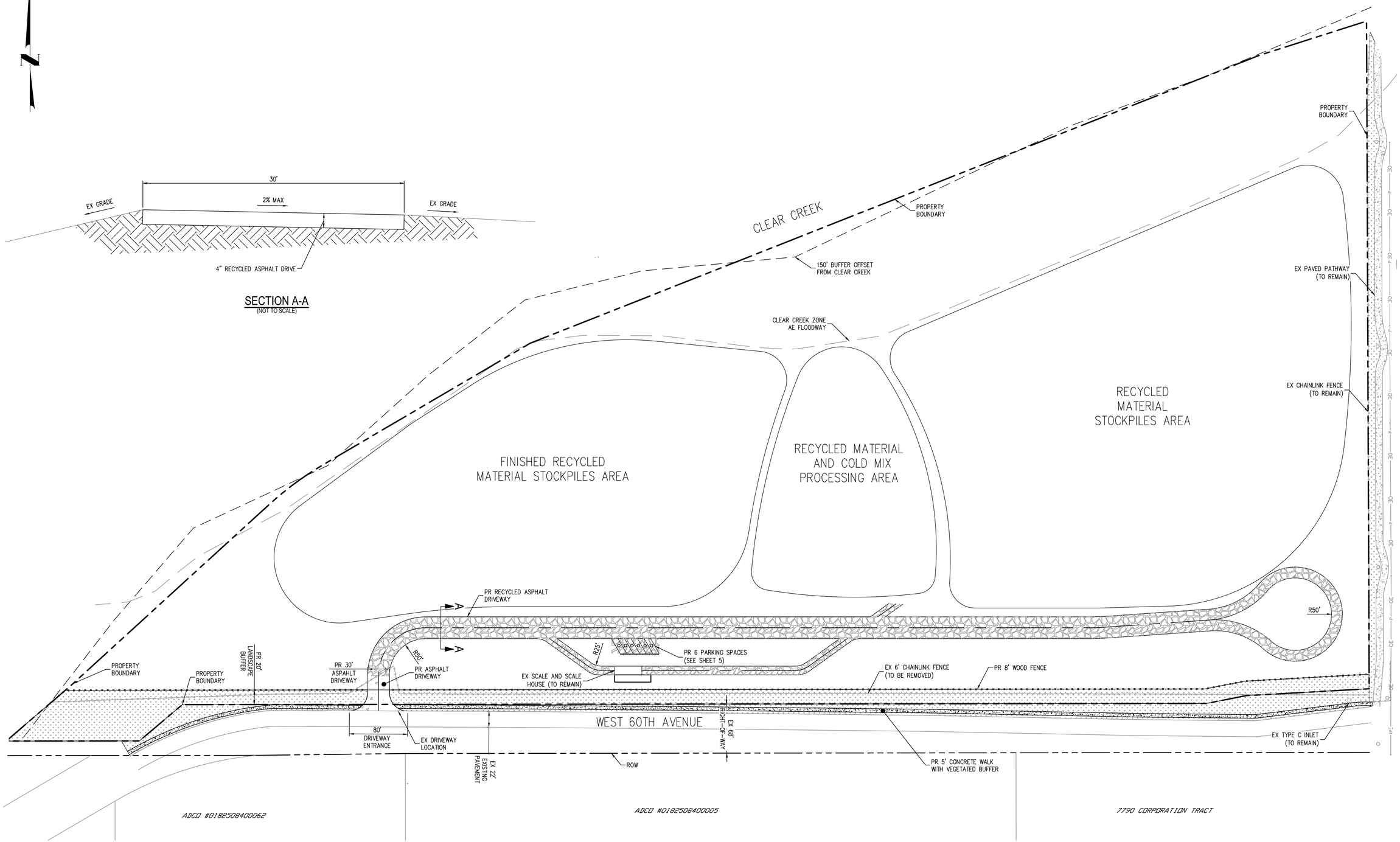
7790 CORPORATION TRACT (RECEPTION NO. 972191, ADAMS COUNTY RECORDS)

ADCO #0182508400063
ADCO #0182508400064
ADCO #0182508400005
ADCO #0182508400062

R.W. BAYER & ASSOCIATES, INC. 2090 EAST 104TH AVENUE, SUITE 200 THORNTON, COLORADO 80233-4316 (303) 452-4433 rwbsurveying@hotmail.com	CAD FILE: B18134/B18134.DWG REVISIONS: 09-12-2018 ADD FLDWAY EXISTING & ADDITIONAL TOPO SOUTH OF FLDWAY LINE / 09-28-2018 ADDED NEW TOPO IN N.W. CORNER /	**PIT R TOPOGRAPHIC MAPPING** PART OF NORTHEAST ONE-QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO.	SCALE: 1"=60	DATE: JULY 18, 2018	DRW BY: G.A.B. / CKD BY: R.B. / PROJ. NO: 2018-134
			BOOK: 698/703	PAGE: 137/46	FILE NO: 8-38-218L / SHEET: 1 OF 1

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

SECTION A-A
(NOT TO SCALE)



811 Know what's below. Call before you dig.

CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

60 0 60 120
SCALE: 1" = 60'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
SITE PLAN

ISSUE DATE: 11-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
3
3 OF 6

FILEPATH: P:\190915\ENGINEERING\CONDITIONAL USE PERMIT\PRIVATE\CUP - PR IMPROVEMENT PLAN\DWG LAYOUT: PR IMP PLAN
7 XREFs: \190915 drawings plan\[U]_e-base-byxt, e-legal-byxt, e-topo[U], e-cell-byxt, p-base, p-legal
PLOTTED: TUE 11/26/19 5:37:36P BY: PAT HERLIHY

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

LEGEND

PROPERTY LINE
EXISTING RIGHT-OF-WAY
EXISTING CONTOURS 5229 5230
PROPOSED CONTOURS 5229 5230
PROPOSED STORM SEWER
PROPOSED DRAINAGE BASIN
LANDSCAPE AREA ADRAIN
SURFACE FLOW DIRECTION
EMERGENCY OVERFLOW LOCATION

BASIN DESIGNATION: OS 1 — 5-YR RATIONAL (POST-PROJECT) C COEFFICIENT
BASIN SIZE IN ACRES: AREA 1.23 AC — MINOR 0.45 / MAJOR 0.67 — 100-YR RATIONAL (POST-PROJECT) C COEFFICIENT
1 BASIN DESIGN POINT

N

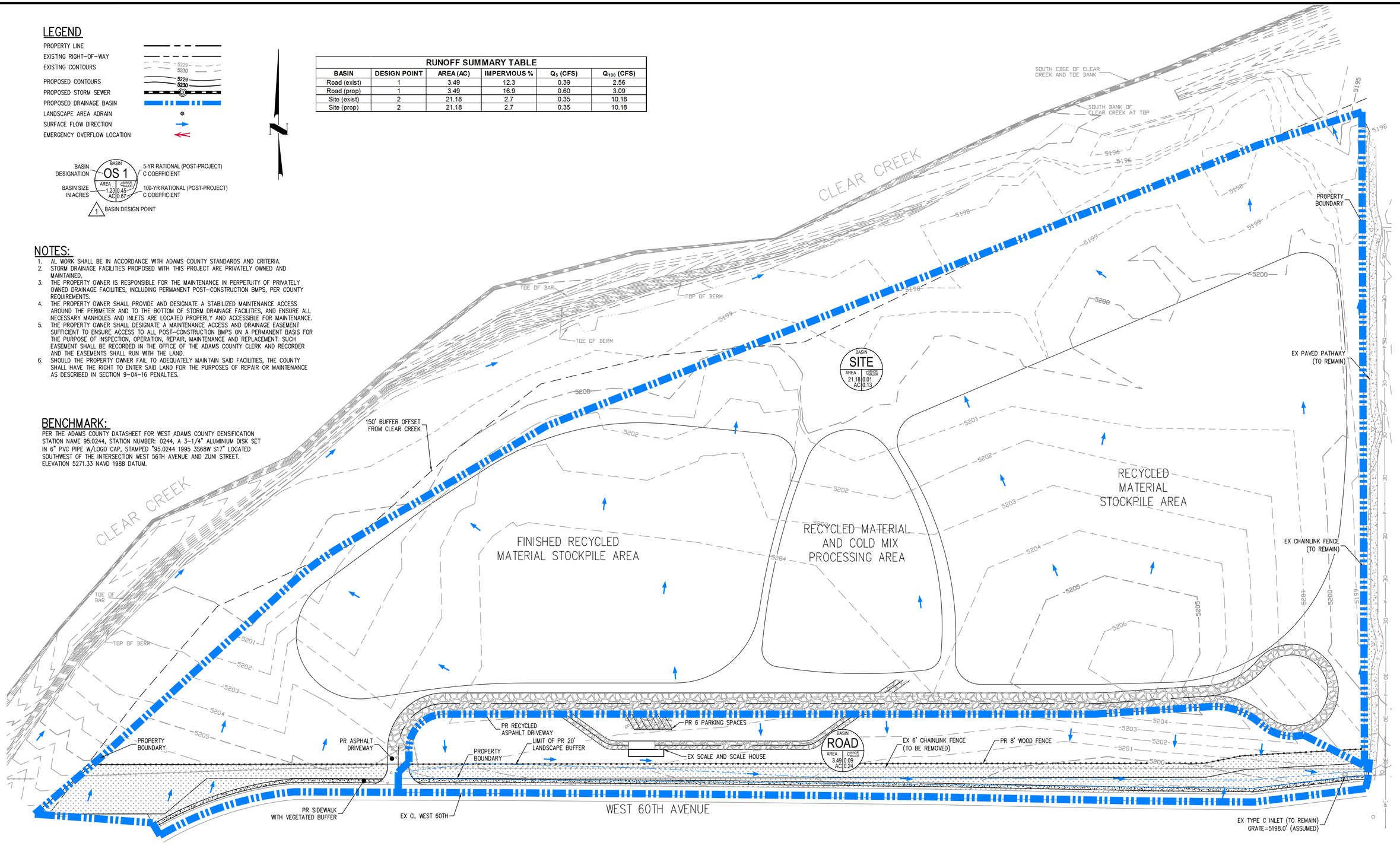
RUNOFF SUMMARY TABLE					
BASIN	DESIGN POINT	AREA (AC)	IMPERVIOUS %	Q_5 (CFS)	Q_{100} (CFS)
Road (exist)	1	3.49	12.3	0.39	2.56
Road (prop)	1	3.49	16.9	0.60	3.09
Site (exist)	2	21.18	2.7	0.35	10.18
Site (prop)	2	21.18	2.7	0.35	10.18

NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH ADAMS COUNTY STANDARDS AND CRITERIA.
2. STORM DRAINAGE FACILITIES PROPOSED WITH THIS PROJECT ARE PRIVATELY OWNED AND MAINTAINED.
3. THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE IN PERPETUITY OF PRIVATELY OWNED DRAINAGE FACILITIES, INCLUDING PERMANENT POST-CONSTRUCTION BMPS, PER COUNTY REQUIREMENTS.
4. THE PROPERTY OWNER SHALL PROVIDE AND DESIGNATE A STABILIZED MAINTENANCE ACCESS AROUND THE PERIMETER AND TO THE BOTTOM OF STORM DRAINAGE FACILITIES, AND ENSURE ALL NECESSARY MANHOLES AND INLETS ARE LOCATED PROPERLY AND ACCESSIBLE FOR MAINTENANCE.
5. THE PROPERTY OWNER SHALL DESIGNATE A MAINTENANCE ACCESS AND DRAINAGE EASEMENT SUFFICIENT TO ENSURE ACCESS TO ALL POST-CONSTRUCTION BMPS ON A PERMANENT BASIS FOR THE PURPOSE OF INSPECTION, OPERATION, REPAIR, MAINTENANCE AND REPLACEMENT. SUCH EASEMENT SHALL BE RECORDED IN THE OFFICE OF THE ADAMS COUNTY CLERK AND RECORDER AND THE EASEMENTS SHALL RUN WITH THE LAND.
6. SHOULD THE PROPERTY OWNER FAIL TO ADEQUATELY MAINTAIN SAID FACILITIES, THE COUNTY SHALL HAVE THE RIGHT TO ENTER SAID LAND FOR THE PURPOSES OF REPAIR OR MAINTENANCE AS DESCRIBED IN SECTION 9-04-16 PENALTIES.

BENCHMARK:

PER THE ADAMS COUNTY DATASHEET FOR WEST ADAMS COUNTY DENSIFICATION STATION NAME 95.0244, STATION NUMBER: 0244, A 3-1/4" ALUMINIUM DISK SET IN 6" PVC PIPE W/LOGO CAP, STAMPED "95.0244 1995 3S68W S17" LOCATED SOUTHWEST OF THE INTERSECTION WEST 56TH AVENUE AND ZUNI STREET. ELEVATION 5271.33 NAVD 1988 DATUM.



811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

60 0 60 120
SCALE: 1" = 60'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
DRAINAGE PLAN

ISSUE DATE: 11-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO. 4
4 OF 6

FILEPATH: P:\190915\ENGINEERING\DRAINAGE\190915 DRAINAGE PLANDWG, LAYOUT: LAYOUT1
7-XREFs: e-base-byot, e-legal-byot[U], e-topo, e-util-byot, p-base, p-legal, p-topo[U]
PLOTTED: WED 11/27/19 9:00:16A BY: MARK WEST

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

BMP LEGEND:

APPROX. LIMIT OF CONSTRUCTION AND DISTURBED AREA		LOC LOC
SILT FENCE	SF	
INLET PROTECTION	IP	
STABILIZED STAGING AREA	SSA	
VEHICLE TRACKING CONTROL	VTC	
SEDIMENT CONTROL LOG	SCL	SCL SCL

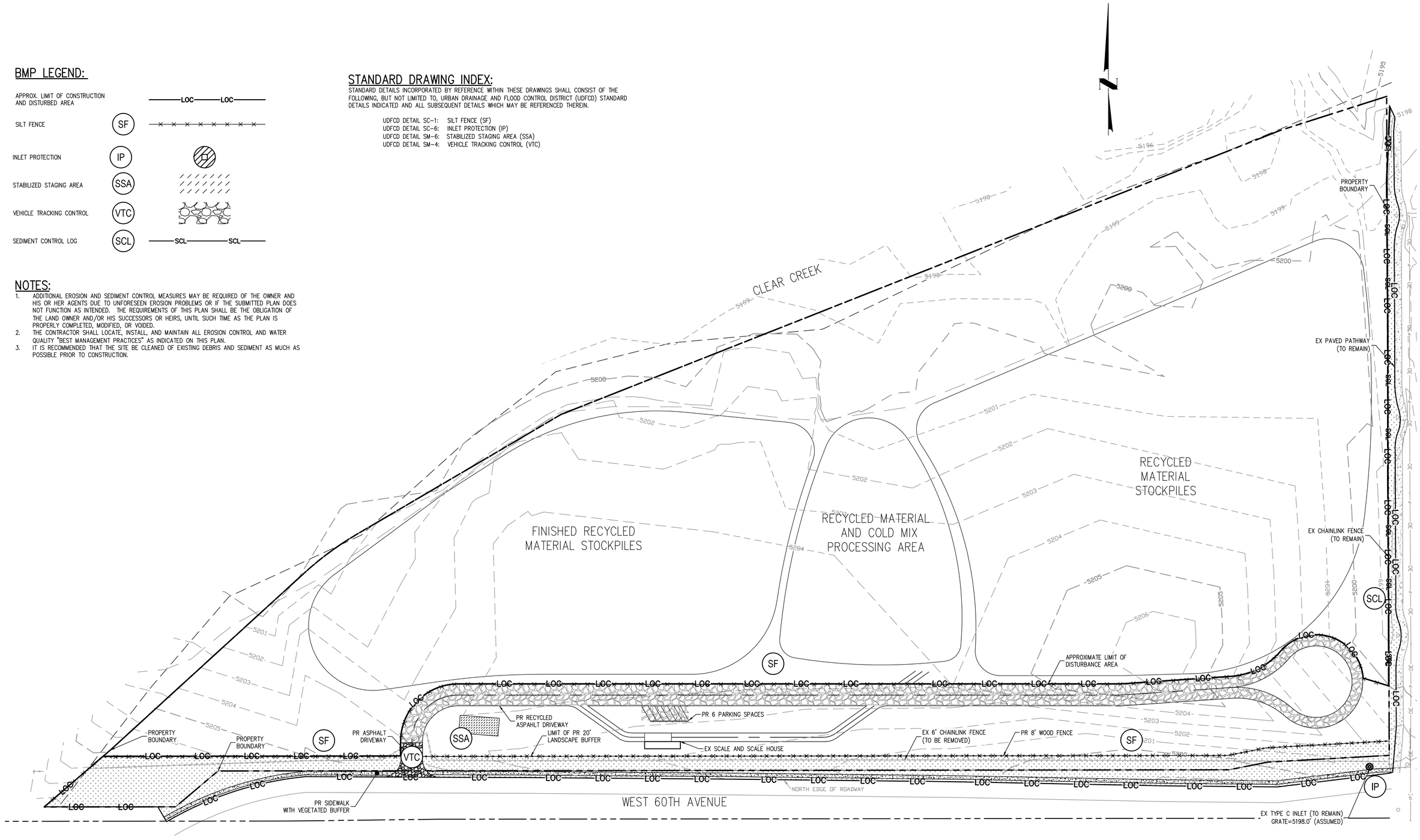
NOTES:

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS PLAN SHALL BE THE OBLIGATION OF THE LAND OWNER AND/OR HIS SUCCESSORS OR HEIRS, UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED, OR VOIDED.
2. THE CONTRACTOR SHALL LOCATE, INSTALL, AND MAINTAIN ALL EROSION CONTROL AND WATER QUALITY "BEST MANAGEMENT PRACTICES" AS INDICATED ON THIS PLAN.
3. IT IS RECOMMENDED THAT THE SITE BE CLEANED OF EXISTING DEBRIS AND SEDIMENT AS MUCH AS POSSIBLE PRIOR TO CONSTRUCTION.

STANDARD DRAWING INDEX:

STANDARD DETAILS INCORPORATED BY REFERENCE WITHIN THESE DRAWINGS SHALL CONSIST OF THE FOLLOWING, BUT NOT LIMITED TO, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT (UDFCD) STANDARD DETAILS INDICATED AND ALL SUBSEQUENT DETAILS WHICH MAY BE REFERENCED THEREIN.

UDFCD DETAIL SC-1: SILT FENCE (SF)
UDFCD DETAIL SC-6: INLET PROTECTION (IP)
UDFCD DETAIL SM-6: STABILIZED STAGING AREA (SSA)
UDFCD DETAIL SM-4: VEHICLE TRACKING CONTROL (VTC)



FILEPATH: P:\190915\ENGINEERING\EROSION\EROSION CONTROL.DWG, LAYOUT: LAYOUT1
7.XREFs: e-base-byot, e-legal-byot, e-topo, e-util-byot, p-base, p-legal, p-topo[U]
PLOTTED: WED 11/27/19 9:51:27A BY: PAT HERLIHY

811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

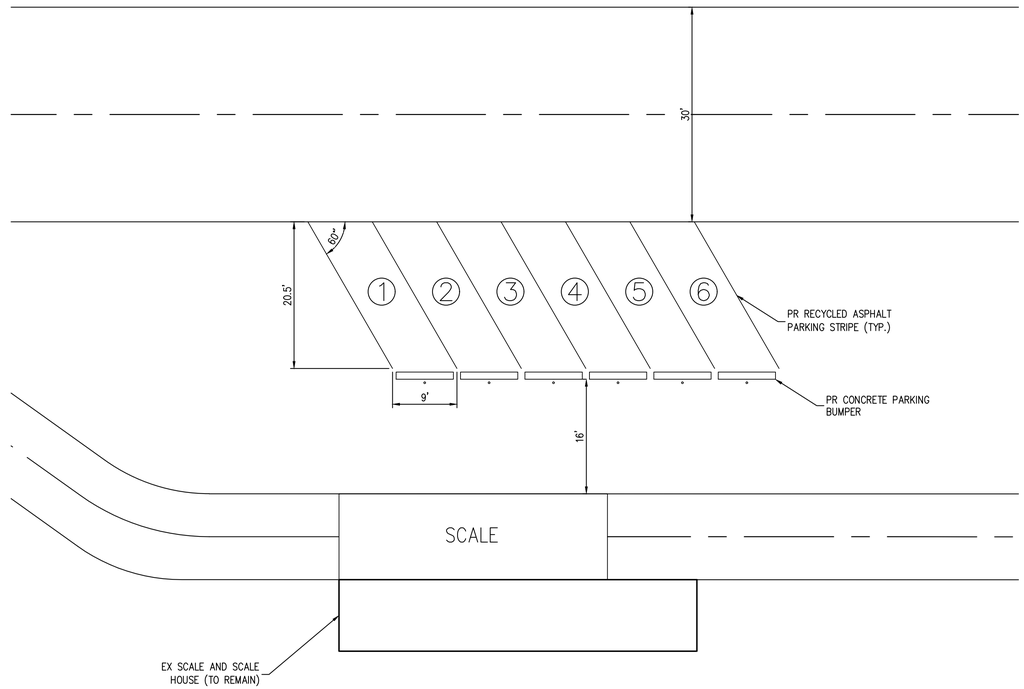
CONDITIONAL USE PERMIT - PIT R
EROSION CONTROL

ISSUE DATE: 11-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO. 5

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.



PARKING PLAN
(1"=10')

811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

10 0 10 20
SCALE: 1" = 10'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
PARKING PLAN

ISSUE DATE: 11-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
6
6 OF 6

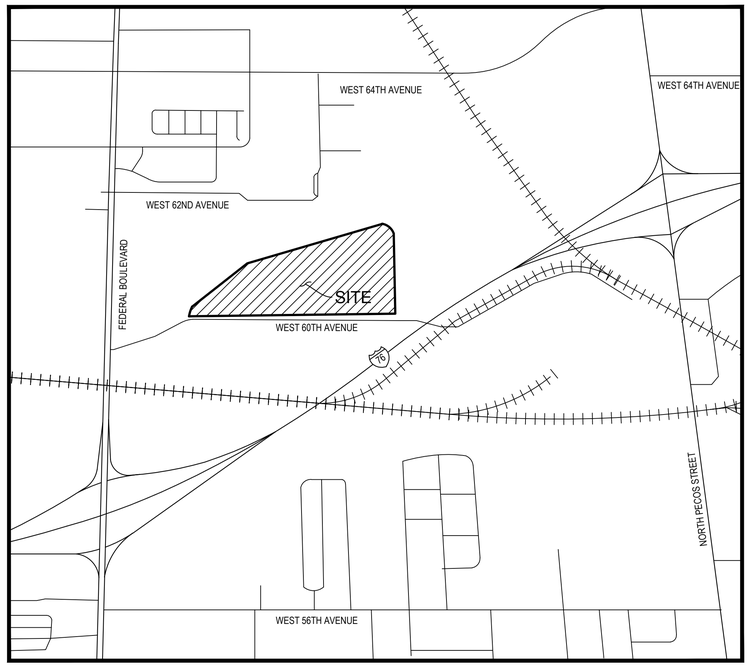
FILEPATH: P:\190915\ENGINEERING\CONDITIONAL USE PERMIT\PRIVATE\CUP - PR IMPROVEMENT PLAN.DWG LAYOUT: PR-PARKING
7 XREFs: 190915 drainage plan[U], e-base-byot, e-legal-byot, e-topo[U], e-util-byot, p-base, p-legal
PLOTTED: TUE 11/26/19 5:38:09P BY: PAT HERLIHY

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

CONDITIONAL USE PERMIT - PIT R

BRANNAN SAND AND GRAVEL
2601 WEST 60TH AVENUE
SITUATED IN THE NORTHEAST CORNER OF SECTION 8,
TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH
PRINCIPAL MERIDIAN
COUNTY OF ADAMS, STATE OF COLORADO

PUBLIC IMPROVEMENT CONSTRUCTION PLANS



VICINITY MAP
SCALE: 1"=600'

BENCHMARK:
PER THE ADAMS COUNTY DATASHEET FOR WEST ADAMS COUNTY DENSIFICATION STATION NAME 95.0244, STATION NUMBER: 0244, A 3-1/4" ALUMINIUM DISK SET IN 6" PVC PIPE W/LOGO CAP, STAMPED "95.0244 1995 3S68W S17" LOCATED SOUTHWEST OF THE INTERSECTION WEST 56TH AVENUE AND ZUNI STREET. ELEVATION 5271.33 NAVD 1988 DATUM.

NOTE:
PUBLIC IMPROVEMENTS SHALL CONFORM TO ADAMS COUNTY STANDARDS AND SPECIFICATOINS AND LATEST EDITION OF COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

LEGEND

EX STORM INLET	
EX STORM SEWER W/MH	ST
EX SANITARY SEWER W/MH	SS
EX WATER	W
EX OVERHEAD ELECTRIC	OE
EX UTILITY POLE	
PROPERTY BOUNDARY	
PR SIDEWALK	
EX CONTOURS	5221 5220
PR CONTOURS	5220 5221

SHEET INDEX

1 COVER SHEET
2 EXISTING CONDITIONS SURVEY
3 WEST 60TH PLAN AND PROFILE (WEST)
4 WEST 60TH PLAN AND PROFILE (EAST)
5 TYPICAL SECTIONS
6 LANDSCAPE PLANS (L1.0, L1.1, L1.2)

811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DEVELOPER:
BRANNAN SAND AND GRAVEL COMPANY, LLC
2500 EAST BRANNAN WAY
DENVER, CO 80229
T. 1-303-534-1231

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

ISSUE DATE: 12-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

Filepath: P:\190915\ENGINEERING\CONDITIONAL USE PERMIT\PUBLIC\PUBLIC COVER.DWG Layout: COVER
Xrefs: ...
Plotted: WED 1/22/19 @ 9:49 AM By: Pat Hedrhy

LEGAL DESCRIPTION: (FROM CLIENT)

A PARCEL OP LAND LYING IN THE NORTHEAST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 8, THENCE SOUTH OO DEGREES 07 MINUTES 03 SECONDS EAST, 1650.60 FEET ALONG THE EAST LINE OF SAID SECTION 8 TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS, SAID POINT BEING THE TRUE POINT OF BEGINNING;
THENCE SOUTH OO DEGREES 07 MINUTES 03 SECONDS EAST ALONG THE EAST LINE OF SAID SECTION 8 920.29 FEET TO A POINT ON THE NORTH LINE OF THAT PARCEL OP LAND AS DESCRIBED IN BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS,
THENCE SOUTH 86 DEGREES 54 MINUTES 2O SECONDS WEST ALONG SAID NORTH LINE 169.81 FEET;
THENCE SOUTH 78 DEGREES 58 MINUTES 16 SECONDS WEST ALONG SAID NORTH LINE 56.02 FEET TO THE NORTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS;
THENCE NORTH 89 DEGREES 58 MINUTES 13 SECONDS WEST ALONG SAID NORTH, LINE 1411.7O FEET;
THENCE SOUTH 49 DEGREES 53 MINUTES 18 SECONDS WEST ALONG THE NORTHWESTERLY LINE OF SAID PARCEL OF LAND DESCRIBED IN BOOK 3432, PAGE 154 A DISTANCE OF 77.56 FEET TO THE EAST-WEST CENTERLINE OF SAID SECTION 8;
THENCE NORTH 89 DEGREES 58 MINUTES 13 SECONDS WEST ALONG SAID EAST-WEST CENTERLINE 183.64 FEET MORE OR LESS TO THE SOUTHERLY LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS;
THENCE NORTHEASTERLY ALONG SAID SOUTHERLY LINE THE FOLLOWING SIX COURSES:
1. NORTH 49 DEGREES 25 MINUTES 25 SECONDS EAST, 122.50 FEET;
2. NORTH 47 DEGREES 42 MINUTES 36 SECONDS EAST, 356.79 FEET;
3. THENCE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 433.51 FEET AND A CENTRAL ANGLE OF 11 DEGREES 59 MINUTES 07 SECONDS;
4. NORTH 59 DEGREES 41 MINUTES 43 SECONDS FAST, 331.34 FEET;
5. NORTH 68 DEGREES 33 MINUTES 27 SECONDS EAST, 1080.62 FEET;
6. NORTH 72 DEGREES 24 MINUTES 16 SECONDS EAST, 155.30 FEET TO THE TRUE POINT OF BEGINNING.
NOTE: THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY SELLARDS & GRIGGS, INC. , JOB NO. 93-085-021,

BASIS FOR BEARINGS:

THE EAST LINE OF THE NORTHEAST ONE-QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEARS SOUTH OO°13'39" EAST (BY PUBLISHED COORDINATES), TAKEN FROM THE CDOT, RIGHT-OF-WAY PLANS PROJECT NO: STE CO120-019, ON FILE IN LAND SURVEY PLATS, BOOK 1, PAGE 4952, RECEPTION NO. 2017-187, ADAMS COUNTY RECORDS.
THIS DRAWING IS IN STATE PLANE COORDINATES (GROUND) NAD83 CENTRAL ZONE
THE COMBINED SCALE FACTOR IS: 0.99979199I (1/X=1.OOO2O852).
ALL BEARINGS SHOWN HEREON ARE RELATIVE (ROTATED) THERETO. MONUMENTS EXIST 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(S) INDICATE ON WHICH SIDE OF THE LINE THE FENCE IS ON.

THE CLIENT REQUESTED THAT RIGHT-OF-WAY BE SHOWN. THE CLIENT WAS MADE AWARE THAT EASEMENTS WOULD NOT BE SHOWN EXCEPT WHERE DOCUMENTATION WAS PROVIDED TO THE SURVEYOR. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY R.W. BAYER & ASSOCIATES, INC. OF THE PROPERTY SHOWN AND DESCRIBED HEREON TO DETERMINE OWNERSHIP, MINERAL INTEREST OWNERSHIP, COMPATIBILITY OF THIS DESCRIPTION WITH THOSE OF ADJACENT TRACTS OF LAND OR RIGHTS-OF-WAY, DEDICATIONS, EASEMENTS OR ENCUMBRANCES OF RECORD AFFECTING THIS TRACT OF LAND.

THIS MAP IS NOT INTENDED TO REPRESENT A BOUNDARY SURVEY OR LAND SURVEY PLAT. IT IS ONLY INTENDED TO DEPICT THE ATTACHED LEGAL DESCRIPTION.

THIS PARCEL OF LAND LIES WITHIN ZONE AE (FLOODWAY AND AREAS INUNDATED BY THE 1% ANNUAL CHANCE FLOODPLAIN (100 YEAR FLOOD) AS DELINEATED IN THE F.E.M.A., FLOOD INSURANCE RATE MAP, MAP NUMBER 08001C0592H, MAP REVISED MARCH 05, 2007. THE FLOODWAY AND FLOODPLAIN LINES SHOWN HEREON ARE FROM THE CAD FILE PREPARED BY ICON ENGINEERING, INC., CAD FILE NAME BRANNON-FW-RESULTS.dwg.

BENCHMARK: PER THE ADAMS COUNTY DATASHEET FOR WEST ADAMS COUNTY DENSIFICATION STATION NAME: 95.0244, STATION NUMBER: 0244, A 3-1/4" ALUMINUM DISK SET IN 6" PVC PIPE W/LOGO CAP, STAMPED "95.0244 1995 3968W S17" LOCATED SOUTHWEST OF THE INTERSECTION WEST 56TH AVENUE AND ZUNI STREET. ELEVATION 5271.33 NAVD 1988 DATUM.

N
W E
S
0 30' 60' 120'

SCALE: 1"=60'

LEGEND

x — x — DENOTES: FENCE LINE
DENOTES: CONCRETE
OHP — OHP — DENOTES: OVERHEAD POWER LINE

N. E. COR. SEC 8, T. 3S., R. 68W.
(NOT FOUND)

S00°13'39"E 1650.56'
S00°13'39"E 2640.85'

EAST LINE N.E.1/4 SEC. 8
(BASIS FOR BEARINGS)

BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS

ZONE AE (FLOODWAY)
CLEAR CREEK

N72° 17' 40"E
155. 30'

SOUTH LINE BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS

MANHOLE UNKNOWN RIM E. = 5198.10
MANHOLE UNKNOWN RIM E. = 5198.40
POWER POLE
GRAVEL ROAD

1080. 62'
N68° 26' 51"E

TOE OF BAR
TOP OF BERM
TOE OF BERM
TOE STOCKPILE

CONTOURS SHOWN ARE APPROXIMATE (STOCKPILE AREA)

CONTOURS SHOWN ARE APPROXIMATE (LARGE STOCKPILE AREA)

MANHOLE UNKNOWN RIM E. = 5198.65

S00°13'39"E 980.29'

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ZONE AE (100 YEAR FLOODPLAIN)

BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS

366. 79'
N47° 36' 00"E

FOUND 3-1/4" ALUMINUM CAP, CDOT, P.L.S. 24673

INV. = 5196.36
15" PVC
INV. = 5197.37

NORTH LINE BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS

NORTH LINE BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS (NOTE: THIS LINE DESCRIBED AS 50 FEET NORTH OF THE NORTH-SOUTH CENTERLINE SECTION 8)

6' CHAINLINK FENCE W/3-STRAND BARBED-WIRE

NOTE: FEATURES BETWEEN FENCE AND ROADWAY NOT FIELD LOCATED

S78°51' 40"W
55. 78'
S86° 47' 44"W 169. 81'

N49° 18' 49"E
121. 80'

S89° 56' 40"W 306. 60'

S49° 46' 42"W
77. 52'

S89° 56' 40"W
183. 57'

S89° 55' 55"W 1104. 85'

BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS

NORTH EDGE OF ROADWAY

WEST 60TH AVENUE

S89° 55' 55"W 1329. 34'

SOUTH LINE S.E. 1/4 N.E. 1/4 SEC. 8

BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS

MANHOLE UNKNOWN RIM E. = 5202. 23

1329. 25'

FOUND 2-1/2 ALUMINUM CAP, P.L.S. 28285, 0.2' BELOW GROUND

C-E 1/16 COR. SEC 8, T. 3S., R. 68W. (S.W. COR. S.E. 1/4 N.E. 1/4 SEC. 8) (FOUND 3-1/4" ALUMINUM CAP, P.L.S. 13258)

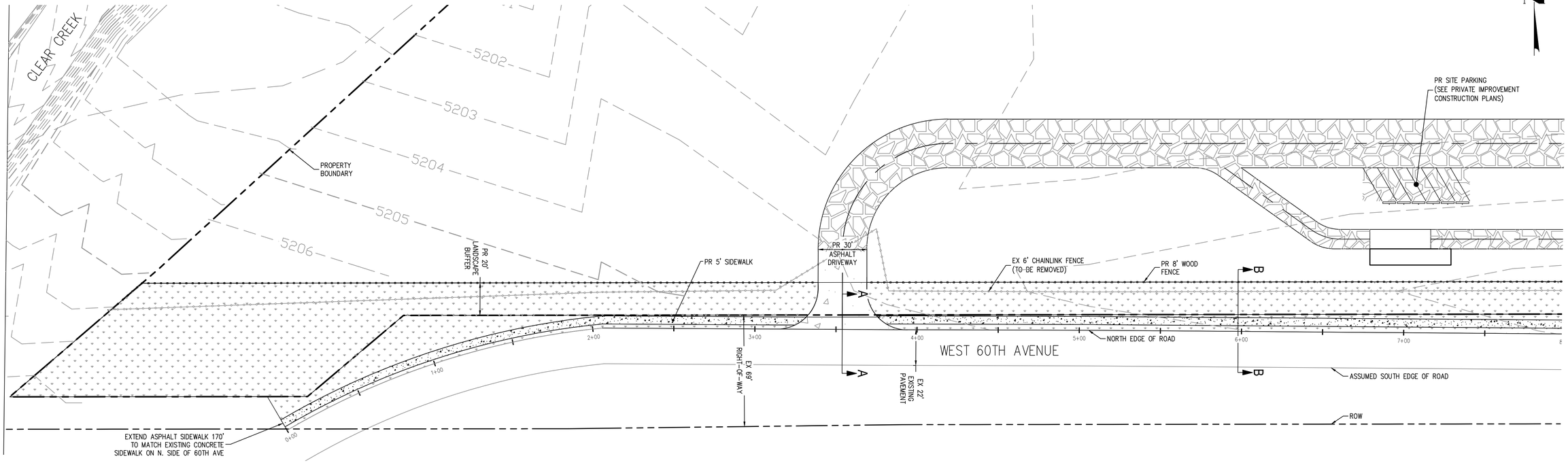
E. 1/4 COR. SEC 8, T. 3S., R. 68W. (S.E. COR. N.E. 1/4 SEC. 8) (FOUND #6 REBAR, UPGRADED W/ 3-1/4" ALUMINUM CAP, BAYER, P.L.S. 6973, 2017, 0.4' BELOW GROUND)

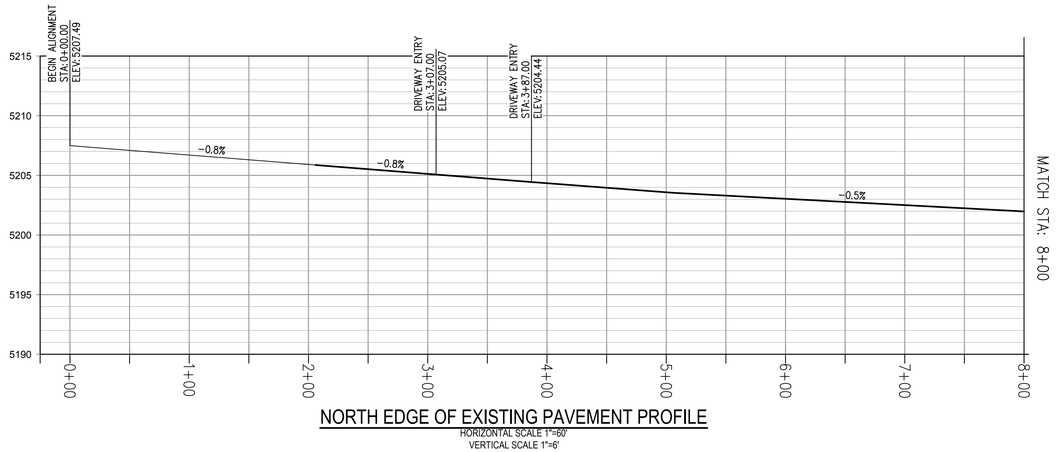
7790 CORPORATION TRACT (RECEPTION NO. 972191, ADAMS COUNTY RECORDS)

ADCO #0182508400063
ADCO #0182508400064
ADCO #0182508400005
ADCO #0182508400062

R.W. BAYER & ASSOCIATES, INC. 2090 EAST 104TH AVENUE, SUITE 200 THORNTON, COLORADO 80233-4316 (303) 452-4433 rwbsurveying@hotmail.com	CAD FILE: B18134/B18134.DWG REVISIONS: 09-12-2018 ADD FLDWAY EXISTING & ADDITIONAL TOPO SOUTH OF FLDWAY LINE / 09-28-2018 ADDED NEW TOPO IN N.W. CORNER /	**PIT R TOPOGRAPHIC MAPPING** PART OF NORTHEAST ONE-QUARTER OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO.	SCALE: 1"=60	DATE: JULY 18, 2018	DRW BY: G.A.B. / CKD BY: R.B. / PROJ. NO: 2018-134
			BOOK: 698/703	PAGE: 137/46	FILE NO: 8-38-218L / SHEET: 1 OF 1

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH





NORTH EDGE OF EXISTING PAVEMENT PROFILE
HORIZONTAL SCALE 1"=60'
VERTICAL SCALE 1"=6'

ADAMS COUNTY GENERAL CONSTRUCTION NOTES:

1. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. TO SCHEDULE A PRE-CONSTRUCTION MEETING CONTACT THE ADAMS COUNTY CONSTRUCTION INSPECTOR SUPERVISOR AT 720-523-6965.
2. ALL CONCRETE CURB, GUTTER AND WALK MUST BE POURED MONOLITHICALLY USING 4,500 psi CONCRETE WITH FIBER MESH.
3. ALL MATERIAL SUBMITTALS MUST BE APPROVED, STAMPED AND SIGNED, BY THE ENGINEER OF RECORD AND, SUBMITTED TO THE ADAMS COUNTY CONSTRUCTION INSPECTOR FOR APPROVAL PRIOR TO CONSTRUCTION/INSTALLATION.
4. THE CONTRACTOR IS REQUIRED TO SUBMIT COPIES OF ALL CONCRETE AND ASPHALT TICKETS TO THE ADAMS COUNTY CONSTRUCTION INSPECTOR.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL TESTING AND, IS REQUIRED TO SUBMIT ALL TEST RESULTS TO THE ADAMS COUNTY CONSTRUCTION INSPECTOR.
6. THE CONTRACTOR IS REQUIRED TO REMOVE A MINIMUM OF TWO (2) FEET OF EXISTING ASPHALT FOR ALL CURB AND GUTTER REPLACEMENT.
7. ALL UTILITY CUTS IN EXISTING STREETS ARE REQUIRED TO BE BACKFILLED WITH FLOWFILL AND, PATCHED WITH A MINIMUM OF 9-INCH ASPHALT PATCH.
8. A COPY OF THE GEOTECHNICAL REPORT SPECIFYING THE PAVEMENT THICKNESS DESIGN MUST BE SUBMITTED FOR REVIEW.
9. PERMITS WILL BE REQUIRED FOR THE INSTALLATION OF ALL UTILITIES. THE DEVELOPER/CONTRACTOR/ENGINEER, MUST SUPPLY THE LINEAL FOOTAGES AND THE NUMBER OF SERVICE CUTS REQUIRED FOR ALL UTILITIES.
10. PERMITS WILL BE REQUIRED FOR THE INSTALLATION OF ALL CONCRETE AND ASPHALT FACILITIES. PRIOR TO THE ISSUANCE OF THESE PERMITS, THE DEVELOPER/CONTRACTOR/ENGINEER, MUST SUPPLY THE SQUARE YARDAGE/SQUARE FOOTAGES OF ALL CONCRETE AND ASPHALT BEING INSTALLED.
11. THE SIA MUST BE COMPLETED WITH APPROPRIATE COLLATERAL, ALONG WITH THE PROPOSED PLAT, PRIOR TO THE ISSUANCE OF ANY ROW ACCESS/CONSTRUCTION PERMIT.
12. NO C.O.'S WILL BE ISSUED FOR ANY BUILDING CONSTRUCTION UNTIL ALL ROW IMPROVEMENTS HAVE BEEN COMPLETED AND HAVE BEEN GRANTED PRELIMINARY ACCEPTANCE.
13. UPON COMPLETION OF ALL CONSTRUCTION, A DRAINAGE CERTIFICATION LETTER, AND APPROPRIATE AS-BUILT CONSTRUCTION DRAWINGS AND INFORMATION WILL BE REQUIRED. THIS LETTER WILL BE STAMPED AND SIGNED BY THE ORIGINAL DESIGN ENGINEER.

BENCHMARK:

PER THE ADAMS COUNTY DATASHEET FOR WEST ADAMS COUNTY DENSIFICATION STATION NAME 95.0244, STATION NUMBER: 0244, A 3-1/4" ALUMINIUM DISK SET IN 6" PVC PIPE W/LOGO CAP, STAMPED "95.0244 1995 3S68W S17" LOCATED SOUTHWEST OF THE INTERSECTION WEST 56TH AVENUE AND ZUNI STREET. ELEVATION 5271.33 NAVD 1988 DATUM.

LEGEND

EX STORM INLET
EX OVERHEAD ELECTRIC — OE —
EX UTILITY POLE
PR LANDSCAPE BUFFER
PROPERTY BOUNDARY
EX CONTOURS 5234 5235
PR CONTOURS 5235 5234
PCL

Know what's below. Call before you dig.

CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

30 0 30 60
SCALE: 1" = 30'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
PLAN AND PROFILE (WEST)

ISSUE DATE: 12-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO. 3
3 OF 6

FILEPATH: P:\190915\ENGINEERING\CONDITIONAL USE PERMIT\PUBLIC\CUP-PUBLIC.DWG LAYOUT: LAYOUT1
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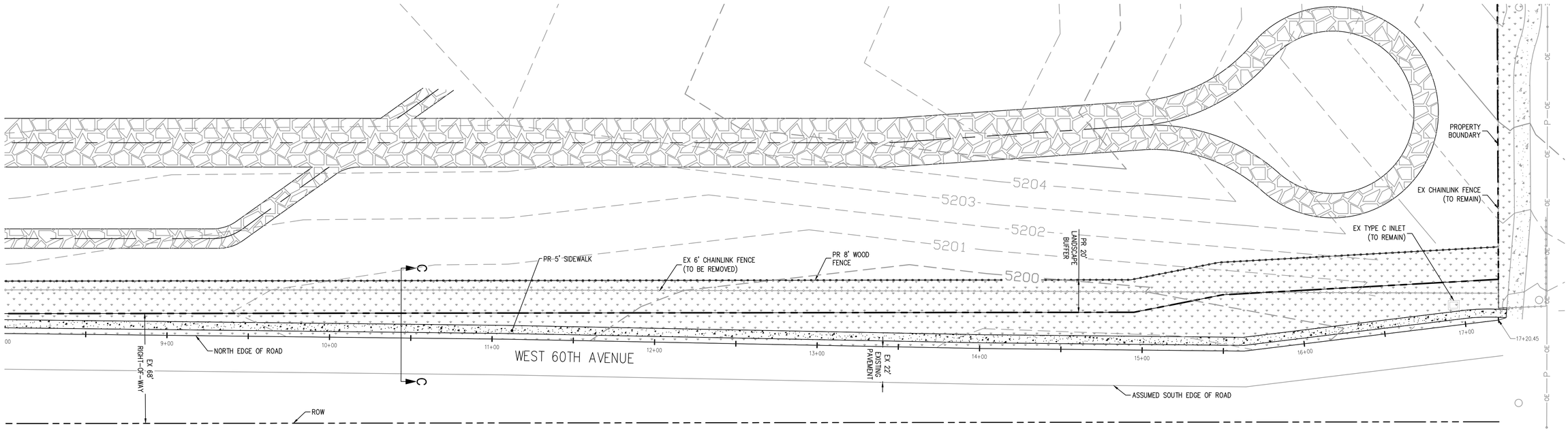
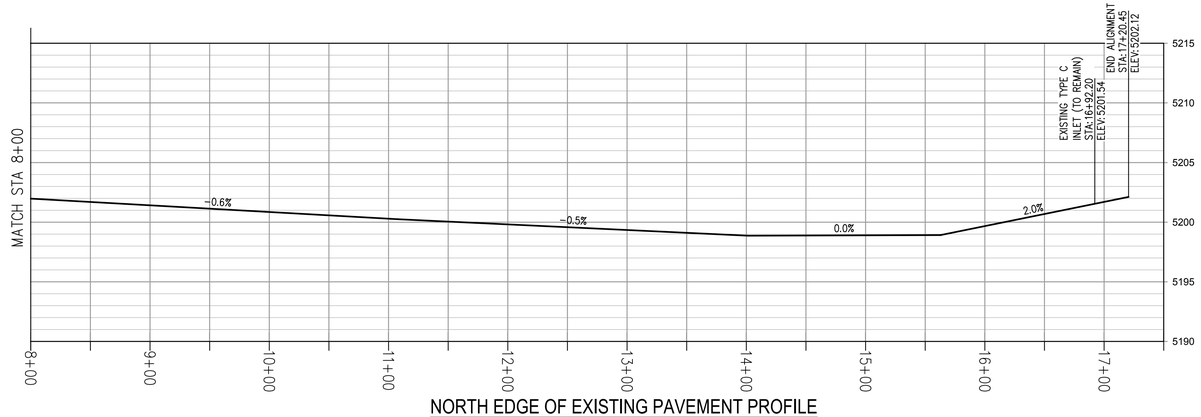
PLOTTED: WED 11/27/19 10:39:14A BY: PAT HERLIHY

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.





NORTH EDGE OF EXISTING PAVEMENT PROFILE

HORIZONTAL SCALE 1"=60'
VERTICAL SCALE 1"=6'

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EX STORM INLET
EX OVERHEAD ELECTRIC — OE —
EX UTILITY POLE
PR LANDSCAPE BUFFER
PROPERTY BOUNDARY
EX CONTOURS — 5234 — 5235 —
PR CONTOURS 5235 5234

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30 0 30 60
SCALE: 1" = 30'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
PLAN AND PLOTTING (EAST)

ISSUE DATE: 12-25-2019 | PROJECT #: 190915

DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
4
4 OF 6

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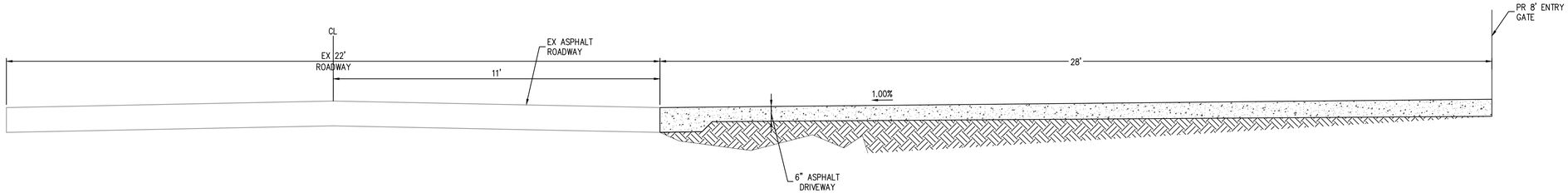
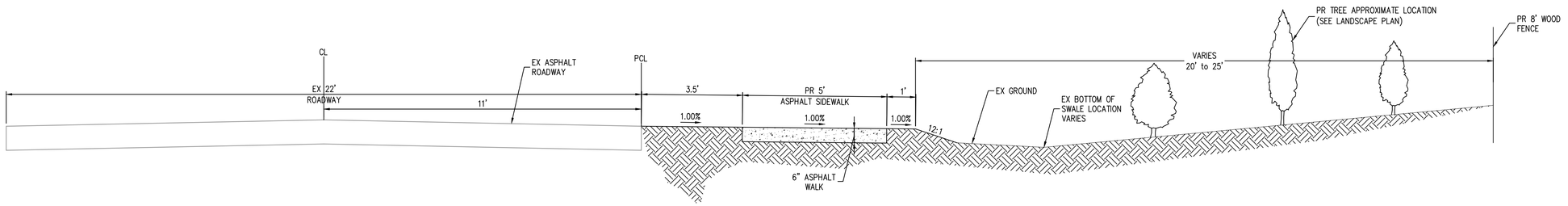
PLOTTED: WED 11/27/19 10:30:14A BY: PAT HERLIHY

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.



TYPICAL SECTION A-A
(NOT TO SCALE)



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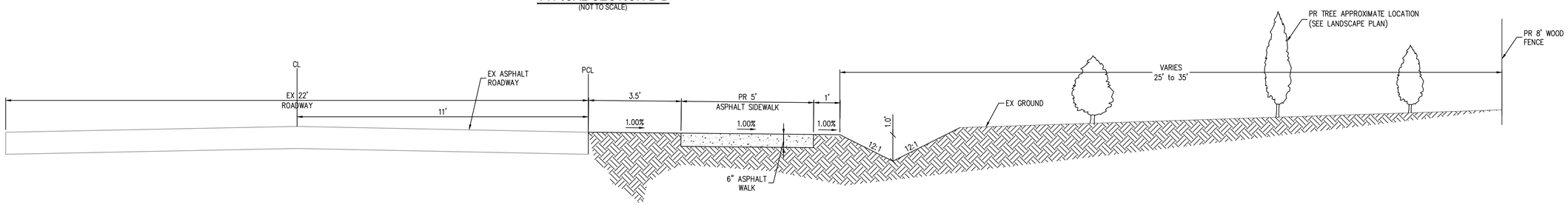

TYPICAL SECTION C-C
(NOT TO SCALE)

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PLOTTED: WED 11/27/19 9:43:13A BY: PAT HERLIHY

Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

5 0 5 10
SCALE: 1" = 5'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

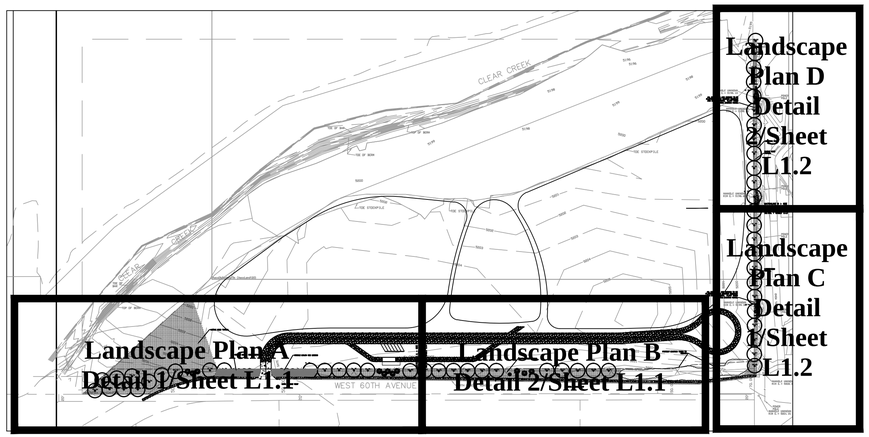
BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
TYPICAL SECTIONS

ISSUE DATE: 12-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
5
5 OF 6



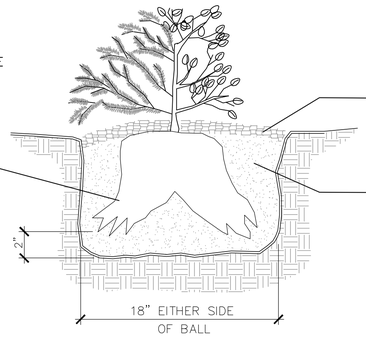
1 OVERALL LANDSCAPE PLAN

Scale: 1"=200'

North

0 200 400 600

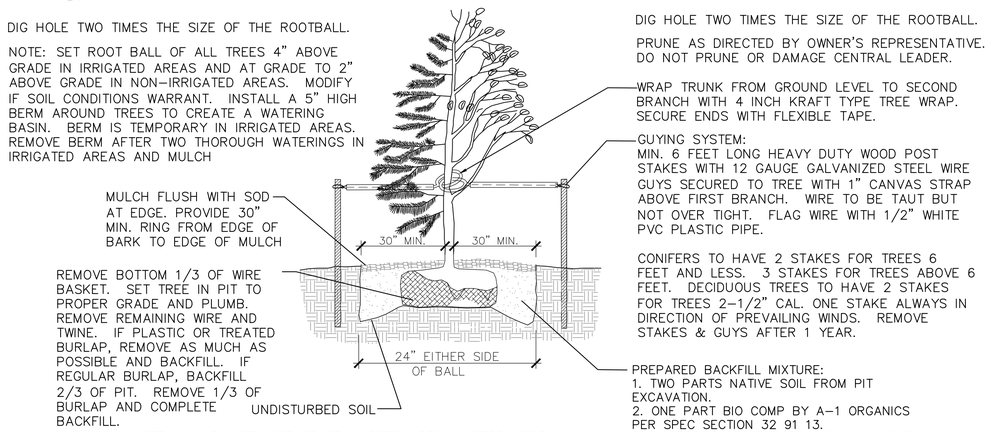
SCALE 1"=200'-0"



NOTE: ALL PLANTS ARE TO BE NURSERY GROWN STOCK FROM GROWERS LOCATED IN USDA HARDINESS ZONES 1,2,3 OR 4.

2 SHRUB PLANTING DETAIL

NOT TO SCALE



NOTE: ALL PLANTS ARE TO BE NURSERY GROWN STOCK FROM GROWERS LOCATED IN USDA HARDINESS ZONES 1,2,3 OR 4.

3 TREE PLANTING DETAIL

NOT TO SCALE

LEGEND

- DECIDUOUS SHADE TREE
- EVERGREEN TREE
- ORNAMENTAL TREE
- DECIDUOUS SHRUB
- 4"-24" BRANNAN SAND AND GRAVEL NATURAL COLORED RIVER ROCK MULCH OVER GEOTEXTILE FABRIC
- LOW GROW NATIVE SEED MIX, ARKANSAS VALLEY LOW GROW SEED MIX, AMEND SOIL FOR SEED WITH 3 CY OF A1 ORGANICS SOIL AMENDMENT PER 1,000 SF TILLED IN TO 9" DEPTH. APPLY SEED AT A RATE OF 25 LBS PER ACRE. CONTRACTOR RESPONSIBLE FOR PROVIDING WATER AS REQUIRED UNTIL SEED IS ESTABLISHED.

PLANT SCHEDULE

SYMBOL	Botanical Name / COMMON NAME	SIZE
	DECIDUOUS TREES:	
GL TR	Gleditsia triacanthos inermis 'Shademaster' SHADEMASTER HONEYLOCUST	2 1/2" B&B
CE OC	Celtis occidentalis WESTERN HACKBERRY	2 1/2" B&B
QU RU	Quercus rubra RED OAK	2 1/2" B&B
PO AN	Populus angustifolia NARROWLEAF COTTONWOOD	2 1/2" B&B
	EVERGREEN TREES:	
JU MO	Juniperus monosperma ONE SEED JUNIPER	6' B&B
	ORNAMENTAL TREES	
AC GR	Acer grandidentatum BIGTOOTH MAPLE	1 1/2" B&B
	DECIDUOUS SHRUBS:	
RH AR	Rhus aromatica 'Grow Low' GROW LOW FRAGRANT SUMAC	#5 Cont.
PR PA	Prunus besseyi 'Pawnee Buttes' CREEPING WESTERN SAND CHERRY	#5 Cont.

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY IN, ON OR ABOUT THE PROJECT SITE. ANY DAMAGE TO ADJACENT PROPERTY OR UTILITIES, NOT DESIGNATED FOR REMOVAL, RELOCATION OR REPLACEMENT, SHALL BE REPAIRED AND/OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS OR LICENSES REQUIRED FOR THE PERFORMANCE OF THE WORK AS APPLICABLE TO THE PROJECT.
3. THE LANDSCAPE ARCHITECT AND/OR OWNER MAKE NO WARRANTY AS TO THE CORRECTNESS AND/OR COMPLETENESS OF THE EXISTING FEATURES SHOWN OR NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES INCLUDING WATER, SEWER, STORM DRAINS, GAS TRANSMISSION LINES, AND OTHER UTILITIES ABOVE AND BELOW THE SURFACE THAT MAY AFFECT THE PROJECT. SHOULD DISCREPANCY OR CONFLICT BE DISCOVERED THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY, AND SHALL NOT CONTINUE CONSTRUCTION UNTIL SAID CONFLICT CAN BE RESOLVED IN WRITING.
4. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES.
5. ANY CONSTRUCTION DEBRIS OR MUD-TRACKING IN THE PUBLIC RIGHT-OF-WAY RESULTING FROM THE WORK SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN AND OTHER DEVICES NECESSARY TO PROVIDE FOR THE PUBLIC SAFETY ON AND ABOUT THE SITE. THE CONTRACTOR SHALL FURNISH APPROPRIATE TRAFFIC CONTROL AND SAFETY MEASURES IN ACCORDANCE WITH AURORA PUBLIC SCHOOLS REQUIREMENTS.
7. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT BOTH ON SITE AND ADJACENT PROPERTY. AREAS OUTSIDE THE LIMITS OF WORK AS SHOWN ON THE PLANS SHALL REMAIN UNDISTURBED. ANY ITEMS NOT INTENDED FOR DEMOLITION MUST BE PROTECTED. ANY DAMAGE WILL BE REPAIRED AT CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL REMOVE ALL DEBRIS FROM DEMOLITION OPERATIONS ON A DAILY BASIS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING. LAYOUT AND STAKING OF ALL IMPROVEMENTS SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION OF IMPROVEMENTS. DISCREPANCIES TO THE BASE INFORMATION SHALL BE BROUGHT TO THE PROJECT MANAGER'S ATTENTION FOR A DECISION PRIOR TO COMMENCING WITH THE WORK. NOTIFICATION OF REQUEST FOR FIELD REVIEW SHALL BE MADE A MINIMUM OF 24 HOURS IN ADVANCE.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE PROJECT MANAGER IF ANY SIGNIFICANT INCONSISTENCIES BETWEEN THE EXISTING CONDITIONS AND THESE PLANS ARE DISCOVERED.
11. ALL CONSTRUCTION SHALL CONFORM WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS OF ADAMS COUNTY.
12. THE APPLICANT AGREES TO MAINTAIN PLANTINGS AND OTHER PROPOSED LANDSCAPE IMPROVEMENTS SHOWN ON THIS PLAN WITHOUT REGARD TO LOCATION INSIDE OR OUTSIDE PUBLIC RIGHT-OF-WAY. TO THE EXTENT THAT PLANTINGS ULTIMATELY RESIDE IN THE PUBLIC RIGHT-OF-WAY, THE APPLICANT AGREES TO INCORPORATE MAINTENANCE INTO A DEVELOPMENT AGREEMENT OR OTHER APPROPRIATE INSTRUMENT AT ADAMS COUNTY'S DISCRETION.
13. THE APPLICANT AGREES TO ESTABLISH AND MAINTAIN VEGETATION THROUGH HAND-WATERING, DELIVERED BY THE APPLICANT'S WATER TRUCK.

SUMMARY OF ADAMS COUNTY LANDSCAPE REQUIREMENTS

4-16-07 REQUIRED LOT LANDSCAPING
TOTAL LOT AREA: 1,019,598 S.F.
MINIMUM LANDSCAPE AREA 10% OF THE LOT AREA: 101,959 S.F. LANDSCAPING PROVIDED: 102,110 S.F.

4-16-07-01 STREET FRONTAGE LANDSCAPING
ALONG WEST 60TH AVENUE: 1900 L.F
TREES REQUIRED: 48, PROVIDED: 48
SHRUBS REQUIRED: 96 PROVIDED : 96
ALONG PUBLIC TRAIL TO EAST 921 L.F.
TREES REQUIRED: 23, PROVIDED: 23
SHRUBS REQUIRED: 46, PROVIDED: 46

PRELIMINARY FOR ILLUSTRATIVE PURPOSES ONLY

811 Know what's below. Call before you dig.

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DESIGNED BY: KJM
CHECKED BY: KJM
DRAWN BY: KJM

HKS HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL COMPANY, LLC

PIT-R CONDITIONAL USE PERMIT
LANDSCAPE NOTES, DETAILS AND LEGEND

ISSUE DATE: 11/25/19 | PROJECT #: 190915

DATE	REVISION COMMENTS
####	####
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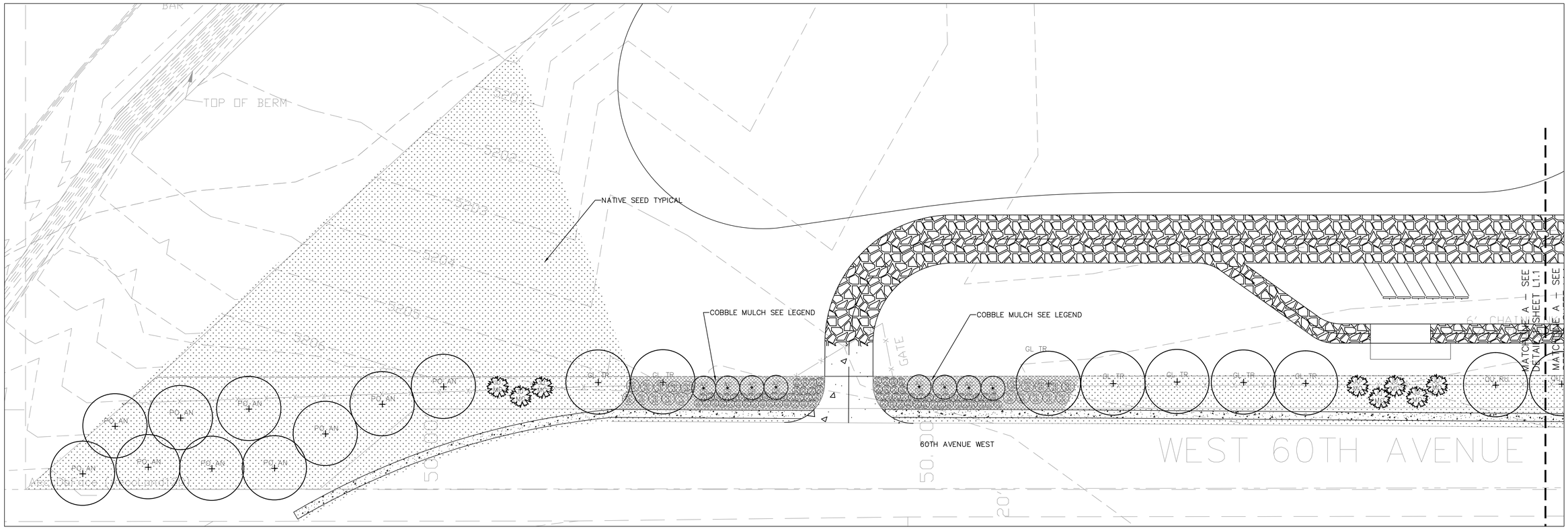
PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
L1.0
01 OF 03

FILEPATH: C:\DATA\2019 PROJECTS\2019-31 BRANNAN PIT R\DRAWINGS\2019-31 BRANNAN PIT R LANDSCAPE PLAN.DWG LAYOUT: L1.0
PLOTTED: TUE 11/26/19 2:45:38P BY: KURT

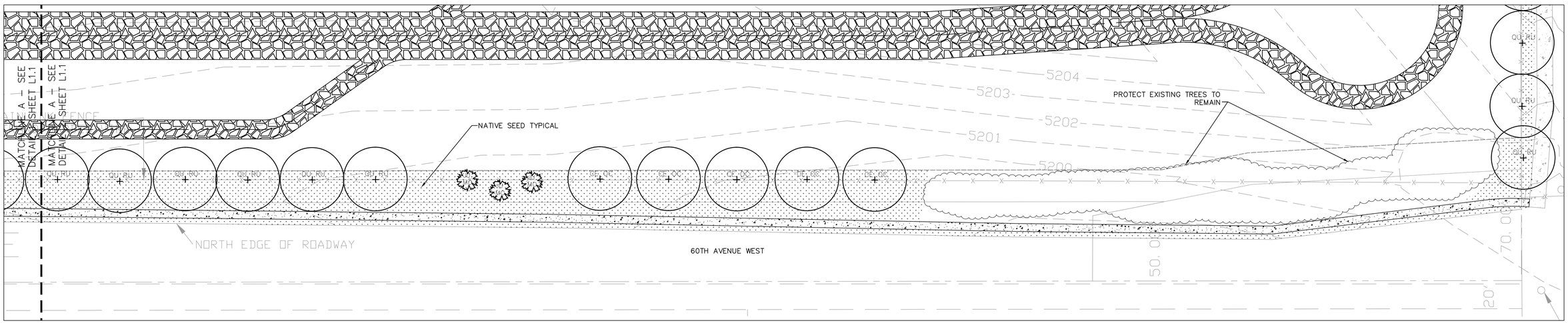


1 LANDSCAPE PLAN □A□ENLARGEMENT

Scale: 1"□30□

0 30 60 90

SCALE 1"=30'-0"



2 LANDSCAPE PLAN □B□ENLARGEMENT

Scale: 1"□30□

0 30 60 90

SCALE 1"=30'-0"

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CHECKED BY: KJM
DRAWN BY: KJM

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1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL COMPANY, LLC

PIT-R CONDITIONAL USE PERMIT
LANDSCAPE PLAN ENLARGEMENTS

ISSUE DATE: 11/25/19 | PROJECT #: 190915

DATE	REVISION COMMENTS
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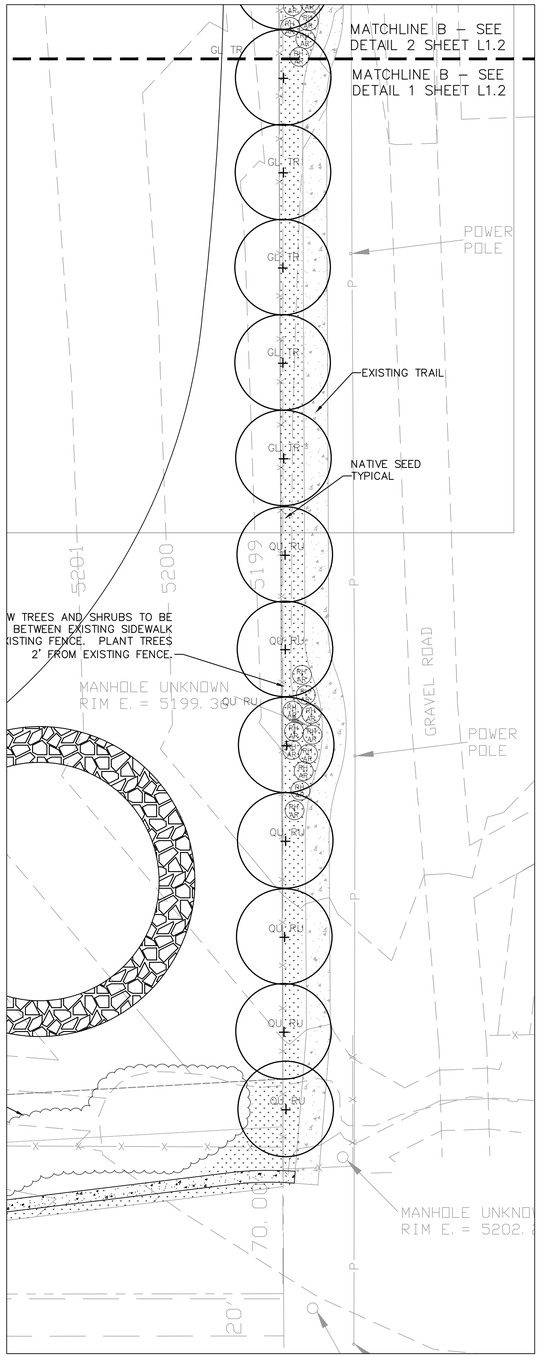
PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
L1.1
02 OF 03

FILEPATH: C:\DATA\2019 PROJECTS\2019-31 BRANNAN PIT R\DRAWINGS\2019-31 BRANNAN PIT R LANDSCAPE PLAN.DWG LAYOUT: L1.1
PLOTTED: TUE 11/26/19 2:45:58P BY: KURT

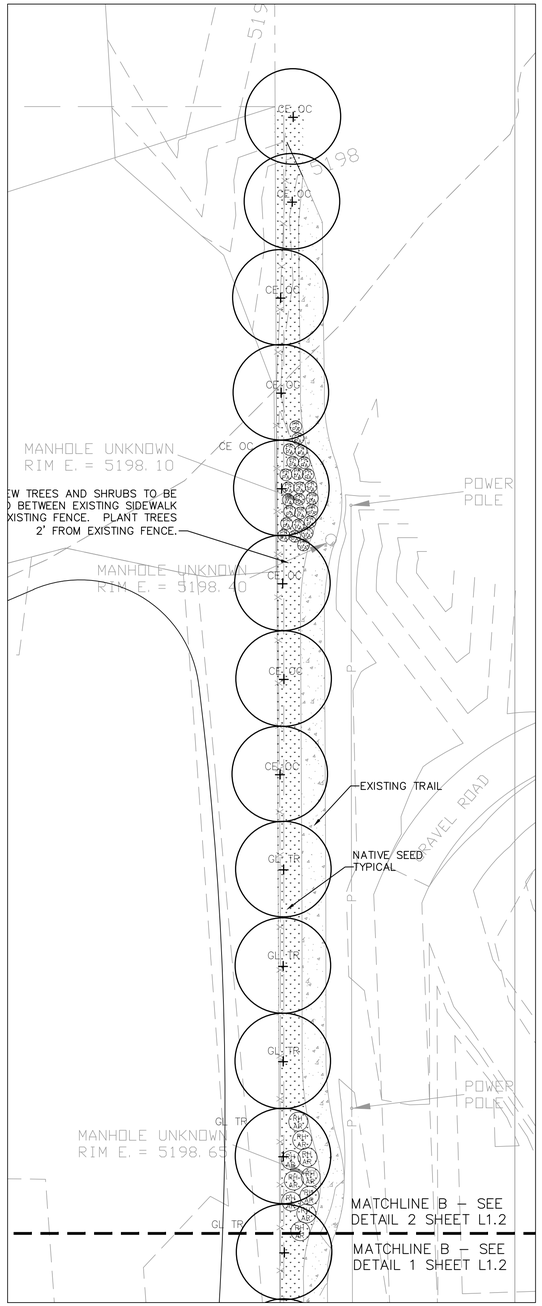


1 LANDSCAPE PLAN □C□ENLARGEMENT

Scale: 1"□30□

0 30 60 90

SCALE 1"=30'-0"



2 LANDSCAPE PLAN □D□ENLARGEMENT

Scale: 1"□30□

0 30 60 90

SCALE 1"=30'-0"

PRELIMINARY FOR ILLUSTRATIVE PURPOSES ONLY

811 Know what's below. Call before you dig.

CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DESIGNED BY: KJM
CHECKED BY: KJM
DRAWN BY: KJM

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL COMPANY, LLC

PIT-R CONDITIONAL USE PERMIT
LANDSCAPE PLAN ENLARGEMENTS

ISSUE DATE: 11/25/19 | PROJECT #: 190915

DATE	REVISION COMMENTS
####	####
####	####
####	####
####	####
####	####
####	####
####	####
####	####

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO. L1.2

03 OF 03

FILEPATH: C:\DATA\2019 PROJECTS\2019-31 BRANNAN PIT R\DRAWINGS\2019-31 BRANNAN PIT R LANDSCAPE PLAN.DWG LAYOUT: L1.2
PLOTTED: TUE 11/26/19 2:46:08P BY: KURT

Filed for record the_____day of_____,A.D. 19____, at_____o'clock____M._____RECORDER.
Reception No._____ By_____DEPUTY.

WARRANTY DEED

THIS DEED, Made on this day of August 27, 1998,
between SAN GRACO GROUP, LLC, A COLORADO LIMITED LIABILITY COMPANY

of the City and County of Denver and State of Colorado, of the Grantor(s), and
PIT 10, LLC, A COLORADO LIMITED LIABILITY COMPANY .

existing under and by virtue of the laws of the State of Colorado, Grantee:

whose legal address is : 4800 BRIGHTON ROAD, DENVER, CO 80216

WITNESS, That the Grantor(s), for and in consideration of the sum of (**$160,000.00**)
ONE HUNDRED SIXTY THOUSAND AND NO/100THS DOLLARS
the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm unto the Grantee, its successors and assigns forever, all the real property, together with improvements, if any, 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

also known as street number WEST 60TH AVENUE

TOGETHER with all and singular and 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 the Grantor(s), 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 appurtenances, unto the Grantee, its successors and assigns forever. The Grantor(s), for himself, his heirs and personal representatives, does covenant, grant, bargain, and agree to and with the Grantee, its successors and assigns, that at the time of the ensealing and delivery of these presents, he is well seized of the premises above conveyed, has good, sure, perfect, absolute and indefeasible estate of inheritance, in law, in fee simple, and has good right, full power and lawful authority to grant, bargain, sell and convey the same in manner and form as aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, encumbrances and restrictions of whatever kind or nature soever,

EXCEPT GENERAL TAXES AND ASSESSMENTS FOR THE YEAR 1998 AND SUBSEQUENT YEARS, AND EXCEPT THE EXCEPTIONS AS LISTED ON EXHIBIT "B" ATTACHED HERETO AND MADE A PART HEREOF AS IF FULLY SET FORTH HEREIN

The Grantor(s) shall and will WARRANT AND FOREVER DEFEND the above bargained premises in the quiet and peaceable possession of the Grantee, its successors and assigns, against all and every person or persons lawfully claiming the whole or any part thereof. The singular number shall include the plural, and the plural the singular, and the use of any gender shall be applicable to all genders.

IN WITNESS WHEREOF the Grantor(s) has executed this deed on the date set forth above.

SAN GRACO GROUP, LLC, A COLORADO LIMITED LIABILITY COMPANY

BY: W.W. SELLERS, MANAGER

STATE OF Colorado)
City and)ss.
County of DENVER)

The foregoing instrument was acknowledged before me on this day of August 27, 1998,
by W.W. SELLERS AS MANAGER OF SAN GRACO GROUP, LLC, A COLORADO LIMITED LIABILITY COMPANY

KARYN K. RIEB
NOTARY PUBLIC
STATE OF COLORADO

My commission expires
Witness my hand and official seal.
My Commission Expires 12-31-2000

Notary Public

Name and Address of Person Creating Newly Created Legal Description (38-35-106.5, C.R.S.)

Escrow# AC18089
Title# AB631068

When Recorded Return to: PIT 10, LLC, A COLORADO LIMITED LIABILITY COMPANY
4800 BRIGHTON ROAD, DENVER, CO 80216

Form No. WDTOCORP Warranty Deed to a Corporation

_____ (Lender)

August 27, 1998 — Date of Deed of Trust

August 31, 1998 — Recording Date of Deed of Trust

Adams County, CO — County of Recording

CO438049 — Reception No. and/or Film. No.. and/or 5449/0473 — Book No./Page No. — Reference Nos. of Recorded Deed of Trust

TO THE PUBLIC TRUSTEE OF
Adams County

Please execute this release, as the indebtedness secured by the Deed of Trust has been fully ~~or partially~~ paid and/or the purpose of the Deed of Trust has been fully satisfied.

San Graco Group, LLC, a Colorado limited liability company
Current Owner and Holder of the Indebtedness Secured by Deed of Trust (Lender)

John Goldsberry, Manager
Name and Title of Agent or Officer of Current Owner and Holder

_____ Signature

_____ Signature

State of Colorado, County of
Adams

The foregoing request for release was acknowledged before me on September , 2004 (date) by* John Goldsberry, as Manager of San Graco Group, LLC, a Colorado limited liability company

_____ Date Commission Expires

Witness My Hand and Seal

_____ Notary Public

RELEASE OF DEED OF TRUST

WHEREAS, the above referenced Grantor(s), by Deed of Trust, conveyed certain real property described in said Deed of Trust referenced above, in the State of Colorado, to be held in trust to secure the payment of the indebtedness referred to therein; and

WHEREAS, the indebtedness secured by the Deed of Trust has been fully ~~or partially~~ paid and/or the purpose of the Deed of Trust has been fully satisfied as set forth in the written request of the current owner and holder of the said indebtedness.

NOW THEREFORE, in consideration of the premises and the payment of the statutory sum, receipt of which is hereby acknowledged, I, as the Public Trustee in the County first referenced above, do hereby remise, release and quitclaim unto the present owner or owners of said real property, and unto the heirs, successors and assigns of such owner or owners forever, all the right, title and interest which I have under and by virtue of the aforesaid Deed of Trust in the real estate described therein, and more particularly described as follows:

See Exhibit "A" attached hereto and made a part hereof.

TO HAVE AND TO HOLD THE SAME, with all the privileges and appurtenances thereunto belonging forever; and further I do hereby fully and absolutely release, cancel and forever discharge said Deed of Trust.

_____ Public Trustee

By _____ Deputy Public Trustee

State of Colorado, County of

_____

The foregoing instrument was acknowledged before me on _____ (date) by _____ as the _____ Public Trustee of _____ County, Colorado.

_____ Date Commission Expires

Witness My Hand and Seal

_____ Notary Public

*If applicable, insert title of agent or officer and name of current owner and holder.

Original Note and Deed of Trust Returned to: Pit 10, LLC

Received by J. C. Marvel, Jr.

_____
Name and Address of Person Creating Newly Created Legal Description (§ 38-35-106.5, C.R.S.)

WHEN RECORDED RETURN TO: Gene Riordan, Vranesh and Raisch, LLP, P. O. Box 871, Boulder, CO 80306

No. 935. Rev. 7-02. REQUEST FOR RELEASE/RELEASE OF DEED OF TRUST ©

Bradford Publishing, 1743 Wazee St., Denver, CO 80202 — (303) 292-2500 — www.bradfordpublishing.com — 1-03

First American Commitment	ALTA Commitment for Title Insurance ISSUED BY **First American Title Insurance Company** File No: NCS-920212-2-CO

COMMITMENT FOR TITLE INSURANCE

Issued By

FIRST AMERICAN TITLE INSURANCE COMPANY

NOTICE

IMPORTANT-READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and the Commitment Conditions, ***First American Title Insurance Company***, a Nebraska Corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I-Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

First American Title Insurance Company

Dennis J Gilmore
President

Jeffrey S Robinson
Secretary

If this jacket was created electronically, it constitutes an original document.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

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COMMITMENT CONDITIONS

1. **DEFINITIONS**
   (a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
   (b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
   (c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
   (d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
   (e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
   (f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
   (g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
   (h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:
   (a) the Notice;
   (b) the Commitment to Issue Policy;
   (c) the Commitment Conditions;
   (d) Schedule A;
   (e) Schedule B, Part I—Requirements;
   (f) Schedule B, Part II—Exceptions; and
   (g) a counter-signature by the Company or its issuing agent that may be in electronic form.

4. **COMPANY'S RIGHT TO AMEND**
   The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. **LIMITATIONS OF LIABILITY**
   (a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
      (i) comply with the Schedule B, Part I—Requirements;
      (ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
      (iii) acquire the Title or create the Mortgage covered by this Commitment.
   (b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
   (c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
   (d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
   (e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
   (f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
   (g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

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6. **LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT**
   (a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
   (b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
   (c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
   (d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
   (e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
   (f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. **IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT**
   The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. **PRO-FORMA POLICY**
   The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. **ARBITRATION**
   The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

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First American **Schedule A**	ALTA Commitment for Title Insurance ISSUED BY **First American Title Insurance Company** File No: NCS-920212-2-CO

Transaction Identification Data for reference only:

Issuing Agent: First American Title Insurance Company National Commercial Services
Commitment No.: NCS-920212-2-CO
Property Address: 2601 West 60th Avenue, Denver, CO
Revision No.:

Issuing Office: 1125 17th Street, Suite 500, Denver, CO 80202
Phone Number: (303)876-1112
Issuing Office File No.: NCS-920212-2-CO

SCHEDULE A

1. Commitment Date: August 21, 2018 5:00 PM
2. Policy or Policies to be issued:

   (a) ☐ ALTA® Owner's Policy (6-17-06)
   Proposed Insured:
   Proposed Policy Amount: $0.00
   (b) ☒ ALTA® Loan Policy (6-17-06)
   Proposed Insured: Obsidian Agency Services, Inc., a California corporation
   Proposed Policy Amount: $1,000.00
   (c) ☒ ALTA® Loan Policy (6-17-06)
   Proposed Insured: Wells Fargo Bank, National Association
   Proposed Policy Amount: $1,000.00

3. The estate or interest in the Land described or referred to in this Commitment is Fee Simple.
4. The Title is, at the Commitment Date, vested in:

   PIT 10, LLC, a Colorado limited liability company

5. The Land is described as follows:

   See Exhibit "A" attached hereto and made a part hereof

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

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First American	ALTA Commitment for Title Insurance ISSUED BY **First American Title Insurance Company**
Exhibit A	File No: NCS-920212-2-CO

Commitment No.: NCS-920212-2-CO

The Land referred to herein below is situated in the County of Adams, State of Colorado, and is described as follows:

A parcel of land lying in the Northeast 1/4 of Section 8, Township 3 South, Range 68 West of the 6th Principal Meridian, County of Adams, State of Colorado, described as follows:

Beginning at the Northeast corner of said Section 8, thence South 00 degrees 07 minutes 03 seconds East, 1650.60 feet along the East line of said Section 8 to a point on the South line of that parcel of land as described in Book 4180, Page 409, Adams County Records, said point being the TRUE POINT OF BEGINNING;

Thence South 00 degrees 07 minutes 03 seconds East along the East line of said Section 8 920.29 feet to a point on the North line of that parcel of land as described in Book 3374, Page 318, Adams County Records, thence South 86 degrees 54 minutes 20 seconds West along said North line 169.81 feet; thence South 78 degrees 58 minutes 16 seconds West along said North line 56.02 feet to the North line of that parcel of land as described in Book 3432, Page 154, Adams County Records; thence North 89 degrees 58 minutes 13 seconds West along said North line 1411.70 feet; thence South 49 degrees 53 minutes 18 seconds West along the Northwesterly line of said parcel of land described in Book 3432, Page 154 a distance of 77.56 feet to the East-West centerline of said Section 8; thence North 89 degrees 58 minutes 13 seconds West along said East-West centerline 183.64 feet more or less to the Southerly line of that parcel of land as described in Book 4180, Page 409, Adams County records; thence Northeasterly along said Southerly line the following six courses:

1. North 49 degrees 25 minutes 25 seconds East, 122.60 feet;
2. North 47 degrees 42 minutes 36 seconds East, 366.79 feet;
3. Thence along a curve to the right having a radius of 433.51 feet and a central angle of 11 degrees 59 minutes 07 seconds;
4. North 59 degrees 41 minutes 43 seconds East, 331.34 feet;
5. North 68 degrees 33 minutes 27 seconds East, 1080.62 feet;
6. North 72 degrees 24 minutes 16 seconds East, 155.30 feet to the TRUE POINT OF BEGINNING,

County of Adams,
State of Colorado.

For informational purposes only: APN: 0182508100041

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Commitment No.: NCS-920212-2-CO

SCHEDULE B, PART I

Requirements

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

2. Pay the agreed amount for the estate or interest to be insured.

3. Pay the premiums, fees, and charges for the Policy to the Company.

4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

5. Payment of all taxes and assessments now due and payable as shown on a certificate of taxes due from the County Treasurer or the County Treasurer's Authorized Agent.

6. Evidence that all assessments for common expenses, if any, have been paid.

7. Receipt by the Company of an ALTA/NSPS Land Title Survey, certified to First American Title Insurance Company, and in form and content satisfactory to the Company. The Company reserves the right to make further requirements and/or exceptions upon review of this survey.

8. Recordation of a Deed of Trust satisfactory to the Company, from PIT 10, LLC, a Colorado limited liability company, to the Public Trustee of Adams County, for the benefit of the proposed insured lender.

9. Recordation of a Second Deed of Trust satisfactory to the Company, from PIT 10, LLC, a Colorado limited liability company, to the Public Trustee of Adams County, for the benefit of the proposed insured lender.

   NOTE: The Second Deed of Trust must contain a recital that it is junior and subordinate to the First Deed of Trust to be insured hereunder.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

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10. Receipt by the Company of the following documentation for PIT 10, LLC, a Colorado limited liability company:

    Operating Agreement, and all amendments thereto, if any.

    NOTE: The Company reserves the right to make further requirements and/or exceptions upon review.

11. Receipt by the Company of a satisfactory Final Affidavit and Indemnity, executed by PIT 10, LLC, a Colorado limited liability company.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

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Commitment No.: NCS-920212-2-CO

SCHEDULE B, PART II

Exceptions

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. 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.

2. Easements, or claims of easements, not shown by the Public Records.

3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct land survey and inspection of the Land would disclose, and which are not shown by the Public Records.

4. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown in the Public Records.

5. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met.

   NOTE: Exception No. 5 will be removed from the policy provided the Company conducts the closing and settlement service for the transaction identified in the commitment.

6. Any and all unpaid taxes, assessments and unredeemed tax sales.

7. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof.

8. Any water rights, claims of title to water, in, on or under the Land.

9. Any existing leases or tenancies.

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10. Any claim to (a) ownership of or rights to minerals and similar substances, including but not limited to, ores, metals, coal, lignite, oil, gas, uranium, clay, rock, sand and gravel located in, on, or under the Land or produces from the Land, whether such ownership or rights arise by lease, grant, exception, conveyance, reservation, or otherwise; and (b) any rights, privileges, immunities, rights of way, and easements associated therewith or appurtenant thereto, whether or not the interests or rights excepted in (a) or (b) appear in the Public Records.

11. Any rights, interest or easements in favor of the United States, the State of Colorado or the Public, which exist or are claimed to exist in and over the present and past bed, banks or waters of Clear Creek.

12. Right of Way for ditch as set forth in instrument recorded February 17, 1874 in Book 49 at Page 534.

13. An easement for telephone and telegraph lines and incidental purposes granted to Colorado Telephone Company, as set forth in an instrument recorded September 28, 1905 in Book 15 at Page 387.

14. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Easement Agreement recorded April 27, 1970 in Book 1593 at Page 320.

15. An easement for underground pipelines and incidental purposes granted to Metropolitan Denver Sewage Disposal District No. 1, as set forth in an instrument recorded May 18, 1983 in Book 2747 at Page 491.

16. Any tax, lien, fee or assessment by reason of inclusion of subject property in the Hyland Hills Park And Recreation District, as evidenced by instrument recorded September 19, 1990 in Book 3712 at Page 402.

17. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Easement Agreement (Storm Water Pipeline) recorded June 30, 2014 at Reception No. 2014000041380.

18. Terms, conditions, provisions, obligations and agreements as set forth in the Bill Of Sale recorded January 19, 2018 at Reception No. 2018000005926.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

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DISCLOSURE STATEMENT

Pursuant to C.R.S. 30-10-406(3)(a) all documents received for recording or filing in the Clerk and Recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one-half of an inch. The Clerk and Recorder will refuse to record or file any document that does not conform to the requirements of this section.

NOTE: If this transaction includes a sale of the property and the price exceeds $100,000.00, the seller must comply with the disclosure/withholding provisions of C.R.S. 39-22-604.5 (Nonresident withholding).

NOTE: Colorado Division of Insurance Regulations 8-1-2 requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title commitment, other than the effective date of the title commitment, for all matters which appear of record prior to the time of recording whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an owner's policy of title insurance and is responsible for the recording and filing of legal documents resulting from the transaction which was closed.

Pursuant to C.R.S. 10-11-122, the company will not issue its owner's policy or owner's policies of title insurance contemplated by this commitment until it has been provided a Certificate of Taxes due or other equivalent documentation from the County Treasurer or the County Treasurer's authorized agent; or until the Proposed Insured has notified or instructed the company in writing to the contrary.

The subject property may be located in a special taxing district. A Certificate of Taxes due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent. Information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

NOTE: Pursuant to CRS 10-11-123, notice is hereby given:

This notice applies to owner's policy commitments containing a mineral severance instrument exception, or exceptions, in Schedule B, Section 2.

A. **That there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and**
B. **That such mineral estate may include the right to enter and use the property without the surface owner's permission.**

NOTE: Pursuant to Colorado Division of Insurance Regulations 8-1-2, Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

A. **The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.**
B. **No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.**
C. **The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.**
D. **The Company must receive payment of the appropriate premium.**
E. **If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of the Commitment, the**

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requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium, fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

NOTE: Pursuant to C.R.S. 38-35-125(2) no person or entity that provides closing and settlement services for a real estate transaction shall disburse funds as a part of such services until those funds have been received and are available for immediate withdrawal as a matter of right.

NOTE: C.R.S. 39-14-102 requires that a real property transfer declaration accompany any conveyance document presented for recordation in the State of Colorado. Said declaration shall be completed and signed by either the grantor or grantee.

NOTE: Pursuant to CRS 10-1-128(6)(a), It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado division of insurance within the department of regulatory agencies.

NOTE: Pursuant to Colorado Division of Insurance Regulations 8-1-3, notice is hereby given of the availability of an ALTA Closing Protection Letter which may, upon request, be provided to certain parties to the transaction identified in the commitment.

Nothing herein contained will be deemed to obligate the company to provide any of the coverages referred to herein unless the above conditions are fully satisfied.

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Berkeley Water and Sanitation District
4455 W. 58th Avenue, Unit A
Arvada, Colorado 80002

10 July 2019

ATTN: Libby Tart
Adams County Community and Economic Development
4430 South Adams County Parkway
Brighton, CO 80601

Re: Will-Serve Letter for 2601 West 60th Avenue (Pit 10)

Dear Ms. Tart:

At the request of Pit 10 (Brannan Sand and Gravel Co.), I am writing to conform that Berkeley Water and Sanitation District will serve the property at 2601 West 60th Avenue, currently owned by Pit 10, LLC.

The subject property is within the planned service area of the District and currently pays property taxes to the District. At this time, physical services (i.e., treated water supply, sanitary sewer) do not extend to the site, nor does the current operation demand such services. At this time, so long as current operations or substantially similar activities occupy the subject property, the District does not intend to extend or seek the property owner's commitment to extend service to 2601 West 60th Avenue.

The District does support the extension of services to the subject property as may be requested in the future by the landowner or other development interests in the vicinity.

Sincerely,

Berkeley Water and Sanitation District

el Energy®

MAILING ADDRESS	ACCOUNT NUMBER		DUE DATE
BRANNAN SAND & GRAVEL CO 2500 BRANNAN WAY DENVER CO 80229-7029	53-3316419-7		12/27/2018
	STATEMENT NUMBER	STATEMENT DATE	AMOUNT DUE
	617976843	12/06/2018	$124,454.71

VERAGES	Last Year	This Year
ture	49° F	47° F
city kWh	872.2	36.3
tricity Cost	$236.80	$42.02

SERVICE ADDRESS: **6001 CLAY ST DENVER, CO 80221**
NEXT READ DATE: 12/13/18

ELECTRICITY SERVICE DETAILS

PREMISES NUMBER: 300976856
INVOICE NUMBER: 0756233730

METER READING INFORMATION		
METER 59961383	Read Dates: 10/10/18 - 11/08/18 (29 Days)	
DESCRIPTION	**CURRENT READING**	**USAGE**
Total Energy	1053 Actual	1053 kWh
ECA On Pk	385 Actual	385 kWh
ECA Off Pk	668 Actual	668 kWh
Demand	Actual	3 kW
Billable Demand		204 kW
Generation&Transmission Demand	Actual	3 kW

ELECTRICITY CHARGES — RATE: PG Primary General

DESCRIPTION	USAGE	UNITS	RATE	CHARGE
Service & Facility				$322.00
Primary General	1053	kWh	$0.004580	$4.82
ECA Off-Peak	668	kWh	$0.029700	$19.84
ECA On-Peak	385	kWh	$0.042480	$16.35
Distribution Demand	204	kW	$3.860000	$787.44
Gen & Transm Demand	3	kW	$9.550000	$28.65
Trans Cost Adj	3	kW	$0.470000	$1.41
Demand Side Mgmt Cost	3	kW	$0.590000	$1.77
Purch Cap Cost Adj	3	kW	$1.290000	$3.87
CACJA	3	kW	$0.900000	$2.70
Renew. Energy Std Adj				$22.83
GRSA				- $48.44 **CR**
Subtotal				**$1,163.24**
Sales Tax				$55.27
Total				**$1,218.51**
Premises Total				**$1,218.51**

030792 8/16

12/06/2018

53-3316419-7

LEGAL DESCRIPTION:

A PARCEL OP LAND LYING IN THE NORTHEAST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 8, THENCE SOUTH O0 DEGREES 07 MINUTES 03 SECONDS EAST, 1650.60 FEET ALONG THE EAST LINE OF SAID SECTION 8 TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS, SAID POINT BEING THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00 DEGREES 07 MINUTES 03 SECONDS EAST ALONG THE EAST LINE OF SAID SECTION 8 920.29 FEET TO A POINT ON THE NORTH LINE OF THAT PARCEL OP LAND AS DESCRIBED IN BOOK 3374, PAGE 318, ADAMS COUNTY RECORDS,
THENCE SOUTH 86 DEGREES 54 MINUTES 20 SECONDS WEST ALONG SAID NORTH LINE 169.81 FEET;
THENCE SOUTH 78 DEGREES 58 MINUTES 16 SECONDS WEST ALONG SAID NORTH LINE 56.02 FEET TO THE NORTH LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 3432, PAGE 154, ADAMS COUNTY RECORDS;
THENCE NORTH 89 DEGREES 58 MINUTES 13 SECONDS WEST ALONG SAID NORTH, LINE 1411.70 FEET;
THENCE SOUTH 49 DEGREES 53 MINUTES 18 SECONDS WEST ALONG THE NORTHWESTERLY LINE OF SAID PARCEL OF LAND DESCRIBED IN BOOK 3432, PAGE 154 A DISTANCE OF 77.56 FEET TO THE EAST-WEST CENTERLINE OF SAID SECTION 8;
THENCE NORTH 89 DEGREES 58 MINUTES 13 SECONDS WEST ALONG SAID EAST-WEST CENTERLINE 183.64 FEET MORE OR LESS TO THE SOUTHERLY LINE OF THAT PARCEL OF LAND AS DESCRIBED IN BOOK 4180, PAGE 409, ADAMS COUNTY RECORDS;
THENCE NORTHEASTERLY ALONG SAID SOUTHERLY LINE THE FOLLOWING SIX COURSES:
1. NORTH 49 DEGREES 25 MINUTES 25 SECONDS EAST, 122.50 FEET;
2. NORTH 47 DEGREES 42 MINUTES 36 SECONDS EAST, 356.79 FEET;
3. THENCE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 433.51 FEET AND A CENTRAL ANGLE OF 11 DEGREES 59 MINUTES 07 SECONDS;
4. NORTH 59 DEGREES 41 MINUTES 43 SECONDS FAST, 331.34 FEET;
5. NORTH 68 DEGREES 33 MINUTES 27 SECONDS EAST, 1080.62 FEET;
6. NORTH 72 DEGREES 24 MINUTES 16 SECONDS EAST, 155.30 FEET TO THE TRUE POINT OF BEGINNING.

NOTE: THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY SELLARDS & GRIGGS, INC., JOB NO. 93-085-021,

EXHIBIT A

A PARCEL OF LAND LYING IN THE NORTHEAST 1/4 OF SECTION 8, TOWNSHIP 3 SOUTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

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2. NORTH 47 DEGREES 42 MINUTES 36 SECONDS EAST, 366.79 FEET;
3. THENCE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 433.51 FEET AND A CENTRAL ANGLE OF 11 DEGREES 59 MINUTES 07 SECONDS;
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NOTE: THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY SELLARDS & GRIGGS, INC., JOB NO. 93-085-021.

Adams County Treasurer
Receipt of Tax Payment

Account	Parcel Number	Receipt Date	Effective Date	Receipt Number
R0114323	0182508100041	May 1, 2018	Apr 30, 2018	2018-05-01-NetVantage-35953

PIT 10 LLC
2500 E BRANNAN WY
DENVER, CO 80229

Situs Address **Payor**

2601 W 60TH AVE 000000000

Legal Description

SECT,TWN,RNG:8-3-68 DESC: PARC IN THE NE4 OF SEC 8 DESC AS FOLS BEG AT THE NE COR OF SD SEC 8 TH S 1650/60 FT SD PT BEING THE TRUE POB TH S 920/29 FT TH S 86D 54M W 169/81 FT TH S 78D 58M W 56/02 FT TH W 1411/70 FT TH S 49D 53M W 77/56 FT TH W 183/64 FT M/L TH NLY THE FOL 6 COURSES TH N 49D 25M E 122/60 FT TH N 47D 42M E 366/79 FT TH ALG CURVE TO RT HAV A RAD OF 433/51 FT AND C/A OF 11D 59M TH N 59D 41M E 331/34 FT TH N 68D 33M E 1080/62 FT TH N 72D 24M E 155/30 FT TO THE TRUE POB 23/537A

Property Code	Actual	Assessed	Year	Area	Mill Levy
UNIM LND 10-34.99 AC - 0540	164,990	47,850	2017	480	107.971

Payments Received

Check	$5,166.42
Check Number 00090028	

Payments Applied

Year	Charges	Billed	Prior Payments	New Payments	Balance
2017	Tax Charge	$5,166.42	$0.00	$5,166.42	$0.00
				$5,166.42	$0.00
			Balance Due as of Apr 30, 2018		**$0.00**

WE ARE EXPANDING TO SERVE YOU BETTER!

4430 S ADAMS COUNTY PKWY C2436
BRIGHTON CO 80601
MON - FRI 7 AM - 5 PM

11860 PECOS STREET
WESTMINSTER CO 80234
TUE, WED, THUR 7:30 AM - 5 PM

720-523-6160

ALL CHECKS ARE SUBJECT TO FINAL COLLECTION. THANK YOU FOR YOUR PAYMENT!

RECEPTION#: 2019000107128.
12/6/2019 at 1:37 PM. 1 OF 4.
REC: $28.00
Josh Zygielbaum, Adams County, CO.

CERTIFICATION OF NOTICE TO MINERAL ESTATE OWNERS

I/We, Fred Marvel, P.E.
(the "Applicant") by signing below, hereby declare and certify as follows:

With respect to the property located at:
Physical Address: 2601 W. 60th Ave., Unincorporated Adams County, CO 80221
Legal Description: See attached

Parcel #(s): 0182508100041

(PLEASE CHECK ONE):

____ On the _____ day of _____, 20____, which is not less than thirty days before the initial public hearing, notice of application for surface development was provided to mineral estate owners pursuant to section 24-65.5-103 of the Colorado Revised Statutes;

or

X I/We have searched the records of the Adams County Tax Assessor and the Adams County Clerk and Recorder for the above identified parcel and have found that no mineral estate owner is identified therein.

Date: 1/9/19 Applicant: Fred Marvel, P.E.

By:
Print Name: Fred J. Marvel
Address: 2500 E. Brannan Way
Denver, CO 80224

STATE OF COLORADO)
)
COUNTY OF ADAMS)

Subscribed and sworn to before me this 9th day of January, 2019, by Fred Marvel.

Witness my hand and official seal.

My Commission expires: Sept 24, 2022

Notary Public

After Recording Return To:

Name and Address of Person Preparing Legal Description:

A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department with all applicable land use applications.

SHANNON MOON
Notary Public
State of Colorado
Notary ID # 20144037668
My Commission Expires 09-26-2022

APPLICANT'S CERTIFICATION CONCERNING QUALIFYING SURFACE DEVELOPMENT, PURSUANT TO C.R.S. §24-65.5-103.3 (1)(b)

I/We, Fred Marvel, P.E., (the "Applicant") by signing below, hereby declare and certify as follows:

Concerning the property located at:

Physical Address: 2601 W. 60th Ave., Unincorporated Adams County, CO 80221

Legal Description: See attached

Parcel #(s): 0182508100041

With respect to qualifying surface developments, that (PLEASE CHECK ONE):

X No mineral estate owner has entered an appearance or filed an objection to the proposed application for development within thirty days after the initial public hearing on the application; or

_____ The Applicant and any mineral estate owners who have filed an objection to the proposed application for development or have otherwise filed an entry of appearance in the initial public hearing regarding such application no later than thirty days following the initial public hearing on the application have executed a surface use agreement related to the property included in the application for development, the provisions of which have been incorporated into the application for development or are evidenced by a memorandum or otherwise recorded in the records of the clerk and recorder of the county in which the property is located so as to provide notice to transferees of the Applicant, who shall be bound by such surface use agreements; or

_____ The application for development provides:

(i) Access to mineral operations, surface facilities, flowlines, and pipelines in support of such operations existing when the final public hearing on the application for development is held by means of public roads sufficient to withstand trucks and drilling equipment or thirty-foot-wide access easements;

(ii) An oil and gas operations area and existing well site locations in accordance with section 24-65.5-103.5 of the Colorado Revised Statutes; and

(iii) That the deposit for incremental drilling costs described in section 24-65.5-103.7 of the Colorado Revised Statutes has been made.

Date: 1-9-19 Applicant: Brannan Sand and Gravel Company, L.L.C.

After Recording Return To:

By: Fred Marvel

Print Name: Fred Marvel, P.E.

Address: 2500 E. Brannan Way
Denver, CO 80229

STATE OF COLORADO)
)
COUNTY OF ADAMS)

Subscribed and sworn to before me this 9th day of January, 2019, by Fred Manuel.

Witness my hand and official seal.

My Commission expires: Sept 26, 2022

Notary Public

SHANNON MOON
Notary Public
State of Colorado
Notary ID # 20144037666
My Commission Expires 09-26-2022

Name and Address of Person Preparing Legal Description:

A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department within thirty days after the initial public hearing on all applicable land use applications.

APPLICANT'S CERTIFICATION CONCERNING QUALIFYING SURFACE DEVELOPMENT, PURSUANT TO C.R.S. §24-65.5-103.3 (1)(b)

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Physical Address: 2601 W. 60th Ave., Unincorporated Adams County, CO 80221

Legal Description: See attachment

Parcel # (s): 0182508100041

With respect to qualifying surface developments:

Access to existing and proposed mineral operations, surface facilities, flowlines, and pipelines in support of such existing and proposed operations for oil and gas exploration and production, including provisions for public roads sufficient to withstand trucks and drilling equipment or thirty-foot-wide access easements, were provided for in a "_____" area as recorded in Reception # _____ on _____.

Date: 1-9-19 Applicant: Brannan Sand and Gravel Company LLC

By: [signature]

Address: 8500 E. Brannan Way Denver, Co 80229

STATE OF COLORADO)
)
COUNTY OF ADAMS)

Subscribed and sworn to before me this 9 day of January, 2019, by Fred Marvel.

Witness my hand and official seal.

My Commission expires: Sept 26, 2022 [signature]
Notary Public

After Recording Return To:

Name and Address of Person Preparing Legal Description:

A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department with all applicable land use applications.

SHANNON MOON
Notary Public
State of Colorado
Notary ID # 20144037668
My Commission Expires 09-26-2022

Josh Zygielbaum
Clerk and Recorder
Adams County
4430 S. Adams County Pkwy., 1st Floor, Suite E2400, Brighton, CO 80601
(720) 523-6020

Transaction # 1115349	**Agent #**	**Source:** OTC
Receipt # 936891	**Attention:**	**Returned:** OTC
Cashier Date: December 06, 2019	**Name:** BRANNAN	
Cashier: MARIAH	**Address:**	

1 Recorded Item

CERTIFICATE **Reception #: 2019000107128**

From: FRED MARVEL **To:** FRED MARVEL

RECORDING FEE $28.00

PAYMENT: CREDITCARD CHIP 803674 AMOUNT: $28.00

Sub Total:	**$28.00**	
Credit Card Fee:	**$0.84**	**A 3% Service Fee will be applied**
Credit Card Amount Charged:	**$28.84**	

Total Payments	Total Fees	Shortage	Check Overage	Refund
$ 28.00	**$ 28.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**

CERTIFICATION OF NOTICE TO MINERAL ESTATE OWNERS

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With respect to the property located at:
Physical Address: 2601 W. 60th Ave., Unincorporated Adams County, CO 80221
Legal Description: See attached

Parcel #(s): 0182508100041

(PLEASE CHECK ONE):

_____ On the _____ day of _____, 20____, which is not less than thirty days before the initial public hearing, notice of application for surface development was provided to mineral estate owners pursuant to section 24-65.5-103 of the Colorado Revised Statutes;

or

X I/We have searched the records of the Adams County Tax Assessor and the Adams County Clerk and Recorder for the above identified parcel and have found that no mineral estate owner is identified therein.

Date: 1/9/19 Applicant: Fred Marvel, P.E.

By: [signature]
Print Name: Fred J. Marvel
Address: 2500 E. Brannan Way
Denver, CO 80229

STATE OF COLORADO)
)
COUNTY OF ADAMS)

Subscribed and sworn to before me this 9th day of January, 2019, by Fred Marvel.

Witness my hand and official seal.

My Commission expires: Sept 24, 2022

[signature]
Notary Public

After Recording Return To:

Name and Address of Person Preparing Legal Description:

A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department with all applicable land use applications.

SHANNON MOON
Notary Public
State of Colorado
Notary ID # 20144037668
My Commission Expires 09-26-2022

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Physical Address: 2601 W. 60th Ave., Unincorporated Adams County, CO 80221

Legal Description: See attached

Parcel #(s): 0182508100041

With respect to qualifying surface developments, that (PLEASE CHECK ONE):

X No mineral estate owner has entered an appearance or filed an objection to the proposed application for development within thirty days after the initial public hearing on the application; or

_____ The Applicant and any mineral estate owners who have filed an objection to the proposed application for development or have otherwise filed an entry of appearance in the initial public hearing regarding such application no later than thirty days following the initial public hearing on the application have executed a surface use agreement related to the property included in the application for development, the provisions of which have been incorporated into the application for development or are evidenced by a memorandum or otherwise recorded in the records of the clerk and recorder of the county in which the property is located so as to provide notice to transferees of the Applicant, who shall be bound by such surface use agreements; or

_____ The application for development provides:

(i) Access to mineral operations, surface facilities, flowlines, and pipelines in support of such operations existing when the final public hearing on the application for development is held by means of public roads sufficient to withstand trucks and drilling equipment or thirty-foot-wide access easements;

(ii) An oil and gas operations area and existing well site locations in accordance with section 24-65.5-103.5 of the Colorado Revised Statutes; and

(iii) That the deposit for incremental drilling costs described in section 24-65.5-103.7 of the Colorado Revised Statutes has been made.

Date: 1-9-19 Applicant: Brannan Sand and Gravel Company, L.L.C.

After Recording Return To:

By: [signature]

Print Name: Fred Marvel, P.E.

Address: 2500 E. Brannan Way

Denver, CO 80229

STATE OF COLORADO)
)
COUNTY OF ADAMS)

Subscribed and sworn to before me this 9th day of January, 2019, by Fred Manuel.

Witness my hand and official seal.

My Commission expires: Sept 24, 2022

Notary Public

SHANNON MOON
Notary Public
State of Colorado
Notary ID # 20144037668
My Commission Expires 09-26-2022

Name and Address of Person Preparing Legal Description:

A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department within thirty days after the initial public hearing on all applicable land use applications.

APPLICANT'S CERTIFICATION CONCERNING QUALIFYING SURFACE DEVELOPMENT, PURSUANT TO C.R.S. §24-65.5-103.3 (1)(b)

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Physical Address: 2601 W. 60th Ave., Unincorporated Adams County, CO 80221

Legal Description: See attachment

Parcel # (s): 0182508100041

With respect to qualifying surface developments:

Access to existing and proposed mineral operations, surface facilities, flowlines, and pipelines in support of such existing and proposed operations for oil and gas exploration and production, including provisions for public roads sufficient to withstand trucks and drilling equipment or thirty-foot-wide access easements, were provided for in a "_____" area as recorded in Reception # _____ on _____.

Date: 1-9-19 Applicant: Brannan Sandand Gravel Company LLC

By: [signature]

Address: 2500 E. Brannan Way
Denver, CO 80229

STATE OF COLORADO)
)
COUNTY OF ADAMS)

Subscribed and sworn to before me this 9 day of January, 2019, by Fred Marvel.

Witness my hand and official seal.

My Commission expires: Sept 26, 2022 [signature]
Notary Public

After Recording Return To:

Name and Address of Person Preparing Legal Description:

A recorded copy of this Certification shall be submitted to the Adams County Community and Economic Development Department with all applicable land use applications.

SHANNON MOON
Notary Public
State of Colorado
Notary ID # 20144037668
My Commission Expires 09-26-2022

Project Number: RCU2019-00021

Project Name: Brannan Sand and Gravel

Conditional Use Permit Application – Outdoor Storage

Response to Criteria for Approval:

1. The conditional use is permitted in the applicable zone district

   The conditional use is permitted in an I-2 & I-3 Industrial zone district.

2. The conditional use is consistent with the purposes of these standards and regulations.

   The conditional use is consistent with the purposes of these standards and regulations and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

3. The conditional use will comply with the requirements of these standards and regulations including, but not limited to, all applicable performance standards.

   The conditional use is consistent with the purposes of these standards and regulations and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

4. The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. In making this determination, the Planning Commission and the Board of County Commissioners shall find, at a minimum, that the conditional use will not result in excessive traffic generation, noise, vibration, dust, glare, heat, smoke, fumes, gas, odors, or inappropriate hours of operation.

   The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. The surrounding parcels are industrially zoned and the purpose of the improvements on site is to come into compliance with county industrial zoning standards. Traffic study yielded that there would be no increased traffic, and a maintenance and operation plan will address any dust and nuisance control concerns.

5. The conditional use permit has addressed all off-site impacts.

   The conditional use permit has addressed all off-site impacts. The traffic study yielded that there will be no impact to the system and no improvements are needed.

6. The site is suitable for the conditional use including adequate usable space, adequate access, and absence of environmental constraints.

   The site is suitable for conditional use. The upgraded driveway entrance will improve access in accordance with county standards. and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

7. The site plan for the proposed conditional use will provide the most convenient and functional use of the lot including the parking scheme, traffic circulation, open space, fencing, screening, landscaping, signage, and lighting.

   The site plan for the proposed conditional use will provide the most convenient and functional use of the lot for the recycling operations.

8. Sewer, water, storm water drainage, fire protection, police protection, and roads are to be available and adequate to serve the needs of the conditional use as designed and proposed.

   Services are adequate to serve the needs of the conditional use as designed and proposed.

   Sewer and water - No sewer service exists to the site. Per included letter from the Berkeley Water and Sanitation District, the property is within the planned service area of the District and the property pays taxes to the District. At this time, physical services do not extend to the site, nor does current operation demand such services.

   Storm water drainage – 60th Avenue will drain to a modified roadside ditch in the widened frontage landscape buffer. Drainage patterns remain per historic conditions and are adequate to serve the site and roadway frontage.

   Fire protection – The site lies within the Adams County Fire Protection District and adequate to serve the needs of the conditional use as designed and proposed.

   Police protection - The site lies within Adams County Sherriff District #1 and adequate to serve the needs of the conditional use as designed and proposed.

   Roads – 60th Avenue site frontage has adequate right-of-way for the use, and will be improved with the project to include a landscape buffer.

Outdoor Storage Criteria

1. There is a need for the outdoor storage operation for the benefit of Adams County.

   There is a need for the outdoor storage as a part of the recyclable construction materials operations. The recyclable construction materials are used in construction projects throughout the County as a benefit to County residents.

   Site recycling operations consist of receiving and stockpiling construction materials from offsite construction activities, and then processing these materials into a size where it is exported offsite for use in new construction applications. Up to 30% of new asphalt can be recycled, making asphalt America's most recycled material. The outdoor storage of the recyclable construction materials t is required for the recycling facility operations.

2. The request is compatible with the Adams County Comprehensive Plan, complies with the minimum zoning requirements of the zone district in which the Conditional Use Permit is to be granted, and complies with all other applicable requirements of the Adams County Zoning and Subdivision Regulations.

   The request is compatible with the Adams County Comprehensive Plan (Plan) as the Recycling operations on the Site will not materially impair the Plan goal for the area to become an "Activity Center" at a future date. The Plan is intended as an advisory document that provides broad-based policy guidance and a physical framework for decision-making within the County. While it is the intent of the Plan that the area of the Site will be an "Activity Center" at some point in the future, it is not the intent of the Plan to displace existing businesses operating under current zoning.

   The site is zoned Industrial-2 and Industrial-3 zone districts and complies with the minimum zoning requirements of the zone district, and through the development of the County required site parking and 60th frontage complies with additional applicable requirements of the Adams County Zoning and Subdivision Regulations.

3. The proposed outdoor storage is clearly subordinate to a principal use of the property.

   The Primary use of the Site is construction materials recycling operations, and the proposed outdoor storage is a secondary use to the principal use of the property for recycling.

4. Aesthetic concerns have been taken into consideration during the site design and placement of the outdoor storage.

   Yes, aesthetic concerns have been considered with the site design including the addition of a landscape buffer and wood fence on 60th Ave to screen views from the roadway.

Project Number: RCU2019-00021

Project Name: Brannan Sand and Gravel

Conditional Use Permit Application – Overheight Stockpiling

Response to Criteria for Approval:

1. The conditional use is permitted in the applicable zone district

   The conditional use is permitted in an I-2 & I-3 Industrial zone district.

2. The conditional use is consistent with the purposes of these standards and regulations.

   The conditional use is consistent with the purposes of these standards and regulations and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

3. The conditional use will comply with the requirements of these standards and regulations including, but not limited to, all applicable performance standards.

   The conditional use is consistent with the purposes of these standards and regulations and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

4. The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. In making this determination, the Planning Commission and the Board of County Commissioners shall find, at a minimum, that the conditional use will not result in excessive traffic generation, noise, vibration, dust, glare, heat, smoke, fumes, gas, odors, or inappropriate hours of operation.

   The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. The surrounding parcels are industrially zoned and the purpose of the improvements on site is to come into compliance with county industrial zoning standards. Traffic study yielded that there would be no increased traffic, and a maintenance and operation plan will address any dust and nuisance control concerns.

5. The conditional use permit has addressed all off-site impacts.

   The conditional use permit has addressed all off-site impacts. The traffic study yielded that there will be no impact to the system and no improvements are needed.

6. The site is suitable for the conditional use including adequate usable space, adequate access, and absence of environmental constraints.

   The site is suitable for conditional use. The upgraded driveway entrance will improve access in accordance with county standards. and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

7. The site plan for the proposed conditional use will provide the most convenient and functional use of the lot including the parking scheme, traffic circulation, open space, fencing, screening, landscaping, signage, and lighting.

   The site plan for the proposed conditional use will provide the most convenient and functional use of the lot for the recycling operations.

8. Sewer, water, storm water drainage, fire protection, police protection, and roads are to be available and adequate to serve the needs of the conditional use as designed and proposed.

   Services are adequate to serve the needs of the conditional use as designed and proposed.

   Sewer and water - No sewer service exists to the site. Per included letter from the Berkeley Water and Sanitation District, the property is within the planned service area of the District and the property pays taxes to the District. At this time, physical services do not extend to the site, nor does current operation demand such services.

   Storm water drainage – 60th Avenue will drain to a modified roadside ditch in the widened frontage landscape buffer. Drainage patterns remain per historic conditions and are adequate to serve the site and roadway frontage.

   Fire protection – The site lies within the Adams County Fire Protection District and adequate to serve the needs of the conditional use as designed and proposed.

   Police protection - The site lies within Adams County Sherriff District #1 and adequate to serve the needs of the conditional use as designed and proposed.

   Roads – 60th Avenue site frontage has adequate right-of-way for the use, and will be improved with the project to include a landscape buffer.

Project Number: RCU2019-00021

Project Name: Brannan Sand and Gravel

Conditional Use Permit Application – Recycling Facilities

Response to Criteria for Approval:

1. The conditional use is permitted in the applicable zone district

   The conditional use is permitted in an I-2 & I-3 Industrial zone district.

2. The conditional use is consistent with the purposes of these standards and regulations.

   The conditional use is consistent with the purposes of these standards and regulations and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

3. The conditional use will comply with the requirements of these standards and regulations including, but not limited to, all applicable performance standards.

   The conditional use is consistent with the purposes of these standards and regulations and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

4. The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. In making this determination, the Planning Commission and the Board of County Commissioners shall find, at a minimum, that the conditional use will not result in excessive traffic generation, noise, vibration, dust, glare, heat, smoke, fumes, gas, odors, or inappropriate hours of operation.

   The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. The surrounding parcels are industrially zoned and the purpose of the improvements on site is to come into compliance with county industrial zoning standards. Traffic study yielded that there would be no increased traffic, and a maintenance and operation plan will address any dust and nuisance control concerns.

5. The conditional use permit has addressed all off-site impacts.

   The conditional use permit has addressed all off-site impacts. The traffic study yielded that there will be no impact to the system and no improvements are needed.

6. The site is suitable for the conditional use including adequate usable space, adequate access, and absence of environmental constraints.

   The site is suitable for conditional use. The upgraded driveway entrance will improve access in accordance with county standards. and the site will be improved with onsite Parking, additional fencing and screening, Landscaping and buffer requirements.

7. The site plan for the proposed conditional use will provide the most convenient and functional use of the lot including the parking scheme, traffic circulation, open space, fencing, screening, landscaping, signage, and lighting.

   The site plan for the proposed conditional use will provide the most convenient and functional use of the lot for the recycling operations.

8. Sewer, water, storm water drainage, fire protection, police protection, and roads are to be available and adequate to serve the needs of the conditional use as designed and proposed.

   Services are adequate to serve the needs of the conditional use as designed and proposed.

   Sewer and water - No sewer service exists to the site. Per included letter from the Berkeley Water and Sanitation District, the property is within the planned service area of the District and the property pays taxes to the District. At this time, physical services do not extend to the site, nor does current operation demand such services.

   Storm water drainage – 60th Avenue will drain to a modified roadside ditch in the widened frontage landscape buffer. Drainage patterns remain per historic conditions and are adequate to serve the site and roadway frontage.

   Fire protection – The site lies within the Adams County Fire Protection District and adequate to serve the needs of the conditional use as designed and proposed.

   Police protection - The site lies within Adams County Sherriff District #1 and adequate to serve the needs of the conditional use as designed and proposed.

   Roads – 60th Avenue site frontage has adequate right-of-way for the use, and will be improved with the project to include a landscape buffer.

Recycle Facilities

1. There is a need for the tire recycling operation for the benefit of Adams County and the proposed end use of the recycled material is a viable marketable material.

   Site operations are limited to recyclable construction materials, and do not include tire recycling. The recyclable construction materials are used in construction projects throughout the County as a benefit to County residents.

   Site recycling operations consist of receiving and stockpiling construction materials from offsite construction activities, and then processing these materials into a size where it is exported offsite for use in new construction applications. Up to 30% of new asphalt can be recycled, making asphalt America's most recycled material. The outdoor storage of the recyclable construction materials required for the recycling facility operations.

2. The request is compatible with the Adams County Comprehensive Plan, complies with the minimum zoning requirements of the zone district in which the Conditional Use Permit is to be granted, and complies with all other applicable requirements of the Adams County Zoning and Subdivision Regulations.

   The request is compatible with the Adams County Comprehensive Plan (Plan) as the Recycling operations on the Site will not materially impair the Plan goal for the area to become an "Activity Center" at a future date. The Plan is intended as an advisory document that provides broad-based policy guidance and a physical framework for decision-making within the County. While it is the intent of the Plan that the area of the Site will be an "Activity Center" at some point in the future, it is not the intent of the Plan to displace existing businesses operating under current zoning.

   The site is zoned Industrial-2 and Industrial-3 zone districts and complies with the minimum zoning requirements of the zone district, and through the development of the County required site parking and 60th frontage complies with additional applicable requirements of the Adams County Zoning and Subdivision Regulations.

3. The applicant has documented his ability to comply with the health standards and operating procedures as provided by the Colorado Department of Public Health and Environment, Tri-County Health Department, Fire District, and other relevant agencies.

   The operation of the Site has documented compliance with the health standards and operating procedures as provided by the Colorado Department of Public Health and Environment, Tri-County Health Department, Fire District, and other relevant agencies.

4. The proposed facility will not cause significant traffic congestion or traffic hazards.

   The proposed inert fill will not cause significant traffic congestions or traffic hazards as demonstrated in the project traffic study submitted 10/10/2019.

5. The request is compatible with the surrounding area.

   The recycling facilities request is compatible with the surrounding industrial uses and zoning in the area.

6. The site will not impact health and welfare of the community based upon specific tire recycling facility design and operating procedures.

   Site operations are limited to recyclable construction materials, and do not include tire recycling. Based on the Site fill design and operating procedures, the operation will not impact the health and welfare of the community.

FINAL

TRAFFIC IMPACT REPORT
BRANNAN SAND & GRAVEL PIT "R"
DENVER, COLORADO

October 23, 2019

Prepared for:
Brannan Sand & Gravel
2500 East Brannan Way
Denver, CO 80229

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Harris Kocher Smith Project No. 190915

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I. SUMMARY

A. Project Overview

Brannan Sand & Gravel Company currently has Pit "R" in operation east of Federal Blvd. and north of 60th Avenue in Adams County, Colorado. The site contains approximately 28 acres. The purpose of this study is to evaluate the impacts of the heavy truck trips that are being generated by Pit "R" on the study area intersections and roadway system. The study includes 2019, 2025, and 2040 analysis horizons, as required by Adams County.

Based on the analyses contained in this traffic study it is concluded that the Brannan Sand & Gravel Pit "R" can continue operating in the study area through the 2040 analysis horizon with no necessary modifications to the road network or to traffic control.

B. Description of Site

The site roughly triangle-shaped, bounded by 60th Avenue on the south, Clear Creek to the northwest, and a local city connection to the Clear Creek Trail on the east. The new RTD Clear Creek-Federal rail station is located just to the southeast. The site is a location for the storage of asphalt and aggregate products. Figure 1 graphically illustrates the location of the development site. The lot has one access point to 60th Avenue. It is skewed to orient more in the east/west direction.

C. Site Location and Study Area Boundaries

The study area encompasses the existing roadway system in the vicinity of the project site. Specifically, the following existing intersections were evaluated:

- Federal Blvd. / 60th Avenue
- 60th Avenue / Site Access

Figure 1 illustrates the location of the existing study area intersections.

D. Existing and Proposed Uses in Vicinity of Site

The only other land use in the close vicinity of the site is the new RTD Clear Creek-Federal Station and Park-n-Ride, located on the south side of 60th Avenue just west of Pit "R". With the constraints of I-76, the RTD Gold Line, freight rail lines, other pits, and lakes formed from old pits, there are few other developable parcels in the area. There are two exceptions:

- Parcels directly across 60th Street from Pit "R". These are zoned I-2.
- Smaller parcels directly west of Pit 2. These are zones I-1.

E. Existing and Committed Transportation Network

The existing transportation network in the vicinity of the proposed development is illustrated in Figure 1. The study area roadways include the following:

Study Area Roadways:

- **60th Avenue** – 60th Avenue is classified as a local street within the study area under the jurisdiction of Adams County. The roadway section consists of one 11-foot travel lane in each direction. 5-foot bike lanes exist in both directions from Federal Blvd. to just west of the Pit access point. Right turn lanes exist for each of the two RTD access points. Curb and gutter and attached sidewalks exist on both sides from Federal Blvd. through the eastern RTD access. Just east of the Pit access, the road narrows to a 20- to 22- foot cross section with no lane striping. The posted speed limit is 30 mph.
- **Federal Blvd. (US 287)** – Federal Boulevard is classified as a Principal Arterial, under the jurisdiction of the Colorado Department of Transportation. The roadway section consists of three travel lanes in each direction with a raised median, plus left and right turn lanes at key intersections. Curb and gutter, narrow shoulders, and attached sidewalks exist on both sides. The posted speed limit is 45 mph.

Study Area Intersections:

- **Federal Blvd. / 60th Avenue** – The Federal Blvd. / 60th Avenue intersection is a signalized four-legged intersection with protected/permitted left turn phasing on the southbound approach. The west leg of the intersection is currently a small site driveway with no defined lanes. The east leg of the intersection has separate left and right turn lanes (no through lane) with approximately 75 feet of storage for the left turn lane. The north leg of the intersection has one left turn lane with approximately 325 feet of storage, two through lanes, and one shared through/right turn lane on the southbound approach and three northbound departure lanes. The south leg of the intersection has two through lanes and one shared through/right turn lane on the northbound approach and three southbound departure lanes. Both the north and south legs have a raised median. Northbound left turns are prohibited.
- **60th Avenue / Site Access** – The 60th Avenue / Site Access intersection is an unsignalized "T" intersection with "stop" control on the southbound approach. The north leg serves as the access to the site and is skewed at approximately a 60-degree angle to operate as a direct movement to and from the west. The access is dirt with no striping. Both the west and east legs have one inbound and one outbound lanes, although to the east, no lane striping or pavement edge treatments exist.

II. EXISTING TRAFFIC CONDITIONS

A. Existing Traffic Volumes

New existing (2019) intersection turning movement traffic volume counts were collected for this study at the following intersection on September 24, 2019. Peak hours were determined to be 7:30 - 8:30 AM and 4:30 - 5:30 PM.

- Federal Blvd. / 60th Avenue
- 60th Avenue / Site Access

New existing (2019) 24-hour directional traffic volumes were collected for this study at the following location on September 24th, 2019:

- 60th Avenue East of the RTD Park-n-Ride Lot
- 60th Avenue East of Federal Blvd.

Figure 2 shows lane geometry, traffic control, existing access points, and speed limits. The existing (2019) peak hour intersection turning movement traffic volume counts are illustrated in Figure 3. Detailed traffic volume count data are provided in Appendix "A". Existing AM and PM peak hour levels of service (LOS) are shown in Table 1 later in this report. Both intersections operate at LOS "A" during both peak hours. The level of service analysis assumes 50% heavy vehicles for movements to and from 60th Avenue at Federal Blvd. 100% heavy vehicles were assumed for the movements into and out of the site access.

The existing daily volume/capacity ratio for Federal Blvd. was calculated using procedures stated in the "Adams County Development Standards and Regulations". DRCOG traffic count data from October 2018 revealed an ADT of about 38,300 vehicles per day. Table 8.16 states an ADT Threshold Capacity for a Major Arterial to be 48,000. This produces a volume/capacity ratio of 0.80.

III. FUTURE TRAFFIC CONDITIONS WITHOUT PROPOSED DEVELOPMENT

A. Future Traffic Volumes

The traffic volume growth rates for the 2025 and 2040 analysis horizons were computed as follows:

- Using DRCOG 2015 and 2040 traffic volume projections, the appropriate annual growth rate to be used for this study is 0.7%. That is the projected growth rate on Federal Blvd. in the vicinity of 60th Avenue. This equates to a 6-year growth factor (2019 to 2025) of 1.06 and a 21-year growth factor (2019 to 2040) of 1.21.
- The vacant parcel of approximately 17 acres on the south side of 60th Avenue from Pit "R" was assumed to develop as currently zoned (I-2). Using Adams County Zoning code setbacks and a Floor Area Ratio (FAR) of 0.5, this site could have a maximum of 370,000 sf of General Heavy Industrial development. ITE "Trip Generation", 10th edition, was used to estimate trip generation. Land Use Code 140 – Manufacturing was assumed. Trips were distributed according to the existing traffic patterns on Federal Blvd.
- There is an additional approximately two acres of vacant land on the north site of 60th Avenue adjacent to Federal Blvd. This land is zoned I-1 and for the purposes of this analysis, commercial/ retail use was assumed. Using a FAR of 0.75, 65,000 sf of retail was assumed. ITE "Trip Generation", land use code 820 – Shopping Center, was assumed. A 50% pass-by trip credit was applied. Trips were distributed according to the existing traffic patterns on Federal Blvd.

These growth factors and assumed development volumes were applied to the 2019 existing traffic counts. 2025 traffic volumes are shown in Figure 4 and 2040 traffic volumes are illustrated in Figure 5. Note that since the development is already in operation, the projections already include volumes from the development.

B. Future Traffic Operational Analysis

Peak hour capacity analyses were performed for the 2019, 2025, 2040 analysis horizons traffic conditions. These scenarios assumed that the existing roadways would remain in-place. No proposed roadway modifications or extensions were included.

These analyses utilized the methodologies contained in the *Highway Capacity Manual* 2010 (HCM) employing *Synchro 10* software and resulted in a qualitative measure of the operational characteristics of the intersection described by a letter designation ranging from "A" to "F" known as "Level of Service" (LOS). LOS "A" represents free-flow operating conditions, whereas LOS "F" represents excessive congestion and delay. Unsignalized intersection capacity analysis reports a LOS designation for each impeded intersection movement. Signalized intersection capacity analysis reports the overall LOS designation for the intersection as well as for each lane group and approach. LOS "D" is considered the minimum acceptable standard of operation.

The following study area intersections were analyzed for 2025 and 2040 traffic conditions:

1. Federal Blvd. / 60th Avenue
2. 60th Avenue / Site Access

The results of these traffic operational analyses are summarized graphically for the 2019, 2025, and 2040 analysis horizons in Figures 8, 9 and 10, respectively. A summary of the results of the intersection capacity analyses is provided in Table 3 and detailed *Synchro 10* software intersection capacity analysis reports in Appendix "B".

IV. PROPOSED PROJECT TRAFFIC

A. Trip Generation

Since the development is already in operation, Table 1 presents the counted peak hour trip generation for the site. Count data was collected at the site access intersection for the two peak hours. The daily volume was estimated from an average of truck ticket records at the site from mid-April through mid-May.

TABLE 1
TRIP GENERATION

	Daily	AM Peak Trips	PM Peak Trips
Sand & Gravel Pit	488	9	9

A comparison of trip generation was made to the current site zoning of I-2. Using Adams County Zoning code setbacks and a Floor Area Ratio (FAR) of 0.5, this site could have a maximum of 560,000 sf of industrial development. ITE "Trip Generation", 10th edition, was used to estimate trip generation. Land Use Code 140 – Manufacturing was assumed. Table 2 shows the resulting trip generation. A comparison to Table 1 show that Pit "R" generates significantly less traffic than would an industrial development on the site. Volume assignments were made with industrial development on the Pit "R" site. These are illustrated in Figures 6 and 7 for 2025 and 2040 timeframes, respectively.

TABLE 2
TRIP GENERATION – INDUSTRIAL DEVELOPMENT

	Daily	AM Peak Trips	PM Peak Trips
Manufacturing	1930	347	375

B. Trip Distribution

Since the development is already in operation, the 2025 and 2040 Traffic Volumes in Figures 4 and 5 reflect the site distribution. All heavy trucks travel to/from the west on 60th Avenue.

C. Project Trip Assignment

Since the development is already in operation, the 2025 and 2040 Traffic Volumes in Figures 4 and 5 reflect the site trip assignment.

V. FUTURE TRAFFIC FORECASTS WITH THE PROPOSED DEVELOPMENT

The 2025 and 2040 Traffic Volumes in Figures 4 and 5 represent the future traffic forecasts with the proposed development.

VI. PROJECT IMPACTS

A. Generalized Daily Traffic Volume Level of Service

As stated previously, the existing volume/capacity ratio on Federal Blvd. is 0.80. This ratio includes the traffic from the pit site.

B. Peak Hour Intersection Level of Service

Since the development is already in operation, the analysis conducted using the future volume projections in section III.B. include the site volumes. The level of service analysis shown in Table 3 and Figures 8, 9 and 10 summarize operations. Both intersections will operate at acceptable LOS "A" during both peak hours and for all three timeframes. No movement LOS will be below "D" as a result of forecast background growth or site traffic.

TABLE 3
SUMMARY OF RESULTS - INTERSECTION CAPACITY ANALYSIS

INTERSECTION	INTERSECTION CONTROL	2019 EXISTING TRAFFIC		2025 TOTAL TRAFFIC		2040 TOTAL TRAFFIC		2025 INDUSTRIAL TRAFFIC		2040 INDUSTRIAL TRAFFIC	
		AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS	AM PEAK LOS	PM PEAK LOS
1. Federal Blvd. & 60th Avenue	**Signal**										
a. WB L		D	D	D	D	D	D	D	F	D	F
b. WB R		D	D	D	D	D	C	D	F	D	F
c. NB TR		A	A	A	C	A	C	B	F	C	F
d. SB L		A	A	B	B	B	D	D	F	D	F
e. SB T		A	A	A	A	A	A	A	B	A	B
f. INTERSECTION		A	A	A	C	A	C	A	E	B	F
2. 60th Avenue & Site Access	**2-Way Stop**										
a. EB LTR		A	A	A	A	A	A	A	A	A	A
b. WB TR		A	A	A	A	A	A	A	A	A	A
c. SB LR	Stop	A	A	A	A	A	A	A	B	A	B
d. NB LR	Stop			A	B	A	B	C	E	C	E

The two columns on the right in Table 3 present the results of an analysis that assumes not only that the nearby industrial and retail parcels are development, but also the Pit "R" site is redeveloped as zoned – with manufacturing industrial uses. Table 3 clearly shows that conditions at the Federal Blvd./60th Avenue intersection would deteriorate to unacceptable levels if the Pit "R" site were redeveloped. Additional lanes and signal improvements would be needed to achieve LOS "D" for all movements.

Queue lengths and associated storage requirements for auxiliary lanes (turn bays) at the study area intersections were calculated for the 2019, 2025 and 2040 background and total traffic scenarios utilizing the *Synchro 10* HCM 2010 95%tile reported queues. The queue length calculations are based on a 25-foot vehicle length. Table 4 provides a summary of these analyses for each of the study area intersections.

TABLE 4
SUMMARY OF RESULTS – QUEUING ANALYSIS

INTERSECTION	EXISTING STORAGE (FT/LN)	INTERSECTION CONTROL	2019 EXISTING TRAFFIC		2025 TOTAL TRAFFIC		2040 TOTAL TRAFFIC		2025 INDUSTRIAL TRAFFIC		2040 INDUSTRIAL TRAFFIC	
			SYNCHRO 10 QUEUE LENGTH (FT/LN) 95TH%		SYNCHRO 10 QUEUE LENGTH (FT/LN) 95TH%		SYNCHRO 10 QUEUE LENGTH (FT/LN) 95TH%		SYNCHRO 10 QUEUE LENGTH (FT/LN) 95TH%		SYNCHRO 10 QUEUE LENGTH (FT/LN) 95TH%	
			AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK
1. Federal Blvd. & 60th Avenue		**Signal**										
a. WB L	75		50	75	100	225	100	250	150	400	175	425
b. WB R			25	50	50	125	50	200	50	300	50	375
c. NB TR			100	250	175	525	175	575	250	575	275	625
d. SB L	325		25	25	150	175	150	175	400	250	400	250
e. SB T			25	100	275	200	300	200	300	200	325	225
2. 60th Avenue & Site Access		**2-Way Stop**										
a. EB LTR			0	0	0	0	0	0	0	25	25	25
b. WB LTR			0	0	0	0	0	0	0	0	0	0
c. SB LR		Stop	0	0	0	0	0	0	25	50	25	50
d. NB LR		Stop	-	-	0	25	0	25	25	100	25	125

Turn bay lengths at all intersections are adequate to handle existing queuing. If the nearby industrial and retail parcels are developed, the westbound left turn lane on 60th Avenue at Federal Blvd. would need to be lengthened to 225 feet to handle 2025 traffic, and to 250 feet for 2040 traffic. If the Pit "R" site were redeveloped, in addition to these two nearby parcels, the westbound queue will greatly exceed even the expanded storage. Additional lanes would be needed.

C. Traffic Signals and Access Locations

The existing site access location will not interfere with any traffic signal operations. Traffic signal warrants will not be met at the site access intersection with 60th Avenue.

D. Turn Lane Storage Requirements

According to the "Adams County Development Standards and Regulations", right and/or left turn lanes are not required at the site access point. As presented above, the westbound left turn lane on 60th Avenue at Federal Blvd. would need to be lengthened to 225 feet to handle 2025 traffic, and to 250 feet for 2040 traffic, if the nearby parcels are developed.

E. Sight Distance

For truck right turns out from the site access, intersection sight distance to the east governs. On 60th Avenue with a 35 mph design speed (30 mph posted speed), according to AASHTO "A Policy on Geometric Design of Highways and Streets", 2018 edition, a minimum of 335 feet of sight distance is needed. Sight distance exists of approximately 1,600 feet east to the I-76 bridge.

For trucks turning left into the site access, stopping sight distance to the west governs. According to AASHTO, at least 250 of stopping sight distance is needed. Sight distance exists of approximately 1,000 feet to the west on 60th Avenue.

F. Acceleration or Deceleration Lanes

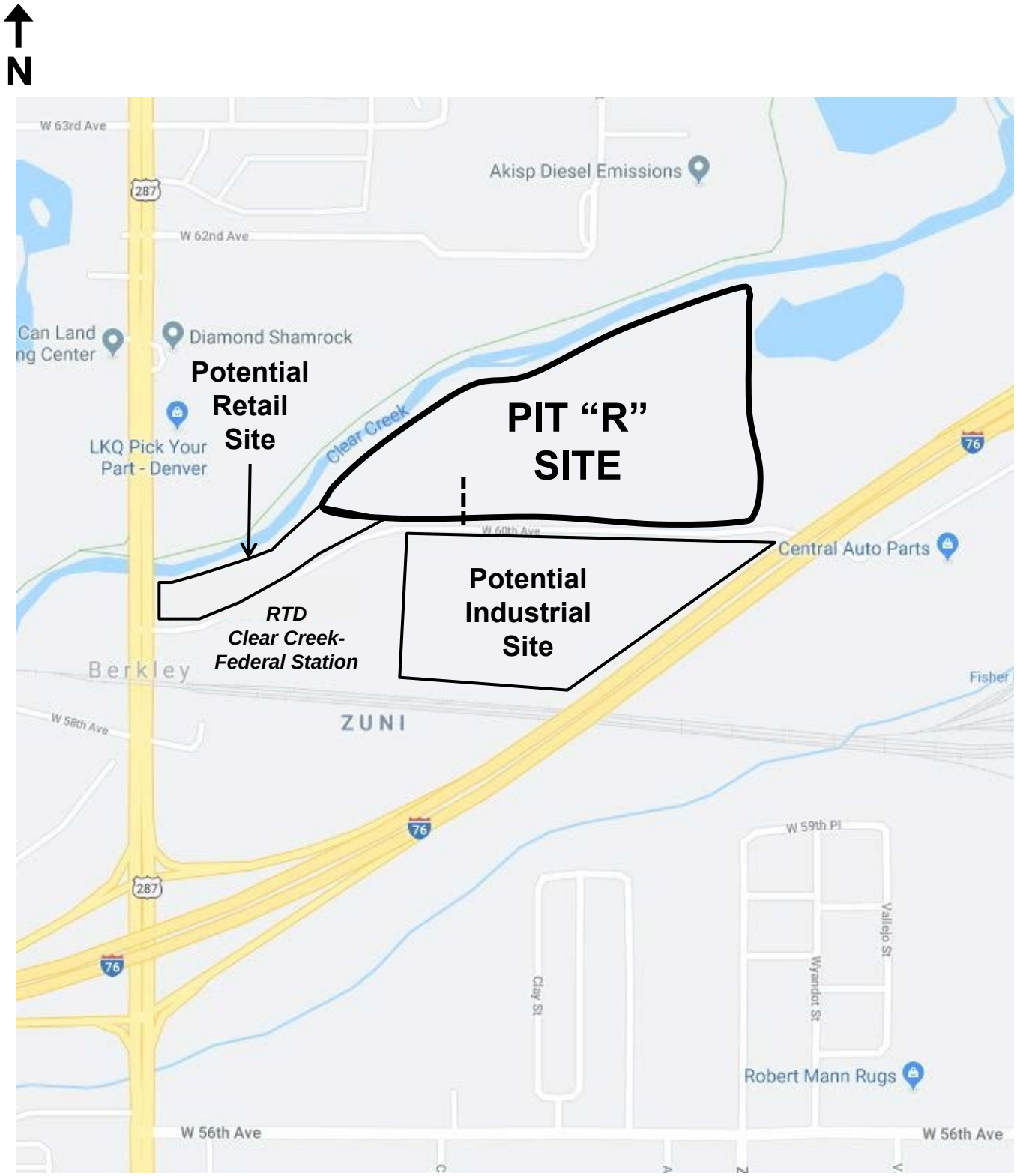
According to the "Adams County Development Standards and Regulations", auxiliary acceleration and deceleration lanes are not required.

VII. MITIGATION MEASURES / RECOMMENDATIONS

Based on the analyses contained in this traffic study it is concluded that the Brannan Sand & Gravel Pit "R" can continue operating in the study area through the 2040 analysis horizon with no necessary modifications to the road network or to traffic control. However, if two nearby sites on 60th Avenue are developed, or if Pit "R" were developed as currently zoned (I-2), roadway improvements would be needed. Table 5 presents a summary of recommendations at the two study area intersections.

TABLE 5
SUMMARY OF RECOMMENDATIONS

Intersection	Recommendations	Responsible	Timing
Federal Blvd./ 60th Avenue	If nearby parcels are developed, the westbound left turn lane would need to be lengthened to 250 feet. Overlap phasing for the westbound right turn with the southbound left turn should be added.	Developers of nearby parcels	When parcels are developed
60th Avenue/ Site Access	No geometric or operational modifications are recommended as a result of the operations at Pit "R".	N/A	N/A



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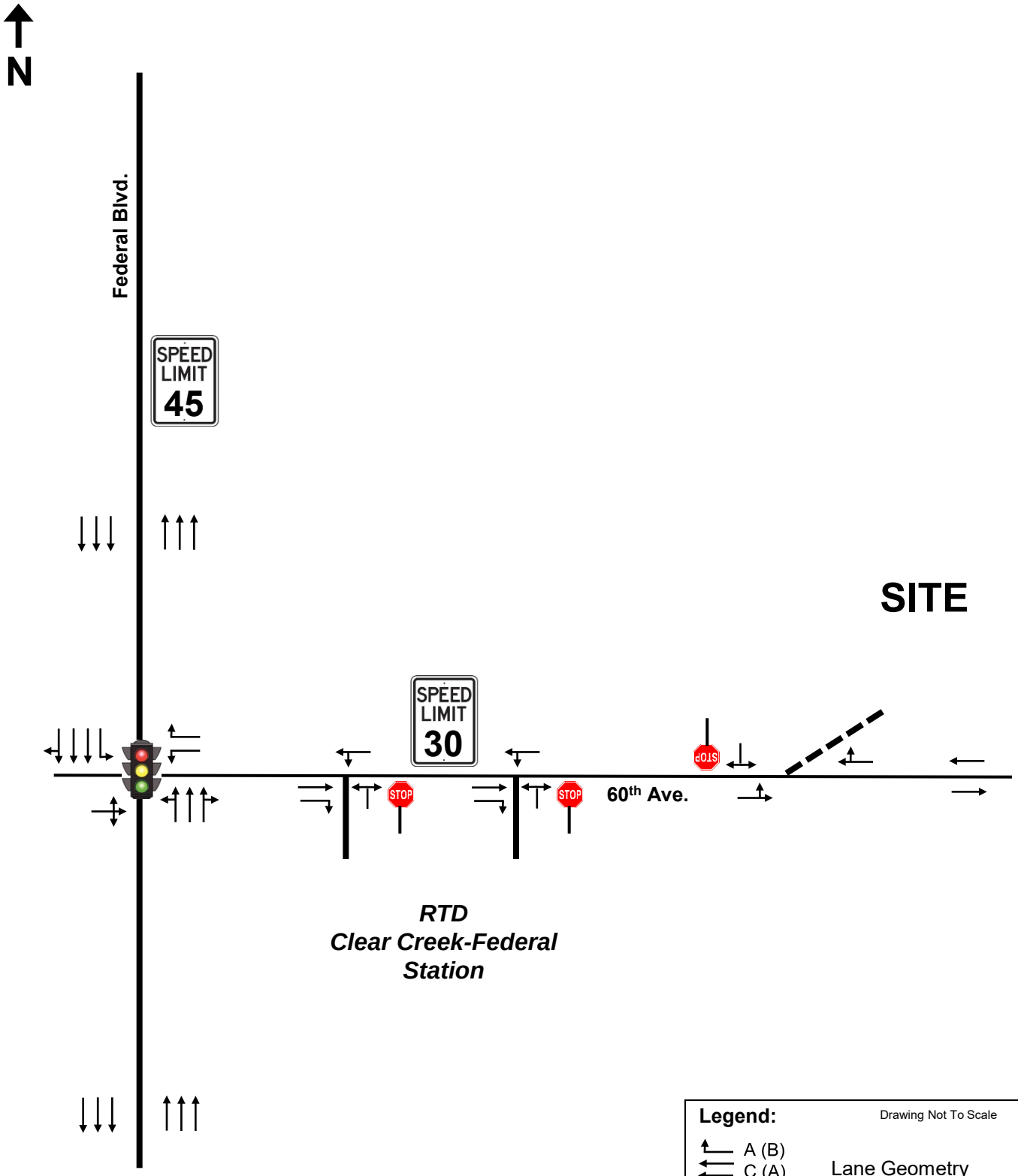
Brannan Sand & Gravel Pit "R"
HKS #190915

Site Location Map
Figure 1



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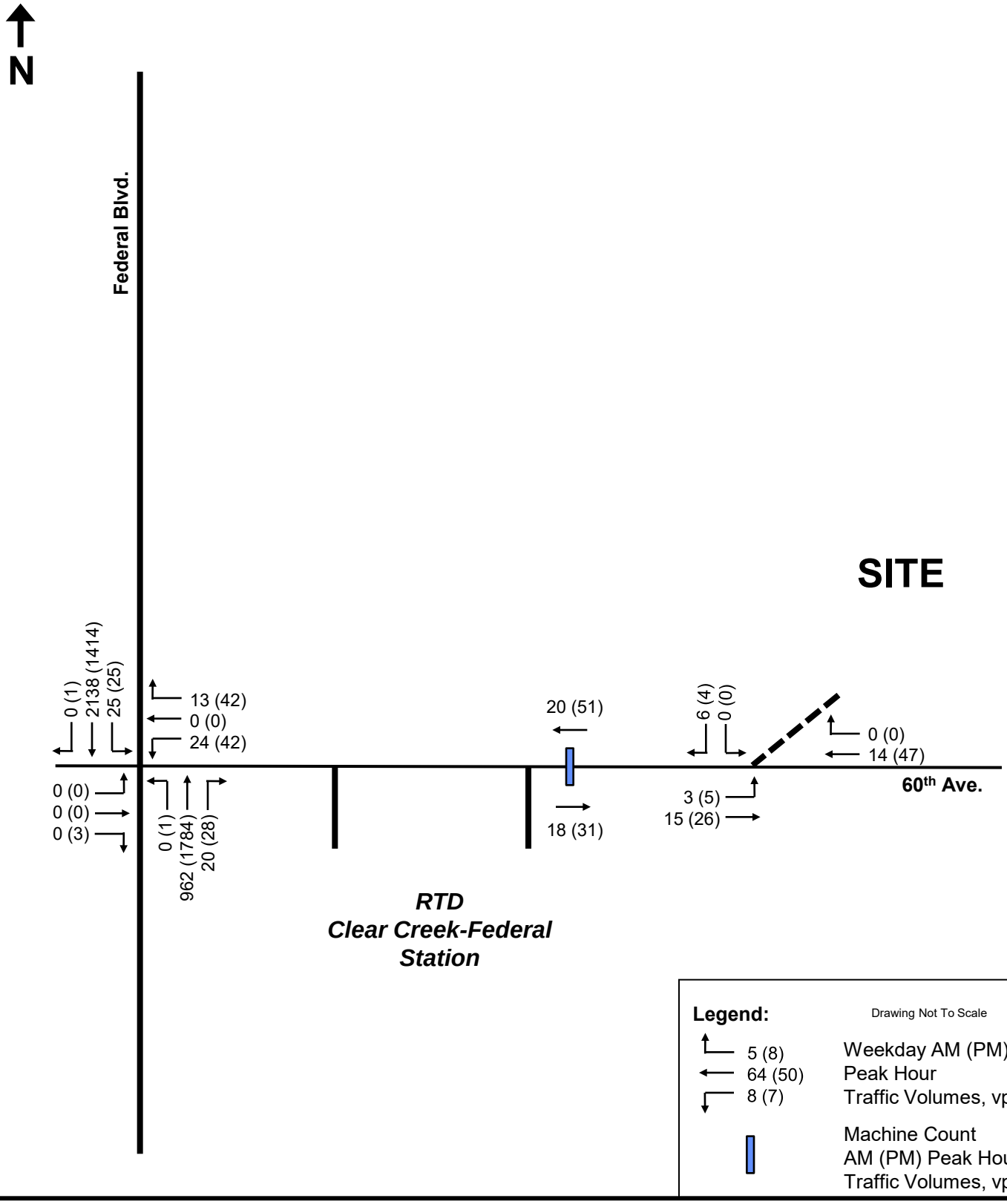
Existing Geometry and Traffic Control
Figure 2



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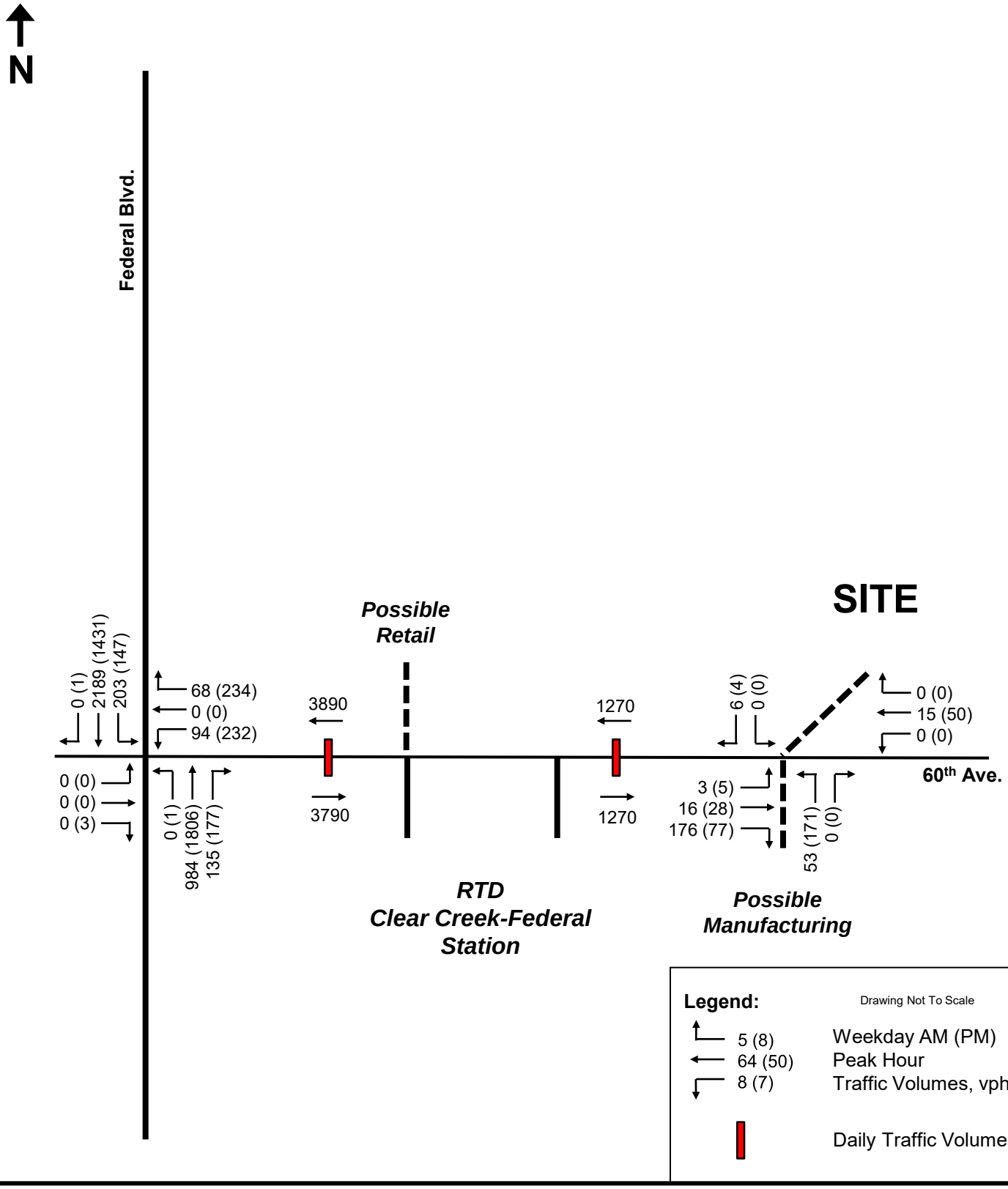
2019 Existing Traffic Volumes

Figure 3



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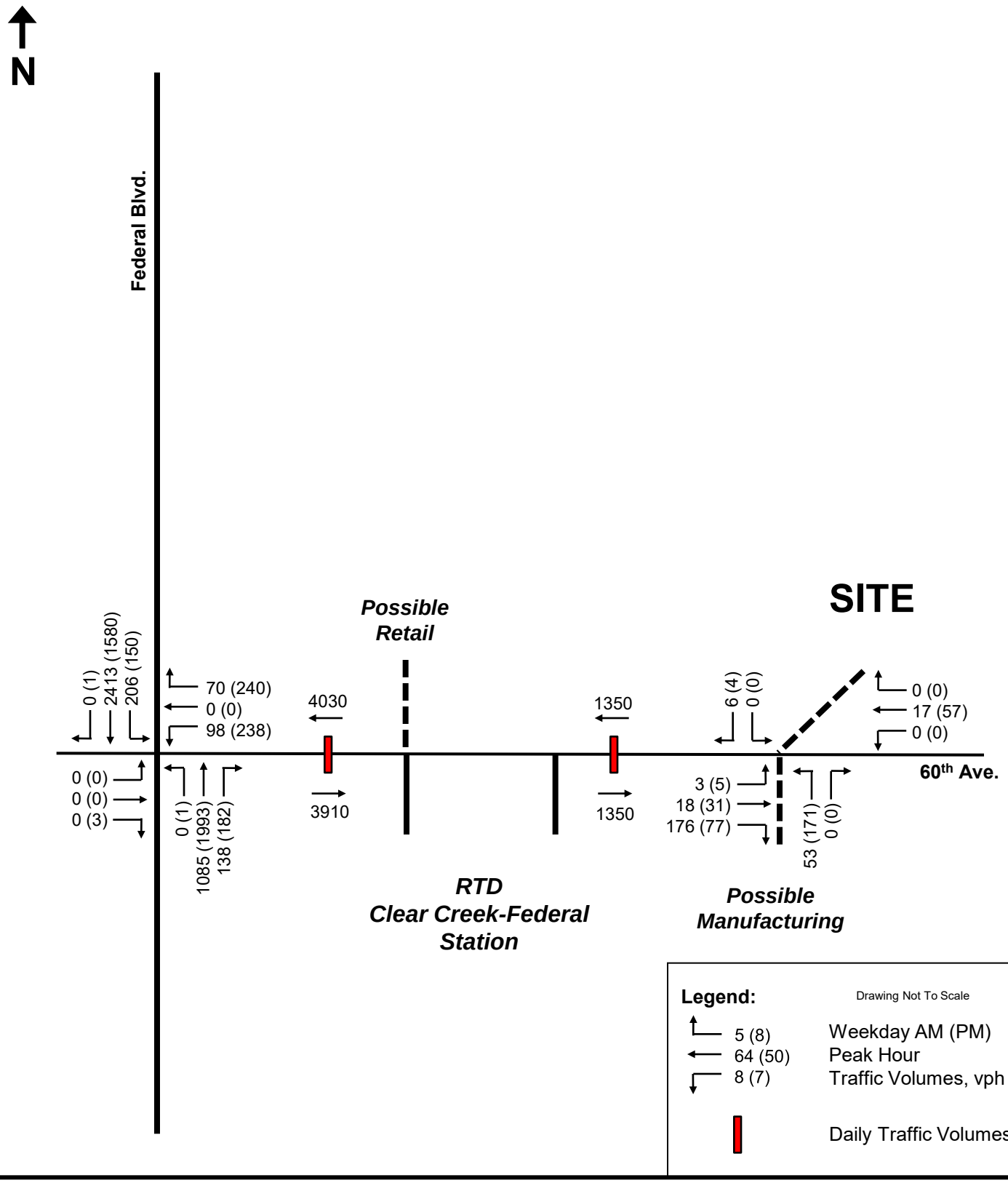
2025 Traffic Volumes
Figure 4



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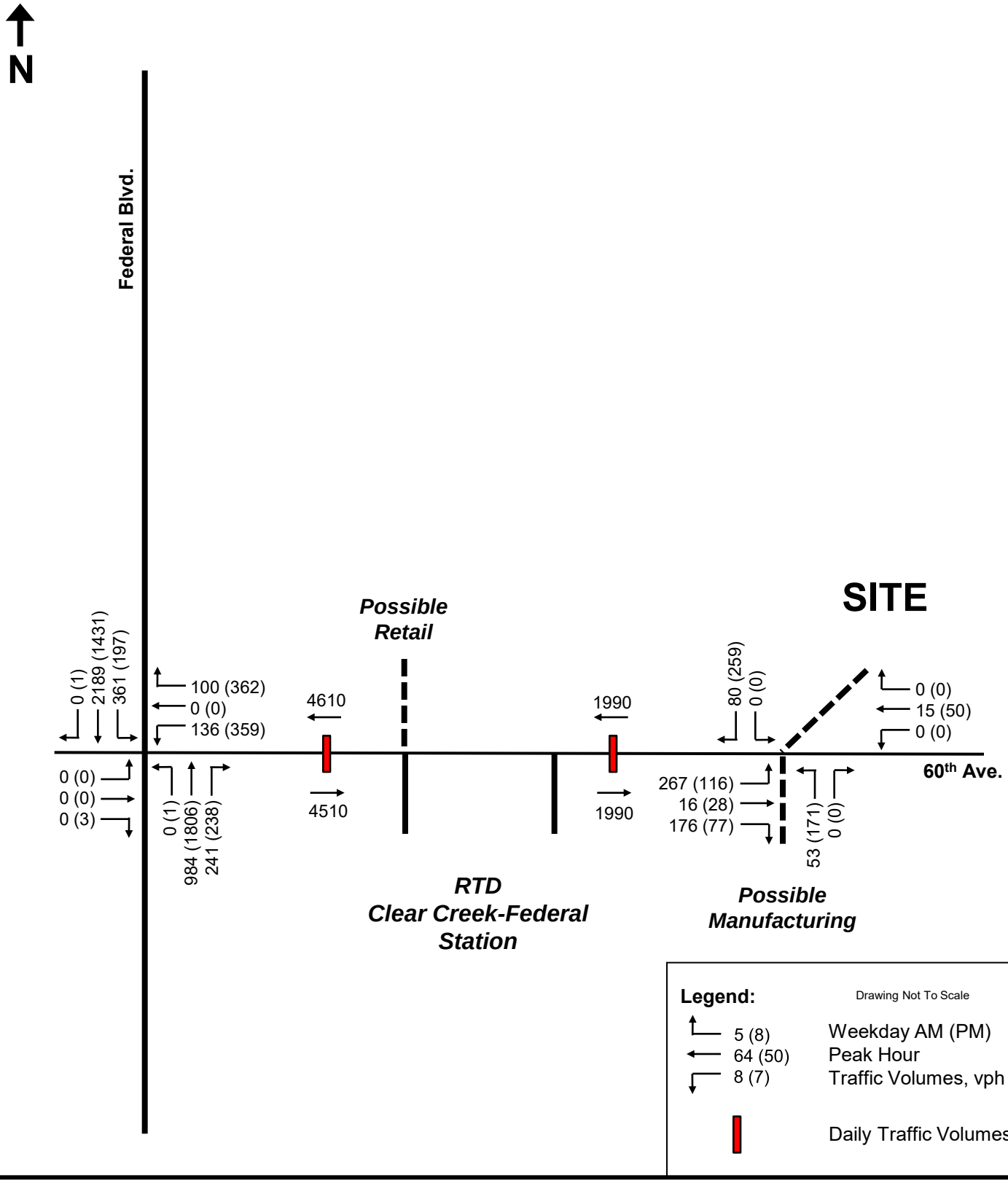
HKS #190915

2040 Traffic Volumes
Figure 5



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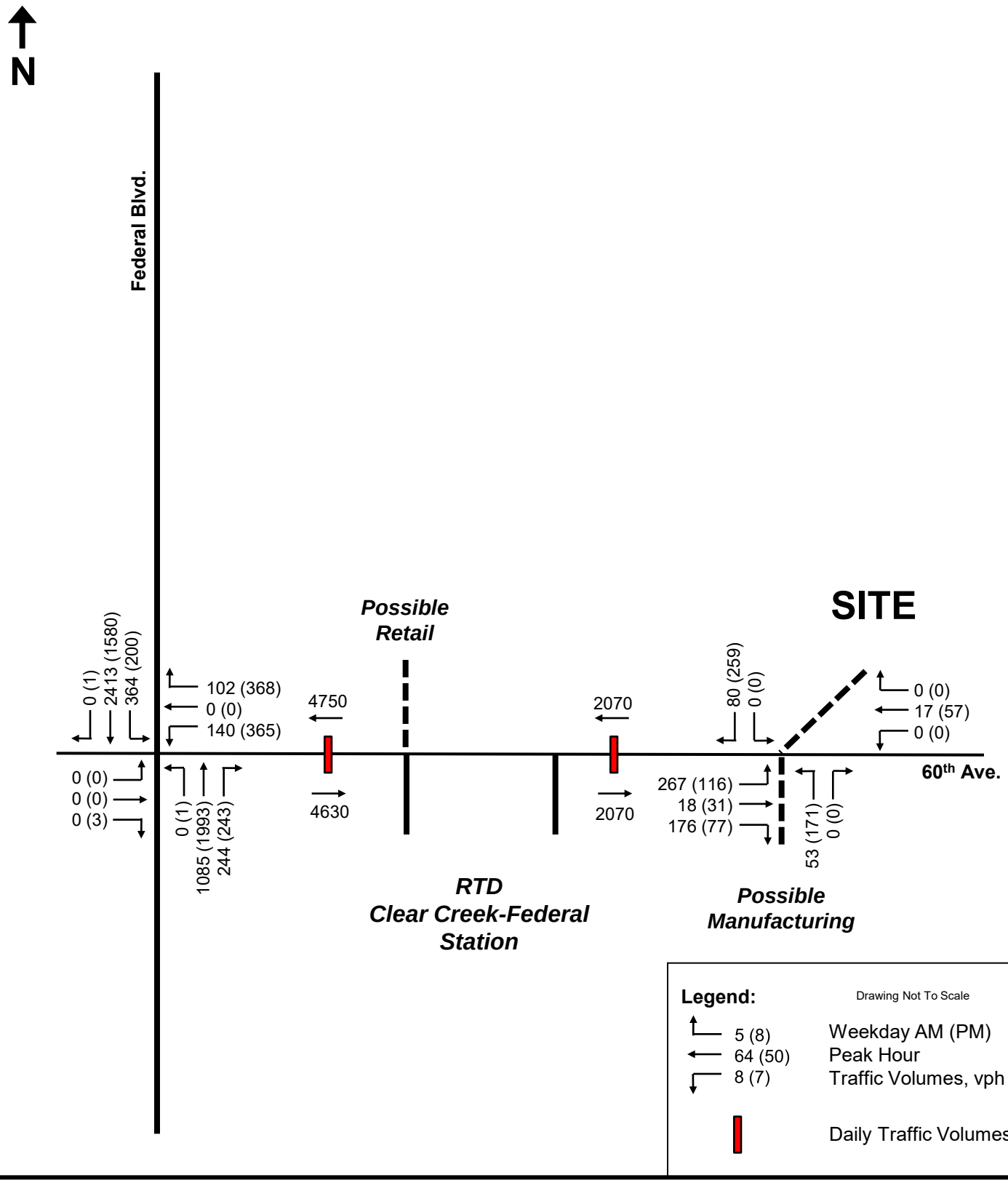
Brannan Sand & Gravel Pit "R"
HKS #190915

2025 Traffic Volumes
With Industrial Use On-Site

Figure 6



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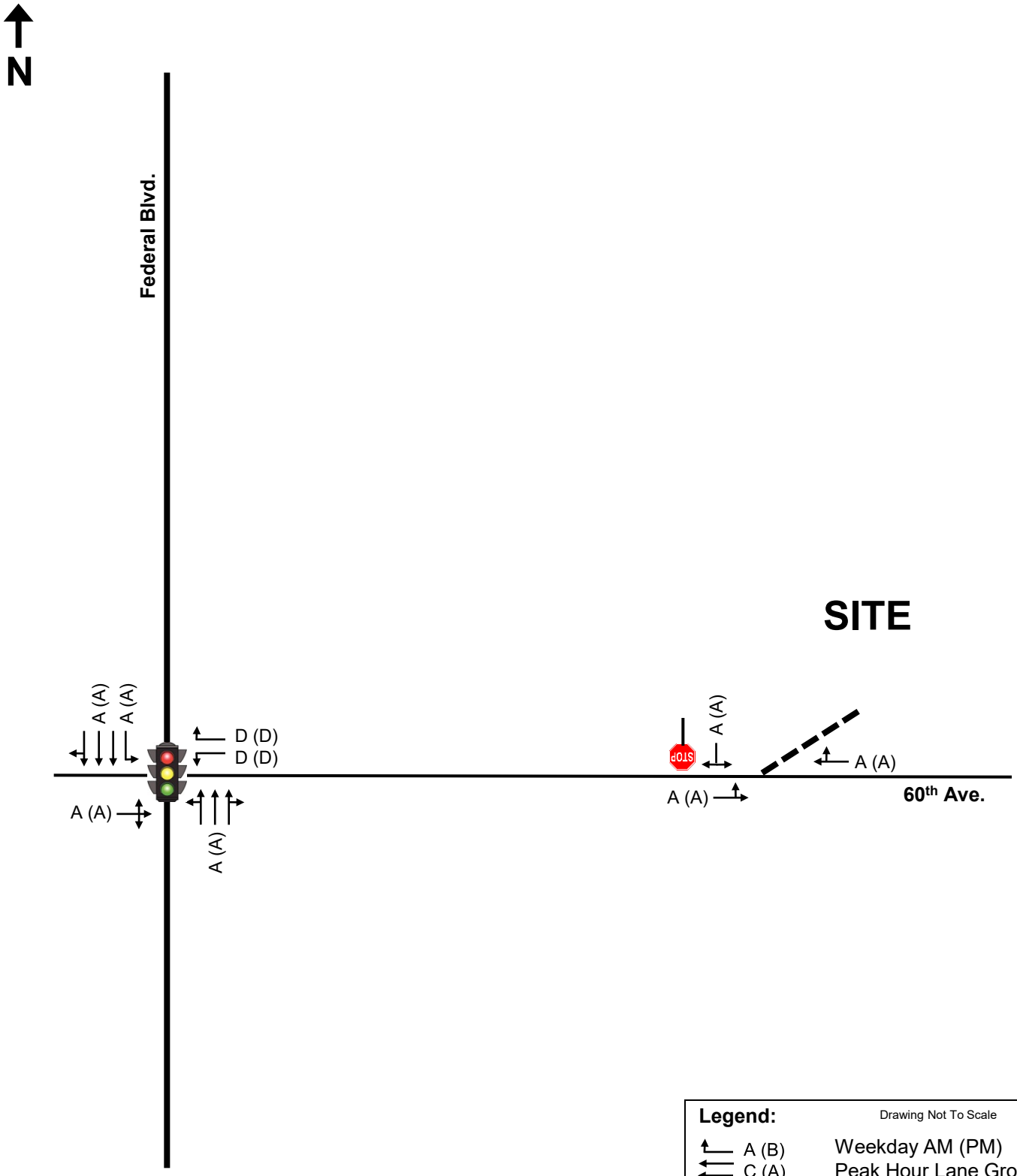
2040 Traffic Volumes
With Industrial Use On-Site

Brannan Sand & Gravel Pit "R"
HKS #190915

Figure 7



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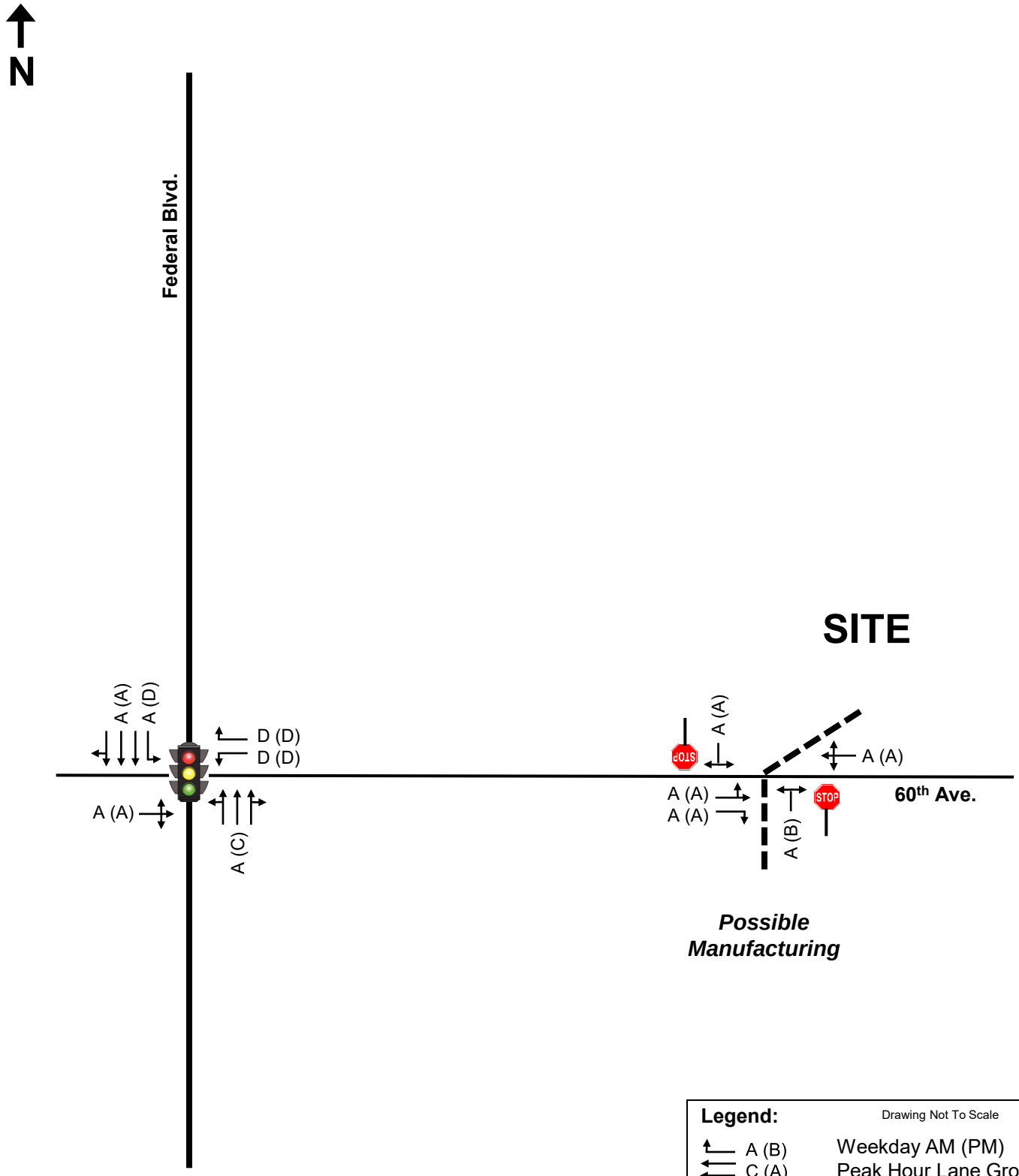
Brannan Sand & Gravel Pit "R"
HKS #190915

2019 Existing Traffic Operational Conditions

Figure 8



Legend: Drawing Not To Scale

A (B)	Weekday AM (PM)
C (A)	Peak Hour Lane Group
A (A)	Level of Service

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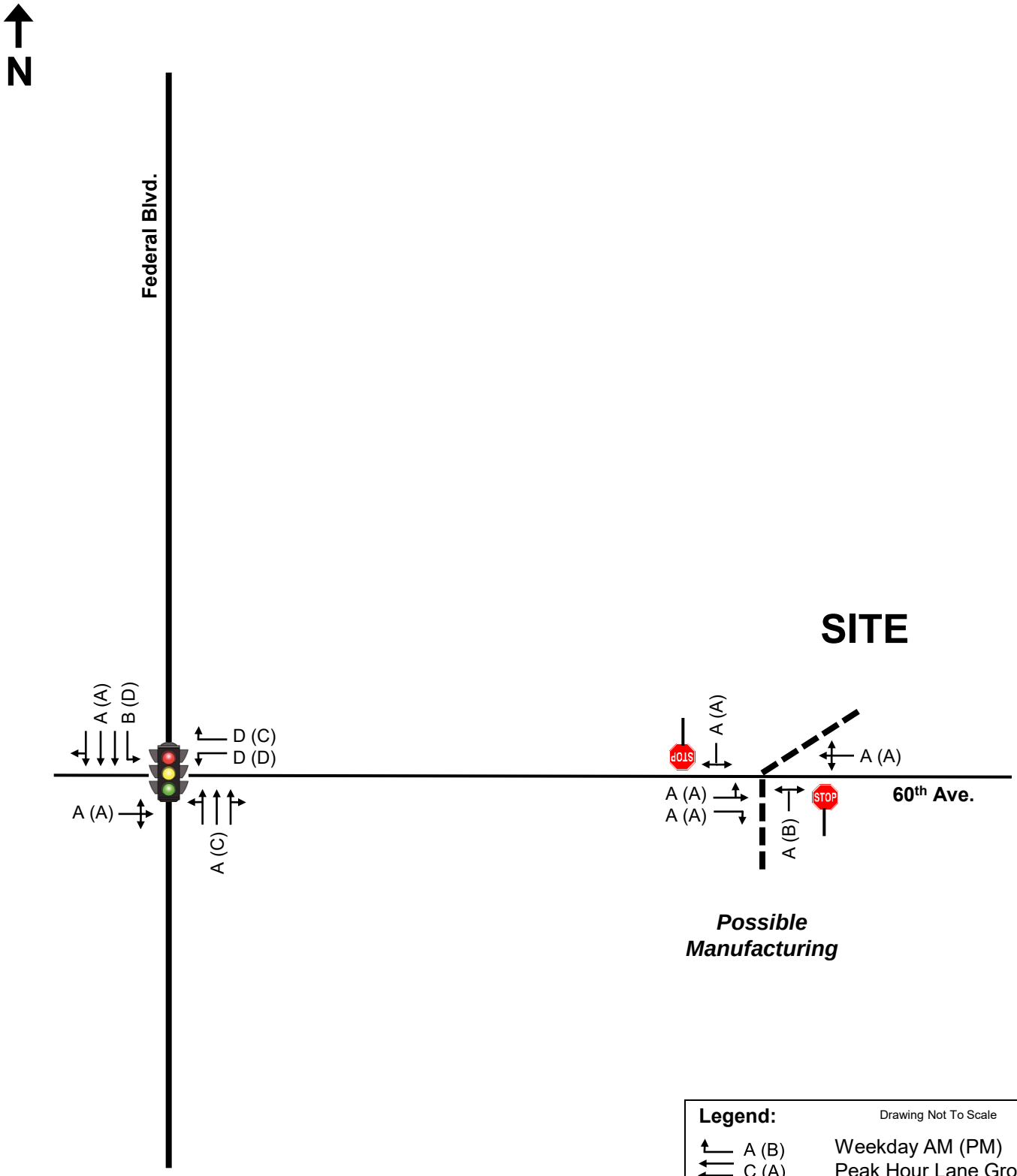
Brannan Sand & Gravel Pit "R"
HKS #190915

2025 Traffic Operational Conditions

Figure 9



Legend:	Drawing Not To Scale
A (B)	Weekday AM (PM)
C (A)	Peak Hour Lane Group
A (A)	Level of Service

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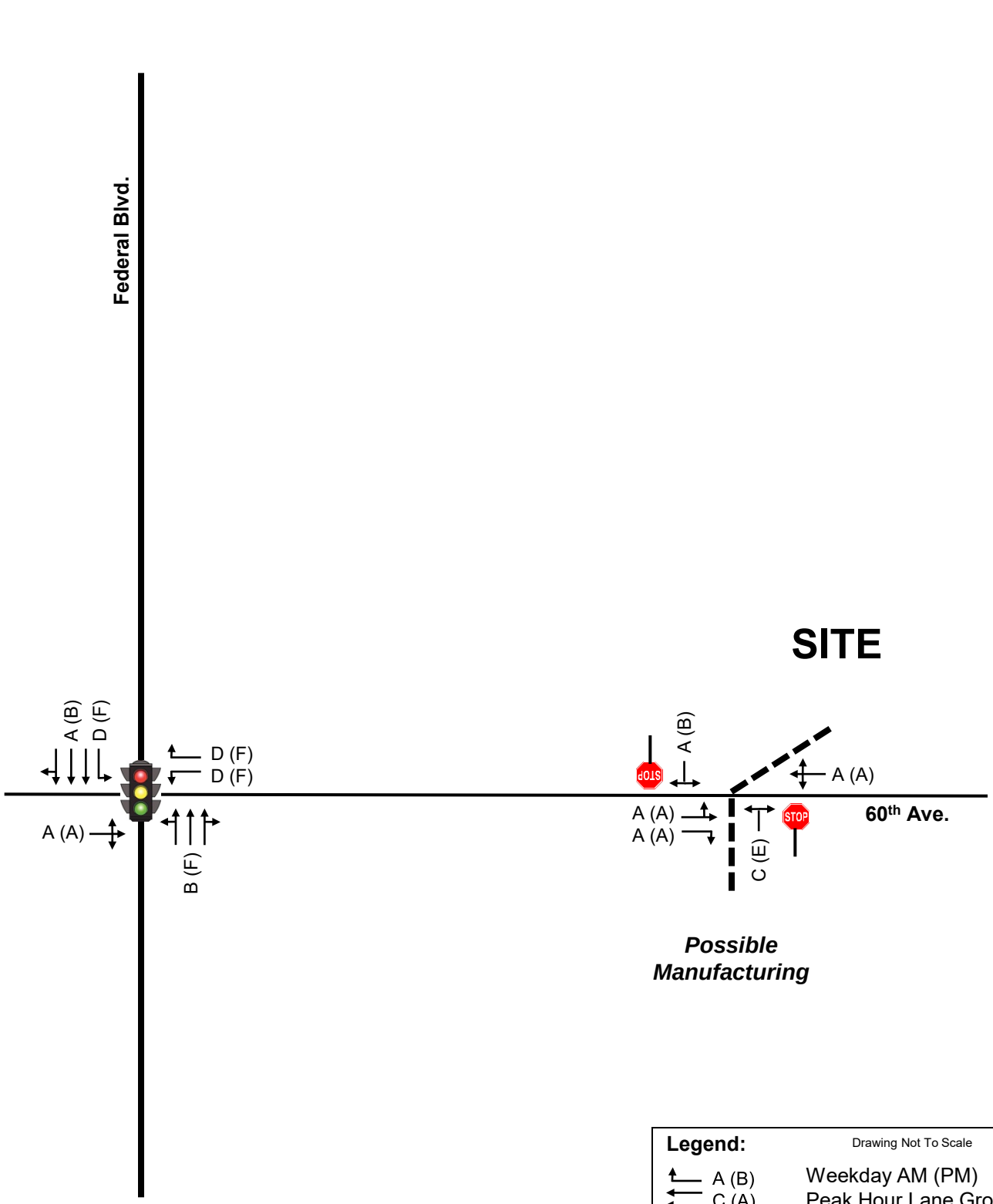
Brannan Sand & Gravel Pit "R"
HKS #190915

2040 Traffic Operational Conditions

Figure 10



Legend:	Drawing Not To Scale
A (B)	Weekday AM (PM)
C (A)	Peak Hour Lane Group
A (A)	Level of Service

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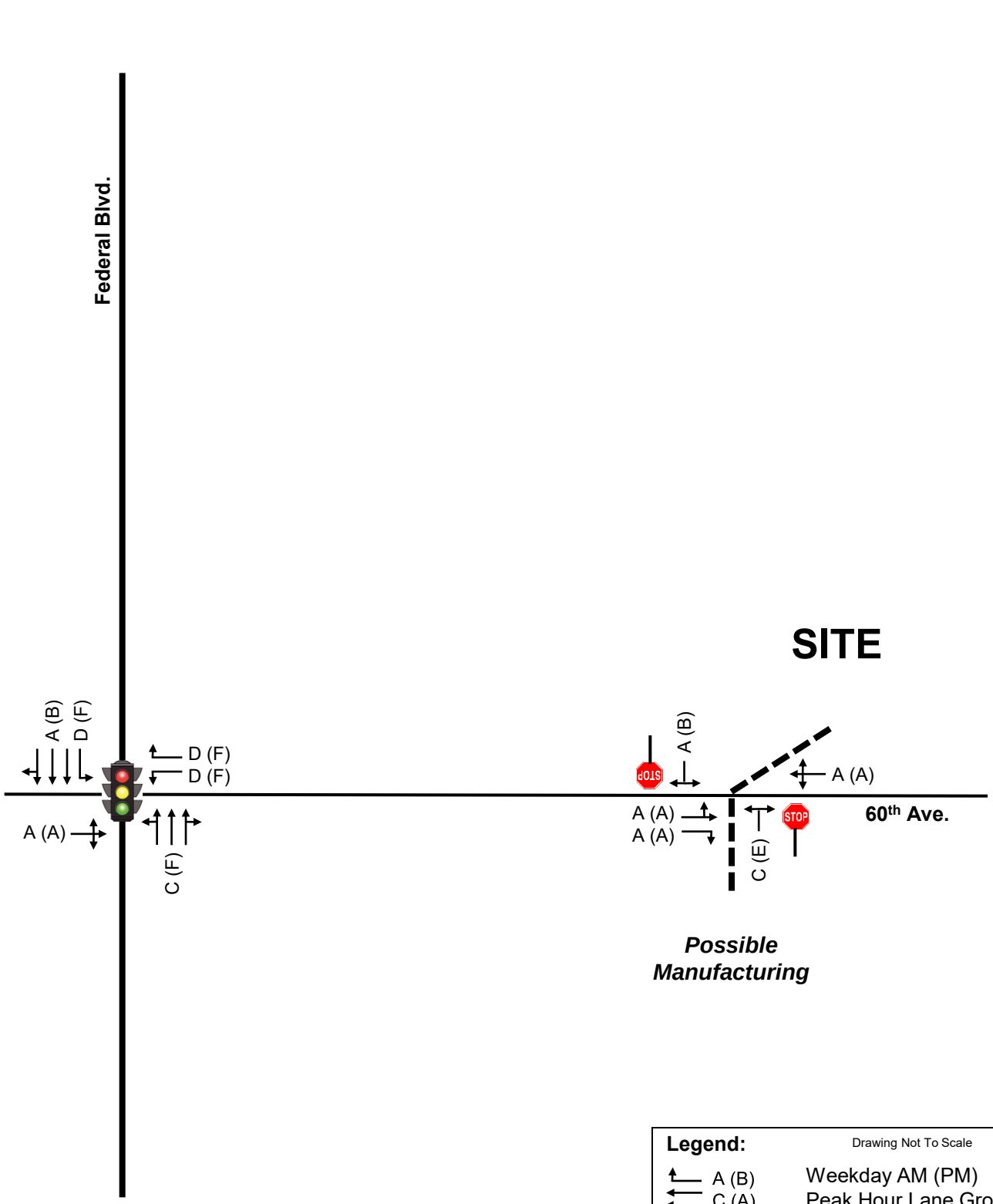
Brannan Sand & Gravel Pit "R"
HKS #190915

2025 Traffic Operational Conditions With Industrial Use On-Site

Figure 11



Legend: Drawing Not To Scale

A (B)	Weekday AM (PM)
C (A)	Peak Hour Lane Group
A (A)	Level of Service

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2040 Traffic Operational Conditions With Industrial Use On-Site

Brannan Sand & Gravel Pit "R"
HKS #190915

Figure 12

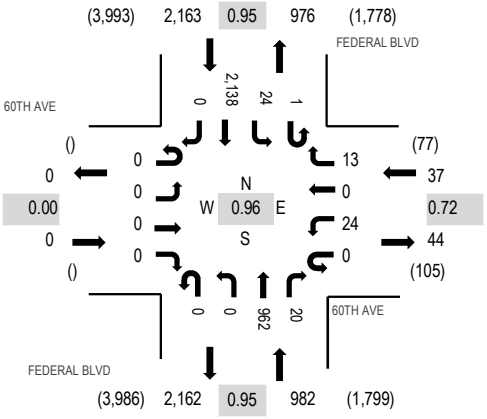
APPENDIX “A”

2019 EXISTING
TRAFFIC VOLUME COUNTS

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

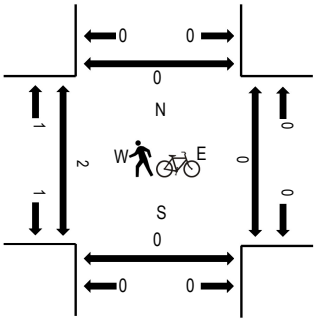
Location: 1 FEDERAL BLVD & 60TH AVE AM
Date: Tuesday, September 24, 2019
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



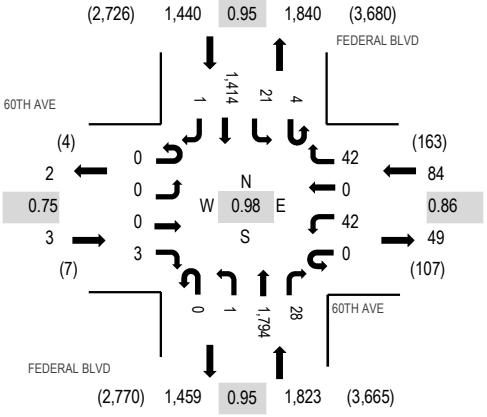
Traffic Counts

Interval Start Time	60TH AVE Eastbound				60TH AVE Westbound				FEDERAL BLVD Northbound				FEDERAL BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	8	0	7	0	0	165	8	2	6	467	0	663	2,989	0	2	0	0
7:15 AM	0	0	0	0	0	6	0	2	0	0	184	8	0	9	531	0	740	3,121	0	0	0	0
7:30 AM	0	0	0	0	0	8	0	2	0	0	240	6	0	7	562	0	825	3,182	1	0	0	0
7:45 AM	0	0	0	0	0	4	0	6	0	0	234	4	1	6	506	0	761	3,048	1	0	0	0
8:00 AM	0	0	0	0	0	6	0	3	0	0	234	6	0	6	540	0	795	2,880	0	0	0	0
8:15 AM	0	0	0	0	0	6	0	2	0	0	254	4	0	5	530	0	801		0	0	0	0
8:30 AM	0	0	0	0	0	4	0	4	0	0	222	14	2	5	440	0	691		0	0	0	0
8:45 AM	0	0	0	0	0	5	0	4	0	0	209	7	1	4	363	0	593		0	0	0	0
Count Total	0	0	0	0	0	47	0	30	0	0	1,742	57	6	48	3,939	0	5,869		2	2	0	0
Peak Hour	0	0	0	0	0	24	0	13	0	0	962	20	1	24	2,138	0	3,182		2	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

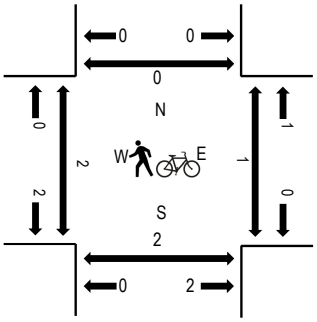
Location: 1 FEDERAL BLVD & 60TH AVE PM
Date: Tuesday, September 24, 2019
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	60TH AVE Eastbound				60TH AVE Westbound				FEDERAL BLVD Northbound				FEDERAL BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	2	0	0	0	10	0	5	0	1	435	10	2	4	290	1	760	3,268	2	0	0	1
4:15 PM	0	0	0	2	0	10	0	10	0	0	454	15	1	6	332	0	830	3,327	0	1	0	0
4:30 PM	0	0	0	1	0	10	0	11	0	0	438	7	2	3	371	1	844	3,350	0	0	0	0
4:45 PM	0	0	0	1	0	8	0	11	0	1	445	6	1	5	356	0	834	3,345	1	0	0	0
5:00 PM	0	0	0	1	0	14	0	10	0	0	446	9	0	8	331	0	819	3,293	1	1	1	0
5:15 PM	0	0	0	0	0	10	0	10	0	0	465	6	1	5	356	0	853		0	0	0	0
5:30 PM	0	0	0	0	0	16	0	10	0	0	478	11	0	1	323	0	839		2	1	0	0
5:45 PM	0	0	0	0	0	9	0	9	0	0	433	5	1	6	319	0	782		1	1	0	0
Count Total	0	2	0	5	0	87	0	76	0	2	3,594	69	8	38	2,678	2	6,561		7	4	1	1
Peak Hour	0	0	0	3	0	42	0	42	0	1	1,794	28	4	21	1,414	1	3,350		2	1	1	0

All Traffic Data Services

Wheat Ridge, CO 80033

Site Code: 3
Station ID: 3
60TH AVE E.O. PARK & RIDE

Start Time	24-Sep-19 Tue	EB	WB							Total
12:00 AM		14	16							30
01:00		10	7							17
02:00		5	7							12
03:00		5	5							10
04:00		18	13							31
05:00		35	16							51
06:00		**64**	33							**97**
07:00		24	31							55
08:00		25	20							45
09:00		23	22							45
10:00		29	28							57
11:00		28	**38**							66
12:00 PM		**46**	36							82
01:00		40	37							77
02:00		40	34							74
03:00		30	46							76
04:00		40	**52**							**92**
05:00		31	45							76
06:00		12	33							45
07:00		9	11							20
08:00		3	3							6
09:00		3	0							3
10:00		14	15							29
11:00		11	14							25
Total		559	562							1121
Percent		49.9%	50.1%							
AM Peak	-	06:00	11:00	-	-	-	-	-	-	06:00
Vol.	-	64	38	-	-	-	-	-	-	97
PM Peak	-	12:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	46	52	-	-	-	-	-	-	92
Grand Total		559	562							1121
Percent		49.9%	50.1%							
ADT		ADT 1,121		AADT 1,121						

APPENDIX “B”

INTERSECTION CAPACITY ANALYSIS WORKSHEETS

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	13	962	20	25	2138
Future Volume (veh/h)	24	13	962	20	25	2138
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1794	1900	1267	1810
Adj Flow Rate, veh/h	26	14	1046	22	27	2324
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	44	40	3782	80	376	4202
Arrive On Green	0.04	0.04	0.77	0.77	0.03	0.85
Sat Flow, veh/h	1206	1077	5098	104	1206	5103
Grp Volume(v), veh/h	26	14	692	376	27	2324
Grp Sat Flow(s),veh/h/ln	1206	1077	1632	1775	1206	1647
Q Serve(g_s), s	1.7	1.0	5.0	5.0	0.3	10.6
Cycle Q Clear(g_c), s	1.7	1.0	5.0	5.0	0.3	10.6
Prop In Lane	1.00	1.00		0.06	1.00	
Lane Grp Cap(c), veh/h	44	40	2501	1360	376	4202
V/C Ratio(X)	0.59	0.35	0.28	0.28	0.07	0.55
Avail Cap(c_a), veh/h	128	114	2501	1360	440	4202
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	37.6	2.8	2.8	1.7	1.7
Incr Delay (d2), s/veh	11.6	5.3	0.3	0.5	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	2.3	2.6	0.1	4.7
LnGrp Delay(d),s/veh	49.6	42.9	3.0	3.3	1.7	2.2
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	40		1068			2351
Approach Delay, s/veh	47.2		3.1			2.2
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.8	65.8				72.6		7.4
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	51.5				62.5		8.5
Max Q Clear Time (g_c+I1), s	2.3	7.0				12.6		3.7
Green Ext Time (p_c), s	0.0	9.2				33.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	3.0
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	15	14	0	0	6
Future Vol, veh/h	3	15	14	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	100	50	50	100	100	100
Mvmt Flow	3	16	15	0	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	15	0	-	0	37	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	5.1	-	-	-	7.4	7.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	3.1	-	-	-	4.4	4.2
Pot Cap-1 Maneuver	1144	-	-	-	776	839
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	797	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1144	-	-	-	774	839
Mov Cap-2 Maneuver	-	-	-	-	774	-
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1144	-	-	-	839
HCM Lane V/C Ratio	0.003	-	-	-	0.008
HCM Control Delay (s)	8.2	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	94	68	984	177	203	2189
Future Volume (veh/h)	94	68	984	177	203	2189
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1699	1900	1267	1810
Adj Flow Rate, veh/h	102	74	1070	192	221	2379
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	131	117	2538	455	339	3848
Arrive On Green	0.11	0.11	0.64	0.64	0.08	0.78
Sat Flow, veh/h	1206	1077	4109	709	1206	5103
Grp Volume(v), veh/h	102	74	836	426	221	2379
Grp Sat Flow(s),veh/h/ln	1206	1077	1546	1574	1206	1647
Q Serve(g_s), s	6.6	5.3	10.6	10.6	4.5	16.4
Cycle Q Clear(g_c), s	6.6	5.3	10.6	10.6	4.5	16.4
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	131	117	1984	1010	339	3848
V/C Ratio(X)	0.78	0.63	0.42	0.42	0.65	0.62
Avail Cap(c_a), veh/h	234	209	1984	1010	339	3848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	34.1	7.0	7.0	7.0	3.8
Incr Delay (d2), s/veh	9.5	5.5	0.7	1.3	4.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.7	4.6	4.9	3.2	7.5
LnGrp Delay(d),s/veh	44.2	39.7	7.7	8.3	11.4	4.5
LnGrp LOS	D	D	A	A	B	A
Approach Vol, veh/h	176		1262			2600
Approach Delay, s/veh	42.3		7.9			5.1
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	55.8				66.8		13.2
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	44.5				55.5		15.5
Max Q Clear Time (g_c+I1), s	6.5	12.6				18.4		8.6
Green Ext Time (p_c), s	0.0	10.9				28.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↱		↕		↰					↱
Traffic Vol, veh/h	3	16	176	0	15	0	53	0	0	0	0	6
Future Vol, veh/h	3	16	176	0	15	0	53	0	0	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	3	17	191	0	16	0	58	0	0	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	208	0	0	43	-	-	-	-	16
Stage 1	-	-	-	-	-	-	23	-	-	-	-	-
Stage 2	-	-	-	-	-	-	20	-	-	-	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	-	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	-	-	4.2
Pot Cap-1 Maneuver	1143	-	-	1363	-	-	960	0	0	0	0	838
Stage 1	-	-	-	-	-	-	995	0	0	0	0	-
Stage 2	-	-	-	-	-	-	999	0	0	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	1363	-	-	950	-	-	-	-	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	950	-	-	-	-	-
Stage 1	-	-	-	-	-	-	992	-	-	-	-	-
Stage 2	-	-	-	-	-	-	991	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.5	0	9	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	950	1143	-	-	1363	-	-	838
HCM Lane V/C Ratio	0.061	0.003	-	-	-	-	-	0.008
HCM Control Delay (s)	9	8.2	0	8.2	0	-	-	9.3
HCM Lane LOS	A	A	A	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	98	70	1085	138	206	2452
Future Volume (veh/h)	98	70	1085	138	206	2452
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1726	1900	1267	1810
Adj Flow Rate, veh/h	107	76	1179	150	224	2665
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	135	121	2753	350	317	3830
Arrive On Green	0.11	0.11	0.65	0.65	0.07	0.78
Sat Flow, veh/h	1206	1077	4389	538	1206	5103
Grp Volume(v), veh/h	107	76	875	454	224	2665
Grp Sat Flow(s),veh/h/ln	1206	1077	1571	1631	1206	1647
Q Serve(g_s), s	6.9	5.4	10.8	10.8	4.7	21.1
Cycle Q Clear(g_c), s	6.9	5.4	10.8	10.8	4.7	21.1
Prop In Lane	1.00	1.00		0.33	1.00	
Lane Grp Cap(c), veh/h	135	121	2043	1061	317	3830
V/C Ratio(X)	0.79	0.63	0.43	0.43	0.71	0.70
Avail Cap(c_a), veh/h	204	182	2043	1061	317	3830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	33.9	6.8	6.8	8.2	4.4
Incr Delay (d2), s/veh	11.5	5.3	0.7	1.3	7.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.8	4.8	5.2	4.0	9.5
LnGrp Delay(d),s/veh	46.1	39.2	7.4	8.0	15.3	5.5
LnGrp LOS	D	D	A	A	B	A
Approach Vol, veh/h	183		1329			2889
Approach Delay, s/veh	43.2		7.6			6.2
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.0	56.5				66.5		13.5
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5				57.5		13.5
Max Q Clear Time (g_c+I1), s	6.7	12.8				23.1		8.9
Green Ext Time (p_c), s	0.0	12.0				29.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

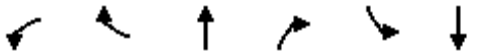
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	18	176	0	17	0	53	0	0	0	0	6
Future Vol, veh/h	3	18	176	0	17	0	53	0	0	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	3	20	191	0	18	0	58	0	0	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	18	0	0	211	0	0	48	-	-	140	-	18
Stage 1	-	-	-	-	-	-	26	-	-	18	-	-
Stage 2	-	-	-	-	-	-	22	-	-	122	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	4.4	-	4.2
Pot Cap-1 Maneuver	1141	-	-	1360	-	-	953	0	0	650	0	836
Stage 1	-	-	-	-	-	-	992	0	0	798	0	-
Stage 2	-	-	-	-	-	-	996	0	0	692	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1141	-	-	1360	-	-	943	-	-	649	-	836
Mov Cap-2 Maneuver	-	-	-	-	-	-	943	-	-	649	-	-
Stage 1	-	-	-	-	-	-	989	-	-	796	-	-
Stage 2	-	-	-	-	-	-	988	-	-	690	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.1	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	943	1141	-	-	1360	-	-	836
HCM Lane V/C Ratio	0.061	0.003	-	-	-	-	-	0.008
HCM Control Delay (s)	9.1	8.2	0	-	0	-	-	9.3
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	136	100	984	241	361	2189
Future Volume (veh/h)	136	100	984	241	361	2189
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1669	1900	1267	1810
Adj Flow Rate, veh/h	148	109	1070	262	392	2379
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	179	160	1742	426	411	3652
Arrive On Green	0.15	0.15	0.48	0.48	0.21	0.74
Sat Flow, veh/h	1206	1077	3804	894	1206	5103
Grp Volume(v), veh/h	148	109	889	443	392	2379
Grp Sat Flow(s),veh/h/ln	1206	1077	1519	1511	1206	1647
Q Serve(g_s), s	9.5	7.7	17.3	17.3	14.6	19.4
Cycle Q Clear(g_c), s	9.5	7.7	17.3	17.3	14.6	19.4
Prop In Lane	1.00	1.00		0.59	1.00	
Lane Grp Cap(c), veh/h	179	160	1448	720	411	3652
V/C Ratio(X)	0.83	0.68	0.61	0.61	0.95	0.65
Avail Cap(c_a), veh/h	249	222	1448	720	411	3652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	32.3	15.5	15.5	16.4	5.2
Incr Delay (d2), s/veh	14.8	5.1	2.0	3.9	32.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.5	7.6	7.9	12.1	8.9
LnGrp Delay(d),s/veh	47.9	37.3	17.4	19.4	48.9	6.2
LnGrp LOS	D	D	B	B	D	A
Approach Vol, veh/h	257		1332			2771
Approach Delay, s/veh	43.4		18.1			12.2
Approach LOS	D		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	21.0	42.6				63.6		16.4
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	16.5	33.5				54.5		16.5
Max Q Clear Time (g_c+I1), s	16.6	19.3				21.4		11.5
Green Ext Time (p_c), s	0.0	7.8				25.7		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↱		↕		↰			↰		
Traffic Vol, veh/h	267	16	176	0	15	0	53	0	0	0	0	80
Future Vol, veh/h	267	16	176	0	15	0	53	0	0	0	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	290	17	191	0	16	0	58	0	0	0	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	208	0	0	657	-	-	709	-	16
Stage 1	-	-	-	-	-	-	597	-	-	16	-	-
Stage 2	-	-	-	-	-	-	60	-	-	693	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	4.4	-	4.2
Pot Cap-1 Maneuver	1143	-	-	1363	-	-	378	0	0	248	0	838
Stage 1	-	-	-	-	-	-	490	0	0	801	0	-
Stage 2	-	-	-	-	-	-	951	0	0	309	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	1363	-	-	262	-	-	192	-	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	262	-	-	192	-	-
Stage 1	-	-	-	-	-	-	346	-	-	566	-	-
Stage 2	-	-	-	-	-	-	852	-	-	218	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	0	22.6	9.8
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	262	1143	-	-	1363	-	-	838
HCM Lane V/C Ratio	0.22	0.254	-	-	-	-	-	0.104
HCM Control Delay (s)	22.6	9.2	0	9.2	0	-	-	9.8
HCM Lane LOS	C	A	A	A	A	-	-	A
HCM 95th %tile Q(veh)	0.8	1	-	-	0	-	-	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	140	102	1085	244	364	2452
Future Volume (veh/h)	140	102	1085	244	364	2452
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1678	1900	1267	1810
Adj Flow Rate, veh/h	152	111	1179	265	396	2665
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	181	162	1691	380	417	3643
Arrive On Green	0.15	0.15	0.45	0.45	0.23	0.74
Sat Flow, veh/h	1206	1077	3892	841	1206	5103
Grp Volume(v), veh/h	152	111	962	482	396	2665
Grp Sat Flow(s),veh/h/ln	1206	1077	1527	1529	1206	1647
Q Serve(g_s), s	9.8	7.8	20.2	20.2	16.3	24.6
Cycle Q Clear(g_c), s	9.8	7.8	20.2	20.2	16.3	24.6
Prop In Lane	1.00	1.00		0.55	1.00	
Lane Grp Cap(c), veh/h	181	162	1380	691	417	3643
V/C Ratio(X)	0.84	0.69	0.70	0.70	0.95	0.73
Avail Cap(c_a), veh/h	219	195	1380	691	419	3643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	32.2	17.5	17.5	17.8	6.0
Incr Delay (d2), s/veh	21.1	7.5	2.9	5.8	31.5	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	2.7	9.0	9.5	12.1	11.3
LnGrp Delay(d),s/veh	54.1	39.7	20.5	23.3	49.3	7.3
LnGrp LOS	D	D	C	C	D	A
Approach Vol, veh/h	263		1444			3061
Approach Delay, s/veh	48.1		21.4			12.8
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	22.8	40.7				63.5		16.5
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	18.5	33.5				56.5		14.5
Max Q Clear Time (g_c+I1), s	18.3	22.2				26.6		11.8
Green Ext Time (p_c), s	0.0	7.2				25.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

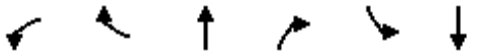
Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	267	18	176	0	17	0	53	0	0	0	0	80
Future Vol, veh/h	267	18	176	0	17	0	53	0	0	0	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	290	20	191	0	18	0	58	0	0	0	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	18	0	0	211	0	0	662	-	-	714	-	18
Stage 1	-	-	-	-	-	-	600	-	-	18	-	-
Stage 2	-	-	-	-	-	-	62	-	-	696	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	4.4	-	4.2
Pot Cap-1 Maneuver	1141	-	-	1360	-	-	375	0	0	246	0	836
Stage 1	-	-	-	-	-	-	488	0	0	798	0	-
Stage 2	-	-	-	-	-	-	949	0	0	308	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1141	-	-	1360	-	-	259	-	-	190	-	836
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	-	-	190	-	-
Stage 1	-	-	-	-	-	-	344	-	-	563	-	-
Stage 2	-	-	-	-	-	-	850	-	-	217	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.3	0	22.8	9.8
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	259	1141	-	-	1360	-	-	836
HCM Lane V/C Ratio	0.222	0.254	-	-	-	-	-	0.104
HCM Control Delay (s)	22.8	9.2	0	-	0	-	-	9.8
HCM Lane LOS	C	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.8	1	-	-	0	-	-	0.3



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	42	1784	28	25	1414
Future Volume (veh/h)	42	42	1784	28	25	1414
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1798	1900	1267	1810
Adj Flow Rate, veh/h	46	46	1939	30	27	1537
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	71	63	3705	57	211	4093
Arrive On Green	0.06	0.06	0.74	0.74	0.03	0.83
Sat Flow, veh/h	1206	1077	5141	77	1206	5103
Grp Volume(v), veh/h	46	46	1274	695	27	1537
Grp Sat Flow(s),veh/h/ln	1206	1077	1636	1784	1206	1647
Q Serve(g_s), s	3.0	3.4	13.0	13.1	0.4	6.2
Cycle Q Clear(g_c), s	3.0	3.4	13.0	13.1	0.4	6.2
Prop In Lane	1.00	1.00		0.04	1.00	
Lane Grp Cap(c), veh/h	71	63	2435	1328	211	4093
V/C Ratio(X)	0.65	0.72	0.52	0.52	0.13	0.38
Avail Cap(c_a), veh/h	128	114	2435	1328	275	4093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	37.0	4.3	4.3	3.4	1.7
Incr Delay (d2), s/veh	9.5	14.5	0.8	1.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.3	5.9	6.7	0.2	2.8
LnGrp Delay(d),s/veh	46.3	51.5	5.1	5.8	3.7	2.0
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	92		1969			1564
Approach Delay, s/veh	48.9		5.3			2.0
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.8	64.0				70.8		9.2
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	51.5				62.5		8.5
Max Q Clear Time (g_c+I1), s	2.4	15.1				8.2		5.4
Green Ext Time (p_c), s	0.0	21.1				18.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

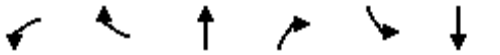
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	26	47	0	0	4
Future Vol, veh/h	5	26	47	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	100	50	50	100	100	100
Mvmt Flow	5	28	51	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	51	0	-	0	89	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	5.1	-	-	-	7.4	7.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	3.1	-	-	-	4.4	4.2
Pot Cap-1 Maneuver	1104	-	-	-	719	797
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	783	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1104	-	-	-	715	797
Mov Cap-2 Maneuver	-	-	-	-	715	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1104	-	-	-	797
HCM Lane V/C Ratio	0.005	-	-	-	0.005
HCM Control Delay (s)	8.3	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	232	234	1806	177	147	1431
Future Volume (veh/h)	232	234	1806	177	147	1431
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1743	1900	1267	1810
Adj Flow Rate, veh/h	252	254	1963	192	160	1555
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	315	281	2156	209	197	3094
Arrive On Green	0.26	0.26	0.49	0.49	0.08	0.63
Sat Flow, veh/h	1206	1077	4568	428	1206	5103
Grp Volume(v), veh/h	252	254	1408	747	160	1555
Grp Sat Flow(s),veh/h/ln	1206	1077	1586	1667	1206	1647
Q Serve(g_s), s	15.6	18.2	32.6	33.2	5.0	13.7
Cycle Q Clear(g_c), s	15.6	18.2	32.6	33.2	5.0	13.7
Prop In Lane	1.00	1.00		0.26	1.00	
Lane Grp Cap(c), veh/h	315	281	1550	815	197	3094
V/C Ratio(X)	0.80	0.90	0.91	0.92	0.81	0.50
Avail Cap(c_a), veh/h	354	316	1550	815	197	3094
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	28.6	18.8	18.9	18.0	8.2
Incr Delay (d2), s/veh	11.1	25.9	9.3	16.8	21.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	7.4	16.1	19.0	3.0	6.4
LnGrp Delay(d),s/veh	38.7	54.4	28.1	35.8	39.9	8.7
LnGrp LOS	D	D	C	D	D	A
Approach Vol, veh/h	506		2155			1715
Approach Delay, s/veh	46.6		30.8			11.6
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	43.6				54.6		25.4
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	36.5				47.5		23.5
Max Q Clear Time (g_c+I1), s	7.0	35.2				15.7		20.2
Green Ext Time (p_c), s	0.0	1.2				15.1		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

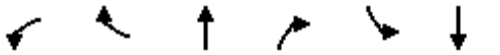
Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	28	77	0	50	0	171	0	0	0	0	4
Future Vol, veh/h	5	28	77	0	50	0	171	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	5	30	84	0	54	0	186	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	114	0	0	96	-	-	-	-	54
Stage 1	-	-	-	-	-	-	40	-	-	-	-	-
Stage 2	-	-	-	-	-	-	56	-	-	-	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	-	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	-	-	4.2
Pot Cap-1 Maneuver	1101	-	-	1475	-	-	887	0	0	0	0	794
Stage 1	-	-	-	-	-	-	975	0	0	0	0	-
Stage 2	-	-	-	-	-	-	956	0	0	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1101	-	-	1475	-	-	879	-	-	-	-	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	879	-	-	-	-	-
Stage 1	-	-	-	-	-	-	970	-	-	-	-	-
Stage 2	-	-	-	-	-	-	951	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	10.2	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	879	1101	-	-	1475	-	-	794
HCM Lane V/C Ratio	0.211	0.005	-	-	-	-	-	0.005
HCM Control Delay (s)	10.2	8.3	0	-	0	-	-	9.6
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	238	240	1993	182	150	1580
Future Volume (veh/h)	238	240	1993	182	150	1580
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1747	1900	1267	1810
Adj Flow Rate, veh/h	259	261	2166	198	163	1717
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	295	351	2251	203	191	3177
Arrive On Green	0.24	0.24	0.51	0.51	0.08	0.64
Sat Flow, veh/h	1206	1077	4610	402	1206	5103
Grp Volume(v), veh/h	259	261	1540	824	163	1717
Grp Sat Flow(s),veh/h/ln	1206	1077	1590	1676	1206	1647
Q Serve(g_s), s	16.5	17.3	37.1	38.3	4.9	15.2
Cycle Q Clear(g_c), s	16.5	17.3	37.1	38.3	4.9	15.2
Prop In Lane	1.00	1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	295	351	1607	847	191	3177
V/C Ratio(X)	0.88	0.74	0.96	0.97	0.85	0.54
Avail Cap(c_a), veh/h	309	363	1607	847	191	3177
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	24.0	19.0	19.2	18.2	7.8
Incr Delay (d2), s/veh	23.1	7.8	14.4	25.0	29.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	5.8	19.3	23.3	3.5	7.0
LnGrp Delay(d),s/veh	52.2	31.8	33.4	44.3	47.7	8.5
LnGrp LOS	D	C	C	D	D	A
Approach Vol, veh/h	520		2364			1880
Approach Delay, s/veh	42.0		37.2			11.9
Approach LOS	D		D			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	44.9				55.9		24.1
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	39.5				50.5		20.5
Max Q Clear Time (g_c+I1), s	6.9	40.3				17.2		19.3
Green Ext Time (p_c), s	0.0	0.0				17.6		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

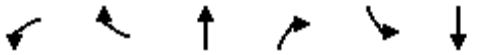
Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	31	77	0	57	0	171	0	0	0	0	4
Future Vol, veh/h	5	31	77	0	57	0	171	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	5	34	84	0	62	0	186	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	118	0	0	108	-	-	148	-	62
Stage 1	-	-	-	-	-	-	44	-	-	62	-	-
Stage 2	-	-	-	-	-	-	64	-	-	86	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	4.4	-	4.2
Pot Cap-1 Maneuver	1092	-	-	1470	-	-	871	0	0	641	0	785
Stage 1	-	-	-	-	-	-	970	0	0	752	0	-
Stage 2	-	-	-	-	-	-	947	0	0	727	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1092	-	-	1470	-	-	863	-	-	638	-	785
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	-	-	638	-	-
Stage 1	-	-	-	-	-	-	965	-	-	748	-	-
Stage 2	-	-	-	-	-	-	942	-	-	723	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	10.3	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	863	1092	-	-	1470	-	-	785
HCM Lane V/C Ratio	0.215	0.005	-	-	-	-	-	0.006
HCM Control Delay (s)	10.3	8.3	0	-	0	-	-	9.6
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	359	362	1806	238	197	1431
Future Volume (veh/h)	359	362	1806	238	197	1431
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1723	1900	1267	1810
Adj Flow Rate, veh/h	390	393	1963	259	214	1555
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	354	316	1922	251	188	2933
Arrive On Green	0.29	0.29	0.46	0.46	0.08	0.59
Sat Flow, veh/h	1206	1077	4369	550	1206	5103
Grp Volume(v), veh/h	390	393	1456	766	214	1555
Grp Sat Flow(s),veh/h/ln	1206	1077	1568	1626	1206	1647
Q Serve(g_s), s	23.5	23.5	36.5	36.5	6.5	14.9
Cycle Q Clear(g_c), s	23.5	23.5	36.5	36.5	6.5	14.9
Prop In Lane	1.00	1.00		0.34	1.00	
Lane Grp Cap(c), veh/h	354	316	1431	742	188	2933
V/C Ratio(X)	1.10	1.24	1.02	1.03	1.14	0.53
Avail Cap(c_a), veh/h	354	316	1431	742	188	2933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	28.2	21.7	21.8	18.4	9.6
Incr Delay (d2), s/veh	77.6	133.1	28.1	41.8	107.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	18.7	21.3	24.9	7.7	6.8
LnGrp Delay(d),s/veh	105.9	161.3	49.9	63.5	126.2	10.3
LnGrp LOS	F	F	F	F	F	B
Approach Vol, veh/h	783		2222			1769
Approach Delay, s/veh	133.7		54.6			24.3
Approach LOS	F		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	41.0				52.0		28.0
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	36.5				47.5		23.5
Max Q Clear Time (g_c+I1), s	8.5	38.5				16.9		25.5
Green Ext Time (p_c), s	0.0	0.0				14.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.4
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	14.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	116	28	77	0	50	0	171	0	0	0	0	259
Future Vol, veh/h	116	28	77	0	50	0	171	0	0	0	0	259
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	126	30	84	0	54	0	186	0	0	0	0	282

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	114	0	0	477	-	-	378	-	54
Stage 1	-	-	-	-	-	-	282	-	-	54	-	-
Stage 2	-	-	-	-	-	-	195	-	-	324	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	4.4	-	4.2
Pot Cap-1 Maneuver	1101	-	-	1475	-	-	498	0	0	436	0	794
Stage 1	-	-	-	-	-	-	725	0	0	760	0	-
Stage 2	-	-	-	-	-	-	807	0	0	523	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1101	-	-	1475	-	-	291	-	-	395	-	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	291	-	-	395	-	-
Stage 1	-	-	-	-	-	-	636	-	-	667	-	-
Stage 2	-	-	-	-	-	-	521	-	-	459	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0	36.9	12
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	291	1101	-	-	1475	-	-	794
HCM Lane V/C Ratio	0.639	0.115	-	-	-	-	-	0.355
HCM Control Delay (s)	36.9	8.7	0	-	0	-	-	12
HCM Lane LOS	E	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	4.1	0.4	-	-	0	-	-	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	365	368	1993	243	200	1580
Future Volume (veh/h)	365	368	1993	243	200	1580
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1267	1729	1900	1267	1810
Adj Flow Rate, veh/h	397	400	2166	264	217	1717
Adj No. of Lanes	1	1	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	50	50	5	5	50	5
Cap, veh/h	339	390	2003	240	188	2995
Arrive On Green	0.28	0.28	0.47	0.47	0.08	0.61
Sat Flow, veh/h	1206	1077	4429	512	1206	5103
Grp Volume(v), veh/h	397	400	1585	845	217	1717
Grp Sat Flow(s),veh/h/ln	1206	1077	1573	1639	1206	1647
Q Serve(g_s), s	22.5	22.5	37.5	37.5	6.5	16.8
Cycle Q Clear(g_c), s	22.5	22.5	37.5	37.5	6.5	16.8
Prop In Lane	1.00	1.00		0.31	1.00	
Lane Grp Cap(c), veh/h	339	390	1475	768	188	2995
V/C Ratio(X)	1.17	1.02	1.07	1.10	1.15	0.57
Avail Cap(c_a), veh/h	339	390	1475	768	188	2995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	25.5	21.3	21.3	18.9	9.5
Incr Delay (d2), s/veh	103.5	52.1	46.3	63.3	113.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.2	14.2	25.7	30.4	10.0	7.7
LnGrp Delay(d),s/veh	132.3	77.6	67.6	84.6	132.2	10.3
LnGrp LOS	F	F	F	F	F	B
Approach Vol, veh/h	797		2430			1934
Approach Delay, s/veh	104.8		73.5			24.0
Approach LOS	F		E			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	42.0				53.0		27.0
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	37.5				48.5		22.5
Max Q Clear Time (g_c+I1), s	8.5	39.5				18.8		24.5
Green Ext Time (p_c), s	0.0	0.0				16.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.8
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	15.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	116	31	77	0	57	0	171	0	0	0	0	259
Future Vol, veh/h	116	31	77	0	57	0	171	0	0	0	0	259
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	0	-	-	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, %	100	50	2	2	50	100	2	2	2	100	2	100
Mvmt Flow	126	34	84	0	62	0	186	0	0	0	0	282

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	118	0	0	489	-	-	390	-	62
Stage 1	-	-	-	-	-	-	286	-	-	62	-	-
Stage 2	-	-	-	-	-	-	203	-	-	328	-	-
Critical Hdwy	5.1	-	-	4.12	-	-	7.12	-	-	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	7.1	-	-
Follow-up Hdwy	3.1	-	-	2.218	-	-	3.518	-	-	4.4	-	4.2
Pot Cap-1 Maneuver	1092	-	-	1470	-	-	489	0	0	428	0	785
Stage 1	-	-	-	-	-	-	721	0	0	752	0	-
Stage 2	-	-	-	-	-	-	799	0	0	520	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1092	-	-	1470	-	-	284	-	-	387	-	785
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	-	-	387	-	-
Stage 1	-	-	-	-	-	-	631	-	-	658	-	-
Stage 2	-	-	-	-	-	-	512	-	-	455	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	0	38.8	12.1
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	284	1092	-	-	1470	-	-	785
HCM Lane V/C Ratio	0.654	0.115	-	-	-	-	-	0.359
HCM Control Delay (s)	38.8	8.7	0	-	0	-	-	12.1
HCM Lane LOS	E	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	4.2	0.4	-	-	0	-	-	1.6

October 25, 2019

Mr. T. Greg Labrie, PE, CFM
Senior Engineer
Adams County
Development Engineering Services
4430 S. Adams Count Parkway
Brighton, CO 80601

RE: Brannan Adams County Pit R Traffic Study
RCU2019-00021
HKS Project No. 190915

Dear Mr. Labrie:

We have reviewed your comments, emailed to Mark West and Greg Barnes on October 23, 2019, concerning the Brannan Sand & Gravel Pit "R" Traffic Impact Study. We offer the following responses:

1. COMMENT: The traffic study is required to be signed and stamped by a professional engineer registered with the state of Colorado.

    a. RESPONSE: A revised report is being submitted that is signed and stamped by a Colorado professional engineer.

2. COMMENT: It is not clear on how the AM and PM peak hour trips were determined. The text indicated it was "observed", does this mean counted? If so, what day did the counts take place? Was it a weekday or weekend? What time were the peak hours count observed?

    a. RESPONSE: P. 4 of the report states that "New existing (2019) peak hour intersection turning movement traffic volume counts were collected for this study at the following intersection on September 24, 2019: Federal Blvd. / 60th Avenue and 60th Avenue / Site Access." P. 6 states "Count data was collected at the site access intersection for the two peak hours."

    Counts were collected at the site driveway over the course of the day on September 24, 2019. Peak hours were determined to be 7:30 – 8:30 AM and 4:30 – 5:30 pm – the same as the counts at the adjacent intersection of Federal/60th. These peak hour times were added to the report. Daily trips were estimated from an average of truck ticket records at the site from mid-April through mid-May.

A revised Traffic Impact Study is being sent with this letter that reflects required changes. If you have any questions or require additional information, please do not hesitate to contact me at: phone: (303) 623-6300; e-mail: chuffine@hkseng.com; or fax: (303) 623-6311.

Respectfully,

Harris Kocher Smith

Charles W. Huffine, PE, PTOE, AICP

Neighborhood Meeting Summary

A neighborhood meeting for RCU2019-00021 was held on October 15, 2019 from 5:00 PM until 7:00 PM. Mailings were sent out to all property owners of record within 1,000 feet. Adams County code requires that mailings be sent to property owners within 500 feet, excluding right of way, however Brannan obliged to Greg Barnes' request to extend the limits to 1,000 feet. Mailings were sent out to 173 recipients. 8 mailings were returned to sender.

The only two attendees were representatives of Brannan, Fred Marvel and Joshua Oliver.

The neighborhood meeting was held at 5880 Lipan St., Denver, CO 80216, which is 2.6 miles from the subject property, since it would be dark at the subject property and the meeting location offered well lit rooms for concerned parties to review plans.

Since no concerned party attended the meeting, there were no issues to address. One party emailed, requesting information regarding our application, which was promptly provided. That correspondence is attached. The materials presented was the draft site plan available at the time.

Open House

Dear Neighbor,

You are invited to an informal open house to learn more about the proposed improvements and modifications to our property located at 2601 W. 60th Ave., Unincorporated Adams County, CO 80221. We are proposing floodplain improvements, landscaping improvements and new site plans for the existing operation. This is an existing operation for which operations are planned to remain substantially unchanged.

Please feel free to drop in at your leisure. There is no formal presentation. Instead, we will have concept plans for you to view and provide feedback. You will also have the opportunity to meet with members of the project team to learn more about our company and our concept.

WHO:	Brannan Sand and Gravel
WHAT:	Neighborhood Open House
WHEN:	Tuesday, October 15, 2019 5:00 – 7:00 P.M.
WHERE:	Brannan Lipan Facility (use east entrance to office building) 5880 Lipan St. Denver, CO 80216

For more information or in the event you are unable to attend but would like to ask questions and/or share your concerns, please do not hesitate to contact:

Joshua Oliver
303-853-5159
joliver@brannan1.com

Brannan Sand and Gravel Pit R Open House Sign In Sheet

October 15, 2019 5:00 PM – 7:00 PM

Name	Email	Telephone Number	Address
Fred Marrel	FJMarrel@brannanwl.com		2500 E Brannan Way Denver, CO 80216
Josh Oliva	joliva@brannanwl.com		2500 E. Brannan Way Denver Co 80216

FILEPATH: P:\190915\ENGINEERING\PRIVATE IMPROVEMENTS\SITE PLAN.DWG LAYOUT: PRIVATE IMPROVEMENT PLAN
1 XREF: e-brannan survey base
PLOTTED: TUE 10/15/19 2:29:35P BY: PAT HERLIHY

811 Know what's below. Call before you dig.

CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

60 0 60 120
SCALE: 1" = 60'

DESIGNED BY: PJH
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL COMPANY, LLC

PIT-R CONDITIONAL USE PERMIT
SITE PLAN

ISSUE DATE: #### PROJECT #: 190915

DATE	REVISION COMMENTS
####	####
####	####
####	####
####	####
####	####
####	####
####	####

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO.
03
03 OF 04

Joshua Oliver

From: Joshua Oliver
Sent: Friday, October 18, 2019 3:39 PM
To: 'Mary Rogers'
Subject: RE: Open House
Attachments: Site Plan w Aerial.pdf

Hi Mary,

I tried to give you a call to talk about our current permitting.

Basically we are going through Adams County Conditional Use Permitting to obtain a time limited CUP to use the site as we have been for the last several decades.

Along with this CUP, we will be installing landscaping, modifying our driveway, installing screening on the fence on the south and east sides of our property, and most likely making floodway improvements.

The floodway improvements may include expanding the floodway on the north of our property to limit the floodplain on the south of our property.

We have no planned increase in our operations or traffic.

I've attached a preliminary site plan for you to review.

Do you have any more questions? If so please feel free to get a hold of me.

Joshua Oliver
Environmental Manager

BRANNAN Companies

joliver@brannan1.com
O: 303.853.5159 |M: 303.472.1736 |F: 303.853.5233

TOP WORK PLACES 2017 THE DENVER POST denverpost.com

From: Mary Rogers [mailto:Mary@rogershvac.com]
Sent: Thursday, October 17, 2019 9:38 AM
To: Joshua Oliver
Subject: [EXTERNAL] Open House

Hi Joshua.

We were unable to attend your open house on Tuesday but wondered if there is any information you can email us regarding the improvements and modifications of the property located at 2601 W. 60th.

Thank you.

Mary Rogers – Project Coordinator

Rogers & Sons, Inc.
6202 Beach St., Denver, CO 80221
HVAC Comfort, Geothermal & Energy Specialist
Email: Mary@rogershvac.com
Web Site: www.rogershvac.com
Phone: (303) 296-2999

Legal Disclaimer: The information comprising this electronic mail may contain privileged and confidential information from Rogers & Sons, Inc. This communication is solely for use by the intended recipient. If you are not the intended recipient, you hereby formally notified that any use, copying or distribution of this communication, in whole or in part is strictly prohibited. If you have received this communication in error, please notify the sender and delete or destroy any copy of this electronic mail. This Communication also does not constitute consent to the use of sender's contact information for direct marketing purposes or for transfers of data to third parties. Thank You.

2500 East Brannan Way
Denver | CO 80229

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THE QUIKRETE COMPANIES INC
C/O KAREN KULP
3490 PIEDMONT RD STE 1300
ATLANTA GA 30305-4811

NIXIE 300 FE 1 0010/10/19
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NOT DELIVERABLE AS ADDRESSED
UNABLE TO FORWARD
BC: 80229702980 *2278-02306-04-39

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80229>7029
30305-481125

2500 East Brannan Way
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10/04/2019
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CURRENT RESIDENT
2880 W 62ND AVE
DENVER CO 80221-2046

NIXIE 808 DC 1 0010/14/19
RETURN TO SENDER
NO SUCH NUMBER
UNABLE TO FORWARD
BC: 80229702900 *1736-00003-04-39

80221-204680
80229>7029

2500 East Brannan Way
Denver | CO 80229

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CO 802
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US POSTAGE
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10/04/2019
032A 0061837940

CURRENT RESIDENT
2400 W 64TH AVE
DENVER CO 80221-2325

N 52

NIXIE 808 DE 1 0010/12/19
RETURN TO SENDER
NO SUCH NUMBER
UNABLE TO FORWARD
BC: 80229702900 *1220-01541-04-39

80221-232500 NSN
80229>7029

2500 East Brannan Way
Denver | CO 80229

DENVER
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10/04/2019
032A 0061837940

CURRENT RESIDENT
5900 FEDERAL BLVD UNIT B
DENVER CO 80221-1872

ABN

NIXIE 808 DE 1 0010/12/19
RETURN TO SENDER
NO SUCH NUMBER
UNABLE TO FORWARD
BC: 80229702900 *1736-00816-04-38

80221-187274 NSN
80229>7029

2500 East Brannan Way
Denver | CO 80229

DENVER
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[illegible]
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Mailed From 80229
10/04/2019
032A 0061837940

CURRENT RESIDENT
5900 FEDERAL BLVD UNIT A
DENVER CO 80221-1872

NIXIE 808 DE 1 0010/12/19
RETURN TO SENDER
NO SUCH NUMBER
UNABLE TO FORWARD
BC: 80229702900 *2278-02211-04-39

NSN
[illegible]

2500 East Brannan Way
Denver | CO 80229

DENVER
CO 802
04 OCT '19
FM 6 L

US POSTAGE
$ 00.50
First-Class
Mailed From 80229
10/04/2019
032A 0061837940

CURRENT RESIDENT
6250 FEDERAL BLVD LOT 23
DENVER CO 80221-2010

NIXIE 808 DE 1 0010/12/19
RETURN TO SENDER
VACANT
UNABLE TO FORWARD
BC: 80229702900 *1320-00991-04-39

VAC
80229702900

2500 East Brannan Way
Denver | CO 80229

US POSTAGE
$ 00.50
First-Class
Mailed From 80229
10/04/2019
032A 0061837940

CURRENT RESIDENT
2400 W 60TH AVE
DENVER CO 80221-1825

NIXIE 808 DE 1 0010/12/19
RETURN TO SENDER
VACANT
UNABLE TO FORWARD
BC: 80229702900 *2020-00917-04-45

VAC
80221-182500
80229570229

2500 East Brannan Way
Denver | CO 80229

DENVER
CO 802
04 OCT '19
FM 51

US POSTAGE
$ 00.50
First-Class
Mailed From 80229
10/04/2019
032A 0061837940

CURRENT RESIDENT
2860 W 60TH AVE
DENVER CO 80221-1818

NIXIE 808 DE 1 0010/12/19
RETURN TO SENDER
VACANT
UNABLE TO FORWARD
BC: 80229702900 *1220-01714-04-39

80221-181 VAC
80229>7029

Pit R Operations Narrative

Brannan's site, located at 2601 W. 60th Ave. Denver, CO 80221, receives recyclable construction materials from construction projects throughout the Denver Metropolitan Area. These materials are processed into various important products that are used for fill material, roadbase and for adding recycled materials into asphalt. The raw materials are stockpiled on the east side of the site, until there is sufficient quantity to process, at which time, mobile crushing and screening equipment is mobilized to the site to process the construction materials into recycled construction materials, which are stockpiled on the west side of the site. Several aggregate products are stored onsite as well.
Trucks enter the site from W. 60th Ave. and proceed to drop off construction materials in the unprocessed stockpile, or drive to the appropriate stockpile to pick up recycled construction materials or aggregates. All trucks cross the scale when picking up recycled construction materials. Over time, the quantity of raw and finished products stored onsite remains in balance.

Pit R Management Plan

1. **Hours of operation**

Hours of operation will be from 6 AM – 6 PM, with allowable night time operations to serve local public projects.

2. **Number of employees**

The typical number of employees (not including offsite drivers) for all site activity is 4.

3. **Screening and Landscaping**

The property shall be screened and landscaped per the attached screening and landscaping plans and Adams County Development Standards.

4. **Parking**

A parking area for employees will be provided.

5. **Traffic Control**

There is one access point to the Site for vehicles entering from West 60th Avenue, located towards the southwest corner of the Site. All site traffic enters at this gated access. An internal recycled asphalt drive lane directs vehicles east. All company and employee vehicles are to remain on the recycled asphalt drive wherever possible and the traffic control plan will be enforced onsite.

6. **Fire access**

Access to the site by the local fire department shall be provided via internal roads and sufficient separation distances.

7. **Permit Requirements from other federal, state and local agencies**

A Colorado Department of Public Health and Environment Air Pollution Control Division has been issued, with construction permit number 03AD0802F
A Colorado Department of Public Health and Environment Water Quality Control Division Non-Extractive Industries Stormwater Discharge Permit has been applied for
A Colorado Department of Public Health and Environment Construction Stormwater Permit will be obtained as necessary

8. **Nuisance Control Plan**

If this site is creating nuisances, the Brannan Sand and Gravel Environmental Manager should be contacted at 303-534-1231.

9. **Appearance**

The site shall maintain a clean, neat, and orderly appearance.

10. **Recordkeeping**

Records shall be kept showing quantities and types of materials on the site, in addition to customer lists and quantity of materials shipped offsite.

11. **Outdoor Storage**

All materials stored outdoors shall be non-hazardous, and only stored in the locations specified on the approved site plan. Conditional use permits for stockpiles in excess of 10 acres or 80% of the lot size and of heights greater than the fence have been applied for as part of this application.

FINAL DRAINAGE REPORT

FOR

BRANNAN SAND & GRAVEL PIT R

2601 WEST 60TH AVENUE, DENVER CO 80221
SITUATED IN THE NORTHEAST CORNER OF SECTION 8, TOWNSHIP 3 SOUTH,
RANGE 68 WEST OF THE 6TH PRINCIPLE MERIDIAN

Prepared:
November 27, 2019

for:

Brannan Sand & Gravel
5880 Lipan St, Denver, CO 80216
(303) 534-1231

Prepared by:

Mark A. West, PE, CFM, LEEDAP
1120 Lincoln Street, Suite 1000
Denver, CO 80203
(303) 623-6300
HKS Project No. 171009

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ENGINEER CERTIFICATION OF DRAINAGE REPORT

I hereby certify that this report and plan for the drainage design of the Brannan Sand and Gravel Pit R development was prepared by me or under my direct supervision in accordance with the provisions of Adams County Storm Drainage Design and Technical Criteria for the owners thereof. I understand that Adams County does not and will not assume liability for drainage facilities designed by others.

Mark A. West, PE, CFM, LEEDAP
State of Colorado License No. 38561
On Behalf of Harris Kocher Smith

DEVELOPER CERTIFICATION OF DRAINAGE FACILITIES

Brannan Sand and Gravel hereby certifies that the drainage facilities for Brannan Sand and Gravel Pit R shall be constructed according to the design presented in this report. I understand that Adams County does not and will not assume liability for the drainage facilities designed and/ or certified by my engineer. I understand that Adams County reviews drainage plans pursuant to Colorado Revised Statues Title 30, Article 28; but cannot, on behalf of Brannan Sand and Gravel, guarantee that final drainage design review will absolve Brannan Sand and Gravel and/ or their successors and/ or assigns the future liability for improper design. I further understand that approval of the Final Plat and/ or Final Development Plan does not imply approval of my engineer's drainage design.

_____
Date

_____
Name of Developer (please print)

_____
Authorized Signature

I. INTRODUCTION

A. SITE LOCATION

The Brannan Sand and Gravel Pit R (Project) property (Site) is located at 2601 West 60th Drive, which is northwest of the intersection of Federal Boulevard and West 60th Drive in unincorporated Adams County. The Site is situated in the northeast quarter of Section 8, Township 3 South, Range 68 West of the Sixth Principal Meridian, County of Adams, State of Colorado. A Vicinity Map is included in Appendix A of this report.

The Site is located amidst unplatted property, with West 60th Drive to the south, an existing Trail to the east, and Clear Creek to the north. Current zoning is I-2 and I-3.

B. PRE- PROJECT SITE CONDITIONS

The Site is comprised of approximately 23.6-acres of land that is currently being used as a construction materials recycling facility. Approximately 0.09 acre (0.03%) of the Site is assumed to be paved with recycled asphalt for the access drive lane.

The Site drains generally to the northeast, with an average slope of approximately 1.2%, directly to Clear Creek. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the site is a former landfill and the underlying soils are sandy in nature, which are classified as Hydrologic Group A (see Appendix A for a report).

The Site lie within a FEMA designated floodway and Zone AE floodplain and floodway for Clear Creek as indicated on the FEMA Flood Insurance Rate Map (FIRM) – Community Panel Nos. 080001C0592H, effective Date March 5, 2007. A FIRMette map is included in Appendix A.

C. FLOOD HAZARD AND DRAINAGE STUDIES RELEVANT TO THE SITE

As mentioned previously, this Site is in a FEMA designated floodplain. Refer to Appendix A for FIRMette map for this area.

No additional information specific to the roadway or Site drainage surrounding the Project has been located.

D. PROPOSED PROJECT DESCRIPTION

Proposed development of the Site consists of:

- Approximately 9000 SF sidewalk along the frontage of 60th Avenue.
- Asphalt entrance improvements at Site access point.
- Landscaping, including:
  - Addition of 5' sidewalk along 60th Avenue.
  - Landscape improvements along the south, west, and north edges.

II. HISTORIC/PRE-PROJECT DRAINAGE SYSTEM

The main portion of the Site currently sheet flows toward Clear Creek off the north edge of the Site. All tributary 100-year flows in the Project area ultimately travel to Clear Creek. Pre-project conditions were analyzed with a single Site basin and one Roadway basin.

Capturing the Roadway Basin, an existing Type C inlet lies at the southeast corner of the Site and was constructed with the Trail and fencing improvements directly east of the Site. This inlet is the existing outfall for Project stormwater drainage along the 60th Avenue frontage. Said inlet is along an existing storm sewer trunk that conveys area flows north to Clear Creek.

No detailed drainage information specific to the Site stormwater drainage has been found. The Site basin's current imperviousness is approximately 2.7%

III. PROPOSED DRAINAGE SYSTEM

A. CRITERIA

Chapter 9 – Adams County Storm Drainage Design and Stormwater Quality Regulations of the *Adams County Development Standards and Regulations*, was the primary criteria used for analysis and design. The *Mile High Flood District (MHFD) / Urban Storm Drainage Criteria Manuals* (USDCM), Volumes 1, 2 and 3, were also used.

B. DESIGN METHODS AND STANDARDS UTILIZED

The Rational Method is appropriate and was used to calculate the peak rate of stormwater runoff.

The design storms analyzed for this Site were the 5- and 100-year events. The rainfall intensities were determined using USDCM Equation 5-3, intensity (I) = $(28.5 \cdot P_1)/(10+T_d)^{0.786}$, based on P_1 = Adams County 1-hour rainfall values for the design storms, T_d.

Hydraflow Express was utilized for hydraulic computations.

C. HYDROLOGIC ANALYSIS

Post-project conditions were analyzed with a single Site basin and one Roadway basin. Pre and Post-project discharge flow calculations yielded the following peak runoff values:

RUNOFF SUMMARY TABLE

BASIN	DESIGN POINT	AREA (AC)	IMPERVIOUS %	Q_5 (CFS)	Q_{100} (CFS)
Road (exist)	1	3.49	12.3	0.39	2.56
Road (prop)	1	3.49	16.9	0.60	3.09
Site (exist)	2	21.18	2.7	0.35	10.18
Site (prop)	2	21.18	2.7	0.35	10.18

Calculations detailing the hydrologic analysis are included within the appendix of this report.

D. PROPOSED STORMWATER IMPROVEMENTS

To comply with the County's MS4 permit, water quality for the proposed impervious areas of the Project is provided within the adjacent landscape areas. The MHFD / UDFCD worksheet UD-BMPv_3.07 Design Procedure Form for Runoff Reduction was used to calculate the Water Quality Capture Volume (WQVC) and WQCV reduction from the runoff traveling from impervious walks and access drives over adjacent pervious areas within the Project. The results of the analysis are that the Sidewalk within the Roadway Basin and the Access Drive within the Site basin are both treated for the WQCV by the surrounding landscape and open space and leave no untreated WQCV. UD-BMP Worksheets are included in Appendix B.

The Road (prop) Basin drains to the existing roadside swale that will be utilized for this Project. Using Hydraflow Express a Channel Report was generated for the 60th Avenue North Roadside Ditch. The results indicate that the swale has a depth of 0.82' with the proposed contributary flow of 3.1cfs (see Appendix C). The velocity of the flow in this channel is 0.4 feet per second which is slow enough not to cause erosion from stormwater flows.

The Road (prop) Basin ultimately drains to the existing Type C inlet at the southeast corner of the Site. A nomograph is included in Appendix C detailing Type C Inlet Capacity for single grate inlets. This nomograph indicates that the existing Type C inlet has capacity for up to 7.5-cfs with 0.5 of head (the depth of ponding). This result indicates that the existing inlet has adequate capacity for the minor increase in flow from the additional sidewalk area.

A Drainage Plan is included in the *Private Improvements Construction Plans* (Plans) for this Project and in Appendix A.

E. STREETS

There are no additional public streets proposed with this Project. Improvements proposed in public right-of-way include extension of asphalt for the Project entrance, a sidewalk along the Project's frontage, and landscaping.

F. OPEN CHANNEL FLOW

No open channels are proposed with this Project. An existing swale along the north side of 60th Avenue directs flow to the existing Type C inlet near the southeast corner of the Site.

G. STORM SEWERS AND CULVERTS

No storm sewers or culverts are proposed with the Project.

H. OPERATIONS AND MAINTENANCE

Operations and maintenance consist of removal of debris and overgrowth in the landscape swale area to maintain clear draining to the existing Type C inlet at the southeast corner of the project.

IV. EROSION AND SEDIMENT CONTROL

A. POTENTIAL EROSION AND SEDIMENTATION

The area of disturbance for the project will be approximately 5-acres including entry and construction laydown areas. Project BMPs are added to the plan to mitigate erosion and sedimentation potential.

B. PROPOSED MITIGATION OF IMPACTS DURING CONSTRUCTION

It is recommended that the Site be cleaned of existing debris and sediment, as much as practical, after BMPs have been placed and prior to construction.

A Stormwater Management / Erosion Control Plan is included in the Construction Plans for this Project.

V. CONCLUSIONS

A. IMPACT OF IMPROVEMENTS

Due to the minor increase in impervious area of the Site for the sidewalk improvements (XX FT), the proposed development increases the stormwater runoff from historic conditions but incorporates runoff reducing practices such as minimizing directly connected impervious areas. Runoff from the Site will continue to be directed to Clear Creek. This Project will have no effect to surface runoff as well as the area's storm drainage system.

B. COMPLIANCE WITH APPLICABLE CRITERIA

The design of the storm drainage facilities is in general compliance with the criteria of Adams County and UDFCD.

VI. REFERENCES

1. *Adams County Development Standards and Regulations, Chapter 9 Storm Drainage Design and Stormwater Quality Regulations*, Adams County, Colorado, December 16, 2014.

2. *Urban Storm Drainage Criteria Manual, Vols. 1 and 2*, Urban Drainage and Flood Control District, January 2016.

3. *Urban Storm Drainage Criteria Manual, Vol. 3*, Urban Drainage and Flood Control District, November 2015.

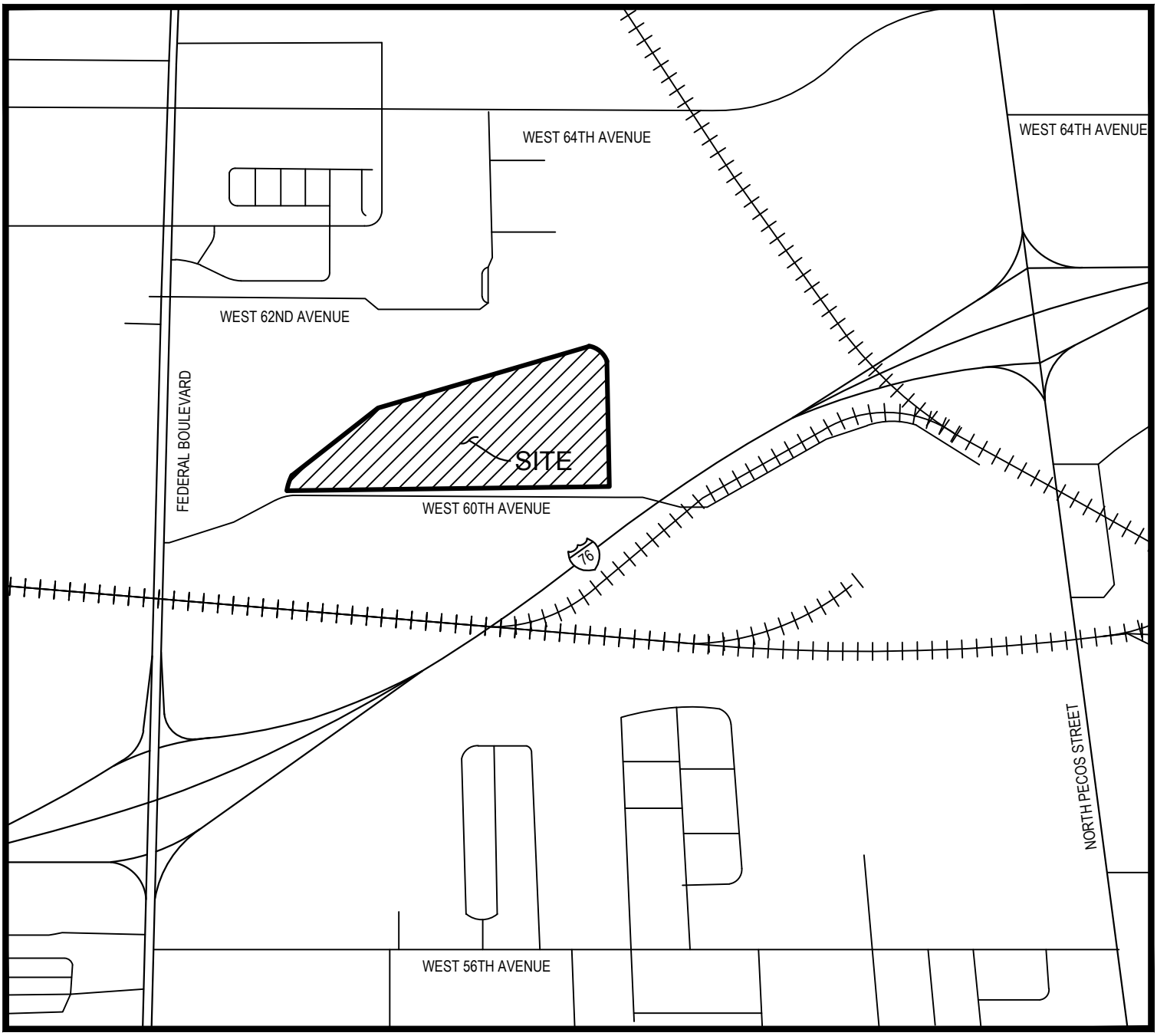
APPENDIX A

Vicinity Map

FEMA Maps

NRCS Soils Report

Drainage Plan

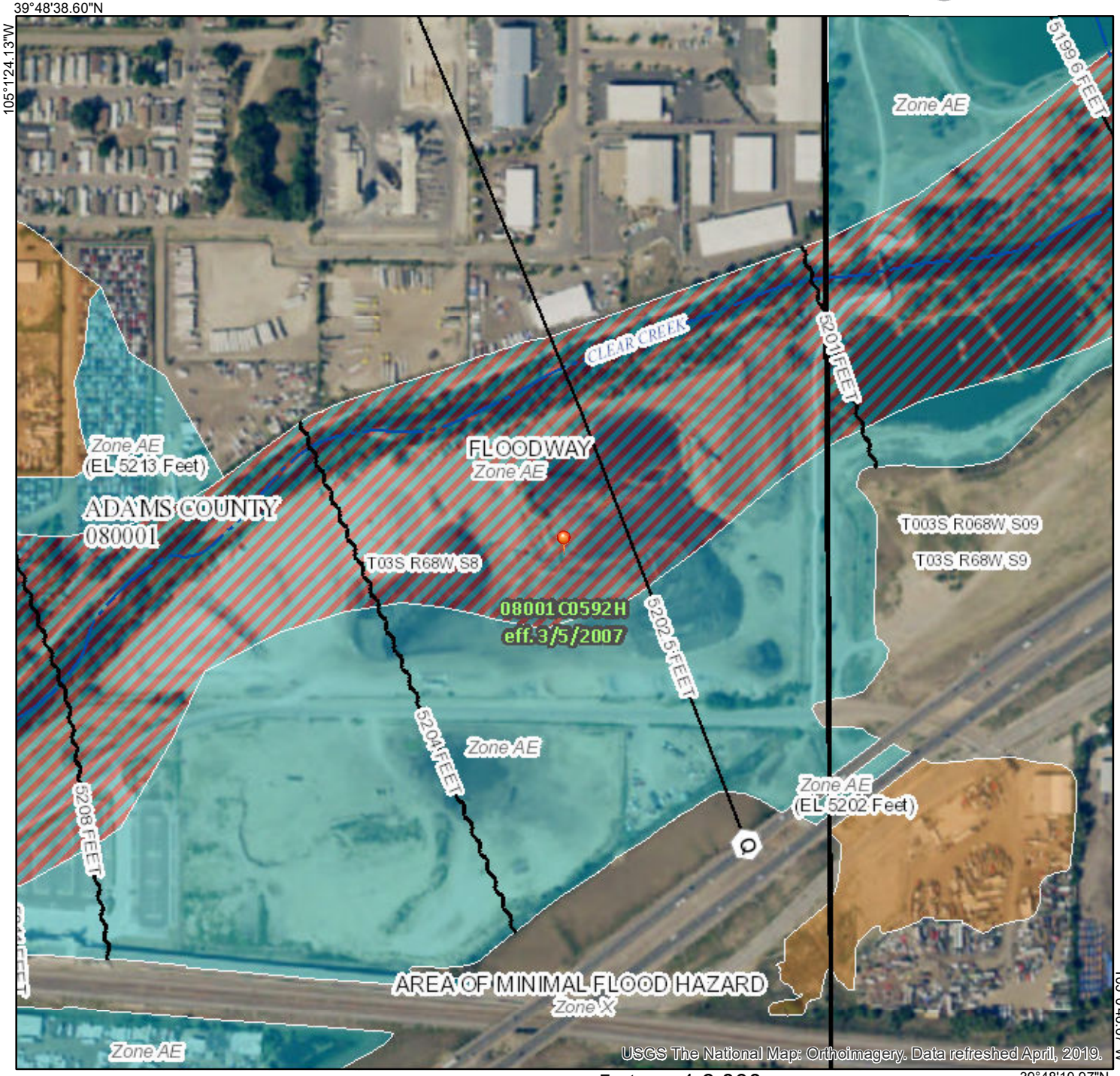


VICINITY MAP

NOT TO SCALE

National Flood Hazard Layer FIRMette

FEMA



0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/26/2019 at 12:07:33 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Adams County Area, Parts of Adams and Denver Counties, Colorado

November 25, 2019

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Map Unit Descriptions..... 9
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MISLD—Gravel pits..... 11
W—Water..... 12

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:3,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Adams County Area, Parts of Adams and Denver Counties, Colorado
Survey Area Data: Version 16, Sep 12, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 20, 2018—Oct 26, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DUM	Dumps	23.3	81.7%
MISLD	Gravel pits	4.3	15.0%
W	Water	0.9	3.3%
Totals for Area of Interest		**28.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Adams County Area, Parts of Adams and Denver Counties, Colorado

DUM—Dumps

Map Unit Setting

National map unit symbol: wm00
Mean annual precipitation: 33 to 42 inches
Mean annual air temperature: 54 to 61 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Dumps: 50 percent
Pits: 50 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dumps

Setting

Parent material: Gravelly mine spoil or earthy fill derived from cherty limestone

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Pits

Properties and qualities

Slope: 0 to 100 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

MISLD—Gravel pits

Map Unit Setting

National map unit symbol: 34w6
Mean annual precipitation: 12 to 14 inches
Farmland classification: Not prime farmland

Map Unit Composition

Gravel pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gravel Pits

Typical profile

H1 - 0 to 6 inches: extremely gravelly sand
H2 - 6 to 60 inches: extremely gravelly sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: A
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: wdnx
Mean annual precipitation: 12 to 14 inches
Farmland classification: Not prime farmland

Map Unit Composition

Water: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Aquolls

Percent of map unit: 10 percent
Landform: Marshes
Hydric soil rating: Yes

Other soils

Percent of map unit: 10 percent
Hydric soil rating: No

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

LEGEND

PROPERTY LINE
EXISTING RIGHT-OF-WAY
EXISTING CONTOURS 5229 5230
PROPOSED CONTOURS 5229 5230
PROPOSED STORM SEWER
PROPOSED DRAINAGE BASIN
LANDSCAPE AREA ADRAIN
SURFACE FLOW DIRECTION
EMERGENCY OVERFLOW LOCATION

BASIN DESIGNATION: OS 1 — 5-YR RATIONAL (POST-PROJECT) C COEFFICIENT
BASIN SIZE IN ACRES: AREA 1.23 AC — MINOR 0.45 / MAJOR 0.67 — 100-YR RATIONAL (POST-PROJECT) C COEFFICIENT
1 BASIN DESIGN POINT

N

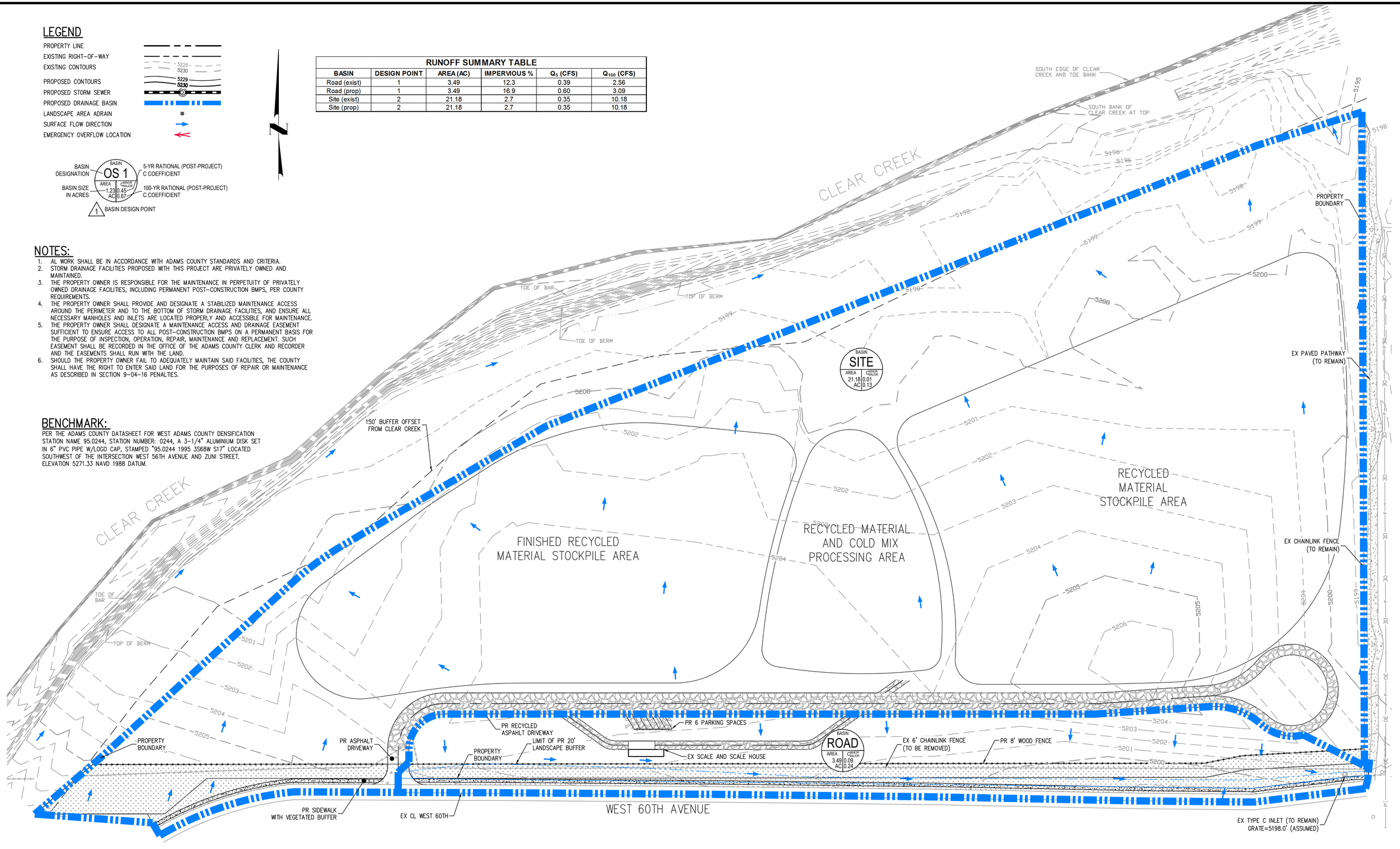
RUNOFF SUMMARY TABLE					
BASIN	DESIGN POINT	AREA (AC)	IMPERVIOUS %	Q_5 (CFS)	Q_{100} (CFS)
Road (exist)	1	3.49	12.3	0.39	2.56
Road (prop)	1	3.49	16.9	0.60	3.09
Site (exist)	2	21.18	2.7	0.35	10.18
Site (prop)	2	21.18	2.7	0.35	10.18

NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH ADAMS COUNTY STANDARDS AND CRITERIA.
2. STORM DRAINAGE FACILITIES PROPOSED WITH THIS PROJECT ARE PRIVATELY OWNED AND MAINTAINED.
3. THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE IN PERPETUITY OF PRIVATELY OWNED DRAINAGE FACILITIES, INCLUDING PERMANENT POST-CONSTRUCTION BMPS, PER COUNTY REQUIREMENTS.
4. THE PROPERTY OWNER SHALL PROVIDE AND DESIGNATE A STABILIZED MAINTENANCE ACCESS AROUND THE PERIMETER AND TO THE BOTTOM OF STORM DRAINAGE FACILITIES, AND ENSURE ALL NECESSARY MANHOLES AND INLETS ARE LOCATED PROPERLY AND ACCESSIBLE FOR MAINTENANCE.
5. THE PROPERTY OWNER SHALL DESIGNATE A MAINTENANCE ACCESS AND DRAINAGE EASEMENT SUFFICIENT TO ENSURE ACCESS TO ALL POST-CONSTRUCTION BMPS ON A PERMANENT BASIS FOR THE PURPOSE OF INSPECTION, OPERATION, REPAIR, MAINTENANCE AND REPLACEMENT. SUCH EASEMENT SHALL BE RECORDED IN THE OFFICE OF THE ADAMS COUNTY CLERK AND RECORDER AND THE EASEMENTS SHALL RUN WITH THE LAND.
6. SHOULD THE PROPERTY OWNER FAIL TO ADEQUATELY MAINTAIN SAID FACILITIES, THE COUNTY SHALL HAVE THE RIGHT TO ENTER SAID LAND FOR THE PURPOSES OF REPAIR OR MAINTENANCE AS DESCRIBED IN SECTION 9-04-16 PENALTIES.

BENCHMARK:

PER THE ADAMS COUNTY DATASHEET FOR WEST ADAMS COUNTY DENSIFICATION STATION NAME 95.0244, STATION NUMBER: 0244, A 3-1/4" ALUMINIUM DISK SET IN 6" PVC PIPE W/LOGO CAP, STAMPED "95.0244 1995 3S68W S17" LOCATED SOUTHWEST OF THE INTERSECTION WEST 56TH AVENUE AND ZUNI STREET. ELEVATION 5271.33 NAVD 1988 DATUM.



811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

60 0 60 120
SCALE: 1" = 60'

DESIGNED BY: DESIGNER
CHECKED BY: REVIEWER
DRAWN BY: DRAFTER

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

BRANNAN SAND AND GRAVEL

CONDITIONAL USE PERMIT - PIT R
DRAINAGE PLAN

ISSUE DATE: 11-25-2019	PROJECT #: 190915
DATE	REVISION COMMENTS

PRELIMINARY NOT FOR CONSTRUCTION

SHEET NO. 4
4 OF 6

FILEPATH: P:\190915\ENGINEERING\DRAINAGE\190915 DRAINAGE PLANDWG, LAYOUT: LAYOUT1
7-XREFs: e-base-byot, e-legal-byot[U], e-topo, e-util-byot, p-base, p-legal, p-topo[U]
PLOTTED: WED 11/27/19 9:00:16A BY: MARK WEST

APPENDIX B

Hydrologic Calculations

IMPERVIOUSNESS AND RUNOFF COEFFICIENTS CALCULATIONS

CALC'D BY:	PH
DATE:	11/26/19
SCS Soil Type:	A

PROJECT: 2601 West 60th Ave.
PROJ. NO: 190915

LAND USE TYPES:
(per UDFCD Table 6-3)

STREETS		ROOFS, DRIVES, WALKS, PARKING		LAWN, CLAY OR SANDY SOIL	
% Imp =	100	% Imp =	90	% Imp =	2

		ACRES							
BASIN	Area (Ac)	STREETS	ROOFS, DRIVES, WALKS, PARKING	LAWN, CLAY OR SANDY SOIL	% Imperv.	Imperv. Acres	C_5=	C_{10}=	C_{100}=
Road (exist)	3.49	0.35	0.02	3.12	12.27	0.43	0.06	0.07	0.21
Road (prop)	3.49	0.35	0.21	2.93	16.94	0.59	0.09	0.10	0.24
Site (exist)	21.18	0.09	0.07	21.02	2.68	0.57	0.01	0.01	0.13
Site (prop)	21.18	0.09	0.07	21.02	2.68	0.57	0.01	0.01	0.13

Table 6-4. Runoff coefficient equations based on NRCS soil group and storm return period

NRCS Soil Group	Storm Return Period						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
A	$C_A = 0.84i^{1.302}$	$C_A = 0.86i^{1.276}$	$C_A = 0.87i^{1.232}$	$C_A = 0.84i^{1.124}$	$C_A = 0.85i+0.025$	$C_A = 0.78i+0.110$	$C_A = 0.65i+0.254$
B	$C_B = 0.84i^{1.169}$	$C_B = 0.86i^{1.088}$	$C_B = 0.81i+0.057$	$C_B = 0.63i+0.249$	$C_B = 0.56i+0.328$	$C_B = 0.47i+0.426$	$C_B = 0.37i+0.536$
C/D	$C_{C/D} = 0.83i^{1.122}$	$C_{C/D} = 0.82i+0.035$	$C_{C/D} = 0.74i+0.132$	$C_{C/D} = 0.56i+0.319$	$C_{C/D} = 0.49i+0.393$	$C_{C/D} = 0.41i+0.484$	$C_{C/D} = 0.32i+0.588$

Where:

i = % imperviousness (expressed as a decimal)

C_A = Runoff coefficient for Natural Resources Conservation Service (NRCS) HSG A soils

C_B = Runoff coefficient for NRCS HSG B soils

$C_{C/D}$ = Runoff coefficient for NRCS HSG C and D soils.

CALCULATED BY: PH
DATE: 11/26/2019
CHECKED BY: MW

STANDARD FORM SF-1
TIME OF CONCENTRATION

JOB NO: 190915
PROJECT: 2601 West 60th Ave.
REVISED:

SUB-BASIN DATA				INITIAL/OVERLAND TIME (T_i)			TRAVEL TIME (T_t)					Tc CHECK (URBANIZED BASINS)				FINAL Tc
DESIGN POINT	BASIN	AREA (AC)	C_5	LENGTH (FT)	SLOPE %	Ti (MIN)	LENGTH (FT)	SLOPE %	K	VELOCITY (FPS)	Tt (MIN)	COMPOS. Tc (MIN)	L_t, TOTAL LENGTH	AVG SLOPE	$T_c = \frac{L_t}{(26-17i)+60(14i+9)\sqrt{S_t}}$	(MIN)
	Road (exist)	3.49	0.06	111	1.04	19.9	1096	0.37	15	0.91	20.1	40.0	1,207	0.43	57.8	40.0
	Road (prop)	3.49	0.09	111	1.04	19.4	1096	0.41	15	0.96	19.0	38.4	1,207	0.47	55.9	38.4
	Site (exist)	21.18	0.01	667	1.02	51.3	667	1.02	10	1.01	11.0	62.4	1,334	1.02	38.2	38.2
	Site (prop)	21.18	0.01	667	1.02	51.3	667	1.02	10	1.01	11.0	62.4	1,334	1.02	38.2	38.2

CALCULATED BY: PH
DATE: 11/26/2019
CHECKED BY: MW

STANDARD FORM SF-2

STORM DRAINAGE SYSTEM DESIGN
(RATIONAL METHOD PROCEDURE)

JOB NO: 190915
PROJECT: 2601 West 60th Ave.
DESIGN STORM: 5 YR

BASIN (s)	DESIGN POINT	DIRECT RUNOFF						TOTAL RUNOFF				STREET		PIPE				TRAVEL TIME			REMARKS
		AREA (AC)	RUNOFF COEFF	T_c (min)	C x A (AC)	I (IN/HR)	Q (CFS)	T_c (MIN)	Σ(C x A) (AC)	I (IN/HR)	Q (CFS)	SLOPE (%)	STREET FLOW (CFS)	DESIGN FLOW (CFS)	SLOPE (%)	PIPE SIZE (IN)	QFULL (CFS)	LENGTH (FT)	VELOCITY (FPS)	T_t (min)	
Road (exist)		3.49	0.06	40.0	0.21	1.87	0.39														North 60th drainage swale, pre-project
Road (prop)		3.49	0.09	38.3	0.31	1.92	0.60														North 60th drainage swale, post-project
Site (exist)		21.18	0.01	38.2	0.18	1.92	0.35														Site, pre-project
Site (prop)		21.18	0.01	38.2	0.18	1.92	0.35														Site, post-project

CALCULATED BY: PH
DATE: 11/26/2019
CHECKED BY: MW

STANDARD FORM SF-2

STORM DRAINAGE SYSTEM DESIGN
(RATIONAL METHOD PROCEDURE)

JOB NO: 190915
PROJECT: 2601 West 60th Ave.
DESIGN STORM: 100 YR

BASIN (s)	DESIGN POINT	DIRECT RUNOFF						TOTAL RUNOFF				STREET		PIPE				TRAVEL TIME			REMARKS
		AREA (AC)	RUNOFF COEFF	T_c (min)	C x A (AC)	I (IN/HR)	Q (CFS)	T_c (MIN)	Σ(C x A) (AC)	I (IN/HR)	Q (CFS)	SLOPE (%)	STREET FLOW (CFS)	DESIGN FLOW (CFS)	SLOPE (%)	PIPE SIZE (IN)	QFULL (CFS)	LENGTH (FT)	VELOCITY (FPS)	T_t (min)	
Road (exist)		3.49	0.21	40.0	0.72	3.57	2.56														North 60th drainage swale, pre-project
Road (prop)		3.49	0.24	38.3	0.84	3.67	3.09														North 60th drainage swale, post-project
Site (exist)		21.18	0.13	38.2	2.77	3.67	10.18														Site, pre-project
Site (prop)		21.18	0.13	38.2	2.77	3.67	10.18														Site, post-project

APPENDIX C

Hydraulic Calculations

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Nov 27 2019

60th Avenue North Roadside Ditch

Triangular

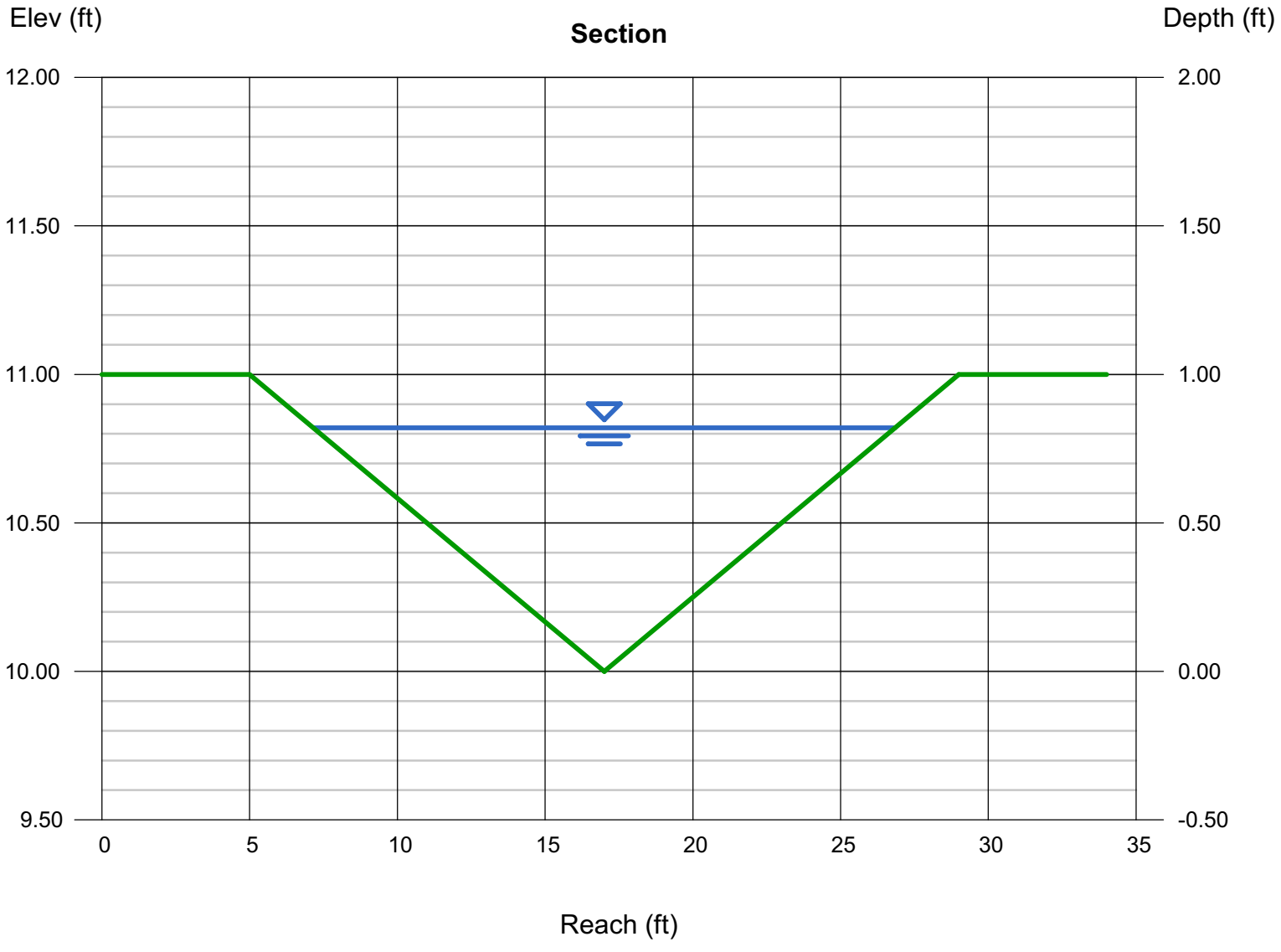
Side Slopes (z:1)	= 12.00, 12.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 10.00
Slope (%)	= 0.50
N-Value	= 0.150

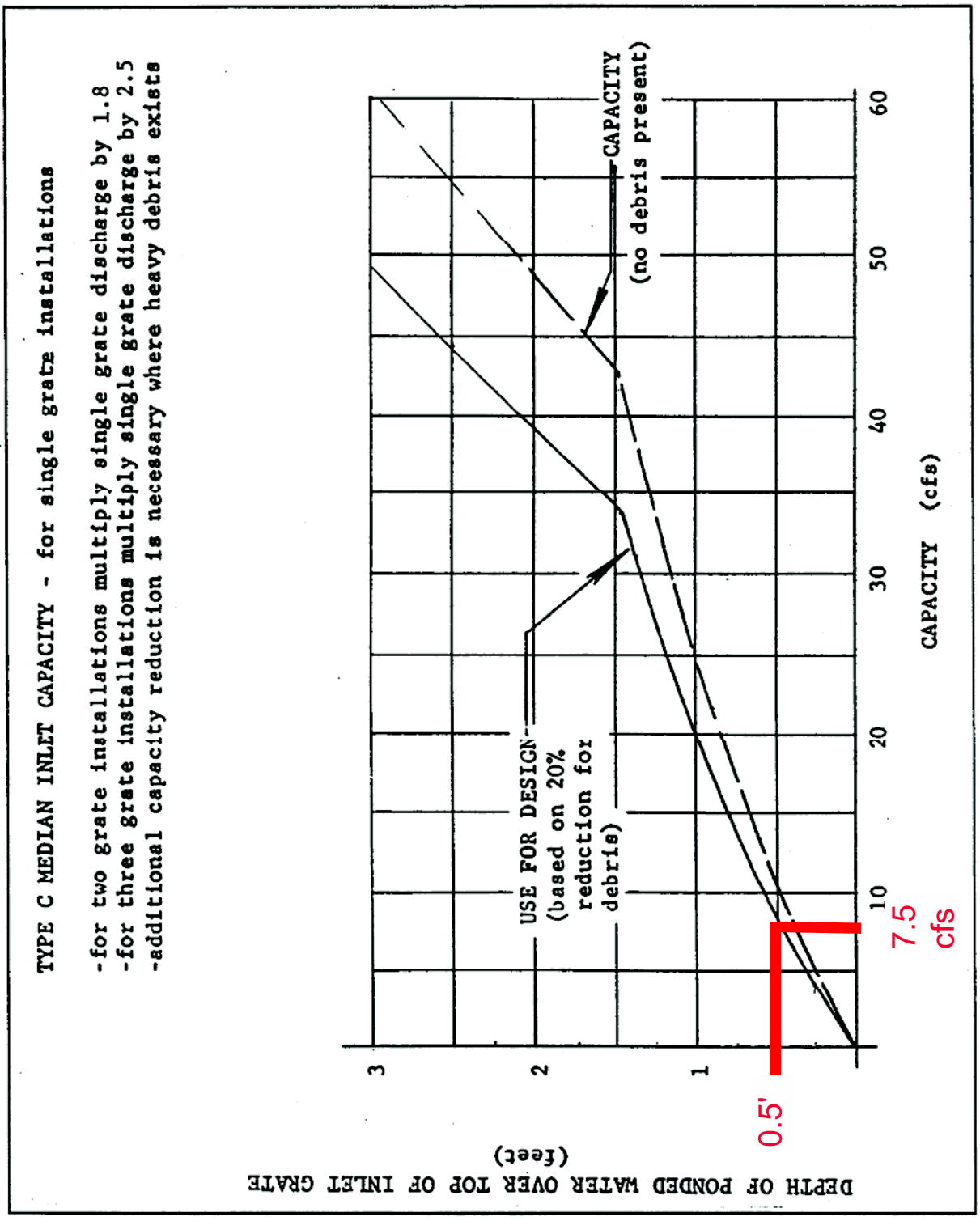
Calculations

Compute by:	Known Q
Known Q (cfs)	= 3.09

Highlighted

Depth (ft)	= 0.82
Q (cfs)	= 3.090
Area (sqft)	= 8.07
Velocity (ft/s)	= 0.38
Wetted Perim (ft)	= 19.75
Crit Depth, Yc (ft)	= 0.34
Top Width (ft)	= 19.68
EGL (ft)	= 0.82




TYPE C MEDIAN INLET CAPACITY - for single grate installations
-for two grate installations multiply single grate discharge by 1.8
-for three grate installations multiply single grate discharge by 2.5
-additional capacity reduction is necessary where heavy debris exists
CAPACITY (no debris present)
USE FOR DESIGN (based on 20% reduction for debris)
CAPACITY (cfs)
DEPTH OF PONDED WATER OVER TOP OF INLET GRATE (feet)
0.5'
7.5 cfs

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer: M.West
Company: HKS
Date: November 26, 2019
Project: Brannan Sand & Gravel
Location: Adams County

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth: 0.60 inches
Depth of Average Runoff Producing Storm, d_6 = 0.43 inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA										
Area ID	Sidewalk	Access Drive										
Downstream Design Point ID	1	2										
Downstream BMP Type	None	None										
DCIA (ft^2)	--	--										
UIA (ft^2)	26,931	51,718										
RPA (ft^2)	17,513	25,000										
SPA (ft^2)	--	--										
HSG A (%)	100%	100%										
HSG B (%)	0%	0%										
HSG C/D (%)	0%	0%										
Average Slope of RPA (ft/ft)	0.083	0.010										
UIA:RPA Interface Width (ft)	8.50	10.00										

CALCULATED RUNOFF RESULTS

Area ID	Sidewalk	Access Drive										
UIA:RPA Area (ft^2)	44,444	76,718										
L / W Ratio	16.00	16.00										
UIA / Area	0.6060	0.6741										
Runoff (in)	0.00	0.00										
Runoff (ft^3)	0	0										
Runoff Reduction (ft^3)	1122	2155										

CALCULATED WQCV RESULTS

Area ID	Sidewalk	Access Drive										
WQCV (ft^3)	1122	2155										
WQCV Reduction (ft^3)	1122	2155										
WQCV Reduction (%)	100%	100%										
Untreated WQCV (ft^3)	0	0										

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	1	2										
DCIA (ft^2)	0	0										
UIA (ft^2)	26,931	51,718										
RPA (ft^2)	17,513	25,000										
SPA (ft^2)	0	0										
Total Area (ft^2)	44,444	76,718										
Total Impervious Area (ft^2)	26,931	51,718										
WQCV (ft^3)	1,122	2,155										
WQCV Reduction (ft^3)	1,122	2,155										
WQCV Reduction (%)	100%	100%										
Untreated WQCV (ft^3)	0	0										

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	121,162
Total Impervious Area (ft^2)	78,649
WQCV (ft^3)	3,277
WQCV Reduction (ft^3)	3,277
WQCV Reduction (%)	100%
Untreated WQCV (ft^3)	0

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

November 27, 2019

Adams County Government Center
Attn: Utility Permit Office
4430 S. Adams County Parkway.
Brighton, CO 80601

Re: Parking Plan–Conditional Use Permit–Brannan Sand and Gravel-Pit R

To Whom it may Concern,

HKS staff has reviewed parking requirements listed in the "Adams County Development Standards and Regulations". According to section 4-12-04-03, there are no specific parking requirements for a sand and gravel pit. While trucks consistently pull in and out of the facility to load and unload, they do not park, per se. The only people that park are employees, of which a maximum of four are anticipated. Six parking spaces are proposed which is enough to handle expected parking demand.

Please let me know if you have any questions or concerns. I can be reached by email at chuffine@hkseng.com, Office Phone: 303.623.6300 ext. 370.

Respectfully Yours,

Chuck Huffine, PE, PTOE

Community & Economic
Development Department
Development Services Division
www.adcogov.org

ADAMS COUNTY
COLORADO

4430 South Adams County Parkway
1st Floor, Suite W2000B
Brighton, CO 80601-8218
PHONE 720.523.6800
FAX 720.523.6967

Re-submittal Form

Case Name/ Number: RCU2019-00021 / Brannan Sand and Gravel

Case Manager: Libby Tart

Resubmitted Items:

X	Response to Review Comments/Updated Hardship Statement
X	Other Conditional Use Applications
X	Site Plan Showing Setbacks, etc.
X	Landscape Plan/Fencing Plan
X	Traffic Impact Study
X	Resource Review/Environmental Assessment/Flammable Gas Study (Tri-County)

Please note the re-submittal review period is 21 days.

The cover letter must include the following information:

- Restate each comment that requires a response
- Provide a response below the comment with a description of the revisions
- Identify any additional changes made to the original document

For County Use Only:

Date Accepted:

Staff (accepting intake):

BOARD OF COUNTY COMMISSIONERS

Eva J. Henry — DISTRICT 1
Charles "Chaz" Tedesco — DISTRICT 2
Emma Pinter — DISTRICT 3
Steve O'Dorisio — DISTRICT 4
Mary Hodge — DISTRICT 5

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

November 27, 2019

Greg Barnes, Case Manager
Adams County – Community & Economic Development Department
4430 South Adams County Parkway
1st Floor, Suite W2000B
Brighton, CO 80601-8218

RE: Project Number: RCU2019-00021
Project Name: Brannan Sand and Gravel Use

Mr. Barnes,

Please find Response in *red italics* to comments received June 25, 2019 regarding the Brannan Sand and Gravel conditional use permit application submittal.

Commenting Division: Development Services, Planning
Name of Reviewer: Libby Tart
Email: Ltart-schoenfelder@adcogov.org / 720-523-6858

PLN4. COMMENTS:

a. Conditional Use Request. It appears the applicant only submitted one Conditional Use request for operations of the recycling facility and not for overheight stockpiling or for outdoor storage in excess of over 80% of the lot coverage. Both the County Attorney and Staff pointed out that the applicant needs to address and apply for each identified Conditional Use under the violation if the applicant wishes to continue the same operations. Please submit any other use requests under another application and pay the appropriate fees for this request when you resubmit.

Response: *Three conditional Use Permit applications and fees are included with this package.*

1. *Recycling Facilities*
2. *Overheight Stockpiling*
3. *Outdoor Storage*

b. Criteria for a Conditional Use. Please provide a response to the criteria for a Conditional Use. This must be provided for each use request since each will be considered and voted upon separately. The following is the criteria:

1. The conditional use is permitted in the applicable zone district.

2. The conditional use is consistent with the purposes of these standards and regulations.

3. The conditional use will comply with the requirements of these standards and regulations including, but not limited to, all applicable performance standards.

4. The conditional use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the County. In making this determination, the Planning Commission and the Board of County Commissioners shall find, at a minimum, that the

conditional use will not result in excessive traffic generation, noise, vibration, dust, glare, heat, smoke, fumes, gas, odors, or inappropriate hours of operation.

5. The conditional use permit has addressed all off-site impacts.

6. The site is suitable for the conditional use including adequate usable space, adequate access, and absence of environmental constraints.

7. The site plan for the proposed conditional use will provide the most convenient and functional use of the lot including the parking scheme, traffic circulation, open space, fencing, screening, landscaping, signage, and lighting.

8. Sewer, water, storm water drainage, fire protection, police protection, and roads are to be available and adequate to serve the needs of the conditional use as designed and proposed.

Response: *The "criteria for conditional use" items have been addressed and are included as a separate attachment, one for each use application. This separate attachment also includes additional "criteria for approval" listed for each application per comments below.*

The applicant also needs to provide a response to the following criteria based on the operations having a recycling and outdoor storage component to them:

RECYCLING FACILITIES, INCLUDING SCRAP TIRE, CRITERIA FOR APPROVAL

1. There is a need for the tire recycling operation for the benefit of Adams County and the proposed end use of the recycled material is a viable marketable material.

2. The request is compatible with the Adams County Comprehensive Plan, complies with the minimum zoning requirements of the zone district in which the Conditional Use Permit is to be granted, and complies with all other applicable requirements of the Adams County Zoning and Subdivision Regulations.

3. The applicant has documented his ability to comply with the health standards and operating procedures as provided by the Colorado Department of Public Health and Environment, Tri-County Health Department, Fire District, and other relevant agencies.

4. The proposed facility will not cause significant traffic congestion or traffic hazards.

5. The request is compatible with the surrounding area.

6. The site will not impact health and welfare of the community based upon specific tire recycling facility design and operating procedures.

Response: *The "criteria for conditional use" items have been addressed and are included as a separate attachment, one for each use application. This separate attachment also includes additional "criteria for approval" listed for each application per comments.*

OUTDOOR STORAGE CRITERIA FOR APPROVAL

1. There is a need for the outdoor storage operation for the benefit of Adams County.

2. The request is compatible with the Adams County Comprehensive Plan, complies with the minimum zoning requirements of the zone district in which the Conditional Use Permit is to be granted, and complies with all other applicable requirements of the Adams County Zoning and Subdivision Regulations.

3. The proposed outdoor storage is clearly subordinate to a principal use of the property.

4. Aesthetic concerns have been taken into consideration during the site design and placement of the outdoor storage.

c. Additional Conditional Use Request. The applicant indicates they "are working with technical experts for the purposes or submitting a Floodplain Use Permit, to include interim uses (stockpiling) and/or permanent fill. This will be submitted at the soonest opportunity. The consolidated land use review is intended to encompass and resolve floodplain uses and other grading issues (i.e. conditional use review of inert fill under ACDSR 2-02-08-02-01)."

Response: The "criteria for conditional use" items have been addressed and are included as a separate attachment, one for each use application. This separate attachment also includes additional "criteria for approval" listed for each application per comments.

While the applicant is implying they will submit more material in conjunction with the current application, staff has yet to see this. There are additional criteria for the inert fill request. **As stated above, all additional requests must be bundled with this application and the appropriate fees paid.** This is based on the continued operations of this business and if the business is requesting the current operations plan for their business, then several Conditional Use permit applications must be bundled together and voted on separately due to specific criteria for each one.

Response: Additional materials in support of the Floodplain Development permit will be prepared and submitted in the first quarter of 2020 per agreement with the County.

See the inert fill criteria below:

INERT FILLS CRITERIA FOR APPROVAL

1. There is a need for the inert filling operation for the benefit of Adams County.

2. The request is compatible with the Adams County Comprehensive Plan, complies with the minimum zoning requirements of the zone district in which the Conditional Use Permit is to be granted, and complies with all other applicable requirements of the Adams County Zoning and Subdivision Regulations.

3. The applicant has documented his ability to comply with the health standards and operating procedures as provided by the Colorado Department of Public Health and Environment, Tri-County Health Department, Fire District, and other relevant agencies.

4. The proposed inert fill will not cause significant traffic congestion or traffic hazards.

5. The request is compatible with the surrounding area.

6. The site will not impact health and welfare of the community based upon specific fill design and operating procedures.

Response: *Comment Noted.*

d. Neighborhood Scoping Meeting Requirement. The applicant did not submit a summary of the neighborhood/scoping meeting that was required, per the original 2018 PRE2018-00127. If this meeting did not occur, please check in with your staff planner and this will be required prior to taking the case to a public hearing. The comments from the PRE stated the following:

A neighborhood/scoping meeting is required prior to submittal of any formal application. A summary of the meeting shall be required in the application. Staff will provide the property owner mailing labels for this meeting. Section 2-01-02 outlines the meeting requirements (time, location, notice, etc.).

Response: *A neighborhood meeting adhering to Section 2-01-02 was held at 5pm on Tuesday October 15, 2019 at the Lipan Asphalt Plant located at 5880 Lipan Street, Denver, CO 80221. The application contains a Neighborhood Meeting Summary with further details.*

e. Clarification on the Proof of Water and Sewer. The applicant states that “the subject property is within the geographic boundary of the Berkeley Water and Sanitation District. At the present time, activities at the site are supplied by imported water. In general, these activities generate low water demand and can be adequately serviced by bottled water (potable water for drinking, etc.) or a water truck (nonpotable water, as well as treated water, for dust control).

The applicant did not clarify where the water is obtained in the paragraph above and did not specify anything to do with sewer. Staff has concerned about general Life Safety and Sewer on the property. The Berkeley Water and Sanitation District should supply a letter indicating they can service this property and whatever measures they require. Please supply this with your next submission.

Response: *The water truck is filled from an offsite facility at 5880 Lipan St., Denver, CO 80216. No sewer service exists to the site. Per included letter from the Berkeley Water and Sanitation District, the property is within the planned service area of the District and the property pays taxes to the District. At this time, physical services do not extend to the site, nor does current operation demand such services.*

f. Existing Conditions and Conditional Use Requirements.

The following are items that must be addressed with this Conditional Use request due to the existing conditions on the site not complying with our current regulations and standards for recycling, outdoor storage, and excessive stockpiling heights. The applicant must demonstrate how they will come into compliance with these requirements on their site plan and these conditions will be added to Staff's recommendation to the Planning Commission and Board of County Commissioners.

• Parking layout. **4-12-02-05 SURFACE OF PARKING AREA**

Except for agricultural areas, off-road parking areas shall be surfaced and maintained with a portland or asphalt concrete surface, or other suitable surface as determined by the Director of Community and Economic Development. Drainage shall be subject to the approval of the Director of Community and Economic Development. The surface of the parking area shall be maintained with the following minimum requirements:

1. Potholes shall not exceed six (6) inches deep or six (6) inches wide.

2. Cracks shall not exceed three (3) inches in width.

3. The parking area shall be maintained in a weed free condition pursuant to Section 4-16.

4. All striping shall be evident at the property line.

Response: *A recycled asphalt parking area has been provided onsite to accommodate regular daily use. The site is not open to the public. Striping and stop bars have been provided to delineate the parking spaces.*

• **Traffic circulation**

• **Parking Space Requirements.** Contractor's yards, building 1 space for each 10,000 sq. ft. of yard materials, storage. At least one ADA parking space is required, per Code. See **4-12-04-05 for the PARKING SPACE SIZE and 4-12-04-07 HANDICAP PARKING SPACES for the requirements for the number of ADA parking spaces.**

Response: *Utilizing the "Contractor's Yard" classification yields a parking space requirement of approximately 80 stalls, when daily use is closer to 6 vehicles maximum. To address the requested parking space requirements, a Transportation Demand Study (Letter) has been prepared with this application to document the actual parking uses.*

• **% of Open space**

Response: *The project includes 89,867sf of proposed landscaping which is 8.8% of the total Lot area.*

• **Fencing.** Per Section 4-**10-01-03-01 *MAXIMUM HEIGHT*** Ninety-six (96) inches, which may include more than four (4) strands of barbed wire forming the top eighteen (18) inches or less of the fence, placed at a forty-five (45) degree angle.

Response: *Fencing has been revised and shown in the plan per comment at an 8' max height.*

• **Screening.** Per Section **4-10-01-03-07 *SCREEN FENCING*** Screen fencing is required to conceal outside storage from all adjacent road right-of-way and lesser intensity uses. Screening is not required between storage yards provided neither yard is visible from an adjacent road right-of-way. This section does not affect required landscaping along street frontages or buffering requirements contained in these regulations. In all practicable cases, the screen fencing addressed below shall be behind the required landscaping. The following criteria shall be followed in determining what form of screening is appropriate to accomplish visual buffering of outside storage yards in the County.

Response: *The revised plan indicates the removal of the existing fence on 60th and replacement (at the buffer width) with 8' solid wood fencing.*

1. If the property is already developed and the proposed storage area is enclosed by an existing chain link fence, which has a useful life remaining, the property owner shall:

a. Install heavy gauge PVC or vinyl inserts.

b. The inserts shall achieve a minimum of ninety (90) percent opacity.

c. Color of the inserts is at the discretion of the applicant.

d. If the existing fence does not have a remaining useful life, the property (or portion of the property affected) defaults to item 2.

Response: *The existing chain link fencing constructed by Adams County along the trail on the east side of the property is to remain.*

2. If the property is not developed and is proposed for outside storage, the property owner shall conceal all outside storage with an eight-foot solid wood fence or masonry wall.

Response: *The revised plan indicates the removal of the existing fence on 60th and replacement (at the buffer width) with 8' solid wood fencing.*

3. If the property is not feasibly screened by a fence from an adjacent road due to topography, the property owner shall:

a. Install fast growing trees (preferably a mix of coniferous and deciduous) appropriately spaced to ensure complete screening at maturity. b. A chain link fence may be constructed at the discretion of the applicant but must be placed to the interior of the screening trees.

Response: *The revised plan indicates the removal of the existing fence on 60th and replacement (at the buffer width) with 8' solid wood fencing. Several existing and proposed trees are also included along 60th.*

4. All fencing shall be maintained and kept in good condition at all times. Condition of fences shall be evaluated through a review of:

a. Structural integrity and being functionally sound under the Uniform Building Code; and

b. Substantially the same condition as originally permitted or constructed.

Response: *Fencing to be maintained for structural integrity and being functionally sound under the Uniform Building Code.*

4-10-01-03-09 *OUTDOOR STORAGE SCREENING* Outdoor storage area screening shall consist of a six (6) foot high minimum screen fence. Outdoor storage shall not be allowed above the height of the fence.

Response: *The revised plan indicates the removal of the existing fence on 60th and replacement (at the buffer width) with 8' solid wood fencing.*

4-10-02-04-07 *RECYCLING FACILITIES, INCLUDING SCRAP TIRE*

1. *Fencing:* An eight (8) foot solid screen fence or security fence, with additional screening material, as approved by the Director of Community and Economic Development, shall enclose all outside storage.

Response: *The revised plan indicates the removal of the existing fence on 60th and replacement (at the buffer width) with 8' solid wood fencing.*

2. *Traffic Control Plan:* Provisions of the traffic control plan shall be followed.

Response: *Comment addressed in site "Operations Narrative and Management Plan" provided with the application under a separate cover.*

3. *Nuisance Control Plan:* Provisions of the nuisance control plan shall be followed.

Response: *Comment addressed in site "Operations Narrative and Management Plan" provided with the application under a separate cover.*

4. *Appearance:* All sites shall maintain a clean, neat, and orderly appearance. Stockpiles of materials may only be placed as specified in the design and operation plan.

Response: *Comment addressed in site "Operations Narrative and Management Plan" provided with the application under a separate cover.*

5. *Recordkeeping:* All operators shall maintain records showing amounts of stockpiled materials both processed and unprocessed that are consistent with the amounts allowed in the Permit. In addition, records containing customer lists and records showing amounts of recycled material shipped off site shall be maintained.

Response: *Comment addressed in site "Operations Narrative and Management Plan" provided with the application under a separate cover.*

6. *Performance Bond:* Prior to commencing operations, and thereafter during the active life of the facility, and for one (1) year after closure, the operator shall post and maintain a performance bond or other approved financial instrument with Adams County. The amount of said bond shall be $3.00 per tire including unprocessed and processed tire amounts allowed in the Permit for tire recycling facilities and the amount necessary to remove materials from recycling facilities for disposal at an appropriate disposal facility. The amount of the bond shall be calculated to include removal, tipping fees, and transportation costs. Should any corrective actions be required by the County in order to protect the health, safety, and general welfare which result from failure of the operator to follow any regulations, standards, or conditions of approval, the performance bond shall be forfeited in an amount sufficient to defray the expense of said actions, including staff time expended by Adams County involved in such corrective actions.

Response: *Comment noted.*

7. *Removal of Trash from Right-of-Way:* Operators shall remove trash, or other waste material, of the type which is brought to the facility, along public rights-of-way within one-half (1/2) mile of the facility.

Response: *Comment addressed in site "Operations Narrative and Management Plan" provided with the application under a separate cover.*

4-10-02-04-09 *OUTDOOR STORAGE IN EXCESS OF 100% OF THE BUILDING AREA*

1. All outdoor storage shall be screened in accordance with the fencing, walls, and screening section (see Section 4-09-01-03) of these standards and regulations.

Response: *The revised plan indicates the removal of the existing fence on 60th and replacement (at the buffer width) with 8' solid wood fencing.*

2. All outdoor storage shall not exceed the height of the fence, unless specifically approved by the board of county commissioners as part of the conditional use permit.

Response: *It is proposed with this plan that the outdoor storage height be 60ft.*

3. All outdoor storage shall consist of non-hazardous materials as determined by the Colorado Department of Public Health and Environment.

Response: *Outdoor storage consist of non-hazardous materials as determined by the Colorado Department of Public Health and Environment.*

4. All outdoor storage shall be designed with adequate access areas and shall meet all requirements of the local fire district.

Response: *The outdoor storage is planned with adequate access and meets the requirements of the local fire district.*

5. Outdoor storage in excess of 100% of the building area within the Industrial-2 and Industrial-3 zone districts shall meet the following:

A. Outdoor storage in excess of eighty percent (80%) of the entire lot or 10 acres shall require an approved conditional use permit.

B. Outdoor storage consisting of less than eighty percent (80%) of the entire lot or 10 acres shall be considered a use-by-right in the I-2 and I-3 zone district and shall meet the above criteria.

Response: *A conditional use permit is applied for outdoor stage in excess of 80% of the Site.*

• **Landscaping.** Technically, as long as the zone districts surrounding the property are I-1 to I-3, the applicant does not need to supply landscape buffers. The following are required though due to the location and the standards for landscaping around the perimeter of a property:

o **4-16-06-02 SPECIAL BUFFERYARDS** Any new development abutting any portion of the designated Adams County Trail System, a public park, or limited access highway, shall be buffered from the trail, or park, using a Type C Bufferyard, unless increased or decreased by the Director of Community and Economic Development.

Response: *Landscaping is proposed in the area adjacent to the existing Trail on the western edge of the property. The proposed landscape areas are 89,867sf which equates to 8.8% of the total site area of 102,4916sf.*

o **4-16-07 REQUIRED LOT LANDSCAPING** In addition to the required bufferyards and bufferyard landscaping, the following site landscaping shall also be required:

1. *Minimum Landscape Area:* All developments shall be required to landscape a minimum of ten (10) percent of the lot area. At least fifty (50) percent of the required landscape area shall be placed so it abuts adjoining public right-of-ways, excluding alleys and drives.

> ***Response:*** *A 20' landscape buffer has been added from the property line into the Site, and landscaping is proposed in the area adjacent to the existing Trail on the western edge of the property. The proposed landscape areas are 89,867sf which equates to 8.8% of the total site area of 102,4916sf. 100% of the landscape coverage adjoins either the public right-of -way or the existing trail.*

2. *Other Requirements:* The placement and design of the landscaping shall be at the discretion of the developer but shall be approved by the Director of Community and Economic Development. In addition to the plantings required under this Section, both Section 4-16-08, Off-Road Parking Lot Landscaping, and Section 4-16-06, Bufferyards, shall apply. The bufferyard landscaping requirements and the required landscaping adjacent to the front of a lot are required even if the 10% lot coverage is exceeded. The landscape area depth is measured from the property line (generally, the right-of-way line) inward. In eastern Adams County, no shrubs shall be required.

> ***Response:*** *A 20' landscape buffer has been added from the property line into the Site, necessitating the removal of existing chain-link fence. A new 8' wood fence is proposed along the 60th frontage.*

3. All applicants not able to meet the landscaping requirements may submit an Appeal from Administrative Decision. *This requires a separate application found on the Land Use Applications page of our website. *

> ***Response:*** *Comment noted.*

4. The applicant/owner of land where landscaping is placed with or without County approval is responsible for relocation, alteration, and/or removal if required by the County at the owner's expense. Any landscaping within the right-of-way will not be used in the assessment of the land as part of right-of-way acquisition.

> ***Response:*** *Comment noted.*

• **Signage. 4-12-02-08 SIGNS** Only signs indicating entrances and exits or designating conditions of use, direction, or identification shall be maintained within a parking area. Signs indicating entrances, exits, or conditions of use shall not exceed four (4) square feet in area, nor shall there be more than one (1) such sign for each entrance or exit.

Reference 4-14-05 GENERAL SIGN REQUIREMENTS for all other sign items.

Response: *No public signage is included with the application.*

• **Lighting. 4-12-02-07 LIGHTING** Any lighting used to illuminate required off-road parking areas shall be arranged in conformance with the following:

1. Lights shall be shielded so directly emitted light shall not shine directly onto surrounding properties;

2. Light shall be arranged so neither direct nor reflect light may create a traffic hazard and no color light(s) may be used in a manner which would be confused with traffic control devises;

3. No blinking, flashing, rotating or otherwise animated lights shall be permitted except temporary holiday lighting displays or safety devices required by federal, state, county or local regulations;

4. The maximum lighting level shall not exceed one (1.0) foot-candle for parking areas and twenty (20.0) foot-candle in loading areas and unloading platforms; and

5. Light levels measured twenty (20) feet beyond the property line shall not exceed one-tenth (0.1) foot-candle as a direct result of on-site lighting.

Response: *No lighting is proposed with this application.*

• Garbage Storage Section **4-10-01-03-08** ***GARBAGE AREA SCREENING*** Garbage area screening shall consist of a six (6) foot high minimum screen fence.

Response: *The site dumpster will be screened by the proposed 8' wood Site fencing along the 60th Avenue frontage.*

• NRCO Standards for Buffers and Activity adjacent to a floodplain/way:

4-11-02-04-02*INDIVIDUAL PROTECTED RESOURCES (WATERBODIES, ONE HUNDRED (100) YEAR FLOODPLAINS, AND WETLANDS)*

1. *Purpose:* This Section establishes the protection standards for waterbodies, floodplains, and wetlands, in order to protect the community as a whole from potential negative impacts caused by development which may affect these resources or their functions. This Section prohibits development on and within a certain distance of these resources.

2. Resource Definitions

a. *Waterbodies:* "Waterbodies" means natural features or manmade reservoirs (i.e., rivers, streams, lakes), which convey or contain surface water.

b. *River:* "River" means the South Platte River and Clear Creek.

c. *Stream:* "Stream" means a body of running water which is neither one of the identified rivers nor an irrigation ditch, and has one (1) or more of the following characteristics:

(1) Has an average annual flow of three (3) cfs or greater including return water from subirrigation practices.

(2) Provides a habitat area for one (1) or more species of fish or waterfowl.

d. *Natural Lake/Pond:* A "natural lake/pond" means a body of standing water, usually at least six (6) feet deep, which was created by natural processes.

e. *Riparian Plant Community:* Riparian plant communities associated with watercourses in Adams County shall be delineated using “Riparian Community Type Classification of Colorado”, USDA Forest Service, 1990.

f. *Floodplains:* "Floodplains" means land adjacent to a watercourse which is subject to flooding as a result of the occurrence of the 100-year or one percent (1%) frequency flood of a watercourse. Flood or flooding means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters and/or the unusual and rapid accumulation or runoff of surface waters from any source.

g. *Wetlands:* "Wetlands" means an area where water is at, near, or above the land surface long enough to support aquatic or hydrophytic vegetation and which has soils indicative of wet conditions. Delineation of wetlands in the County shall be according to the 1989 Army Corps of Engineers definition of jurisdictional wetlands. This definition excludes irrigation induced wetlands.

3. *No Development or Setbacks/Buffers Required:* Due to the risk of severe negative impacts on the community at large, if waterbodies, floodplains, and wetlands are wholly or partially developed, and the necessity to protect the natural functions of these resources, development of these resources is prohibited in most cases and a setback/buffer is required.

4. *Development Prohibited:* Development in waterbodies, the one hundred (100) year floodplain, wetlands, and significant wildlife habitat is prohibited except for essential facilities as specified below.

a. Setback/Buffers Required

(1) *Measurement:* Setbacks shall be measured from the mean high water or top of bank, whichever is farthest from the thread of the watercourse or the center of the waterbody.

b. Setback/Buffer Definitions

(1) *Buffer:* The area protected by the setback is the "buffer" and shall remain free from development, parking, open storage of vehicles, refuse, or any other material. Terrain disturbance for bona fide agricultural purposes, flood protection, wildlife habitat enhancement, or pathways are permitted in the buffer upon receipt of applicable permits.

5. *Minimum Setback/Buffer Required:* All development is required to be setback from specified resources as follows:

a. *Rivers:* Minimum one-hundred-fifty (150) feet.

b. *Streams:* Along streams, development shall be located out of the riparian plant community, but in no case shall the required setback be less than fifty (50) feet nor more than one hundred-fifty (150) feet.

c. *Natural Lake/Pond:* Adjacent to natural lakes or ponds, development shall be located out of the riparian plant community, but in no case shall the required setback be less than fifty (50) feet nor more than one hundred-fifty (150) feet.

d. *Wetlands:* Minimum fifty (50) feet.

Response: *The site adheres to the NRCO buffer/setback requirements. The site contains a River as Clear Creek, but does not contain streams, lakes, or wetlands. A 150' setback from the River as Clear Creek has been shown in the plan.*

Commenting Division: Development Services, Engineering:

Name of Review: Greg Labrie

Email: GLabrie@adcogov.org **/ 720-523-6824**

ENG1: Flood Insurance Rate Map – FIRM Panel # (08001C0592H), Federal Emergency Management Agency, January 20, 2016. According to the above reference, the project site is located within a special flood hazard delineated area; A floodplain use permit will be required. No new structures or stockpiles of material will be allowed in the floodway.

Response: Additional materials in support of the Floodplain Development permit will be prepared and submitted in the first quarter of 2020 per agreement with the County.

ENG2: The project site is in a NRCO district. The project site is disturbing over an acre, therefore, an environmental assessment will be required.

Response: *Per project conversations with City Attorney, Christy Fitch; The site has already been developed; therefore, a Resources Review is not be required. The project will comply with the NRCO buffer/setback requirements in section 4-11-02-04-02. The site contains a River as Clear Creek, but does not contain streams, lakes, or wetlands. A 150' setback from the River as Clear Creek has been added to the plan.*

ENG3: The project site is within the County's MS4 Stormwater Permit area. The applicant shall be responsible to ensure compliance with all Federal, State, and Local water quality construction requirements. In the event that the disturbed area of the site exceeds 1 acre the applicant shall be responsible to prepare the SWMP plan using the Adams County ESC Template, and obtain both a County SWQ Permit and State Permit COR-030000.

Response: *The plan adheres to the County's MS4 requirements and a SWMP is included with the application.*

ENG4: If the applicant is proposing to install over 3,000 square feet of impervious area on the project site. A drainage report and drainage plans in accordance to Chapter 9 of the Adams County Development Review Manual, are required to be completed by a registered professional engineer and submitted to Adams County for review and final approval.

Response: *A drainage report detailing the drainage characteristics of the proposed improvements on 60th is included with the submittal.*

ENG5: The applicant is required to construct roadway improvements adjacent to the proposed site. Roadway improvements will consist of curb, gutter and sidewalk adjacent to the site and, any roadway improvements as required by the approved traffic impact study.

Response: *The traffic study indicates that additional lanes and/or right-of-way is not needed for the current use. Improvements to 60th include the addition of a landscape buffer, sidewalk, and a roadside drainage swale in lieu of curb and gutter per the typical section in the plan.*

ENG6: The applicant is required to complete a traffic impact study signed and stamped by a professional engineer.

Response: *A traffic impact study has been prepared and was submitted to the County on 10/15/19 and have responded to comments and resubmitted on 10/25/19. Study results indicate that additional turn lanes or right-of-way is not needed on 60th.*

Commenting Division: Development Services, Right-of-Way

Name of Review: Marissa Hillje

Email. mhillje@adcogov.org**/ 720-523-6837**

ROW1: W 60th Ave is classified as a local street which requires 30 ft for the ½ street. Currently, there is 30ft of right-of-way for the ½ street. If there is a rational nexus to acquire additional right of way it needs to be equal to the impact of the development. This can be determined by a traffic impact study and/or public improvement requirements for the development.

> ***Response:*** *A traffic impact study has been prepared and was submitted to the County on 10/15/19 and have responded to comments and resubmitted on 10/25/19. Study results indicate that additional turn lanes or right-of-way is not needed on 60th.*

Commenting Division: Environmental Programs Manager

Name of Review: Katie Keefe

Email. KKeefe@adcogov.org/

ENV1: The subject parcel lies within the Natural Resource Conservation Overlay (NRCO) zone district and as such, must be evaluated for impacts to environmentally sensitive areas including floodplains, streams, and wetlands. Per 3-39-03-02, a site-specific Resource Review is required prior to the first development or disturbance of land greater than 1-acre within a NRCO district.

> ***Response:*** *Per project correspondence, the site has already been developed; therefore, a Resources Review is not be required. The project will comply with the NRCO buffer/setback requirements in section 4-11-02-04-02.*

ENV2: A Resource Review following the methodology outlined in Adams County development standards section 4-11-02-03-04 must be completed by a qualified professional detailing necessary mitigation measures for identified impacts. The Resource Review must be submitted for review.

> ***Response:*** *Per project correspondence, the site has already been developed; therefore, a Resources Review is not be required. The project will comply with the NRCO buffer/setback requirements in section 4-11-02-04-02.*

ENV3: Provide details demonstrating inert fill operations meet the design requirements and standards specified in Adams County development standards chapter 2-02-08-07-04. Provide current and projected total amounts of inert fill material for this site.

> ***Response:*** *Comment noted.*

ENV4: Provide an inert fill acceptance and management plan outlining how requirements of 4-10-02-03-02(4) for inert fill operations will be met.

Response: *Comment noted.*

ENV5: Provide traffic plan for inert fill operations per 4-10-02-03-02-(4)(c).

Response: *Comment noted.*

ENV6: Provide nuisance control plan describing control measures for both inert fill operations and cold mix plant operations, per sections 4-10-02-03-02(4)(d) and 4-04-02-01-09, respectively.

Response: *Comment noted.*

Commenting Division: Development Services Building and Safety

Name of Review: Justin Blair

Email: jblair@adcogov.org / 720-523-6843

BSD1- No Comment.

Response: *Comment noted.*

Commenting Division: Parks

Name of Review: Aaron Clark

Email: aclark@adcogov.org

PKS1: It appears the use is encroaching on County-owned property. The documents in the application do not appear to acknowledge this. Parks has quite a bit going on in the are with the trail across the way. Planning suggests having a conversation with Parks about this and ensuring you invite your planner to the meeting as well

Response: *Comment noted.*

Comments from Referral Agencies:

Commenting Division: CDPHE

Good morning, Libby:

The Colorado Department of Public Health and Environment (CDPHE) appreciates the opportunity to comment on this proposal. Please note that the following requirements are not intended to be an exhaustive list and it is ultimately the responsibility of the applicant to comply with all applicable rules and regulations.

Health Equity and Environmental Justice

CDPHE is dedicated to promoting and protecting the health and environment for all Coloradans. As part of those efforts, we strive to achieve health equity and environmental justice. HEALTH EQUITY is when all people, regardless of who they are or what they believe, have the opportunity to attain their full health potential. Achieving health equity requires valuing all people equally with focused and ongoing efforts to address inequalities.

ENVIRONMENTAL JUSTICE is the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income. With respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Based on our analysis of the proposed project area, CDPHE notes that this project has potential to impact nearby vulnerable minority and low-income communities. The project is in close proximity to certain communities to whom the health and environmental impacts of the project could be more detrimental and disproportionate.

It is our strong recommendation that your organization consider the potential for disproportionate environmental and health impacts on specific communities within the project scope and if so, take action to mitigate and minimize those impacts. This includes interfacing directly with the communities in the project area to better understand community perspectives on the project and get feedback on how it may impact them during development and construction as well as after completion. We have included some general resources for your reference.

If you have any questions concerning health equity and environmental justice, please contact:

Office of Health Equity
cdphe_healthequity@state.co.us
303-692-2087 P 303.692.3662 | F 303.691.7702
4300 Cherry Creek Drive South, Denver, CO 80246
sean.hackett@state.co.us | www.colorado.gov/cdphe

Response: *A neighborhood meeting adhering to Section 2-01-02 was held at 5pm on Tuesday October 15, 2019 at the Lipan Asphalt Plant located at 5880 Lipan Street, Denver, CO 80221.*

Commenting Division: CDOT

I have reviewed the referral for Brannan Sand and Gravel regarding a CUP to allow mining, sand and gravel processing and retail sales on a parcel located at 2601 West 60th Avenue and have no objections. If any grading will alter the drainage to the Interstate 76 Right-of-way, we would want to review a drainage study, but it appears Brannan will just be continuing with existing use.

Thank you for the opportunity to review this referral.

Steve Loeffler
Permits Unit- Region 1
P 303.757.9891 | F 303.757.9886
2829 W. Howard Pl. 2nd Floor, Denver, CO 80204
steven.loeffler@state.co.us | www.codot.gov | www.cotrip.org

Response: *Drainage patterns to I-76 are not altered with the project.*

Commenting Division: Tri-County Health

Thank you for the opportunity to review and comment on the Conditional Use Permit for to allow mining, sand, and gravel processing and retail sales on a 23.57-acre parcel in an Industrial-2 and Industrial-3 zone district located at 2601 West 60th Avenue. Tri-County Health Department (TCHD) staff has reviewed the application for compliance with applicable environmental and public health regulations and principles of healthy community design. After reviewing the application, TCHD the following comments.

Historic Landfill within Adams County Overlay District

In accordance with Section 3-35-03 of Chapter 3-Zone District Regulation, Flammable Gas Overlay (FGO), the subject property will need to comply with all applicable sections of the Adams County Flammable Gas Overlay (FGO). Flammable gas from decomposing organic matter in landfills may travel up to 1,000 feet from the source. Because construction is planned within 1,000 feet of Landfill No. AD-004, AD-008, AD-027, AD-028, AD-030, AD-145, AD-175, and AD-234 we recommend the following:

1. A flammable gas investigation should be conducted to determine if flammable gas (methane) is present in the subsurface soils at the property. The plan for the investigation shall be submitted to TCHD for review and approval.

2. TCHD will review the results of the investigation. If the investigation indicates that methane is not present at or above 20% of the lower explosive limit for methane (1% by volume in air) in the soils, no further action is required.

3. In lieu of the investigation, the scale house shall be elevated off of the ground surface to prevent the intrusion of flammable gasses into the occupied space. If "skirting" is provided around the scale house, it shall be vented to prevent the accumulation of flammable gasses. Alternatively, an active flammable gas control system shall be designed and constructed to protect the scale house from flammable gas.

4. Health and safety practices shall be followed during mining activities to protect site workers. A copy of TCHD guidelines for safe construction in areas on or near former landfills has been attached.

Questions regarding this may be directed to Sheila Lynch at 720-200-1571 or slynch@tchd.org.

Response: *Per project correspondence, Tri-County Health issued a "No Further Action" letter.*

Stormwater Impacts on Nearby Waterway

The gravel mining facility requires a permit for sand and gravel mining through the Colorado Department of Public Health and Environment (CDPHE). According to CDPHE records (https://www.colorado.gov/pacific/cdphe/clean-water-active-permits) there is no existing active permit on file. The general permit requirements can be found at file://srvfsvm01/data/EH/82_Land%20use/Land%20Use%20Case%20Reviews/Reference%20Materials/Plan%20Review%20for%20Land%20Use/Douglas%20County/4966_Sand%20and%20Gravel%20Mining-General%20Permit%20Form-WQ_PER_COG500000_Permit.pdf

Response: *Sand and Gravel mining are not performed onsite.*

Fugitive Dust

Exposure to air pollution is associated with a number of health problems including asthma, lung cancer, and heart disease. The Colorado Department of Public Health and Environment Air Pollution Control Division (APCD) regulates air emissions, including fugitive dust. Control measures may be necessary to minimize the amount of fugitive emissions from site activities including haul roads, stockpiles, and erosion. The applicant shall contact the APCD, at (303) 692-3100 for more information. Additional information is available at https://www.colorado.gov/pacific/cdphe/categories/services-and-information/environment/air-quality/business-and-industry.

Response: F*ugitive dust control is performed in compliance with CDPHE APCD requirements and Colorado APCD Construction Permit number 03AD0802F.*

Wastewater – Portable Toilets for Onsite Personnel

Sewage has the potential to carry illness-causing organisms and must be handled properly to avoid spreading disease. Information regarding wastewater is not included in the application. If the applicant is proposing to use portable restrooms for onsite personnel, TCHD has no objection to the use of portable toilets, provided the units are properly cleaned and maintained. TCHD recommends that a portable hand sink be provided near the restrooms.

Please feel free to contact me at 720-200-1585 or aheinrich@tchd.org if you have any questions.

Sincerely,
Annemarie Heinrich, MPH/MURP
Land Use and Built Environment Specialist
cc: Sheila Lynch, Monte Deatrich, Michael Weakley, TCHD

Response: *Comment noted.*

Commenting Division: Xcel Energy

Public Service Company of Colorado's Right-of-Way & Permits Referral Desk has reviewed the conditional use permit plans for Brannan Sand and Gravel Use and has no apparent conflict.

Should the project require any new electric service or modification to existing facilities, the property owner/developer/contractor must complete the application process via xcelenergy.com/InstallAndConnect. The Builder's Call Line is 1-800-628-2121.

As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center by dialing 811 to have all utilities located prior to any construction.

Donna George

Right-of-Way and Permits

PSCo/Xcel Energy

Office: 303-571-3306, Email: donna.george@xcelenergy.com

Response: *Comment noted, UNC at 811 will be contacted prior to any construction activities.*