



**BOARDWALK PIPELINE PROJECT – PHASE II
IVEY WEST TO BRIGHTON WEST INTERCONNECT**

**APPLICATION FOR CONDITIONAL USE PERMIT
(WITH SUBMITTAL ITEMS FROM THE AREAS AND ACTIVITIES OF STATE INTEREST CHECKLIST)**

Submitted By:



Zion Engineering LLC
8100 E. Maplewood Avenue, Suite 100
Greenwood Village, CO 80111

On Behalf of:

DISCOVERY DJ SERVICES, LLC
7859 Walnut Hill Lane, Suite 335
Dallas, TX

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1.0 INTRODUCTION

Discovery DJ Services, LLC (“Discovery”), a joint venture between Discovery Midstream Partners, LLC and Ward Petroleum, is submitting this application for a Conditional Use Permit (“CUP”) to Adams County. The application is in accordance with the requirements outlined under Chapter 2 of the Adams County Development Standards and Regulations (“ACDSR”), the Conditional Use Permit Checklist, and additional requested submittal criteria for the Adams County Areas and Activities of State Interest (“AASI”) Checklist, as outlined during the conceptual review process and subsequent Adams County Conceptual Review Meeting Summary Letter dated January 30, 2017 and further discussed under Section 2.4 below.

This CUP application is organized in an order to address the requirements of: i) the CUP Checklist; ii) the specific additional applicable items from the AASI Checklist; and iii) additional information as outlined in the conceptual review summary letter and requested by the Adams County Planning Department (“ACPD”) staff.

1.1 PURPOSE & NEED

Advances in oil and gas extraction technologies have resulted in a substantial increase in oil and gas activities across Colorado, more specifically in the Denver-Julesburg Basin and Wattenberg Fields within Adams County. Crude oil and produced liquids (condensate, produced water) from these wells impede the natural gas production and require transportation to oil and gas facilities for processing, treatment, and either disposal or sale to regional markets. Currently, these liquids are transported by truck from the individual well pads resulting in an increasing number of trucks per day on the local city and county roads and state highways, along with increased dust, noise and emissions. Similarly, the existing natural gas infrastructure in and around these wells is at capacity or doesn’t exist within areas of new drilling. Centralized collection of these liquids and more efficient means of transportation are required to reduce the local truck traffic and facilitate transportation of the natural gas and produced liquids to locations where they can be processed and sold to meet market demands. The Project is a necessary component of the overall system to gather, process, transport and market the area’s natural resources in the Niobrara and Codell formations.

1.2 PROJECT OVERVIEW

The Boardwalk Pipeline Project, approved on December 13, 2016 by the Adams County Board of County Commissioners (RCU2016-000016) incorporates a 29.4-mile natural gas gathering trunkline originating at a Central Delivery Point (“CDP”) Facility located in the SW of Section 24, Township 1S, Range 67W to Discovery’s Ft. Lupton Gas Plant located approximately 4.3-miles northwest of Lochbuie, Colorado in the SW of Section 11, Township 1N, Range 66W where the gas is processed to recover natural gas liquids (“NGL”)’s for delivery to a nearby third party via a 0.6-mile NGL sales pipeline. Conversely, pipeline quality natural gas off the Ft. Lupton Gas Plant is delivered to a custody meter station for sales to a third-party transmission pipeline via a 1.4-mile residue gas sales pipeline. Similarly, the project and associated Conditional Use Permit incorporated a 12-mile crude oil pipeline from the CDP Facility to the intersection of E. 120th Ave. and Powhatan Rd., where the crude oil pipeline was capped and inerted in place for future crude oil gathering.

Phase II of the Boardwalk Pipeline Project expands the original system west of the CDP facility with a new 20-inch or smaller natural gas pipeline, 8-inch crude oil pipeline, and 12-inch or smaller water pipeline from Ward Petroleum’s Ivey West Well Pad located in the SWSE of Section 11, Township 1S, Range 68W traveling east approximately 2-miles along the E-470 multi-use easement before crossing E-470 to the north, to a new pipeline pigging facility (Brighton West Interconnect Facility) located approximately 2,100 feet west from the intersection of E. 152nd Avenue and Holly Street on the north side of E-470. From the new Brighton West Interconnect Facility, the Phase II pipelines will continue north approximately 4.5 miles before crossing into Weld County near the intersection of E. 168th Ave. / County Road 2 and Quebec Street and continuing north by north east approximately 14.7 miles to the Discovery Ft. Lupton Gas Plant. Similarly, the Phase II pipelines will extend back south across E-470 and east along the E-470 multi-use easement approximately 3.9 miles where they will cross E-470 just west of Riverdale Road and tie-in with the Ward Petroleum Riverdale gathering laterals delivering natural gas, crude oil, and produced water to the Central Delivery Point Facility.

This Conditional Use Permit application incorporates the portion of the Phase II Boardwalk Pipeline Project proposed 20-inch natural gas pipeline, 8-inch crude oil pipeline, and 12-inch or smaller water pipeline from Ward Petroleum’s Ivey West Well Pad to the Brighton West Interconnect Facility located approximately 2,100 feet west from the intersection of E. 152nd Avenue and Holly Street.

Separate Conditional Use Permit applications (PRE2017-0001) have been submitted to Adams County for the portions of the Phase II Boardwalk Pipeline Project between the new Brighton West Interconnect Facility and the Riverdale Tie-In and the Brighton West Interconnect Facility to the Adams County Line.

Sections 1.2.1 through 1.2.4 below further describe the key infrastructure located within Adams County and associated with this Conditional Use Permit application:

1.2.1 NATURAL GAS GATHERING TRUNKLINE

The natural gas gathering trunkline will be constructed of 20.0” O.D. x 0.406” W.T., X-65, API 5L, PSL2, or comparable line pipe coated with 12-14 mils of fusion bond epoxy for external corrosion protection. All state highway, railroad, city and county road, and other crossings will be crossed by either bore or horizontal directional drill (“HDD”), thereby avoiding surface impacts in these areas, utilizing 20.0” O.D. x 0.500” W.T., X-65, API 5L, PSL2 or comparable crossing pipe coated with 12-14 mils of fusion bond epoxy plus an additional 24-30 mils of abrasive resistant overlay coating.

Although the natural gas gathering trunkline does not fall under the jurisdiction of the Code of Federal Regulations (“CFR”), the trunkline will be designed and constructed to meet the requirements of CFR Part 192 “Transportation of Natural and Other Gas by Pipeline”. In general, under the CFR, Discovery is required to design and construct the trunkline for a Class 1 area classification utilizing a 0.72 design safety factor at a depth of 36 inches below ground level. As an additional recognized safety precaution, Discovery will design the pipeline for the more stringent Class 2 area classification utilizing a 0.60 design safety factor and all state highway, railroad, city and county road, and other crossing locations to a Class 3 area classification utilizing a 0.50 design safety factor. In addition, Discovery will bury the trunkline a minimum of 48 inches below grade. At all county and / or public roads crossings, the trunkline will be buried a minimum of 60 inches below the bottom of the bar ditches (USDOT and Adams County Public Works Department requires a minimum of 36 inches). Discovery will comply with all requirements for construction in the E-470 corridor as well as the Nationwide Plan 12 permit for all waterway crossings, which allow waterways to be open cut or bored depending upon the condition of the waterway.

The natural gas trunkline will be designed to facilitate routine pigging operations to remove liquids that drop out in the pipeline as well as in-line inspection of the line as required in accordance with the CFR.

Table 1.2.1 below summarizes key information for the natural gas trunkline.

**Table 1.2.1
Boardwalk Pipeline Project – Phase II
Ivey West to Brighton West Interconnect
Natural Gas Gathering Trunkline**

Pipeline Diameter	20.0” O.D.
Pipeline Wall Thickness	0.406” W.T. (Line Pipe) / 0.500” W.T. (Crossing Pipe)
Yield Strength	65,000 psi (X-52 Grade)
Total Pipeline Length	2.10 miles
Total Pipeline Length in Adams County	2.10 miles
Total Parcel / Tract Count In Adams County	Four (4)

1.2.2 CRUDE OIL PIPELINE

The crude oil pipeline will be constructed of 8.625” O.D. x 0.219” W.T., X-52, API 5L, PSL2 or comparable line pipe coated with 12-14 mils of fusion bond epoxy for external corrosion protection. All state highway, railroad, city and county road, and other crossings will be crossed either by bore or horizontal directional drill (“HDD”), thereby avoiding surface impacts in these areas, utilizing 8.625” O.D. x 0.322” W.T., X-52, API 5L, PSL2 or comparable crossing pipe coated with 12-14 mils of fusion bond epoxy plus an additional 24-30 mils of abrasive resistant overlay coating.

Although the crude oil pipeline does not fall under the jurisdiction of the Code of Federal Regulations (“CFR”), the pipeline will be designed and constructed to meet the requirements of CFR Part 195 “Transportation of Hazardous Liquids by Pipeline”. In general, under the CFR, Discovery is required to construct the pipeline at a depth of 36 inches below ground level. As an additional recognized safety precaution, Discovery will bury the pipeline a minimum of 48 inches below grade. At all county and / or public roads crossings, the pipeline will be buried a minimum of 60 inches below the bottom of the bar ditches (USDOT and Adams County Public Works Department requires a minimum of 36 inches). Discovery will comply with all requirements for construction in the E-470 corridor as well as the Nationwide Plan 12 permit for all waterway crossings, which allow waterways to be open cut or bored depending upon the condition of the waterway.

The crude oil pipeline will be designed to facilitate routine pigging operations as well as in-line inspection of the line as required in accordance with the CFR.

Table 1.2.2 below summarizes key information for the crude oil pipeline.

**Table 1.2.2
Boardwalk Pipeline Project – Phase II
Ivey West to Brighton West Interconnect
Crude Oil Pipeline**

Pipeline Diameter	8.625” O.D.
Pipeline Wall Thickness	0.219” W.T. (Line Pipe) / 0.322” W.T. (Crossing Pipe)
Yield Strength	52,000 psi (X-52 Grade)
Total Pipeline Length	2.10 miles
Total Pipeline Length in Adams County	2.10 miles
Total Parcel / Tract Count In Adams County	Four (4)

1.2.3 WATER PIPELINE

The water pipeline will be constructed of 12-Inch or smaller, DR11, PE4710, ASTM F2619 / API 5LE or comparable high density polyethylene pipe. All state highway, railroad, city and county road and other crossings will be crossed either by bore or horizontal directional drill (“HDD”), thereby avoiding surface impacts in these areas, utilizing 16.0” O.D. x 0.375” W.T., X-52, API 5L, PSL2 or comparable casing pipe.

The water pipeline will be buried a minimum for 48 inches below grade, with all county and / or public roads crossings, buried a minimum of 60 inches below the bottom of the bar ditches (USDOT and Adams County Public Works Department requires a minimum of 36 inches). Discovery will comply with all requirements for construction in the E-470 corridor as well as the Nationwide Plan 12 permit for all waterway crossings, which allow waterways to be open cut or bored depending upon the condition of the waterway.

Table 1.2.3 at below summarizes key information for the water pipeline.

**Table 1.2.3
Boardwalk Pipeline Project – Phase II
Ivey West to Brighton West Interconnect
Water Pipeline**

Pipeline Diameter	12.75” O.D. or Smaller
DR Rating	DR-11
Total Pipeline Length	2.10 miles
Total Pipeline Length in Adams County	2.10 miles
Total Parcel / Tract Count In Adams County	Four (4)

1.2.4 BRIGHTON WEST INTERCONNECT FACILITY

The Brighton West Interconnect Facility will incorporate the following:

- ❖ One (1) 20-Inch or Smaller, ANSI 600 Natural Gas Pig Receiver;
- ❖ One (1) 16-Inch, ANSI 600 Natural Gas Pig Receiver;
- ❖ One (1) 20-Inch or Smaller, ANSI 600 Natural Gas Pig Launcher; and
- ❖ One (1) 8-Inch, ANSI 600 Crude Oil Pig Receiver

Figure 1.2.4 below provide a picture of a typical pig launcher / pig receiver.



Figure 1.2.4 – Typical Pipeline Pig Receiver / Pig Launcher

The overall site will be approximately 75 ft. wide x 100 ft. long, or approximately 0.17-acres and will be enclosed with a 6-foot tall chain link fence plus 2-foot outrigger and 3-strands of barbed wire. Ingress / egress to the site will require a permit for a new access road off Riverdale Road.

1.3 DESCRIPTION OF PREFERRED PIPELINE ROUTE

The proposed route for the natural gas gathering trunkline, crude oil pipeline, and water pipeline crosses unincorporated Adams County, the City of Thornton, and within the E-470 multi-use easement. As outlined in Figure 1.3 on the following page, the pipelines originate at Ward Petroleum's proposed Ivey West Well Pad located in the SWSE of Section 11, Township 1S, Range 68W, approximately 1,500 ft. northwest of the intersection of E. 152nd Avenue and York Street and travels approximately 2.10 miles in a general southeast direction along the E-470 corridor before turning north and crossing the E-470 tollway to the proposed Brighton West Interconnect Facility.

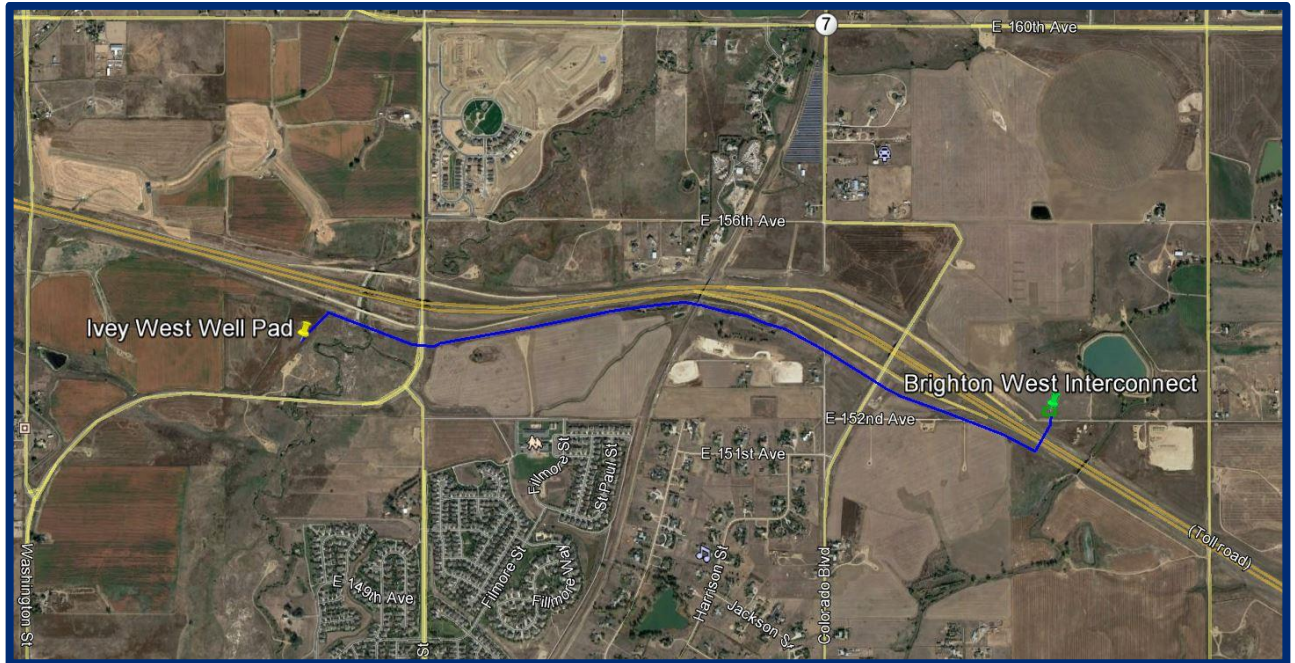


Figure 1.3 – Preferred Pipeline Route, Adams County

A total of seven (7) crossings, including irrigation canals, city and county roads, railroads, and the E-470 tollway are required. Table 1.3a below summarizes the Adams County road crossings required along the preferred route, while Table 1.3b below outlines a list of other featured crossings along the preferred route.

Table 1.3a Boardwalk Pipeline Project – Phase II Ivey West to Brighton West Interconnect Adams County Road Crossings			
No.	Road Crossed	Nearest Intersection	Distance to Intersection (Approximate)
1	E. 152 nd Avenue	E. 152 nd Avenue & York Street	600 ft.
2	Colorado Blvd.	E. 152 nd Avenue & Colorado Blvd.	550 ft.
3	E. 152 nd Avenue	E. 152 nd Avenue & Holly Street	2,100 ft.

Table 1.3b Boardwalk Pipeline Project Brighton West Interconnect to Riverdale Tie-In Adams County Non-County Road & Other Feature Crossings			
No.	Type of Feature	Name / Description	Approximate Crossing Location
1	Creek / Stream	Big Dry Creek	39°58'30.87"N, 104°57'43.63"W
2	Ditch / Canal	German Ditch	39°58'34.32"N, 104°56'47.82"W
3	Railroad	Union Pacific Railroad	39°58'34.05"N, 104°56'46.72"W
4	Toll Road	E-470 Tollway	39°58'16.14"N, 104°55'47.92"W

1.4 CONSTRUCTION SCHEDULE

Construction activities in Adams County will commence upon approval of the CUP and completion of all conditions of approval. A final schedule for construction of the project has not yet been developed, however it is anticipated that pipeline construction within the County will take approximately 3-4 months, all weather permitting.

Following completion of all design activities and selection of the applicable construction contractor, Discovery will provide the ACDP a detailed schedule prior to starting construction.

2.0 CONDITIONAL USE PERMIT APPLICATION

This CUP Application has been developed in accordance with the ACDSR, Chapter 2, Section 02-02-08 “Conditional Use Permit” and the submittal criteria identified within the CUP Checklist.

2.1 CONDITIONAL USE PERMIT CHECKLIST

A completed copy of the CUP Checklist has been provided under Exhibit A “Conditional Use Permit Checklist”.

2.2 DEVELOPMENT APPLICATION (SUBMITTAL ITEM A)

A completed Development Application has been provided under Exhibit B “Development Application”.

2.3 APPLICATION FEE

A check for the required \$1,000.00 application fee, made payable to Adams County, is submitted and accompanies this Application.

2.4 CONCEPTUAL REVIEW MEETING SUMMARY LETTER (SUBMITTAL ITEM B)

A Conceptual Review Meeting was held on January 30, 2017 between Discovery and staff members from Adams County Planning Department (“ACPD”) and the Public Works Department, to begin the application process and discuss Discovery’s preferred route for the natural gas, crude oil, and water pipelines through Adams County, along with the planned location and scope for the Brighton West Interconnect Facilities. A summary of the County’s preliminary comments along with a breakdown of the applicable submittal requirements for the CUP and additional items that would need to be addressed was provided by the ACPD in a letter dated January 30, 2015, and attached hereto under Exhibit C “Conceptual Review Meeting Summary Letter”. A Conceptual Review Meeting waiver is not applicable.

2.5 NEIGHBORHOOD MEETING SUMMARY

In accordance with ACDSR Section 2-01-02 and following discussions with the ACDP, Discovery conducted a neighborhood meeting to inform owners of property located within 500 feet of the pipeline permanent right-of-way (“ROW”) in Adams County as well as within 500 feet of the Brighton West Interconnect Facility. The neighborhood meeting was held on Monday, March 6, 2017 at the Hampton Inn, located at 992 Platte River Blvd, Brighton, Colorado 80601 from 6:00 p.m. to 7:30 p.m.. Notification of the neighborhood meeting was mailed to all identified property owners within 500 feet of the Project in accordance with ACDSR Section 2-01-02-03-01. A copy of the notification brochure, along with the required summary of the neighborhood meeting is provided under Exhibit D “Neighborhood Meeting Notification & Summary”.

Following completion of the neighborhood meeting, the preferred pipeline route and location of the Brighton West Interconnect Facilities were revised to accommodate landowner feedback, to relocate the pipeline into the E-470 multi-use easement which also required moving the Brighton West Interconnect facilities to the north side of E-470 as outlined within this CUP application. These route modifications resulted in five (5) additional landowners falling within the 500 foot notification buffer outlined under ACDSR Section 2-01-02. Pursuant to discussions with the County, Discovery is in the process of contacting each of the five (5) landowners that were not included in the original neighborhood meeting notification mailing to review the project scope with them and address any questions they may have. Copies of these additional landowner meeting questions and answers will be provided to the County under separate cover.

2.6 CERTIFICATE OF TAXES PAID

Prior to the commencement of construction activities, Discovery will secure the applicable easements and executed right-of-way agreements along with an agreement for the Brighton West Interconnect Facility site, owned by Brighton Farms LLC (parcel no. 0157107400001) authorizing the right to construct, operate, and maintain the 20-inch or smaller natural gas, 8-inch crude oil, and 12-inch or smaller water pipelines and associated above ground facilities on all privately and publicly owned properties. As lease and easement holder, Discovery is not responsible for the payment of property taxes on the parcels, as that remains the responsibility of the landowner.

2.7 PROOF OF OWNERSHIP

As described above in Section 2.6, Discovery is not the fee simple estate owner of the properties on which the respective pipelines or the Brighton West Interconnect Facility will be located within Adams County. Discovery will acquire the applicable easements and right-of-way agreements from the owners prior to the commencement of construction activities, and will record these executed agreements with the Adams County Clerk and Recorder's office ahead of initiating construction activities. A list of the parcels within Adams County on which the respective pipelines and the Brighton West Interconnect Facility will be located are provided under Exhibit E "Adams County Line List".

2.8 PROOF OF WATER AND SEWER SERVICE

The operation of the respective pipelines, nor the Brighton West Interconnect Facility, will not require water or sanitary services. During the construction phase of the project, water for hydrostatic testing and dust mitigation will be obtained from permitted sources in accordance with the applicable state and local requirements and will be supplied using water trucks. Temporary sanitary facilities will be provided for construction workers at staging areas along the right-of-way.

2.9 TRI-COUNTY HEALTH DEPARTMENT

A check payable to the Tri-County Health Department in the amount of \$245.00 is being submitted with this Application.

2.10 SOIL AND GEOLOGIC REPORTS

Reference Section 3.9.8.

2.11 PRELIMINARY DRAINAGE STUDY

As outlined above, the Brighton West Interconnect Facility will be located on approximately a 75 ft. wide x 100 ft. long site located on property owned by Brighton Farms LLC (parcel no. 0157107400001), on an easement secured in advance by Discovery. Overall, final elevations of the site will remain consistent with existing elevations. The imperviousness of the area will increase by approximately 0.06% due to the graveling of the site.

A detailed drainage study is not required for the respective pipeline easements as no permanent grade alterations or changes to existing drainage patterns are expected. The areas disturbed during construction of the pipelines will be returned to their original state after installation. There are no impervious surfaces or aboveground structures that are proposed as part of the respective pipelines, with the exception of the Brighton West Interconnect Facility, where the above-ground appurtenances are minimal and will not affect overall drainage patterns or imperviousness of the site due to the small footprint of the above-ground piping.

Prior to construction, a Stormwater Management Plan ("SWMP") will be prepared and submitted to the County, as part of the Erosion and Sediment Control Plan to address water quality issues associate with construction activities. Stormwater Best Management Practices ("BMP")'s will be installed for the construction phase in accordance with the requirements of the SWMP.

2.12 PROOF OF UTILITY SERVICES

Power for the respective pipelines, nor the Brighton West Interconnect Facility, will not be required. Therefore, a proof of utility services will not be required and has intentionally been omitted from this CUP application.

2.13 CERTIFIED BOUNDARY SURVEY OR IMPROVEMENT LOCATION CERTIFICATE (ILC)

Route maps for the respective pipelines are provided under Exhibit F “Boardwalk Phase II – Ivey West to BWI Route Maps”. Upon completion of construction, Discovery will provide Adams County with a legal description of the respective pipeline route(s) in a format that is consistent with the U.S. Department of Transportation National Pipeline Mapping System requirements.

2.14 PROJECT SITE PLAN

A site plan for the Brighton West Interconnect Facility has been provided under Exhibit G.1 “Brighton West Interconnect Facility Site Plan”.

Pipeline alignment sheets, showing the planned location and route of the natural gas, crude oil, and water pipelines, permanent easement, and temporary construction and temporary staging areas located within Adams County are provided under Exhibit G.2 “Pipeline Alignment Sheets”.

Typical ditch details along the pipeline are provided under Exhibit G.3 “Typical Pipeline Ditch Details”.

2.15 EXPLANATION OF THE REQUEST AND GENERAL PROJECT OVERVIEW (SUBMITTAL ITEM C)

2.15.1 EXPLANATION OF THE REQUEST

Pursuant to ACDSR Section 2-02-08-01, a conditional use is a land use which is “presumptively compatible with other land uses authorized or permitted in a zone district, but, if approved....require more discretionary review than those uses which are authorized.” Through consultation with the ACDP, Discovery has been advised that the respective pipelines and proposed Brighton West Interconnect Facility use is classified as Industrial Use and subject to the County Conditional Use Permit review and approval. Consequently, Discovery respectfully submits this Application for the Board of County Commissioners’ review and approval pursuant to regulations, procedures, and criteria for approval under the ACDSR Section 2-02-08.

2.15.2 CRITERIA FOR APPROVAL

Section 2-02-08-06 of the ACDSR outlines eight (8) criteria for reviewing and approving a proposed conditional use. The following breaks down these criteria and the respective answers thereto for the Project:

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

Response: As outlined under section 2.15.1 above, Discovery has been advised by the ACDP, that the proposed facilities and respective pipeline use is classified as industrial use within the affected Zone Districts A-3 and subject to the County Conditional Use Permit review and approval pursuant to ACDSR Section 3-07-01.

2. Criteria: The conditional use is consistent with the purpose of these standards and regulations.

Response: Adams County’s land use and development standards and regulations are intended to control and assist in the orderly, efficient, and integrated development of the County, in order to preserve the health, safety, and welfare of the public. These standards and regulations designate, regulate, and restrict the location of the buildings, structures, and use of land for residence, commercial, industry, agriculture or other purposes; regulate and limit the height, number of stories, and size of buildings and other structures hereafter erected or altered; establish minimum requirements for off-street parking, loading, and unloading; regulate and determine the minimum size of lots; regulate and determine the size of yards, landscaping, and other open spaces; regulate the density of population and buildings; and for said purposes, divide the unincorporated area of the County into zone districts of such number, shape and are as may be deemed best suited to carry out these standards and regulations and to provide for their administration, enforcement, and amendment.

Discovery's proposed facilities and underground pipelines will remain consistent with the purposes as detailed in the Adams County Standards and Regulations. In addition, all required and applicable permits for the Project have been, or will be, obtained from the appropriate Federal, State and Local agencies prior to construction, including:

- ❖ U.S. Fish and Wildlife Service (USFWS)
- ❖ U.S. Army Corp of Engineers (USACE)
- ❖ National Resource Conservation Service (NRCS)
- ❖ Colorado Department of Health and Public Environment (CDPHE)
- ❖ State Historic Preservation Office (SHPO)
- ❖ Colorado Parks & Wildlife (CPW)

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

Response: Discovery will comply with the applicable performance standards as outlined under the Adams County Standards and Regulations, Chapter 4 – Design Requirements and Performance Standards. In addition, Discovery will maintain the facilities and respective pipelines to ensure compliance with federal regulatory requirements (49 CFR Parts 192 and 195, Clean Water Act, etc.).

4. Criteria: 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.

Response: Of all facility locations and route alternatives considered, the preferred pipeline route has minimal impact on existing residential uses and is compatible, complimentary and consistent with agricultural uses (99 percent of the route). In addition:

- ❖ The Discovery route is consistent with the character of the area (i.e. agricultural use co-existing with underground pipelines and utilities).
- ❖ Where applicable, anticipated future development will be accommodated in the easement agreement terms negotiated with landowners.
- ❖ Of all facility locations and route alternatives considered, the preferred route has the fewest number of directly impacted businesses and landowners, the least impact on existing traffic patterns, and takes the most direct route practicable.
- ❖ Of all route alternatives considered, the preferred route has the least environmental impact.
- ❖ The Brighton West Interconnect Facility site will be fenced and secured.
- ❖ Noise during construction has been partially mitigated by the location of the route, avoiding dense population areas, following unpopulated and rural populated areas and the resulting noise will not be uncharacteristic of typical noise from day-to-day activities in the area.
- ❖ Dust during construction will be controlled by a dust mitigation plan and will not be uncharacteristic of the dust created by existing agricultural activities.

- ❖ Pipelines are the safest mode of transportation for natural gas, crude oil, and produced liquids, and will in-fact reduce the amount of truck traffic in the area, and are not detrimental to the health, safety, and welfare of inhabitants of the area.
- ❖ During construction, an increase in traffic will be required and impacts will be mitigated with established traffic plans.
- ❖ No other off-site impacts to air or water quality are expected as a result of construction or operation of the facilities or respective pipelines.
- ❖ The respective pipelines will be located underground and their operation would not produce any nuisances to inconveniences to nearby landowners or the general public. The pipelines will not change the existing character or harmony of the current adjacent land uses, reduce the economic viability of any parcels, nor threaten the health, safety, or welfare of the general public.

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

Response: Discovery has made every effort to address any potential off-site impacts due to the construction or operation of the facilities and respective pipelines both in the planning and development of facility locations as well as the preferred pipeline route, the design of the project, and the following operation of the respective facilities and pipelines.

- ❖ During construction, an increase in traffic will be required and impacts will be mitigated with established traffic plans.
- ❖ As previously noted, dust and noise during construction will be mitigated and will not be uncharacteristic of the dust and noise in the area due to ongoing daily activities.
- ❖ No other off-site impacts to air or water quality are expected as a result of construction or operation of the facilities or respective pipelines.

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

Response: Discovery will obtain sufficient land, right-of-way, and temporary working space along with strategically placed access for ingress / egress to the pipeline right-of-way to safely construct the pipelines and associated facilities.

- ❖ Approximately 1.9-miles of the 2.1 mile route will be located within the E-470 utility corridor, and is compatible with the designated service of the corridor.
- ❖ The predominant agricultural land use near the facilities and along the pipeline route is both compatible and complimentary with the required facility and pipeline operations.

7. Criteria: 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.

Response: Discovery has taken great care in considering the current and potential use of the properties and adjacent lands for the project, talking with both landowners directly impacted by the project, as well as adjacent landowners to ensure the project provides the most convenient and functional use of the properties and right-of-way, including:

- ❖ The facility site plans provide ease of ingress / egress for traffic and space has been incorporated on the site to facilitate “staging” of trucks and parking for operations vehicles to avoid impacts to existing traffic patterns.
- ❖ The perimeter of the Brighton West Interconnect Facility will incorporate a 6 foot chain link fence with a 2 foot outrigger and 3-strands of barbed wire along the top of

the fence for security. Access drive gates will be placed to facilitate ingress / egress, and will be designed to accommodate emergency vehicles.

- ❖ Signage for the facilities will be minimal, but will include the applicants name, facility name, and emergency contact information. All signage will be placed and secured to the chain link fencing. No monument signage will be required.
 - ❖ Facility lighting at the Brighton West Interconnect Facility will not be required.
 - ❖ The underground pipelines will not interfere with the predominant use in the area – agriculture.
 - ❖ The underground pipelines are predominantly routed near and parallel to section lines, property lines, and existing utility corridors so as to minimize impacts on future development.
8. Criteria: 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: Discovery has considered the utility requirements, fire and police protection, and ingress / egress to and from the facilities and pipeline rights-of-way in the planning and the design of the project, including:

- ❖ The proposed facilities will not require sewer or water service since they will be unmanned facilities. Site grading will facilitate natural storm water drainage and designed to meet the County drainage requirements. No storm water drainage infrastructure will be required.
- ❖ All access drives and facility drive gates will be designed to meet the ingress / egress requirements of the respective fire districts.
- ❖ The facilities will not impose an additional burden on police forces beyond their current responsibilities.
- ❖ The pipelines will be located underground and will not require utility services (i.e. sewer, water, storm water drainage, etc.), or the construction of new roads.
- ❖ The pipelines will not impose an additional burden on fire or police forces beyond their current responsibilities

2.16 RE-ZONING APPLICATION

Not applicable. The project does not involve a request for re-zoning.

2.17 SUBMITTAL REQUIREMENTS FOR A SOLID WASTE TRANSFER STATION (SUBMITTAL ITEM E)

Not applicable. The project does not involve a solid waste transfer station.

2.18 SUBMITTAL REQUIREMENTS FOR A SOLID WASTE COMPOSTING FACILITY (SUBMITTAL ITEM F)

Not applicable. The project does not involve a solid waste composting facility.

2.19 SUBMITTAL REQUIREMENTS FOR A SCRAP TIRE RECYCLING FACILITY (SUBMITTAL ITEM G)

Not applicable. The project does not involve a scrap tire recycling facility.

2.20 SUBMITTAL REQUIREMENTS FOR INERT FILL (SUBMITTAL ITEM H)

Not applicable. The project does not involve inert fill.

2.21 PLANNING AND DEVELOPMENT APPLICANT FEEDBACK SURVEY (SUBMITTAL ITEM D)

A completed Applicant Feedback Survey form is provided under Exhibit H "Applicant Feedback Survey".

2.22 TRAFFIC IMPACT FEE ACKNOWLEDGEMENT AFFIDAVIT (SUBMITTAL ITEM I)

It is acknowledged that Adams County may charge a Traffic Impact Fee in conjunction with the building permit(s) for the Project. A copy of the Traffic Impact Fee Acknowledgement Affidavit is provided under Exhibit J "Traffic Impact Fee Acknowledgement Affidavit".

2.23 ELECTRONIC VERSION OF THE LEGAL DESCRIPTION

The written descriptions and legal Plats describing and depicting the permanent, temporary and construction pipeline easements along with the Brighton West Interconnect Facility site, prepared and certified by a registered Colorado Professional Land Surveyor will be provided electronically prior to performing any construction activities.

Upon completion of construction, Discovery will provide Adams County with an electronic version of the pipeline alignment in a format that is consistent with the U.S. Department of Transportation National Pipeline Mapping System requirements.

2.24 CERTIFICATE NOTICE TO MINERAL ESTATE OWNERS (SUBMITTAL ITEM J)

Pursuant to CRS Section 24-65.5-102(2)(a), a natural gas, crude oil, or produced water pipeline does not constitute an "application for development" that would trigger the requirements of the Surface Development Notification Act, CRS Section 24-65.5-101, et. seq., and therefore is not applicable.

2.25 APPLICANT'S CERTIFICATION CONCERNING QUALIFYING SURFACE DEVELOPMENT, PURSUANT TO C.R.S. 24-65.5-103.3(1)(B) (SUBMITTAL ITEM K)

As outlined above, pursuant to CRS Section 24-65.5-102(2)(a), a natural gas, crude oil, or produced water pipeline does not constitute an "application for development" that would trigger the requirements of the Surface Development Notification Act, CRS Section 24-65.5-101, et. seq., and therefore an applicant's certification concerning qualifying surface development is not applicable.

2.26 RECORDED COPY OF THE CERTIFICATION CONCERNING QUALIFYING SURFACE DEVELOPMENT (SUBMITTAL ITEM L)

As outlined above, pursuant to CRS Section 24-65.5-102(2)(a), a natural gas, crude oil, or produced water pipeline does not constitute an "application for development" that would trigger the requirements of the Surface Development Notification Act, CRS Section 24-65.5-101, et. seq., and therefore an applicant's recorded copy of the certification concerning qualifying surface development is not applicable.

3.0 ADDITIONAL ITEMS REQUESTED

Pursuant to the Conceptual Review Summary Letter dated January 30, 2017, and attached hereto under Exhibit C "Conceptual Review Meeting Summary Letter", additional items outlined under the Areas and Activities of State Interest ("AASI") checklist and requested by ACPD staff are addressed under Sections 3.1 through 3.9 below. A copy of the completed AASI checklist is attached hereto under Exhibit K "Areas and Activities of State Interest Checklist".

3.1 INFORMATION DESCRIBING THE APPLICANT

3.1.1 APPLICANT & PROJECT OWNER INFORMATION

3.1.1.1 APPLICANT INFORMATION

Discovery DJ Services, LLC
Attn: Mr. Cory Jordan
7859 Walnut Hill Lane, Suite 335
Dallas, TX 75230

3.1.1.2 PROJECT OWNER

Discovery DJ Services, LLC
7859 Walnut Hill Lane, Suite 335
Dallas, TX 75230

(318) 272-1018

3.1.2 CONTACT INFORMATION FOR INDIVIDUALS CONSTRUCTING & OPERATING THE PROJECT

3.1.2.1 PROJECT MANAGER

Cory Jordan
Discovery DJ Services, LLC
7859 Walnut Hill Lane, Suite 335
Dallas, TX 75230
(318) 272-1018

3.1.2.2 CONSTRUCTION MANAGER

Jeff Brewster
Quality Check Energy Services, LLC
562 north 7th avenue
Brighton, CO 80601
(318) 348-7693

3.1.2.3 ENVIRONMENTAL CONSULTANT

Chad Barnes
SWCA Environmental Consultants
2120 South Collee Ave., Suite 2
Fort Collins, Colorado 80525
(970) 237-4096

3.1.2.4 PROJECT SURVEYOR

Doug W. Chinn, PLS
Acklam, Inc.
195 Telluride St., Ste. 7
Brighton, CO 80601
(720) 685-5905

3.1.2.5 PROJECT ENGINEER

Celeste Coffman
Zion Engineering, LLC
8100 E. Maplewood Ave., Suite 100
Greenwood Village, CO 80111
(720) 841-0143

3.1.2.6 OPERATIONS

Cory Kline
Discovery DJ Services, LLC
4501 CR 35
Fort Lupton, CO 80621
(970) 987-2527

3.1.3 APPLICANT'S FINANCIAL & TECHNICAL CAPABILITY TO DEVELOP & OPERATE PROJECT

The Applicant is financially capable to develop this Project. The project will be financed using equity from the private equity fund Old Ironsides Energy LLC and the management team. The management team has a \$100,000,000+ equity commitment for the development of greenfield midstream projects in the continental United States, which is substantially more than adequate for the development of the Project.

The Applicant possesses the technical capabilities to oversee the construction and operation of the Project, and is fully responsible for the Project. The Discovery management team recently spun out of

Wildcat Midstream Holdings in 2016 where the team safely operated over 200 miles of regulated and non-regulated natural gas and hazardous liquid pipelines and 140,000 Mcf/d of cryogenic natural gas processing and treating assets in the states of Texas and Louisiana.

Only contractors with the experience and expertise to construct this Project will be pre-qualified to bid on this Project.

3.2 INFORMATION DESCRIBING THE PROJECT

3.2.1 DETAILED PLANS & SPECIFICATIONS

Reference Section 2.14 above.

3.2.2 DESCRIPTION OF PROJECT ALTERNATIVES

Discovery has considered two alternative route alignments for the Project as outlined in Figure 3.2.2 below. Alternate #1 routes to the north side of the E-470 corridor and is approximately the same length as the preferred route, while Alternate #2 routes further to the south of the E-470 corridor and is slightly longer. Alternate #2 utilize less of the E-470 multi-use easement than Alternate #1 or the preferred route, with comparable environmental impacts and a greater impact on nearby landowners and the general public than the preferred route.

Similar to the preferred route, construction activities for both Alternative #1 and Alternative #2 will have minimal, temporary and short term, effects on the residents, businesses and natural environment of Adams County.

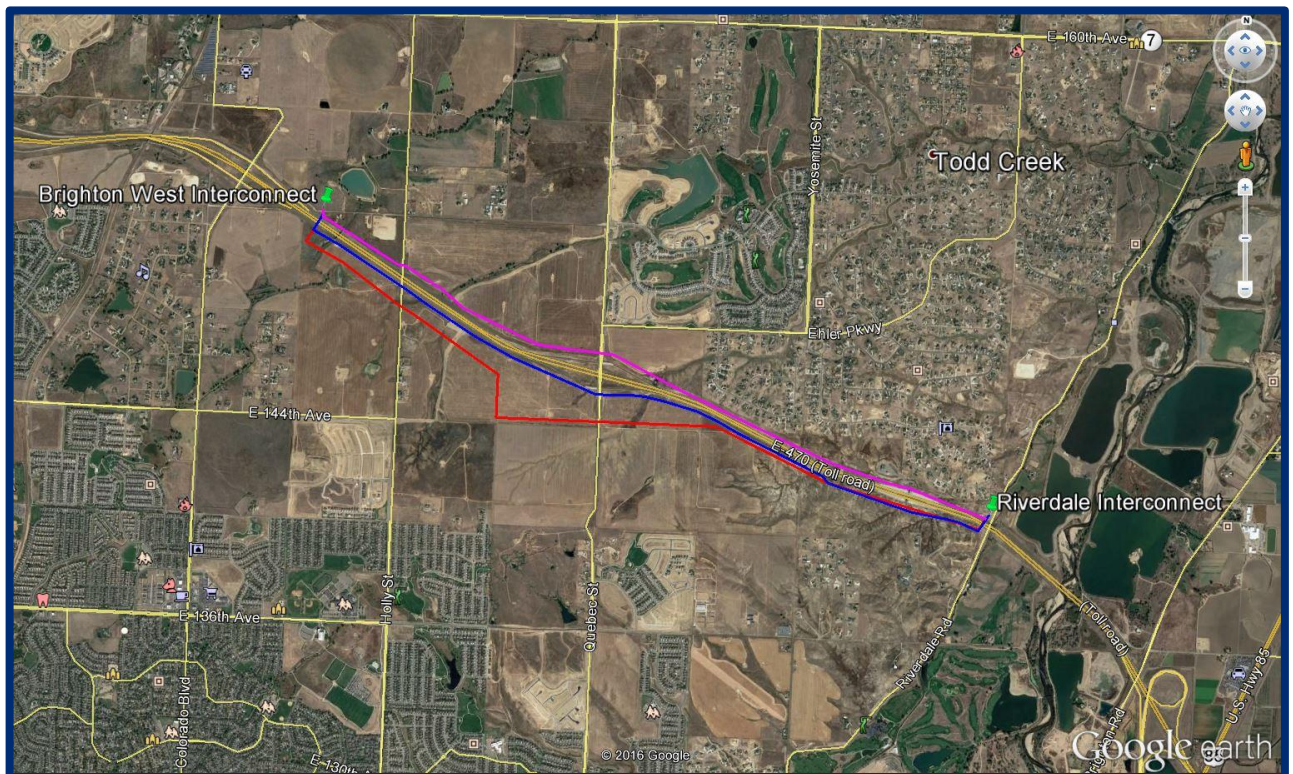


Figure 3.2.2 – Alternate Pipeline Route Map, Adams County

Table 3.2.2 on top of the following page summarizes the respective route lengths and land affected by each alternative and the preferred route.

Table 3.2.2
Project Alternatives
Route Lengths & Land Affected, Adams County

Routes	Acres of Land Affected (Based on 75' wide area of disturbance)	Total Pipeline Length (miles)	No. Road Crossings
Alternative 1	19.1 acres	2.10	3
Alternative 2	20.7 acres	2.28	5
Preferred	19.1 acres	2.10	4

3.2.2.1 ALTERNATIVE ROUTE #1

Alternative #1 is routed to the north side of the E-470 corridor and is approximately the same length as the preferred route with the same originating point, in the SWSE of Section 11, Township 1S, Range 68W, approximately 1,500 ft. northwest of the intersection of E. 152nd Avenue and York Street and crosses the E-470 tollway to the north before turning southeast and in general following the E-470 tollway to the Brighton West Interconnect site located 2,100 feet west of the intersection of E. 152nd Avenue and Holly Street. This Alternative would incorporate a comparable area of disturbance of approximately 2.10 miles long and 75 ft. wide, or approximately 19.1 acres, with a permanent easement 2.10 miles long and 30 feet wide outside of the E-470 multi-use easement / 10 feet wide inside the E-470 multi-use easement, or approximately 3.1 acres, and would follow the E-470 multi-use easement along the northern side of the E-470 corridor for a majority of the alignment. Route Maps for this Alternative are provided under Exhibit L.1 "Alternate Route #1 – Route Maps".

3.2.2.2 ALTERNATIVE ROUTE #2

Alternative #2 is routed south of the E-470 corridor and is approximately 2.28 miles in total length with the same originating point, in the SWSE of Section 11, Township 1S, Range 68W, approximately 1,500 ft. northwest of the intersection of E. 152nd Avenue and York Street and crosses the E-470 tollway approximately 2,500 ft. east of the intersection of Colorado Blvd & E. 152nd Avenue. This Alternative would incorporate an area of disturbance of approximately 2.28 miles long and 75 feet wide, or approximately 20.7 acres, with a permanent easement of 2.28 miles long and 30 feet wide, or approximately 8.3 acres. While this Alternative would avoid construction within the E-470 multi-use easement, providing a higher degree of safety for construction of the pipelines; it would have a greater impact on the landowners, in many cases bisecting portions of the properties crossed, would have a greater degree of surface disturbance, and avoids the intended use of the E-470 multi-use corridor. Route Maps for this Alternative are provided under Exhibit L.2 "Alternative Route #2 – Route Maps".

3.2.2.3 AIR QUALITY ALTERNATIVES

The short-term emission sources impacting air quality would be the same for both alternatives and the preferred route and would include construction equipment, typically diesel driven, and traffic on the roadways and right-of-way. Both Alternative #1 and Alternative #2 are in the same air shed as the preferred route. Both Alternative routes would be expected to have a comparable construction duration. As a result, both Alternatives #1 and #2 would be expected to have an equal if not greater impacts to the overall air quality.

Construction for either Alternative or the preferred route is anticipated to occur in mid-2017 summer months based upon the anticipated receipt of the required permits. Discovery will plan to utilize water suppression to reduce the amount of dust generated during construction, as necessary.

3.2.2.4 PREFERRED ROUTE

The preferred route for the natural gas, crude oil, and water pipelines crosses the City of Thornton and unincorporated Adams County. As outlined in Figure 3.2.2 above, the pipelines would originate at Ward Petroleum's Ivey West well pad located in the SWSE of Section 11, Township 1S, Range 68W, approximately 1,500 ft. northwest of the intersection of E. 152nd Avenue and York Street and travels in a general southeasterly direction through agricultural fields and along the E-470 multi-use easement to a point approximately 2,500 feet east of the intersection of Colorado Blvd and E. 152nd Avenue, where the pipelines turn north crossing the E-470 Tollway to the proposed Brighton West Interconnect Facility.

The preferred route would incorporate an area of disturbance of approximately 2.10 miles long and 75 feet wide, or approximately 19.1 acres, with a permanent easement of 2.10 miles long and 30 feet wide outside of the E-470 multi-use easement / 10 feet wide inside the E-470 multi-use easement, or approximately 3.1 acres. Route Maps for the preferred route are provided under Exhibit F "Boardwalk Phase II – BWI to Riverdale Tie-In Route Maps".

3.2.2.5 PREFERRED ROUTE CONSIDERATIONS & REASONING

The preferred route was selected to mitigate the impacts to local residential neighborhoods; conform with the comprehensive plans for the City of Thornton, E-470, and Adams County; minimize impacts to the environment; and to the greatest degree possible, the preferences of local city and county landowners. The preferred route is primarily located within the E-470 multi-use easement along the south side of the E-470 corridor, and within lands zoned for agricultural use. Discovery has contacted E-470 and is working with them to acquire the applicable easement within their multi-use easement, in addition to working with the City of Thornton for portions of the alignment within city limits.

In areas zoned as agricultural, Discovery worked with each respective landowner to develop the preferred alignment to mitigate impacts to actively cultivated fields and productive areas, along with landowner considerations and preferences.

In addition to zoning and landowner considerations, numerous other factors were included in the decision process for the selection of the preferred route. Discovery has reviewed and considered the Adams County and City of Thornton Comprehensive Plans as well as the Adams County Transportation Plan in selection of the preferred route.

The preferred route does cross Big Dry Creek, German Ditch, and the E-470 tollway. Discovery will plan to cross each of these locations via horizontal direction drill, in accordance with the applicable ditch and E-470 company requirements. Permit applications for these crossings are being prepared and will be submitted in the next few weeks, following completion of field survey along the route. Copies of these permits will be provided to Adams County upon receipt, and prior to construction.

3.2.3 PROJECT DESIGN, PERMITTING, CONSTRUCTION & OPERATIONS SCHEDULE

The acquisition of land and right-of-way, engineering and design, procurement of equipment and materials, and the selection of the applicable contractor(s) for the project will occur concurrently with the acquisition of the respective local, state, and federal permits required. This shall include, but not be limited to:

- ❖ Finalizing landowner agreements and the acquisition of the applicable permanent and temporary construction easements and required temporary work space from individual landowners. This is currently underway in both the City of Thornton and Adams County;
- ❖ Perform the applicable geotechnical investigations for engineering and design of the E-470 Tollway crossing. This work is currently underway.
- ❖ Acquire the applicable local, state, and federal permits required for the project, including but not limited to, the applicable E-470, and German Ditch Company crossing permits; stormwater

general permit with the Colorado Department of Public Health and Environment (“CDPHE”), Water Quality Control Division; CDPHE discharge permit; CDPHE Air Quality Control Division construction air permit, Army Corp of Engineers (“ACOE”) Nationwide #12 permit, and applicable local building permit. A complete list and the current status of the applicable permits is outlined under Exhibit M “Federal, State and Local Permits”;

- ❖ Detailed engineering and design of the Brighton West Interconnect Facilities and each respective pipeline. These activities are currently underway;
- ❖ Solicitation, bid and award of the applicable construction contract(s) to third party construction and non-destructive examination contractors;
- ❖ Pre-construction survey of the pipeline alignments and Riverdale Tie-In Facilities site;
- ❖ Construction of the respective pipelines and Brighton West Interconnect Facility. Discovery plans to begin construction in Adams County once all permits are received and the required land and right-of-way is acquired.

Following completion of construction, Discovery will commission the natural gas, crude oil, and water pipelines along with the Brighton West Interconnect Facilities and place the Project in-service.

Overall, the non-construction activities are anticipated to take approximately 4-6 months, followed by approximately 3-4 months of construction and 1-2 weeks of commissioning.

3.2.4 PROJECT NEED

Advances in oil and gas extraction technologies have resulted in a substantial increase in oil and gas activities across Colorado, more specifically in the Denver-Julesburg Basin and Wattenberg Fields within Adams County. Crude oil and produced liquids (condensate, produced water) from these wells impede the natural gas production and require transportation to oil and gas facilities for processing, treatment, and either disposal or sale to regional markets. Currently, these liquids are transported by truck from the individual well pads resulting in an increasing number of trucks per day on the local city and county roads and state highways. Similarly, the existing natural gas infrastructure in and around these wells is at capacity or doesn’t exist within areas of new drilling. Pipelines provide a more efficient means of transportation reducing the local truck traffic, emissions, noise and dust associated with current operations and facilitates the transportation of the natural gas and produced liquids to locations where they can be processed and sold to meet market demands. The Project is a necessary component of the overall system to gather, process, transport and market the area’s natural resources in the Niobrara and Codell formations.

3.2.5 CONSTRUCTION & OPERATION CONSERVATION TECHNIQUES

All pipelines will be buried to provide 48-inches of cover. The pipeline trench will be excavated mechanically; pipe segments will then be strung along the ditch line and then welded together using welders and weld procedures qualified under the requirements of the Code of Federal Regulations; each weld will be examined utilizing industry standard non-destructive examination, or x-ray, procedures by qualified technicians; the coating on the pipeline will be inspected for damage and repaired as necessary and then the line(s) will be lowered into the trench and backfilled. The pipeline(s) will subsequently be pressure tested using water (hydrostatically tested) to industry regulations.

All available topsoil will be conserved through a process known as “double-ditching”, which excavates and removes and conserves topsoil where practical. Conserved topsoil will be windrowed separately from the underlying subsoil and stored along the construction right-of-way until the trench is backfilled.

During construction, the Applicant will follow BMPs described in the Stormwater Management Plan. Erosion control BMPs include silt fencing, straw wattles, hay bales, or combinations of these items, depending on the particular area requiring erosion control during construction.

Construction staking will occur to designate the pipeline centerlines and outside construction right-of-way boundaries. The limits of disturbance will be clearly marked/staked prior to construction including the construction right-of-way, temporary use areas / work space, and access roads. Utility lines will be

located and marked to prevent accidental damage during pipeline construction. Sensitive areas to be protected from disturbance or that require monitoring will be indicated on engineering documents and construction drawings and staked and marked accordingly in the field prior to construction. The location of access road entry points will be properly marked. Flagging, signs, and other markings identifying the limits of disturbance would be maintained through all phases of construction. A survey crew would be available during construction to replace any stakes that have been damaged or inadvertently removed.

Wildlife and High Interest Species: Wildlife and high interest species surveys will be performed prior to construction and the applicable agencies consulted. This shall include:

- ❖ A Raptor nest survey will be completed if pipeline construction extends or is scheduled for the raptor nesting season (January 15 to July 31). If active raptor nests are found near the ROW (within 0.3 miles) the CDPW will be consulted to determine if any nest protection measures are needed.
- ❖ A nesting Burrowing Owl Survey will be completed if any black-tailed prairie dog towns are crossed during the period of owl activity (March 15 to October 31). If nesting burrowing owls are located consultations would occur with the CDPW to determine if any nest protection measures are needed.
- ❖ A Ute ladies' tresses orchid and Colorado butterfly plant survey would be completed in all wetlands that are proposed to be crossed by trenching. This survey would be completed during the plants blooming period (late July through August). If either species is located consultation would occur with the USFWS.
- ❖ The Colorado Parks and Wildlife District Wildlife Manager for the area will be consulted prior to construction. If there any issues of wildlife mortality (entrapment in the trench, or other mortality) the District Wildlife Manager will be notified.

Archeology and Paleontology: On call archeologist and paleontologist would be available to consult if any potential archeological (stone tools, fire rings, foundations, bones) or paleontological (fossils) artifacts are found during construction/excavation of the trench and ROW. Project construction would be temporarily stopped until review by the archeologist/paleontologist. If needed the State Historic Preservation Office (SHPO) would be consulted. Impacts to historic canal/ditch crossings would be avoided by completing these crossings by horizontal directional drill ("HDD").

Mobilization: Construction equipment will be transported to the construction right-of-way via tractor trailer and unloaded within designated staging area(s). Transportation equipment will be removed from the site or parked within a staging area once off-loading is completed.

Clearing and Grading: Vegetation will be cleared and the construction right-of-way would be graded, to the degree necessary, to provide for safe and efficient operation of construction equipment and vehicles and to provide space for the storage of subsoil and topsoil. Construction activity and ground disturbance will be limited to approved, staked areas.

Where required, trees will be cut with a chain saw and/or mechanical shears and brush would generally be cut with a hydro-axe or similar equipment. Trees and brush will be cut as close to the ground as possible. Vegetative material will typically be shredded and scattered back across the surface to increase roughness, facilitate seeding establishment, and protect the construction right-of-way. Stumps that are not shredded or chipped and that are incorporated into the topsoil will be removed and disposed of at an approved disposal facility. Vegetation may also be brush-hogged to preserve habitat.

Topsoil will be stockpiled separately from subsoil and will not be used to pad the trench or construct trench breakers. In areas where the construction right-of-way crosses ephemeral drainages, the drainages will not be blocked with topsoil or subsoil piles. Topsoil and subsoil would be placed on the banks of the drainages. Gaps will be left periodically in the topsoil and subsoil piles to avoid ponding and excess diversion of natural runoff during storm events.

Trenching: Trenching will be completed using track hoes or a mechanical trenching machine. The pipeline trench will be to one side of the construction right-of-way to allow for spoil to be placed opposite of the wider working side. It is not anticipated that blasting will be required during pipeline construction.

Access will be provided for landowners and grazing rights holders to move vehicles, equipment, and livestock across the trench where necessary and consistent with prior agreement with landowners. Livestock operators will be contacted and adequate crossing facilities would be provided as needed to ensure livestock are not prevented from reaching water sources because of the open trench.

The contractor will keep wildlife and livestock trails open and passable by adding soft plugs (areas where the trench is excavated and replaced with minimal compaction) during construction. Soft plugs with ramps on either side will be left at all well-defined livestock and wildlife trails and at no more than 0.5-mile intervals along the open trench to allow passage across the trench and to provide a means of escape for livestock and wildlife that may fall into the trench.

Trench breakers constructed of sand bags or polyurethane foam will be installed at specific spacing intervals to impede shallow groundwater from flowing down the trench.

Lowering-in and Padding: Before the pipe section is lowered into the trench, an inspection will be conducted to verify that the pipe is properly fitted and installed in the trench, minimum cover is provided, and the trench bottom is free of rocks and other debris that could damage the external steel pipe coating or high density polyurethane (“HDPE”) water pipe. The pipe sections will be simultaneously lifted in position over the trench and lowered in place. Sifted soil fines from the excavated subsoil will provide rock-free pipeline padding and bedding. Sandbags may be used to pad the bottom of the trench instead of, or in combination with, padding with soil fines. In rocky areas, padding material or a rock shield will be used to protect the pipe and coating. Topsoil will not be used to pad the pipe.

Backfilling Pipeline: Shading and backfill will begin after a section of pipe has been successfully placed in the trench, inspected, and approved for backfill. Backfill will be conducted using a bulldozer or other suitable equipment. Subsoil excavated from the trench will generally be used to backfill the trench, except in rocky areas where imported select fill material may be needed. Backfill will be graded and compacted, where necessary, for ground stability, by tamping or walking with a wheeled or tracked vehicle. Compaction will be conducted to the extent that there would be no voids in the trench. Any excavated materials or materials unfit for backfill will either be utilized elsewhere or properly disposed of in accordance with applicable laws, regulations and landowner agreements.

Cleanup and Restoration: Cleanup and restoration will occur after the pipeline is installed and backfill is completed, or in the spring following construction if weather conditions would inhibit the proper restoration activities, so as to minimize the length of time that the open trench and un-stabilized right-of-way is present. Cleanup of the surface along the construction right-of-way will include removal of construction debris and final grading to the finished contours. Permanent erosion control measures will be installed as required and seeding would occur in accordance with landowner requirements. Invasive and noxious weeds will be controlled after construction until the right-of-way is restored.

Road Crossings: All county road crossings will be completed by conventional bore or directional drill methodology with sufficient depth to maintain a minimum of 60-inches of cover at the lowest bar ditch.

Waterbody Crossings: All streams and named ditch / canal crossings will be completed by HDD to avoid disturbance of the stream and ditch bed and banks. Each HDD will begin, end and be of sufficient depth to ensure the pipeline is not subject to the hazard of stream scour during anticipated flood events. If the HDD crossing avoids impact to all associated wetlands, a U.S. Army Corps of Engineers (USACE) 404 permit will not be necessary for this crossing.

In areas with trenched wetland crossings, the construction right-of-way will be reduced from 75 feet in width to 50 feet in width, where only the ditch line will be topsoiled and the drive space will be matted with pipeline mats to mitigate disturbance. Blading would occur only over the trench line and the construction traffic / access area would be matted to avoid vegetation disturbance. If standard open

cut construction methods are used in wetland areas, Discovery will obtain the necessary ACOE 404 permits.

3.3 PROPERTY RIGHTS, PERMITS AND OTHER APPROVALS

3.3.1 FEDERAL, STATE & LOCAL PERMITS AND APPROVALS

Discovery has consulted the applicable federal, state, and local permitting authorities for all required occupational, environmental, and building / work permits for the Project and is in the process of obtaining these permits. The following federal and state permits will be required for the Project:

Federal Permits:

Army Corps of Engineers (ACOE)

- ❖ The proposed pipelines will cross several wetland areas, ditches and streams that are under the jurisdiction of the ACOE. Generally, pipeline construction does not result in the permanent fill of wetlands or waters of the U.S. Pipeline construction results in a temporary disturbance without loss or long term impacts. The Project should fall within the Nationwide Permit (Nationwide Permit #12) guidelines with the ACOE. Nationwide permits are regulated under Section 404 of the Clean Water Act. Required mitigation activities include removing all excess materials at wetland and stream crossings; stockpiling and restoring topsoil; and restoration of the wetland or stream channel to pre-construction conditions and contours. Based upon review of National Wetland Inventory maps and aerial photography for the Project, the Project will not cross more than 500 feet of wetlands. Thus, Preconstruction Notification (“PCN”) with the ACOE will not be required for the Project. Discovery is in the process of preparing and acquiring the applicable Nationwide #12 Authorizations from the ACOE prior to construction.

State Permits:

Colorado Department of Public Health and Environment (“CDPHE”)

- ❖ Stormwater General Permit: CDPHE Water Quality Control Division. Discovery is in the process of acquiring the Stormwater General Permit, which will be obtained prior to performing any construction activities. A Stormwater Management Plan (“SWMP”) will be prepared as required by CDPHE.
- ❖ A Colorado Discharge Permit System (CDPS) permit: This permit is required from the CDPHE (Water Quality Control Division) for discharge of hydrostatic test water associated with pipeline integrity testing during construction. Required information for the permit includes the name and location of the Project; location of the test water discharge; dates of discharge; volumes of discharge; the source of test water; test water quality; and the BMP’s for the test water discharge location. Testing of discharge water is also required as part of the permit. This permit will be obtained prior to construction once hydrostatic testing details have been determined.
- ❖ Construction Air Permit: This permit is required from the CDPHE (Air Quality Control Division). In Adams County this permit is needed for the construction of the Brighton West Interconnect Facilities. The preparation of the application for this permit is in process and will be obtained prior to construction.

A summary of the applicable permits and their current status is outlined under Exhibit O “Federal, State and Local Permits”. A copy of all permits applicable to Adams County will be provided prior to construction.

As outlined under Sections 2.6 and 2.7 above, Discovery will acquire the applicable pipeline easements, temporary use areas, and rights-of-way with landowners along the preferred route and Brighton West Interconnect site, currently owned by Brighton Farms LLC (parcel no. 0157107400001). Copies of all lease, easement, and right-of-way agreements can be provided to the County upon request.

3.3.2 OFFICIAL FEDERAL & STATE AGENCY CONSULTATION COORESPONDENCE

Copies of all federal and state agency consultation correspondence will be provided under separate cover or transmittal.

3.3.3 DESCRIPTION OF WATER TO BE USED BY THE PROJECT

During construction, water will be utilized for dust mitigation and fire prevention purposes as well as for hydrostatic testing of the facility piping and respective pipelines in accordance with the applicable sections of the Code of Federal Regulations. Overall, approximately 400,000 gallons of water is anticipated to be required during construction based upon an estimated summer / fall construction timeline as follows:

Dust Mitigation & Fire Protection	200,000 gallons
Hydrostatic Testing	200,000 gallons

Water during construction will be obtained under permit or written approval from private landowners, as applicable. Table 3.3.3 below outlines potential water sources and their respective amounts:

**Table 3.3.3.
Boardwalk Pipeline Project
Ivey West to Brighton West Interconnect
Construction Water Sources**

Source	Fill Location	Total Allowable Amount	Public / Private	Governing Agency	County of Source
FRICO	TBD	No Con	Private	CDHPE	Adams
Prairie View Subdivision	Prairie View Subdivision	30,000 gallons / day	Private	CDHPE	Adams

The buried pipelines are not expected to impact the natural aquifer recharge in the area, and neither the facilities or respective pipelines will require water consumption during operation of the Project.

3.3.4 REGIONAL WATER QUALITY MANAGEMENT PLAN

The Project area is within the Platte River Basin Division and falls under Section 11 of the Statewide Regional Water Quality Plan. As required, a Stormwater Management Plan (“SWMP”) and Erosion and Sediment Control Plan will be prepared and submitted to Adams County prior to construction, outlining the Best Management Practices required. The SWMP and Erosion and Sediment Control Plan will be prepared under the Colorado Department of Public Health and Environment Colorado Discharge Permitting System Permit and in accordance with the Clean Water Act National Pollution Discharge Elimination System regulations and Adams County’s Grading Erosion and Sediment Control manual. These plans will address water quality issues associated with construction activities. By following this plan and the practices to be outlined in the SWMP, impacts to water quality or quantity from Project will be negligible and comply with the Statewide Regional Water Quality Plan.

3.4 FINANCIAL FEASIBILITY OF THE PROJECT

Construction of Phase II of the Boardwalk Pipeline Project in Adams and Weld Counties is estimated to cost approximately \$25,000,000. The pipelines and facilities in Adams and Weld Counties will be constructed commencing in the Summer of 2017 and take approximately 3-4 months to complete.

This Project is a necessary component of the overall system to gather, process, transport and market the area’s natural resources in the Niobrara and Codell formations.

Construction of the Project will provide a path of delivery for resources of the Applicant’s customers. Contracts or agreements with third parties for services to design and construct will be managed via private documents.

The Applicant will finance the Project directly. The benefit would be directly to the Applicant, Adams County and indirectly the public, with contractual arrangements with customer(s) to provided minimum revenues to the Applicant.

The cost of mitigation, such as for HDD crossings of streams, boring roads and drainages, and avoidance of endangered species, is included within the total estimated cost of the Project and has not been broken out as line items. Applicant will bear 100% of mitigation costs.

This Project's sponsors, Old Ironsides Energy and Discovery Midstream Partners, will finance the project with equity. Old Ironsides Energy is a \$1.3 billion private equity fund.

3.5 LAND USE

The AASI checklist incorporates six (6) general submittal items for land use. The following outlines these six items and addresses the Project responses to them.

1. *Description of existing land uses within and adjacent to the Impact Area.*

The 2.10-mile pipeline route and facility site within Adams County cross lands within zone district A-3 (agricultural uses).

2. *Description of provisions from local land use plans that are applicable to the Project and an assessment of whether the Project shall comply with those provisions*

The local land use plan for the A-3 (agricultural) zone district crossed by the respective pipelines and where the proposed facility will be located do not directly relate to the proposed Project; however, the presence of these pipelines and associated facility are compatible with the existing land uses. The Project will comply with all land use provisions.

3. *Description of impacts and Net Effect that the project would have on land use patterns*

The Project will have no impact on the land use patterns within Adams County. A large majority of the parcels in which the proposed facilities will be located will be able to be utilized for the existing land use and as previously noted, the underground pipelines will have no impact on land use along the right-of-way.

4. *Description of the surrounding and/or impacted community(ies)*

The surrounding communities will have little to no impact by the Project. As noted above, the proposed facilities and respective pipelines will have no impact on the current land use or future development plans of surrounding communities.

5. *Description of the surrounding and/or impacted Cultural Resources*

Reference Section 3.9.10.

6. *Description of existing and unique agricultural land in the area*

The land the proposed pipeline route crosses as well as that where the proposed facility will be located is largely undeveloped land that is utilized as pasture or row crop productions. Approximately 90% of the proposed pipeline route is located within the E-470 utility corridor.

3.6 LOCAL GOVERNMENT SERVICES

3.6.1 EXISTING CAPACITY OF AND DEMAND FOR LOCAL GOVERNMENT SERVICES

The Project will utilize existing infrastructure to facilitate construction and ongoing operation activities. These activities will not unduly impact existing roads or require the construction of new permanent public roads. Those vehicles using public roads to access the proposed facilities and / or pipeline right-of-way, will be operated within the county specified and adopted load limits. Any oversized loads will be approved and permitted by the County prior to their utilization of County roads. The existing infrastructure has the capacity to accommodate the activities associated with the construction, operation, and required maintenance of the proposed facilities and respective pipelines.

3.6.2 IMPACTS & NET EFFECTS OF PROJECT ON DEMAND FOR LOCAL GOVERNMENT SERVICES

The Project does not anticipate adversely impacting any local services by Adams County. Those workers associated with the construction of the facilities and respective pipelines are temporary, and will not overly burden the existing capacities of Adams County, or local districts’ ability to provide services to its residents. Prior to construction, Discovery will coordinate with local fire protection and emergency services providers. Subsequently, prior to operation of the Project, Discovery will work with the local emergency responders concerning emergency response plans for the facilities and respective pipelines. Following start-up and operation of the Project, Discovery will work with the local emergency responders for periodic training drills, as required. It is not anticipated that the construction and operation of the Project will create additional demand for local government services.

3.6.3 POTENTIAL EFFECT ON THE EXISTING TRANSPORTATION NETWORK

The Project will not impact the existing transportation network. The temporary increase in traffic during construction will be more than offset by the decrease in truck transport traffic associated with the crude oil and liquids production compared to the respective pipeline capacities over the life of the Project.

3.7 FINANCIAL EFFECTS ON COUNTY RESIDENTS AND LOCAL ECONOMY

Adams County is located in the northeastern quadrant of the Denver metropolitan area and covers over 1,100 square miles of land. It includes the cities of Arvada, Aurora, Bennett, Brighton, Commerce City, Federal Heights, Northglenn, Thornton, Westminster, and a substantial unincorporated area. Table 3.7a below outlines the top private, non-retail major employers in Adams County and Table 3.7b on the following page breaks down the employment and wage information by industry within the County.

**Table 3.7a
Major Employers – Private Non-Retail
Adams County, Colorado**

Rank	Company	Product / Service	Employment
1	University of Colorado Hospital	Healthcare / Research	6,550
2	Children’s Hospital Colorado	Healthcare	5,250
3	United Parcel Service	Parcel Delivery	2,680
4	Sturgeon Electric	Electrical Services	1,270
5	HealthONE: North Suburban Medical Center	Healthcare	900
6	ADS Alliance Data Systems	Network & Credit Auth. Services	840
7	Shamrock Foods	Food Distribution	800
8	SROriginals	Bakery Product Manuf. & Dist.	790
9	Centura Health: St. Anthony’s North Hospital	Healthcare	790
10	Platte Valley Medical Center	Healthcare	650

Source: Metro Denver Economic Development Corporation, June 2016 (www.metrodenver.org)

Table 3.7b
Employment & Wage Information
Adams County, Colorado

Industry	Avg. No. Establishments	Average Employment	Total Wage	Average Weekly Wage
Agriculture, Forestry, Fishing & Hunting	47	893	\$24,431,037	\$526
Mining	37	272	\$20,850,969	\$1,474
Utilities	27	776	\$57,107,009	\$1,415
Construction	1,226	13,781	\$643,929,661	\$899
Manufacturing	446	10,739	\$617,027,910	\$1,105
Wholesale Trade	986	13,210	\$746,613,821	\$1,087
Retail Trade	955	16,752	\$463,697,733	\$532
Transportation and Warehousing	473	13,476	\$594,864,147	\$849
Information	96	2,101	\$137,417,117	\$1,258
Finance and Insurance	455	2,674	\$109,373,722	\$787
Real Estate and Rental and Leasing	426	2,612	\$93,914,339	\$691
Professional and Technical Services	937	4,880	\$288,539,664	\$1,137
Management of Companies and Enterprises	77	1,653	\$121,687,734	\$1,416
Administrative and Waste Services	560	9,574	\$311,567,394	\$626
Educational Services	131	13,492	\$520,357,268	\$742
Health Care and Social Assistance	595	15,889	\$727,499,122	\$881
Arts, Entertainment, and Recreation	80	1,349	\$26,031,581	\$371
Accommodation and Food Services	656	12,011	\$189,130,068	\$303
Other Services, Ex. Public Admin	697	4,459	\$155,373,725	\$670
Public Administration	63	7,385	\$391,578,949	\$1,020
Unclassified	8	10	\$237,647	\$457

Source: Colorado Department of Labor, September 2011 (<http://www.adamscountycod.com/site-selection/data/labor-market-data>)

The construction of the proposed facility and respective pipelines in Adams County will not negatively impact the existing tax burden or fee structure for government services applicable to Adams County residents and property owners, but will in fact result in an increased tax revenue for the County. Based upon the 2016 property Mill Levy of 95.046 for the proposed property, the 2.10-mile pipelines and associated facilities will add approximately \$38,000 in additional total annual tax revenue to the County.

The daily operation of the proposed facilities and pipeline will create jobs for trade technicians, supervisory personnel, and administrative assistance with an estimated potential annual combined income of \$750,000.

Overall, pipelines are the safest, most reliable, and efficient way to transport natural gas, crude oil, and produced liquids from their point of production to end consumers. The Project will increase the efficiency of transporting the local oil and gas production to the domestic marketplace and will reduce local truck traffic, providing a net reduction in air emissions and noise. These benefits along with the increase in ad valorem tax revenues for Adams County, result in the Project presenting a positive impact on Adams County and the surrounding community.

3.8 RECREATION OPPORTUNITIES

The preferred route is primarily located within the E-470 multi-use easement along the south side of the E-470 corridor. Portions of the route outside of the E-470 multi-use easement cross private lands and is primarily

located in rural areas. Recreation in these areas is limited to dispersed activities including: hunting, hiking, biking, ATV use and other similar activities. The preferred route does not cross any developed recreation areas within Adams County.

3.8.1 DESCRIPTION OF PRESENT & POTENTIAL RECREATIONAL USES

A review of the trail, parks and open space maps provide on the Adams County Parks and Community Resources webpage indicates that the proposed route does not cross or impact any existing Adams County parks or trails.

3.8.2 MAP DEPICTING RECREATIONAL USES

A map is not necessary since the preferred route does not cross or impact any existing Adams County Parks or trails.

3.8.3 IMPACTS & NET EFFECTS OF PROJECT ON PRESENT & POTENTIAL RECREATIONAL OPPORTUNITIES

Since the preferred route does not cross any Adams County parks or trails, there will be a zero impact on present and future recreational opportunities.

3.9 ENVIRONMENTAL ANALYSIS

The Project Area will be composed of approximately 2.10 miles of pipeline right-of-way with a nominal width of 75 feet (19.1 acres) and a permanent easement of 30 feet where outside of the E-470 multi-use easement and 10 feet within the multi-use easement (3.0 acres). The Project Area originates at Ward Petroleum’s Ivey West well pad located in the SWSE of Section 11, Township 1S, Range 68W, approximately 1,500 ft. northwest of the intersection of E. 152nd Avenue and York Street and travels in a general southeasterly direction through agricultural fields and along the E-470 multi-use easement to a point approximately 2,500 feet east of the intersection of Colorado Blvd and E. 152nd Avenue, where the pipelines turn north crossing the E-470 Tollway to the proposed Brighton West Interconnect Facility.

Figure 3.9 below illustrates the proposed Project route and associated facility location, and depicts the areas that will be temporarily impacted within Adams County.

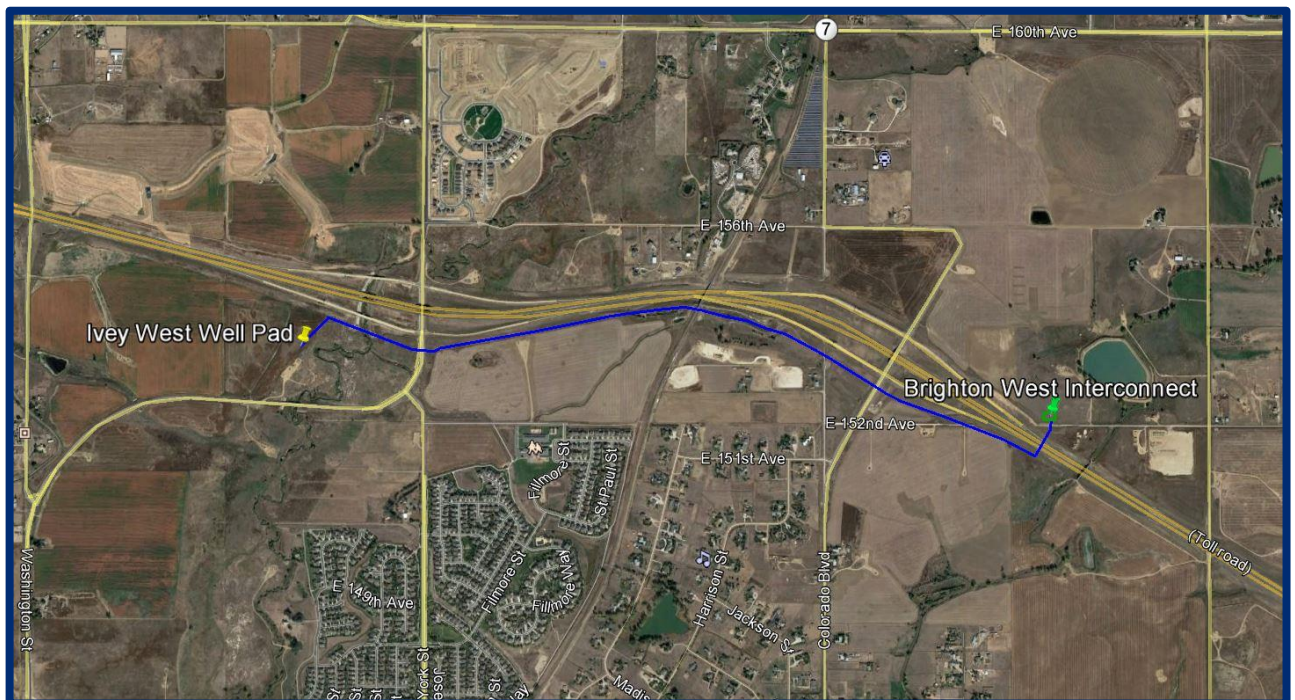


Figure 3.9 – Preferred Pipeline Route, Adams County

The following photographs depict the typical terrain, contours, and vegetation of the Project Area.

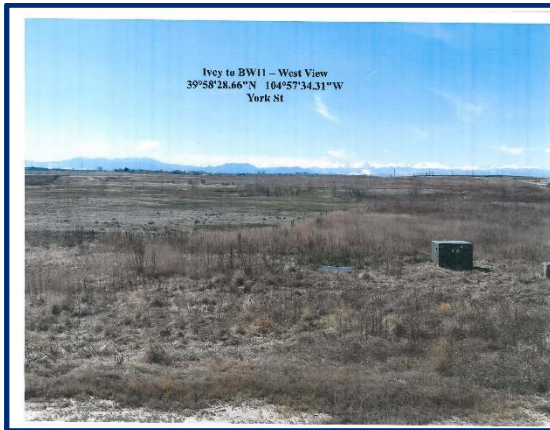


Image #1 – York Street Crossing (Looking West)

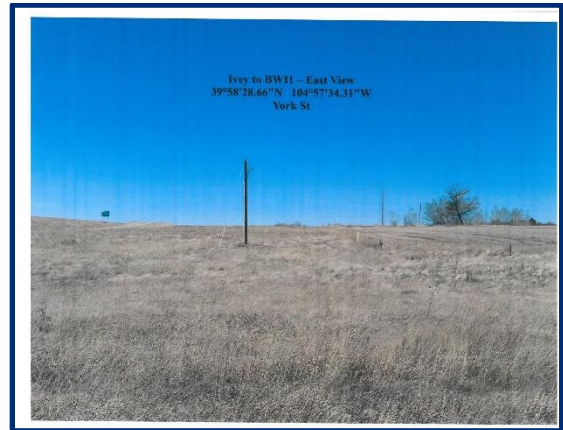


Image #2 – York Street Crossing (Looking East)

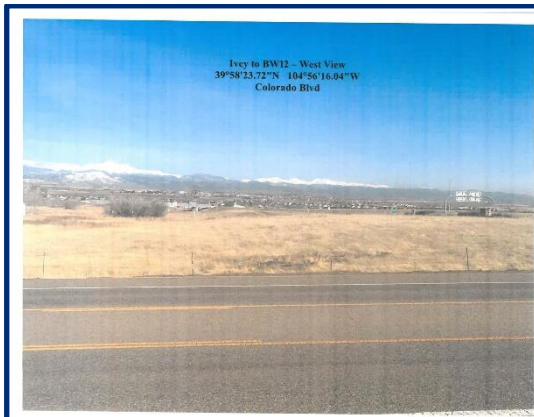


Image #3 – Colorado Blvd. Crossing (Looking West)

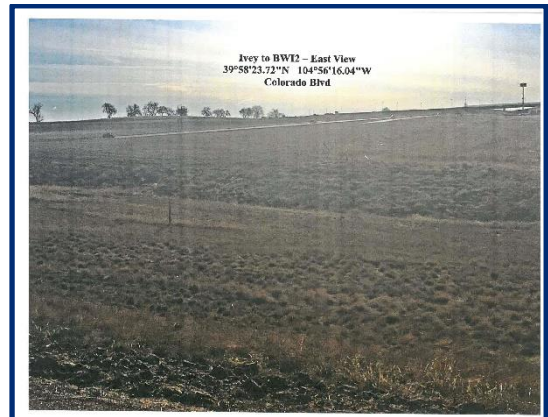


Image #4 – Colorado Blvd. Crossing (Looking East)

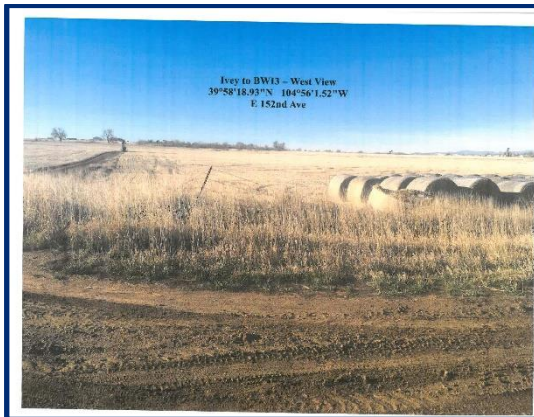


Image #5 – E. 152nd Ave. (Looking West)

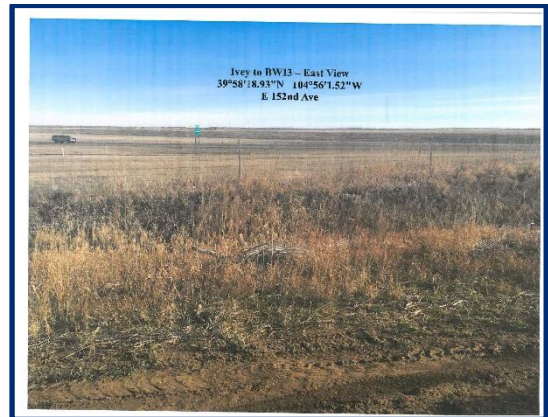


Image #6 – E. 152nd Ave. (Looking East)

Sections 3.9.1 through 3.9.10, respectively, outline the potential effects of the Project on air quality; visual quality; surface water quality; groundwater quality and quantity; wetlands and riparian areas; terrestrial and aquatic animals and habitat; terrestrial and aquatic plant life; soils, geological conditions, and natural hazards; nuisances; and areas of paleontological, historical, and archaeological importance. Hazardous materials associated with the proposed project are discussed in Section 3.9.11; the balance between benefits and losses is discussed in Section 3.9.12; and Section 3.9.13 presents the monitoring and mitigation plan proposed by Discovery to comply with the applicable approval criteria in Section 6-17 of the ACDSR Chapter 6.

3.9.1 AIR QUALITY

The project area will be located in an air shed that includes the Denver metropolitan area, the Denver International Airport areas along the Platte River drainage. The region has been designated as a marginal nonattainment area for the 8-hour ozone National Ambient Air Quality Standard. The region has been designated as attainment for all other air quality standards. Table 3.9.1 below summarizes the National Ambient Air Quality Standards.

**Table 3.9.1
Ambient Air Quality Standards and PSD Increments (ug/m³)**

Pollutant/Averaging Time	NAAQS	CAAQS	PSD Class I Increment ₁	PSD Class II Increment ₁
CO				
1-hour ²	40,000	40,000	-- ³	-- ³
8-hour ²	10,000	10,000	-- ³	-- ³
NO₂				
1-hour ⁸	188	188	-- ³	-- ³
Annual ⁴	100	100	2.5	25
O₃				
8-hour ⁶	147	144	-- ³	-- ³
PM ₁₀				
24-hour ²	150	150	8	30
Annual ⁴	-- ⁵		4	17
PM_{2.5}				
24-hour ⁷	35	35	2	9
Annual ⁴	12	12	1	4
SO₂				
1-hour ⁹	196	196	-- ³	-- ³
3-hour ²	1,300	700	25	512
24-hour ²	-- ⁵		5	91
Annual ⁴	-- ⁵		2	20

¹ The PSD demonstrations serve information purposes only and do not constitute a regulatory PSD increment consumption analysis.

² No more than one exceedance per year.

³ No PSD increments have been established.

⁴ Annual arithmetic mean.

⁵ The NAAQS for this averaging time for this pollutant has been revoked by EPA.

⁶ An area is in compliance with the standard if the fourth-highest daily maximum 8-hour ozone concentrations in a year, averaged over 3 years, is less than or equal to the level of the standard.

⁷ An area is in compliance with the standard if the highest 24-hour PM_{2.5} concentrations in a year, averaged over 3 years, is less than or equal to the level of the standard.

⁸ An area is in compliance with the standard if the 98th percentile of daily maximum 1-hour NO₂ concentrations in a year, averaged over 3 years, is less than or equal to the level of the standard.

⁹ An area is in compliance with the standard if the 99th percentile of daily maximum 1-hour SO₂ concentrations in a year, averaged over 3 years, is less than or equal to the level of the standard.

Winds typically follow the Platte River drainage predominately coming out of the southwest and the northeast. A windrose of wind frequencies monitored at the Ft. St. Vrain power plant area are shown in Figure 3.9.1 at top of the following page.

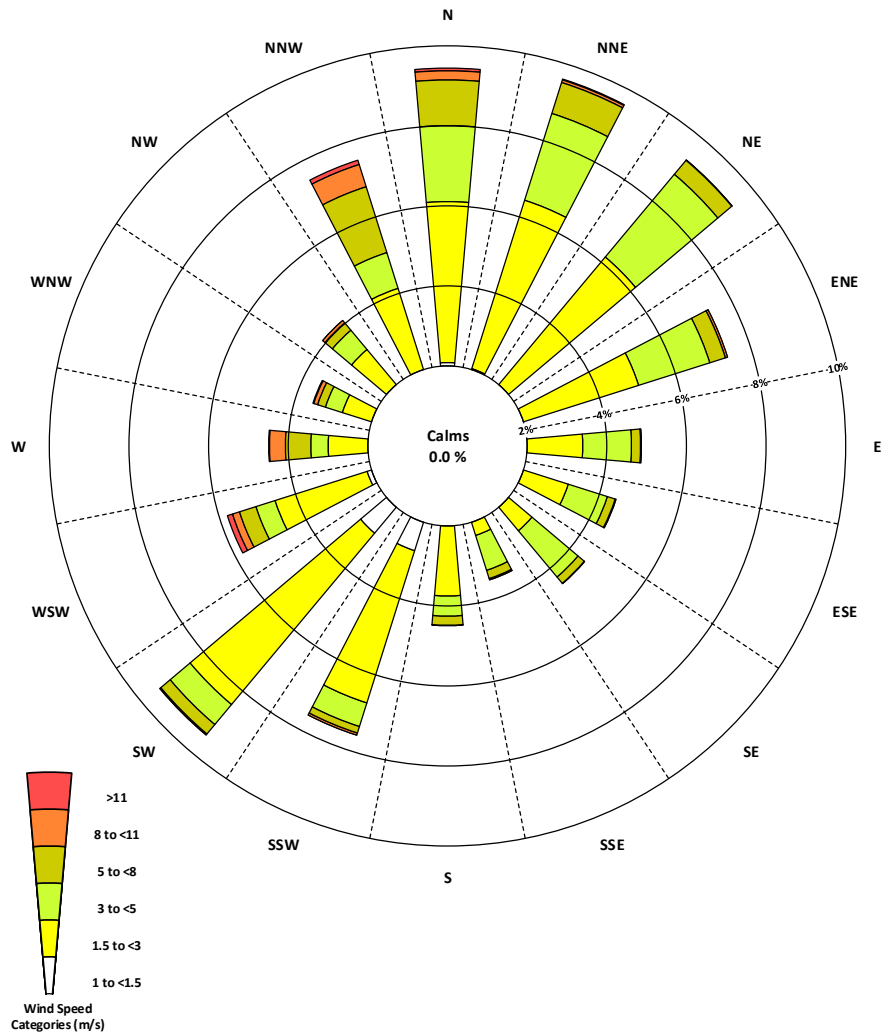


Figure 3.9.1– Wind Frequencies – St. Vrain Power Plant, Adams County

Intermittent and short-term air pollutant emissions during construction activities will occur through the operation of diesel-fired heavy construction equipment. Emissions for primarily fugitive particulate matter (PM₁₀ and PM_{2.5}) will occur from vehicle traffic, pipeline trench excavation and diesel combustion emissions. Emissions of NO_x, SO₂, CO, volatile organic compounds (VOC) and particulate matter (PM₁₀, PM_{2.5}) will occur from the operation of diesel-fired equipment. Water dust suppression will be utilized by the Applicant to mitigate fugitive particulate matter emissions.

Emissions from the processing facilities will be the only source of long term emissions. Low emission internal combustion engines equipped with oxidation catalysts will be utilized to mitigate combustion emissions,, and enclosed flares will be utilized to mitigate process vent VOC emissions. These facilities are also required to secure a construction air permit from the Colorado Department of Health and Environment that will further stipulate emission reducing requirements, as well as monitoring and recording requirements.

3.9.2 VISUAL QUALITY

1. *Map and description of ground cover and vegetation, tree canopies, waterfalls and streams or other natural features.*

The Project is primarily within a mixture of irrigated and dryland agricultural lands. The common agricultural lands include dryland wheat, corn, alfalfa, and grass hay. The Project also crosses herbaceous native upland habitat dominated by non-woody vegetation (i.e., grasses and forbs).

The dominant species are blue grama (*Bouteloua gracilis*), buffalograss (*Bouteloua dactyloides*), western wheatgrass (*Pascopyron smithii*), and slender wheatgrass (*Elymus trachycaulus*). These grassland communities are in generally poor condition due to disturbance and therefore have become infested with invasive species that include cheatgrass (*Bromus tectorum*), musk thistle (*Carduus nutans*), and Canada thistle (*Cirsium canadensis*). Multiple wetlands are also crossed by the Project, dominated by hydrophytic species such as narrowleaf cattails (*Typha angustifolia*), Nebraska sedge (*Carex nabrascensis*), Baltic rush (*Juncus balticus*), and saltgrass (*Distichlis spicata*).

The maps included in Exhibit N “Environmental Maps” illustrate the different land use types crossed by the Project as well as all the wetland and stream crossings.

2. *Description of view sheds, scenic vistas, unique landscapes or land formations.*

The ROW in Adams County crosses flat areas of mainly agricultural land. The Adams County Big Dry Creek Open Space is 1.0 mile south of the Project Area and the Riverdale Bluffs Open Space is 2.5 miles southeast of the Project Area.

3. *Map and description of buildings, structure design and materials to be used for the Project. Include elevations of proposed buildings and other structures.*

There are no planned buildings or structures with the Project; however, the Project will incorporate some above grade piping at the Brighton West Interconnect Facility located on the north side of E-470 approximately 2,100 feet west of the intersection of E. 152nd Avenue & Holly Street. A site plan for the Brighton West Interconnect Facility has been provided under Exhibit G.1 “Brighton West Interconnect Facility Site Plan”.

4. *Descriptions of the impacts and Net Effect that the Project would have on visual quality.*

During the construction phase, construction equipment (bulldozer, track hoe, backhoe, trucks, trencher, and other equipment) would be visible along the right-of-way. Once construction is complete, the right-of-way would be restored to pre-construction conditions and contours. Agricultural land would return to agricultural uses, native grassland habitats would be reseeded, and wetlands would be allowed to return to their existing condition. No long-term effects to visual quality would occur from pipeline construction.

3.9.3 SURFACE WATER QUALITY

1. *Map and description of all surface waters, including applicable State water quality standards, to be affected by the project.*

The maps provided under Exhibit N “Environmental Maps” illustrate the stream, ditch, and wetland crossings in Adams County. The crossings are described in Table 3.9.3 below.

WETLAND/STREAM ID	DESCRIPTION	CROSSING DISTANCE	Crossing Method	LOCATION
WB1AAD042	Big Dry Creek	21	HDD	1S 68W S11
W1AAD010	PEM Wetland	0	OC	1S 68W S11
W1AAD011	PEM Wetland	27	OC	1S 68W S12
WB1AAD043	German Ditch	20	HDD	1S 68W S12

The route would cross one named creek, six named ditches, and two unnamed ditches. Four PEM wetlands are crossed.

Project construction is not expected to impact State water quality standards at any crossing location. Crossings would be made by HDD with no discharge of sediments or pollutants into the stream or ditch/canal.

2. *Descriptions of the immediate and long term impact and Net Effects that the Project would have on the quantity and quality of surface water under both average and worst case conditions.*

All streams and major canals/ditches would be crossed by HDD. No disturbance of stream or ditch bed and banks would occur. Project construction would follow standard BMPs to avoid/minimize offsite sedimentation and erosion. Project construction is expected to have minimal to no impacts to surface water quality.

Project construction is expected to have no impacts to surface water quantity. No permanent dewatering or loss of water flow would occur as a result of Project construction. During construction, water would be needed for dust control and hydrostatic testing of the pipe. This water would be obtained from local sources and would not impact surface water quantity or flows in any local streams or ditches.

3. *Descriptions of the immediate and long term impacts and Net Effects that the project would have on the meandering characteristics and limits of the streambed under both average and worst case conditions.*

There would be no long- or short-term impacts to meandering characteristics of streams. All ditch and stream crossings would be made by HDD. HDD crossings would avoid all stream and ditch impacts. No impacts to ditches or streambanks, streambeds, stream or ditch side vegetation, and future or current water flows would occur as a result of Project construction.

3.9.4 GROUNDWATER QUALITY & QUANTITY

The Project Area is located within the Denver Basin, with a portion of the Project in both the Arapahoe Formation and the Denver Formation. The Project Area also briefly crosses into the South Platte River Alluvial Aquifer which overlays the Denver Basin. The proposed Project Area does not fall within any Colorado Division of Water Resources designated basins and is entirely within the Colorado Division of Water Resources South Platte Division. Reference Figures 3.9.4a through 3.9.4b on the following page for the applicable water division and basin delineations, along with the Project location.

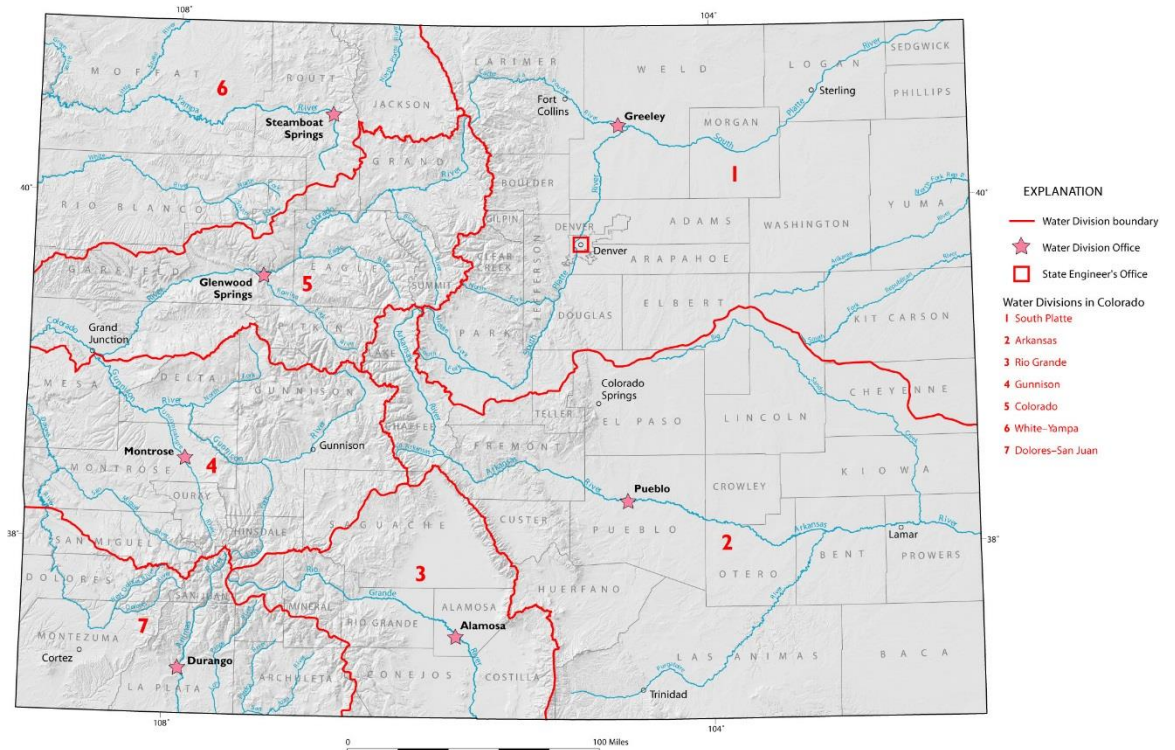


Figure 3.9.4a – Colorado Division of Water Resources, Water Division Map

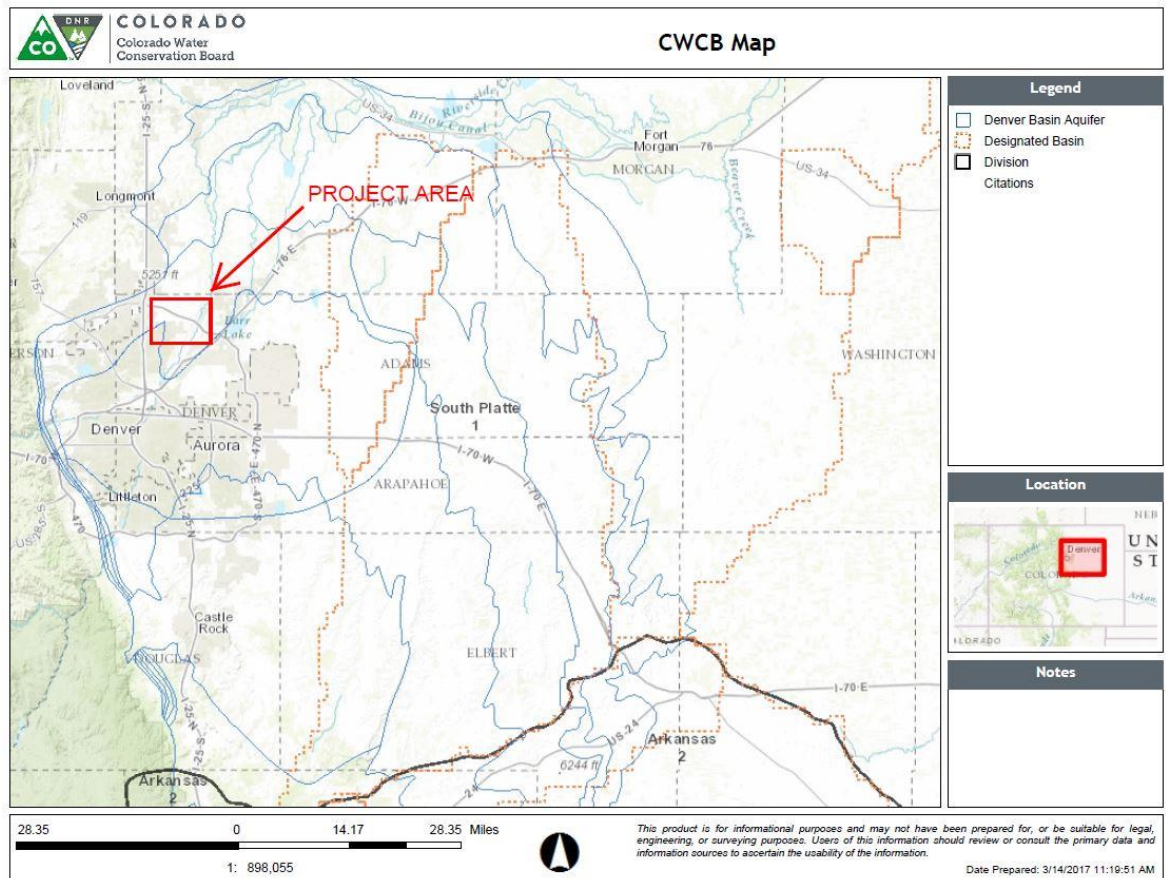


Figure 3.9.4b – Division of Water Resources, Denver Basin Aquifer Map

The Denver Basin – Denver and Arapahoe Aquifers

The Denver Basin is a structural sedimentary basin and is a layered, multi-aquifered system. In the Project Area, groundwater typically flows from south to north toward the South Platte River as illustrated in Figure 3.9.4c below.

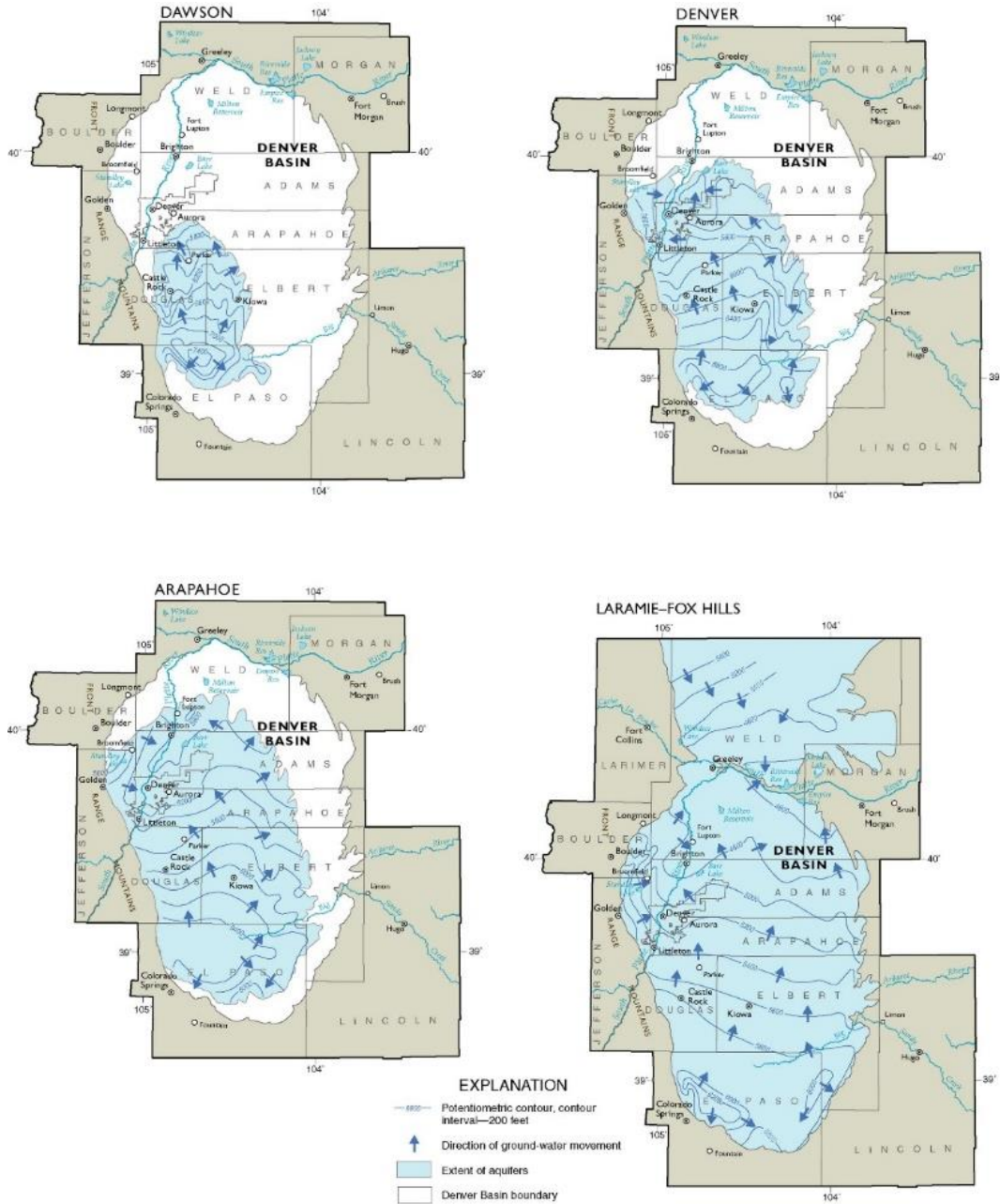


Figure 3.9.4c – Denver Basin, Groundwater Flow Patterns

The Denver Basin is a heavily used system and the demand for water has changed the natural groundwater flow processes. Historical discharge to streams and alluvial aquifers has been reduced and in some cases eliminated. The proposed pipeline, however, will be buried approximately 48 inches below existing grade and therefore should have no impact on groundwater quality or quantity in the Denver Basin aquifers. The depth to the Arapahoe and Denver Basins bedrock aquifers is 0.5 mile or more below the surface.

The levels of total dissolved solids in the groundwater in the Arapahoe and Denver Basins range from 400 to 1,000 milligrams per liter. Values and delineations are presented in Figure 3.9.4d below.

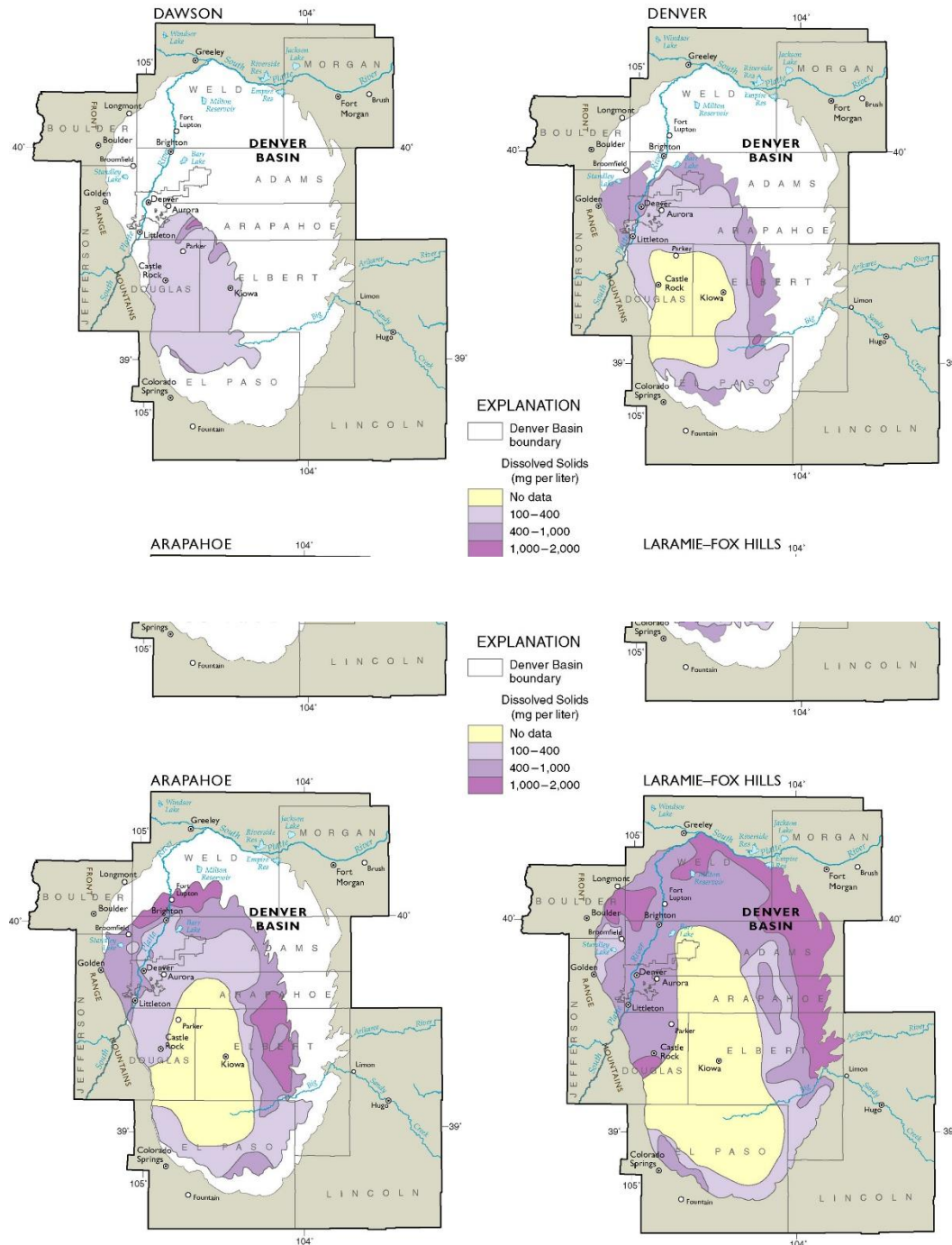


Figure 3.9.4d – Denver Basin, Total Dissolved Solids

The South Platte River Basin

The South Platte River alluvial aquifer is fed by surface waters within the Project Area. Similar to the Denver Basin, the general flow is south to north as most surface waters within the Project Area are tributaries of the South Platte River as illustrated in Figure 3.9.4e at top of the following page.

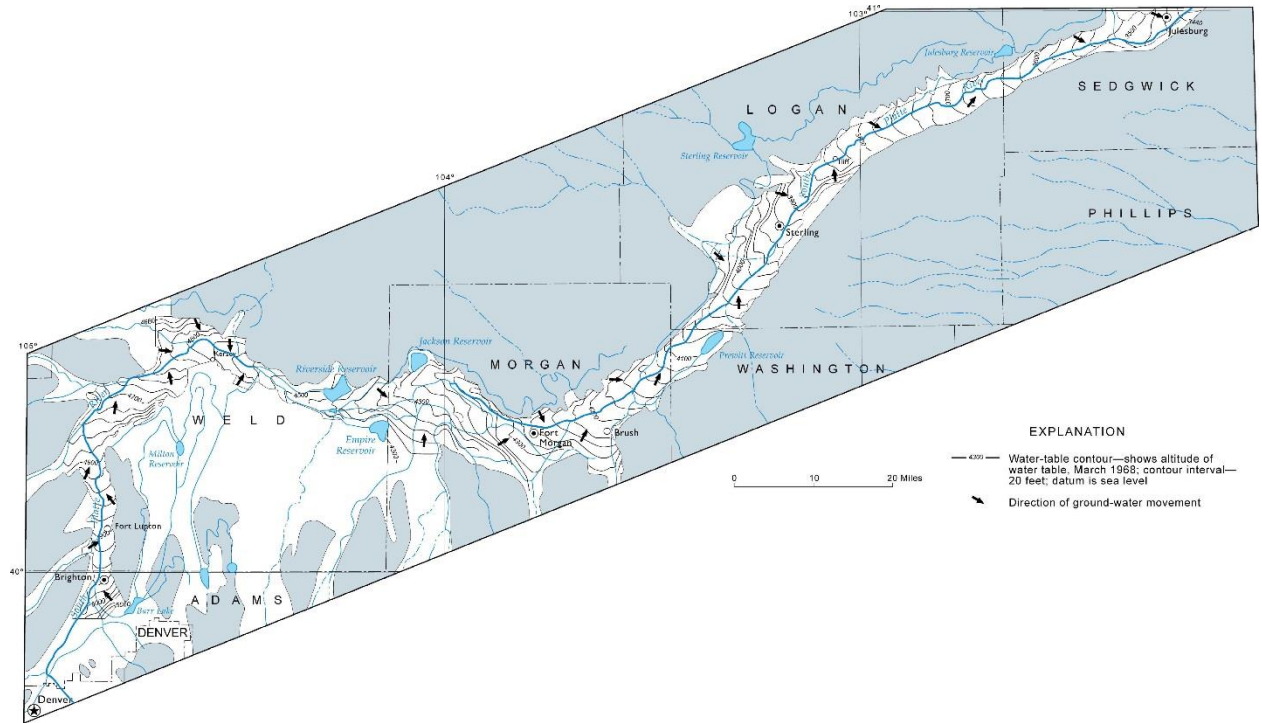


Figure 3.9.4e – South Platte River Basin, Groundwater Flow Patterns

It is possible that alluvial groundwater flow in the Lower South Platte River alluvial aquifer could be impacted if trenching intersects with shallow groundwater. However, the route crosses through very few floodplains or areas with riparian vegetation, and therefore it is not anticipated that much shallow groundwater will be encountered. Additionally, the historical depths to the alluvial aquifer in the Project Area are between 10 and 50 feet as presented in Figure 3.9.4f below.

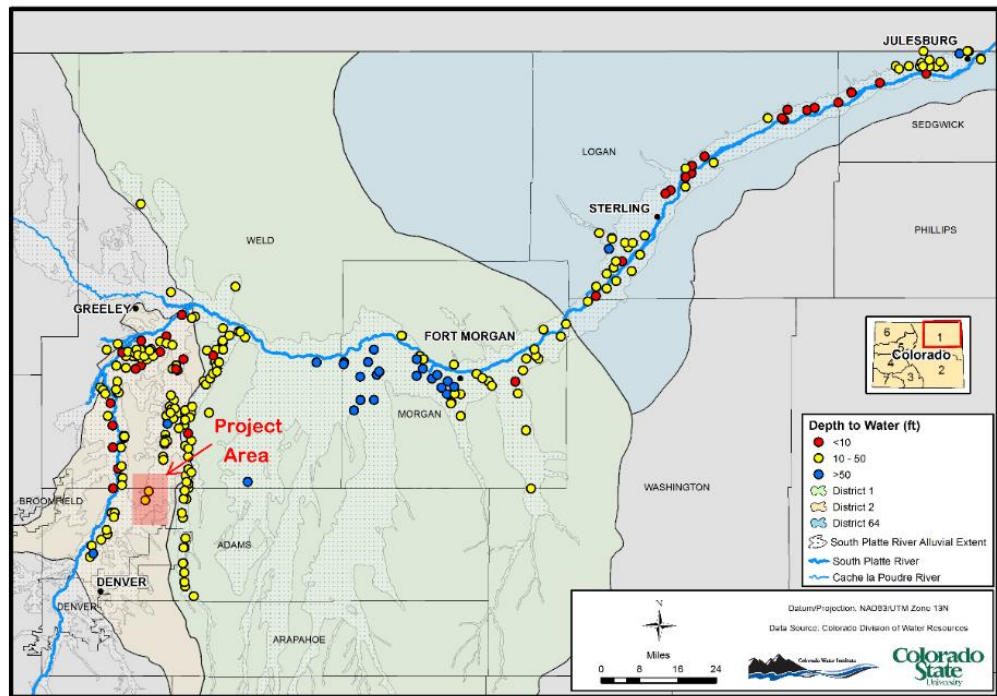


Figure 3.9.4f – South Platte River Alluvial Aquifer, Groundwater Table Depths

As mentioned above, the pipeline will be located 48 inches below grade, with a bottom of ditch depth of approximately 66 inches, and therefore no impact on groundwater is anticipated. Similarly, HDD crossings associated with the construction of the pipeline will be at 30-foot depths or less. If groundwater is encountered during trenching or HDD activities, de-watering methods may be used and the water will be pumped and discharged to alluvial/colluvial sediments close to the pipeline trench. During construction, the applicable BMPs will be implemented to mitigate any erosion issues, in accordance with the written Stormwater Management Plan.

The levels of total dissolved solids in the groundwater in the Lower South Platte River aquifer range from 1,000 to 2,000 milligrams per liter. Values and delineations are presented in Figure 3.9.4g below.

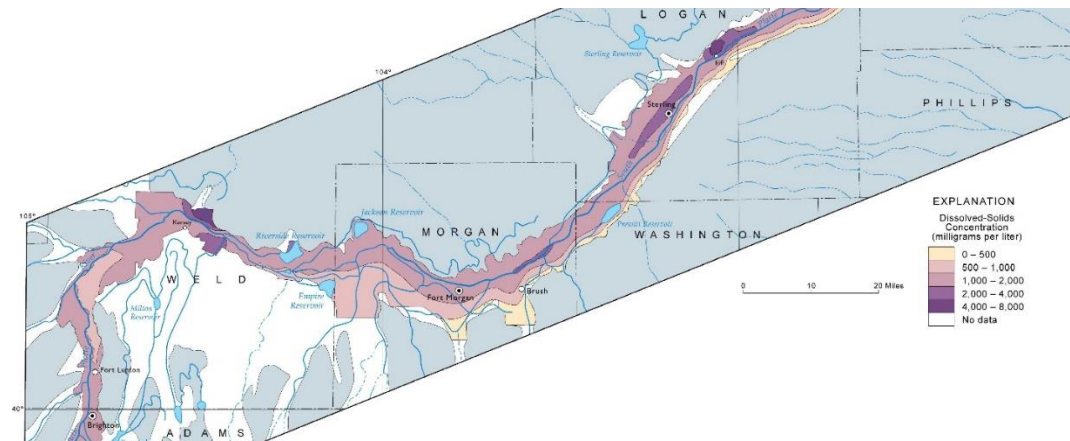


Figure 3.9.4g – South Platte River Alluvial Aquifer, Total Dissolved Solids

Colorado Division of Water Resources South Platte Division

In the South Platte Division, the Colorado Division of Water Resources lists 167,750 “wells constructed” producing between 0 and 9,000 gallons per minute (gpm). The lower capacity wells (<100 gpm) are primarily used for domestic household use and livestock watering. The higher capacity wells are used for industrial, municipal, and irrigation purposes. Water well application locations are depicted in Figure 3.9.4h at top of the following page. Similarly, current wells and well fields within the Project Area are illustrated in Figure 3.9.4j at the bottom of the following page. Denver Aquifer wells typically have flow rates between 50 and 150 gallons and Denver Aquifer has about 800 high-capacity wells with total annual permitted withdrawals of more than 72,600 acre-feet. Arapahoe Basin wells can yield up to 800 gpm. Arapahoe Aquifer has more than 1,000 high-capacity wells with maximum total annual withdrawals of more than 168,700 acre-feet. The Project Area does include both domestic and agricultural water wells. The Applicant will coordinate with private landowners to ensure that groundwater quality is not affected by construction or operation of the Project.

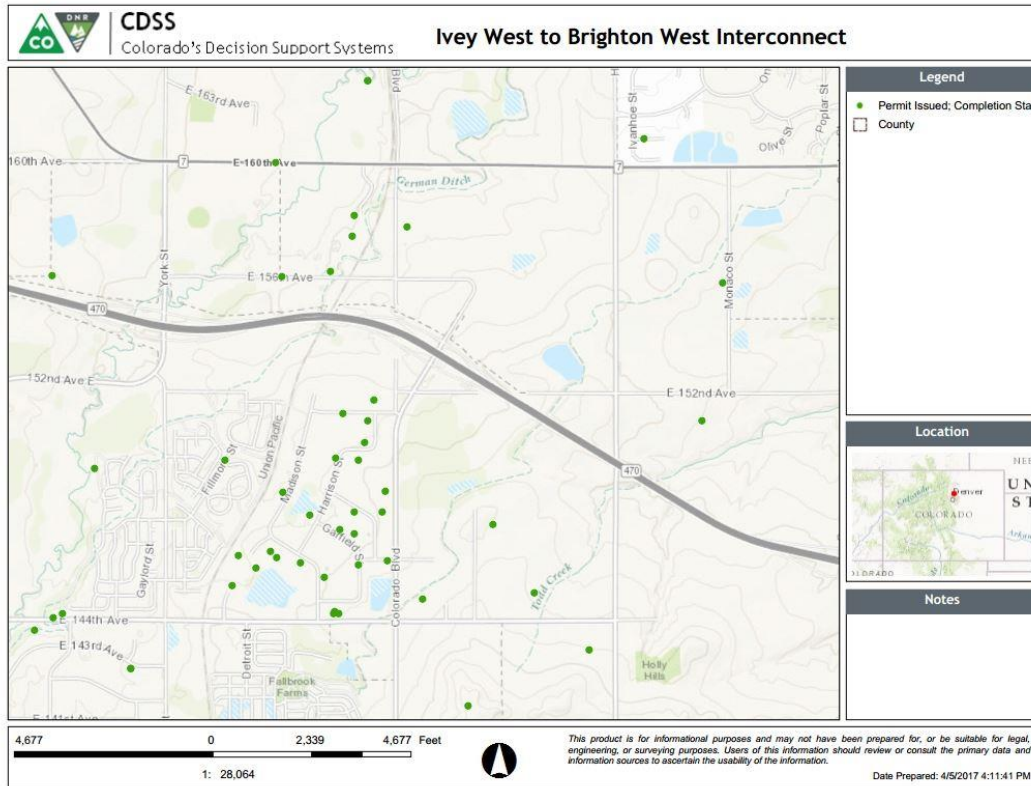


Figure 3.9.4h – Water Well Applications within the Project Area

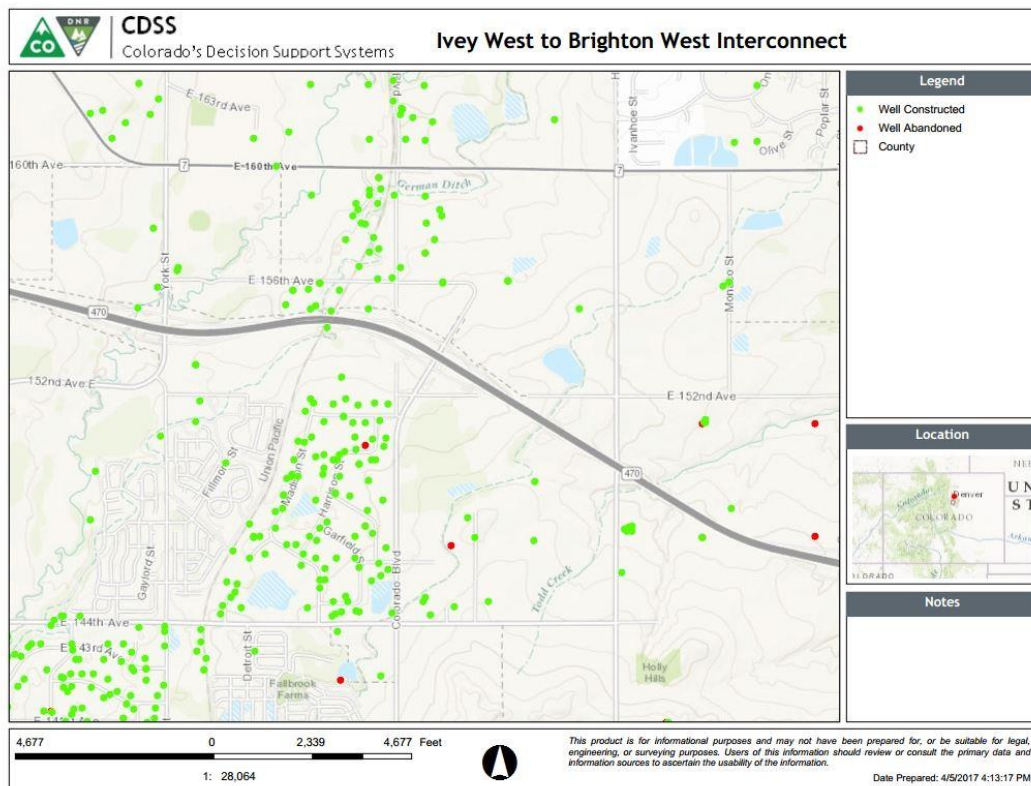


Figure 3.9.4j – Existing Water Wells and Well Fields within the Project Area

Alluvial groundwater flow could be impacted if trenching intersects with shallow groundwater which could occur in areas with riparian vegetation or developing floodplains. If groundwater is encountered during trenching or HDD activities, de-watering methods may be used and the water will be pumped and discharged to alluvial/colluvial sediments close to the pipeline trench. During construction, the applicable BMPs will be implemented to mitigate any erosion issues, in accordance with the written Stormwater Management Plan. If necessary, trench breakers will be installed to keep seasonal high-water tables from diverting any flow to the pipeline trench.

Overall, the Project should have no impact on groundwater.

3.9.5 WETLANDS & RIPARIAN AREAS

1. *Map and description of all floodplains, wetlands, and riparian areas to be affected by the project, including a description of each type of wetlands, species composition, and biomass.*

Figure 3.9.5 on the following page illustrates flood hazard areas crossed by the pipeline in Adams County (FEMA 2017). The ROW crosses approximately 0.43 miles of FEMA-designated 100-year floodplain.

Wetland crossing locations were determined by review of NWI mapping followed by field review and verification. The maps in Exhibit N "Environmental Maps" illustrate the location and extent of all wetlands and Table 3.9.3, above, summarizes these crossings. The route would cross approximately 200 feet of wetlands in Adams County. Dominant plants in these wetland areas include hydrophytic species such as narrowleaf cattails, Nebraska sedge, Baltic rush, softstem bulrush (*Schoenoplectus tabernaemontani*), common threesquare (*Schoenoplectus pungens*), and saltgrass.

The only riparian habitat crossed is located along a crossing of Big Dry Creek; the riparian habitat along this creek is dominated by wetland plants with a few Russian olive (*Elaeagnus angustifolia*) trees. This area would be crossed by an HDD with no disturbance of the riparian habitat area.

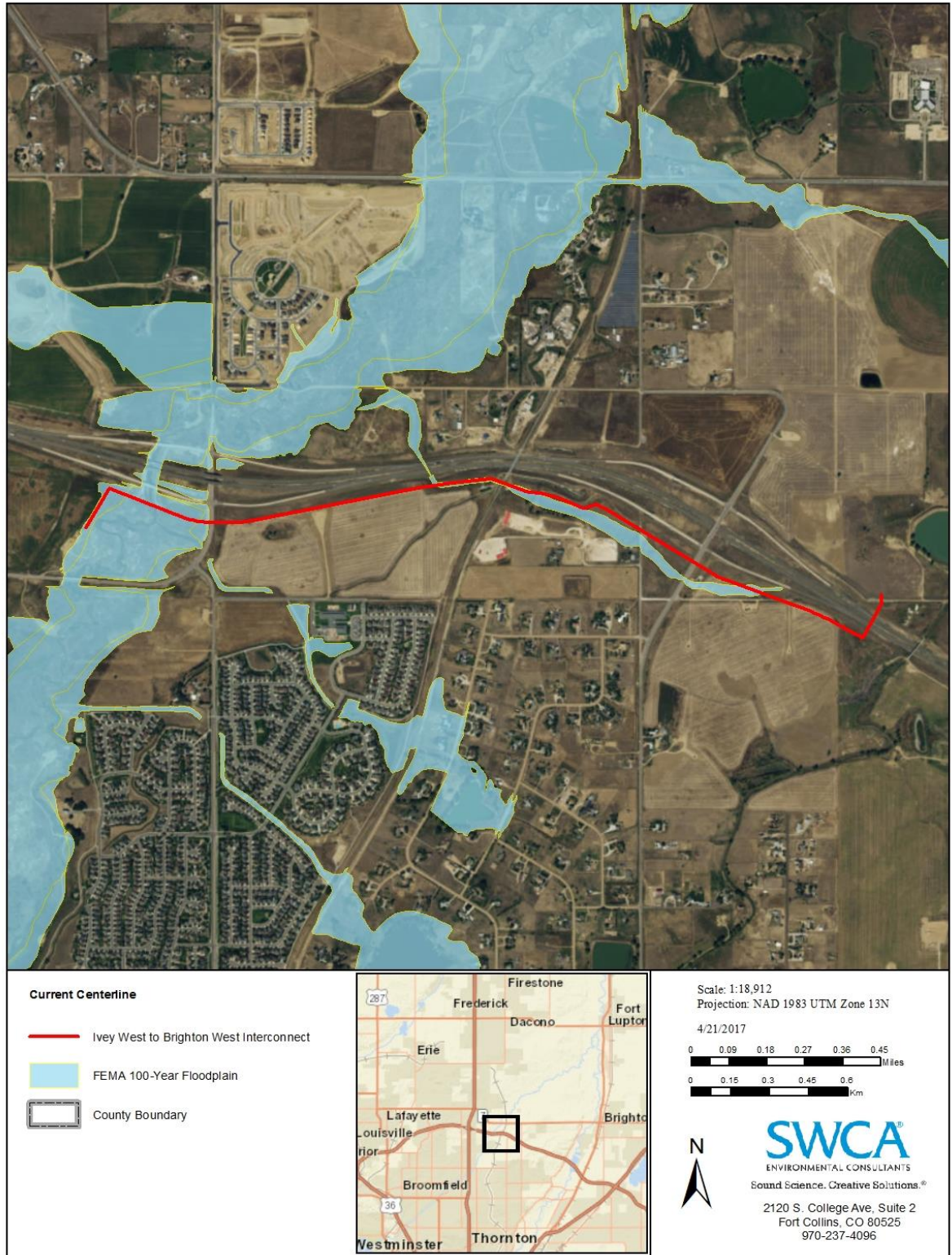


Figure 3.9.5 – Flood Hazard Areas, Adams County

2. *Description of the source of water interacting with the surface systems to create each wetland (i.e., side-slope runoff, over-bank flooding, groundwater seepage, etc.).*

The majority of wetlands along the route are fed by groundwater via a high water table. Standing water and saturated soils are present at most wetland areas. Seepage from irrigation and ditches also provides or supplements the hydrology of some wetland areas.

3. *Description of the impacts and Net Effect that the Project would have on the floodplains, delineated flood hazard zone(s), wetlands and riparian areas.*

Temporary disturbance during construction across 0.43 miles of 100-year flood hazard areas would not impact flood flows or future flood hazards. Once construction is completed in the flood hazard area, the ground will be returned to its original contours with no permanent aboveground structures.

Project construction would temporarily impact 0.28 acre of wetlands. Where possible, wetland crossings would be completed using an HDD. In areas with open cut wetland crossings, the construction ROW width would be reduced from 75 feet to 50 feet and only the trench line would be topsoiled. The travel lane and working space would be matted to avoid disturbing wetland soils. Construction traffic would be restricted to the matted area. Upon completion of construction, wetlands will be restored to preconstruction conditions and contours, topsoil will be replaced, and the wetland will be reseeded. Wetlands should return to preconstruction conditions within one to two growing seasons.

3.9.6 TERRESTRIAL & AQUATIC ANIMALS AND HABITAT

1. *Map and description of terrestrial and aquatic animals including the status and relative importance of game and non-game wildlife, livestock and other animals.*

The Project is located in an area with extensive human disturbance (agriculture, roads, residential development). Wildlife species present include coyote; red fox; a variety of small mammals (deer mouse, house mouse, jackrabbit, cottontail rabbit); a variety of songbirds, small upland game birds, and waterfowl; and a few reptiles (western terrestrial garter snake, gopher snake) and amphibians (bullfrog, leopard frog, spadefoot toad, tiger salamander).

The route crosses approximately 1,050 feet of white-tailed prairie dog (*Cynomys leucurus*) colonies. Four raptor nests are located near the pipeline route; all nests were inactive at the time of survey. One potential blue heron (*Ardea Herodias*) rookery was located approximately 950 feet from the pipeline. The locations of these features are illustrated on the maps under Exhibit N “Environmental Maps”.

2. *A description of stream flows and lake levels needed to protect the aquatic environment.*

The Project would not impact stream flows or lake levels. All streams and ditches would be crossed by HDD with no disturbance of the stream bed or bank. No lakes would be crossed or impacted by Project construction.

3. *Description of threatened or endangered animal species and their habitat.*

SWCA reviewed the list of federally listed species for Adams County, Colorado, available through the U.S. Fish and Wildlife Service (USFWS) website (USFWS 2017) to determine the species that are evaluated in this report. In total, nine species are listed to have potential to occur in the Project Area. Table 3.9.6 on the following page summarizes those species as well as the potential for the species to occur in the area.

Table 3.9.6
Federally Listed Potentially Occurring in the Project Area

Common Name (Scientific Name)	Federal/State Status ¹	Habitat	Potential to Occur on the Site, Project Effects Determination
Plants			
Colorado butterfly plant (<i>Gaura neomexicana</i> var. <i>coloradensis</i>)	FT	Wetland habitats along meandering stream channels of the high plains. This plant typically prefers open habitat where surrounding vegetation is not substantially overgrown, and in undisturbed areas it is found in association with native grasses.	The proposed Project is within the range for the species but no suitable habitat was observed during surveys. The species is unlikely to be present.
Ute ladies'-tresses (<i>Spiranthes diluvialis</i>)	FT	Areas with seasonally wet soils and wet meadows near springs, lakes, or perennial streams and their associated floodplains below 6,500 feet above sea level in the South Platte River drainage.	The proposed Project is within the range for the species but no suitable habitat was observed during surveys. The species is unlikely to be present.
Western prairie fringed orchid (<i>Platanthera praeclara</i>)	FT	The species occurs in Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and Oklahoma. Upstream depletions to the Platte River system in Colorado and Wyoming may affect the species in Nebraska.	Occurs in native mid-height and tall grass prairie habitat. No occurrence in Colorado. Any depletion of water that flows to the South Platte River system that results from Project development could impact this species. This Project would not require water depletions and would not impact this species. No effect.
Fish			
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	FE	Riverine areas associated with the Platte River.	No potential to occur on site. Any depletion of water that flows to the South Platte River system that results from Project development could impact this species. This Project would not require water depletions and would not impact this species. No effect.
Birds			
Least tern (<i>Sterna antillarum</i>)	FE	Sandy beaches, shorelines, and islands.	No potential habitat on site. Any depletion of water that flows to the South Platte River system that results from Project development could impact this species. This Project would not require water depletions and would not impact this species. No effect.

Table 3.9.6 (Cont.)
Federally Listed Potentially Occurring in the Project Area

Common Name (Scientific Name)	Federal/State Status ¹	Habitat	Potential to Occur on the Site, Project Effects Determination
Birds (Cont.)			
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	FT	Residents of old-growth or mature forests that possess complex structural components (uneven aged stands, high canopy closure, multi-storied levels, high tree density). Canyons with riparian or conifer communities are also important components.	The Project Area is located on the plains. There is no potential habitat for this species on or near the site. It is highly unlikely that this species occurs on or near the site. No effect.
Piping plover (<i>Charadrius melodus</i>)	FT	Sandy beaches, shorelines, and islands.	No potential habitat on the site. Any depletion of water that flows to the South Platte River system that results from Project development could impact this species. This Project would not require water depletions and would not impact this species. No effect.
Whooping crane (<i>Grus americana</i>)	FE	Wetlands, lakes, agricultural fields, and pastures.	A very rare migrant in the region. No potential habitat for the species on site. Any depletion of water that flows to the South Platte River system that results from Project development could impact this species. This Project would not require water depletions and would not impact this species. No effect.
Mammals			
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	FT	Thick shrubby and tree-dominated riparian zones.	No suitable habitat was identified in the Project Area. All creeks and ditches will be bored, with no impact to riparian areas. Unlikely to impact this species.

Notes:

1. Regulatory Status:
FT = Federally listed as threatened
FE = Federally listed as endangered
Sources: USFWS 2017

Project construction is unlikely to impact any federally listed species. Creeks and ditches would be crossed by HDD with no disturbance to the creek bed or adjacent habitat.

4. *Map and description of critical wildlife habitat and livestock range to be affected by the project including migration routes, calving areas, summer and winter range, and spawning beds.*

The Project does not cross or impact critical wildlife habitat areas. There are no big game winter concentration areas or migration corridors in the area.

The most important wildlife habitat areas crossed by the ROW include wetlands, native grassland areas, white-tailed prairie dog colonies, and raptor nests, the locations of which are illustrated under Exhibit N "Environmental Maps".

The Project does not cross any important fisheries, aquatic habitats, or spawning beds.

5. *Description of the impacts and Net Effect that the Project would have on terrestrial and aquatic animals, habitat and food chain.*

Project construction would cause the temporary disturbance of 9.89 acres of agricultural lands, 7.8 acres of native grasslands, and 0.22 acre of wetlands. Disturbance of these habitat areas would be limited to one growing season. Once construction is completed the ROW would be restored to preconstruction conditions and contours, topsoil would be replaced, and the ROW would be reseeded (except on agricultural lands). The temporary loss of habitat is not anticipated to impact any populations of local wildlife, or wildlife food chains.

Project construction-related disturbance (traffic, noise, and increased human activity) could result in the temporary displacement of wildlife near construction zones. Limited mortality of small and less mobile animals (small mammals, some reptiles and amphibians) would occur with construction. No long-term disturbance impacts would occur once construction along the ROW is completed and the ROW is restored.

ROW restoration, preconstruction raptor and burrowing owl surveys (if construction is proposed during the nesting season for these species), HDD of stream and canal crossings, and other mitigation/minimization and restoration measures implemented for this Project will help reduce impacts to wildlife and habitats.

3.9.7 TERRESTRIAL & AQUATIC PLANT LIFE

1. *Map and description of terrestrial and aquatic plant life including the type and density, and threatened or endangered plant species and habitat.*

The Project is primarily within a mixture of irrigated and dryland agricultural lands. The common agricultural lands include dryland wheat, corn, alfalfa, and grass hay. The Project also crosses herbaceous native upland habitat dominated by non-woody vegetation (i.e., grasses and forbs). The dominant species are blue grama, buffalograss, western wheatgrass, and slender wheatgrass. These grassland communities are in generally poor condition due to disturbance and therefore have become infested with invasive species that include cheatgrass, musk thistle, and Canada thistle. Multiple wetlands are also crossed by the Project, dominated by hydrophytic species such as narrowleaf cattails, Nebraska sedge, Baltic rush, and saltgrass.

The maps included under Exhibit N “Environmental Maps” illustrate the different land use types crossed by the Project as well as all the wetland and stream crossings. Table 3.9.7 below presents the length of crossing of each vegetation type.

**Table 3.9.7
Vegetation Types Crossed by Boardwalk Pipeline Project – Phase II
Ivey West to Brighton West Interconnect**

Vegetation Type	Length (Miles)	Acres of Temporary Impact	Acres of Permanent Impact
Agriculture	1.01 (5,312 feet)	9.34	0.00
Native grassland	0.91 (4,800 feet)	10.77	0.00
Wetlands	0.03 (972 feet)	0.22	0.00
Roadway – Parcel Gaps	0.15 (792 feet)	1.36	0.00

2. *Descriptions of the impacts and Net Effect that the Project would have on terrestrial and aquatic plant life.*

After construction, the ROW would be restored to preconstruction conditions and contours, topsoil would be replaced, and the ROW would be reseeded. A temporary impact to the vegetation in the ROW would occur for one to two growing seasons.

3.9.8 SOILS, GEOLOGICAL CONDITIONS & NATURAL HAZARDS

1. *Map and description of soil, geologic conditions, and Natural Hazards including but not limited to soil types, drainage areas, slopes, avalanche areas, debris fans, mud flows, rock slide areas, faults and fissures, seismic history, and wildfire hazard areas.*

Figures 3.9.8 below illustrates the soil types crossed by the preferred pipeline route.



Figure 3.9.8 – Ivey West to BWI – Soils, Adams County

Source: websoilsurvey.sc.egov.usda.gov

There are no mapped faults within 30 miles of the project area (USGS 2016). There is a 0.01-0.02 probability of a greater than 5.0 earthquake occurring in the area within 50 years (USGS 2009). There are no known geological hazards (landslides, steep slope areas, potential mud flows) in the Project area.

Due to the lack of identified natural hazards, it is highly unlikely the Project area will be affected by a natural hazard nor would the Project exacerbate the potential of generating a natural hazard.

The USGS soil descriptions as well as a full report for the Project area soils is provided under Exhibit O “USGS Soils Report”. In addition, geotechnical investigations of the soils along the pipeline route are currently being performed at select crossing locations. A copy of the final geotech report will be submitted to the County upon receipt.

2. *Descriptions of the risks to the Project from Natural Hazards.*

There is a low risk to the project from natural hazards. Topography is gentle along the ROW. There are no steep slopes, areas with landslide risk, or fault areas (USGS 2016) along the route.

3. *Descriptions of the impact and net effect of the project on soil and geologic conditions in the area, and their effects on streambed meander limits and aquifer recharge areas.*

Pipeline construction is not anticipated to impact long term soil productivity. Soil stockpiling would prevent the mixing of topsoil and subsoil by using soil segregation methods. The top 6-12 inches (additional topsoil depth may be required across agricultural lands if requested by landowners) of topsoil will be segregated from the subsoil and stockpiled in a separate pile. Topsoil will be stripped and stockpiled from the ditch line and adjacent spoil areas. Traditionally, vegetation is cleared with a bulldozer down to bare soil across the entire construction ROW. In order to minimize

disturbance and the need for extensive use of restoration treatments, the contractor will attempt to minimize the ROW width wherever possible. Where possible, vegetation will be crushed by track vehicles or cut with a brush hog instead of cleared. Clearing will be necessary over the trench and possibly the passing lane, depending on fire protection needs for welding operations. Additional disturbance may occur if soil padding is used to work over adjacent pipelines. Wherever blading occurs, topsoil will be salvaged, stored separately and protected.

The pipelines are not anticipated to cross any areas of exposed bedrock. Pipeline installation would be within areas of mixed soil with scattered rocks.

The Project will not impact streambed meander limits and aquifer recharge areas. Ditch and stream crossings would be by HDD with no disturbance of the stream or ditch bed and bank. The pipeline would be constructed in a shallow trench (approximately 4 feet), the pipeline would not impact aquifer recharge.

3.9.9 NUISANCES

Descriptions and maps showing the range of noise, glare, dust, fumes, vibration, and odor levels caused by the Project, along with an indication of their significance.

Localized areas of construction noise, and fugitive dust would occur along the pipeline route. Fugitive dust, dirt and mud on roadways would be reduced by following BMP's that will be outlined in the project Stormwater Management Plan. Watering of construction sites will be used as needed to control fugitive dust. Vehicle construction entrances will be used to minimize dirt and mud on public roads where construction traffic enters and exits. Road cleaning will be completed as needed if dirt builds up at construction entrances and exits onto public roads.

Project related trash will be collected on a daily basis and restricted to appropriate receptacles. All construction materials will be contained within the construction ROW or construction work areas.

Localized levels of increased noise will occur temporarily near each construction spread. This noise will be generally restricted to day light hours (note: HDD sites will operate over a 24 hour period). Noise in any area should be restricted to a few days, just during active construction in an area. The pipeline has been routed to avoid most areas of potential conflicts. Construction related noise would be similar to ongoing agricultural activities.

3.9.10 AREAS OF PALEONTOLOGICAL, HISTORICAL & ARCHEOLOGICAL IMPORTANCE

1. *Map and description of all sites of paleontological, historic or archaeological interest.*

The route crosses areas of mainly loamy Pleistocene and Holocene slope wash, along with alluvium and aeolian deposits (ESRI and Natural Resources Conservation Service 2014). These formations have the potential to yield recent Pleistocene and Holocene faunal remains and possibly fossils as well. The pipeline will be buried in an approximately 4- to 5-foot deep trench, which will cut through pedogenically altered surface and near-surface horizons, as well as layers of subsoil. These depositional settings have the potential to contain recent fossils. Additionally, in areas where Tertiary-Cretaceous bedrock is exposed (Tweto 1979), there is the potential to yield much older fossils from these time periods as well, including but not limited to fossilized plant remains, which are relatively common occurrences in these strata.

SWCA Environmental Consultants completed a desktop review of known and potential cultural resources located along the Project centerline (Exhibit P) (Burnett 2017). Records from the Colorado Office of Archaeology and Historic Preservation (OAHP) were searched, which provide a complete summary of all documented prehistoric and historic cultural resource sites and site segments in the Project vicinity. This records search also identifies any National Register of Historic Places (NRHP) properties and districts. General Land Office (GLO) plats, and historic topographic maps were reviewed in an attempt to identify historic resources that are not present in OAHP records.

Results of the records search completed for the Project are provided under Exhibit P, Desktop Cultural Resources Review of the Proposed Ivey West to County Line Pipeline, Adams County, Colorado (Burnett 2017).

Three of the previously recorded cultural sites identified in OAHP records are within 200 feet of the proposed centerline. These include one historic ditch segments, one railroad segment, and one farmstead. The historic railroad segment (5AM472.17) is eligible for NRHP nomination, and the remainder of the sites are either not eligible or noncontributing to overall site eligibility.

A review of historic 1:24,000-scale 7.5-minute U.S. Geological Survey (USGS) quadrangles and 1866 GLO plats identified additional site leads. The GLO plats depict very few features of potential significance. One site lead was generated from the GLO plat: a road labeled “Dry Creek Road,” but this road is no longer intact. By 1938, several farmsteads had occupied the Project vicinity (USGS 1940), and these are represented by mapped buildings on the historic quadrangles. The number of mapped buildings more than doubled by 1965 (USGS 1965). The historic buildings cannot be entirely confirmed to be extant, but OAHP records for the few that have been formally documented indicate that both NRHP-eligible and not eligible farmsteads are present in the vicinity. Considering the current level of modern visual disturbance in the area, the proposed pipeline is unlikely to result in significant indirect adverse effects to any NRHP-eligible historic buildings in the vicinity of the Project. Aside from the ditch segments and scattered historic buildings, the historic map review identified no other significant potential historic resources in the Project Area vicinity that are not already identified in the OAHP records. Eight potentially historic named roads have been mapped in proximity to the proposed centerline (U.S. Census Bureau, Geography Division 2010). These roads have been upgraded and/or paved and remain in use today.

For detailed summaries of previous cultural resources inventories and the results of the cultural resources and cultural site leads identified in the Project vicinity, the reader is referred to Exhibit P (Burnett 2017).

2. *Description of the impacts and Net Effect of the Project on sites of paleontological, historic or archaeological interest.*

No impacts to significant paleontological resources are anticipated with Project construction. Construction is unlikely to extend into bedrock. More recent fossils could be present in sandy areas and subsoil areas. A qualified paleontologist will be on call during the construction phase. If potential fossils are encountered, construction will be temporarily halted in that area until site review by the paleontologist.

Impacts to known cultural resource sites are not anticipated. The Union Pacific Railroad – Dent Branch, German Ditch, Signal Ditch, and potentially historic roads (East 152nd Avenue, East 160th Avenue, Baseline Road, Colorado Boulevard, Holly Street, Monaco Street, Quebec Street, and York Street) are the only cultural resources identified in this desktop review that may be adversely affected by this Project. All canals will be crossed by using HDD. The HDD technique will avoid all impacts to the bed and banks of canals. The areas of highest potential for encountering previously undocumented buried archaeological deposits are in the intact soils on either side of Big Dry Creek. In the event that such a discovery is made, SWCA recommends that the resource be formally recorded and evaluated for NRHP eligibility by a permitted archaeologist. The State Historic Preservation Office will be consulted if needed to determine appropriate mitigation of any discovered cultural resource sites.

3.9.11 HAZARDOUS MATERIALS DISCRPTION

1. *Description of all hazardous, toxic, and explosive substances to be used, stored, transported, disturbed or produced in connection with the Project, including the type and amount of such substances, their location, and the practices and procedures to be implemented to avoid accidental release and exposure, and any foreseeable impacts to the environment of such substances.*

No toxic or explosive substances will be stored along the right-of-way, at the Brighton West Interconnect Facility site or in the associated construction areas. Upon installation of the pipelines, the lines will transport natural gas, crude oil, and produced water.

The wet natural gas is a high BTU gas with entrained natural gas liquids.

The crude oil is anticipated to be a light sweet oil with an API gravity of approximately 34 degrees.

The Project will be managed and maintenance will be performed on the respective pipelines and at the Brighton West Interconnect Facility in order to mitigate risk, including but not limited to:

- ❖ The natural gas and crude oil pipelines will be designed to Federal Safety Standards contained in 49 CFR Part 192 and 49 CFR Part 195 respectively in addition to national engineering design codes for pipelines set forth by the American Society of Mechanical Engineers, and Colorado Oil and Gas Pipeline Safety Regulations.
- ❖ The natural gas and crude oil pipelines will be operated to Federal Safety Standards contained in 49 CFR Part 192 and 49 CFR Part 195 respectively, as well as Discovery's internal operating standards and practices, and written maintenance procedures.
- ❖ The State of Colorado mandates excavation safety procedures through legal requirements for utility notification, or "one call" systems, which require advance notification of utilities prior to any excavation in the vicinity of the pipelines.
- ❖ The pipelines will be protected from corrosion by a cathodic protection system and monitored 24 hours / day by a Supervisory Control and Data Acquisition ("SCADA") system.
- ❖ In addition, Discovery will, as required by Federal Regulations, operate the pipelines under a comprehensive Pipeline Integrity Management Program and develop Emergency Response Plans, as required.

There are no chemical or waste storage facilities associated with the Project.

Pipeline burial depths will conform to U.S. Department of Transportation, state, and local requirements with a minimum depth of cover of 48-inches.

Routine maintenance of the Project will be performed on scheduled intervals, and as needed basis in accordance with the guidelines and requirements set forth by the U.S. Department of Transportation and Discovery's internal maintenance procedures, which meet or exceed regulatory requirements. Trained and qualified technicians will be stationed out of Discovery's Ft. Lupton Gas Plant located near WCR 35 and Eagle Street in Weld County to facilitate the proper maintenance of the Project. Maintenance activities associated with the Project will include, but not be limited to:

- ❖ Implementation of a damage prevention program, including observation of any construction activities by others on or near the permanent easement; participation in the State's one-call program and responding to one-calls.
- ❖ Implementation of a public education program;
- ❖ Installation and maintenance of pipeline markers;
- ❖ Inspection and maintenance of corrosion control systems;
- ❖ Inspection of block valves;
- ❖ Inspection of crossings by other pipelines, highways, utilities;
- ❖ Inspection and maintenance of safety, control, mechanical and electrical equipment;
- ❖ Maintenance of communication equipment; and
- ❖ Calibration of all instruments to comply with USDOT regulations.

2. *Location of storage areas designated for equipment, fuel, lubricants, chemical and waste storage with an explanation of spill containment measures.*

Temporary storage areas and laydown yards will be required during construction for construction personnel vehicles, staging of contractor equipment and materials, and general construction activities.

Following construction, there will be no storage of fuels, lubricants chemicals or waste on the pipeline right-of-way or Riverdale Tie-In Facility, except on a temporary basis during maintenance activities.

3. *Reportable quantities, emergency response plan, spill prevention, and counter measures plan due to the proposed project.*

A Spill Response and Emergency Plan specific to the area will be developed for the Project, providing detail for responding to spills during all weather conditions. It will provide detailed information on response procedures to be followed and actions taken in the event of a spill or natural gas release. The plan will include the type and location of equipment and type of personnel training required to implement the plan. Containment and cleanup procedures will also be addressed. The plan will include:

- ❖ Notification procedures for initiating the response and for regulatory reporting;
- ❖ Description of initial response actions, including immediate response steps, securing the source of the spill / release, safety and health considerations, emergency medical treatments, sampling procedures, storage/disposal of waste materials and documentation of the response;
- ❖ Description of response teams and their responsibilities;
- ❖ Command posts and staging areas;
- ❖ Communication equipment;
- ❖ Resources available for response;

Measures to contain or control any spill that may occur and to contact appropriate emergency offices and personnel are formulated and designed in accordance with federal, state, and local requirements.

3.9.12 BALANCE BETWEEN BENEFITS & LOSSES

1. *Description of foreseeable benefits of natural, agricultural, recreational, range or industrial resources within the County and opportunities to develop those resources in the future.*

Project construction would allow local fossil fuels to be developed and marketed. The gathering lines would allow for the safe transport of locally produced fossil fuels.

2. *Description of foreseeable losses of natural, agricultural, recreational, range or industrial resources within the County and loss of opportunities to develop those resources in the future.*

Project construction and operation would result in the temporary loss of production of 9.89 acres of agricultural lands, 7.80 acres of native grassland, and 0.22 acres of wetlands. Impacts to these areas are not anticipated to extend past one to two growing seasons. Impacts to agriculture, range resources, and recreation would be short term.

The pipeline ROW has been routed with landowner input to maximize use of existing ROWs and property boundaries, and to avoid potential future conflicts with land use and development.

3.9.13 MONITORING & MITIGATION PLAN

1. *Description of all Mitigation for the Project.*

- a. *Describe how and when Mitigation shall be implemented and financed.*

Mitigation will be completed during construction, and after construction until the ROW has been restored. The project proponent will fund all mitigation and restoration activities.

b. Describe impacts that are unavoidable that cannot be mitigated.

Project construction and operation would not result in any permanent impacts; all disturbed areas will be restored to preconstruction uses and vegetation.

Fugitive emissions from flanged valve and equipment connections will also result volatile organic compound (“VOC”) emissions, which are covered under the applicable Colorado Department of Health and Environment Air Quality General Permit.

2. *Description of methodology used to measure impacts of the project and effectiveness of proposed Mitigation measures.*

The Project will follow restoration requirements of the Colorado General Stormwater Permit (requires restoration of the entire ROW to 70% vegetation cover), Air Quality General Permit (recovery of tank vapors, complete combustion with enclosed flare in upset conditions), U.S. Army Corps of Engineers Section 404 Permit (requires restoration of all disturbed wetlands to 80% cover), and other appropriate permits.

ROW restoration will be also completed according to the requirements of individual landowners.

3. *Description, location and intervals of proposed monitoring to ensure that Mitigation shall be effective.*

Construction monitoring for stormwater, erosion control, air quality, wildlife, cultural and historic resources (on call experts) and other resources will be completed during the entire construction phase. If there are issues related to these and other resources project construction may be temporarily halted, additional BMP’s or other measures may be added to mitigate impacts.

Post construction monitoring will be completed for stormwater/erosion, ROW restoration, and weed control until all permit requirements have been met and all landowners requirements have been met.

4.0 SAFETY

4.1 SAFETY MEASURES

The pipelines and associated facilities will be covered under an Emergency Response Plan and will be designed and constructed per code. Isolation valves will be strategically placed at each end of the respective pipelines and are required to be inspected twice a year. Overpressure protection devices will be installed and inspected annually or as required by code. Additionally, a hydrostatic test will be performed prior to start up. The pipelines will be protected with a leak detection system and monitored by a 24 hour control room through a SCADA system. The pipelines will be identified through pipeline markers. The steel pipelines will be cathodically protected to mitigate corrosion as well as above ground portions will be inspected through an atmospheric inspection program. Company employees are covered under training programs, including our Operator Qualification Program. Moreover, the company follows a detailed Public Awareness program.

4.2 TYPICAL INCIDENT RESPONSE PROTOCOL

Discovery maintains an emergency response plan which addresses responses to leaks or spills. This response plan contains detailed information on the steps needed to address any emergency event reasonably anticipated to be encountered during pipeline operations. The response plan contains contact information, detailed step by step spill/leak response information, emergency phone numbers for local responders and spill/leak contractors. The response plan is reviewed on a regular basis.

4.3 APPLICANT’S SAFETY RECORD

Discovery has no recordable or non-recordable incidents.

EXHIBIT A
CONDITIONAL USE PERMIT CHECKLIST

CONDITIONAL USE PERMIT

Transmittal Items

Primary Mandatory Items

- 1. Universal Application, including legal description
- 2. Application fee (*refer to fee schedule)
- 3. Written explanation of the project
- 4. Site Plan showing proposed development
- 5. Certificate of Taxes Paid
- 6. Proof of ownership (warranty deed or title policy)
- 7. Proof of water and sewer services
- 8. Proof of Utilities (e.g. electric, and gas)
- 9. Conceptual Review Meeting Letter and/or Waiver
- 10. Traffic Impact Fees Acknowledgement

Secondary Required Project Specific Items

- 1. Tri-County Health Department review fee*
- 2. Copy of certified boundary survey or Improvement Location Survey (ILS) for the subject property
- 3. Neighborhood Meeting Summary (required, unless waived)
- 4. Certificate of Notice to Mineral Estate Owners/and Lessees
- 5. Certificate of Surface Development
- 6. Solid waste transfer station(supplemental documents)
- 7. Solid waste composting facility (supplemental documents)
- 8. Scrap tire recycling facility (supplemental documents)
- 9. Inert fill (supplemental documents)

EXHIBIT B
DEVELOPMENT APPLICATION

Development Application

APPLICANT

Name(s): Phone #:
Address:
City, State, Zip:
2nd Phone #: Email:

OWNER

Name(s): Phone #:
Address:
City, State, Zip:
2nd Phone #: Email:

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

Name: Phone #:
Address:
City, State, Zip:
2nd Phone #: Email:

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

Name(s): Phone #:
Address:
City, State, Zip:
2nd Phone #: Email:

DESCRIPTION OF SITE

Address:

City, State, Zip:

Area (acres or square feet):

Tax Assessor Parcel Number

Existing Zoning:

Existing Land Use:

Proposed Land Use:

Water Service:

Public or Private? If Public, list District.

Sewer Service:

Public or Private? If Public, list District.

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

Name:

Date:

Owner's Printed Name

Name:

Owner's Signature

EXHIBIT C
CONCEPTUAL REVIEW MEETING SUMMARY LETTER



Development Review Team Comments

Date: 1/23/2017

Project Number: PRE2017-00001

Project Name: Boardwalk Pipeline

Note to Applicant:

The following review comments and information from the Development Review Team is based on the information you submitted for the Conceptual Review meeting and applicable to the submitted documents only. The Development Review Team review comments may change if you provide different information during the scheduled Conceptual Review meeting date. Please contact the case manager if you have any questions:

Commenting Division: Building Review

Name of Reviewer: Justin Blair

Date: 01/06/2017

Email: jblair@adcogov.org

No Comment

Commenting Division: Engineering Review

Name of Reviewer: Greg Labrie

Date: 01/23/2017

Email: glabrie@adcogov.org

Complete

ENG1: Buried pipeline is exempt from the floodplain regulations. A floodplain use permit is not required for this project.

ENG2: The applicant shall be responsible to ensure compliance with all Federal, State, and Local water quality construction requirements. Several sections of the "Boardwalk Pipeline Project" are located within the County's MS4 Stormwater Permit area. In the event that the disturbed area of these sites 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.

ENG3: Prior to issuance of construction permits, the developer is required to submit for review and receive approval of all construction documents (construction plans and reports). Construction documents shall include, at a minimum, site plan(s) and profile(s) showing the specific location of the pipeline, both horizontally and vertically, in any area within the Adams County jurisdiction. All construction documents must meet the requirements of the Adams County Development Standards and Regulations. The developer shall submit to the Adams County Development Review Engineering division the following: Engineering Review Application, two (2) copies of all construction documents. The development review fee for utility projects is \$100.0

ENG4: Several sections of the proposed pipeline project run through jurisdictions that are outside of Adams County authority. Adams County cannot permit or approve the pipeline location or construction in these areas. The developer is responsible for meeting all requirements of other jurisdictions.

ENG5: Adams County does not allow gas pipelines to be located within the County's Right-of-Way, excepting perpendicular crossings only.

ENG6: The developer is responsible for the repair or replacement of any broken or damaged County infrastructure damaged by the construction of this project.

ENG7: The proposed project alignment(s) are within the boundaries of the following regional drainage studies:

Beebe Draw and Barr Lake Tributary Areas – Outfall Systems Planning Study, Prepared for Urban Drainage and Flood Control District, Adams County, City of Brighton and, Farmers Reservoir and Irrigation Company. Prepared by Wright Water Engineers, Inc., May 1992.
(Pipeline Alignments: Options 1, 2 & 3)

Todd Creek & DFA 0052 OSP, Prepared for Urban Drainage Flood Control District and Adams County,

Flood Hazard Area Delineation Beebe Draw and Left Bank Tributaries, Prepared for Urban Drainage and Flood Control District. Prepared by Kiowa Engineering Corp., July 1993.
(Pipeline Alignments: Option 2)

South Platte River MDP, Prepared for Urban Drainage Flood Control District and Adams County, April

2002.

Second Creek (Downstream of DIA) and DFA 0053, Prepared for Urban Drainage and Flood Control District, and Adams County, October 2003.

For the regional drainage facilities mentioned in the studies listed above, it is recommended that the applicant either avoid them or install the line to a depth below the facility to provide sufficient cover and avoid potential utility conflicts. Show these regional facilities on the plans.

ENG8: Full street closings are generally not allowed within Adams County, unless approved by Construction Management. It is recommended that street crossing be bored, when possible, to prevent street closures (even partial closures).

ENG9: All work within County ROW, properties or County regulated floodplains will require construction permitting.

Commenting Division: Parks Review

Name of Reviewer: Aaron Clark

Date: 01/20/2017

Email: aclark@adcogov.org

Complete

PRK1: Mapping of the "AC West Preferred Route" is in insufficient detail to determine whether the proposed route crosses property owned by the County as open space. Parcel #0157122000001, the Riverdale Bluffs Open Space. This property is under a conservation easement held by Commerce City. Please provide more details.

PRK2: The "Barr Lake Preferred Route" runs immediately to the north of property owned by the County as open space. Parcel 0156900000275. Please coordinate with Parks on any anticipated impacts to the open space property.

Commenting Division: Planner Review

Name of Reviewer: Chris LaRue

Date: 01/23/2017

Email: clarue@adcogov.org

Complete

PLN1. Per Section 2-02-08 completed CUP applications, including all relevant items within the application checklists are required. Hearings will be required before both the Planning Commission and the Board of County Commissioners.

PLN2. A summary of all neighborhood/scoping meetings held by the applicant(s) addressing the concerns of the meeting. The summary should include the names, addresses, telephone numbers, and concerns expressed during the meeting. Neighborhood meetings shall comply with Section 2-01-02.

PLN3. The site plan to be submitted shall be prepared at an easily readable scale showing:

- i. Boundary of the proposed activity;
- ii. Relationship of the proposed activity to surrounding topographic and cultural features such as roads, streams and existing structures;
- iii. Proposed buildings, improvements, and infrastructure; and
- iv. Clearly labeled major roads.

PLN4. Please submit all items listed on the CUP and ASSI (Areas and Activities of State Interest) checklists for all proposed pipeline alignments. All of the submittal items in the CUP and ASSI applications are equally important, and please pay particular importance to AASI checklist items #25, #27-35, and Submittal Item E. While the process for permitting this project will be a Conditional Use Permit, we review additional information similar to the requirements listed on the AASI application.

PLN5. Please provide a written summary that describes the impacts of the proposed project as it relates to applicable approval criteria that shall be required for the application, along with a copy of the latest approved zoning and subdivision plans, a vicinity/zoning map, and Assessor Parcel Numbers of the parcels that are proposed to be developed.

PLN6. Describe the status of other Federal, State, and local permit requirements (chart form is preferred). If you have obtained said permits please submit them with your application.

PLN7. Prepare a Development Agreement that outlines the requirements regarding the pre-construction, construction, post-construction, and maintenance requirements of the Project.

PLN8. The proposals would pass through a variety of zonings within Adams County to include A-3, A-1, PL, RE, PUD, and DIA. Future applications will need to address compatibility with the zonings.

PLN9. The proposal would pass through lands designated as Mixed Use Employment/Neighborhood, Parks and Open Space, Residential, Agricultural, and Estate Residential. Please describe how the proposal will be consistent with these designations.

PLN10. The proposals would impact several municipalities. Please contact those cities and provide a status update as to the permitting required.

PLN11. Contact the E-470 Authority, CDOT & Barr Lake State Park to determine any concerns.

PLN12. Contact all park and recreation districts, water districts, fire districts, school districts, and neighborhood organizations and determine any concerns.

PLN13. Contact all ditch companies that could be impacted and determine any concerns they might have.

PLN14. A detailed alternatives analysis shall be presented on the route selection. You will need to discuss at least three different alternatives (the preferred route may be one of the three).

PLN15. Safety Record. Please provide operational safety records for all parties involved in the construction, operation and maintenance of the pipeline and facilities. Report and describe items such as deaths, injuries, explosions, leaks and spills. Detail the steps to prevent such occurrences in the future. With the application describe other relevant safeguards, protocols, and reporting/notification systems that would be in place to respond to safety and security incidents involving the proposed infrastructure.

Commenting Division: Planner Review

Name of Reviewer: Chris LaRue

Date: 01/23/2017

Email: clarue@adcogov.org

Complete

PLN16. Provide information regarding securing permissions from private property owners where the infrastructure will traverse/impact.

PLN17. Adequate landscaping/screening shall be installed where areas can be seen from the public right-of-way or any other sensitive area (residential).

PLN18. The site plan with the application was difficult to read due to the scale. More detailed comments can be provided with a more detailed plan.

PLN19. The various routes will pass near or through multiple areas developed with residential. Staff would anticipate a lot of concerns from property owners.

PLN20. A neighborhood meeting is required. You will want to obtain citizen approval prior to submitting a case. Comments or concerns made by an agency interested in the project should be incorporated into the application. We can assist you with labels. Please review Section 2-01-02, Neighborhood Meetings to ensure your neighborhood meeting will comply with our requirements. That section talks about location of the meeting, notice of the meeting, and format.

PLN21. There are several different lines that we know from discussions may follow separate processing under different applications. The above comments would be applicable to all of the different components. More detailed and individualized comments will be prepared for each separate project.

PLN22. Please utilize the following link to access our land use permits:
<http://www.adcogov.org/index.aspx?NID=1475>

PLN16. Provide information regarding securing permissions from private property owners where the infrastructure will traverse/impact.

Commenting Division: ROW Review

Name of Reviewer: Chris LaRue

Date: 01/23/2017

Email: clarue@adcogov.org

No Response

EXHIBIT D
NEIGHBORHOOD MEETING NOTIFICATION & SUMMARY

EXHIBIT D
NEIGHBORHOOD MEETING NOTIFICATION & SUMMARY

D.1 – NEIGHBORHOOD MEETING NOTIFICATION

RE-SCHEDULED FOR MARCH 6, 2017



Boardwalk Pipeline Project - Phase II Neighborhood Open House Invitation for Project Landowners and Neighbors

* Date: Monday, March 6, 2017

Time: 6:00 - 7:30 P.M.

Location:
Hampton Inn
992 Platte River Blvd
Brighton, CO 80601

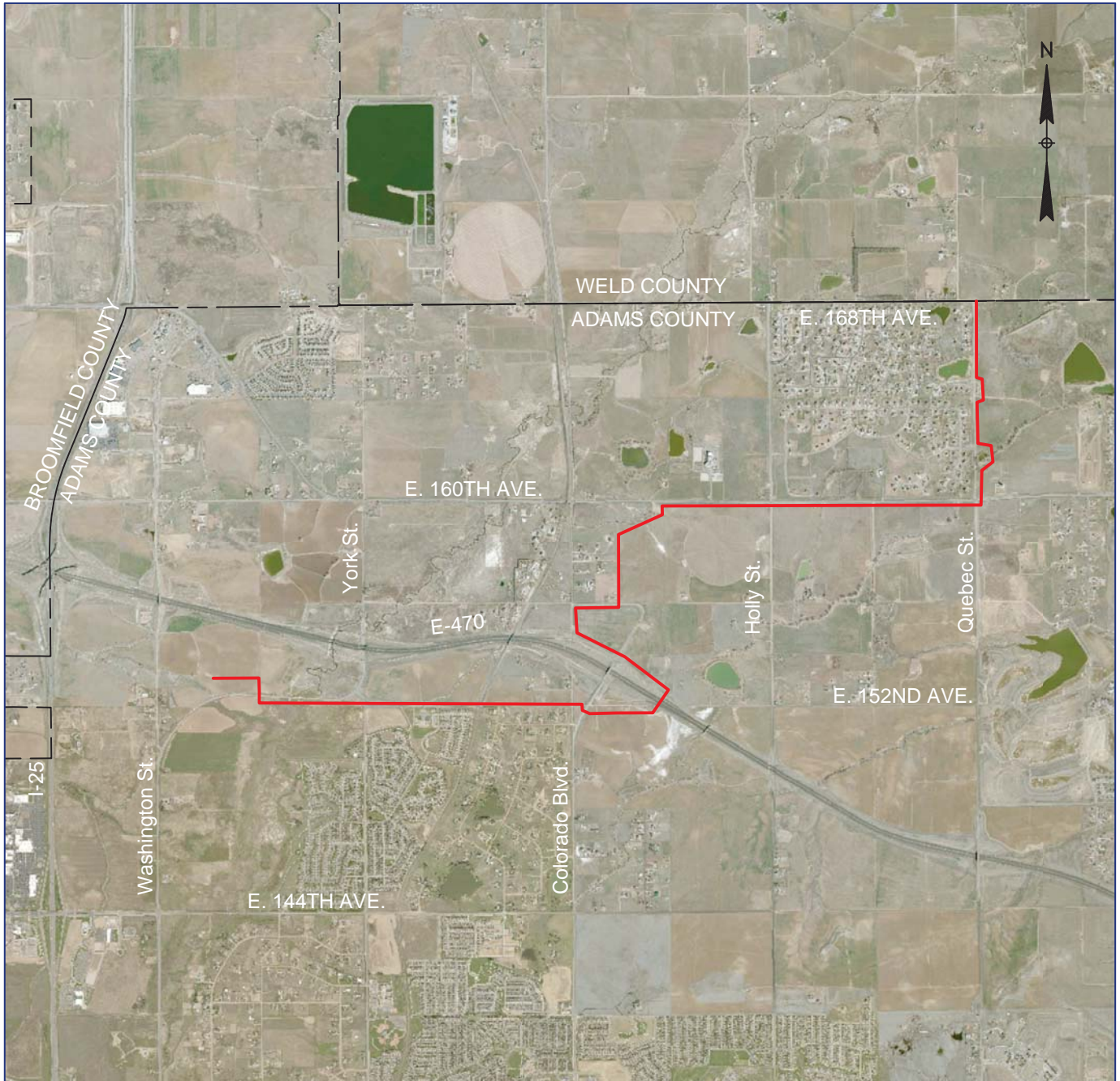
* Please note, the original Neighborhood Open House planned for Monday, February 27, 2017 has been rescheduled for Monday, March 6, 2017 from 6:00 - 7:30 p.m. because we have made revisions to the original proposed route, as a result of input we received from neighbors and landowners in the Brighton Farms area. When we make a change like this, county regulations require us to reschedule.

Purpose

Discovery DJ Services, LLC is holding an informational meeting for the community to discuss its pipeline expansion project. The Boardwalk Pipeline Project is an expansion to the existing Boardwalk Pipeline designed to transport produced natural gas, crude oil and water. The proposed expansion will transport natural gas to the Discovery Ft. Lupton Gas Plant located in Weld County, near Fort Lupton, crude oil to regional markets, and produced water to nearby existing disposal sites. This expansion project will originate at a location west of Washington Street, just north of E. 152nd Avenue and incorporate approximately 2.25 miles of 16-inch natural gas pipeline, 8-inch crude oil pipeline, and 12-inch or smaller produced water pipeline that extends east to approximately E. 152nd Avenue and Colorado Blvd. before crossing E-470 heading north approximately 4.3 miles and crossing into Weld County near E. 168th Ave. / WCR 2 and Quebec Street.

Discovery is holding this meeting to inform neighbors and landowners and seek their input prior to submitting permit applications with Adams County and the City of Thornton. This will be an Open House style meeting with experts from different groups across the project. We hope you are able to join us to provide input before we submit our application.

Boardwalk Pipeline Project - Phase II Neighborhood Meeting Invitation Map



Contact Information

If you have questions or need any information before the meeting, please feel free to contact:

Cory Jordan
214.414.1980
cory@discoverymidstream.com

EXHIBIT D
NEIGHBORHOOD MEETING NOTIFICATION & SUMMARY

D.2 – NEIGHBORHOOD MEETING SUMMARY

March 17, 2017

**Adams County – Application for Conditional Use Permit
Discovery DJ Services, LLC
Boardwalk Pipeline Project, Phase II – Ivey West to Adams County Line**

Reference: Neighborhood Meeting Summary

Pursuant to the Adams County Development Standards and Regulations Section 2-01-02, Discovery DJ Services, LLC (“Discovery”), as owner and operator, held a Neighborhood Meeting for the Boardwalk Pipeline Project – Phase II, Ivey West to the Adams County line on Monday, March 6, 2017 from 6:00 p.m. to 7:30 p.m. at the Hampton Inn Hotel located at 992 Platte River Blvd, Brighton, CO 80601.

The following summarizes the Discovery representatives and property owners in attendance and documents the questions and concerns / issues raised by attendees, the responses, and how they have been addressed within the application for the Conditional Use Permit.

In attendance were nine (9) representatives for Discovery as outlined below:

Attendees:

Project Staff

- | | |
|--|---|
| ✓ Cory Jordan – Discovery Midstream Partners, LLC | ✓ Andy Siegfried – Zion Engineering, LLC |
| ✓ Cory Kline – Discovery Midstream Partners, LLC | ✓ Celeste Coffman – Zion Engineering, LLC |
| ✓ Manya Miller – Discovery Midstream Partners, LLC | ✓ Mike Czuchna – Zion Engineering, LLC |
| ✓ Casey Nikoloric – Ten10 Group | ✓ Brianna Medema – Zion Engineering, LLC |
| | ✓ Justin Panter – Zion Engineering, LLC |

The meeting was held as an open forum so that property owners could ask questions of any of the Discovery representatives. Materials for the neighborhood meeting included slide presentations providing an introduction to Discovery, Engineering, Design & Construction for Pipelines, and Discovery Operations.

Concerns / Issues & Responses

1. **Question** (Ms. Kathy Kerrigan): How far are you into development?

Response: This is the first step in the Adams County permitting process for the project. We are currently in the process of preparing the permit applications, performing survey, and talking with landowners.

2. **Question** (Ms. Kathy Kerrigan): What is running in the pipeline?

Response: We will have water, natural gas and oil pipelines in a common right-of-way.

3. **Question** (Ms. Kathy Kerrigan) – Where is the drilling?

Response: The Ivey well pad and then the pipelines will move the produced natural gas to Discovery's Ft. Lupton gas plant. The produced oil from the well pad will be delivered to a new oil terminal outside of Platteville, in Weld County.

4. **Question** (Ms. Kathy Kerrigan): Will you have compressors?

Response: There are plans for compressors on the project; however, the plans are to place these compressors on other parts of the project, further north from you.

5. **Question** (Ms. Kathy Kerrigan): What is being done to keep the pipeline safe to the public?

Response: We will be designing and constructing the respective pipelines under the federal codes following accepted industry standards and we will also be using a thicker wall pipe than what the codes require.

6. **Question** (Ms. Kathy Kerrigan): How do you notify the public in case of emergency?

Response: We will develop an emergency response plan with the local fire department.

7. **Question** (Ms. Kathy Kerrigan): Do you live near a pipeline?

Response: Yes, I do, a 42" line.

8. **Question** (Ms. Kathy Kerrigan): What is the access like?

Response: All county roads will be either bored or directionally drilled, therefore construction will not impact traffic or access.

9. **Question** (Ms. Kathy Kerrigan): Who at Adams County is the point of contact?

Response: Chris LaRue

10. **Question** (Ms. Kathy Kerrigan): What is being done for noise and emissions mitigation?

Response: Discovery will comply with requirements of <40 Tonns Per Year No_x. Much of the compression will be electric and in buildings with noise control.

11. **Question** (Ms. Kathy Kerrigan): Why are you going along this route? Cost?

Response: This is not the cheapest route. We are following this route in order to follow land owners requests and to cause the minimum amount of impact to the community.

12. **Question** (Mr. Art Dawson): Where are oil, water and gas going?

Response: Various locations, CIG and Enterprise primarily for further distribution to regional markets.

13. **Question** (Mr. Art Dawson): We are most concerned about crossing near school. What schools will you be near?

Response: Silver Creek Elementary, We have met with the city of Brighton, County of Thornton Fire Department Chief in regards to ERT and to coordinate construction.

14. **Question** (Mr. Art Dawson): Are you working with Extraction?

Response: Not at this time.

15. **Question** (Mr. Larry Parker): Are you following the Railroad?

Response: No we are not. But we do cross the railroad.

16. **Question** (Mr. Larry Parker): Where is the pipeline? What is your relationship with Lyons Oil and Gas?

Response: We do not have a relationship with Lyons. Let me tell you about the pipeline, 1st slide.

17. **Question** (Mr. Larry Parker): So where are you?

Response: Ward Petroleum lvey pad and then we'll route southeast and cross E-470 near 152nd Avenue & Colorado Blvd.

18. **Question** (Mr. Larry Parker): I'm getting royalties from other Oil and Gas companies, will I receive money from this pipeline?

Response: Walked Larry through map and showed him he was west of the pipeline and it was not on his property. The pipeline is on Stonehocker property.

EXHIBIT E
ADAMS COUNTY LINE LIST



**Boardwalk Pipeline Project
Ivey West to Brighton West Interconnect
Parcel Owners Index
Adams County, Colorado**

TRACT NO.	PARCEL NUMBER	SURFACE OWNER	ADDRESS	COUNTY	SEC	TWP	RNG	COMMENTS
CO-AD-001.1IVEY	157311400006	HOWE BARBARA LOUISE ET AL	17661 N SADDLE RIDGE DR SURPRISE, AZ 85374	ADAMS	11	1S	68W	
CO-AD-001.2IVEY	157311400002	LMB CAPITAL PARTNERS LLC	905 W 124TH AVE SUITE 200 WESTMINSTER, CO 80234	ADAMS	11	1S	68W	
CO-AD-001.3IVEY		E-470						
CO-AD-001.4IVEY X-ING		UNKNOWN DITCH CROSSING						
CO-AD-001.5IVEY		E-470						
CO-AD-001.6IVEY X-ING		YORK STREET						
CO-AD-001.7IVEY		E-470						
CO-AD-0010.1IVEY		E-470						
CO-AD-011IVEY X-ING		DRAINAGE DITCH CROSSING		ADAMS	12	1S	68W	
CO-AD-11.1IVEY RE-ENTRY		E-470						
CO-AD-013IVEY X-ING		GERMAN DITCH CROSSING		ADAMS	12	1S	68W	
CO-AD-016IVEY X-ING		RAILROAD CROSSING		ADAMS	12	1S	68W	
CO-AD-16.1IVEY RE-ENTRY		E-470						
CO-AD-018IVEY X-ING		COLORADO BLVD.						
CO-AD-18.1IVEY RE-ENTRY		E-470						
CO-AD-002BWI X-ING		E-470 TOLLWAY		ADAMS				
CO-AD-004BWI		UNIDENTIFIED 70' TRACT OF LAND (POSSIBLY E-470,		ADAMS	18	1S	67W	
CO-AD-005BWI X-ING		E 152ND AVE		ADAMS	18, 7	1S	67W	
CO-AD-003WESTBR	157107400001	BRIGHTON FARMS, LLC	15600 HOLLY STREET BRIGHTON, CO 80602-7911	ADAMS	7	1S	67W	
CO-AD-001IVEY OFFLINE	0157311000009	152ND AND WASHINGTON, LLC C/O CARLSON ASSOCIATES	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	11	1S	68W	
CO-AD-002IVEY X-ING OFFLINE	OFFLINE	EAST 152ND AVENUE						
CO-AD-003IVEY OFFLINE	0157311000009	152ND AND WASHINGTON, LLC C/O CARLSON ASSOCIATES (RE-ENTRY)	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	11	1S	68W	
CO-AD-004IVEY OFFLINE	157311400006	HOWE BARBARA LOUISE ET AL	17661 N SADDLE RIDGE DR SURPRISE AZ 85374	ADAMS	11	1S	68W	

Prepared By:





**Boardwalk Pipeline Project
Ivey West to Brighton West Interconnect
Parcel Owners Index
Adams County, Colorado**

CO-AD-005IVEY OFFLINE	No parcel # found	CITY OF THORNTON		ADAMS	11	1S	68W	
CO-AD-006IVEY Re-Entry OFFLINE	157311400006	HOWE BARBARA LOUISE ET AL	17661 N SADDLE RIDGE DR SURPRISE AZ 85374	ADAMS	11	1S	68W	
CO-AD-007IVEY X-ING OFFLINE		UNKNOWN DITCH CROSSING		ADAMS	11	1S	68W	
CO-AD-008IVEY OFFLINE		UNIDENTIFIED PARCEL		ADAMS	11	1S	68W	
CO-AD-009IVEY X-ING OFFLINE		YORK STREET						
CO-AD-010IVEY OFFLINE	0157312300001	YORK 80, LLC (UNDIVIDED 15/096 INTEREST) AND 152ND AND YORK, LLC (UNDIVIDED 84/094 INTEREST) C/O CARLSON ASSOCIATES	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	12	1S	68W	
CO-AD-0012IVEY OFFLINE	0157312300001	YORK 80, LLC (UNDIVIDED 15/096 INTEREST) AND 152ND AND YORK, LLC (UNDIVIDED 84/094 INTEREST) C/O CARLSON ASSOCIATES (RE-ENTRY)	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	12	1S	68W	
CO-AD-014IVEY OFFLINE	0157312300001	YORK 80, LLC (UNDIVIDED 15/096 INTEREST) AND 152ND AND YORK, LLC (UNDIVIDED 84/094 INTEREST) C/O CARLSON ASSOCIATES (RE-ENTRY)	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	12	1S	68W	
CO-AD-015IVEY OFFLINE	157312000026	152ND AND YORK, LLC	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	12	1S	68W	
CO-AD-017IVEY OFFLINE	0157312000013	FICK FAMILY TRUST C/O EVA M. FICK, TRUSTEE	7953 S. GAYLORD COURT CENTENNIAL, CO 80122	ADAMS	12	1S	68W	
CO-AD-019IVEY OFFLINE	0157107300002	GAYESKI CAPITAL EQUITIES, LLC	905 W. 124TH AVENUE, SUITE 200 WESTMINSTER, CO 80234	ADAMS	7	1S	67W	
CO-AD-020IVEY X-ING		EAST 152ND AVENUE						
CO-AD-021IVEY OFFLINE	0157118200002	GAYESKI CAPITAL EQUITIES, LLC	905 W. 124TH AVENUE, SUITE 200 WESTMINSTER, CO 80234	ADAMS	18	1S	67W	
CO-AD-022IVEY X-ING		COLORADO BLVD.						
CO-AD-023IVEY OFFLINE		UNIDENTIFIED STRIP (APPROX 70 FT WIDE)		ADAMS	18	1S	67W	
CO-AD-024IVEY OFFLINE	0157118200004	COLORADO AND E-470, LLC C/O CARLSON ASSOCIATES	P.O. BOX 247 12460 1st Street EASTLAKE, CO 80614	ADAMS	18	1S	67W	
CO-AD-025IVEY OFFLINE	0157118100001	WILLOW BEND, INC.	14059 PARK COVE DRIVE BROOMFIELD, CO 80023	ADAMS	18	1S	67W	
CO-AD-003BWI	0157118100001	WILLOW BEND, INC.	14059 PARK COVE DRIVE BROOMFIELD, CO 80023	ADAMS	18	1S	67W	
CO-AD-029IVEY X-ING		UNNAMED DITCH CROSSING		ADAMS	18	1S	67W	

Prepared By:



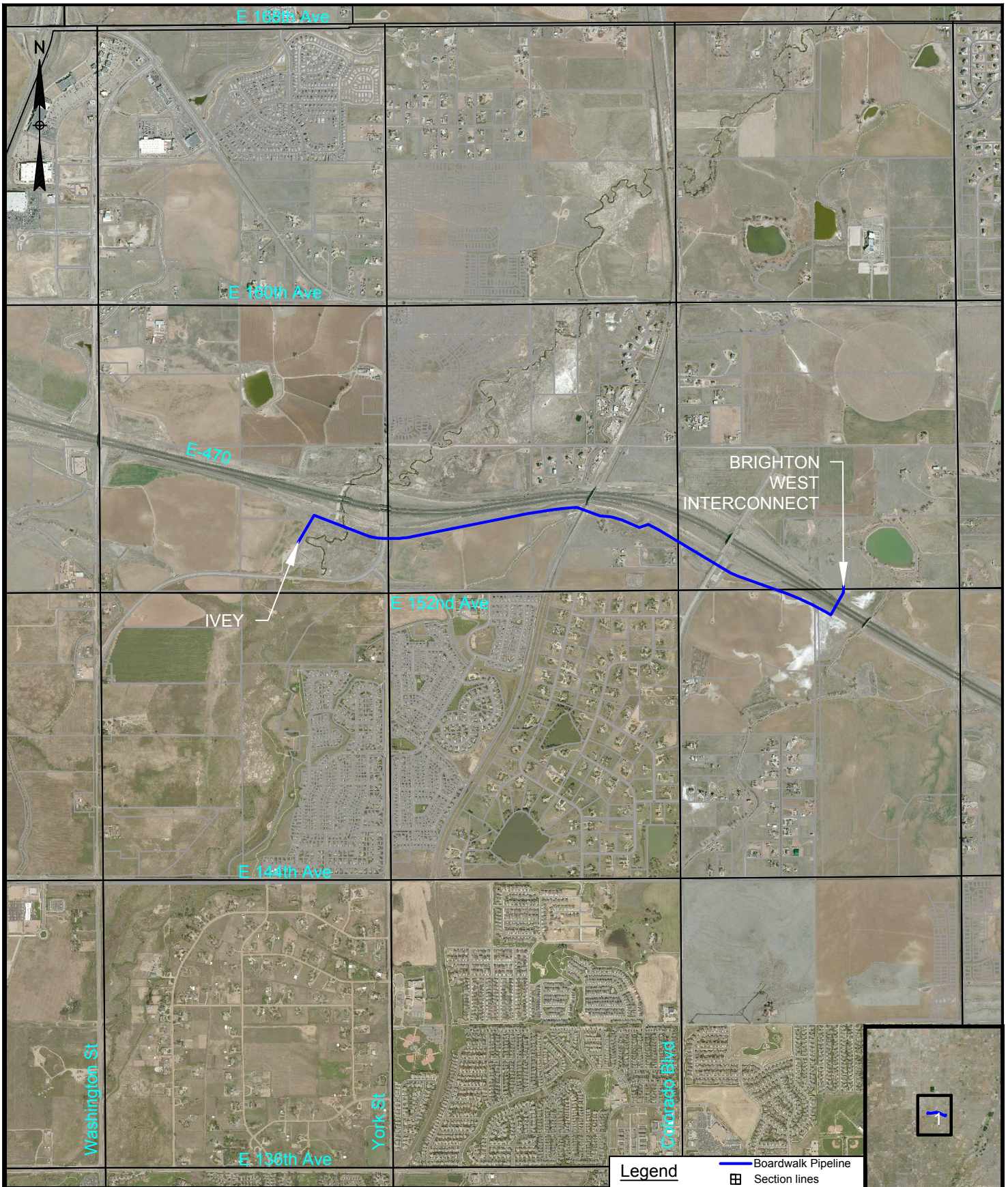


**Boardwalk Pipeline Project
Ivey West to Brighton West Interconnect
Parcel Owners Index
Adams County, Colorado**

CO-AD-030IVEY OFFLINE	0157118400002	VTL WILLOW BEND, LLC C/O TRUE LIFE COMMUNITIES (RE-ENTRY)	1350 17TH STREET, SUITE 350 DENVER, CO 80202	ADAMS	18	1S	67W	
CO-AD-043IVEY OFFLINE	157116302003	Plateau 470, LLC	12460 1ST STREET, PO BOX 247 EASTLAKE, CO 80614	ADAMS	16	1S	67W	
CO-AD-044IVEY OFFLINE	157117301001	Plateau 470, LLC	12460 1ST STREET, PO BOX 247 EASTLAKE, CO 80614	ADAMS	17	1S	67W	
CO-AD-045IVEY OFFLINE	157117402001	Plateau 470, LLC	12460 1ST STREET, PO BOX 247 EASTLAKE, CO 80614	ADAMS	17	1S	67W	
CO-AD-046IVEY OFFLINE	157116302001	Plateau 470, LLC	12460 1ST STREET, PO BOX 247 EASTLAKE, CO 80614	ADAMS	16	1S	67W	
CO-AD-047IVEY OFFLINE	157117301002	Plateau 470, LLC	12460 1ST STREET, PO BOX 247 EASTLAKE, CO 80614	ADAMS	17	1S	67W	
CO-AD-048IVEY OFFLINE	157117402002	Plateau 470, LLC	12460 1ST STREET, PO BOX 247 EASTLAKE, CO 80614	ADAMS	17	1S	67W	

EXHIBIT F
IVEY WEST TO BWI – PREFERRED ROUTE MAPS

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REV.	DESCRIPTION	BY	DATE	CHKD	CHKD
A	Issued w/ Permit Application	JTW	04/24/17	CC	ALS

Legend

- Boardwalk Pipeline
- Section lines

DISCOVERY

BOARDWALK PIPELINE PROJECT - PHASE II
 IVEY TO BRIGHTON WEST INTERCONNECT PREFERRED
 MAP 1 OF 1
 ADAMS COUNTY, CO

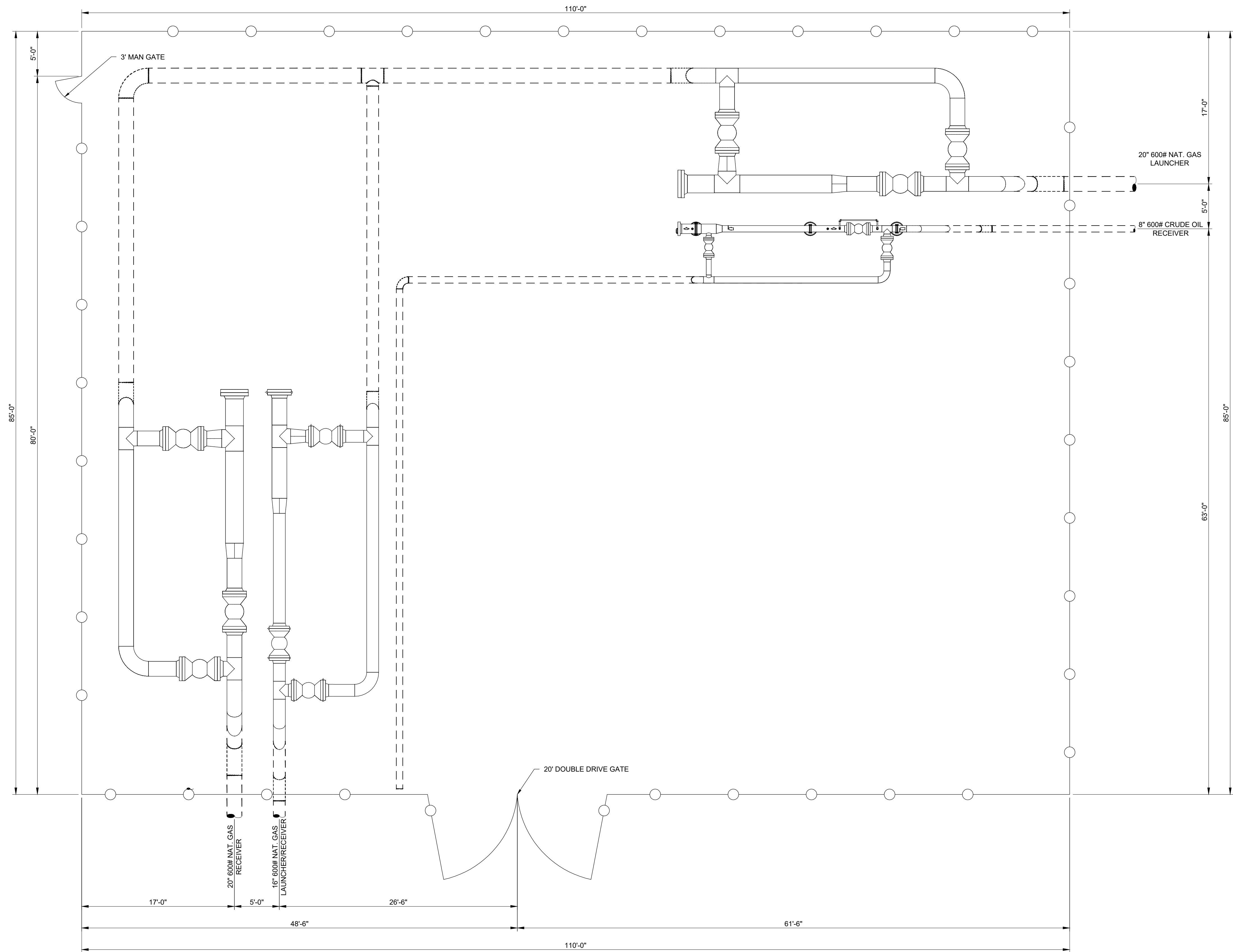
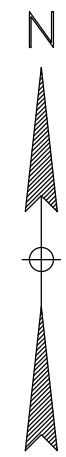
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ZION ENGINEERING, LLC			DWG NO. 17008-M-1050	REV. A

EXHIBIT G
PROJECT SITE PLANS

**EXHIBIT G
PROJECT SITE PLANS**

G.1 – BRIGHTON WEST INTERCONNECT FACILITY SITE PLAN

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PLAN

SCALE 1"=6'-0"

REFERENCE DRAWINGS

REVISIONS

DRAWING NO	DESCRIPTION
No	

NO	DESCRIPTION	BY	CHKD	APPVD	DATE
A	ISSUED WITH PERMIT APPLICATION	JRH	ALS	ALS	04/25/17

DISCOVERY

ZION ENGINEERING, LLC

8100 E. Maplewood Ave., Suite 100
Greenwood Village, CO 80111
303-243-3050

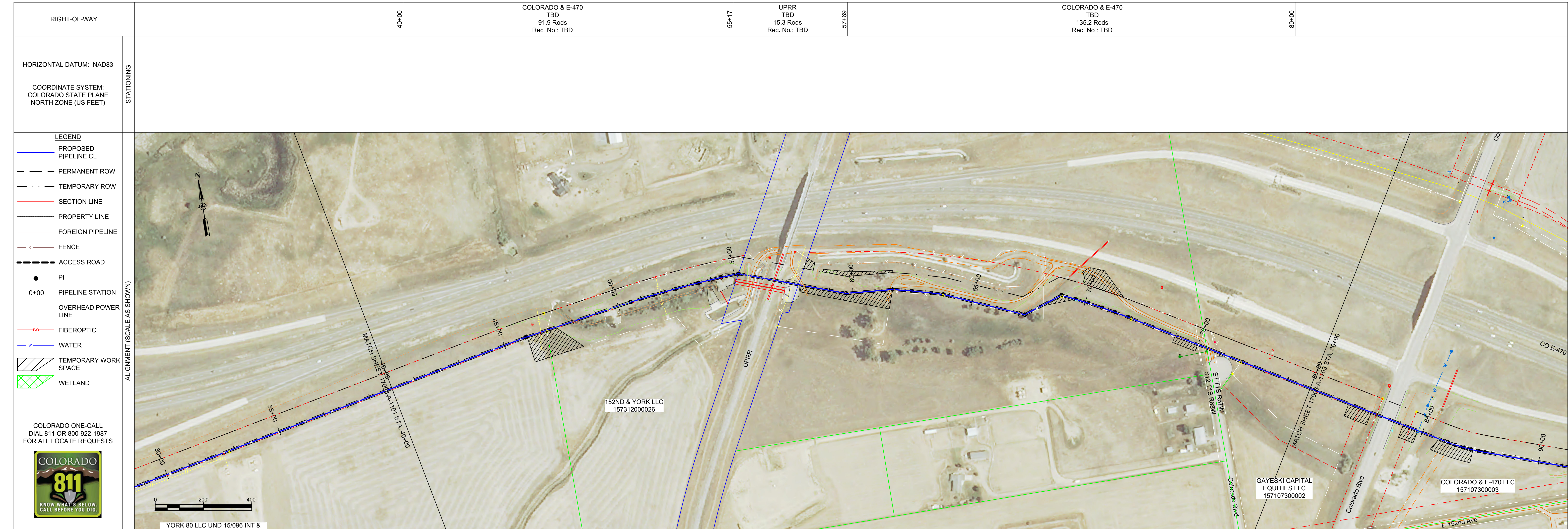
DISCOVERY DJ SERVICES, LLC.

BOARDWALK PIPELINE PROJECT
BRIGHTON WEST INTECONNECT PIGGING FACILITY
SITE LAYOUT
ADAMS COUNTY, COLORADO

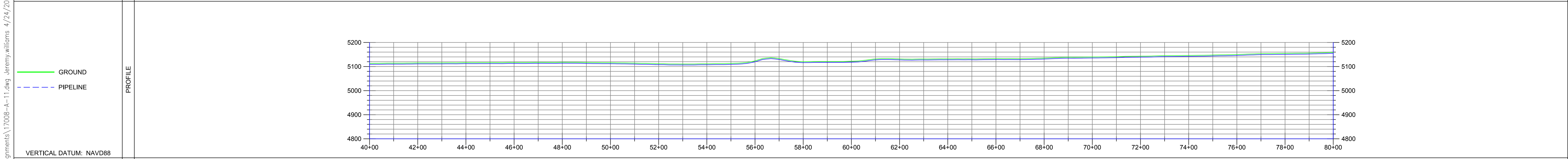
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**EXHIBIT G
PROJECT SITE PLANS**

G.2 – PIPELINE ALIGNMENT SHEETS



PLSS CALLOUTS
 ENVIRONMENTAL
 ROW & DITCH DETAIL
 LOCATION CLASS
 DEPTH OF COVER



VERTICAL DATUM: NAVD88	PROFILE	MATERIAL
		<p>ELL 22.5° 3R SEG ELL 55+17 BORE UPRR 56+68 ELL 22.5° 3R SEG ELL 59+72 ELL 22.5° 3R SEG ELL 61+64 ELL 45° 3R SEG ELL 67+24 ELL 45° 3R SEG ELL 68+97</p> <p>20" O.D. x 0.406" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE 20" O.D. x 0.500" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE PLUS 24-30 MILS ARO 20" O.D. x 0.406" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE</p> <p>ELL 22.5° 3R SEG ELL 55+17 BORE UPRR 56+68 ELL 22.5° 3R SEG ELL 59+72 ELL 22.5° 3R SEG ELL 61+64 ELL 45° 3R SEG ELL 67+24 ELL 45° 3R SEG ELL 68+97</p> <p>8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE 8.625" O.D. x 0.322" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE PLUS 24-30 MILS ARO 8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE</p> <p>ELL 22.5° 3R SEG ELL 55+17 BORE UPRR 56+68 ELL 22.5° 3R SEG ELL 59+72 ELL 22.5° 3R SEG ELL 61+64 ELL 45° 3R SEG ELL 67+24 ELL 45° 3R SEG ELL 68+97</p> <p>12" O.D., DR11, PE4710, ASTM F2619 / API 5LE 16" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE 12" O.D., DR11, PE4710, ASTM F2619 / API 5LE</p>

NOTES:
 1. STATIONING IS BASED ON HORIZONTAL DISTANCES.
 2. ZION ENGINEERING, LLC AND DISCOVERY DJ SERVICES, LLC. ARE NOT RESPONSIBLE FOR THE LOCATION OF FOREIGN UTILITIES, PIPELINES, OR THIRD PARTY SUBSURFACE STRUCTURES REFLECTED ON THESE ALIGNMENT SHEETS. THE INFORMATION SHOWN HEREIN IS FURNISHED WITHOUT LIABILITY ON THE PART OF ZION ENGINEERING, LLC OR DISCOVERY DJ SERVICES, LLC. FOR ANY DAMAGES RESULTING FROM ERRORS OR OMISSIONS THEREIN.
 3. ALL POINTS OF INTERSECTION ANGLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE ANGLES NECESSARY TO PROPERLY CONSTRUCT THE PIPELINE AND SHALL TRIM ALL SEGMENTABLE FITTINGS, AS REQUIRED.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ONE-CALL AT 811 OR 800-922-1987, AT LEAST 72 HOURS BEFORE DIGGING.

DRAWING NO	DESCRIPTION	No	DESCRIPTION	BY	CHKD	APPVD	DATE
17008-A-1103	20" NATURAL GAS, 8" CRUDE OIL, & 12" WATER PIPELINES STA. 80+00 TO 112+31						
17008-A-1101	20" NATURAL GAS, 8" CRUDE OIL, & 12" WATER PIPELINES STA. 0+00 TO 40+00						
17008-A-1100	20" NATURAL GAS, 8" CRUDE OIL, & 12" WATER PIPELINES ALIGNMENT SHEET INDEX	A	ISSUED W/ PERMIT APPLICATION	JTW	CC	ALS	04/24/17

DISCOVERY
ZION ENGINEERING, LLC
 8100 E. Maplewood Ave., Suite 100
 Greenwood Village, CO 80111
 303-243-3050

DISCOVERY DJ SERVICES, LLC.
 BOARDWALK PIPELINE PROJECT - PHASE II
 20" NATURAL GAS AFE#-GTH002, 8" CRUDE OIL AFE#-OILVLY, & 12" WATER PIPELINES
 ALIGNMENT SHEET
 STA. 40+00 TO 80+00

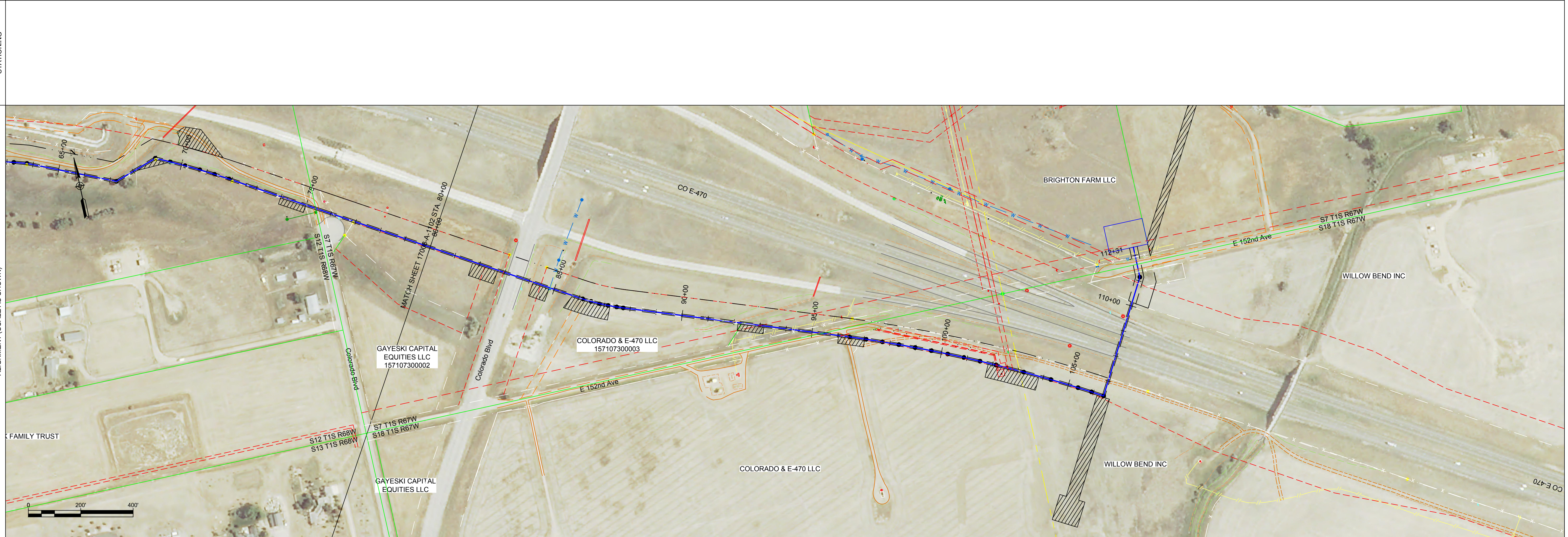
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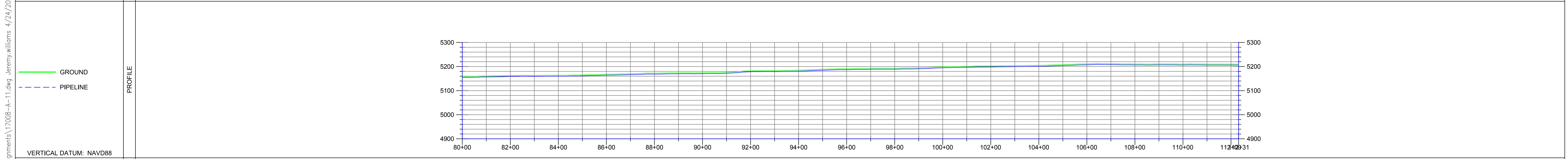
LEGEND

- PROPOSED PIPELINE CL
- PERMANENT ROW
- TEMPORARY ROW
- SECTION LINE
- PROPERTY LINE
- FOREIGN PIPELINE
- FENCE
- ACCESS ROAD
- PI
- PIPELINE STATION
- OVERHEAD POWER LINE
- FIBEROPTIC
- WATER
- TEMPORARY WORK SPACE
- WETLAND

COLORADO ONE-CALL
 DIAL 811 OR 800-922-1987
 FOR ALL LOCATE REQUESTS



PLSS CALLOUTS	SECTION 7, TOWNSHIP 1S, RANGE 67W	SECTION 18, TOWNSHIP 1S, RANGE 67W	SECTION 7, TOWNSHIP 1S, RANGE 67W
ENVIRONMENTAL			
ROW & DITCH DETAIL	SEE DETAIL 17008-DD-1161		
LOCATION CLASS			
DEPTH OF COVER	MIN. 4 FEET		



MATERIAL	BORE Colorado Ave 83+43 L=260' 20" O.D. x 0.406" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE E 152nd Ave 83+43 L=230' 20" O.D. x 0.500" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE E 152nd Ave 83+43 L=230' 20" O.D. x 0.406" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE	BORE E 152nd Ave 83+43 L=230' 20" O.D. x 0.500" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE E 152nd Ave 83+43 L=230' 20" O.D. x 0.406" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE	BORE E 152nd Ave 83+43 L=230' 20" O.D. x 0.500" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE E 152nd Ave 111+65 L=80' 20" O.D. x 0.500" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE E 152nd Ave 111+65 L=80' 20" O.D. x 0.406" W.T., API-5L, PSL2, X-65 w/12-14 MILS FBE	END OF PIPELINE 112+31 SEE DWG 17008-G-XXXX	
	BORE Colorado Ave 83+43 L=260' 8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE	BORE Colorado Ave 83+43 L=260' 8.625" O.D. x 0.322" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE Colorado Ave 83+43 L=260' 8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE	BORE E 152nd Ave 83+43 L=230' 8.625" O.D. x 0.322" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE PLUS 24-30 MILS ARO	BORE E 152nd Ave 83+43 L=230' 8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE	BORE E 152nd Ave 83+43 L=230' 8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE	BORE E 152nd Ave 83+43 L=230' 8.625" O.D. x 0.219" W.T., API-5L, PSL2, X-52 w/12-14 MILS FBE	BORE E 152nd Ave 111+65 L=80' 8.625" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE	BORE E 152nd Ave 111+65 L=80' 12" O.D., DR11, PE4710, ASTM F2619 / API 5LE	END OF PIPELINE 112+31 SEE DWG 17008-G-XXXX
	BORE Colorado Ave 83+43 L=260' 12" O.D., DR11, PE4710, ASTM F2619 / API 5LE	BORE Colorado Ave 83+43 L=260' 16" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE	BORE Colorado Ave 83+43 L=260' 12" O.D., DR11, PE4710, ASTM F2619 / API 5LE	BORE E 152nd Ave 83+43 L=230' 16" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE	BORE E 152nd Ave 83+43 L=230' 12" O.D., DR11, PE4710, ASTM F2619 / API 5LE	BORE E 152nd Ave 83+43 L=230' 16" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE	BORE E 152nd Ave 83+43 L=230' 16" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE	BORE E 152nd Ave 111+65 L=80' 16" O.D. x 0.375" W.T., API-5L, PSL2, X-52 CASING PIPE w/12" DR11 CARRIER PIPE	BORE E 152nd Ave 111+65 L=80' 12" O.D., DR11, PE4710, ASTM F2619 / API 5LE	END OF PIPELINE 112+31 SEE DWG 17008-G-XXXX

NOTES:

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- ZION ENGINEERING, LLC AND DISCOVERY DJ SERVICES, LLC. ARE NOT RESPONSIBLE FOR THE LOCATION OF FOREIGN UTILITIES, PIPELINES, OR THIRD PARTY SUBSURFACE STRUCTURES REFLECTED ON THESE ALIGNMENT SHEETS. THE INFORMATION SHOWN HEREIN IS FURNISHED WITHOUT LIABILITY ON THE PART OF ZION ENGINEERING, LLC OR DISCOVERY DJ SERVICES, LLC. FOR ANY DAMAGES RESULTING FROM ERRORS OR OMISSIONS THEREIN.
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DRAWING NO	DESCRIPTION	DATE	BY	CHKD	APPVD
17008-A-1102	20" NATURAL GAS, 8" CRUDE OIL, & 12" WATER PIPELINES STA. 40+00 TO 80+00				
17008-A-1100	20" NATURAL GAS, 8" CRUDE OIL, & 12" WATER PIPELINES ALIGNMENT SHEET INDEX	A	JTW	CC	ALS
					04/24/17

DISCOVERY

ZION ENGINEERING, LLC

8100 E. Maplewood Ave., Suite 100
 Greenwood Village, CO 80111
 303-243-3050

DISCOVERY DJ SERVICES, LLC.

BOARDWALK PIPELINE PROJECT - PHASE II

20" NATURAL GAS AFE#-GTH002, 8" CRUDE OIL AFE#-OILVLY, & 12" WATER PIPELINES
 ALIGNMENT SHEET
 STA. 80+00 TO 112+31

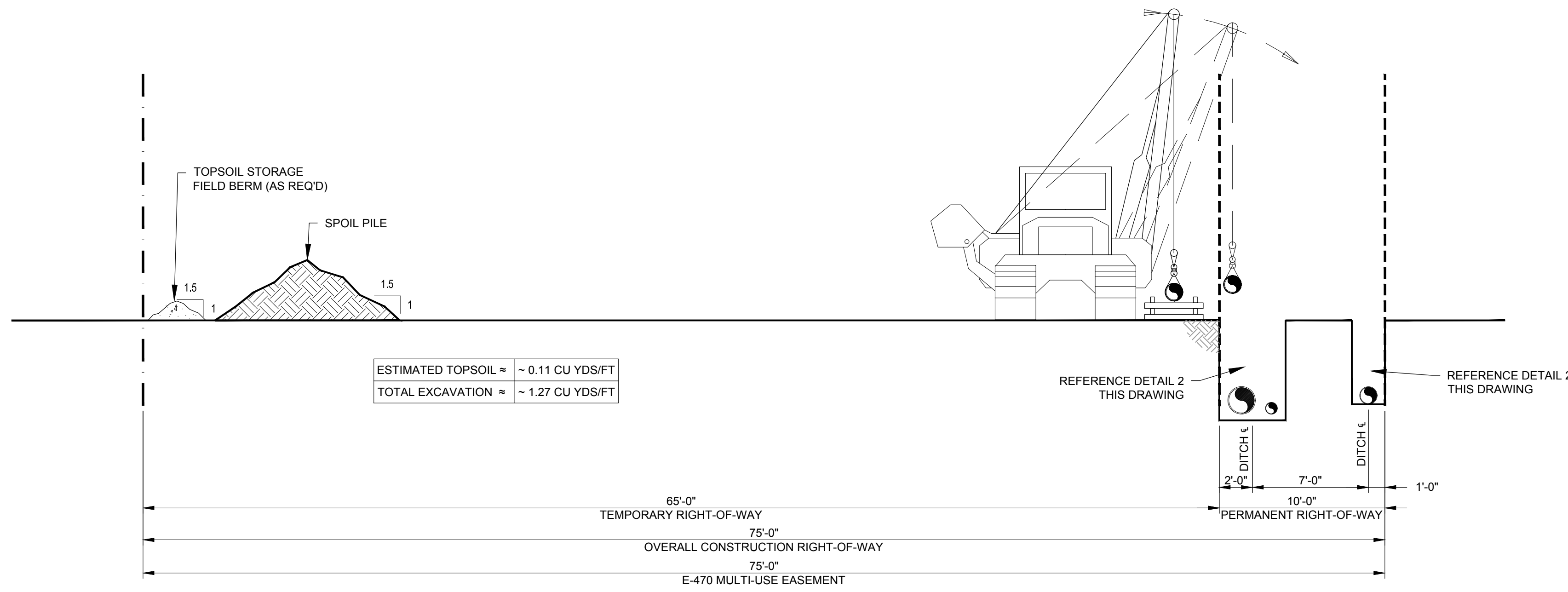
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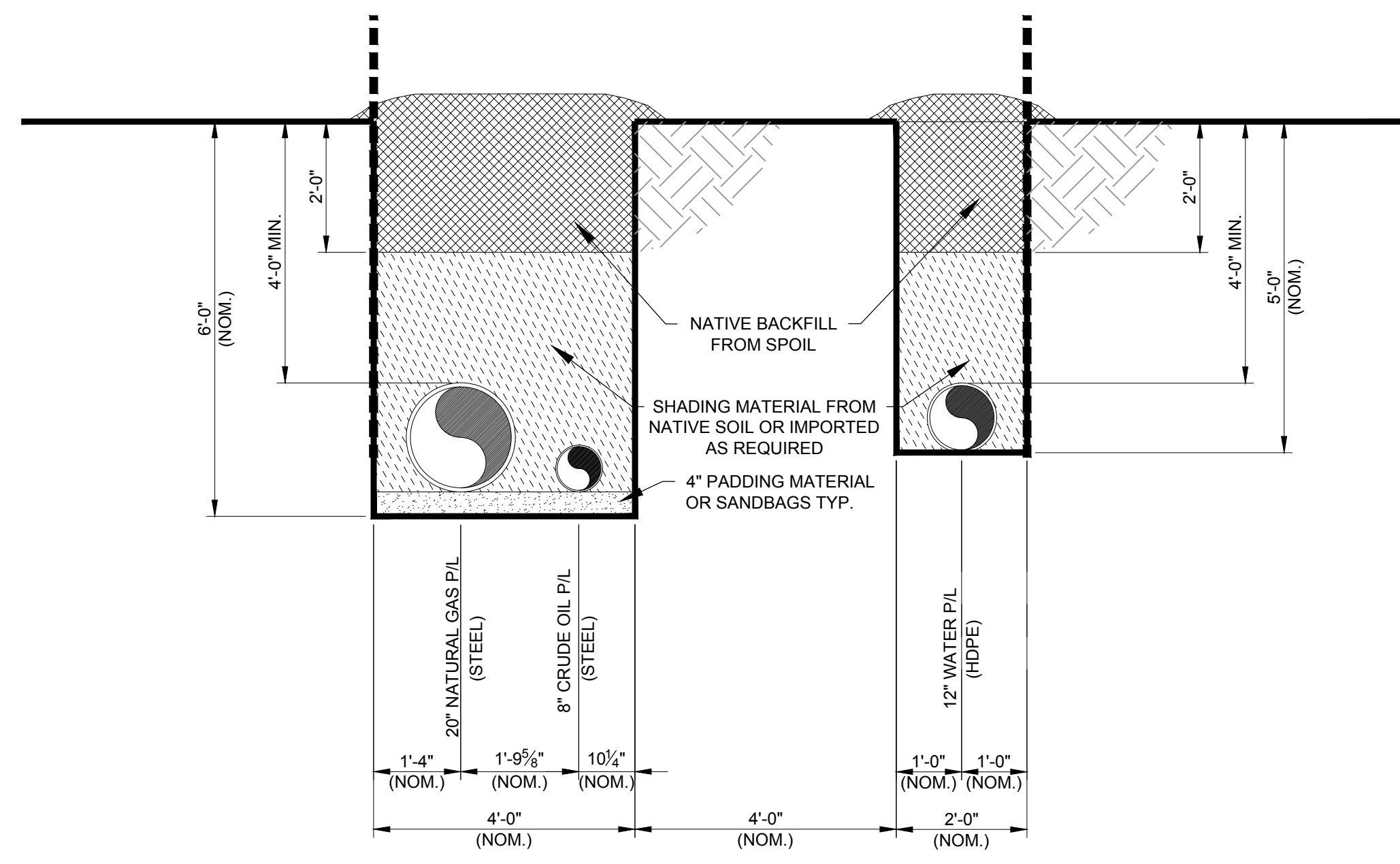
**EXHIBIT G
PROJECT SITE PLANS**

G.3 – TYPICAL PIPELINE DITCH DETAILS

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DITCH DETAIL 2 - LOOKING UP STATION
SCALE 3/16"=1'-0"



DETAIL 2
SCALE 1/2"=1'-0"

NOTES:
1. ASSUME 6" DEPTH OF TOPSOIL.

REFERENCE DRAWINGS		REVISIONS					
DRAWING NO	DESCRIPTION	No	DESCRIPTION	BY	CHKD	APPVD	DATE
		A	ISSUED W/ PERMIT APPLICATION	JTW	CC	ALS	04/24/17
		No					

DISCOVERY

ZION ENGINEERING, LLC

8100 E. Maplewood Ave., Suite 100
Greenwood Village, CO 80111
303-243-3050

DISCOVERY DJ SERVICES, LLC.		
BOARDWALK PIPELINE PROJECT - PHASE II TYPICAL 75' RIGHT-OF-WAY & DITCH DETAILS DETAIL 2		
SCALE: AS SHOWN	DRAWING NO: 17008-DD-1161	REV: A

EXHIBIT H
APPLICANT FEEDBACK SURVEY

SUBMITTAL ITEM D

PLANNING AND DEVELOPMENT APPLICANT FEEDBACK SURVEY

Please take a few moments and fill out this form on the level of assistance you received.

Your response to this survey will help us to increase the level of assistance we provide to applicants for development.

Our mission is to provide applicants with all the information at our disposal so they can use it to make informed business decisions on development projects as well as assisting them in solving problems in order for them to help the County develop in a positive manner. We realize we will not always completely agree and there will be cases where we fundamentally disagree, however, we would request a report from you.

Please fill in the type of inquiry:

- Telephone Inquiry
- Counter Inquiry
- Land Use Case Applicant
- Other - Conditional Use Permit

1. Do you feel you received all the information we can provide to help you make an informed business decision on your development application?

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree

2. Was your treatment by the staff courteous and businesslike?

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree

3. If you needed help coordinating your project with other agencies, did you get it?

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree

4. If we disagreed with your plans, do you feel:

a. the reasons(s) were fully explained?

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree

b. the reasons(s) were based on County development codes and policies?

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree

c. we made suggestions on how to improve the plans or make them consistent with County development regulations and policies?

Strongly Agree Agree Neither Agree or Disagree Disagree Strongly Disagree

Please explain if you answered Disagree or Strongly Disagree to any of the above questions?

Not Applicable

What are we doing right? Do you have any suggestions you can make to help us improve our level of service?

Overall, the County Staff was extremely helpful and responsive. Questions were addressed professionally and in a timely manner with Staff making every effort to try and address questions and assisting with getting in touch with the right people.

May the Director contact you to discuss any problems noted? Yes No

Contact Name: Andy Siegfried
Zion Engineering, LLC

Telephone No.: (303) 243-3071 (office)
(303) 941-3547 (cell)

E-mail Address: andy.siegfried@zion-eng.com

EXHIBIT J
TRAFFIC IMPACT FEE ACKNOWLEDGEMENT AFFIDAVIT

Submittal Item I
Traffic Impact Fee Acknowledgment Affidavit

I Andy Siegfried, for Cory Jordan being the applicant or owner of the project or property subject to the attached land use application hereby acknowledge Adams County may charge a Traffic Impact Fee in conjunction with building permit(s) for my project. This fee will be assessed in accordance with the procedures outlined in Section 5-06 in Chapter 5 of the Adams County Development Standards and Regulations and with the fee schedule shown below.



 Signature of Applicant or Owner

March 13, 2017

 Date

Traffic Impact Fee Schedule

Land Use Types	Development Unit	Impact Fee Charged
Residential		
Number of Dwelling/Spaces/Rooms		
Single-Family Detached	1	\$1,599.07
Multi-Family	1	\$983.13
Mobile Home park - per space	1	\$888.37
Hotel/Motel - per room	1	\$1,018.67
Retail Commercial		
Building Square Footage		
Shop Ctr/Gen Retail, less than 100,000 sf	1000	\$2,730.26
Shop Ctr/Gen Retail, 100,000 - 499,999 sf	1000	\$2,132.09
Shop Ctr/Gen Retail, 500,000 - 1 million sf	1000	\$1,824.12
Shop Ctr/Gen Retail, 1 million sf or more	1000	\$1,622.76
Auto Sales/Repair	1000	\$1,989.95
Bank	1000	\$6,550.26
Bldg Materials/Hardware/Nursery	1000	\$2,872.40
Convenience Store	1000	\$3,796.31
Discount Store	1000	\$2,718.42
Furniture Store	1000	\$319.82
Restaurant, Fast Food	1000	\$7,675.53
Restaurant, Sit-Down	1000	\$5,330.23
Office Institutional		
Building Square Footage		
Office, General	1000	\$1,178.57
Office, Medical	1000	\$2,896.09
Hospital	1000	\$728.47
Nursing home	1000	\$284.28
Church/Synagogue	1000	\$521.18
Day Care Center	1000	\$2,505.21
Elementary/Secondary School	1000	\$444.19
Industrial		
Building Square Footage		
General Light Industrial	1000	\$775.85
Warehouse	1000	\$402.73
Mini-Warehouse	1000	\$207.29

EXHIBIT K
AREAS AND ACTIVITIES OF STATE INTEREST (AASI) CHECKLIST



AREAS AND ACTIVITY OF STATE INTEREST (1041)

Primary Mandatory Items

1. Development (Universal) application
2. Legal description on Word document
3. Application fee of \$5,000
4. Written explanation of the project
5. Site Plan showing proposed development
6. N/A Certificate of Taxes Paid
7. N/A Proof of ownership (title policy dated within 30 days of
 submittal)
8. N/A Proof of water and sewer services
9. N/A Proof of Utilities (e.g electric, and gas)

Secondary Required Project Specific Items

1. Tri-County Health Department review fee of \$55
2. Neighborhood Meeting Summary
3. N/A Certificate of Notice to Mineral Estate Owners/and Lessees
4. N/A Certificate of Surface Development
5. Information describing the Applicant
6. Information describing the Project
7. Property Rights, Permits and other Approvals
8. Financial Feasibility of the Project



- 9. Land Use
- 10. Local Government Services
- 11. Financial Burden on County Residents
- 12. Local Economy
- 13. Recreational Opportunity
- 14. Environmental Impact Analysis

Required Engineering Documents 3 hard copies required of all Engineering documents

- 1. Drainage Report*
- 2. Traffic Impact Study*
- 3. Erosion and Sediment Control Plans*
- 4. Construction / Engineering Design Plans*

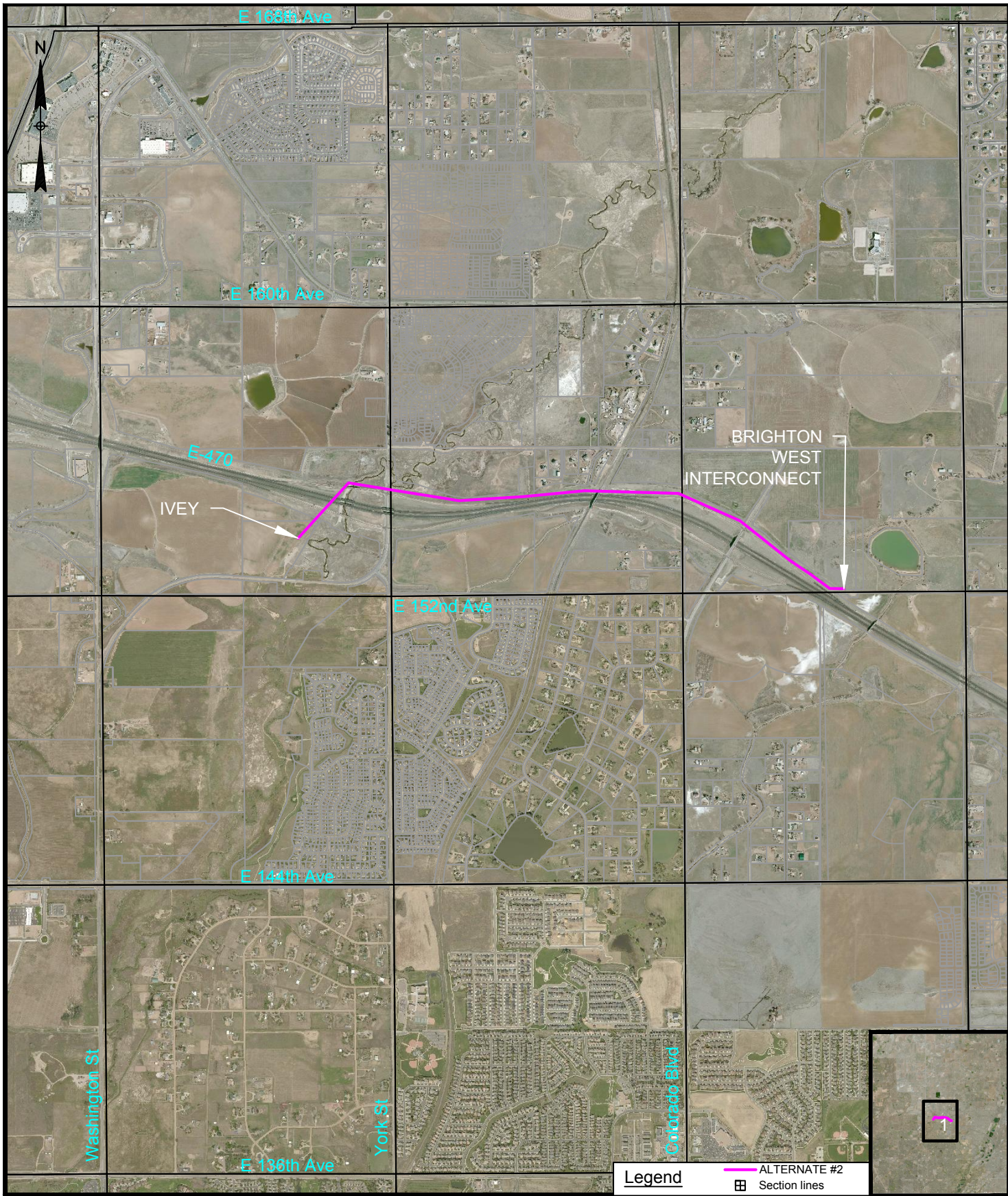
*Contact staff for fees

EXHIBIT L
ALTERNATE ROUTES

**EXHIBIT L
ALTERNATE ROUTES**

L.1 – ALTERNATE ROUTE #1 – ROUTE MAPS

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REV.	DESCRIPTION	BY	DATE	CHKD	CHKD
A	Issued w/ Permit Application	JTW	04/24/17	CC	ALS

Legend

- ALTERNATE #2
- Section lines

DISCOVERY

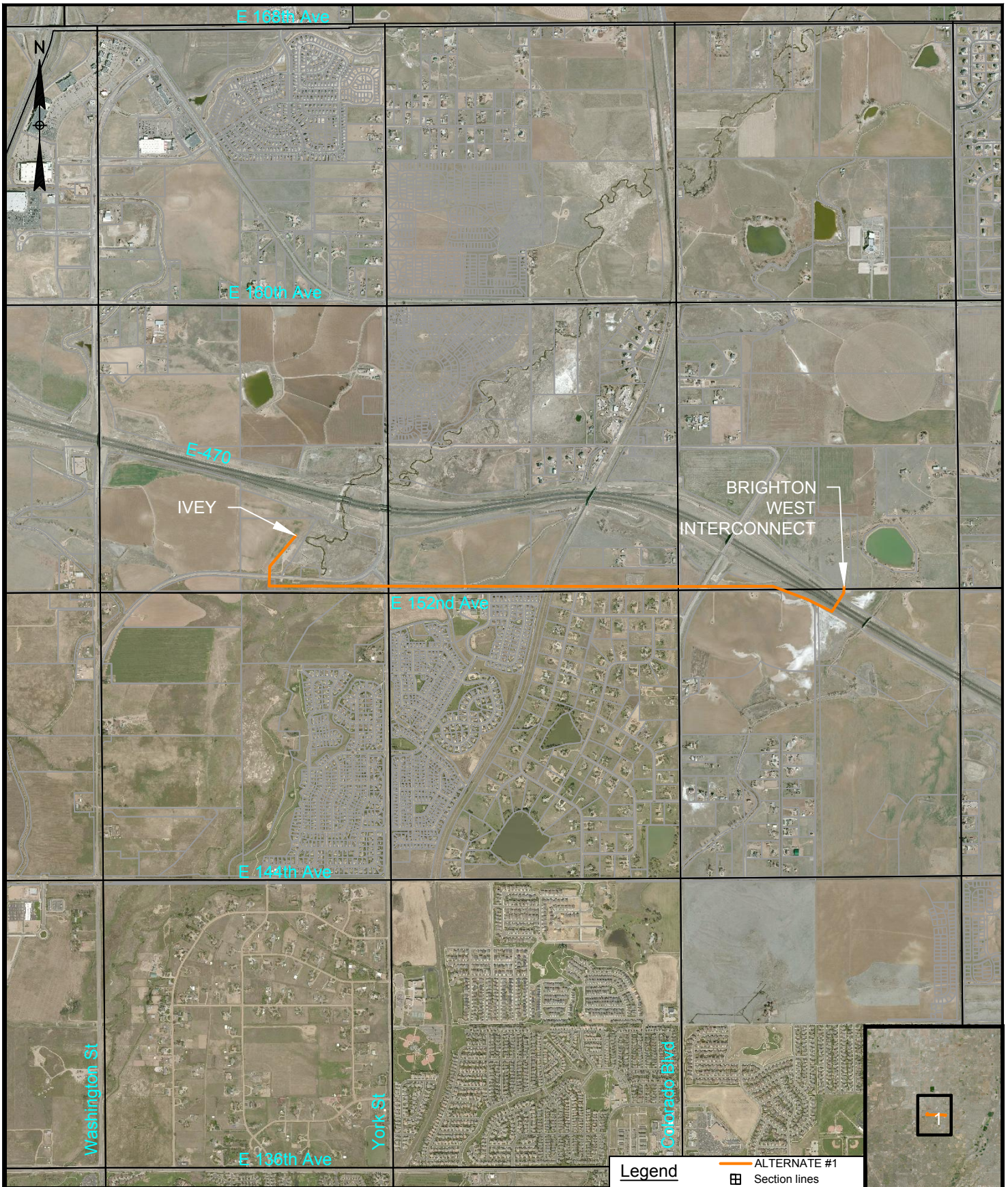
BOARDWALK PIPELINE PROJECT - PHASE II
 IVEY TO BRIGHTON WEST INTERCONNECT ALTERNATE #2
 MAP 1 OF 1
 ADAMS COUNTY, CO

DRAWN:	CHECKED:	APPROVED:	DATE:	SCALE: 1:2400
ZION ENGINEERING, LLC			DWG NO. 17008-M-1050-C	REV. A

**EXHIBIT L
ALTERNATE ROUTES**

L.2 – ALTERNATE ROUTE #2 – ROUTE MAPS

P:\Discovery Midstream\17008 - Discovery Phase II Permitting Support\CAD\MAPS\HTS\Route Maps\17008-M-1050-B.dwg - Jeremy Williams - 4/24/2017 4:38:29 PM



Legend

- ALTERNATE #1
- Section lines

DISCOVERY

BOARDWALK PIPELINE PROJECT - PHASE II
 IVEY TO BRIGHTON WEST INTERCONNECT ALTERNATE #1
 MAP 1 OF 1
 ADAMS COUNTY, CO

REV.	DESCRIPTION	BY	DATE	CHKD	CHKD
A	Issued w/ Permit Application	JTW	04/24/17	CC	ALS

DRAWN:	CHECKED:	APPROVED:	DATE:	SCALE: 1:2400
			DWG NO.	REV.
			17008-M-1050-B	A

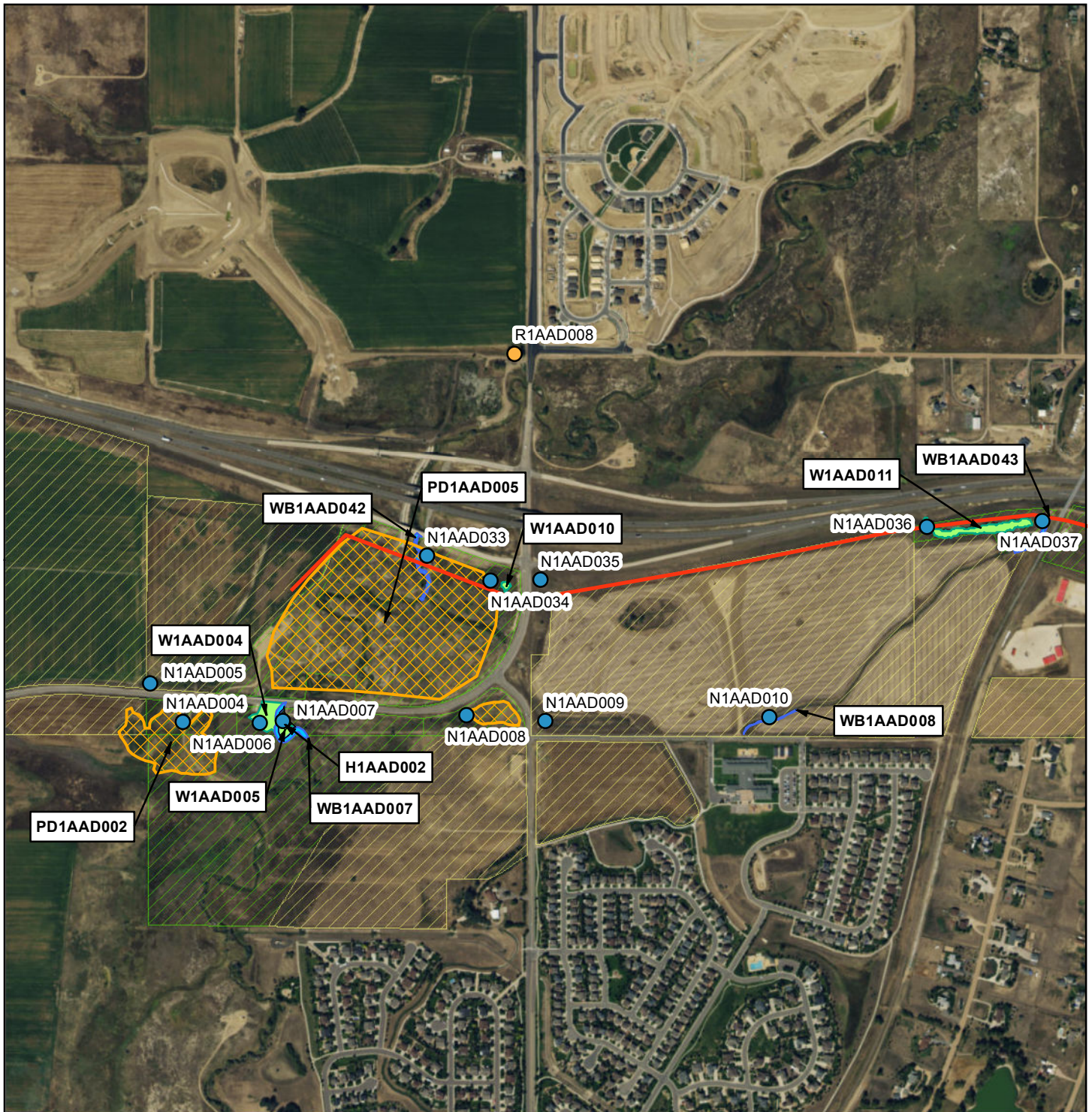
EXHIBIT M
FEDERAL, STATE & LOCAL PERMITS LIST













Boardwalk Pipeline Project - Phase II Project Permit List

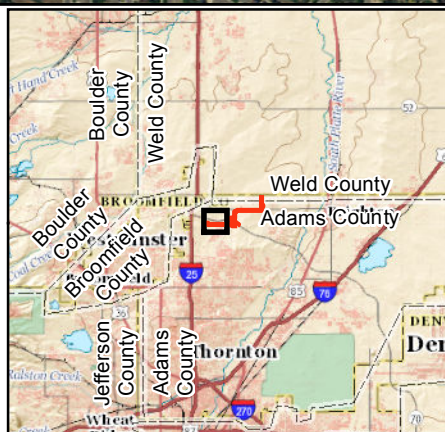
	Status
Federal	
Army Corps of Engineer (ACOE)	
Nationwide Permit 12	Pending
State of Colorado	
Colorado Department of Public Health and Environment Air Pollution Control Division	
Stormwater General Permit	Pending
Colorado Discharge Permit System (CDPS)	Pending
County	
Adams County	
Conditional Use Permit	
Ivey West to Brighton West Interconnect	Pending
Brighton West Interconnect to Adams County Line	Pending
Brighon West Interconnect to Riverdale Tie-In	Pending
Powhaton Road Crude Oil Pipeline Extension	Pending
Barr Lake to Powhaton Tie-In	Pending
Weld County	
Use by Special Review Permit	
Adams / Weld County Line to Ft. Lupton Gas Plant	Pending
City / Local	
City of Thornton	
Special Use Permit	
Ivey West to Brighton West Interconnect	Pending
Brighton West Interconnect to Adams County Line	Pending
Brighon West Interconnect to Riverdale Tie-In	Pending
City of Ft. Lupton	
Use by Special Review Permit	Pending
Crossings	
Crossed Entity's Name	Project Specific Name
Colorado Department of Transportation (CDOT)	
Utility / Special Use Permit Application	
Canam Hwy / U.S. HWY 85	Weld County to Facility
U.W. 85 Bus	Weld County to Facility
	Pending
	Pending
E-470	
Application for Pipeline or Wire Line – Crossing And/or Longitudinal	
E-470	Ivey to 470
E-470	470 to Riverdale
	Pending
	Pending
UPRR Railroad	
Application for Pipeline or Wire Line – Crossing And/or Longitudinal	
UPRR	Ivey to 470
UPRR	Weld County to Facility (Multiple Crossings)
	Pending
	Pending
Farmers Reservoir and Irrigation Company (FRICO)	
Application for Trenchless Project Review	
Brighton Lateral	Weld County to Facility
Brighton Ditch	Weld County to Facility
East Burlington Ext Ditch	Barr Lake Lateral
Neres Canal	Barr Lake Lateral
Beebe Seep Canal	Barr Lake Lateral
	Pending
	Pending
	Pending
	Pending
	Pending
Fulton Irrigation Ditch Company	
Application for Project Review	
Fulton Ditch	Adams County line to Facility
	Pending
German Ditch Company	
Application for Project Review	
German Ditch	470 to Adams County (Multiple Crossings)
German Ditch	Weld County to Facility (Multiple Crossings)
	Pending
	Pending
Henrylyn Irrigation District	
Application for Project Review	
Denver-Hudson Canal	Barr Lake Lateral
Denver-Hudson Canal	Sack - Crude Extension
	Pending
	Pending
Signal Ditch Company	
Application for Project Review	
Signal Ditch	470 to Adams County (Multiple Crossings)
Signal Ditch	Weld County to Facility (Multiple Crossings)
	Pending
	Pending
Lupton Bottom Ditch Co Incorporated	
Application for Project Review	
Lupton Bottom Ditch	
	Pending

EXHIBIT N
ENVIRONMENTAL MAPS



Legend

- | | | | |
|---|-----------------------------------|---|---------------------------------|
|  | Ivey West to County Line Pipeline |  | Landcover
Agriculture |
|  | Noxious Weed |  | Native Grassland |
|  | Raptor Nest |  | County Boundary |
|  | Pdgo Colony | | |
|  | Potential Prebbles Habitat | | |
|  | Waterbody | | |
|  | Wetland | | |



Scale: 1:12,000
 Projection: NAD 1983 UTM Zone 13N
 3/27/2017

0 0.055 0.11 0.165 0.22 0.275 Miles
 0 0.1 0.2 0.3 0.4 Km

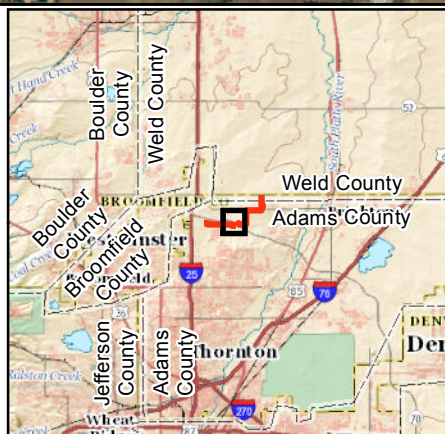


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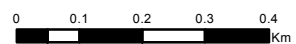
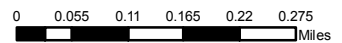
Legend

- Ivey West to County Line Pipeline
- Noxious Weed
- Raptor Nest
- Waterbody
- Wetland
- Landcover**
- Agriculture
- Native Grassland
- County Boundary



Scale: 1:12,000
 Projection: NAD 1983 UTM Zone 13N

3/27/2017



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EXHIBIT O
USGS SOILS REPORT



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



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

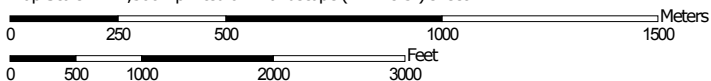
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map (Ivey West to Brighton West Interconnect)




Map Scale: 1:17,500 if printed on A landscape (11" x 8.5") sheet.




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.

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 13, Sep 22, 2016

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

Date(s) aerial images were photographed: Mar 16, 2012—Sep 18, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Ivey West to Brighton West Interconnect)

Adams County Area, Parts of Adams and Denver Counties, Colorado (CO001)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdB	Arvada loam, 0 to 3 percent slopes	7.4	15.6%
AsC	Ascalon sandy loam, 3 to 5 percent slopes	5.8	12.2%
AsD	Ascalon sandy loam, 5 to 9 percent slopes	0.7	1.5%
NuB	Nunn clay loam, 1 to 3 percent slopes	2.1	4.6%
PIB	Platner loam, 0 to 3 percent slopes	11.8	24.9%
PIC	Platner loam, 3 to 5 percent slopes	15.2	32.3%
UIC	Ulm loam, 3 to 5 percent slopes	1.4	2.9%
UID	Ulm loam, 5 to 9 percent slopes	2.8	5.9%
W	Water	0.0	0.1%
Totals for Area of Interest		47.2	100.0%

Map Unit Descriptions (Ivey West to Brighton West Interconnect)

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

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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

AdB—Arvada loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 34vj
Elevation: 4,400 to 5,600 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 125 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Arvada

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 2 inches: loam
H2 - 2 to 4 inches: sandy loam
H3 - 4 to 15 inches: clay
H4 - 15 to 28 inches: sandy clay
H5 - 28 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Salt Flat (R067XY033CO)

Hydric soil rating: No

Minor Components

Nunn

Percent of map unit: 20 percent

Hydric soil rating: No

AsC—Ascalon sandy loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tln

Elevation: 3,550 to 5,970 feet

Mean annual precipitation: 12 to 16 inches

Mean annual air temperature: 46 to 57 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Ascalon and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves

Landform position (two-dimensional): Shoulder, summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam

Bt1 - 6 to 12 inches: sandy clay loam

Bt2 - 12 to 19 inches: sandy clay loam

Bk - 19 to 35 inches: sandy clay loam

C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.1 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: Sandy Plains (R067BY024CO), Sandy (North) Draft (April 2010)
(PE 16-20) (R072XA022KS)
Hydric soil rating: No

Minor Components

Stoneham

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Plains (R067BY002CO), Loamy Upland (North) (PE 16-20)
(R072XA015KS)
Hydric soil rating: No

Vona

Percent of map unit: 8 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope, footslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R067BY024CO), Sandy (North) Draft (April 2010)
(PE 16-20) (R072XA022KS)
Hydric soil rating: No

Platner

Percent of map unit: 2 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Plains (R067BY002CO), Loamy Upland (North) (PE 16-20)
(R072XA015KS)
Hydric soil rating: No

AsD—Ascalon sandy loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tlmx
Elevation: 3,870 to 6,070 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Ascalon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Bt1 - 6 to 12 inches: sandy clay loam
Bt2 - 12 to 19 inches: sandy clay loam
Bk - 19 to 35 inches: sandy clay loam
C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: Sandy Plains (R067BY024CO)
Hydric soil rating: No

Minor Components

Stoneham

Percent of map unit: 10 percent
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

Manter

Percent of map unit: 5 percent
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R067BY024CO)
Hydric soil rating: No

NuB—Nunn clay loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tlpl
Elevation: 3,900 to 5,840 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Nunn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nunn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Pleistocene aged alluvium and/or eolian deposits

Typical profile

Ap - 0 to 9 inches: clay loam
Bt - 9 to 13 inches: clay loam
Btk - 13 to 25 inches: clay loam
Bk1 - 25 to 38 inches: clay loam
Bk2 - 38 to 80 inches: clay loam

Custom Soil Resource Report

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 7 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 0.5
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: Clayey Plains (R067BY042CO)
Hydric soil rating: No

Minor Components

Heldt

Percent of map unit: 10 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Clayey Plains (R067BY042CO)
Hydric soil rating: No

Satanta

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

PIB—Platner loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tln0
Elevation: 4,000 to 4,930 feet
Mean annual precipitation: 14 to 17 inches
Mean annual air temperature: 46 to 50 degrees F

Custom Soil Resource Report

Frost-free period: 135 to 160 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Platner and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Platner

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed eolian deposits over tertiary aged alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 6 inches: loam

Bt1 - 6 to 11 inches: clay

Bt2 - 11 to 20 inches: clay

Bk1 - 20 to 27 inches: loam

Bk2 - 27 to 37 inches: sandy clay loam

C - 37 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)

Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Ecological site: Loamy Plains (R067BY002CO)

Hydric soil rating: No

Minor Components

Ascalon

Percent of map unit: 10 percent

Landform: Interfluves

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Custom Soil Resource Report

Ecological site: Loamy Plains (R067BY002CO)

Hydric soil rating: No

Rago, rarely flooded

Percent of map unit: 4 percent

Landform: Drainageways

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, head slope

Down-slope shape: Linear

Across-slope shape: Concave

Ecological site: Overflow (R067BY036CO)

Hydric soil rating: No

Rago, ponded

Percent of map unit: 1 percent

Landform: Playas

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: Plains Swale (R067BY010CO)

Hydric soil rating: No

PIC—Platner loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tlmz

Elevation: 3,580 to 5,600 feet

Mean annual precipitation: 13 to 19 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 140 to 165 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Platner and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Platner

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed eolian deposits over calcareous tertiary alluvium

Typical profile

Ap - 0 to 6 inches: loam

Bt1 - 6 to 11 inches: clay

Bt2 - 11 to 20 inches: clay

Custom Soil Resource Report

Bk1 - 20 to 27 inches: clay loam
Bk2 - 27 to 37 inches: sandy clay loam
C - 37 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.1 to 1.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

Minor Components

Wages

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

Stoneham

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

UIC—Ulm loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 34x4
Elevation: 4,000 to 5,600 feet
Mean annual precipitation: 12 to 14 inches

Custom Soil Resource Report

Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 125 to 155 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Ulm

Setting

Landform: Plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 7 inches: loam
H2 - 7 to 13 inches: silty clay
H3 - 13 to 30 inches: clay
H4 - 30 to 48 inches: clay loam
H5 - 48 to 52 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

Minor Components

Reno Hill

Percent of map unit: 13 percent
Hydric soil rating: No

Shingle

Percent of map unit: 5 percent
Hydric soil rating: No

Apishapa

Percent of map unit: 2 percent
Landform: Swales
Hydric soil rating: Yes

UID—Ulm loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 34x5
Elevation: 4,000 to 5,600 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 125 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Ulm

Setting

Landform: Plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 13 inches: silty clay
H3 - 13 to 30 inches: clay
H4 - 30 to 48 inches: clay loam
H5 - 48 to 52 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.2 inches)

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Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Loamy Plains (R067BY002CO)
Hydric soil rating: No

Minor Components

Shingle

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

Renohill

Percent of map unit: 8 percent
Hydric soil rating: No

Apishapa

Percent of map unit: 2 percent
Landform: Swales
Hydric soil rating: Yes

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

Other soils

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

Aquolls

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

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

EXHIBIT P
CLASS 1 CULTURAL RESOURCES REPORT



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Desktop Cultural Resources Review of the Proposed Ivey West to County Line Pipeline, Adams County, Colorado

Prepared for
Discovery DJ Services, LLC

Prepared by
SWCA Environmental Consultants

March 2017



**Desktop Cultural Resources Review of the Proposed
Ivey West to County Line Pipeline,
Adams County, Colorado**

Prepared for

**Discovery DJ Services, LLC
7859 Walnut Hill, Suite 335
Dallas, Texas 75230**

Prepared by

**Paul Burnett
SWCA Environmental Consultants
2120 South College Avenue, Suite 2
Fort Collins, Colorado 80525
970.237.4096**

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EXECUTIVE SUMMARY

Discovery DJ Services, LLC, contracted SWCA Environmental Consultants to complete a cultural resources review for 6.18 linear miles of proposed pipeline between Broomfield and Brighton, Adams County, Colorado (the Ivey West to County Line pipeline). The resources review considered a 400-foot-wide corridor centered on the pipeline for potential direct project effects, and a 1-mile-wide corridor for potential indirect project effects. Discovery DJ Services provided the centerline via KMZ file format. As a part of this desktop review, a limited field reconnaissance was also conducted in proximity to wetland and waterbody crossings. No other field surveys were completed. The purpose of this review is to identify any significant cultural resource constraints associated with the development of the pipeline.

The Union Pacific Railroad – Dent Branch, German Ditch, Signal Ditch, and eight potentially historic roads (East 152nd Avenue, East 160th Avenue, Baseline Road, Colorado Boulevard, Holly Street, Monaco Street, Quebec Street, and York Street) are the only cultural resources identified in this desktop review that may be adversely affected by this project. SWCA Environmental Consultants recommends boring the pipeline below these resources to avoid physical damage to the resources. The areas of highest potential for encountering previously undocumented buried archaeological deposits are in the intact soils on either side of Big Dry Creek.

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INTRODUCTION

Discovery DJ Services, LLC, contracted SWCA Environmental Consultants (SWCA) to complete a cultural resources review for 6.61 linear miles of proposed pipeline between Broomfield and Brighton, Adams County, Colorado (the Ivey West to County Line pipeline) (Figure 1). The resources review considered a 400-foot-wide corridor centered on the pipeline for potential direct project effects, and a 1-mile-wide corridor for potential indirect project effects. SWCA conducted a review of cultural resources records for the pipeline, including a file search through the Colorado Office of Archaeology and Historic Preservation (OAHP) COMPASS database on February 9, 2017 (File Search No. 19934). This review was performed to evaluate the nature of the historical occupation of the area and to assess the potential for previously unrecorded cultural resources. Additionally, SWCA reviewed General Land Office (GLO) maps, maps from the U.S. Geological Survey (USGS) U.S. Topo and Historical Topographic Map Collection, and aerial imagery.

OAHP FILE SEARCH RESULTS

The OAHP geographic information systems (GIS) records search identified 13 previous cultural resource inventories within 1 mile of the project centerline, five of which are within 200 feet of the proposed pipeline centerline. All but one of these five projects were conducted for road improvement projects, and one was conducted for a water improvement project (Table 1).

Table 1. Previous Cultural Resource Inventories within 200 Feet of Proposed Centerline

Survey ID	Name	Institution	Authorship
AM.AE.R4	Cultural Resource Investigations for 152 nd Parkway, Adams County, Colorado	Foothill Engineering Consultants, Inc.	Hoefler, Ted
AM.CH.NR28	Class III Cultural Resource Inventory of the State Highway 7 at Holly Street Access Improvements for the Heritage Todd Creek Project, Adams County, Colorado	SWCA Environmental Consultants	Guy Hays, Heidi
AM.LG.R2	An Archaeological Survey of the Area Affected by the Northglenn Water Management Program	Wheaton College Department of Sociology and Anthropology	Arnold, Dean E.
MC.CH.R157	Historic Resources Survey Report: E-470 Segment IV, 120 th Avenue to I-25 North	Hermesen Consultants	Keeley, Gail Hermesen
MC.CH.R3	Final Report of Cultural Resource Inventory for the Proposed E-470 Corridor, Douglas, Arapahoe, Denver, Broomfield, and Adams Counties, Colorado	Colorado Department of Highways	Joyner, Kathryn L.

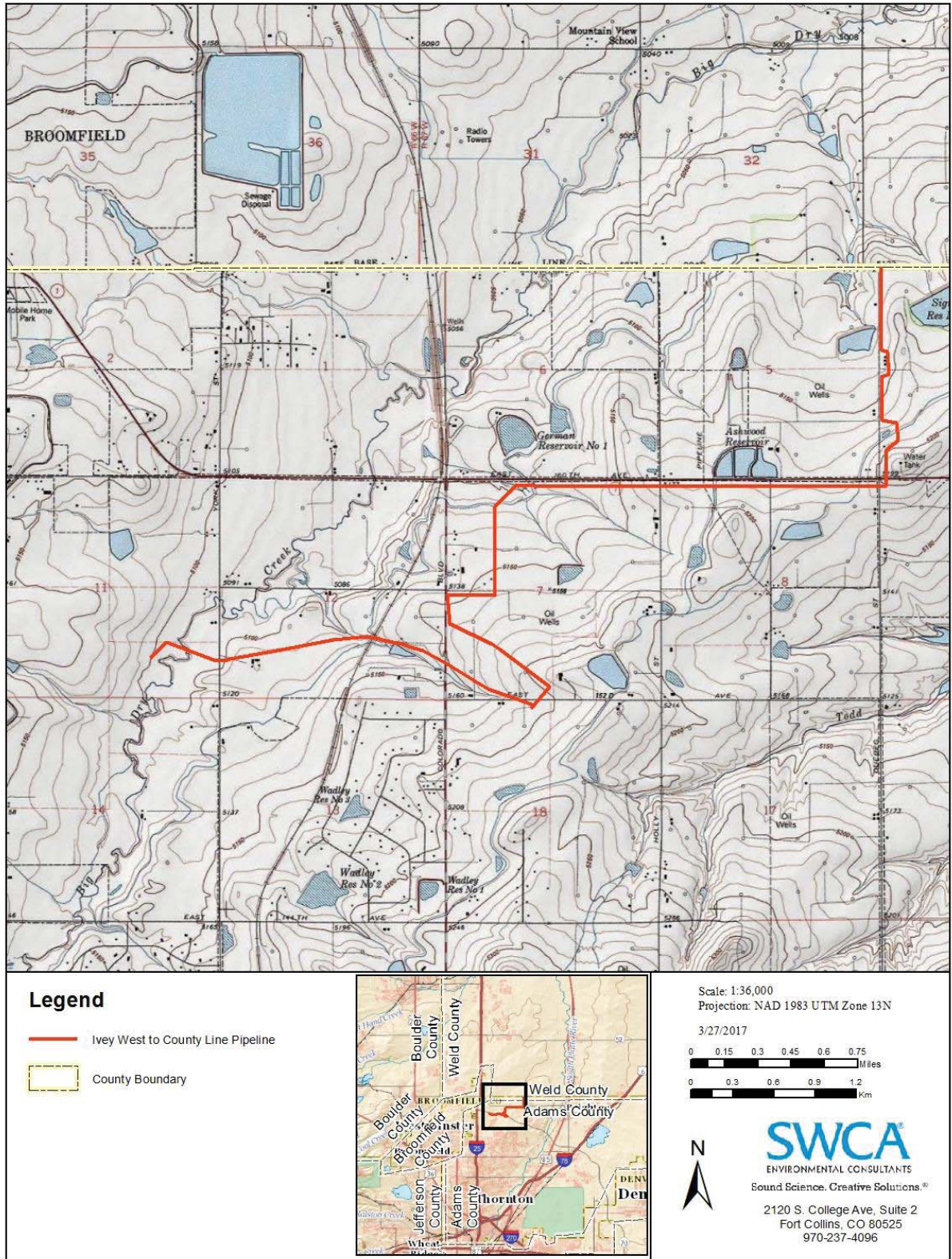


Figure 1. Overview of the proposed Ivey West to County Line pipeline.

The OAHP file search results identified 41 previously recorded sites or site segments within 1 mile of the proposed centerline, and three of these are within 200 feet of the proposed centerline. These include one prehistoric open camp, three historic ditch segments, and one railroad segment (Table 2). The historic railroad segment (5AM472.17) is eligible for National Register of Historic Places (NRHP) nomination, and the remainder of the sites are either not eligible or noncontributing to overall site eligibility.

Table 2. Previously Recorded Sites within 200 Feet of Proposed Centerline

Number	Period	Description	NRHP Eligibility
5AM470	Historic	Corley Farm	Not eligible (officially)
5AM471.1	Historic	German Ditch Segment	Does not support eligibility (officially)
5AM472.17	Historic	Union Pacific Railroad – Dent Branch Segment	Eligible (officially), contributing segment

The contributing segment of the NRHP-eligible Union Pacific Railroad (UPRR) – Dent Branch (5AM472.17) was originally recorded by URS in 2007 for the RTD North Metro Corridor environmental impact statement project. This 15.5-mile segment of railroad extends from south of Sand Creek Junction north to Big Dry Creek, north of Highway 7. The segment, which is no longer in use, is associated with 25 features, including spurs to local businesses, signals, switches, bridges, and culverts. Associated artifacts include metal and glass fragments, slag, coal, tie-plates, tie-bolts, rail anchors, glass insulator fragments, and spikes. This segment was constructed in 1909, but the grade has been repaired and maintained, and most of the extant features were constructed from 1920 to 1940, but some were upgraded as recently as the late 1990s. 5AM472.17 has been determined to be eligible for NRHP nomination under Criterion A due to its association with the expansion of the railroad in northern Colorado, early sugar beet growing communities, and the expansion of coal mining in the Weld County Carbon Valley.

The portion of this UPRR railroad segment crossed by the proposed Ivey West to County Line pipeline is 145 feet south of E-470, approximately 0.4 mile east-northeast of the eastern terminus of East 152nd Avenue, and directly north of modern residential subdivisions. Considering the amount of modern infrastructure in the vicinity, the proposed underground pipeline will not significantly alter the current setting. SWCA recommends that physical impacts to the UPRR – Dent Branch segment (5AM472.17) be avoided using horizontal directional drilling, and with this avoidance measure in place, this resource will not be adversely affected by the proposed project.

In addition to the sites or site segments that are within 200 feet of the proposed centerline, 31 sites or site segments are between 200 feet and 1 mile from the proposed centerline. To assess the potential for indirect adverse effects to these resources, the sites/segments that are determined or recommended to be eligible for NRHP nomination, need data before an NRHP evaluation can be supported, or are Centennial Farms were selected for further review. These include eight resources (Table 3).

Table 3. Previously Recorded NRHP-Eligible and Needs Data Sites between 200 Feet and 1 Mile of the Proposed Centerline

Site Number	Description	NRHP Eligibility
5AM457.1	Bull Canal Segment	Eligible (officially)
5AM457.6		Eligible (field)
5AM457.11		Eligible (field), contributing segment
5AM471.4	German Ditch Segment	Eligible (field), contributing segment
5AM472.1	Union Pacific Railroad – Dent Branch Segment	Eligible (officially), contributing segment
5AM472.20		Eligible (field), contributing segment
5AM2199	Farmstead	Eligible (officially)
5AM2402	Historic Borrow Pit	Needs data (officially)

Considering the subsurface nature of the proposed pipeline and the existing level of modern disturbance in the area, SWCA recommends that none of the canal/ditch segments between 200 feet and 1 mile from the proposed centerline will be adversely affected by the project. A historic UPRR borrow pit (5AM2402) is nearly 1 mile from the proposed centerline and additional data are needed before an NRHP evaluation can be made for this resource; however, there are several roads and buildings between this site and the proposed pipeline. As a result, the project will not adversely affect this site.

Two NRHP-eligible railroad segments are between 200 feet and 1 mile of the proposed project centerline (see Table 3). Major obstructions such as county roads and highways are located between the proposed project centerline and these railroad segments. The one railroad segment lacking such obstructions is 5AM472.1, a segment of the aforementioned UPRR – Dent Branch. This segment is intersected by the proposed centerline, which will be constructed within the E-470 with the tollway itself and residential housing developments in the immediate vicinity. Once vegetated, the pipeline ROW will not constitute a new prominent disturbance in the area.

One NRHP-eligible farmstead (5AM2199) is located 0.46 mile northwest of the project centerline; however, several roads and other developments are located between this site and the project, and modern developments in the immediate vicinity were noted in the original recording of the site. Given these settings surrounding the project, no sites or site segments between 200 feet and 1 mile of the proposed centerline will be adversely affected by the project. SWCA therefore recommends that none of the cultural resources identified in the OAHF file search results that are between 200 feet and 1 mile from the proposed centerline will be adversely affected by the project, and no further work is recommended for these resources.

HISTORIC PROPERTY REVIEW

In an attempt to identify significant historic properties not present in the OAHF records, SWCA reviewed historic maps of the project area, including the 1863 GLO plat for Township 1 South, Range 67 West; the 1866 GLO plat for Township 1 South, Range 68 West; as well as historic topographic maps containing information mapped between 1938 and 1965 (Bureau of

Land Management 2016). The GLO plats depict very few features of potential significance. One site lead was generated from the GLO plat: a road labeled “Dry Creek Road.”

The Dry Creek Road is mapped as paralleling the northwest side of Dry Creek on the 1866 plat for Township 1 South, Range 68 West. It passes near the project area off the west end of the pipeline route. A faint southwest-trending disturbance is visible on aerial imagery, but this cannot be confirmed to be associated with the historic road. To further investigate this possibility, field reconnaissance was conducted in this area. No visual remains of a road trace or associated swale remain, and the area has been developed with oil and gas infrastructure and associated graded areas. As a result, no extant portions of the Dry Creek Road as mapped on the GLO plat remains within the project area.

Many of the first roads in the region tended to follow property lines and the section lines surveyed by the GLO (Autobee and Dobson-Brown 2003:E-52). In 1885, the Colorado General Assembly passed legislation that allowed county commissioners to declare any section or township line on the public domain a public highway. Eight potentially historic named roads—East 152nd Avenue, East 160th Avenue, Baseline Road, Colorado Boulevard, Holly Street, Monaco Street, Quebec Street, and York Street—have been mapped in proximity to the proposed centerline (U.S. Census Bureau, Geography Division 2010). These roads have been upgraded and/or paved and remain in use today. To avoid adverse effects to any of these potentially historically significant roads crossed by the pipeline, SWCA recommends avoidance by boring the pipeline under these roads. Given the amount of modern infrastructure in the immediate vicinity, indirect adverse effects caused by pipeline construction on either side of these roads are unlikely.

Several buildings and canals are mapped on the historic topographic maps within the project vicinity (USGS 1940, 1957, 1965). The canals are still intact and include those documented in the OAHP files search, along with segments that have yet to be formally recorded. Where these corresponded with potential U.S. Army Corps of Engineers jurisdictional waters of the United States, field reconnaissance was performed and the canals/ditches were recorded accordingly (discussed below).

By 1938, several farmsteads had occupied the project vicinity (USGS 1940), and these are represented by mapped buildings on the historic topographic maps. The number of mapped buildings more than doubled by 1965 (USGS 1965). Undocumented historic farm complexes can best be understood within the context of the *Historic Farms and Ranches of Weld County* multiple property listing (Whitacre and Simmons 1990). One mapped historic building is the Moreland School, which was mapped in 1938 on the Eastlake quadrangle (USGS 1940), at the southeast corner of what is now the intersection of East 160th Avenue and Holly Street. The school was no longer present by the time the quadrangle was remapped in 1954 (USGS 1957). The historic buildings cannot be entirely confirmed to be extant, but OAHP records for the few that have been formally documented indicate that both NRHP-eligible and not eligible farmsteads are present in the vicinity. Considering the current level of modern visual disturbance in the area, the proposed pipeline is unlikely to result in significant indirect adverse effects to any NRHP-eligible historic buildings in the vicinity of the project. Aside from the ditch segments and scattered historic buildings, the historic map review identified no

other significant potential historic resources in the project area vicinity that are not already identified in the OAHF records.

The land patent search of the sections crossed by the proposed pipeline identified three that were patented by the UPRR under the Union and Central Railroad Grant of 1862. The remaining patents were issued to individuals under the Homestead Act of 1862 and the Sale-Cash Entry Act of 1820.

FIELD RECONNAISSANCE

Two segments of the historic German Ditch (5AM471.6 and 5AM471.7) were newly recorded during field reconnaissance for the current project. The first segment (5AM471.6) was recorded from the intersection of East 160th Avenue south and west approximately 0.25 mile to a north-trending fence line. The second consists of a 0.25 mile segment recorded within the E-470 ROW. The southwest end is bound by a previously recorded segment (5AM471.1) and the northeast end is bound by the culvert that takes the ditch beneath the south side of E-470. The German Ditch was built between 1882 and 1883 by the German Ditch & Reservoir Company (Whitacre and Simmons 1990). Given this association with early agriculture, the ditch is eligible for NRHP nomination. The first newly recorded segment, 5AM471.6, contribute to this eligibility. The second, 5AM471.7, was entirely rerouted and modernized with concrete lining and modern water control features and does not contribute to the overall eligibility of the resource. SWCA recommends avoidance of project-related disturbances to Segment 6 by boring to place the pipeline at a sufficient depth under this historic ditch. Although avoidance of Segment 7 is not recommended due to its NRHP eligibility assessment, the ditch will likely be avoided by boring as will be done for other canals and ditches crossed by the proposed pipeline. Housing developments, and modern improved roads are located in the immediate vicinity of these ditch segments. In these settings, the disturbance associated with pipeline construction will be temporary and will not result in indirect effects to this historic ditch.

Two segments of the historic Signal Ditch (5AM473.6 and 5AM473.7) were newly recorded during the field reconnaissance. The first segment (5AM473.6) is a 0.4-mile-long segment that was recorded from Quebec Street northeast to a property boundary. The second segment (5AM473.7) was recorded south from 160th Avenue and extends 0.6 mile to a property boundary. The Signal Ditch was built ca. 1885, possibly by the Signal Ditch Company (Fareillo 2007). Given this association with early agriculture, the ditch is eligible for NRHP nomination, and these segments contribute to this eligibility. SWCA recommends avoidance of project-related disturbances by boring to place the pipeline at a sufficient depth under this historic ditch. A modern housing development and modern improved roads are located adjacent to these ditch segments, and the pipeline will extend through formerly cultivated fields that are now being developed with oil and gas infrastructure. In this setting, the disturbance associated with pipeline construction will be temporary and will not result in indirect effects to this historic ditch.

A short segment of an unnamed abandoned lateral to Signal Ditch was also documented during this field reconnaissance (5AM3776). This segment is not depicted on the 1957

topographic map, but it is present on the updated 1965 map (USGS 1957; 1965). This segment includes three concrete water control features. As a portion of a relatively recently built small unnamed lateral to Signal Ditch, SWCA recommends that this resource does not meet NRHP criteria, and no avoidance measures are recommended.

GEOLOGIC FACTORS AFFECTING SITE POTENTIAL

The project area is located in a suburban setting of low rolling hills in the Dry Creek and Todd Creek watersheds. Todd Creek is south and east of the project area, but the proposed pipeline will cross Dry Creek. Most of the soils are loamy Aridisols and dry Mollisols that are prime irrigated farmlands (Esri and Natural Resources Conservation Service 2014). These soils typically exhibit a stable surface horizon overlying a pedogenically altered subsurface horizon(s). Although these soils may be generally favorable for the preservation of buried archaeological material, the major factor affecting this preservation is the agricultural and suburban development in the area. Most of the land has been cultivated, and this has disturbed the upper soil horizons along the majority of the proposed centerline. A few locations appear to contain intact soils, namely the areas on either side of Big Dry Creek, which do not appear to have been plowed. Considering this and the presence of fairly extensive aggraded alluvial sediment adjacent to this stream (Tweto 1979), these areas are the most likely to contain intact, deeply buried archaeological material.

SUMMARY AND RECOMMENDATIONS

The UPRR – Dent Branch, German Ditch, and Signal Ditch, and eight potentially historic named roads (East 152nd Avenue, East 160th Avenue, Baseline Road, Colorado Boulevard, Holly Street, Monaco Street, Quebec Street, and York Street) are the only cultural resources identified in this desktop review that may be adversely affected by this project. However, all are surrounded by modern suburban improvements, cultivated fields, and oil and gas infrastructure. As a result, the visual settings of these historic resources have been compromised. SWCA recommends using boring to avoid physical damage to these resources. By adhering to these avoidance measures, construction and operation of the Ivey West to County Line pipeline should result in no adverse effects to significant known historic properties. The areas of highest potential for encountering previously undocumented buried archaeological deposits are in the intact soils on either side of Big Dry Creek. In the event that such a discovery is made, SWCA recommends that the resource be formally recorded and evaluated for NRHP eligibility by a permitted archaeologist.

REFERENCES CITED

Autobee, Robert, and Deborah Dobson-Brown

- 2003 *Colorado State Roads and Highways Multiple Property Listing*. National Register of Historic Places Multiple Property Documentation Form. Available at: http://www.historycolorado.org/sites/default/files/files/OAHP/crforms_edumat/pdfs/645.pdf. Accessed November 13, 2015.

Bureau of Land Management

- 2016 Official Website of the U.S. Department of the Interior, Bureau of Land Management General Land Office Records. Online database available at: <http://www.glorerecords.blm.gov/default.aspx>. Accessed February 14, 2017.

Esri and Natural Resources Conservation Service

- 2014 SSURGO Downloader 2014. Available at: <http://landscapeteam.maps.arcgis.com/apps/SimpleViewer/index.html?appid=4dbfecc52f1442eeb368c435251591ec>. Accessed February 12, 2017.

Fareillo, Justin

- 2007 5AM473.1 Site Form. On file at the Colorado Office of Archaeology and Historic Preservation, Denver.

Tweto, Ogden

- 1979 Geologic Map of Colorado. Available at: http://ngmdb.usgs.gov/Prodesc/prodesc_68589.htm. Accessed December 12, 2016.

U.S. Census Bureau, Geography Division

- 2010 Processed TIGER 2010 Streets. National Geospatial Center of Excellence, Fort Worth, Texas. Available at: <https://datagateway.nrcs.usda.gov/>. Accessed April 19, 2014.

U.S. Geological Survey (USGS)

- 1940 Eastlake, Colorado. Topographic map, 1:24,000-scale. Available at: <https://geonames.usgs.gov/apex/f?p=262:18:0::NO:RP%2C18::>. Accessed February 12, 2017.
- 1957 Eastlake, Colorado. Topographic map, 1:24,000-scale. Available at: <https://geonames.usgs.gov/apex/f?p=262:18:0::NO:RP%2C18::>. Accessed February 12, 2017.
- 1965 Eastlake, Colorado. Topographic map, 1:24,000-scale. Available at: <https://geonames.usgs.gov/apex/f?p=262:18:0::NO:RP%2C18::>. Accessed February 12, 2017.

Whitacre, Christine, and R. Laurie Simmons

1990 *Historic Farms and Ranches of Weld County*. National Register of Historic Places Multiple Property Documentation Form. On file at the Colorado Office of Archaeology and Historic Preservation, Denver. Available at: http://www.historycolorado.org/sites/default/files/files/OAHP/crforms_edumat/pdfs/619.pdf. Accessed October 1, 2015.

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