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October 24, 2016

Kodi Jean Verhalen
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ELECTRONIC FILING

Hon. Eric L. Lipman
Administrative Law Judge
State of Minnesota, Office of Administrative Hearings
PO Box 64620
St. Paul, MN 55164-0620

Re: Direct Testimony
In the Matter of the Petition of Minnesota Energy Resources Corporation for a Route Permit for the Rochester Natural Gas Pipeline Project in Olmsted County
MPUC Docket No. G011/GP-15-858
OAH Docket No. 8-2500-33180

Dear Judge Lipman:

Enclosed for filing please find the Direct Testimony and Schedules of the following witnesses for Minnesota Energy Resources Corporation in the above-reference docket:

Amber S. Lee – Regulatory
Lindsay K. Lyle – Engineering and Design
Rick J. Moser – Environmental

We have served the filing on all parties noted on the attached service list by way of electronic filing through the eDockets system, or by U.S. Mail.

Please direct any questions regarding this filing to the undersigned.

Sincerely,

/s/ Kodi Jean Verhalen

Kodi Jean Verhalen

KJV/jy
Enclosures
cc: Service List

In the Matter of the Petition of Minnesota Energy Resources Corporation for a Route Permit for the Rochester Natural Gas Pipeline Project in Olmsted County

Docket No. G011/GP-15-858
OAH Docket No. 8-2500-33180

CERTIFICATE OF SERVICE

I, Jill N. Yeaman, hereby certify that on the 24th day of October, 2016, on behalf of Minnesota Energy Resources Corporation (MERC), I electronically filed a true and correct copy of the following documents:

1) Direct Testimony and Schedules of Amber S. Lee;
2) Direct Testimony and Schedule of Lindsay K. Lyle; and
3) Direct Testimony and Schedule of Rick J. Moser

on www.edockets.state.mn.us. Said documents were also served via U.S. mail and electronic service as designated on the attached service list.

/s/ Jill N. Yeaman
Jill N. Yeaman

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Direct Testimony and Schedules
Amber S. Lee

Before the Office of Administrative Hearings
600 North Robert Street
St. Paul, Minnesota 55101

For the Minnesota Public Utilities Commission
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St. Paul, Minnesota 55101

In the Matter of a Petition by Minnesota Energy Resources Corporation for a Route Permit for the Rochester Natural Gas Pipeline in Olmsted County

MPUC Docket No. G011/GP-15-858
OAH Docket No. 8-2500-33180
Exhibit _____

Direct Testimony
Regulatory

October 24, 2016

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Amber S. Lee. My business address is 1995 Rahncliff Court, Suite 200, Eagan, Minnesota 55122.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am employed by WEC Business Support ("WBS"). WBS is the service company that provides service to Minnesota Energy Resources Corporation ("MERC" or the "Company"). My position is Manager of Regulatory and Legislative Affairs for MERC. MERC is a subsidiary of WEC Energy Group, Inc. ("WEC"), a utility holding company headquartered in Milwaukee, Wisconsin. WEC's operating public utility subsidiaries provide electric and natural gas service to approximately 4.4 million customers over four states, including MERC's approximately 230,000 natural gas customers in Minnesota.

Q. FOR WHOM ARE YOU PROVIDING TESTIMONY?

A. I am testifying on behalf of MERC.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have been the Regulatory and Legislative Affairs Manager at MERC since May 2014. Prior to that time, I worked as an attorney practicing in Minnesota utility regulation.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I am testifying in support of MERC's application to the Minnesota Public Utilities Commission ("Commission") for a Route Permit for MERC's proposed Rochester Natural Gas Pipeline Project in Olmsted County ("Rochester Project" or "Project"). Specifically, I am testifying in support of the following sections of MERC's Route Permit Application ("Application"): Section 1 (Completeness Checklist), Section 2 (Introduction), Section 3 (General Information (Minn. R. 7852.2100)), Section 7 (Preferred Route Location and Environmental Description (Minn. R. 7852.2600)) (with the exception of Subpart 3), and the portion of Section 8 (Environmental Impact of Preferred Route (Minn. R. 7852.2700)) regarding pipeline cost. I am also available to answer questions about MERC's easement acquisition process.

Q. ARE YOU SPONSORING ANY SCHEDULES WITH YOUR DIRECT TESTIMONY?

A. Yes. I am sponsoring the following:

Schedule 1. Map Comparison of the Changes Between the Application Preferred Route and the Modified Preferred Route.

Schedule 2. A Screenshot of the Willow Creek Commons Properties from the Olmsted County Zoning Website.

Schedule 3. A Screenshot of the Westridge Hills Development Properties from the Olmsted County Zoning Website.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. My testimony supports the Company's Application for the Project and I am available to answer general questions about the Project. I am also available to answer more detailed questions about the subjects I identified above.

I also provide an overview of the Rochester Project, the need for the Project, MERC's current pipeline route preference, and the general support for that route preference.

Q. ARE THERE OTHER WITNESSES PROVIDING TESTIMONY IN THIS CASE?

A. Yes. In addition to my testimony, MERC is providing Direct Testimony of the following witnesses:

1. **Lindsay K. Lyle** – Ms. Lyle is an employee of MERC. She provides Direct Testimony supporting the design and construction of the Project, including safety considerations. Specifically, Ms. Lyle is supporting the following sections of the Application: Section 4 (Proposed Pipeline and Associated Facilities Description (Minn. R. 7852.2200)), Section 5 (Land Requirements (Minn. R. 7852.2300)), Section 6 (Project Expansion (Minn. R. 7852.2400)), the portion of Section 8 (Environmental Impact of Preferred Route (Minn. R. 7852.2700)) regarding pipeline accessibility, Section 10 (Right-of-Way Preparation Procedures and Construction Activity Sequence (Minn. R. 7852.2500)), Section 11 Subpart 1 (Right-of-Way Protection Measures (Minn. R. 7852.2800)), and Section 12 (Operation and Maintenance (Minn. R. 7852.2900)).

3. **Rick J. Moser** – Mr. Moser is an employee of WBS. He provides Direct Testimony supporting the route development for, and environmental impacts associated with, the Project. Specifically, Mr. Moser is supporting the following sections of the Application: Section 7 Subpart 3 (Description of Existing Environment), Section 8 (Environmental Impact of the Preferred Route (Minn. R. 7852.2700)) (with the exception of Pipeline Cost and Accessibility), Section 9 (Evidence of Consideration of Alternative Routes (Minn. R. 7852.3100)), Section 11, Subpart 2 (Right-of-Way Restoration Measures (Minn. R. 7852.2800)), and Section 13 (List of Government Agencies and Permits (Minn. R. 7852.3000)).

II. DESCRIPTION OF THE ROCHESTER PROJECT

Q. PLEASE DESCRIBE THE ROCHESTER PROJECT.

A. The Rochester Project is a significant system integrity and system capacity project for MERC and our customers. It is designed to improve the operation and efficiency of MERC's distribution system. This Project will also allow MERC to accommodate additional natural gas capacity on its distribution system in and around the City of Rochester as well as in surrounding communities in southeastern Minnesota, which are currently at capacity and cannot support continued growth without expansion of the supply of interstate gas into the area. The proposed Project would install approximately 13.1 miles of steel pipeline designed to be capable of operating at 500 pounds per square inch gauge ("psig"), two new Town Border Stations ("TBS") and one new District Regulator Station ("DRS"). The pipeline would consist of approximately 5.1 miles of 16-inch outside diameter steel pipe to be operated at pressures between 400 psig and 475

psig and approximately 8.0 miles of 12-inch outside diameter steel pipe to be operated at pressures between 250 psig and 275 psig.

Q. PLEASE DESCRIBE THE NEED FOR THE ROCHESTER PROJECT.

A. The Rochester Project is designed to alleviate a two-fold need by: (1) eliminating the operating pressure and piping configuration issues that prevent MERC's existing distribution system in the Rochester area from efficiently and reliably distributing the gas available on the system across Rochester and surrounding communities; and (2) increasing the interstate natural gas pipeline capacity available to the Rochester area and surrounding area so that it is adequate to meet existing customer demand as well as projected future demand.

Q. PLEASE SUMMARIZE THE OPERATING PRESSURE AND PIPING CONFIGURATION ISSUES YOU MENTIONED.

A. Under present circumstances, in situations of high demand, MERC's existing low-pressure distribution system in Rochester cannot distribute all of the gas supply available in the southern portion of the system to the northern portion of the system where it is needed. This constraint during peak periods is due to the configuration of the system's piping that interconnects the various portions of MERC's low-pressure distribution system within the City of Rochester and the wide range of pressures under which the distribution system operates. The proposed Rochester Project will allow MERC to more efficiently and effectively distribute natural gas to where the demand is located.

Q. PLEASE SUMMARIZE MERC'S NEED FOR ADDED INTERSTATE PIPELINE CAPACITY ON ITS SYSTEM.

A. The greater Rochester area has experienced continued population growth and commercial and industrial expansion, in large part due to the growth of services supporting the expansion of health care facilities in and around the city. As a result of this growth, MERC is unable to meet its design day requirements for firm customers served in the Rochester area absent improvements to increase capacity.

The main barrier for MERC to continue to meet its design day requirements for customers in the Rochester area is the limited level of interstate pipeline capacity reserve that currently exists. Northern Natural Gas ("NNG") is the sole provider of interstate natural gas pipeline capacity to the Rochester area, and NNG is currently fully subscribed on its transmission system serving the area with no additional firm capacity available.

The proposed Project will provide additional capacity from NNG that will allow MERC to meet its existing customer requirements as well as anticipated future demand for the long term.

To provide additional firm capacity, NNG and MERC have negotiated a long-term capacity contract (the "Precedent Agreement" or the "PA") under which NNG will build additional capacity into the two transmission laterals that connect to MERC's proposed TBS 1D, to be located adjacent to the existing NNG TBS 1D, and the Proposed TBS, to be located in Section 13 or Section 14 of Salem Township.

Q. PLEASE SUMMARIZE HOW NNG WILL ADD CAPACITY TO ITS INTERSTATE PIPELINE SYSTEM IN THE AREA.

A. At a high-level, I understand that NNG must first increase the pressure of its pipeline system in Minnesota, which it will do by installing a 15,000 horsepower compressor to increase the pressure within the main transmission lines that run into Minnesota. In addition, NNG must make modifications to other facilities in and around the Rochester area to manage the increased capacity that will be fed to MERC's Rochester TBS system as a result of the increased pressure.

Q. IS THE ROCHESTER PROJECT PREDICATED UPON PARTICULAR ASSUMPTIONS OF FUTURE GROWTH?

A. No. MERC currently operates with a negative reserve margin in the Rochester area and we need to increase capacity into that area to meet current needs. However, I note that demand growth in Rochester has generally been stronger than elsewhere on the MERC system.

III. PROJECT ROUTES UNDER CONSIDERATION

Q. WHAT ROUTES HAS MERC PROPOSED IN THIS PROCEEDING?

A. In the Application, MERC proposed the Preferred Route and the Alternate Route. These two routes were developed based on review of the area and the preference to follow existing rights-of-way and property lines to the greatest extent possible. Before filing the

Application, MERC held a public open house to obtain feedback from members of the public on the proposal and the routes under consideration for inclusion in the Application.

After gathering additional landowner comments during the February 29, 2016, Scoping meetings held by the Department of Commerce, Energy Environmental Review and Analysis ("EERA") Staff, MERC reviewed its route preference and proposed the Modified Preferred Route on April 13, 2016. All three of these routes are shown in Figure 1A (Application Preferred Route), Figure 1B (Application Alternate Route), and Figure 1C (Modified Preferred Route) of the Comparative Environmental Analysis ("CEA"). **Schedule 1** to my testimony illustrates the two areas where the Modified Preferred Route differs from the Application Preferred Route.

Q. WHAT MODIFICATIONS WERE MADE FROM THE APPLICATION PREFERRED ROUTE TO DEVELOP THE MODIFIED PREFERRED ROUTE?

A. The Application Preferred Route and the Modified Preferred Route differ in two areas: (1) Sections 13, 24, and 25 of Salem Township and Sections 18, 19, 28, 29, and 30 of Rochester Township; and (2) Sections 22, 23, 26, and 27 of Rochester Township. These two areas are shown on Schedule 1 to my Direct Testimony.

Q. DOES MERC PREFER THE MODIFIED PREFERRED ROUTE FOR THE PROJECT?

A. Yes. MERC still prefers the Modified Preferred Route for the Project.

IV. ROCHESTER PROJECT COSTS

Q. WHAT IS THE TOTAL ESTIMATED COST OF MERC'S ROCHESTER PROJECT?

A. MERC estimates construction costs for the Project at about $44 million. MERC's estimate is based on the routes proposed in the Application and the Modified Preferred Route and does not account for additional mileage that may be added by certain Segment Alternatives identified in the CEA[1] if they are selected by the Commission for the Project. It also does not include additional easement costs that would be incurred if the Commission selects a Segment Alternative through any of the existing commercial developments along 48th Street SW east of 11th Avenue SW.

Q. ARE THERE SEGMENT ALTERNATIVES WITH NOTABLY HIGHER COSTS THAN OTHER SEGMENT ALTERNATIVES?

A. Segment Alternatives HJ-2, HJ-4, IJ-3, and IJ-4 cross through densely developed commercial areas. Along these Segment Alternatives, the cost of property is estimated to be five times the cost of property along other Segment Alternatives that could be used in this area. Therefore, the overall cost for these four Segment Alternatives would be much higher than other Segment Alternatives.

[1] Segment Alternatives are defined in Tables 4-2 to 4-5 of the CEA. Segment Alternatives are depicted in Schedule 1 to Mr. Moser's Direct Testimony.

V. FUTURE DEVELOPMENT CONSIDERATIONS

A. County Road Development

Q. HAS MERC COORDINATED WITH OLMSTED COUNTY REGARDING THE POSSIBILITY THAT THE COUNTY WILL NEED TO WIDEN ITS ROADS IN THE FUTURE?

A. Yes. The County submitted public comments summarizing its concerns regarding the future widening of county roads as envisioned in its Long Range Transportation Plan. Ideally the County would like the route selected for the Project to avoid the rights-of-way that may be expanded under the County's long-term plan. The County's primary concern is that if any Segment Alternative that follows a county road is selected for the Project, and that road needs to be expanded in the future, the pipeline may need to be relocated if it is constructed near the currently-existing road right-of-way.

MERC met with the Olmsted County Public Works Department and the Olmsted County Engineer on October 17, 2016. During this meeting, MERC confirmed that it would work with Olmsted County and the County Engineer on the final alignment for the Project as it relates to road rights-of-way and future development plans to determine where appropriate mitigation measures may be incorporated into the final design of the Project. MERC understands the County's concerns in this regard and commits to working with the County to avoid the duplicate construction of infrastructure wherever practicable along the selected route.

B. Private Land Developments

Q. HAS THE COMPANY EVALUATED THE DEVELOPMENTS THAT MAY BE ENCOUNTERED ALONG THE SEGMENT ALTERNATIVES IN THE CEA?

A. Yes. The Company identified two proposed developments that would be bisected by the Application Preferred Route or the Modified Preferred Route: Willow Creek Commons[2] and Westridge Hills.[3]

Q. DID THE COMPANY MAKE ANY CHANGES TO ITS ROUTE PREFERENCE AFTER LEARNING OF THESE TWO PROPOSED DEVELOPMENTS?

A. Yes. During the Scoping Comment period, the landowner of the property that would be crossed by the Application Preferred Route's diagonal crossing in Section 26 of Rochester Township filed comments indicating that a portion of the proposed property within the Willow Creek Commons General Development Plan ("GDP") had been platted and recorded for development of the Willow Creek Commons with Olmsted County in November 2014.

Based on the status of development, and the fact that the Application Preferred Route diagonally crossed several platted properties covered by other portions of the GDP, MERC developed the Modified Preferred Route that follows 11th Avenue SW north before turning east along 40th Street SW. While the Modified Preferred Route anticipated alignment still crosses parcels within the Willow Creek Commons GDP, it is now located

[2] Segment Alternatives HJ-2 and IJ-2. "Willow Creek Commons" is used to refer to the combined Willow Creek Commons, Willow Creek Commons West, and the 40 ST GDP.

[3] Segment Alternatives FH-1, FH-2, FI-2, GH-2, and GI-2.

along the perimeter and no longer bisects the smaller parcels located in the northwest portion of the planned development. These parcels can be seen on **Schedule 2** to my testimony, which is a screenshot from the Olmsted County Zoning website, accessed on October 17, 2016.

Q. DID MERC PROPOSE ANY PIPELINE ROUTE CHANGES TO ITS ROUTE PREFERENCE ACROSS THE WESTRIDGE HILLS PROPOSED DEVELOPMENT?

A. No. The status of the Westridge Hills proposed development is different from the status of the Willow Creek Commons development. A portion of the Willow Creek Commons development has been platted, but the Westridge Hills proposed development has not been platted and currently the GDP for Westridge Hills is no longer valid.

Q. WHY DO YOU SAY THE GDP IS NO LONGER VALID?

A. According to the City of Rochester Land Use Plan, Section 61.216, a GDP is only valid for a period of two years unless subsequent development approvals occur. No action has occurred on the Westridge Hills GDP since 2007 according to the City of Rochester. The subdivision also does not appear in the Olmsted County Subdivision Plat records[4] or on the Olmsted County Zoning Information website.[5] A screenshot of this area from the Zoning website is included as **Schedule 3** to my testimony.

[4] Olmsted County Subdivision Plat Search, available at https://www.co.olmsted.mn.us/pw/surveying/Pages/SubdivisionAlphabeticalSearch.aspx.

[5] https://gweb01.co.olmsted.mn.us/Flexviewers/ZoningInfoPublic/

Q. DOES MERC SUPPORT A ROUTE CHANGE TO THE MODIFIED PREFERRED ROUTE TO AVOID THE WESTRIDGE DEVELOPMENT?

A. No. Given the out-of-date status of the Westridge Hills GDP, and the ability to develop lots around existing natural gas pipelines, as explained in the Direct Testimony of Ms. Lyle, MERC continues to believe that the Modified Preferred Route is the most appropriate route for the Project. The Modified Preferred Route anticipated alignment follows the property line of two parcels that were included in the 2007 Westridge Hills GDP. In addition to the fact that the current status of the proposed development does not warrant route modification at this time, MERC also prefers the Modified Preferred Route over the alternative that runs along 48th Street because of the constructability issues that that alternative presents.

C. Potential Other Future Development

Q. BASED ON THE PHASED CONSTRUCTION TIMELINE FOR THE PROJECT (2017-2022), DOES MERC ANTICIPATE DEVELOPMENTS BEING APPROVED ALONG ANY OF THE SEGMENT ALTERNATIVES IDENTIFIED IN THE CEA BEFORE THE PROJECT IS FULLY CONSTRUCTED?

A. MERC has no knowledge of the specifics of other future developments under consideration. MERC is aware, however, that there has been a lot of commercial and residential growth, generally, in the Project area, particularly between the Proposed TBS and the DRS.

Q. HOW DOES MERC INTEND TO ADDRESS FUTURE DEVELOPMENT THAT MAY BE APPROVED PRIOR TO COMMENCING CONSTRUCTION ON ALL THE PHASES?

A. After receiving the Route Permit from the Commission, MERC will begin conversations with landowners along the entire Project to gather information and design an alignment that will avoid unanticipated project impacts. MERC will prioritize the design for the areas where development is occurring or has occurred most recently.

There may be unforeseen circumstances, however, that arise during the detailed engineering and design of the Project or during right-of-way acquisition. In light of this, MERC requests that the following special condition, which has been included in prior Commission-issued pipeline Route Permits, be included in the Route Permit for this Project:

> Route width variations may be allowed for the Permittee to overcome potential site-specific constraints. These constraints may arise from any of the following:
>
> 1. Unforeseen circumstances encountered during the detailed engineering and design process.
> 2. Federal or state agency requirements.
> 3. Existing infrastructure within the pipeline route, including but not limited to railroads, natural gas and liquid pipelines, high voltage electric transmission lines, or sewer and water lines.
>
> Any alignment modifications arising from these site specific constraints that would result in right-of-way placement outside of this designated route shall be located to have the same or less impacts relative to the criteria in Minnesota Rules7852.1900 as the alignment identified in this permit and be specifically identified in and approved as part of the Plan and Profile submitted pursuant to Part VI. of this permit.

If MERC exercises this condition, consistent with other projects, it will identify any areas where this special condition applies and will provide information with its plan and profile filing explaining the site-specific constraints encountered and tables demonstrating that the modification impacts relative to the criteria in Minnesota Rule 7852.1900 are the same or less than the Commission-approved anticipated alignment.

VI. MERC'S ROUTE PREFERENCE

Q. HAS MERC IDENTIFIED ANY CHANGES TO ITS ROUTE PREFERENCE BASED ON THE DEVELOPMENT OF THE CEA OR LANDOWNER FEEDBACK?

A. MERC has reviewed the CEA carefully and listened to landowners and other interested stakeholders throughout this process. Based on this information, MERC continues to prefer the Modified Preferred Route for the entire length of the Project.

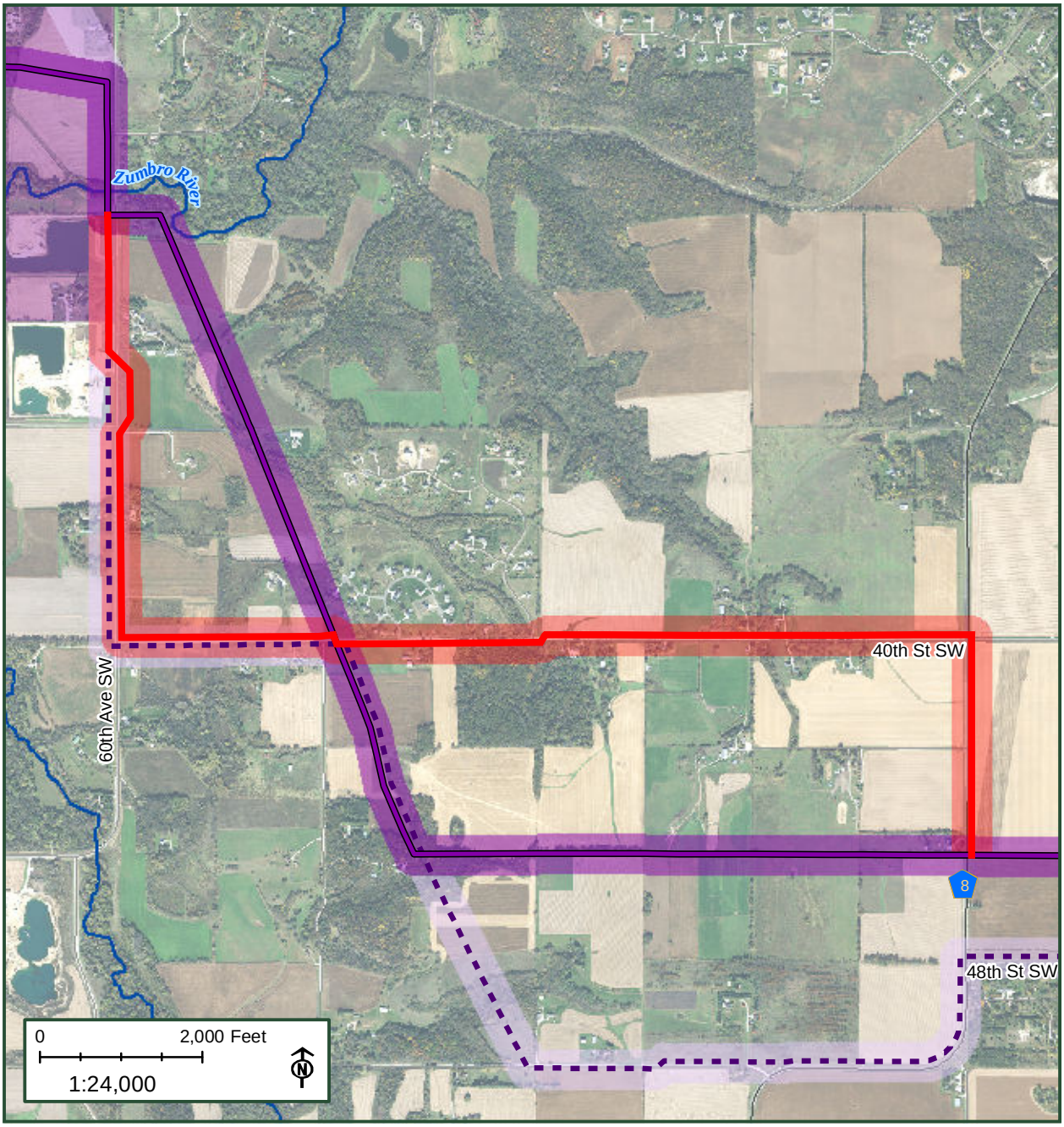
VII. CONCLUSION

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

MINNESOTA ENERGY RESOURCES

60th / 40th Route Segment Overview



Legend

- Modified Preferred Route Segment
- Route Permit Preferred Route
- Route Permit Alternate Route
- 60th / 40th Route Segment
- Preferred Route (Application)
- Alternate Route
- Proposed Town Border Station & Route Buffer
- PWI Stream
- Waterbody/NWI Wetland
- City / Township Boundary
- Railroad
- 161kV AC Transmission Line
- Road
- US / State / County Highway

*Buffer distance is 1.25 miles

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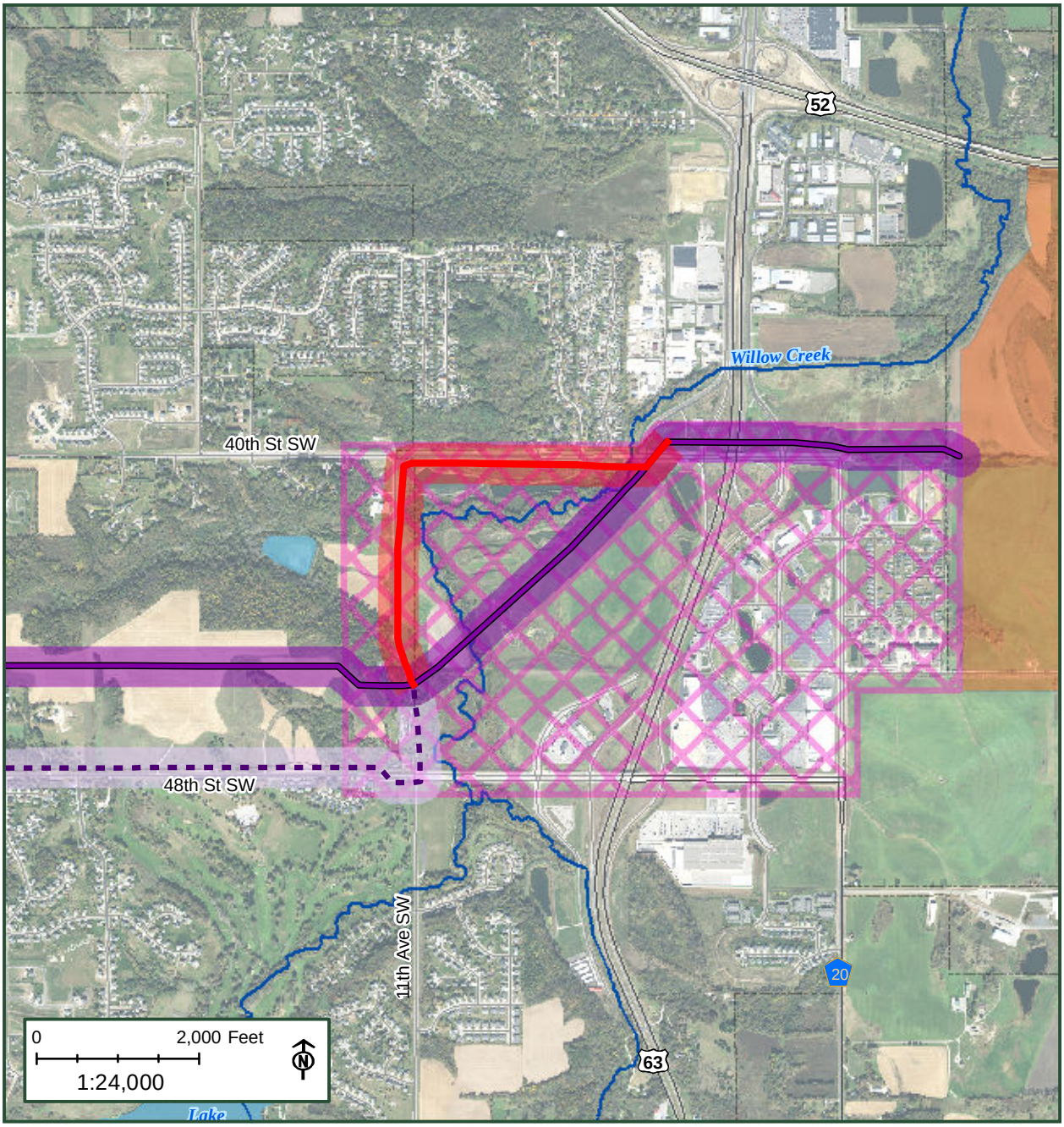
MINNESOTA ENERGY RESOURCES

11th / 40th Route Segment Overview



Legend

- Modified Preferred Route Segment
- Route Permit Preferred Route
- Route Permit Alternate Route
- 40th / 11th Route Segment
- Preferred Route (Application)
- Alternate Route
- Route Alternative Buffer
- Proposed District Regulator Station & Route Buffer
- PWI Stream
- Waterbody/NWI Wetland
- City / Township Boundary
- Railroad
- 161kV AC Transmission Line
- Road
- US / State / County Highway

*Buffer distance is 1.25 miles

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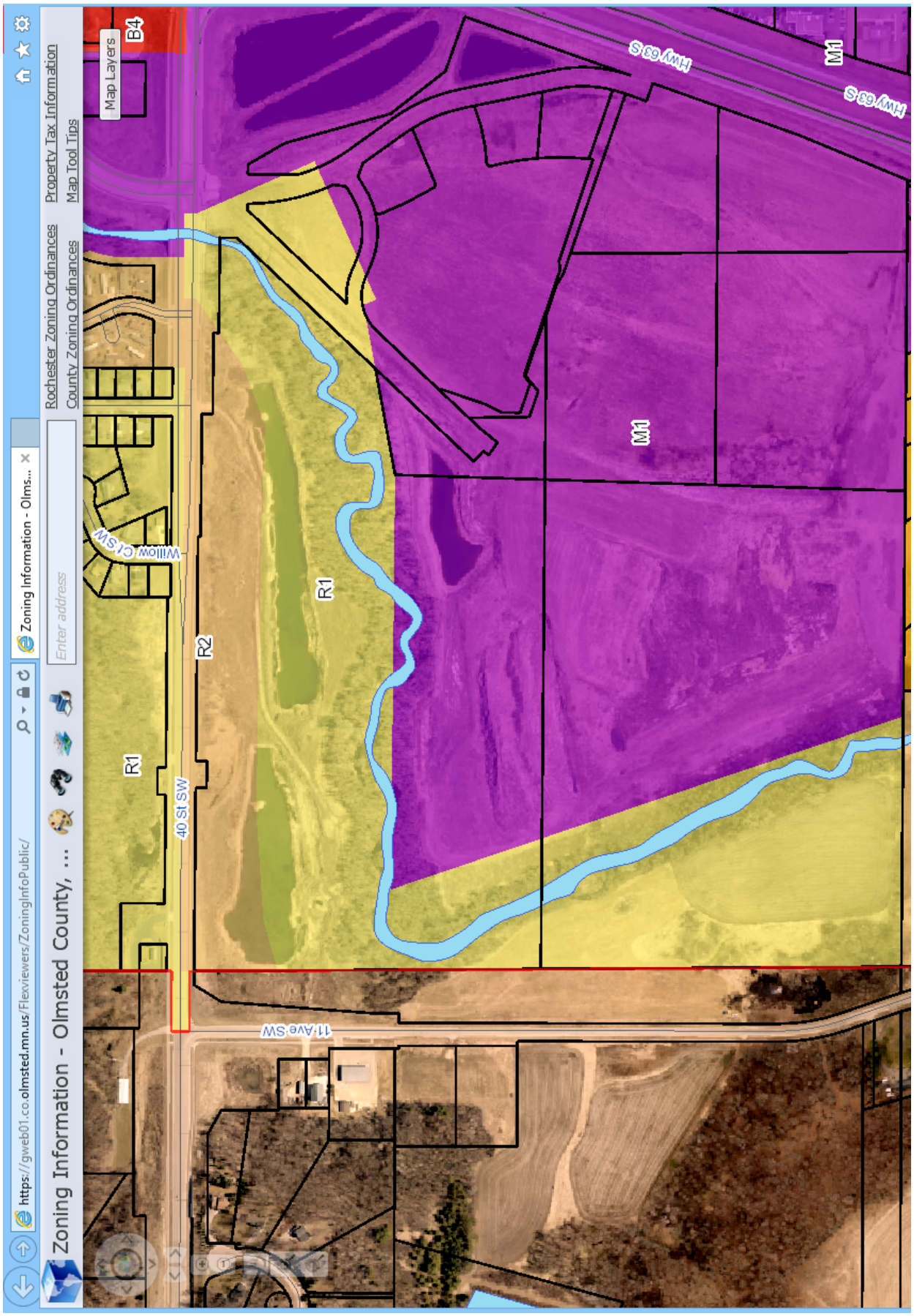
Zoning Information - Olmsted County, ...
https://gweb01.co.olmsted.mn.us/FlexViewers/ZoningInfoPublic/
Zoning Information - Olms...
Enter address
Rochester Zoning Ordinances
County Zoning Ordinances
Property Tax Information
Map Tool Tips
Map Layers
B4
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M1
R1
R2
R1
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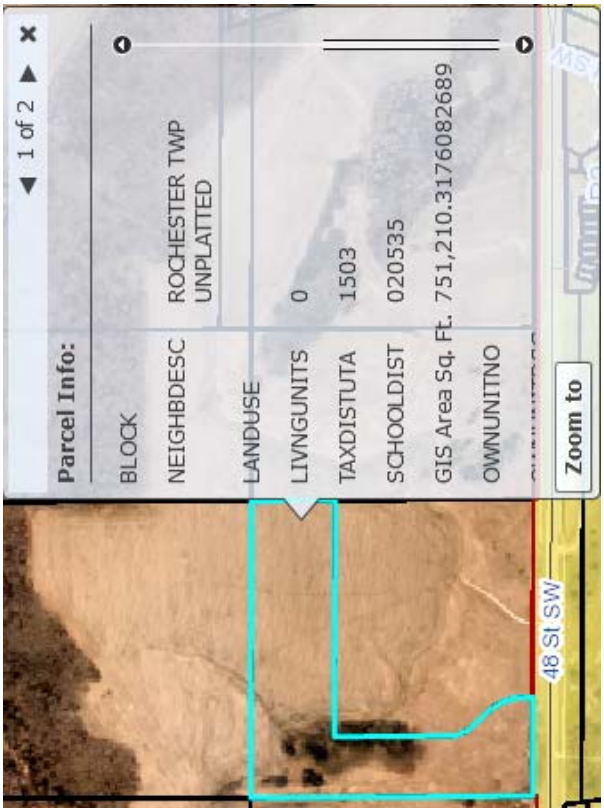
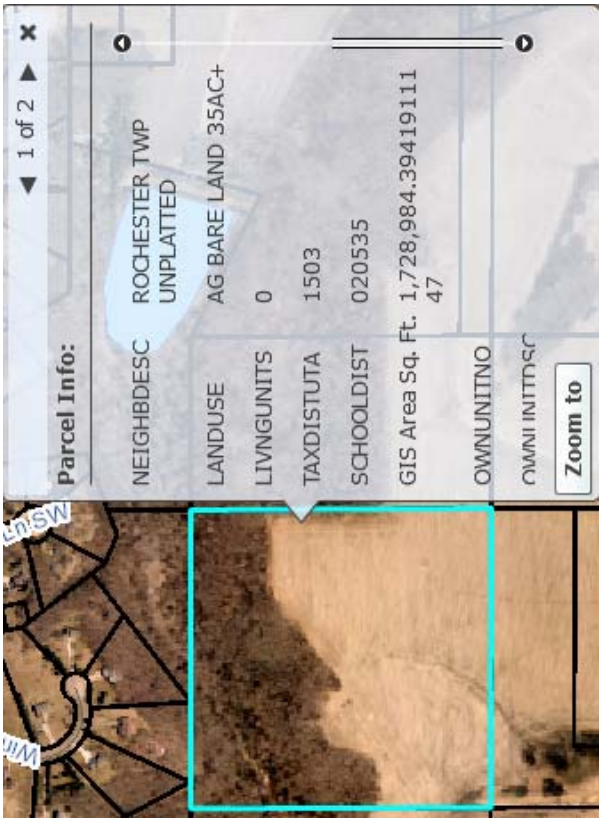
Hwy 63 S


1 of 2
Parcel Info:
BLOCK
NEIGHBDESC ROCHESTER TWP UNPLATTED
LANDUSE
LIVNGUNITS 0
TAXDISTUTA 1503
SCHOOLDIST 020535
GIS Area Sq. Ft. 751,210.3176082689
OWNUNITNO
Zoom to
48 St SW


1 of 2
Parcel Info:
NEIGHBDESC ROCHESTER TWP UNPLATTED
LANDUSE AG BARE LAND 35AC+
LIVNGUNITS 0
TAXDISTUTA 1503
SCHOOLDIST 020535
GIS Area Sq. Ft. 1,728,984.39419111 47
OWNUNITNO
Zoom to

Direct Testimony and Schedule
Lindsay K. Lyle

Before the Office of Administrative Hearings
600 North Robert Street
St. Paul, Minnesota 55101

For the Minnesota Public Utilities Commission
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St. Paul, Minnesota 55101

In the Matter of a Petition by Minnesota Energy Resources Corporation for a Route Permit for the Rochester Natural Gas Pipeline in Olmsted County

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Direct Testimony
Engineering and Design

October 24, 2016

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lindsay K. Lyle. My business address is 1995 Rahncliff Court, Suite 200, Eagan, Minnesota 55122.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am Engineering Manager at Minnesota Energy Resources Corporation ("MERC" or the "Company"). MERC is a public utility subsidiary of WEC Energy Group, Inc. ("WEC"), a utility holding company headquartered in Milwaukee, Wisconsin. WEC's operating public utility subsidiaries provide electric and natural gas service to approximately 4.4 million customers over four states, including MERC's approximately 230,000 natural gas customers in Minnesota.

Q. FOR WHOM ARE YOU PROVIDING TESTIMONY?

A. I am testifying on behalf of MERC.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I received a Bachelor of Science degree in chemical engineering in 1998 from Oklahoma State University. I received a Master's Degree in business administration in 2004 from Oklahoma State University.

I have been employed in the natural gas industry since 1999, holding engineering positions with Oklahoma Natural Gas Company, Aquila, and now MERC. At MERC, I

lead the Engineering Group and oversee the delivery of engineering services for construction, operation and maintenance projects for gas distribution within prescribed budgets, scope and schedule.

I have been actively involved in coordinating the design and engineering and construction planning aspects of the Rochester Natural Gas Pipeline Project ("Rochester Project" or "Project").

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I am testifying in support of MERC's application to the Minnesota Public Utilities Commission ("Commission") for a Route Permit for MERC's proposed Rochester Project. Specifically, I am testifying in support of the following sections of MERC's Route Permit Application ("Application"): Section 4 (Proposed Pipeline and Associated Facilities Description (Minn. R. 7852.2200)), Section 5 (Land Requirements (Minn. R. 7852.2300)), Section 6 (Project Expansion (Minn. R. 7852.2400)), the portion of Section 8 (Environmental Impact of Preferred Route (Minn. R. 7852.2700)) regarding pipeline accessibility, Section 10 (Right-of-Way Preparation Procedures and Construction Activity Sequence (Minn. R. 7852.2500)), Section 11 Subpart 1 (Right-of-Way Protection Measures (Minn. R. 7852.2800)), and Section 12 (Operation and Maintenance (Minn. R. 7852.2900)).

Q. ARE YOU SPONSORING ANY SCHEDULES WITH YOUR DIRECT TESTIMONY?

A. Yes. I am sponsoring the following:

Schedule 1. Examples of Development Around Natural Gas Pipelines.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

a. My testimony sponsors the Company's Application for the Project related to engineering, design, and safety related to both construction and maintenance. I am also testifying on the incorporation of natural gas pipelines into private developments around the City of Rochester. Finally, I am testifying as to the design/engineering and construction considerations related to proposed Segment Alternatives for the Project based on review of these alternatives with my staff and design/engineering consultants.

II. DESCRIPTION OF THE ROCHESTER PROJECT

Q. PLEASE PROVIDE MORE INFORMATION ON THE NEED FOR ADDITIONAL NATURAL GAS CAPACITY IN ROCHESTER, AS DISCUSSED IN MERC'S APPLICATION.

A. MERC's Rochester distribution system is currently at capacity and must be upgraded to meet our current needs, as well as to meet the expected growth in customer demand over the next ten years.

To meet the projected increase in demand, the capacity of both the interstate transmission pipeline system (by Northern Natural Gas ("NNG")) in the Rochester area and MERC's Rochester distribution system must be expanded.

Q. HOW WILL MERC EXPAND ITS DISTRIBUTION SYSTEM IN THE ROCHESTER AREA?

A. To handle the increased supply flow and operating pressure resulting from NNG's upgrades to its pipeline system in the Rochester area, MERC will construct an approximately 13.1-mile long main distribution pipeline that connects a new TBS 1D in northwest Rochester, to the Proposed TBS in west Rochester, and to new District Regulator Station ("DRS") in the vicinity of TBS 1B in southeast Rochester. This new pipeline will be designed with a maximum allowable operating pressure ("MAOP") of 500 pounds per square inch gauge ("psig"), tying together the northern and southern portions of our existing TBS system. Although the pipeline will have an MAOP of 500 psig, the 5.1 miles of 16-inch steel pipe from TBS 1D to the Proposed TBS will be operated between 400 psig to 450 psig. The 8.0 miles of 12-inch steel pipe from the Proposed TBS to the DRS will be operated between 250 psig to 275 psig.

III. PROJECT LAND REQUIREMENTS

Q. WHAT RIGHT-OF-WAY WILL BE REQUIRED FOR THE PROJECT?

A. MERC will require a 50-foot permanent right-of-way and a 50-foot temporary right-of-way for the length of the pipeline. The 50-foot permanent right-of-way will be used for the location of the steel pipeline and to ensure access for inspections and maintenance and to avoid encroachment on the natural gas pipeline. The 50-foot temporary right-of-way will only be used for purposes of pipeline construction and will expire upon completion of Project construction.

Q. WILL THE PIPELINE BE CENTERED IN THE 50-FOOT PERMANENT RIGHT-OF-WAY?

A. Not necessarily. The pipeline will be located in the 50-foot right-of-way in the location that makes the most sense given the location of the pipeline and surrounding development. The pipeline may be offset to one side of the permanent right-of-way but will maintain a minimum five-foot separation from the pipeline centerline and the edge of the permanent right-of-way.

Q. WILL THE TEMPORARY RIGHT-OF-WAY BE EQUALLY DISTRIBUTED BETWEEN THE TWO SIDES OF THE PERMANENT RIGHT-OF-WAY?

A. It is unlikely that the 50-foot temporary right-of-way would measure 25 feet on each side of the permanent right-of-way. The purpose of the temporary right-of-way is to provide adequate space for construction equipment, the staging and welding of the pipe, and storage of the soil spoil piles. Depending on the construction conditions, the temporary right-of-way may be all located on one side of the permanent right-of-way or be divided between the two sides of the permanent right-of-way.

Q. ARE THERE ANY LAND REQUIREMENTS NECESSARY FOR THE PROJECT NOT ADDRESSED IN THE APPLICATION OR THE COMPARATIVE ENVIRONMENTAL ASSESSMENT ("CEA")?

A. Yes. MERC will need property for temporary workspace at horizontal directional drilling ("HDD") locations beyond the 225 square feet that will be excavated.

Q. WHY IS ADDITIONAL WORK SPACE FOR HDD NECESSARY?

A. Although only approximately 225 square feet will be excavated at each end of an HDD location, an area of appropriate size is necessary for staging equipment at each HDD workspace. These work spaces need to be at least 20,000 square feet in total size, although some HDD work spaces may need to be larger depending on the length, depth, and angle of the HDD.

It is MERC's intention to co-locate all temporary extra workspaces for HDD within the construction right-of-way (the combined permanent and temporary right-of-way). There may be feature (road or waterbody) constraints that would require the temporary extra workspace to be located outside that construction right-of-way but within the 500-foot route width. In rare circumstances, temporary extra workspace may be required outside the 500-foot route width for pipe stringing where the route makes a turn in direction and feature constraints do not allow pipe stringing within the route width. In any instance where temporary extra workspace for HDD is necessary for construction of the pipeline, MERC will obtain an easement from the affected landowner.

Q. DOES MERC REQUEST ANY SPECIAL CONDITIONS TO THE ROUTE PERMIT TO ENSURE IT HAS APPROPRIATE AUTHORITY TO ACQUIRE THESE NECESSARY WORK SPACES?

A. Yes. Consistent with other Route Permits issued by the Commission, MERC requests that the following special condition be included in the Route Permit for the Project.

> The Permittee may obtain extra temporary workspace that is needed at locations where the project will cross features such as

waterbodies, roads, railroads, side slopes, and other special circumstances and HDD will be utilized. Extra temporary workspace will be allowed for construction activities including, but not limited to, staging equipment and stockpiling spoil material to facilitate construction of the pipeline. These dimensions will vary depending on actual site-specific conditions, but will typically be 20,000 square feet on each side of the features crossed.

IV. ROUTE DESIGN CONSIDERATIONS

Q. HAVE YOU REVIEWED ALL THE ROUTES AND SEGMENT ALTERNATIVES INCLUDED IN THE CEA?

A. I have reviewed the Routes and Segment Alternatives included in the CEA with my staff and with my consultants who will be responsible for the detailed engineering and design of the Project.

Q. HAS MERC IDENTIFIED ANY DESIGN OR ENGINEERING CONCERNS WITH ANY OF THE SEGMENT ALTERNATIVES?

A. Yes. MERC has identified design or engineering concerns with Segment Alternatives CD-2, DE-2, EF-2, EG-2, EG-3, and EG-4.

Q. PLEASE EXPLAIN.

A. Segment Alternatives CD-2, DE-2, EF-2, EG-2, EG-3, and EG-4 all, in some form, follow the existing BP Pipeline, a liquid petroleum pipeline constructed in the late 1940s. This pipeline was constructed prior to the implementation of federal or state standards for petroleum pipeline depth of cover. During both of the Public Information Meetings held for the proposed Project (February 29, 2016, and September 28, 2016), landowners commented that the BP Pipeline was located at varying depths of cover along its length

and some commented that field or farm equipment had encountered the pipeline in recent years. Based on this information, any alternative that would follow any portion of the BP Pipeline would pose unique challenges for accessibility, both for construction and maintenance purposes, when compared to other alternatives in these areas. Any of these Segment Alternatives would also require more separation between the BP Pipeline and the proposed Project, resulting in additional impacts for the landowners' property. Construction accessibility would also be challenging and more costly as matting over the BP Pipeline right-of-way would also be necessary to minimize any possibility for contact with, or damage to, the BP Pipeline. Finally, any future maintenance activities could be challenging because vehicle traffic would not be able to traverse the BP Pipeline without additional matting.

Q. DOES THIS MEAN THAT NONE OF THESE SEGMENT ALTERNATIVES CAN BE CONSTRUCTED?

A. While MERC believes these Segment Alternatives (CD-2, DE-2, EF-2, EG-2, EG-3, and EG-4) could be constructed, accessibility of these Segment Alternatives is an issue that is unique to these Segment Alternatives. For each of these Segment Alternatives, there are other options in the record that would not have these accessibility concerns. Further, as discussed by Mr. Rick Moser, it appears that all Segment Alternatives, when comparing those that follow the BP Pipeline to those that do not follow the BP Pipeline, are anticipated to have minimal impacts relative to environmental criteria. So, on balance, with accessibility as the differentiating factor, Segment Alternatives CD-2, DE-2, EF-2, EG-2, EG-3, EG-4, and EG-7 are not the preferred choices for the Project.

Q. HAVE ANY STAKEHOLDERS IDENTIFIED DESIGN OR ENGINEERING CONCERNS WITH UNDERLYING PROPERTY USES AND A NEW NATURAL GAS PIPELINE?

A. Yes. MERC heard from several stakeholders regarding specific portions of the Project. I address comments that we received from the landowners who own the property covered by the out-of-date Westridge Hills General Development Plan ("GDP") and the Minnesota Department of Natural Resources ("MnDNR") regarding crossing a Minnesota Biologic Survey ("MBS") site north of 40th Street SW near the DRS location. The MnDNR also commented that portions of the routes under consideration were near known karst features.

A. Residential Development

Q. DOES MERC HAVE ANY EXPERIENCE WITH DEVELOPMENT OCCURRING AROUND A NATURAL GAS PIPELINE?

A. MERC does not have direct experience with a residential development being designed around one of our natural gas distribution pipelines in the Rochester area. I am aware, however, of three residential developments in Olmsted County that were designed around natural gas transmission pipelines. I have knowledge of a residential development in the Wisconsin Public Service area in Sheboygan Wisconsin with a similar development that was designed around a natural gas transmission line. I am also aware of a commercial development in nearby Fillmore County occurring around a natural gas pipelines. I have

attached schematics of the residential and commercial developments and how they were designed around the natural gas pipelines in **Schedule 1** to my testimony.

Q. COULD A DEVELOPMENT THAT HAS NOT FINALIZED ITS DESIGN PLANS REASONABLY DEVELOP A PLAN THAT COULD INCORPORATE THE NATURAL GAS PIPELINE INTO ITS DEVELOPMENT?

A. Yes. As I mentioned, it is feasible to design residential or commercial developments around a natural gas pipeline, when incorporated early in the process. Given that the Westridge Hills GDP is currently out-of-date, and the timing of the Rochester Project, it is reasonable that the Westridge Hills development could be designed around the natural gas distribution pipeline.

B. Natural Resources

Q. COULD IMPACTS TO THE SITE IDENTIFIED BY THE MNDNR NORTH OF 40TH STREET SW BE MITIGATED?

A. Yes. Based on the information available at this time, MERC believes it can complete HDD under the area identified as an area of concern by the MnDNR. Mr. Moser's Direct Testimony provides additional information on the area and the mitigation of impacts.

Q. HOW DOES MERC INTEND TO IDENTIFY KARST FEATURES COMMON TO THE ROCHESTER AREA DURING PROJECT PLANNING AND CONSTRUCTION?

A MERC has already identified that the Modified Preferred Route avoids high probability sinkhole areas and mapped karst topography . For any other route selected by the

Commission, MERC intends to deploy ground-penetrating radar as part of the design process in high potential sinkhole areas to identify any of these features. Should these features be identified, the pipeline alignment may be modified to avoid them. Mitigation measures, such as anti-seep collars will be utilized to prevent the movement of water along the pipeline in areas adjacent to sinkholes as well as other sensitive geologic features such as springs and underground stream features. The possibility of encountering these features along any route selected for the Project further supports the inclusion of the special condition identified in the Direct Testimony of Ms. Lee.

C. Anticipated Alignment

Q. ARE THERE ANY SEGMENT ALTERNATIVES THAT SHOULD HAVE A DIFFERENT ALIGNMENT FROM THAT SHOWN IN THE CEA FOR DESIGN OR ENGINEERING PURPOSES?

A. Yes. After additional review of the alignments in the CEA and the existing topography in the area, if any of the Segment Alternatives that continue east from the intersection of 11th Avenue SW and 48th Street SW were selected by the Commission for the Project (HJ-3, HJ-4, IJ-3 and IJ-4), the alignment east of 11th Avenue SW should continue along the south side of 48th Street SW to Fern Avenue.

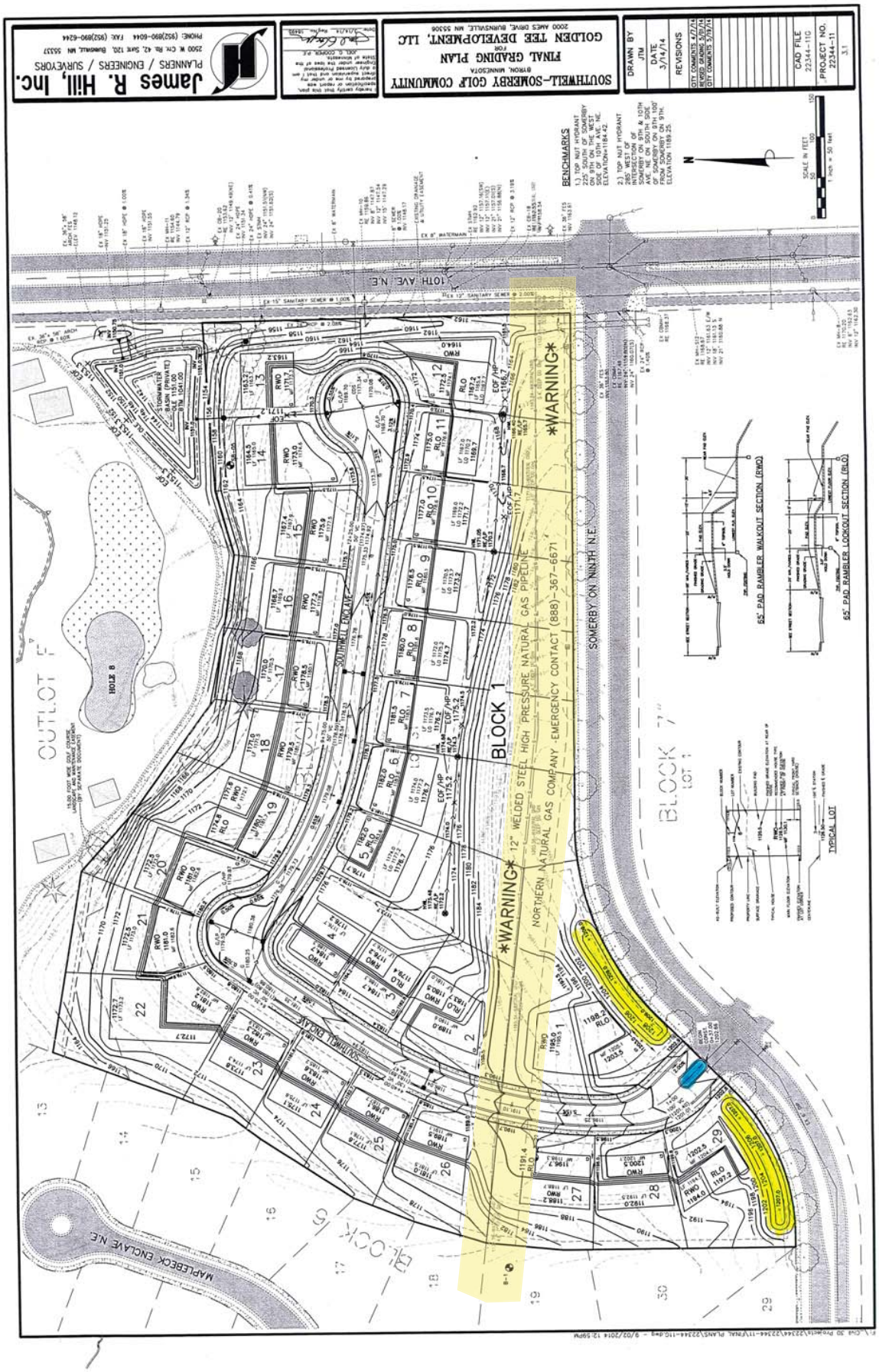
Q. WHY SHOULD THE ALIGNMENT OF THESE SEGMENT ALTERNATIVES CONTINUE ON THE SOUTH SIDE OF 48TH STREET SW INSTEAD OF CROSSING NORTH, AS SHOWN IN THE CEA?

A. In reviewing this area, the northeast corner of the intersection of 11th Avenue SW and 48th Street SW has a large change in topography and a water feature in this area. While this does not make this alignment incapable of being constructed, given this dramatic change in topography and the presence of the water feature, crossing to the north in this area is not the best alignment for theses Segment Alternatives. If the Commission were to determine that any of these Segment Alternatives were the most appropriate route for the Project, the anticipated alignment should continue along the south side of 48th Street SW from 11th Avenue SW east to Fern Avenue.

V. CONCLUSION

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.



Residential Development

"OFFICIAL PLAT"

EAST BROOKFIELD THIRD SUBDIVISION

INSTRUMENT OF DEDICATION

KNOW ALL MEN BY THESE PRESENTS: That East Brookfield, LLC, a Minnesota Limited Liability Company being owner and proprietor of the following described property situated in in the County of Olmsted, State of Minnesota, to wit:

That part of the Southeast Quarter of Section 29, Township 107 North, Range 15 West, Olmsted County, described as follows:

BEGINNING at the Southwest corner of Block 2, EAST BROOKFIELD SECOND SUBDIVISION; thence North 89 degrees 55 minutes 04 seconds East (Note: All bearings are in relationship with the Olmsted County Coordinate System NAD '83, Adjusted 1996) along the Southerly line of said Block 2 and its Easterly extension thereof, 213.00 feet to the Southerly extension of the Westerly line of Block 3, said EAST BROOKFIELD SECOND SUBDIVISION; thence North 00 degrees 04 minutes 56 seconds West along said Southerly extension, 60.00 feet to the Southwest corner of said Block 3; thence North 89 degrees 55 minutes 04 seconds East along the Southerly line of said Block 3, for a distance of 743.00 feet to the Southeast corner of said Block 3; thence South 00 degrees 04 minutes 56 seconds East along the Southerly extension of the East line of said Block 3, for a distance of 60.00 feet to the Westerly extension of the Southerly line of Block 4, said EAST BROOKFIELD SECOND SUBDIVISION; thence North 89 degrees 55 minutes 04 seconds East for a distance of 198.00 feet to the Southeast corner of said Block 4 and to the Westerly line of EAST BROOKFIELD SUBDIVISION; thence South 00 degrees 04 minutes 56 seconds East along said Westerly line, 209.09 feet to a point on the Northerly line of Outlot A, said EAST BROOKFIELD SUBDIVISION; thence South 89 degrees 21 minutes 40 seconds West along the Northerly line of said Outlot A, 75.24 feet; thence South 89 degrees 32 minutes 00 seconds West along said Northerly line, 92.29 feet to the Northwest corner of said Outlot A; thence South 00 degrees 36 minutes 20 seconds East along the Westerly line of said Outlot A, 143.98 feet to the Southwest corner of said Outlot A and the Northerly line of ROLLING HEIGHTS NINTH SUBDIVISION; thence South 63 degrees 50 minutes 50 seconds West along said Northerly line and the Northerly line of ROLLING HEIGHTS SEVENTH SUBDIVISION, 185.09 feet to the northwest corner of Lot 12, Block 2, said ROLLING HEIGHTS SEVENTH SUBDIVISION; thence South 89 degrees 19 minutes 04 seconds West along said Northerly line of ROLLING HEIGHTS SEVENTH SUBDIVISION, 335.00 feet to the Northwest corner of said ROLLING HEIGHTS SEVENTH SUBDIVISION and the Easterly line of ROLLING HEIGHTS SECOND SUBDIVISION; thence North 00 degrees 36 minutes 08 seconds West along said Easterly line, 142.13 feet to the Northeast corner of said ROLLING HEIGHTS SECOND SUBDIVISION; thence South 89 degrees 53 minutes 21 seconds West along the Northerly line of said ROLLING HEIGHTS SECOND SUBDIVISION and the Northerly line of NORTHERN KNOLL, FIRST SUBDIVISION, 537.64 feet; thence North 00 degrees 04 minutes 56 seconds West, 188.69 feet; thence North 25 degrees 41 minutes 29 seconds East, 120.73 feet to the POINT OF BEGINNING.

Said Parcel contains 10.31 acres, more or less.

Has caused the same to be surveyed and platted as EAST BROOKFIELD THIRD SUBDIVISION and does hereby donate and dedicate to the public for public use forever the public ways, and Outlot and grant the easements as shown on this plat.

In witness whereof said East Brookfield, L.L.C., a Minnesota Limited Liability Company has caused these presents to be signed this 28th day of June, 2013.

By: Scott Brooks its President
Scott Brooks

CITY APPROVAL
STATE OF MINNESOTA
COUNTY OF OLMSTED
CITY OF BYRON

We do hereby certify that on the ~~May~~ 22nd day of May, 2013, the accompanying plat was duly approved by the Common Council of the City of Byron. In testimony whereof, we have hereunto signed our names this 18 day of July, 2013.

Ann M. Oberle
Mayor

Darcy Blair Hall
City Clerk / Treasurer

COUNTY SURVEYOR

I certify that this plat has been checked mathematically and that the plat conforms to applicable platting laws.

This 31 day of MAY, 2013

Joel Thoreson
Joel Thoreson
Olmsted County Surveyor

STATE OF MINNESOTA
COUNTY OF Dodge

The foregoing instrument was acknowledged before me this 28th day of June, 2013, by Scott Brooks its President
Scott Brooks
East Brookfield, LLC., a Minnesota Limited Liability Company, on behalf of the Company.

Janet R. Bregon
Notary Public, Dodge County, MN
My Commission Expires 1-31-14

PROPERTY RECORDS AND LICENSING

Taxes payable in the year 2013 on the land herein described have been paid, there are no delinquent taxes and transfer has been entered this 24th day of July, 2013

DOCUMENT NUMBER A-1327167

I hereby certify that this instrument was filed in the Office of Property Records and Licensing for the record on this 24th day of July, 2013, at 11 o'clock A.M., and was duly recorded in the Olmsted County records.

W. Mark Knopik
Director of Property Records & Licensing

Wendy M Wold
Deputy

SURVEYOR'S CERTIFICATE

I hereby certify that I have surveyed and platted the property described on this plat as EAST BROOKFIELD THIRD SUBDIVISION; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on the plat; that all monuments depicted on the plat have or will be correctly set within one year as indicated on the plat; that all water boundaries and wet lands as defined in MS 505.01, Subd. 3 existing as of the date of this certification are shown and labeled on the plat; and that all public ways are shown and labeled on the plat.

Dated this 25th day of June, 2013

Richard J. Massey
Minnesota L.S. No. 41814

STATE OF MINNESOTA
COUNTY OF OLMSTED

The foregoing Surveyor's Certificate was acknowledged before me this 25th day of June, 2013, by Richard J. Massey, L.S. No. 41814.

Julie L. Lipps
Notary Public, Olmsted County, MN
My Commission Expires 1-31-18

JULIE L. LIPPS
NOTARY PUBLIC - MINNESOTA
My Commission Expires Jan. 31, 2018

PROJECT NUMBER 1098-13

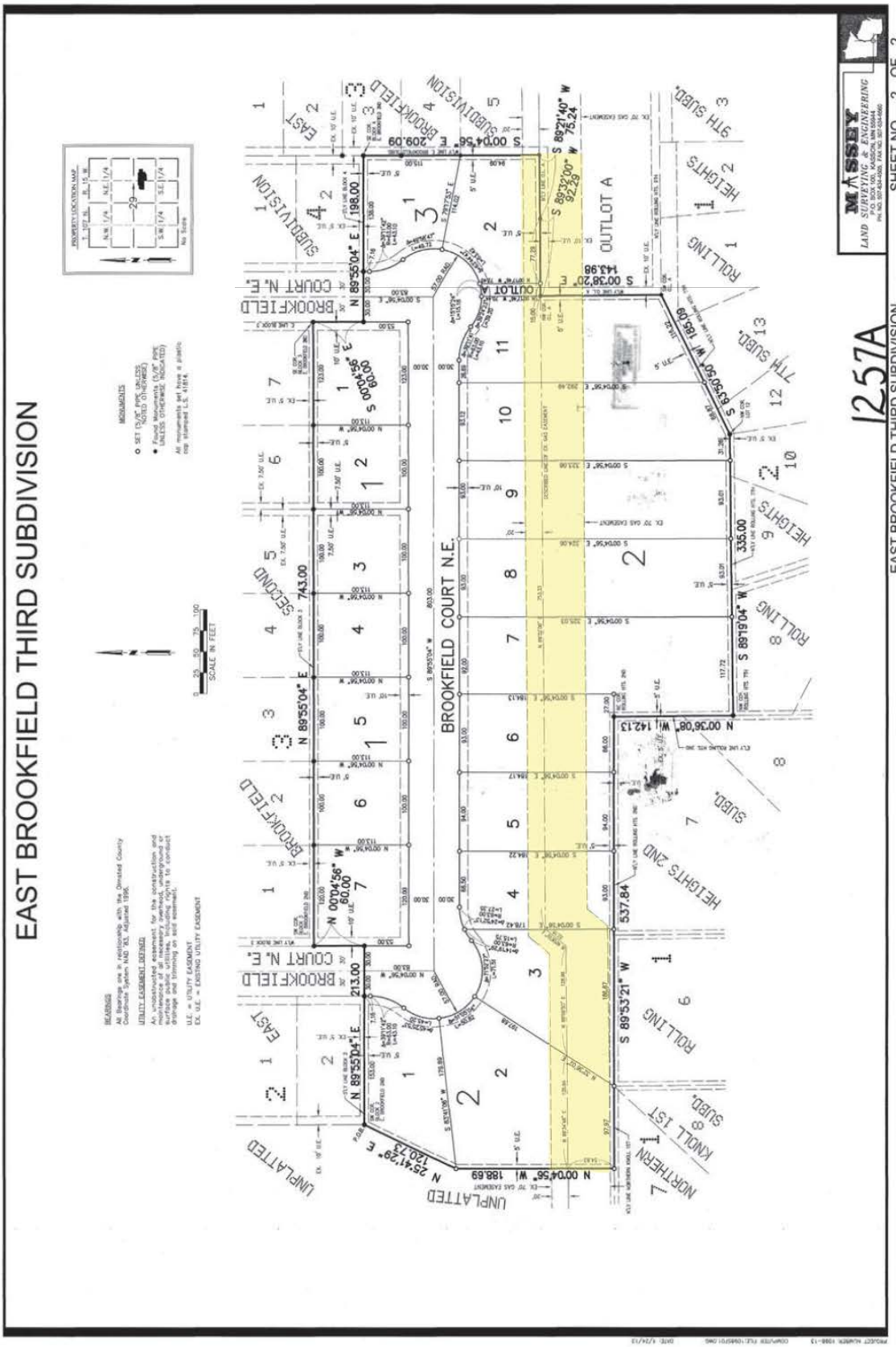
Residential Development

1257A

EAST BROOKFIELD THIRD SUBDIVISION

MASSEY
LAND SURVEYING & ENGINEERING
P.O. BOX 100, KASSON, MN 55944
PH. NO. 507-634-4505, FAX NO. 507-634-0560

SHEET NO. 1 OF 2


"OFFICIAL PLAT"
EAST BROOKFIELD THIRD SUBDIVISION
EAST BROOKFIELD THIRD SUBDIVISION
SHEET NO. 2 OF 2
1257A
MASSEY
LAND SURVEYING & ENGINEERING
BROOKFIELD COURT N.E.
OUTLOT A
UNPLATTED
SECOND
HEIGHTS
ROLLING
KNOLL 1ST
NORTHERN
SUBD.
N 89°55'04" E 198.00
S 00°04'56" E 209.09
S 89°21'40" W 75.24
S 89°32'00" W 92.39
S 00°38'20" E 143.98
S 63°50'30" W 185.09
S 00°04'56" E 600.00
N 89°55'04" E 743.00
S 00°04'56" E 335.00
S 89°19'04" W
N 00°36'08" W 142.13
N 00°04'56" W 60.00
S 89°53'21" W 537.84
N 89°55'04" E 213.00
N 25°41'29" E 120.73
N 00°04'56" W 188.69
MONUMENTS
SCALE IN FEET
BEARINGS
UTILITY EASEMENT DEFINED
U.E. = UTILITY EASEMENT
EX. U.E. = EXISTING UTILITY EASEMENT

"OFFICIAL PLAT"

KASSON MEADOWS SIXTH SUBDIVISION

INSTRUMENT OF DEDICATION

KNOW ALL MEN BY THESE PRESENTS: That Kasson Meadows, LLC, a Minnesota Corporation, owner and proprietor of the following described property situated in the City of Kasson, County of Dodge, State of Minnesota, to wit:

That part the of Northeast Quarter (NE ¼) of Section Twenty-Eight (28), Township One hundred seven (107) North, Range Sixteen (16) West of the 5th P.M., Dodge County, Minnesota, described as follows:

Commencing at the Northeast corner of the Northeast Quarter of said Section 28; thence South 00°01'48" East, assumed bearing, along the East line of said Northeast Quarter, 1772.52 feet to the Southeast Corner of KASSON MEADOWS, according to the plat thereof on file in the County Recorder's office; thence North 89°54'22" West, along the South line of said KASSON MEADOWS and along the North line of the South 866.25 feet of said Northeast Quarter, 800.24 feet to the Point of Beginning; thence North 00°12'46" East, 296.24 feet to the Southeast Corner of Lot 5, Block 2 KASSON MEADOWS FIFTH ADDITION, according to the plat thereof on file in the County Recorder's office; thence North 71°19'24" West, along the Southerly line of said Block 2, a distance of 292.64 feet; thence North 52°44'25" West, along the Southerly line of said Block 2, a distance of 180.00 feet to the Southwest corner thereof and to the Easterly Right of Way line of 21st Place NE; thence South 37°15'35" West, along said Easterly Right of Way line, 21.99 feet; thence North 52°44'25" West, along the Southerly line of said subdivision and its Northwesterly extension, 293.43 feet to a point on the West line of the East 1466.16 feet of said Northeast Quarter; thence South 00°01'48" East, along said West line, 657.99 feet, to said North line of the South 866.25 feet ; thence South 89°54'22" East, along said North line 665.90 feet to the Point of Beginning, containing 6.84 acres, subject to easements and restrictions of record.

Has caused the same to be surveyed and platted as KASSON MEADOWS SIXTH SUBDIVISION and do hereby dedicate to the public for public use the thoroughfares and also dedicate the easements as shown on this plat for drainage and utility purposes only.

In witness whereof said Kasson Meadows, LLC, has caused these presents to be signed by its proper officer this 21 day of October, 2014.

Scott Lampland, President

STATE OF MINNESOTA
COUNTY OF OLMSTED

The foregoing instrument was acknowledged before me this 21 day of October, 2014, by Scott Lampland, President of Kasson Meadows, LLC, a Minnesota Corporation, on behalf of the corporation.

Notary Public, Olmsted County, Minnesota
My Commission Expires Jan 2018

LAURIE WASHBURN
Notary Public-Minnesota
My Commission Expires Jan 31, 2018

SURVEYOR'S CERTIFICATE

I hereby certify that I have surveyed and platted the property described on this plat as KASSON MEADOWS SIXTH SUBDIVISION; that this plat is a correct representation of the boundary survey, that all mathematical data and labels are correctly designated on the plat; that all monuments depicted on the plat have or will be correctly set within one year as indicated on the plat; that all water boundaries and wet lands as defined in MS 505.01, Subd. 3, existing as of the date of this certification are shown and labeled on the plat; and that all public ways are shown and labeled on the plat.
Dated this 17 day of October, 2014

Richard J. Massey, Land Surveyor
Minnesota License No. 41814

STATE OF MINNESOTA
COUNTY OF OLMSTED

The foregoing Surveyor's Certificate was acknowledged before me this 17 day of October, 2014 by Richard J. Massey, Minnesota License No. 41814.

Notary Public, Olmsted County, MN
My Commission Expires Jan 31, 2020

CITY OF KASSON PLANNING AND ZONING COMMISSION

Approved by the Planning Commission of the City of Kasson, Minnesota, at a meeting thereof on 9th day of June, 2014.

Commission Chairperson

CITY OF KASSON CITY COUNCIL

We do hereby certify that on the 11th day of June, 2014, the accompanying plat was duly approved by the City Council of Kasson, Minnesota.

Mayor

Administrator-Clerk

COUNTY SURVEYOR

Pursuant to Chapter 389.09, laws of Minnesota, this plat has been approved, this 19th day of November, 2014.

DODGE COUNTY, AUDITOR/TREASURER

Taxes payable in the year 2014, on the land herein described, have been paid; there are no delinquent taxes and transfer has been entered on this 19th day of November, 2014.

Dodge County Auditor/Treasurer

by _____ Deputy

Document Number 208625

I hereby certify that this instrument was filed in the Office of the County Recorder for record on this 19th day of November, 2014, at 3:45 o'clock P. M., and was duly recorded in Book B of Plats on page 152.

Dodge County Recorder

UTILITY EASEMENT DEFINED

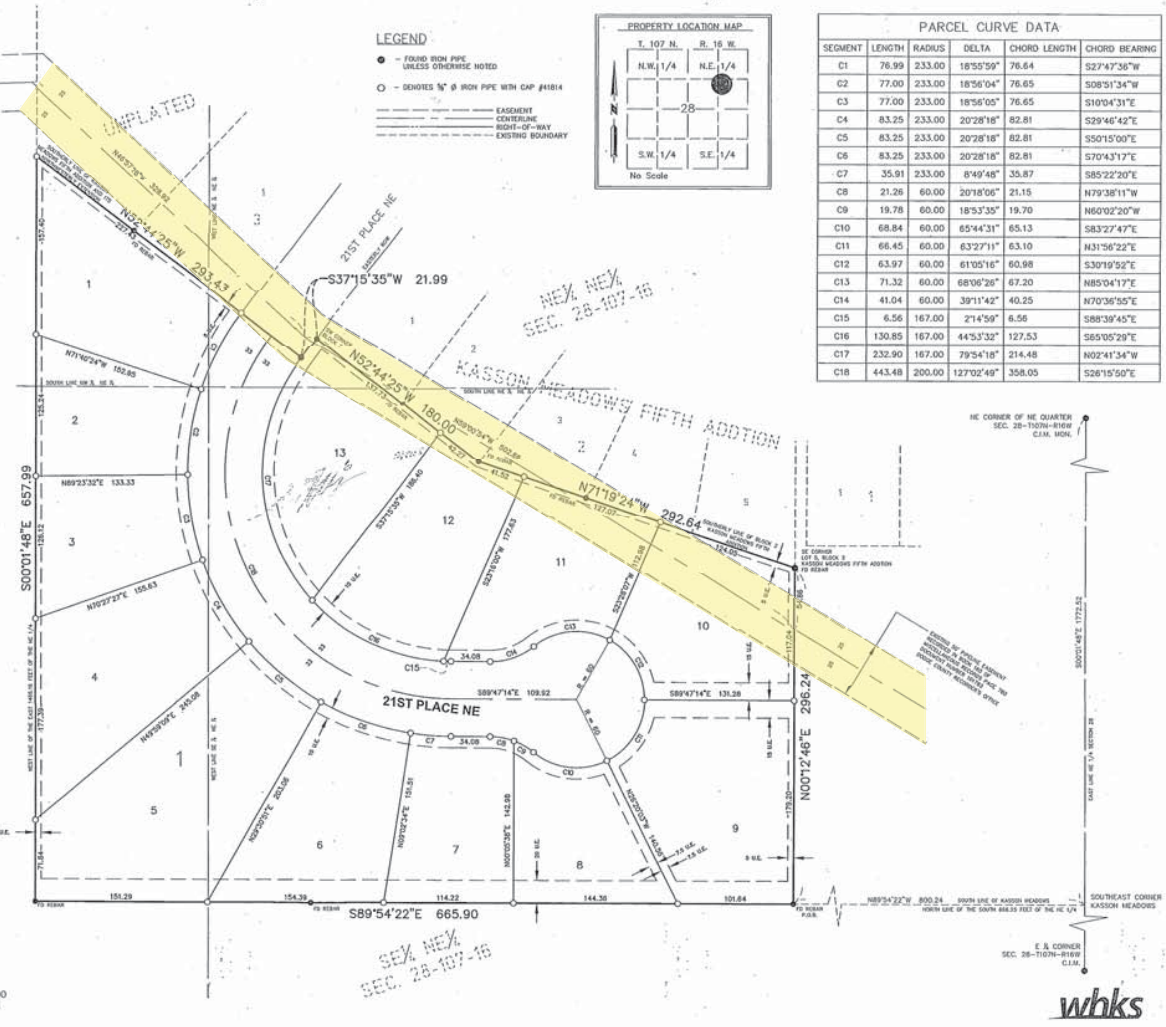
An unobstructed easement for the construction and maintenance of all necessary overhead, underground or surface public utilities, including rights to conduct drainage and trimming on said easement.

U.E. = UTILITY EASEMENT

BEARING SYSTEM USED:

ALL BEARINGS ARE IN RELATIONSHIP WITH THE EAST LINE OF THE NORTHEAST QUARTER OF SECTION 28 AND IS ASSUMED TO BEAR S00°01'48"E.

SCALE 1"=50

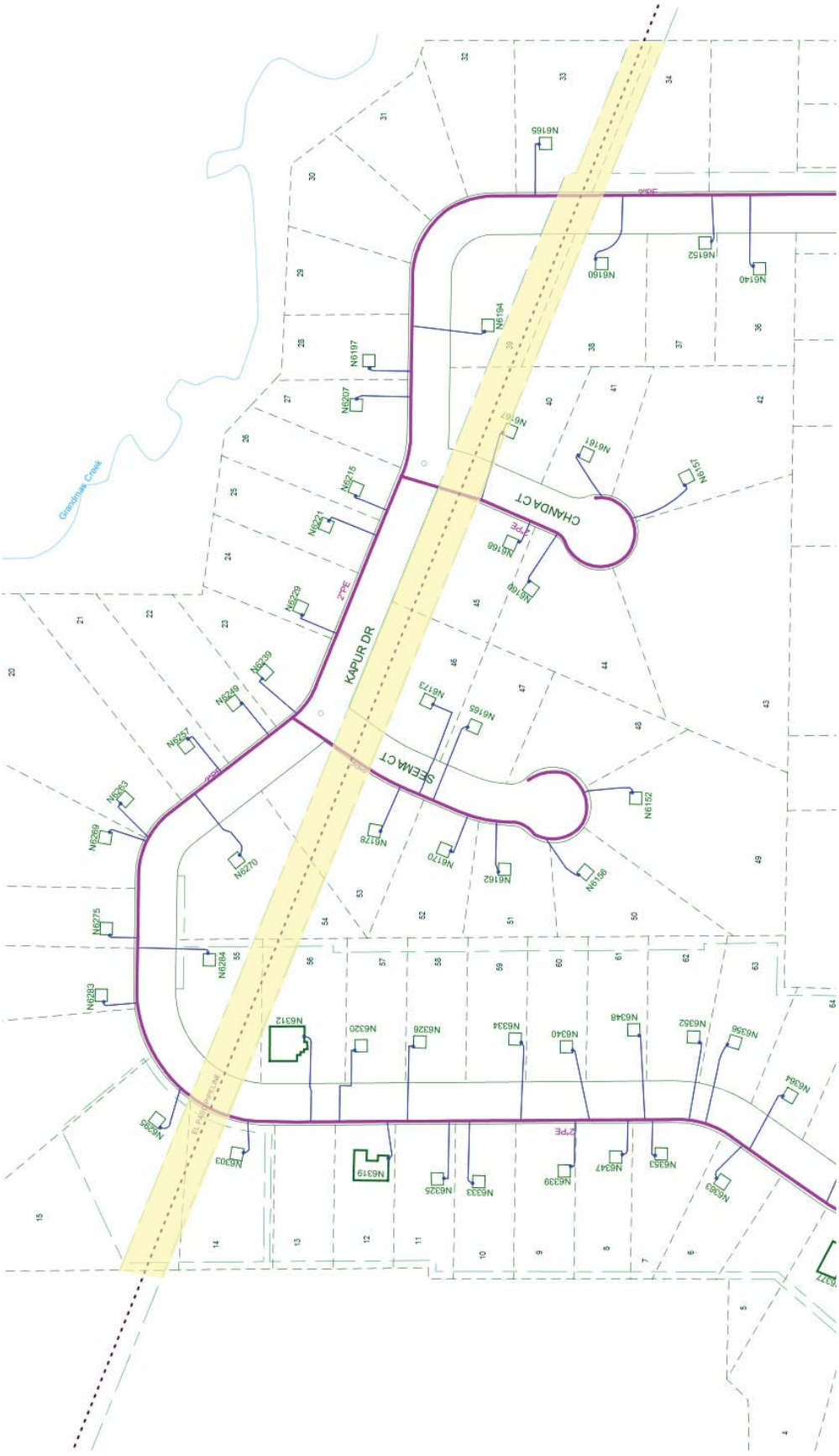


PARCEL CURVE DATA					
SEGMENT	LENGTH	RADIUS	DELTA	CHORD LENGTH	CHORD BEARING
C1	76.99	233.00	18°55'59"	76.64	S27°47'36"W
C2	77.00	233.00	18°56'04"	76.65	S08°51'34"W
C3	77.00	233.00	18°56'05"	76.65	S10°04'31"E
C4	83.25	233.00	20°28'18"	82.81	S29°46'42"E
C5	83.25	233.00	20°28'18"	82.81	S50°15'00"E
C6	83.25	233.00	20°28'18"	82.81	S70°43'17"E
C7	35.91	233.00	8°49'48"	35.87	S85°22'20"E
C8	21.26	60.00	20°18'06"	21.15	N79°38'11"W
C9	19.78	60.00	18°53'35"	19.70	N60°03'20"W
C10	68.84	60.00	65°44'31"	65.13	S83°27'47"E
C11	66.45	60.00	63°27'11"	63.10	N31°56'22"E
C12	63.97	60.00	61°05'16"	60.98	S30°19'52"E
C13	71.32	60.00	68°06'26"	67.20	N85°04'17"E
C14	41.04	60.00	39°11'42"	40.25	N70°35'55"E
C15	6.56	167.00	2°14'59"	6.56	S88°39'45"E
C16	130.85	167.00	44°53'32"	127.53	S65°05'29"E
C17	232.90	167.00	79°54'18"	214.48	N02°41'34"W
C18	443.48	200.00	127°02'49"	358.05	S26°15'50"E

whks

Residential Development

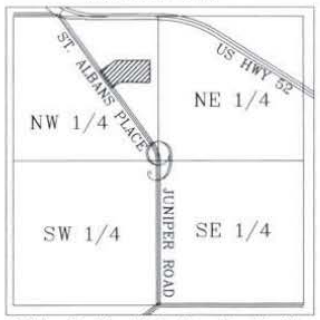
Direct Testimony of L. Lyle
Schedule 1
MPUC Docket No. G011/GP-15-858
OAH Docket No. 8-2500-33180



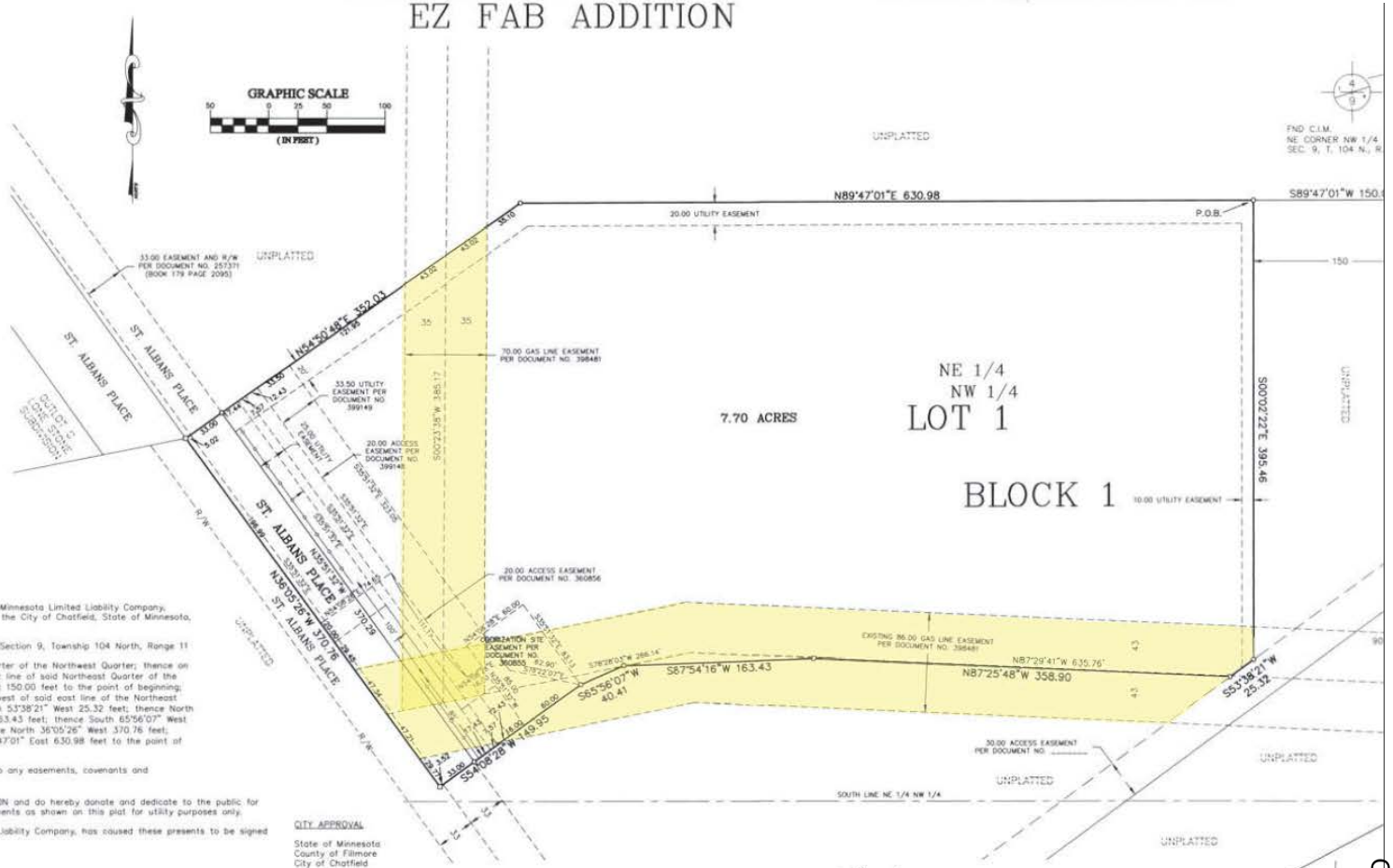
Sheboygan Natural Gas Pipeline and Residential Development

"OFFICIAL PLAT"

EZ FAB ADDITION



SEC. 9, T. 104 N., R. 11 W.,
FILLMORE COUNTY
"NOT TO SCALE"



LEGEND

- SPIKE SET
- IRON PIPE WITH PLASTIC CAP STAMPED LS 21940 SET
- FOUND MONUMENTS ARE 1/2 INCH IRON PIPES UNLESS OTHERWISE NOTED
- EASEMENT LINE
- SECTION LINE
- CONTROLLED ACCESS

INSTRUMENT OF DEDICATION

KNOW ALL MEN BY THESE PRESENTS: That Touhy Real Estate, LLC, a Minnesota Limited Liability Company, owners and proprietors of the following described property situated in the City of Chatfield, State of Minnesota, to wit:

That part of the Northeast Quarter of the Northwest Quarter of Section 9, Township 104 North, Range 11 West, Fillmore County, Minnesota, described as follows:
Commencing at the northeast corner of said Northeast Quarter of the Northwest Quarter; thence on an assumed bearing of South 00°02'22" East along the east line of said Northeast Quarter of the Northwest Quarter 803.51 feet; thence South 89°47'01" West 150.00 feet to the point of beginning; thence South 00°02'22" East parallel with and 150.00 feet west of said east line of the Northeast Quarter of the Northwest Quarter 395.46 feet; thence South 53°38'21" West 25.32 feet; thence North 87°25'48" West 358.90 feet; thence South 87°54'16" West 163.43 feet; thence South 65°56'07" West 40.41 feet; thence South 54°08'28" West 149.95 feet; thence North 36°05'26" West 370.76 feet; thence North 54°50'48" East 352.03 feet; thence North 89°47'01" East 630.98 feet to the point of beginning.

The above described parcel contains 7.70 acres and is subject to any easements, covenants and restrictions of record.

Have caused the same to be surveyed and platted as EZ FAB ADDITION and do hereby donate and dedicate to the public for the public use forever the public ways, and also dedicating the easements as shown on this plat for utility purposes only.

In witness whereof said Touhy Real Estate, LLC, a Minnesota Limited Liability Company, has caused these presents to be signed by its proper officer this 4 day of June, 2014.

Daniel J. Touhy, President

STATE OF MINNESOTA
COUNTY OF Olmsted
The foregoing instrument was acknowledged before me this 4 day of June, 2014 by Daniel J. Touhy, President of Touhy Real Estate, LLC, a Minnesota Limited Liability Company, on behalf of the company.

Michell Hans
Notary Public, Olmsted County, Minnesota
My Commission expires: Jan 31, 2019

MICHELLE M. HANSON
Notary Public-Minnesota
My Commission Expires Jan 31, 2019

SURVEYOR'S CERTIFICATE

I hereby certify that I have surveyed and platted the property described on this plat as EZ FAB ADDITION; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on the plat; that all monuments depicted on the plat have been correctly set; that all water boundaries and wet lands, as defined in MS 505.01, Subd. 3 existing as of the date of this certification are shown and labeled on this plat; and that all public ways are shown and labeled on the plat.

Geoffrey G. Griffin, L.S.
Minnesota License Number 21940

State of Minnesota
County of Olmsted

The foregoing Surveyor's Certificate was acknowledged before me, a Notary Public, this 2 day of June, 2014.

Monica G. Green
Notary Public, Olmsted County, Minnesota

MONICA G. GREEN
Notary Public
My Commission Expires Jan 31, 2019

My commission expires: 1/31/2015

CITY APPROVAL

State of Minnesota
County of Fillmore
City of Chatfield

We, Russ Smith, Mayor, and Joel Young, City Clerk, in and for the City of Chatfield, do hereby certify that on the 9th day of Dec, 2013 the accompanying plat was duly approved by the Common Council of the City of Chatfield. In testimony thereof we have hereunto signed our names and affixed the seal of said City of Chatfield this 9th day of June, 2014.

Russ Smith, Mayor

Joel Young, City Clerk

FILLMORE COUNTY RECORDER

DOCUMENT NUMBER 399852

I hereby certify that this instrument was filed in the Office of the County Recorder for the record on this 1st day of July, 2014, at 11:38 o'clock A.M., and was duly recorded in the Fillmore County records.

County Recorder

Deputy

Doc #: 399852 Fees: $ 56.00
COUNTY RECORDER OFFICE OF FILLMORE COUNTY, MINN.
I hereby certify that the within instrument was filed on 7/1/2014 at 11:38 AM
David Kiehne, Fillmore County Recorder
By Deputy

FILLMORE COUNTY TAX STATEMENTS

Taxes due and payable in the year 2014 have been paid.

Fillmore County Auditor/Treasurer

Date: 07/01/2014

UTILITY EASEMENT
AN UNOBSTRUCTED EASEMENT FOR THE CONSTRUCTION AND MAINTENANCE OF ALL NECESSARY UNDERGROUND OR SURFACE PUBLIC UTILITIES INCLUDING THE RIGHT TO CONDUCT DRAINAGE AND TRIMMING ON SAID EASEMENT.

BEARINGS
ALL BEARINGS ARE BASED ON TH... THE NORTHWEST QUARTER OF SEC... 104 NORTH, RANGE 11 WEST, W... BEAR SOUTH 00°02'22" EAST.

SHE...

G-Cubed
14070 Hwy 52 S.E.
Chatfield, MN 55923

Commercial Development

Direct Testimony and Schedule
Rick J. Moser

Before the Office of Administrative Hearings
600 North Robert Street
St. Paul, Minnesota 55101

For the Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, Minnesota 55101

In the Matter of a Petition by Minnesota Energy Resources Corporation for a Route Permit for the Rochester Natural Gas Pipeline in Olmsted County

MPUC Docket No. G011/GP-15-858
OAH Docket No. 8-2500-33180
Exhibit _____

Direct Testimony
Environmental

October 24, 2016

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III. MODIFIED PREFERRED ROUTE 6
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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Rick J. Moser, my business address is 700 N Adams Street, Green Bay, WI 54307.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am Manager – Environmental Programs & Asset Licensing for WEC Business Services ("WBS"). WBS is the service company that provides service to Minnesota Energy Resources Corporation ("MERC" or the "Company"). MERC is a public utility subsidiary of WEC Energy Group, Inc. ("WEC"), a utility holding company headquartered in Milwaukee, Wisconsin. WEC's operating public utility subsidiaries provide electric and natural gas service to approximately 4.4 million customers over four states, including MERC's approximately 230,000 natural gas customers in Minnesota.

Q. FOR WHOM ARE YOU PROVIDING TESTIMONY?

A. I am testifying on behalf of MERC.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I received a Bachelor of Science degree in biology and a minor in environmental science from St. Norbert College in De Pere, Wisconsin. I have been managing environmental-related issues on utility projects since 1998. I joined this company's environmental department in 2001. For MERC, I lead the portion of the environmental department that is responsible for identifying and ensuring compliance with environmental regulations

commonly encountered on natural gas pipeline distribution projects. My team participates in the planning, routing, and permitting of major utility projects and is responsible for identifying environmental resources and recommending avoidance, minimization, or mitigation measures related to those resources.

I have been actively involved in overseeing the environmental planning and route development aspects of the Rochester Natural Gas Pipeline Project in Olmsted County, Minnesota ("Rochester Project" or "Project") since January 2016 and a member of my team was involved prior to my involvement.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I am testifying in support of MERC's application to the Minnesota Public Utilities Commission ("Commission") for a Route Permit for MERC's proposed Rochester Project. Specifically, I am testifying in support of the following sections of MERC's Route Permit Application ("Application"): Section 7 Subpart 3 (Description of Existing Environment), Section 8 (Environmental Impact of the Preferred Route (Minn. R. 7852.2700)) (with the exception of Pipeline Cost and Accessibility), Section 9 (Evidence of Consideration of Alternative Routes (Minn. R. 7852.3100)), Section 11, Subpart 2 (Right-of-Way Restoration Measures (Minn. R. 7852.2800)), and Section 13 (List of Government Agencies and Permits (Minn. R. 7852.3000)).

Q. ARE YOU SPONSORING ANY SCHEDULES WITH YOUR DIRECT TESTIMONY?

A. Yes. I am sponsoring the following:

Schedule 1. Relative Merits Analysis Summary Table and Segment Alternative Key.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. My testimony sponsors the Company's Application for the Project related to environmental review and route development. I also discuss certain aspects of the Comparative Environmental Analysis ("CEA") prepared for the Project by the Department of Commerce, Energy Environmental Review and Analysis ("EERA").

II. ROUTE DEVELOPMENT FOR THE ROCHESTER PROJECT

Q. HOW DID THE COMPANY UNDERTAKE DEVELOPMENT OF THE ROUTES PROPOSED IN THE APPLICATION?

A. MERC began identifying possible routes for the Rochester Project during the summer of 2014. To identify possible routes for the Project, MERC started by identifying the necessary interconnection points for the Project. Based on input from Ms. Lindsay Lyle and her department, MERC determined that the pipeline would need to connect to a Town Border Station ("TBS") near the existing Northern Natural Gas ("NNG") TBS 1D, to a new TBS west of the City of Rochester near the intersection of County Road 25 and County Road 15 ("Proposed TBS"), and to a District Regulator Station ("DRS") located east of US Highway 63, in the area near the existing TBS 1B.

Q. AFTER IDENTIFYING THE NECESSARY INTERCONNECTION POINTS, HOW DID MERC IDENTIFY ITS PREFERRED AND ALTERNATE ROUTE FOR THE PROJECT APPLICATION?

A. Using Minnesota Rule 7852.1900, the criteria for the Commission's selection of a final route for a pipeline project, as a guide, MERC identified existing infrastructure and rights-of-way between the TBS 1D, Proposed TBS, and DRS interconnection points for potential right-of-way sharing or paralleling opportunities. Additionally, MERC enlisted the assistance of an environmental consultant to evaluate aerial photography for the purpose of identifying human settlement and the other criteria in Minnesota Rule 7852.1900 along the identified existing infrastructure.

In June 2014, MERC sent letters to 27 agencies to obtain information on existing and planned developments, agricultural practices, sensitive natural resources, cultural resources, permitting requirements, and highway crossing requirements, to name a few. After evaluating all this information, MERC identified a Preferred Route as required by Minnesota Statutes Section 216G.02, subdivision 3(b)(1) and Minnesota Rule 7852.2600, Subpart 1. MERC also decided that instead of including only evidence of consideration of alternative routes in its Application, it would also identify an Alternate Route.

Q. DID MERC PROVIDE ANY OPPORTUNITIES FOR PUBLIC INPUT IN ITS ROUTE SELECTION PROCESS BEFORE FILING ITS APPLICATION?

A. Yes. Prior to filing its Application, but after it had tentatively identified its Preferred and Alternate Routes, MERC invited landowners within the 500-foot-wide route and 1.5-

mile-wide TBS and DRS buffers to attend a public open house in September 2015. Other stakeholders such as city, state, and county officials were also invited to the open house.

Q. DID MERC MAKE ANY CHANGES TO ITS PREFERRED AND ALTERNATE ROUTES AS A RESULT OF FEEDBACK RECEIVED DURING THE PUBLIC OPEN HOUSE?

A. There were two changes as a result of the public open house. First, MERC added the "Route Alternative Buffer" starting at milepost 11.4 (west of 11th Ave SW) to the end of the project. This was a result of a conversation with a City official indicating that this area was actively being developed. The Route Alternative Buffer was intended to ensure MERC had the flexibility to avoid conflicts with future development plans. Second, MERC added an alternative route segment that proceeds south along 60th Ave SW from milepost 6.6 to 40th Street SW and then turns and continues east to the intersection of 40th Street SW, 55th Avenue SW, and the BP Pipeline. Mileposts can be found in Figure 6 of the Route Permit Application or Figure 2 of the CEA.

MERC initially intended to avoid this portion of 60th Ave SW due to potential conflicts with a mining operation located in this area. During the open house, the operators of the mine indicated that they did not have concerns with locating a pipeline adjacent to their property. At this open house, MERC started to hear concerns regarding the depth of the existing BP Pipeline in the area and as a result, we began to think an alternative may be required for portions of the Application Preferred Route that followed the existing BP Pipeline.

Q. WHAT WERE THE REASONS MERC SUPPORTED THE "PREFERRED ROUTE" IN THE APPLICATION FOR THE PROJECT?

A. MERC selected the "Application Preferred Route" as the route it preferred for the Project in its Application because MERC concluded, that on balance and based on the information available to MERC at the time, that route, of those considered, was the preferential route for the Project. When compared to the alternative segments included in the Application, the Application Preferred Route crossed fewer feet of wetlands, fewer feet of agricultural land, and fewer feet of forest land. The Application Preferred Route paralleled existing infrastructure for approximately 60 percent of its length and where it deviated, it was located in agricultural land to minimize the environmental impacts.

III. MODIFIED PREFERRED ROUTE

Q. HAS MERC REVISED ITS ROUTE PREFERENCE SINCE FILING THE APPLICATION?

A. Yes. After hearing from landowners during the Scoping Meetings on February 29, 2016, and reading comments filed during the commend period, MERC reevaluated the portions of the Application Preferred Route that paralleled the BP Pipeline as well as a portion of the route that proceeded cross-country to the northeast from 11th Avenue SW to 40th Street SW primarily in Section 26, T106N, R14W.

Q. WHY DID MERC REEVALUATE THE PORTIONS OF THE PREFERRED ROUTE THAT FOLLOWED THE BP PIPELINE?

A. During the Scoping Meetings on February 28, 2016, MERC once again heard from landowners that there were depth-of-cover issues with the BP Pipeline. The BP Pipeline was constructed in the late 1940s, before the enactment of federal or state standards associated with petroleum pipeline depth of cover. Landowners commented that there were places where the BP Line was either exposed through soil or where farm equipment was encountering the BP Line at shallow depths. As discussed by Ms. Lyle, depth of cover issues for an existing pipeline in a parallel corridor would create construction, maintenance, and accessibility concerns not associated with any of the other Segment Alternatives under consideration for the Project.

Q. WHY DID MERC REEVALUATE THE PORTION OF THE PREFERRED ROUTE THAT CROSSED DIAGONALLY TO THE NORTHWEST FROM 11TH AVENUE SW TO 40TH STREET SW IN SECTION 26, T106N, R41W?

A. During the Scoping Comment period, the landowner of the property crossed by this portion of the Project filed comments indicating that a portion of this land was platted and recorded with Olmsted County in November 2014 as part of the Willow Creek Commons development and the rest was within an approved General Development Plan ("GDP"). This was the first time MERC learned of this GDP and the Willow Creek Commons development. Based on the stage of development, MERC reevaluated whether an alternative could be identified that would minimize the impacts to the platted lots and avoid a diagonal crossing of small parcels covered by the Willow Creek Commons GDP.

Q. WHAT WAS THE RESULT OF THESE ADDITIONAL REVIEWS?

A. As a result of these additional reviews, MERC identified the Modified Preferred Route in its Scoping Comments dated April 13, 2016. The Modified Preferred Route follows 60th Avenue SW from milepost 6.6 south to 40th Street SW, proceeds east to County Road 8 where it turns south until it rejoins the Application Preferred Route, to avoid following the BP Pipeline. The Modified Preferred Route also parallels 11th Avenue SW to 40th Street SW to avoid a diagonal crossing of the Willow Creek Commons GDP and internal parcels. Comparison maps of these areas between the Application Preferred Route and the Modified Preferred Route are available as Schedule 1 to the testimony of Ms. Amber Lee.

IV. OTHER ROUTE ADJUSTMENTS

Q. HAVE YOU REVIEWED ALL THE ROUTES AND SEGMENT ALTERNATIVES INCLUDED IN THE CEA?

A. Yes. I have reviewed the Routes and Segment Alternatives included in the CEA.

Q. ARE ALL OF THE SEGMENT ALTERNATIVES CAPABLE OF BEING CONSTRUCTED FROM AN ENVIRONMENTAL PERSPECTIVE?

A. Yes. I have not identified any environmental features that would render any of the Segment Alternatives incapable of being constructed.

Q. DO YOU BELIEVE THE CEA ACCURATELY REFLECTS THE RELATIVE MERITS OF THE SEGMENT ALTERNATIVES?

A. Not entirely. While I think the CEA does a good job of analyzing and evaluating the Segment Alternatives, I believe the relative merits analysis in Chapter 6 fails to consider two key issues. The first is the cost to construct Segment Alternatives HJ-3, HJ-4, IJ-3 and IJ-4. As discussed in the testimony of Ms. Lee, these four Segment Alternatives would be more expensive to construct than other options because of the existing commercial development in the area. The second is the accessibility for construction and maintenance purposes of Segment Alternatives CD-2, DE-2, EF-2, EG-2, EG-3, EG-4, and EG-7, as discussed in the testimony of Ms. Lyle, due to the fact they follow the BP Pipeline. For purposes of comparing the potential impacts of Segment Alternatives in these areas for the criteria of surface water, wetlands, vegetation, wildlife and wildlife habitat, and threatened, endangered, and other special status species, all Segment Alternatives are anticipated to have minimal impacts on these criteria.

I have provided a summary table that reflects the conclusions of Chapter 6 of the CEA relative merits analysis as **Schedule 1** to my testimony. As noted in that schedule, I have added a column for Criteria E, cost and accessibility, to reflect the analysis I discuss above.

Q. DO YOU BELIEVE ANY OF THE SEGMENT ALTERNATIVES IDENTIFIED IN THE CEA COMPLY MORE FULLY WITH THE CRITERIA IDENTIFIED IN MINNESOTA RULE 7852.1900 THAN THE MODIFIED PREFERRED ROUTE?

A. No. MERC continues to advocate that the Modified Preferred Route best addresses the criteria identified in Minnesota Rule 7852.1900 and is the most appropriate route for the Project.

V. ENVIRONMENTAL COMMENTS

Q. HAVE ANY AREAS ALONG MERC'S MODIFIED PREFERRED ROUTE BEEN IDENTIFIED FOR ENVIRONMENTAL CONCERNS BY ANY STATE OR FEDERAL AGENCIES?

A. Yes. In Scoping Comments filed on April 13, 2016, the Minnesota Department of Natural Resources ("MnDNR") commented that it was concerned about the crossing of native plant communities and/or Minnesota Biologic Survey ("MBS") sites of moderate to high biodiversity. The MnDNR requested that "greenfield routes" be avoided and that the Company use wildlife friendly erosion control materials during Project construction. The Minnesota Pollution Control Agency ("MPCA") also provided comments to EERA on the Project on October 7, 2016.

A. MnDNR

Q. HOW DOES MERC RESPOND TO THE REQUEST TO USE WILDLIFE FRIENDLY EROSION CONTROL MATERIALS?

A. MERC has no objection to using wildlife friendly erosion control materials in higher priority areas, consistent with the guidelines provided by the MnDNR. Areas of higher priority of wildlife-friendly erosion control will include areas with higher amphibian use, such as wetland and water crossings, and rare species habitat.

Q. WHAT MBS SITES OF MODERATE TO HIGH BIODIVERSITY ARE LOCATED ALONG THE SEGMENT ALTERNATIVES AND HOW MIGHT THEY BE IMPACTED BY SEGMENT ALTERNATIVES UNDER CONSIDERATION?

A. There are five sites of native plant communities and/or MBS sites of moderate to high biodiversity crossed by a Segment Alternative or the DRS Buffer for the Project. One Railroad Rights-of-Way prairie is crossed by Segment Alternative BC-1. One MBS site of moderate biodiversity is crossed by Segment Alternative EG-8. One MBS site of moderate biodiversity is located north of 40th Street SW and is crossed by Segment Alternatives HJ-1, HJ-2, IJ-1, and IJ-2. Segment Alternatives BC-1 and HJ-1 are incorporated into MERC's Modified Preferred Route. One MBS site of moderate biodiversity is located within the buffer for the Proposed TBS. One MBS site of high biodiversity is within the DRS Buffer. These MBS sites can be found on Figure 2, Pages 3 and 4 of the CEA.

Q. WHAT MITIGATION MEASURES ARE AVAILABLE TO MINIMIZE IMPACTS TO THE MBS SITES OF MODERATE BIODIVERSITY CROSSED BY PROPOSED PIPELINE SEGMENT ALTERNATIVES?

A. As discussed in the CEA at pages 108-109, for areas that might contain rare features, horizontal directional drilling ("HDD") may be used. If any route were selected that incorporated Segment Alternatives HJ-1, HJ-2, IJ-1, or IJ-2, MERC would install the pipeline using HDD underneath the wetland complex. Any large woody vegetation that would prevent access for inspection purposes in a 10-foot wide area above the pipeline would need to be removed. The identified MBS site in this area, however, is not classified as forested or a forested wetland, so vegetation clearing is anticipated to be minimal. All vegetation management in this area could be accomplished during the winter months to minimize overall impacts to the site.

With respect to the MBS site of moderate biodiversity crossed by Segment Alternative EG-8,[1] MERC would prefer to entirely avoid direct impacts to this site by not routing the project along this Segment Alternative. However, if the Commission selects Segment Alternative EG-8 for the Project, MERC believes it can avoid direct impacts to this site by locating the permanent and temporary rights-of-way outside of the MBS site.

[1] This Segment Alternative was added to consideration by a member of the public during the Scoping Comment process.

Q. WHAT MITIGATION MEASURES ARE AVAILABLE TO AVOID THE IMPACTS TO THE MBS SITES OF BIODIVERSITY WITHIN THE DRS AND PROPOSED TBS BUFFERS?

A. Both the Proposed TBS and the DRS can be located to avoid the MBS sites of moderate and high biodiversity, respectively, that have been identified in these areas.

Q. WOULD MERC BE ABLE TO AVOID IMPACTS ON THE RAILROAD RIGHTS-OF-WAY PRAIRIE?

A. Yes. Open-cut trenching through the railroad and U.S. Highway 14 is not a viable option. Therefore, MERC would avoid direct impacts to this prairie through the use of HDD underneath the railroad right-of-way. Due to the design constraints of 16-inch steel pipe, a setback beyond the railroad right-of-way would be necessary for this crossing. Direct impacts to the prairie would be avoided through the use of HDD.

B. MPCA

Q. WHAT COMMENTS DID THE MPCA PROVIDE ON THE PROJECT?

A. The MPCA provided several comments and requests related to Minnesota's Section 401 Water Quality Certification Program and the construction of the Project.

Q. HOW DOES MERC RESPOND TO THE MPCA'S COMMENTS?

A. All of the issues identified by the MPCA will be addressed during the permitting process undertaken by MERC with the MPCA after issuance of the Route Permit. MERC commits to complying with the requirements of the MPCA's Section 401 program and to

develop a Project-specific stormwater pollution prevention plan in compliance with the MPCA's general construction stormwater permit.

VI. CONCLUSION

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

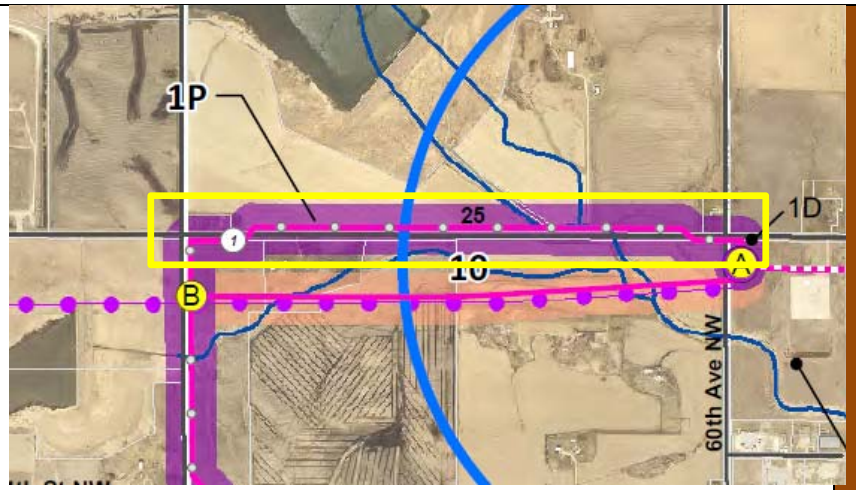
Rochester Natural Gas Pipeline Project Route Segments

TBS 1D to Proposed TBS Segment Alternatives

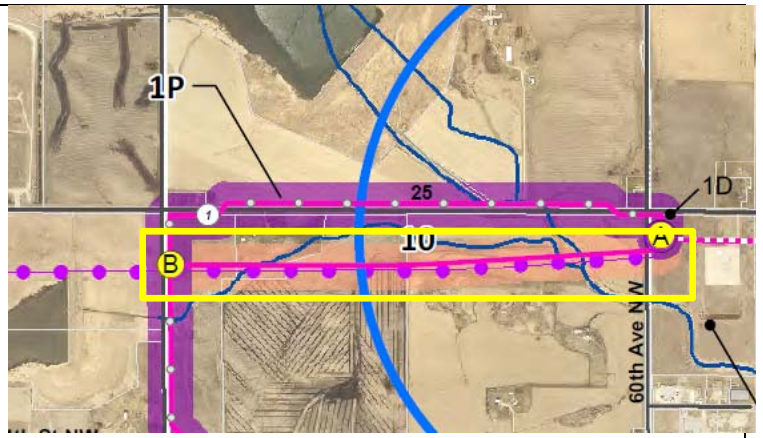
Proposed TBS to County Road 8 Segment Alternatives

County Road 8 to 11th Avenue SW Segment Alternatives

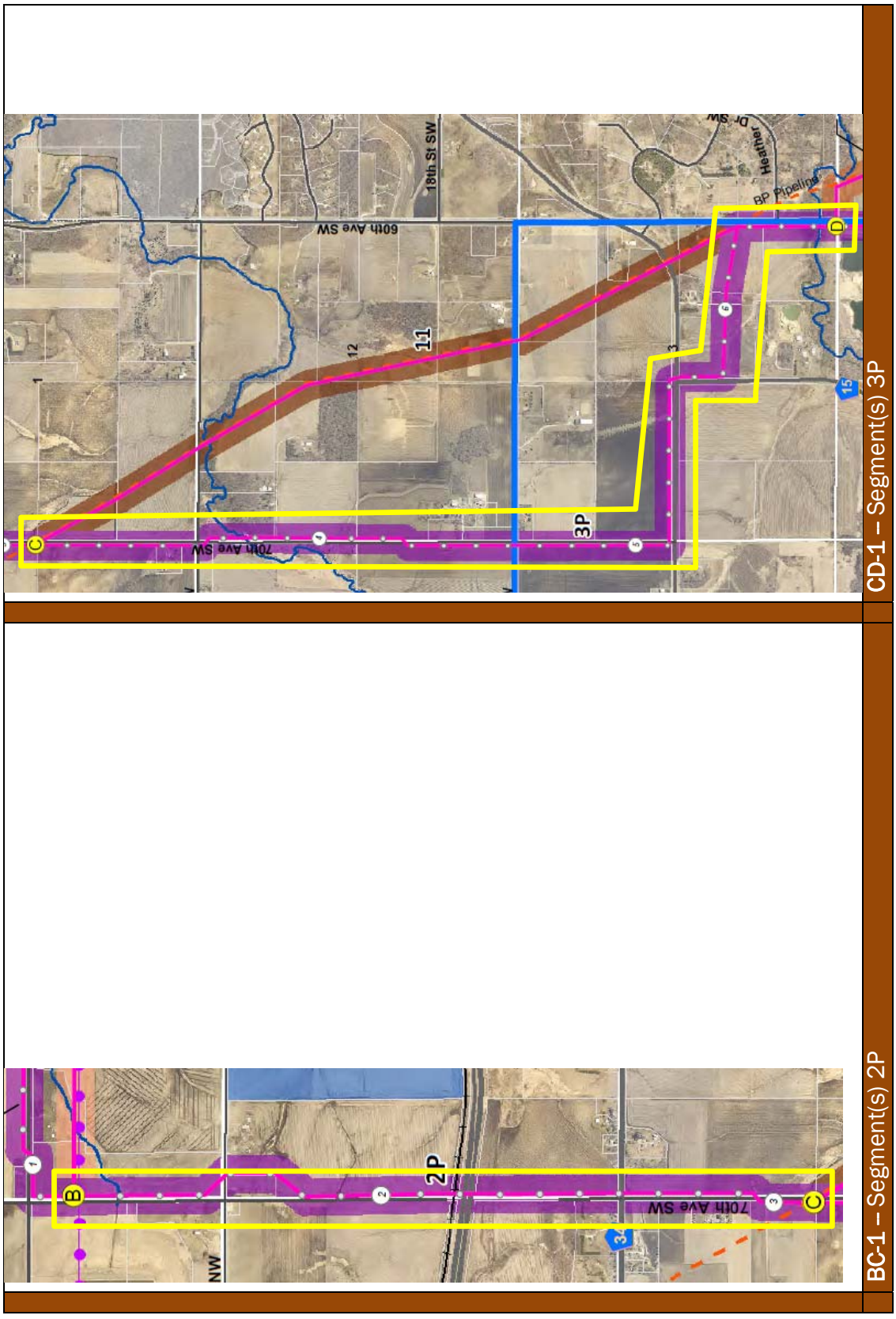
11th Avenue SW to Proposed District Regulator Station Segment Alternatives

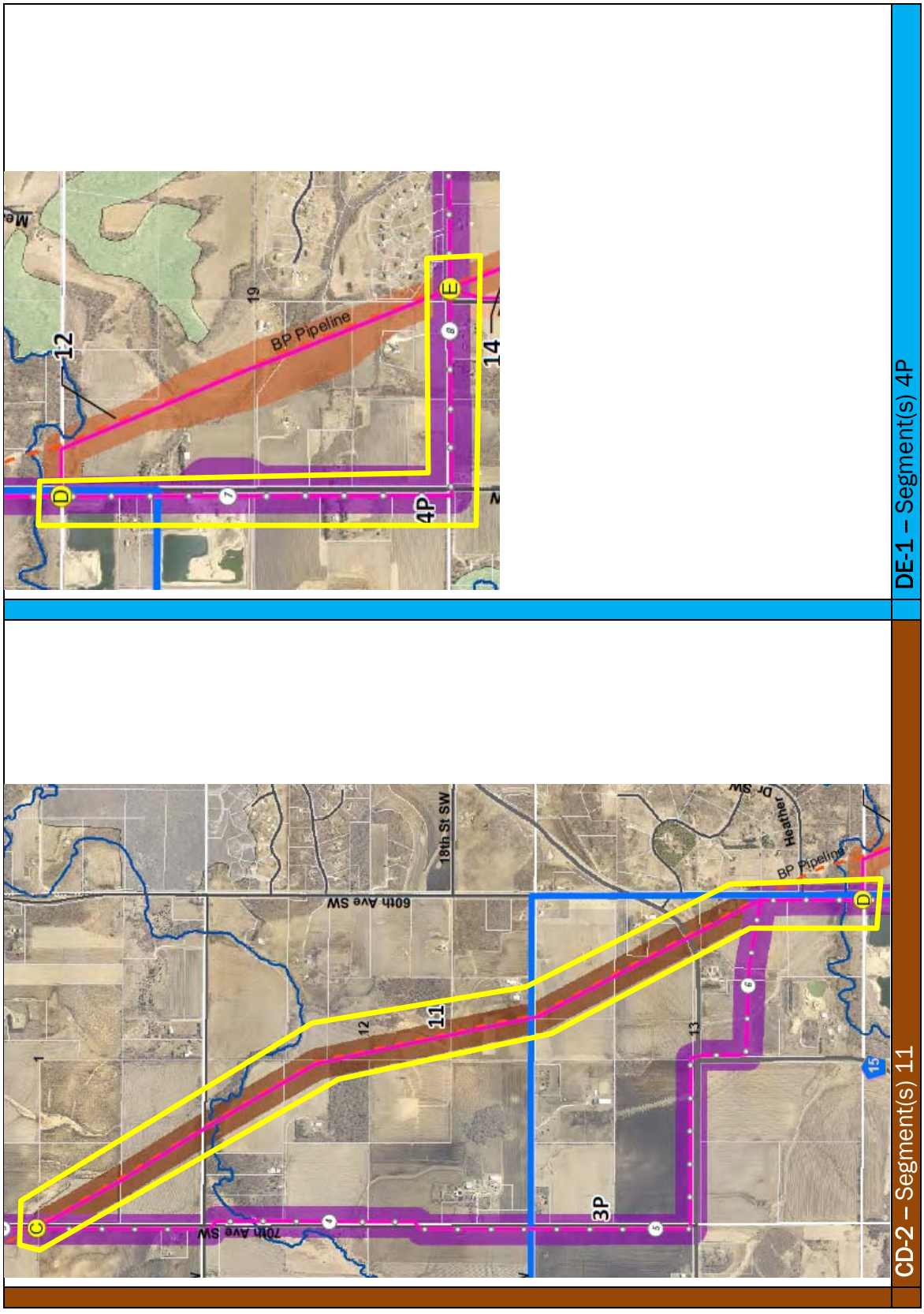


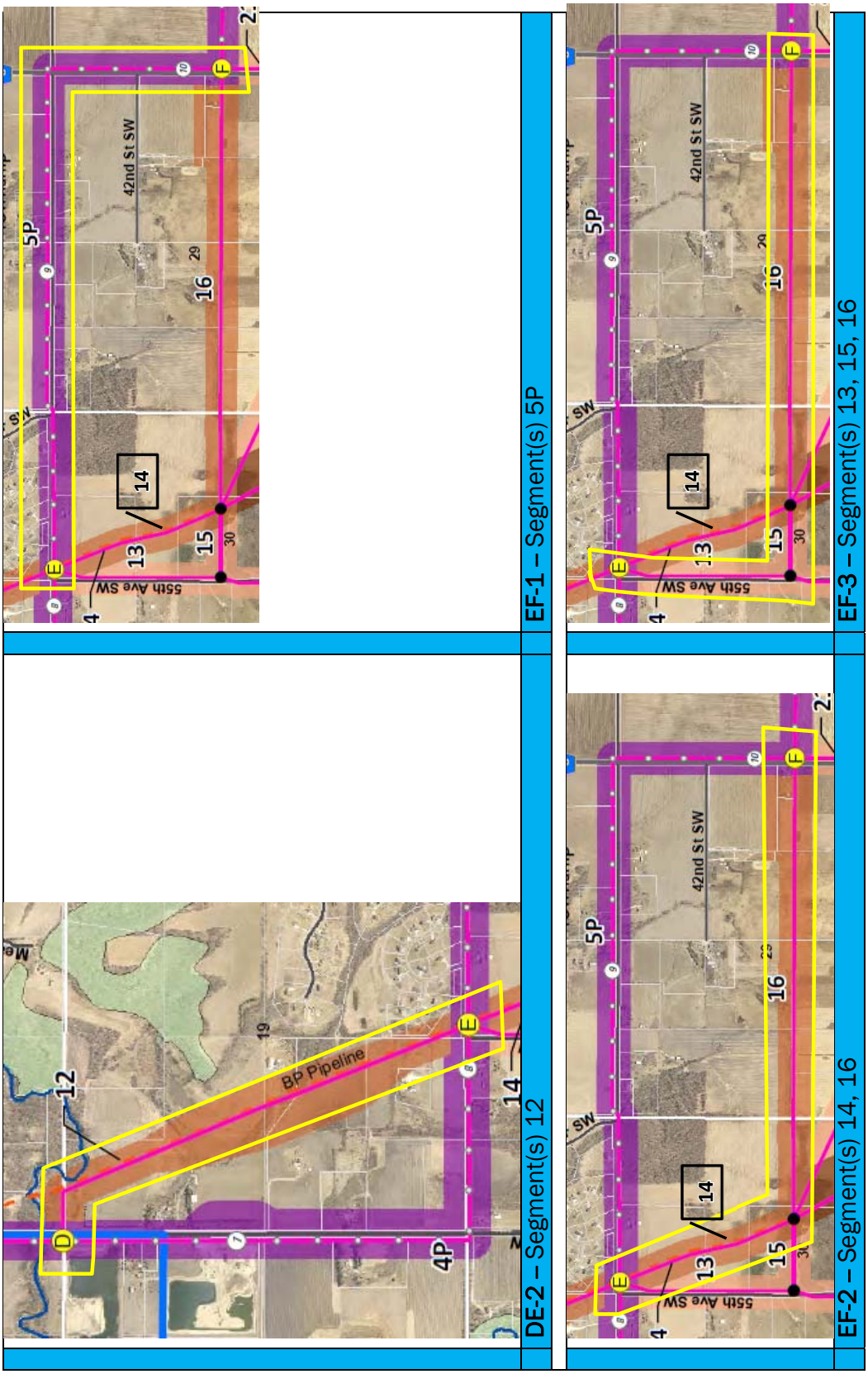
AB-1 – Segment(s) 1P

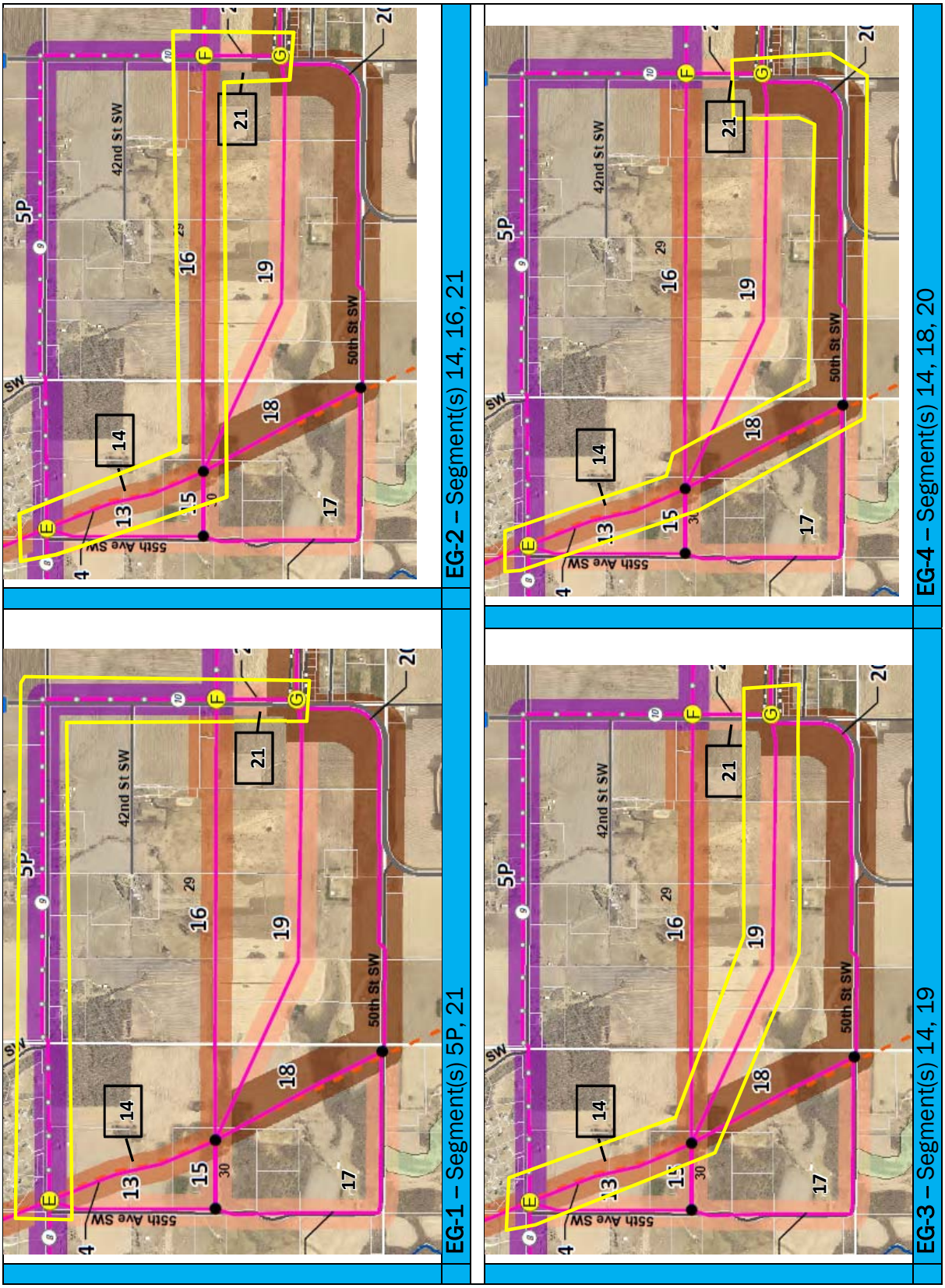


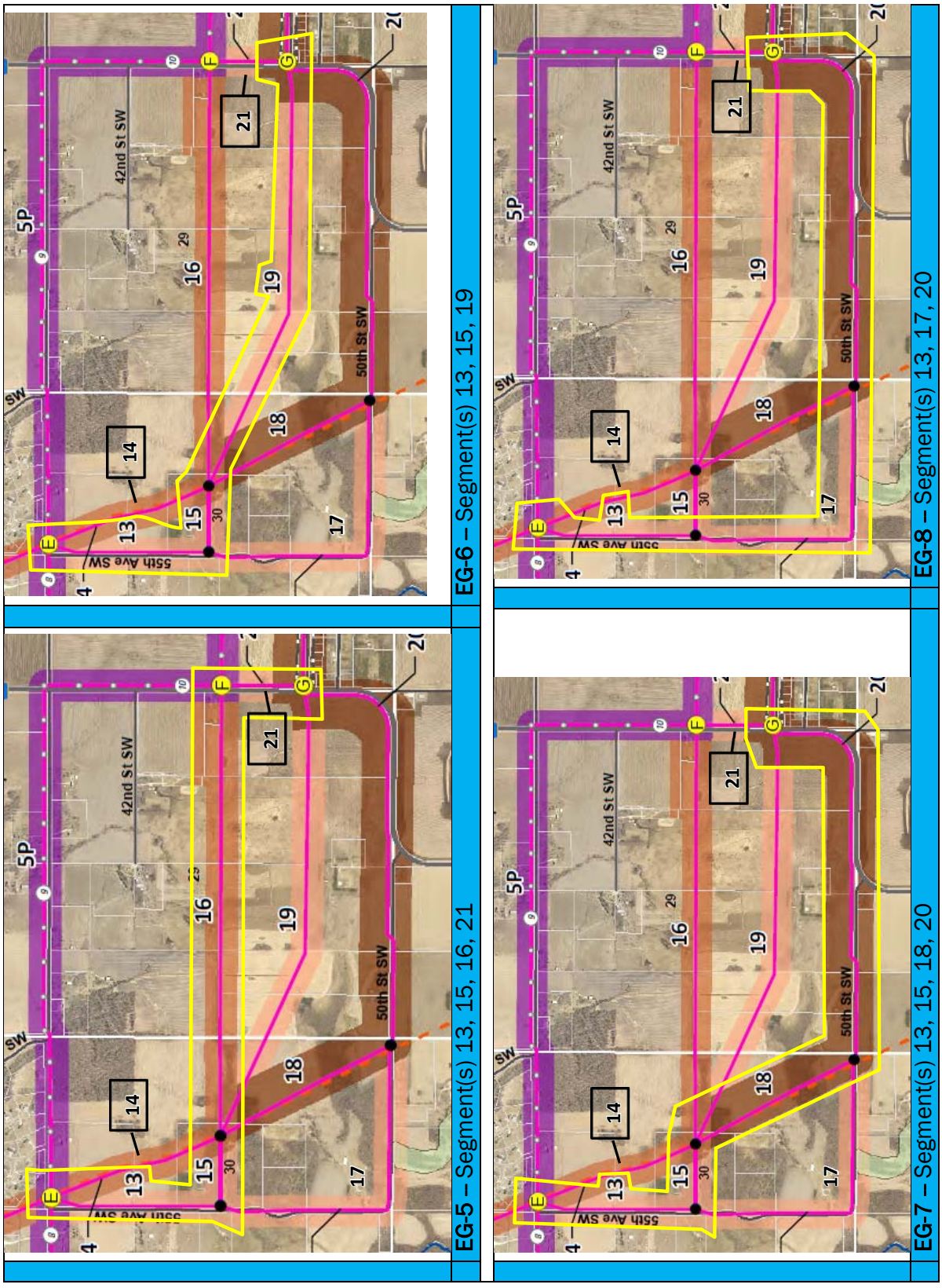
AB-2 – Segment(s) 10


CD-1 – Segment(s) 3P
18th St SW
60th Ave SW
70th Ave SW
Heather
BP Pipeline
11
12
3P
C
D
BC-1 – Segment(s) 2P
2P
B
C
70th Ave SW
NW


DE-1 – Segment(s) 4P
BP Pipeline
12
19
14
4P
D
E
CD-2 – Segment(s) 11
18th St SW
60th Ave SW
70th Ave SW
Heather
BP Pipeline
11
12
13
3P
C
D


42nd St SW
55th Ave SW
5P
4P
BP Pipeline
EF-1 – Segment(s) 5P
EF-3 – Segment(s) 13, 15, 16
DE-2 – Segment(s) 12
EF-2 – Segment(s) 14, 16


EG-1 – Segment(s) 5P, 21
EG-2 – Segment(s) 14, 16, 21
EG-3 – Segment(s) 14, 19
EG-4 – Segment(s) 14, 18, 20
42nd St SW
50th St SW
55th Ave SW
5P
13
14
15
16
17
18
19
21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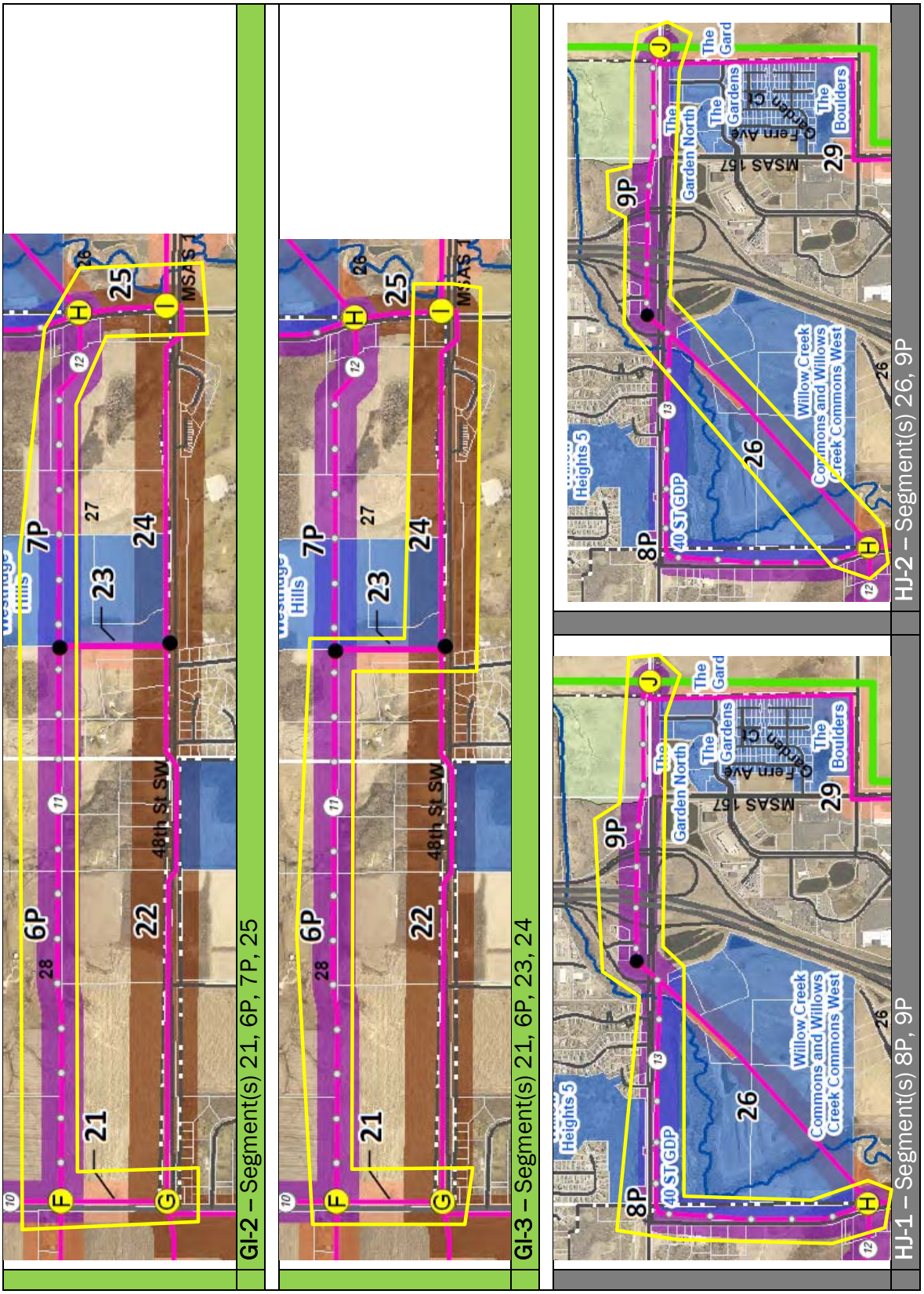
EG-6 – Segment(s) 13, 15, 19
EG-7 – Segment(s) 13, 15, 18, 20
EG-8 – Segment(s) 13, 17, 20
42nd St SW
50th St SW
55th Ave SW
5P
13
14
15
16
17
18
19
21
E
F
G


FH-1 – Segment(s) 6P, 7P
FH-2 – Segment(s) 6P, 23, 24, 25
FH-3 – Segment(s) 21, 22, 24, 25
6P
7P
21
22
23
24
25
27
28
48th St SW
MSAS 1


FI-1 – Segment(s) 6P, 23, 24
FI-2 – Segment(s) 6P, 7P, 25
FI-3 – Segment(s) 21, 22, 23
6P
7P
21
22
23
24
25
27
28
F
G
H
I
48th St SW
Hills


GH-1 – Segment(s) 22, 24, 25
GH-2 – Segment(s) 21, 6P, 7P
GI-1 – Segment(s) 22, 24
21
22
23
24
25
6P
7P
27
28
48th St SW
Westridge Hills
MSAS 1
F
G
H
I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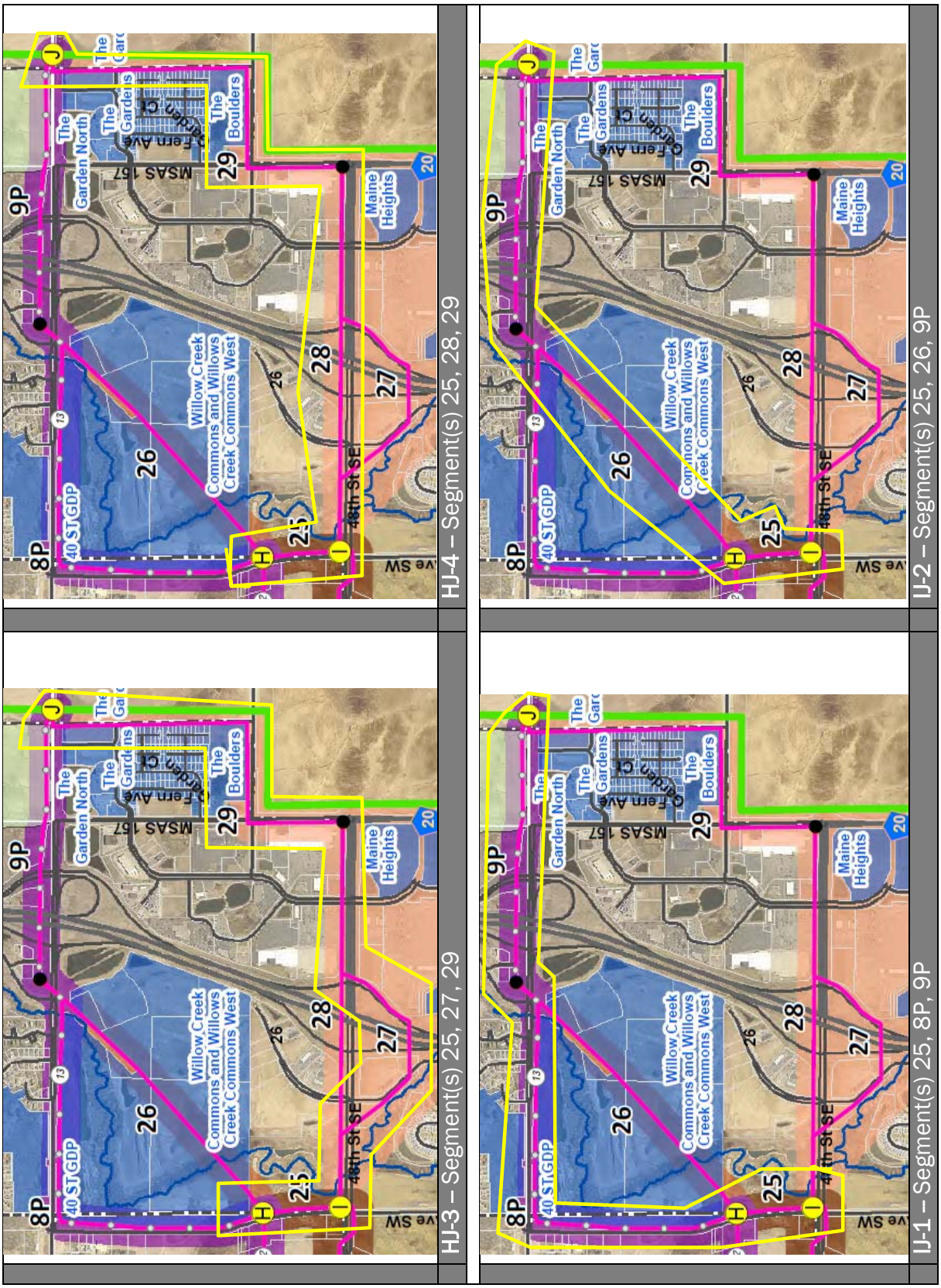
GI-3 – Segment(s) 21, 6P, 23, 24
HJ-1 – Segment(s) 8P, 9P
HJ-2 – Segment(s) 26, 9P
MSAS 157
48th St SW
Willow Creek Commons and Willows Creek Commons West
The Boulders
The Gardens
The Garden North
Heights 5
40 STGDP


HJ-4 – Segment(s) 25, 28, 29
IJ-2 – Segment(s) 25, 26, 9P
HJ-3 – Segment(s) 25, 27, 29
IJ-1 – Segment(s) 25, 8P, 9P
MSAS 157
Willow Creek Commons and Willows Creek Commons West
Maine Heights
40 St GDP
46th St SE
The Garden North
The Gardens
The Boulders
25
26
27
28
29
8P
9P
H
I
J
20

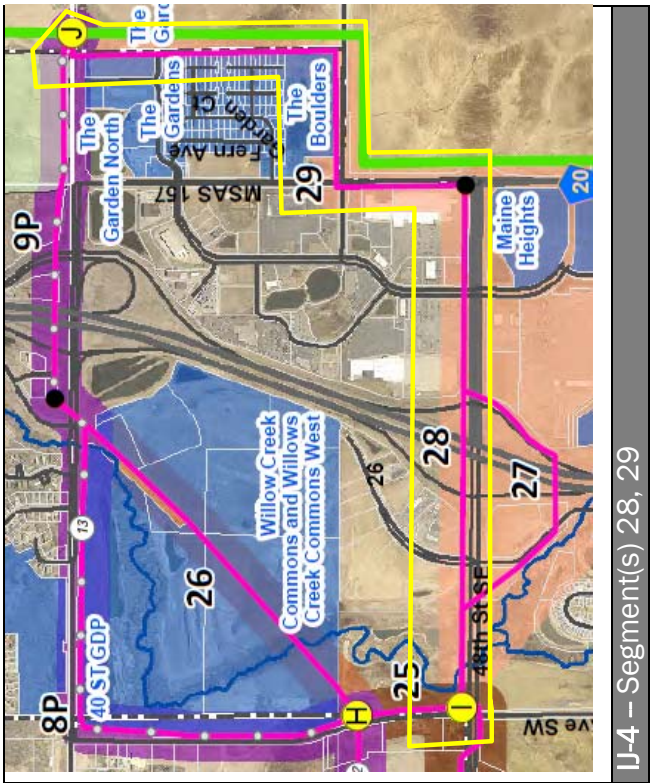

IJ-4 – Segment(s) 28, 29
IJ-3 – Segment(s) 27, 29
MSAS 157
Willow Creek Commons and Willows Creek Commons West
The Garden North
The Boulders
Maine Heights
40 St GDP
46th St SE
9P
8P
26
27
28
29
25

Table 1: TBS 1D to Proposed TBS Segment Alternatives

Segment Alternative	Route Segment(s)	Length (mi appx.)	Description	Land Use and Zoning	Geology	Groundwater Resources	Mining	Paralleling	Planned Future Development	Cost and Accessibility[1]
AB-1	1P	1.1	Originates at TBS 1D on the southeast corner of 19th St NW and 60th Ave NW. Follows 19th St NW west for 1.0 miles and then 70th Ave NW south for 0.1 miles.							
AB-2	10	1.0	Originates at TBS 1D and follows the existing Northern Natural Gas Pipeline right-of-way for 1.0 miles to 70th Ave NW, approximately 0.1 mile south of 19th St NW. Route Segment 10 was added.							
BC-1	2P	1.9	Originates on 70th Ave NW approximately 0.1 mile south of 19th St NW and follows 70th Ave NW south to the junction of BP pipeline.							
CD-1	3P	3.4	Originates at junction of BP pipeline and 70th Ave SW and follows 70th Ave SW south for 2.0 miles to CSAH 25, then follows CSAH 25 east for 0.5 miles to CR 15, then south for 0.2 miles, then east for 0.6 miles to 60th Ave SW, then follows 60th Ave SW south for 0.3 miles to Comparison Endpoint D.				▲			
CD-2	11	2.7	Originates at junction of BP pipeline and 70th Ave SW and follows BP pipeline to 60th Ave SW.							▲

[1] Column not included in Comparative Environmental Analysis Relative Merits Analysis Tables.

Table 2: Proposed TBS to County Road 8 Segment Alternatives

Segment Alternatives	Route Segment(s)	Length (mi appx.)	Description	Land Use and Zoning	Geology	Groundwater Resources	Mining	Paralleling	Planned Future Development	Cost and Accessibility[2]
DE-1	4P	1.5	Follows 60th Ave SW south to 40th St SW and east along 40th St SW. Route Segment 4P was widened along 60th Ave SW.	▲			▲			
DE-2	12	1.2	From 60th Ave SW, heads east to the existing BP pipeline. Follows the BP pipeline southeast to 40th St SW. Route Segment 12 was widened along the BP pipeline.							▲
EF-1	5P	2.0	Follows 40th St SW east for 1.5 miles to CR 8, then south along CR 8 for 0.5 miles. Route Segment 5P was added.							
EF-2	14, 16	1.8	Follows the BP pipeline southeast to about 0.5 mile south of 40th St SW. Heads east cross country along the half section to CR 8.		▲			▲		▲
EF-3	13, 15, 16	2.0	From the intersection of 55th Ave SW and 40th St SW, follows 55th Ave SW south to about 0.5 miles south of 40th St SW. Heads east cross country along the half section to CR 8. Route Segments 13 and 15 were added.		▲			▲		
EG-1	5P, 21	2.2	From the intersection of 55th Ave SW and 40th St SW, follows 40th St SW. Turns south and follows CR 8 to 48th St SW. Route Segments 5P and 21 were added.							
EG-2	14, 16, 21	2.1	Follows the BP pipeline southeast to about 0.5 mile south of 40th St SW. Heads east cross country along the half section to CR 8. Follows CR 8 south to intersection with 48th St SW. Route Segment 21 was added.		▲			▲		▲
EG-3	14, 19	1.9	Follows the BP pipeline southeast to about 0.5 mile south of 40th St SW. Heads southeast cross country (following property boundaries where available) to intersection of CR 8 and 48th St SW. Route Segment 19 was added.		▲			▲		▲
EG-4	14, 18, 20	2.3	Follows the BP pipeline southeast to 50th St SW. Follows 50th St SW to CR 8 and then follows CR 8 north to the intersection with 48th St SW. The Route Segments 18 and 20 were widened along the BP pipeline, 50th St SW, and CR 8.		▲					▲
EG-5	13, 15, 16, 21	2.2	From the intersection of 55th Ave SW and 40th St SW, follows 55th Ave SW south to about 0.5 miles south of 40th St SW. Heads east cross country along the half section to CR 8. Follows CR 8 south to intersection with 48th St SW. Route Segments 13, 15, and 21 were added.		▲					
EG-6	13, 15, 19	2.1	From the intersection of 55th Ave SW and 40th St SW, follows 55th Ave SW south to about 0.5 miles south of 40th St SW. Heads east cross county to the BP pipeline. Heads southeast cross county (following property boundaries where available) to intersection of CR 8 and 48th St SW. Route Segments 13, 15, and 19 were added.		▲			▲		

[2] Column not included in Comparative Environmental Analysis Relative Merits Analysis Tables.

Segment Alternatives	Route Segment(s)	Length (mi appx.)	Description	Land Use and Zoning	Geology	Groundwater Resources	Mining	Paralleling	Planned Future Development	Cost and Accessibility[2]
EG-7	13, 15, 18, 20	2.5	From the intersection of 55th Ave SW and 40th St SW, follows 55th Ave SW south to about 0.5 miles south of 40th St SW. Heads east cross county to the BP pipeline. Follows the BP pipeline southeast to 50th St SW. Follows 50th St SW to CR 8 and then CR 8 north to the intersection with 48th St SW. Route Segments 18 and 20 were widened along the BP pipeline, 50th St SW, and CR 8. Route Segments 13 and 15 were added.		▲					▲
EG-8	13, 17, 20	2.7	From the intersection of 55th Ave SW and 40th St SW, follows 55th Ave SW south to 50th St SW. Follows 50th St SW to CR 8 and then CR 8 north to intersection with 48th St SW. Route Segment 20 was widened along 50th St SW and CR 8. Route Segments 13 and 17 were added.		▲	▲				

Table 3: County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternatives	Route Segments	Length (mi appx.)	Description	Land Use and Zoning	Geology	Groundwater Resources	Mining	Paralleling	Planned Future Development	Cost and Accessibility[3]
FH-1	6P, 7P	2.0	From CR 8, heads east cross county along the half section to 11th Ave SW.					▲	■	
FH-2	6P, 23, 24, 25	2.5	From CR 8, heads east cross county along the half section to the western boundary of the Westridge Hills Development. Follows property boundaries south to 48th St SW. Heads east on 48th St SW to 11th Ave SW. Heads north on 11th Ave SW for 0.2 mile. Route Segment 24 was widened along 48th St SW. Route Segment 23 was added.					▲	▲	
FH-3	21, 22, 24, 25	2.5	Follows CR 8 south to intersection with 48th St SW. Follows 48th St SW east to 11th Ave SW. Follows 11th Ave SW north for 0.2 mile. Route Segments 22 and 24 were widened along 48th St SW. Route Segment 21 was added.						▲	
FI-1	6P, 23, 24	2.3	From CR 8, heads east cross county along the half section to the western boundary of the Westridge Hills Development. Follows property boundaries south to 48th St SW. Heads east on 48th St SW to 11th Ave SW. Route Segment 24 was widened along 48th St SW. Route Segment 23 was added.					▲	▲	
FI-2	6P, 7P, 25	2.2	From CR 8, heads east cross county along the half section to 11th Ave SW. Follows 11th Ave SW south for 0.2 mile.					▲	■	
FI-3	21, 22, 24	2.3	Follows CR 8 south to intersection with 48th St SW. Follows 48th St SW east to 11th Ave SW. Route Segments 22 and 24 was widened along 48th St SW. Route Segment 21 was added.						▲	
GH-1	22, 24, 25	2.3	From the intersection of CR 8 and 48th St SW, follows 48th St SW east to 11th Ave SW. Follows 11th Ave SW north for 0.2 mile. Route Segments 22 and 24 were widened along 48th St SW.						▲	
GH-2	21, 6P, 7P	2.2	From the intersection of CR 8 and 48th St SW, follows CR 8 north for 0.2 mile. From CR 8, heads east cross county along the half section to 11th Ave SW. Route Segment 21 was added.					▲	■	
GI-1	22, 24	2.1	From the intersection of CR 8 and 48th St SW, follows 48th St SW east to 11th Ave SW. Route Segments 22 and 24 were widened along 48th St SW.						▲	
GI-2	21, 6P, 7P, 25	2.4	From the intersection of CR 8 and 48th St SW, follows CR 8 north for 0.2 mile. From CR 8, heads east cross county along the half section to 11th Ave SW. Follows 11th Ave SW south for 0.2 mile. Route Segment 21 was added.					▲	■	

[3] Column not included in Comparative Environmental Analysis Relative Merits Analysis Tables.

Segment Alternatives	Route Segments	Length (mi appx.)	Description	Land Use and Zoning	Geology	Groundwater Resources	Mining	Paralleling	Planned Future Development	Cost and Accessibility[3]
GI-3	21, 6P, 23, 24	2.5	From the intersection of CR 8 and 48th St SW, follows CR 8 north for 0.2 mile. From CR 8, heads east cross county along the half section to the western boundary of the Westridge Hills Development. Follows property boundaries south to 48th St SW. Heads east on 48th St SW to 11th Ave SW. Route Segment 24 was widened along 48th St SW. Route Segments 21 and 23 were added.					◀	◀	

Table 4: 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternatives	Route Segments	Length (mi appx.)	Description	Land Use and Zoning	Geology	Groundwater Resources	Mining	Paralleling	Planned Future Development	Cost and Accessibility[4]
HJ-1	8P, 9P	1.8	From 11th Ave SW, continues north along 11th Ave SW and then east along 40th St SW, crossing US Highway 63 in the 40th St SW interchange, to the Proposed DRS. Route Segment 8P was added.						▲	
HJ-2	26, 9P	1.5	From 11th Ave SW, heads cross county northeast to 40th St SW. Follows 40th St SW, crossing US Highway 63 in the 40th St SW interchange, to the Proposed DRS.			▲		▲	■	
HJ-3	25, 27, 29	2.4	Follows 11th Ave SW south for 0.2 mile. Follows 48th St SE east, crossing US Highway 63 south of the 48th St SE interchange, to CR 20. Continues north along CR 20 to 45th St SE, east along 45th St SE for 0.25 mile, and north along property boundaries, to the Proposed DRS. Route Segments 27 and 29 were added.					▲	▲	▲
HJ-4	25, 28, 29	2.2	Follows 11th Ave SW south for 0.2 mile. Follows 48th St SE east, crossing US Highway 63 within the 48th St SE interchange, to CR 20. Continues north along CR 20 to 45th St SE, east along 45th St SE for 0.25 mile, and north along property boundaries, to the Proposed DRS. Route Segments 28 and 29 were added.					▲	▲	▲
IJ-1	25, 8P, 9P	2.0	Follows 11th Ave SW north for 0.7 mile. Continues east along 40th St SW, crossing US Highway 63 in the 40th St SW interchange, to the Proposed DRS. Route Segment 8P was added.						▲	
IJ-2	25, 26, 9P	1.7	Follows 11th Ave SW north for 0.2 mile. Continues cross country northeast to 40th St SW. Follows 40th St SW, crossing US Highway 63 in the 40th St SW interchange, to the Proposed DRS.			▲		▲	■	
IJ-3	27, 29	2.2	Follows 48th St SE east, crossing US Highway 63 south of the 48th St SE interchange, to CR 20. Continues north along CR 20 to 45th St SE, east along 45th St SE for 0.25 mile, and north along property boundaries to the Proposed DRS. Route Segments 27 and 29 were added.					▲	▲	▲
IJ-4	28, 29	2.0	Follows 48th St SE east, crossing US Highway 63 within the 48th St SE interchange, to CR 20. Continues north along CR 20 to 45th St SE, east along 45th St SE for 0.25 mile, and north along property boundaries to the Proposed DRS. Route Segments 28 and 29 were added.					▲	▲	▲

[4] Column not included in Comparative Environmental Analysis Relative Merits Analysis Tables.