December 2022 version

Environmental Assessment Worksheet

This most recent Environmental Assessment Worksheet (EAW) form and guidance documents are available at the Environmental Quality Board's website at**:** https://www.eqb.state.mn.us**/** The EAW form provides information about a project that may have the potential for significant environmental effects. Guidance documents provide additional detail and links to resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 21.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project title:** South Branch Wild Rice River Rock Arch Rapids Restoration Project

2. **Proposer:** Wild Rice Watershed District

Contact person: Tara Jensen
Title: District Administrator
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3. **RGU:** Minnesota Department of Natural Resources

Contact person: Caroline Oswald
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4. **Reason for EAW Preparation:** (check one)

Required:
☐ EIS Scoping
X Mandatory EAW

Discretionary:
☐ Citizen petition
☐ RGU discretion
☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

Minnesota Rules part 4410.4300 subpart 26. Stream Diversion: "For a diversion, realignment, or channelization of any designated trout stream, or affecting greater than 500 feet of natural watercourse with a total drainage area of ten or more square miles unless exempted by part 4410.4600, subpart 14, item E, or 17, the local government unit shall be the RGU."

Minnesota Rules part 4410.4300 subpart 27.A. Wetlands and Public Waters: "For projects that will change or diminish the course, current, or cross-section of one acre or more of any public water or public waters wetland except for those to be drained without a permit pursuant to Minnesota Statutes, chapter 103G, the local government unit shall be the RGU."

5. **Project Location:**

- County: Clay County
- City/Township: Near Ulen, MN; Ulen and Hagen Townships
- PLS Location (¼, ¼, Section, Township, Range):
    - Ulen Township: Section 18, 19, 20, 21, and 28, T142N, R44W

    - Hagen Township: Section 9, 14, 15, 16, 23, and 24, T142N, R45W
- Watershed (81 major watershed scale): Wild Rice River (60) (see Attachment 2, Exhibit 3: Watershed Map)
- GPS Coordinates: 47.101986, -96.326100 (General)
- Tax Parcel Number: 29.019.0460, 12.014.3700, 12.015.3600, 12.015.4000, 12.014.2370, 29.028.1201, 29.021.3300, 29.021.4300, 29.021.4400, 29.020.2300, 12.015.3400, 12.016.3700, 12.009.3302, 60.999.9999, 29.021.3301, 29.080.0101, 12.023.1000, 29.019.2500, 29.020.1500, 12.014.4400, 29.021.3350, 12.016.4100, 29.028.1801, 12.024.3500, 29.019.1100, 29.018.4001, 12.014.3500, 29.018.3700, 29.027.2600, 12.016.2800, 12.015.3100, 60.900.0120, 29.028.1401, 29.028.1600, 29.028.1101, 29.028.1800, 29.021.3500, 12.024.3000, 29.020.4700, 12.023.1450, 29.020.2400, 29.020.1700, 29.080.0102, 12.023.1100, 12.023.2600, 12.024.2600, 12.024.1600, 12.024.0480, 29.018.4000, 12.016.1400, 12.014.1700, 12.016.1600, 12.014.2200, 29.021.3400, 12.008.4001, 29.000.5000, 12.009.3300, 12.023.1001, 12.016.4000, 12.015.1000

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project (see Attachment 1);
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable) (see Attachment 1); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan (see Attachment 1).
- List of data sources, models, and other resources (from the Item-by-Item Guidance: *Climate Adaptation and Resilience* or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project during the life of the project (as detailed below in item 7. Climate Adaptation and Resilience).
    - U.S. Global Change Research Program (2023) Fifth National Climate Assessment.
    - University of Minnesota climate Adaptation Partnership (2024) Minnesota Climate Projections (CMIP5).

6. Project Description:

a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

The Wild Rice Watershed District proposes to install a series of rock arch rapids within a 13-mile stretch of the South Branch Wild Rice River from the town of Ulen downstream to County Road 110 in Clay County, Minnesota. The proposed project is an effort to restore the river's connection with its floodplain, thereby reducing flood damage, erosion, and sediment transport, as well as restore floodplain habitats and provide continued fish passage.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities

Proposed Project Description

The Wild Rice Watershed District is proposing to restore approximately 13 miles of the South Branch Wild Rice River (see Attachment 2, Exhibit 2: Existing Channel Map). The restoration work includes the installation of a number of rock arch rapids of variable height, length, and width along the stretch of the South Branch Wild Rice River between the town of Ulen and

County Road 110. The goal of the proposed project is to provide flood damage reduction to adjacent public and private infrastructure, reduce streambank erosion, and reduce sediment transport that results in sedimentation. Additionally, the restoration would reconnect the channel with its floodplain improving both instream habitats and floodplain habitats while also providing continued fish passage.

Background

The spring snowmelt and summer rainfalls have historically caused flooding issues across the agricultural dominated landscape of the Red River Valley. These runoff events have also caused areas of severe channel erosion and sedimentation within the South Branch Wild Rice River. These issues have been exacerbated by altered hydrology (drainage ditches) and the U.S. Army Corps of Engineers (USACE) 1980's channel straightening project. The USACE project was a flood control project that increased river channel capacity through widening and deepening the channel downstream of the proposed restoration reach. All these factors have resulted in channel erosion, to the extent that the floodplain was disconnected, and altered the river's ability to transport sediments.

Rock Arch Rapids

The rock arch rapids would be installed to stabilize the grade of the channel and reduce the erosion within the channel. The rock arch rapids would function as a sediment trap as well as reconnect the channel with its floodplain. Each rock arch rapids would be designed specifically to each stretch of the channel. The rapids would be constructed to an elevation that would restore the bankfull profile and historic floodplain. In general, the rapids would consist of a riprap lined ramp and a series of rock arches or boulder weirs. The designs would be consistent with the guidance of the Minnesota Department of Natural Resources (DNR) River Ecology Unit.

Construction Methods

Construction at each rock arch rapids site would take approximately four to six weeks to complete and would be followed by the reestablishment of vegetation that would occur over the span of a few years. Construction would occur during the fall and winter to ensure channel work happens during the lowest flow conditions. Methods of construction include:

1. Establish site access – this step may include some tree clearing in upland areas for safe access.
2. Installation of downstream in-channel sediment control devices (floating silt curtain) and other erosion control devices.
3. Channel reshaping and sub-cutting as needed to install rapids.
4. Rock layers installed to create rapids in the channel.
5. Voids in rock layer would be filled to ensure flow over rapids not through underlying rock layers.
6. Install boulder weirs with voids filled with rock chinking stone to create preferred flow path in the rapids.
7. Following construction, reclamation of adjacent uplands and removed vegetation.
8. Removal of downstream sediment control devices and other erosion control devices.

Typical construction equipment used for these projects includes excavators, bulldozers, front end loaders would be used on site for site access, channel excavation, and installation of rock arch rapids. Side-dump trucks and dump trucks would be used to haul rock, boulders, and aggregate onto the site.

Construction activities associated with the proposed project are likely to result in temporary noise and dust. Dust would be minimized through standard dust control measures, such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions.

This would be accomplished without causing erosion and sedimentation to the stream. Construction contractors would be required to comply with applicable local noise restrictions and ordinances to the most reasonable extent.

Natural Resource Impacts

The proposed project is located within a landscape comprised of agricultural lands, streams, rivers, wet ditches, roadways, gravel pits, rural residential properties, and floodplain forests. The aquatic resources along the proposed project's area of interest (AOI) are identified by the National Wetland Inventory (NWI) and the Minnesota Public Waters inventory. Construction activities would impact portions of the South Branch Wild Rice River (a public waters) and potentially impact areas of wetlands directly adjacent to each rock arch rapids site. These activities include channel excavation and fill for regrading and installation of the rock arch rapids. The excavation of soil within the channel would remove any aquatic plants present and would be replaced by bounders and rock, which would alter the plants in the area and would create pools and riffles that are different from current conditions. Permanent impacts would include the placement of fill (boulders, rock, aggregate) within the channel for the construction of each rock arch rapids site. Impacts to aquatic resources are subject to State and Federal regulations and require authorization through a Clean Water Act (CWA)/Minnesota Wetland Conservation Act (WCA) permit and Minnesota Public Waters Work Permit.

There are several Minnesota Biological Survey (MBS) native plant communities or sites of biodiversity significance that could potentially be impacted from use of heavy machinery and rock arch rapids site access. These communities, especially those within the river's floodplain, have been adversely affected from the channel's continued erosion and downcutting. The proposed project would not permanently impact any rare features or rare species identified in the Natural Heritage Review. The impacts to this site would be limited to tree removal to ensure safe site access and safe use of machinery during construction. Coordination with the DNR and avoidance measures would be taken to prevent impacts to these state-listed species. Avoidance measures include, avoiding rapid site placement adjacent to known rare habitats where possible and operating within previously disturbed areas where possible. Additionally, the proposed project would avoid excessive tree and vegetation removal within the communities, limiting removal to the minimal needed for safe site access and site use.

There are several threated and endangered species identified by the DNR within proximity of the proposed project's AOI. Avoidance and minimization measures described by the DNR in the Natural Heritage Review report (Attachment 3) would be utilized where feasible. There are no other special concern resources (i.e., trout stream/lakes, wild or scenic rivers, calcareous fens) within close proximity of the proposed project that would be impacted as a result of the project.

Best management practices (BMPs) for erosion and sedimentation control during construction would include, but are not limited to, sediment control logs, erosion control blankets, and silt fences. Erosion and sedimentation controls would be used to avoid impacts to adjacent land, wetlands, and sensitive habitat areas. The construction activities are likely to produce noise and dust. The construction crew would be required to follow local noise ordinances and restrictions. Limiting the extent of soil exposure or watering exposed soils would be done to minimize dust pollution. Disposal of all excess materials and debris from construction would occur in accordance with state and county regulations.

Timing and Duration

The anticipated schedule is outlined below:

- Proposed Project EAW: Fall2024 – Spring 2025
- Plans, Specification, and Cost Estimate: Spring 2025
- USACE, WCA, and DNR Public Waters Permits: Apply Spring 2025
- Desired Construction Start: Fall 2025
- Construction Completion: Fall 2026

c. Project magnitude:

Table 1. Project Magnitude

Description	Number
Total Project Acreage	n/a
Linear project length	14.47 miles
Number and type of residential units	n/a
Residential building area (in square feet)	n/a
Commercial building area (in square feet)	n/a
Industrial building area (in square feet)	n/a
Institutional building area (in square feet)	n/a
Other uses – specify (in square feet)	n/a
Structure height(s)	n/a

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the project is to improve flood damage protection for adjacent landowners, prevent further erosion and sedimentation in the channel, improve water quality, and reconnect the channel to its floodplain.

During the 1980s, the USACE implemented a flood protection project that resulted in altering the natural state of the South Branch Wild Rice River. The project widened and deepened the channel to prevent flood damages to the surrounding landscape. The USACE project and the construction of many drainage ditches in the surrounding landscape resulted in severe channel erosion and sedimentation. The erosion has resulted in the channel's disconnect from the natural floodplain. Today, the channel's function during rainfall events and spring melt result in further erosion and sedimentation as well as dysfunctional flood protection. The project is needed to slow erosion and sedimentation as well as to reduce flood damages by reconnecting the floodplain.

The beneficiaries of this proposed project would include landowners adjacent to the South Branch Wild Rice River and its downstream waterbodies, natural resources managers, and recreational users. The proposed project would reduce flooding to downstream waterbodies through the reduction of sedimentation and erosion. The restoration of the stream would also improve water quality, aquatic habitats, and floodplain habitats resulting in favorable conditions for aquatic and terrestrial species.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐ Yes X No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

f. Is this project a subsequent stage of an earlier project? ☐ Yes X No
If yes, briefly describe the past development, timeline and any past environmental review.

7. Climate Adaptation and Resilience:

a. Describe the climate trends in the general location of the project (see guidance: *Climate Adaptation and Resilience*) and how climate change is anticipated to affect that location during the life of the project.

The most recent "National Climate Assessment (NCA)"[1] report, developed by the U.S. Global Change Research Program (USGCRP), described the climate trends in the Midwest as having increases in temperatures, humidity, droughts, heavy rainfalls, and exacerbated stressors on ecosystems. A review of the University of Minnesota's "Minnesota Climate Projections"[2] indicates that the climate in Clay County and within the AOI is trending towards increased number of days with 1 or more inches of rain, decreased number of sub-zero temperature nights, and an increase in the number of days reaching above 90 degrees Fahrenheit. Historically, the AOI received 4 days/year of greater an inch of rain, 45 nights/year of sub-zero temperatures, and 10-15 days/year of above 90 degrees Fahrenheit. The trends for mid-century (2041-2060) include 4-5 days/year of greater an inch of rain, 30 nights/year of sub-zero temperatures, and 25-35 days/year of above 90 degrees Fahrenheit.

b. For each Resource Category in the table below: Describe how the project's proposed activities and how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.

Table 2. Proposed Project's Climate Considerations and Adaptations

Resource Category	Climate Considerations	Project Information	Adaptations
Project Design	The proposed project design should consider increased frequency and duration of heavy rain events, potential for flooding, and increase in peak flows.	Climate change risks and vulnerabilities identified include: increased frequency and intensity of storm events, and flooding.	The proposed project's goal to stabilize the channel would prevent further erosion and make the channel more resilient to the increase in rainfall and peak flows.
Land Use	The proposed project design should consider existing land use, potential land use changes, and the potential for impacts on climate. Climate trends for the general location predict a wetter climate with more frequent and higher intensity storm events.	Climate change risks and vulnerabilities identified include: increased frequency and intensity of storm events, and increased precipitation.	The goal of the proposed project is to provide flood damage reduction to adjacent public and private infrastructure. As previously mentioned, the stabilization of the channel would prevent further erosion and degradation from increased precipitation and peak flows. The stabilization would also allow native plant species to establish.

[1] U.S. Global Change Research Program (2023) Fifth National Climate Assessment.
[2] University of Minnesota climate Adaptation Partnership (2024) Minnesota Climate Projections (CMIP5).

ResourceCategory	Climate Considerations	Project Information	Adaptations
Water Resources	Addressed in item 12	Addressed in item 12	Addressed in item 12
Contamination/ Hazardous Materials/Wastes	Climate change predictions are not anticipated to influence the potential environmental effects of generation/use/storage of hazardous waste and materials for this proposed project.	Climate change risks and vulnerabilities identified include: construction equipment would utilize potentially hazardous materials such as gasoline or diesel fuels, motor oils, hydraulic fluids, and other lubricants.	During construction, contractors would protect soil and water resources from contamination and hazardous materials. Vehicles would be equipped with spill kits for rapid response. All hazardous materials would be stored in containment apparatuses, while not in use.
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Addressed in item 14.	Addressed in item 14.	Addressed in item14.

8. **Cover types:** Estimate the acreage of the site with each of the following cover types before and after development:

   Cover types within the AOI were estimated based on reference to U.S. Department of Agriculture Cropland Data Layer (2023)[3] (see Attachment 2, Exhibit 6: Land Cover Map).

Table 3: Proposed Project Cover Types

Cover Types	Before (acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	338.44	338.44
Deep lakes (>2 meters deep)	0	0
Wooded/forest	60.45	60.45
Rivers/streams	17.11	17.11
Brush/Grassland	13.78	13.78
Cropland	63.33	63.33
Livestock rangeland/pastureland	7.56	7.56
Lawn/landscaping	0	0
Green infrastructure TOTAL (from table below*)	0	0
Impervious surface	0	0
Stormwater Pond (wet sedimentation basin)	0	0
Other (describe): Developed land	13.78	13.78
TOTAL	514.45	514.45

[3] U.S. Department of Agriculture – National Agricultural Statistics Service (2024) Cropland CROS.

Table 4: Proposed Project Green Infrastructure

Green Infrastructure*	Before (acreage)	After (acreage)
Constructed infiltration systems (infiltration basins/infiltration trenches/ rainwater gardens/bioretention areas without underdrains/swales with impermeable check dams)	0	0
Constructed tree trenches and tree boxes	0	0
Constructed wetlands	0	0
Constructed green roofs	0	0
Constructed permeable pavements	0	0
Other (describe)	0	0
TOTAL*	0	0

Table 5. Proposed Project Trees

Trees	Percent	Number
Percent tree canopy removed or number of mature trees removed during development	< 1%	Less than 10
Number of new trees planted	0	0

9. Permits and approvals required: List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Table 6. Proposed Project Permits and Approvals

Unit of Government	Type of Application	Status
U.S. Army Corps of Engineers	Section 404	To be applied for
U.S. Fish and Wildlife Service	Endangered Species Act (ESA) Consultation and Approval	To be completed
Minnesota State Historic Preservation Office	Cultural Resources Review and Concurrence	To be completed
Minnesota Pollution Control Agency	Section 401; National Pollutant Discharge Elimination System (NPDES) Permit	To be applied for
DNR	Public Waters Work Permit	To be applied for
DNR	State-listed Species and Rare Feature Review (Natural Heritage Information System)	Applied and Received (August 23rd, 2024)
Clay County Soil and Water Conservation District	Wetland Conservation Act Permit	To be applied for

10. Land use:

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks and open space, cemeteries, trails, prime or unique farmlands.

Land Use

The existing land use along the South Branch Wild Rice River AOI includes herbaceous wetlands, woody wetlands, upland forests, rural residential properties, and agricultural lands (see Attachment 2, Exhibit 5: Land Use Map). A review of the U.S. Geological Survey (USGS) National Land Cover Database (NLCD)[4] indicates that the AOI is dominated by woody wetlands (56.93% of the AOI) with remnants of wooded forests, herbaceous wetlands, and croplands.

Parks and Open Spaces

There are no federal, state, or county designated lands within the South Branch Wild Rice River AOI. The AOI and surrounding landscape is privately owned agricultural land and public transportation infrastructure. The nearest state land is the 479.6-acre Ulen Wildlife Management Area located just west of Ulen, MN and approximately 0.5 miles south of the AOI. Additionally, the 525.6-acre Felton Prairie Scientific Natural Area is located 0.6 miles south of the AOI along County Road 110. Additionally, there are several state and federal lands located within a 3-mile radius of the AOI including the Flickertail Prairie Waterfowl Production Area, Fuglie Waterfowl Production Area, and Northern Tallgrass Prairie National Wildlife Refuge.

Cemeteries

There are three cemeteries within or directly adjacent to the AOI, Sliper Cemetery, Calvary Lutheran Cemetery, and Bethlehem. Sliper Cemetery is completely within the boundary of the AOI, but Calvary Lutheran and Bethlehem cemeteries are only partially overlapping the AOI. None of these cemeteries would be disturbed by construction of the proposed project. The design phase of the proposed project would be used to avoid locating rock arch rapids directly adjacent to these sites. In the case that a rock arch rapids is adjacent to any cemetery, there would be plans in place to prevent any disturbance to the site. The majority of the work would be in-channel, with temporary impacts occurring during construction from machinery access and top of bank/side slope work.

Trails

There are several state-designated trails located directly adjacent to the AOI. The Agassiz Recreational Trail is a multi-recreational trail that runs between Ulen, MN and Crookston, MN. It offers recreation for hikers, bikers, horseback riders, and ATV/UTVs. The trail follows an abandoned railroad grade with parking lots accesses in Crookston, Melvin, Fertile, Gary, Twin Valley, and Ulen. This trail intersects the AOI at the north end of Ulen along Minnesota Highway 32. Additionally, there are several snowmobiling trails in the area around the AOI. These include two tracks of the Clay Trail Alliance Trails (Trail No. 100) and two tracks of the Moonshiner Trails (Trail No. 243). A portion of Moonshiner Trails intersects the AOI along Minnesota Highway 32. There are no Minnesota State Water Trails within or near the AOI.

[4] Multi-Resolution Land Characteristics (MRLC) (2019) National Land Cover Database.

Farmland Classification[5]

The AOI consists of four types of farmland classifications that indicate soils suitability for food, feed, fiber, forage, and oilseed crops. The classifications identified in the AOI include, "all areas are prime farmland, farmland of statewide importance, not prime farmland, and prime farmland if drained." The most prominent classification are soil series that are considered to be "not prime farmland" with approximately 94.6 % (486.87 acres) of the AOI considered to be this classification. As previously stated, the majority of the work would be in-channel, with temporary impacts occurring during construction from machinery access and top of bank/side slope work.

ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

Clay County Local Water Management Plan[6]

The plan was prepared by the Clay Soil & Water Conservation District and the Local Water Management Plan Advisory Committee and went into effect May 9th, 2017. The purpose of the plan is:

1. "To identify existing or potential problems and opportunities for protection, management, or development of water resources and related land resources in the county.
2. To develop and implement a plan of action to promote sound hydrologic management of water and related land resources in the county.
3. To work towards effective environmental protection and management in the county."

Additionally, the plan states that pursuant to Minnesota Statute 103B.311 subd. 4, the plan must, "address water management issues over the entire county, address problems in the context of watershed units and groundwater systems, be based upon principles of sound hydrologic management of water, effective environmental protection, and efficient management, be consistent with local water management plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or groundwater systems, and to address water management issues over a ten year period with five year implementation plans."

Clay County Comprehensive Plan[7]

Adopted May 17th, 2022, the plan was developed by the Fargo-Moorhead Metropolitan Council of Governments in coordination between the Clay County Board of Commissioners, Clay County Planning Commission, and Clay County Administration. The plan outlines the goals and objectives as they relate to community and resilience, housing, land-use, transportation, agriculture, natural resources and the environment, economic development, and intergovernmental coordination. The goals and objectives that pertain to land-use, agriculture, and natural resources include:

1. "Land-Use
    a. Agricultural
        i. Recognize and protect the agricultural character of Clay County.
    b. Residential
        i. Promote and encourage quality and diversified residential

[5] U.S. Department of Agriculture, Natural Resources Conservation Service (2024) Web Soil Survey.
[6] Clay Soil & Water Conservation District, Local Water Management Plan Advisory Committee (2017) Local Water Management Plan.
[7] Clay County (2022) Clay County Comprehensive Plan.

development.
ii. Provide opportunities for quality rural residential development in Clay County.
iii. Recognize the diversity of living and working arrangements in the unincorporated areas of Clay County.

c. Commercial Industrial
i. Encourage commercial and industrial development that is in harmony with the agricultural and rural character of Clay County.
ii. Promote the incorporated communities of Clay County as prime location for commercial industrial development.

2. Agricultural
a. Support the long-term protection of the County's strong diverse agricultural economy.

3. Natural Resources and the Environment
a. Environmental health
i. Ensure affordable, efficient, safe, and environmentally sound individual and community wastewater management for the benefit of Clay County property owners.
ii. Reduce nuisance conditions in Clay County caused by blight, pollution, and unsightly land uses and practices.
iii. Protect groundwater resources in Clay County to ensure safe and clean drinking water as well as adequate supply for people and agriculture during drought.

b. Floodplains
i. Foster a community resilient to the impacts of flooding through targeted mitigation planning and implementation for the benefit of Clay County residents, agriculture, and industry.

c. Prairies and woodlands
i. Protect and enhance remnant tracts of native prairie and forests for the benefit and enjoyment of Clay County residents and visitors.
ii. Grow and restore prairie and woodland areas in clay county for the benefit and enjoyment of Clay County businesses, residents, and visitors.

d. Resource Recovery and Solid Waste
i. Foster an integrated waste management system that protects the public health and environment of Clay County in a manner appropriate to the characteristics of the waste stream.

e. Shoreland and Stormwater
i. Protect and enhance the health and vitality of Clay County surface waters including lakes, rivers, and streams for the benefit and enjoyment of Clay County residents and visitors.

f. Wetlands
i. Recognize the importance of wetlands for the services they provide and protect wetlands from encroachment, development, and degradation.

g. Public Open Space
i. Maintain and enhance County lands acquired through FEMA Hazard Grant Funding to serve the community and the greater region."

<u>Wild Rice – Marsh River One Watershed, One Plan</u>[8]

[8] Clearwater County and SWCD, Becker County and SWCD, Mahnomen County and SWCD, Norman County and SWCD, Clay

The Wild Rice – Marsh River One Watershed, One Plan was developed through the coordination of the counties and SWCDs (soil and water conservation districts) of Clearwater, Becker, Mahnomen, Norman, Clay, Polk, and Wild Rice. The plan's goals are broken up into three zones, the Lake Agassiz Plain (west portion), Transition Zone (central portion), and Headwaters (east portion). The goals of the Lake Agassiz Plain include flood damage reduction, soil health, stream and riparian habitat enhancement, and ditch maintenance and improvement. The goals of the Transition Zone include sediment reduction, phosphorus reduction, prescribed grazing, soil health, increasing water storage, stream and riparian habitat enhancement, prairie and wetland restoration, bacteria reduction, drinking water protection, and land retirement programs. Finally, the goals for the Headwaters include forest management and protection, lakeshore restoration, and wild rice protection.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Clay County administers a Shoreland Management Ordinance that regulates the use and orderly development of shorelands in the county to prevent and eliminate pollution of public waters, to maintain historic values of significant historic sites in the unincorporated areas of Clay County, and to preserve and enhance their natural resources as provided in the Environmental Rights Act (Minnesota Statues 116B).

iv. If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding, describe the risk potential considering changing precipitation and event intensity.

There are no critical facilities proposed to be built within floodplain areas.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The proposed project is compatible with nearby land uses, zoning, and the plans described in 9a, as the proposed project's goal is to improve drainage, reduce flooding and erosion, and restore stream and riparian habitats. The proposed project may also improve water quality within channels and subsequently to downstream waterbodies. The proposed project would also protect against damages to agriculture fields, landowner properties, and public transportation structures caused by flooding. These outcomes are all described as goals within the One Watershed One Plan.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 10b above and any risk potential.

The proposed project is not incompatible with any county or watershed plans.

11. Geology, soils and topography/land forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the

County and SWCD, Polk County and SWCD, and Wild Rice County and SWCD (2020) Wild Rice – Marsh River One Watershed, One Plan.

project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

The geology of Clay County includes flat glacial lake plains from the retreat of glacial Lake Agassiz and undulating hummocky topography from the advance and retreat of the Wadena Lobe. The bedrock around the proposed project area has depths between 100 feet to 300 feet in depth.

The DNR and Minnesota Geologic Survey assess pollution sensitivity to near-surface geologic materials.[9] This assessment analyzes the rate of water movement through the soil to the water table at a depth of 10 feet. The majority of the AOI's surrounding area is identified as having ultra-low or low pollution sensitivity, indicating a travel rate of greater than a year, while the AOI has increased pollution sensitivity ranging between low to moderate as well as moderate to high pollution sensitivity, indicating a travel rate of hours to weeks.

The geologic features of the AOI have no limitations or susceptibility to adverse impacts that would be a concern for the proposed project.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 12.b.ii.

According to the USDA, NRCS, Web Soil Survey[10], the predominate soils within the proposed project's AOI includes:

- 1006, Fluvaquents - Haploborolls complex, 0 to 30 percent slopes (42.33 % of the AOI);
- I16F, Fluvaquents, frequently flooded-Hapludolls complex, 0 to 30 percent slopes (22.71 % of the AOI);
- I795A, Lamoure silt loam, 0 to 2 percent slopes, frequently flooded (22.30 % of the AOI).

All soil units identified within the AOI are shown in Table 7. The soils within the AOI are characterized by low to moderate runoff with many of the areas being altered by drainage. The soil textures within AOI are predominantly fine sandy loams (23.29 % of the area) and silt loams (22.37 % of the area) (Table 8). Approximately 42.33 % of the soils are undefined.

[9] Minnesota Department of Natural Resources and Minnesota Geological Survey (2024) Watershed Health Assessment Framework.
[10] U.S. Department of Agriculture, Natural Resources Conservation Service (2024) Web Soil Survey.

Table 1. USDA Soils in the AOI.

Map unit symbol	Map unit name	Hydrologic Group	Acres in AOI	Percent of AOI
I47A	Poppleton fine sand, 0 to 2 percent slopes	A	12.10	2.35
1001	Haplaquolls and Udifluvents, level	B/D	0.40	0.08
1006	Fluvaquents-Haploborolls complex, 0 to 30 percent slopes	-	217.86	42.33
1029	Pits, gravel	-	0.02	0.00
I683A	Flom clay loam, 0 to 1 percent slopes	C/D	0.22	0.04
I849A	Kittson fine sandy loam, wet, 0 to 2 percent slopes	C	2.73	0.53
33B	Hokans-Svea complex, 1 to 4 percent slopes	B	3.65	0.71
I49A	Rauville silty clay loam, 0 to 2 percent slopes, frequently flooded	B/D	8.71	1.69
I15A	Hecla loamy fine sand, 0 to 2 percent slopes	A	2.47	0.48
I170A	Swenoda loam, 0 to 3 percent slopes	B	3.49	0.68
38B	Waukon loam, 2 to 6 percent slopes	B	1.44	0.28
I356A	Ulen fine sandy loam, 0 to 2 percent slopes	A	0.25	0.05
402E	Sioux bouldery loamy coarse sand, 12 to 30 percent slopes	A	0.50	0.10
I716A	Arveson clay loam, 0 to 1 percent slopes	B/D	1.00	0.19
I16F	Fluvaquents,frequently flooded-Hapludolls complex, 0 to 30 percent slopes	A/D	116.88	22.71
I18A	Foldahl loamy fine sand, loamy till substratum, 0 to 3 percent slopes	A	14.66	2.85
494	Darnen loam, 1 to 6 percent slopes	C	0.40	0.08
543	Markey muck, occasionally ponded, 0 to 1 percent slopes	A/D	1.12	0.22
I753A	Rosewood loamy fine sand, 0 to 1 percent slopes	A/D	6.16	1.20
I795A	Lamoure silt loam, 0 to 2 percent slopes, frequently flooded	B/D	114.76	22.30
I759A	Towner loamy fine sand, 0 to 3 percent slopes	B	0.00	0.00
I674A	Lohnes sandy loam, 0 to 2 percent slopes	A	1.64	0.32
I40B	Maddock loamy fine sand, 2 to 6 percent slopes	A	0.01	0.00
I673B	Lohnes coarse sandy loam, 2 to 6 percent slopes	A	3.82	0.74
942D2	Langhei-Barnes, moderately eroded, complex, 12 to 20 percent slopes	B	0.28	0.05
258B	Sandberg sandy loam, 1 to 6 percent slopes	-	0.14	0.03
	Totals for Area of Interest		**514.69**	**100.00%**

Table 2. Soil Textures in the AOI.

Soil Texture	Acres in AOI	Percent of AOI
Clay Loam	1.21	0.24
Coarse Sandy Loam	3.82	0.74
Fine Sand	12.10	2.35
Fine Sandy Loam	119.85	23.29
Gravelly loamy sand	0.50	0.10
Loam	9.26	1.80
Loamy Fine Sand	23.30	4.53
Muck	1.12	0.22
Sandy Loam	1.79	0.35
Silt Loam	115.16	22.37
Silty Clay Loam	8.71	1.69
Extremely Gravely	0.02	0.00
Undefined	217.86	42.33

The landscape that surrounds the proposed project's AOI is primarily agricultural fields broken up by drainage ditches and rural residential properties. To accommodate agricultural production, the hydrology in the region was significantly altered by the construction of a network of drainage ditches and straightening of rivers and streams. Within the Wild Rice River Watershed there are an estimated 2,148 miles of altered watercourses, of which approximately 14.23 miles are directly associated with the proposed project's AOI. These ditch systems were constructed mainly to provide flood protection for agriculture fields, residential properties, and road infrastructure.

Based on the DNR and U.S. Forest Service's "Ecological Classification System", the ecological land classification of the AOI is the Prairie Parkland Province, Red River Valley section, and Red River Prairie subsection.[11] The Prairie Parkland Province makes up the northwestern border of Minnesota and climatic conditions favored grassland habitats. The Red River Valley section and Red River Prairie subsection major landform is the lake plain of Glacial Lake Agassiz and minor landforms include till plains, beach ridges, sand dunes and water-reworked till. The topography of this subsection is characteristic of a large glacial lake plain that is flat to gently rolling hills that are broken up by river, streams, drainages, and wetlands. Prior to the conversion to agricultural production, the main habitats included tallgrass prairie and wet prairies with forested floodplains located along the rivers and streams.

The impacts to soils and topography include the excavation of the channel substrates to the desired elevations, which would be then filled by the installation of the rock weir. The total volume of excavation and fill would change between the rock arch rapids sites; however, the average site would be less than 1 acre in size. The excavation across all sites is estimated to be 36,073 cubic yards. This excavation would be replaced by the placement of the rock weir, which is estimated to be approximately 60,122 cubic yards of fill. The rock weirs would prevent the erosion and downcutting within the channel while restoring the topography of the channel and its capability of accessing its floodplain. Disturbed areas would be covered with erosion control blankets or mulched. The proposed project does not expect any bedrock or soil destabilization after completion and vegetation reestablishment. The proposed project would make area soils more stable due to the reduction of downcutting in the channel, which

[11] Minnesota Department of Natural Resources (2024) Ecological Classification System.

has destabilized the river and the adjacent soils. Topsoil on the site would be salvaged and reused to expedite vegetation reestablishment as well.

12. Water resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive species and the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

Wetlands and Public Waters

Based on a review of the DNR Statewide Wetland Inventory, the AOI includes the riverine type streams and herbaceous and woody type riparian wetlands (see Attachment 2, Exhibit 7: NWI Circular 39 Class Map).[12] Of the water resource types located within the AOI, the majority are Circular 39 Type 1 wetlands (totaling 138.74 acres; 51.85 % of corridors NWI features) and riverines (Type 90; totaling 116.34 acres; 43.47 % of corridors NWI features) with some small tracts of Type 3, Type 6, and Type 7 wetlands (Table 9). Additionally, the stream channel is identified as a Public Waters Watercourse (Name: Wild Rice River, South Branch; DNR ID: 101490; Kittle: H-026-047-012) as well as an Unnamed Creek (DNR ID: 123338; Kittle: H-026-047-012-020). None of the wetlands, rivers, or creeks identified within the AOI have a special designation. The nearest waterbody with a special designation is the Felton Creek, located approximately 4 miles south of the AOI and is a DNR Trout Stream.

Table 3. Wetland features within the AOI.

Cowardin Code	Wetland Community	Circular 39	Acres in AOI
PEM1A	Freshwater Emergent Wetland	1	38.93
PEM1C	Freshwater Emergent Wetland	3	2.74
PFO1/EM1A	Freshwater Forested/Emergent Wetland	1	2.24
PFO1/EM1C	Freshwater Forested/Emergent Wetland	7	0.22
PFO1A	Freshwater Forested Wetland	1	97.57
PFO1C	Freshwater Forested Wetland	7	5.45
PSS1/EM1A	Freshwater Shrub/Emergent Wetland	6	2.35
PSS1A	Freshwater Shrub Wetland	6	1.00
PSS1C	Freshwater Shrub Wetland	6	0.43
PSS1D	Freshwater Shrub Wetland	6	0.30
PUBF	Freshwater Pond	4	0.03
R2UBH	Riverine	90	89.49
R2USA	Riverine	90	12.83
R2USC	Riverine	90	14.01
	Totals		**267.60**

[12] Minnesota Department of Natural Resources (2024) NWI Wetland Finder.

MPCA 303d Impaired Waters List[13]

The Minnesota Pollution Control Agency (MPCA) maintains a list of waters that are impaired and "fail to meet water quality standards" required by the CWA.[14] Based on the MPCA's Draft 2024 Impaired Waters List, there are 16 waterbodies (13 streams and 3 lakes) listed as impaired with various stressors within the Wild Rice River Watershed. There are three stretches of the South Branch Wild Rice River, one upstream, one downstream, and one within the AOI, as well as the Wild Rice River and the Red River of the North that are listed as impaired waters. Of these waters, only one waterbody is located within 1 mile of the AOI and is listed as impaired by Escherichia coli (E. coli) and benthic macroinvertebrates bioassessments (InvertBio) (Table 10) (see Attachment 2, Exhibit 9: Impaired Waters Map).

Table 10. MPCA 303d Impaired Waters List within one mile of the AOI

Water body name	Water body description	Assessment Unit Identification Number	Use Class	Affected designated use	Pollutant or stressor
Wild Rice River, South Branch	Unnamed cr to Unnamed cr	09020108-662	2Bg	Aquatic Life; Aquatic Recreation	E.coli; InvertBio

Minnesota DNR Infested Waters

The DNR maintains a statewide list of waterbodies that have been infested with an aquatic invasive species and could have potential effects to connected waters.[15] A review of the infested waterbodies list indicates that there are no waterbodies listed as infested within the AOI. The nearest infested waterbody is Tilde Lake located approximately 5 miles southeast of Ulen, MN and is infested with red swamp crayfish.

ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

The AOI is located within the Red River Valley Region according to MPCA's groundwater profiles.[16] The Red River Valley Region is characterized by beach ridges that act as local recharge areas and are susceptible to groundwater contamination. The region's groundwater quality consists of high-dissolved solids, including manganese, potential arsenic, chloride, sulfate, nitrate, and total dissolved solids.

The DNR published the Geologic Atlas of Clay County, Minnesota in 2018. This report describes the geology and hydrogeology throughout the county. The depth to the water table within and adjacent to the AOI is primarily 0-10 feet in depth, but there are several tracts where it increases to greater than 30 feet in depth from the land surface.

Based on the Minnesota Department of Health's Source Water Protection database, there are no Drinking Water Supply Management Areas (DWSMA) or wellhead protection areas within the AOI.[17] The town of Ulen is directly adjacent to the AOI and is included as both a

[13] Minnesota Pollution Control Agency (2024) 303d Impaired Waters List.
[14] Minnesota Pollution Control Agency (2024) Impaired Waters List – Defining Impaired Waters.
[15] Minnesota Department of Natural Resources (2024) Infested Waters List.
[16] Minnesota Pollution Control Agency (2023) Ground Water Profile: Red River Valley Region.
[17] Minnesota Department of Health (2024) Source Water Protection Database.

DWSMA (Ulen; ID: 1140011) and a wellhead protection area. The Ulen DWSMA is characterized as having "low" vulnerability.

The Minnesota Department of Health also maintains a Minnesota Well Index as an inventory of active and inactive wells in Minnesota.[18] There are no wells located within the AOI, but there are many wells located within a 1-mile buffer (Table 11).

Table 11. Wells within a mile of the AOI (Minnesota Well Index 2021)

Well No.	Status	Well Type
00100858	Active	Domestic Well
00100859	Active	Domestic Well
00100864	Active	Domestic Well
00100876	Active	Domestic Well
00130600	Active	Domestic Well
00147219	Active	Domestic Well
00147270	Active	Domestic Well
00147295	Sealed	Domestic Well
00158973	Active	Domestic Well
00163351	Active	Domestic Well
00163370	Active	Domestic Well
00166407	Active	Domestic Well
00166413	Active	Domestic Well
00166526	Active	Domestic Well
00197498	Active	Domestic Well
00215461	Active	Domestic Well
00221813	Active	Domestic Well
00221816	Active	Investigation Well
00232327	Sealed	Exploration Well
00232346	Active	
00511769	Sealed	Irrigation Well
00511770	Active	Domestic Well
00511787	Sealed	Irrigation Well
00516619	Active	Domestic Well
00568487	Active	Domestic Well
00568488	Active	Domestic Well
00568489	Active	Domestic Well
00576372	Active	Domestic Well
00594877	Active	Domestic Well
00613120	Active	Domestic Well
00625263	Active	Domestic Well
00625264	Active	Domestic Well
00631671	Active	Domestic Well
00631676	Active	Domestic Well
00631677	Active	Domestic Well

[18] Minnesota Department of Health (2024) Minnesota Well Index.

Well No.	Status	Well Type
00633402	Active	Domestic Well
00633403	Active	Domestic Well
00665177	Active	Domestic Well
00665178	Active	Domestic Well
00665179	Active	Domestic Well
00672080	Active	Domestic Well
00672081	Active	Domestic Well
00704437	Active	Domestic Well
00723219	Active	Domestic Well
00723229	Active	Domestic Well
00726699	Active	Irrigation Well
00745655	Active	Domestic Well
00748399	Active	Domestic Well
00753705	Active	Domestic Well
00759856	Active	Irrigation Well

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site. The proposed project would not produce or treat any sanitary, municipal/domestic, or industrial wastewater.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

Not applicable.

2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.

Not applicable.

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.

Not applicable.

ii. Stormwater - Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments or are classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

Currently, the channel is functioning at a degraded state from continued sedimentation and erosion. Flows from runoff flow through South Branch Wild Rice River discharges into the main branch of the Wild Rice River, and finally into the Red River of the North. Without the use of BMPs during construction, any change in discharge could result in exacerbating environmental effects to the AOI and downstream waterbodies. These environmental effects could include stream bank erosion, sedimentation, significant nutrient fluxes, seasonal algal blooms, and dissolved oxygen deficiencies. If not properly managed, these environmental effects could have significant impacts on floodplain and aquatic habitats as well as potential concerns to human health.

To ensure that construction and stormwater runoff at the site do not exacerbate the current water quality conditions in the South Branch Wild Rice River, the proposer and contractors would place erosion and sediment control devices downstream and along the channel banks to prevent erosion and sediment discharge. Additionally, construction timing would occur in the fall and winter to ensure low flow conditions within the channel. These BMPs would be utilized throughout the entirety of the construction phase. The erosion control devices would consist of, but not be limited to, erosion control blankets, silt curtains, and straw sediment control logs along banks and floating silt curtain in channel. Through coordination with the DNR during the permitting phase of the project, the watershed district would consider “wildlife friendly erosion controls” and other biodegradable devices to minimize lasting impacts to fish and wildlife. The proposed project would result in a sediment pool upstream of each of the rapids that are created. The pool would serve as a location that would capture part of the sediment load coming down the channel. The proposed project would be monitored by the Wild Rice Watershed District to evaluate the quantity of sediment captured. Additionally, the river is monitored downstream by the USGS and water quality samples are also taken. Post-construction activities would include the restoration of disturbed areas, which may include, but are not limited to, grading to final contours, seeding, and mulching. Areas of re-seeding would be done using a Minnesota Board of Water and Soil Resources native seed mix.

The proposer would develop an erosion control plan, apply for an MPCA Construction Stormwater General Permit, and prepare a Stormwater Pollution Prevention Plan (SWPPP) to address state requirements for construction-related erosion, sediment, and pollution

control. The standards and rules established by local and watershed agencies would be followed to mitigate the water quality and quantity impacts created by the proposed project.

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should the appropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.

The proposed project does not require any dewatering, thus no water appropriation permit would be required. All construction within the channel would be completed in "wet conditions".

iv. Surface Waters

a) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.

Although the majority of the work would occur within the channel due to the construction of rock arch rapids, there is potential for environmental impacts to wetlands directly adjacent to the river channel. As summarized in Section 12.a.i., approximately 51.99 % of the project's AOI are NWI identified wetlands. The impacts to these wetlands would be the result of site access and staging for the in-channel construction, which would require some tree and vegetation removal. These impacts would be temporary and limited to what is necessary to complete construction. The impacted areas would be restored following the completion of the project through restoring topsoil, seeding with a native seed mix, and mulching.

Construction would occur in the fall and winter to ensure that the channel is at low flow conditions. As mentioned above, construction methods would require some tree and vegetation removal for equipment mobilization and site access. There would be no excavation or fill occurring in wetlands. Since there would be no permanent impacts to wetlands, the project is not subject to compensatory wetland

mitigation. The proposer would submit the necessary permit applications under WCA and Section 404 of the CWA for all temporary impacts to wetlands.

Direct Impacts

As discussed previously, the direct impacts to wetlands within the AOI include the removal of both herbaceous and woody plant communities for site access and staging. The extent of vegetation removal would be limited only to what is necessary to provide the contractors safe access to the rock arch rapid sites. BMPs would be placed around all identified wetlands to prevent erosion of bare ground areas and prevent sedimentation of adjacent wetlands and the South Branch Wild Rice River. These BMPs would include, but are not limited to, silt fences, sediment traps, hay logs, and vegetation buffers. During construction, daily maintenance and inspection of erosion and sediment control devices would be done to ensure the stabilization of each construction site.

Indirect Impacts

The indirect impact to wetlands from the proposed project may include change in flooding fluxes and altering the region's drainage systems. These indirect impacts would be permanent and would result in channel improvements that would restore floodplain connectivity that would reduce flood damage in the area.

Climate Trends

Based on the most recent Fifth NCA report, developed by USGCRP, the climate trends in the Midwest will include increases in temperatures, extreme precipitation, droughts, and exacerbated stressors on ecosystems. These trends would result in negative impacts to water resources within the AOI. Restoring the channel and its floodplains would protect against the climate trends by benefiting the ecosystem and preventing damages to transportation infrastructure and local landowners from flooding.

b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The proposed project would impact several segments of the South Branch Wild Rice River within the AOI. These segments are identified as Minnesota Public Waters. To install the rock arch rapids, there would be both temporary excavation and permanent fill below the rivers ordinary high water (OHW) level. These physical alterations include temporary excavation of soil that would remain in the channel as fill during construction of the rock rapids and permanent fill of boulders and aggregate materials for the rock arch rapids. As mentioned in previous sections, the timing of construction would be during the fall and winter to ensure that work is

done in the river's low flow conditions.

Additionally, the construction of the rock arch rapids within the channel would result in changes in hydrology regime, aquatic community composition, and the channel's water chemistry. The rock arch rapids would require changes to the channel profile and alter the current hydrologic flows, but the rapids would also act as a sediment trap improving water quality, reduce channel erosion, improve in-stream aquatic habitats, and reconnect the channel to its floodplain. To prevent channel erosion and sediment transport to downstream waterbodies, the proposer and contractors would install floating silt curtains throughout the construction zone. Additionally, erosion control devices would be installed along the channel banks and slopes to prevent additional sediments from eroding into the channel.

As previously mentioned, the permanent impacts to aquatic resources would require the acquisition of local, state, and federal permits. These permits include CWA permits, WCA permits, DNR Public Water Works permit, and County zoning permits.

Direct Impacts

As previously described, the direct impacts to several segments of the South Branch Wild Rice River include re-grading the channel profile in preparation for the installation of the rock arch rapid. These direct impacts would alter the channels flow, habitats, and water quality.

Indirect Impacts

The indirect impacts of the proposed project would include changes in regional drainage, surface water fluxes, and downstream water quality. These indirect impacts would result in improvement of flood protection for the surround landowners, improve water quality, and reduce channel erosion.

Climate Trends

As mentioned previously, the climate trends in the Midwest include increases in temperatures, increases in droughts, increases in heavy rainfalls, and exacerbated stressors on ecosystems. At its current condition, the increase in heavy rainfalls, drought, and ecosystem stressors will cause negative impacts to the South Branch Wild Rice River, downstream waterbodies, and adjacent wetlands; this proposed project would improve the flood water protection.

13. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

MPCA's, "What's in My Neighborhood"[19] online database was reviewed for the presence of potentially contaminated sites and other environmental information within proposed project's AOI. There are no sites located within the AOI (see Attachment 2, Exhibit 10: What's in My Neighborhood Map). Due to the type of work and location of construction, there would be no environmental effects from pre-existing site conditions that would be worsened or exacerbated by the proposed project.

b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

   The project would not generate solid waste, apart from general garbage generated during construction. The project contractors would ensure the careful handling, storing, and disposing of solid waste generated during construction per contractor contracts. Additionally, the implementation of general BMPs and erosion control devices would prevent these solid wastes from contaminating wetlands and surface waters and being transported to downstream waterbodies.

   All solid waste, including materials and debris, produced from construction would be disposed of daily and in accordance with the contractor's contract requirements.

c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

   The chemicals/hazardous materials that would be present at the site include fuel and oil that are typical of heavy machinery operations. These materials would not contaminate any groundwater resources. There would be a possibility that materials could leak or spill into surface waters, but to prevent this from occurring, proper maintenance and inspection of all machinery would occur prior to work commencing each day. Any equipment that shows indication of leaks or improper operation would be removed and fixed prior to being deployed for work. Storage of these materials and refueling stations would be located away from all aquatic resources.

   Improperly handled and stored hazardous materials could have some significant environmental effects and could lead to public safety issues. A hazardous material spill or leak at the proposed project site would impact water quality within the South Branch Wild Rice River. Without immediate containment, the spill or leak would travel downstream into the Main Branch Wild Rice River and into the Red River. This would also impact the species that utilize the river including fish, wildlife, and plant communities. Additionally, contamination would pose risks to public health.

[19] Minnesota Pollution Control Agency (2024) What's in My Neighborhood.

If a spill should occur during construction, it is the responsibility of the contractor to notify the project engineer and Minnesota Department of Public Safety and Minnesota Duty Officer. Appropriate action to remediate would be taken in accordance with MPCA guidelines and regulations in place at the time of construction.

d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

There would be no hazardous materials generated from the proposed project. No above or below-ground storage tanks are planned for permanent use in conjunction with the proposed project. Temporary storage tanks for petroleum products may be used for refueling equipment during construction. A spill kit would be kept near all storage tanks at all times.

14. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The proposed project's AOI is located within the Prairie Parkland Province, Red River Valley section, and the Red River Prairie subsection of the DNR Ecological Classification System. The Prairie Parkland Province is approximately 16 million acres and runs along the entirety of the western boundary of Minnesota. Historically, the plant community within the Prairie Parkland Province was predominately tallgrass prairie with shrub and forest tracts along the river and stream corridors. The Red River Valley section is characterized by extremely flat plains, beach ridges, and wave-cut scarp. Historically, the Red River Valley section was dominated by upland and wetland prairies with tree and shrub communities lining river and stream corridors. The Red River Prairie subsection falls between the Red River of the North and the historical tallgrass prairie boundary. The minor landforms include till plains, beach ridges, sand dunes, and water-reworked till. The historic tallgrass prairie and wet prairies were converted into agricultural production. Wetlands and streams were extensively ditched to accommodate the growing agricultural practices. There are several key habitats common to the subsection and present within the AOI. These include prairie, forest-lowland deciduous, and wetland non-forest.[20]

Prairie

The prairie habitat is predominately native grasses and forbs. The most common grasses include big bluestem (*Andropogon gerardii*), prairie dropseed (*Sporobolus heterolepis*), and little bluestem (*Schizachyrium scoparium*). The wet prairie is dominated by big bluestem (*Andropogon gerardii*), prairie chordgrass (*Spartina p*ectinata), and a variety of sedges (*Carex* spp.). The most common forbs include leadplant (*Amorpha canescens*), prairie rose (*Rosa a*rkansana), red-osier dogwood (*Cornus sericea*), and a variety of willows (*Salix* spp.). The Species in Greatest Conservation Need (SGCN) species identified within this habitat include regal fritillary (*Speyeria idalia*) (dependent upon the beared birdfoot violet (*Viola pedate*)), arogos skipper (*Atrytone a*rogos) (dependent upon big bluestem (*Andropogon gerardii*)), uncas skipper (*Hesperia uncas*) (dependent upon hairy grama (*Bouteloua hirsuta*)), red-tailed leafhopper (*Aflexia rubranura*) (dependent upon prairie dropseed (*Sporobolus heterolepis*)), and the Dakota skipper (*Hesperia dacotae*) (dependent upon bunchgrasses

[20] Minnesota Department of Natural Resources (2006) Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife, Comprehensive Wildlife Conservation Strategy. Division of Ecological Services, Minnesota Department of Natural Resources.

and a variety of flowering forbs).[21] Although uncommon, the bird species considered to be SGCN species include chestnut-collared longspur (*Calcarius ornatus*), Sprague's pipit (*Anthus spragueii*), and Baird's sparrow (*Ammodramus bairdii*).

Forest-lowland Deciduous

This habitat occurs on floodplains and terraces along rivers and streams. These areas are seasonally flooded, receiving flood waters from the associated riverine systems. Within the AOI, these habitat canopies are dominated by black ash (*Fraxinus nigra*) and silver maple (*Acer saccharinum*) with other some areas of green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), bur oak (*Quercus macrocarpa*), and basswood (*Tilia americana*). The understories are patchy, but dominated by speckled alder (*Alnus incana*), mountain maple (Acer spicatum), dogwoods (*Cornus* spp.), gooseberries/currants (*Ribes* spp.), and winterberry (*Ilex verticillate*). The SGCN species include, prothonotary warblers (*Protonotaria citrea*), cerulean warblers (*Setophaga cerulea*), red-shouldered hawks (*Buteo lineatus*), and eastern massasauga (*Sistrurus catenatus*).

Nonforested wetlands

This key habitat consists of four wetland types including marshes, wet meadows, fens, and bogs. Marsh-type wetlands are commonly dominated by cattails (*Typha* spp.), bulrushes (*Schoenoplectus* spp.), and arrowheads (*Sagittaria* spp.). Wet meadows are dominated by lake sedge (*Carex lacustris*), tussock sedge (*Carex stricta*), and bluejoint (*Calamagrostis canadensis*). Open rich peatlands are characteristic of fine-leaved sedges (*Carex* spp.) and a variety of mosses (especially brown mosses). Graminoid fens are predominately brown mosses (*Amblystegiaceae* spp.), peat moss species (*Sphagnum* spp.), sedges (*Carex* spp.), buckbean (*Menyanthes trifoliata*), and tufted bulrush (*Scirpus cespitosus*). Calcareous fens are dominated by tufted bulrush (*Trichophorum cespitosum*), Kalm's lobelia (*Lobelia kalmia*), and grass of parnassus (*Parnassia* spp.) including some rare species of twig rush (*Cladium mariscoides*) and hairlike beak rush (*Rhynchospora capillacea*). Non-forest wetlands are declining and are commonly disturbed by invasive species, such as purple loosestrife (*Lythrum salicaria*) and glossy buckthorn (*Rhamnus cathartica*). Several species identified as SGCN species commonly utilize this habitat. These species include sedge wrens (*Cistothorus stellaris*), yellow rails (*Coturnicops* spp.), Nelson's sharp-tailed sparrows (*Ammodramus nelson*), two-spotted skippers (*Euphyes bimacula*), least bitterns (*Ixobrychus exilis*), American bitterns (*Botaurus lentiginosus*), marsh wrens (*Cistothorus palustris*), Virginia rails (*Rallus limicola*), and Forster's terns (*Sterna forsteri*).

River – Headwater to Large

The SGCN species dependent upon this habitat and known to be present within the South Branch Wild Rice River only includes the creek heelsplitter (*Lasmigona compressa*).

Fish Species

The MPCA has three biological monitoring stations (Station IDs: 05RD069, 94RD012, and 14RD042) that occur within the AOI. These stations are used to determine the health of fish and invertebrate communities within the South Branch Wild Rice River. Fish were sampled in 2006 (Station ID: 05RD069), identifying a total of 22 species, and sampled in 2014 (Station IDs: 94RD012 and 14RD042), identifying a total of 19 species (Table 12).

[21] Minnesota Department of Natural Resources (2016) Minnesota's Wildlife Action Plan 2015-2025. Division of Ecological and Water Resources, Minnesota Department of Natural Resources.

Table 12. Fish species sampled by MCPA in the South Branch Wild Rice River

Species Sampled	Station 05RD069 (Sampled 2006)	Station 94RD012 (Sampled 2014)	Station 14RD042 (Sampled 2014)
Bigmouth Shiner	X	X	X
Blacknose Dace	X	X	X
Blackside Darter	X	X	X
Brook Stickleback	X		X
Carmine Shiner	X	X	X
Central Mudminnow	X		X
Common Shiner	X	X	X
Creek Chub	X	X	X
Fathead Minnow	X		X
Golden Siner			X
Golden Redhorse	X	X	
Hornyhead Chub	X	X	X
Johnny Darter	X	X	X
Longnose Dace	X	X	X
Northern Redbelly Dace	X	X	X
Pearl Dace	X	X	X
Pumpkinseed	X		
Quilback	X		
Rock Bass		X	X
Sand Shiner	X	X	
Shorthead Redhorse	X	X	
Smallmouth Bass		X	
Spotfin Shiner	X	X	X
Stonecat	X	X	X
White Sucker	X	X	X

Noxious Weeds, Terrestrial Invasives, and Aquatic Invasives

Clay County lists three noxious weeds that are on the Minnesota Department of Agriculture Approved County Noxious Weeds list.[22] These species include the bull thistle (*Cirsium vulgare*), kochia (*Bassia scoparia*), and musk thistle (*Carduus nutans*). Although Clay County doesn't maintain a list of county-specific invasive species, there is potential that these species could be present in Clay County as well as the proposed project's AOI. Finally, a review of the DNR Infested Waters List indicates that there are no waterbodies in the AOI that are infested with aquatic invasive species.[23] Additionally, in Clay County there are only two infested waterbodies. Lake Tilde is infested with red swamp crayfish and Turtle Lake is infested with zebra mussels.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, andother sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA- LA-944) and/or correspondence number (MCE 2024-00608) from which the

[22] Minnesota Department of Agriculture (2024) Minnesota Noxious Weed List.
[23] Minnesota Department of Natural Resources (2024) Aquatic Invasive Species.

data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

State-Listed Species

Currently, there are 20 state-listed threatened and endangered species (Table 13) and 41 species of special concern listed as present within Clay County.[24] Of the state-listed species in Clay County; eight species are listed as threatened, and twelve species are listed as endangered.

Table 13. State-listed Threatened and Endangered Species in Clay County

Common name	Scientific name	Group	Federal status	State status
Assiniboia Skipper	*Hesperia assiniboia*	insect	none	endangered
Baird's Sparrow	*Centronyx bairdii*	bird	none	endangered
Burrowing Owl	*Athene cunicularia*	bird	none	endangered
Chestnut-collared Longspur	*Calcarius ornatus*	bird	none	endangered
Clustered Broomrape	*Orobanche fasciculata*	vascular plant	none	threatened
Dakota Skipper	*Hesperia dacotae*	insect	threatened	endangered
Garita Skipperling	*Oarisma garita*	insect	none	threatened
Hair-like Beak Rush	*Rhynchospora capillacea*	vascular plant	none	threatened
Henslow's Sparrow	*Centronyx henslowii*	bird	none	endangered
Loggerhead Shrike	*Lanius ludovicianus*	bird	none	endangered
Louisiana Broomrape	*Orobanche ludoviciana*	vascular plant	none	threatened
One-flowered Broomrape	*Orobanche uniflora*	vascular plant	none	threatened
Poweshiek Skipperling	*Oarisma poweshiek*	insect	endangered	endangered
Short-beaked Arrowhead	*Sagittaria brevirostra*	vascular plant	none	endangered
Sprague's Pipit	*Anthus spragueii*	bird	none	endangered
Sterile Sedge	*Carex sterilis*	vascular plant	none	threatened
Uhler's Arctic	*Oeneis uhleri varuna*	insect	none	endangered
Western Prairie Fringed Orchid	*Platanthera praeclara*	vascular plant	threatened	endangered
Whorled Nutrush	*Scleria verticillata*	vascular plant	none	threatened
Wilson's Phalarope	*Phalaropus tricolor*	bird	none	threatened

In addition, a DNR Natural Heritage Information System (NHIS) data review determined that there is one state-listed endangered species and five state-listed species of special concern within the AOI (see Attachment 3).[25] The endangered species within the AOI is the western prairie fringed orchid (*Platanthera praeclara*), while the species of special concern includes the small white lady's-slipper (*Cypripedium candidum*), creek heelsplitter (*Lasmigona compressa*), greater prairie chicken (*Tympanuchus cupido*), marbled godwit (*Limosa fedoa*), and the yellow rail (*Coturnicops*

[24] Minnesota Department of Natural Resources (2024) Rare Species Guide.
[25] Minnesota Department of Natural Resources (2024) Minnesota Conservation Explorer – NHIS Database.

noveboracensi). The western prairie fringed orchid is an extremely rare species that occurs in remnant native plant communities, most commonly northern wet prairies, northern mesic prairies, or prairie wet meadow/carr habitats. The DNR describes the creek splitter's habitat as "creeks, small rivers, and upstream portions of large rivers with sand, fine gravel, and mud substrates. The species often colonizes downstream riffles in small pools, swift currents, and water depths between 1 and 2 feet."[26] The marbled godwit is documented near the AOI and is known to feed and nest in upland grasslands along the edge of seasonal wetlands. Finally, the yellow rail is documented near the AOI and depends on wetlands for nesting but are known for being vulnerable to water level fluctuations.

Federally Listed Species

USFWS Information for Planning and Consultation Tool (IPaC) identified the following species as potentially within the proposed project's AOI: Dakota Skipper (*Hesperia dacotae*) and Western Prairie Fringed Orchid (*Orchid Platanthera*) as threatened species, the monarch butterfly (*Danaus plexippus*) as a candidate species, and the western regal fritillary (*Argynnis idalia occidentalis*) as a proposed threatened species (Attachment 3).[27] No critical habitats were identified within the AOI. The IPaC identified the bald eagle (*Haliaeetus leucocephalus*) and 14 other migratory bird species within the AOI. The migratory birds include, the black tern (*Chlidonias niger surinamenisis*), black-billed cuckoo (*Coccyzus erythropthalmus*), bobolink (*Dolichonyx oryzivorus*), chimney swift (*Chaetura pelagica*), Fanklin's gull (*Leucophaeus pipixcan*), grasshopper sparrow (*Ammodramus savannarum perpaliidus*), hudsonian godwit (*Limosa haemastica*), Le Conte's sparrow (*Ammospiza leconteii*), lesser yellowlegs (*Tringa flavipes*), marbled godwit (*Limosa fedoa*), northern harrier (*Circus hudsonius*), pectoral sandpiper (*Calidris melanotos*), red-headed woodpecker (*Melanerpes erythrocephalus*), and short-billed dowitcher (*Limnodromus griseus*).

Minnesota Biological Survey (MBS)

The MBS has identified Sites of Moderate Biodiversity Significance that overlap the proposed project. Sites A review of current MBS data indicates that there are identified MBS sites of biodiversity significance located within the AOI. Based on current Minnesota Natural Heritage Data, there are thirty native plant communities, and two sites of biodiversity significance located within and adjacent to the AOI (see Attachment 2, Exhibit 11: MBS Sites of Biodiversity Significance and Exhibit 12: MBS Native Plant Communities Map). A review by the DNR Natural Heritage, indicates that several Native Plant Communities including UPn12d - Dry Hill Prairie (Northern) (S1), UPn12b - Dry Sand - Gravel Prairie (Northern) (S2), FFn57a - Black Ash - Silver Maple Terrace Forest (S3), MHs38b - Basswood - Bur Oak - (Green Ash) Forest (S3).

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

Habitats/Plant Communities

The proposed project would have some impact to the aquatic habitats and plant communities within the South Branch Wild Rice River, caused by the construction of the rock arch rapids. The impacts to aquatic habitats would include vegetation/cover loss, change in habitat composition and structure, and changes in hydrologic regime. The excavation of soil within the channel would remove any aquatic plants present and would be replaced by bounders and rock. The placement of boulders and rock for the rapids would alter the plants in the area and would create pools and

[26] Minnesota Department of Natural Resources (2024) Rare Species Guide.
[27] U.S. Fish and Wildlife Service (2024) Information for Planning and Consultation.

riffles that are different from current conditions. Following project completion, the rock arch rapids would improve connectivity of the channel to its floodplain, improve fish passage, provide an increase in habitat availability to aquatic species especially the creek heelsplitter, provide a sediment trap that would improve water quality in the channel and to downstream waterbodies.

Additionally, the proposed project's site access and storage areas would result in some impact to habitats adjacent to the channel including vegetation removal and change in plant community composition. The extent of habitat impacts would be limited to only what is necessary for safe site access and construction storage. Upon completion of the construction of the rock arch rapids, the access and storage sites would be re-established with vegetation similar to pre-existing conditions.

Fish and Wildlife

The South Branch Wild Rice River is utilized by many aquatic species for forage, cover, and breeding habitat. During construction, these species would be temporarily impacted by vegetation removal, topsoil stripping, altering the hydrologic regime, and temporary dispersion of species. Upon completion of the proposed project, the habitats within the AOI would be restored to a more natural state for the fish and wildlife species that utilize it, because rock arch rapids would provide channel structure and cover as well as continued fish passage.

State-listed Species

The creek heelsplitter has been documented in the South Branch Wild Rice River and has potential to be impacted by the in-channel construction. The creek heelsplitter is sensitive to water quality, without proper use and maintenance of erosion control practices, this species could be adversely impacted. It's anticipated that the other state-listed species would not be impacted by the channel work but could potentially be impacted by the mobilization of construction equipment and access to each rock arch rapids location; however, these would be temporary impacts for site access at each rock arch rapids. The proposer would follow the avoidance and minimization guidance described in the DNR Natural Heritage Review and discussed in more detail in item 14d below.

Federally Listed Species

Similar to the state listed species, the channel restoration work would not impact these species, but there is some potential for impact from construction access for heavy machinery, but these would be temporary impacts for site access at each rock arch rapids.

MBS Rare Features

There would likely be some impact to these habitats, but these would be temporary impacts for site access at each rock arch rapids. No earth moving activities would occur but there would likely be some tree removal for site access. Due to the channel being disconnected from the floodplain, the installation of the rock arch rapids would not have an impact on these habitats. The FFn57a - Black Ash - Silver Maple Terrace Forest habitat would receive more frequent saturation due to reconnecting the channel to its floodplain. Any impacts to the native plant communities would be minimized by limiting vegetation removal to only what is necessary for safe access to each rock arch rapids site and safe workspace for construction.

Climate Trends

As previously discussed, climate trends indicate an increase in heavy rainfall events and an increase in higher temperatures. There is potential that more heavy rainfall events could lengthen peak flood waters through the South Branch Wild Rice River potentially transporting and spreading invasive species and infesting connecting waterbodies. High temperatures could alter the habitats present along the proposed project corridors including the spread of invasive species. The proposed project would counteract these climate trends by improving flood damage reduction through reconnection of the floodplain.

d. Identify measures that will be taken to avoid, minimize, or mitigate the adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources.

The proposed project's design and permitting phases would be used to reduce or avoid adverse impacts to species, rare features, and sensitive resources to the greatest extent possible. If the project cannot ensure that these habitats are not present or completely avoided, the Proposer would contact the USFWS and DNR Endangered Species prior to construction to identify measures to avoid or minimize impacts to these species. Some avoidance measures that would be considered include, avoiding suitable habitat locations and change the timing of construction to avoid nesting seasons. Additionally, the proposer would avoid native prairie habitats wherever feasible.

All impacts to aquatic resources identified as public waters would be mitigated through a Minnesota Public Water Works Permit and the permit's specific conditions. All wetland impacts outside the public waters jurisdiction would be mitigated through a WCA Permit and the permit conditions. A permit application would be submitted to the USACE, and mitigation would be based on the agency's "jurisdictional determination".

State-listed Species

If any protected species are encountered or observed during construction, construction activities would be paused until coordination state agencies is completed. For state-listed species, the proposed project would:

- Avoid habitat for the western prairie fringed orchid and small white lady's-slipper. If the proposed project cannot ensure that habitat for the western prairie fringed orchid is not present or completely avoided, the proposer must coordinate with the DNR and complete a rare plant survey by a qualified surveyor to determine presence prior to any construction activity. Any work that would impact this species would require a takings permit.
- Maintain and implement strict sediment and erosion control devices around each construction site to prevent any sedimentation or runoff from degrading the waterbody and impacting the creek splitter's habitat.
- During the booming season (April 1 through May 15) of the greater prairie chicken construction would be limited to starting construction after 9:00AM. (Construction is proposed to occur in the fall and winter, thus avoiding impact to the species.)
- Avoid construction in marbled godwit nesting habitat between May and August.
- Avoid causing significant water level fluctuations from beginning of May through Mid-August to minimize impacts to yellow rail nesting.

Federally Listed Species

The project proposer would coordinate with the USFWS and USACE (regulatory agency) to determine the best avoidance and minimization measures. The watershed district would abide by all the conditions in the USACE permit relative to the federally listed species.

MBS Sites of Biodiversity Significance and Native Plant Communities

The proposer would coordinate with the DNR and applicable local agencies to determine the required actions prior to construction. The proposer may be required to hire a qualified surveyor to determine the extents of native plant communities. At a minimum, the proposed project would follow the following avoidance and minimization measures:

- Anywhere possible, construction would occur within already disturbed areas.
- Maintain buffers between activities and MBS site.
- Only equipment necessary for construction of rock arch rapids would be used within MBS

sites.

- Stockpiles and parked equipment would remain outside of MBS sites.
- Spoil piles would not be place in MBS sites.
- If possible, complete work under frozen conditions.
- Install and maintain erosion control devices around sensitive areas.
- Equipment would be inspected and cleaned.
- Disturbed areas would be revegetated by native seed mixes.

Invasive Species

The proposed project would comply with the DNR Operational Order 113 to "prevent the introduction, establishment, or spread of invasive species by implementing site-level management" and comply with the Minnesota Noxious Weed Law (Minnesota Statutes 18.75-18.91) to effectively control and eradicate weeds that could be present within or near the construction footprint. To every extent feasible, the contractor would implement practices that would prevent the spread of invasive species. All equipment would be thoroughly cleaned prior to construction to prevent contaminating the site with new invasive, between the construction of each rock arch rapids site, and cleaned following the completion of construction completion to prevent the spread of any invasive species at the site. Cleaning methods would include visual inspection of the equipment and power washing. To ensure that these invasives do not re-enter the river, contractors would use runoff containments when washing equipment.

15. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

A review of the Minnesota Office of the State Archaeologist's (OSA) public database indicates that there are archaeological sites located along or adjacent to the AOI.[28] There are three archaeological sites that intersect the AOI, and an additional two sites located adjacent to the AOI. Additionally, there are three sections that are listed on the Minnesota Indian Affairs Council data layer. Only one of these sites intersects the AOI. These sites are known archaeological sites that are of Native American Importance and requires coordination with the Minnesota Indian Affairs Council.

A review of Minnesota's Statewide Historic Inventory Portal (MnSHIP) indicated that there are four sites located within the AOI of the proposed project. Each of these sites are bridge structures that cross the South Branch Wild Rice River.

There would be no impacts outside of the channel that would result in the degradation or disturbance of any historic or cultural resource that may be present within the AOI. The work outside of the channel would be limited to the removal of vegetation for site access and storage.

A detailed archaeological Phase 1 Survey has not been completed for the proposed project. Coordination with SHPO would be done to ensure that the proposed project would not impact any historic or cultural resources. Coordination would include requesting a literature search and review by SHPO to identify any potential sensitive sites within the AOI and, if SHPO deems it necessary, a cultural resources Phase 1 Survey would be completed prior to construction.

[28] Minnesota Office of the State Archaeologist (2025) Minnesota OSA Public Viewer.

16. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

There are no scenic views or vistas within the AOI of the proposed project. There would be temporary impacts to neighboring properties, roadway users, and recreationalists during construction. These impacts would be minor as they would be confined to the construction zone and during normal daylight hours. The visual impacts may include dust clouds, vapor plumes, and intense light glares. These impacts would be managed by dust control measures (e.g., wetting soil, reduced machine speeds on exposed soils, limit exposed soils, etc.), the timing of construction, and the orientation of construction lights. The timing of construction would be during the fall and winter months where the water levels are at their lowest. It is likely that recreational users would not be present during the freezing months. Additionally, users of the river and river corridor for recreation would encounter some visual impediments. These would be temporary impediments and confined to the construction period of the proposed project.

17. Air:

a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

The proposed project would not result in stationary source air emissions.

b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

The use of heavy machinery and equipment typical of construction projects would result in burning of gasoline but is not anticipated to adversely impact current air quality at the site. The emissions would be temporary and would not exceed current emissions standards. There are no management measures planned for the proposed project. All equipment would be maintained to operate based on factory-suggested operations, including periodic maintenance intervals to avoid inefficiencies in operations that would increase emissions. The proposed project would not have long-term emissions impacts and would not cause an increase in traffic. No mitigation plans have been established for the proposed project.

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

The dust and odors generated during the construction would be minimal and would occur during construction activities that includes site access, removal of sediments, and placement of

fill for the rock arch rapids. Any dust impacts would be managed by dust control methods. These methods include, but are not limited to, wetting exposed soils, mulching exposed soils, and restricting unnecessary equipment movement on bare soils. Odors generated during construction would be the result of exhaust of diesel engines and fuel storage. The odors would be managed by zone restricting, operation timing, and standard emission controls.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint

a. GHG Quantification: For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to come to that conclusion and any GHG emission sources not included in the total calculation.

The proposed project would require the use of heavy machinery typically used for construction projects. These include excavators, bulldozers, and loaders, all of which burn diesel fuel during construction. Construction emissions from these vehicles were estimated using the Environmental Protection Agency's (EPA) Simplified GHG Emissions Calculator (SGEC) (Table 14).[29] For this assessment, it was assumed that the machinery would be in operation for approximately 210 days, 8 hours per day (equivalent to 210 days/year). The exact days and hours per day of construction would vary depending on timing of year and environmental/climate conditions. The EPA's SGEC tool calculates the CO2 emissions based on duration of equipment operations and the estimated quantity (gallons) of diesel fuel consumed by the equipment. The fuel consumption of heavy machinery typical of river restoration projects were estimated based on the Caterpillar Performance Handbook.[30] The handbook indicates the fuel consumptions of the following heavy machinery when operated with 10 % – 30 % idle time.

- Excavators (15.3 gallons/hour)
- Bulldozers (12.82 gallons/hour)
- Backhoe Loaders (2.2 gallons/hour)
- Graders (14.94 gallons/hour)
- Skid Steers (3.7 gallons/hour)

Construction Emissions

Table 14. Proposed Project Construction Emissions

Scope	Type of Emission	Emission Sub-type	Project-related CO_2e Emissions (tons/year)	Calculation method(s)
Scope 1	Combustion	Mobile Heavy Equipment	839.8 ton/year	EPA Simplified GHG Emissions Calculator

b. GHG Assessment
   i. Describe any mitigation considered to reduce the project's GHG emissions.
   ii. Describe and quantify reductions from selected mitigation, if proposed to reduce the project's GHG emissions. Explain why the selected mitigation was preferred.
   iii. Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next

[29] U.S. Environmental Protection Agency (2024) Simplified GHG Emissions Calculator.
[30] Wheeler CAT (2022) Caterpillar Performance Handbook.

Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.

Due to the nature of the proposed project, no mitigation is required to reduce the project's GHG emissions. The emissions from the proposed project are typical of construction equipment and would be temporary. The emissions would be localized and limited to the construction periods. Upon completion, there would be no CO2 emissions at the project site, thus the net lifetime GHG emissions for the project would be the 839.8 ton/year that would occur during construction. It would not negatively impact the Minnesota Next Generation Energy Act or other local reduction goals. Periodic maintenance may be required to ensure the stream functions correctly.

19. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Existing noise conditions at the site are the result of nearby roadway use, adjacent agricultural operations, and general residential properties' noise. The existing nearby sensitive receptors are limited to residential properties and cemeteries. The noise generated during construction would be caused by the mobilization and use of heavy machinery and equipment. Noise impacts would be temporary and restricted to the construction period. Local residents, roadway users, and recreational users adjacent to the construction zone could be affected by increased noise and annoyances during outdoor, everyday activities. All local residents and visitors would be notified about the timing and duration of construction prior to the beginning of construction. The proposed project would not have permanent noise pollution impacts to the site. The proposed project would conform to all state and local noise standards.

20. Transportation

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

   Existing transportation would not be impacted from the construction activities. The construction is located within the channel, well off any roadway. There may be some delays for traffic during equipment mobilization and site access, which would largely involve delivering rock for installation into each of the rapids (approximately 1 trip per 20-25 cubic yards of material). From a traffic perspective, rock would be delivered in a relatively short period of time, typically expected over the course of a week in duration for delivery to each site. Additionally, equipment storage and construction staff parking may cause some delays in transportation. It is expected that onsite equipment would likely include a front-end loader, potentially a small bulldozer, and an excavator.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 *(available at: http://www.dot.state.mn.us/accessmanagement/resources.html)* or a

similar local guidance,

Peak hour traffic generated would not exceed 250 vehicles nor would the total daily trips exceed 2,500 as a result of the proposed project. A construction crew of approximately 3 people would likely be involved with the construction on-site (2 x 3 = 6 trips per day). Local residents and roadway users may encounter slow speed during mobilization and operations of heavy machinery. There are no traffic improvements necessary to accommodate the temporary construction or operations and maintenance activities associated with the proposed project.

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

The local residents and roadway users would be informed when construction is anticipated in order to allow users to accommodate, if necessary. The project does not require a detour for the proposed project construction. Any additional traffic that may occur would be relatively short-lived during the duration of construction. Most significant traffic would occur over the course of a week for each rapids when rock and boulders are being delivered to the individual sites.

21. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

The proposed project impact area includes the 14.47 miles of the South Branch Wild Rice River from the town of Ulen, MN downstream to County Road 110 in Clay County. The proposed project construction is expected to occur in the Fall 2025 and be completed in the Fall 2026. Construction at each rock arch rapids site would take approximately four to six weeks to complete and would be followed by the reestablishment of vegetation that would occur over the span of a few years.

Potential environmental effects of construction from the proposed project includes temporary erosion and sedimentation due to construction and stormwater runoff, some tree and vegetation removal from the channel's adjacent wetland and upland areas, and short-term impacts to the aquatic habitats within and plant communities adjacent to the South Branch Wild Rice River. Impacts to cover types, land use, geology, hazardous and solid waste generation, fish, wildlife, and plants, visual, air, greenhouse gas emissions, noise, and transportation are expected to be negligible and are, therefore, unlikely to combine with other environmental effects.

The geographic scale of the construction-related erosion and sedimentation is expected to be limited to the 14.47 miles of the South Branch Wild Rice River from the town of Ulen, MN downstream to County Road 110 in Clay County. The geographic scale of the tree and vegetation removal would be limited to the South Branch Wild Rice River's adjacent wetland and upland area. The geographic scale of the impacts to aquatic habitats would vary between the rock arch rapids sites; however, the average site would be less than 1 acre in size. The excavation across all sites is estimated to be 36,073 cubic yards.

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

Staff from the Clay County SWCD were contacted to inquire about current or planned project in the area that may have impacts that could contribute to cumulative potential effects from the proposed project. Based on the information obtained, there are no reasonably foreseeable future projects along the South Branch Wild Rice River that would interact with the scale and timeframe of the proposed project.

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

There are no reasonably foreseeable future projects identified that could combine with the environmental effects from the proposed project within the same geographic scales and timeframe of the proposed project.

Compliance with public waters, wetlands, stormwater, and erosion and sediment permits would ensure that environmental effects remain limited and negligible. Long term, the proposed project is expected to reduce flood damage to adjacent lands, improve water quality by reducing erosion and sedimentation, and improve both aquatic and floodplain habitats by restoring the channels connection to the floodplain. Additionally, the proposed project is expected to build resiliency to buffer against potential effects of climate change such as increased rain events.

22. Other potential environmental effects: If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

There are no other known or potential environmental effects that were not discussed in EAW items 1 through 21.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

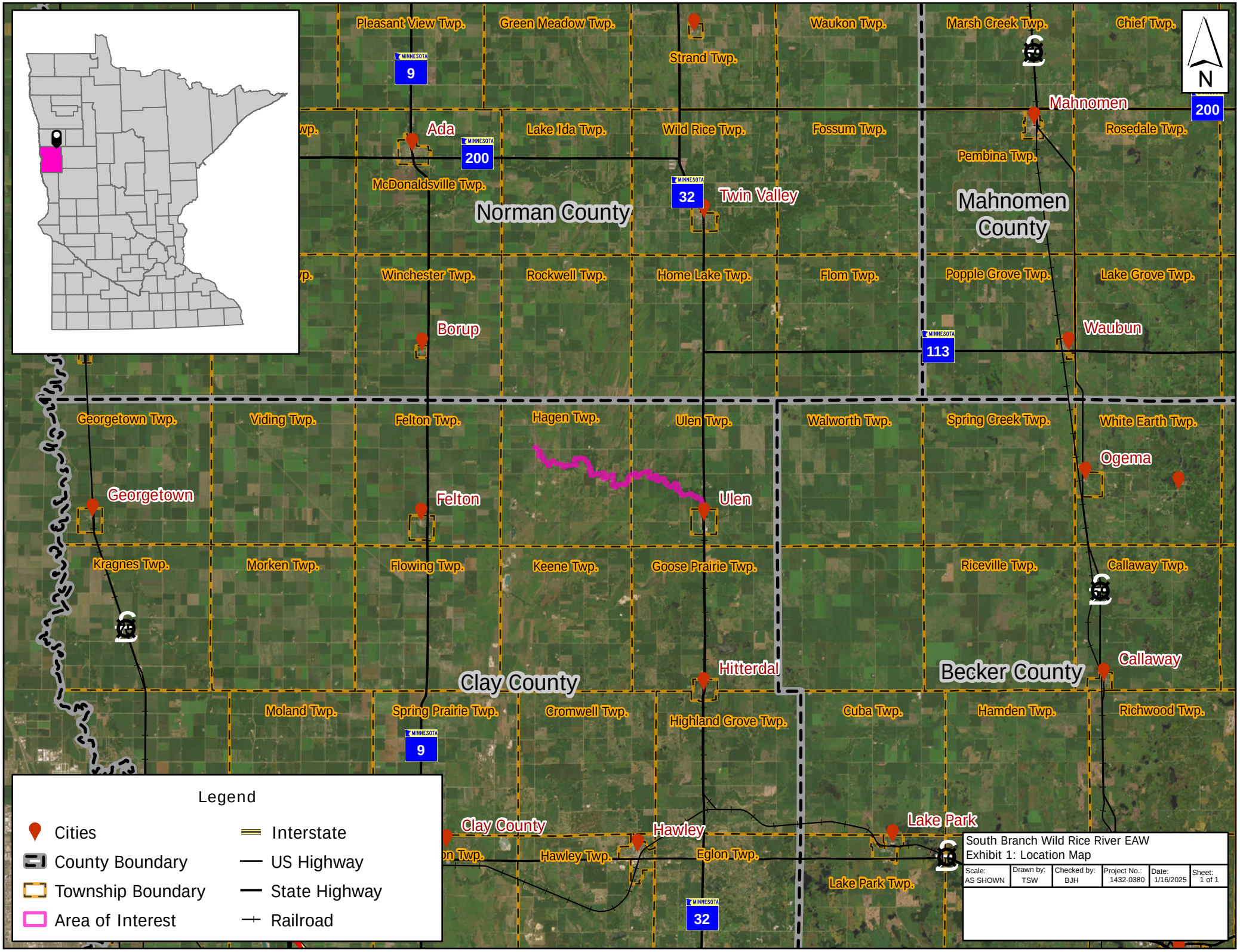
I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature Caroline Oswald Digitally signed by Caroline Oswald Date: 2025.03.31 07:59:42 -05'00' Date 03/31/2025

Title Project Manager

Attachment 1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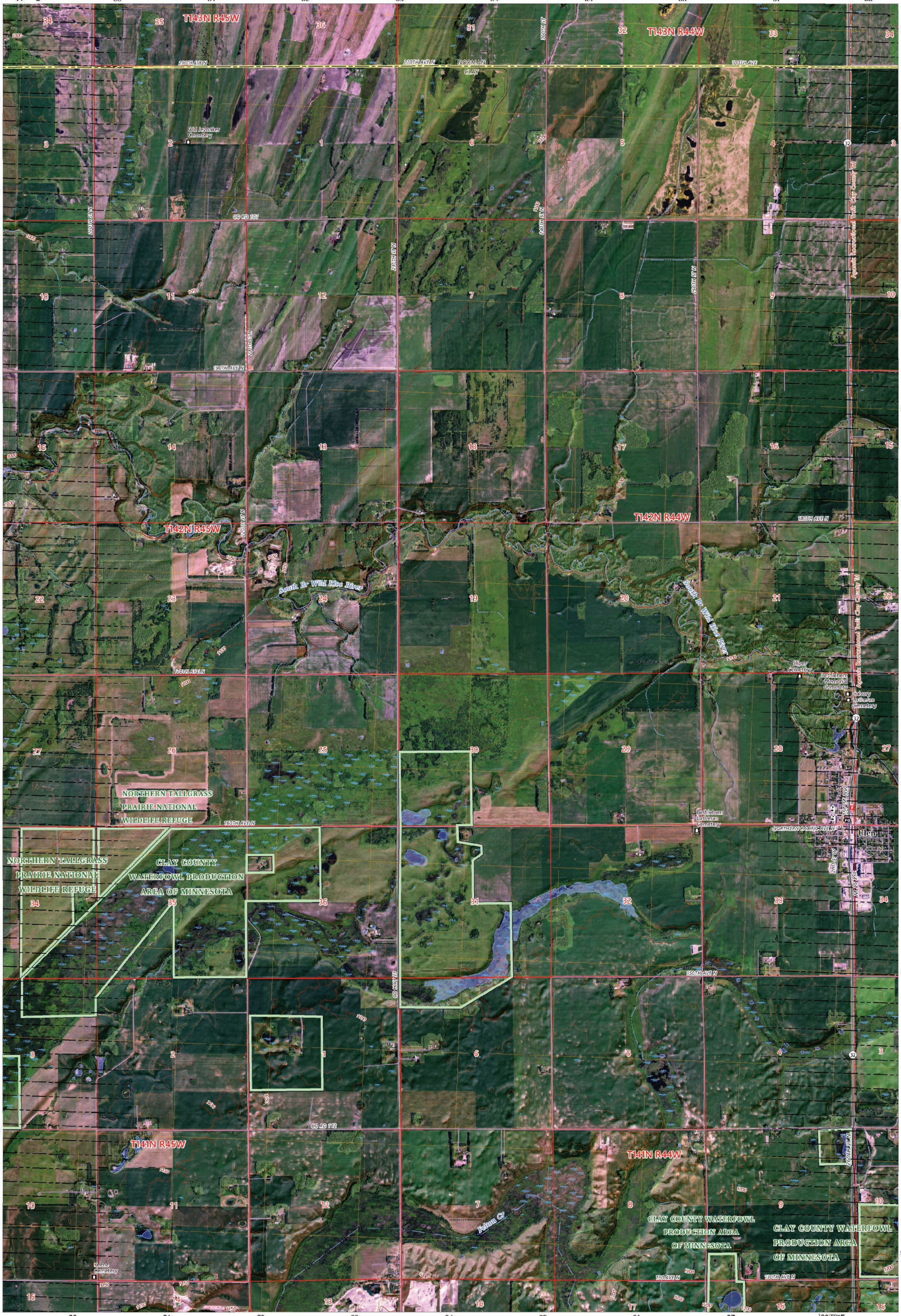
Green Meadow Twp.
Strand Twp.
Waukon Twp.
Marsh Creek Twp.
Chief Twp.
Mahnomen
Ada
Lake Ida Twp.
Wild Rice Twp.
Fossum Twp.
Rosedale Twp.
Pembina Twp.
McDonaldsville Twp.
Norman County
Twin Valley
Mahnomen County
Winchester Twp.
Rockwell Twp.
Home Lake Twp.
Flom Twp.
Popple Grove Twp.
Lake Grove Twp.
Borup
Waubun
Georgetown Twp.
Viding Twp.
Felton Twp.
Hagen Twp.
Ulen Twp.
Walworth Twp.
Spring Creek Twp.
White Earth Twp.
Ogema
Georgetown
Felton
Ulen
Kragnes Twp.
Morken Twp.
Flowing Twp.
Keene Twp.
Goose Prairie Twp.
Riceville Twp.
Callaway Twp.
Hitterdal
Clay County
Becker County
Callaway
Moland Twp.
Spring Prairie Twp.
Cromwell Twp.
Highland Grove Twp.
Cuba Twp.
Hamden Twp.
Richwood Twp.
Clay County
Hawley
Lake Park
Hawley Twp.
Eglon Twp.
Lake Park Twp.
N
200
9
32
113
59
75
Legend
Cities
County Boundary
Township Boundary
Area of Interest
Interstate
US Highway
State Highway
Railroad
South Branch Wild Rice River EAW
Exhibit 1: Location Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 1/16/2025
Sheet: 1 of 1

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
OnDemand Topo

7.5-MINUTE TOPO QUADRANGLE
Custom Extent
7.5-MINUTE TOPO



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14T

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This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PT | QT
Grid Zone Designation 14T

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

MINNESOTA

QUADRANGLE LOCATION

Ulen NW	Syre
Ulen SW	Ulen

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

7.5-MINUTE TOPO, MN
2025

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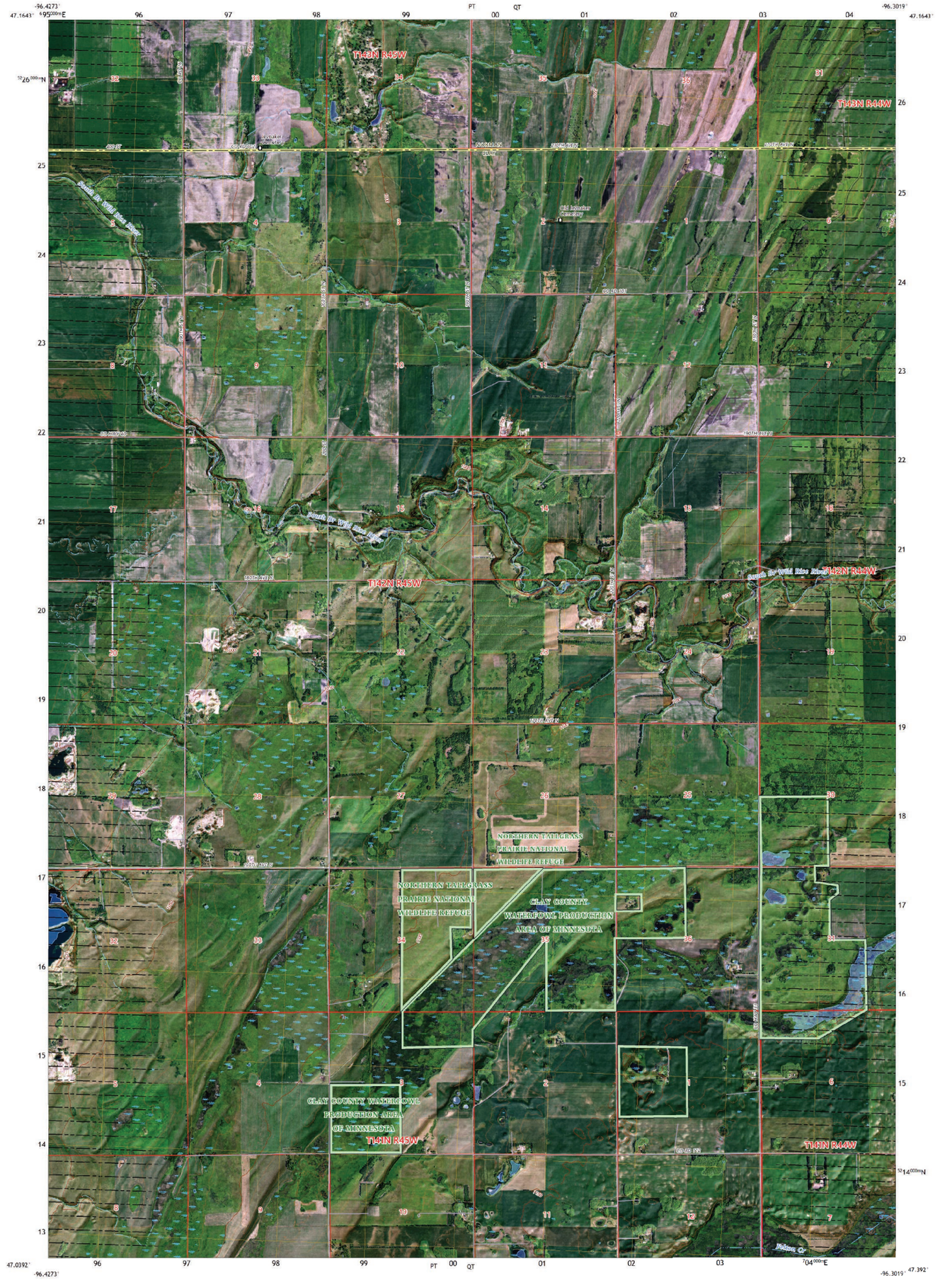

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World Geodetic System of 1984 (WGS84). Projection and
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SCALE 1:24 000

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CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

U.S. National Grid
100,000-m Square ID
PT QT
Grid Zone Designation
14T

MINNESOTA
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Ulen NW
Syre
Ulen SW
Ulen
ADJOINING QUADRANGLES

ROAD CLASSIFICATION
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Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

7.5-MINUTE TOPO, MN
2025

200TH AVE N

CLAY COUNTY

190TH AVE N

BEACH RIDGE ROCK ARCH RAPID 1 SHEET 21

BEACH RIDGE ROCK ARCH RAPID 2 SHEET 22

BEACH RIDGE ROCK ARCH RAPID 3 SHEET 23

BEACH RIDGE ROCK ARCH RAPID 4 SHEET 24

BEACH RIDGE ROCK ARCH RAPID 5 SHEET 25

BEACH RIDGE ROCK ARCH RAPID 6 SHEET 26

180TH AVE N

170TH AVE N

190TH ST N

200TH ST N

210TH ST N

220TH ST N

230TH ST N

HAGEN TWP

ULEN TWP

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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Scale Feet

H:\JBN\1400\1432\00_1432_365\CAD\Plans\Feasibility Study\INDEX MAP - ROCK ARCH RAPIDS BEACH RIDGE REACH.dwg-Layout1-4/28/2020 1:34 PM-(hrollin)

No.	Revision	Date	By

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SOUTH BRANCH WILD RICE RIVER
RESTORATION & SEDIMENT REDUCTION PROJECT
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

INDEX MAP - BEACH RIDGE ROCK ARCH RAPIDS

PROJECT NO. 1432-0365

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SECTION 11

12

190TH AVE N

18

17

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15

14

13

UPPER RIDGE
ROCK ARCH RAPID 4
SHEET 30

180TH AVE N

UPPER RIDGE
ROCK ARCH RAPID 5
SHEET 31

UPPER RIDGE
ROCK ARCH RAPID 1
SHEET 27

UPPER RIDGE
ROCK ARCH RAPID 3
SHEET 29

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UPPER RIDGE
ROCK ARCH RAPID 7
SHEET 33

UPPER RIDGE
ROCK ARCH RAPID 6
SHEET 32

20

23

24

UPPER RIDGE
ROCK ARCH RAPID 2
SHEET 28

HAGEN
TWP

ULEN
TWP

HWY 32

170TH AVE N

UPPER RIDGE
ROCK ARCH RAPID 8
SHEET 34

27

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220TH ST N

230TH ST N

240TH ST N

250TH ST N

ULEN

HWY 34

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Scale Feet

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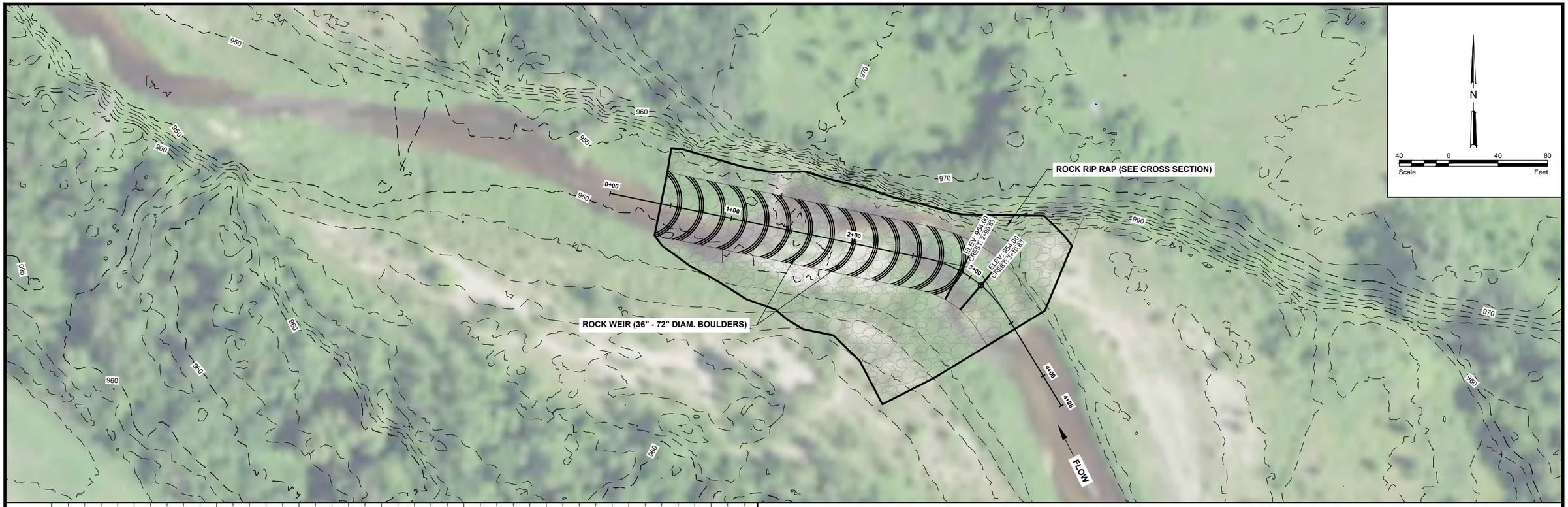
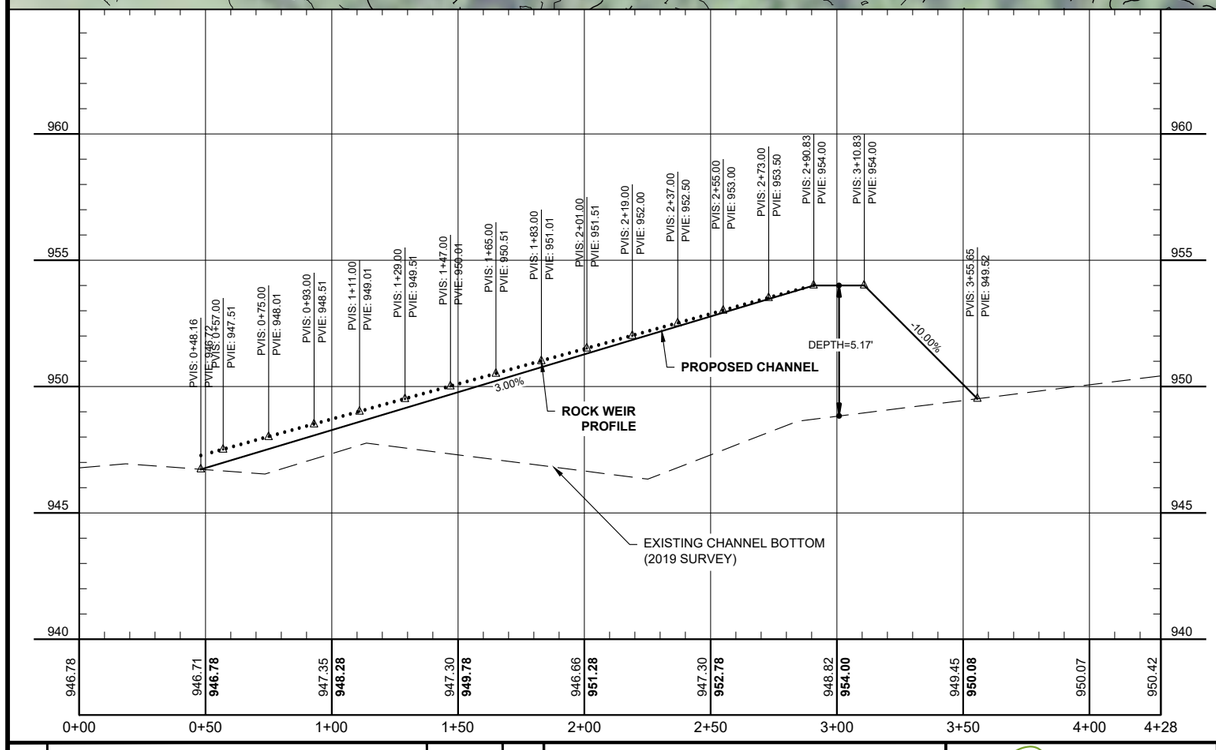
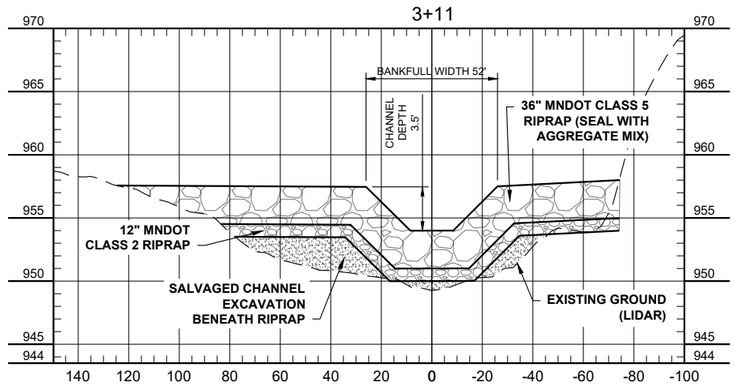
CLAY & NORMAN COUNTIES, MINNESOTA

INDEX MAP - UPPER RIDGE ROCK ARCH RAPIDS

PROJECT NO. 1432-0365







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BEACH RIDGE
ROCK ARCH RAPIDS 1
PLAN AND PROFILE
PROJECT NO. 1432-0365

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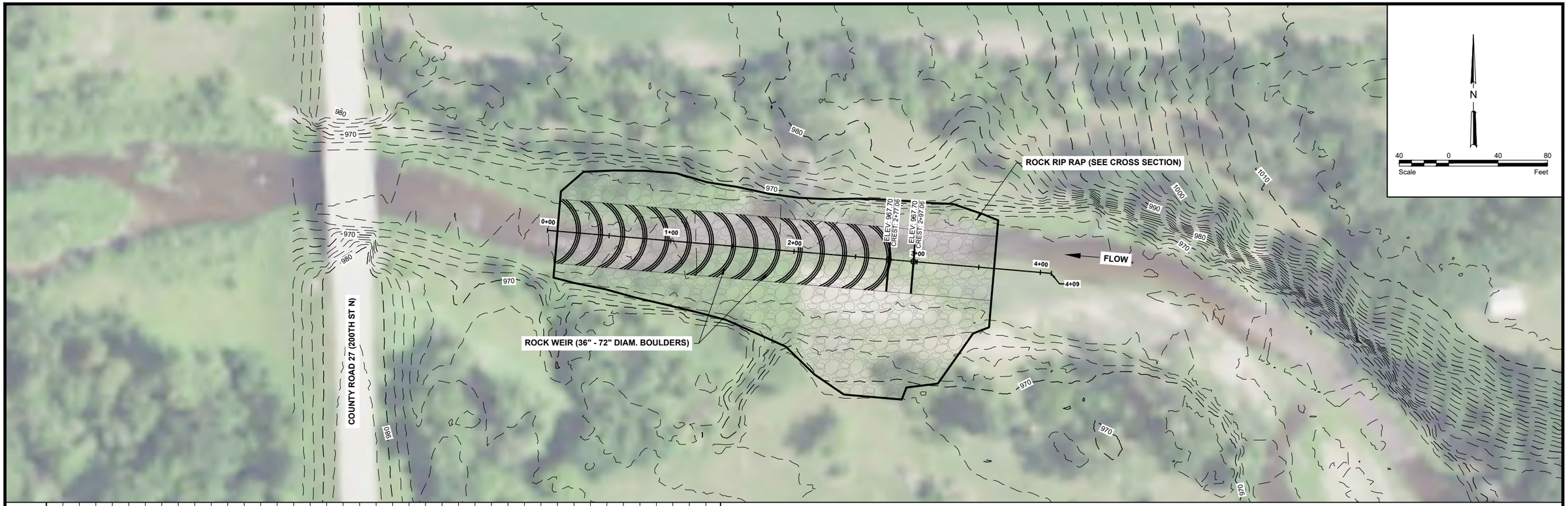

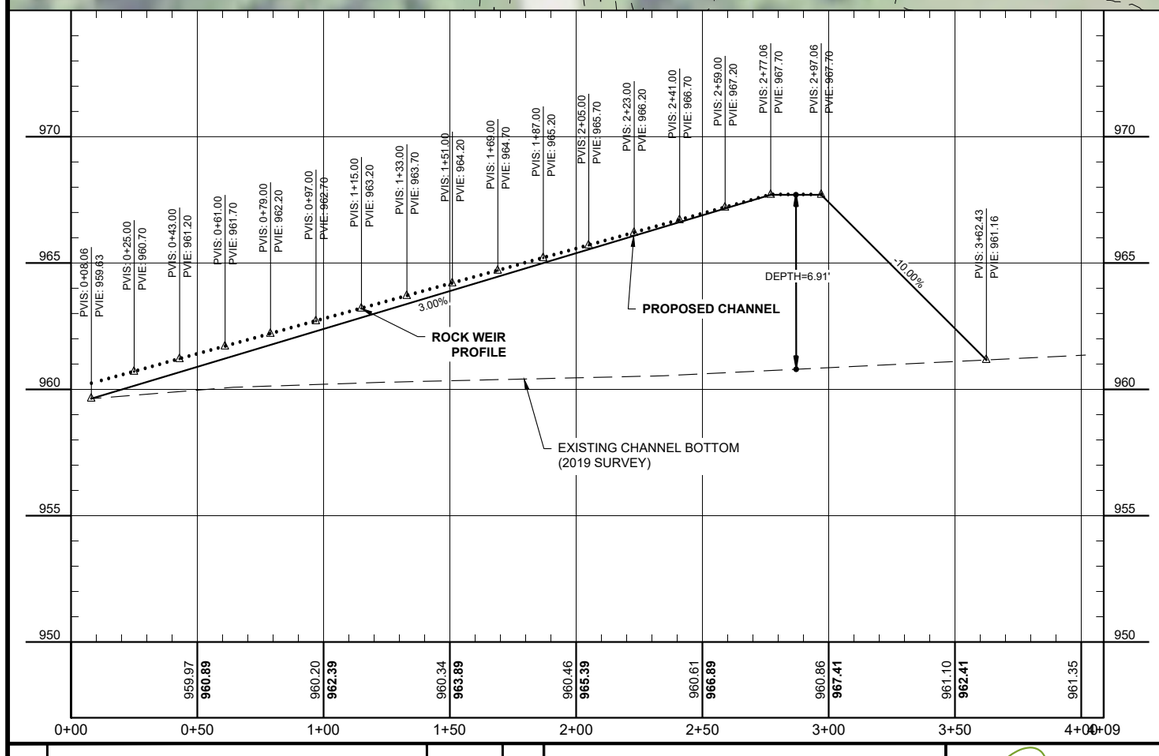

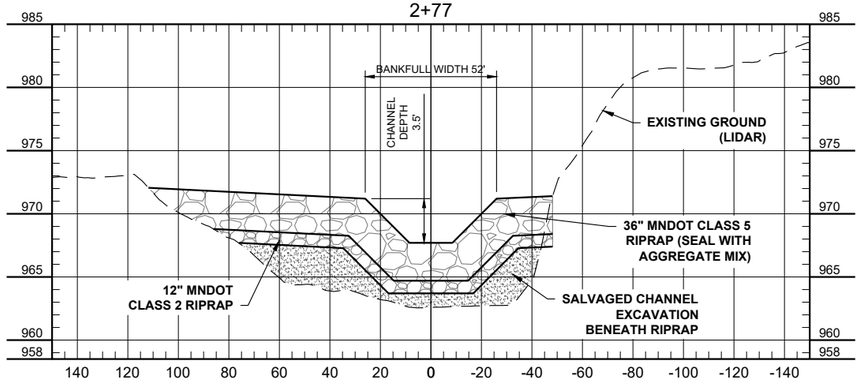

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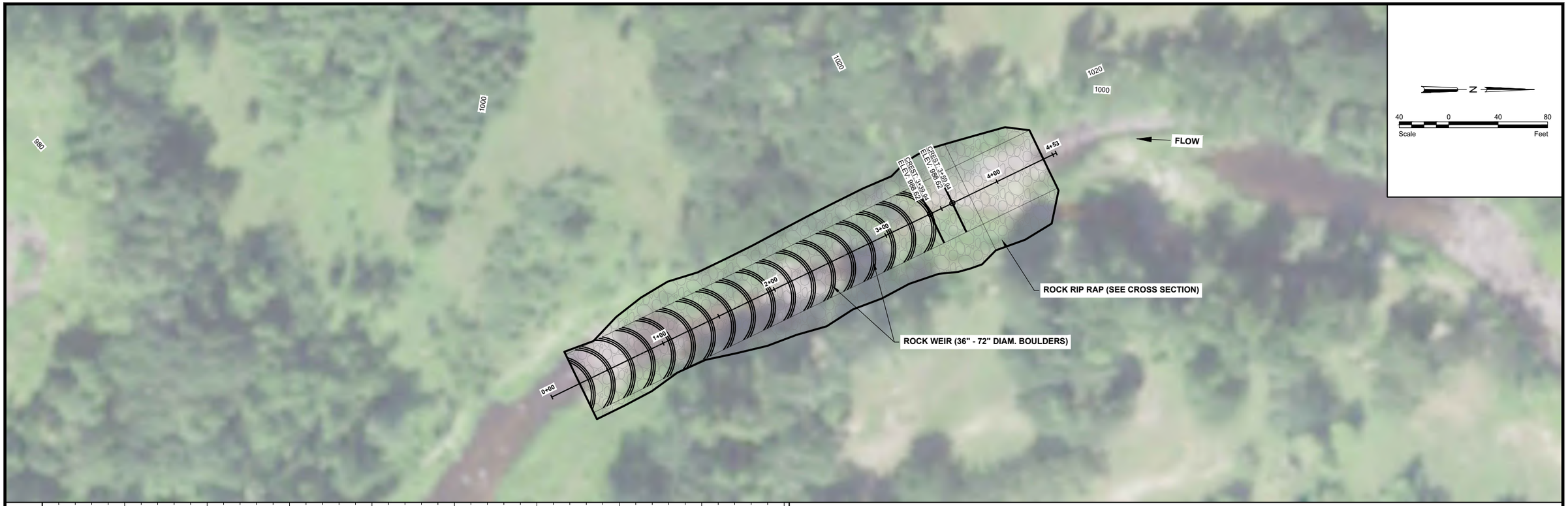

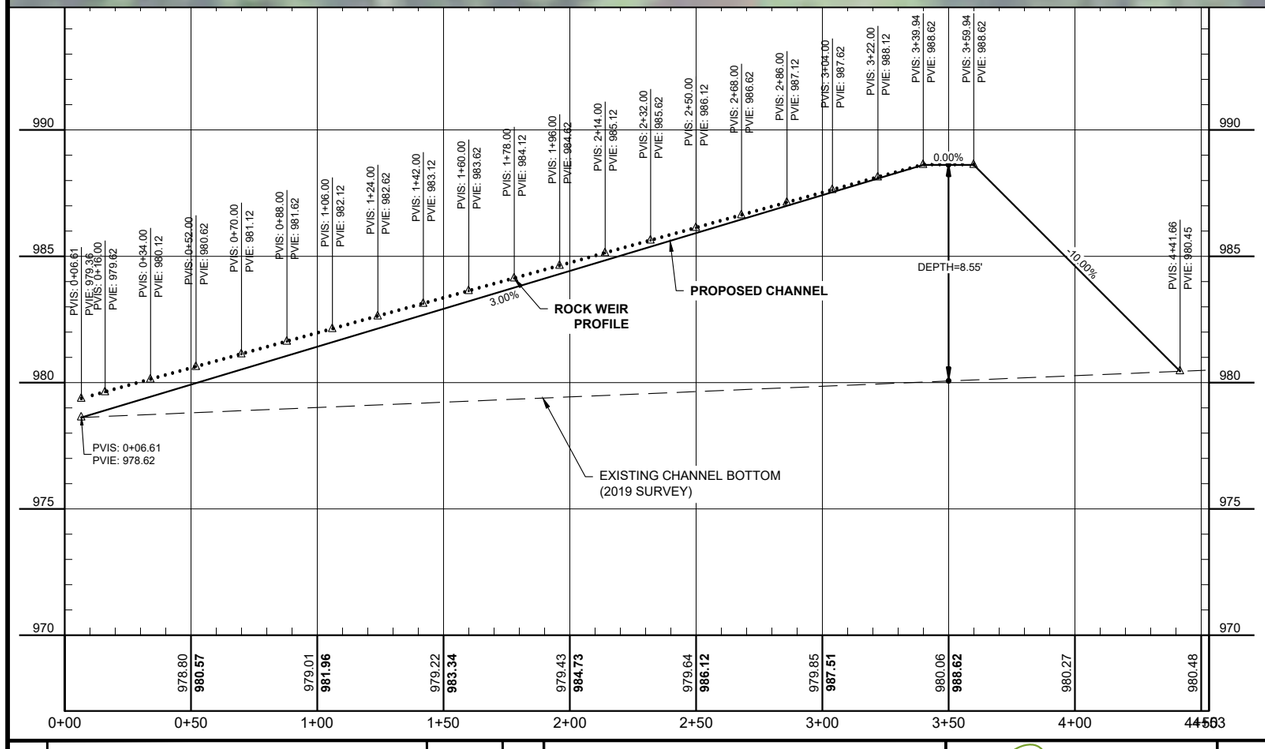

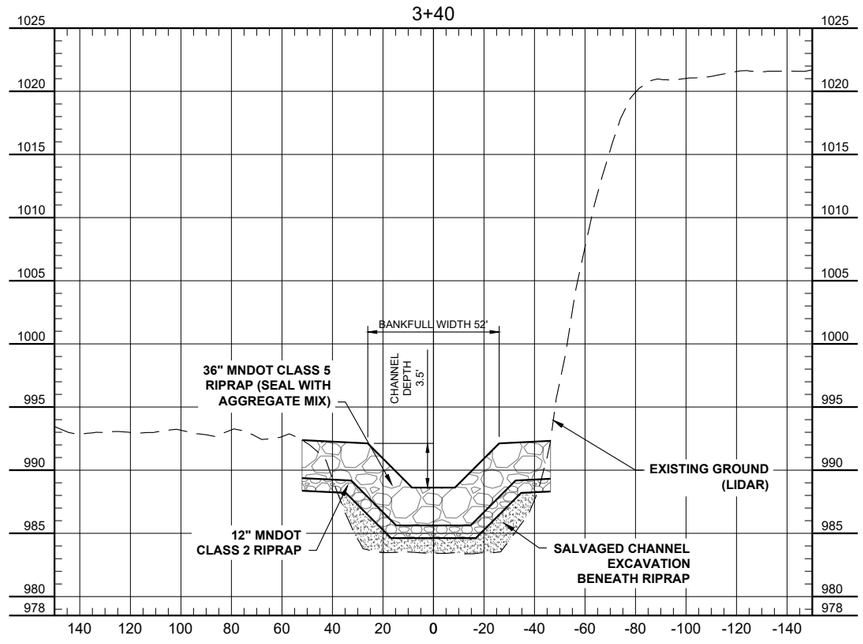

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CLAY & NORMAN COUNTIES, MINNESOTA

BEACH RIDGE
ROCK ARCH RAPIDS 3
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PROJECT NO. 1432-0365

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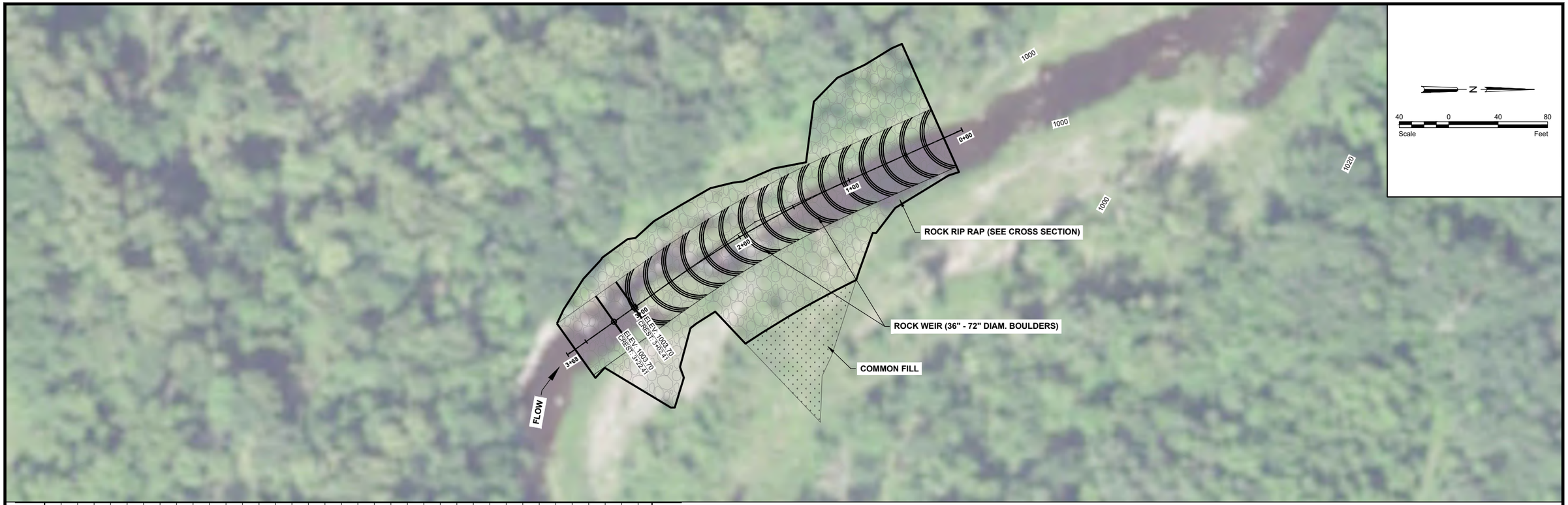

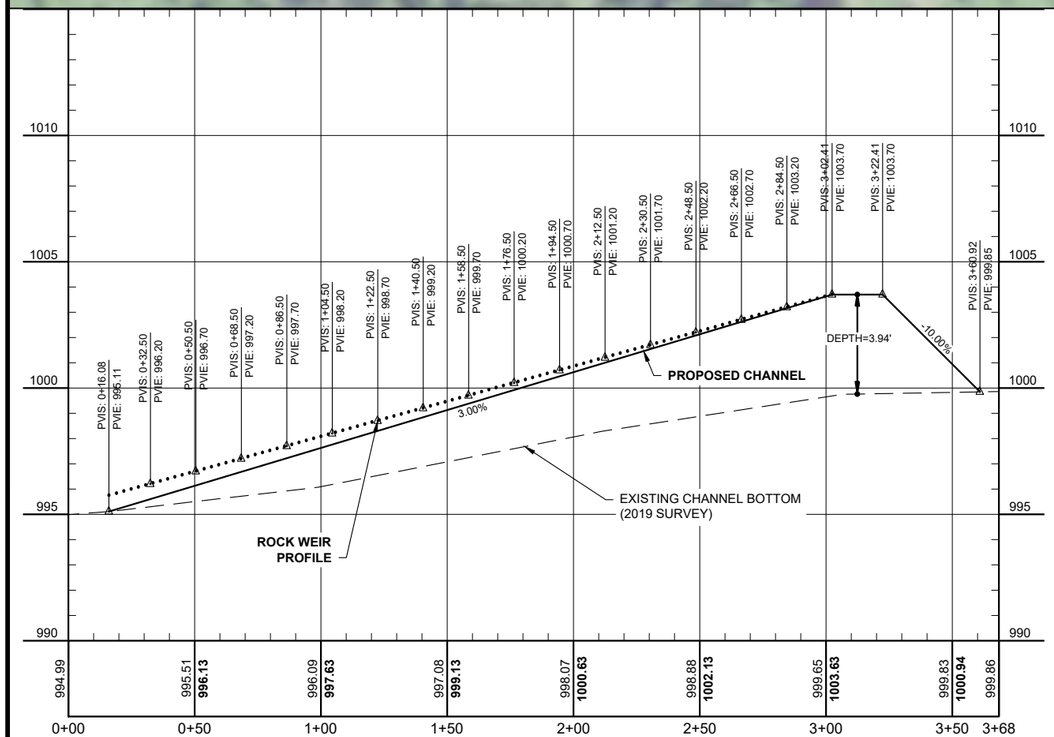

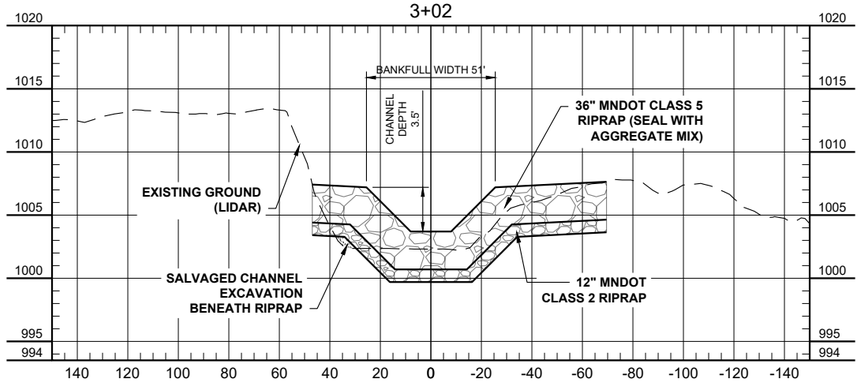

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CLAY & NORMAN COUNTIES, MINNESOTA

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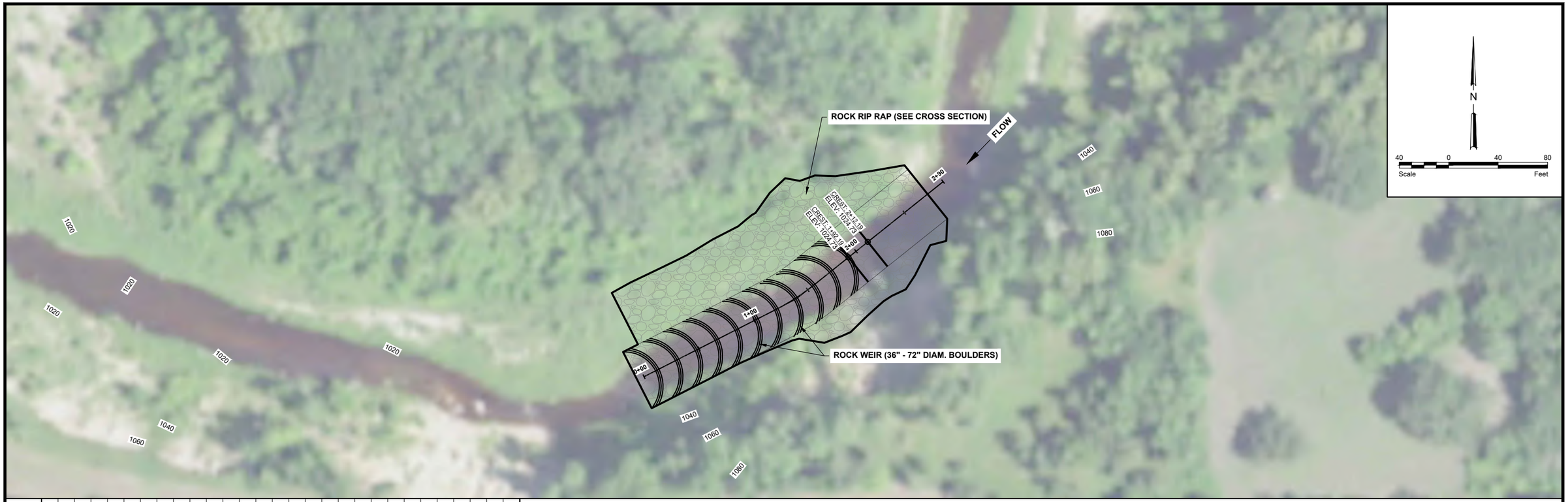
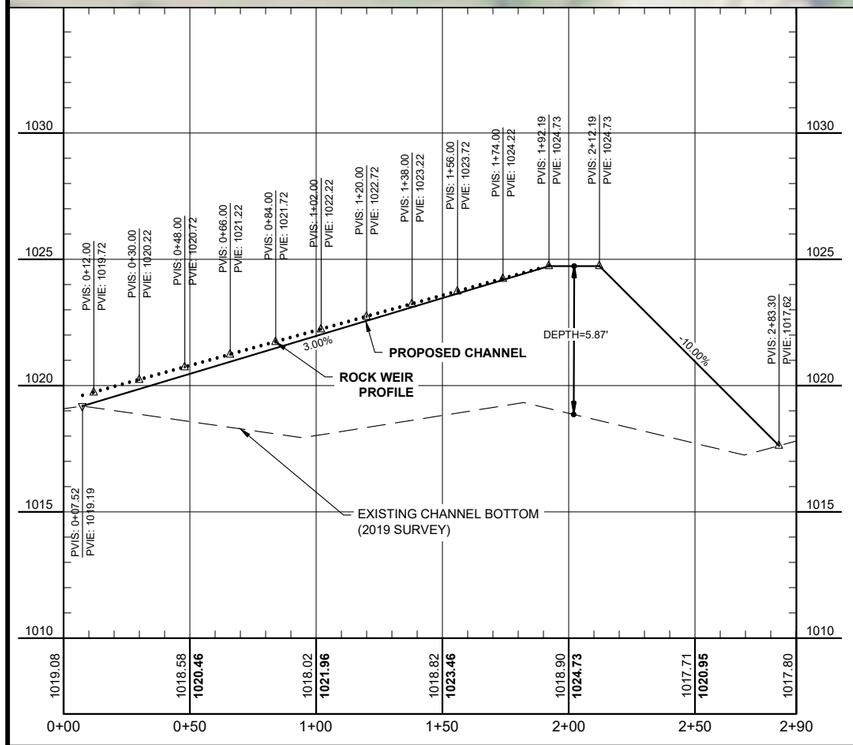
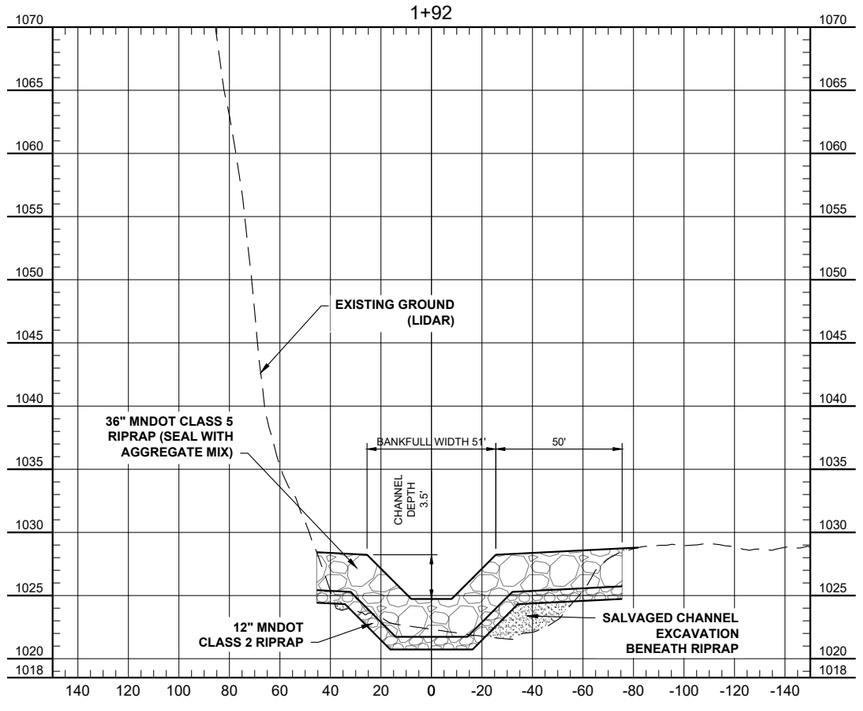
PROJECT NO. 1432-0365







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PROJECT NO. 1432-0365

SHEET
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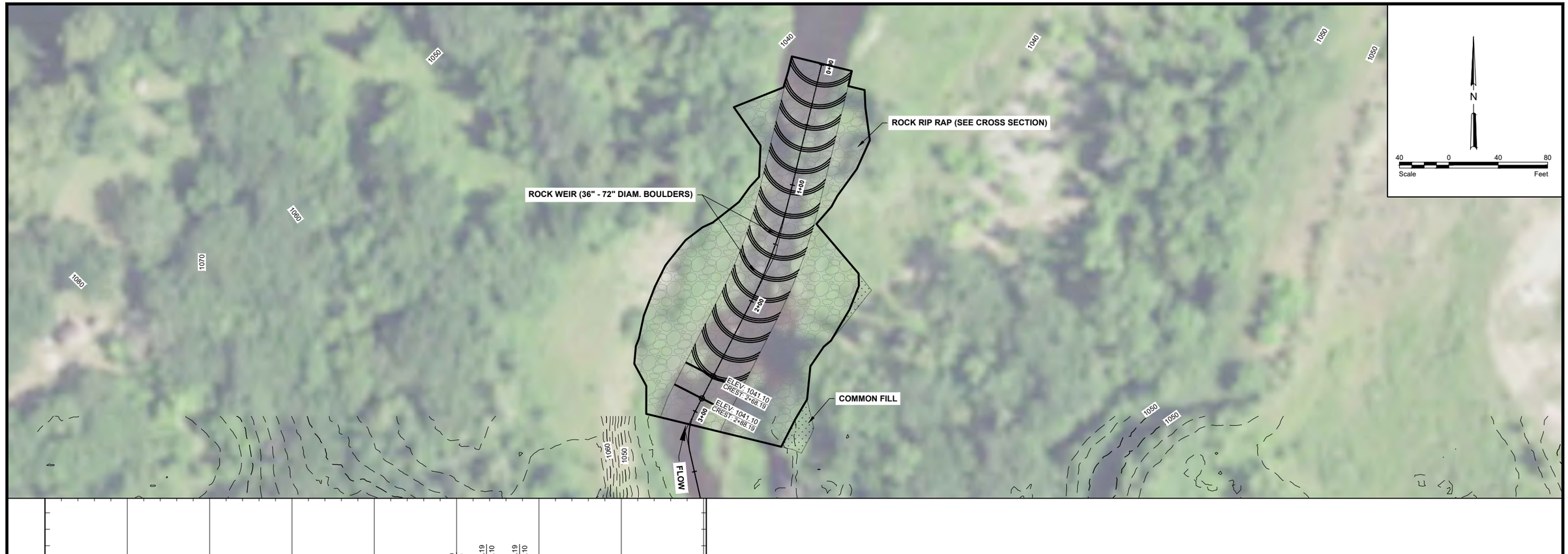

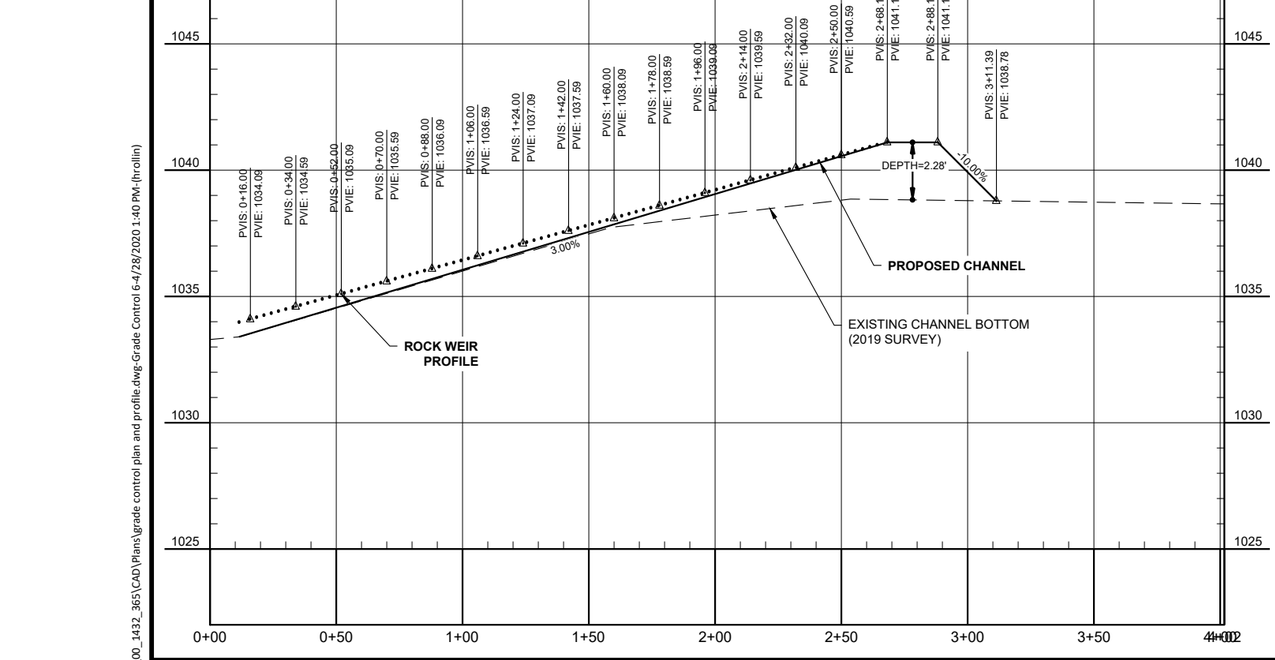

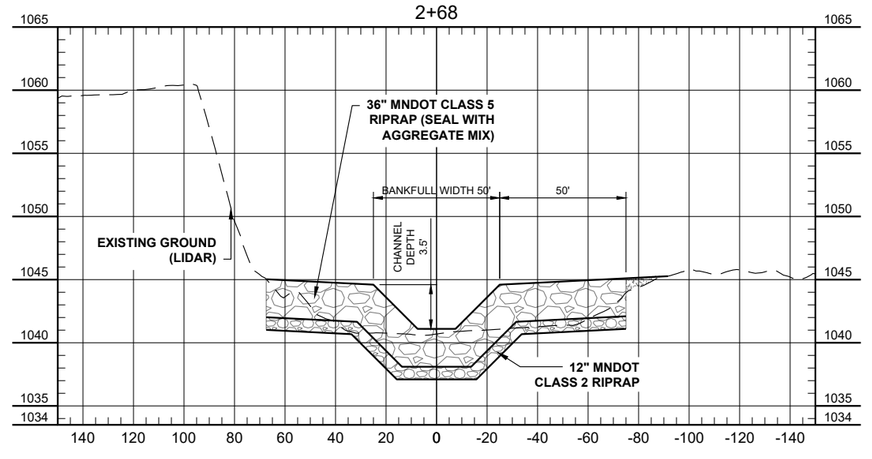

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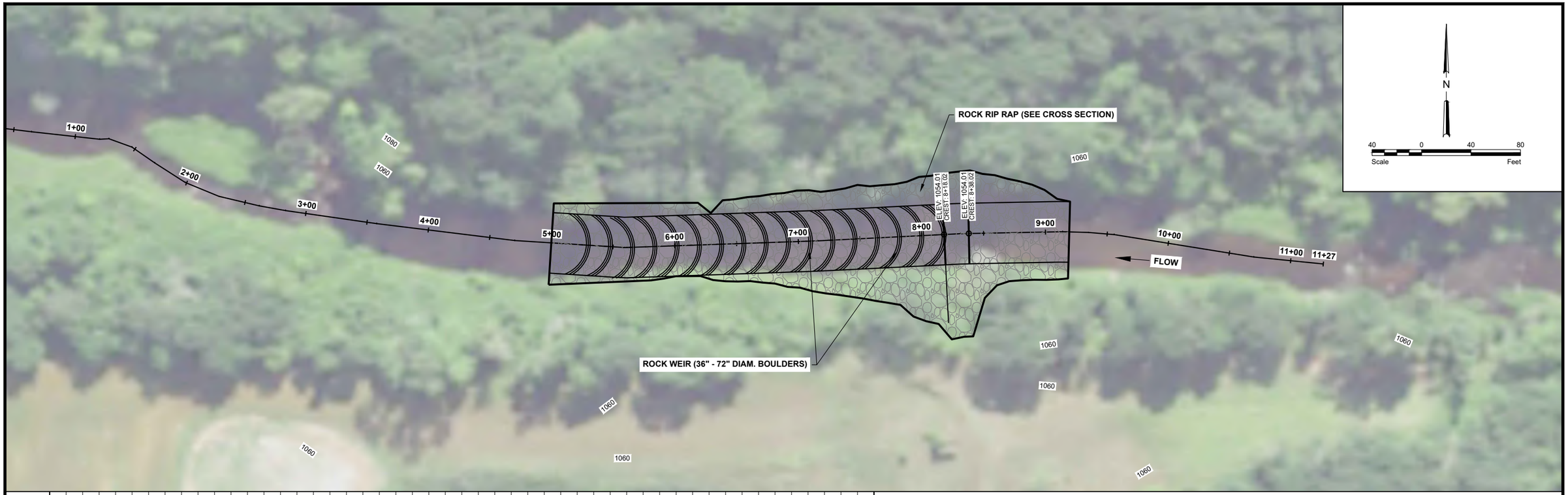
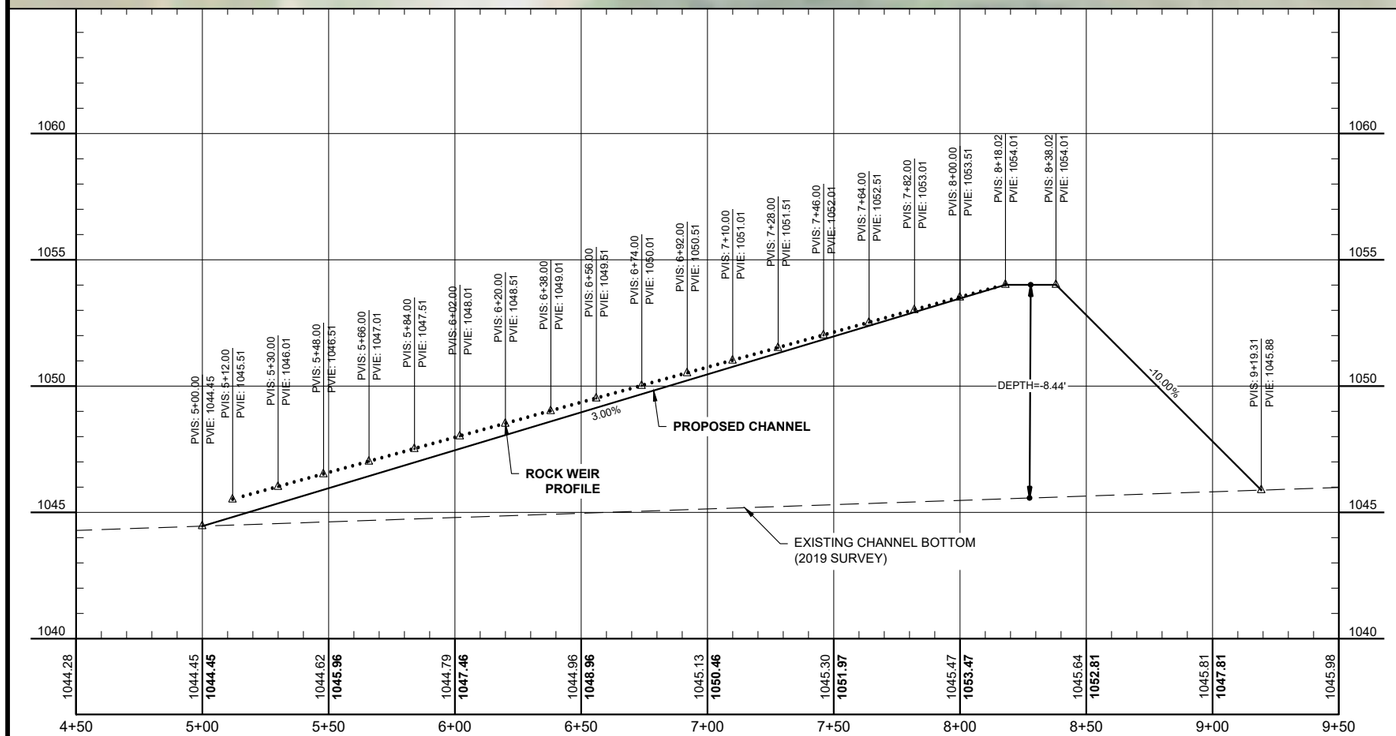
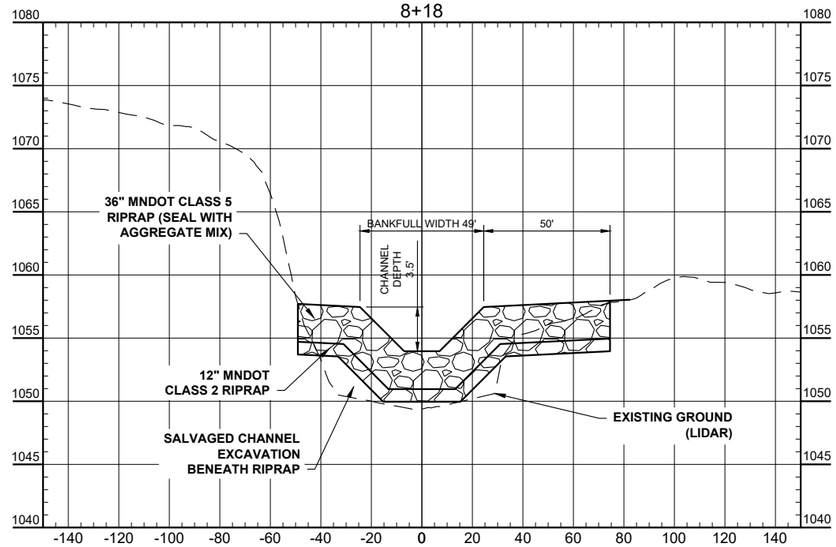
RESTORATION & SEDIMENT REDUCTION PROJECT
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

BEACH RIDGE
ROCK ARCH RAPIDS 6
PLAN AND PROFILE
PROJECT NO. 1432-0365







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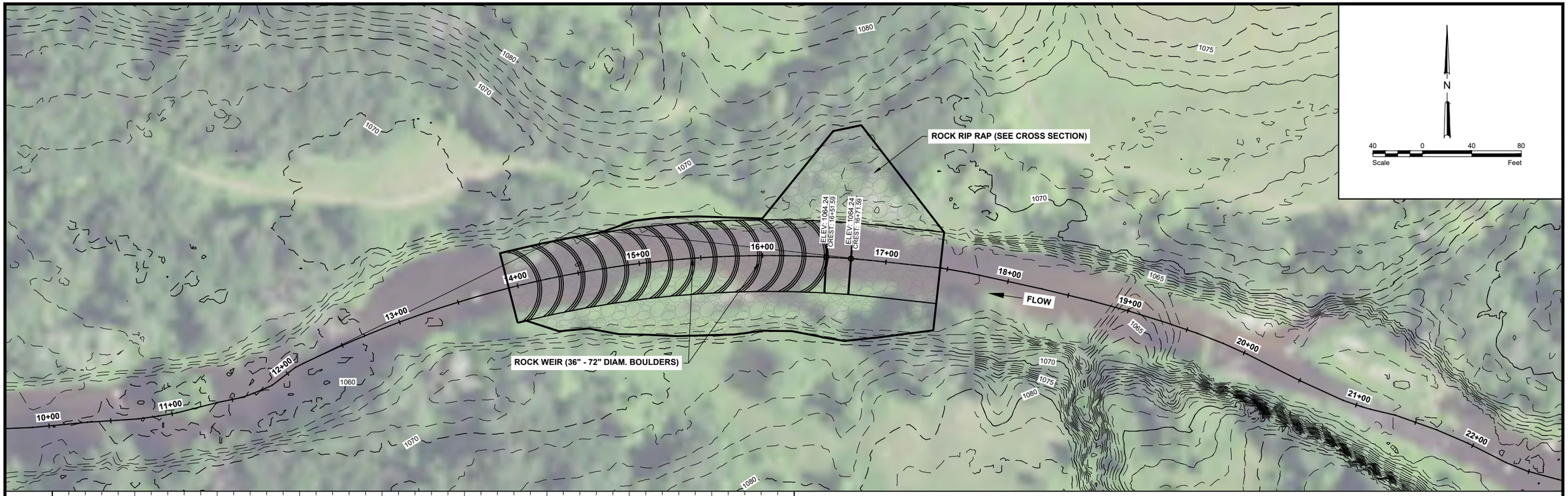
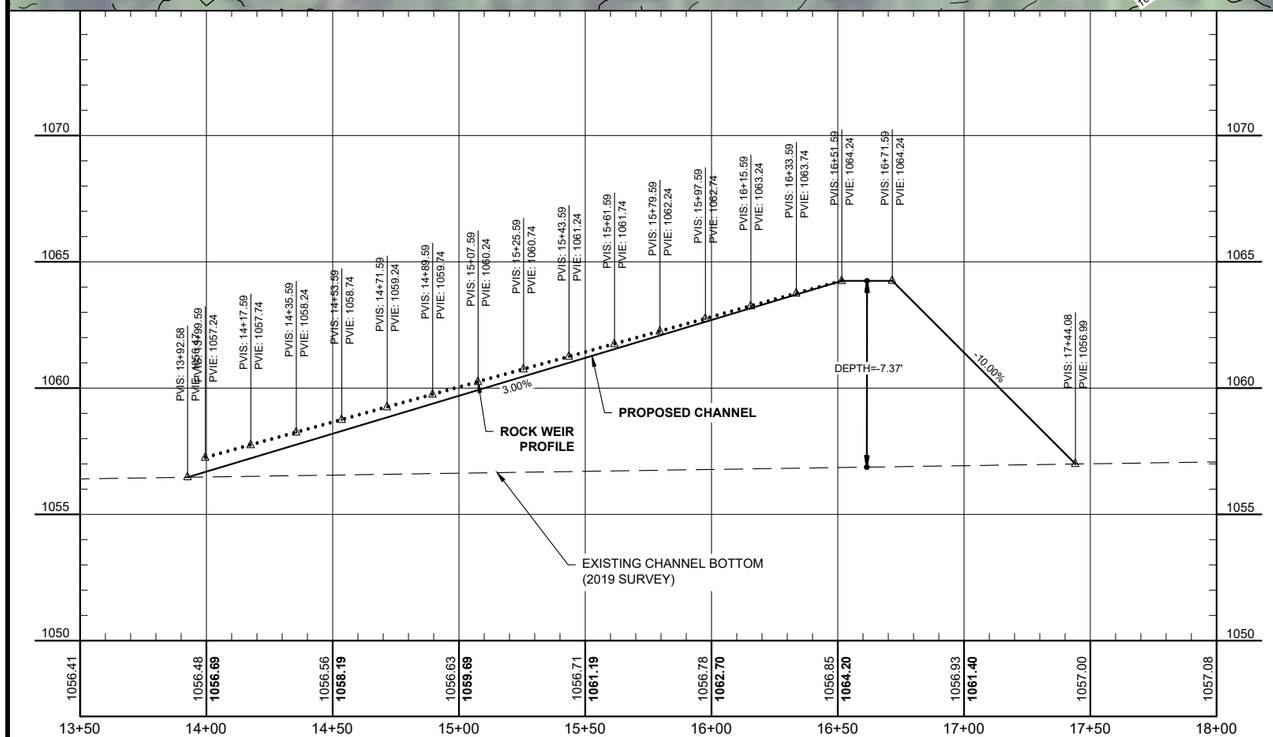
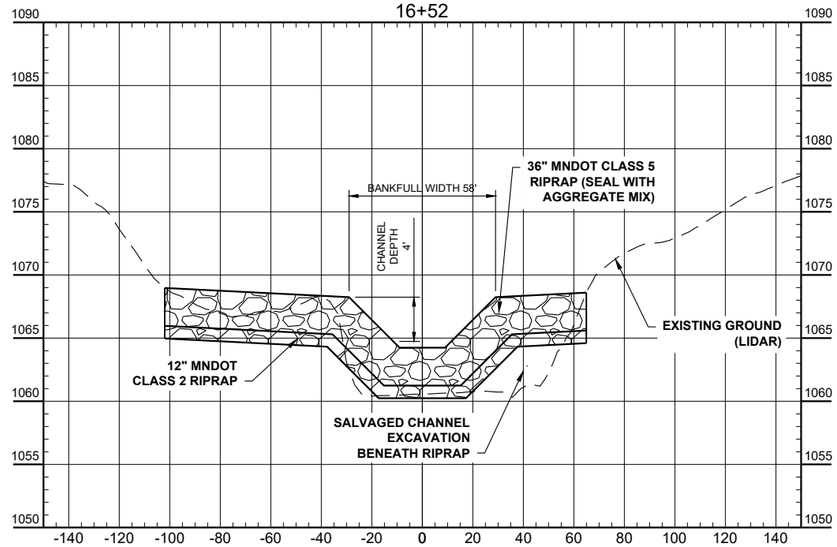
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 1
PLAN AND PROFILE
PROJECT NO. 1432-0365







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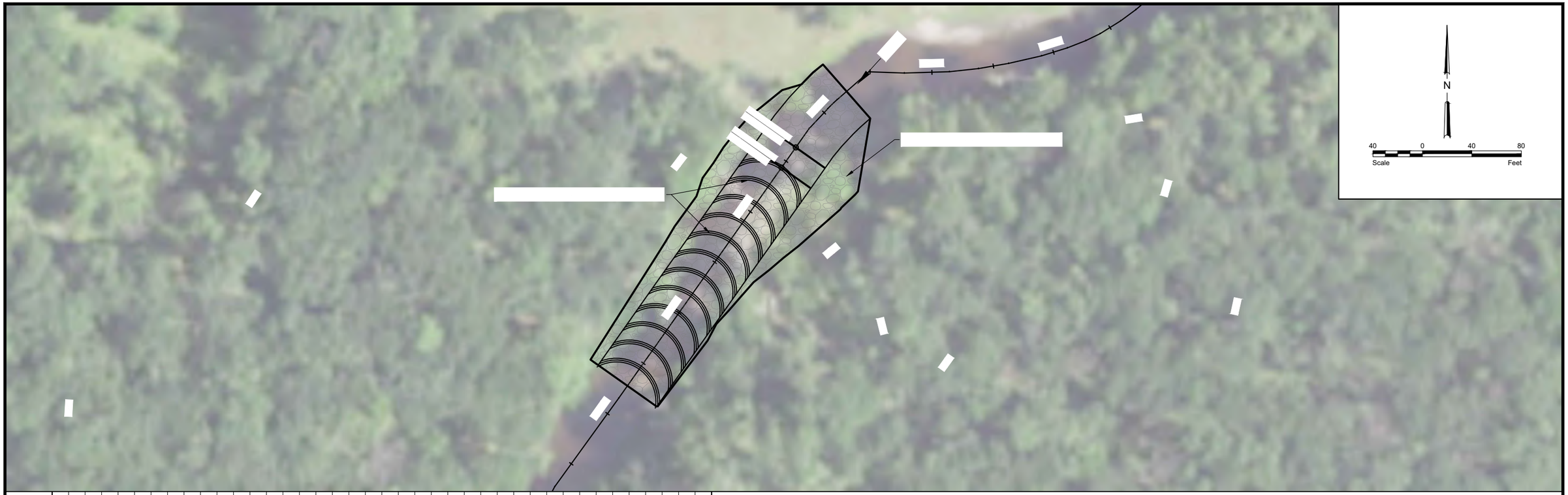
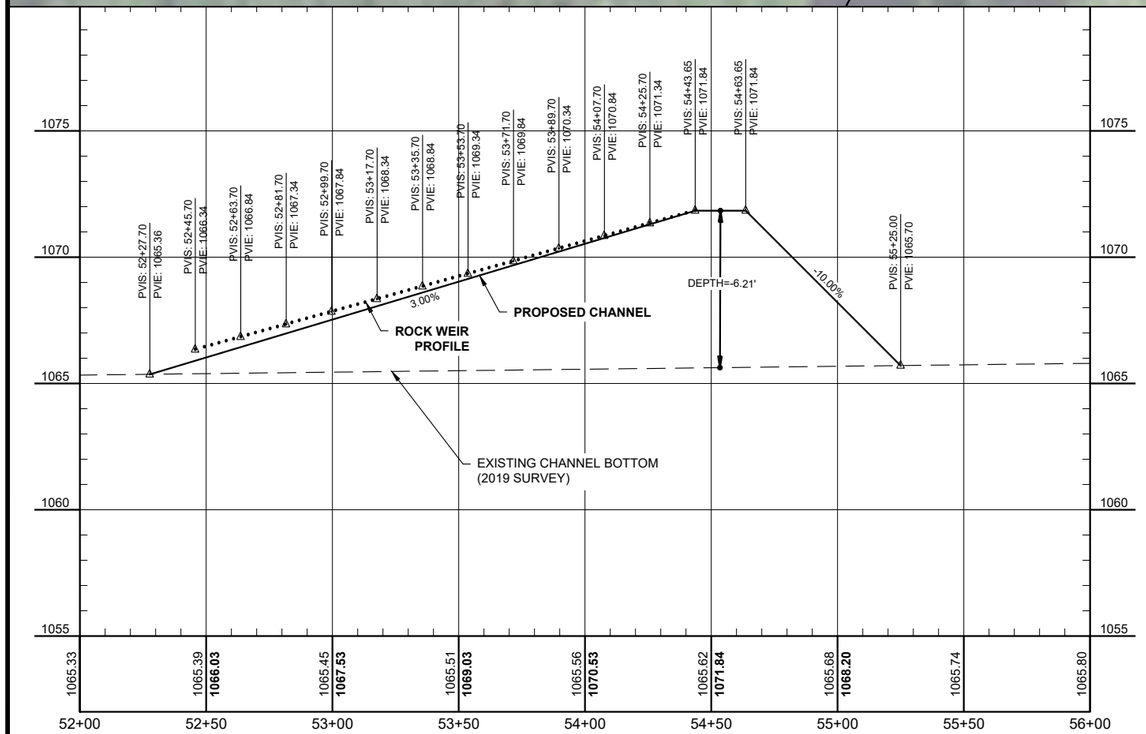
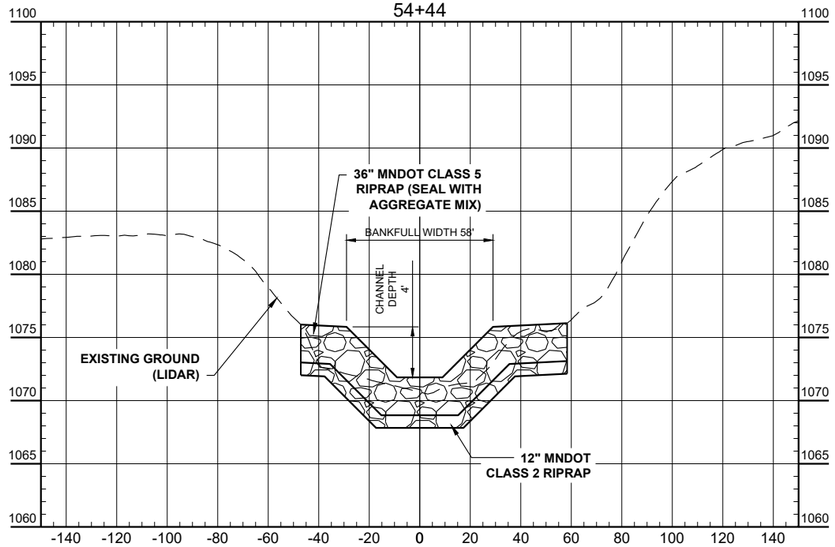
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 2
PLAN AND PROFILE
PROJECT NO. 1432-0365







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WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 3
PLAN AND PROFILE
PROJECT NO. 1432-0365

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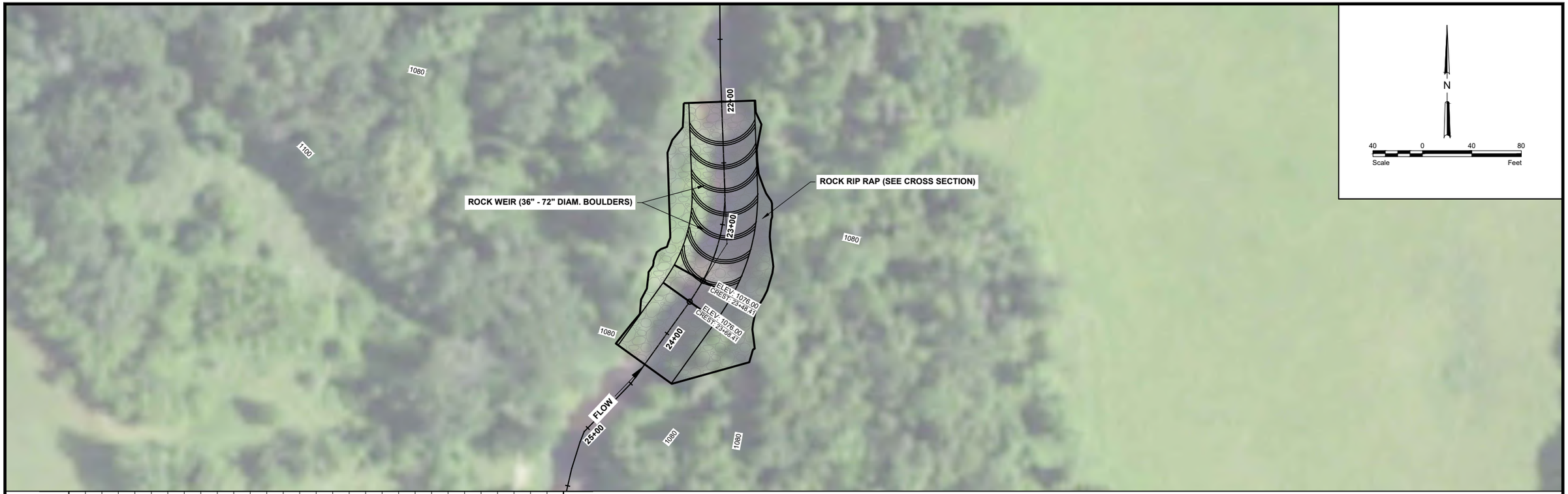

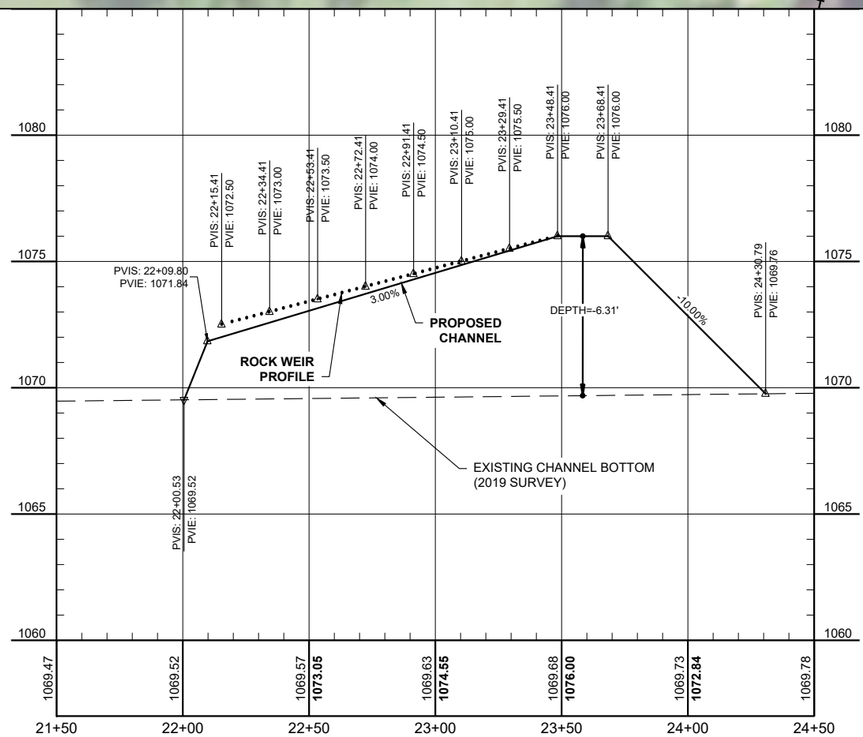

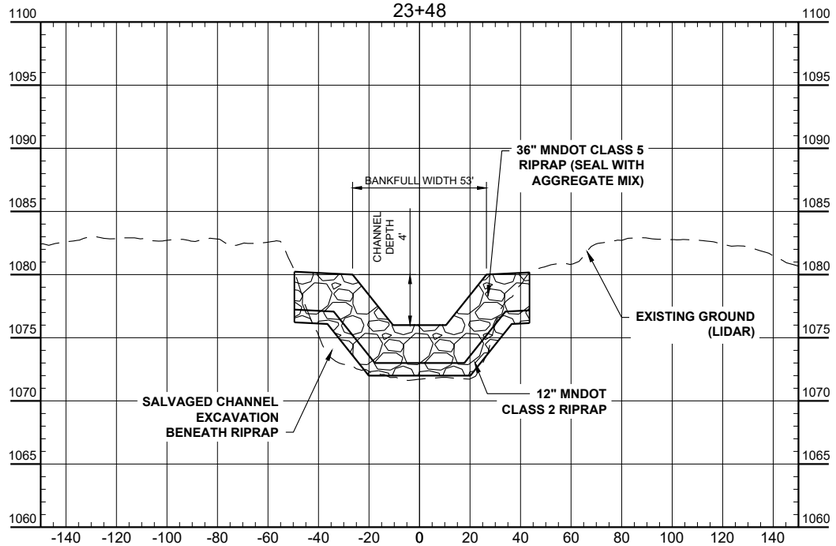

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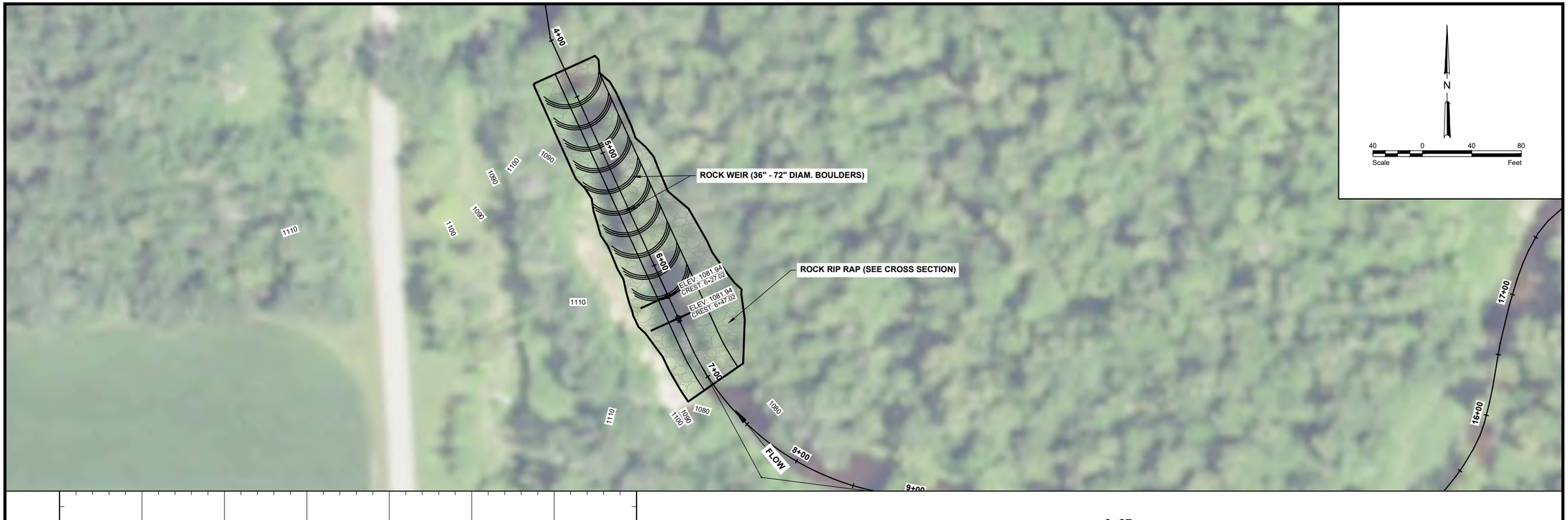
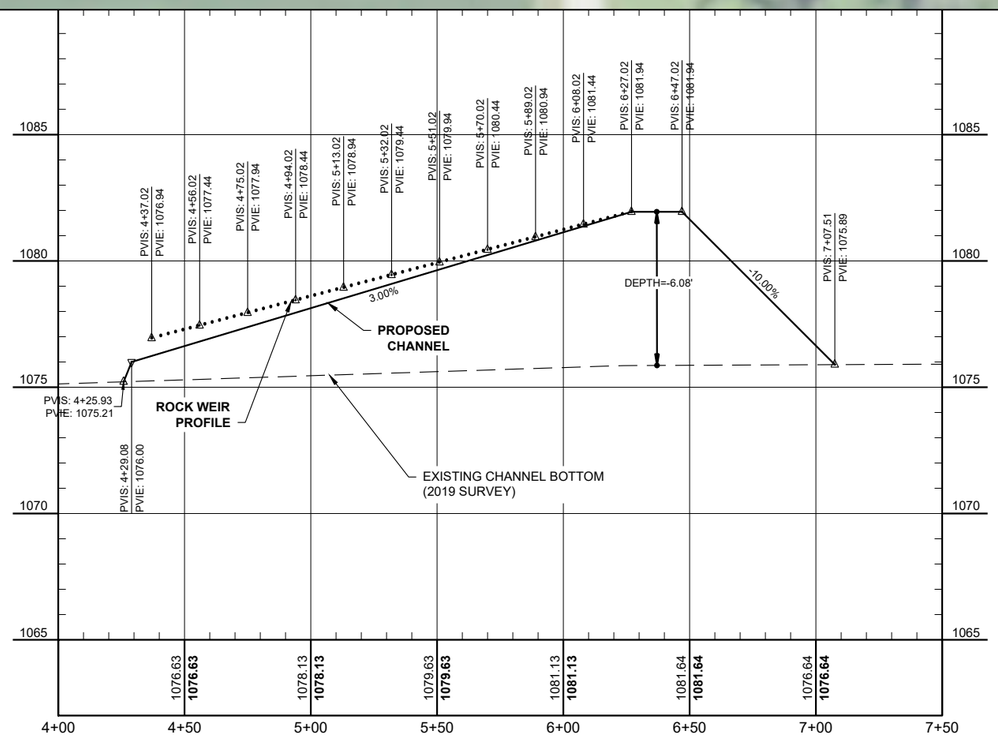
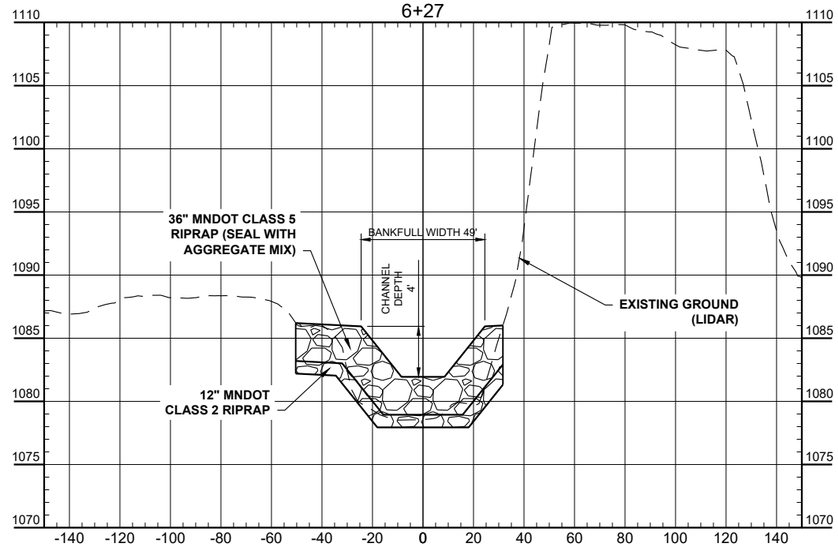
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 4
PLAN AND PROFILE
PROJECT NO. 1432-0365







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RESTORATION & SEDIMENT REDUCTION PROJECT
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 5
PLAN AND PROFILE
PROJECT NO. 1432-0365

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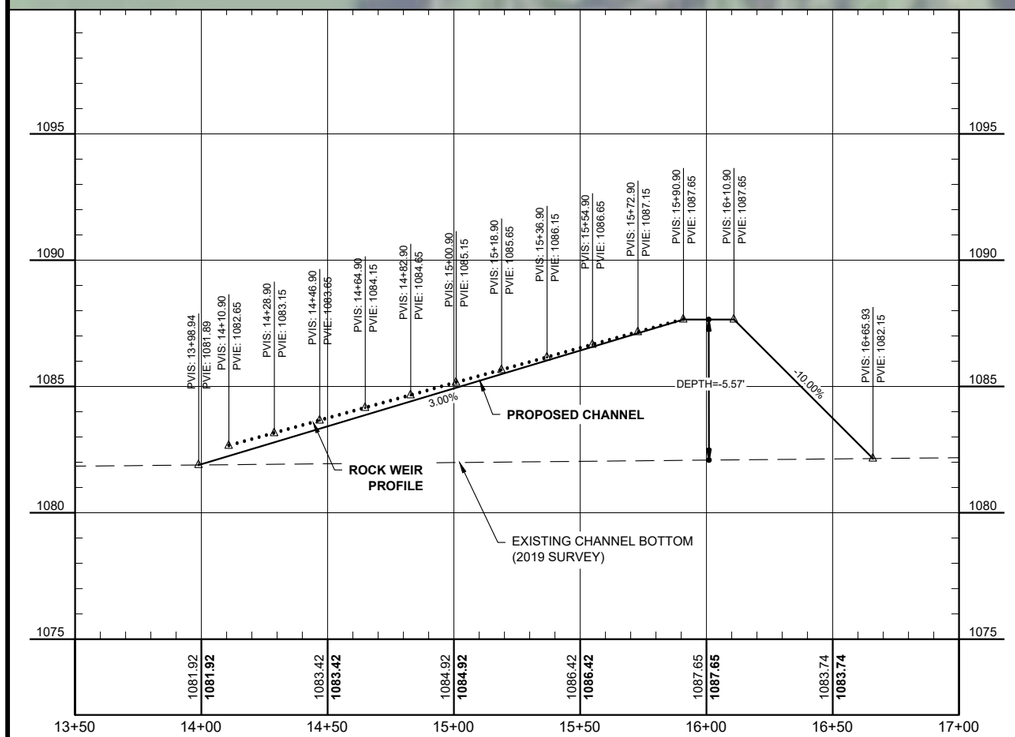

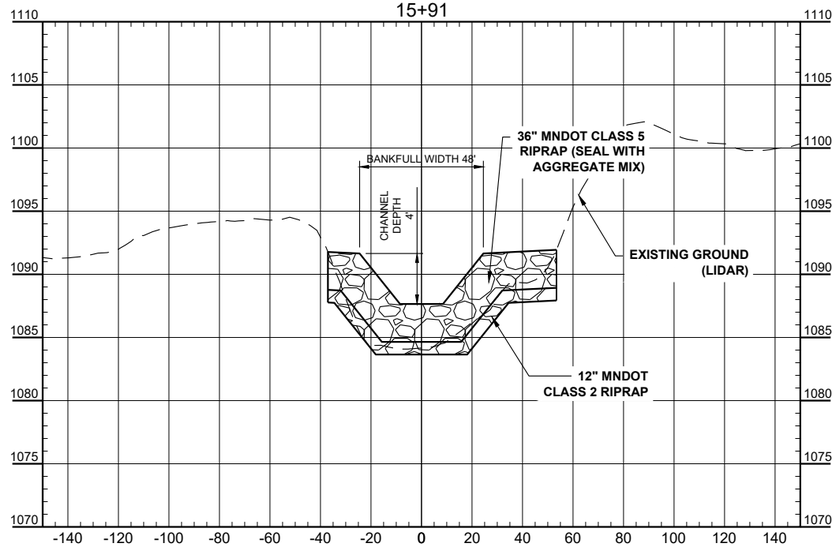

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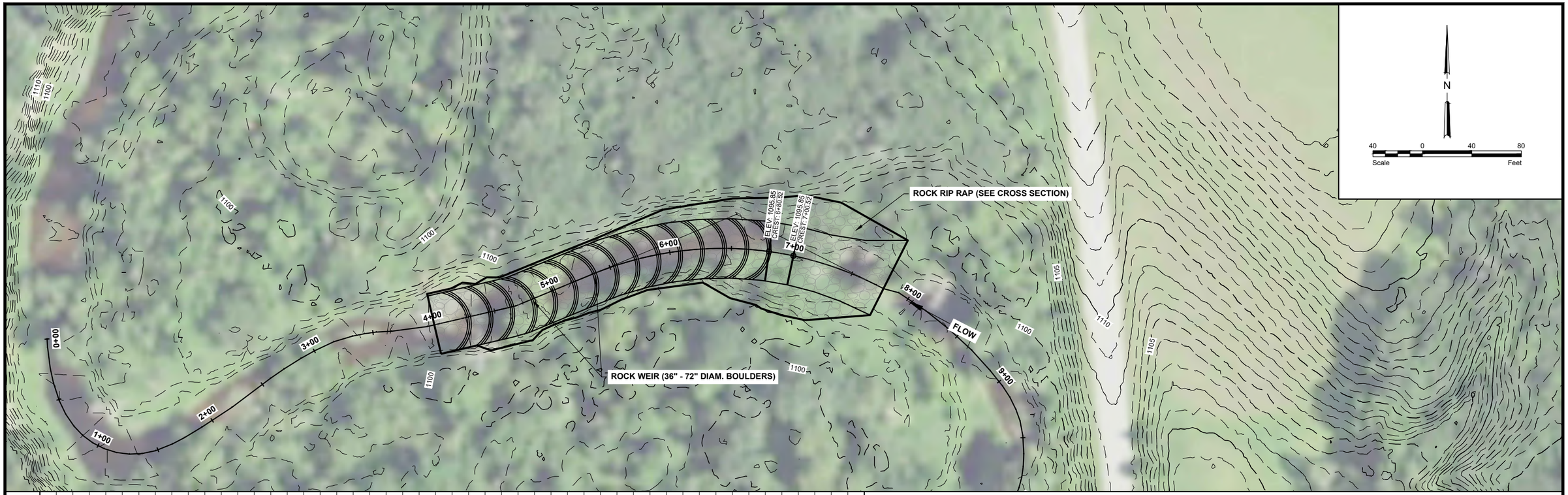
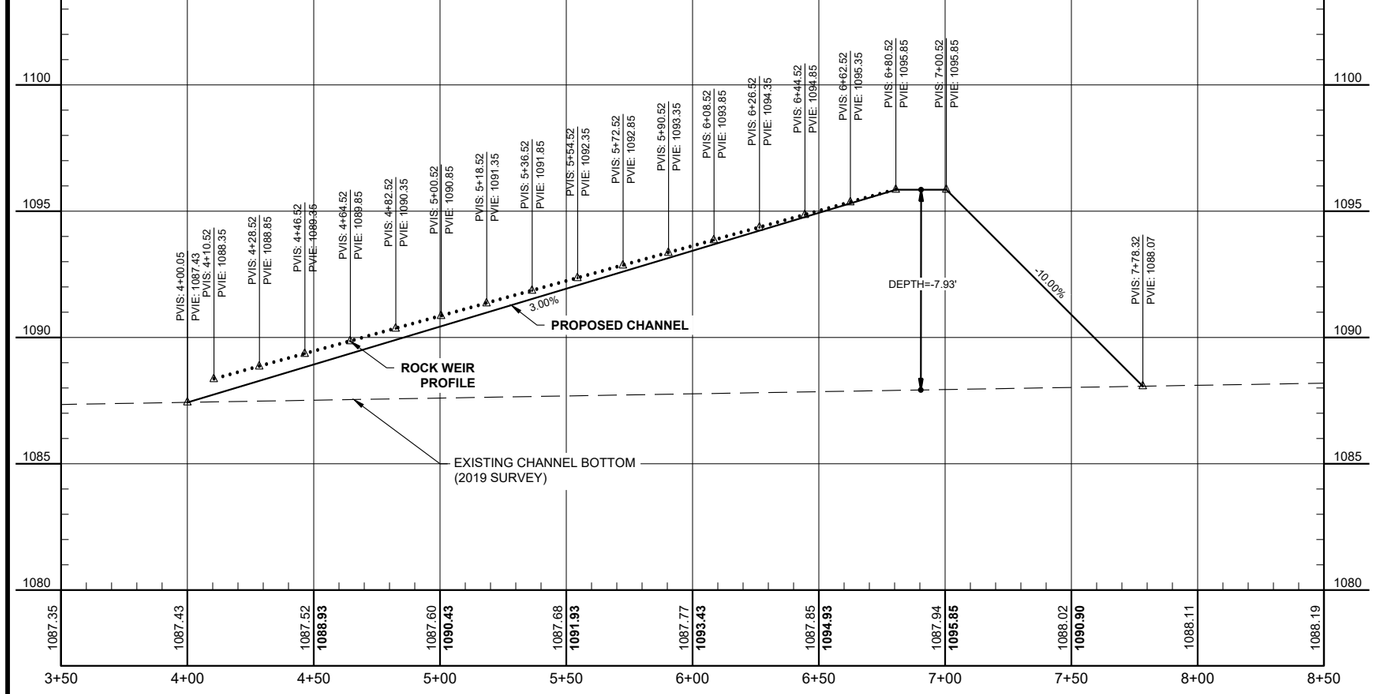
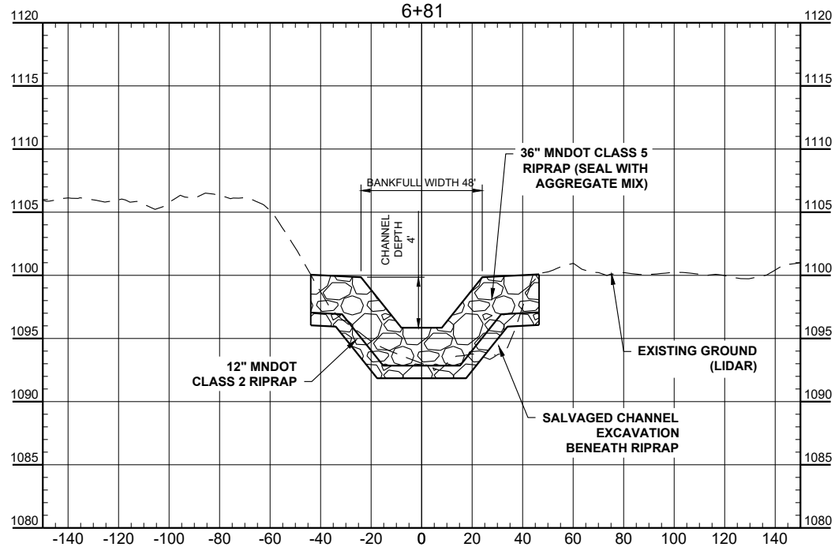
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 6
PLAN AND PROFILE
PROJECT NO. 1432-0365







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RESTORATION & SEDIMENT REDUCTION PROJECT
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 7
PLAN AND PROFILE
PROJECT NO. 1432-0365

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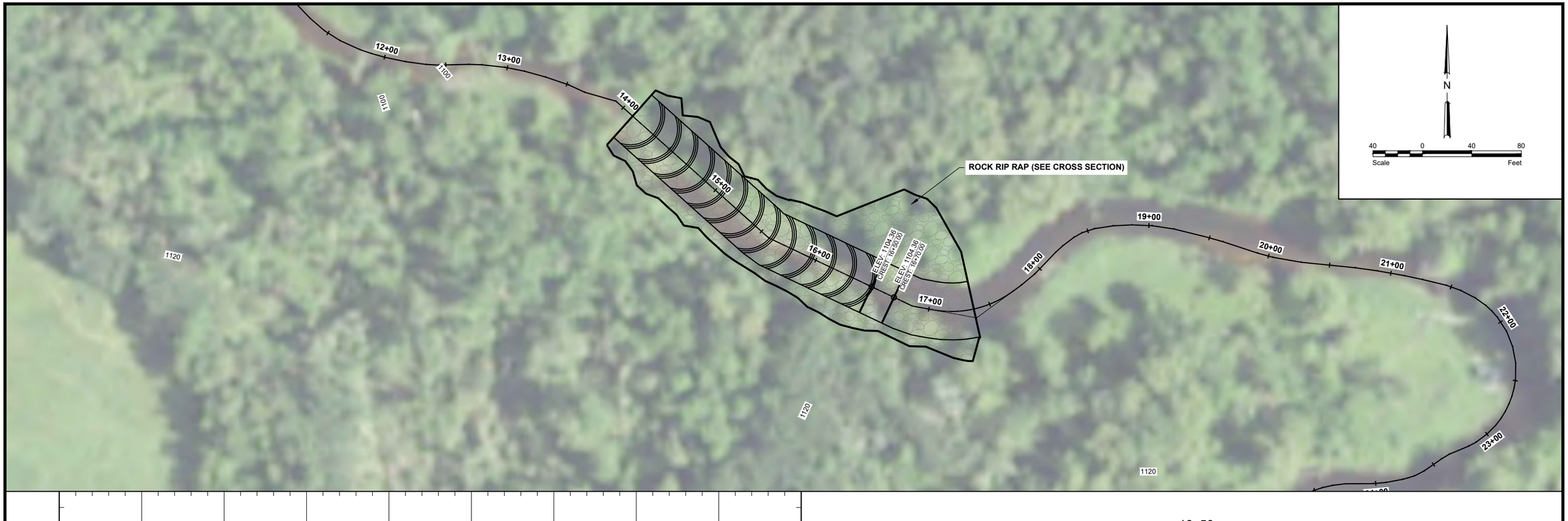

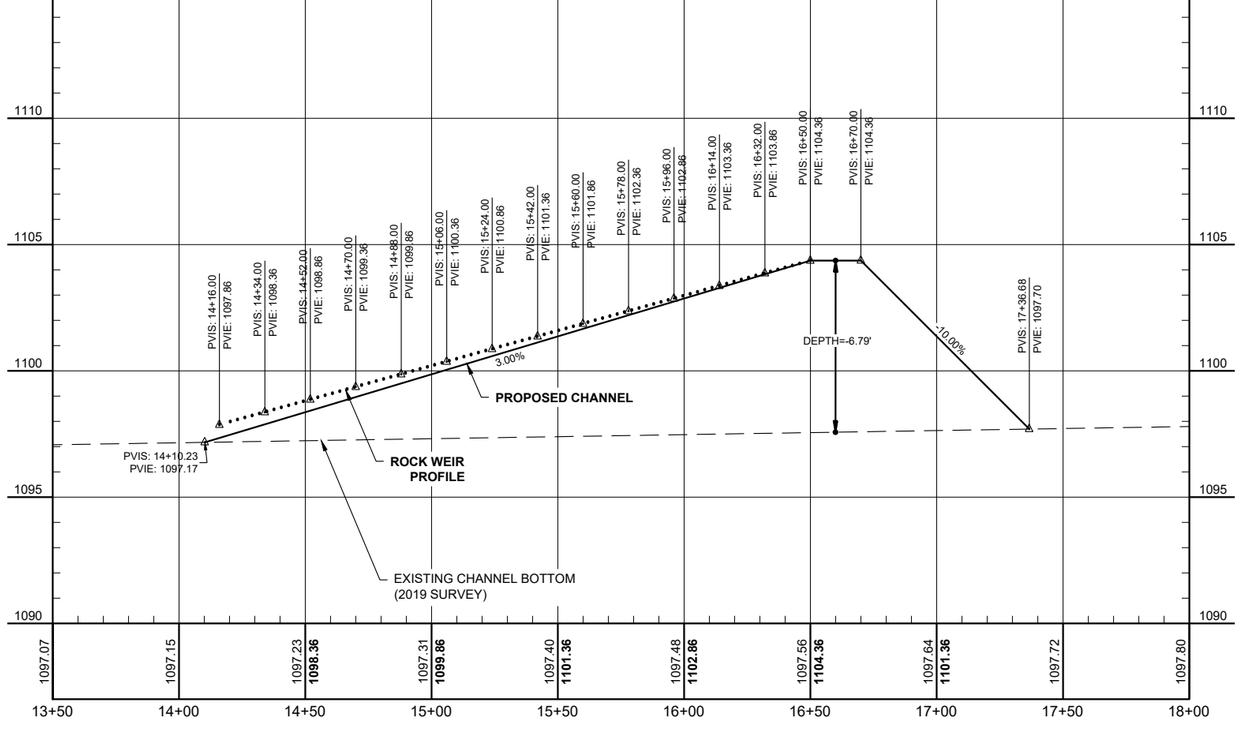

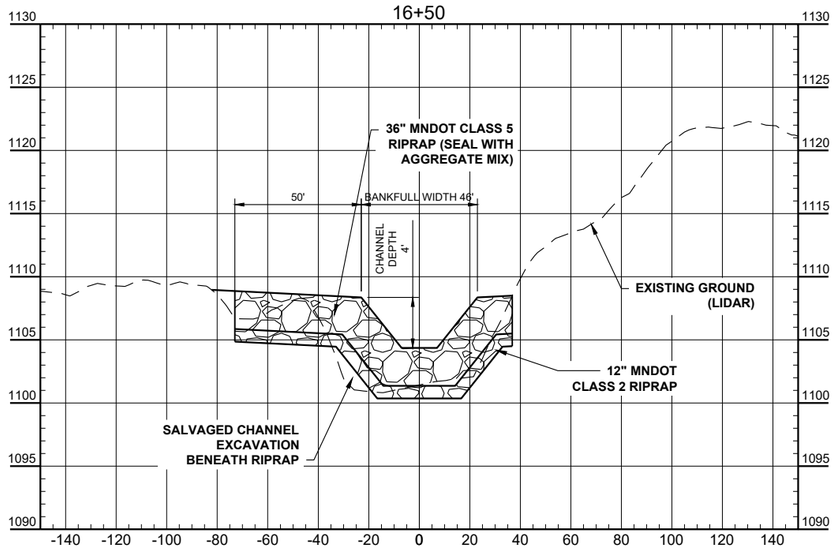

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RESTORATION & SEDIMENT REDUCTION PROJECT
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

UPPER RIDGE
ROCK ARCH RAPIDS 8
PLAN AND PROFILE
PROJECT NO. 1432-0365

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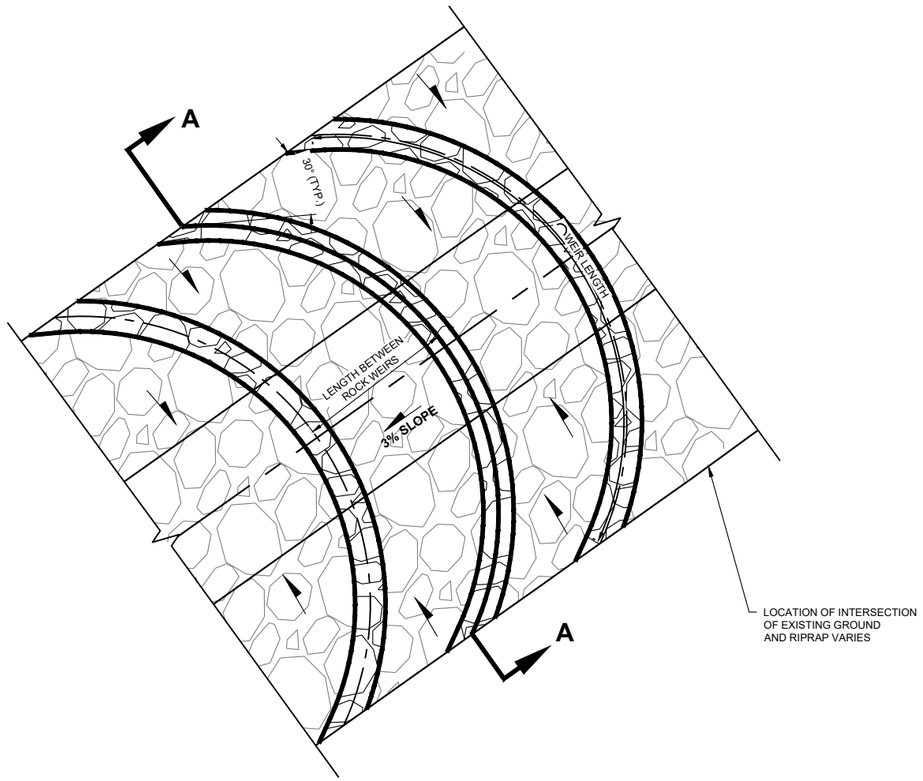
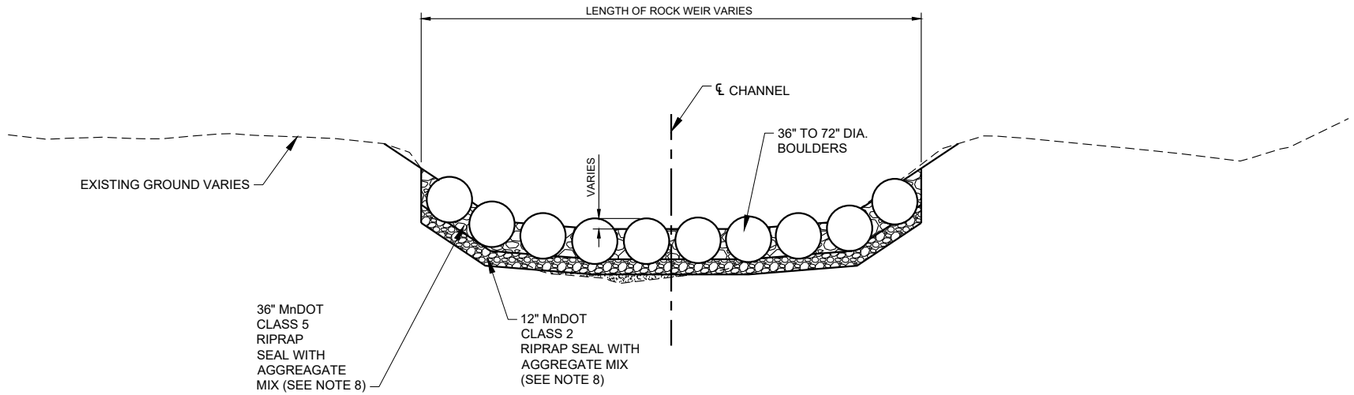


ROCK WEIR LAYOUT
NOT TO SCALE



ROCK WEIR SECTION A - A
NOT TO SCALE

Location	Rock Arch Rapids No.	Length of Rapid (Crest to Toe)(ft)	Distance Between Boulder Weirs (ft)	Number of Weirs.	Weir Length (ft)
Channelized Reach		128	21	7	47
Beach Ridge	1	243	18	14	63
Beach Ridge	2	269	18	15	63
Beach Ridge	3	333	18	18	63
Beach Ridge	4	286	18	16	62
Beach Ridge	5	185	18	11	62
Beach Ridge	6	257	18	15	62
Upper Ridge	1	318	18	18	59
Upper Ridge	2	259	18	15	70
Upper Ridge	3	226	18	13	70
Upper Ridge	4	139	19	8	64
Upper Ridge	5	198	19	11	59
Upper Ridge	6	192	18	11	58
Upper Ridge	7	280	18	16	58
Upper Ridge	8	240	18	14	56

NOTES:

1. NUMBER OF BOULDERS FOR EACH ROCK-ARCH IS DEPENDENT ON SIZE AND SPACING OF BOULDERS.
2. ROCK WEIRS SHALL CONSIST OF 36" - 72" BOULDERS. TOP OF BOULDERS SHALL BE SET ABOVE MNDOT CL 5 RIPRAP AS SHOWN ON THE PROFILES.
3. BOULDER WEIRS ARE TO BE FILLED WITH SMALLER STONE (MNDOT CL. 2 ROCK RIPRAP) TO REDUCE LEAKAGE AND CREATE POOLS.
4. ADDITIONAL BOULDERS WILL BE ADDED RANDOMLY TO ADD TO AESTHETICS AS DIRECTED BY THE ENGINEER OR REPRESENTATIVE IN THE FIELD.
5. THE WEIRS FUNCTION TO PROVIDE ADDED STABILITY TO THE RAPIDS, RESTING AREA FOR THE MIGRATION OF FISH, DIRECTING FLOW TOWARDS MID-CHANNEL (REDUCING STRESS ON BANKS) AND INCREASING SAFETY BY CREATING LOW VELOCITIES NEAR BANKS.
6. WEIRS ARE TO BE INTEGRATED INTO THE CONSTRUCTED BANKS, THE GAPS BETWEEN BOULDERS SHALL TYPICALLY RANGE FROM 0 TO 6 INCHES. LARGER GAPS MAY BE NECESSARY DEPENDING ON SPECIES OF FISH.
7. ALL FILL MATERIAL UNDER RIPRAP RAMP TO BE OR EXCAVATED CHANNEL MATERIAL.
8. VOIDS IN THE PLACED RIPRAP SHALL BE FILLED WITH A WELL GRADED MIX OF AGGREGATE VARYING FROM THE NO. 40 SIEVE UP TO 3 INCH STONES. THE MIX OF AGGREGATE SHOULD BE SUCH THAT IT IS NOT BLOWN OUT OF THE RIPRAP BY THE RIVERS CURRENT BUT INSTEAD FORCES FLOW OVER THE RIPRAP. EXCESS CHANNEL EXCAVATION CAN BE USED FOR FILLING VOIDS WITH ENGINEERS APPROVAL.

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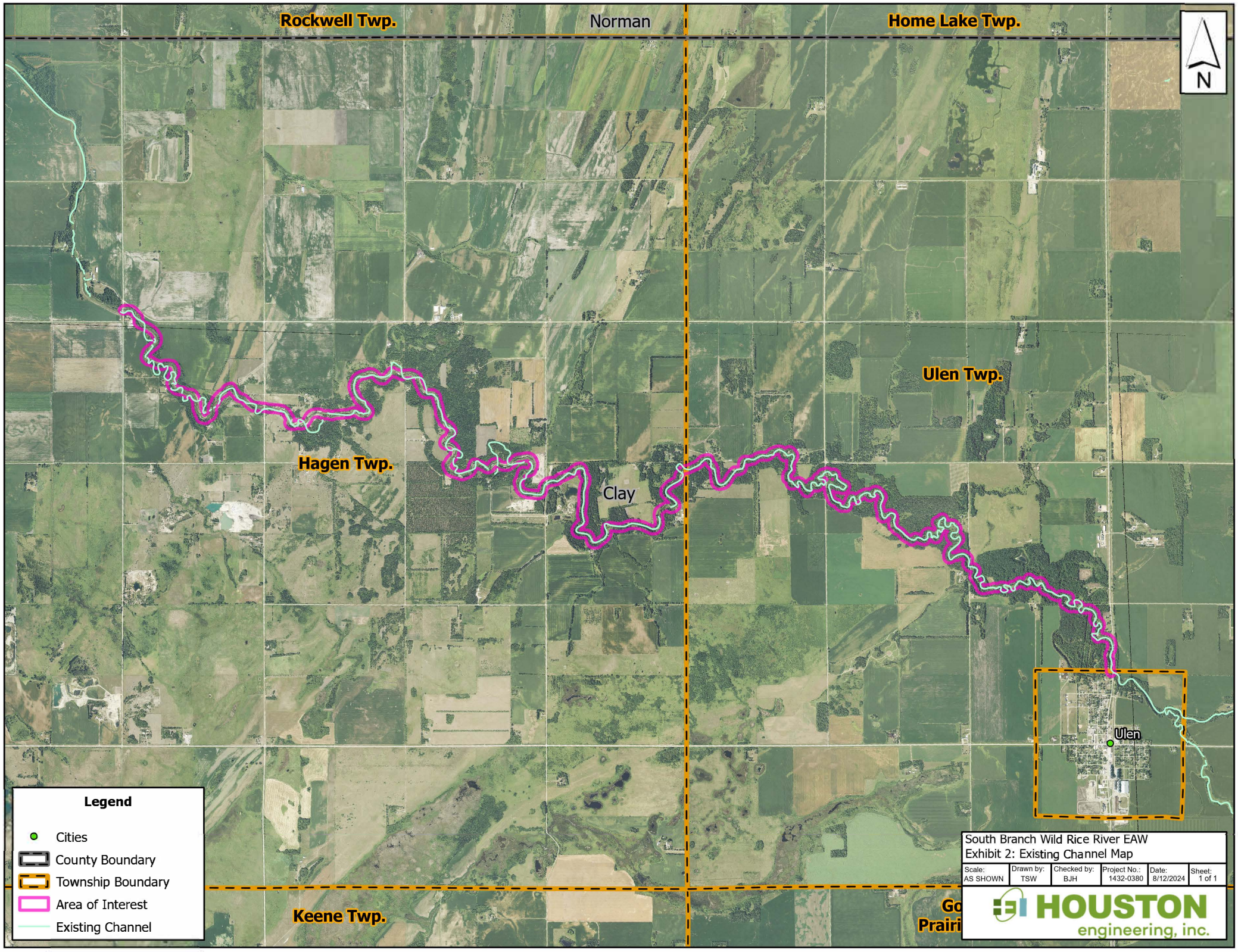
RESTORATION & SEDIMENT REDUCTION PROJECT
WILD RICE WATERSHED DISTRICT
CLAY & NORMAN COUNTIES, MINNESOTA

ROCK ARCH RAPIDS DETAILS
PROJECT NO. 1432-0365

Attachment 2


Rockwell Twp.
Norman
Home Lake Twp.
N
Ulen Twp.
Hagen Twp.
Clay
Ulen
Keene Twp.
Legend
Cities
County Boundary
Township Boundary
Area of Interest
Existing Channel
South Branch Wild Rice River EAW
Exhibit 2: Existing Channel Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
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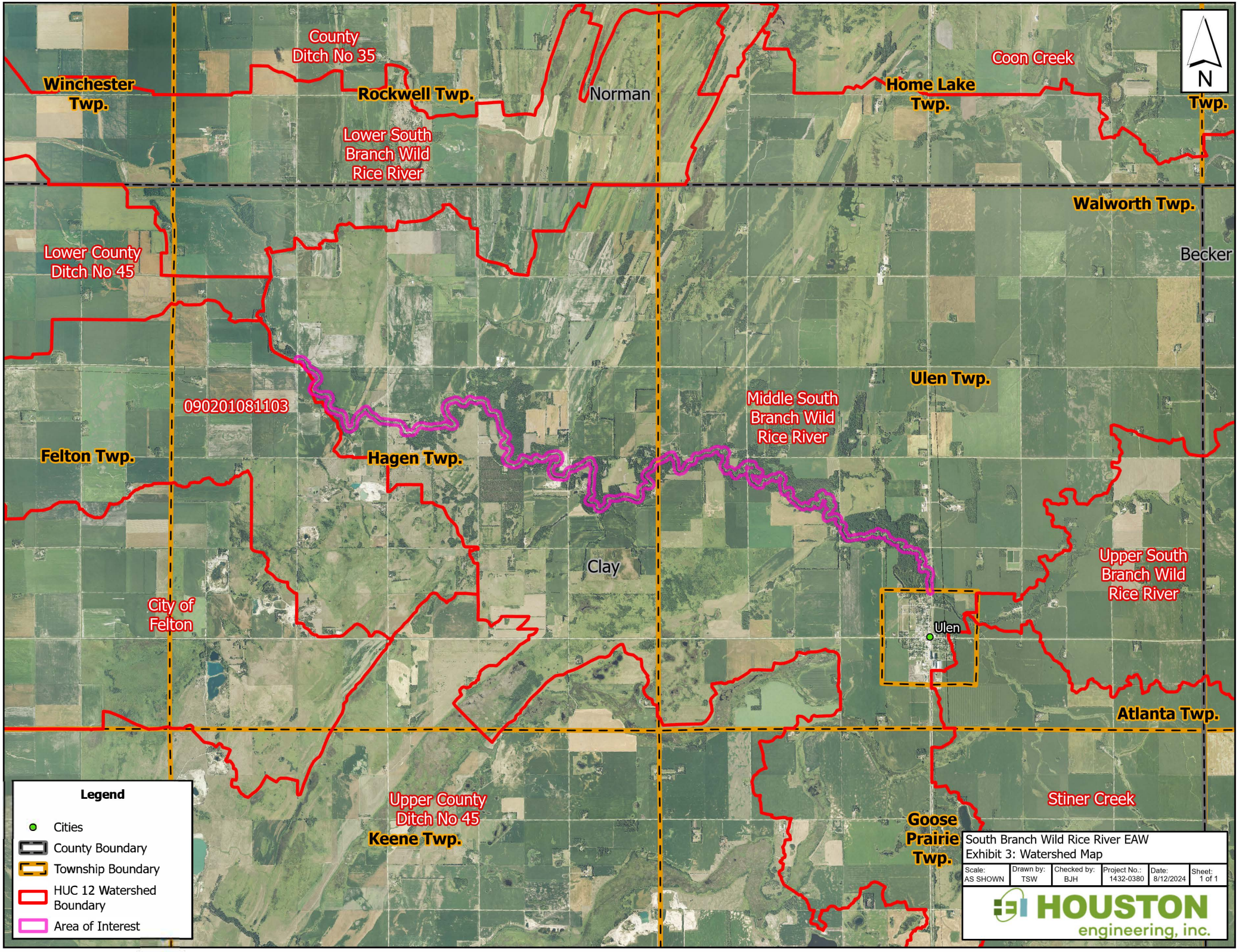
County Ditch No 35
Winchester Twp.
Rockwell Twp.
Norman
Coon Creek
Home Lake Twp.
Twp.
N
Lower South Branch Wild Rice River
Walworth Twp.
Lower County Ditch No 45
Becker
Ulen Twp.
090201081103
Middle South Branch Wild Rice River
Felton Twp.
Hagen Twp.
Clay
Upper South Branch Wild Rice River
City of Felton
Ulen
Atlanta Twp.
Upper County Ditch No 45
Keene Twp.
Stiner Creek
Goose Prairie Twp.
Legend
Cities
County Boundary
Township Boundary
HUC 12 Watershed Boundary
Area of Interest
South Branch Wild Rice River EAW
Exhibit 3: Watershed Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
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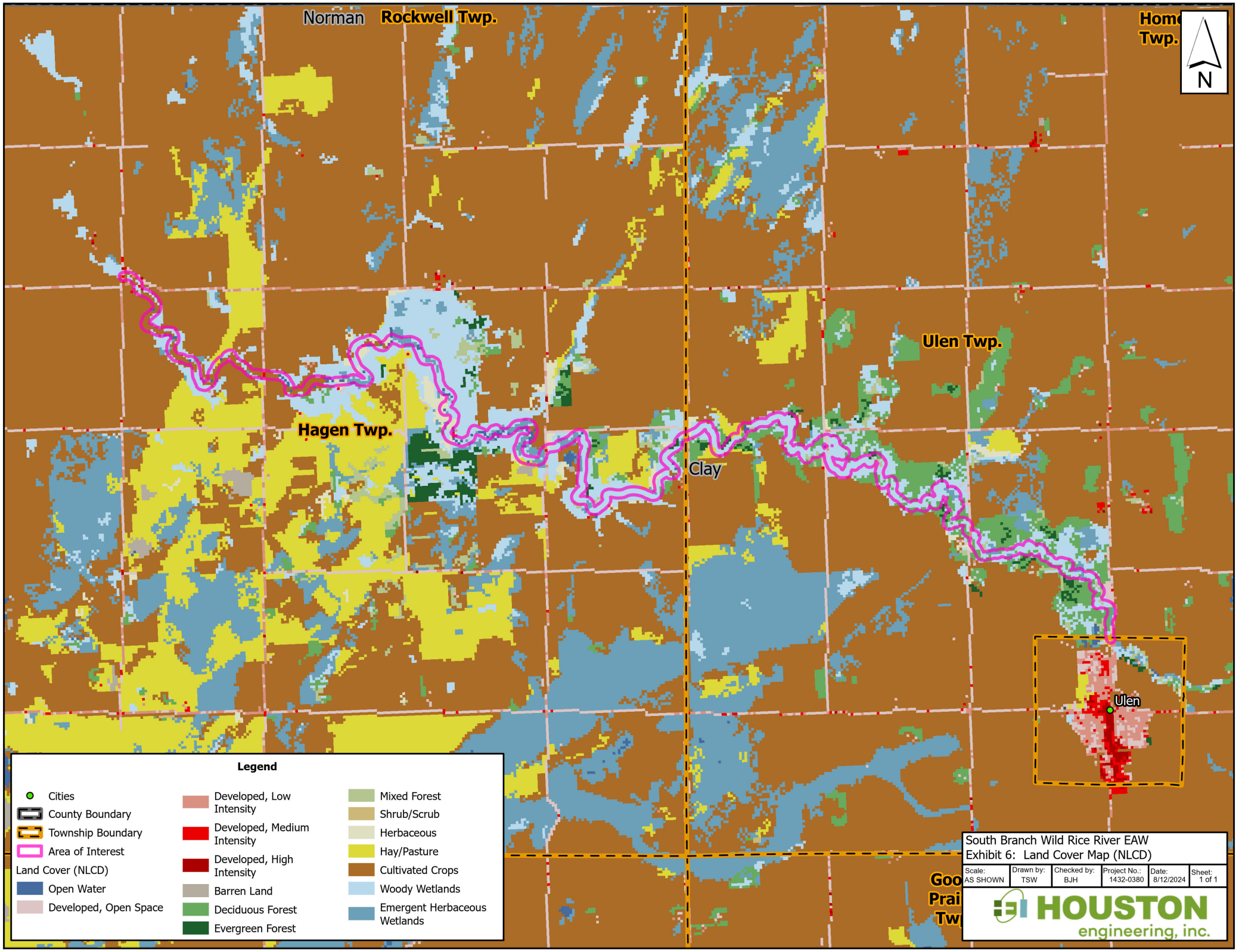
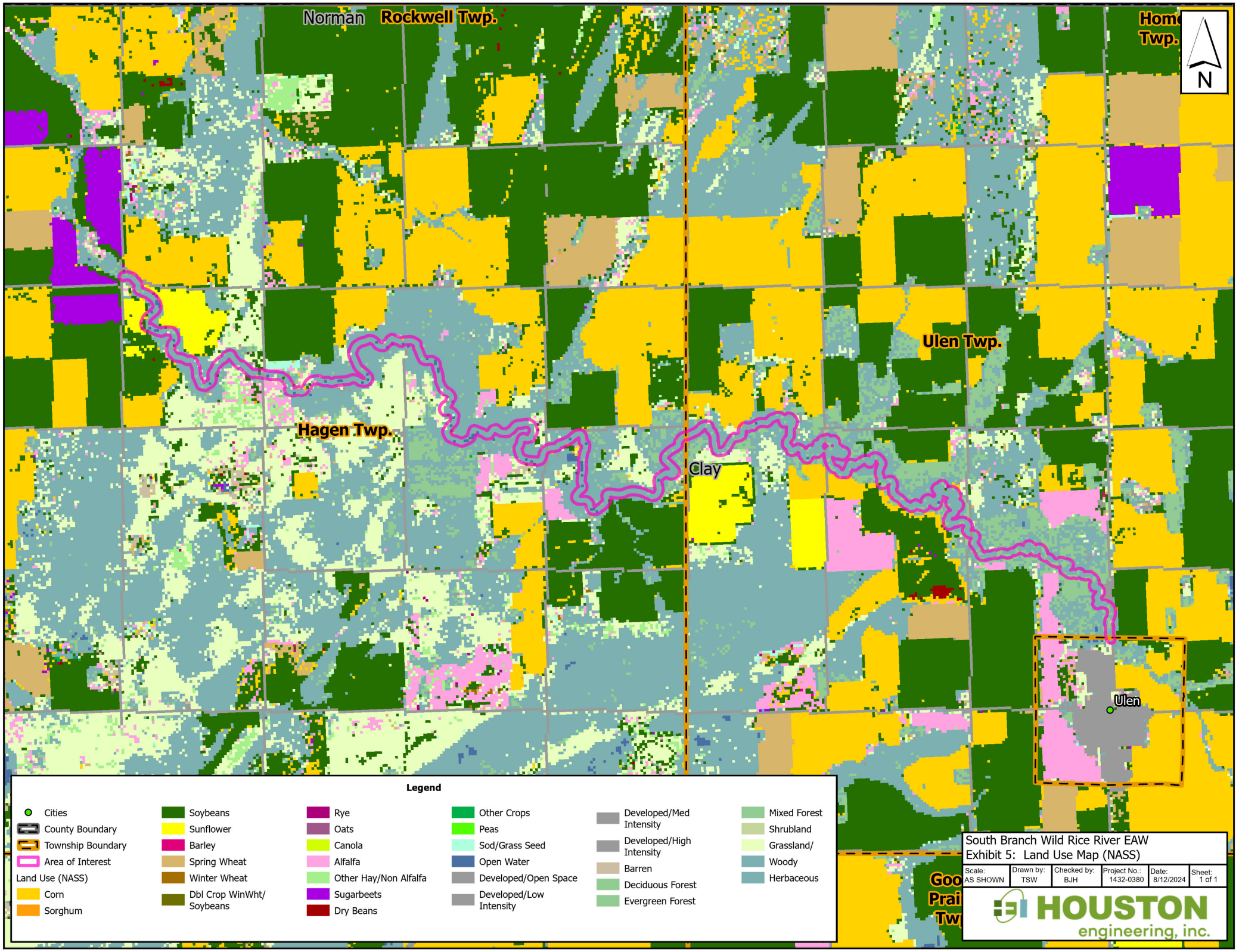
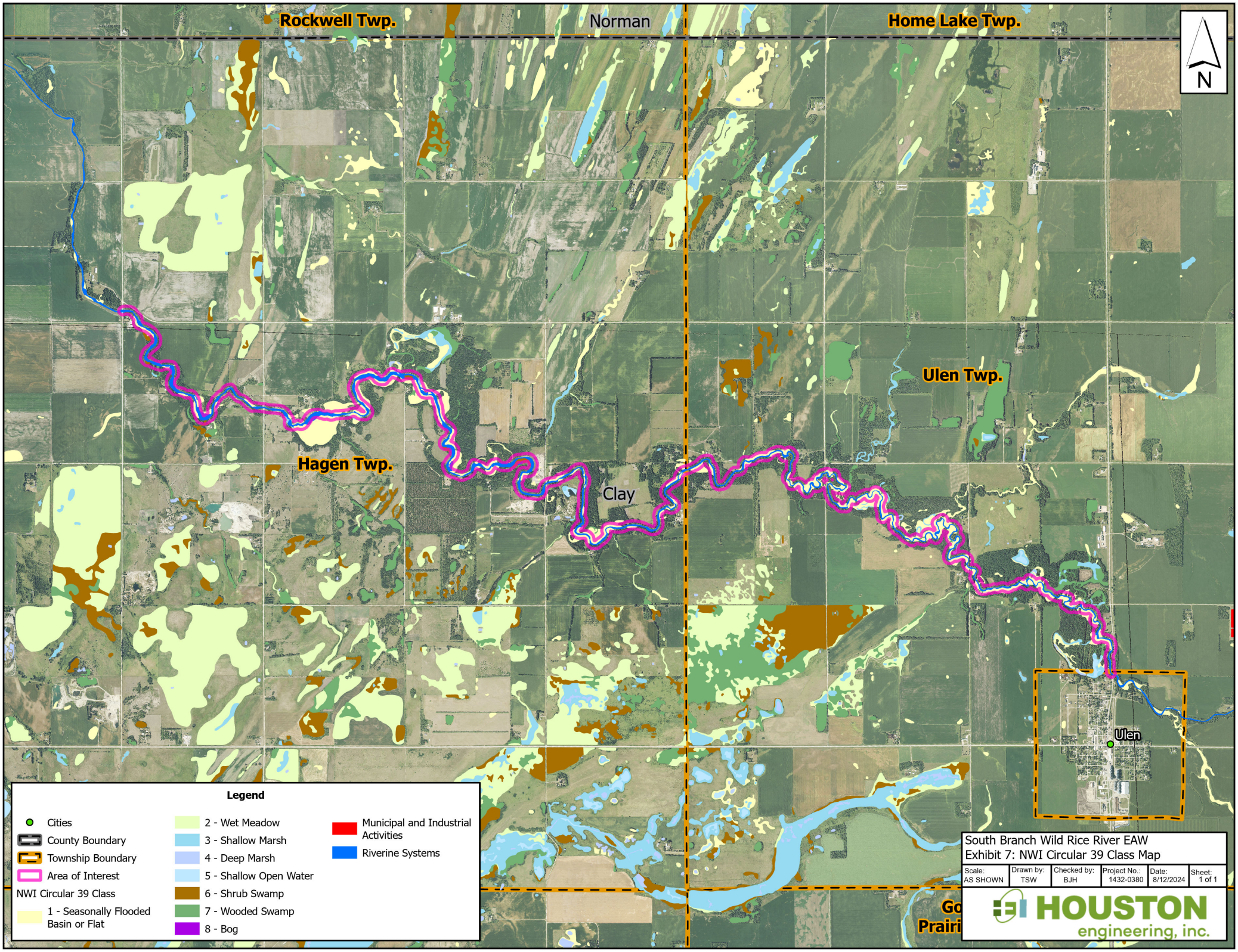
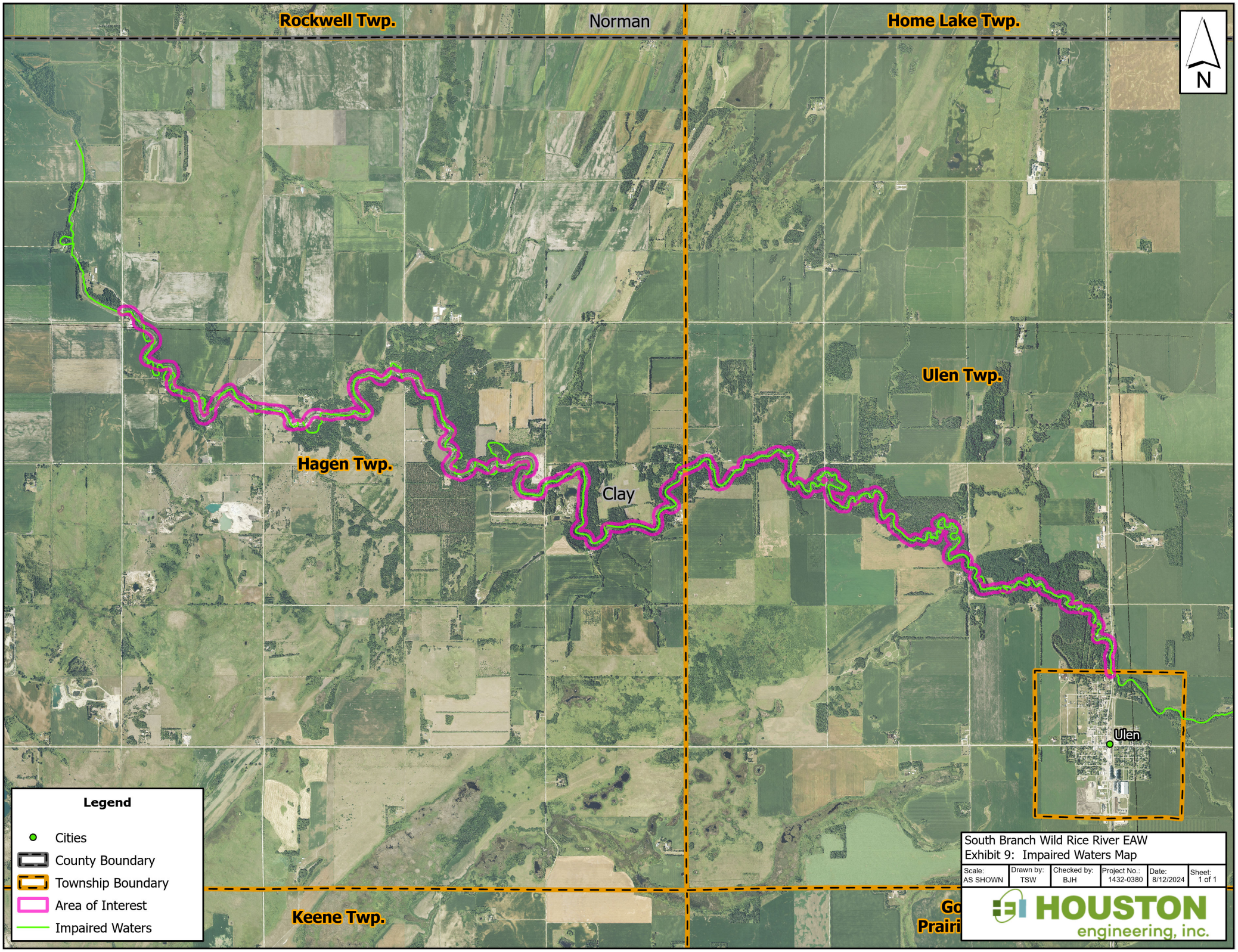

Norman
Rockwell Twp.
Ulen Twp.
Hagen Twp.
Clay
Ulen
N
Legend
Cities
County Boundary
Township Boundary
Area of Interest
Land Cover (NLCD)
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceous Wetlands
South Branch Wild Rice River EAW
Exhibit 6: Land Cover Map (NLCD)
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.


Norman
Rockwell Twp.
Ulen Twp.
Hagen Twp.
Clay
Ulen
N
Legend
Cities
County Boundary
Township Boundary
Area of Interest
Land Use (NASS)
Corn
Sorghum
Soybeans
Sunflower
Barley
Spring Wheat
Winter Wheat
Dbl Crop WinWht/ Soybeans
Rye
Oats
Canola
Alfalfa
Other Hay/Non Alfalfa
Sugarbeets
Dry Beans
Other Crops
Peas
Sod/Grass Seed
Open Water
Developed/Open Space
Developed/Low Intensity
Developed/Med Intensity
Developed/High Intensity
Barren
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrubland
Grassland/
Woody
Herbaceous
South Branch Wild Rice River EAW
Exhibit 5: Land Use Map (NASS)
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.


Rockwell Twp.
Norman
Home Lake Twp.
N
Ulen Twp.
Hagen Twp.
Clay
Ulen
Legend
Cities
County Boundary
Township Boundary
Area of Interest
NWI Circular 39 Class
1 - Seasonally Flooded Basin or Flat
2 - Wet Meadow
3 - Shallow Marsh
4 - Deep Marsh
5 - Shallow Open Water
6 - Shrub Swamp
7 - Wooded Swamp
8 - Bog
Municipal and Industrial Activities
Riverine Systems
South Branch Wild Rice River EAW
Exhibit 7: NWI Circular 39 Class Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.


Rockwell Twp.
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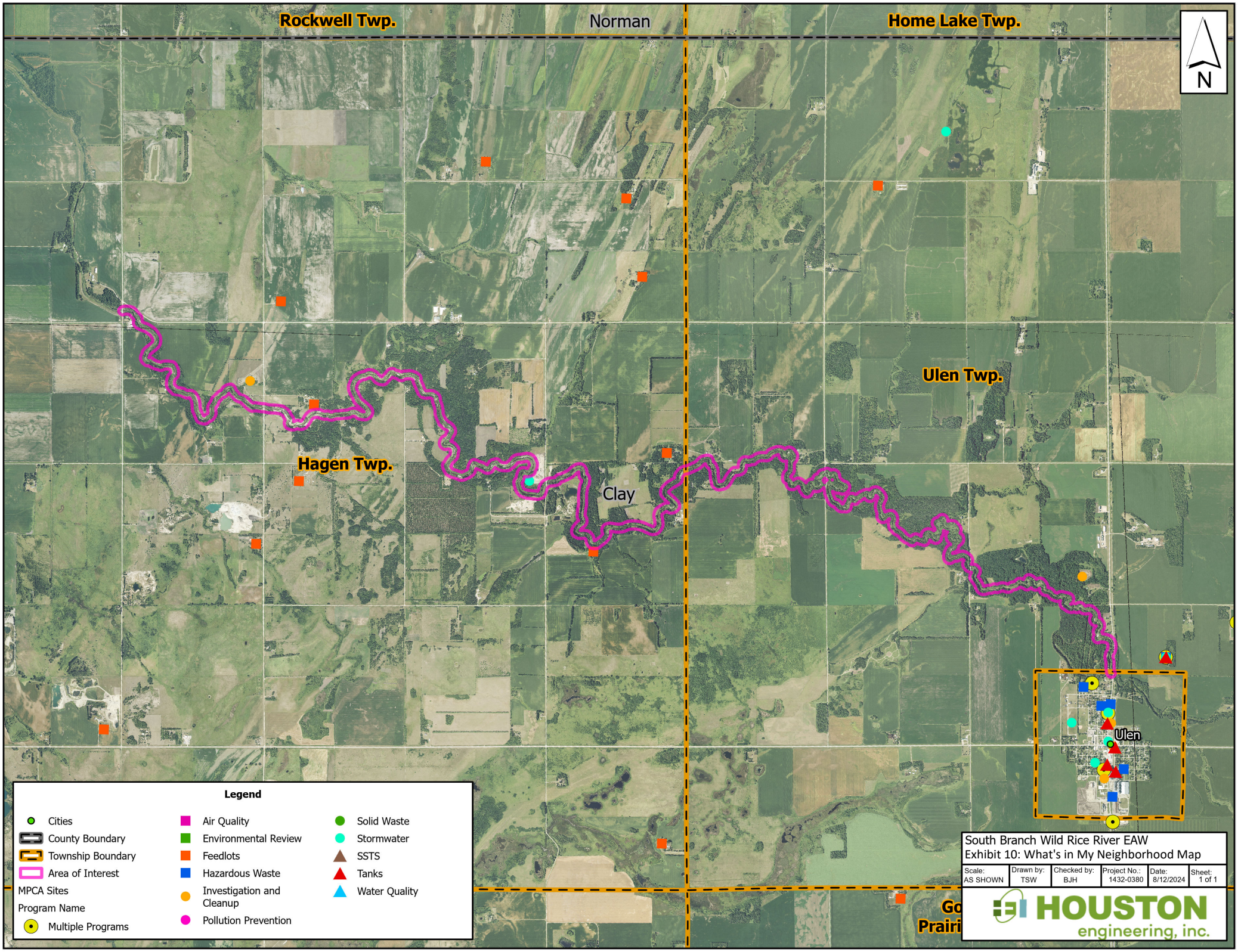
Home Lake Twp.
N
Ulen Twp.
Hagen Twp.
Clay
Ulen
Keene Twp.
Legend
Cities
County Boundary
Township Boundary
Area of Interest
Impaired Waters
South Branch Wild Rice River EAW
Exhibit 9: Impaired Waters Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.


Rockwell Twp.
Norman
Home Lake Twp.
N
Ulen Twp.
Hagen Twp.
Clay
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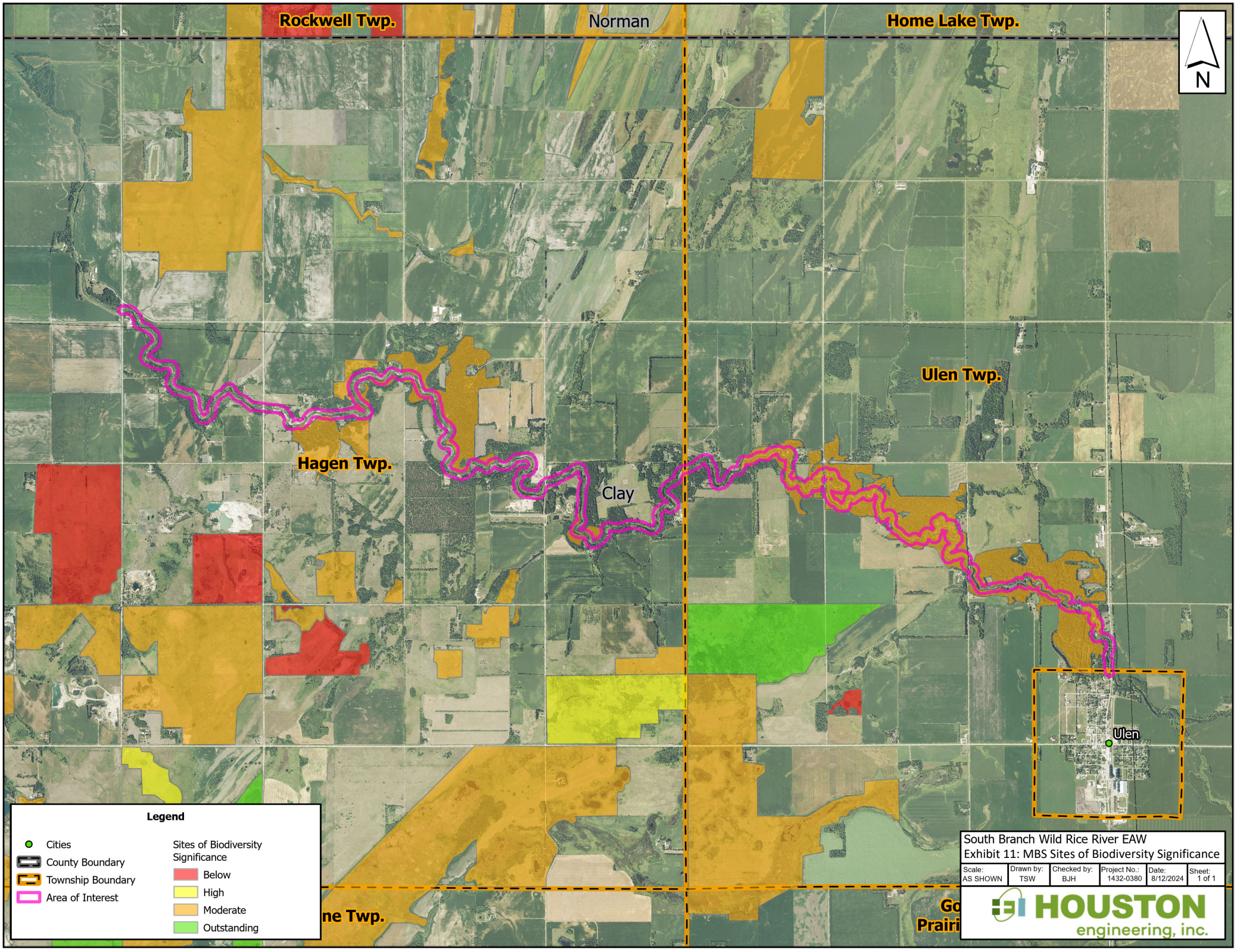
Legend
Cities
County Boundary
Township Boundary
Area of Interest
MPCA Sites
Program Name
Multiple Programs
Air Quality
Environmental Review
Feedlots
Hazardous Waste
Investigation and Cleanup
Pollution Prevention
Solid Waste
Stormwater
SSTS
Tanks
Water Quality
South Branch Wild Rice River EAW
Exhibit 10: What's in My Neighborhood Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.


Rockwell Twp.
Norman
Home Lake Twp.
N
Ulen Twp.
Hagen Twp.
Clay
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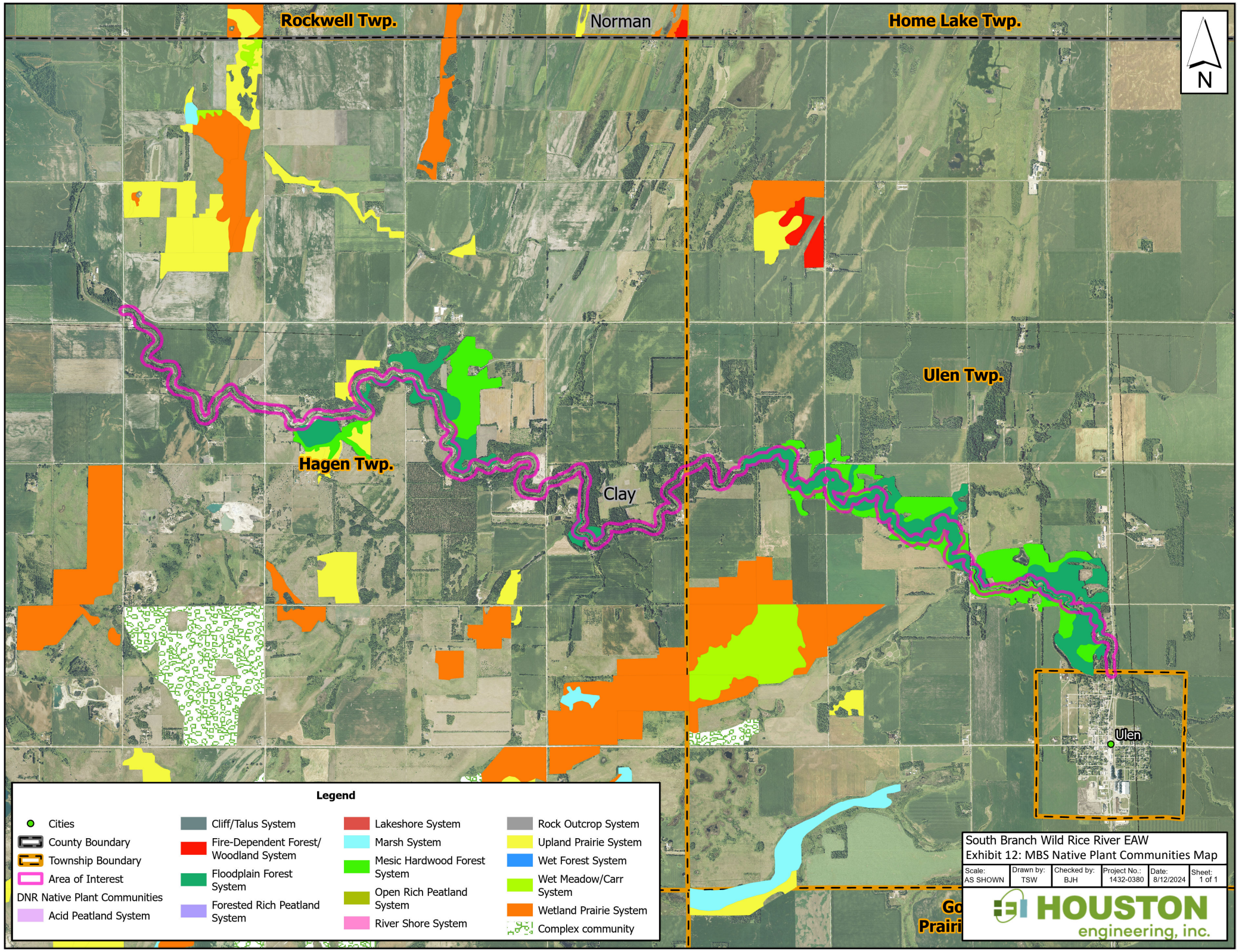
Legend
Cities
County Boundary
Township Boundary
Area of Interest
Sites of Biodiversity Significance
Below
High
Moderate
Outstanding
South Branch Wild Rice River EAW
Exhibit 11: MBS Sites of Biodiversity Significance
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.


Rockwell Twp.
Norman
Home Lake Twp.
N
Ulen Twp.
Hagen Twp.
Clay
Ulen
Legend
Cities
County Boundary
Township Boundary
Area of Interest
DNR Native Plant Communities
Acid Peatland System
Cliff/Talus System
Fire-Dependent Forest/ Woodland System
Floodplain Forest System
Forested Rich Peatland System
Lakeshore System
Marsh System
Mesic Hardwood Forest System
Open Rich Peatland System
River Shore System
Rock Outcrop System
Upland Prairie System
Wet Forest System
Wet Meadow/Carr System
Wetland Prairie System
Complex community
South Branch Wild Rice River EAW
Exhibit 12: MBS Native Plant Communities Map
Scale: AS SHOWN
Drawn by: TSW
Checked by: BJH
Project No.: 1432-0380
Date: 8/12/2024
Sheet: 1 of 1
HOUSTON engineering, inc.

Attachment 3

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

August 23, 2024

Benjamin Hengel
Houston Engineering

RE: Natural Heritage Review of the proposed **South Branch - Wild Rice River Restoration and Stabilization Project,**

County	Township	Range	Section
Clay	142N	44W	18, 19, 20, 21, 27, 28
Clay	142N	45W	8, 9, 14, 15, 16, 23, 24

Dear Benjamin Hengel,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2024-00608** in the email subject line.

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

Ecologically Significant Areas

- The Minnesota Biological Survey (MBS) has identified **Hagen 15** and **Ulen 21, 20** as Sites of *Moderate* Biodiversity Significance which overlap the proposed project. Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as *Moderate* contain occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery.

  These Sites contain several rare native plant communities:
  - UPn12d - Dry Hill Prairie (Northern) -critically imperiled (S1)
  - UPn12b - Dry Sand - Gravel Prairie (Northern) - imperiled (S2)
  - FFn57a - Black Ash - Silver Maple Terrace Forest - vulnerable to extirpation (S3)

- MHs38b - Basswood - Bur Oak - (Green Ash) Forest - vulnerable to extirpation (S3)

The DNR recommends that the project be designed to avoid impacts to these ecologically significant areas. Actions to avoid or minimize disturbance include, but are not limited to, the following recommendations:

- As much as possible, operate within already-disturbed areas.
- Avoid MBS Sites and native plant communities ranked S1, S2, or S3.
- Retain a buffer between proposed activities and the MBS Site.
- Minimize vehicular disturbance in the MBS Site (allow only vehicles/equipment necessary for construction activities).
- Do not park equipment or stockpile supplies in the MBS Site.
- Do not place spoil in the MBS Site or other sensitive areas.
- If possible, conduct the work under frozen ground conditions.
- Work in watercourses should be conducted during low flow whenever possible.
- Use effective erosion prevention and sediment control measures.
- Inspect and clean equipment prior to operation and follow recommendations to prevent the spread of invasive species.
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible.
- Use only weed-free mulches, topsoils, and seed mixes. Of particular concern are birdsfoot trefoil (*Lotus corniculatus*) and crown vetch (*Coronilla varia*), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas.

MBS Sites of Biodiversity Significance and DNR Native Plant Communities can be viewed using the Explore page in Minnesota Conservation Explorer or their GIS shapefiles can be downloaded from the MN Geospatial Commons. Please contact the NH Review Team if you need assistance accessing the data. Reference the MBS Site Biodiversity Significance and Native Plant Community websites for information on interpreting the data. To receive a list of MBS Sites of Biodiversity Significance and DNR Native Plant Communities in the vicinity of your project, create a Conservation Planning Report using the Explore Tab in Minnesota Conservation Explorer.

- If the Wetland Conservation Act (WCA) is applicable to this project, please note that native plant communities with a Conservation Status Rank of S1 through S3 or wetlands within *High* or *Outstanding* MBS Sites of Biodiversity Significance may qualify as Rare Natural Communities (RNC) under WCA. Minnesota Rules, part 8420.0515, subpart 3 states that a wetland replacement plan for activities that modify a RNC must be denied if the local government unit determines the proposed activities will permanently adversely affect the RNC. If the proposed project includes a wetland replacement plan under WCA, please contact your DNR Regional Ecologist for further evaluation. Please visit WCA Program Guidance and Information for additional information, including the Rare Natural Communities Technical Guidance.

State-listed Species

- Western prairie fringed orchid (*Platanthera praeclara*), a federally-listed threatened and state-listed endangered plant species, and small white lady's-slipper (*Cypripedium candidum*), a state-listed plant species of special concern have been documented in the vicinity of the proposed project. Habitat for these species includes upland prairie, wetland prairie, and wet meadow/carr. **Given the extreme rarity and protected status of the western prairie fringed orchid, any suitable habitat for this species within or adjacent to the project area will need to be identified and avoided**. If this is not possible and suitable habitat will be disturbed by the proposed project (staging area, new access roads, etc.), a botanical survey for this species will be needed.

  Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of endangered or threatened plants or animals, including their parts or seeds, without a permit. **To demonstrate avoidance, a qualified surveyor will need to determine if suitable habitat exists within the activity impact area and, if so, conduct a survey prior to any project activities.** Surveys must be conducted by a qualified surveyor and follow the standards contained in the Rare Species Survey Process and Rare Plant Guidance. Visit the Natural Heritage Review page for a list of certified surveyors and more information on this process. Project planning should take into account that any botanical survey needs to be conducted during the appropriate time of the year, which may be limited. **Please contact** Review.NHIS@state.mn.us **to confirm that suitable habitat will be avoided or to inform us that a botanical survey will be needed.**

- Creek heelsplitter (*Lasmigona compressa*), a state-listed mussel species of special concern, has been documented in the South Branch of the Wild Rice River. These species are particularly vulnerable to deterioration in water quality, especially increased siltation. **Therefore, it is important that stringent erosion prevention and sediment control practices are maintained, throughout the duration of the project, to prevent adverse debris and material from impacting downstream populations.**

- The proposed project is located directly adjacent to booming grounds of the Greater Prairie-chicken (*Tympanuchus cupido*), a state-listed bird species of special concern. During the booming season, usually April 1 through May 15, dozens of males gather in areas of short cover (including agricultural land), where they defend small territories and advertise to females using elaborate displays and booming sounds. After the mating season ends, the birds disperse and nest in areas of dense, undisturbed cover. **All construction activities should not take place before 9:00 AM between April 1 through May 15. We recommend disturbance or clearing of the project area be limited to July 30 through March 1.**

- Marbled godwit (*Limosa fedoa*), a state-listed bird species of special concern, has been documented in the vicinity of the proposed project. This species prefers to feed and nest in short

upland grassland areas along the edges of seasonal wetlands but is also known to nest in adjacent cropland stubble if the adequate habitat is limited. **If feasible, avoid impacts to nesting habitat between May and August.**

- Yellow rail (*Coturnicops noveboracensi*), a state-listed bird species of special concern, has been documented in the vicinity of the proposed project. They are dependent on wetland systems and are extremely vulnerable to changes in hydrology; even a slight change of one inch in water depth can cause yellow rails to abandon the area. Yellow rails start nesting in late-May and the young typically fledge by the end of June. **If feasible, avoid changing water levels from early May through mid-August to minimize impacts to nesting birds.**

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts. Please report any species sightings using the Quick Species Observation Form.

Federally Protected Species

- Western prairie fringed orchid is a federally listed plant species. **To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online Information for Planning and Consultation (IPaC) tool.**

Environmental Review and Permitting

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance. Sufficient information should be provided so the DNR can determine whether a takings permit will be needed for any of the above protected species.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If

additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.**

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit the Natural Heritage Review website for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, you may contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Molly Barrett

Digitally signed by Molly Barrett
Date: 2024.08.23 18:00:10 -05'00'

Natural Heritage Review Specialist
Molly.Barrett@state.mn.us

Cc: Owen Baird, Regional Environmental Assessment Ecologist, Northwest (Region 1)
Cc: Becky Marty, Regional Ecologist, Northwest (Region 1)
Cc: Jennie Skancke, Wetlands Program Coordinator

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To:
Project Code: 2024-0136377
Project Name: South Branch Wild Rice River

08/28/2024 13:57:20 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

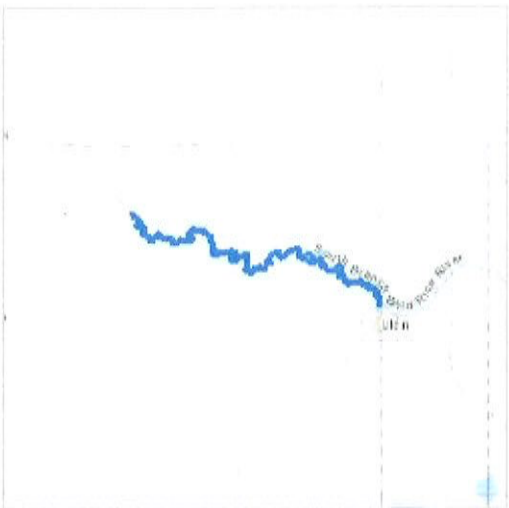
This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2024-0136377
Project Name: South Branch Wild Rice River
Project Type: Modification Stream or Waterbody
Project Description: Rock arch rapids restoration project
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.104750300000006,-96.34557024642254,14z



Counties: Clay County, Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

INSECTS

NAME	STATUS
Dakota Skipper *Hesperia dacotae* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1028	Threatened
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Western Regal Fritillary *Argynnis idalia occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/12017	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Wild Rice Watershed District
Name: Benjamin Hengel
Address: 1401 21st. Ave. N
City: Fargo
State: ND
Zip: 58102
Email bhengel@houstoneng.com
Phone: 7014999468

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers