July 2013 version

ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:
http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.
Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.
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:** CSAH 9 Reconstruction (SAP-056-609-005), Otter Tail County, MN

2. **Proposer:** Otter Tail County Highway Dept.
   Contact person: Charles Grotte, P.E.
   Title: Assistant County Engineer, Otter Tail County
   Address: 505 South Court Street, Suite 1
   City, State, ZIP: Fergus Falls, MN 56537
   Phone: (218) 998-8475
   Fax: (218) 998-8488
   Email: CGrotte@co.ottertail.mn.us

3. **RGU:** Otter Tail County Highway Dept.
   Contact person: Charles Grotte, P.E.
   Title: Assistant County Engineer, Otter Tail County
   Address: 505 South Court Street, Suite 1
   City, State, ZIP: Fergus Falls, MN 56537
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   Email: CGrotte@co.ottertail.mn.us

4. **Reason for EAW Preparation:** (check one)

Required:	Discretionary:
• EIS Scoping	• Citizen petition
X Mandatory EAW	• RGU discretion
	• Proposer initiated

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

   Minn. R. 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:** Northwest corner of Otter Tail County, just south of the Becker County line along the northwestern shore of Pelican Lake.
   County: Otter Tail County
   City/Township: Scambler
   PLS Location (¼, ¼, Section, Township, Range): North ½ of Section 11, T137N, R43W; South ½ of Section 2, T137N R43W; and West ½ of Section 1, T137N, R43W.
   Watershed (81 major watershed scale): Otter Tail River Watershed
   GPS Coordinates: NA – linear roadway project
   Tax Parcel Number: NA – linear roadway project

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

- **County map showing the general location of the project;** (See Figure 1)
- **U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and** (See Figure 1)
- **Site plans showing all significant project and natural features. Pre-construction site plan and post- construction site plan.** (See Figure 2 and Exhibit A)

The following are provided as part of this document:

TABLES

FIGURES

EXHIIBITS:

6. **Project Description:**

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

Otter Tail County has prepared final plans for the reconstruction of CSAH 9 located in northwestern Otter Tail County. The overall goals of the reconstruction project are to:

- Improve traffic and pedestrian safety;
- Correct geometric limitations;
- Upgrade mobility for regional traffic that links local growth areas and regional centers;
- Minimize property disruption; and
- Minimize/mitigate environmental impacts.

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**.

Project Description:
Otter Tail County (County) is proposing reconstruction of approximately 2.2 miles of CSAH 9, which is a two-lane rural highway. The CSAH 9 reconstruction project (project) is located within the northwest corner of Otter Tail County along the northwestern shore of Pelican Lake, extending from just north of South Pelican Drive to the Otter Tail/Becker County line (**Figures 1 & 2**).

CSAH 9/20 Corridor Study
In 2009, the County sponsored the CSAH 9/20 Corridor Study with the purpose of:

- Identifying transportation issues affecting the existing project corridor;
- Analyze and evaluate improvement options;
- Select short- and long-term range alternatives;
- Identify safety improvements; and
- If needed, undertake corridor preservation measures.

The study was guided by the Study Review Committee (SRC) composed of key stakeholders and senior technical staff. The study also included two public open house meetings and two public walk-around meetings.

The long-term range alternative identified during the study process provides for a bypass, routing the CSAH 9 alignment to a new location west and north of the current alignment. It was determined based on traffic volume forecasts and a route diversion analysis that a new CSAH 9 alignment did not warrant construction. It was recommended that the mapping process preserve the necessary right-of-way moving forward. This will help avoid future conflicts with land use categories, assuming growing traffic needs will ultimately lead to additional roadways in the area.

The short-term range alternative looked at three different improvement options. The alternative selected, which is the basis for this project, was determined by the SRC, open houses, and walk-arounds. The selected alternative includes dynamic driver feedback signs, crosswalks, and medians at the intersections of CSAH 9/CSAH 20, and CSAH 9/South Pelican Drive. These

features address the most important objectives identified during this study: improve safety and reduce corridor speed.

CSAH 9 Project Overview

The project goals will be constructed to Minnesota Department of Transportation (MnDOT) State Aid Standards. The County submitted and received final plan approval from MnDOT for the CSAH 9 project (refer to **Exhibit A**).

The CSAH 9 project corridor currently consists of two 12-foot paved driving lanes with one-foot gravel/grass shoulders on both sides. The project proposes two configured roadway segments as summarized below:

- Segment 1 will consist of two 12-foot paved driving lanes with four-foot paved shoulders from South Pelican Drive to the CSAH9/CSAH 20 intersection—approximately 1.6 miles in length. This segment will provide a curb and gutter and a six-foot wide concrete sidewalk on the side of the roadway corridor away from Pelican Lake. Where feasible, a six-foot boulevard is proposed to be built between the highway and sidewalk. The curb and gutter and sidewalk is not proposed on the Pelican Lake side of the highway. The project will also consist of a center median at the Yacht Club and intersection of CSAH 9 and CSAH 20.
- Segment 2 will consist of two 12-foot driving lanes with two, two-foot paved shoulders and five-and-one half-foot gravel shoulders from the CSAH 9/CSAH 20 intersection to the Otter Tail/Becker County line. This segment of the CSAH 9 project is approximately 0.6 mile. No curb and gutter or sidewalk is proposed for this segment of the CSAH 9 project.

As noted above, the project will incorporate traffic calming features to provide improved safety along this corridor. These enhancements include:

- Driver feedback signs at three locations: (1) between South Pelican Drive and 510th Street, (2) between 510th Street and Duck Lake Road, and (3) between Duck Lake Road and CSAH 20. These would be similar to the existing driver feedback sign installed south of South Pelican Drive.
- Curb and gutter along the side of CSAH 9 that is away from Pelican Lake;
- Crosswalks installed at the Yacht Club and CSAH 9/CSAH 20 intersection;
- Additional street light at the intersection of CSAH 9/CSAH 20; and
- Raised center medians at the Yacht Club and CSAH 9/CSAH 20 intersection.

The roadway alignment of the shoulder on the Pelican Lake side of the project will remain approximately at the location of the existing shoulder. The project proposes to shift the highway centerline approximately five (5) feet away from Pelican Lake. The project will realign the existing alignment at Duck Lake to provide for an "S" curve alignment which will minimize fill impacts.[1] The southerly curve through this area is proposed to be shifted closer to Pelican Lake to allow a smoother transition through this segment.

Driveway accommodations along the project corridor will be addressed as follows:

- Existing driveways on the Pelican Lake side of the project and those north of the CSAH 9/CSAH 20 intersection are proposed to be paved with bituminous pavement to the right-of-way line. It is anticipated that new driveway segments will match existing driveway segments. An exception to this option is in regard to farm field approaches, which would

[1] Otter Tail County Highway and Minnesota Department of Natural Resources (DNR) early coordination meeting – August 6, 2012.

not be paved to the right-of-way line. If work is required beyond the right-of-way line, the existing surface would be replaced with materials that existed prior to the CSAH 9 project (e.g., concrete, gravel, etc.).

- Existing driveways on the project corridor away from the Pelican Lake side of the highway will consist of concrete aprons from the proposed curb and gutter to the back side of the sidewalk. It is anticipated new driveway segments will match existing driveway segments. If work is required beyond the right-of-way line, the existing surface is proposed to be replaced with materials that existed prior to the project (e.g., concrete, gravel, etc.).

- New concrete driveway aprons will be constructed as needed to provide access to back lots through the curb and gutter and sidewalk. The property owner is responsible for any new construction beyond the sidewalk.

The project will address highway drainage, including replacing all existing culverts and drainage structures within the project area. This includes the culverts at Bob Creek, Duck Lake, and Spring Creek.

To accommodate the project design, 2.12 acres of wetlands and 1.29 acres of designated public waters will be impacted by permanent cut and fill activities. These impacts are shown on **Exhibit B** and discussed in more detail under EAW **Question #11**.

Construction Methods
Construction activities associated with the CSAH 9 project are likely to result in noise, dust, and construction traffic congestion. Dust generated during construction will be minimized through standard dust control measures, such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions in accordance with MnDOT standard specifications at the time of construction. Construction contractors will be required to comply with applicable local noise restrictions and ordinances to the most reasonable extent.

Excess materials and debris from the project, such as existing pavement, fencing material, unsuitable grading material, and tree/vegetation, would be disposed of in accordance with MnDOT standard specifications and applicable rules. Excess materials and debris will not be placed in wetlands, floodplains, or other sensitive areas.

Vibrations resulting from the use of high-impact equipment, such pavement jack hammering, will be unavoidable with construction of the proposed project. Vibration is often a nuisance during roadway projects, though adverse impacts of these activities are not anticipated. Construction vibrations may be perceptible and possibly annoying to occupants of buildings within the project area. Proper planning and communication with potentially impacted properties/residents can mitigate these unavoidable construction inconveniences.

Timing and Duration of Construction Activities
The proposed project is anticipated to commence construction April/May 2017, with the construction completed in August 2017, and final paving completed by June 2018, depending on project permits and approvals.

c. **Project magnitude**:

Table 1: Project Magnitude

Total Project Acreage*	30.1 acres
Linear project length	2.2 miles
Number and type of residential units	NA
Commercial building area (in square feet)	NA
Industrial building area (in square feet)	NA
Institutional building area (in square feet)	NA
Other uses – specify (in square feet)	
Structure height(s)	NA

*Project area - Includes areas within right-of-way and construction easements of the CSAH 9 project. Total area disturbed by construction activities is 23.7 acres.

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 proposed project is to provide for:

- Improved roadway segment;
- Incorporated traffic calming measures;
- Add pedestrian features (i.e. sidewalk and designated crosswalks); and
- Improved drainage management.

The CSAH 9 project road segment is in need of reconstruction, the surface has deteriorated, the alignment does not meet design speed criteria and the existing road has insufficient strength.

Beneficiaries include local and seasonal corridor users by providing traffic calming features, the addition of pedestrian sidewalk, and marked road crossings at the Yacht Club and intersection of CSAH 9/CSAH 20. Residents in the vicinity of the project will benefit from this project, both with the safer road geometry and sidewalk/pedestrian enhancements.

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

The following cover types are estimated based on the CSAH 9 project construction limits, which includes the temporary construction and permanent project right-of-way easements. See **Figure 3** for a National Land Cover Dataset (NLCD 2011) map.

Table 2: Cover Types – Before and After (acres)

	Before	After		Before	After
Wetlands**	2.12	0	Lawn/landscaping	0	0
Deep water/streams	0	0	Impervious surface	8.8	13.2
Wooded/forest	2.6	2.6	Stormwater pond	0	0
Brush/Grassland	0	0	Developed, Open Space	4.4	3.9
Cropland (hay/pasture, cultivated)	5.4	5.2	Developed, Low Intensity	2.5	2.5
Herbaceous	1.4	1.1	Developed, Medium	1.6	1.6
Open water/public waters**	1.29	0	**TOTAL**	30.1	30.1

Source:
** Detailed wetland and public waters impact data based on wetland delineation and analysis conducted by Otter Tail County and separate from the 2011 NLCD cover types data.

8. **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 3: Permits and Approvals Required

UNIT OF GOVERNMENT	TYPE OF APPLICATION	STATUS
Federal		
U.S. Army Corps of Engineers (USACE)	Section 404 Permit	Obtained
State		
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System Construction Wastewater Permit (including Stormwater Pollution Prevention Plan)	Will be applied for
	401 Water Quality Certification	Obtained
Department of Natural Resources	Water Appropriations Permit – Dewatering (if needed)	Will be applied for
	Public Waters Work Permit	Applied for
Local		
Otter Tail County	Conditional Use Permit	Obtained
	EAW Approval	Pending
	EIS Need Decision and Findings of Fact & Conclusions	To be obtained

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. Land use:

a. Describe:

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

Based on aerial photography and National Land Cover Database (NLCD 2011), the CSAH 9 project is located within a rural, low-intensity developed area with predominately residential, agricultural, wetland, open water and some commercial land uses. The northern portion of the project is adjacent to agricultural, commercial, wetland and open space land uses. Along the southern segment of the project, Pelican Lake is on the south/southeast side of the highway. Land use within southern segment of the CSAH 9 project consist of residential, agricultural, wetlands, open water and open space.

Prime and Unique Farmlands

There is approximately 4.5 acres of Farmland of Statewide Importance located within the northern segment of the project area (see the NRCS, *Farmland Classifications* report in **Exhibit C**). The CSAH 9 project is not anticipated to cause adverse impacts to the designated Farmland of Statewide Importance; nor will designated Farmland of Statewide Importance be acquired. The CSAH 9 project will not have a substantial impact upon agricultural production within the project area.

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.

Otter Tail County 2040 Transportation Plan (Adopted July 21, 2015)

The County's 2040 Long Range Transportation Plan translates identified issues into specific, actionable initiatives and strategies. The top two goals of this plan are "Safety" and "Accessibility & Mobility". The project area is identified as an area with "Lake access and narrow roadway concerns (pp. 2-32)." The County rated this segment of CSAH 9 as "Platinum" under its Highway Preservation Analysis, meaning this route serves as a backbone to the County's transportation network and provides connectivity to MnDOT's roadway network and population centers throughout the County. One of the performance and maintenance metrics for such classified roadways is that major repairs should be applied before the Pavement Quality Index (PQI) reaches 65. The project area is identified as having a "poor" PQI with 20-29 points on the rating scale (p. 2-13). The County Transportation Program approved the CSAH 9 reconstruction project September 22, 2015 (p.6-15)[2].

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

The project is located within the existing CSAH 9/20 corridor, which is under the County's jurisdiction. The project is located within the 1,000-foot Lakeshore Boundary and the County's Shoreland Management regulations apply.

The Otter Tail County, Shoreland Management Ordinance regulates the use and

[2] Otter Tail County, Transportation Program Approved 9-22-2015, http://www.co.otter-tail.mn.us/DocumentCenter/Home/View/7617, accessed Aug. 22, s2016.

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 Otter Tail County; and to preserve and enhance their natural resources as provided in the Environmental Rights Act (Minnesota Statues 116B).

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

There are no compatibility issues with nearby land uses, zoning, and plans listed in Item 9a. The project is a transportation reconstruction project that has gone through project development phases with local and state level stakeholders and regulatory agencies. Due diligence has been implemented to select the least environmentally damaging project and features, while providing human health and safety considerations.

Land Use

The primary land use within the project area is rural residential, agriculture, open space, with some commercial. The project requires additional permanent right-of-way and temporary construction easements outside of the existing CSAH 9 right-of-way, though, the general land uses in this area will not change after the project has been constructed. Permanent highway right-of way and temporary construction easements have been obtained for the project.

The proposed project will support the existing land uses within the area. The project will result in an improved and safer portion of the CSAH 9 transportation system, which will benefit the land owners/community in the area and all other highway users.

Zoning

According to *The Shoreland Management Ordinance of Otter Tail County, Minnesota* (revised Apr. 8, 2016), road projects by a Road Authority within an existing road right-of-way are exempt from all the provisions of the Ordinance and are permitted in any district (The Shoreland Management Ordinance of Otter Tail County, Minnesota, Revised Apr 8, 2016, p. 26 (IV.(13)). The project features have been designed to minimize adverse impacts, while providing a design that adequately addresses project issues and purpose and need, which includes public safety and road maintenance/preservation.

Plans

Otter Tail County 2040 Transportation Plan (Adopted July 21, 2015)

The project will be addressing performance and maintenance issues of CSAH 9 and instituting a planned project that benefits both the County's and MnDOT's transportation network. The project directly corresponds with the County's long range transportation plan by:

- Developing and maintaining a transportation system that promotes safety for all users (Goal 1, p. 3-2); and
- Developing a transportation system that increases the accessibility and mobility options for all users (Goal 2, p.3-2).

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

No potential incompatibilities with nearby land uses, zoning or plans have been identified.

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

Otter Tail County is positioned within the sandy glacial outwash plain with gently rolling hills. Along the northwestern and southeastern edges of the county lie steeper hills and bluffs. The majority of the county's 1,048 lakes are formed in the sandy areas[3].

Continental glaciation formed the landscapes of Otter Tail County. Bedrock in the County is covered by 200 to more than 400 feet of Wisconsin glacial deposits[4]. The project is located within the Wawa subprovince of the Archaen Superior Province. Bedrock in the project area is primarily granitic mafic metavolcanics rocks; orthogneiss and migmatite; and volcanogenic greywacke and mudstone (Geologic Map of Minnesota, Bedrock Geology, 2011). Surficial geology in the area is till of the Erskine moraine, deposits associated with the Des Moines Lobe (Minnesota Geological Survey, 2007).

There are no susceptible geologic features recorded within the project area.

There will be no adverse impacts to geology in the area as a result of the CSAH 9 project. The project will be located within previously disturbed areas within the existing highway right-of-way and previously disturbed areas directly outside of the right-of-way line.

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 11.b.ii.**

Soils

According to the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), soils in the project area are predominately:

- *Rushlake-Hangaard complex* (29.3%) – loamy sand/gravelly coarse sand;
- *Dorset-Corliss complex, 6-12% slopes* (17.5%) – sandy loam/gravelly coarse sand; and
- *Verndale sandy loam, 2-6% slopes* (14.9%) - loam/sandy loam/sand.

NRCS classified soils within the project area are tabulated in **Table 4** with NRCS, Web Soil Survey, soil reports/maps provided within **Exhibit C**.

Hydrological soils group ratings are also provided in **Table 4**. These ratings are based on estimates of runoff potential. Soils are assigned one of four groups (A, B, C, and D; low to high runoff potential) according to the rate of water infiltration when the soils are not protected by

[3] Otter Tail County Local Water Management Plan, Aug 31, 2009 – Aug 31, 2019, http://www.co.otter-tail.mn.us/DocumentCenter/View/1063, accessed Aug 30, 2016.

[4] Otter Tail County, Geologic History & Geomorphology, http://www.co.otter-tail.mn.us/630/Geologic-History-Geomorphology, accessed Aug. 22, 2016.

vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Soils within the project area generally have a high infiltration rate (low runoff potential).

The Verndale sandy loam (567B) located in the northern portion of the project is classified as Farmland of Statewide Importance. The project will remain within previously disturbed areas and will not adversely impact these soils.

Table 4: Soils

Map Unit Symbol	Map Unit Name	Hydrologic Soil Group Rating	Acreage	Percentage
567B	**Verndale sandy loam, 2-6% slopes**	**B**	**4.5**	**14.9%**
711B	Arvilla-Sandberg complex 2-6% slopes	A	3.7	12.5%
711C	Arvilla-Sandberg complex 6-12% slopes	A	1.0	3.3%
778B	Dorset-Corliss complex, 1-6% slopes	A	1.1	3.9%
778C	**Dorset-Corliss complex, 6-12% slopes**	**A**	**5.3**	**17.5%**
1027	Udorthents, wet substratum (fill land)		2.3	7.9%
1120	**Rushlake-Hangaard complex**	**A**	**8.9**	**29.3%**
1230	Haslie and Nidaros soils, ponded	B/D	3.0	9.8%
W	Water		0.3	0.9%

Source: USDA, Natural Resources Conservation Service, Web Soil Survey, http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, accessed Aug 25, 2016. See **Exhibit C** for the corresponding NRCS soils report.

Topography

Topography in the general project area is shown on **Figure 4**. The CSAH 9 project is located in a relatively low area with several surface water resources located directly adjacent to the roadway that services the transportation network in this region. Locally, within the area of the project, the elevation ranges from 1,415-1,317 feet above mean sea level.

Impacts to Soils

The CSAH 9 project will not adversely or significantly impact the soil resources within the project area. The project will remain primarily within the existing roadway alignment and within previously disturbed areas directly adjacent to the existing roadway right-of-way. Construction will result in cut and fill activities in areas directly adjacent to the existing road right-of-way to accommodate the proposed project design. These impacts are primarily associated with impacts to wetlands, which is discussed under question **#11 Water Resources**.

The contractor will install and maintain sediment and erosion control measures. The CSAH 9 project Erosion Control Plan is provided as **Exhibit A2**. Temporary sediment control measures include silt curtain(s), silt fence(s); sediment logs, filter berms, bale barriers, and ditch checks. Permanent sediment and erosion control methods that will be implemented include contouring road cuts, rounding shoulders and backslopes; shaping for drainage; sodding; wood fiber blanket(s); and other bioengineering methods.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

Not Applicable

11. 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, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include 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.

Surface Waters – Lakes & Streams

The CSAH 9 project is adjacent to several surface water and wetland resources. There are three (3) public water basins and two (2) public water wetlands within the project assessment boundary. There are also two (2) creeks within the project area; Spring Creek and Bob Creek. Designated Public Waters are shown on **Figure 5** and listed below (north to south along the project extents):

- Unnamed, Public Water Wetland (56-1660W) has a surface area of 46.5 acres. This water body is a Type 3 wetland located on the east side of CSAH 9, outside of the northern portion of the project. The project will not impact this wetland.

- Pelican Lake, Public Water Basin (56-786P), has a surface area of 3,929 acres. This lake is a Type 5 wetland with maximum depth of 64-feet. The project is located adjacent to the northwest shore of Pelican Lake. Use classifications for this lake are 2B, 3C: a healthy warm water aquatic community; industrial cooling and materials transport use without a high level of treatment. Pelican Lake is classified by the County Shoreland Management Ordinance as a General Development Lake[5]. This lake was assessed and classified as impaired in 2007 with mercury in fish tissue[6]. Pelican Lake has also been designated as infested waters due to the presence of Zebra Mussels (*Dreissena polymorpha*)[7].

- Unnamed Public Water Wetland (56-1661W) has a surface area of 75 acres. This waterbody is a Type 4 wetland located on the north side of CSAH 9, just west of the intersection of CSAH 9/CSAH 20. Spring Creek is located within this public water wetland boundary.

    - Spring Creek, Public Water Watercourse (56-70356),

[5] Otter Tail County, Shoreland Management District and Classifications, revised Nov 20, 2014, http://www.co.otter-tail.mn.us/DocumentCenter/View/1016, access Aug 30, 2016.
[6] MPCA, Surface Water Data, Lake and Stream Water Quality Dashboard, Pelican: 1 Mi. S of Cormorant (Lake), http://cf.pca.state.mn.us/water/watershedweb/wdip/waterunit.cfm?wid=56-0786-00, accessed Aug 23, 2016.
[7] MDNR, LakeFinder, Pelican (56078600), http://www.dnr.state.mn.us/lakefind/lake.html?id=56078600, accessed Aug 30, 2016.

Spring Creek is a perennial stream that serves as a natural drainage to this region. This portion of Spring Creek serves as its outlet; this outlet is located just west of the CSAH 9/20 intersection.

- Duck Lake, Public Water Basin (56-925P), is a Type 5 wetland with a surface area of approximately 40 acres and has a use-classification of 2B, 3C (as described above). The water quality conditions of this basin have not been assessed and there is no monitoring data available[8].

- Unnamed, Public Water Basin (56-930P), is a Type 5 wetland with a surface area of approximately 50 acres and has a use-classification as a 2B, 3C (as described above). The water body is classified by the County Shoreland Management Ordinance as a Natural Environment Lake. The water quality conditions of this basin have not been assessed and there is no monitoring data available[9]. Bob Creek is associated with this basin and provides a natural drainage to area with an outlet to Pelican Lake located south of the intersection of 510th Street and CSAH 9.

MPCA 303d Impaired waters within one (1) mile of the project include Pelican Lake and Lake Ida (ID: 03058200). Pelican Lake is discussed above. Lake Ida is located 1-mile northwest of the project. Use classification for this lake is 2B, 3C (as described above). This lake is impaired with mercury in fish tissue[10]. Lake Ida will not be impacted by the project and therefore will not be further discussed.

Waterfowl Production Area

The CSAH 9 project is located between two (2) WPAs, the Sullivan WPA in the northern extents of the project, and the Willow WPA located approximately 0.6 miles southeast from the project area. The Sullivan WPA is a 78.5-acre, Becker County WPA within the Detroit Lakes Wetland Management District and is located directly adjacent to the most northern extent of the proposed project. The Willow WPA is a 40.6-acre, Otter Tail County WPA within the Fergus Falls Wetland Management District and is located along the south side of CSAH 9/South Pelican Dr., approximately 650 feet from the southwestern shores of Pelican Lake.

The project is not anticipated to adversely or significantly impact the WPAs as they are located outside of the project right-of-way.

Wetlands

Wetland delineations were conducted by County staff. Coordination between the County and MDNR and USACE has occurred and the following wetland impacts have been determined during the Joint Application process for Activities Affecting Water Resources in Minnesota (**Exhibit B** and **Table 5**). All impacted wetlands, with the exception of wetland Sites 13,14 (Type 7, PFO1/EMC) and Site 17 (Type 6, PSS1/EM1C), are classified as Type 3 (PEMC) wetlands.

[8] MPCA, Surface Water Data, Lake and Stream Water Quality Dashboard, Duck (Lake) (56-0925-00), http://cf.pca.state.mn.us/water/watershedweb/wdip/waterunit.cfm?wid=56-0925-00, accessed Aug 23, 2016.
[9] MPCA, Surface Water Data, Lake and Stream Water Quality Dashboard, Unnamed (Lake) (56-0930-00), http://cf.pca.state.mn.us/water/watershedweb/wdip/waterunit.cfm?wid=56-0930-00, accessed Aug 23, 2016.
[10] MPCA, Surface Water Data, Lake and Stream Water Quality Dashboard, Ida: 1 Mi. W of Cormorant (Lake), http://cf.pca.state.mn.us/water/watershedweb/wdip/waterunit.cfm?wid=03-0582-00#, accessed Aug 23 2016.

Table 5: Wetlands

Location	Station location (station to station)*	Wetland Classifications	Acres
Site 1	174+30 to 187+30	Type 3, PEMC	0.31
Site 2	202+30 to 202+80	Type 3, PEMC	0.02
Site 4	209+25 to 211+10	Type 3, PEMC	0.10
Site 5	235+50 to 239+00	Type 3, PEMC	0.27
Site 6	239+40 to 243+80	Type 3, PEMC	0.19
Site 7	246+90 to 249+10	Type 3, PEMC	0.07
Site 8	250+05 to 250+45	Type 3, PEMC	0.02
Site 9	251+00 to 253+75	Type 3, PEMC	0.23
Site 10	251+30 to 253+75	Type 3, PEMC	0.12
Site 11	254+00 to 259+20	Type 3, PEMC	0.20
Site 13	259+20 to 259+85	Type 7, PFO1/EMC	0.13
Site 14	260+20 to 265+60	Type 7, PFO1/EMC	0.10
Site 15	261+45 to 262+30	Type 3, PEMC	0.02
Site 16	265+95 to 268+70	Type 3, PEMC	0.18
Site 17	265+95 to 269+35	Type 6, PSS1/EMC	0.16
Total			**2.12**

*Station numbers correspond to location of wetland site as shown in **Exhibit B**.

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.

Depth to Groundwater

The Pelican River sand plain aquifer underlies the project area. The water table in this region is generally 1,350 feet above mean sea level (NAVD 88). Within the project area, the saturated thickness of the Pelican River sand plain aquifer is generally equal to 60 feet and less than 80 feet[11].

Wells & Wellhead Protection

The project is not located within a MDH wellhead protection area. Nearby wells located adjacent to the project are shown on **Figure 6**. Wells identified and listed in **Table 6** are those located within the vicinity of the project. There are two (2) wells identified in the directory that are located within the existing CSAH 9 right-of-way:

- USGS 183 (Unique Well No. 00256461): monitoring well located in the southern most portion of the project at the intersection of CSAH 9 and 510th Street; and
- Zorbaz of Pelican Lake, Inc. 1 Sealed H0200151 (Unique Well No.00262925): located in the northern portion of the project on the west side of CSAH 9 at the intersection of CSAH 9 and CSAH 20.

[11] USGS, Thomas H.C. Reppe, "Ground-Water Availability from Surficial Aquifers in the Red River of the North Basin", Minnesota, Scientific Investigations Report 2005-5204, pp. 5, 13, http://pubs.usgs.gov/sir/2005/5204/pdf/SIR20055204.pdf, accessed Aug 31, 2016.

Table 6: MDH Well Index - Nearby Wells

Unique Well Number (well classification)	Well Name
00262925 (sealed well)	***Zorbaz of Pelican Lake, Inc. 1 Sealed H0200151***
*00260870 (public supply)	Olympic Boat Center 1
*00691370 (public supply)	Hanson, Thomas
00735262 (domestic well)	Halstenson, Tom
00256461 (monitoring well)	***USGS 183***
00504951 (domestic well)	Grewatz, Burt
00714152 (domestic well)	Jendro, R. Bennett

Wells ***bolded and italicized*** are those within the existing CSAH 9/project right-of-way.
*Data Source: County Well Index (2011)
Data Source: MDH Minnesota Well Index (2016)

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.

No sanitary, municipal/domestic or industrial wastewater will be produced from or treated at the site.

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.

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.

Not applicable.

ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion

control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

The project will result in increased impervious surfaces in the project area (existing: 8.8 acres; proposed: 13.2 acres). The stormwater quantity and quality impacts caused by the increased impervious surface created by the project will be minimized through Best Management Practices (BMPs). Changes in existing and post-project impacts to stormwater quantity and quality are anticipated to be negligible.

Drainage in the study area is primarily rural in nature and includes vegetated ditches along the outside shoulders of the CSAH 9 corridor. These inevitably drain to Pelican Lake or remain within the adjacent natural vegetated ditches. The southern portion of the proposed project will construct a curb and gutter system with catch basins that drain to the natural vegetated drainages on the north/northwestern side of the highway, which will then drain through a series of culverts maintained along the highway system. These culverts outlet to Pelican Lake. Natural drainage will continue in the northern portion of the project, into adjacent vegetated ditches. The project will replace all existing culverts and drainage structures within the project area and stormwater management will essentially be maintained as it currently exists.

Stormwater quality and quantity will be managed by temporary sediment control (e.g., storm drain inlet protection) and permanent erosion and sediment control features along the roadways, ditches and flumes. The project Erosion Control Plan is provided as **Exhibit A2**. The project will also apply for a MPCA Construction Stormwater General Permit and prepare a Stormwater Pollution Prevention Plan (SWPPP) that will further address permanent and construction erosion, sediment, and pollution control. The standards and rules established by local agencies and watershed agencies will be followed to the extent possible to mitigate the water quality and quantity impacts creates 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. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

Temporary groundwater dewatering may be required during the CSAH 9 project construction period. Dewatering is not expected to require a water use appropriation permit as it is anticipated that the dewatering will be under the permit threshold of withdrawing more than 10,000 gallons of water per day or one (1) million gallons per year. Dewatering will comply with the MPCA NPDES Construction Stormwater Permit and discharged in a manner that does not create nuisance conditions or adversely affect the receiving water or downstream properties.

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. 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.

Approximately 2.12 acres (combined total of 15 sites) of wetlands will be directly and permanently impacted by the cut and fill activities as a result of the project. These wetland sites are tabulated in **Table 7** with locations and cross-sections shown in **Exhibit B**. The wetlands located directly adjacent to the existing highway right-of-way are currently acting as part of the natural drainage ditches for the area. The narrow portions of wetlands to be permanently cut and/or filled by the project are located on the edges of these adjacent wetlands. Indirect impacts to wetlands are not anticipated as erosion and sediment control BMPs will be implemented to the project-impacted areas.

Avoidance and minimization measures taken include: 1) project inslopes in wetland areas beyond the clear zone are broken to 1:2 to minimize impacts, and 2) the 5-foot wide berm between the road and sidewalk was eliminated in wetland areas to minimize impacts. Wetland impacts were minimized to the extent practicable while meeting the project purpose and need to reconstruct the road to current MnDOT State Aid Standards and provide a safe and more efficient transportation system.

Wetland replacement credits will be undertaken through the MN Local Government Road Wetland Replacement Program (LGRWRP). Approximately 2.12 acres of wetland impacts qualify for wetland mitigation bank credits and are anticipated to be withdrawn through the Board and Soil Resources (BWSR) wetland bank.

Table 7: Wetland Impacts

WETLANDS IMPACTS								
Location	**Station location (station to station)**	**Impacted Area**		**Permanent Impact (SF)**			**Acres**	**Type of Impact**
		Circular 39	**Cowardin**	**Cut**	**Fill**	**Total**		
Site 1	174+30 to 187+30	Type 3	PEMC	141	13,274	13,415	0.31	Fill
Site 2	202+30 to 202+80	Type 3	PEMC	459	374	833	0.02	Fill
Site 4	209+25 to 211+10	Type 3	PEMC		4,269	4,269	0.10	Fill
Site 5	235+50 to 239+00	Type 3	PEMC	126	11,675	11,801	0.27	Fill
Site 6	239+40 to 243+80	Type 3	PEMC	173	8,035	8,208	0.19	Fill
Site 7	246+90 to 249+10	Type 3	PEMC	196	2,790	2,986	0.07	Fill
Site 8	250+05 to 250+45	Type 3	PEMC	457	558	1,015	0.02	Fill
Site 9	251+00 to 253+75	Type 3	PEMC	1,854	8,128	9,982	0.23	Fill
Site 10	251+30 to 253+75	Type 3	PEMC	5,293	--	5,293	0.12	Cut/Fill
Site 11	254+00 to 259+20	Type 3	PEMC	1,603	7,092	8,695	0.20	Cut/Fill
Site 13	259+20 to 259+85	Type 7	PFO1/EMC	2,241	3,431	5,672	0.13	Fill
Site 14	260+20 to 265+60	Type 7	PFO1/EMC	4,023	259	4,282	0.10	Cut/Fill
Site 15	261+45 to 262+30	Type 3	PEMC	696	192	888	0.02	Cut
Site 16	265+95 to 268+70	Type 3	PEMC	4,128	3,659	7,787	0.18	Cut/Fill
Site 17	265+95 to 269+35	Type 6	PSS1/EMC	301	6,707	7,008	0.16	Fill
Total	**Wetland Impacts**					**92,134**	**2.12**	

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. 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.

Surface Waters – Public Waters Impacts

The project will permanently impact 1.29 acres (combined total of five sites) of adjacent surface water resources. Direct effects from filling these areas will include minor loss of natural vegetated/shoreline areas located directly adjacent to the existing CSAH 9 corridor. The proposed project grade will be widened from the existing highway right-of-way to meet current MnDOT State Aid Design Requirements, which will require placing permanent fill into various public waters along CSAH 9. See **Table 8** for tabulated impact areas and **Exhibit B** for locations and cross-sections of areas to be filled.

Table 8: Public Waters Impacts

PUBLIC WATERS IMPACTS								
Location	**Station location (station to station)**	**Impacted Area**		**Permanent Impact (SF)**			**Acres**	**Type of Impact**
		Waterbody	**Aquatic Resource Type**	**Cut**	**Fill**	**Total**		
Culvert 1	185+85	Stream (Bob Creek)	Tributary	1,200	652	1,852	0.04	Fill
Culvert 2	237+25	Stream (Spring Creek)	Tributary	1,058	2,976	4,034	0.09	Fill
Rip Rap	234+20 to 242+50	Lake (Pelican Lake)	Lake	2,599	10,300	12,899	0.30	Fill
Site 3	202+95 to 208+80	Lake (Duck Lake)	Lake	117	23,918	24,035	0.55	Fill
Site 12	254+00 to 260+00	Type 3	PEMC	865	12,442	13,307	0.31	Fill
Total	**Public Waters Impacts**					**56,127**	**1.29**	
TOTAL	**Wetland & Public Waters Impacts**					**135,362**	**3.41**	

The project may indirectly impact surface water quality, which can be indirectly degraded by contaminated highway runoff. Stormwater runoff from the pavement surface contains organic and inorganic chemicals and often appreciable quantities of suspended solids. These materials are primarily derived from combustion products, vehicle and pavement wear, and highway maintenance activities. During precipitation events and snow melting, runoff is collected in roadside ditches and transported to receiving waters via natural drainage ways. Precipitation patterns affect the washoff of pollutants from the pavement surface and the quantity of highway runoff. The increased width of the paved surface area of CSAH 9 would result in greater quantities of runoff, more rapid runoff, and in less infiltration during events when heavy precipitation or rapid snowmelt occurs.

The project includes a curb and gutter system on the southern portion of the project and a storm drainage that maintains the existing stormwater management within the project area. Stormwater collected by the curb and gutter system would be discharged into natural vegetated drainageways prior to entering Pelican Lake verses direct drainage into the lake.

Avoidance and minimization of project impacts to surface waters includes conducting work on the side of the road, away from Pelican Lake to avoid impacts to the lake. Inslopes in the lake and wetland areas beyond the clear zone were broken to 1:2 to minimize impacts. Also, the 6-foot-wide berm between the road and the sidewalk was eliminated in lake and wetland areas to minimize impacts.

At Duck Lake, the County had originally planned to smoothen the curves more than the final

proposed plan. While the "S" curves at this location are improved by the project, they are tighter than originally planned in order to minimize impacts to Duck Lake and the adjacent wetlands.

Impacts to surface water resources are anticipated to be minimal and not result in adverse effects or degrade below existing conditions of adjacent surface waters. The work will comply with the MDNR Public Waters Work Permit and MPCA NPDES Construction Stormwater Permit by providing appropriate sediment control BMPs and perimeter control methods, such as silt curtains and silt fences.

12. 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.

The Minnesota Pollution Control Agency (MPCA), "What's in My Neighborhood" online database was reviewed for the presence of potentially contaminated sites and for other environmental information in the project area[12] (**Exhibit D**). There is one (1) inactive site directly within the project right-of-way:

- Crystal-Pierz Marine – Pelican Rapids (MPCA ID: MNR000111971)
  Location: 51629 County Road 9, Pelican Rapids, Scambler Township, Otter Tail County, MN 56572
  - Hazardous Waste, Small to Minimal QG (inactive)
    Hazardous waste includes substances that are corrosive, explosive, toxic, and/or fire hazards. Small to minimal quantity generators produce 0-1,000 kilograms of hazardous waste per calendar month. The inactive, small to minimal quantity generator of hazardous waste does not have any spills or cleanup activities identified for this site.

There are two (2) sites directly outside of the project assessment boundary, which will not be impacted, nor are they anticipated to cause or exacerbate environmental impacts within the project area as a result of project construction:

- Pelican View Estates (MPCA ID: MN00068799)
  - Wastewater discharger, SDS permit

  Pelican Hills RV Park Expansion
  Location: 20098 S Pelican Dr., Pelican Rapids, Scambler Township, Otter Tail County, MN 56572
  - Tank Site (125714) – Active
  - Construction Stormwater Permit (C00009559) - Active

There are no anticipated potential environmental effects that would result or be exacerbated from pre-existing project site conditions and/or project construction.

[12] MPCA, What's in My Neighborhood, https://www.pca.state.mn.us/data/whats-my-neighborhood, accessed Aug 26, 2016.

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.

All regulated solid wastes generated during project construction will be disposed of properly in a permitted, licensed solid waste facility or a similarly regulated facility. Project demolition of concrete, asphalt or potentially recyclable construction materials will be directed to the appropriate storage, crushing or renovation facility for reuse.

Environmental impacts from handling, storage, and disposal of solid waste generated during project construction are anticipated to be minimal. If a spill of toxic substances should occur, it is the responsibility of the contractor to notify the Project Engineer and Minnesota Department of Public Safety, Minnesota Duty Officer and appropriate action to remediate will be taken in accordance with MPCA guidelines and regulations in place at the time of construction.

Excess materials and debris from this project such as concrete and bituminous pavement will be disposed of in accordance with MPCA specifications. In particular, excess materials and debris will not be placed in wetlands or floodplains. Debris such as concrete and bituminous pavement, if not recycled or reused, must be landed in an MPCA permitted landfill.

If contaminated soils are encountered during construction, the response would be handled according to MPCA 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 above or below ground tanks to store petroleum or other materials. 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.

Toxic or hazardous materials will not be present at the construction site, except for fuel and lubricants as necessary for the construction equipment used on the project. If a spill were to occur during construction, the Project Engineer and Minnesota Duty Officer will be contacted and appropriate action to remediate will be taken immediately in accordance with MPCA guidelines and regulations in place at the time of project 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.

No above or below ground storage tanks are planned for permanent use in conjunction with the project. Temporary storage tanks for petroleum products may be located in the project area for refueling equipment during roadway construction. A spill kit will be kept near any storage tanks.

13. 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 project is located along the existing CSAH 9 corridor in a rural residential, agricultural setting with open space, wetland and other surface water resources. Because the project is located primarily within the existing highway corridor, fish, wildlife, and wildlife habitat are limited within the project area. Adjacent areas include open space, agricultural lands, wooded areas, open water, and wetland habitat, which would be home to various mammals, reptiles, bird species, fish species and invertebrates. Common wildlife species include striped and spotted skunks, short and long-tailed weasel, coyotes, woodchucks, raccoons, ground squirrels, chipmunks, moles, gophers, bats, voles, rates, porcupines, mice and shrews. Common birds include American kestrel, killdeer, rock dove, mourning dove, common flicker, red-headed woodpecker, horned lark, tree swallow, barn swallow, blue jay, American robin, house wren, starling, house sparrow, red-wind blackbird, common grackle, born headed cowbird, and American goldfinch. Herons, egrets, hawks, and eagles can be frequently observed within the vicinity of Pelican Lake. No Wildlife Areas are found within the project area.

Vegetation within the project assessment boundary for the northern segment of the project includes primarily agricultural (grass/pasture, croplands), open space, herbaceous wetlands, and deciduous forest. The southern segment of the has more residential land uses wetland areas adjacent to the highway corridor. Wetlands within the project assessment boundary are Type 3, 6, and 7. Type 3 wetlands are characterized by grasses, bulrushes, spikerushes, cattails, arrowheads, pickerelweed, and smartweeds. Alders, willows, buttonbush, dogwoods, leatheleaf and swamp-privet are common vegetation in Type 6 wetlands. Tamarack, white cedar, arborvitae, black spruce balsom, red maple and black ash are typical for Type 7 wetlands. These types of environments typically provide habitat for waterfowl, amphibians and fish, and offer recreation such as hunting, fishing, and canoeing.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-805) and/or correspondence number (ERDB___) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

The Minnesota Department of Natural Resources (MDNR), Natural Heritage and Nongame Research Program, Rare Natural Features GIS data (LA-805) was reviewed for the presence of rare features within and in close proximity to the proposed project.

Rare features directly within or directly adjacent to the project consist of Minnesota County Biological Survey Sites (MCBS), which are shown on **Figure 7**. There are three (3) sites within the vicinity of the project:

- Sullivan WPA[13] is approximately 0.26 miles east/northeast of the northern most extent of the project. This is a 35 acre MCBS site below minimum biodiversity significance threshold.
- Burton Lake Prairie is located approximately 0.6 miles west of the project. This site is a 218 acre MCBS site with high biodiversity significance.

[13] The eastern half of the Sullivan WPA is designated as a MCBS site below biodiversity significance threshold. This is identified on the Water Resources Map (**Figure 5**).

- Scrambler 9 is an approximate 647-acre site ranked Below minimum biodiversity significance threshold.

Sites that are classified below the minimum threshold for statewide significance lack occurrences of rare species and natural features, or do not meet MCBS standards for Outstanding, High, or Moderate rank. Sites ranked "high" for biodiversity significance contain very good quality occurrences of the rarest species, high-quality examples of rare native plant communities, and/or important functional landscapes.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. 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.

Because the project is predominately located within the existing highway corridor and project impacts will be predominately confined during the temporary construction period, impacts to fish, wildlife, and wildlife habitat will be minimal. The primary impact to wildlife and wildlife habitat is associated with permanent cut and fill activities to edges of wetlands and public waters within the proposed right-of-way; these impacts are discussed in more detail under EAW **Question #11**. No significant adverse impacts to wildlife resources or habitats are anticipated from the project.

Fish and other aquatic species will be protected by use of temporary and permanent sediment and erosion control activities that will maintain existing water quality and prevent degradation to the wetland and public water resources adjacent to the CSAH 9 project corridor.

There are no anticipated concerns with introduction or spread of invasive species from the project construction and operation. The MDNR Public Waters Work Permit may provide recommendations to prevent spread of invasive species in association with work within Pelican Lake, which is infested with Zebra Mussels.

There are no known threatened and endangered species in the area, therefore no impacts are anticipated. No project impacts to the MCBS within the vicinity of the project are anticipated because of the nature of the project and the project is located outside of these natural areas.

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

The project is not anticipated to result in adverse effects to fish, wildlife, plant communities, and sensitive ecological resources. No specific mitigation is identified with this project.

14. 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.

A Phase Ia (pre-phase I) Archaeological Survey was conducted by Dr. Richard M. Rothaus of Trefoil Cultural and Environmental for CSAH 9 reconstruction project (June 2013). A Visual Examination (Windshield Survey) and Pedestrian Survey was conducted by Trefoil May 5th, 2013. The CSAH 9 corridor and the adjacent areas have been disturbed by previous road construction. These

modifications are either deep ditches or areas where the roadway has been downcut through hills. No Phase I survey is recommended and a finding of No Properties Affected is recommended.

The Minnesota State Historic Preservation Office reviewed the cultural resources report conducted for the project and concluded that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by the project. See **Exhibit E** for this correspondence.

Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

As noted in the Phase Ia Archaeological Survey report (June 2013) conducted by Trefoil Cultural and Environmental, the Pelican Lake area is known to have numerous burials in proximity to the lakeshore, and it is possible for burials or remnants to remain in areas identified as disturbed by this Phase Ia survey. Construction crews should be equipped with an inadvertent discovery protocol. If possible human remains are uncovered, the following procedure should be followed:

1. Stop all work in the area of the discovery (follow contractor's normal work stop procedure).
2. Call the appropriate County Sheriff.
3. If possible human bones are present, do not disturb the site and do not allow photographs; it may be a crime scene.
4. Do not allow anyone to remove anything from the site.
5. Secure the area in a discrete fashion.
6. Instruct crew to keep it confidential (unwanted media attention can make small problems big).
7. Keep a log of your actions, including time, date and individuals present (just in case).

If remains are determined to be recent, the Sheriff's office will instruct the contractor on how to proceed. If the Sheriff's office determines the remains are not recent, they will contact the appropriate officials at the Office of the State Archaeologist. Work shall not resume until authorization has been obtained in writing to proceed has be granted by the Sheriff or State Archaeologist.

15. **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 or adjacent to the project. The CSAH 9 project will result in potential temporary annoyances to local residences with the presence and utilization of heavy machinery in the project area during the reconstruction process. Visual effects will be relative based on the viewer and their perspective of the viewshed of the project. Local residences that reside within the viewshed of the project will have the greatest potential for adverse impacts to viewshed during the temporary construction period. Proper notification to neighboring residences and keeping project schedule will provide relative relief to those with visual disturbances resultant of the construction activities of the project.

16. **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, and any greenhouse gases. 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 reconstruction to CSAH 9 corridor will not result in stationary source air emission concerns.

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 project will result in the use of heavy machinery and equipment, and construction crew vehicles during the construction. Traffic generated during construction will be typical for a highway reconstruction project. Project related emissions are not anticipated to result in changes or degradation to the current air quality within the area. No mitigation measures are planned; equipment will be maintained to operate under factory-suggested operations and maintenance intervals to avoid inefficiencies in operations.

The effect of the project's traffic generation on air emissions will be minimal/negligible and temporary. Traffic generation will be confined to the construction period of the project. No additional measures have been developed or are planned to minimize or mitigate vehicle-related emissions.

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 16a). 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.

Dust and odors are typical and unavoidable during roadway reconstruction. Sources of dust and odors are from the equipment and machinery, including vehicles that temporarily operate on-site. Residences will be notified in advance to inform them of construction activities within or near the vicinity of their property. Dust control measures will be implemented during construction to minimize any disturbances. Odor disturbances will be limited to the construction equipment emissions, and will only occur within the immediate construction area.

The project will not generate substantial odors during construction. Potential odors will include exhaust from diesel engines and fuel storage. Dust generated during construction will be minimized through standard dust control measures, such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions. Construction contractors will be required to control dust and other airborne particulates.

17. 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.

The project is within an existing highway corridor and is therefore exempt from MN Noise Standards, per MN Stat. 116.07, subd 2a., provided that all reasonably available noise mitigation measures, as approved by the commissioners of MnDOT and MPCA, are employed to abate noise. The construction activities associated with the project will result in temporary increased noise levels

relative to existing conditions. These impacts will primarily be associated with construction equipment. Any associated high-impact equipment noise, such as pavement sawing, or jack hammering, will be unavoidable during construction. High-impact noise construction activities will be limited in duration to the greatest extent possible.

18. 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**.

The project does not involve any parking spaces. The project will not generate traffic, with the exception of traffic generated during construction. No project-related traffic estimates have been made. The temporary construction period will last between April/May through August 2017, with final paving completed by June 2018. Construction will occur during typical daylight hours. During construction, there may be a slight traffic influx to the project area, which will dissipate after the project has been constructed.

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**.

Construction activities will likely result in temporary and minor traffic inconveniences due to traffic rerouting during construction. The project will have no effect on traffic congestion. No additional analyses were conducted nor are they planned

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

The project has a prepared detour plan to minimize and mitigate project related transportation effects. Traffic will be rerouted around the north/east/south sides of Pelican Lake and proper notifications and signage will be implemented. Refer to the detour traffic control and traffic control plan for the project is provided as **Exhibit A3**.

19. 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 project related environmental effects will be temporary and confined within the project area along the northwestern shore of Pelican Lake, from South Pelican Dr. to the Otter Tail/Becker County line and during Spring to Autumn of 2017. There are no other anticipated projects, activities, or existing conditions that would result in significant adverse environmental effects.

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.

Not applicable. There is no future project that may interact with environmental effects of the proposed project within the geographic timescales listed above.

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 cumulative potential effects anticipated with this project that would adversely alter or modify environmental conditions or pose potential harm to the environment or wellbeing of individuals living within the area of the project.

20. 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.

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 Chad Hoff Date Oct 7, 2016

Title Asst. County Engineer

References

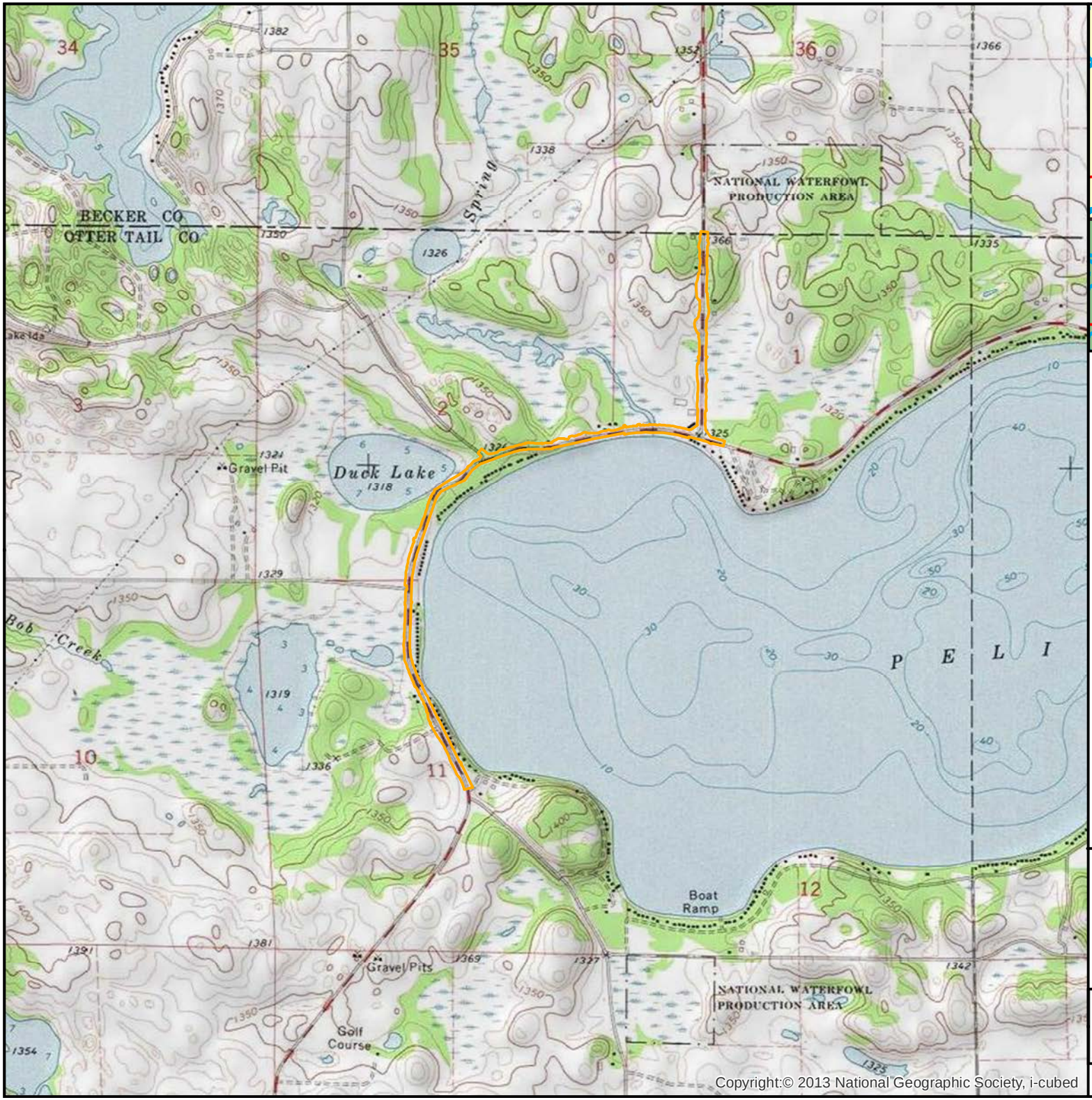
Minnesota Geological Survey. (2007). *Quaternary Geology of Minnesota.* http://www.mngs.umn.edu/Minnesota%20Geology%20Images/images/surficial%20geology%20map%20Minnesota%20geology_jpg.jpg.

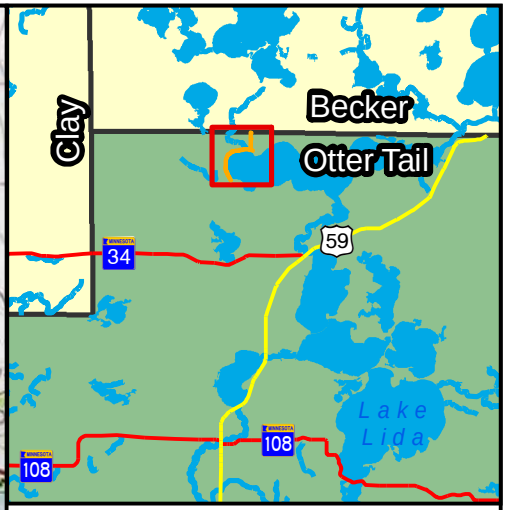
Otter Tail County. (Adopted July 21, 2015). *2040 Transportation Plan.* Prepared by: SFR Consulting Group.

Otter Tail County Government Services Center, Land & Resource Management. (Revised Apr 8, 2016). *The Shoreland Management Ordinance of Otter Tail County, Minnesota.* Fergus Falls, MN: http://www.co.otter-tail.mn.us/DocumentCenter/View/1017 (accessed Aug. 22, 2016).

University of Minnesota, Minnesota Geological Survey . (2011). *Geologic Map of Minnesota, Bedrock Geology.* Compiled by M. A. Jirsa, T.J. Boerboom, V.W. Chandler, J.H. Mossler, A.C. Runkel, and D.R. Setterhom.

FIGURES





Proposed Limits

N

Miles

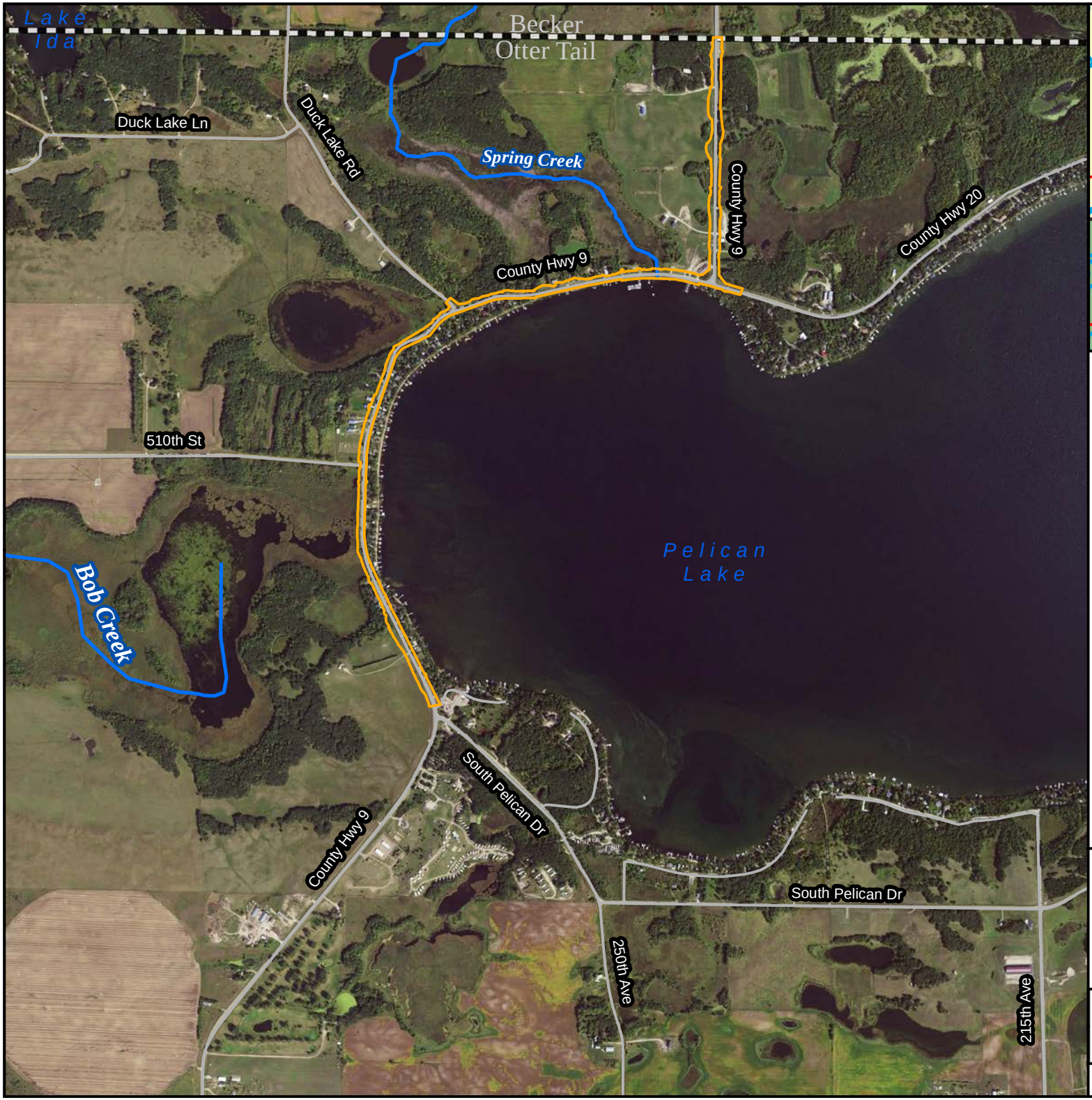
0 0.2 0.4 0.8

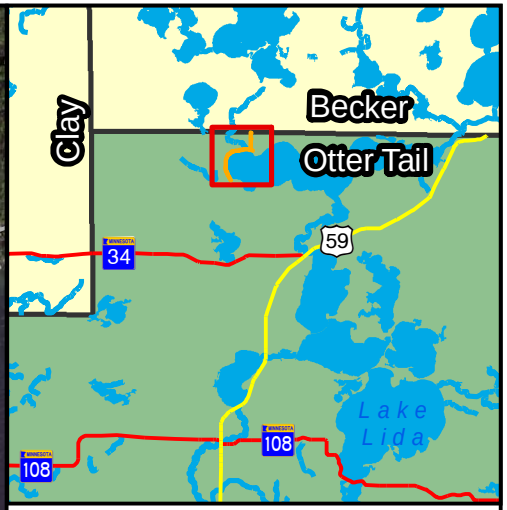
Figure 1
Project Location (USGS)

CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/9/2016





Proposed Limits
Road
State Highway
US Highway
County Border

N

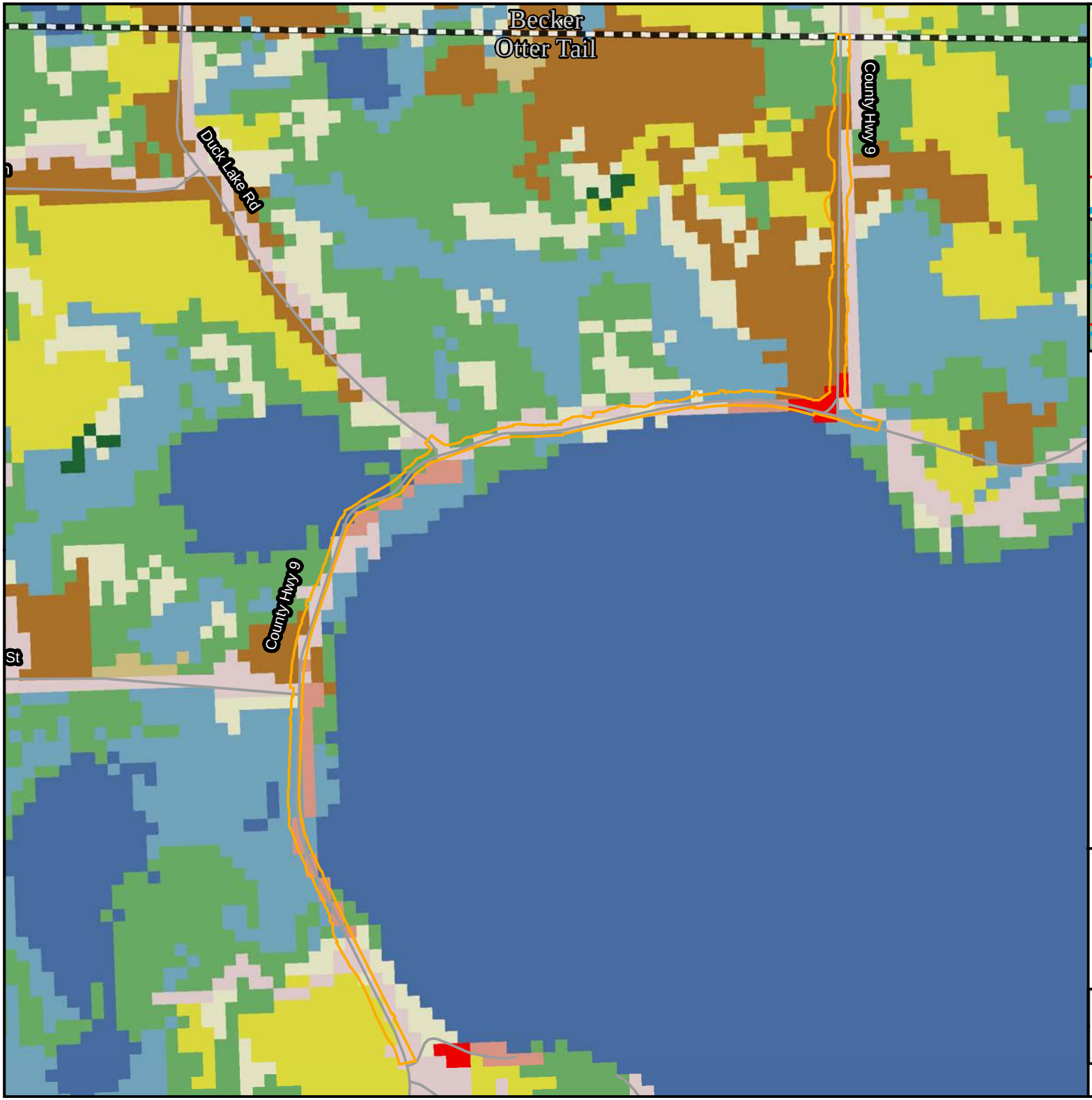
Miles
0 0.1 0.2 0.4

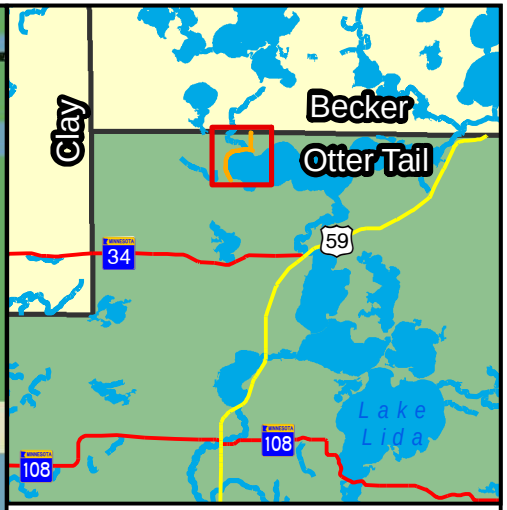
Figure 2
Project Location

CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/9/2016





NLCD 2011

- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceuous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceuous Wetlands

- Road
- State Highway
- US Highway
- Proposed Limits
- County Border

N

Miles

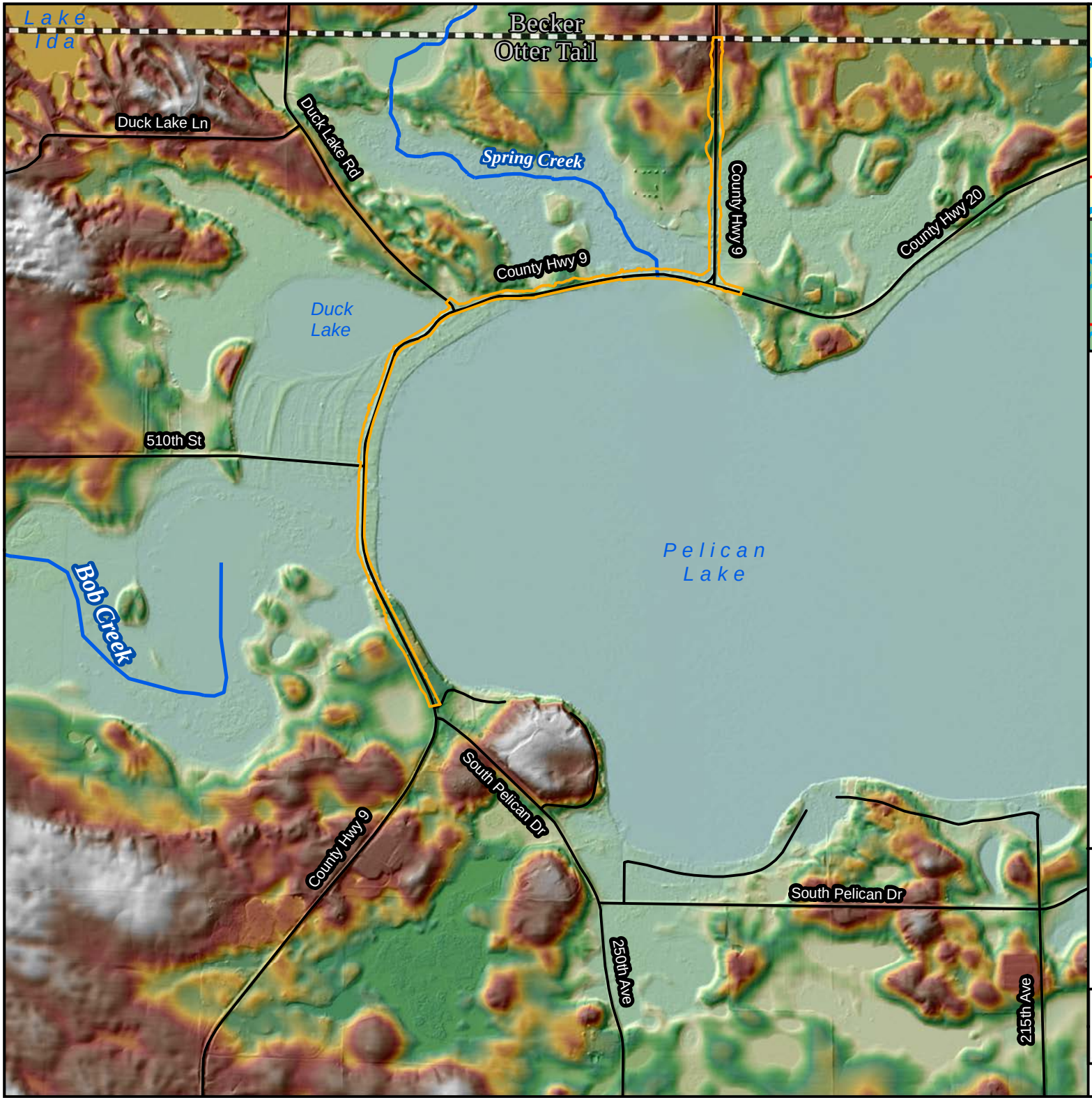
0 0.075 0.15 0.3

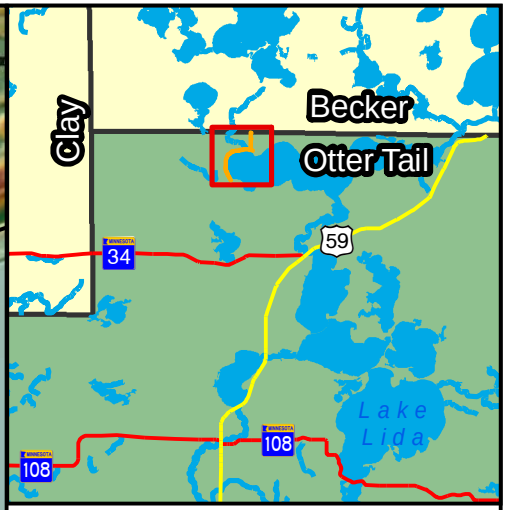
Figure 3
Cover Types (NLCD 2011)

CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/9/2016





Proposed Limits

Road

State Highway

US Highway

County Border

Digital Elevation Model in feet

High : 1415.76

Low : 1317.97

N

Miles

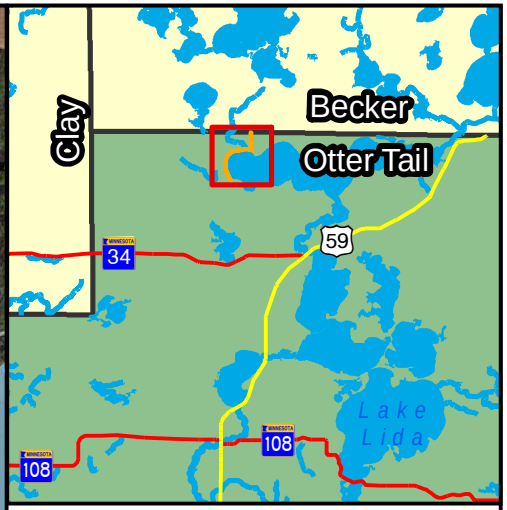
0 0.1 0.2 0.4

Figure 4
Topographic Map

CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/12/2016



- Waterfowl Production Area
- Public Water Basin
- Public Water Wetland
- Public Watercourses
- Road
- State Highway
- US Highway
- Proposed Limits
- County Border

N

Miles

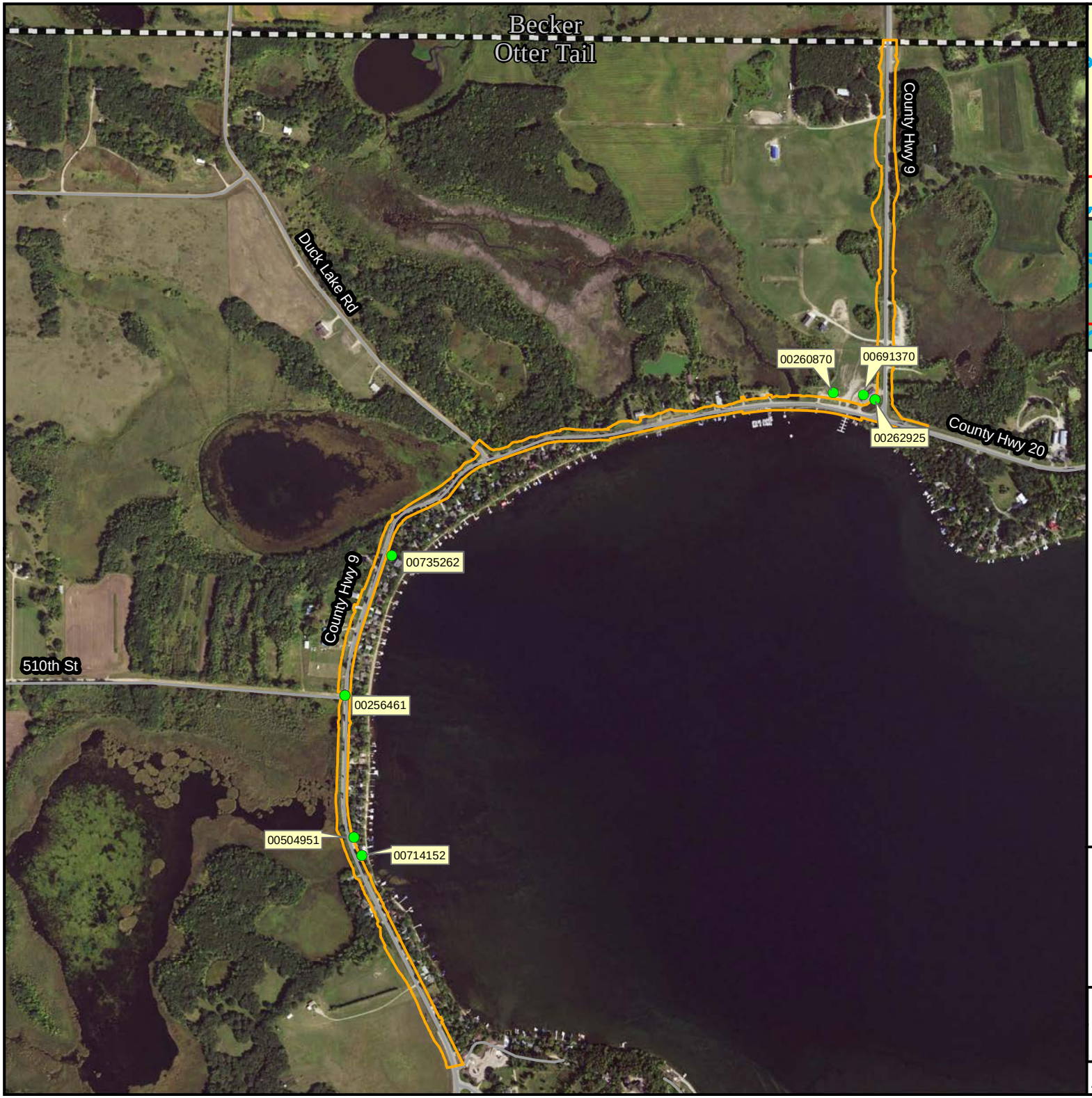
0 0.1 0.2 0.4

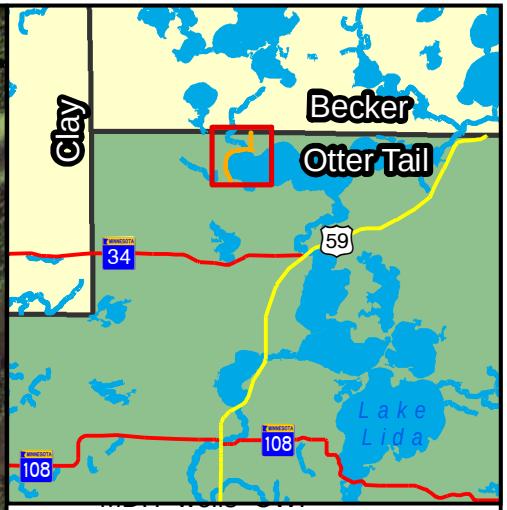
Figure 5
Surface Waters Map

CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/9/2016





Well
Road
State Highway
US Highway
Proposed Limits
County Border

N

Miles

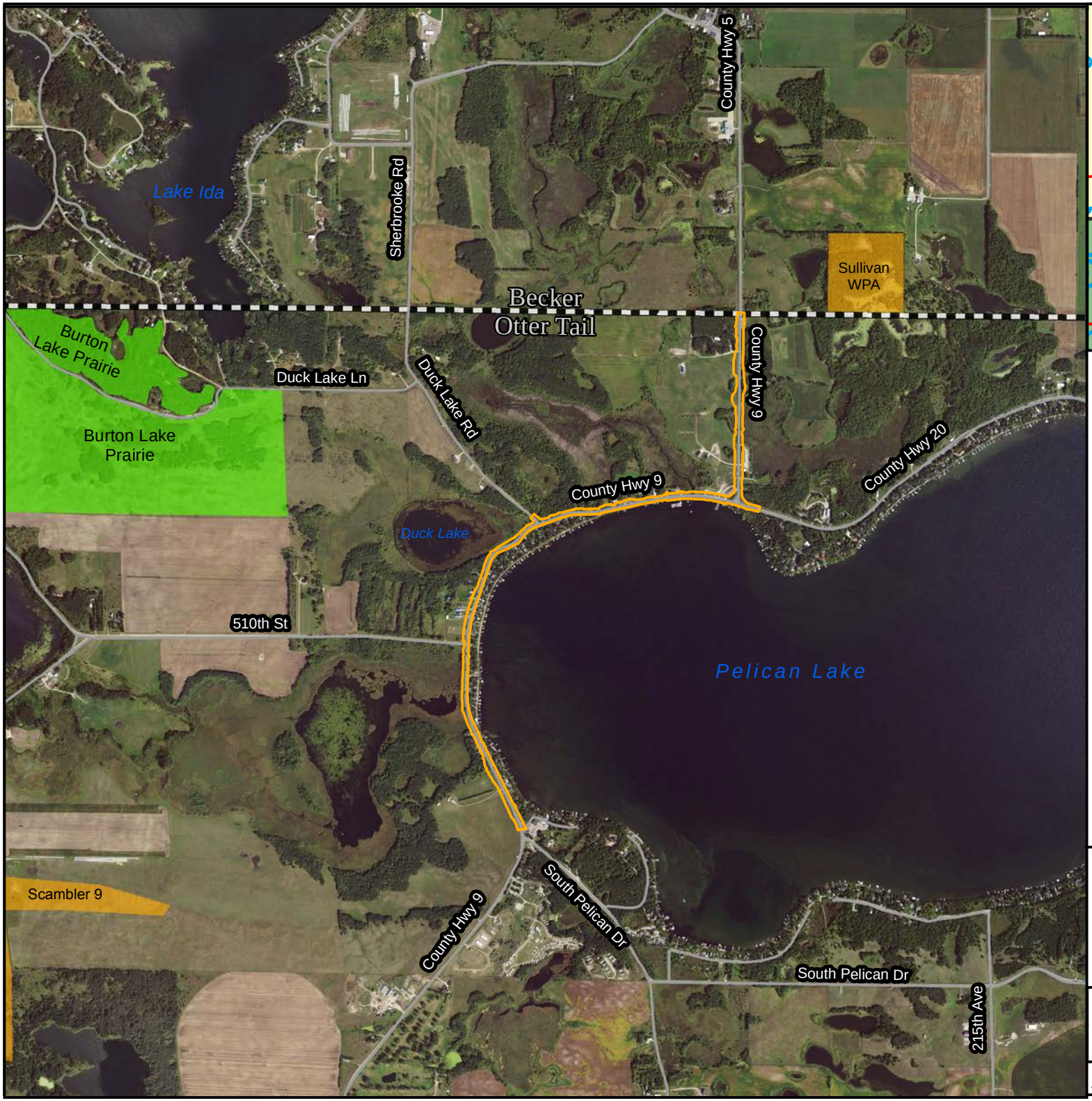
0 0.1 0.2 0.4

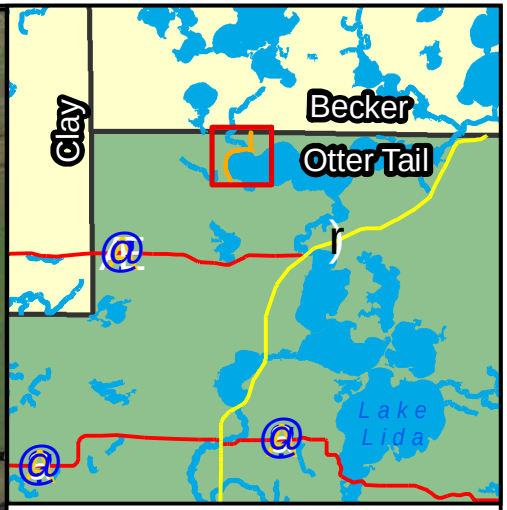
Figure 6
Wells Map

CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/12/2016





Proposed Limits
Road
State Highway
US Highway
County Border

MCBS Sites

Below
Moderate
High

N

Miles

0 0.2 0.4 0.8

Figure 7
Rare Features
(MNDNR, NHIS (2015))
CSAH 9 Reconstruction
Otter Tail County
SAP 056-609-005

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Scale:	Drawn by:	Project No.:	Date:
AS SHOWN	BRG	5197-024	9/19/2016

EXHIBIT A1

Engineering Plan Sheets

Project Details

BEG. S.A.P. 056-609-005
STA. 153+00.00

LEAVE INPLACE

LEAVE CATCH BASIN INPL.

PT: 157+79.73

P.I. 154+65.42
Δ = 52°42'28"
Dc = 7°30'00"
Dc = 7°30'19"
L = 378.46 FT
T = 202.77 FT
R = 763.94 FT
MAX. SUPER ELV. = 0.055 FT/FT

LEAVE CULVERTS INPL.

PUBLIC ACCESS

RES LOT C

RES LOT B

LINE

QUARTER

SECTION 13 T137N R43W

W1/4-SE1/4

N26° 38' 28"W
917.86

PC: 166+97.59

Water Line

SEPTIC

MAX.

NOTE: CONSTRUCTION EASEMENT LIMITS ARE ESTABLISHED AT 5 OR 15 FOOT (TYP.) OFFSET FROM AND AT RIGHT ANGLES TO THE CUT AND FILL LIMITS.

SCALE: 1" = 100'

GRADING GRADE

342.04 342.13 342.30 342.55 342.88 343.22 343.57 343.91 344.25 344.59 344.93 345.26 345.59 345.64 345.69 345.63 345.48 345.23 344.88 344.43 343.89 343.24 342.50 341.66 340.72

BITUMINOUS SURFACE 1.125' ABOVE GRADING GRADE.
GRADING GRADE

VERTICAL CONTROL
THESE ELEVATIONS ARE BASED ON SEA LEVEL DATUM, NAVD 88, AND TIED INTO THE U.S. LEVEL NET THROUGH HARN CONTROL MARK "5611 C", AS ADJUSTED BY THE OTTER TAIL COUNTY CONTROL NETWORK, ELEV. 1356.911. LOCATED 2.7 MILES WEST ON TRUNK HIGHWAY 34 FROM JUNCTION OF TRUNK HIGHWAY 34 AND TRUNK HIGHWAY 59 AT DUNVILLA, 209 FEET RIGHT OF TRUNK HIGHWAY 34, AT TRUNK HIGHWAY 34 STATION 775+70.

500.00' V.C.
M = 296.01

0.681%

SUBCUT REMOVED
PROJ. 056-609-003

41.00

2' COMPACTION SUBCUT

1654+75.00 VPI
ELV. 1349.29

1.719%

P. 12" X 285' RCP SEWER CL. III

900.00' V.C.
M = 253.64

1354+25.00 VPI
ELV. 1342.14

SOIL BORING LEGEND
- FILL
- LEAN CLAY
- ORGANIC LEAN CLAY
- CLAYEY SAND
- SILTY SAND
- POORLY GRADED SAND
- POORLY GRADED SAND WITH SILT

343.65 343.25 343.26 343.45 343.73 343.58 344.63 344.80 344.67 345.22 345.73 346.15 346.53 346.96 346.19 347.07 347.79 348.31 348.82 349.30 349.67 350.08 350.18 350.49 350.73 350.98

154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00

1360 1355 1350 1345 1340 1335 1330 1325 1320 1315

CERTIFIED BY: [signature] PROFESSIONAL ENGINEER LIC. NO. 20196 July 12, 2016

S.A.P. 056-609-005

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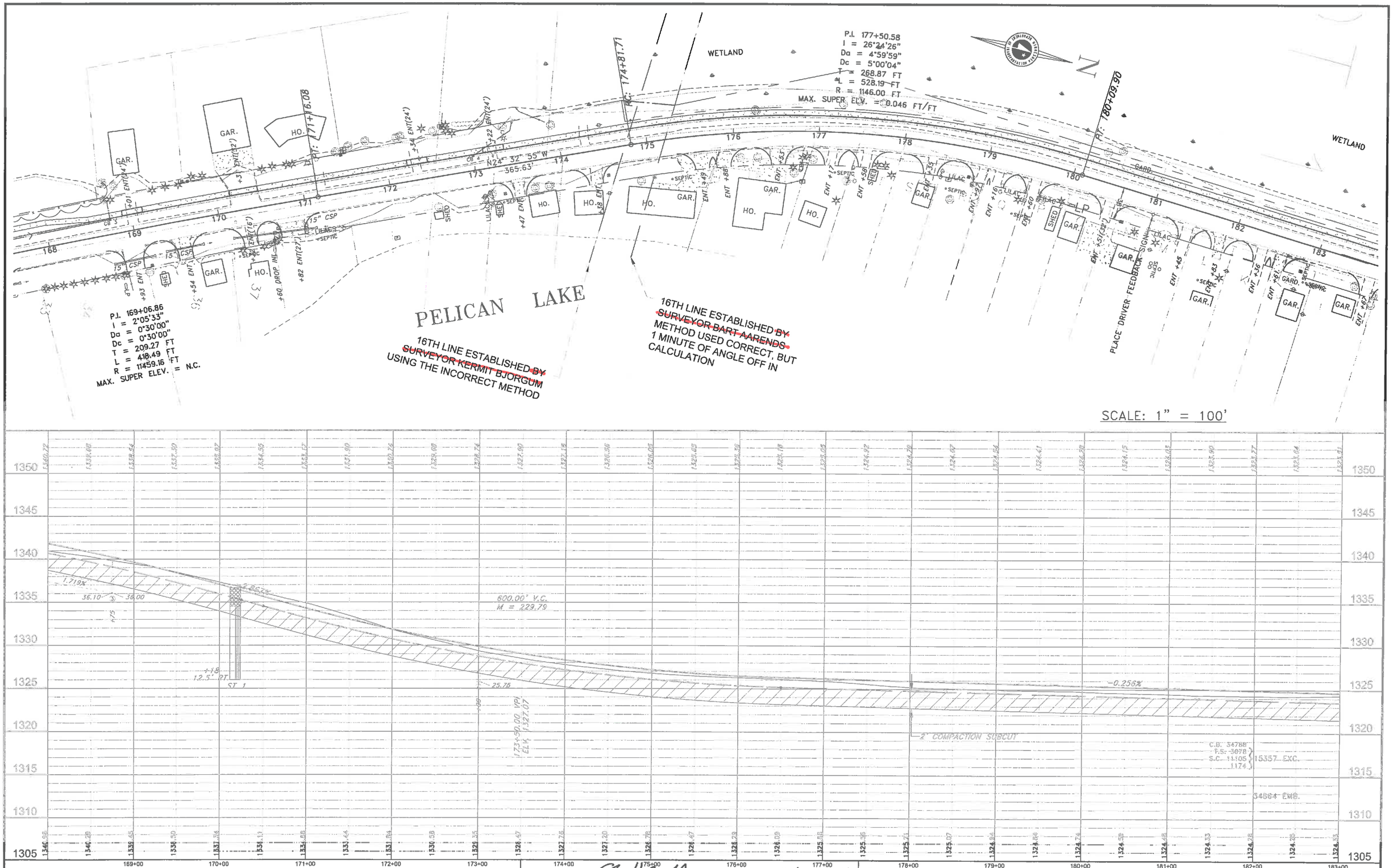

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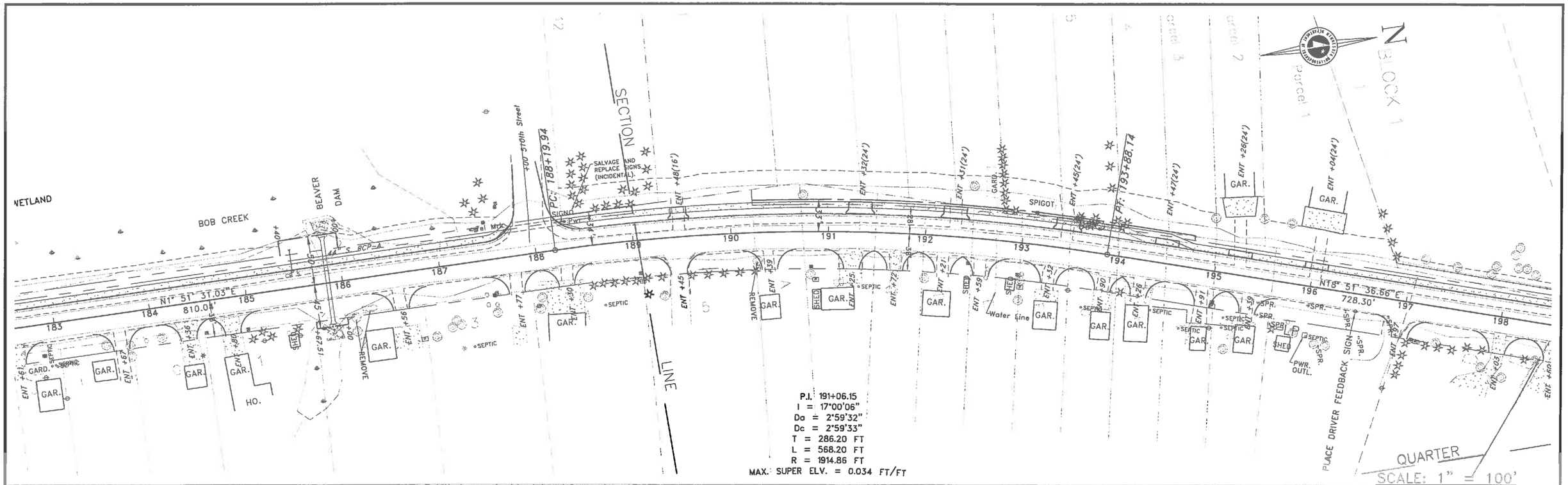

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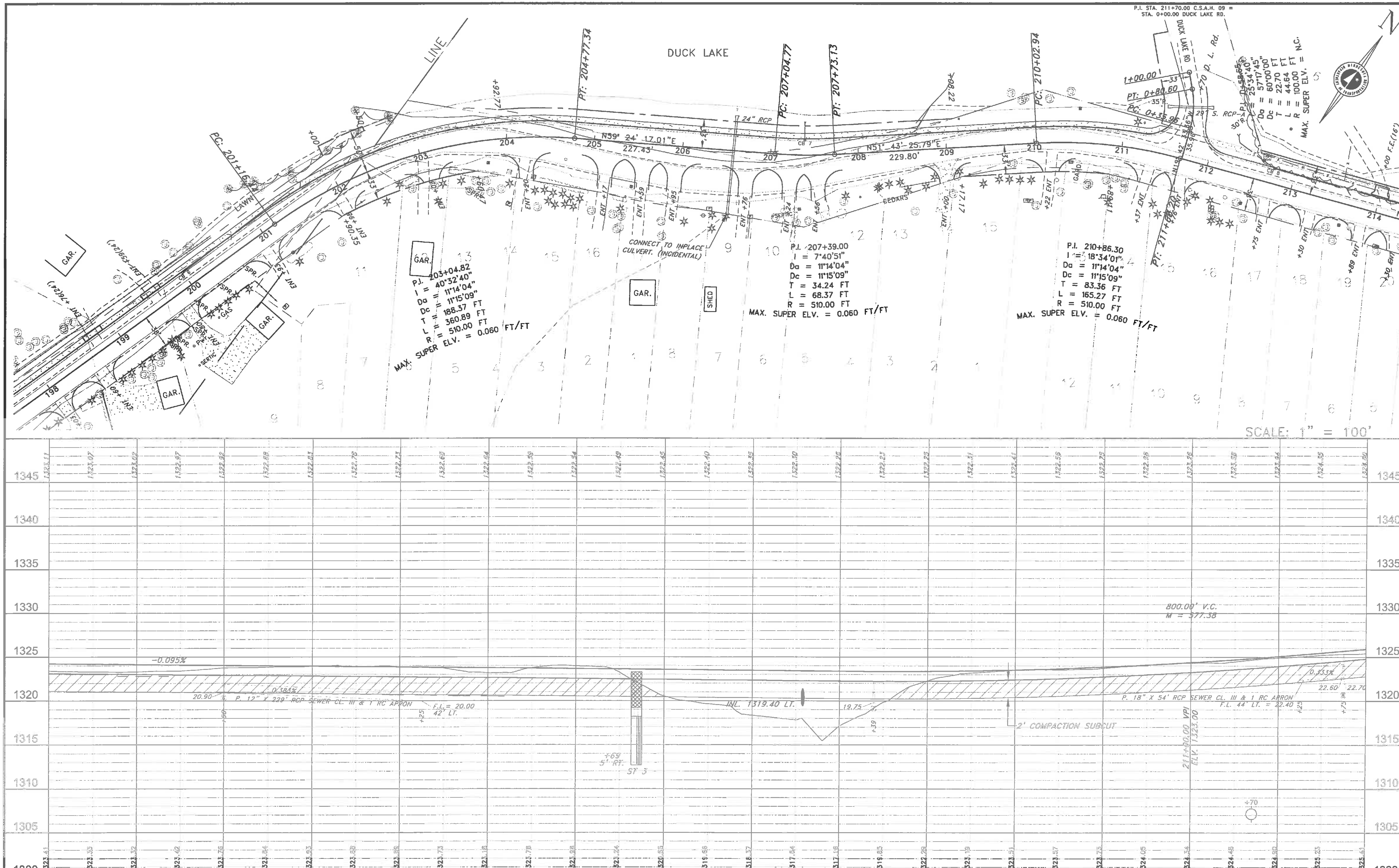
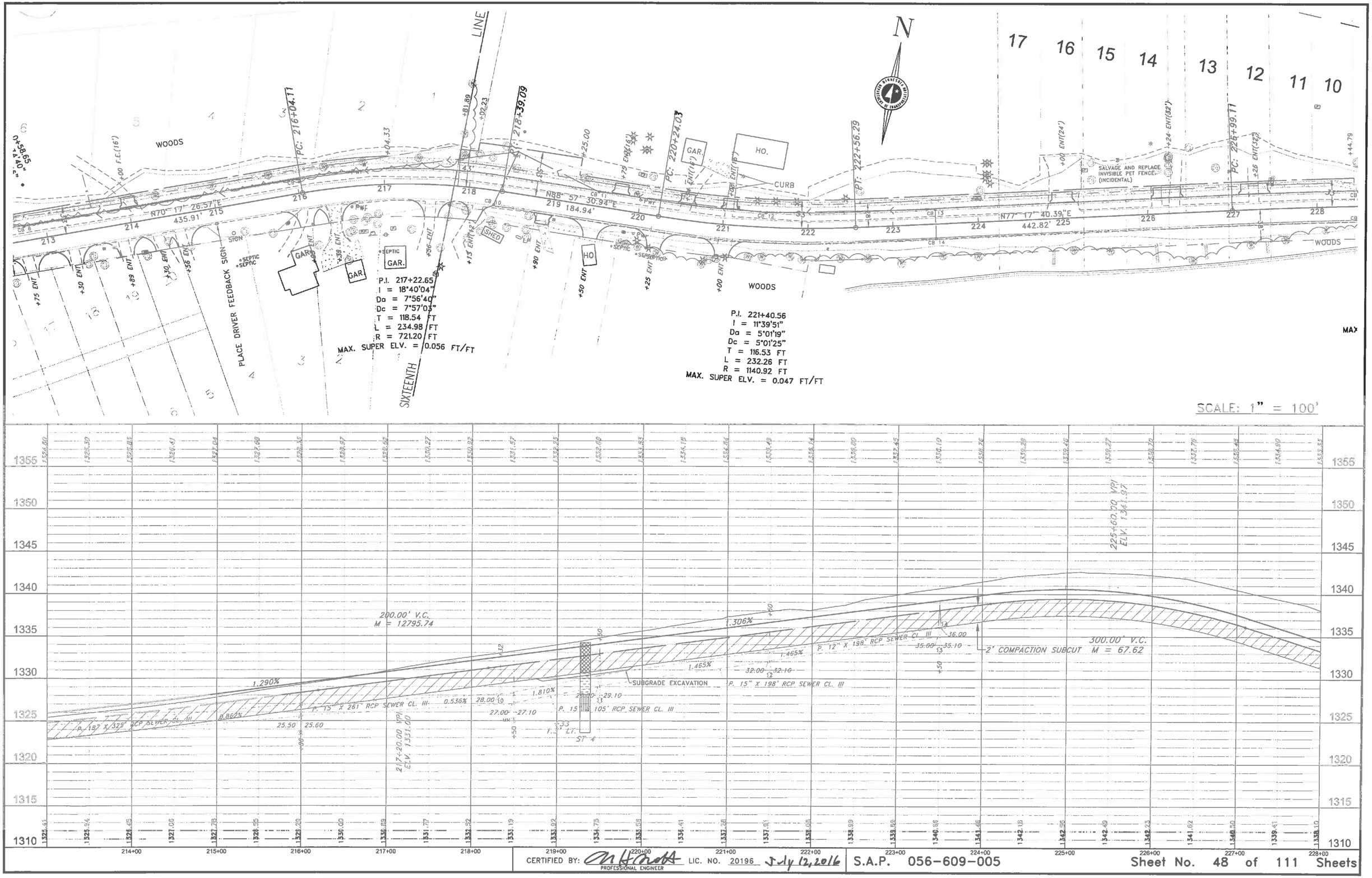


DUCK LAKE
P.I. 203+04.82
I = 40°32'40"
Da = 11°14'04"
Dc = 11°15'09"
T = 188.37 FT
L = 360.89 FT
R = 510.00 FT
MAX. SUPER ELV. = 0.060 FT/FT
P.I. 207+39.00
I = 7°40'51"
Da = 11°14'04"
Dc = 11°15'09"
T = 34.24 FT
L = 68.37 FT
R = 510.00 FT
MAX. SUPER ELV. = 0.060 FT/FT
P.I. 210+86.30
I = 18°34'01"
Da = 11°14'04"
Dc = 11°15'09"
T = 83.36 FT
L = 165.27 FT
R = 510.00 FT
MAX. SUPER ELV. = 0.060 FT/FT
CONNECT TO INPLACE CULVERT. (INCIDENTAL)
SCALE: 1" = 100'
800.00' V.C.
M = 377.38
2' COMPACTION SUBCUT

CERTIFIED BY: [signature] PROFESSIONAL ENGINEER LIC. NO. 20196 July 12, 2016

S.A.P. 056-609-005

Sheet No. 47 of 111 Sheets



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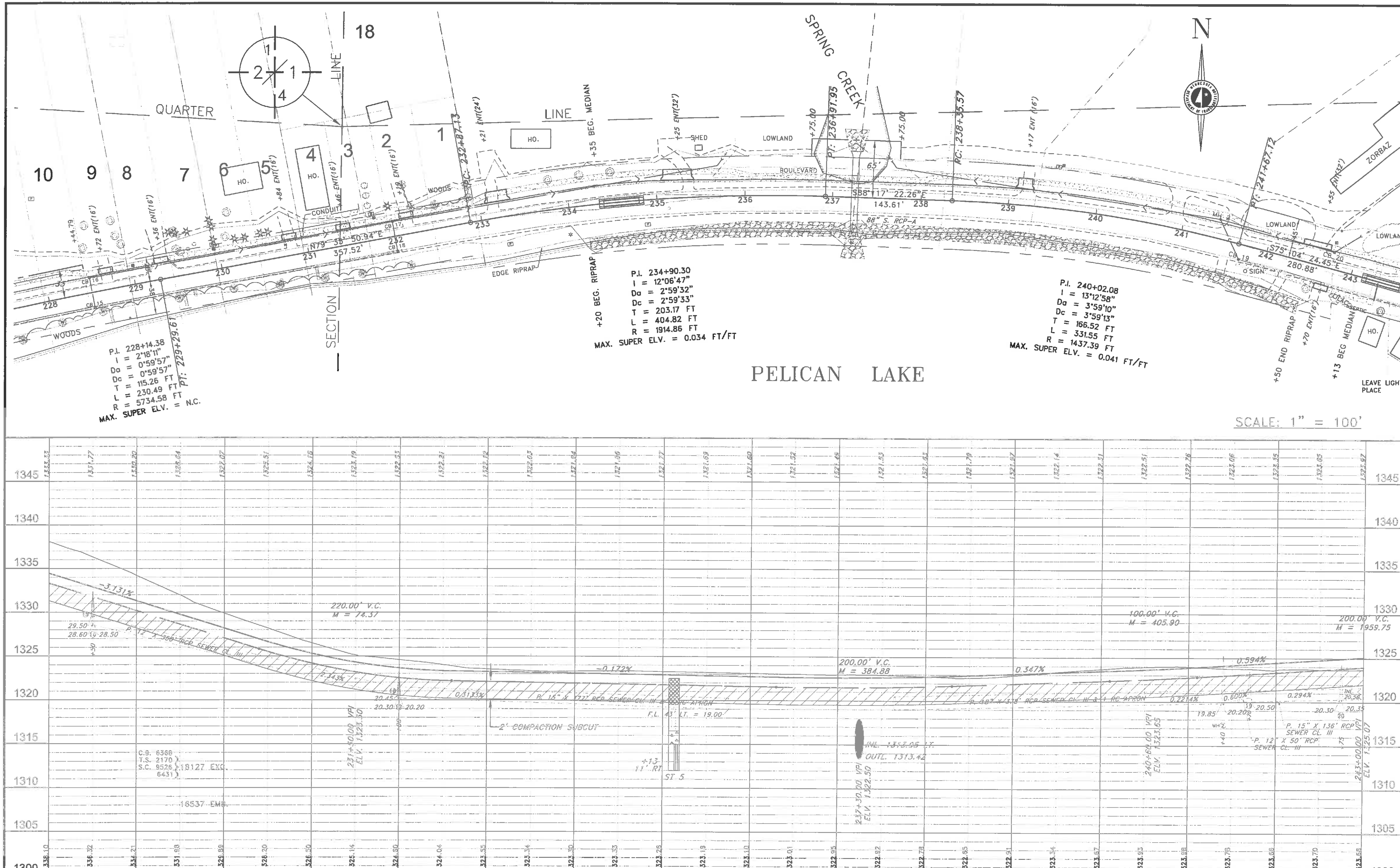
N
QUARTER LINE
SECTION LINE
18
SPRING CREEK
PELICAN LAKE
LOWLAND
BOULEVARD
WOODS
SHED
ZORBAZ
CONDUIT
EDGE RIPRAP
HO.
PC: 232+87.13
PT: 236+91.95
PC: 238+35.57
PT: 229+29.61
PT: 241+67.12
N79°38'50.94"E 357.52'
S88°17'22.26"E 143.61'
S75°04'24.45"E 280.88'
88" S. RCP-A
+20 BEG. RIPRAP
+35 BEG. MEDIAN
+50 END RIPRAP
+13 BEG MEDIAN
LEAVE LIGHT PLACE
P.I. 228+14.38
I = 2°18'11"
Da = 0°59'57"
Dc = 0°59'57"
T = 115.26 FT
L = 230.49 FT
R = 5734.58 FT
MAX. SUPER ELV. = N.C.
P.I. 234+90.30
I = 12°06'47"
Da = 2°59'32"
Dc = 2°59'33"
T = 203.17 FT
L = 404.82 FT
R = 1914.86 FT
MAX. SUPER ELV. = 0.034 FT/FT
P.I. 240+02.08
I = 13°12'58"
Da = 3°59'10"
Dc = 3°59'13"
T = 166.52 FT
L = 331.55 FT
R = 1437.39 FT
MAX. SUPER ELV. = 0.041 FT/FT
SCALE: 1" = 100'
1345
1340
1335
1330
1325
1320
1315
1310
1305
1300
-3.131%
220.00' V.C.
M = 74.37
-0.172%
200.00' V.C.
M = 384.88
0.347%
100.00' V.C.
M = 405.90
0.594%
200.00' V.C.
M = 1959.75
231+50.00 VPI ELV. 1323.50
237+30.00 VPI ELV. 1322.50
240+60.00 VPI ELV. 1323.55
243+00.00 VPI ELV. 1325.07
2' COMPACTION SUBCUT
F.L. 43' LT. = 19.00'
INL. 1313.05 LT.
OUTL. 1313.42
ST 5
C.B. 6368
T.S. 2170
S.C. 9526
6431
18127 EXC.
16537 EMB.
229+00
230+00
231+00
232+00
233+00
234+00
235+00
236+00
237+00
238+00
239+00
240+00
241+00
242+00
243+00

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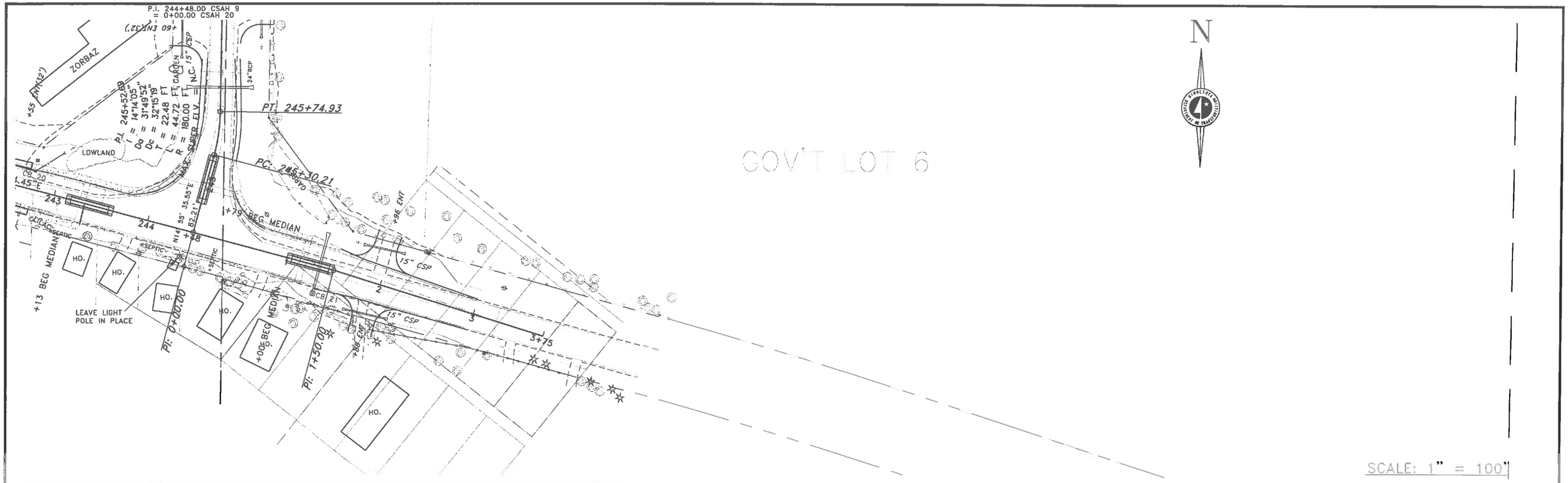
S.A.P. 056-609-005

Sheet No. 49 of 111 Sheets



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S.A.P. 056-609-005

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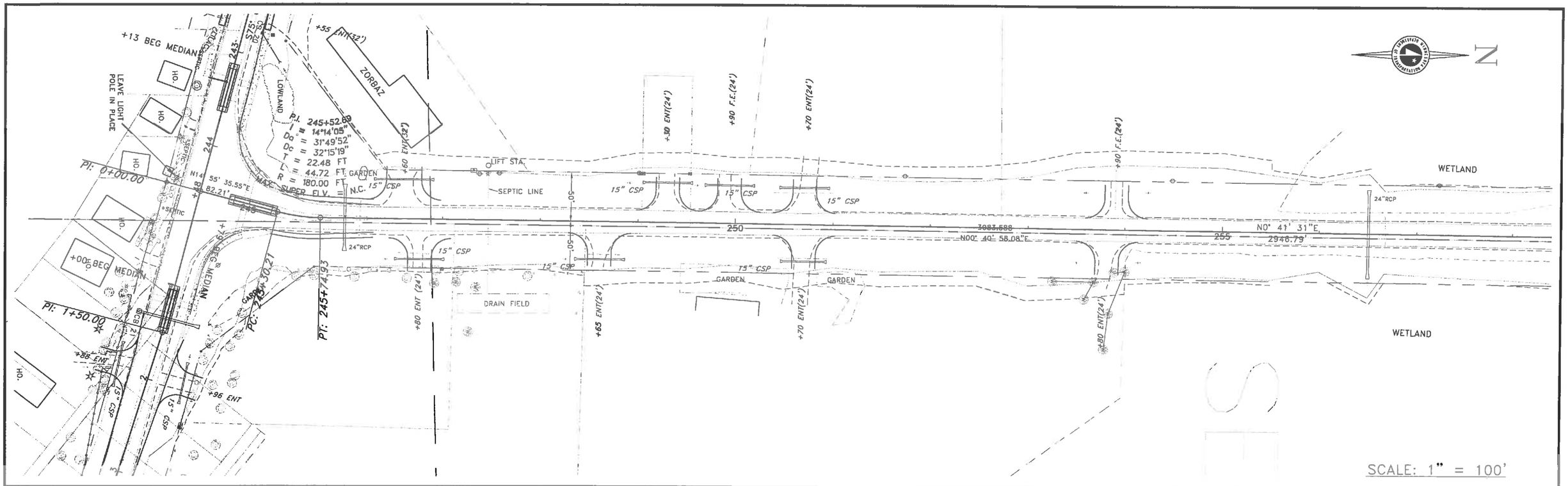
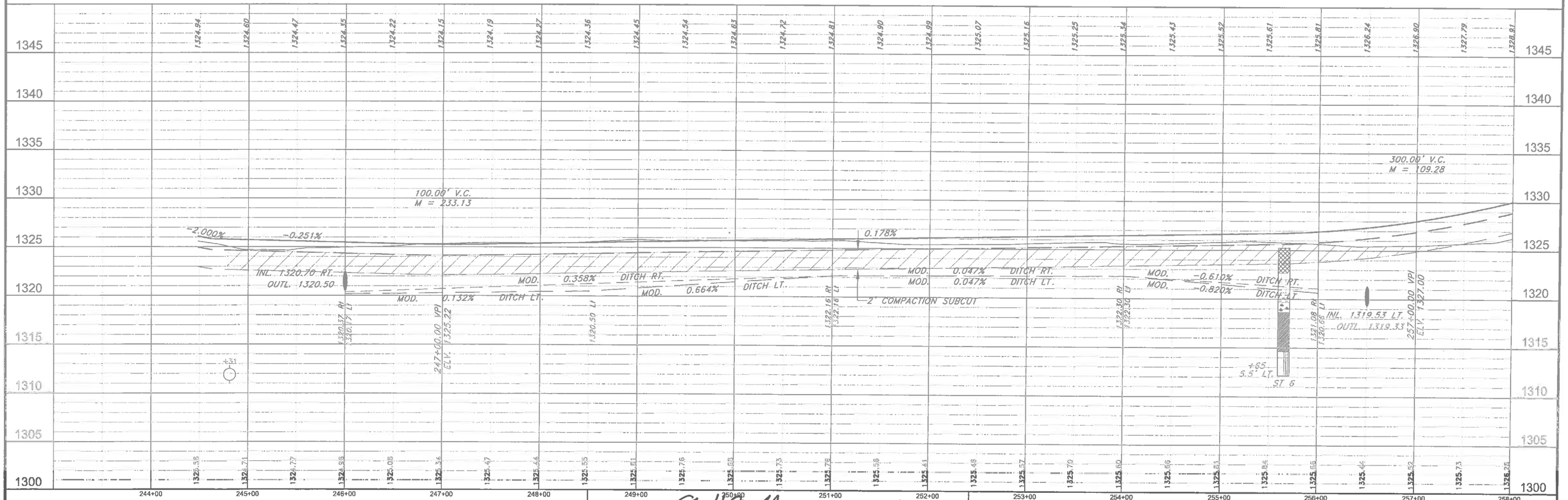
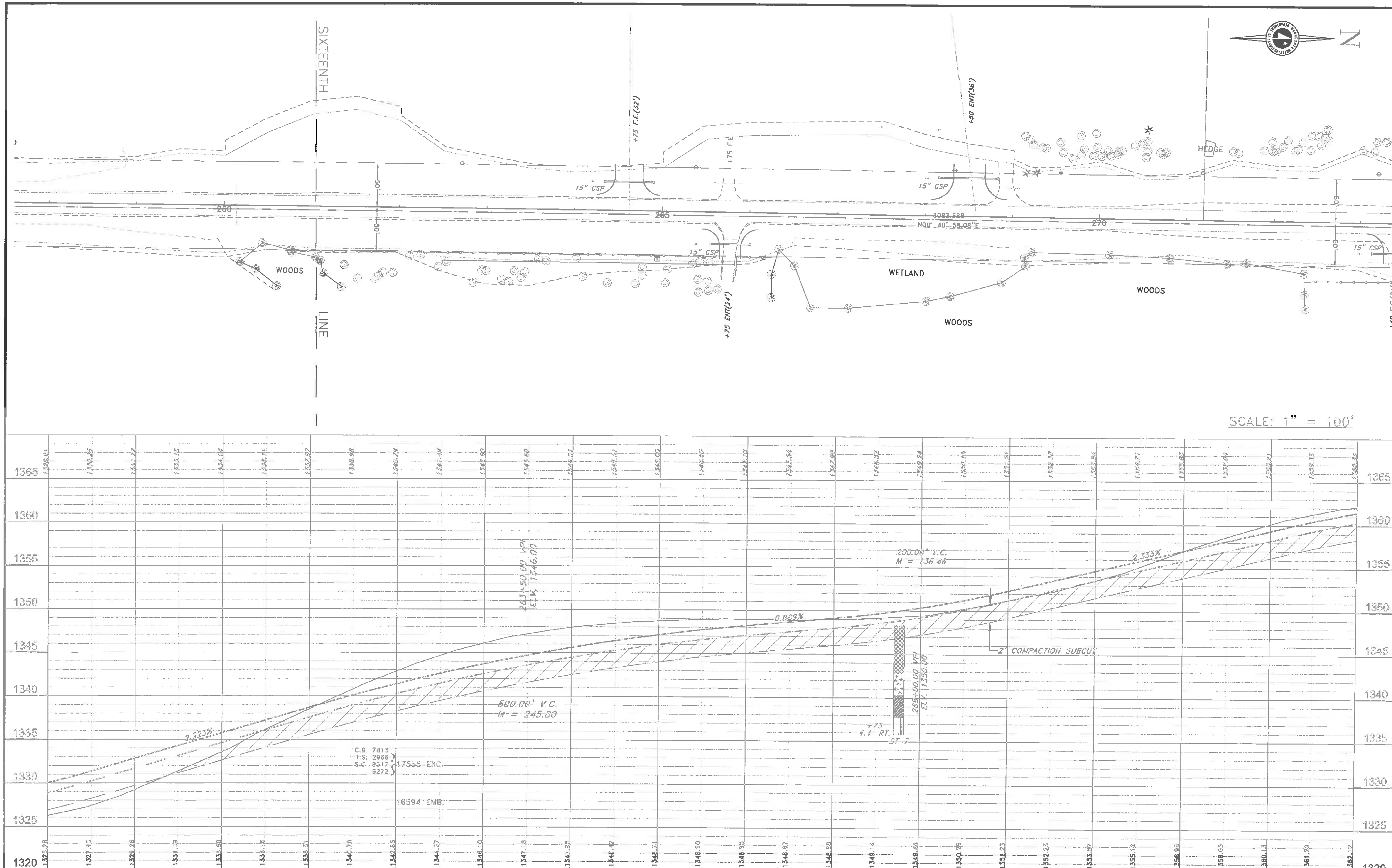




CERTIFIED BY: [signature] PROFESSIONAL ENGINEER LIC. NO. 20196 July 12, 2016

S.A.P. 056-609-005

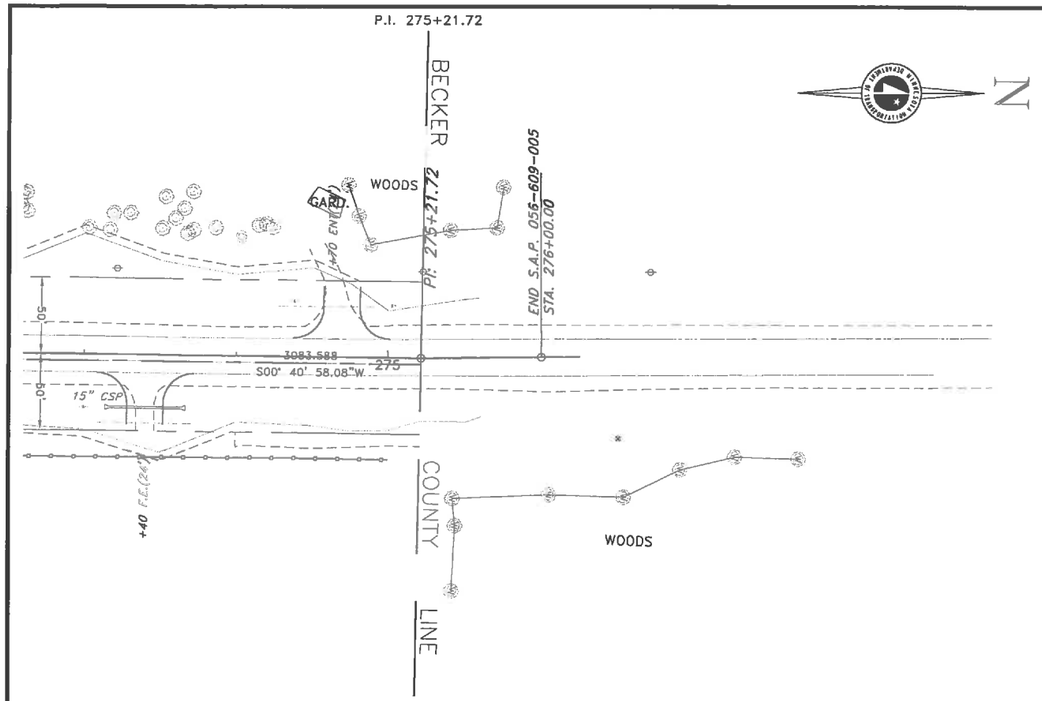
Sheet No. 51 of 111 Sheets



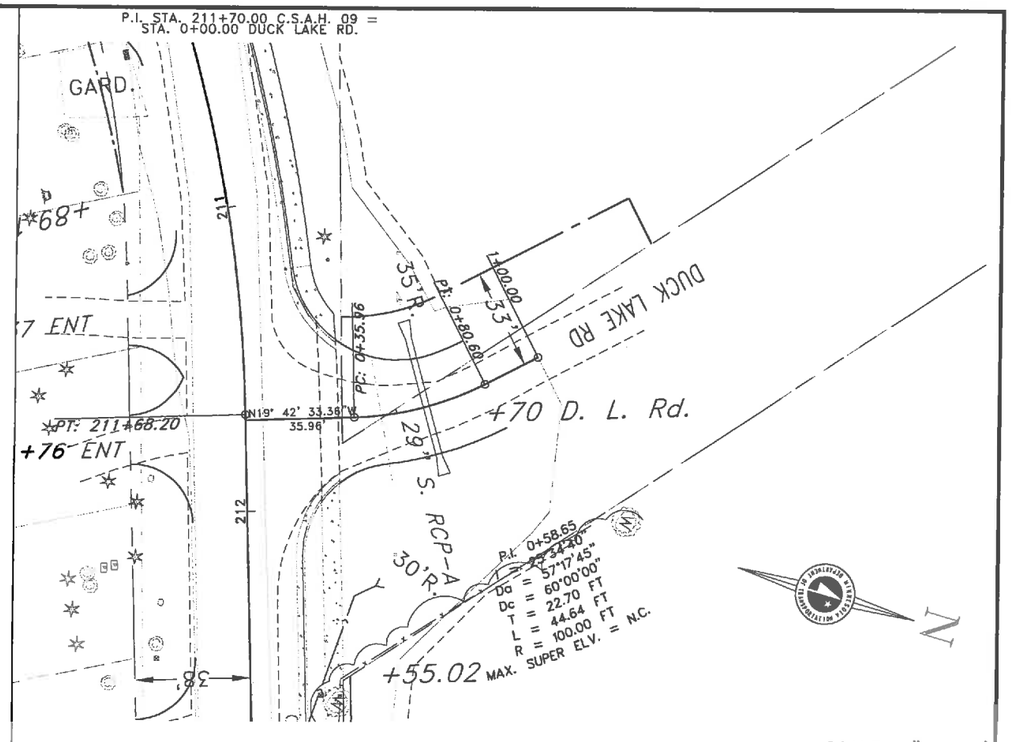
CERTIFIED BY: [signature] PROFESSIONAL ENGINEER LIC. NO. 20196 July 12, 2016

S.A.P. 056-609-005

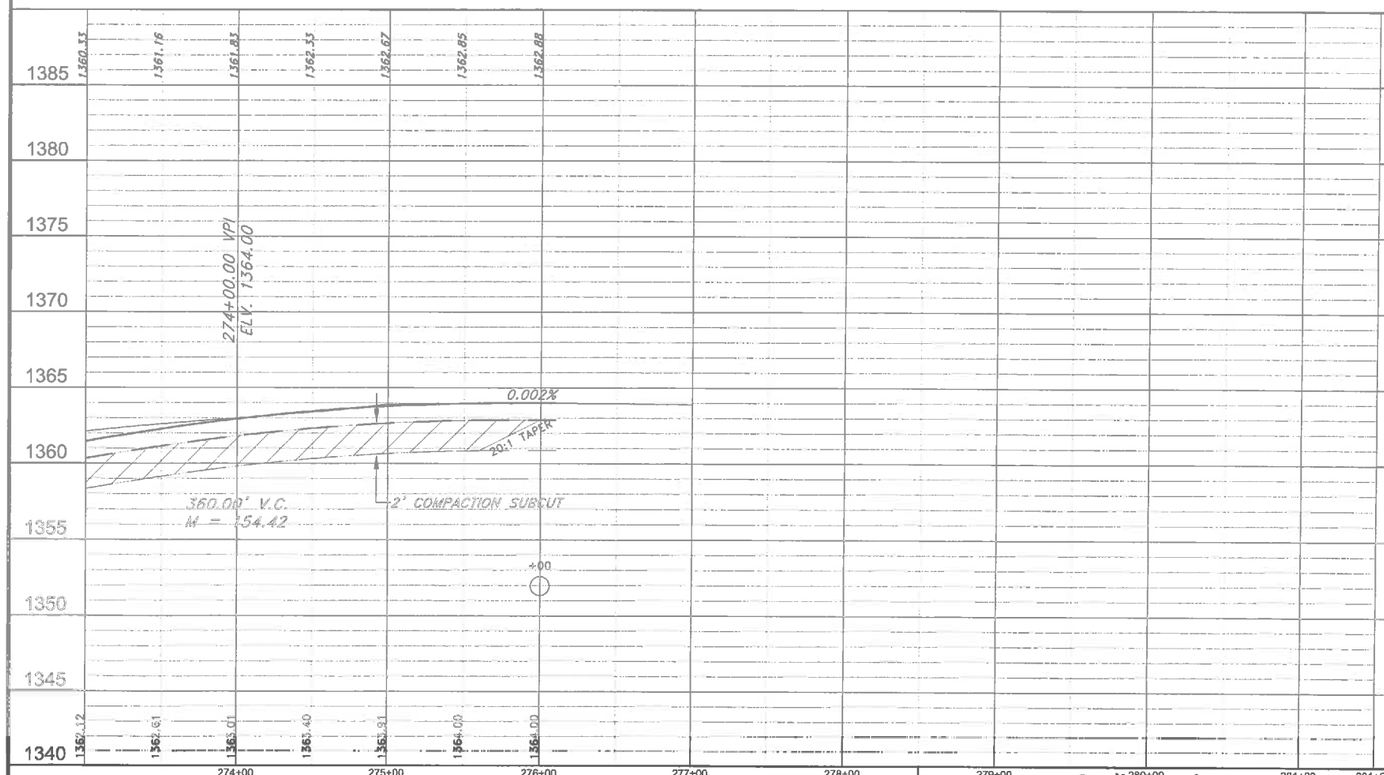
Sheet No. 52 of 111 Sheets

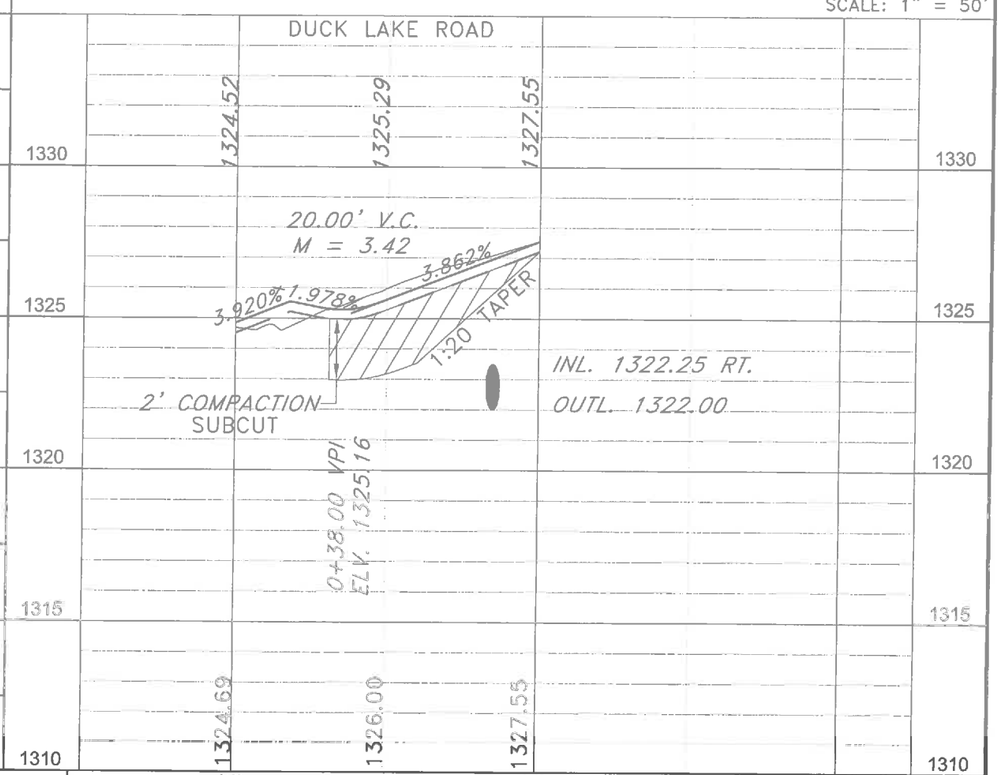


SCALE: 1" = 100'



SCALE: 1" = 50'





CERTIFIED BY: _____ PROFESSIONAL ENGINEER LIC. NO. 20196 July 12, 2016

S.A.P. 056-609-005

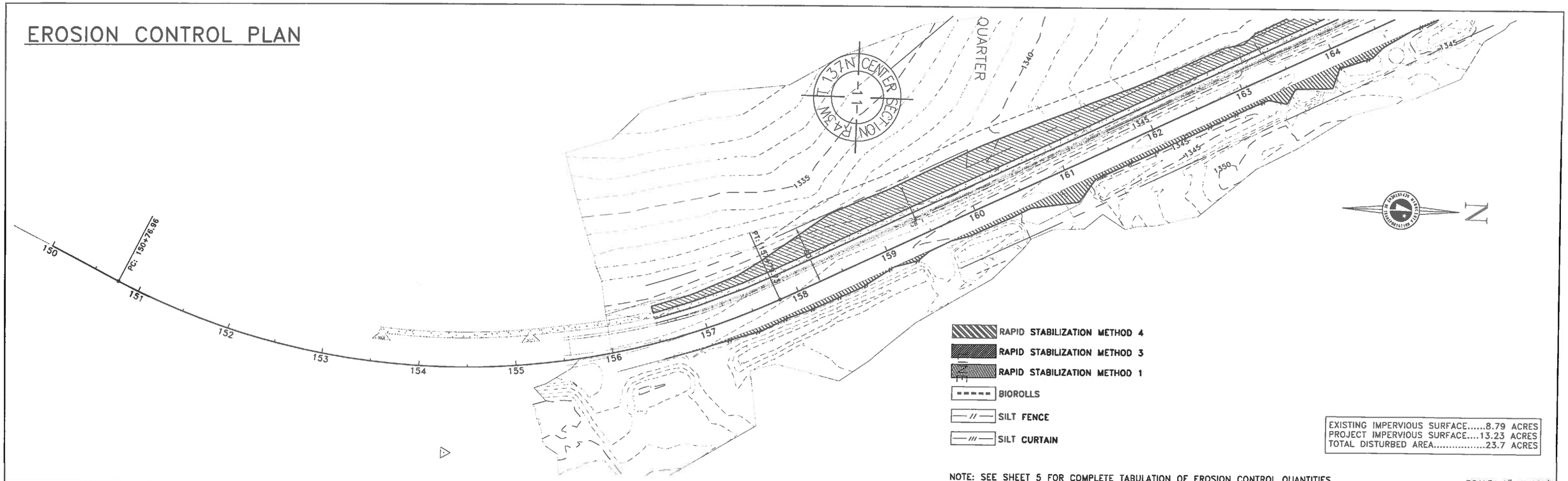
Sheet No. 53 of 111 Sheets

EXHIBIT A2

Engineering Plan Sheets

Erosion Control Plan

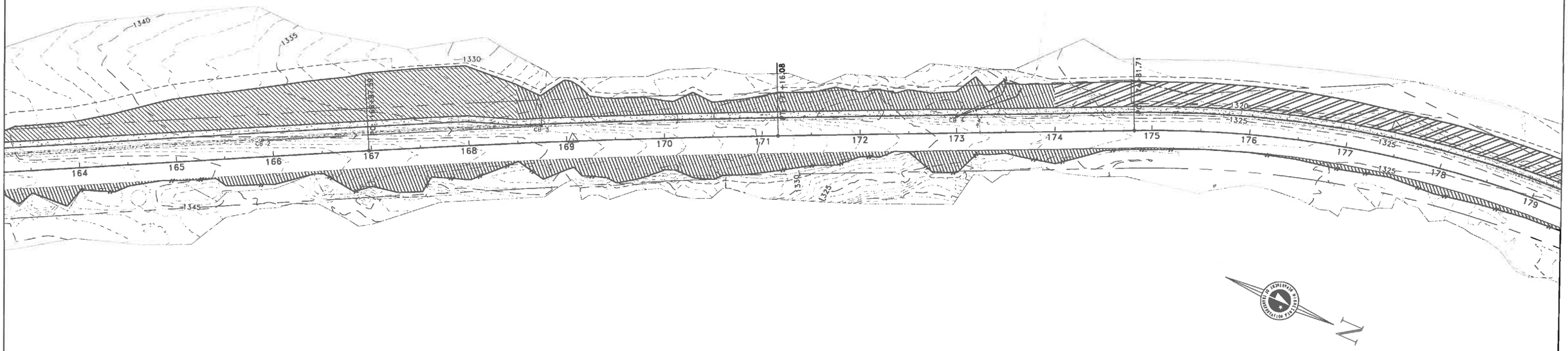
EROSION CONTROL PLAN



EXISTING IMPERVIOUS SURFACE.....8.79 ACRES
PROJECT IMPERVIOUS SURFACE....13.23 ACRES
TOTAL DISTURBED AREA.....23.7 ACRES

NOTE: SEE SHEET 5 FOR COMPLETE TABULATION OF EROSION CONTROL QUANTITIES.

SCALE: 1" = 100'



CERTIFIED BY: Chris Hartt PROFESSIONAL ENGINEER LIC. NO. 20196 July 12, 2016

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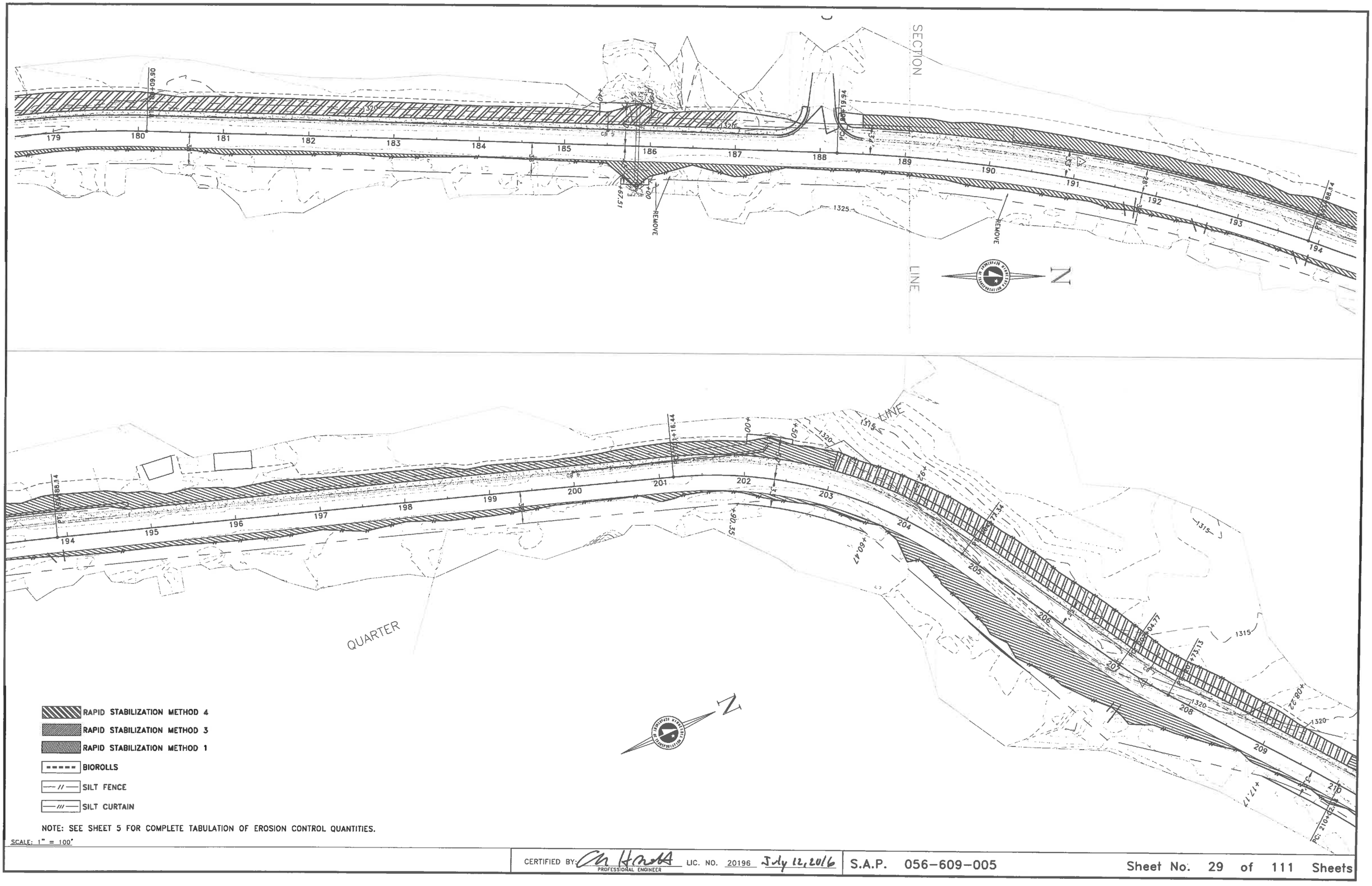

NOTE: SEE SHEET 5 FOR COMPLETE TABULATION OF EROSION CONTROL QUANTITIES.

SCALE: 1" = 100'

CERTIFIED BY: _____ LIC. NO. 20196 July 12, 2016
PROFESSIONAL ENGINEER

S.A.P. 056-609-005

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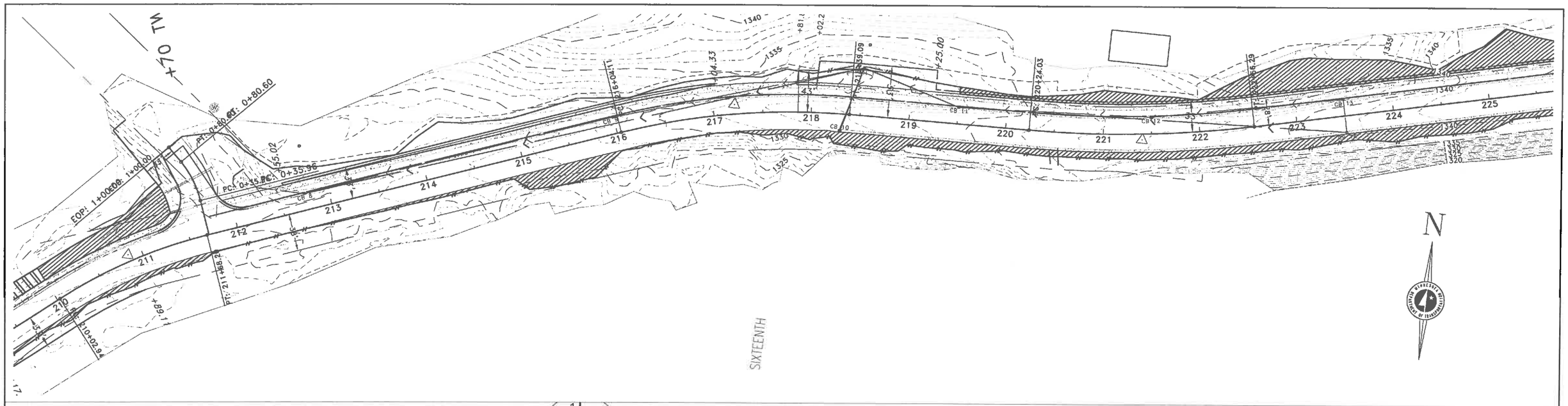

NOTE: SEE SHEET 5 FOR COMPLETE TABULATION OF EROSION CONTROL QUANTITIES.

SCALE: 1" = 100'

CERTIFIED BY: _____ LIC. NO. 20196 July 12, 2016
PROFESSIONAL ENGINEER

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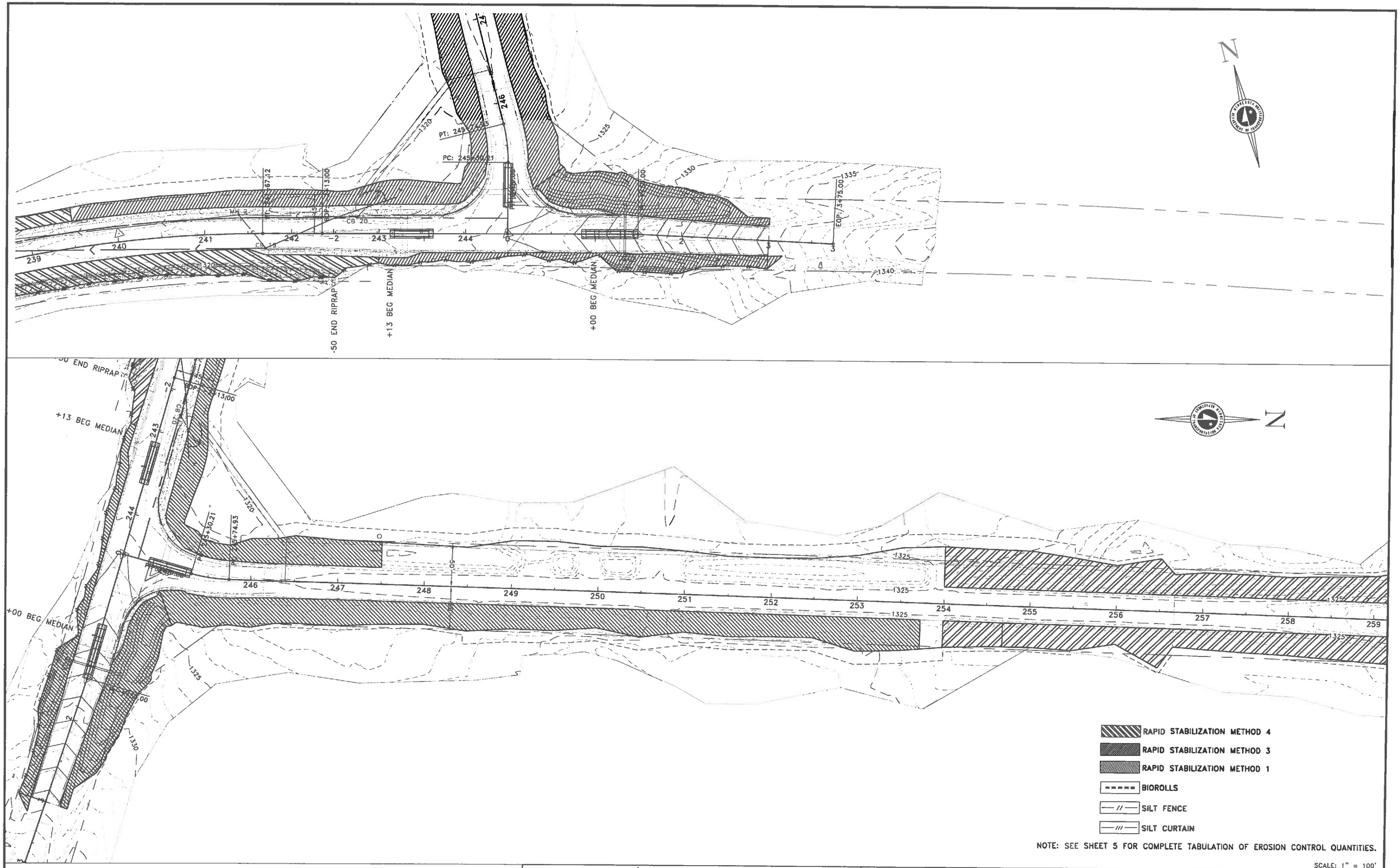
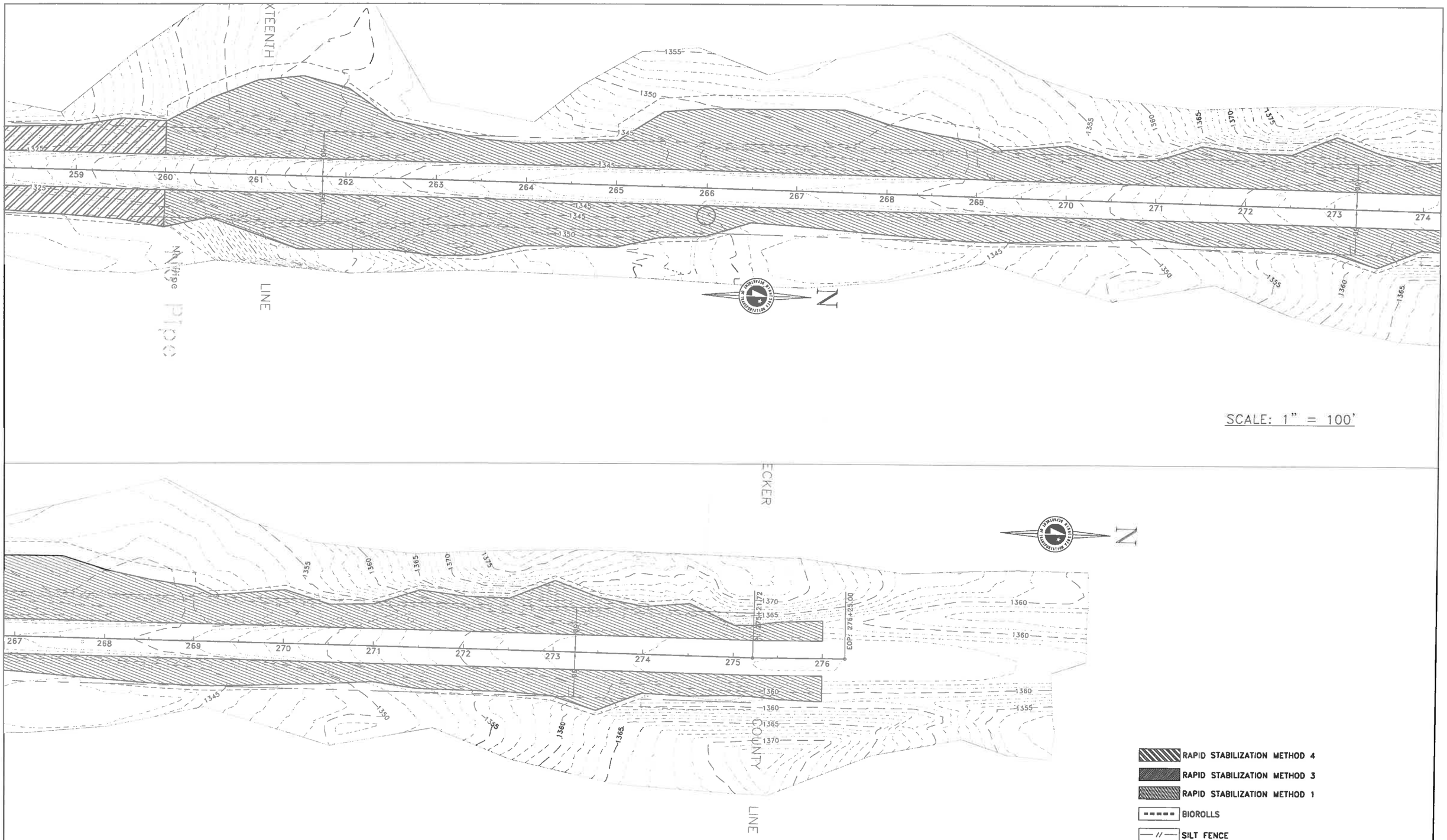


NOTE: SEE SHEET 5 FOR COMPLETE TABULATION OF EROSION CONTROL QUANTITIES.

SCALE: 1" = 100'

CERTIFIED BY: _____ LIC. NO. 20196 July 12, 2016
PROFESSIONAL ENGINEER

S.A.P. 056-609-005



SCALE: 1" = 100'

NOTE: SEE SHEET 5 FOR COMPLETE TABULATION OF EROSION CONTROL QUANTITIES.

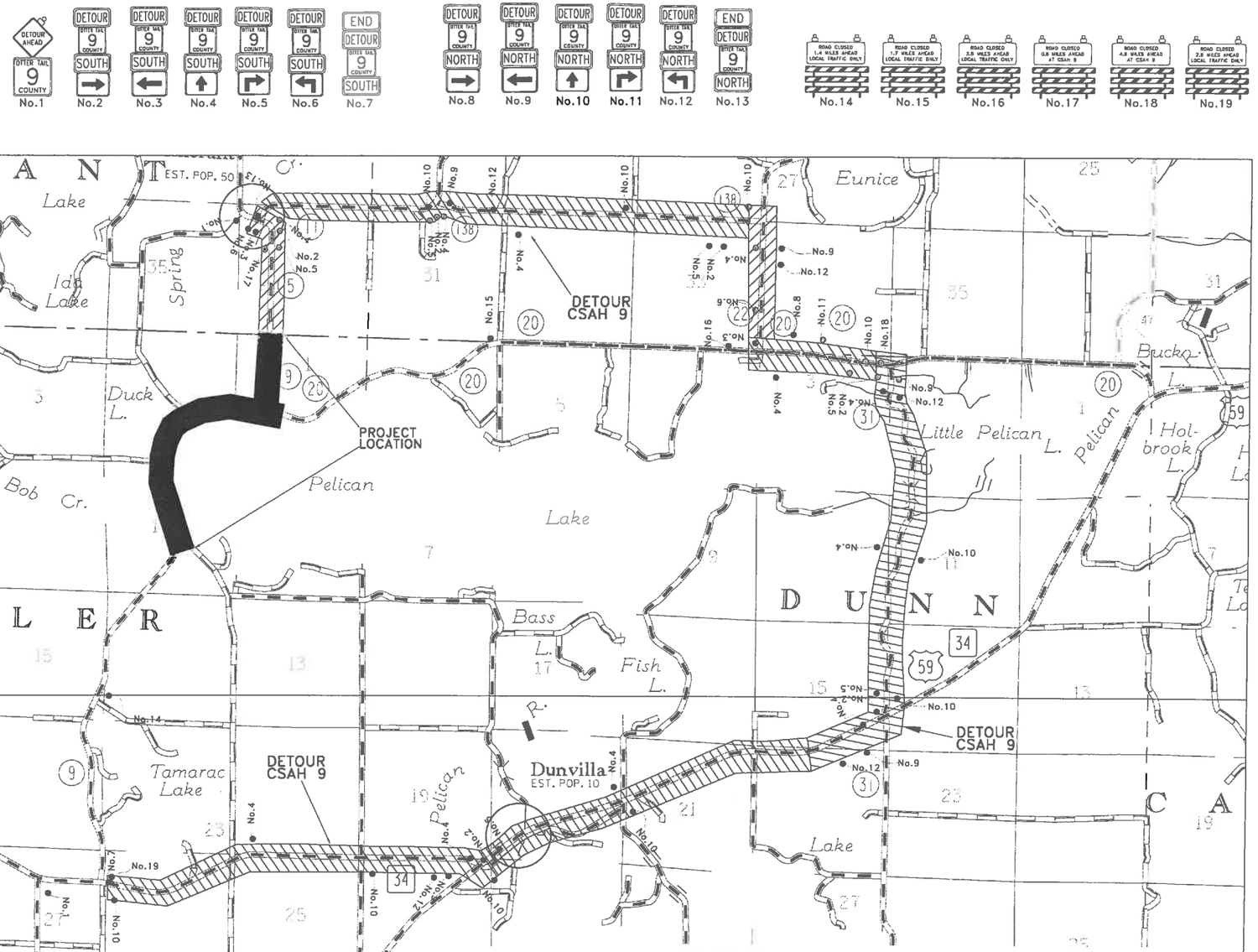
CERTIFIED BY _____ LIC. NO. 20196 July 12, 2016
PROFESSIONAL ENGINEER

S.A.P. 056-609-005

EXHIBIT A3

Engineering Plan Sheets

Detour Traffic Control



DISTANCES ARE APPROXIMATE.

ALL DETOUR TRAFFIC CONTROL DEVICES SHOWN, UNLESS OTHERWISE NOTED, SHALL BE FURNISHED, INSTALED, MAINTAINED, REMOVED BY AND REMAIN THE PROPERTY OF THE CONTRACTOR.

LOCATIONS OF SIGNS AND BARRICADES **MAY** BE ADJUSTED AS DIRECTED BY THE ENGINEER.

ALL SIGNS SHALL CONFORM IN LETTER SIZE AND COLOR AS SPECIFIED IN THE MINNESOTA STANDARD SIGNS MANUAL.

UNLESS OTHERWISE INDICATED OR EXEMPTED BY THE ENGINEER, ALL SIGNS SHOWN WHICH ARE INDEPENDENTLY MOUNTED SHALL BE ATTACHED TO TWO UPRIGHT POSTS EXTENDED FROM TWO DRIVEN GROUND POSTS. ALL SHALL CONFORM TO THE HEIGHT REQUIREMENTS OF SECTION 2A.18 OF THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE MOST RECENT EDITION.

ROUTE MARKER ASSEMBLIES SHALL BE INSTALLED ON A SINGLE UPRIGHT POST EXTENDED FROM A GROUND POST.

N

DETOUR TRAFFIC CONTROL SIGN QUANTITIES

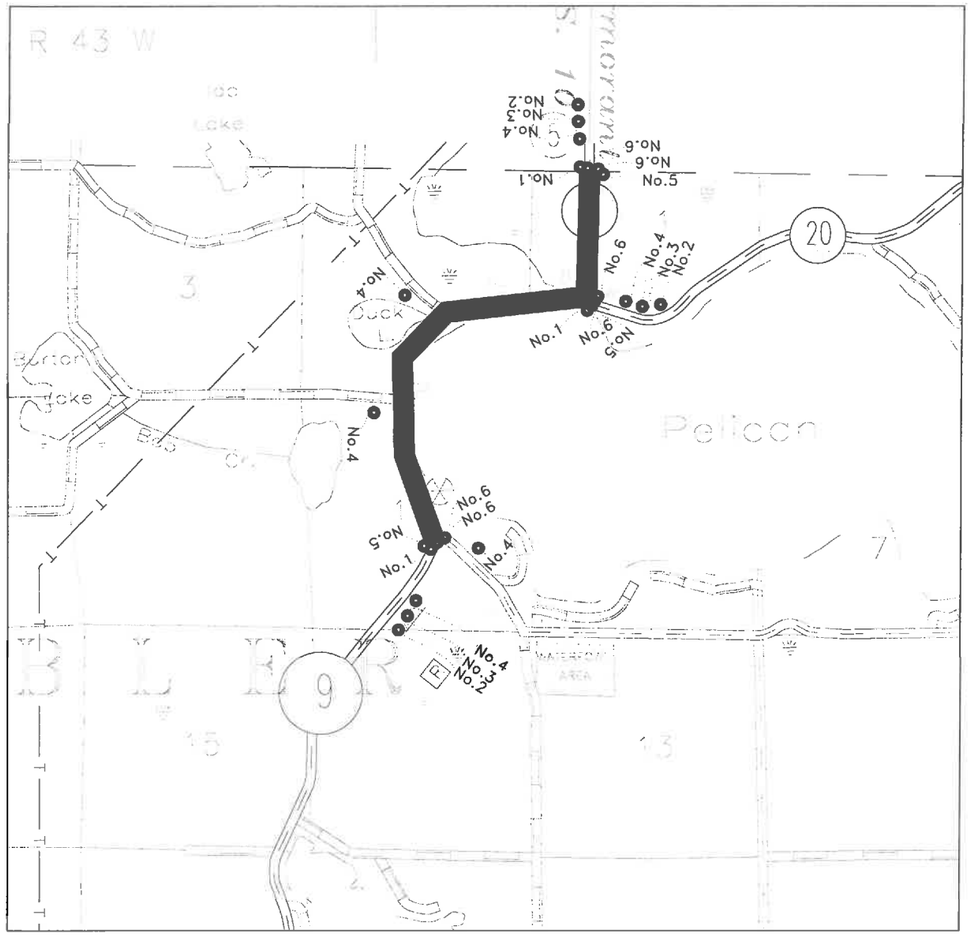
SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	ESTIMATED QUANTITY
OTTER TAIL 9 COUNTY	M1-X4	BLACK ON WHITE	24"X24"	52
	M6-3	BLACK ON WHITE	21"X15"	21
	M5-1R	BLACK ON WHITE	21"X15"	7
	M5-1L	BLACK ON WHITE	21"X15"	7
	M6-1	BLACK ON WHITE	21"X15"	14
DETOUR	M4-8	BLACK ON ORANGE	24"X12"	51
END	M4-6	BLACK ON WHITE	24"X12"	2
NORTH	M3-1	BLACK ON WHITE	24"X12"	23
SOUTH	M3-3	BLACK ON WHITE	24"X12"	28
DETOUR AHEAD	W20-2	BLACK ON ORANGE	48"X48"	2
	TYPE "A" FLASHER	YELLOW		14
DETOUR	M4-10 R	BLACK ON ORANGE	48"X18"	0
DETOUR	M4-10 L	BLACK ON ORANGE	48"X18"	0
	TYPE III BARRICADE	WHITE AND ORANGE	8'	6
ROAD CLOSED 0.8 MILES AHEAD AT CSAH 9	R11-3a (MOD.)	BLACK ON WHITE	60"X30"	1
ROAD CLOSED 1.4 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60"X30"	1
ROAD CLOSED 1.7 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60"X30"	1
ROAD CLOSED 3.8 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60"X30"	1
ROAD CLOSED 4.8 MILES AHEAD AT CSAH 9	R11-3a (MOD.)	BLACK ON WHITE	60"X30"	1
ROAD CLOSED 2.8 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60"X30"	1

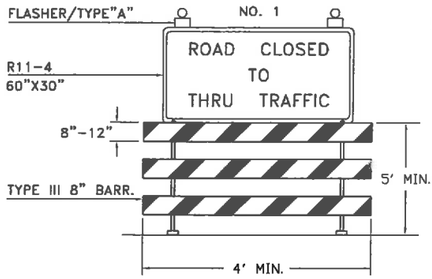
DETOUR TRAFFIC CONTROL FOR CSAH 9 OTTER TAIL COUNTY

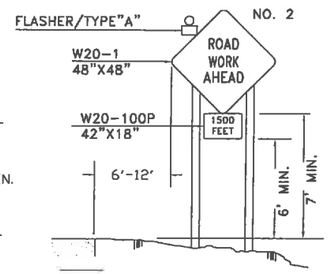
NO SCALE

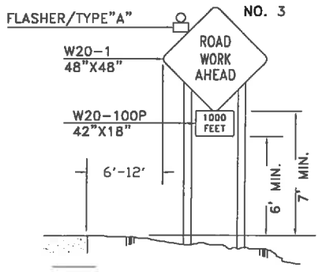
CERTIFIED BY: _____ PROFESSIONAL ENGINEER LIC. NO. 20196 July 12 2016

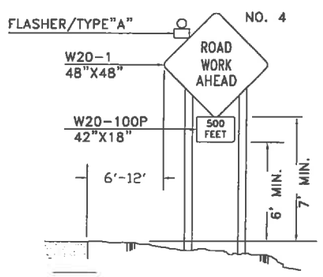
S.A.P. 056-609-005











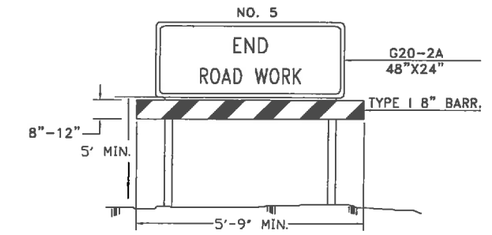
SIGN SCHEDULE	
SIGN NUMBER	QUANTITY
NO. 1	3
NO. 2	3
NO. 3	3
NO. 4	6
NO. 5	3
NO. 6	6

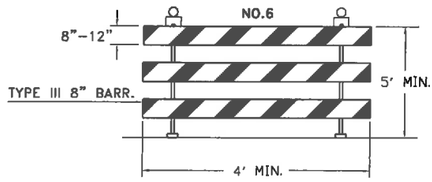
-NOTES-

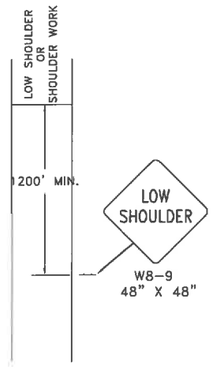
ALL CONSTRUCTION SIGNING AS SHOWN BELOW BUT NOT LIMITED TO SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY REQUIRED FLAGGERS AND/OR PILOT CAR OPPERATIONS SHALL BE FURNISHED BY THE CONTRACTOR AND WILL BE PAID FOR AS PART OF TRAFFIC CONTROL.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MMUTCD AND ALL REVISIONS, AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS (FIELD MANUAL) MOST RECENT EDITION.

ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.
ALL SIGN POSTS SHALL BE POUNDED. (EXCEPTION NO.1 AND NO.6.)

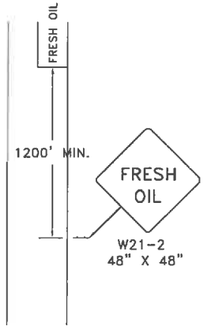






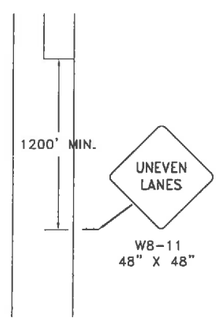
TYPE BB

TO BE USED IN A MAJOR WORK AREA, WHERE THE SIGNED CONDITIONS EXIST.



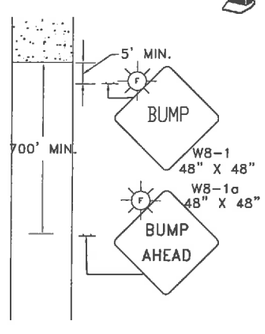
TYPE CC

TO BE USED WHERE THE SIGNED CONDITIONS EXIST.



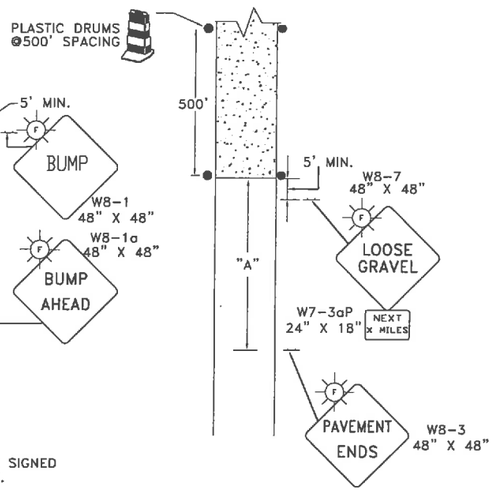
TYPE GG

TO BE USED WHERE A DIFFERENCE OF ELEV. BETWEEN LANES EXIST.

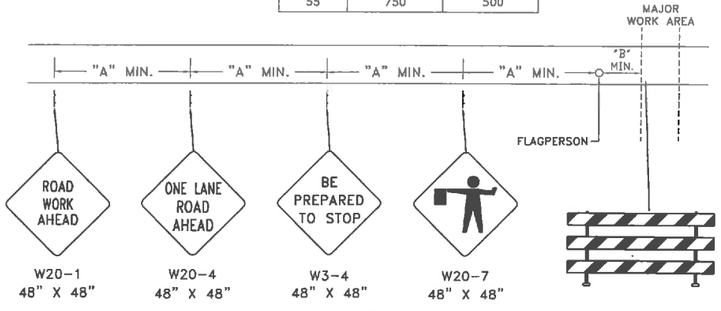


TYPE FF

TO BE USED WHERE THE SIGNED CONDITIONS EXIST.



SPEED LIMIT(MPH)	SPACING OF ADVANCE WARNING SIGNS (A)(FEET)	BUFFER SPACE (B)(FEET)
0-30	250	200
35-40	325	305
45-50	600	425
55	750	500



SEE TABLE FOR SPACING DISTANCE "A" AND "B"

TRAFFIC CONTROL PLAN

NO SCALE

CERTIFIED BY: C. Hamba PROFESSIONAL ENGINEER LIC. NO. 20196 July 12 2016

S.A.P. 056-609-005

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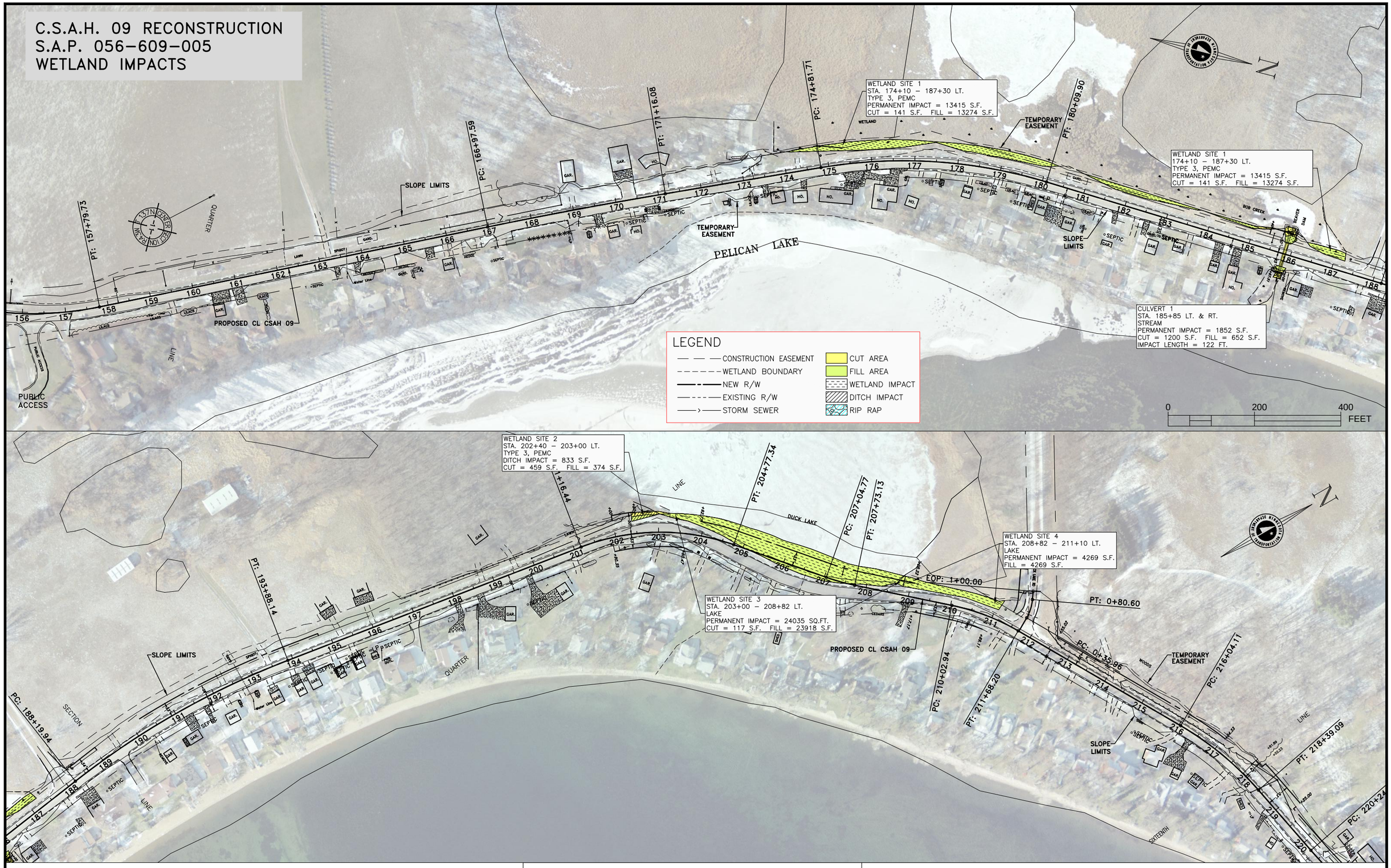
EXHIBIT B

Wetland/Public Waters
Impacts
Locations and Cross
Sections

C.S.A.H. 09 RECONSTRUCTION
S.A.P. 056-609-005
WETLAND IMPACTS



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PROFESSIONAL ENGINEER

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Sheet No. 1 of 3 Sheets

N

WETLAND SITE 8
STA. 249+45 – 250+40 LT.
TYPE 3, PEMC
DITCH IMPACT = 1015 S.F.
CUT = 457 S.F. FILL = 558 S.F.

WETLAND SITE 7
STA. 246+95 – 249+05 LT.
TYPE 3, PEMC
DITCH IMPACT = 2986 S.F.
CUT = 196 S.F. FILL = 2790 S.F.

CULVERT 2
STA. 237+25 LT.
STREAM
PERMANENT IMPACT = 4034 S.F.
CUT = 1058 S.F. FILL = 2976 S.F.
IMPACT LENGTH = 146 FT.

WETLAND SITE 5
STA. 235+50 – 239+00 LT.
TYPE 3, PEMC
PERMANENT IMPACT = 11801 S.F.
CUT = 126 S.F. FILL = 11675 S.F.

WETLAND SITE 6
STA. 239+40 – 246+30 LT.
TYPE 3, PEMC
DITCH IMPACT = 8208 S.F.
CUT = 173 S.F. FILL = 8035 S.F.

WETLAND SITE RIP RAP
STA. 234+20 – 242+50 LT.
LAKE
PERMANENT IMPACT = 12899 S.F.
CUT = 2599 S.F. FILL = 10300 S.F.

PELICAN LAKE

PT: 218+39.09
PC: 220+24.03
PT: 222+56.29
PC: 226+99.11
PC: 232+87.13
PT: 229+29.61
PT: 235+56+91.95
PC: 238+35.57
PT: 241+67.12
PT: 245+74.93
PC: 245+30.21

SLOPE LIMITS
TEMPORARY EASEMENT
PROPOSED CL CSAH 09
SECTION LINE
QUARTER LINE

LEGEND

CONSTRUCTION EASEMENT	CUT AREA
WETLAND BOUNDARY	FILL AREA
NEW R/W	WETLAND IMPACT
EXISTING R/W	DITCH IMPACT
STORM SEWER	RIP RAP

0 200 400 FEET

WETLAND SITE 8
STA. 249+45 – 250+40 LT.
TYPE 3, PEMC
DITCH IMPACT = 1015 S.F.
CUT = 457 S.F. FILL = 558 S.F.

WETLAND SITE 9
STA. 251+00 – 255+50 LT.
TYPE 3, PEMC
DITCH IMPACT = 9982 S.F.
CUT = 1854 S.F. FILL = 8128 S.F.

WETLAND SITE 11
STA. 255+50 – 259+90 LT.
TYPE 3, PEMC
PERMANENT IMPACT = 8695 S.F.
CUT = 1603 S.F. FILL = 7092 S.F.

WETLAND SITE 13
STA. 260+20 – 263+00 LT.
TYPE 7, PF01/EMC
DITCH IMPACT = 5672 S.F.
CUT = 2241 S.F. FILL = 3431 S.F.

WETLAND SITE 14
STA. 263+00 – 264+85 LT.
TYPE 7, PF01/EMC
PERMANENT IMPACT = 4282 S.F.
CUT = 4023 S.F. FILL = 259 S.F.

WETLAND SITE 16
STA. 264+85 – 268+65 LT.
TYPE 3, PEMC
DITCH IMPACT = 7787 S.F.
CUT = 4128 S.F. FILL = 3659 S.F.

PI: 275+21.72
EOP: 276+25.00

TEMPORARY EASEMENT
SLOPE LIMITS
SIXTEENTH
COUNTY LINE

WETLAND SITE 10
STA. 251+35 – 253+65 LT.
TYPE 3, PEMC
DITCH IMPACT = 5293 S.F.
FILL = 5293 S.F.

WETLAND SITE 12
STA. 254+00 – 260+00 RT.
TYPE 3, PEMC
PERMANENT IMPACT = 13307 S.F.
CUT = 865 S.F. FILL = 12442 S.F.

WETLAND SITE 15
STA. 261+50 – 262+30 LT.
TYPE 3, PEMC
DITCH IMPACT = 888 S.F.
CUT = 696 S.F. FILL = 192 S.F.

SLOPE LIMITS

WETLAND SITE 17
STA. 266+00 – 269+40 RT.
TYPE 6, PSS1/EMC
PERMANENT IMPACT = 7008 SQ.FT.
CUT = 301 S.F. FILL = 6707 S.F.

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Sheet No. 2 of 3 Sheets

WETLAND IMPACT CROSS SECTION TYPICALS

LEGEND

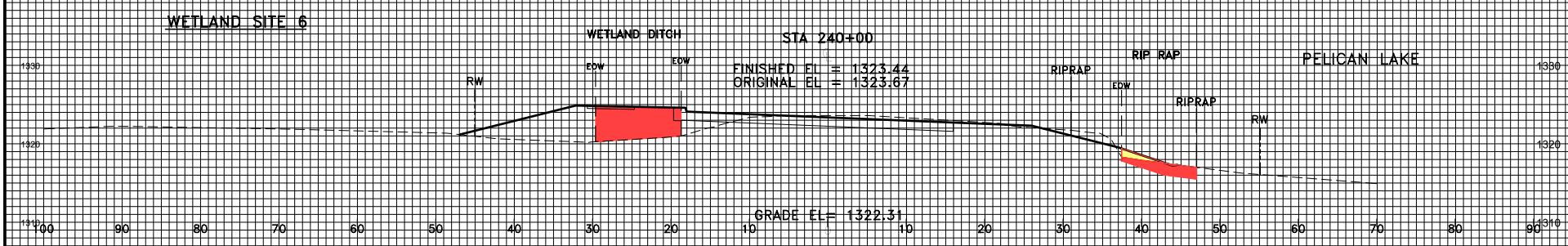
PERMANENT IMPACT

- EXISTING GRADE
- PROPOSED GRADE
- EXISTING R/W
- CUT AREA
- FILL AREA
- RIP RAP

WETLAND SITE 6

STA 240+00

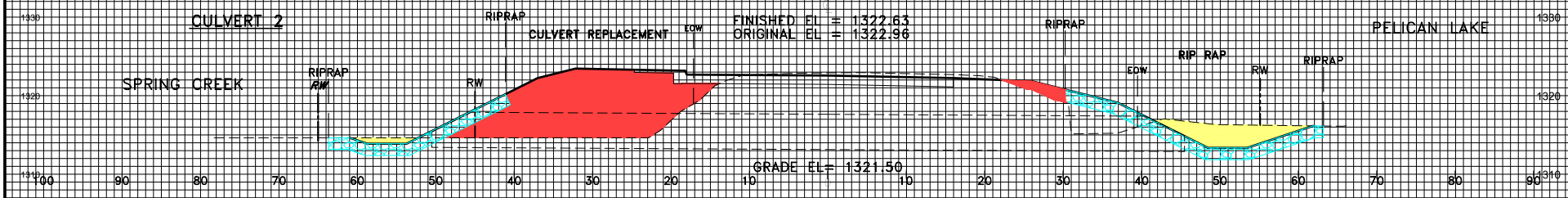
FINISHED EL = 1323.44
ORIGINAL EL = 1323.67



CULVERT 2

STA 237+25

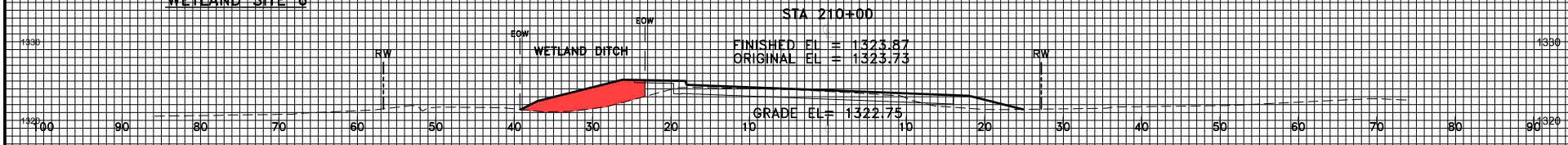
FINISHED EL = 1322.63
ORIGINAL EL = 1322.96



WETLAND SITE 6

STA 210+00

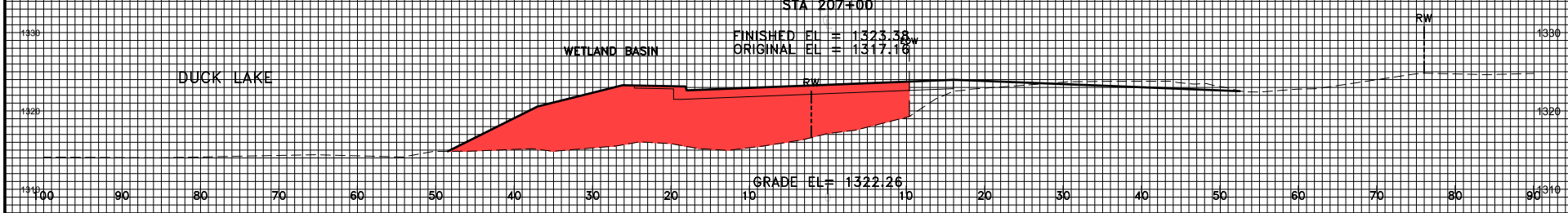
FINISHED EL = 1323.87
ORIGINAL EL = 1323.73



WETLAND SITE 6

STA 207+00

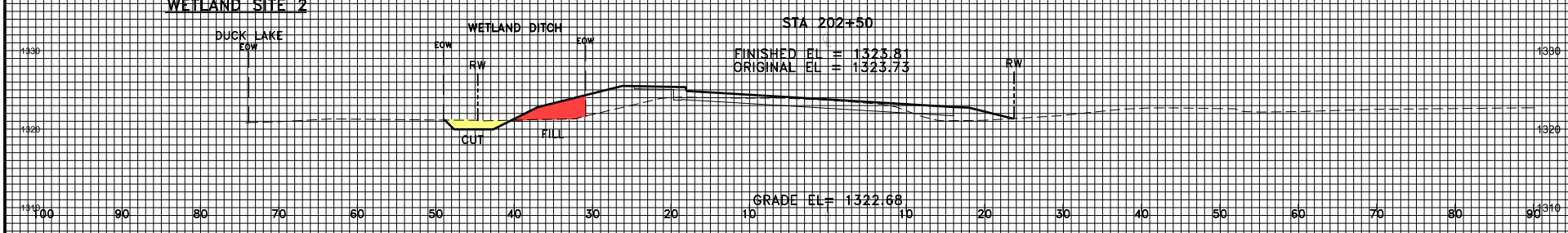
FINISHED EL = 1323.38
ORIGINAL EL = 1317.16



WETLAND SITE 2

STA 202+50

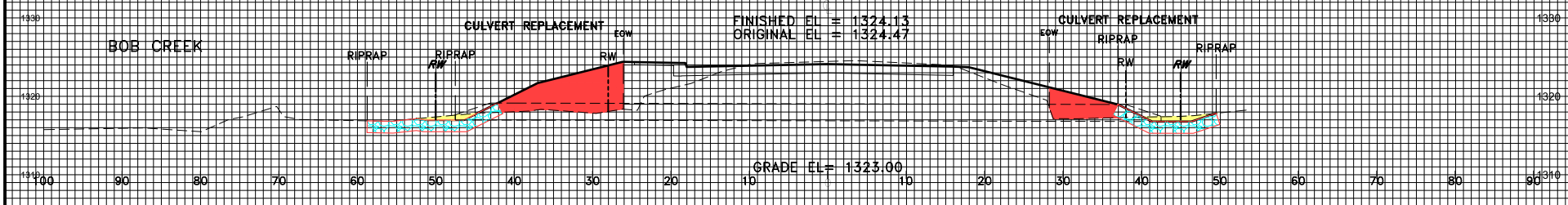
FINISHED EL = 1323.81
ORIGINAL EL = 1323.73



CULVERT 1

STA 185+85

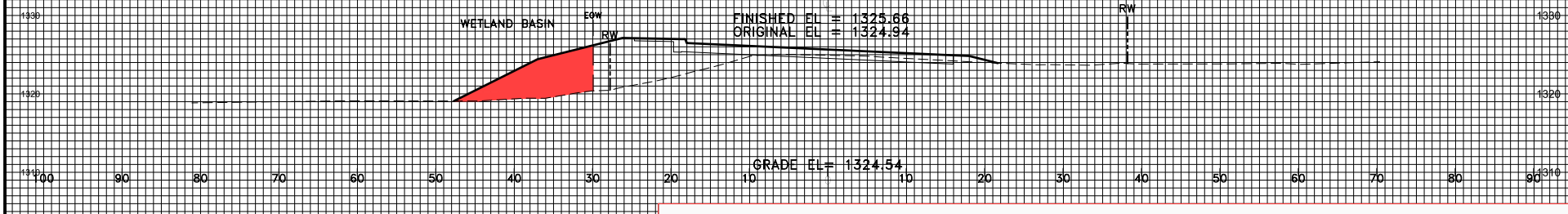
FINISHED EL = 1324.13
ORIGINAL EL = 1324.47



WETLAND SITE 1

STA 179+00

FINISHED EL = 1325.66
ORIGINAL EL = 1324.94



S.A.P. 056-609-005 Sheet No. 3 of 3 Sheets

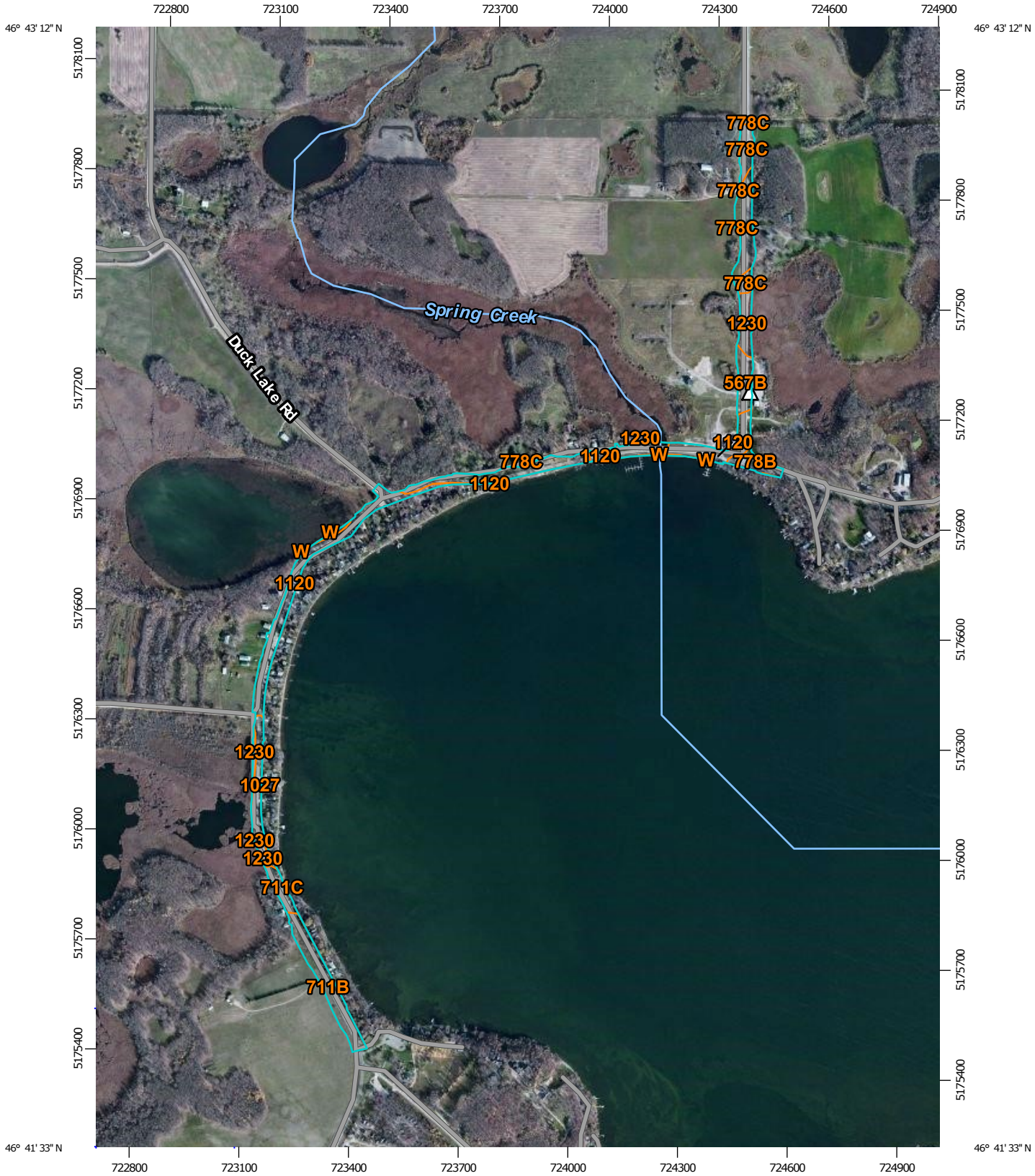
EXHIBIT C1

USDA, NRCS

Web Soil Survey

Soils Report

Soil Map—Becker County, Minnesota, and Otter Tail County, Minnesota
(CSAH 9 (SAP-056-609-005) EAW)



MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Becker County, Minnesota
Survey Area Data: Version 11, Sep 18, 2015

Soil Survey Area: Otter Tail County, Minnesota
Survey Area Data: Version 11, Sep 18, 2015

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Oct 6, 2010—Oct 15, 2010

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

Map Unit Legend

Becker County, Minnesota (MN005)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
778C	Dorset-Corliss complex, 6 to 12 percent slopes	0.1	0.3%
Subtotals for Soil Survey Area		**0.1**	**0.3%**
Totals for Area of Interest		**30.2**	**100.0%**

Otter Tail County, Minnesota (MN111)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
567B	Verndale sandy loam, 2 to 6 percent slopes	4.5	14.9%
711B	Arvilla-Sandberg complex, 2 to 6 percent slopes	3.8	12.5%
711C	Arvilla-Sandberg complex, 6 to 12 percent slopes	1.0	3.3%
778B	Dorset-Corliss complex, 1 to 6 percent slopes	1.2	3.9%
778C	Dorset-Corliss complex, 6 to 12 percent slopes	5.2	17.2%
1027	Udorthents, wet substratum (fill land)	2.4	7.9%
1120	Rushlake-Hangaard complex	8.9	29.4%
1230	Haslie and Nidaros soils, ponded	3.0	9.8%
W	Water	0.3	0.9%
Subtotals for Soil Survey Area		**30.1**	**99.7%**
Totals for Area of Interest		**30.2**	**100.0%**

EXHIBIT C2

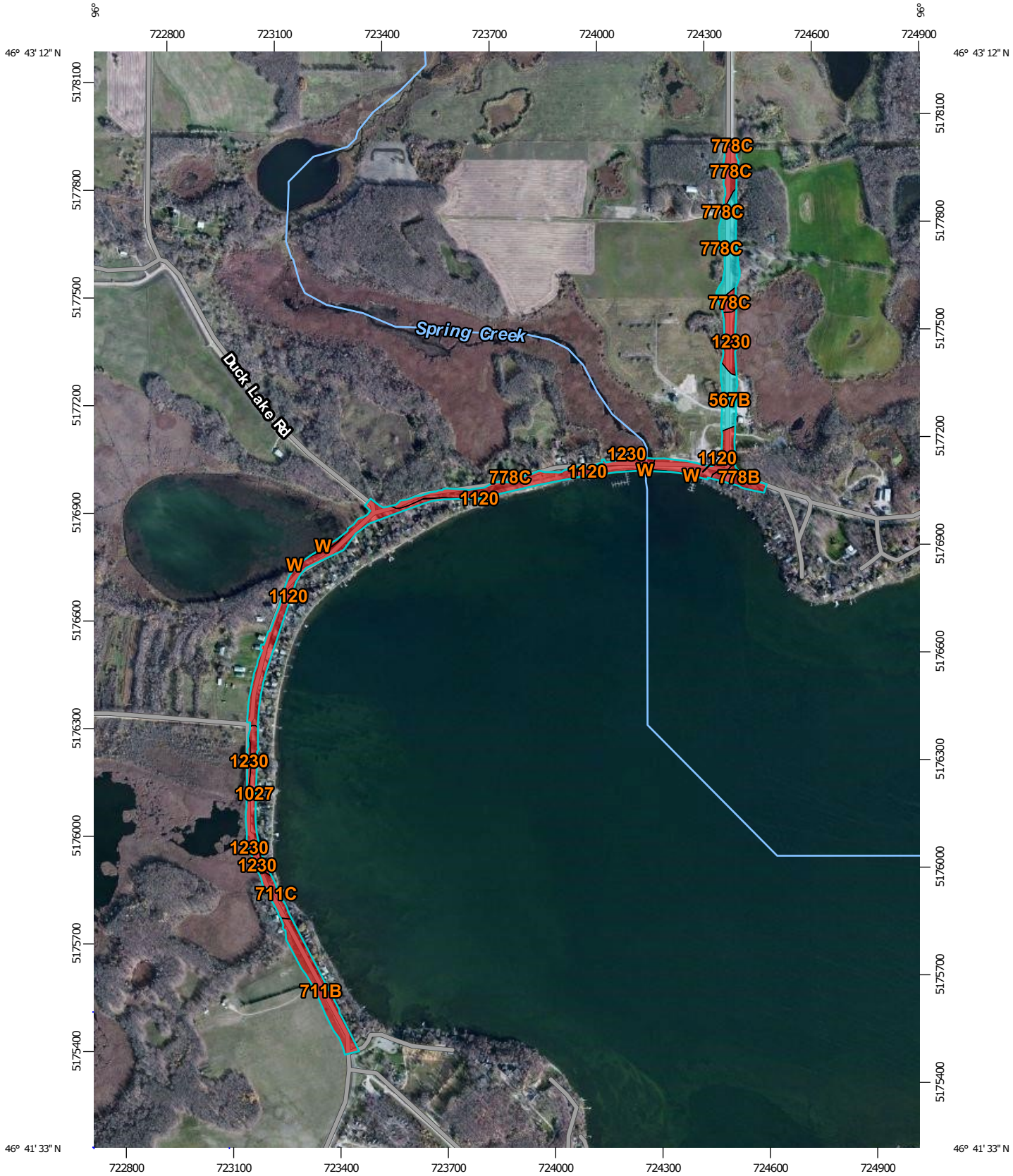
USDA, NRCS

Web Soil Survey

Farmland

Classifications

Farmland Classification—Becker County, Minnesota, and Otter Tail County, Minnesota
(CSAH 9 (SAP-056-609-005) EAW)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Becker County, Minnesota
Survey Area Data: Version 11, Sep 18, 2015

Soil Survey Area: Otter Tail County, Minnesota
Survey Area Data: Version 11, Sep 18, 2015

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Oct 6, 2010—Oct 15, 2010

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

Farmland Classification

Farmland Classification— Summary by Map Unit — Becker County, Minnesota (MN005)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
778C	Dorset-Corliss complex, 6 to 12 percent slopes	Not prime farmland	0.1	0.3%
Subtotals for Soil Survey Area			**0.1**	**0.3%**
Totals for Area of Interest			**30.2**	**100.0%**

Farmland Classification— Summary by Map Unit — Otter Tail County, Minnesota (MN111)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
567B	Verndale sandy loam, 2 to 6 percent slopes	Farmland of statewide importance	4.5	14.9%
711B	Arvilla-Sandberg complex, 2 to 6 percent slopes	Not prime farmland	3.8	12.5%
711C	Arvilla-Sandberg complex, 6 to 12 percent slopes	Not prime farmland	1.0	3.3%
778B	Dorset-Corliss complex, 1 to 6 percent slopes	Not prime farmland	1.2	3.9%
778C	Dorset-Corliss complex, 6 to 12 percent slopes	Not prime farmland	5.2	17.2%
1027	Udorthents, wet substratum (fill land)	Not prime farmland	2.4	7.9%
1120	Rushlake-Hangaard complex	Not prime farmland	8.9	29.4%
1230	Haslie and Nidaros soils, ponded	Not prime farmland	3.0	9.8%
W	Water	Not prime farmland	0.3	0.9%
Subtotals for Soil Survey Area			**30.1**	**99.7%**
Totals for Area of Interest			**30.2**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

EXHIBIT D

MPCA,
"What's in My
Neighborhood"

CSAH 9 Reconstruction (SAP 056-609-005) EAW

August 26, 2016

MPCA Sites

- Multiple Activities
- Air
- Feedlot
- Hazardous Waste
- Investigation and Cleanup
- Solid Waste
- Tanks and Leaks
- Water

1:31,041

0 0.275 0.55 1.1 mi

0 0.425 0.85 1.7 km

EXHIBIT E

SHPO Correspondence

Minnesota Historical Society

Using the Power of History to Transform Lives
PRESERVING • SHARING • CONNECTING

STATE HISTORIC PRESERVATION OFFICE

July 22, 2013

Charles Grotte
Assistant County Engineer
Otter Tail County Highway Department
505 South Court Street, Suite 1
Fergus Falls, MN 56537

RE: S.A.P. 056-609-005, Reconstruction of CSAH 9
Scambler Twp., Otter Tail County
SHPO Number: 2011-1860

Dear Mr. Grotte:

Thank you for the opportunity to comment on the above project. It has been reviewed pursuant to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We have reviewed the cultural resources survey report that was prepared for this project. Based on the results of the survey, we conclude that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by this project

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, Procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal permit or license, it should be submitted to our office by the responsible federal agency.

Please contact our Compliance Section at (651) 259-3455 if you have any questions on our review of this project.

Sincerely,

Mary Ann Heidemann, Manager
Government Programs and Compliance

cc: Richard Rothaus, Trefoil