



August 11, 2015

Melissa Jenny
United States Army Corps of Engineers
180 5th Street East, Suite 700
St. Paul, MN 55101-1678

Re: NEPA/404 Merger Process (Concurrence Point 4) for the Southwest Light Rail Transit (LRT) Project

Dear Ms. Jenny,

The Southwest LRT Project Office (SPO) is pleased to submit the enclosed NEPA/404 Merger Process Concurrence Point 4 (Document) for the Southwest LRT Project. This Document supplements the project's Draft Environmental Impact Statement (DEIS) and subsequent letter received from the USACE pertaining to the alternatives identified in the DEIS on December 20, 2012, as well as the Southwest LRT NEPA/404 Merger Concurrence Points Package (submitted May 5, 2014) and subsequent concurrence letter received from the USACE on October 16, 2014.

The Document describes the efforts taken by Southwest LRT Project during the design process to avoid and minimize potential adverse impacts to regulated aquatic resources. Appropriate and practicable steps have been taken to minimize unavoidable adverse impacts and are presented in the Document. In addition, the Metropolitan Council adopted a revised project scope on July 8, 2015 to reduce project costs by approximately \$250 million. As a result of this action, Mitchell Station in Eden Prairie has been eliminated, making the SouthWest Station the Southwest LRT's westernmost stop. Additionally, construction of the Town Center Station in Eden Prairie has been deferred. The length of the proposed alignment has been reduced by approximately 1.5 miles, eliminating potential impacts to a total of nine jurisdictional aquatic resources (approximately one acre of potential permanent impact and approximately five acres of potential temporary impact).

The SPO respectfully requests that the USACE provide, in writing, concurrence that information provided in the Document satisfies Clean Water Act (CWA) requirements. As a designated Cooperating Agency under the National Environmental Policy Act (NEPA), SPO kindly requests that the Corps provide timely review of the Document and response within 45 days in order to incorporate progress on the Project's Merger Process and streamlining efforts into the Final Environmental Impact Statement (FEIS), and to allow for continued development of a CWA permit application.

Please feel free to contact me with any questions or needs for additional information at 612.373.3808 or Nani.jacobson@metrotransit.org.

Thank you for your time and assistance.

Sincerely,

A handwritten signature in blue ink that reads "Nani Jacobson". The signature is written in a cursive, flowing style.

Nani Jacobson, Assistant Director, Environmental & Agreements, Southwest LRT Project Office

Cc: Maya Sarna, FTA Headquarters, Office of Planning & Environment
Bill Wheeler, FTA Region V, Office of Planning & Program Development
Ben Hodapp, Anderson Engineering of Minnesota, LLC.

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NEPA 404/Merger Process: Concurrence Point 4 Southwest LRT (METRO Green Line Extension)

Minneapolis, St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, Minnesota

CH2M HILL, Inc.—Project No. 474576

August 2015

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Executive Summary

The Southwest LRT (METRO Green Line Extension) Project has previously submitted and received written concurrence from the United States Army Corps of Engineers (USACE) for Concurrence Points 1, 2, and 3 of the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act (CWA) Merger Process. These Concurrence Points are defined as 1) Purpose and Need; 2) Array of Alternatives and Alternatives Carried Forward; and 3) Identification of the Selected Alternative. This document includes details relevant to the fourth and final Concurrence Point (Design Phase Impact Minimization) of the NEPA/404 Merger Process. It provides a written summary of appropriate and practicable steps taken by Southwest LRT Project during the design phase to minimize potential adverse impacts to the aquatic ecosystem and intent to provide compensatory mitigation for unavoidable impacts in accordance with the United States Environmental Protection Agency and USACE Wetlands Compensatory Mitigation Rule through the purchase of established wetland bank credits.

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1 Introduction

This report provides documentation of the Southwest LRT Project's fourth and final Concurrence Point for the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act (CWA) Merger Process (NEPA/404 Merger Process). The project's NEPA/404 Merger Process is being conducted under the guidelines provided within the *Guidance for Using the NEPA/404 Merger Process on Proposals Requiring CWA Section 404 Authorization* (MVP Internal Guidance; April 30, 2007), which outlines the following four Concurrence Points: 1) Purpose and Need; 2) Array of Alternatives and Alternatives Carried Forward; 3) Identification of the Selected Alternative; and 4) Design Phase Impact Minimization.

2 Background

After reviewing the Southwest LRT Draft Environmental Impact Statement (DEIS), the USACE "concurred with Point 1 (Project Purpose and Need) and Point 2 (Array of Alternatives and Alternatives Carried Forward) of the merger process for the SWLRT project in a letter dated December 20, 2012", as stated in a USACE letter from October 16, 2014. Upon learning that the Southwest LRT Project was developing a Supplemental DEIS (SDEIS), the USACE indicated the need to revisit Concurrence Point 2 of the merger process. In response, the Southwest LRT Project developed and submitted a NEPA/404 Merger Process Concurrence Points Package (May 5, 2014) that provided documentation for the Concurrence Points. Upon reviewing the project's Concurrence Points Package, the USACE stated in the 10/16/2014 letter that they "have determined that [they] still concur with Point 2 of the merger process". The USACE also concurred with Point 3 in this letter by stating that they had made a "preliminary determination that alignment LRT 3A-1 is the LEDPA [Least Environmentally Damaging Practicable Alternative] for this project."

The preliminary impact minimization efforts (Point 4) submitted on May 5, 2014 with the 2014 Concurrence Points Package were discussed broadly for select segments identified as having the potential for wetland impact. Over the past year, the Southwest LRT project design has advanced, the minimization efforts associated with impacts to aquatic resources have been refined, and as a result, the quantity of impact to aquatic resources has decreased considerably. In addition, the Metropolitan Council adopted a revised project scope on July 8, 2015 to reduce project costs by approximately \$250 million. The revised project scope has deferred the construction of the Town Center Station and eliminated the Mitchell Road Station, both in Eden Prairie. The length of the proposed alignment has been reduced by approximately 1.5 miles, making the SouthWest Station the Southwest LRT's westernmost stop and eliminating potential impacts to nine CWA regulated aquatic resources.

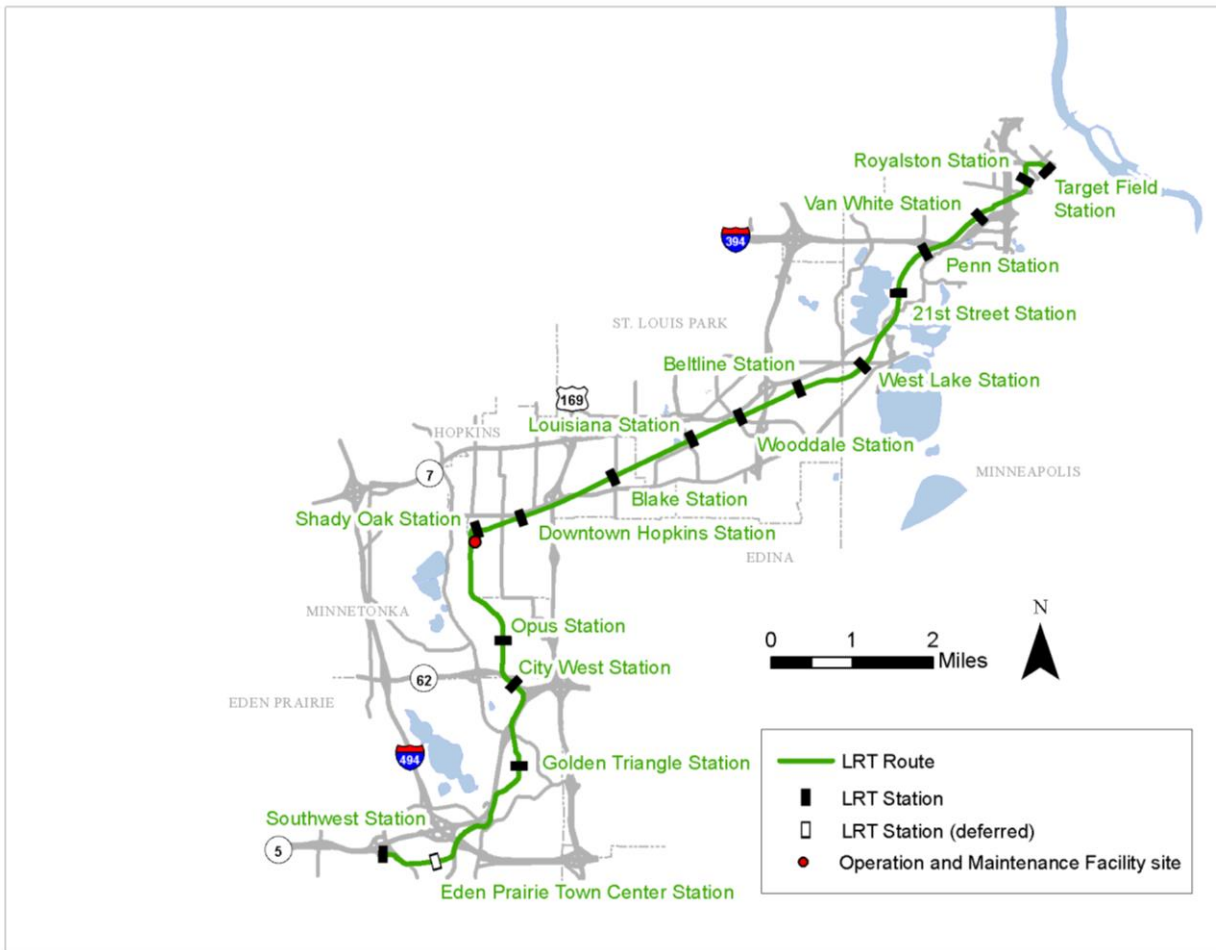
The purpose of this report is to provide the USACE with a comprehensive description of the wide array of design minimization efforts achieved for each individual aquatic resource located within the footprint of the LEDPA.

3 General Project Overview

The Southwest LRT (METRO Green Line Extension) is approximately 14.5 miles of new double track proposed as an extension of the METRO Green Line (Central Corridor LRT) which will operate from

downtown Minneapolis through the communities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to Edina (see Figure 3-1).

FIGURE 3-1: Proposed Southwest LRT Alignment



The proposed alignment includes 16 new stations (including Eden Prairie Town Center Station that is deferred for construction at a later date), approximately 2,500 additional park-and-ride spaces, accommodations for passenger drop-off (kiss-and-ride), bicycle and pedestrian access, as well as new or restructured local bus routes connecting stations to nearby residential, commercial and educational destinations.

The Southwest LRT will operate primarily at-grade, and other portions will be elevated to avoid impacts to wetlands and water resources (see Figure 3-2 for typical LRT track cross sections). For just under one half mile, it will operate in a shallow LRT tunnel in the Kenilworth Corridor south of the Kenilworth Channel with an at-grade LRT bridge over the channel. The western most station on the line will be located at SouthWest Station in Eden Prairie, providing rail/bus connections at the existing transit center.

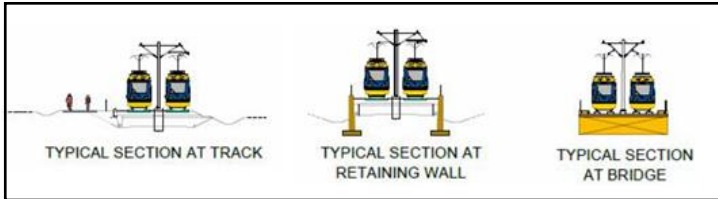


FIGURE 3-2: Typical Light Rail Cross Sections

4 Design Phase Impact Minimization: Project-Wide

In a general effort to reduce indirect temporary and permanent impacts to aquatic resources, the project plans to incorporate erosion/sediment control and Best Management Practices (BMPs) related to general construction grading and the pumping of water (when necessary) during construction. The following Project-Wide BMPs have been identified and will be employed at appropriate locations and throughout applicable phases of the project:

- Sequencing construction to consider seasonal variation (i.e. frozen ground)
- Restoring wetland soils and hydrology to existing conditions or grades
- Restoring disturbed stream channels to original width and substrate
- Minimizing construction right-of-way corridor width
- Preserving existing tree canopies and natural areas in and around aquatic resources as much as possible
- Implementing elevated structures or bridge spans across aquatic resources where feasible
- Implementing erosion and sediment control BMPs that will protect aquatic resources such as: silt fence, bio-rolls, inlet protection, groundwater pumping practices for temporary construction in streams, sedimentation ponds, etc.
- Avoiding the use of fertilizers, pesticides, herbicides within aquatic habitats
- Considering downstream waters and implementing water quality BMPs
- Coordinating project storm water management to maintain or improve water quality

In addition to the general BMPs listed above, the Southwest LRT Project engineers have developed project-specific water quality BMPs that are being proposed in order to meet certification under Section 401 of the Clean Water Act (CWA), as required by the Minnesota Pollution Control Agency (MPCA). These BMPs are listed and depicted on the Overhead Plan Sheets associated with each impacted aquatic resource (Appendix B).

Temporary & Permanent Impact Definitions

Temporary impacts are generally those related to activities that are completed and the physical characteristics of the wetland are restored within 180 days of the start of the activity. All proposed temporarily impacted areas will be restored to existing grades and re-vegetated to an appropriate native vegetative community. Permanent impacts are unavoidable impacts to aquatic resources that will remain after all appropriate and practicable minimization has been implemented.

5 Summary of Potential Aquatic Resource Impacts

The proposed Southwest LRT track alignment affects 26 aquatic resources that are regulated by the USACE under Section 404 of the CWA, resulting in 79,870 SF (1.83 Ac) of permanent impact and 327,317 SF (7.51 Ac) of temporary impact. In addition, potential impacts to nine CWA regulated aquatic resources have been eliminated as a result of the July 8 revised project scope (approximately one acre of potential permanent impact and five acres of potential temporary impact). These aquatic resources, along with the previous potential impact quantities, have been included in the Preliminary Design Phase Aquatic Resource Impact MapBook in Appendix A for USACE reference. The current proposed impacts and minimization efforts that are applicable to the aquatic resources that are regulated by the CWA are summarized in Table 5-1.

TABLE 5-1
Summary of CWA Regulated Impacted Aquatic Resources

Wetland ID	Map Book Page #	Plan Sheet #	Impact Quantity (SF)		Type (Circ. 39)	Summary of Minimization Efforts
			Permanent (>180 Days)	Temporary (<180 Days)		
EP-EP-22	LPA-2	1	3,316	None	3	Parking area design modifications
EP-EP-24	LPA-2	2	16,617	None	5	Preservation of existing flows into Purgatory Creek
DOT-EP-17	LPA-2	3	203	15,969	2/5	Maximize steepness of alignment side slope to limit lateral grading; Restoration of temporary impact areas
DOT-EP-18	LPA-3	4	915	None	3	Maximize steepness of alignment side slope to limit lateral grading
DOT-EP-23	LPA-3	5	203	None	1	Wetland impact minimization not feasible
DOT-EP-24	LPA-3	5	93	None	1	Wetland impact minimization not feasible
DOT-EP-07	LPA-3	6	381	None	2	Wetland impact minimization not feasible
NM-EP-01	LPA-4	7	None	18,221	5/6	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
NM-EP-02	LPA-4	8	None	2,052	3	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
NM-EP-03	LPA-4	8	None	899	3	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
NM-EP-04	LPA-4	9	None	1,727	7	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
NM-EP-06	LPA-4	10	14,296	6,606	5/6	Maximize steepness of access road embankment side slope to limit lateral grading; Restoration of temporary impact areas

NM-EP-08	LPA-4	11	None	40,237	3/5/6	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
NM-EP-09	LPA-4	12	None	8,339	3	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
DOT-EP-08	LPA-4	13	None	11,219	3	Elevated track alignment to avoid permanent impacts; Restoration of temporary impact areas
DOT-EP-09	LPA-5	14	20,274	9,885	3	Elevated track alignment to minimize permanent impacts; Restoration of temporary impact areas
NM-EP-12	LPA-5	16	1,879	None	6	Retaining wall to reduce lateral grading from alignment
MTA-MTA-06	LPA-5	18	343	None	1	Wetland minimization not feasible
MTA-MTA-07	LPA-5	18	2,086	5,595	3	Wetland impact minimization not feasible
MTA-MTA-08	LPA-5	19	None	3,145	3	Restoration of temporary impact areas
MTA-MTA-09	LPA-6	20	707	797	3	Restoration of temporary impact areas
MTA-MTA-11	LPA-6	21 & 22	1,864	134,296*	2/3/5 6/7	Elevated alignment to eliminate lateral grading into wetland; Restoration of temporary impact areas
NM-HOP-13	LPA-6	23	16,435	40,098	1/3/5/6	OMF design modification
MTA-MTA-12	LPA-7	24	141	23,066	5	Retaining wall to reduce lateral grading from alignment; Restoration of temporary impact areas
NM-HOP-16 (Nine-Mile Creek)	LPA-7	25	None	594	90	Restoration of temporary impact areas
MC-SLP-01 (Minnehaha Creek)	LPA-9	26	None	None	90	No permanent or temporary impacts proposed
MC-MPL-13 (Kenilworth Channel)	LPA-12	27	117	4,572	90	Elevated bridge alignment crossing

*Temporary impact will exceed 180 days

Total (SF)	79,870	327,317
Total (Ac)	1.83	7.51

The proposed project will result in permanent and temporary impacts to Wetland Types 1, 2, 3, 5, 6, 7, and 90 (Circular 39). Table 5-2 contains a summary of the overall approximate percentage of each Wetland Type that will be impacted by this proposed project.

TABLE 5-2
Summary of Total CWA Regulated Impact by Wetland Type

Impact Type	Wetland Type (Circular 39)								Total Impact (SF)
	1	2	3	4	5	6	7	90	
Permanent	9.9%	0.9%	55.3%	0.0%	21.1%	11.0%	1.8%	0.1%	79,870
Temporary	1.9%	15.7%	30.1%	0.0%	18.7%	23.8%	8.2%	1.6%	327,317

In addition to the CWA regulated impacts summarized in Table 5-1, the proposed project will result in permanent impact to a total of three non-jurisdictional isolated wetland basins (NM-EP-10, MTA-MTA-03, and MTA-MTA-04) that are not regulated under the CWA, but are regulated under the Minnesota Wetland Conservation Act (WCA). The proposed project will permanently fill 13,079 SF (0.30 Ac) of non-CWA regulated wetlands (no additional temporary impact). The proposed impact details along with the avoidance and minimization efforts associated with these four non-CWA regulated wetlands have been included in Section 7 of this document for USACE reference. These impacts, along with associated mitigation requirements, will be addressed in the MN Joint Permit Application that will be submitted to all appropriate WCA Local Government Units.

6 Design Phase Impact Minimization: Individual Aquatic Resources

All unavoidable aquatic resource impacts associated with the proposed Southwest LRT Project have been avoided and minimized to the greatest and most practicable extent possible. The following section of this document provides a description of the nature of each potential impact (geographically, from west to east) as well as the avoidance and minimization efforts proposed for each applicable aquatic resource. The attached Preliminary Design Phase Aquatic Resource Impact Mapbook (Appendix A) provides a general overview of the impacted resources along the preliminary LEDPA alignment, and the attached Overhead Plan Sheets (Appendix B) depict specific elements and current design plans for each potential impact location. Please note that the three non-CWA regulated wetlands have been included in the Mapbook and Overhead Plan Sheet exhibits for USACE reference.

EP-EP-22

The portion of EP-EP-22 that will be impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh constructed storm pond that is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and purple loosestrife (*Lythrum salicaria*).

Permanent Impacts: Approximately 3,316 SF (0.08 Ac) of EP-EP-22 will be permanently filled as a result of the proposed access drive and parking re-configuration at the Southwest Station (see Overhead Plan Sheet 1). The access drive and parking re-configuration is necessary in order to segregate bus, car, and pedestrian traffic from the bus terminal from the proposed rail alignment.

The proposed re-configuration will maximize the re-use of the existing driveway in order to minimize permanent wetland impacts. EP-EP-22 currently serves as a stormwater detention pond for the adjacent development. Hydrology to the preserved portion of EP-EP-22 would be maintained.

Temporary Impacts: No temporary wetland impacts are proposed to EP-EP-22.

EP-EP-24

EP-EP-24 is a Type 5, shallow open water excavated stormwater pond (two connected stormwater ponds). The vegetated portion of wetland is dominated by sandbar willow (*Salix interior*) and narrow-leaf cat-tail (*Typha angustifolia*).

Permanent Impacts: Approximately 16,617SF (0.38 Ac) of EP-EP-24 will be permanently filled as a result of the proposed access drive and parking re-configuration at the Southwest Station bus terminal and rail alignment crossing (see Overhead Plan Sheet 2), and the proposed extension of the existing box culverts. The

proposed access drive and parking re-configuration is necessary in order to segregate bus, car, and pedestrian traffic from the bus terminal from the proposed rail alignment.

EP-EP-24 currently acts as a stormwater detention pond for the adjacent development. Stormwater from the north is currently conveyed from a County Ditch into an underground culvert draining into the northern portion of EP-EP-24. Hydrology from EP-EP-24 is conveyed through a box culvert that passes underneath Technology Drive into the Purgatory Creek Conservation Area Reservoir. Flows into Purgatory Creek Conservation Area Reservoir from EP-EP-24 would be maintained.

Temporary Impacts: EP-EP-24 will be entirely filled as a result of the proposed track alignment and parking lot configuration. No temporary impacts are proposed.

DOT-EP-17

The portion of DOT-EP-17 that will be impacted by the proposed Southwest LRT Project is a Type 2/5, fresh wet meadow/shallow open water storm water detention pond that is dominated by reed canary grass (*Phalaris arundinacea*) and stinging nettle (*Urtica dioica*).

Permanent Impacts: Approximately 203 SF (0.005 Ac) of DOT-EP-17 will be permanently filled as a result of the proposed grading needed to accommodate an additional turn lane on eastbound Technology Drive at the intersection of Prairie Center Drive (see Overhead Plan Sheet 3). The proposed additional turn lane is necessary to mitigate impacts to traffic operations related to the anticipated traffic increase in and around the area of the proposed LRT park and ride facility at Southwest Station.

The proposed embankment side slopes of Technology Drive will utilize the maximum slope that is feasible, given traffic safety concerns, and will utilize engineered light-weight fill in order to limit lateral grading into the wetland.

Temporary Impacts: Approximately 15,969 (0.37 Ac) of vegetation may be cleared for proposed construction access and staging. The open water portion of DOT-EP-17 will likely be temporarily drawn down during construction to facilitate the proposed embankment and light-weight fill construction for the additional turn lane. Within 180 days of construction commencement, the temporarily impacted areas will be restored to the original grade, the existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix, and the hydrology of the wetland will be restored to existing conditions.

DOT-EP-18

The portion of DOT-EP-18 that will be impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh, roadside ditch that is dominated by common spikerush (*Eleocharis palustris*).

Permanent Impacts: Approximately 915 SF (0.02 Ac) of DOT-EP-18 will be permanently filled as a result of the proposed additional grading necessary to accommodate the replaced pedestrian path along northbound Flying Cloud Drive, north of the intersection of Flying Cloud Drive and Technology Drive. The pedestrian path replacement is necessary due to the addition of a left turn lane on northbound Flying Cloud Drive at the intersection of Technology Drive (see Overhead Plan Sheet 4). The proposed additional turn lane is necessary to mitigate impacts to traffic operations related to the proposed at-grade crossing of Technology Drive at the intersection with Flying Cloud Drive. The proposed embankment side slopes of Flying Cloud Drive will utilize the maximum slope that is feasible, given traffic safety concerns, to limit lateral grading into the wetland.

Temporary Impacts: No temporary wetland impacts are proposed to DOT-EP-18.

DOT-EP-23

The portion of DOT-EP-23 that will be impacted by the proposed Southwest LRT Project is a Type 1, seasonally flooded basin, roadside ditch that is dominated by narrow-leaf cat-tail (*Typha angustifolia*).

Permanent Impacts: Approximately 203 SF (0.005 Ac) of DOT-EP-23 will be permanently filled as a result of the proposed grading necessary to accommodate roadway improvements at the west-bound Interstate 494 exist ramp to Flying Cloud Drive (see Overhead Plan Sheet 5).

Temporary Impacts: No temporary wetland impacts are proposed to DOT-EP-23.

DOT-EP-24

The portion of DOT-EP-24 that will be impacted by the proposed Southwest LRT Project is a Type 1, seasonally flooded basin, roadside ditch that is dominated by reed canary grass (*Phalaris arundinacea*) and narrow-leaf cat-tail (*Typha angustifolia*).

Permanent Impacts: Approximately 93 SF (0.002 Ac) of DOT-EP-24 will be permanently filled as a result of the proposed grading necessary to accommodate roadway improvements at the west-bound Interstate 494 exist ramp to Flying Cloud Drive (see Overhead Plan Sheet 5).

Temporary Impacts: No temporary wetland impacts are proposed to DOT-EP-24.

DOT-EP-07

DOT-EP-07 is a Type 2, fresh wet meadow, roadside ditch that is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*), and is currently part of the Technology Drive drainage system.

Permanent Impacts: Approximately 381 SF (0.01 Ac) of DOT-EP-07 will be permanently filled as a result of the proposed grading that will be necessary to accommodate the proposed track alignment along Flying Cloud Drive (see Overhead Plan Sheet 5). The location of the proposed track alignment in this area is fixed by existing commercial development to the east, and the freeway entrance ramp from Flying Cloud Drive to the west.

Given the small size of DOT-EP-07 (0.01 acre), it would not be feasible to preserve any portion of the wetland.

Temporary Impacts: DOT-EP-07 will be entirely filled as a result of the proposed track alignment construction along Flying Cloud Drive. No temporary impacts are proposed.

NM-EP-01

The portion of NM-EP-01 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 5/6, shallow open water/shrub carr wetland that is dominated by box elder (*Acer negundo*), sandbar willow (*Salix interior*), and reed canary grass (*Phalaris arundinacea*).

Permanent Impacts: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for placement of the proposed elevated track alignment along Flying Cloud Drive (see Overhead Plan Sheet 7). The proposed track alignment at this location will be elevated 16 feet above the wetland, which will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. All proposed footings will be placed outside the wetland.

The design alternative specified in the DEIS included an at-grade crossing through NM-EP-01. This alternative was redesigned to minimize wetland fill and to eliminate the potential traffic and safety concerns associated with an at-grade crossing of Flying Cloud Drive. A design alternative considered consisted of an elevated crossing through the wetland, which limited wetland fill to the footings of the elevated structure, and addressed the traffic and safety concerns associated with the at-grade crossing at Flying Cloud Drive. The final proposed design avoids all permanent impacts by shifting the entire elevated alignment to the southeast, which eliminated the need to place any of the proposed alignment footings within the wetland boundary.

Temporary Impacts: Approximately 18,221 SF (0.24 Ac) of vegetation clearing and/or hydrology alteration may be required for proposed construction staging and access. This the minimum area necessary to accommodate safe construction access for the proposed LRT bridge. The proposed construction will generally consist of excavation for footing construction, pile driving, material delivery of piles, reinforcing steel, ready mix concrete, beams and rails, forming of concrete substructures, beam erection, deck forming and eventual stripping, walkway and barrier placement. The proposed construction activities will likely require the use of several cranes to be placed immediately adjacent to the foundations for pile driving operations and foundation and substructure construction, and immediately adjacent to the proposed bridge alignment to erect beams and provide for material delivery.

Temporary draw down of the surface water will likely be required in this area together with sump drains within the excavation needed to place the foundations for the proposed bridge substructures. Within 180 days of construction commencement, the temporarily impacted areas will be restored to the original grade, the existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix, and the hydrology of the wetland will be restored to existing conditions.

NM-EP-02

The portion of NM-EP-02 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh that partially encompasses Nine Mile Creek and part of the creek's floodplain. The wetland vegetation is dominated by narrow-leaf cat-tail (*Typhus angustifolia*), and reed canary grass (*Phalaris arundinacea*).

Permanent Impacts: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for placement of the proposed elevated track alignment along Flying Cloud Drive (see Overhead Plan Sheet 8). The proposed track alignment at this location will be elevated 31 feet above the wetland which will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. All proposed footings will be placed outside the wetland.

The design alternative specified in the DEIS included an at-grade crossing through NM-EP-02. This alternative was redesigned to minimize wetland fill and to eliminate potential traffic and safety concerns associated with an at-grade crossing of Flying Cloud Drive. A design alternative considered consisted of an elevated crossing through the wetland, which limited wetland fill to the footings of the elevated structure, and addressed the traffic and safety concerns associated with the at-grade crossing at Flying Cloud Drive. The final proposed design avoids all permanent impacts by shifting the entire elevated alignment to the southeast, which eliminated the need to place any of the alignment footings within the wetland boundary.

Temporary Impacts: Approximately 2,052 SF (0.05 Ac) of vegetation may be cleared for proposed construction staging and access. This is the minimum area necessary to accommodate safe construction

access. No in-stream work within Nine Mile Creek is proposed. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

NM-EP-03

The portion of NM-EP-03 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh that is divided by Nine Mile Creek. The wetland vegetation is dominated by American elm (*Ulmus americana*) and reed canary grass (*Phalaris arundinacea*).

Permanent Impact: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for placement of the proposed elevated track alignment along Flying Cloud Drive (see Overhead Plan Sheet 8). The proposed track alignment at this location will be elevated 31 feet above the wetland which will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. All proposed footings will be placed outside the wetland.

The design alternative specified in the DEIS included an at-grade crossing through NM-EP-03. This alternative was redesigned to minimize wetland fill and to eliminate potential traffic and safety concerns associated with an at-grade crossing of Flying Cloud Drive. The final proposed design avoids all permanent impacts by elevating the alignment over NM-EP-03, and placing all the alignment footings outside the wetland boundary.

Temporary Impacts: Approximately 899 SF (0.02 Ac) of vegetation may be cleared for proposed construction staging and access. This is the minimum area necessary to accommodate safe construction access. No in-stream work within Nine Mile Creek is proposed. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

NM-EP-04

The small portion of NM-EP-04 that will be temporarily impacted by the proposed Southwest LRT Project is along the edge of a Type 7, hardwood swamp that is dominated by green ash (*Fraxinus pennsylvanica*) and common buckthorn (*Rhamnus cathartica*).

Permanent Impact: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for placement of the proposed elevated track alignment (see Overhead Plan Sheet 9). Elevation of the proposed track alignment at this location will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. The footings for the proposed elevated track alignment will be placed outside of NM-EP-04.

The design alternative specified in the DEIS included an at-grade alignment that would have resulted in permanent wetland fill associated with lateral grading from the embankment side slope. This alternative was redesigned to minimize wetland fill and to eliminate potential traffic and safety concerns associated with an at-grade crossing of Flying Cloud Drive. The final proposed design avoids all permanent impacts by elevating the alignment and eliminating the need for lateral alignment embankment side slopes into NM-EP-04.

Temporary Impacts: Approximately 1,727 SF (0.04 Ac) of vegetation may be cleared for proposed construction staging and access. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated

areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

NM-EP-06

The portion of NM-EP-06 that will be temporarily impacted by the proposed Southwest LRT Project contains Type 5/6, shallow open water/scrub carr wetland types, and is dominated by Eastern cottonwood (*Populus deltoides*), common spikerush (*Eleocharis palustris*), and reed canary grass (*Phalaris arundinacea*).

Permanent Impacts: Approximately 14,296 SF (0.33 Ac) of NM-EP-06 will be permanently filled as a result of the construction of a proposed access road that is required due to an agreement between the City of Eden Prairie and the landowner of this property (see Overhead Plan Sheet 10). The avoidance option for this wetland had the LRT tracks curving further to the east to avoid impact to the existing driveway. The project Hazard and Threats analysis identified that the LRT track curvature at the bottom of a 6% downgrade was unacceptable for safety and operations. Therefore, the LRT curvature had to be flattened, resulting in the need to impact the existing driveway. A driveway alignment that crossed LRT north of the platform was explored, but it resulted in larger wetland impacts to a higher quality wetland.

Temporary Impacts: Approximately 6,606 SF (0.15 Ac) of vegetation may be cleared for proposed construction staging and access. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

NM-EP-08

The portion of NM-EP-08 that will be temporarily impacted by the proposed Southwest LRT Project contains Type 3/5/6, shallow marsh/shallow open water/scrub carr wetland types, and is dominated by Eastern cottonwood (*Populus deltoides*), common spikerush (*Eleocharis palustris*), and reed canary grass (*Phalaris arundinacea*).

Permanent Impact: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for placement of the proposed elevated track alignment and floodplain mitigation grading (see Overhead Plan Sheet 11). The proposed track alignment at this location will be elevated 6 feet above the wetland which will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. The footings of the proposed elevated alignment will consist of 16-inch diameter cast-in-place piles, which will not alter the wetland's cross-section or hydrological characteristics, obstruct flow patterns, change the wetland boundary, or convert any portion of the wetland into non-wetland. Therefore, the proposed footings will not have the effect of fill (under the CWA).

The design alternative specified in the DEIS included an at-grade crossing through NM-EP-08. This alternative was redesigned to minimize wetland fill. The final proposed design avoids all fill to MN-EP-08 by elevating the alignment over the wetland.

Temporary Impacts: Approximately 40,237 SF (0.92 Ac) of vegetation may be cleared for proposed construction staging and access. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

NM-EP-09

The portion of NM-EP-09 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh that is dominated by American elm (*Ulmus americana*), reed canary grass (*Phalaris arundinacea*), and narrow-leaf cat-tail (*Typha angustifolia*).

Permanent Impact: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for placement of the proposed elevated track alignment (see Overhead Plan Sheet 12). Elevation of the proposed track alignment at this location will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. The footings for the elevated track alignment will be placed outside of NM-EP-09.

The design alternative specified in the DEIS included an at-grade alignment that would have resulted in permanent wetland fill associated with lateral grading from the embankment side slope. This alternative was redesigned to minimize wetland fill. The final proposed design avoids all permanent impacts by elevating the alignment over NM-EP-08, and placing all the alignment footings outside the wetland boundary.

Temporary Impacts: Approximately 8,339 SF (0.19 Ac) of vegetation may be cleared for proposed construction staging and access. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

DOT-EP-08

The portion of DOT-EP-08 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh, roadside ditch that is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*).

Permanent Impact: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging required for placement of the proposed elevated track alignment, as well as trench excavation and jacking pits necessary for storm sewer installation to re-route an existing storm pipe which will be impacted by foundations of the proposed LRT bridge structure (see Overhead Plan Sheet 13). Elevation of the proposed track alignment at this location will eliminate the need for alignment embankment side slopes and lateral grading into the wetland. The footings for the proposed elevated track alignment will be placed outside of DOT-EP-08.

Temporary Impacts: Approximately 11,219 SF (0.26 Ac) of vegetation may be cleared for proposed construction staging and access and storm sewer installation, as described above. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

DOT-EP-09

The portion of DOT-EP-09 that will be impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh, roadside ditch that is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*).

Permanent Impacts: Approximately 1,985 SF (0.05 Ac) of DOT-EP-09 will be permanently filled as a result of placing 8-foot diameter piers to support the proposed elevated track alignment that will pass through the

majority of DOT-EP-09, as well as the placement of a retaining wall in the northern portion of DOT-EP-09 necessary to transition the proposed elevated track alignment to existing grade just north of the wetland (see Overhead Plan Sheet 14).

The proposed placement of the track in this location is fixed by Highway 212 to the east and existing commercial development to the west. The larger support piers (8-foot diameter) for the proposed elevated structure at this location are necessary due to the physical properties of the existing soils. The transition to existing grade just north of the wetland is necessary to accommodate a safe track alignment crossing underneath Highway 62.

Wetland fill will be minimized by elevating the proposed track alignment through the majority of the wetland. The proposed elevated platform was extended from the original design to minimize wetland impact to the most practicable extent in this area. The proposed elevated structure eliminates the need for alignment side embankment slopes and lateral grading into the wetland.

An additional 18,289 SF (0.42 Ac) of excavation is being proposed to serve as floodplain storage mitigation within the southern portion of DOT-EP-09. The proposed floodplain mitigation will expand the width of the existing roadside ditch to mitigate for the volume impact of this same roadside ditch due to the proposed LRT bridge piers and northerly abutment and retaining walls. Although the USACE will consider this a permanent impact, the proposed floodplain mitigation is intended to function as the existing roadside ditch and therefore will not require mitigation. See Section 8.2 for a more detailed mitigation discussion on this portion of permanent impact to DOT-EP-09.

Temporary Impacts: Approximately 9,885 SF (0.23Ac) of vegetation may be cleared for construction staging and access for the proposed track alignment and floodplain mitigation area in the southern portion of the ditch. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

NM-EP-12

The portion of NM-EP-12 that will be impacted by the proposed Southwest LRT Project is a Type 6, shrub carr wetland that is dominated by sandbar willow (*Salix interior*).

Permanent Impacts: Approximately 1,879 SF (0.04 Ac) of NM-EP-12 will be permanently filled as a result of the grading associated with side embankment of a proposed access road to service the park-and-ride at City West Station. The proposed access road to the City West Station will convert an existing gravel rural roadway abutting the southern right of way of TH 62 to a paved urban roadway with a sidewalk along the south side of the road. The wider urban cross section for the roadway and sidewalk would result in the need to widen the embankment at this wetland (see Overhead Plan Sheet 16). The location of the proposed access road is fixed by the location of City West Station.

A retaining wall has been proposed between the proposed access road and track alignment. The proposed retaining wall would allow the access road to remain closer to the track alignment while limiting the amount of lateral grading southwest of the road into NM-EP-12.

Temporary Impacts: No temporary wetland impacts are proposed to NM-EP-12.

MTA-MTA-06

MTA-MTA-06 is a small Type 1, seasonally flooded basin that is currently part of a drainage way and is dominated by box elder (*Acer negundo*), silver maple (*Acer saccharinum*), gray dogwood (*Cornus racemosa*), and common buckthorn (*Rhamnus cathartica*).

Permanent Impacts: Approximately 343 SF (0.01 Ac) of MTA-MTA-06 will be permanently filled as a result of grading that is necessary to accommodate the proposed track alignment within the Opus Development in Minnetonka (see Overhead Plan Sheet 18). The location of the proposed track alignment in this area is fixed by existing commercial development to the east, and Bren Road to the west.

Given the small size of MTA-MTA-06 (343 SF), it is not feasible to preserve any portion of the wetland.

Temporary Impacts: MTA-MTA-06 will be entirely filled as a result of the track alignment construction within the Opus Development in Minnetonka. No temporary impacts are proposed.

MTA-MTA-07

The portion of MTA-MTA-07 that will be impacted by the proposed Southwest LRT Project is a linear Type 3, shallow marsh that currently contains stormwater drainage and is dominated by box elder (*Acer negundo*) and narrow-leaf cat-tail (*Typha angustifolia*).

Permanent Impacts: Approximately 2,086 (0.05 Ac) of MTA-MTA-07 will be permanently filled as a result of the grading necessary to accommodate the proposed track alignment within the Opus Development in Minnetonka and an access road to the proposed traction power substation (TPSS) located north of this wetland (see Overhead Plan Sheet 18). The location of the proposed track alignment in this area is fixed by existing commercial development to the east, and Bren Road East to the west of the track alignment. The TPSS will provide electricity for the light rail catenary wires. The location of the TPSS is based on optimal spacing requirement for power distribution, access roadways, security requirements, and adequate spacing between other TPSS locations to provide sufficient electrical power to the train.

Temporary Impacts: Approximately 5,595 SF (0.13 Ac) of vegetation along the northern portion of the wetland may be cleared for construction staging and access during the creation of the proposed floodplain mitigation in this area. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

MTA-MTA-08

The portion of MTA-MTA-08 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh that is dominated by box elder (*Acer negundo*), common buckthorn (*Rhamnus cathartica*), and reed canary grass (*Phalaris arundinacea*).

Permanent Impact: No permanent wetland fill is being proposed at this location. Impacts are limited to temporary vegetation clearing and construction staging that will be required for the creation of the proposed floodplain mitigation in this area (see Overhead Plan Sheet 19).

Temporary Impacts: Approximately 3,145 SF (0.07 Ac) of vegetation along the southern portion of the wetland may be cleared for construction staging and access during the creation of the proposed floodplain mitigation in this area. This is the minimum area necessary to accommodate safe construction access. The

proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

MTA-MTA-09

The portion of MTA-MTA-09 that will be temporarily impacted by the proposed Southwest LRT Project is a Type 3, shallow marsh that is dominated by box elder (*Acer negundo*) and orange jewelweed (*Impatiens capensis*).

Permanent Impact: Approximately 707 SF (0.02 Ac) will be permanently filled as a result of a slight realignment of the existing pedestrian trail in this area and the proposed placement of riprap at the improved stormwater outfall (see Overhead Plan Sheet 20). The trail realignment is related to design refinements to raise the elevations of the three pedestrian underpasses in this area to keep the trail above the high water level of the nearby wetlands, and to help avoid and reduce any impacts to groundwater. A change in stormwater conveyance west of the proposed at-grade track alignment necessitates the placement of a culvert west of the wetland, underneath the track alignment and realigned pedestrian trail. The proposed riprap at the western edge of MTA-MTA-09 will dissipate stormwater velocity and reduce scour and erosion at the stormwater outfall on the east side of the pedestrian trail.

Temporary Impacts: Approximately 797 SF (0.02 Ac) of vegetation along the southwestern edge of the wetland may be cleared for construction staging and access during the realignment of the existing pedestrian trail. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

MTA-MTA-11

The portion of MTA-MTA-11 that will be impacted by the proposed Southwest LRT Project contains Types 2/3/5/6/7, fresh wet meadow/shallow marsh/shallow open water/shrub carr/hardwood swamp wetland types. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*), sandbar willow (*Salix interior*), box elder (*Acer negundo*), and green ash (*Fraxinus pennsylvanica*).

Permanent Impacts: Approximately 1,864 SF (0.04 Ac) of MTA-MTA-11 will be permanently filled as a result of placing 8-foot diameter piers to support the proposed elevated track alignment that will pass through the majority of MTA-MTA-11, and the bridge abutment structure in the southern portion of MTA-MTA-11 to transition to the proposed elevated track alignment north of Smetana Road (see Overhead Plan Sheet 21 & 22).

The proposed design of the alignment through MTA-MTA-11 went through several design modifications to minimize wetland impacts and address safety concerns.

The design alternative specified in the DEIS included a 3,200 foot long, 120 foot-span pre-stressed beam light rail bridge over the wetlands south of the Canadian Pacific (CP) Bass Lake Spur Rail alignment and over the CP line towards K-Tel Road. This initial light rail alignment would have resulted in temporary wetland impacts due to bridge construction activities and substantial permanent wetland impacts from the placement of bridge columns and a required an emergency and maintenance access road at-grade and paralleling the length of the bridge. Due to visual and noise impacts, maintenance and safety access considerations, and cost concerns, the Southwest LRT team developed and evaluated adjustments to the alignment in the DEIS as part of the Project Development process.

The first adjustment considered was an at-grade crossing between Smetana Road and the CP Rail Line, with a tunnel beneath the CP Rail Line. The at-grade option would result in more adverse wetland impacts than the DEIS bridge alignment due to at-grade (fill) crossing for the entire alignment across MTA-MTA-11. There would also be wetland impacts in the direct footprint of the excavated tunnel beneath CP Rail line and potential adverse impacts due to active groundwater pumping or lateral drainage effect as result of the tunnel underneath the CP Rail Line.

While the at-grade option would have been more cost effective and would have required less maintenance than the DEIS Bridge Alignment, it was dismissed from further study due primarily due to aquatic resource impacts and CP Rail not supporting a light rail tunnel underneath their existing freight rail line.

The current proposed alignment is the at-grade and bridge option which would result in the least amount of wetland impact, while still meeting other needs of the project. This alignment is a hybrid of the previously considered options, incorporating an at-grade alignment, low bridge spans over portions of MTA-MTA-11, and a high bridge section that would span over the northern portion of MTA-MTA-11 and the existing CP rail line. Permanent wetland fill was further minimized when Metro Transit confirmed that the regularly scheduled bridge inspections can be provided on the bridge utilizing special equipment, and from the ground level without the aid of a permanent access roadway beneath the bridge. Coordination with first responders from Hopkins and Minnetonka confirmed that response efforts to incidents on the bridge can be accessed from each end of the bridge without a permanent access roadway beneath the bridge. Permanent wetland fill will be limited to the proposed western bridge abutment structure and the proposed elevated alignment footings.

Temporary Impacts: Approximately 134,296 SF (3.08 Ac) of vegetation clearing and/or hydrology alteration may be required for construction staging and access during the proposed elevated track alignment installation. This is the minimum area necessary to accommodate safe construction access to facilitate the proposed LRT bridge construction. Proposed construction activities will generally consist of excavation for footing construction, pile driving, material delivery of piles, reinforcing steel, ready mix concrete, beams and rails, forming of concrete substructures, beam erection, deck forming and eventual stripping, walkway and barrier placement. Proposed construction will likely require the use of several cranes to be placed immediately adjacent to the foundations for pile driving operations, foundation and substructure construction, and immediately adjacent to the bridge alignment to erect beams and provide for material delivery. Temporary removal of water within the open water portion of this wetland may be required together with sump drains within the excavation area needed to place the proposed foundations for the bridge substructures.

Within approximately eighteen months of construction commencement, the proposed temporarily impacted workspace will be restored to the original grade, the existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix, and the hydrology of the wetland will be restored to existing conditions.

This potential impact does not meet the standard definition of a temporary impact. Although the activities required for construction staging and access are temporary in nature, construction at this location will last longer than 180 days due to the relatively large expanse of the proposed crossing and the multiple phases of construction that will be required. The USACE has recommended that the project propose a reduced mitigation ratio to compensate for this temporary impact associated with a linear project under Section 404

of the CWA. Additional details regarding the mitigation requirements for this type of impact can be found in Section 8.3.

NM-HOP-13

The portion of NM-HOP-13 that will be impacted by the proposed Southwest LRT Project is a linear wetland that is partially used as a stormwater pond and contains Types 1/3/5/6, seasonally flooded basin/shallow marsh/shallow open water/shrub carr wetland types. Wetland vegetation is dominated by black willow (*Salix nigra*), sandbar willow (*Salix interior*), reed canary grass (*Phalaris arundinacea*), and purple loosestrife (*Lythrum salicaria*).

Permanent Impacts: Approximately 16,435 SF (0.38 Ac) of NM-HOP-13 will be permanently filled as a result of grading associated within the proposed Operations and Maintenance Facility (OMF) (see Overhead Plan Sheet 23). The location of the proposed OMF site was chosen among several other alternatives because it best meets the siting criteria specified in the DEIS and is centrally located along the light rail extension, allowing for more efficient operational maintenance than the other alternatives considered. The layout of the proposed OMF is fixed to allow for a flat grade and the minimum interior track radius within the OMF. The proposed interior track grading within NM-HOP-13 must also be wide enough to accommodate safe derailments, which are more likely to occur in OMF facilities than at any other location along the alignment.

The proposed OMF site is designed to minimize permanent wetland fill as much as possible, given operational and safety criteria that must be incorporated into the design. The design was modified to remove a proposed permanent access road beneath the bridge after Metro Transit confirmed that the regularly scheduled bridge inspections can be provided on the bridge utilizing special equipment and from the ground level without the aid of a permanent access roadway beneath the bridge. Coordination with first responders from Hopkins and Minnetonka confirmed that response efforts to incidents on the bridge can be accessed from each end of the bridge without a permanent access roadway beneath the bridge. In addition, the original site layout was modified from the design depicted in the SDEIS to allow for a single interior loop track, which has reduced the amount of track and potential permanent wetland fill. Fill within the eastern portion of the wetland will be necessary for the proposed loop track.

Temporary Impacts: Approximately 40,098 SF (0.92 Ac) of vegetation may be cleared for construction staging and access during the proposed OMF construction and to allow for improvements to the stormwater treatment and conveyance system located near the eastern most portion of this wetland. This is the minimum area necessary to accommodate safe construction access. The proposed temporary impact area will be restored to the original grade and existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix within 180 days of construction commencement.

MTA-MTA-12

The portion of MTA-MTA-12 that will be impacted by the proposed Southwest LRT Project is a Type 5, shallow open water stormwater pond. The vegetated portion of the wetland is dominated by box elder (*Acer negundo*) and reed canary grass (*Phalaris arundinacea*).

Permanent Impacts: Approximately 141 SF (0.003 Ac) of MTA-MTA-12 will be permanently filled as a result of the installation of one bridge pier that will be required to accommodate the proposed elevated track alignment crossing of K-Tel Drive, north of the proposed OMF (see Overhead Plan Sheet 24). The location of the proposed track alignment in this area is fixed by the proposed OMF to the east and wetland MTA-MTA-12 to the west.

Temporary Impacts: Approximately 23,066 (0.53 Ac) of vegetation clearing and/or hydrology alteration may be required to provide appropriate fill to support a proposed retaining wall and excavate the proposed floodplain mitigation area south of MTA-MTA-12. As previously mentioned, MTA-MTA-12 primarily consists of an open water pond. It is likely that a temporary draw down will be necessary to facilitate construction of the proposed retaining wall, grading for the proposed flood storage mitigation area, and the potential replacement of the outlet structure and pipe at this location. The draw down will also likely include sump drains within the excavation needed for the placement of the proposed retaining wall foundations and engineered backfill of the proposed retaining wall. Construction of the proposed retaining wall will require space for equipment and workers along the wetland side of the wall to place formwork for concrete and eventual stripping, placement of reinforcing steel, material delivery, and final surface finish treatments of the proposed wall.

Within 180 days of construction commencement, the temporarily impacted areas will be restored to the original grade, the existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix, and the hydrology of the wetland will be restored to existing conditions.

NM-HOP-16

NM-HOP-16 is a Type 90, permanently flooded portion of the North Fork of Nine Mile Creek that flows through an existing box culvert east of the proposed Shady Oak LRT Station located in Hopkins. There is a potential that the existing box culvert in this location may need to be replaced.

If the box culvert is able to remain in-place, then no in-stream work would occur. If the box-culvert would need to be replaced, then in-stream work would be necessary and would result in approximately 594 SF (0.01 Ac), or 60 linear feet of temporary impact. In this case, a temporary draw down of the stream would be required together with sump drains within the excavation needed to place the foundations for a new box culvert (see Overhead Plan Sheet 25).

MC-SLP-01

MC-SLP-01 is a Type 90, permanently flooded portion of Minnehaha Creek that currently flows underneath a freight rail bridge located east of Blake Road North in St. Louis Park. The Southwest LRT Project is planning to construct an elevated crossing that will replace the existing bridge and allow the proposed alignment, the freight rail, and pedestrian trail to span the creek (see Overhead Plan Sheet 26). Minnehaha Creek will not be impacted by this proposed alignment crossing; the plan sheet has been included in this document to illustrate the fact that this aquatic resource has successfully been avoided by the proposed project.

MC-MPL-13

The portion of MC-SLP-13 that will be impacted by the proposed Southwest LRT Project is an unclassified Type 90 manmade channel located between Cedar Lake and Lake of the Isles (i.e., Kenilworth Channel).

Permanent Impacts: Approximately 117 SF (0.002 Ac), or 100 linear feet of MC-MPL-13 will be permanently impacted as a result of the proposed alignment bridge footings that will have the effect of wetland "fill" (see Overhead Plan Sheet 37). Impacts are limited to the area of the proposed concrete support piers, which are necessary to support the crossing at this location. The channel crossing currently consists of two wood-pile bridges that service a pedestrian trail and freight railroad track alignment over the channel. One alternative considered in the DEIS was to replace the current wood-pile bridges, with a single LRT/pedestrian trail bridge. However, based on adjustments to the alignment and incorporation of freight

rail modifications, it was determined that a second bridge would be required to accommodate two LRT tracks and the pedestrian trail. The preferred alternative will require a minimal 508 SF of “fill”.

The proposed design will maintain the bridged crossing, which will result in minimal impacts to the wetland. Coordination with the Minnesota DNR and Minnehaha Creek Watershed District will be required to address the proposed impacts to the Kenilworth Channel. This “fill” will not require mitigation by the CWA/USACE as it is not regulated as a wetland.

Temporary Impacts: Approximately 4,572 SF (0.17 acres) of MC-MPL-13 will be temporarily impacted during construction of the bridge. During the construction of the bridge pier foundations and related pier stems, the contractor will be required to install cofferdam systems that will fully surround the pier footings to allow the contractor to build the footings and pier stems in a dry condition. Prior to the construction of the piers, sheet pile will be driven around the perimeter of the pier footings and a concrete seal will be placed within the limits of the sheet pile enclosure. The estimated cofferdam area foot print equates to 600 SF (0.01) acres. The contractor will then remove the water from the cofferdam with the use of pump(s). The water removal process is outlined below.

The general temporary water removal of cofferdams involves the discharge of cofferdam water into settling tanks, dumpsters, rock channels, and sediment bags. The proposed method involves pumping the water flowing from the cofferdams into settling tanks. Two or more tanks can be used in series. Flocculants shall be used in the second tank to increase the effectiveness of the settling. Flocculants can also be directly added to the cofferdam water as a pretreatment prior to discharging to the settling tanks. Prior to treatment an approved level of Nephelometric Turbidity Units (NTU) and pH will be defined. Once treated, the water discharge will have constraints that are set at no more than the predetermined NTU as compared to the channel water baseline and a pH +/- 1.0 pH based generally on a pH of 7.0 (measured hourly until the data indicates no change). Once this condition is met the water will be discharged back into the channel. Tanks are generally cleaned out when more than one-third (1/3) filled with silt. The water release rate will be controlled such that the required settlement is achieved. The release rate will be dependent upon the tank size used by the contractor.

7 Non-CWA Regulated Wetland Impacts

As mentioned previously, the proposed Southwest LRT Project will permanently fill three wetlands that are regulated under the WCA, but are not regulated under Section 404 of the CWA. These wetlands have been deemed “isolated” by the USACE, as documented in the Approved Jurisdiction Determination dated May 28, 2015. The avoidance and minimization efforts associated with these three isolated basins are summarized below. In addition, the project has completely avoided filling an isolated basin located in Minnehaha Creek Watershed District (MC-SLP-08) as a result of the revised project scope approved by the Metropolitan Council on July 8, 2015.

NM-EP-10

NM-EP-10 (regulated by Nine Mile Creek Watershed District under the MN WCA) is an isolated Type 3, shallow marsh that is currently used for stormwater treatment and is dominated by reed canary grass (*Phalaris arundinacea*).

Permanent Impacts: Approximately 5,603 (0.13 Ac) of NM-EP-10 will be permanently filled as a result of a proposed access road to service the park-and-ride at City West Station (see Overhead Plan Sheet 15). The location of the proposed access road is fixed by the location of City West Station and surrounding existing development.

Given the small size of NM-EP-10 (5,603 SF), it would not be feasible to preserve any portion of the wetland.

Temporary Impacts: NM-EP-10 will be entirely filled as a result of the proposed access road to the City Station park-and-ride. No temporary impacts are proposed.

MTA-MTA-03

MTA-MTA-03 (regulated by the City of Minnetonka under the MN WCA) is an isolated Type 1, seasonally flooded basin that is dominated by sandbar willow (*Salix interior*) and common buckthorn (*Rhamnus cathartica*).

Permanent Impacts: Approximately 644 SF (0.01 Ac) of MTA-MTA-03 will be permanently filled as a result of grading that is necessary to accommodate the proposed track alignment within the Opus Development in Minnetonka (see Overhead Plan Sheet 17). The location of the proposed track alignment in this area is fixed by existing commercial development to the east, and Bren Road to the west.

Given the small size of MTA-MTA-03 (644 SF), it would not be feasible to preserve any portion of the wetland.

Temporary Impacts: MTA-MTA-03 will be entirely filled as a result of the proposed track alignment construction within the Opus Development in Minnetonka. No temporary impacts are proposed.

MTA-MTA-04

MTA-MTA-04 (regulated by the City of Minnetonka under the MN WCA) is an isolated Type 1, seasonally flooded basin that is dominated by sandbar willow (*Salix interior*) and common buckthorn (*Rhamnus cathartica*).

Permanent Impacts: Approximately 6,832 SF (0.16 Ac) of MTA-MTA-04 will be permanently filled as a result of grading that is necessary to accommodate the proposed track alignment within the Opus Development in Minnetonka (see Overhead Plan Sheet 17). The location of the proposed track alignment in this area is fixed by existing commercial development to the east, and Bren Road to the west.

Given the small size of MTA-MTA-04 (6,832 SF), it would not be feasible to preserve any portion of the wetland.

Temporary Impacts: MTA-MTA-04 will be entirely filled as a result of the proposed track alignment construction within the Opus Development in Minnetonka. No temporary impacts are proposed.

8 Compensatory Mitigation

The proposed Southwest LRT Project will result in a total of 195,760 SF (4.49 Ac) of impact to Waters of the U.S. that will require compensatory mitigation under Section 404 of the CWA. These impacts, as well as the proposed mitigation replacement ratios and resulting compensatory mitigation credit requirements, are summarized in Table 8-1.

TABLE 8-1
Summary of CWA Regulated Waters of the U.S. Impacts Requiring Compensatory Mitigation

Wetland Label	Type (Circ. 39)	Impact Quantity Requiring Mitigation (SF)	CWA Replacement Ratio	CWA Credits Required (SF)
EP-EP-22	3	3,316	2:1	6,632
EP-EP-24	5	16,617	2:1	33,234
DOT-EP-17	2	203	2:1	406
DOT-EP-18	3	915	2:1	1,830
DOT-EP-23	1	203	1:1	203
DOT-EP-24	1	93	1:1	93
DOT-EP-07	2	381	1:1	381
NM-EP-06	5/6	14,296	2:1	28,592
DOT-EP-09	3	1,985	1:1	1,985
NM-EP-12	6	1,879	2:1	3,758
MTA-MTA-06	1	343	1:1	343
MTA-MTA-07	3	2,086	2:1	4,172
MTA-MTA-09	3	707	2:1	1,414
MTA-MTA-11	2/3/5/6/7	1,864	2:1	3,728
MTA-MTA-11*	2/3/5/6/7	134,296	0.50:1	67,148
NM-HOP-13	1/3/5/6	16,435	2:1	32,870
MTA-MTA-12	5	141	2:1	282
<i>*Impact qualifies for a reduced replacement ratio based on USACE guidance for temporary impacts associated with linear projects</i>		195,760 SF		187,071 SF
		(4.49 Ac)		(4.29 Ac)

The project is planning to purchase 187,071 SF (4.29 Ac) of Corps-approved mitigation bank credits to fulfill the compensatory mitigation requirements for these potential impacts. This amount of compensatory mitigation was calculated based on USACE guidance, and the mitigation replacement ratios being proposed for each impacted aquatic resource were determined based on the type, location, and duration of the proposed impact (see Table 8-2). The project is proposing three different mitigation replacement ratios that correspond with three general types of impact: standard, ditch, or extended temporary impact. These general types of impact are discussed below in Sections 8.1-8.3.

TABLE 8-2
Summary of General Impact Types and Corresponding Replacement Ratios

General Impact Type	Waters of the U.S. Impacts Requiring Mitigation (SF)	CWA Replacement Ratio	Mitigation Credits Needed (SF)	Major Watershed/BSA
Standard Impact	58,459	2:1	116,918	33/9
Ditch Impact	3,005	1:1	3,005	33/9
Extended Temporary Impact	134,296	0.5:1	67,148	33/9
		195,760 SF		187,071 SF
		(4.49 Ac)		(4.29 Ac)

Please note that the mitigation requirements for non-CWA regulated wetland impacts have not been included in this document. The mitigation associated with these impacts will be addressed in the Minnesota Joint Application that will be submitted to all applicable WCA LGUs.

8.1 Standard Impact

A compensation ratio of 2:1 is being proposed for all of the “standard impacts” that have been proposed for the Southwest LRT Project. These impacts are considered “standard” because they meet the general guidance provided in Section G of Part II of the St. Paul District Compensatory Mitigation Policy. Based on this document, the USACE basic compensation ratio for this area (<80%) is 2.5:1, and the minimum compensation ratio for this area is 2:1. The minimum ratio can be attained if the applicant meets at least two of the three following incentives when purchasing bank credits: In-Place, In-Advance, or In-Kind.

The Southwest LRT has qualified for the In-Place and In-Advance incentives by planning to purchase wetland banking credits from the same 8-digit HUC watershed in which the impacts requiring CWA/USACE mitigation occur (HUC 33/BSA 9) and by purchasing Corps-approved mitigation banking credits in advance of the potential wetland impact occurrences.

Although the USACE prefers impacts to be replaced In-Kind, the project will be unable to do so for all impacts because the wetland types of banking credits required for this incentive are simply not available in the project area. However, the majority of the impacted wetlands requiring mitigation are Type 3 (as summarized in Table 5-2), and the majority of the banking credits available in HUC 33/BSA 9 are also Type 3.

8.2 Ditch Impact

The Southwest LRT project has received guidance from the USACE that allows an applicant to request a reduced compensation ratio for permanent impacts to degraded/ditched wetland areas. A compensation ratio of 1:1 is being proposed for impacts to five degraded wetland areas that are regulated by the CWA/USACE. These wetland areas are considered “incidental wetlands” under the WCA because they are road ditches that were excavated out of previous upland. A general description of these wetlands has been provided below. Additional details on the delineated portions of these wetlands can be found in the *Wetland Investigation Report*, the *2014 Supplemental Wetland Investigation Report*, and the *2015 Supplemental Wetland Investigation Report* that were prepared for the Southwest LRT Project by Anderson Engineering in 2013, 2014, and 2015 respectively.

- **DOT-EP-23** is a degraded Type 1, seasonally flooded basin that is part of the roadway drainage system for the west-bound Interstate 494 exist ramp to Flying Cloud Drive (see page MapBook page LPA-3 in Appendix A for location). The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*).
- **DOT-EP-24** is a degraded Type 1, seasonally flooded basin that is part of the roadway drainage system for the west-bound Interstate 494 exist ramp to Flying Cloud Drive (see page MapBook page LPA-3 in Appendix A for location). The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*).
- **DOT-EP-07** is a degraded Type 2, fresh wet meadow that is part of the roadway drainage system for US-212 E (see page MapBook page LPA-3 in Appendix A for location). The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*).

- **DOT-EP-09** is a degraded Type 3, shallow marsh that is part of the road-way drainage system for US-212 W (see page MapBook page LPA-5 in Appendix A for location). The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*).
- **MTA-MTA-06** is a degraded Type 1, seasonally flooded basin that is part of the roadway drainage system along Bren Road West in Minnetonka (see page MapBook page LPA-5 in Appendix A for location). The wetland vegetation is dominated by box elder (*Acer negundo*), silver maple (*Acer saccharinum*), gray dogwood (*Cornus racemosa*), and common buckthorn (*Thamnus cathartica*).

8.3 Extended Temporary Impact

The St. Paul District of the USACE has provided the Southwest LRT Project with guidance for determining baseline compensation ratios for impacts associated with linear projects that will exceed the standard 180 day temporary impact duration. This guidance was utilized for determining the mitigation requirements associated with the proposed 134,296 SF (3.08 Ac) of vegetation clearing/hydrology alteration that will affect wetland MTA-MTA-11 for more than 180 days.

The proposed LRT design in this particular location necessitates an extended duration of impact to allow for construction access during the multiple phase construction of a land bridge that will cross over the freight rail line located between Minnetonka and Hopkins (see Section 6 for impact and proposed avoidance and minimization details). This proposed impact qualifies for a reduced mitigation ratio because this area will be restored to the original grade, the existing vegetated areas will be re-seeded with an appropriate native wetland species seed mix, and the hydrology of the wetland will be restored to existing conditions.

The compensation ratios referenced in the guidance document for an impact of this type range from 0.10:1 to 0.50:1, and are determined based on the type of wetland that is being impacted as well as the estimated impact duration, which can range from 3 years to indefinite. The wetland types that occur within the proposed temporary workspace of MTA-MTA-11 include Circ. 39 Types 2/3/5/6/7, and the estimated impact duration is approximately 18 months. Based on these factors, the project is proposing a 0.50:1 compensation ratio, which amounts to 67,148 SF of required mitigation bank credits.

8.4 Waters of the U.S. Impacts Not Requiring Mitigation

The Southwest LRT Project will result in permanent impact to portions of two CWA regulated Waters of the U.S. that will not require compensatory mitigation. The Kenilworth Channel (MC-MPL-13) is a Type 90 channel that flows between Cedar Lake and Lake of the Isles (see page LPA-12 of the CWA Regulated Impact MapBook for location). The proposed LRT track will cross this channel on an elevated structure that will necessitate the construction of large bridge piers. This impact has been reported as permanent because the piers will be large enough to have the effect of fill within the channel. However, compensatory mitigation will not be required for this impact because this channel is not regulated as a wetland under the CWA.

In addition, a portion of the ditched wetland DOT-EP-09 will be permanently impacted by the creation of proposed floodplain mitigation through excavation (see overhead plan sheet 14). Although this potential impact will be considered permanent by the USACE, it will not require compensatory mitigation because the area will retain the existing wetland type and function as a roadside ditch along US HWY-212. Please note that a separate portion of DOT-EP-09 (1,985 SF) will be permanently impacted by the construction of a proposed retaining wall and bridge piers (as discussed in Section 6) and therefore will require mitigation at a compensation ratio of 1:1. The proposed compensation ratio for this portion of permanent impact to DOT-EP-09 is discussed above in Section 8.2.

9 Conclusion

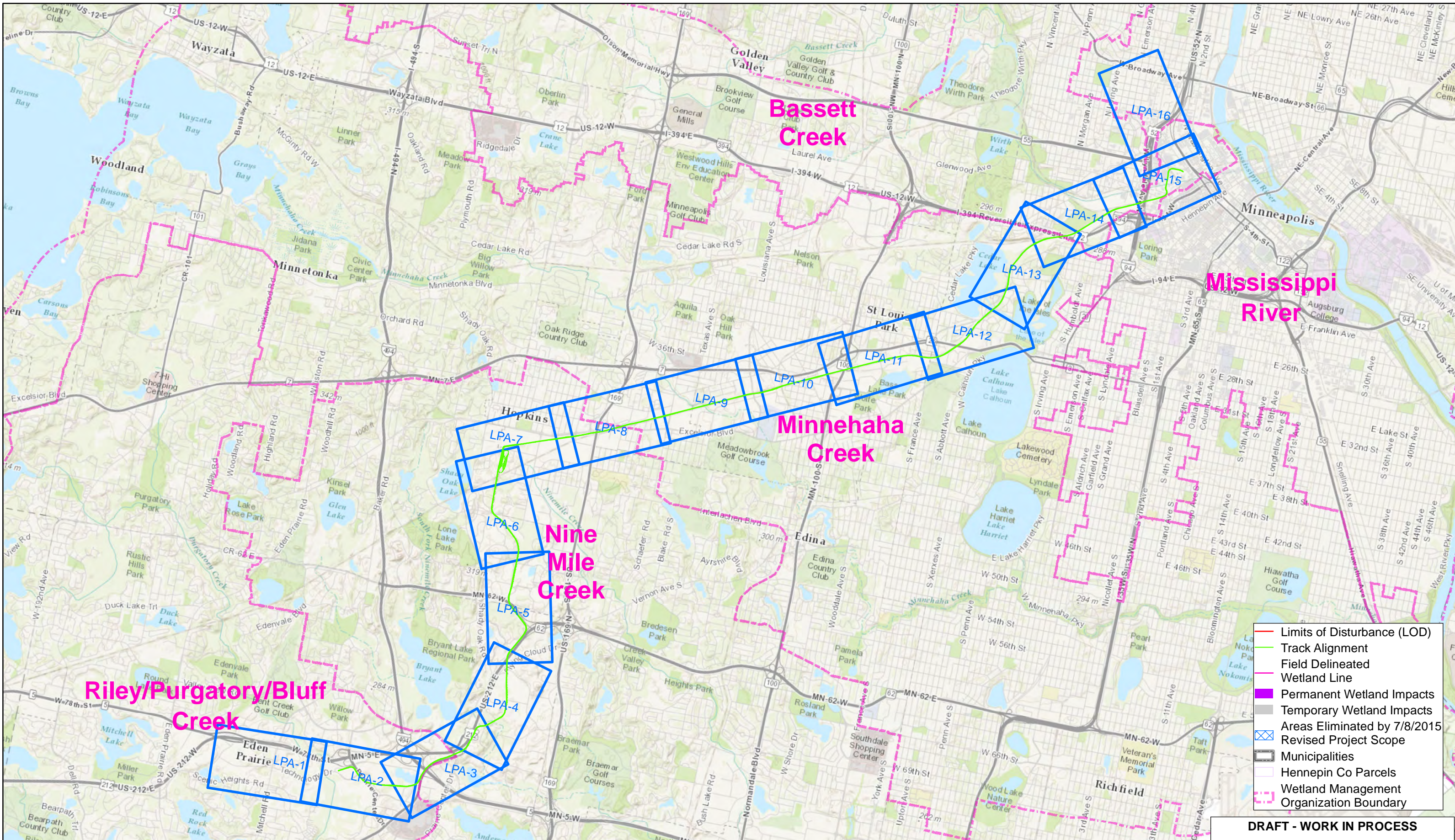
The USACE has previously provided preliminary concurrence to Point 1, 2 and 3. No design changes have occurred which would trigger review of these points.

The project has taken all appropriate and practicable steps to minimize potential adverse effects on the aquatic ecosystem. The project will continue to consider and refine avoidance and minimization measures during the final design phase to avoid or minimize impacts to aquatic resources to the maximum practicable extent. All unavoidable impacts to aquatic resources regulated by the Clean Water Act will be compensated for in accordance with the United States Environmental Protection Agency and USACE Wetlands Compensatory Mitigation Rule.

This document serves to present information pertaining to Concurrence Point 4 and provide supporting details that would allow the USACE to provide, in writing, concurrence that information provided in this document would satisfy Clean Water Act requirements.

Appendix A

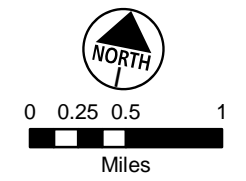
Preliminary Design Phase Aquatic Resource Impact MapBook



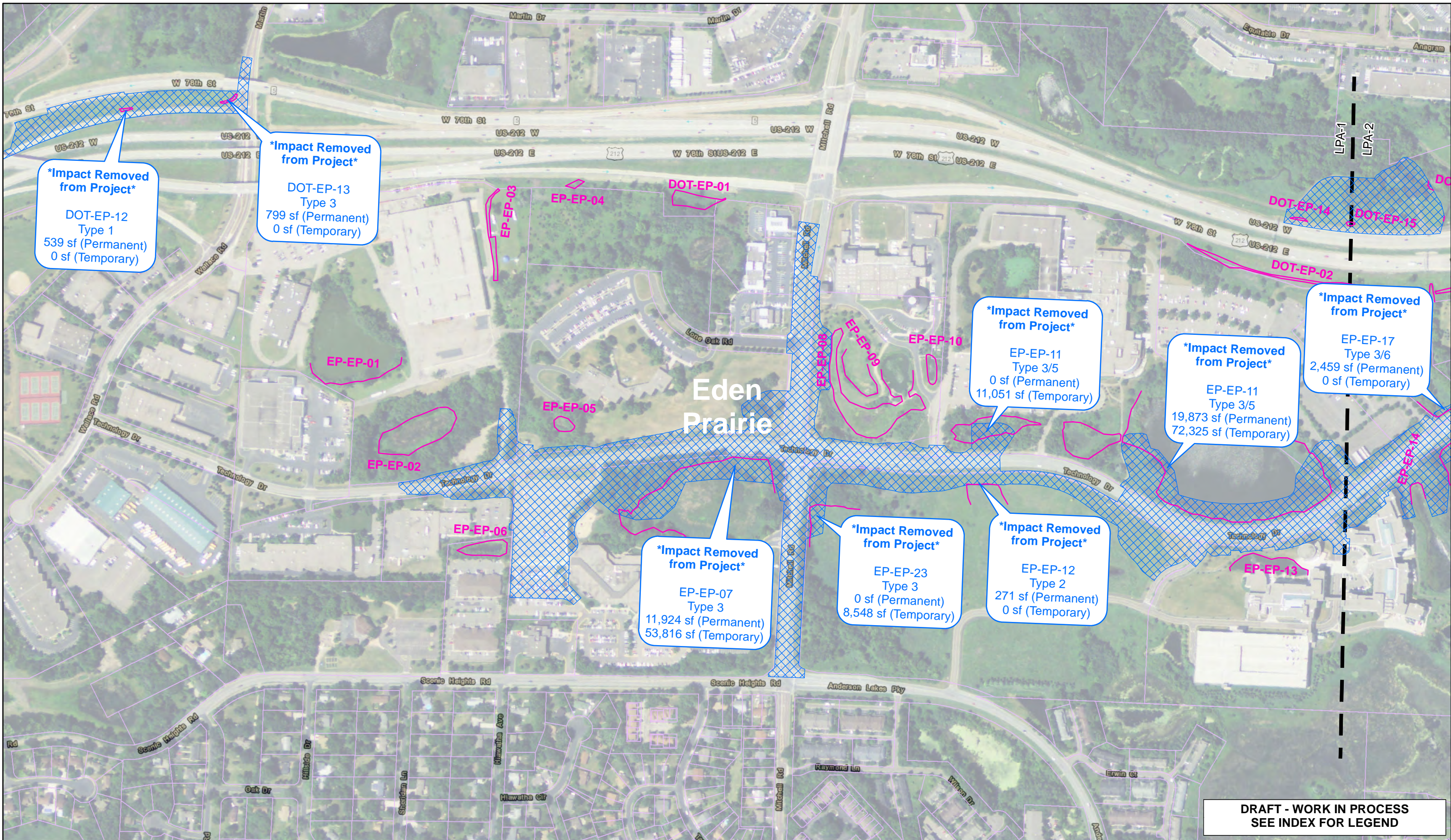
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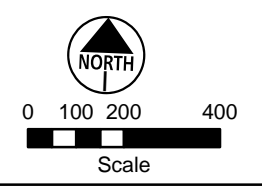
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SEE INDEX FOR LEGEND

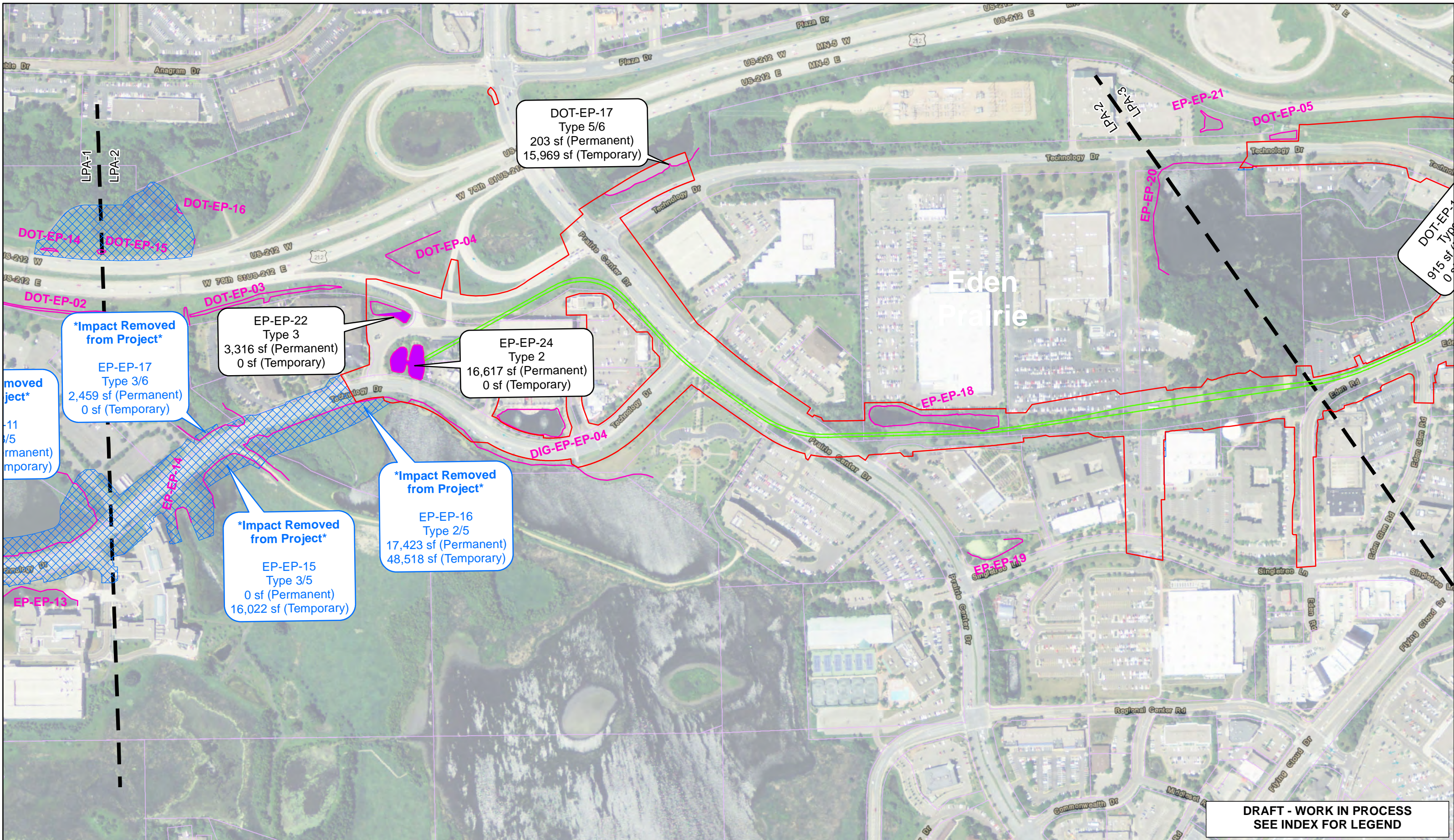


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DOT-EP-17
Type 5/6
203 sf (Permanent)
15,969 sf (Temporary)

EP-EP-22
Type 3
3,316 sf (Permanent)
0 sf (Temporary)

EP-EP-24
Type 2
16,617 sf (Permanent)
0 sf (Temporary)

Impact Removed from Project
EP-EP-17
Type 3/6
2,459 sf (Permanent)
0 sf (Temporary)

Impact Removed from Project
EP-EP-16
Type 2/5
17,423 sf (Permanent)
48,518 sf (Temporary)

Impact Removed from Project
EP-EP-15
Type 3/5
0 sf (Permanent)
16,022 sf (Temporary)

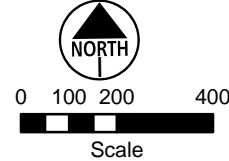
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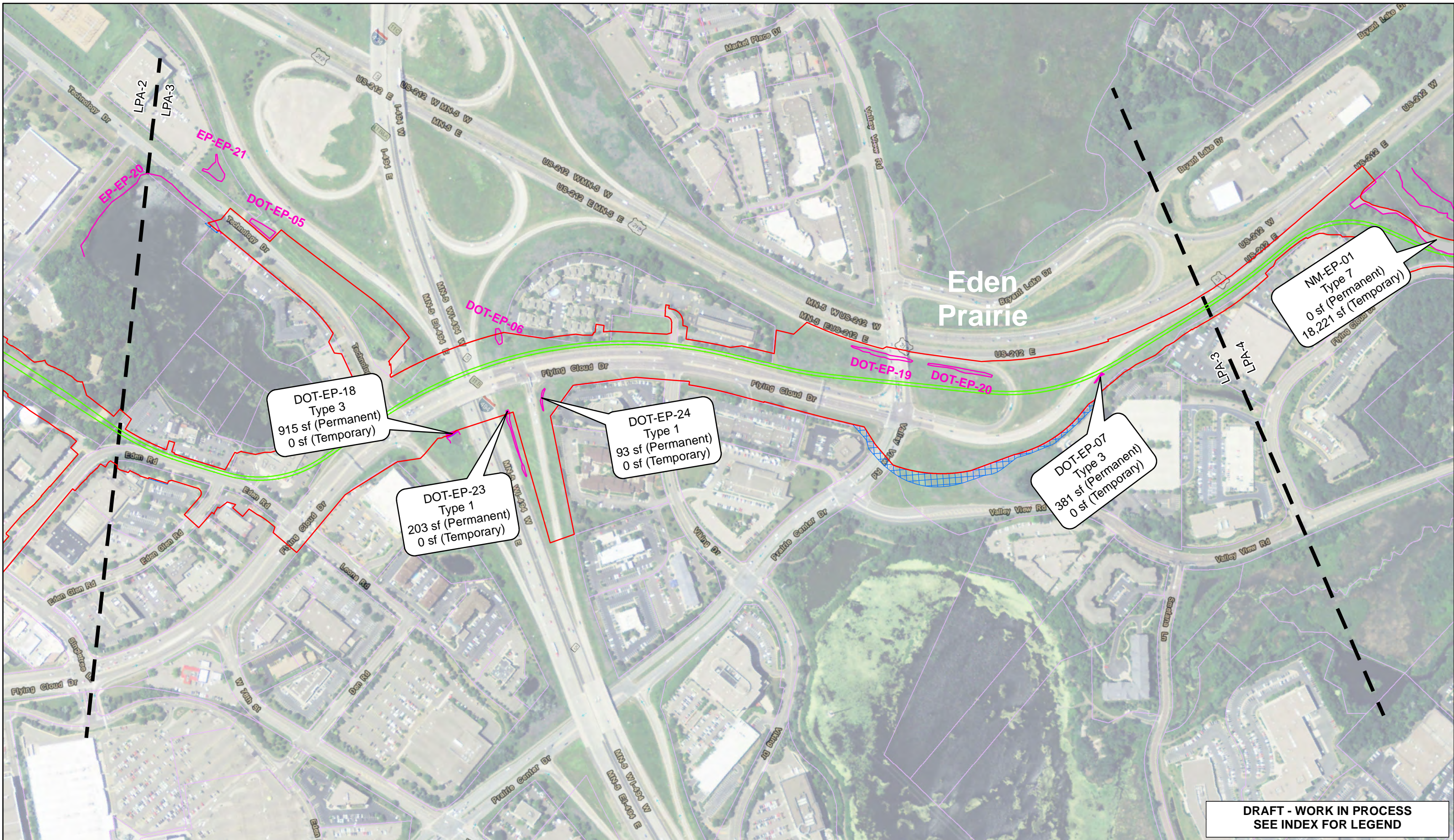


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NM-EP-01
Type 7
0 sf (Permanent)
18,221 sf (Temporary)

DOT-EP-18
Type 3
915 sf (Permanent)
0 sf (Temporary)

DOT-EP-23
Type 1
203 sf (Permanent)
0 sf (Temporary)

DOT-EP-24
Type 1
93 sf (Permanent)
0 sf (Temporary)

DOT-EP-07
Type 3
381 sf (Permanent)
0 sf (Temporary)

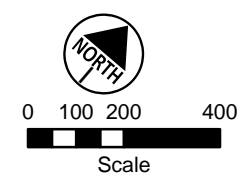
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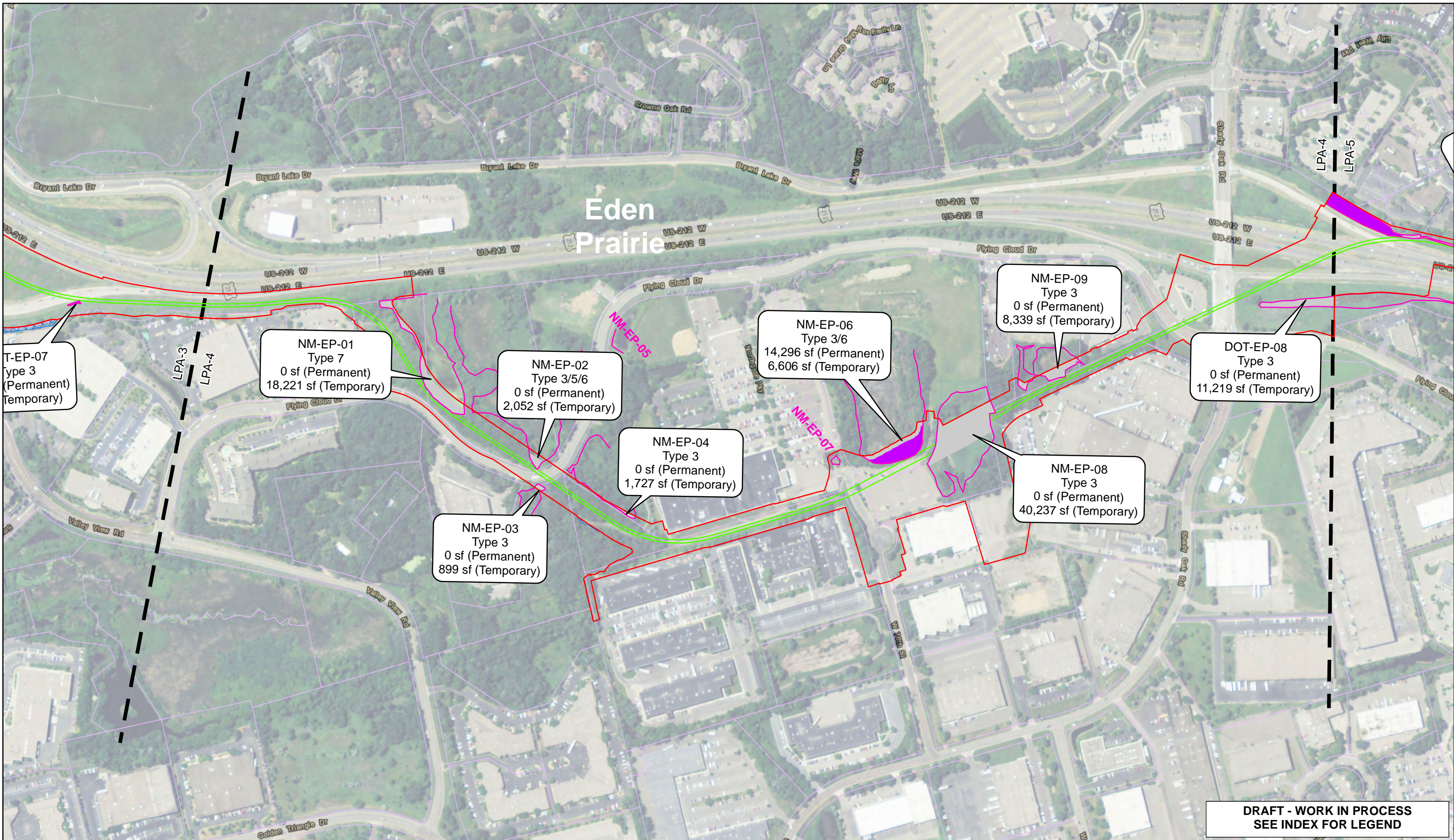


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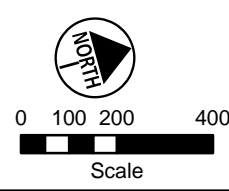
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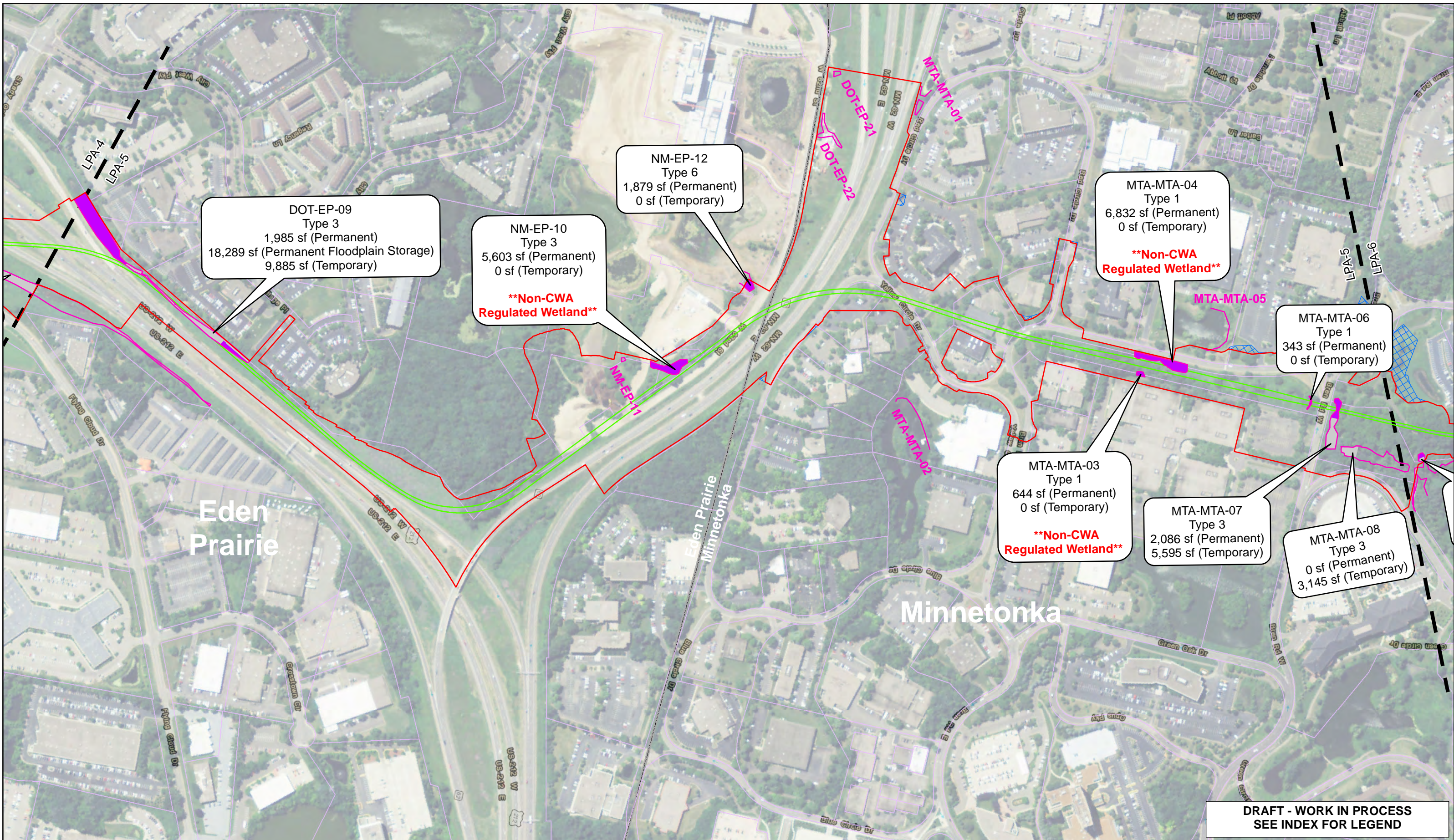


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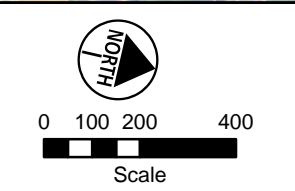


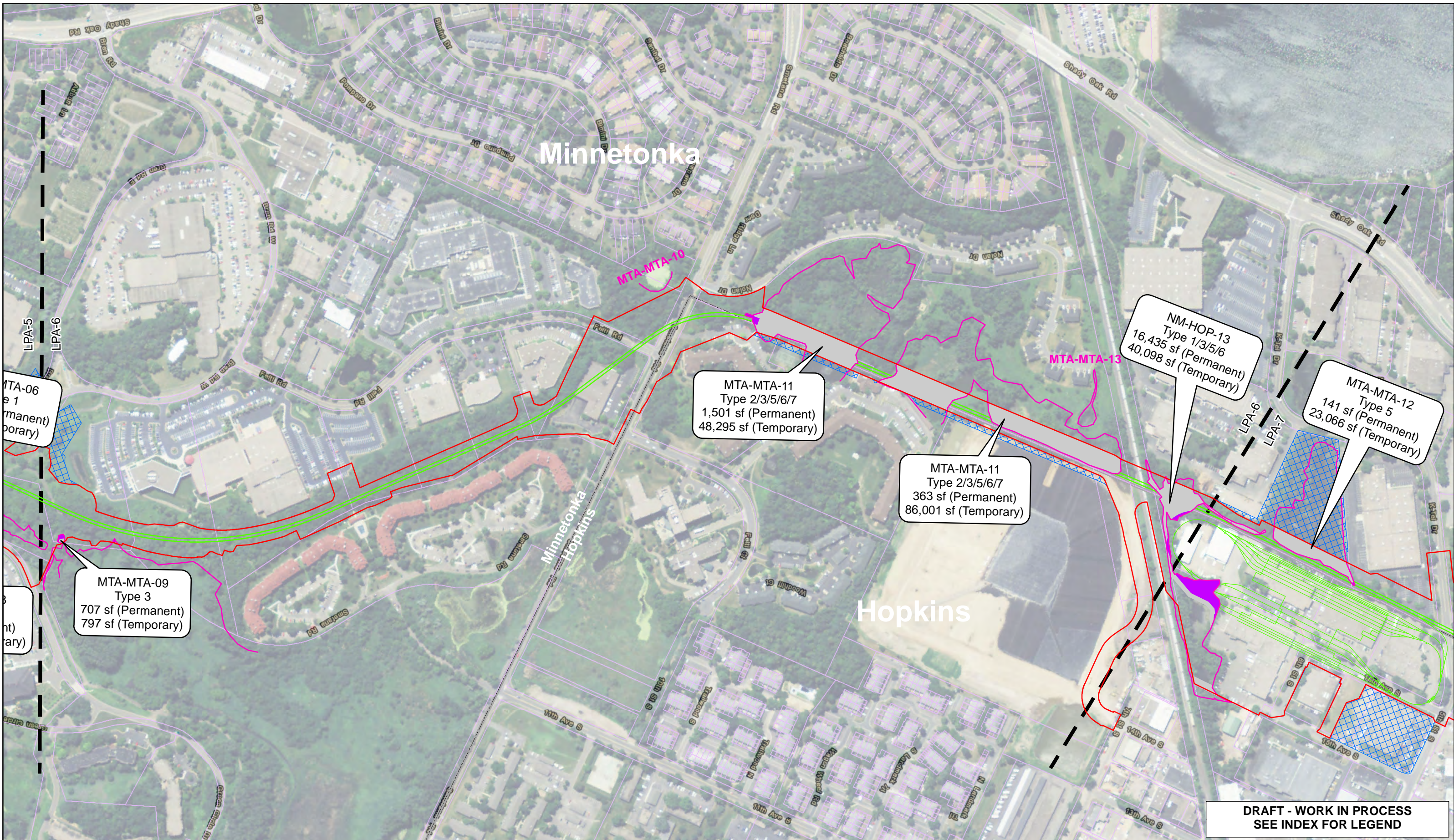


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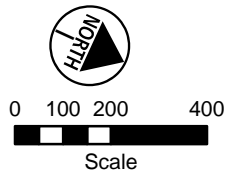


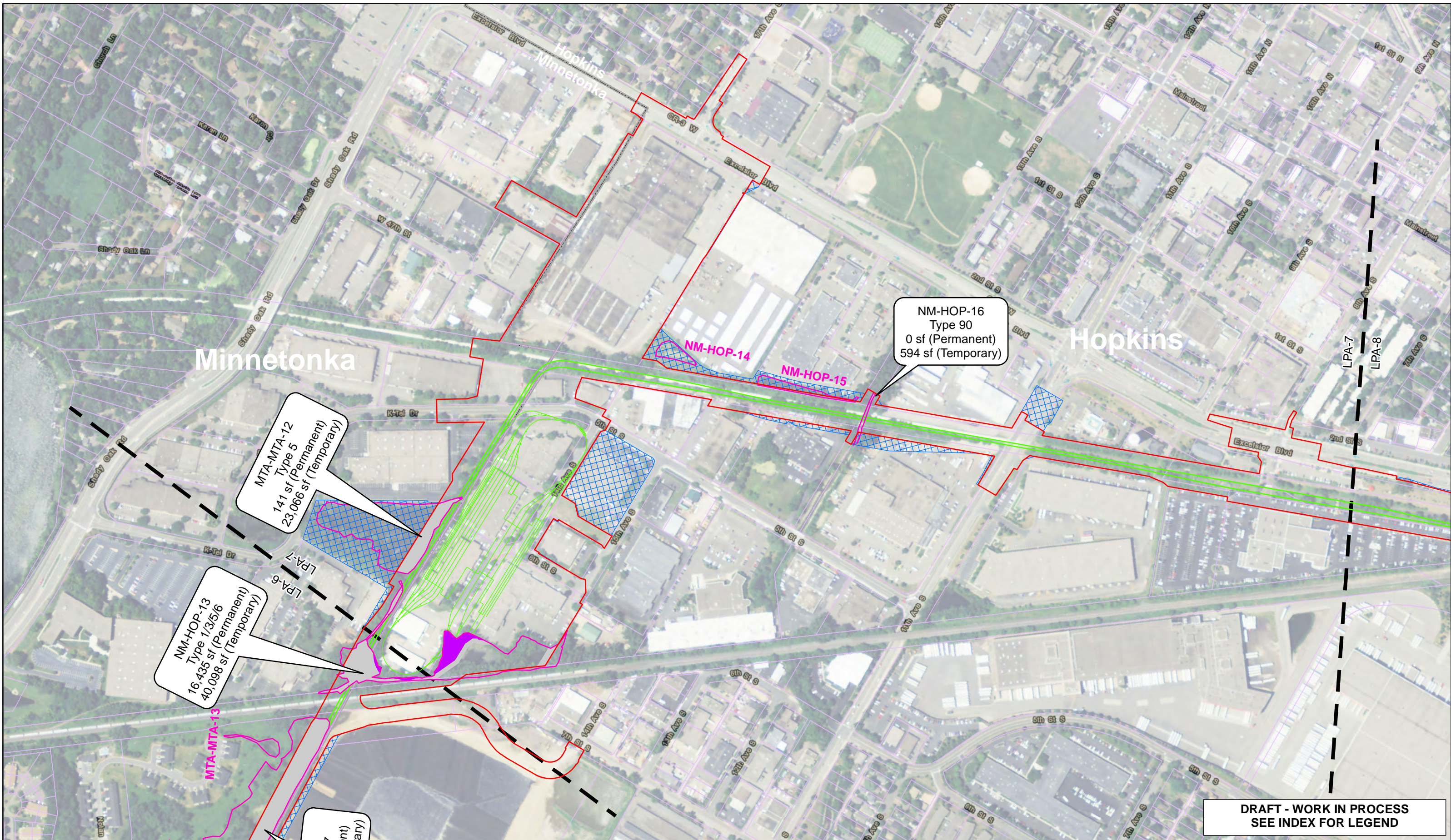
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Minnetonka

Hopkins

MTA-MTA-12
Type 5
141 sf (Permanent)
23,066 sf (Temporary)

NM-HOP-13
Type 1/3/5/6
16,435 sf (Permanent)
40,098 sf (Temporary)

NM-HOP-16
Type 90
0 sf (Permanent)
594 sf (Temporary)

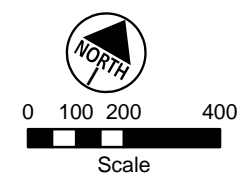
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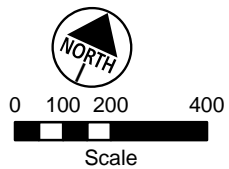
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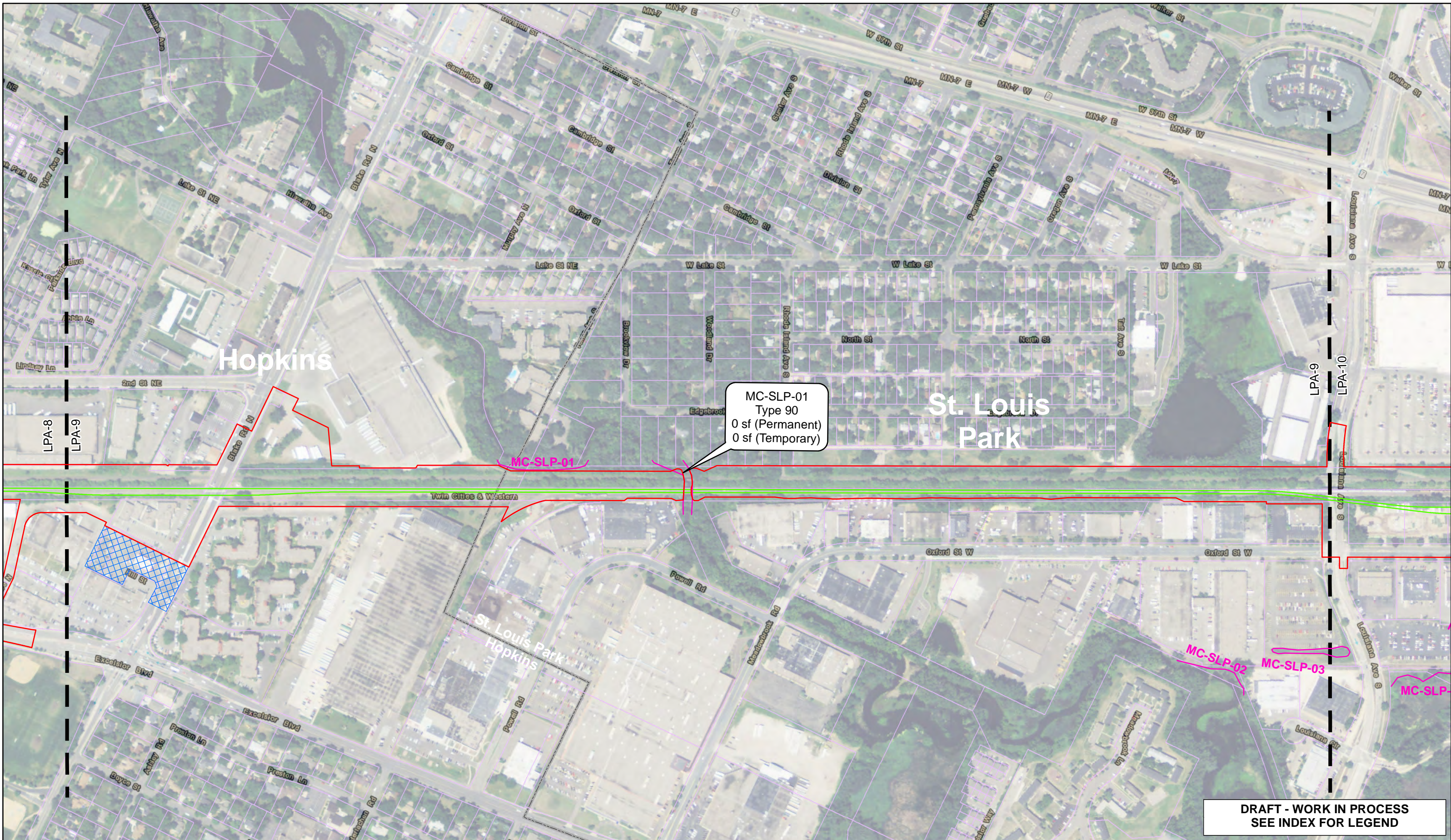


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MC-SLP-01
 Type 90
 0 sf (Permanent)
 0 sf (Temporary)

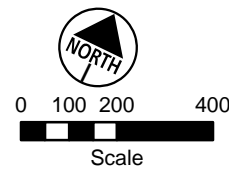
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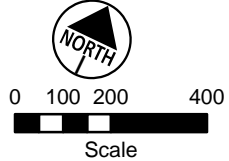
St. Louis Park

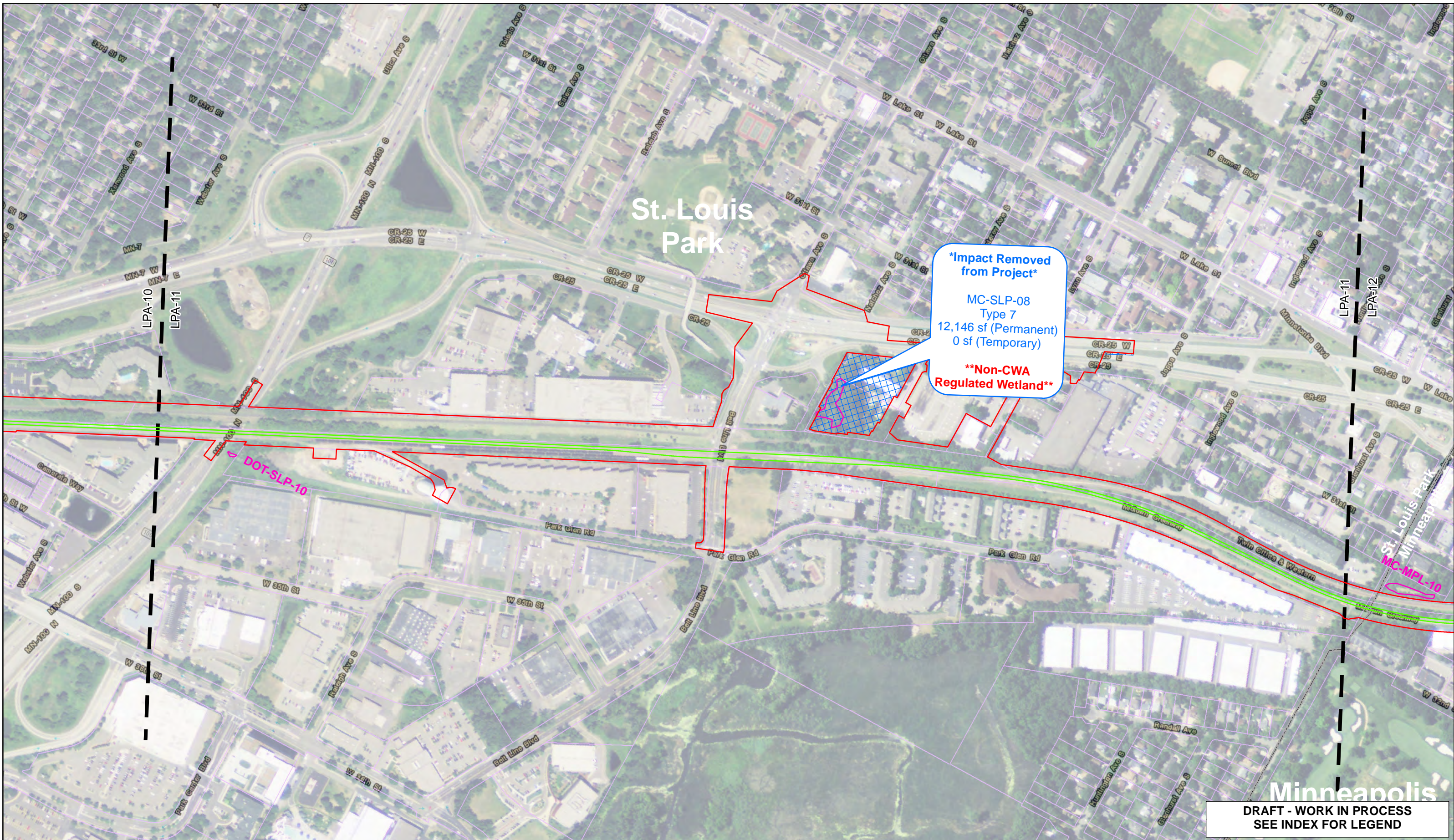
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St. Louis Park

Impact Removed from Project
 MC-SLP-08
 Type 7
 12,146 sf (Permanent)
 0 sf (Temporary)
****Non-CWA Regulated Wetland****

DOT-SLP-10

MC-MPL-10

Minneapolis

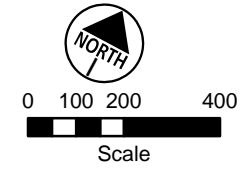
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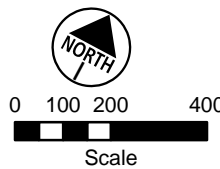
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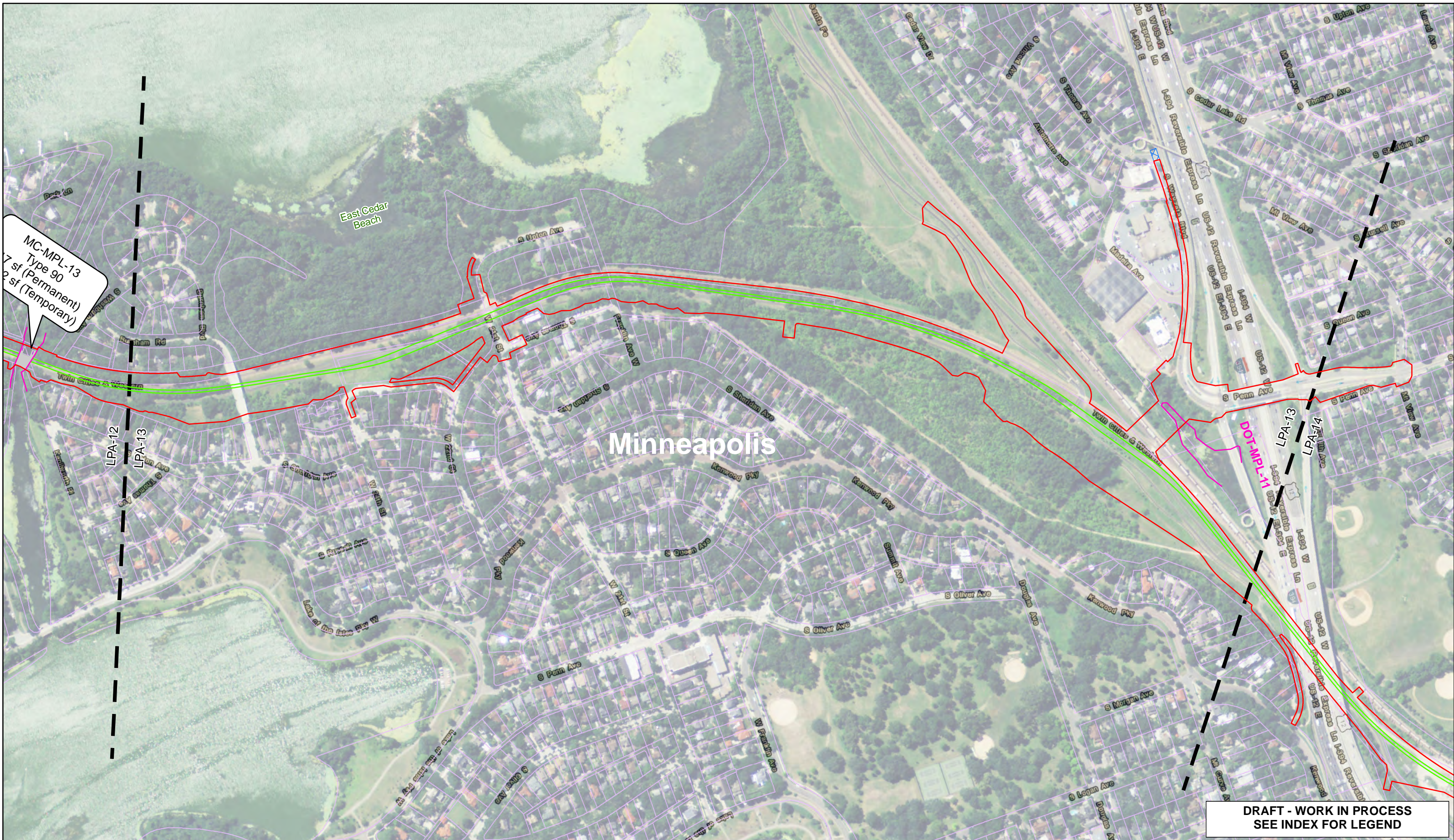


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MC-MPL-13
Type 90
7 sf (Permanent)
2 sf (Temporary)

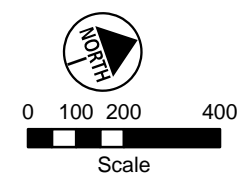
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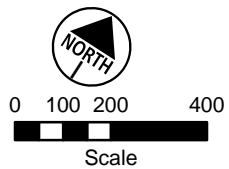


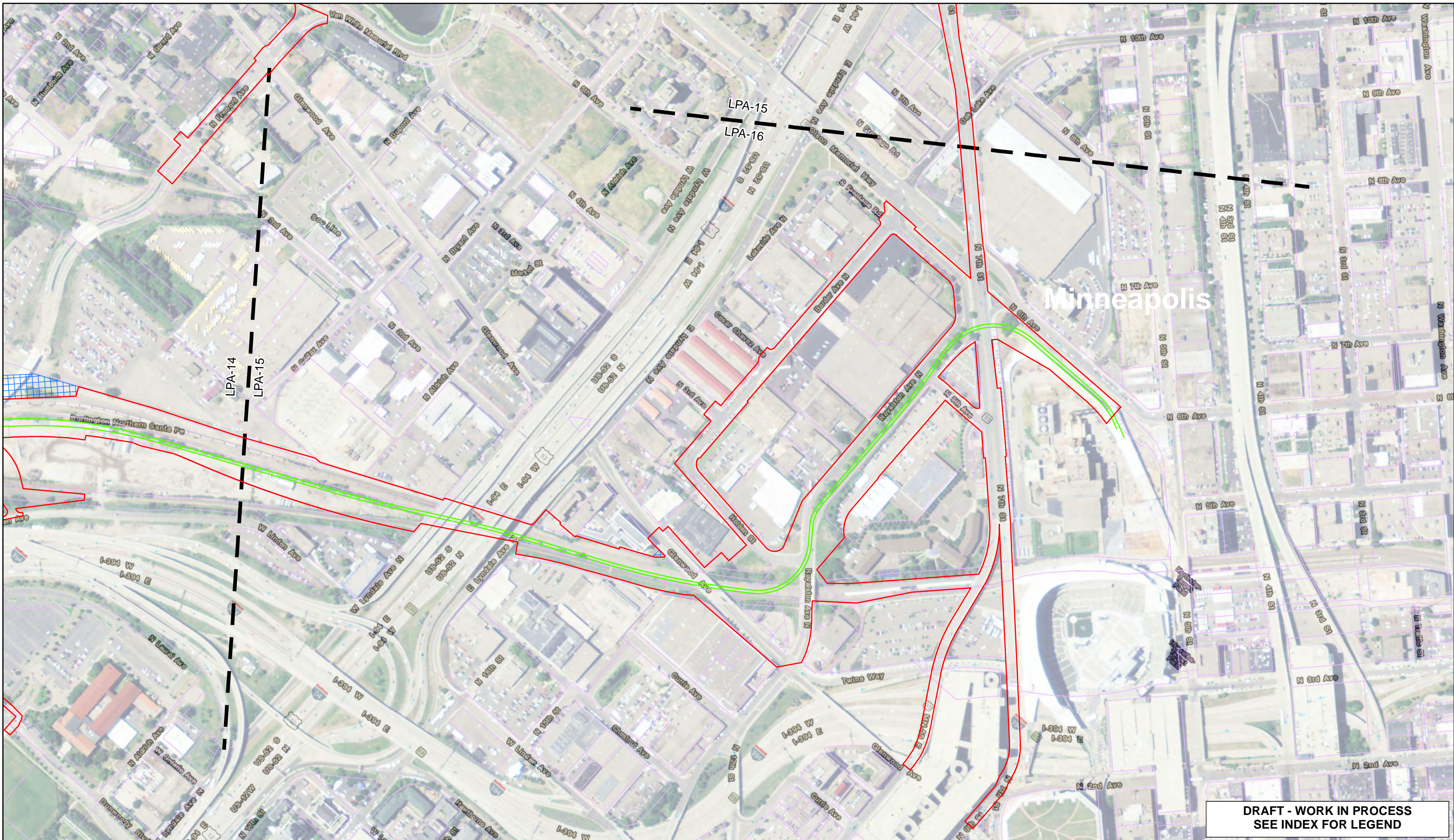
**DRAFT - WORK IN PROCESS
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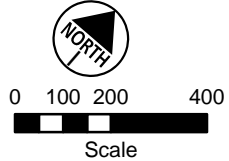


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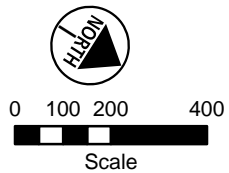
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Appendix B

Overhead Plan Sheets

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPs MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

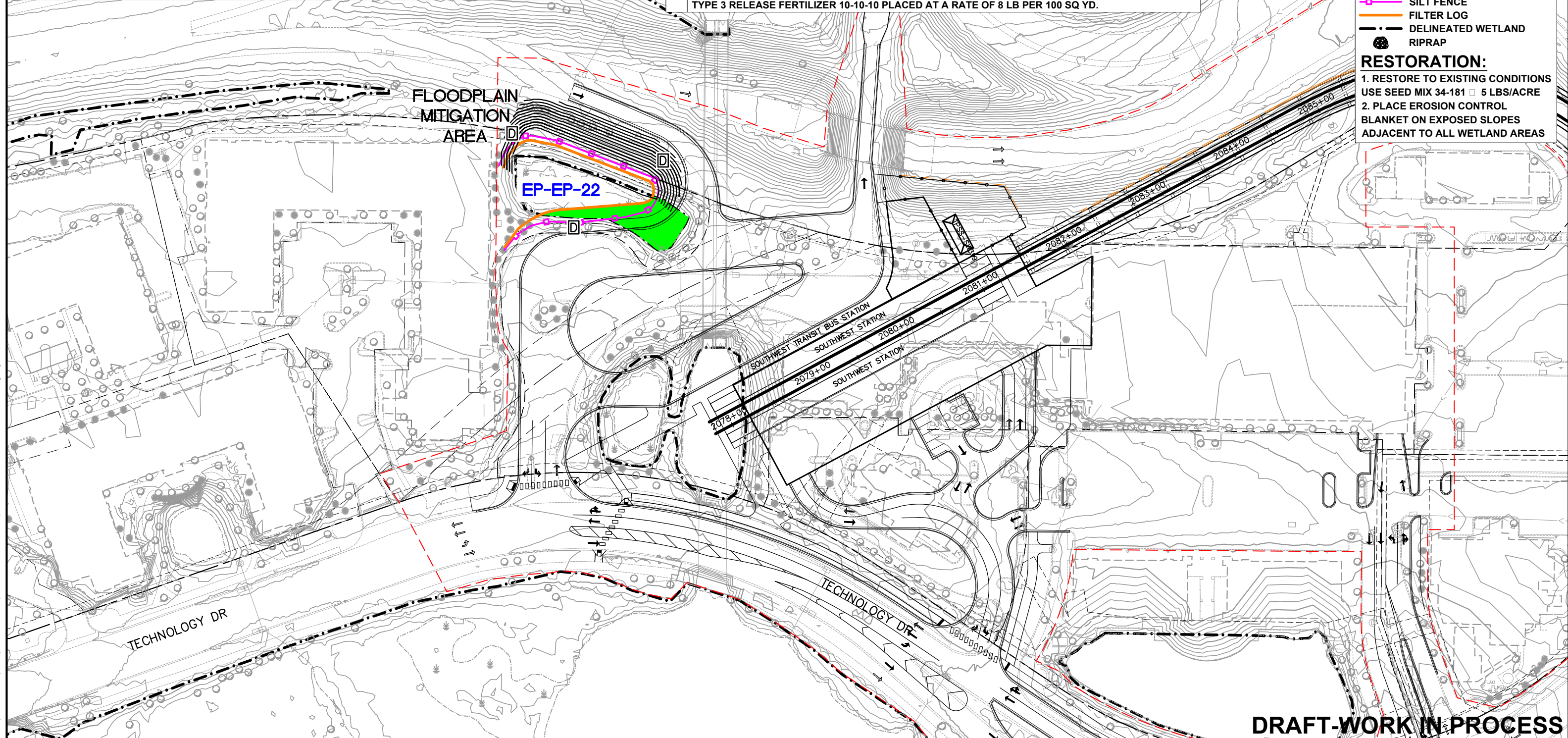
WETLAND IMPACTS:
 3,316 SF (PERMANENT)
 0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

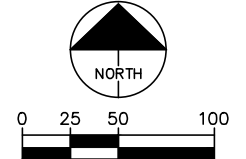


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACT
 EP-EP-22
 SHEET 1 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 1



Aug. 03 2015 10:00 am V:\3400_ADC\CAD\SEGMENT W1\EXHIBITS\WETLANDS\EXHIBIT-01--WETLAND IMPACTS.dwg By: msoblich

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:
 16,617 SF (PERMANENT)
 0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:
 N/A



DRAFT-WORK IN PROCESS

Jul. 30 2015 04:47 pm V:\3400_ADC\CAD\SEGMENT\W\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS.dwg By: msoblech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPs MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
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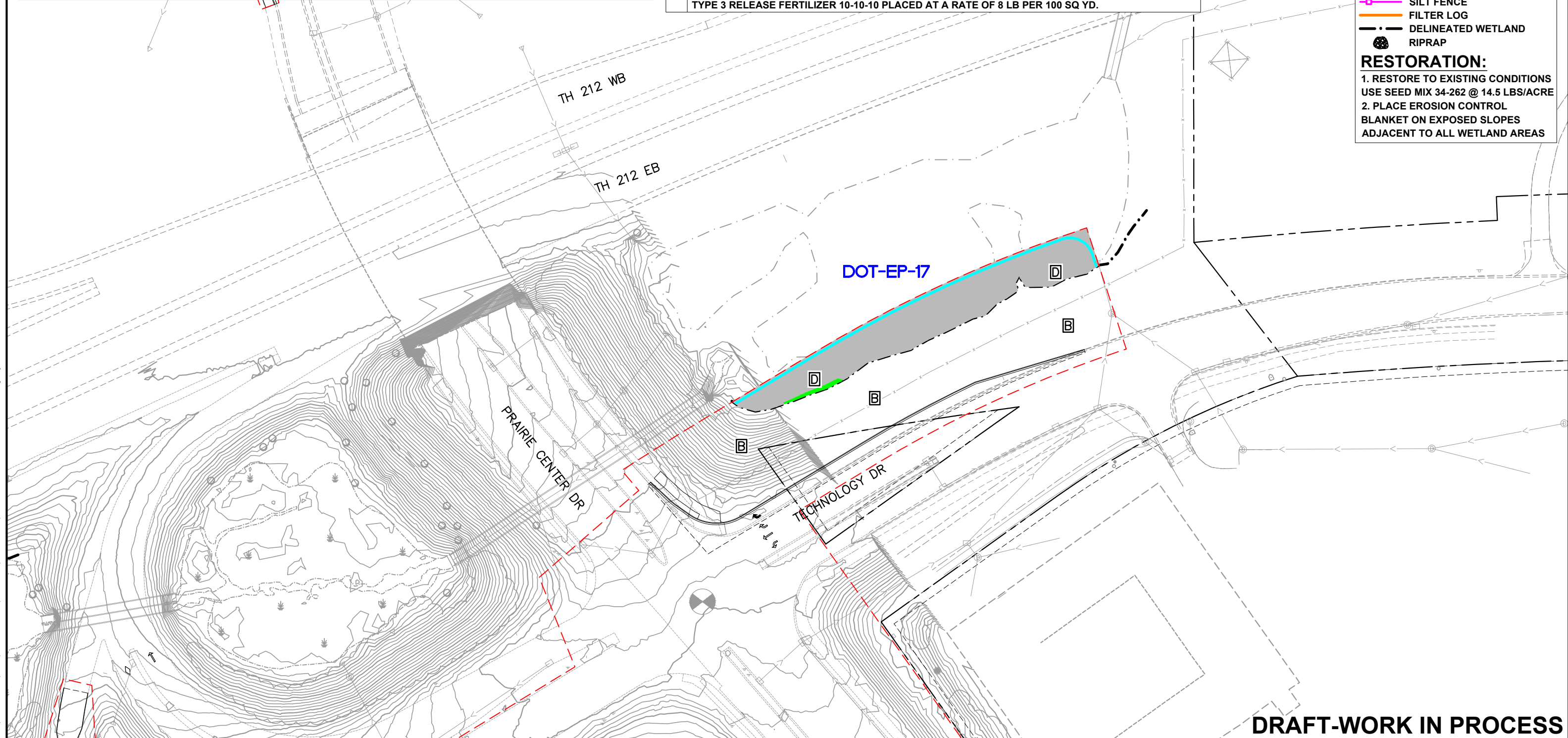
WETLAND IMPACTS:
 203 SF (PERMANENT)
 15,969 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-262 @ 14.5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

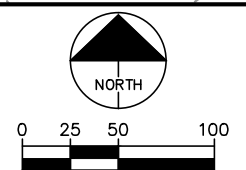


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACT
 DOT-EP-17
 SHEET 3 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 10



Jul, 30 2015 04:47 pm V:\3400_ADC\CAD\SEGMENT\W\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS.dwg By: msoblech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:

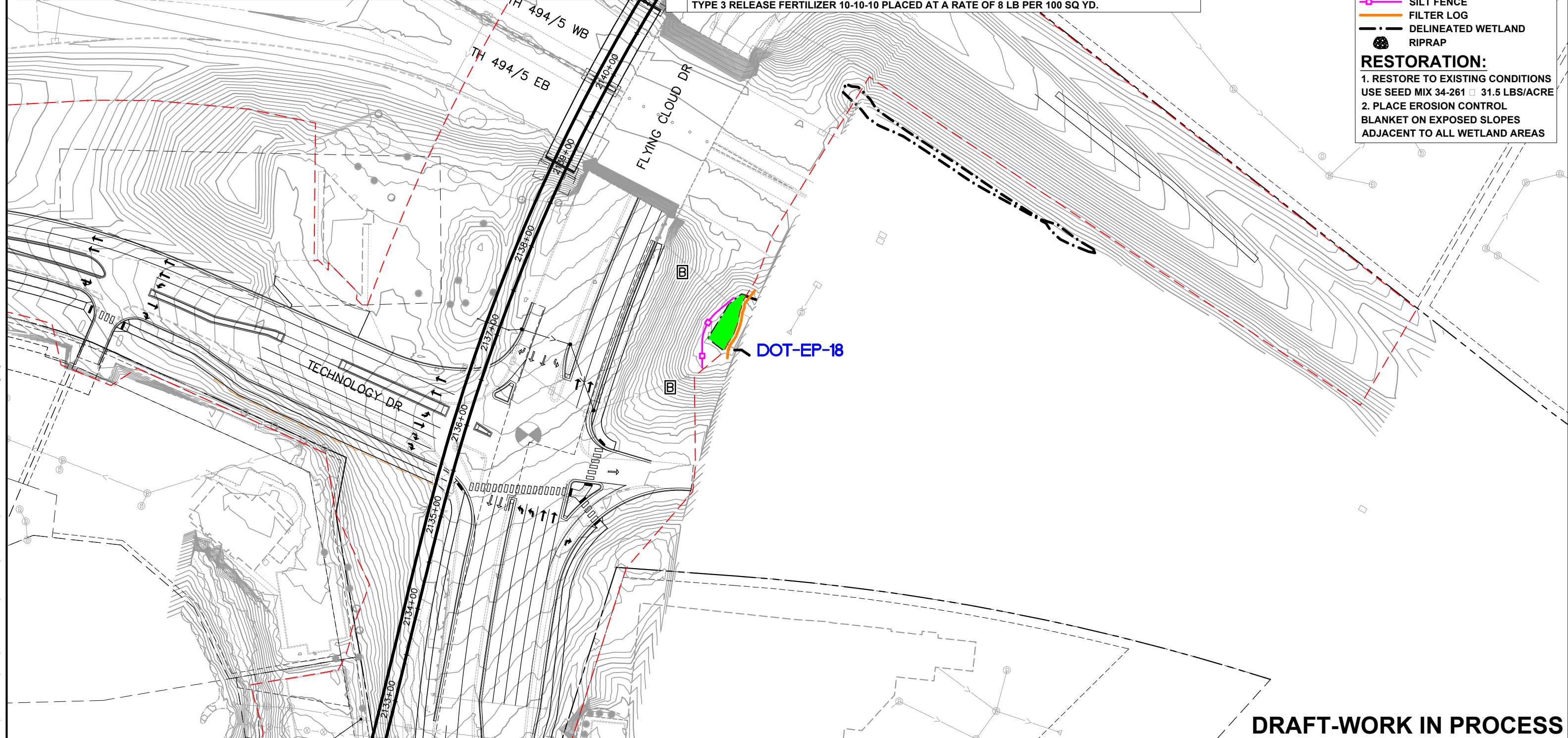
15 SF (PERMANENT)
0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-261 31.5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

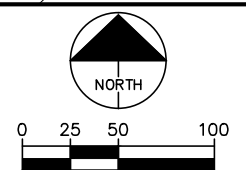


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
WETLAND IMPACT
DOT-EP-18
SHEET 4 OF 27

REV: 3
DATE: 03/10/2015
ID #: 41



Aug. 03 2015 10:01 am V:\3400_ADC\CAD\SEGMENT W1\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:

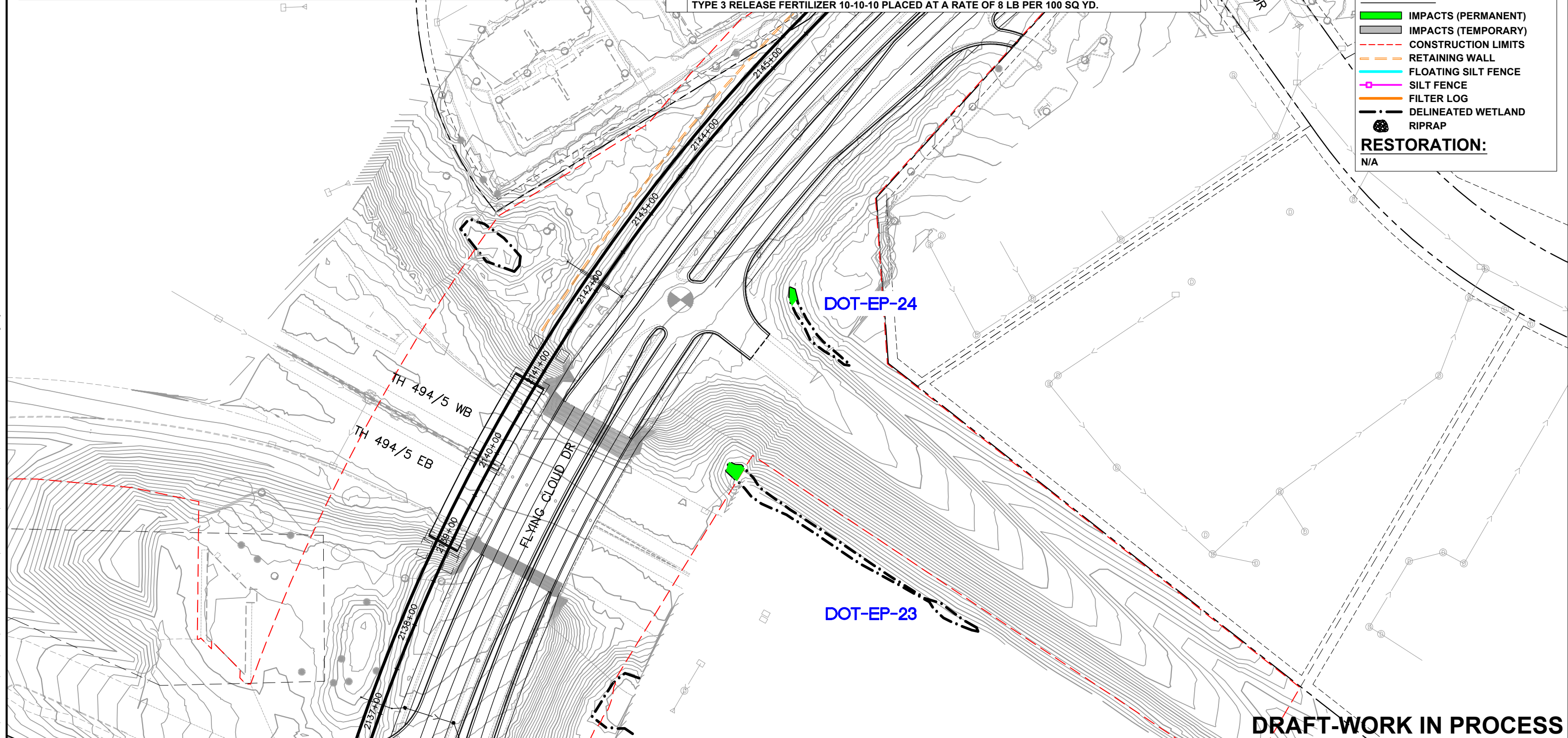
DOT-EP-23:
203 SF (PERMANENT)
0 SF (TEMPORARY)

DOT-EP-24:
93 SF (PERMANENT)
0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

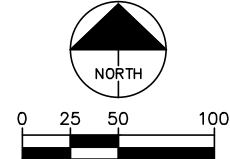
RESTORATION:
N/A



DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL
WETLAND IMPACT
DOT-EP-23 AND DOT-EP-24
SHEET 5 OF 27

REV: 3
DATE : 03/10/2015
ID #: 41



Jul, 30 2015 05:08 pm V:\3400_ADC\CAD\LRCI\LRCI-026\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS-LRCI-026.dwg By: msobiech



NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
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6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

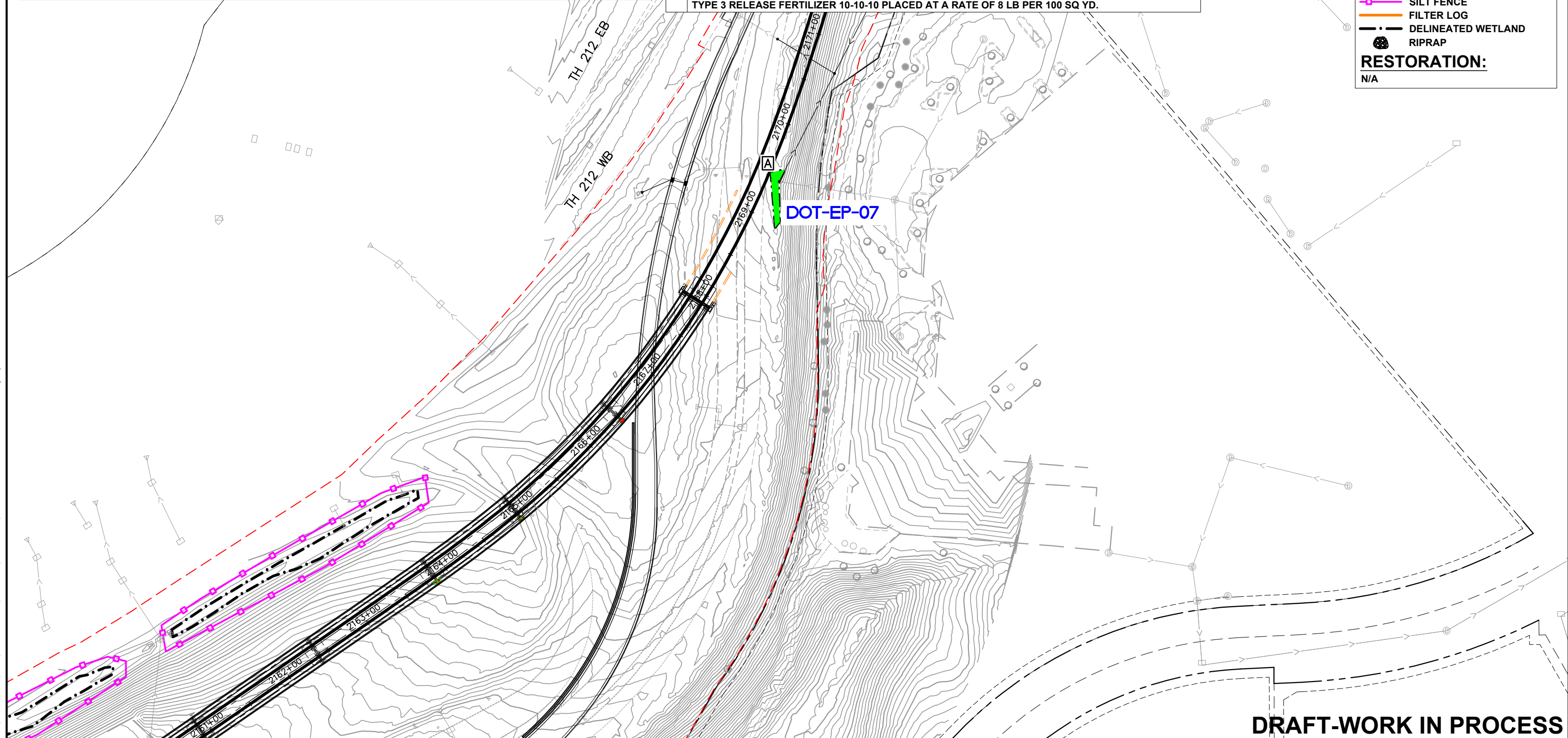
- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:
 381 SF (PERMANENT)
 0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:
 N/A

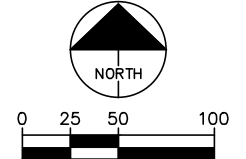


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACT
 DOT-EP-07
 SHEET 6 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 12



Jul, 30 2015 04:50 pm V:\3400_ADC\CAD\SEGMENT\W\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS.dwg By: msoblech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

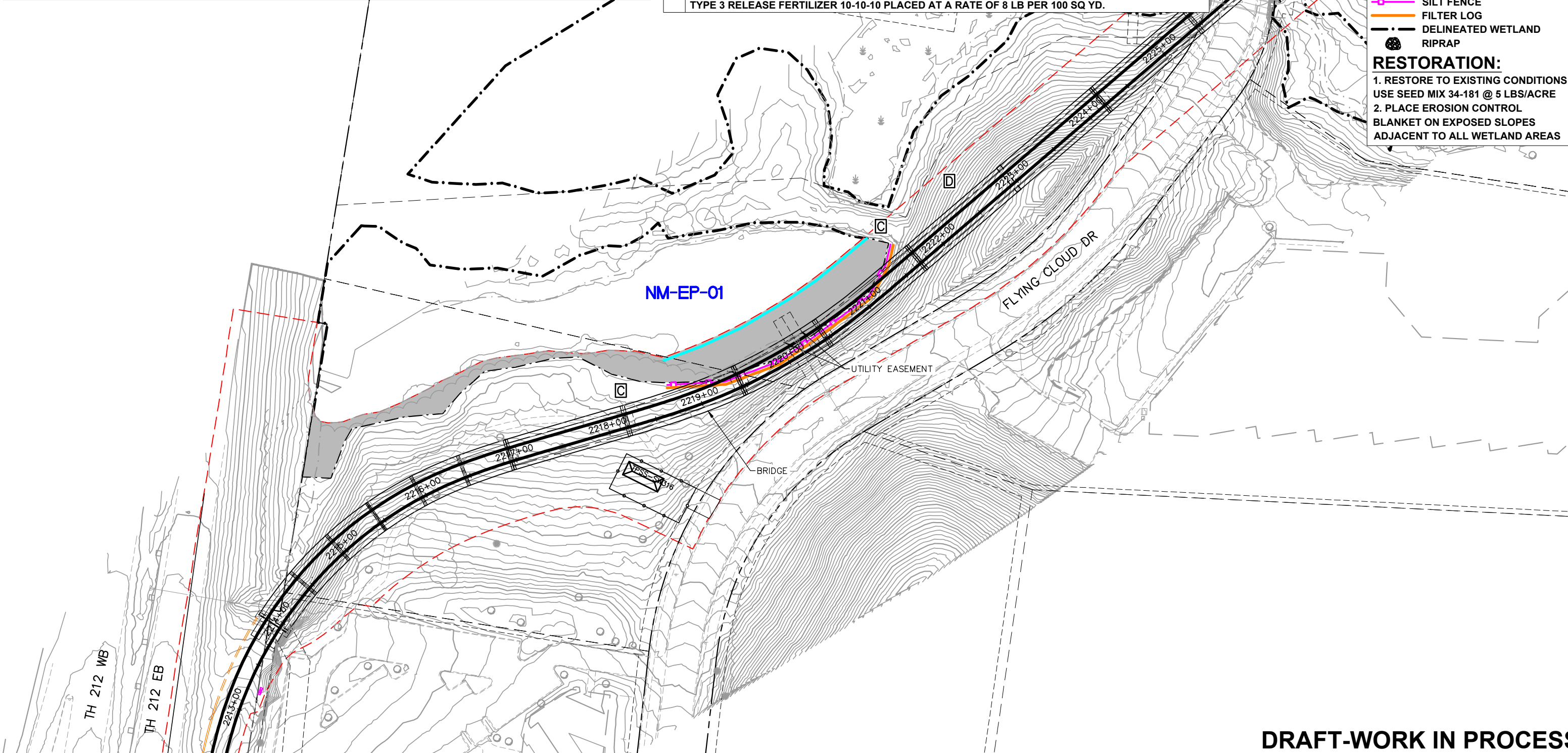
WETLAND IMPACTS:
 0 SF (PERMANENT)
 18,221 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

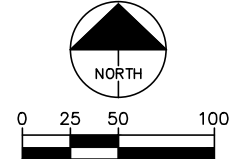


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACTS
 NM-EP-01
 SHEET 7 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 13



Jul, 30 2015 04:52 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
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- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:

NM-EP-02:
 0 SF (PERMANENT)
 2,052 SF (TEMPORARY)

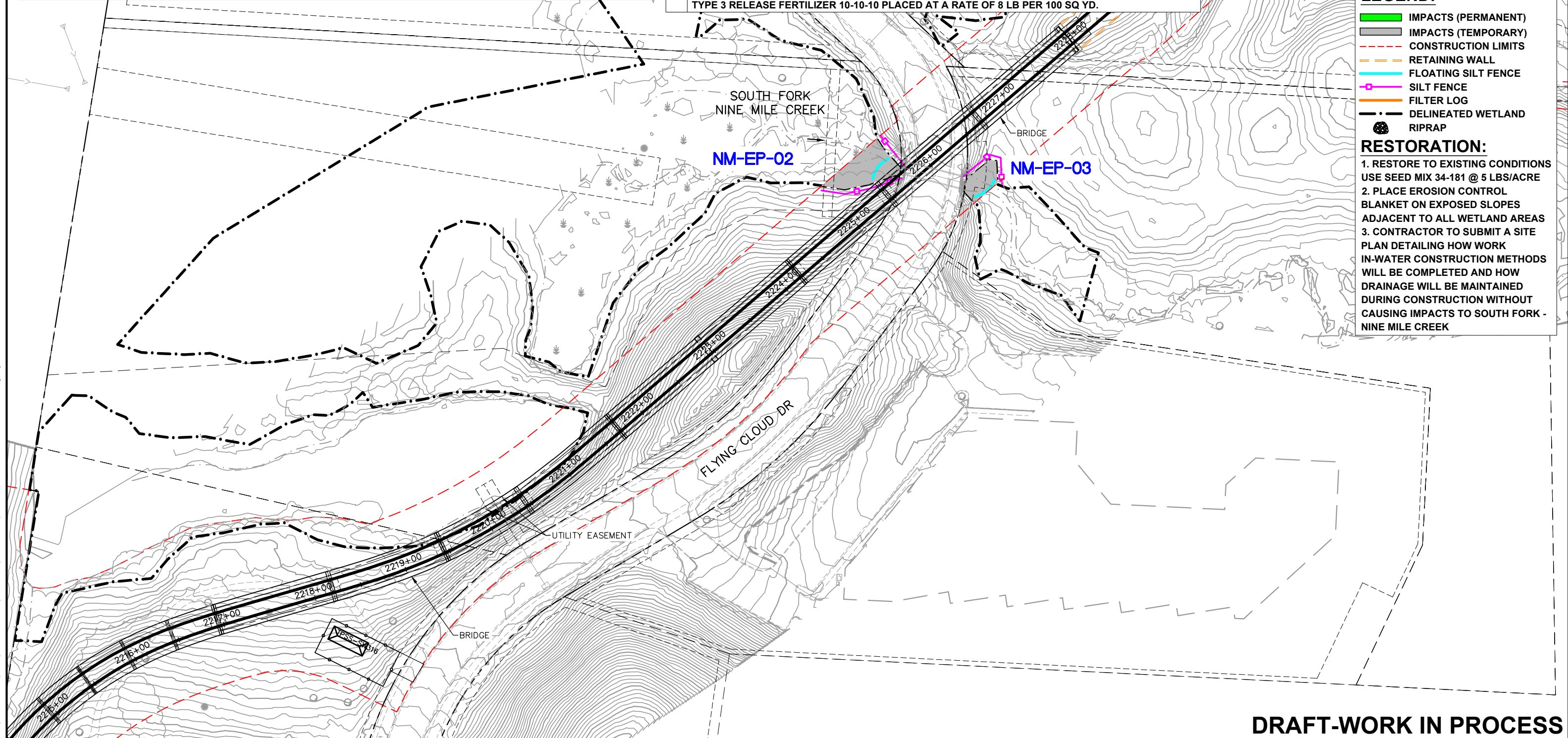
NM-EP-03:
 0 SF (PERMANENT)
 899 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS
3. CONTRACTOR TO SUBMIT A SITE PLAN DETAILING HOW WORK IN-WATER CONSTRUCTION METHODS WILL BE COMPLETED AND HOW DRAINAGE WILL BE MAINTAINED DURING CONSTRUCTION WITHOUT CAUSING IMPACTS TO SOUTH FORK - NINE MILE CREEK

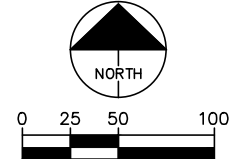


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACTS
 NM-EP-02 AND NM-EP-03
 SHEET 8 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 14



Jul, 30 2015 04:52 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

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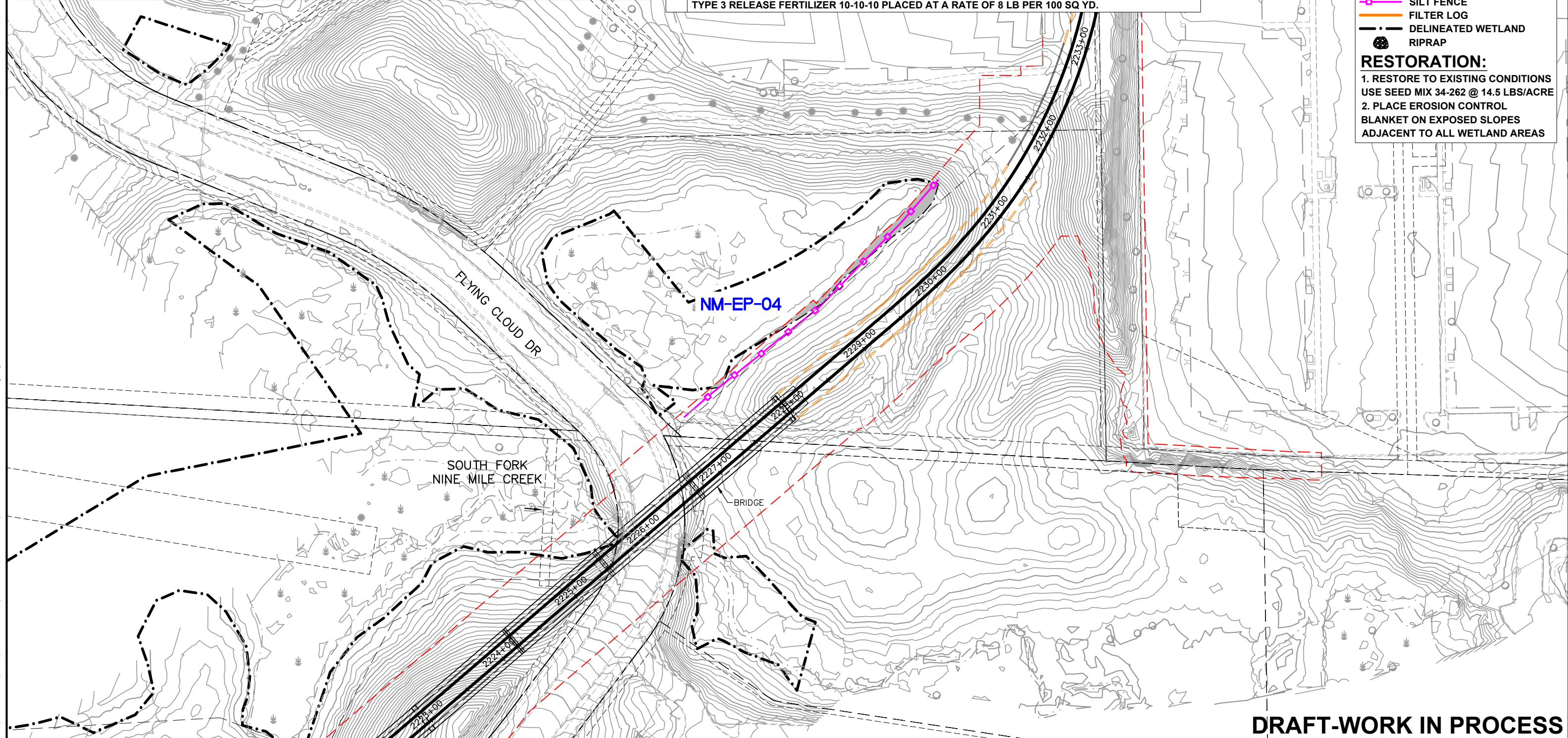
WETLAND IMPACTS:
 0 SF (PERMANENT)
 1,727 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-262 @ 14.5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

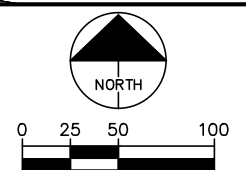


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACTS
 NM-EP-04
 SHEET 9 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 15



Jul, 30 2015 04:53 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPs MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:
 14,296 SF (PERMANENT)
 6,606 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



DRAFT-WORK IN PROCESS

Jul 30 2015 04:53 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPs MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

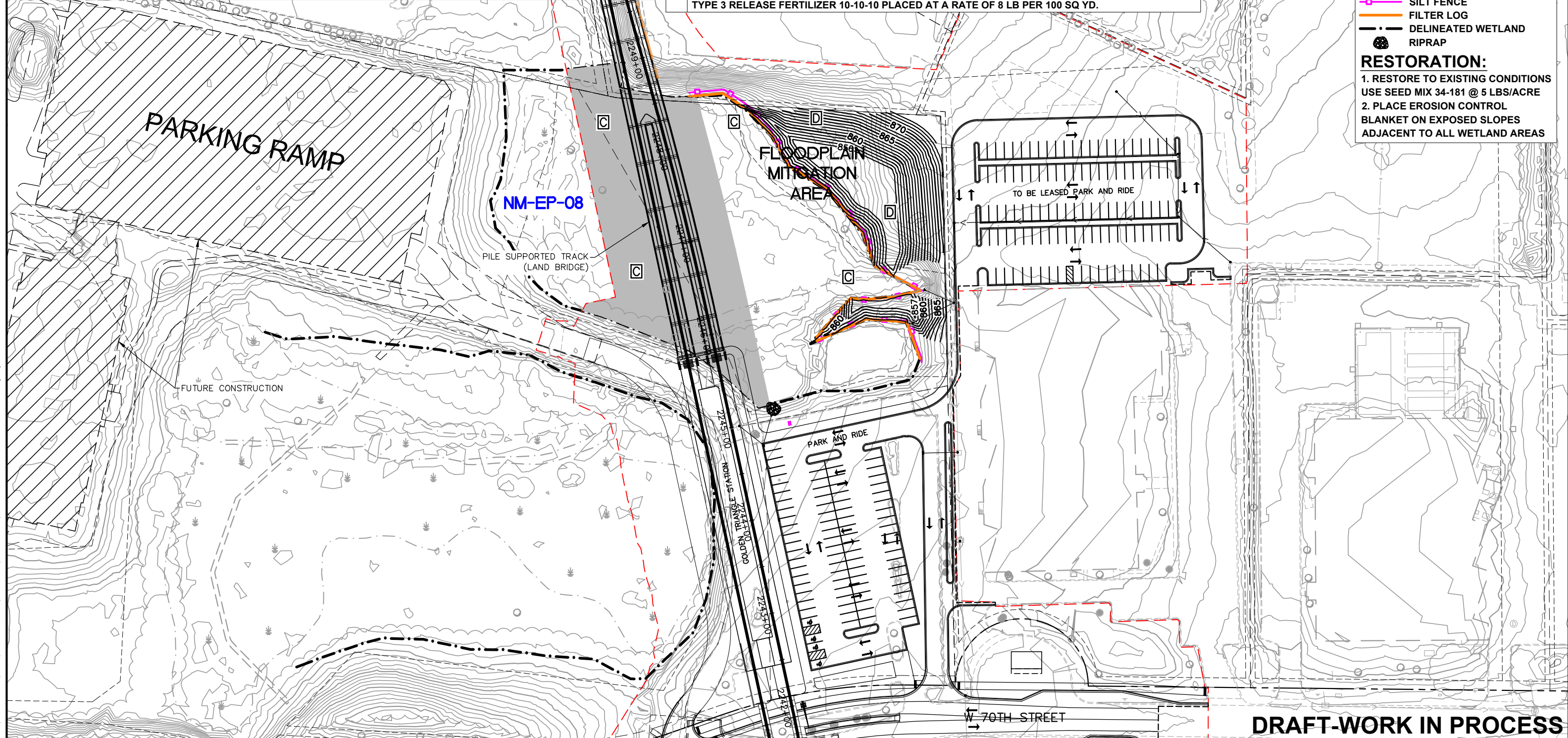
WETLAND IMPACTS:
 0 SF (PERMANENT)
 40,237 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

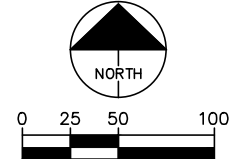
1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



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SOUTHWEST LIGHT RAIL
 WETLAND IMPACTS
 NM-EP-08
 SHEET 11 OF 27

REV: 3
 DATE: 03/10/2015
 ID #: 17



DRAFT-WORK IN PROCESS

NOTES:










1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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- | | |
|----------|---|
| A | RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING. |
| B | RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE. |
| C | RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE. |
| D | RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD. |

WETLAND IMPACTS:

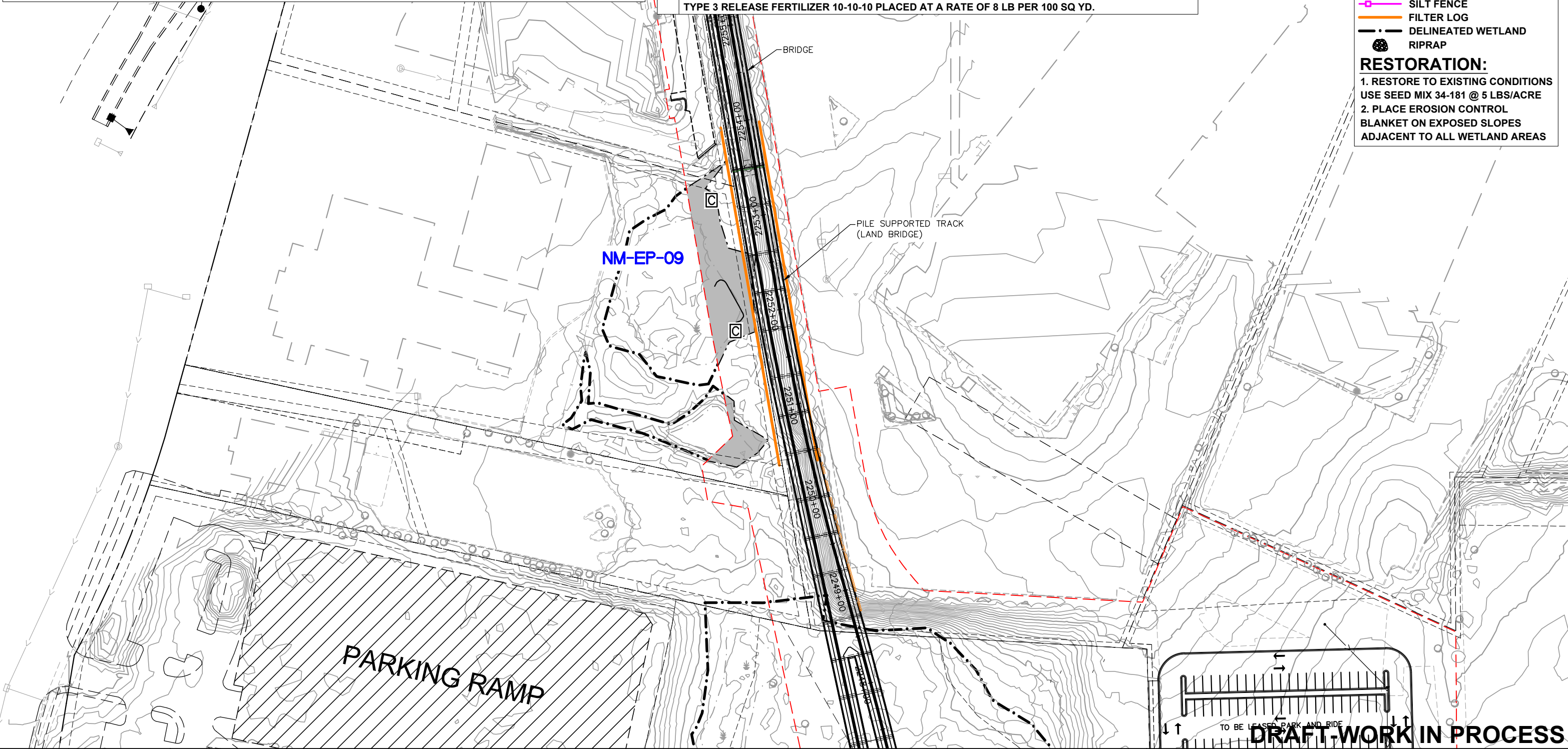
0 SF (PERMANENT)
8,339 SF (TEMPORARY)

LEGEND:

-  IMPACTS (PERMANENT)
-  IMPACTS (TEMPORARY)
-  CONSTRUCTION LIMITS
-  RETAINING WALL
-  FLOATING SILT FENCE
-  SILT FENCE
-  FILTER LOG
-  DELINEATED WETLAND
-  RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



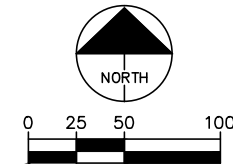
TO BE LEASED PARK AND RIDE

DRAFT WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
NM-EP-09
SHEET 12 OF 27

REV: 3
DATE : 03/10/2015
ID #: 18



Jul, 30 2015 04:54 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech



NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

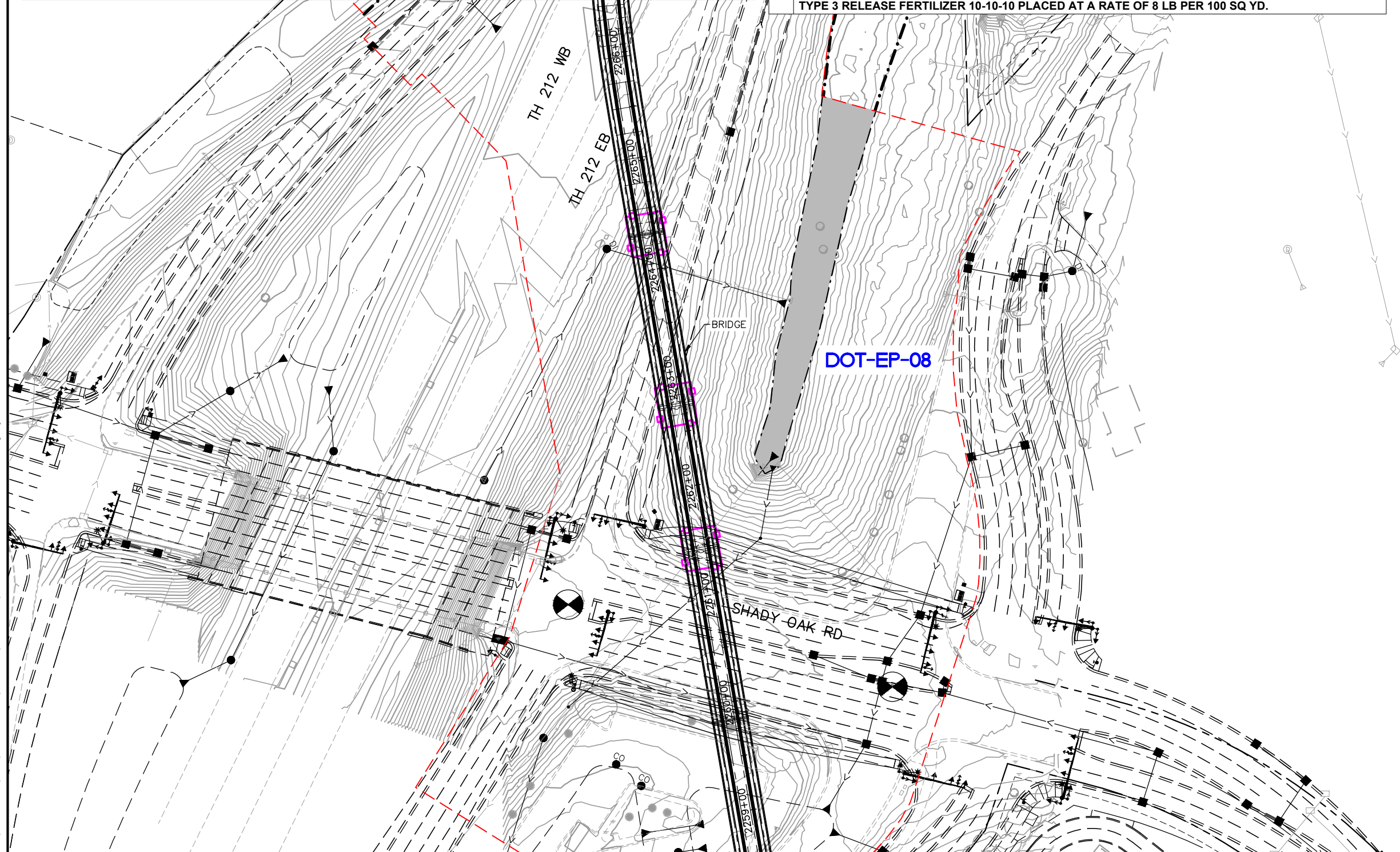
WETLAND IMPACTS:
 0 SF (PERMANENT)
 11,219 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

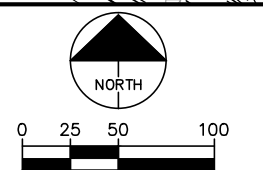


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACTS
 DOT-EP-08
 SHEET 13 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 19



Jul 30 2015 04:54 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:

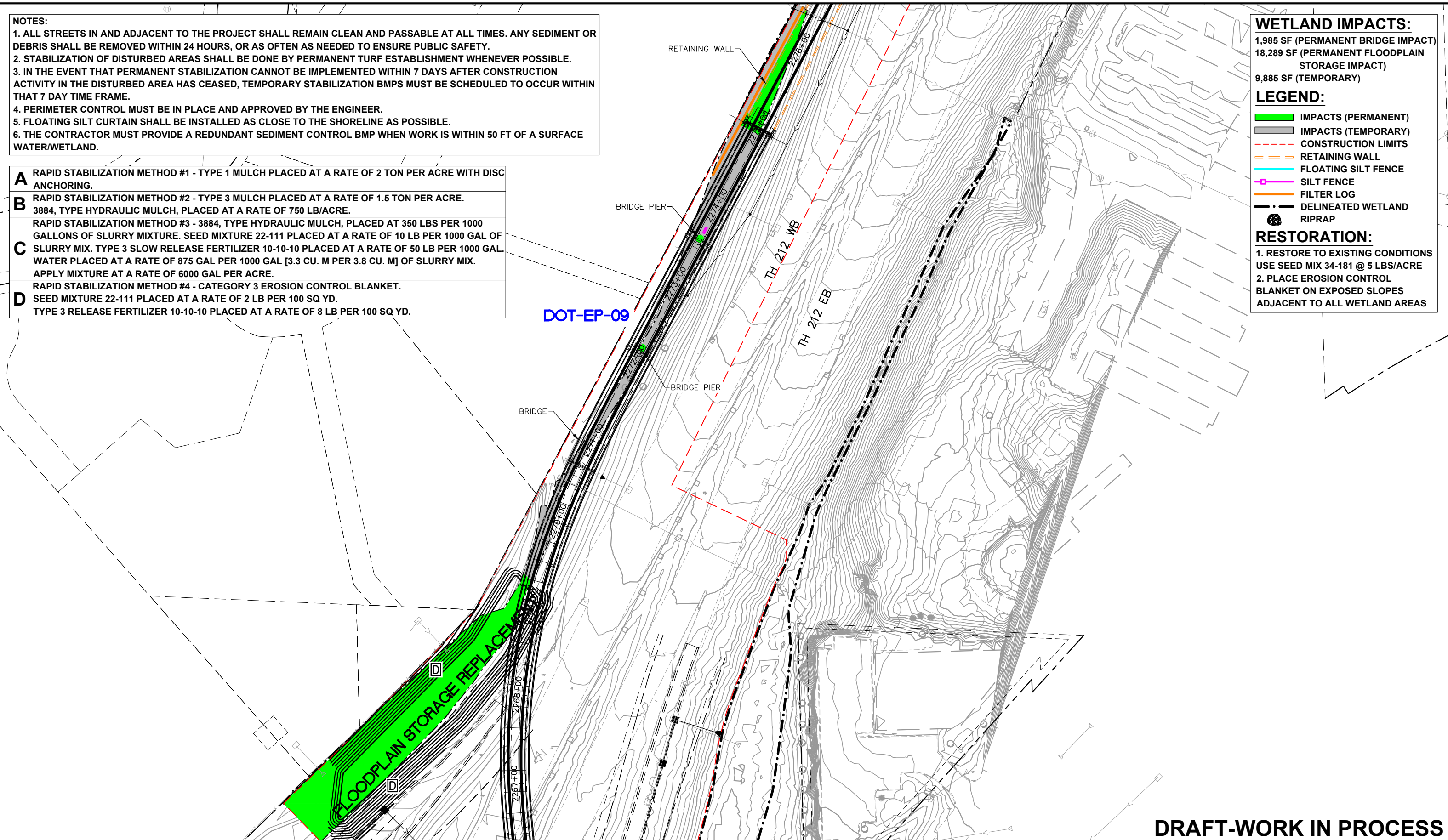
1,985 SF (PERMANENT BRIDGE IMPACT)
 18,289 SF (PERMANENT FLOODPLAIN STORAGE IMPACT)
 9,885 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



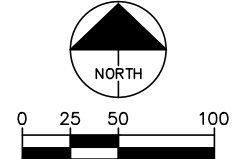
DRAFT-WORK IN PROCESS

Jul, 30 2015 04:55 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech



SOUTHWEST LIGHT RAIL
 WETLAND IMPACTS
 DOT-EP-09
 SHEET 14 OF 27

REV: 3
 DATE: 03/10/2015
 ID #: 20



NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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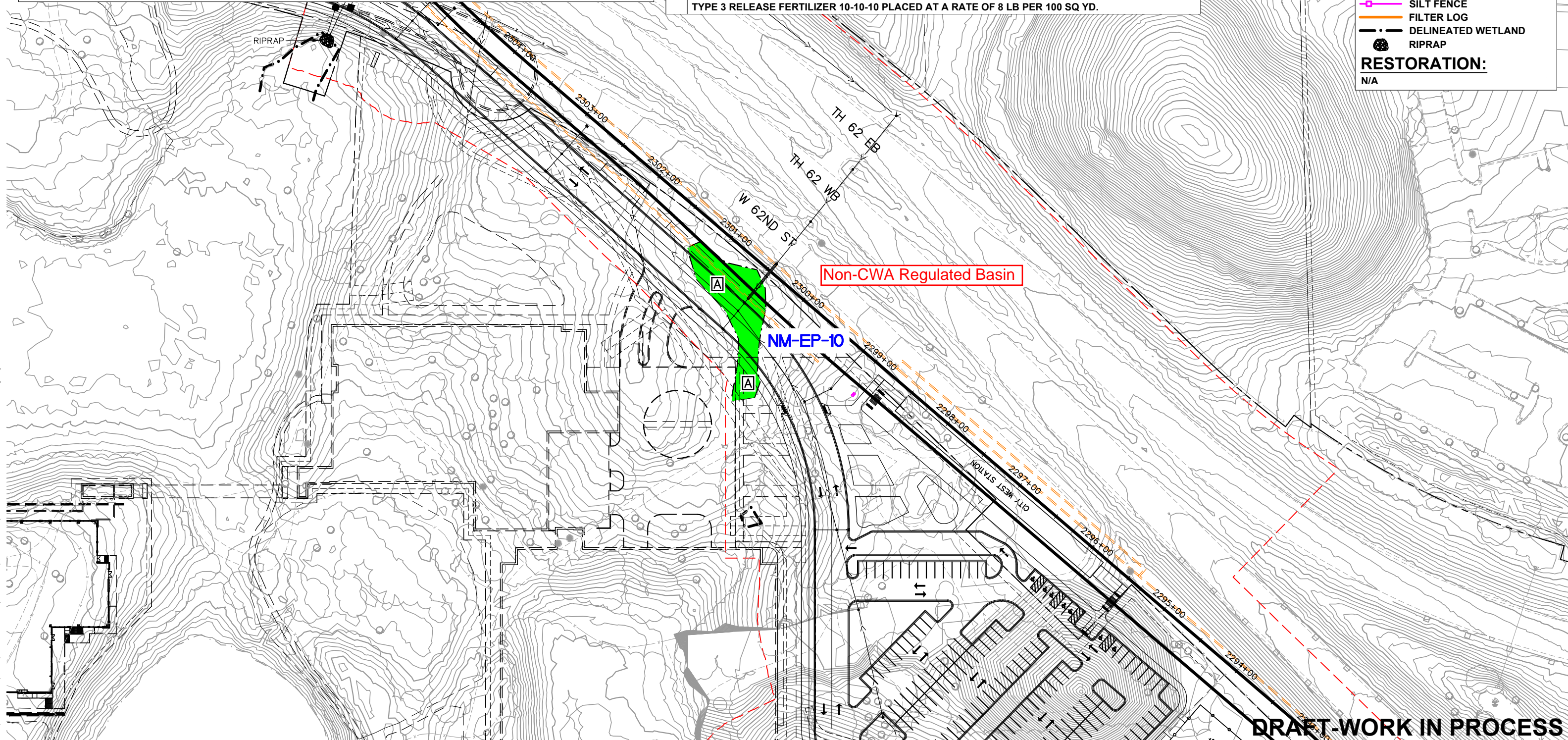
- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
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WETLAND IMPACTS:
 5,603 SF (PERMANENT)
 0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:
 N/A



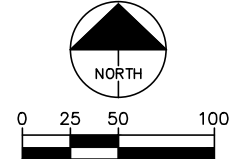
DRAFT WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
 NM-EP-10
 SHEET 15 OF 27

Non-CWA Regulated Basin

REV: 3
 DATE: 03/10/2015
 ID #: 21



Jul. 30 2015 04:55 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

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- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
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- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

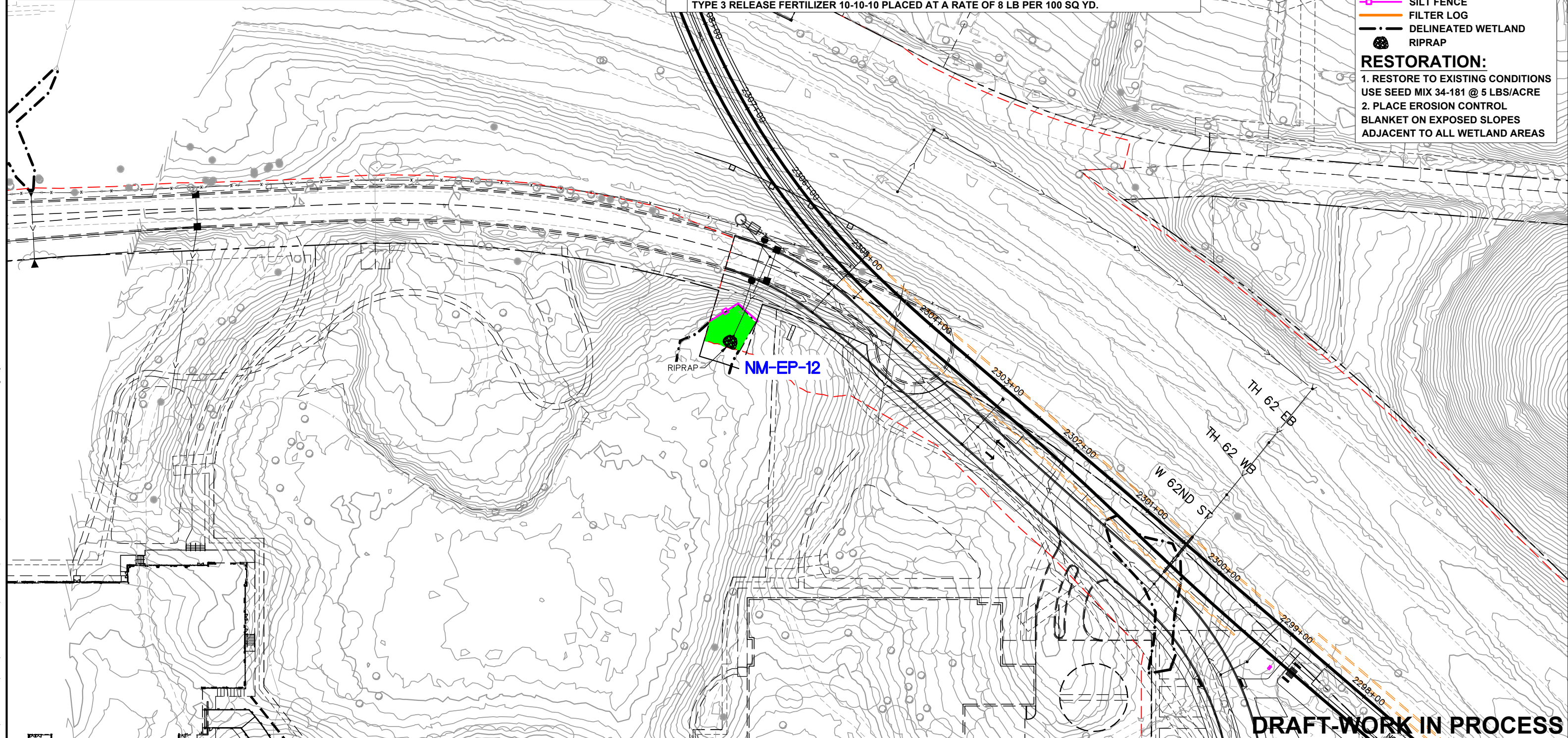
WETLAND IMPACTS:
 1,879 SF (PERMANENT)
 0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



DRAFT-WORK IN PROCESS

Jul, 31, 2015 01:09 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobielech

NOTES:

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- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:

MTA-MTA-03:
644 SF (PERMANENT)
0 SF (TEMPORARY)

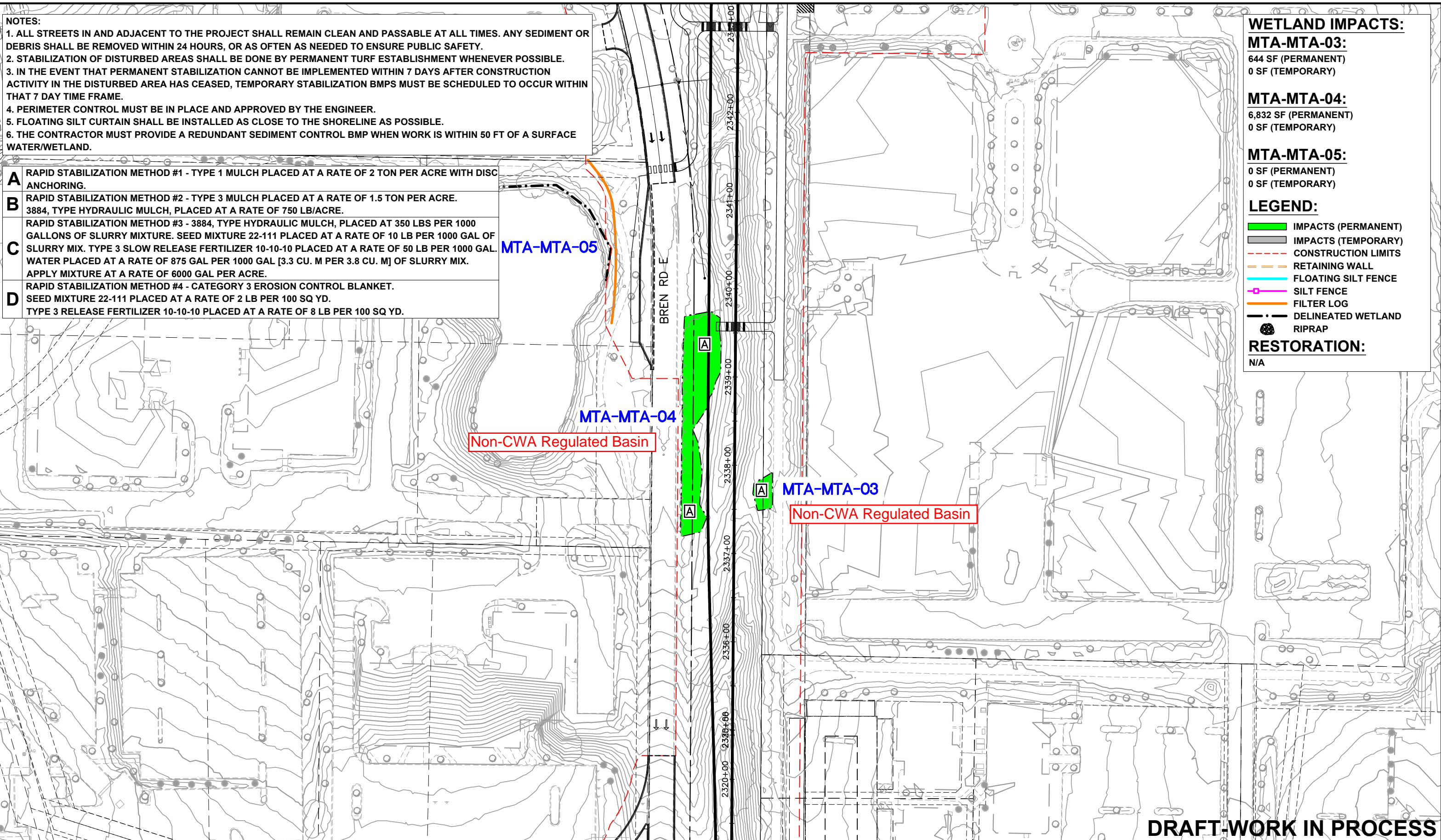
MTA-MTA-04:
6,832 SF (PERMANENT)
0 SF (TEMPORARY)

MTA-MTA-05:
0 SF (PERMANENT)
0 SF (TEMPORARY)

LEGEND:

- █ IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:
N/A

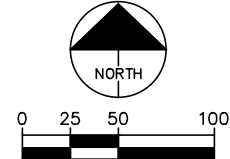


SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
MTA-MTA-03 AND MTA-MTA-04
SHEET 17 OF 27

Non-CWA Regulated Basins

REV: 3
DATE : 03/10/2015
ID #: 23



Jul, 31, 2015 12:53 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPs MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

WETLAND IMPACTS:

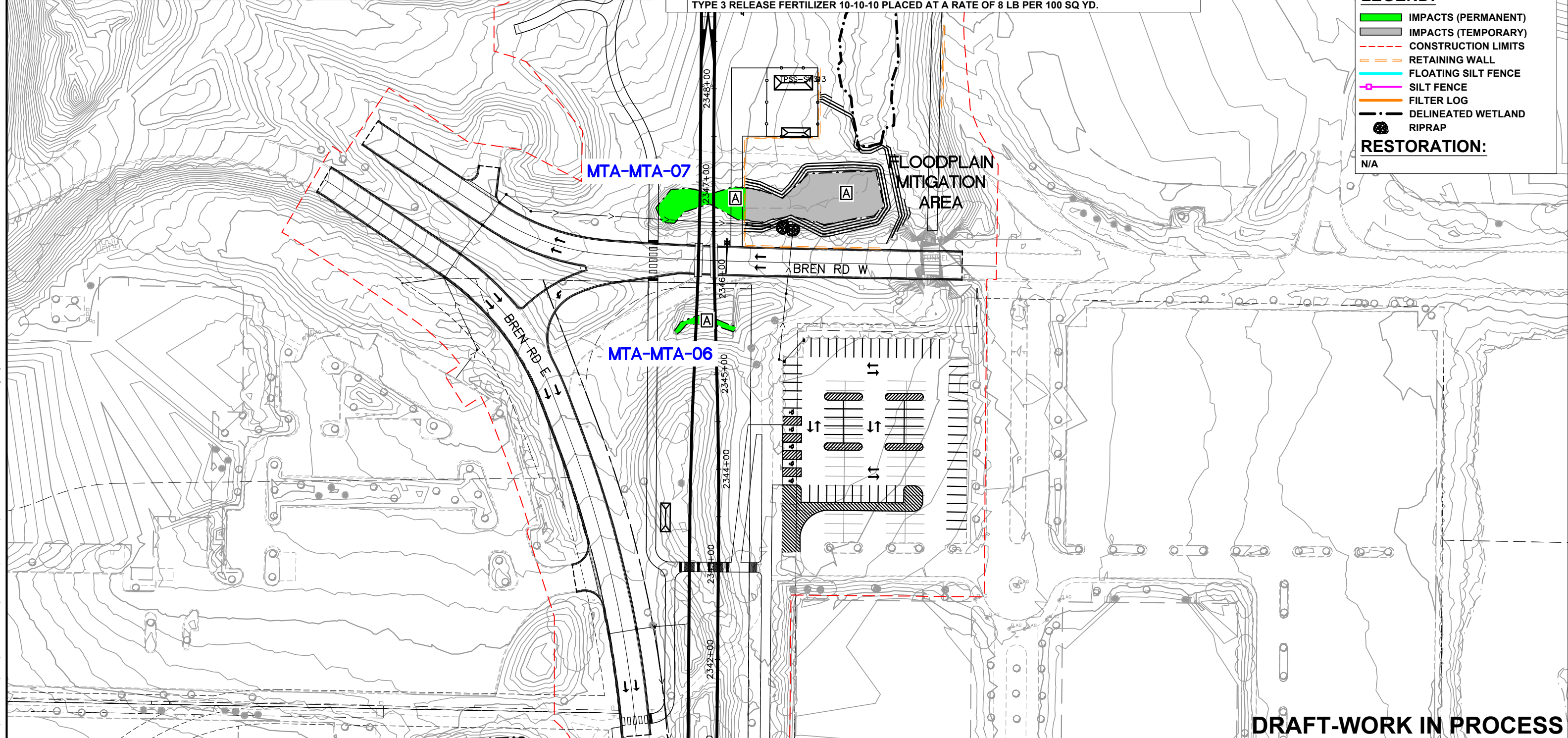
MTA-MTA-06:
343 SF (PERMANENT)
0 SF (TEMPORARY)

MTA-MTA-07:
2,086 SF (PERMANENT)
5,595 SF (TEMPORARY)

LEGEND:

- █ IMPACTS (PERMANENT)
- █ IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:
N/A

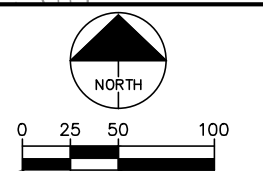


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
WETLAND IMPACTS
MTA-MTA-06 AND MTA-MTA-07
SHEET 18 OF 27

REV: 3
DATE : 03/10/2015
ID #: 24



Jul, 30 2015 05:11 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: msobielec

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

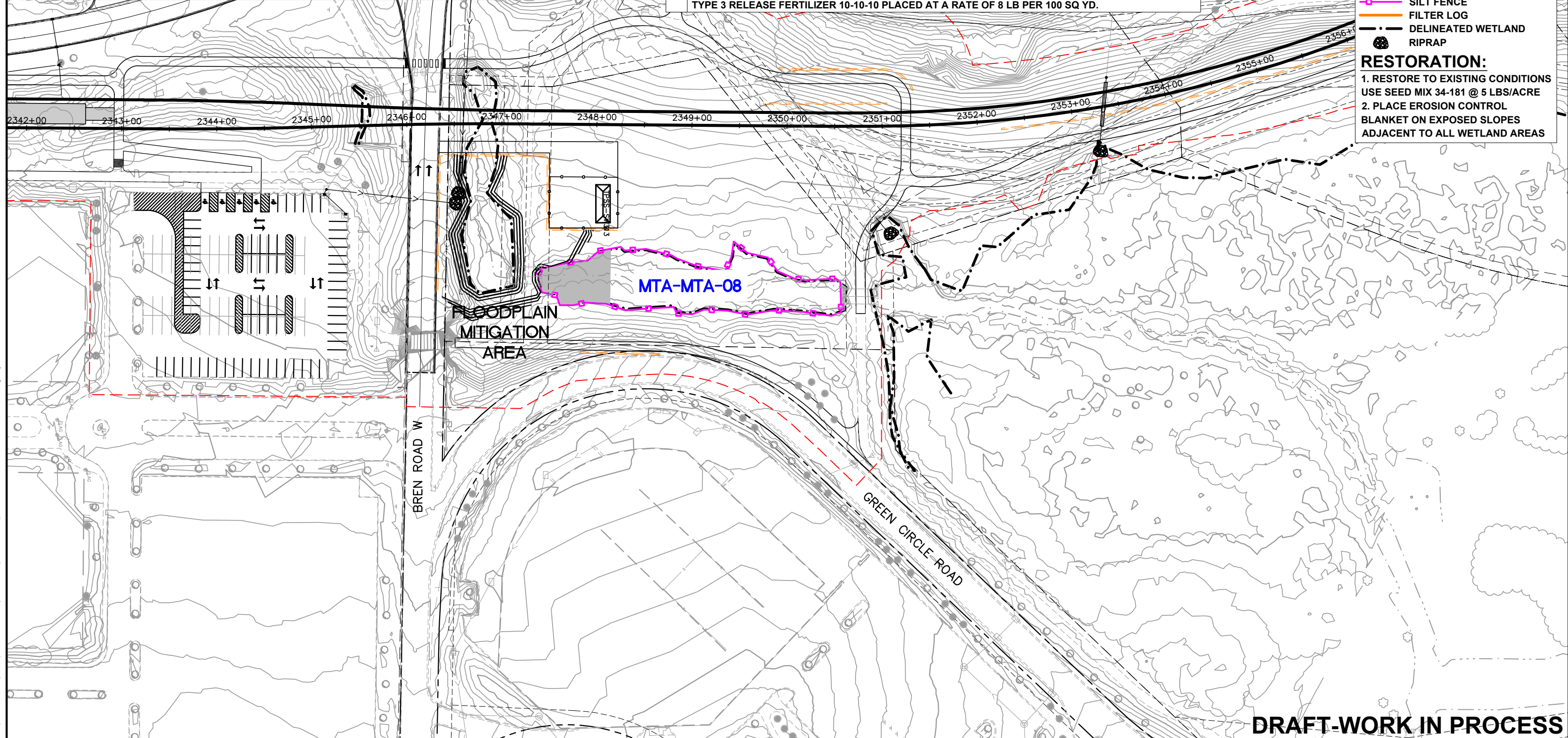
WETLAND IMPACTS:
 0 SF (PERMANENT)
 3145 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

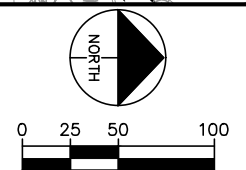


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACT
 MTA-MTA-08
 SHEET 19 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 25



Jul, 30 2015 05:14 pm V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

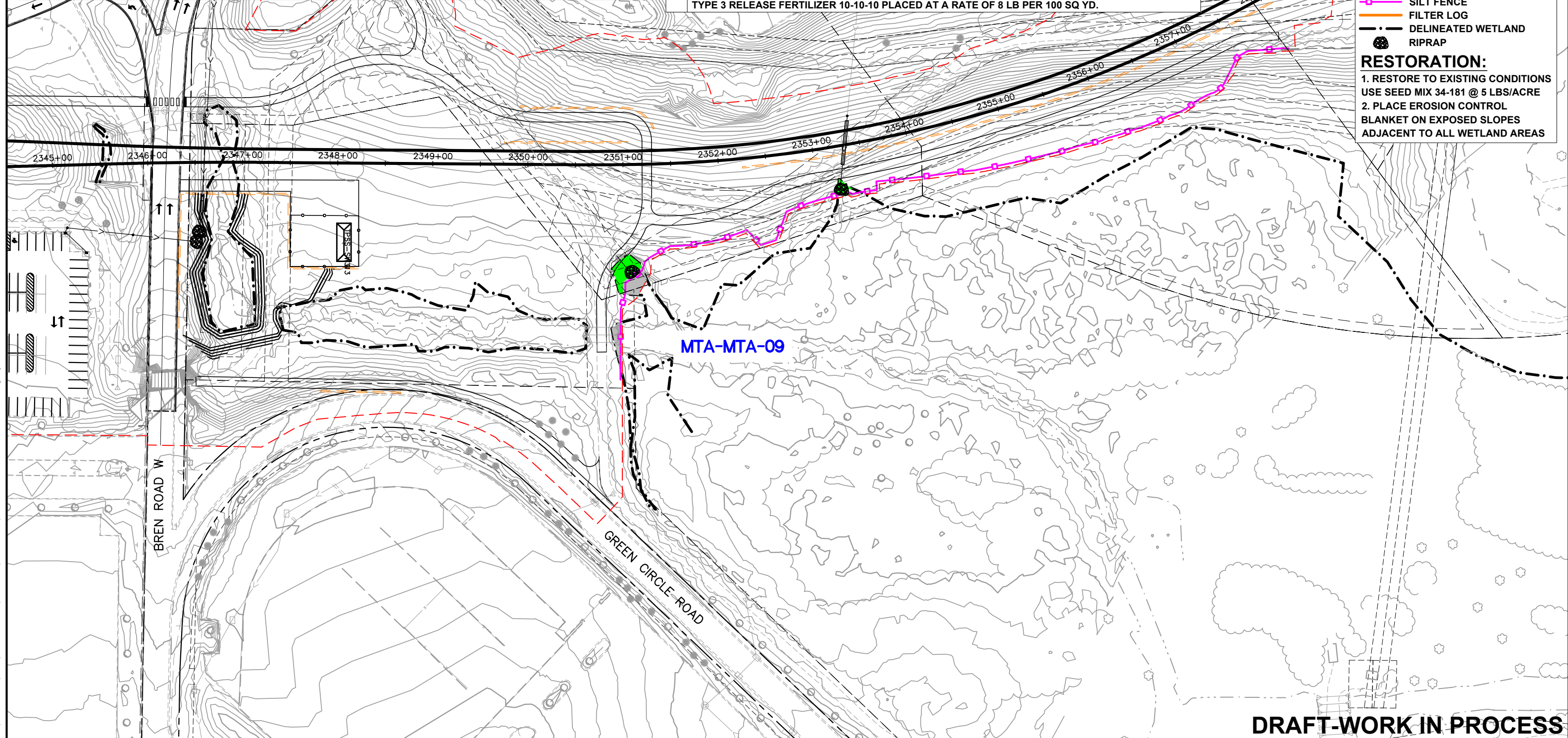
WETLAND IMPACTS:
 707 SF (PERMANENT)
 797 SF (TEMPORARY)

LEGEND:

- █ IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- - - CONSTRUCTION LIMITS
- - - RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- · - · - DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS

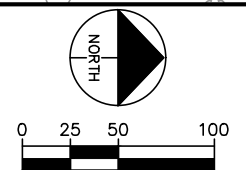


DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
 WETLAND IMPACT
 MTA-MTA-09
 SHEET 20 OF 27

REV: 3
 DATE : 03/10/2015
 ID #: 26



Jul, 31, 2015 09:18 am V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
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- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

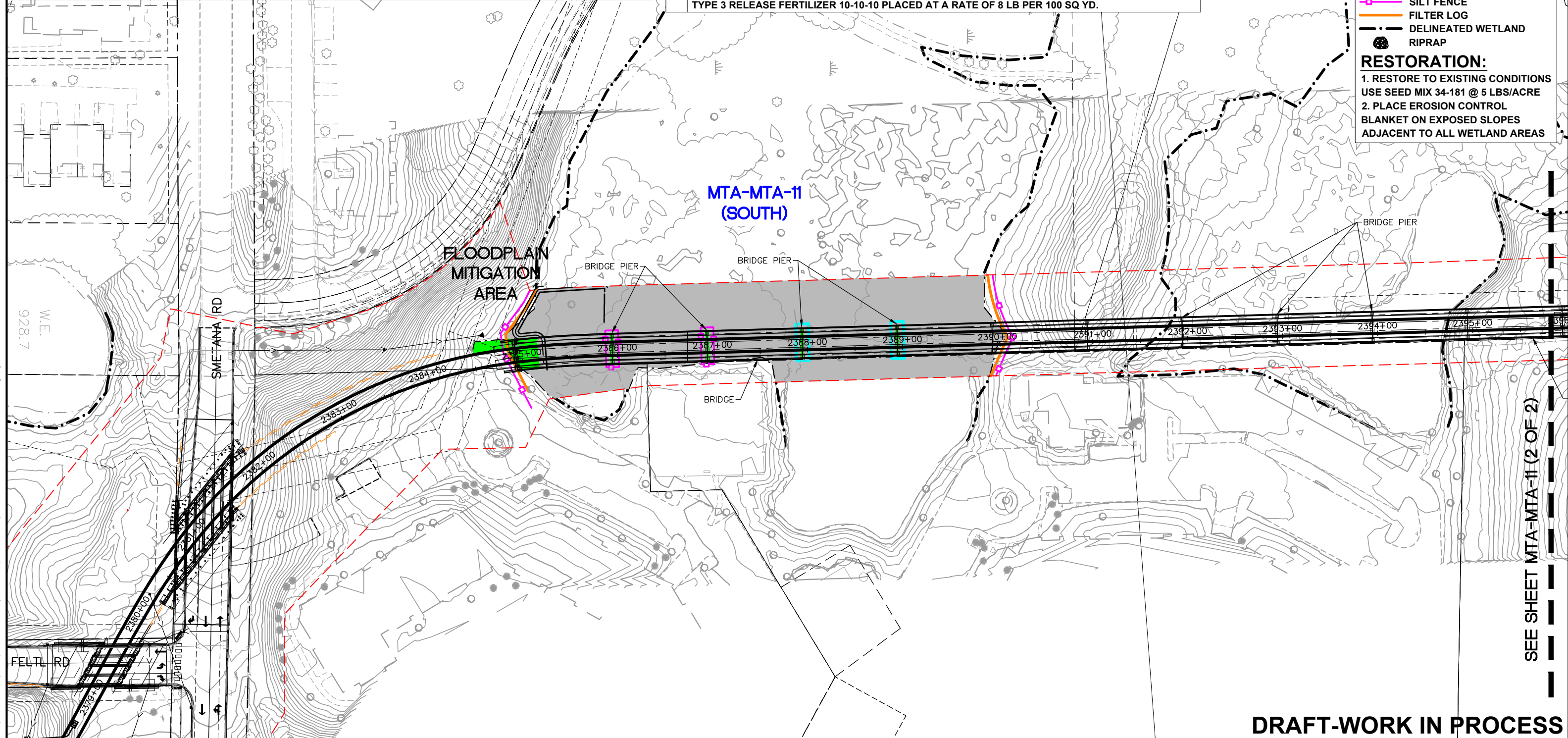
WETLAND IMPACTS:
 1,501 SF (PERMANENT)
 48,295 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



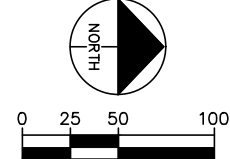
SEE SHEET MTA-MTA-11 (2 OF 2)

DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
 MTA-MTA-11 (1 OF 2)
 SHEET 21 OF 27

REV: 3
 DATE: 03/10/2015
 ID #: 27



Jul, 30 2015 04:59 pm V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msobiech

NOTES:

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6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

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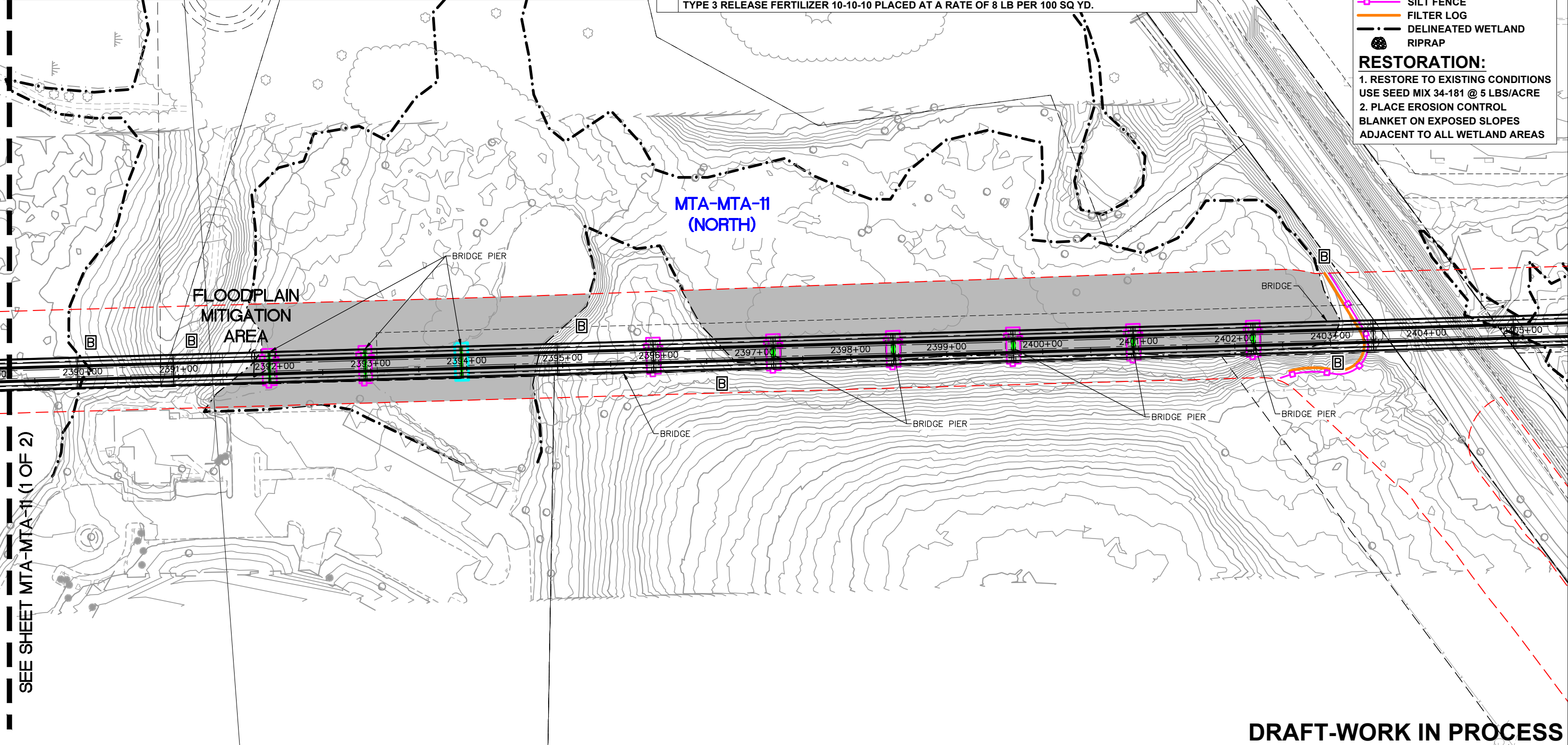
WETLAND IMPACTS:
 363 SF (PERMANENT)
 86,001 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS



Jul 30 2015 04:59 pm V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msoblech
 SEE SHEET MTA-MTA-11 (1 OF 2)

DRAFT-WORK IN PROCESS

WETLAND IMPACTS:

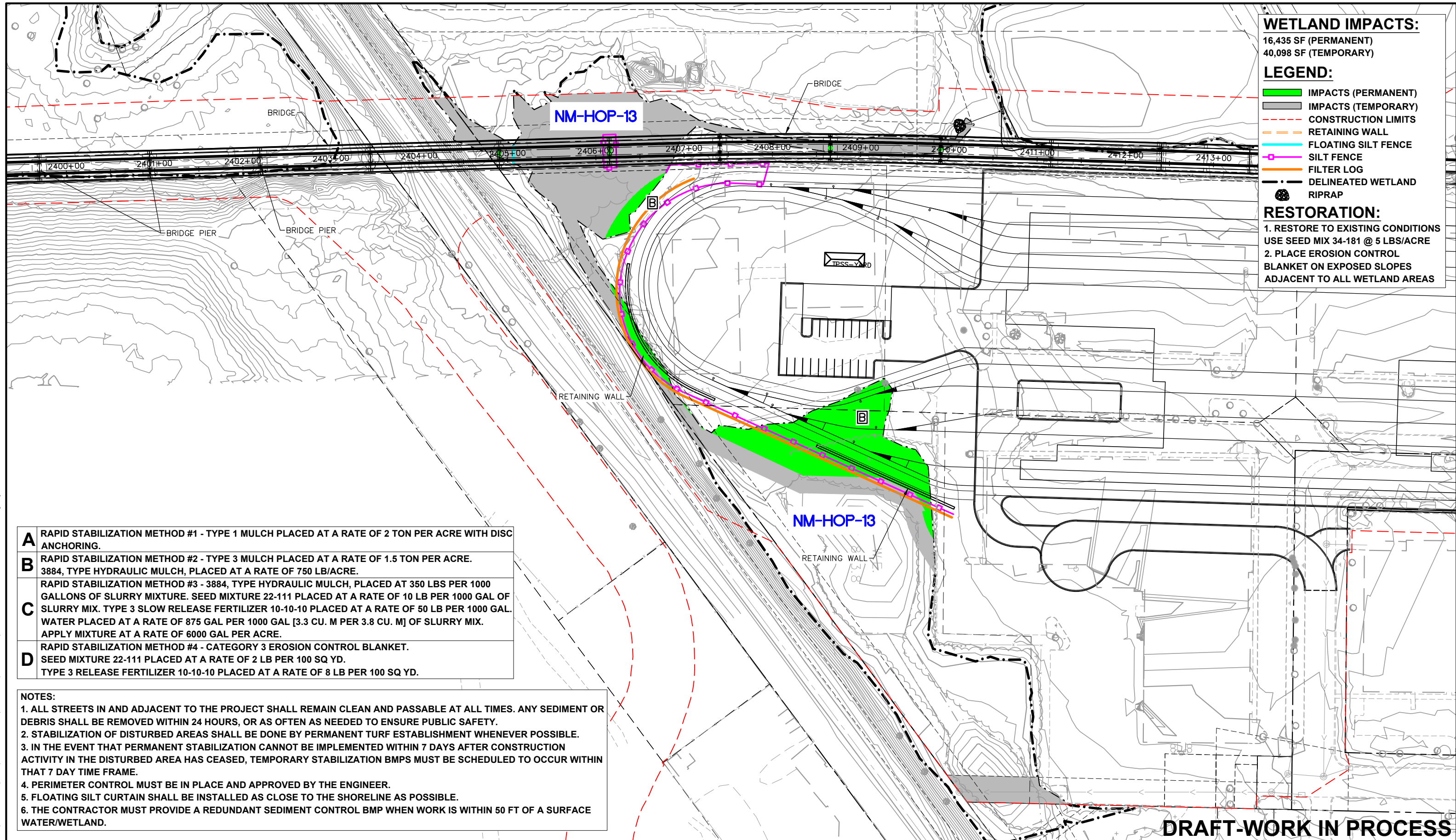
16,435 SF (PERMANENT)
40,098 SF (TEMPORARY)

LEGEND:

- █ IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL
BLANKET ON EXPOSED SLOPES
ADJACENT TO ALL WETLAND AREAS



- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
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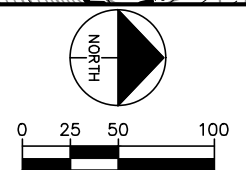
- NOTES:**
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 6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
WETLAND IMPACT
NM-HOP-13
SHEET 23 OF 27

REV: 3
DATE : 03/10/2015
ID #: 30



Jul, 30 2015 05:00 pm V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msobiech

WETLAND IMPACTS:

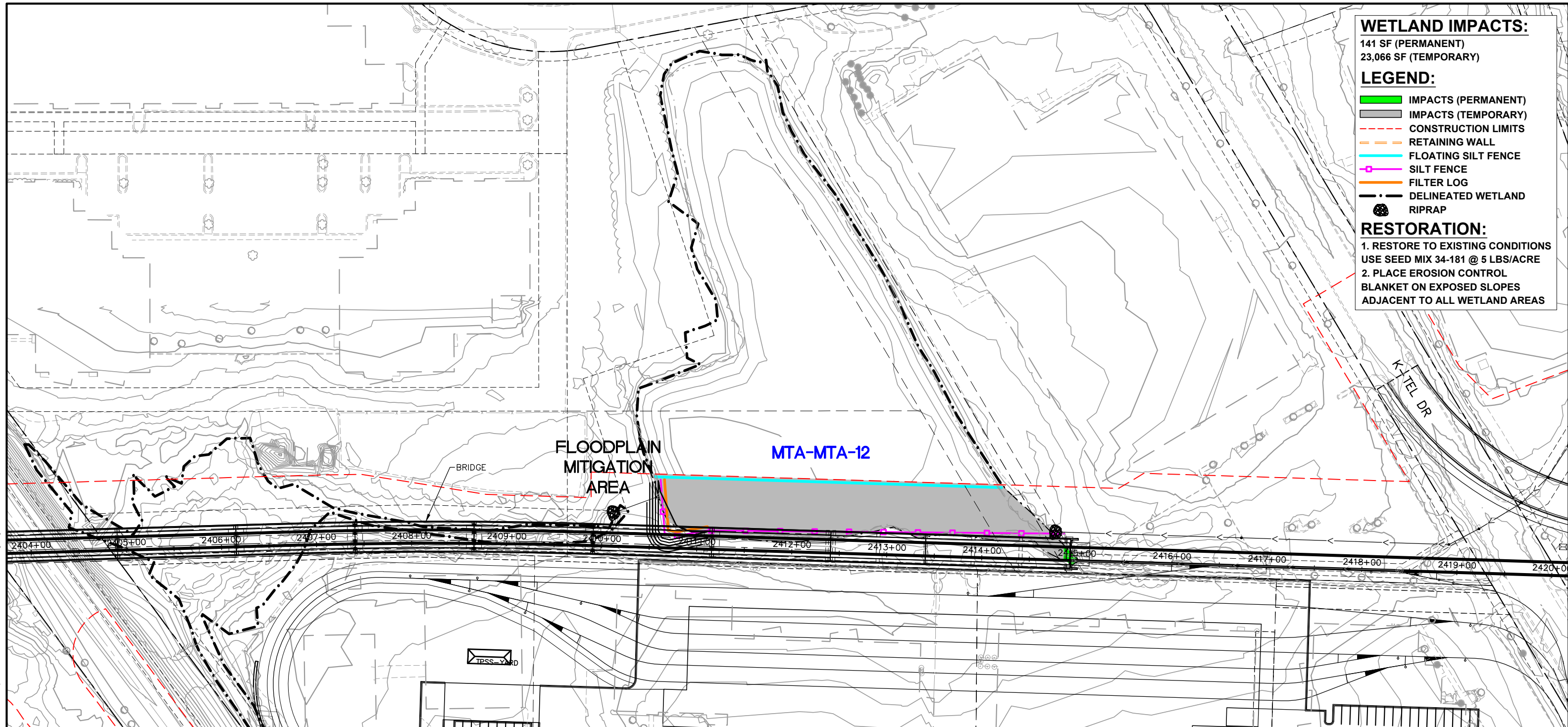
141 SF (PERMANENT)
23,066 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS
USE SEED MIX 34-181 @ 5 LBS/ACRE
2. PLACE EROSION CONTROL
BLANKET ON EXPOSED SLOPES
ADJACENT TO ALL WETLAND AREAS



NOTES:

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6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

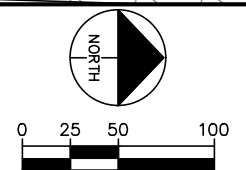
- A** RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
- B** RAPID STABILIZATION METHOD #2 - TYPE 3 MULCH PLACED AT A RATE OF 1.5 TON PER ACRE. 3884, TYPE HYDRAULIC MULCH, PLACED AT A RATE OF 750 LB/ACRE.
- C** RAPID STABILIZATION METHOD #3 - 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
- D** RAPID STABILIZATION METHOD #4 - CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ YD. TYPE 3 RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.

DRAFT-WORK IN PROCESS



SOUTHWEST LIGHT RAIL
WETLAND IMPACT
MTA-MTA-12
SHEET 24 OF 27

REV: 3
DATE : 03/10/2015
ID #: 29



Jul, 30 2015 05:00 pm V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msobiech

NOTES:

1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPs MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

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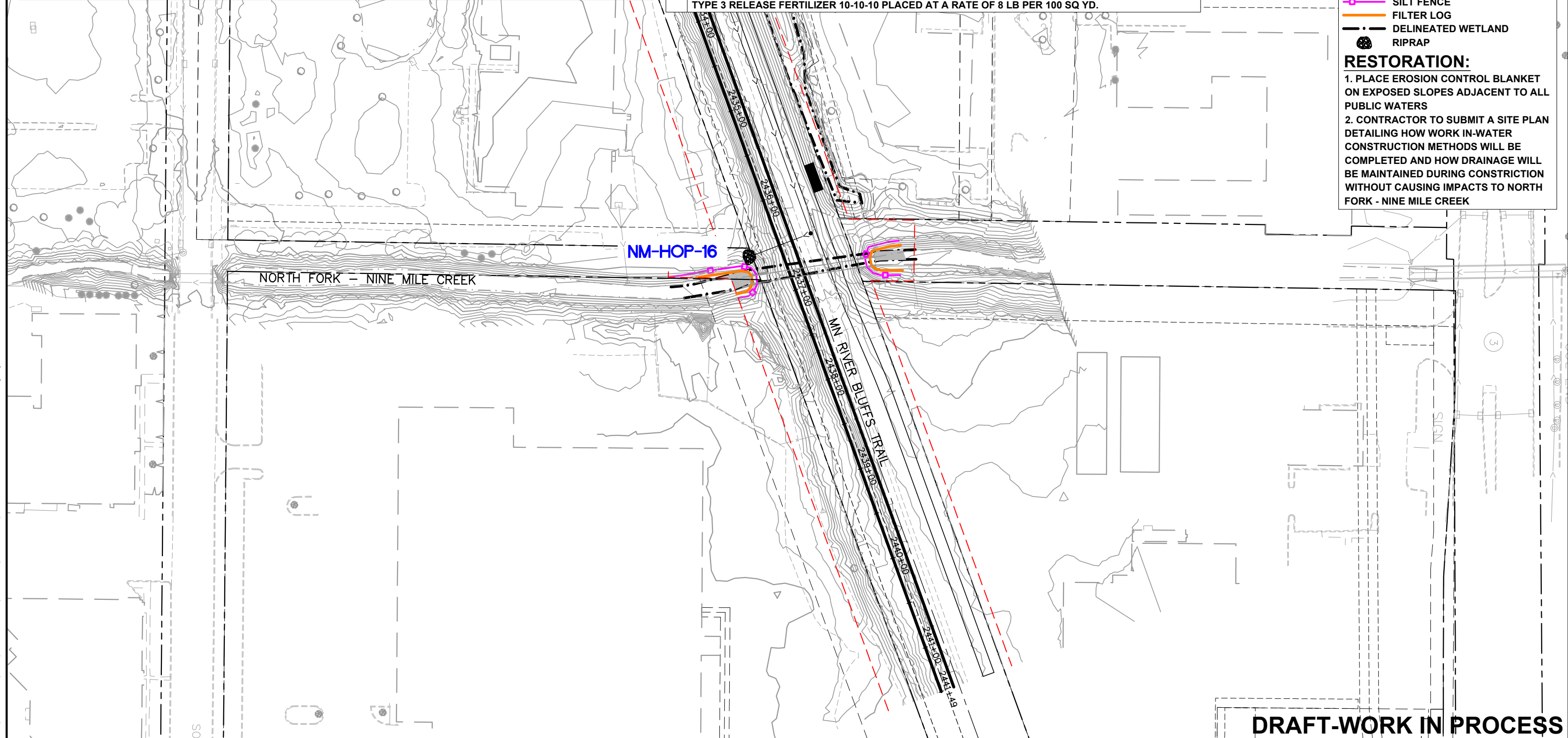
PUBLIC WATER IMPACTS:
 0 SF (PERMANENT)
 594 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- DELINEATED WETLAND
- RIPRAP

RESTORATION:

1. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL PUBLIC WATERS
2. CONTRACTOR TO SUBMIT A SITE PLAN DETAILING HOW WORK IN-WATER CONSTRUCTION METHODS WILL BE COMPLETED AND HOW DRAINAGE WILL BE MAINTAINED DURING CONSTRUCTION WITHOUT CAUSING IMPACTS TO NORTH FORK - NINE MILE CREEK



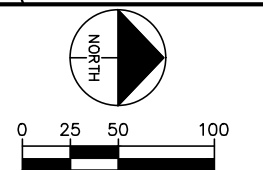
DRAFT-WORK IN PROCESS

Jul, 30 2015 05:00 pm V:\3400_ADC\CAD\SEGMENT W3\EXHIBITS\WETLANDS\EXHIBIT-03-WETLAND IMPACTS.dwg By: msobiech








SOUTHWEST LIGHT RAIL
 WETLAND IMPACT
 NM-HOP-16
 SHEET 25 OF 27

REV: 3
 DATE :03/10/2015
 ID #: 33

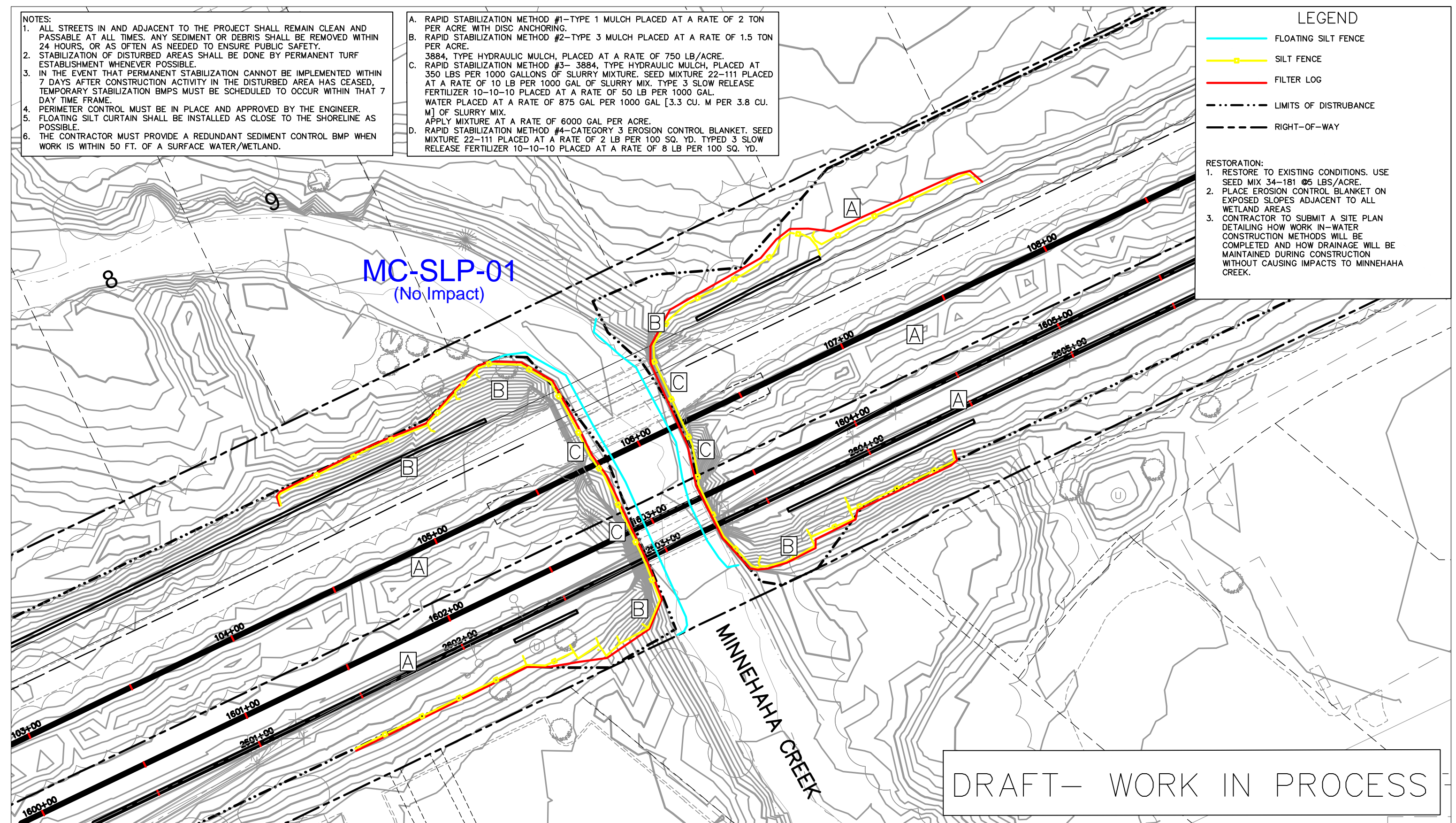


- NOTES:
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- D. RAPID STABILIZATION METHOD #4-CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ. YD. TYPED 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ. YD.

- LEGEND
-  FLOATING SILT FENCE
 -  SILT FENCE
 -  FILTER LOG
 -  LIMITS OF DISTURBANCE
 -  RIGHT-OF-WAY
- RESTORATION:
1. RESTORE TO EXISTING CONDITIONS. USE SEED MIX 34-181 @5 LBS/ACRE.
 2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS
 3. CONTRACTOR TO SUBMIT A SITE PLAN DETAILING HOW WORK IN-WATER CONSTRUCTION METHODS WILL BE COMPLETED AND HOW DRAINAGE WILL BE MAINTAINED DURING CONSTRUCTION WITHOUT CAUSING IMPACTS TO MINNEHAHA CREEK.

MC-SLP-01
(No Impact)



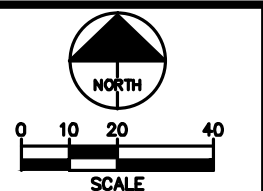
DRAFT- WORK IN PROCESS

May, 04 2015 10:59 am V:\3400_ADC\COMPANY\SAMBATEK\EXHIBITS\E2-CIV-ES PLAN Minnehaha.dwg By: 606



SOUTHWEST LIGHT RAIL
EROSION AND SEDIMENT CONTROL EXHIBIT
MINNEHAHA CREEK CROSSING
SHEET 26 OF 27

REV:0
DATE:5/4/2015



- NOTES:
1. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
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- C. RAPID STABILIZATION METHOD #3- 3884, TYPE HYDRAULIC MULCH, PLACED AT 350 LBS PER 1000 GALLONS OF SLURRY MIXTURE. SEED MIXTURE 22-111 PLACED AT A RATE OF 10 LB PER 1000 GAL OF SLURRY MIX. TYPE 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 50 LB PER 1000 GAL. WATER PLACED AT A RATE OF 875 GAL PER 1000 GAL [3.3 CU. M PER 3.8 CU. M] OF SLURRY MIX.
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- D. RAPID STABILIZATION METHOD #4-CATEGORY 3 EROSION CONTROL BLANKET. SEED MIXTURE 22-111 PLACED AT A RATE OF 2 LB PER 100 SQ. YD. TYPED 3 SLOW RELEASE FERTILIZER 10-10-10 PLACED AT A RATE OF 8 LB PER 100 SQ. YD.

WETLAND IMPACTS:

117 SF (PERMANENT)
4,572 SF (TEMPORARY)

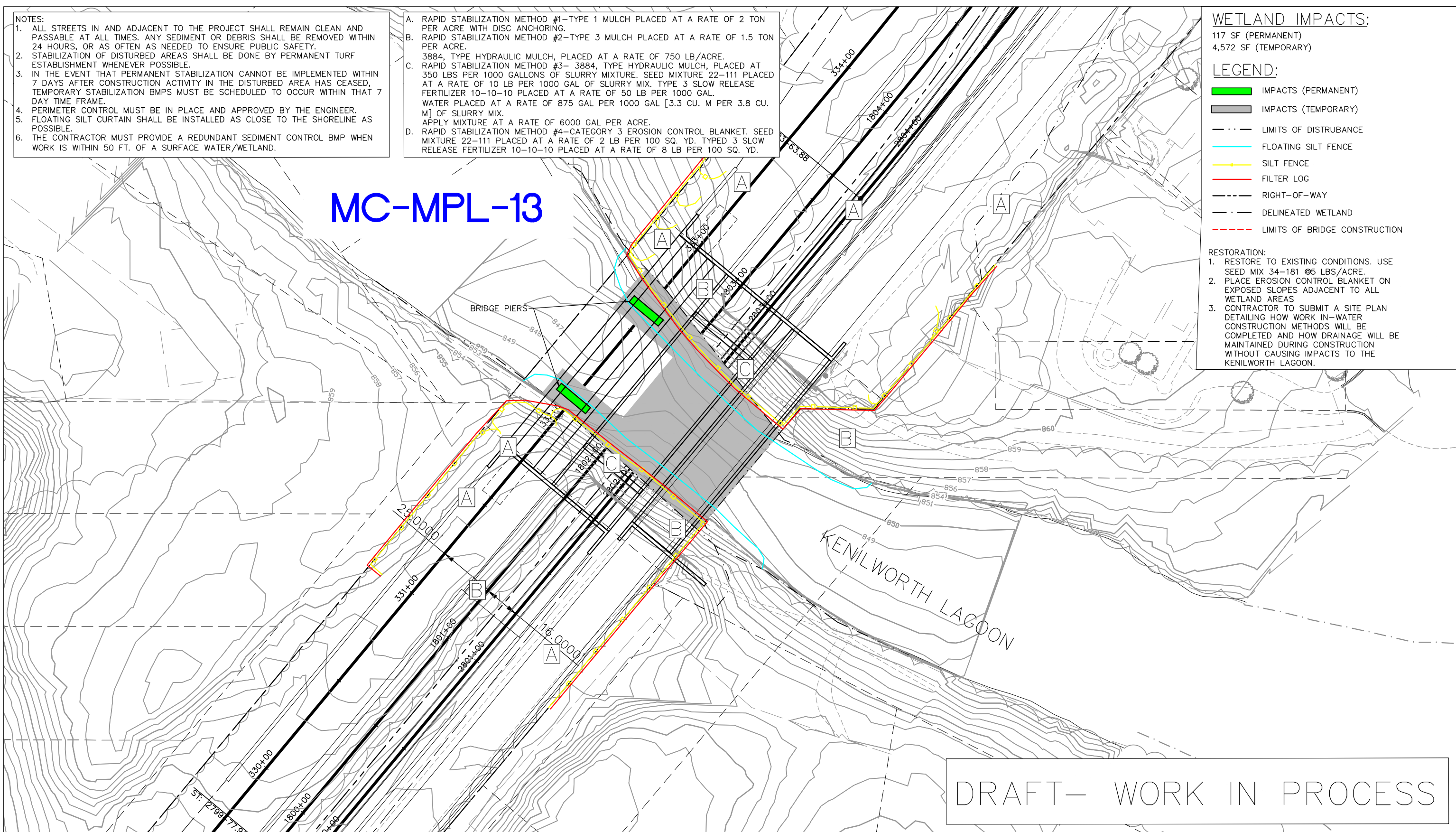
LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- LIMITS OF DISTURBANCE
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- RIGHT-OF-WAY
- DELINEATED WETLAND
- LIMITS OF BRIDGE CONSTRUCTION

RESTORATION:

1. RESTORE TO EXISTING CONDITIONS. USE SEED MIX 34-181 @5 LBS/ACRE.
2. PLACE EROSION CONTROL BLANKET ON EXPOSED SLOPES ADJACENT TO ALL WETLAND AREAS
3. CONTRACTOR TO SUBMIT A SITE PLAN DETAILING HOW WORK IN-WATER CONSTRUCTION METHODS WILL BE COMPLETED AND HOW DRAINAGE WILL BE MAINTAINED DURING CONSTRUCTION WITHOUT CAUSING IMPACTS TO THE KENILWORTH LAGOON.

MC-MPL-13



DRAFT- WORK IN PROCESS

Jun, 17 2015 06:35 pm C:\Users\fosmotl\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\WB11Z66P\E3-CIV-ES PLAN Kenilworth Crossing Rev 1.dwg By: Fosmotl



SOUTHWEST LIGHT RAIL
EROSION AND SEDIMENT CONTROL EXHIBIT
MC-MPL-13
SHEET 27 OF 27

REV:1
DATE:6/17/2015

