Minnesota Interagency Water Resource Application

(Clean Water Act, Section 404)

Southwest LRT (METRO Green Line Extension)—

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

CH2M HILL, Inc.—Project No. 474576

November 2015

Contents

APPENDICES

1 PART ONE: Applicant Information

Project

Southwest Light Rail Transit (LRT) - METRO Green Line Extension

Applicant/Landowner

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2 PART TWO: Site Location Information

County

Hennepin

Cities

Eden Prairie
Minnetonka
Hopkins
St. Louis Park
Minneapolis

Local Government Units (LGUs)

Minnesota Department of Transportation (MnDOT)
City of Eden Prairie
Nine Mile Creek Watershed District (NMCWD)
City of Minnetonka
Minnehaha Creek Watershed District (MCWD)
City of Minneapolis

Note: This application is specific to aquatic resources that are regulated by the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). A separate application will be provided to each applicable LGU in early 2016 for the aquatic resources that are regulated under the Minnesota Wetland Conservation Act (WCA).

Parcel ID and/or Address

The light rail alignment corridor spans numerous Parcel IDs and addresses, extending from the existing SouthWest Transit bus station in Eden Prairie, continuing in a northeasterly direction through Minnetonka, Hopkins, St. Louis Park, to the existing Target Field station in Minneapolis. (See attached MapBook Index, Appendix A)

Legal Description (Entire Corridor)

T116N R22W (Sections: 1, 10, 11, 12, 14, 15)
T117N R22W (Sections: 23, 24, 25, 26, 36)
T117N R21W (Sections: 16, 17, 19, 20, 21)
T28N R24W (Sections: 5, 6)
T29N R24W (Sections: 16, 21, 22, 28, 29, 32)

Lat/Long (Decimal Degrees)

West End: 44.859334, 93.446089
Center Point: 44.935207, 93.364829
East End: 44.981709, 93.277338

Approximate Size

Linear: 14.5 miles (76,560 ft)

Adjacent Property Owners

Appendix B contains a comprehensive list of the owners/properties that are directly adjacent to the delineated boundaries of the aquatic resources impacted by the project, as well as an associated MapBook that depicts each impact and applicable Hennepin County Parcel ID. The list was generated utilizing input from the Southwest Project Office Outreach Team and the Parcel Base and Multiple Parcel Base GIS shapefiles that are publically available through the Hennepin County GIS Open Data website (http://www.hennepin.us/gisopendata). The documentation CD included with this application contains a digital copy of this list in the Excel format requested by the USACE (including addresses), as well as a geodatabase that contains GIS shapefiles of the project's proposed impacts and associated Parcel IDs.

Evidence of Ownership/Requisite Property Rights

The applicant will acquire permanent right-of-way and temporary construction easements as needed prior to construction of the project.

Additional Known Permits/Approvals Required for Project

Table 2-1 contains a summary of the additional known permits, approvals, and reviews that will be required for the Southwest LRT Project. This information will also be included in Chapter 9 of the Southwest LRT Project's Final Environmental Impact Statement.

TABLE 2-1
Summary of Total CWA Impacts by Wetland Type

Government Agency	Type and/or Name of Document	Permit	Approval	Other
Federal				
Federal Transit Administration	Environmental Impact Statement		•	
	Section 4(f)		•	
	Section 106 of the National Historic Preservation Act – Agreement		•	
	Record of Decision		•	
U.S. Army Corps of Engineers	Environmental Impact Statement		•	
	Section 404 Wetlands Permit	•		
	Section 106 of the National Historic Preservation Act – Agreement		•	
U.S. Fish and Wildlife Services	Section 7 of the Threatened and Endangered Species Act			•
Federal Highway Administration	Design Review			•
Advisory Council on Historic Preservation	Section 106 of the National Historic Preservation Act – Agreement		•	
Department of the Interior	Section 4(f)			•
State				
MN Department of Health	Permits to Cap and Abandon Wells	•		
Minnesota Department of Transportation	Permit to Construct on MnDOT Right of Way	•		
	Wetland Conservation Act Wetland Replacement Plan		•	
MN Department of Natural Resources	Work in Protected Waters Permit	•		

Government Agency	Type and/or Name of Document	Permit	Approval	Other
MN Department of Natural Resources	Natural Heritage Information System Review for Rare Features			•
MN Pollution Control Agency	National Pollutant Discharge Elimination System Permit	•		
MN Pollution Control Agency	Section 401 Water Quality Certification		•	
	Response Action Plan		•	
	Air Quality Permit	•		
	Application for Voluntary Brownfield Program Participation (addresses non-petroleum and petroleum contamination)		•	
State Board of Electricity, MN Department of Labor and Industry	Electrical Permits	•		
State Historic Preservation Office (MnSHPO)	Section 106 of the National Historic Preservation Act – Agreement		•	
	Design Review			•
Local and Regional				
Metropolitan Council	Environmental Impact Statement (EIS)		•	
	Section 106 of the National Historic Preservation Act – Agreement		•	
	EIS Adequacy Determination (state process)		•	
City of Minneapolis	Right of Way Permit	•		
	Utility Permits (water, sewer, electrical, storm)	•		
	Erosion and Sedimentation Control Plan		•	
	Section 106 of the National Historic Preservation Act – Agreement			•[a]
City of St. Louis Park	Utility Permits (water, sewer, electrical, storm)	•		
	Erosion and Sedimentation Control Plan		•	
	Section 106 of the National Historic Preservation Act - Agreement			•[a]
City of Hopkins	Utility Permits (water, sewer, electrical, storm)	•		
	Erosion and Sedimentation Control Plan		•	
	Section 106 of the National Historic Preservation Act - Agreement			•[a]
City of Minnetonka	Utility Permits (water, sewer, electrical, storm)	•		
	Erosion and Sedimentation Control Plan		•	
	Wetland Conservation Act Wetland Replacement Plan		•	
	Wetland/Floodplain Alteration Permit	•		
	Rezoning		•	
	Section 106 of the National Historic Preservation Act - Agreement			•[a]
City of Eden Prairie	Utility Permits (water, sewer, electrical, storm)	•		
	Wetland Conservation Act Wetland Replacement Plan		•	
	Eden Prairie Wetland Replacement Plan		•	
	Erosion and Sedimentation Control Plan		•	
	Section 106 of the National Historic Preservation Act - Agreement			•[a]

Government Agency	Type and/or Name of Document	Permit	Approval	Other
Minneapolis Park & Recreation Board	Construction Permit	•		
	Section 106 of the National Historic Preservation Act - Agreement			• [a]
Burlington Northern Santa Fe Railroad	Permit to Construct on Railroad Right of Way	•		
Canadian Pacific Railroad	Permit to Construct on Railroad Right of Way	•		
Nine Mile Creek Watershed District	Sediment and Erosion Control Permits	•		
	Stormwater Management		•	
	Work in Floodplain Permit	•		
	Wetland Conservation Act Wetland Replacement Plan		•	
	Wetland Permit	•		
	Waterbody Crossings/Structures	•		
	Water Appropriations Permit	•		
Minnehaha Creek Watershed District	Sediment and Erosion Control Permits	•		
	Work in Floodplain Permit	•		
	Waterbody Crossings & Structures Permit	•		
	Stormwater Management	•		
Riley Purgatory Bluff Creek Watershed District	Sediment and Erosion Control Permits	•		
	Stormwater Management	•		
	Work in Floodplain Permit	•		
	Wetland, Lake, Creek Buffer		•	
	Waterbody Crossings and Structures Permit	•		
	Streambank and Shoreline Stabilization Permit	•		
	Water Appropriations Permit	•		
Three Rivers Park District	Section 106 of the National Historic Preservation Act – Agreement			• [a]
Kenwood Isles Area Association	Section 106 of the National Historic Preservation Act – Agreement			• [a]

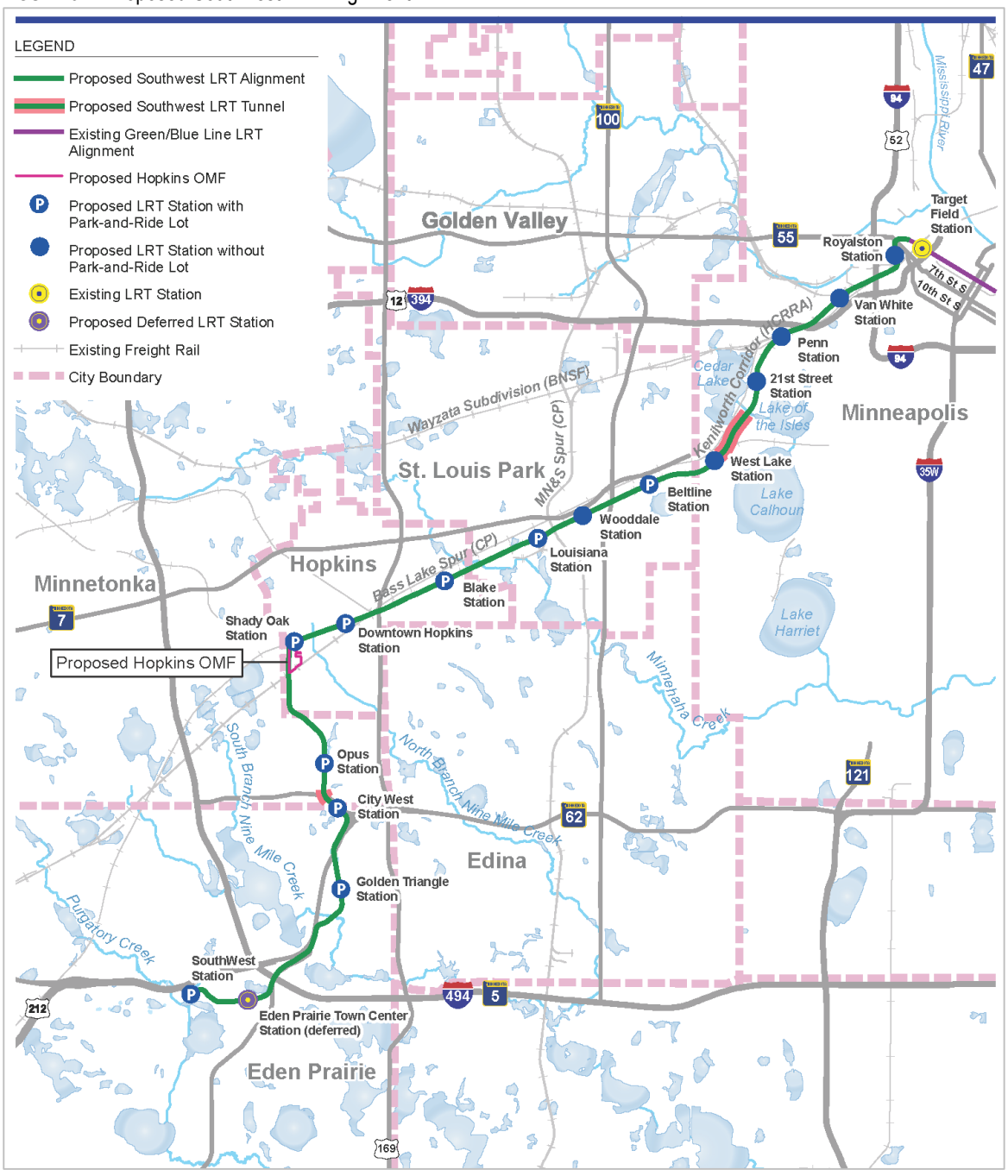
[a] 36 CFR 800.6(c)(3)

3 PART THREE: General Project/Site Information

3.1 Project Description

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).

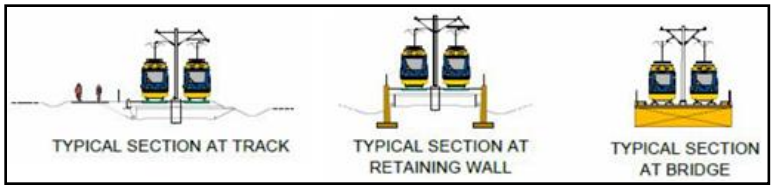
FIGURE 3-1: Proposed Southwest LRT Alignment



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, 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 with portions 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 (see Figure 3-1). 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



In 2005, HCRRA (Hennepin County Regional Rail Authority) initiated the Southwest Transitway Alternatives Analysis (AA) process, which compared the benefits, costs, and impacts of a range of transit alternatives (modes and routes). The range of alternatives considered included enhanced bus, bus rapid transit, and light rail, including a range of potential alignments for bus rapid transit and light rail. The results of the AA laid the foundation for the project's development and evaluation of alternatives, as required under the National Environmental Policy Act (NEPA), which was initiated in September 2008, when the Federal Transit Administration (FTA) and HCRRA issued their notice of intent to publish an Environmental Impact Statement (EIS). The project's scoping process began with FTA and HCRRA's proposal to study the alternatives resulting from the AA within a federal and state EIS. During the scoping process, HCRRA solicited public and agency comments on the range of alternatives to be studied in the EIS. In May 2010, the project's AA process was completed with the identification of the project's Locally Preferred Alternative (LPA) and incorporation of the LPA into the 2030 Transportation Policy Plan by Metropolitan Council (the Council). In summary, HCRRA and the Council found that LRT 3A would best meet the AA's Purpose and Need Statement. The LPA was incorporated within two of the seven alternatives evaluated in the Draft EIS (LRT 3A and LRT 3A-1[1]).

After publication of the Draft EIS (October 2012), the Council undertook a process to develop and evaluate potential adjustments to LRT 3A and LRT 3A-1 based on comments received on the Draft EIS. Design adjustments were also developed to help avoid or minimize adverse environmental impacts, including avoiding and minimizing impacts to wetlands. In April 2014, the Council identified the design adjustments to be incorporated into the LPA, based on LRT 3A-1, which will include co-location of light rail and freight rail in the Kenilworth Corridor. In summary, the Council found that, relative to the other options considered, the LPA based on LRT 3A-1, with the identified design adjustments, would provide the best balance of costs, benefits, and environmental impacts, and in doing so found that it would best meet the Project's Purpose and Need. The USACE provided concurrence that the LPA (based on LRT 3A-1) is the least environmentally

[1] LRT 3A and LRT 3A-1 included the same proposed transit improvements, but included differing freight rail modifications.

damaging practicable alternative (LEDPA) on October 16, 2014, because the LPA will result in fewer impacts to waters of the U.S. than the other alternatives that were evaluated.

The proposed project will permanently impact a total of 79,882 square feet (1.83 acres) of 17 aquatic resources that are regulated by the USACE under Section 404 of the CWA. Two project-wide wetland avoidance alternatives (no build and expanded bus route) were analyzed as part of the Draft EIS and Supplemental Draft EIS; however, these alternatives were not adopted because they did not meet the project purpose. The proposed permanent impacts are the minimum necessary to construct the alignment and meet the project purpose. The alignment incorporates several design measures that minimize wetland impacts throughout the alignment (see Sections 8.2 and 8.3, Attachment C). The proposed alignment will also result in 327,989 square feet (7.53 acres) of temporary impact to 18 aquatic resources regulated under the CWA to accommodate construction access for the project. All temporary impacts will be restored following the completion of construction (See Section 7, Attachment B and Section 8.3, Attachment C for details).

In addition to the CWA regulated impacts summarized above, the proposed project will permanently fill three isolated wetland basins (NM-EP-10, MTA-MTA-03, and MTA-MTA-04) that are not regulated under the CWA, but are regulated under WCA. The proposed impact details along with the avoidance and minimization efforts associated with these three non-CWA regulated wetlands have been included in Section 8.4 of this document for USACE reference. These impacts, along with associated mitigation requirements, will be addressed in the MN Joint Permit Applications that will be submitted to all appropriate WCA LGUs.

3.2 Project Purpose & Need

The project purpose, as adopted by the USACE on December 20, 2012, is to "provide high-capacity transit service in the Southwest Transitway study area." The project needs, as identified in the project's Draft EIS and Final EIS, are as follows:

- Need to address declining mobility resulting from high residential and employment growth and limited infrastructure improvements. Due to lack of planned highway capacity additions, future demand increases will not be adequately met by capacity enhancements for cars or buses.
- Need to address limitation on competitive and reliable transit options for choice riders and transit-dependent populations between Southwest suburbs and downtown Minneapolis.
- Need to maintain a balanced and economically competitive multimodal freight system.
- Regional/local plans calling for investment in additional light rail transit projects in the region.

3.3 Anticipated Project Schedule for Implementation and Completion

The anticipated duration of Southwest LRT construction is Quarter Three of 2016 through Quarter Four of 2019. The anticipated start of operations is 2020.

4 PART FOUR: Aquatic Resource Impact[2] Summary

The proposed project affects 26 unique aquatic resources that are regulated by the USACE under Section 404 of the CWA, resulting in 79,882 SF (1.83 Ac) of permanent impact[3] and 327,989 SF (7.53 Ac) of temporary impact[4]. Table 4-1 contains a summary of the overall approximate percentage of each Wetland Type that will be impacted by this proposed project, and Table 4-2 contains a detailed summary of the CWA regulated aquatic resources that occur from west to east along the proposed project alignment. The associated CWA Regulated Aquatic Resource Impact MapBook is located in Appendix A, and the associated Overhead Plan Sheets are located in Appendix C.

TABLE 4-1
Summary of Total CWA Impacts by Wetland Type

Impact Type	Percent of Proposed Impact by 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%	1.7%	0.1%	79,882
Temporary	1.9%	15.7%	30.0%	0.0%	18.7%	23.8%	8.1%	1.8%	327,989

[2] The term "impact" as used in this joint application document is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For the purposes of this document, it is not meant to indicate whether or not those activities may require mitigation/replacement.

[3] Permanent impacts are unavoidable impacts to aquatic resources that will remain after all appropriate and practicable minimization has been implemented.

[4] Temporary impacts are generally those related to construction access and staging activities that will be restored to existing grades and re-seeded with an appropriate native vegetation seed mix within 180 days (unless otherwise noted) of the start of the activity.

TABLE 4-2
Overall Summary of CWA Regulated Aquatic Resources (West to East)

Aquatic Resource ID	Mapbook Sheet # (Appendix A)	Overhead Plan Sheet # (Appendix C)	Aquatic Resource Type	Applicable Regulators		Permanent Impacts (> 180 Days)				Temporary Impacts (< 180 Days)				Overall Size of Aquatic Resource*		County	Major Water-shed #	Minor Water-shed #	Bank Service Area #
				CWA	WCA	Type of Impact	Impact Size Acre	Impact Size Square Feet	Existing Plant Community (Eggers and Reed, 2007)	Type of Impact	Impact Size Acre	Impact Size Square Feet	Existing Plant Community (Eggers and Reed, 2007)	Acre	Square Feet				
EP-EP-22	1	1	Wetland	X	X	Fill	0.08	3,316	Shallow Marsh	NA	0.00	0	NA	0.20	8,636	Hennepin	33	118	9
EP-EP-24	1	2	Wetland	X	X	Fill	0.38	16,617	Shallow Open Water	NA	0.00	0	NA	0.38	16,617	Hennepin	33	118	9
DOT-EP-17	1	3	Wetland	X	X	Fill	0.005	203	Fresh Wet Meadow	Vegetation Clearing	0.37	15,969	Fresh Wet Meadow/ Shallow Open Water	2.21	96,206	Hennepin	33	118	9
DOT-EP-18	2	4	Wetland	X		Fill	0.02	915	Shallow Marsh	NA	0.00	0	NA	0.10	4,296	Hennepin	33	141	9
DOT-EP-23	2	5	Wetland	X		Fill	0.005	203	Seasonally Flooded Basin	NA	0.00	0	NA	0.05	2,315	Hennepin	33	141	9
DOT-EP-24	2	5	Wetland	X		Fill	0.002	93	Seasonally Flooded Basin	NA	0.00	0	NA	0.01	677	Hennepin	33	141	9
DOT-EP-07	2	6	Wetland	X		Fill	0.01	381	Fresh Wet Meadow	NA	0.00	0	NA	0.01	381	Hennepin	33	141	9
NM-EP-01	3	7	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.42	18,221	Shallow Open Water/Scrub Carr	1.81	78,750	Hennepin	33	141	9
NM-EP-02	3	8	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.05	2,052	Shallow Marsh	6.22	270,806	Hennepin	33	141	9
NM-EP-03	3	8	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.02	899	Shallow Marsh	2.16	94,140	Hennepin	33	141	9
NM-EP-04	3	9	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.04	1,727	Hardwood Swamp	1.18	51,396	Hennepin	33	141	9
NM-EP-06	3	10	Wetland	X	X	Fill	0.33	14,296	Shallow Marsh/Scrub Carr	Vegetation Clearing	0.15	6,606	Shallow Marsh/Scrub Carr	4.02	175,309	Hennepin	33	141	9
NM-EP-08	3	11	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.92	40,237	Shallow Marsh/Scrub Carr	2.25	98,183	Hennepin	33	141	9
NM-EP-09	3	12	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.19	8,339	Shallow Marsh	0.66	28,967	Hennepin	33	141	9
DOT-EP-08	3	13	Wetland	X		NA	0.00	0	NA	Vegetation Clearing	0.26	11,219	Shallow Marsh	0.84	36,589	Hennepin	33	141	9
DOT-EP-09	4	14	Wetland	X		Fill	0.47	20,274	Shallow Marsh	Vegetation Clearing	0.23	9,885	Shallow Marsh	0.70	30,375	Hennepin	33	141	9
NM-EP-12	4	16	Wetland	X	X	Fill	0.04	1,879	Scrub Carr	NA	0.00	0	NA	3.4	148104	Hennepin	33	141	9
MTA-MTA-06	4	18	Wetland	X		Fill	0.01	343	Seasonally Flooded Basin	NA	0.00	0	NA	0.01	343	Hennepin	33	142	9
MTA-MTA-07	4	18	Wetland	X	X	Fill	0.05	2,086	Shallow Marsh	NA	0.13	5,595	NA	0.18	7,681	Hennepin	33	142	9
MTA-MTA-08	4	19	Wetland	X	X	NA	0.00	0	NA	Vegetation Clearing	0.072	3,145	Shallow Marsh	0.34	15,005	Hennepin	33	142	9
MTA-MTA-09	5	20	Wetland	X	X	Fill	0.02	707	Shallow Marsh	Temporary Drainage/ Vegetation Clearing	0.02	797	Shallow Marsh	36.20	1,576,777	Hennepin	33	142	9
MTA-MTA-11	5	21 & 22	Wetland	X	X	Fill	0.04	1,864	Fresh Wet Meadow/ Shallow Marsh/Shallow Open Water/Scrub Carr/ Hardwood Swamp	Temporary Drainage/Vegetation Clearing/Temporary Fill	3.08**	134,296**	Fresh Wet Meadow/ Shallow Marsh/Shallow Open Water/Scrub Carr/ Hardwood Swamp	11.79	513,587	Hennepin	33	142	9
NM-HOP-13	5	23	Wetland	X	X	Fill	0.38	16,435	Seasonally Flooded Basin/Shallow Marsh/ Scrub Carr	Vegetation Clearing	0.92	40,098	Seasonally Flooded Basin/ Shallow Marsh/Shallow Open Water/Scrub Carr	2.67	116,491	Hennepin	33	142	9
MTA-MTA-12	6	24	Wetland	X	X	Fill	0.00	141	Shallow Open Water	Temporary Drainage/ Vegetation Clearing	0.53	23,066	Shallow Open Water	2.70	117,686	Hennepin	33	142	9
NM-HOP-16	6	25	Nine Mile Creek	X		NA	0.00	0	NA	Culvert Installation	0.01	594	Channel	NA	NA	Hennepin	33	142	9
MC-SLP-01	8	26	Minnehaha Creek	X		NA	0.00	0	NA	NA	0.00	0	NA	NA	NA	Hennepin	20	094	7
MC-MPL-13	11	27	Kenilworth Channel	X		Fill	0.002	129	Channel	Cofferdam Installation/ Pier Construction	0.12	5,244	Channel	NA	NA	Hennepin	20	094	7
						Total Permanent Impact	**1.83 (Ac)**	**79,882 (SF)**		**Total Temporary Impact**	**7.53 (Ac)**	**327,989 (SF)**							

**Overall sizes of aquatic resources are approximate*
***Impact will last longer than 180 days but is considered temporary because it will be restored and mitigated as required*

5 PART FIVE: Applicant Signature

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: Nani Jacobsen **Date:** Nov. 13, 2015

I hereby authorize **Anderson Engineering of MN, LLC** to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

6 Attachment A

(Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination)

This section was previously completed and submitted by the project with the Southwest LRT *Wetland Investigation Report,* the *2014 Supplemental Wetland Investigation Report,* and the *2015 Supplemental Wetland Investigation Report* in 2013, 2014, and 2015, respectively (Anderson Engineering).

7 Attachment B: Restoration of Temporarily Impacted Areas

The Southwest LRT Project is proposing 327,989 SF (7.53 acres) of temporary impact to 18 aquatic resources that are regulated under the CWA, as summarized in Table 4-2 and discussed in detail in Section 8.3 as a part of Attachment C (Avoidance & Minimization) of this application. This section provides the proposed restoration, maintenance, and monitoring details for all temporarily impacted wetlands.

The proposed temporary impacts are generally associated with access and staging for construction activities in the areas adjacent to the proposed LRT alignment. The potential temporary impact activities include clearing wetland vegetation, temporarily placing clean fill in a wetland, and temporarily altering wetland hydrology. Within 180 days of construction commencement (unless otherwise noted in Attachment C), 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 aquatic resources will be restored to existing conditions. These areas will be monitored by the applicant and the contractors during construction. Following construction, restoration and monitoring will occur as required to meet regulatory standards. See the *Wetland MTA-MTA-11 Restoration Plan* in Appendix E for additional restoration details specific to the proposed temporary impacts at wetland MTA-MTA-11.

Measures to Avoid Compaction While Working in a Wetland

The following is a list of measures that the applicant will implement (when appropriate) to avoid and minimize wetland soil compaction that can be caused by construction activities and the temporary placement of fill material and construction equipment in a wetland, when and where possible:

- Avoid equipment entry into wetlands to the extent possible.
- Where equipment entry into wetlands is unavoidable, minimize the area disturbed as well as the number of repeated passes over the same trail.
- Utilize site footprinting and construction phasing to limit and sequence work within wetland areas.
- Use low ground pressure equipment or tracked vehicles when possible.
- Schedule the work during the drier seasons of the year or during time when the ground is frozen, where possible.
- Plan to move equipment and materials to upland areas prior to the occurrence of thawing conditions.
- Cross streams, channels and flow paths at right angles.
- For temporary roads, incorporate support systems such as geotextiles and various wood and metal platform devices.
- Utilize subsoiling or chiseling to break up compacted surfaces to reestablish soil porosity when work is completed.
- Locate staging, storage, and maintenance areas outside of wetland areas.

Wetland Seed Mixes

The project is proposing to temporarily clear existing emergent and/or herbaceous vegetation within sixteen aquatic resources that are regulated by the CWA. Table 7-1 contains a list of the aquatic resources and the associated native wetland species seed mix that will be planted upon construction completion at each location, as appropriate. These seed mixes have been approved for use in emergent wetlands (State Mix 34-181) and wet prairies (State Mix 34-262) by the MN Board of Water and Soil Resources and the MN Department of Transportation. Each seed mix (included in Appendix D) specifies the plant species, seeding

rates, percent of each species within the mix, and seeds per square foot that are required to meet the state standards.

TABLE 7-1
Summary of Temporarily Impacted Aquatic Resources with Appropriate State Approved Seed Mixes

Aquatic Resource	Appropriate Seed Mix
DOT-EP-17	Wet Prairie (State Mix 34-262)
NM-EP-01	Emergent Wetland (State Mix 34-181)
NM-EP-02	Emergent Wetland (State Mix 34-181)
NM-EP-03	Emergent Wetland (State Mix 34-181)
NM-EP-04	Wet Prairie (State Mix 34-262)
NM-EP-06	Emergent Wetland (State Mix 34-181)
NM-EP-08	Emergent Wetland (State Mix 34-181)
NM-EP-09	Emergent Wetland (State Mix 34-181)
DOT-EP-08	Emergent Wetland (State Mix 34-181)
DOT-EP-09	Emergent Wetland (State Mix 34-181)
MTA-MTA-07	Emergent Wetland (State Mix 34-181)
MTA-MTA-08	Emergent Wetland (State Mix 34-181)
MTA-MTA-09	Emergent Wetland (State Mix 34-181)
MTA-MTA-11	Emergent Wetland (State Mix 34-181) & Wet Prairie (State Mix 34-262)
NM-HOP-13	Emergent Wetland (State Mix 34-181)
MTA-MTA-12	Emergent Wetland (State Mix 34-181) (Along edge of pond only)

Seeding Specifications

The following is a list of seeding specifications that will be provided to contractors for re-seeding previously vegetated, temporarily impacted wetland areas.

- The grading contractor shall install and maintain throughout the project silt fence along the boundary of the wetland.
- Any excess excavated spoils shall be removed and placed in stockpile locations away from the wetland.
- Specified seed mixes (or approved equivalent) shall be broadcast at recommended rates within each of the identified seeding zones.
- After broadcast seeding, the site must be rolled or cultipacked to ensure proper seed to soil contact. Roll or pack in order to lightly cover seed with approximately 1/8 to 1/4 inch of soil. Seeds should be no deeper than 1/4 inch.
- Within 2 days of placing seed, apply weed free mulch at a rate of 1 ton per acre, or an erosion control blanket. Mulch should be ½ to 1 ½ inch deep. Mulch should be crimped into the soil to a depth of 1 to 2 inches immediately after it is applied. After mulch has been spread, apply water with a fine spray. If the mulch windrows along the edge of open water, it should be removed or re-spread.
- After planting is complete, remove and dispose of any excess materials, trash or stockpiles.
- After germination of the broadcast seeding, the contractor shall hand-seed the specified mixes into areas that did not germinate, and lightly rake the hand spread seed into the soil.

- Acceptance by the Southwest LRT Project will be granted upon completion of satisfactory inspection by the project or project representative.

8 Attachment C: Avoidance & Minimization

8.1 Project Purpose, Need, and Requirement

The project purpose, as adopted by the USACE on December 20, 2012, is to "provide high-capacity transit service in the Southwest Transitway study area." The project needs, as identified in the Draft EIS and Final EIS, are as follows:

- Need to address declining mobility resulting from high residential and employment growth and limited infrastructure improvements. Due to lack of planned highway capacity additions, future demand increases will not be adequately met by capacity enhancements for cars or buses.
- Need to address limitation on competitive and reliable transit options for choice riders and transit-dependent populations between Southwest suburbs and downtown Minneapolis.
- Need to develop and maintain a balanced and economically competitive multimodal freight system.
- Regional/local plans calling for investment in additional light rail transit projects in the region.

The project has not identified any requirements specific to the project location, footprint, or water management. See Appendix C for Overhead Plan Sheets of the entire alignment that display all relevant features of the project, all aquatic resource features (all impact areas are noted), and applicable construction details. Soil maps for the entire alignment were included as a part of the Southwest LRT Project's *Wetland Investigation Report,* the *2014 Supplemental Wetland Investigation Report*, and the *2015 Supplemental Wetland Investigation Report*, which were submitted by Anderson Engineering in 2013, 2014, and 2015.

8.2 Avoidance & Minimization: Project-Wide

8.2.1 Project-Wide Avoidance

As documented in the NEPA/Section 404 Merger Documents that have been submitted to the USACE throughout the project's engineering phase, impacts to aquatic resources have been avoided and minimized to the maximum practicable extent. On December 20, 2012, the USACE provided general concurrence to Points 1 and 2, which established the project purpose and need and included a detailed summarization of the array of project alternatives considered. On October 16, 2014, the USACE provided concurrence with Point 3, which identified the LPA as the apparent LEDPA. The USACE provided concurrence with 4th and final Point on October 14, 2015, which included a comprehensive description of the impact minimization measures that have been incorporated into the project design.

All permanent impacts listed in this permit application are unavoidable under the LEDPA. Two avoidance alternatives are discussed below per regulatory requirements. Both the "no build" alternative and "enhanced bus" alternative would avoid impacts to all the wetlands along the proposed Southwest LRT alignment, but do not meet the project's purpose and need. These project-wide avoidance alternatives were analyzed as part of the Draft EIS[5] and Supplemental Draft EIS[6], and are discussed below.

[5] To review additional alternatives that were considered in the Draft EIS, see http://www.metrocouncil.org/Transportation/Projects/Current-Projects/Southwest-LRT/Environmental/DRAFT EIS.aspx

[6] To review additional alternatives that were considered in the Supplemental Draft EIS, see http://metrocouncil.org/swlrt/sDraft EIS

Project-Wide Avoidance Alternative #1: No Build

The No Build alternative would avoid impacts to all wetlands along the proposed Southwest LRT alignment. It would not; however, support the project purpose and need of establishing a high-capacity transit survey service in the Southwest LRT study area. The No Build alternative would maintain the existing conditions and future changes as outlined in future transportation system plans, with exception of the Southwest LRT project. Eliminating the improvements within the Southwest LRT study area would be inconsistent with the local and regional comprehensive plans. It would not improve mobility, provide a cost-effective efficient travel option, or support economic development and an economically competitive freight rail system. Because the No Build alternative does not address any of the project goals or transportation needs of the Southwest LRT, it was not recommended as the LPA or LEDPA. The USACE concurred with this decision in a letter dated October 16, 2014.

Project-Wide Avoidance Alternative #2: Enhanced Bus

Like the No Build alternative, the Enhanced Bus alternative would avoid impacts to all wetlands along the proposed Southwest LRT alignment. The Enhanced Bus alternative is a low capital cost alternative that would provide the best transit service to the LRT corridor, without the major capital investment of constructing a light-rail transit alignment. The Enhanced Bus alternative would not adequately support the goals and objective of the Southwest LRT. The Enhanced Bus alternative would only marginally improve the existing conditions, and would be inconsistent with local and regional comprehensive plans looking to address transportation concerns in the project area. Enhancing bus service in the area, without constructing the proposed Southwest LRT alignment, would only marginally improve mobility, and would not provide an efficient travel option, or support economic development and economically competitive freight rail system. Because the Enhanced Bus alternative does not adequately support the project purpose or transportation needs of the Southwest Transitway, it was not recommended as the LPA or LEDPA. The USACE concurred with this decision in a letter dated October 16, 2014.

In addition to the two alternatives discussed above, the project engineers considered multiple route options throughout the early design phase, including alternatives for the entire route as well as for specific portions of the route. In general, these alternatives were abandoned because they were not feasible or did not meet the project purpose. These alternatives were included in the project's required NEPA documentation and were submitted to the USACE under Concurrence Point 2 of the NEPA/404 merger document. The USACE reviewed these alternatives and concurred that the LPA is the apparent LEDPA of all considered alternatives in the letter dated October 16, 2014.

8.2.2 Project-Wide Minimization

In a general effort to reduce indirect temporary and permanent impacts to aquatic resources, the applicant will 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 utilized 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
- Ensuring that all streets in and adjacent to the project remain clean and passable at all times by removing sediment or debris within 24 hours or as often as needed to ensure public safety
- Stabilizing disturbed areas by establishing permanent turf whenever possible
- Scheduling temporary BMPs to occur in the event that permanent stabilization cannot be implemented within seven days of construction
- Ensuring placement of perimeter controls that are approved by the engineer
- Providing redundant sediment control BMPs when working within 50 feet of a surface water/wetland
- Installing floating silt curtains as close to the shoreline as possible
- 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 erosion/sediment control BMPs listed above, the Southwest LRT Project engineers have developed project-specific stream crossing BMPs to meet certification under Section 401 of the CWA, as required by the Minnesota Pollution Control Agency. The proposed LRT alignment will cross five streams (illustrated on the MapBook in Appendix A): the Unnamed Stream at Wetland EP-EP-24, South Fork of Nine Mile Creek, North Fork of Nine Mile Creek, Minnehaha Creek, and the Unnamed Stream between Cedar Lake and Lake of the Isles (Kenilworth Channel). The following stream crossing BMPs will be implemented at the five proposed stream crossings when and where applicable, as depicted on the Overhead Plan Sheets in Appendix C:

- Machine sliced silt fencing
- Super duty silt fencing
- Curb check filter logs
- Silt curtains
- In areas where work will temporarily cease for 7 days or in areas within 200 feet of water's edge during the MnDNR restriction period (March 15-June 15), exposed soil will be stabilized using Rapid Stabilization Method #2:
    - Type 3 Mulch @ 1.5 tons/acre
    - 3884, Type Hydraulic Mulch @ 750 lbs/acre
- At EP-EP-24, the contractor will provide a plan for box culvert installation, and the plan shall use one of the options from "Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001" provided by the MnDNR.[7] Acceptable methods include:
    - Option 1: Temporary Stream Block/Bypass Pumping
    - Option 2: Culvert Bypass
    - Option 3: Partial Stream Diversion

8.3 Avoidance & 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. The following section of this document

[7] See http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_introduction.pdf.

provides a description of the nature of each potential impact (geographically, from west to east), the avoidance and minimization efforts proposed for each applicable aquatic resource, and supporting information regarding the restoration of each temporarily impacted aquatic resource.

The attached CWA Regulated Aquatic Resource Impact Mapbook (Appendix A) provides a general overview of the impacted resources along the proposed LEDPA alignment, and the attached Overhead Plan Sheets (Appendix C) 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 diocia*).

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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing, hydrology alteration, and the potential placement of clean temporary fill for proposed construction access and staging. 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for proposed construction access and staging. 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for proposed construction access and staging. 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for proposed construction access and staging. 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. See

Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

NM-EP-06

The portion of NM-EP-06 that will be temporarily impacted by the proposed Southwest LRT Project contains Type 3/6, shallow marsh/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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for proposed construction access and staging. 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

NM-EP-08

The portion of NM-EP-08 that will be temporarily impacted by the proposed Southwest LRT Project contains Type 3/6, shallow marsh/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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for proposed construction access and staging. 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. See

Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for proposed construction access and staging. 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 9.2 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 this wetland will be temporarily affected by vegetation clearing, hydrology alteration, and the potential placement of clean temporary fill for construction access and staging 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill along the northern portion of the wetland for construction access and staging 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill along the northern portion of the wetland for construction access and staging 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill along the southwestern edge of the wetland for proposed construction access and staging 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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/scrub 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 Draft EIS 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 Draft EIS 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 Draft EIS 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 Draft EIS 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 this wetland will be temporarily affected by vegetation clearing, hydrology alteration, and the placement of clean temporary fill and/or interlocking tracking pads for construction access and staging during the installation of the proposed elevated track alignment. 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. Geotextile fabric and interlocking tracking pads, or other accepted form of temporary access, will likely be needed along the west side of the bridge, within the wetland boundary, to provide access for construction equipment. This will reduce the compaction and temporary impacts in the wetland. 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. See the *Wetland MTA-MTA-11 Restoration Plan* in Appendix E for additional details regarding the proposed temporary construction impact minimization measures that will be implemented during construction, and the proposed restoration, maintenance, and monitoring plan that will be utilized post-construction.

This proposed 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 9.3.

Note: The temporary impacts that are being proposed for wetland MTA-MTA-11 in this CWA Section 404 permit application are going to be considered permanent under the WCA because the proposed impact duration is longer than 6 months. As a result, the project's WCA permit application will include full mitigation for all proposed impact to this wetland (136,160 SF) at a ratio of 2:1.

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/scrub 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 Draft EIS 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 Supplemental Draft EIS 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 this wetland will be temporarily affected by vegetation clearing and the potential placement of clean temporary fill for construction access and staging 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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 this wetland will be temporarily affected by vegetation clearing, hydrology alteration, and the potential placement of clean temporary fill for access and staging to construct the proposed retaining wall and to 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. See Section 7, Attachment B for additional details regarding the restoration, maintenance, and monitoring of this proposed impact location.

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.

Permanent Impacts: No permanent impact is being proposed at this location.

Temporary Impacts: 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). If impacted, the area will be restored within 180 days of construction commencement.

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.

Permanent Impacts: No permanent impact is being proposed at this location. 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.

Temporary Impacts: No temporary impact is being proposed at this location.

MC-MPL-13

The portion of MC-MPL-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 129 SF (0.003 Ac), or 20 linear feet of the MC-MPL-13 channel will be permanently impacted as a result of two proposed freight rail bridge footings that will have the effect of wetland "fill" within the Kenilworth Channel. The proposed freight rail bridge will replace an existing wood pile freight rail bridge, which will be removed. Impacts from the proposed freight rail bridge will be limited to the area of the bridge's concrete support piers, which are necessary to support the proposed freight rail crossing at this location (see Overhead Plan Sheet 27). The project will also construct two other new bridges across the channel, one that will carry the proposed light rail alignment and one that will carry the existing multi-use trail. Neither of the two new bridges will include piers within the channel. The new multi-use trail bridge will replace an existing wood-pile bridge that carries the existing multi-use path.

Through the project's planning process, a wide range of designs was developed and considered for the proposed new freight rail, light rail and multi-use path bridges across the channel. Because the Kenilworth Channel is both a Section 4(f) recreation property and a Section 106 historic property, the Council and FTA have coordinated the design process for the bridges with the Minneapolis Park and Recreation Board (MPRB) and the Minnesota State Historic Preservation Office (MnSHPO), respectively.

Because of geometric constraints within the Kenilworth Corridor, it was determined that both of the existing wood-pile bridges would need to be removed to accommodate a light rail, freight rail alignment and multi-use path. The initial proposed designs of the new replacement bridges would have placed freight rail on one

new bridge (with piers in the water) and light rail and the multi-use path on another bridge (also with piers in the water). Upon further design consideration and coordination with the MPRB, the MnSHPO and other Section 106 consulting parties, the design of the bridges was modified to include three separate bridges for the multi-use trail, the light rail alignment, and freight rail, respectively (generally east to west crossing the channel). Through that process, the proposed multi-use trail and light rail bridges have been designed to span the channel without piers in the water and, therefore, will not result in permanent impact to this aquatic resource. The designs meet requirements under Section 4(f) and Section 106 to avoid, minimize and mitigate impacts to the recreation property and the historic property, respectively.

This design of the three bridges across the channel allow each bridge to be designed to its specific load and deflection requirements, defines pier and span configurations that minimize impacts upon the channel, permits as much light as possible to reach the channel, and limits noise impacts to channel users (with additional noise mitigation measures).

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 because it is not regulated as a wetland.

Temporary Impacts: Approximately 5,244 SF (0.12 acres) or 100 linear feet of the MC-MPL-13 channel will be temporarily impacted during construction of the bridge pier foundations and related pier stems. The contractor will be required to install two cofferdam systems that will fully surround each of 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 interior limits of the sheet pile enclosure. The estimated area of each cofferdam foot print equates to 1,200 SF (0.03) acres. The contractor will then remove the water from the cofferdam with the use of pump(s). The water removal process is outlined below.

Temporary water removal within cofferdams involves the discharge of cofferdam water into either settling tanks, dumpsters, sediment bags or city sewer facilities. The proposed method involves pumping the water flowing from the cofferdams into settling tanks. The water release rate into an approved facility will be controlled such that the required settlement is achieved. The release rate will be dependent upon the tank size used by the contractor. The impacted area will be restored within 180 days of construction commencement.

8.4 Avoidance & Minimization: Non-CWA Regulated Wetlands

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 Jurisdictional Determination dated May 28, 2015. The avoidance and minimization efforts associated with these three isolated basins are summarized below for USACE reference.

NM-EP-10

NM-EP-10 (regulated by Nine Mile Creek Watershed District under the 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.

8.5 Reduction/Elimination of Impacts over Time

The Southwest LRT project does not anticipate additional impacts to wetlands after construction is complete. The project will develop a long-term operation and maintenance plan for vegetation management, and all maintenance will be limited to the acquired right-of-way. The stationary nature of the track should ensure that wetlands surrounding the alignment are not affected during the operation of the train. If any unforeseen track maintenance or repairs arise, each will be dealt with on a case-by-case basis and BMPs specific to that situation will be established in coordination with the applicable local regulatory agencies.

9 Attachment D: Replacement/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 9-1.

TABLE 9-1
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	3/6	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	1/3/6	16,435	2:1	32,870
MTA-MTA-12	5	141	2:1	282
		195,760 SF		**187,071 SF**
		(4.49 Ac)		**(4.29 Ac)**

**Impact qualifies for a reduced replacement ratio based on USACE guidance for temporary impacts associated with linear projects*

The project is planning to purchase 187,071 SF (4.29 Ac) of Corps-approved mitigation bank credits from the USACE Bank Service Area (BSA) 9 to fulfill the compensatory mitigation requirements for these proposed 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. The project is proposing three different mitigation replacement ratios that correspond with three general types of impact: standard, ditch, or extended temporary impact (see Table 9-2). These general types of impact are discussed below in Sections 9.1-9.3.

TABLE 9-2
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 permit application. The required mitigation associated with these impacts will be addressed in the Minnesota Joint Application that will be submitted to all applicable WCA LGUs.

9.1 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 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 bank credits from the same 8-digit Hydrologic Unit Code (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 4-1), and the majority of the banking credits available in HUC 33/BSA 9 are also Type 3.

9.2 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*).

9.3 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 bridge that will cross over the existing Canadian Pacific freight rail line located between Minnetonka and Hopkins (see Section 8.3, Attachment C 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. See the *Wetland MTA-MTA-11 Restoration Plan* in Appendix E for restoration and monitoring details.

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 Circular 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.

As previously mentioned, all permanent and temporary impacts to this wetland will require full mitigation under the WCA at a replacement ratio of 2:1.

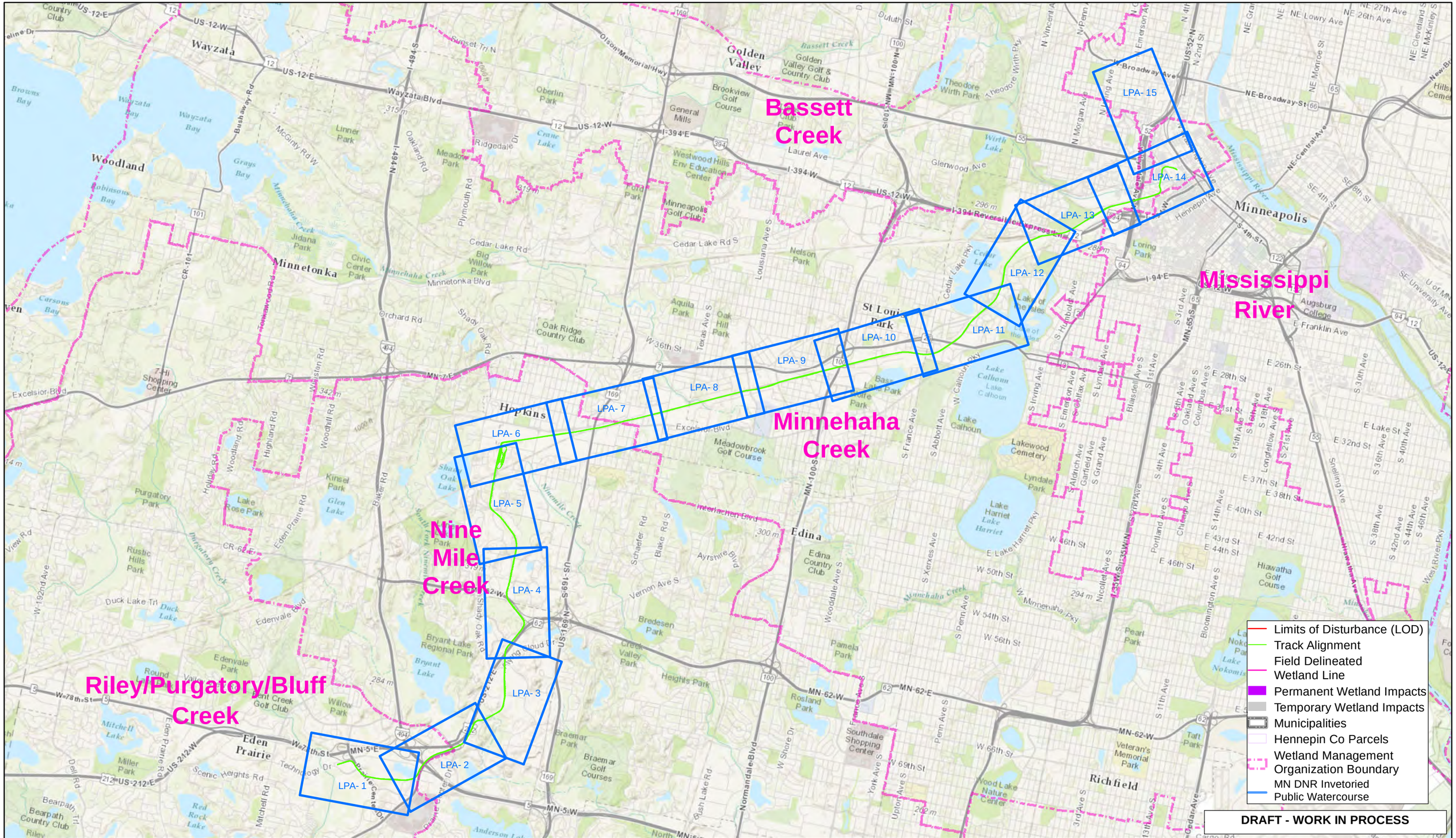
9.4 Waters of the U.S. Impacts Not Requiring Mitigation

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-11 of the CWA Regulated Impact MapBook for location). The proposed freight rail bridge at this location will necessitate the construction of large bridge piers, as described in Section 8.3. This impact is considered 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 proposed creation of 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 8.3, Attachment C) 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 9.2.

APPENDIX A

CWA Regulated Aquatic Resource Impact MapBook



SOUTHWEST LRT

CWA Regulated Aquatic Resource Impacts
MapBook Index

Map Index
Rev 00.00
10/13/2015

NORTH

0 0.25 0.5 1
Miles

DOT-EP-17
Type 2/5
203 sf (Permanent)
15,969 sf (Temporary)

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

EP-EP-24
Type 5
16,617 sf (Permanent)
0 sf (Temporary)

DOT-EP-16
DOT-EP-14
DOT-EP-15
DOT-EP-04
Unnamed Stream
DOT-EP-05
EP-EP-21
LPA-1
LPA-2
EP-EP-18
EP-EP-19
EP-EP-13
DIG-EP-EP-04
Purgatory Creek
Lake Idlewild
Eden Prairie
Plaza Dr
Anagram Dr
US-212 W
US-212 E
W 78th St
MN-5 W
MN-5 E
Technology Dr
Prairie Center Dr
Eden Rd
Singletree Ln
Regional Center Rd
Commonwealth Dr
Flying Cloud Dr

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SEE INDEX FOR LEGEND

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CWA Regulated Aquatic Resource Impacts
MapBook

LPA- 1
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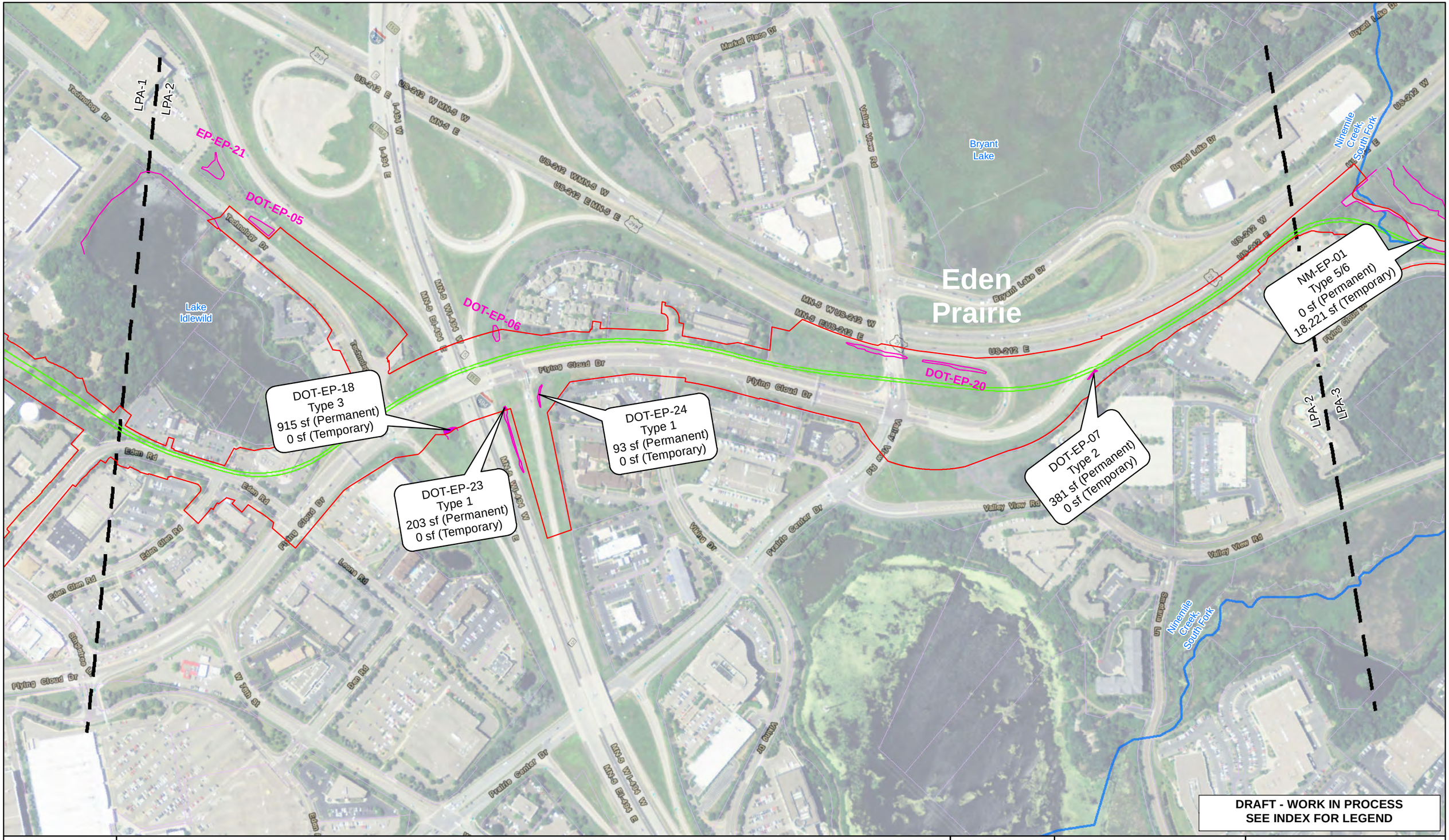
NORTH

0 100 200 400
Scale



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MapBook

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10/13/2015
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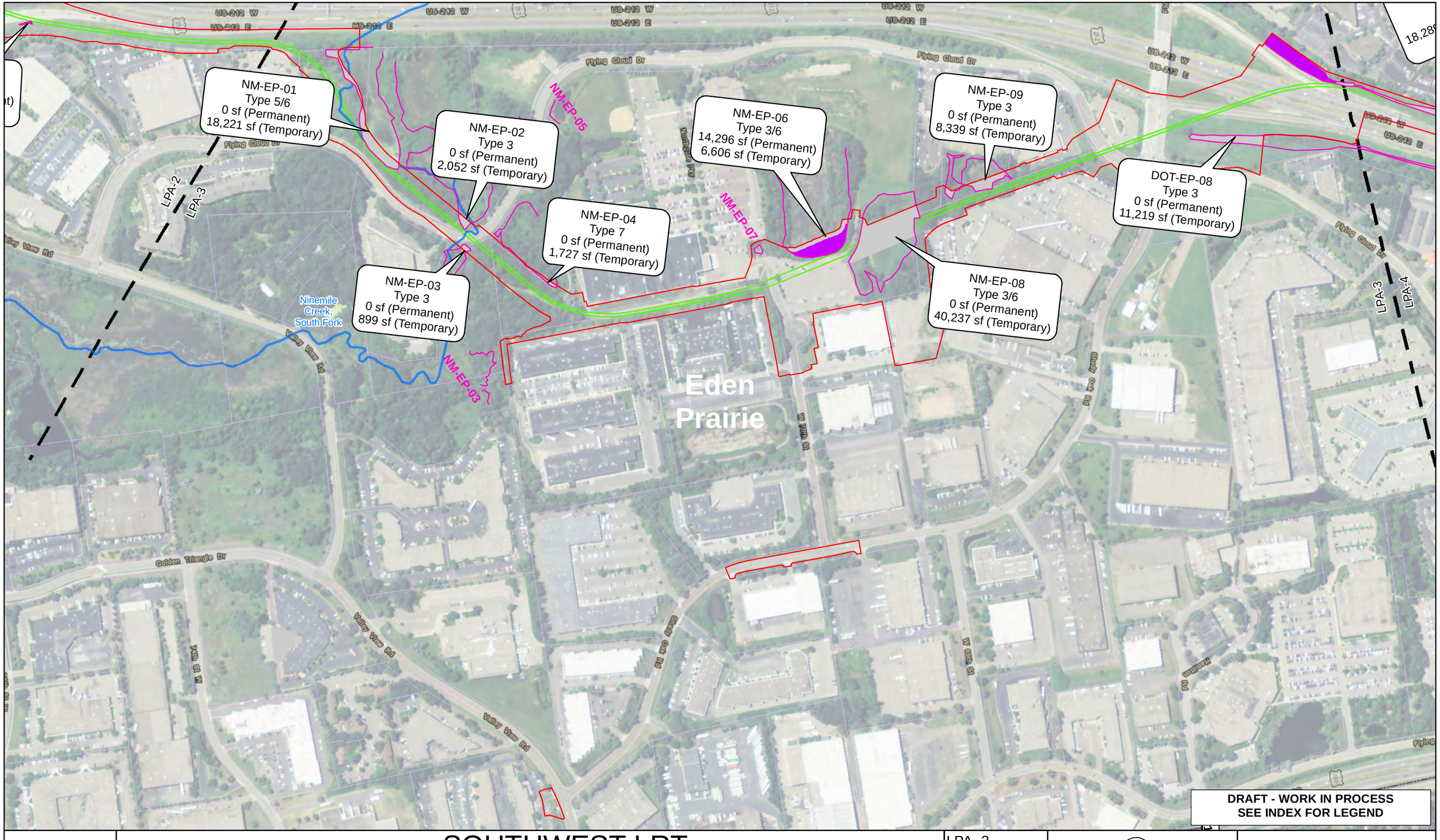
NORTH

0 100 200 400
Scale



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SOUTHWEST LRT

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MapBook

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10/13/2015
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NORTH

0 100 200 400
Scale

DOT-EP-09
Type 3
1,985 sf (Permanent)
18,289 sf (Permanent Floodplain Storage)
9,885 sf (Temporary)

NM-EP-10
Type 3
5,603 sf (Permanent)
0 sf (Temporary)

**Non-CWA
Regulated Wetland****

NM-EP-12
Type 6
1,879 sf (Permanent)
0 sf (Temporary)

MTA-MTA-04
Type 1
6,832 sf (Permanent)
0 sf (Temporary)

**Non-CWA
Regulated Wetland****

MTA-MTA-06
Type 1
343 sf (Permanent)
0 sf (Temporary)

MTA-MTA-03
Type 1
644 sf (Permanent)
0 sf (Temporary)

**Non-CWA
Regulated Wetland****

MTA-MTA-07
Type 3
2,086 sf (Permanent)
5,595 sf (Temporary)

MTA-MTA-08
Type 3
0 sf (Permanent)
3,145 sf (Temporary)

DOT-EP-21
DOT-EP-22
MTA-MTA-01
NM-EP-11
MTA-MTA-02
LPA-3
LPA-4
LPA-5
Eden Prairie
Minnetonka

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0 100 200 400
Scale

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MapBook

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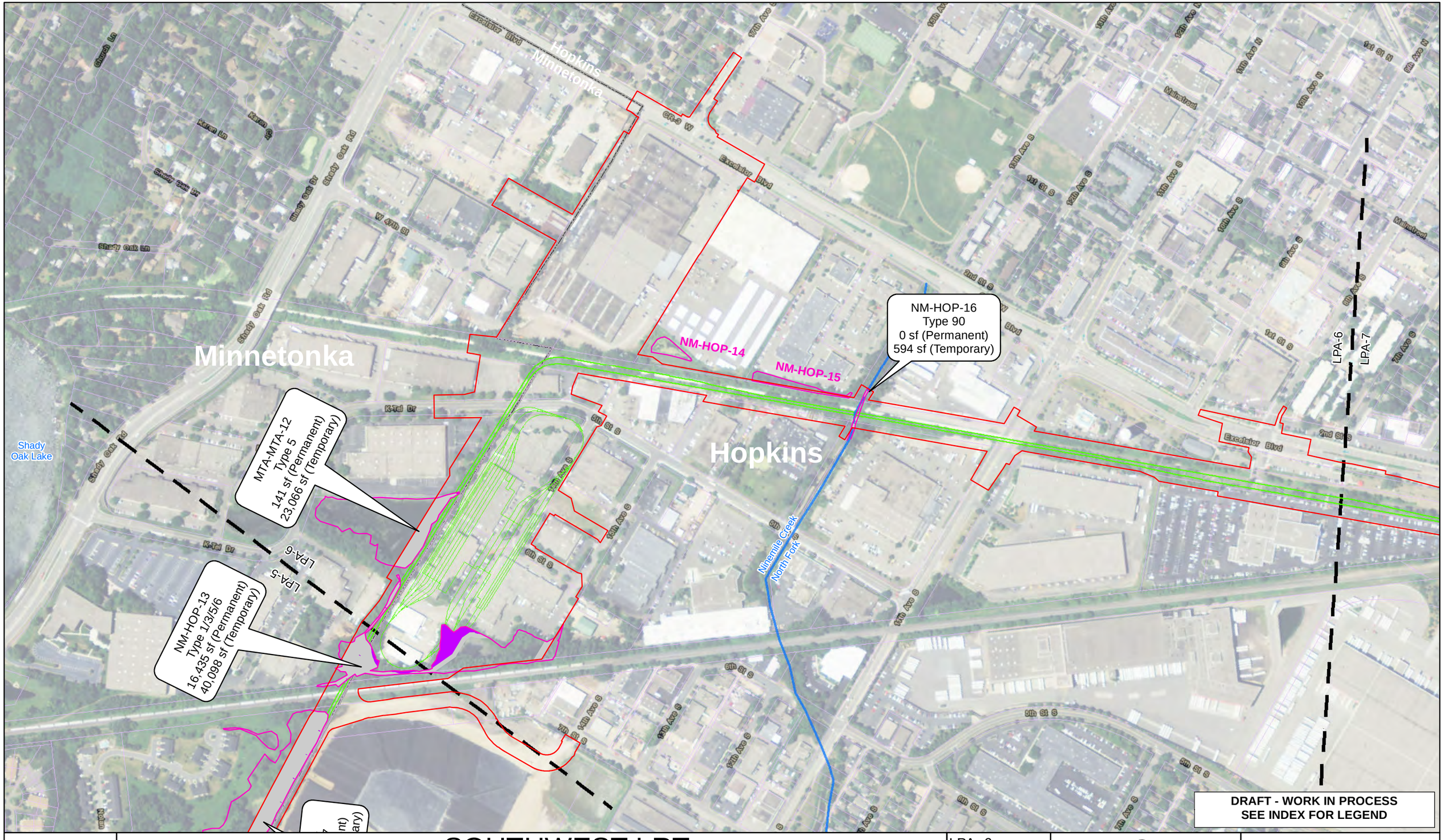
NORTH

0 100 200 400
Scale



SOUTHWEST LRT

CWA Regulated Aquatic Resource Impacts
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10/13/2015
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NORTH

0 100 200 400
Scale

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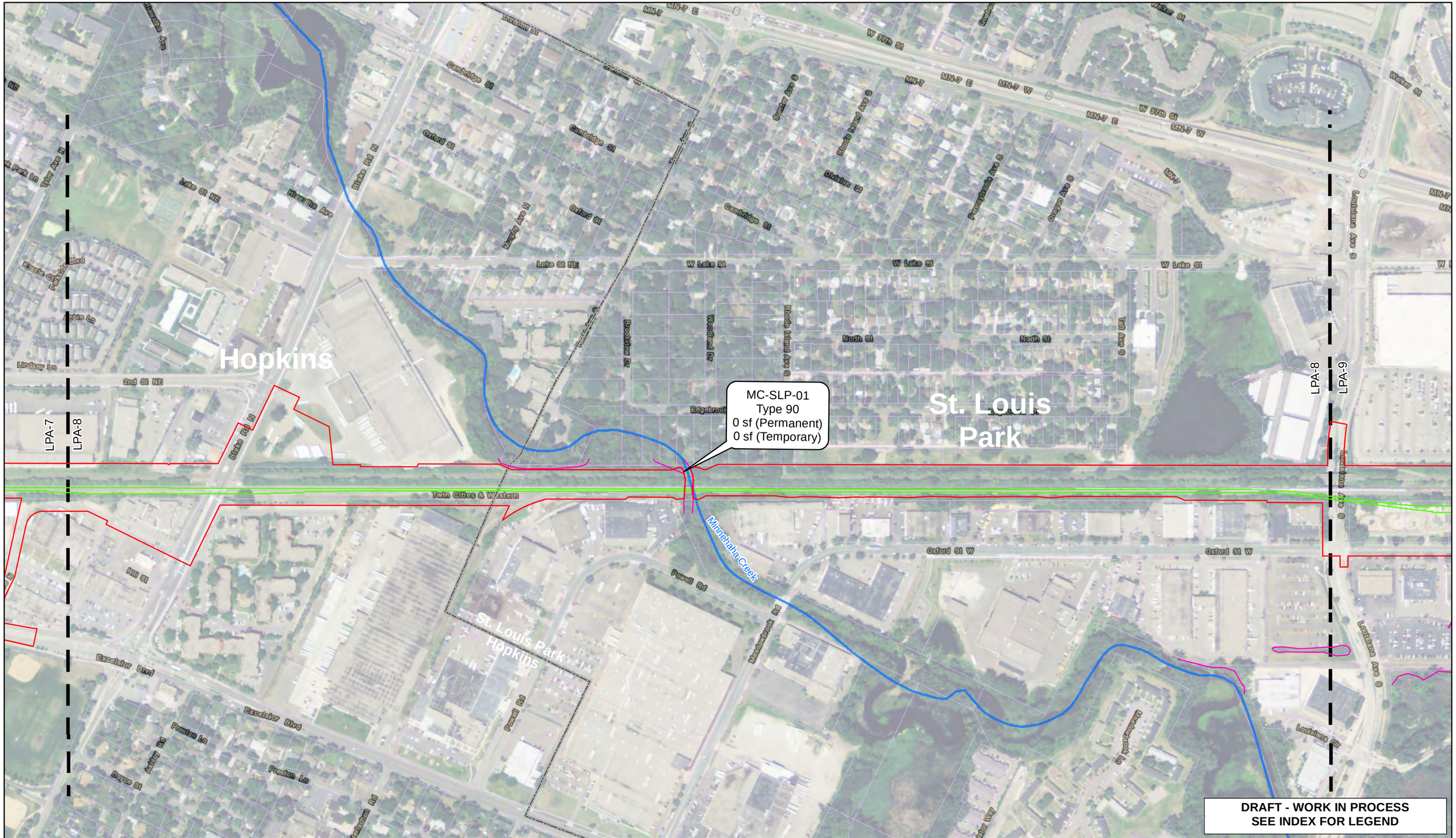
NORTH

0 100 200 400
Scale



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NORTH

0 100 200 400
Scale

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NORTH

0 100 200 400
Scale

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NORTH

0 100 200 400
Scale

MC-MPL-13
Type 90
129 sf (Permanent)
5,244 sf (Temporary)

MC-MPL-12

MC-MPL-11

MC-MPL-10

LPA-10

LPA-11

LPA-12

St. Louis Park

Minneapolis

Cedar Lake

Lake Calhoun

Lake of the Isles

Unnamed Stream

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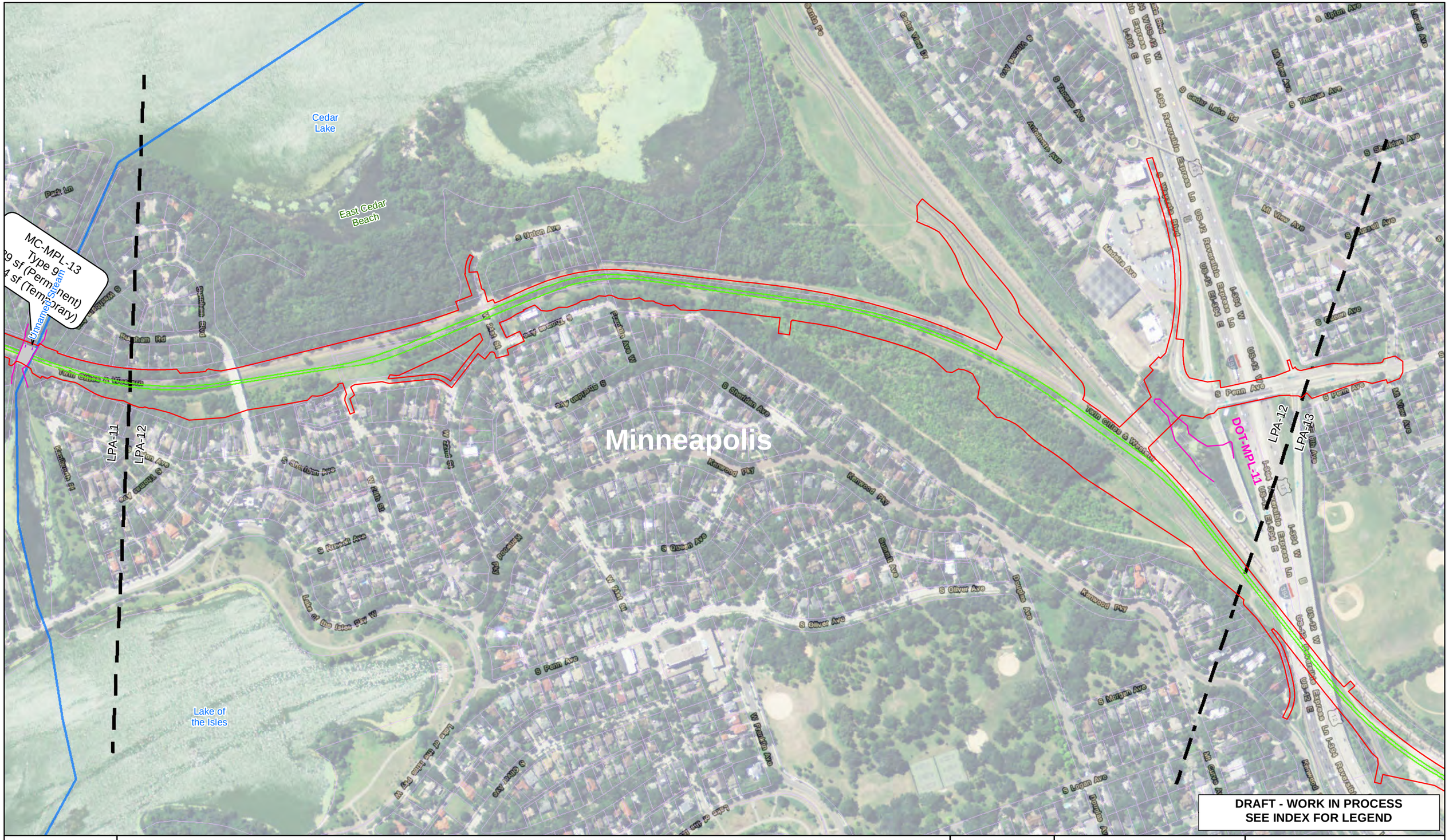
NORTH

0 100 200 400
Scale



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NORTH

0 100 200 400
Scale

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MapBook

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Rev 00.00
10/13/2015
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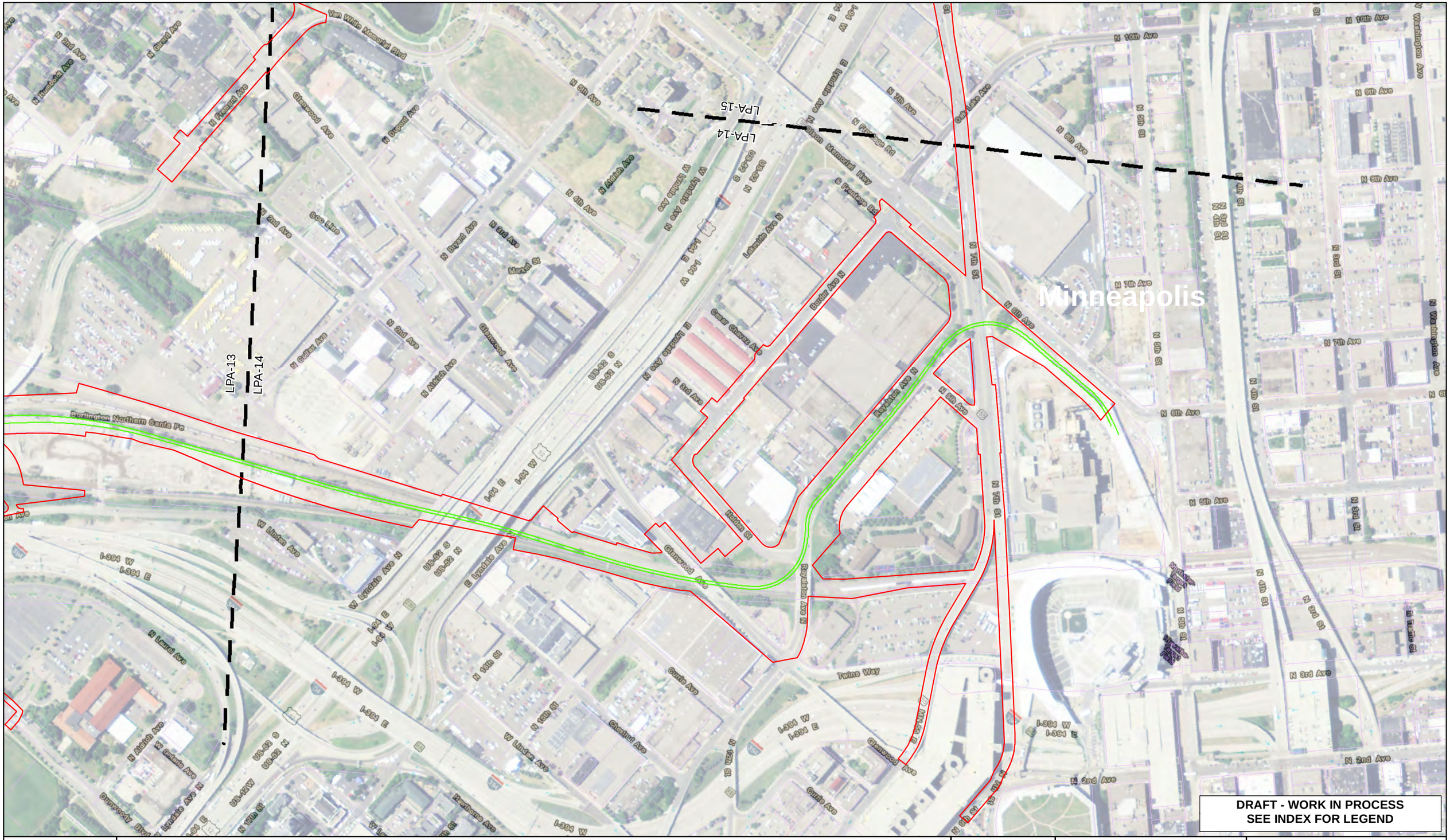
NORTH

0 100 200 400
Scale



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0 100 200 400
Scale

SOUTHWEST LRT

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MapBook

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NORTH

0 100 200 400
Scale

APPENDIX B

List of Adjacent Property Owners & Associated MapBook

Southwest LRT Project- List of Mailing Addresses for Landowners Adjacent to Impacted Waters of the U.S.

Hennepin County PID (for reference)	**Data Requested by US Army Corps of Engineers** (duplicates included on list)					
Parcel ID	**Point of Contact**	**Address 1**	**Address 2**	**City**	**State**	**Zip Code**
111622210013	UNITED HEALTH GROUP, ATTN: DAVE PELNER	9900 BREN ROAD E		MINNETONKA	MN	55343
111622310025	PRIMETECH PARK OWNERS ASSOCIATION	4918 LINCOLN LA DR		EDINA	MN	55436
111622310027	CORNERSTONE	C/O DELOITTE & TOUCHE, LLP	P.O. BOX #188144	CARLSBAD	CA	92008
111622340021	LIBERTY PROPERTY TRUST, ATTN: RICK WEIBLEN	10400 VIKING DRIVE	#130	EDEN PRAIRIE	MN	55344
1211622130011	CITY OF EDEN PRAIRIE, ATTN: DAVID LINDAHL	8080 MITCHELL RD		EDEN PRAIRIE	MN	55344
1211622210007	CITY OF EDEN PRAIRIE, ATTN: DAVID LINDAHL	8080 MITCHELL RD		EDEN PRAIRIE	MN	55344
1211622240008	FC OFFICE INC.	C/O RYAN COMPANIES	50 S. 10TH STREET SUITE 300	MINNEAPOLIS	MN	55403
2511722120003	SOO LINE RAIL ROAD COMPANY	7TH FLOOR TAX DEPARTMENT	120 S 6TH ST	MINNEAPOLIS	MN	55402
2511722210001	HENNEPIN COUNTY PUBLIC WORKS ATTN: DEBRA BRISK	A-2303 GOVERNMENT CENTER	300 SOUTH 6TH STREET	MINNEAPOLIS	MN	55487
2611722419000	SOO LINE RAIL ROAD COMPANY	7TH FLOOR TAX DEPARTMENT	120 S 6TH ST	MINNEAPOLIS	MN	55402
2611722419000	SOO LINE RAIL ROAD COMPANY	7TH FLOOR TAX DEPARTMENT	120 S 6TH ST	MINNEAPOLIS	MN	55402
3611722210002	CITY OF MINNETONKA, ATTN: JULIE WISCHNACK	14600 MINNETONKA BLVD.		MINNETONKA	MN	55345
3611722240010	CITY OF MINNETONKA, ATTN: JULIE WISCHNACK	14600 MINNETONKA BLVD.		MINNETONKA	MN	55345
3611722310002	CITY OF MINNETONKA, ATTN: JULIE WISCHNACK	14600 MINNETONKA BLVD.		MINNETONKA	MN	55345
2511722210005	UGORETS 410 LLC, ATTN: ALEX UGORETS	410 11TH AVE S		HOPKINS	MN	55343
2511722230058	BNR PROPERTIES LLC	11181 CO RD NO 502		BAYFIELD	CO	81122
2511722230049	KANT-SING PARTNERSHIP	620 16TH AVE S		HOPKINS	MN	55343
2511722230050	LIBERTY PROPERTY TRUST, ATTN: RICK WEIBLEN	10400 VIKING DRIVE	#130	EDEN PRAIRIE	MN	55344
3611722240006	AMERICAN MEDICAL SYSTEMS, ATTN: PAUL VAN BRUNT	10700 BREEN RD W		MINNETONKA	MN	55343
3611722240009	AMERICAN MEDICAL SYSTEMS, ATTN: PAUL VAN BRUNT	10700 BREEN RD W		MINNETONKA	MN	55343
2511722330005	GREENFIELD APARTMENTS LLP	C/O STUART CO	1000 80TH ST W	BLOOMINGTON	MN	55420
2511722330006	GREENFIELD APARTMENTS LLP	C/O STUART CO	1000 80TH ST W	BLOOMINGTON	MN	55420
2611722140006	THE TRAVELERS COMPANIES INC, ATTN: CASSANDRA HEADRICK	385 WASHINGTON STREET, NB12A		ST. PAUL	MN	55102
2611722410008	500 NORTH ROBERT LTD PTRSHP	1224 96TH ST. W		BLOOMINGTON	MN	55431
2611722440106	DEER RIDGE TOWNHOMES LLP	C/O STUART CO	1000 80TH ST W	BLOOMINGTON	MN	55420
111622240052	DUCHOSSOIS MILESTONE R E LLC	6436 CITY WEST PKWY		EDEN PRAIRIE	MN	55344
111622240058	KRAUS-ANDERSON INCOPORATED	4310 OLD SHAKOPEE RD W		BLOOMINGTON	MN	55437
111622310026	CRE CITY WEST LIC; CHICAGO TITLE INSURANCE CO	222 S 9TH ST #3060		MINNEAPOLIS	MN	55402
111622340012	METRO STORAGE EDEN PRAIRIE	13528 BOULTON BLVD		LAKE FOREST	IL	60045
111622340017	METRO DESIGN CENTER/WHITEBOARD PRODUCT SOLUTIONS	6811 FLYING CLOUD DR		EDEN PRAIRIE	MN	55344
111622340018	ISLAMIC CTR MASIJ AL-HUDA/ISLAMIC CULTURAL COMM CENTR	2534 CENTRAL AVE N E		MINNEAPOLIS	MN	55418
111622340020	LIBERTY PROPERTY TRUST, ATTN: RICK WEIBLEN	10400 VIKING DRIVE	#130	EDEN PRAIRIE	MN	55344
1211622210009	LIBERTY PROPERTY TRUST, ATTN: RICK WEIBLEN	10400 VIKING DRIVE	#130	EDEN PRAIRIE	MN	55344
1211622230010	LIBERTY PROPERTY TRUST, ATTN: RICK WEIBLEN	10400 VIKING DRIVE	#130	EDEN PRAIRIE	MN	55344
1211622240006	EAGLE RIDGE A A BUILDING CO	C/O EAGLE RIDGE ACADEMY	7255 FLYING CLOUD DR	EDEN PRAIRIE	MN	55344

Hennepin County PID (for reference)	Data Requested by US Army Corps of Engineers (duplicates included on list)					
Parcel ID	**Point of Contact**	**Address 1**	**Address 2**	**City**	**State**	**Zip Code**
1211622240007	LIBERTY PROPERTY TRUST, ATTN: RICK WEIBLEN	10400 VIKING DRIVE	#130	EDEN PRAIRIE	MN	55344
111622340011	VALUEVISION MEDIA INC	6740 SHADY OAK RD		EDEN PRAIRIE	MN	55344
1511622110012	SW METRO TRANSIT COMM	13500 TECHNOLOGY DR		EDEN PRAIRIE	MN	55344
1511622129000	NAP -SW STATION, LLC.	C/O RYAN PTS	P.O BOX 06019	CHICAGO	ILLINOIS	60606
1511622129000	SOUTHWEST STATION HOMEOWNERS ASSOCIATION	13560 TECHNOLOGY DRIVE		EDEN PRAIRIE	MN	55344
1511622129000	MILLICENT C OLSEN ET AL	13560 TECHNOLOGY DR	CONDO # 1323	EDEN PRAIRIE	MN	55344
1511622129000	KIMBERLY BURKE/JEFFREY BURKE	13560 TECHNOLOGY DR	CONDO # 1112	EDEN PRAIRIE	MN	55344
1511622129000	KATE M HOGAN	13560 TECHNOLOGY DR	CONDO # 1225	EDEN PRAIRIE	MN	55344
1511622129000	E ROCHFORD & R G ROCHFORD	13560 TECHNOLOGY DR	CONDO # 1125	EDEN PRAIRIE	MN	55344
1511622129000	ANN M ABBE	13560 TECHNOLOGY DR	CONDO # 1307	EDEN PRAIRIE	MN	55344
1511622129000	NICOLE WESTVIG	13560 TECHNOLOGY DR	CONDO # 1103	EDEN PRAIRIE	MN	55344
1511622129000	BRIGID RENKEN/ANTHONY RENKEN	13560 TECHNOLOGY DR	CONDO # 1325	EDEN PRAIRIE	MN	55344
1511622129000	HEDAYAT ANBAR ET AL	13560 TECHNOLOGY DR	CONDO # 1316	EDEN PRAIRIE	MN	55344
1511622129000	JOHN EDWARD LOBBEN TRUSTEE	13560 TECHNOLOGY DR	CONDO # 1330	EDEN PRAIRIE	MN	55344
1511622129000	AMIN ETEMAD-REZAI	13560 TECHNOLOGY DR	CONDO # 1109	EDEN PRAIRIE	MN	55344
1511622129000	T F BLAIR & L A BLAIR	13560 TECHNOLOGY DR	CONDO # 1206	EDEN PRAIRIE	MN	55344
1511622129000	A ALIZADEH & R ALIZADEH	13560 TECHNOLOGY DR	CONDO # 1216	EDEN PRAIRIE	MN	55344
1511622129000	BEAR STEARN ASSET BACKED SEC	13560 TECHNOLOGY DR	CONDO # 1308	EDEN PRAIRIE	MN	55344
1511622129000	C A WARNER & L A BARDEAUX	13560 TECHNOLOGY DR	CONDO # 1115	EDEN PRAIRIE	MN	55344
1511622129000	A M & S THIERINGER	13560 TECHNOLOGY DR	CONDO # 1124	EDEN PRAIRIE	MN	55344
1511622129000	P M HAMZA & K K PUTHIYEDATH	13560 TECHNOLOGY DR	CONDO # 1126	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO # 1123	EDEN PRAIRIE	MN	55344
1511622129000	RENEE L RIBA	13560 TECHNOLOGY DR	CONDO # 1208	EDEN PRAIRIE	MN	55344
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1511622129000	SARA K HACKENMUELLER	13560 TECHNOLOGY DR	CONDO # 1119	EDEN PRAIRIE	MN	55344
1511622129000	SUSAN E FRISKE	13560 TECHNOLOGY DR	CONDO # 1213	EDEN PRAIRIE	MN	55344
1511622129000	JEFFREY DONALD THEISEN	13560 TECHNOLOGY DR	CONDO # 1218	EDEN PRAIRIE	MN	55344
1511622129000	ROBERT L SHEFFER	13560 TECHNOLOGY DR	CONDO # 1310	EDEN PRAIRIE	MN	55344
1511622129000	VICKI S CISON	13560 TECHNOLOGY DR	CONDO # 1114	EDEN PRAIRIE	MN	55344
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1511622129000	JASON HAMMERAND	13560 TECHNOLOGY DR	CONDO # 1220	EDEN PRAIRIE	MN	55344
1511622129000	RONALD W CHAPEK	13560 TECHNOLOGY DR	CONDO # 1309	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO # 1305	EDEN PRAIRIE	MN	55344
1511622129000	JIANRONG BU & YONGPING PU	13560 TECHNOLOGY DR	CONDO # 1326	EDEN PRAIRIE	MN	55344
1511622129000	BRANDON J HUMMEL	13560 TECHNOLOGY DR	CONDO # 1228	EDEN PRAIRIE	MN	55344
1511622129000	AUDREY M ZILLER	13560 TECHNOLOGY DR	CONDO # 1204	EDEN PRAIRIE	MN	55344
1511622129000	AL SAALABI	13560 TECHNOLOGY DR	CONDO # 1318	EDEN PRAIRIE	MN	55344
1511622129000	DAVID ALLEN TETLEY	13560 TECHNOLOGY DR	CONDO # 1128	EDEN PRAIRIE	MN	55344
1511622129000	DUNCAN LOUIE	13560 TECHNOLOGY DR	CONDO # 1211	EDEN PRAIRIE	MN	55344
1511622129000	KRISTEN CORNILLE	13560 TECHNOLOGY DR	CONDO #1122	EDEN PRAIRIE	MN	55344
1511622129000	JON K TERP & KAREN S TERP	13560 TECHNOLOGY DR	CONDO #1127	EDEN PRAIRIE	MN	55344
1511622129000	DAVID M JOHNSON	13560 TECHNOLOGY DR	CONDO #1116	EDEN PRAIRIE	MN	55344
1511622129000	REX L/DEBRA J SYLVESTER	13560 TECHNOLOGY DR	CONDO #1221	EDEN PRAIRIE	MN	55344
1511622129000	ROBERT J MEIXNER JR	13560 TECHNOLOGY DR	CONDO #1321	EDEN PRAIRIE	MN	55344
1511622129000	MICHAEL WOLTERSTORFF	13560 TECHNOLOGY DR	CONDO #1328	EDEN PRAIRIE	MN	55344
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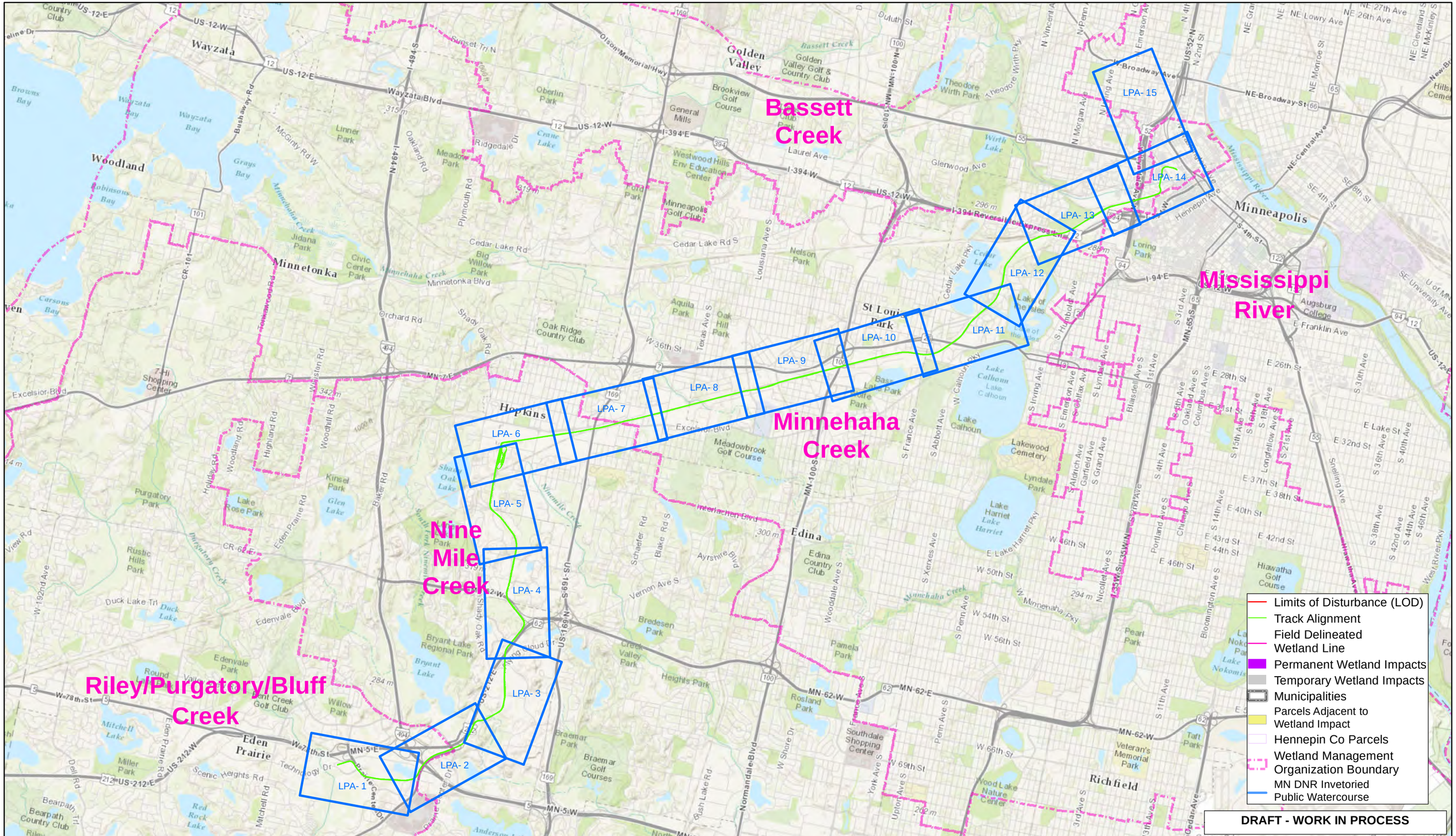
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1223	EDEN PRAIRIE	MN	55344
1511622129000	SHUAI LU	13560 TECHNOLOGY DR	CONDO #1207	EDEN PRAIRIE	MN	55344

Hennepin County PID (for reference)	Data Requested by US Army Corps of Engineers (duplicates included on list)					
Parcel ID	**Point of Contact**	**Address 1**	**Address 2**	**City**	**State**	**Zip Code**
1511622129000	ARVIND MIRTIPATI	13560 TECHNOLOGY DR	CONDO #1224	EDEN PRAIRIE	MN	55344
1511622129000	KARTHIK VISWANATHAN	13560 TECHNOLOGY DR	CONDO #1301	EDEN PRAIRIE	MN	55344
1511622129000	KATHY MCNAMARA	13560 TECHNOLOGY DR	CONDO #1219	EDEN PRAIRIE	MN	55344
1511622129000	STACY SOUDERS	13560 TECHNOLOGY DR	CONDO #1214	EDEN PRAIRIE	MN	55344
1511622129000	ALBERT GEORGE HEPP	13560 TECHNOLOGY DR	CONDO #1319	EDEN PRAIRIE	MN	55344
1511622129000	JACOB F & SHERRI L BARKER	13560 TECHNOLOGY DR	CONDO #1202	EDEN PRAIRIE	MN	55344
1511622129000	JANE GREEN	13560 TECHNOLOGY DR	CONDO #1314	EDEN PRAIRIE	MN	55344
1511622129000	CARLA MARIA PRINCEV	13560 TECHNOLOGY DR	CONDO #1118	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1100	EDEN PRAIRIE	MN	55344
1511622129000	ADEEL AHMAD	13560 TECHNOLOGY DR	CONDO #1303	EDEN PRAIRIE	MN	55344
1511622129000	CHARLES HUBERT/NICOLE HUBERT	13560 TECHNOLOGY DR	CONDO #1102	EDEN PRAIRIE	MN	55344
1511622129000	BGT HOMES LLC	13560 TECHNOLOGY DR	CONDO #1209	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1226	EDEN PRAIRIE	MN	55344
1511622129000	VERONA MANAGEMENT GROUP LLC	13560 TECHNOLOGY DR	CONDO #1111	EDEN PRAIRIE	MN	55344
1511622129000	JESSICA A DUBIEL	13560 TECHNOLOGY DR	CONDO #1324	EDEN PRAIRIE	MN	55344
1511622129000	EUGENE W HANSON	13560 TECHNOLOGY DR	CONDO #1108	EDEN PRAIRIE	MN	55344
1511622129000	PRATHIMA VASUDEVA	13560 TECHNOLOGY DR	CONDO #1304	EDEN PRAIRIE	MN	55344
1511622129000	REBECCA M ZEI	13560 TECHNOLOGY DR	CONDO #1104	EDEN PRAIRIE	MN	55344
1511622129000	SUSANNA M COLE	13560 TECHNOLOGY DR	CONDO #1311	EDEN PRAIRIE	MN	55344
1511622129000	NEIL WEINARD	13560 TECHNOLOGY DR	CONDO #1222	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1315	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1113	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1329	EDEN PRAIRIE	MN	55344
1511622129000	S RAMANATHAN & V SANTHANAM	13560 TECHNOLOGY DR	CONDO #1121	EDEN PRAIRIE	MN	55344
1511622129000	WILLIAM E O'SULLIVAN	13560 TECHNOLOGY DR	CONDO #1201	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1210	EDEN PRAIRIE	MN	55344
1511622129000	BRIAN C HAGAMAN	13560 TECHNOLOGY DR	CONDO #1205	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1217	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1106	EDEN PRAIRIE	MN	55344
1511622129000	WAYNE KERR & MARLENE KERR	13560 TECHNOLOGY DR	CONDO #1322	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1130	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1129	EDEN PRAIRIE	MN	55344
1511622129000	NAVEED AHMED & HUDA MALIK	13560 TECHNOLOGY DR	CONDO #1306	EDEN PRAIRIE	MN	55344
1511622129000	JANA L JOHNSON	13560 TECHNOLOGY DR	CONDO #1312	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1110	EDEN PRAIRIE	MN	55344
1511622129000	MICHELLE KAY JOHNSON	13560 TECHNOLOGY DR	CONDO #1212	EDEN PRAIRIE	MN	55344
1511622129000	ELIZABETH W GRANT	13560 TECHNOLOGY DR	CONDO #1327	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1229	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1317	EDEN PRAIRIE	MN	55344
1511622129000	NAP SOUTHWEST STATION LLC	13560 TECHNOLOGY DR	CONDO #1117	EDEN PRAIRIE	MN	55344
3202924130001	HENNEPIN COUNTY PUBLIC WORKS, ATTN: DEBRA BRISK	A-2303 GOVERNMENT CENTER	300 SOUTH 6TH STREET	MINNEAPOLIS	MN	55487
3202924420091	MINNEAPOLIS PARK AND RECREATION BOARD, ATTN: MICHAEL SCHROEDER	2117 WEST RIVER RD N		MINNEAPOLIS	MN	55411
3202924130018	MINNEAPOLIS PARK AND RECREATION BOARD, ATTN: MICHAEL SCHROEDER	2117 WEST RIVER RD N		MINNEAPOLIS	MN	55411
3202924120001	MINNEAPOLIS PARK AND RECREATION BOARD, ATTN: MICHAEL SCHROEDER	2117 WEST RIVER RD N		MINNEAPOLIS	MN	55411
3202924420001	CITY OF MINNEAPOLIS PUBLIC WORKS, ATTN: PAUL MILLER	350 S 5TH ST #203		MINNEAPOLIS	MN	55414
3202924340508	HENNEPIN COUNTY PUBLIC WORKS, ATTN: DEBRA BRISK	A-2303 GOVERNMENT CENTER	300 SOUTH 6TH STREET	MINNEAPOLIS	MN	55487



SOUTHWEST LRT

Parcels Adjacent to
CWA Regulated Aquatic Resource Impacts
MapBook Index

Map Index
Rev 00.00
10/13/2015

NORTH

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Miles

DOT-EP-17
Type 2/5
203 sf (Permanent)
15,969 sf (Temporary)

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

EP-EP-24
Type 5
16,617 sf (Permanent)
0 sf (Temporary)

DOT-EP-16
DOT-EP-14
DOT-EP-15
DOT-EP-04
DOT-EP-05
EP-EP-21
EP-EP-18
EP-EP-19
EP-EP-13
DIG-EP-EP-04
LPA-1
LPA-2

1511622129000
1511622110012

Unnamed Stream
Purgatory Creek
Lake Idlewild

Eden Prairie

Plaza Dr
US-212 W
US-212 E
MN-5 W
MN-5 E
W 78th St
Technology Dr
Prairie Center Dr
Anagram Dr
Eden Glen Rd
Singletree Ln
Regional Center Rd
Flying Cloud Dr
Commonwealth Dr

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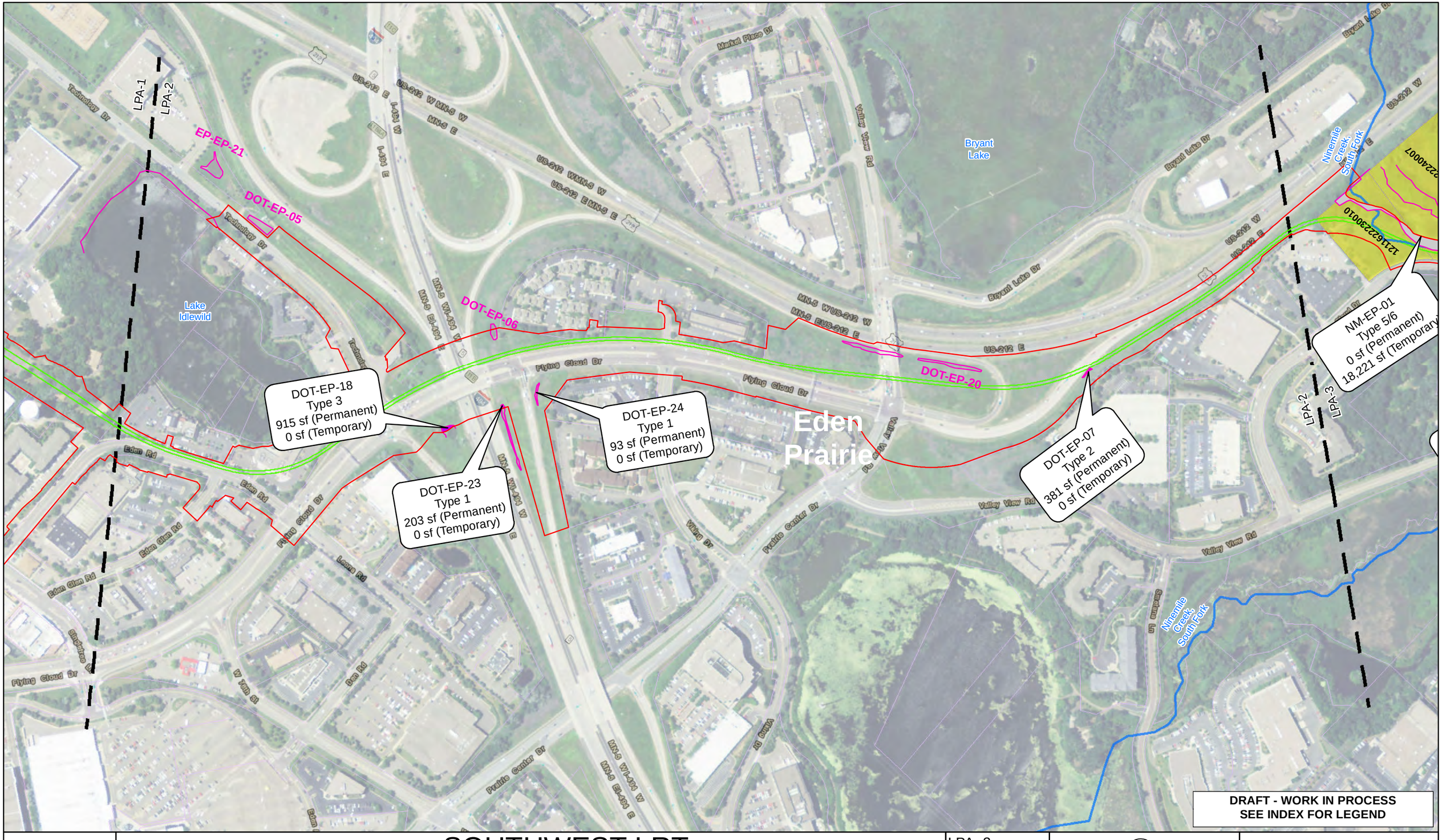
NORTH

0 100 200 400
Scale



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Parcels Adjacent to
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0 100 200 400
Scale


NM-EP-01
Type 5/6
0 sf (Permanent)
18,221 sf (Temporary)
NM-EP-02
Type 3
0 sf (Permanent)
2,052 sf (Temporary)
NM-EP-03
Type 3
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899 sf (Temporary)
NM-EP-04
Type 7
0 sf (Permanent)
1,727 sf (Temporary)
NM-EP-06
Type 3/6
14,296 sf (Permanent)
6,606 sf (Temporary)
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Type 3/6
0 sf (Permanent)
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8,339 sf (Temporary)
DOT-EP-08
Type 3
0 sf (Permanent)
11,219 sf (Temporary)
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0111622340020
0111622340018
0111622340012
0111622340017
0111622340011
0111622340021
0111622310027
0111622310025
Ninemile Creek, South Fork
Eden Prairie
LPA-2
LPA-3
LPA-4
US-212 W
US-212 E
Flying Cloud Dr
Valley View Rd
Golden Triangle Dr
Shady Oak Rd
W 70th St
W 78th St
74th St W
Hamilton Rd
DRAFT - WORK IN PROCESS
SEE INDEX FOR LEGEND

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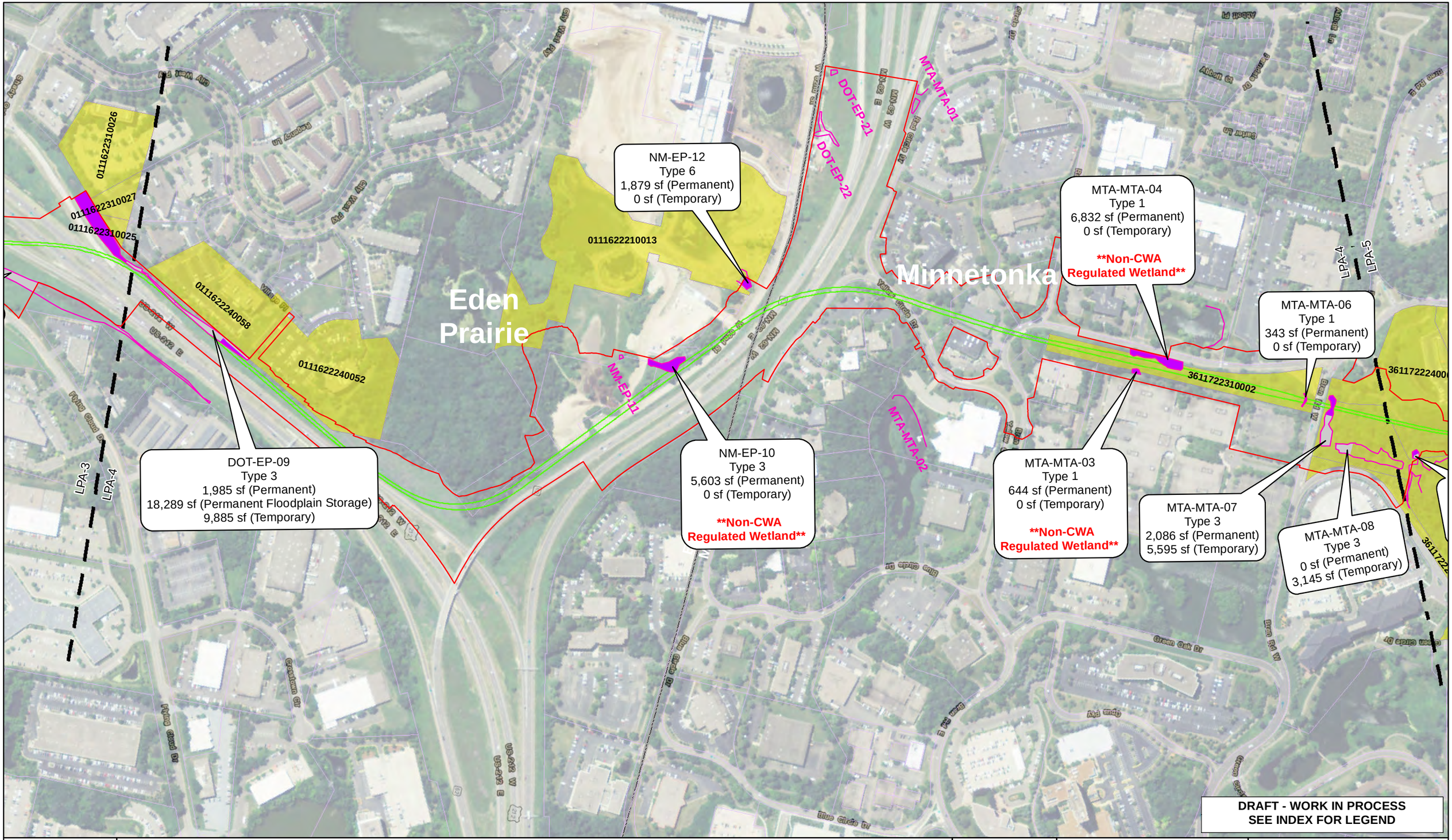
NORTH
0 100 200 400
Scale

SOUTHWEST
METROPOLITAN COUNCIL



SOUTHWEST LRT

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NORTH

0 100 200 400
Scale

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

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-14

NM-HOP-15

Minnetonka

Hopkins

Shady Oak Lake

2511722210001

2511722120003

2611722419000

2611722140006

2611722410008

2511722230049

2511722230050

2511722230058

2611722440106

2511722210005

LPA-5

LPA-6

LPA-7

Ninemile Creek

North Fork

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NORTH

0 100 200 400
Scale

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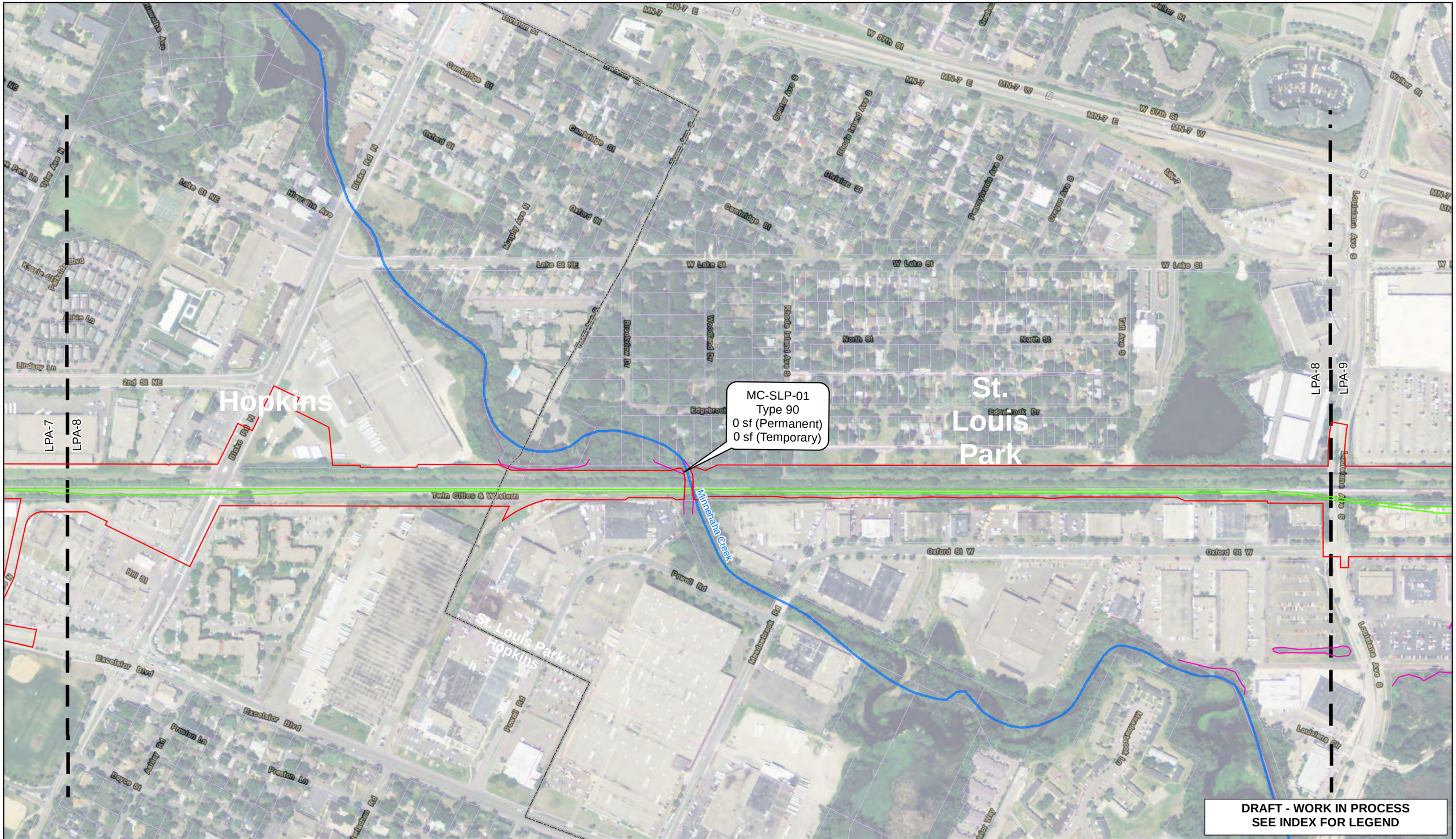
NORTH

0 100 200 400
Scale



SOUTHWEST LRT

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0 100 200 400
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0 100 200 400
Scale

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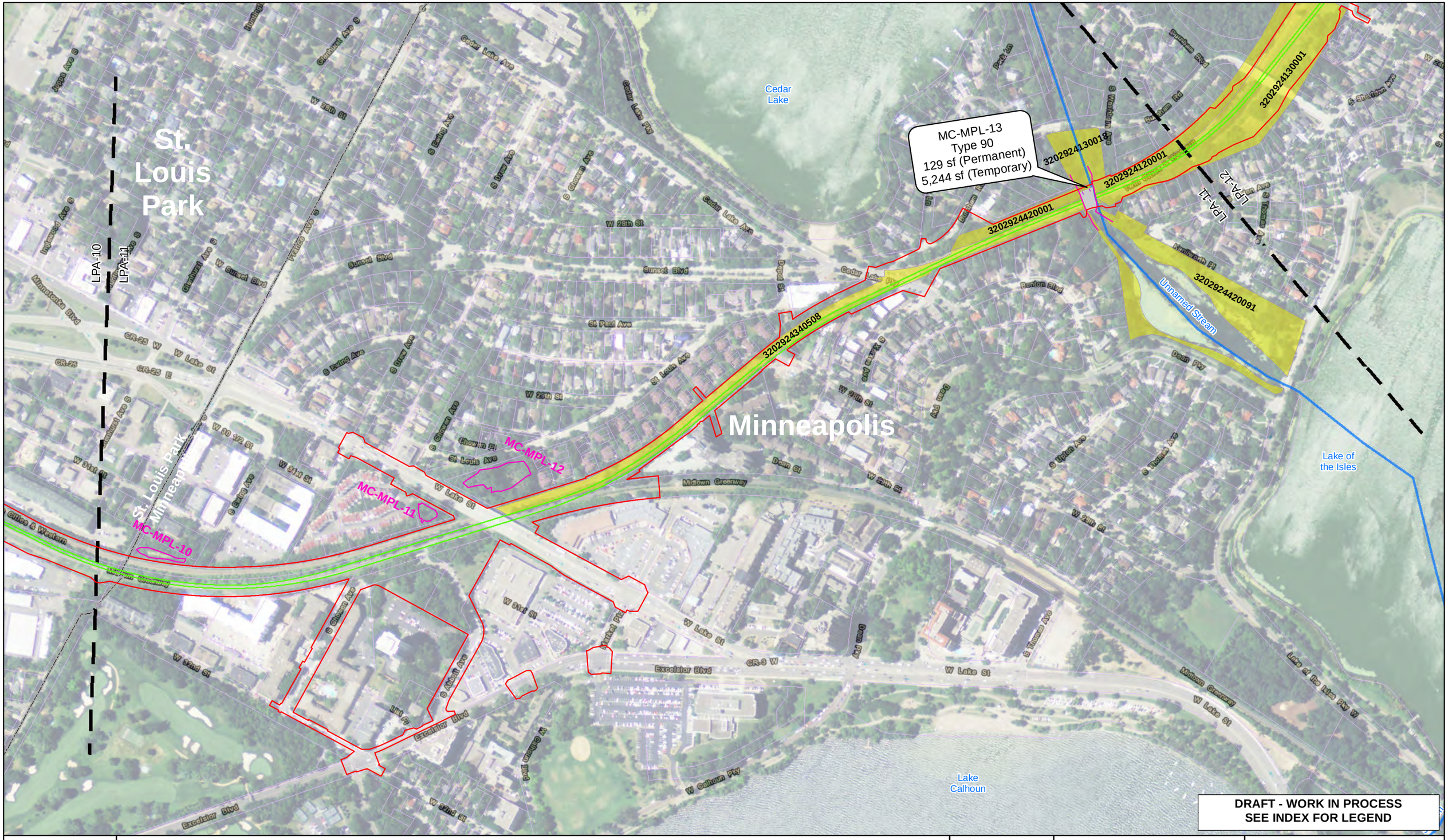
NORTH

0 100 200 400
Scale



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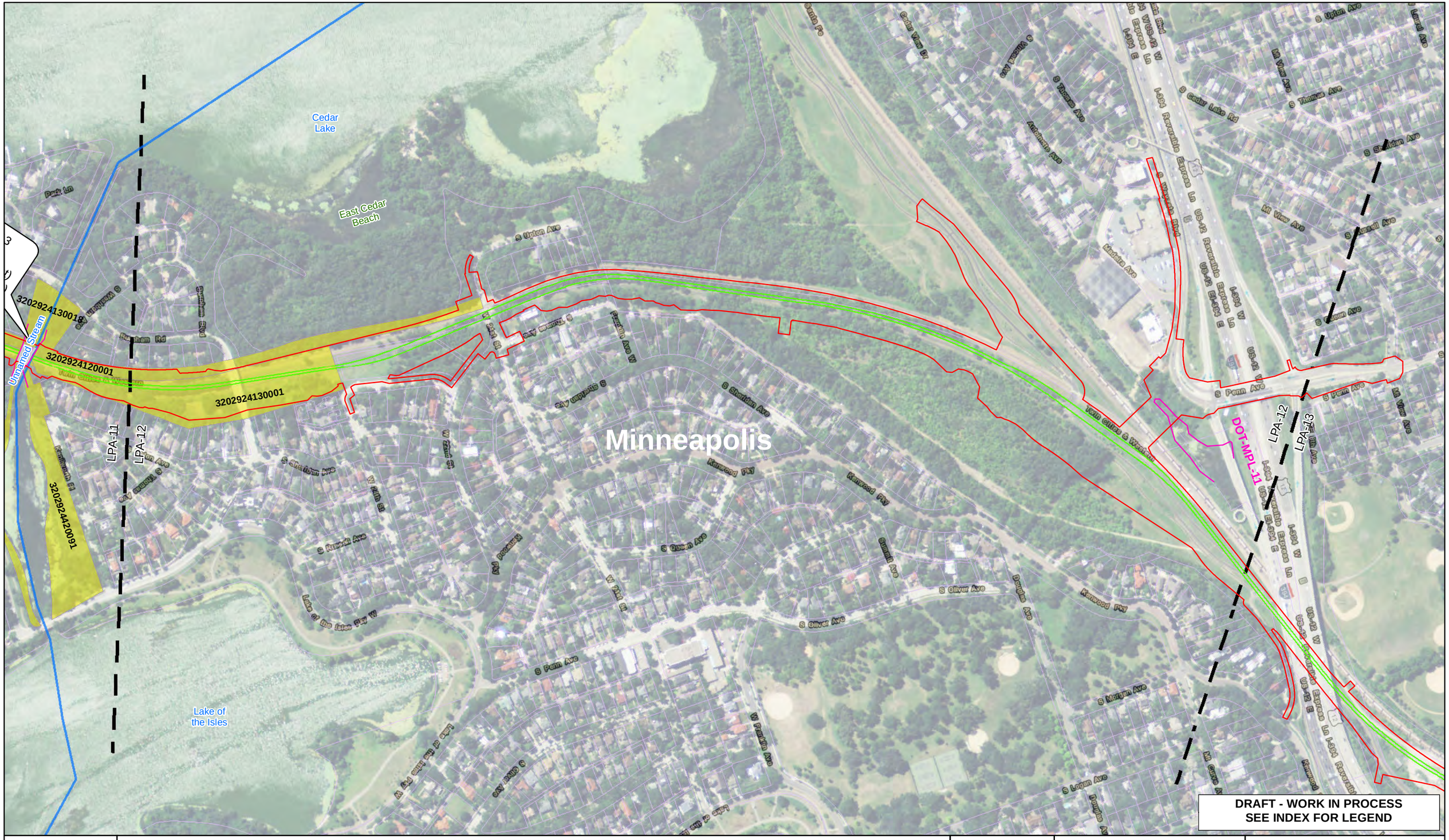
NORTH

0 100 200 400
Scale



DRAFT - WORK IN PROCESS
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0 100 200 400
Scale

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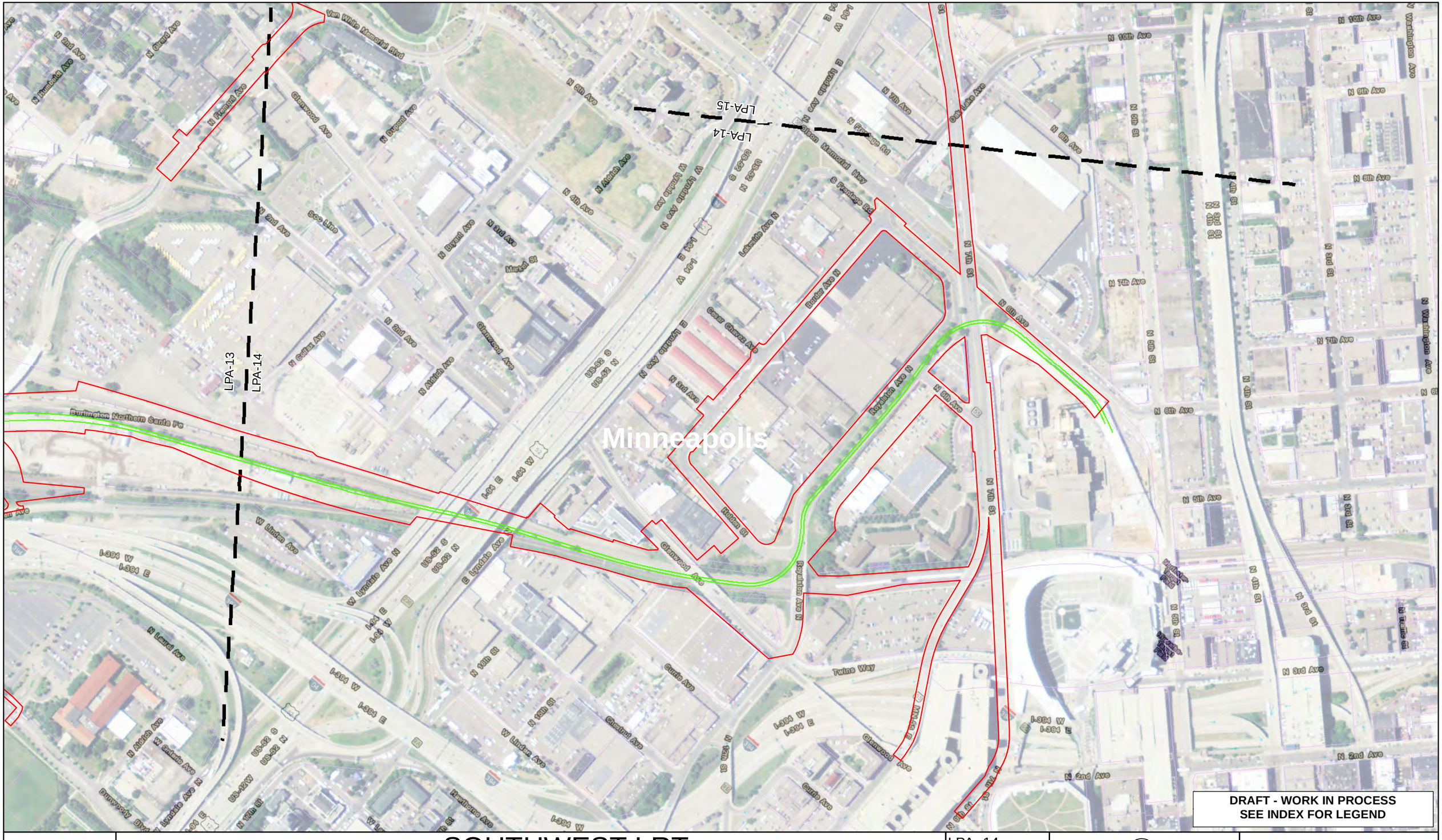
NORTH

0 100 200 400
Scale



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0 100 200 400
Scale

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NORTH

0 100 200 400
Scale

APPENDIX C

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

FLOODPLAIN MITIGATION AREA

EP-EP-22

D

SOUTHWEST TRANSIT BUS STATION

SOUTHWEST STATION

2085+00
2084+00
2083+00
2082+00
2081+00
2080+00
2079+00
2078+00

TECHNOLOGY DR

DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
EP-EP-22
SHEET 1 OF 27

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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention

METROPOLITAN COUNCIL

AECOM SRF Consulting Group, Inc. WSB & Associates, Inc.

Aug, 03 2015 10:00 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.
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 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 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 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 RATE OF 875 GAL PER 1000 GAL (3.3 CU.M PER 3.8 CU.M) OF SLURRY MIX. APPLY MIXTURE AT 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 100SQ YD. TYPE 3 RELEASE FERTILIZER 10–10–10 PLACED AT A RATE OF 8 LB PER 100 SQ YD.,
1	THE CONTRACTOR SHALL PROVIDED A PLAN FOR BOX CULVERT INSTALLATION, THE PLAN SHALL USE ONE THE OPTIONS FORM "BEST PRACTICES FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004–0001" PROVIDED BY THE MNDNR. ACCEPTABLE METHODS INCLUDE: –OPTION 1: TEMPORARY STREAM BLOCK/BYPASS PUMPING. –OPTION 2: CULVERT BYPASS. –OPTION 3: PARTIAL STREAM DIVERSION.
2	RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS WHERE WORK WILL TEMPORARILY CEASE FOR 7 DAYS.

WETLAND IMPACTS:

16,617 SF (PERMANENT)
0 SF (TEMPORARY)

WETLAND IMPACTS:

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

RESTORATION:

N/A

EP-EP-24

TECHNOLOGY DR

SOUTHWEST TRANSIT BUS STATION

DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
EP-EP-24
SHEET 2 OF 27

REV: 4
DATE : 03/10/2015
ID #: 9

NORTH

SOUTHWEST Green Line LRT Extention

METROPOLITAN COUNCIL

AECOM

SRF Consulting Group, Inc.

WSB & Associates, Inc.

Oct, 23 2015 08:51 am C:\Users\V-SancheM\appdata\local\temp\AcPublish_6728\EXHIBIT-01-WETLAND IMPACTS - BL..dwg By: V-SancheM

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.
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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:

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

TH 212 WB
TH 212 EB
DOT-EP-17
PRAIRIE CENTER DR
TECHNOLOGY DR
D
B

DRAFT-WORK IN PROCESS

Jul, 30 2015 04:47 pm V:\3400_ADC\CAD\SEGMENT W1\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS.dwg By: msobiech

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
DOT-EP-17
SHEET 3 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

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:

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

TH 494/5 WB
TH 494/5 EB
FLYING CLOUD DR
TECHNOLOGY DR
2140+00
2139+00
2138+00
2137+00
2136+00
2135+00
2134+00
2133+00
B
DOT-EP-18

DRAFT-WORK IN PROCESS

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

SOUTHWEST
Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
DOT-EP-18
SHEET 4 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

NOTES:
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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.

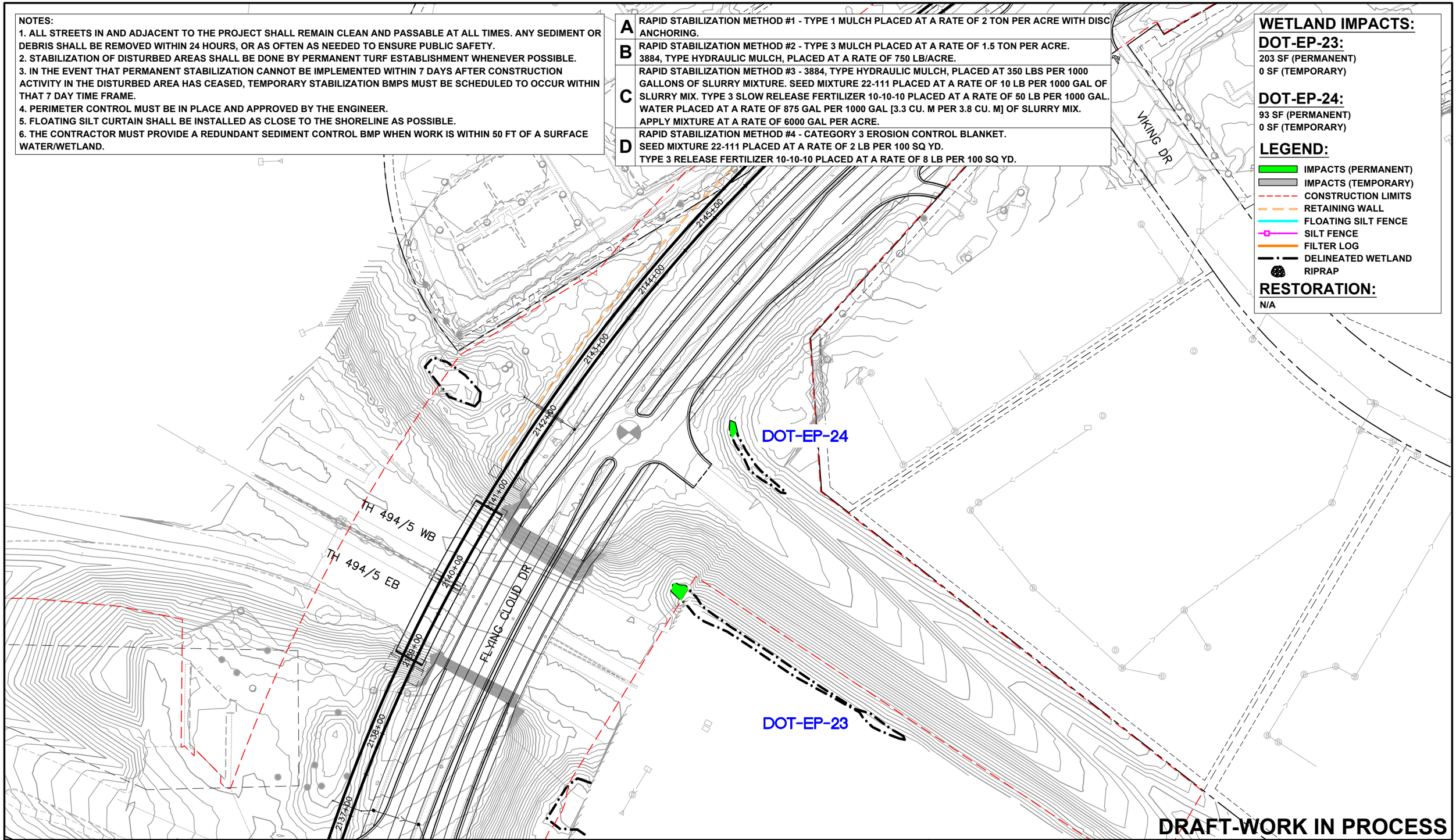
WETLAND IMPACTS:

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 Green Line LRT Extention

SOUTHWEST LIGHT RAIL

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

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

NORTH
0 25 50 100

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

NOTES:
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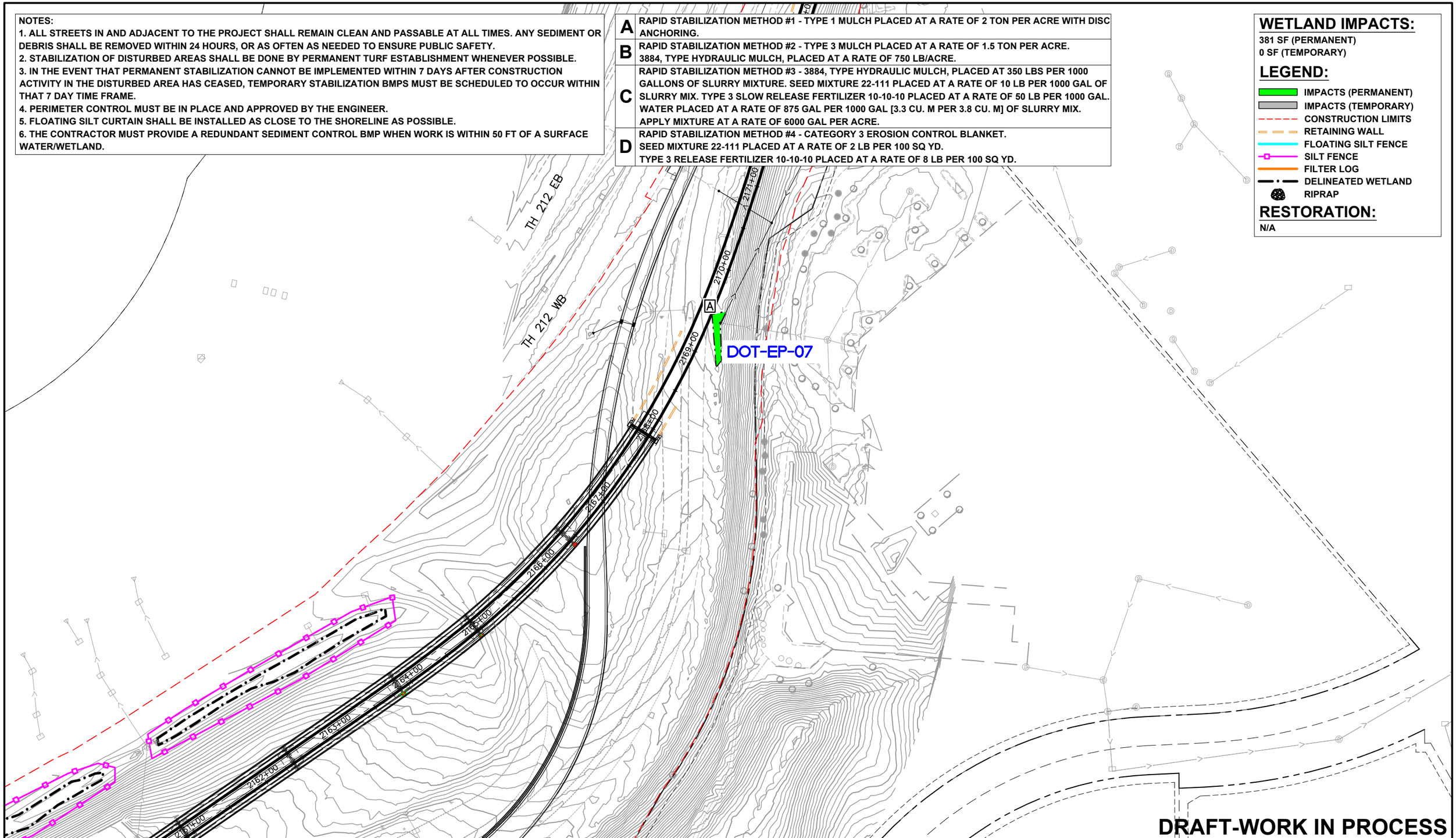
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

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:
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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention
METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

Jul, 30 2015 04:50 pm v:\3400_ADC\CAD\SEGMENT W1\EXHIBITS\WETLANDS\EXHIBIT-01-WETLAND IMPACTS.dwg By: msobiech

NOTES:
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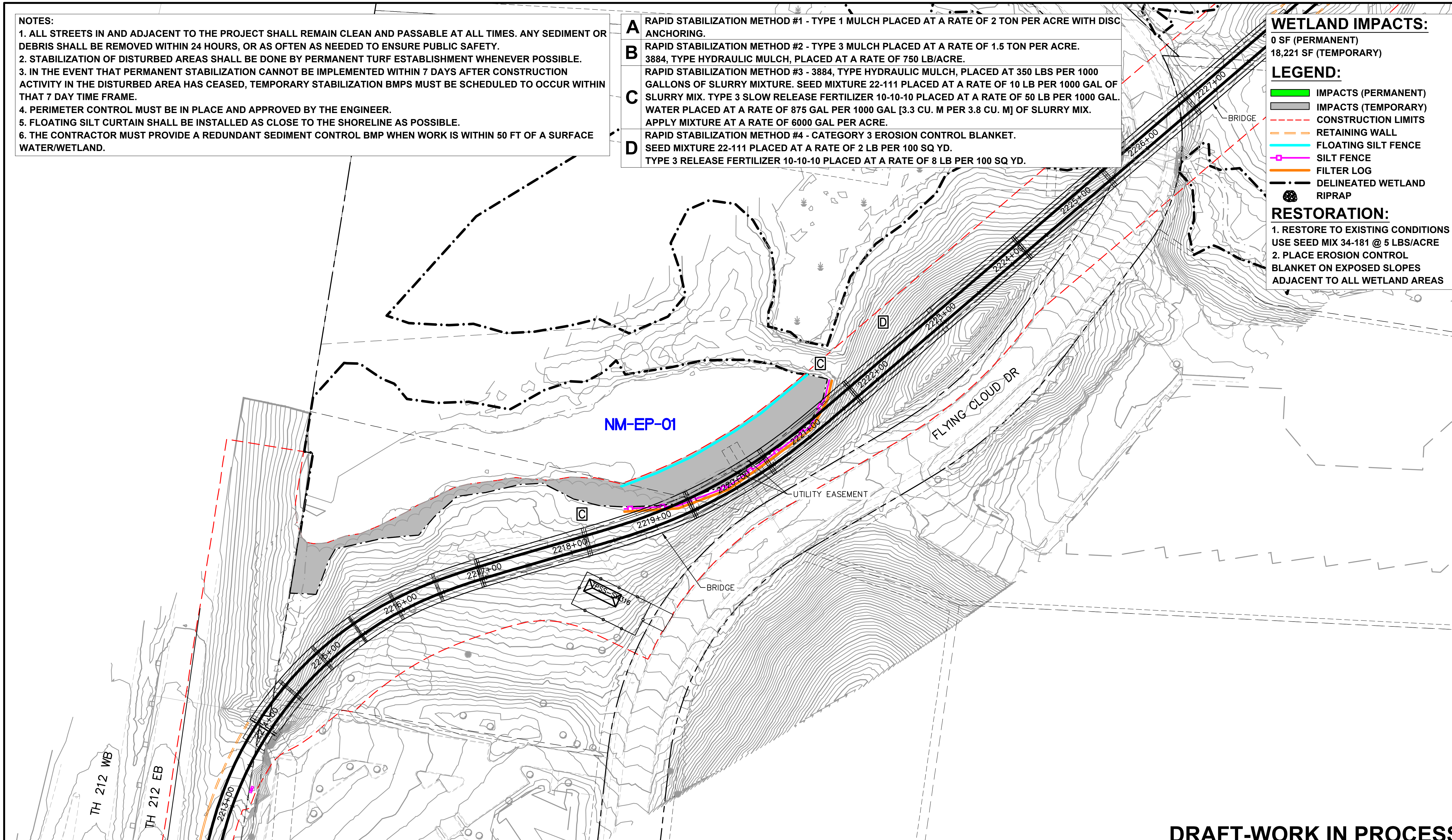
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.

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 Green Line LRT Extention

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

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL | AECOM | SRF Consulting Group, Inc. | WSB & Associates, Inc.

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.
2. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
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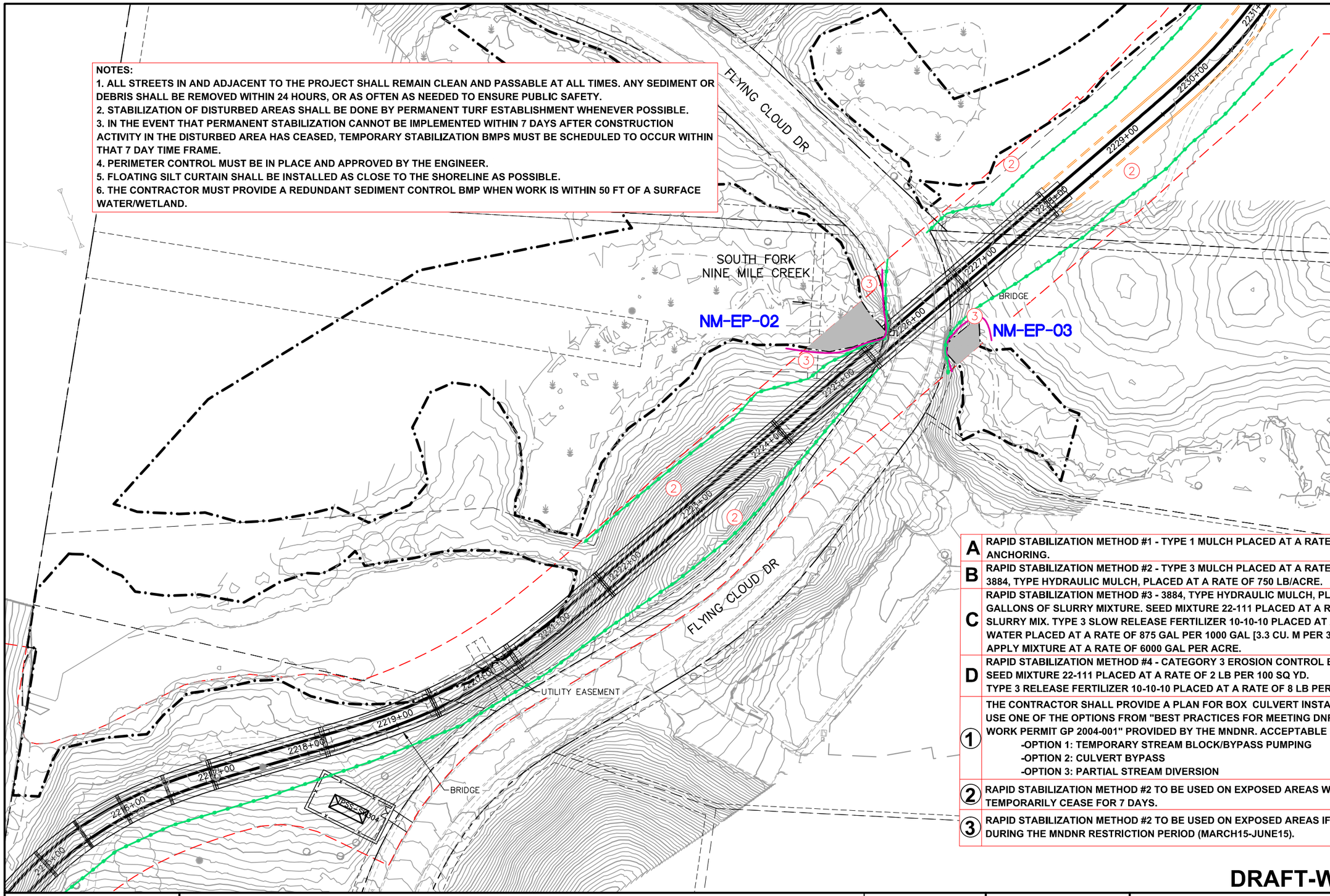
4. PERIMETER CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER.
5. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE.
6. THE CONTRACTOR MUST PROVIDE A REDUNDANT SEDIMENT CONTROL BMP WHEN WORK IS WITHIN 50 FT OF A SURFACE WATER/WETLAND.



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
- SUPER DUTY 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

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.
1	THE CONTRACTOR SHALL PROVIDE A PLAN FOR BOX CULVERT INSTALLATION, THE PLAN SHALL USE ONE OF THE OPTIONS FROM "BEST PRACTICES FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-001" PROVIDED BY THE MNDNR. ACCEPTABLE METHODS INCLUDE: -OPTION 1: TEMPORARY STREAM BLOCK/BYPASS PUMPING -OPTION 2: CULVERT BYPASS -OPTION 3: PARTIAL STREAM DIVERSION
2	RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS WHERE WORK WILL TEMPORARILY CEASE FOR 7 DAYS.
3	RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS IF WITHIN 200' OF WATER'S EDGE DURING THE MNDNR RESTRICTION PERIOD (MARCH15-JUNE15).

DRAFT-WORK IN PROCESS

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

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

REV: 4
DATE : 03/10/2015
ID #: 14

NORTH
0 25 50 100

METROPOLITAN COUNCIL · AECOM · SRF Consulting Group, Inc. · WSB & Associates, Inc.

Oct, 22 2015 04:32 pm V:\3400_ADC\CAD\SEGMENT W2\EXHIBITS\WETLANDS\EXHIBIT-02-WETLAND IMPACTS.dwg By: V-SancheM

NOTES:
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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.

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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. APPLY MIXTURE AT A RATE OF 6000 GAL PER ACRE.
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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

NM-EP-04

FLYING CLOUD DR

SOUTH FORK NINE MILE CREEK

BRIDGE

2233+00
2232+00
2231+00
2230+00
2229+00
2228+00
2227+00
2226+00
2225+00
2224+00
2223+00

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

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
NM-EP-04
SHEET 9 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

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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.
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

PARKING RAMP
PILE SUPPORTED TRACK (LAND BRIDGE)
FUTURE CONSTRUCTION
POND
NM-EP-06
GOLDEN TRIANGLE STATION
PARK AND RIDE
W 70TH STREET
TO BE LE
2245+00
2244+00
2243+00
2242+00
2241+00

DRAFT-WORK IN PROCESS

SOUTHWEST
Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
NM-EP-06
SHEET 10 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

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.

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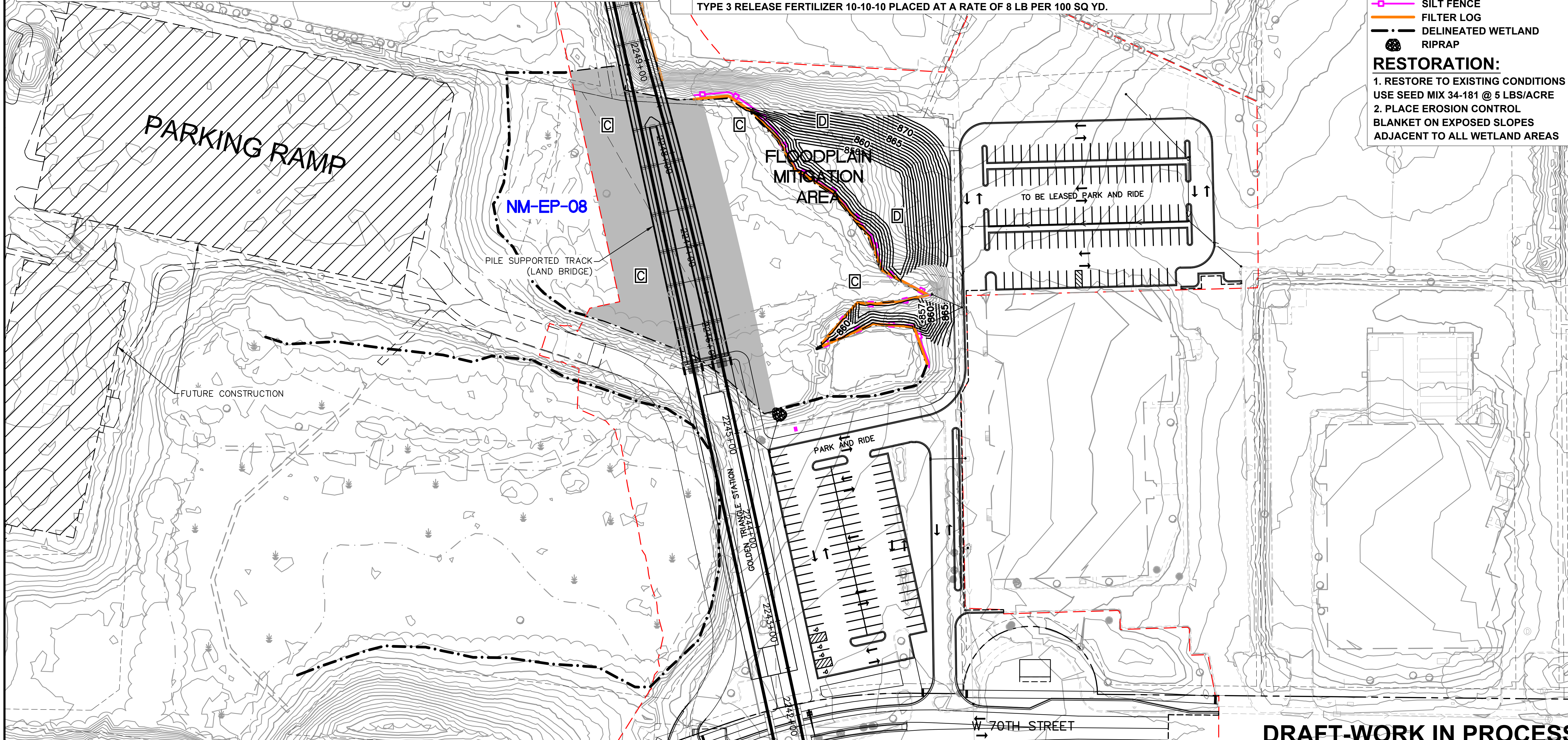
WETLAND IMPACTS:
0 SF (PERMANENT)
40,237 SF (TEMPORARY)

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



DRAFT-WORK IN PROCESS

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SOUTHWEST Green Line LRT Extention

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

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

NORTH
0 25 50 100

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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.

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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:
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

BRIDGE
PILE SUPPORTED TRACK (LAND BRIDGE)
NM-EP-09
C
PARKING RAMP
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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention
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NOTES:
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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:
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

TH 212 WB
TH 212 EB
2266+00
2265+00
2264+00
2263+00
2262+00
2261+00
2259+00
BRIDGE
DOT-EP-08
SHADY OAK RD

DRAFT-WORK IN PROCESS

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

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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention
METROPOLITAN COUNCIL
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WSB & Associates, Inc.

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

A	RAPID STABILIZATION METHOD #1 - TYPE 1 MULCH PLACED AT A RATE OF 2 TON PER ACRE WITH DISC ANCHORING.
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DOT-EP-09

RETAINING WALL
BRIDGE PIER
BRIDGE PIER
BRIDGE
TH 212 WB
TH 212 EB
2276+00
2274+00
2273+00
2272+00
2271+00
2270+00
2269+00
2268+00
2267+00
FLOODPLAIN STORAGE REPLACEMENT
D
D

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

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
DOT-EP-09
SHEET 14 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
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WSB & Associates, Inc.

NOTES:
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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

RIPRAP
2304+00
2303+00
2302+00
2301+00
2300+00
2299+00
2298+00
2297+00
2296+00
2295+00
2294+00
TH 62 EB
TH 62 WB
W 62ND ST
CITY WEST STATION
A
Non-CWA Regulated Basin
NM-EP-10

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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention
METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

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

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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

RIPRAP
NM-EP-12
2307+00
2306+00
2305+00
2304+00
2303+00
2302+00
2301+00
2300+00
2299+00
2298+00
TH 62 EB
TH 62 WB
W 62ND ST

DRAFT-WORK IN PROCESS

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MTA-MTA-05

MTA-MTA-04

Non-CWA Regulated Basin

MTA-MTA-03

Non-CWA Regulated Basin

BREN RD E

2343+00
2342+00
2341+00
2340+00
2339+00
2338+00
2337+00
2336+00
2330+00
2320+00

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

DRAFT-WORK IN PROCESS

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL

AECOM

SRF Consulting Group, Inc.

WSB & Associates, Inc.

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.

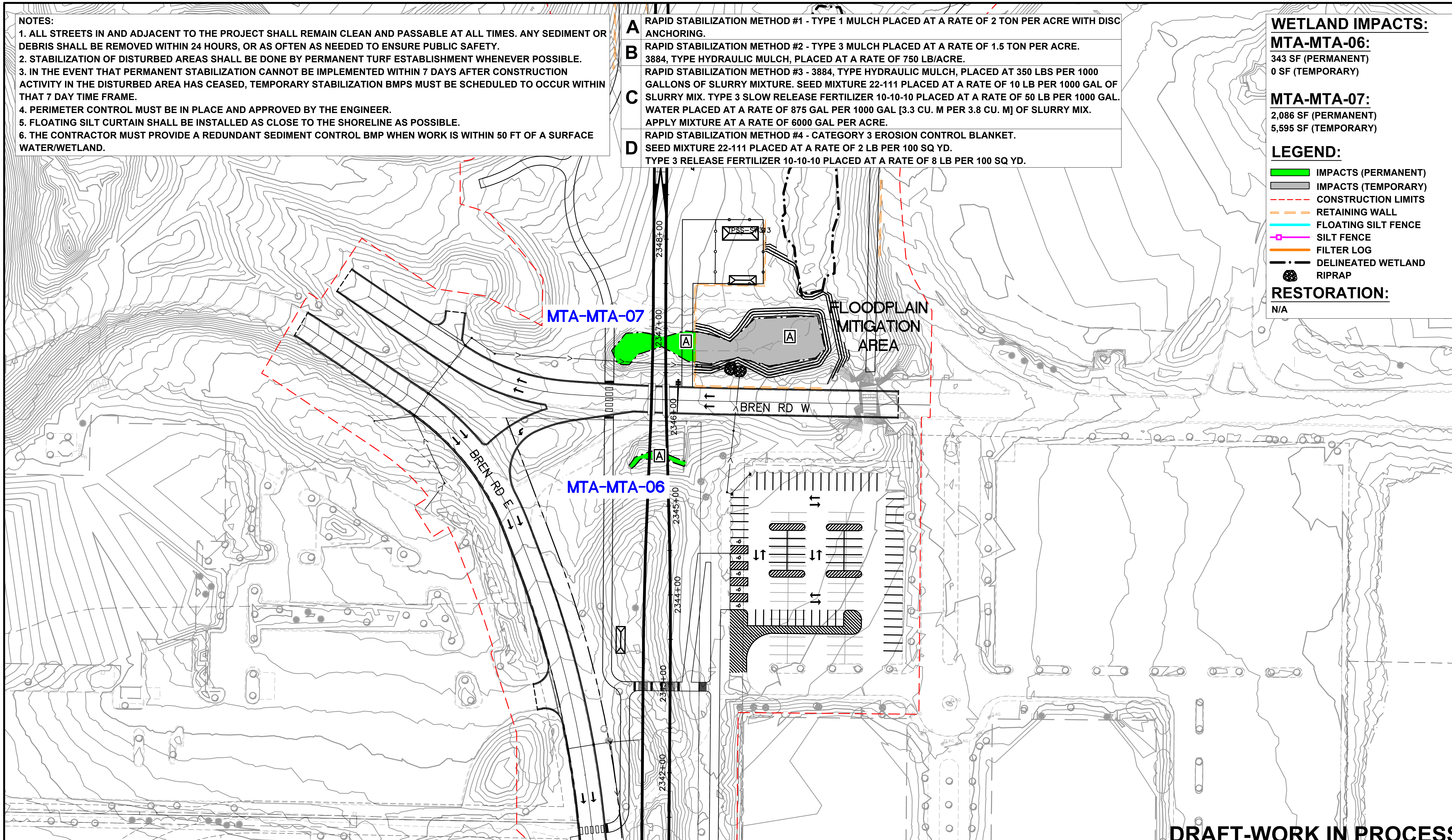
WETLAND IMPACTS:

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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extension
METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

Jul. 30, 2015 05:11 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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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)
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

2342+00 2343+00 2344+00 2345+00 2346+00 2347+00 2348+00 2349+00 2350+00 2351+00 2352+00 2353+00 2354+00 2355+00 2356+00

MTA-MTA-08

FLOODPLAIN MITIGATION AREA

BREN ROAD W

GREEN CIRCLE ROAD

DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
MTA-MTA-08
SHEET 19 OF 27

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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention

METROPOLITAN COUNCIL

AECOM SRF Consulting Group, Inc. WSB & Associates, Inc.

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

NOTES:
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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

2345+00 2346+00 2347+00 2348+00 2349+00 2350+00 2351+00 2352+00 2353+00 2354+00 2355+00 2356+00 2357+00 2358+00 2359+00

MTA-MTA-09

BREN ROAD W

GREEN CIRCLE ROAD

DRAFT-WORK IN PROCESS

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

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
MTA-MTA-09
SHEET 20 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL · AECOM · SRF Consulting Group, Inc. · WSB & Associates, Inc.

NOTES:
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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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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

MTA-MTA-11 (SOUTH)

FLOODPLAIN MITIGATION AREA

BRIDGE PIER
BRIDGE PIER
BRIDGE PIER
BRIDGE

SMETANA RD
FELTL RD

W.E. 928.7

2379+00
2380+00
2381+00
2382+00
2383+00
2384+00
2385+00
2386+00
2387+00
2388+00
2389+00
2390+00
2391+00
2392+00
2393+00
2394+00
2395+00

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

NORTH
0 25 50 100

SOUTHWEST Green Line LRT Extention
METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

NOTES:
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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:
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

MTA-MTA-11 (NORTH)

FLOODPLAIN MITIGATION AREA

BRIDGE PIER

BRIDGE

B

2390+00 2391+00 2392+00 2393+00 2394+00 2395+00 2396+00 2397+00 2398+00 2399+00 2400+00 2401+00 2402+00 2403+00 2404+00 2405+00

SEE SHEET MTA-MTA-11 (1 OF 2)

DRAFT-WORK IN PROCESS

SOUTHWEST Green Line LRT Extention

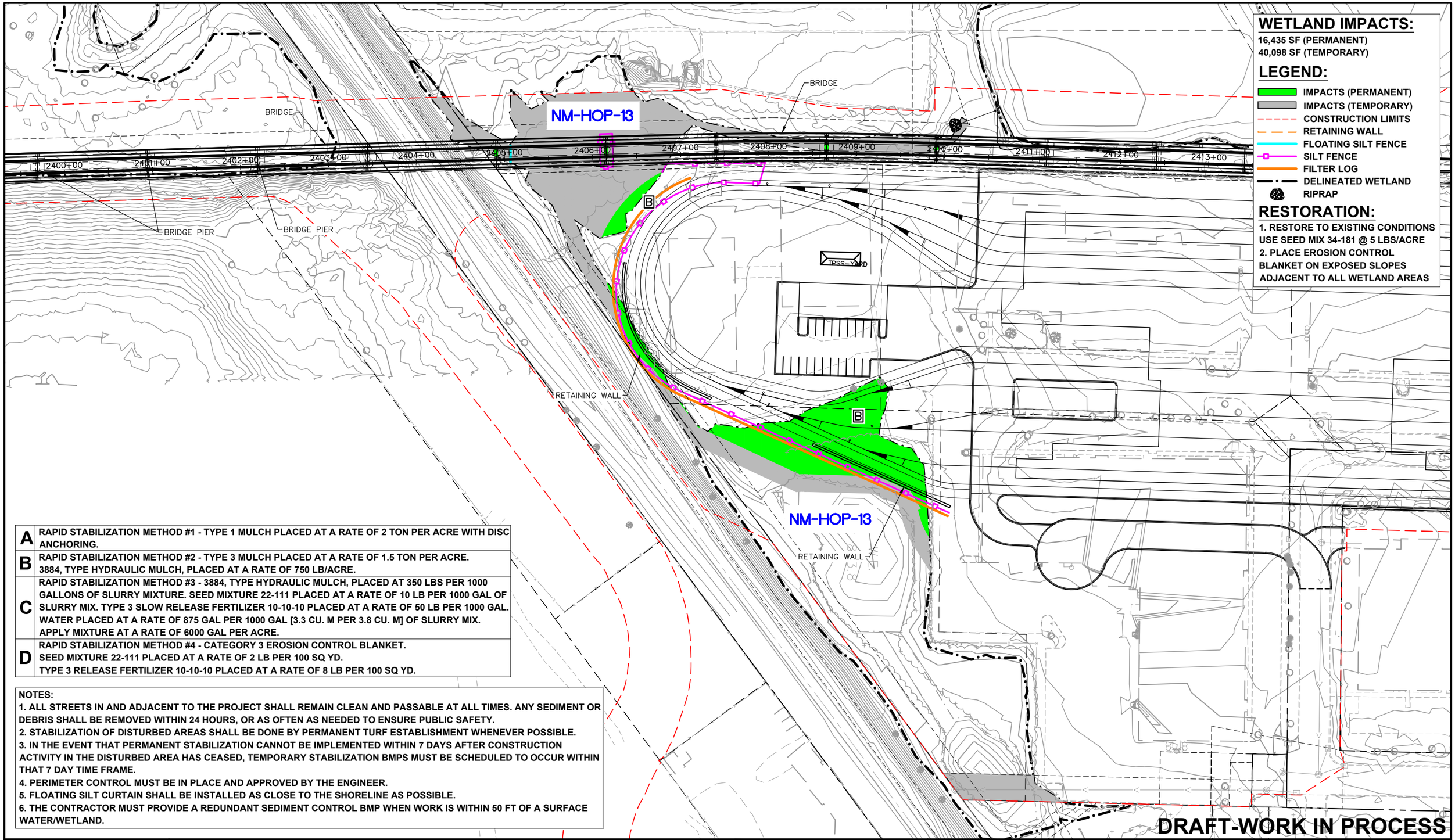
SOUTHWEST LIGHT RAIL

WETLAND IMPACT
MTA-MTA-11 (2 OF 2)
SHEET 22 OF 27

REV: 3
DATE : 03/10/2015
ID #: 28

NORTH
0 25 50 100

METROPOLITAN COUNCIL · AECOM · SRF Consulting Group, Inc. · WSB & Associates, Inc.



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.
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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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 Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
NM-HOP-13
SHEET 23 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

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

FLOODPLAIN MITIGATION AREA

MTA-MTA-12

BRIDGE

TPSS - YARD

K-TEL DR

2404+00 2405+00 2406+00 2407+00 2408+00 2409+00 2410+00 2411+00 2412+00 2413+00 2414+00 2415+00 2416+00 2417+00 2418+00 2419+00 2420+00

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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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DRAFT-WORK IN PROCESS

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

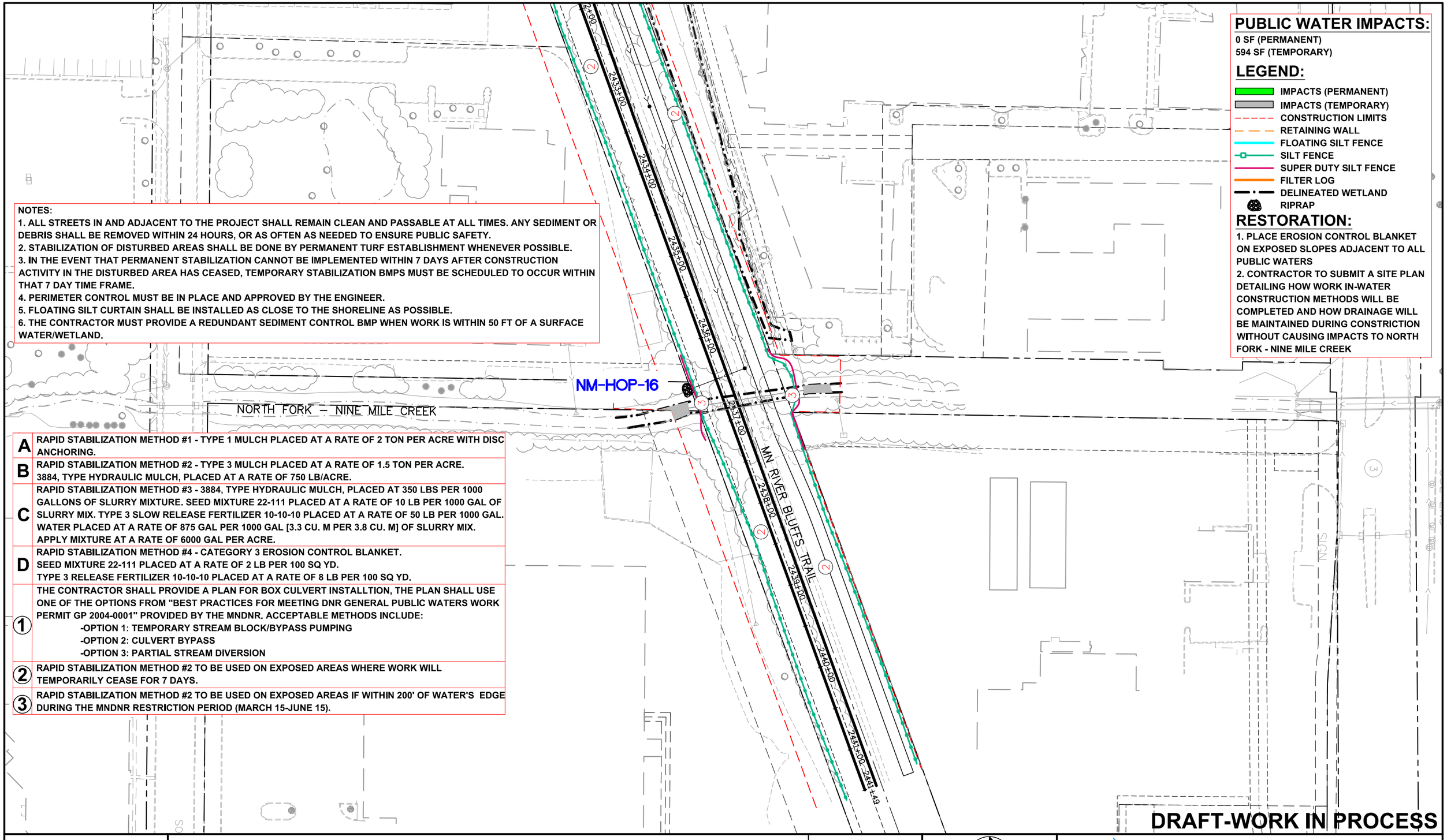
WETLAND IMPACT
MTA-MTA-12
SHEET 24 OF 27

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

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF Consulting Group, Inc.
WSB & Associates, Inc.

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.

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.
①	THE CONTRACTOR SHALL PROVIDE A PLAN FOR BOX CULVERT INSTALLTION, THE PLAN SHALL USE ONE OF THE OPTIONS FROM "BEST PRACTICES FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001" PROVIDED BY THE MNDNR. ACCEPTABLE METHODS INCLUDE: -OPTION 1: TEMPORARY STREAM BLOCK/BYPASS PUMPING -OPTION 2: CULVERT BYPASS -OPTION 3: PARTIAL STREAM DIVERSION
②	RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS WHERE WORK WILL TEMPORARILY CEASE FOR 7 DAYS.
③	RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS IF WITHIN 200' OF WATER'S EDGE DURING THE MNDNR RESTRICTION PERIOD (MARCH 15-JUNE 15).

PUBLIC WATER IMPACTS:

0 SF (PERMANENT)
594 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- SUPER DUTY 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 CONSTRICTION WITHOUT CAUSING IMPACTS TO NORTH FORK - NINE MILE CREEK

DRAFT-WORK IN PROCESS

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

WETLAND IMPACT
NM-HOP-16
SHEET 25 OF 27

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METROPOLITAN COUNCIL · AECOM · SRF Consulting Group, Inc. · WSB & Associates, Inc.

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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.
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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. TYPED 3 SLOW RELEASE FERTILIZER 10–10–10 PLACED AT A RATE OF 8 LB PER 100 SQ. YD.
① RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS WHERE WORK WILL TEMPORARILY CEASE FOR 7 DAYS.
② RAPID STABILIZATION METHODE #2 TO BE USED ON EXPOSED AREAS IF WITHIN 200' OF WATER'S EDGE DURING THE MNDRN RESTRICTION PERIOD (MARCH15–JUNE15).

WETLAND IMPACTS:

0 SF (PERMANENT)
0 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- LIMITS OF DISTRUBANCE
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- RIGHT–OF–WAY
- DELINEATED WETLAND

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-SLP-01
(No Impact)

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STA. 2602+57.06, 0.00'

MINNEHAHA CREEK

DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
MINNEHAHA CREEK CROSSING
SHEET 26 OF 27

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SOUTHWEST Green Line LRT Extension
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NOTES:
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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. TYPED 3 SLOW RELEASE FERTILIZER 10–10–10 PLACED AT A RATE OF 8 LB PER 100 SQ. YD.
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② RAPID STABILIZATION METHOD #2 TO BE USED ON EXPOSED AREAS IF WITHIN 200' OF WATER'S EDGE DURING THE MNDNR RESTRICTION PERIOD (MARCH15–JUNE15).

MC-MPL-13

BRIDGE PIERS

KENILWORTH LAGOON

WETLAND IMPACTS:

129 SF (PERMANENT)
5,244 SF (TEMPORARY)

LEGEND:

- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- LIMITS OF DISTRUBANCE
- FLOATING SILT FENCE
- SILT FENCE
- FILTER LOG
- RIGHT–OF–WAY
- DELINEATED WETLAND

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.

DRAFT-WORK IN PROCESS

SOUTHWEST Green Line LRT Extension

SOUTHWEST LIGHT RAIL

WETLAND IMPACTS
MC-MPL-13
SHEET 27 OF 27

Rev 4
10/22/2015

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METROPOLITAN COUNCIL

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APPENDIX D

Wetland Seed Mixes

34-181 **Emergent Wetland**

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
American slough grass	*Beckmannia syzigachne*	0.78	0.70	14.07%	12.92
tall manna grass	*Glyceria grandis*	0.28	0.25	4.98%	6.40
rice cut grass	*Leersia oryzoides*	0.34	0.30	5.93%	3.70
	Total Grasses	**1.40**	**1.25**	**24.98%**	**23.02**
river bulrush	*Bolboschoenus fluviatilis*	0.85	0.76	15.20%	1.20
bristly sedge	*Carex comosa*	0.20	0.18	3.63%	2.00
lake sedge	*Carex lacustris*	0.07	0.06	1.19%	0.24
tussock sedge	*Carex stricta*	0.04	0.04	0.77%	0.75
least spikerush	*Eleocharis acicularis*	0.11	0.10	1.94%	2.50
marsh spikerush	*Eleocharis palustris*	0.11	0.10	2.03%	1.90
Torrey's rush	*Juncus torreyi*	0.04	0.04	0.85%	25.00
Three-square bulrush	*Schoenoplectus pungens*	0.26	0.23	4.54%	1.00
soft stem bulrush	*Schoenoplectus tabernaemontani*	0.49	0.44	8.78%	5.00
woolgrass	*Scirpus cyperinus*	0.06	0.05	1.02%	32.00
	Total Sedges and Rushes	**2.24**	**2.00**	**39.95%**	**71.59**
Sweet flag	*Acorus americanus*	0.31	0.28	5.53%	0.67
common water plantain	*Alisma triviale*	0.45	0.40	8.00%	9.70
marsh milkweed	*Asclepias incarnata*	0.31	0.28	5.67%	0.50
broad-leaved arrowhead	*Sagittaria latifolia*	0.34	0.30	6.07%	6.80
giant bur reed	*Sparganium eurycarpum*	0.55	0.49	9.80%	0.09
	Total Forbs	**1.96**	**1.75**	**35.07%**	**17.76**
	Totals:	**5.60**	**5.00**	**100.00%**	**112.37**
Purpose:	Emergent wetland restoration for use in wetland mitigation, shoreline restoration, wet stormwater ponds where emergent vegetation is desired.				
Planting Area:	Statewide				

34-262 **Wet Prairie**

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	1.12	1.00	6.89%	3.67
fringed brome	*Bromus ciliatus*	1.68	1.50	10.38%	6.08
bluejoint	*Calamagrostis canadensis*	0.04	0.04	0.27%	4.00
Virginia wild rye	*Elymus virginicus*	1.96	1.75	12.07%	2.70
tall manna grass	*Glyceria grandis*	0.17	0.15	1.02%	3.80
fowl manna grass	*Glyceria striata*	0.12	0.11	0.73%	3.50
switchgrass	*Panicum virgatum*	0.84	0.75	5.16%	3.85
fowl bluegrass	*Poa palustris*	0.22	0.20	1.39%	9.60
Indian grass	*Sorghastrum nutans*	0.56	0.50	3.44%	2.20
prairie cordgrass	*Spartina pectinata*	0.56	0.50	3.41%	1.20
	Total Grasses	**7.29**	**6.50**	**44.76%**	**40.60**
wooly sedge	*Carex pellita*	0.06	0.05	0.32%	0.47
tussock sedge	*Carex stricta*	0.02	0.02	0.17%	0.48
fox sedge	*Carex vulpinoidea*	0.11	0.10	0.66%	3.50
dark green bulrush	*Scirpus atrovirens*	0.11	0.10	0.72%	17.74
woolgrass	*Scirpus cyperinus*	0.03	0.03	0.18%	16.00
	Total Sedges and Rushes	**0.34**	**0.30**	**2.05%**	**38.19**
Canada anemone	*Anemone canadensis*	0.03	0.03	0.21%	0.09
marsh milkweed	*Asclepias incarnata*	0.09	0.08	0.55%	0.14
Canada tick trefoil	*Desmodium canadense*	0.56	0.50	3.41%	1.00
flat-topped aster	*Doellingeria umbellata*	0.06	0.05	0.34%	1.20
common boneset	*Eupatorium perfoliatum*	0.03	0.03	0.23%	2.00
grass-leaved goldenrod	*Euthamia graminifolia*	0.02	0.02	0.11%	2.00
spotted Joe pye weed	*Eutrochium maculatum*	0.04	0.04	0.30%	1.50
autumn sneezeweed	*Helenium autumnale*	0.06	0.05	0.35%	2.39
sawtooth sunflower	*Helianthus grosseserratus*	0.06	0.05	0.38%	0.30
great blazing star	*Liatris pycnostachya*	0.02	0.02	0.17%	0.10
great lobelia	*Lobelia siphilitica*	0.01	0.01	0.05%	1.40
blue monkey flower	*Mimulus ringens*	0.01	0.01	0.05%	6.40
Virginia mountain mint	*Pycnanthemum virginianum*	0.09	0.08	0.55%	6.50
red-stemmed aster	*Symphyotrichum puniceum*	0.09	0.08	0.56%	2.40
blue vervain	*Verbena hastata*	0.17	0.15	1.06%	5.25
bunched ironweed	*Vernonia fasciculata*	0.03	0.03	0.23%	0.30
Culver's root	*Veronicastrum virginicum*	0.02	0.02	0.14%	6.00
golden alexanders	*Zizia aurea*	0.28	0.25	1.76%	1.03
	Total Forbs	**1.68**	**1.50**	**10.45%**	**40.00**
Oats or winter wheat (see note at beginning of list for recommended dates)		6.95	6.20	42.74%	2.76
	Total Cover Crop	**6.95**	**6.20**	**42.74%**	**2.76**
	Totals:	**16.25**	**14.50**	**100.00%**	**121.55**
Purpose:	Wet prairie reconstruction for wetland mitigation or ecological restoration.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

APPENDIX E

Wetland MTA-MTA-11 Restoration Plan

Wetland MTA-MTA-11 Restoration Plan

Introduction

This wetland restoration plan has been developed by the Southwest Light Rail Transit (LRT) Project Office (SPO) to demonstrate the project's intention to fully restore the temporarily impacted portion of wetland MTA-MTA-11 to pre-project conditions following construction. The proposed LRT design at this particular location necessitates an extended duration of temporary impact to allow for construction access during the multiple phase construction of a bridge that will cross over wetland MTA-MTA-11 and the existing Canadian Pacific freight rail line located between Minnetonka and Hopkins. It is estimated that construction of the proposed crossing will last for approximately 18 months, which is longer than the standard 180 days that the USACE typically allows for temporary impacts. As a result, the project is proposing to mitigate for the temporal loss of the wetland's functions and values at a compensation ratio of 0.5:1, as determined based on USACE guidance for determining baseline compensation ratios for impacts associated with linear projects.

The remainder of this document contains a summary of the temporary impact details, temporary impact minimization measures that will be utilized prior to and during construction, post-construction restoration details, and maintenance and monitoring details. The attached plan sheets illustrate the erosion control and temporary construction measures that will be utilized to minimize impacts during construction.

Temporary Impact Details

Approximately 134,296 SF (3.08 Ac) of wetland MTA-MTA-11 will be temporarily affected by vegetation clearing, hydrology alteration, and the placement of clean temporary fill and/or interlocking tracking pads for construction access and staging during the installation of the proposed elevated track alignment. 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. Geotextile fabric and interlocking tracking pads, or other accepted form of temporary access, will likely be needed along the west side of the bridge, within the wetland boundary, to provide access for construction equipment. 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.

Temporary Impact Minimization Measures

The Southwest LRT Project has developed the following list of best management practices (BMPs) for contractor use prior to and during construction at this location, as depicted on the attached plan sheets.

- The grading contractor shall install and maintain certified weed free bale barriers or accepted alternative along the construction limits within the wetland.
- Construction equipment will be weed free and decontaminated (with documentation provided) prior to use in the wetland area.
- The contractor shall install geotextile fabric and interlocking tracking pads, or other accepted form of temporary access, along the west side of the bridge, when appropriate, to provide access for construction equipment and reduce compaction and temporary impacts in the wetland. The preferred access method is to use geotextile fabric/tracking pads as much as possible to limit the areas of compaction.
- In certain areas, it may be necessary to strip the wetland topsoil and set aside to be used to restore the area following construction. After stripping, the wetland topsoil shall be immediately placed or stockpiled in an approved location, outside of the wetland.
- The contractor shall implement the following measures to avoid and minimize wetland soil compaction during construction, when and where possible:
    - Avoid equipment entry into wetlands to the extent possible.
    - Where equipment entry into wetlands is unavoidable, minimize the area disturbed as well as the number of repeated passes over the same trail.
    - Utilize site footprinting and construction phasing to limit and sequence work within wetland areas.
    - Use low ground pressure equipment or tracked vehicles when possible.
    - Schedule the work during the drier seasons of the year or during time when the ground is frozen, where possible.
    - Plan to move equipment and materials to upland areas prior to the occurrence of thawing conditions.
    - Cross streams, channels and flow paths at right angles.
    - For temporary roads, incorporate support systems such as geotextiles and various wood and metal platform devices.
    - Utilize subsoiling or chiseling to break up compacted surfaces to reestablish soil porosity when work is completed.
    - Locate staging, storage, and maintenance areas outside of wetland areas, when feasible.

Post-Construction Restoration Details

After all construction within the wetland is complete, the bale barriers (or approved alternative), geotextile fabric, and interlocking tracking pads, clean temporary fill, and all other construction materials will be removed from the wetland. The grade of the soil within the wetland areas that are disturbed by construction, will be restored to pre-project lines and grades.

For areas in which the top soil was removed, the subsoil shall be graded so that the completed work, after the wetland topsoil is placed, conforms to pre-project lines and grades. Prior to placing the reserved wetland topsoil, the contractor shall scarify or till the surface of the graded subsoil to a minimum depth of 6 inches to permit bonding between the subsoil and wetland topsoil. Tillage by disking harrowing, raking, or other approved methods shall be accomplished in such a manner that the depressions and ridges formed by tillage shall be parallel to the desired contours. Wetland topsoil shall be placed and spread specifically

within the areas in which it was stripped. Wetland topsoil in an unworkable condition due to excessive moisture, frost or other conditions shall not be placed until it is suitable for spreading. After the wetland topsoil is spread, all stiff clods, rocks, roots, and other foreign matter shall be cleared and disposed of by the contractor so that the finished surface will be acceptable for subsequent seeding and mulching.

The area of disturbed wetland soil shall be seeded with an appropriate state approved native wetland species seed mix. State Mix 34-181 shall be used for emergent wetland areas, and State Mix 34-262 shall be used for wet prairie areas, as appropriate. The following is a list of seeding specifications for contractor use to ensure successful establishment of wetland vegetation:

- Specified seed mixes (or approved equivalent) shall be broadcast at the rate recommended within the seeding zones.
- After broadcast seeding, the site must be rolled or cultipacked to ensure proper seed to soil contact. Roll or pack in order to lightly cover seed with approximately 1/8 to 1/4 inch of soil. Seeds should be no deeper than 1/4 inch.
- Within 2 days of placing seed, apply weed free mulch at a rate of 1 ton per acre, or an erosion control blanket. Mulch should be ½ to 1 ½ inch deep. Mulch should be crimped into the soil to a depth of 1 to 2 inches immediately after it is applied. After mulch has been spread, apply water with a fine spray. If the mulch windrows along the edge of open water, it should be removed or re-spread.
- After planting is complete, remove and dispose of any excess materials, trash or stockpiles.
- After germination of the broadcast seeding, the contractor shall hand-seed the specified mixes into areas that did not germinate, and lightly rake the hand spread seed into the soil.

Maintenance & Monitoring

The following maintenance and monitoring details are being proposed to ensure the successful establishment and persistence of the restored portion of wetland MTA-MTA-11. Maintenance will involve removal of trash, weed control, and any remedial measures deemed necessary for the success of the temporary impact restoration (e.g., reseeding and re-planting). The restoration site shall be visited a minimum of one time per growing season (April-October) for three consecutive years, or as required by the USACE, to monitor the establishment of vegetation and to control the establishment of weeds and invasive species. Maintenance activities will be directed by SPO or a designated representative.

Non-native and Invasive Plant Control:

Particular emphasis will be placed on proactive removal of non-native and invasive plants. Eradication of these species will be conducted as necessary to minimize competition that could prevent the establishment of native species. Non-native and invasive plants should be removed by hand or controlled with proper herbicides that are specific to the target species and are selected in coordination or consultation with Metro Transit of a designated representative. Efforts to control highly invasive non-native plants should extend to areas near the project area so as to minimize spread into the mitigation site.

Problematic perennial weeds that typically do not decrease over time often need to be spot treated with herbicide for sufficient control. Examples include reed canary grass, smooth brome, quack grass, purple loosestrife, Canada thistle, Kentucky bluegrass and birds-foot trefoil. Canada thistle should be spot treated as soon as clumps appear to avoid the need to spray large areas (and lose native forbs). A common practice for Canada thistle control involves clipping seed heads while they are in the bud stage (usually early June)

and conducting herbicide application with a broad-leaf specific herbicide in the fall (mid to late October). This timing limits the application of herbicide while pollinators are active.

Grass-specific herbicides are used to control reed canary grass in wet meadow restorations, particularly on sites dominated by forbs and sedges that will not be affected. Grass-specific herbicides work better on young reed canary plants than on mature plants. There is some evidence that using surfactants and disking prior to application may improve effectiveness. It should be noted that grass specific herbicides are not aquatically certified and should not be used near open water. When using a broad-spectrum herbicide it is important that an aquatically certified form of glyphosate be used near open water.

Other Pests:

Insects, vertebrate pests, disease and herbivore predation will be monitored. Generally speaking, there will be a high threshold of tolerance before control measures are considered. All applicable federal and state laws and regulations will be closely followed.

Fertilization:

Fertilizer will not be applied.

Mowing:

Mowing, where feasible, is an essential step in the establishment of native vegetation. Mowing at least twice during the first growing season and at least once during the second growing season with a flail mower (to prevent smothering plants) is necessary for native vegetation establishment. Weeds should be mowed to between five and eight inches before seed is allowed to set (usually as weeds reach 12-14 inches). Mowing height should be raised as native plants establish. Primary goals of mowing are to allow sufficient light to reach native plant seedlings and preventing weed seed production.

Mowing of annual and biennial weeds is also beneficial in wetland transition areas for species such as giant ragweed and Canada thistle, but should only be conducted if rutting and soil compaction will not result. Pressure from annual and biennial weeds is generally less with increased soil saturation and water depth, and in many cases early successional weeds are displacing native species in wetlands.

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

LEGEND:
- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- BALE BARRIER
- SUPER DUTY 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

MTA-MTA-11 (SOUTH)

Riprap within 24 hours of Connecting

FLOODPLAIN MITIGATION AREA

Line with Geotextile Fabric and Place Interlocking Tracking Pads on top

Bale Barrier Certified Weed Free or Alternative

BRIDGE PIER

BRIDGE

Dewatering Plan to be Submitted a Minimum of 10 Days Prior to Activity

Containment for Sheet Piling, Inflo Temporary Plastic

Apply Temporary stabilization with MnDot Type 9 Mulch in all Temporary impact areas within 7 days of being unworked

Construction Entrance (minimum length 50')

Apply Rapid stabilization Method #4 in areas outside of delineated wetland areas within 7 days of being unworked

SMETANA RD

FELTL RD

W.E. 928.7

2380+00 2381+00 2382+00 2383+00 2384+00 2385+00 2386+00 2387+00 2388+00 2389+00 2390+00 2391+00 2392+00 2393+00 2394+00 2395+00

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

DRAFT-WORK IN PROCESS

SOUTHWEST Green Line LRT Extention

SOUTHWEST LIGHT RAIL

EROSION CONTROL & TEMPORARY CONSTRUCTION MEASURES
WETLAND MTA-MTA-11
SHEET 1 OF 2

REV: 0
DATE : 11/4/2015
ID #: 27

NORTH
0 25 50 100

METROPOLITAN COUNCIL
AECOM
SRF
WSB & Associates, Inc.

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

LEGEND:
- IMPACTS (PERMANENT)
- IMPACTS (TEMPORARY)
- CONSTRUCTION LIMITS
- RETAINING WALL
- FLOATING SILT FENCE
- SILT FENCE
- BALE BARRIER
- SUPER DUTY 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

MTA-MTA-11 (NORTH)

Bale Barrier Certified Weed Free or Alternative

Line with Geotextile Fabric and Place Interlocking Tracking Pads on top

FLOODPLAIN MITIGATION AREA

BRIDGE PIER

Line with Geotextile Fabric and Place Interlocking Tracking Pads on top

Construction Entrance (minimum length 50')

BRIDGE

2390+00 2391+00 2392+00 2393+00 2394+00 2395+00 2396+00 2397+00 2398+00 2399+00 2400+00 2401+00 2402+00 2403+00 2404+00 2405+00

Dewatering Plan to be Submitted a Minimum of 10 Days Prior to Activity

Containment for Dewatering: Sheet Piling, Inflatable Barrier, Temporary Plastic Cofferdam

Apply Temporary stabilization with MnDot Type 9 Mulch in all Temporary impact areas within 7 days of being unworked

Apply Rapid stabilization Method #4 in areas outside of delineated wetland areas within 7 days of being unworked

SEE SHEET MTA-MTA-11 (1 OF 2)

DRAFT-WORK IN PROCESS

SOUTHWEST LIGHT RAIL

EROSION CONTROL & TEMPORARY CONSTRUCTION MEASURES
WETLAND MTA-MTA-11
SHEET 2 OF 2

REV: 0
DATE : 11/4/2015
ID #: 28

NORTH
0 25 50 100

METROPOLITAN COUNCIL