



PERMIT REPORT

To: Board of Managers

From: Elizabeth Showalter, Permitting Technician

Date: December 17, 2018

Re: Metropolitan Council; Permit 18-670: Emergency Relief Structure 04 and Sanitary Tunnel 344 – Minnehaha Parkway, Minneapolis

Recommendation:

Approval of MCWD permit application on the following conditions:

1. Identification of the contractor responsible for implementing the erosion control plan;
2. Submission of an NPDES permit;
3. Submission of a construction schedule;

Background:

The Metropolitan Council has applied for a Minnehaha Creek Watershed District permit for the rehabilitation of Emergency Relief Structure 04 and sanitary tunnel MN 344, and construction of an associated above-ground temporary conveyance near Minnehaha Creek between Minnehaha Parkway and Hiawatha Avenue within Minnehaha Regional Park. The application is before the Board of Managers on the determination of the Administrator that the high profile nature of the project and the previous involvement of the Board in the project warrant Board consideration of the permit. The application was complete on December 14, 2018.

The Emergency Relief Structure (ERS) serves as an emergency discharge point from the combined sanitary/storm sewer tunnel to Minnehaha Creek. Minneapolis has a limited number of combined sewers remaining, and has separated many in the last decades. The ERS would only discharge to the creek under extremely high flow events, and has not discharged for 15 years, including a combined storm and sanitary flow in the tunnel of 27,000 gallons per minute during the heavy rain in 2014. At that time, the sanitary flow was 11 inches below the overflow weir elevation. As the combined storm and sanitary sewers are separated in future utility projects, the flow will continue to reduce. Repair and replacement of utility lines also reduces inflow of storm/ground water into the sanitary pipes through holes in the pipes, further reducing the frequency of discharge. If needed due to increased discharge an adjustable gate can be added to the ERS to allow more control over the potential discharge, but at this time is not proposed due to the infrequency of discharge.

The project will involve a temporary diversion of sanitary flow via an above ground conveyance to allow the tunnel and ERS to be emptied and scanned. The scans will be used to design and fabricate a fiberglass liner to be installed within the existing concrete tunnel, essentially creating a new pipe. The tunnel will remain in place and continue to withstand earth pressures. The newly installed liner will serve as the primary conveyance for sanitary sewage. While the installation



of the fiberglass liner is underway, the temporary conveyance will be established above ground and a temporary bridge will be constructed south of Hiawatha Avenue. The temporary systems will be removed upon completion of the liner, and sanitary flow will be returned to the tunnel. The liner will also reduce inflow of storm/groundwater into the sanitary tunnel which contributes to high flow during rain events.

The project triggers the District's Erosion Control, Floodplain Alteration, and Waterbody Crossings and Structures rules. A wetland delineation was approved by the District under permit W18-43. No wetland impacts are proposed. Land disturbing activity is proposed upgradient of the wetland boundary, however, the applicant's land rights are for utility easement and construction easement only, and does not have rights to establish a wetland buffer.

In addition to the District Rules, the District is bound by state law, which states:

Neither the state, nor a unit of metropolitan government, nor a political subdivision of the state may take any action that may diminish the flow of water to or from Camp Coldwater Springs. All projects must be reviewed under the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act with regard to the flow of water to or from Camp Coldwater Springs.

2001 Minn. Laws Ch. 101, sec 1.

As a component of the project, the construction of two ventilation shafts is proposed within the bedrock to allow workers to breathe during the installation of the liner (required by OSHA standards). Test drills have occurred in the areas proposed for the ventilation shafts and the sites were determined to not exhibit characteristics of fractured flow, such as could potentially affect flow of water to or from Coldwater Springs. In addition, the pores in the ventilation shafts will be sealed as the shaft is drilled to eliminate the need for aquifer dewatering to prevent groundwater from entering the shafts. Existing access shafts will be utilized for movement of workers and materials in and out of the tunnel.

No aquifer dewatering is proposed as a component of the ventilation shaft installation, and no other disturbance to the bedrock is proposed. The National Park Service (NPS) has conducted monitoring at Camp Coldwater Springs for many years and will be conducting additional monitoring before and during construction activities to identify any variability in flow at Cold Water Springs. The applicant has committed to providing the weekly results of the NPS monitoring data to the District.

District Rule Analysis:

Erosion Control Rule

The District's Erosion Control Rule is applied to projects proposing 5,000 square feet of disturbance or 50 cubic yards of fill, excavation, or stockpiling on-site. The Applicant is proposing approximately 4 acres of disturbance, therefore the rule is triggered. In accordance with the rule provisions, the Applicant has submitted an erosion control plan which identifies



erosion and sediment control best management practices. These include a rock construction entrance, silt fence down gradient of disturbed areas, concrete washout locations utilizing impermeable liners, and inlet protection where necessary. A temporary sediment basin is not required, since less than five acres will be disturbed by construction activities.¹ Additionally, a vegetative stabilization plan including the incorporation of six-inches of topsoil into underlying soils prior to final stabilization has also been provided.

Identification of the responsible contractor and submission of an NPDES permit are listed as recommended conditions of approval. Upon satisfaction of the recommended conditions, the project meets the Erosion Control Rule.

Floodplain Alteration

The Floodplain Alteration Rule is triggered whenever land altering activity is proposed below the 100 year flood elevation of any waterbody. The Applicant is proposing disturbance in the floodplain of Minnehaha Creek for the installation of the temporary sewage conveyance beneath the Minnehaha Parkway Bridge, therefore the rule is triggered. The total fill will be approximately 4.5 cubic yards in the floodplain, created by the construction of cradles to elevate the conveyance above the 100 year flood elevation and placement of jersey barriers to protect the conveyance and to provide another redundancy to prevent discharge of sanitary sewage to the creek. The cradles and jersey barriers will be removed upon project completion. About 0.7 cubic yards of fill is proposed for the abutments of the temporary bridge to be constructed between the Hiawatha weir and Hiawatha Avenue.

As stated in the District's Floodplain Alteration Rule section 3(a), "fill shall not cause a net decrease in storage capacity below the projected 100-year high water elevation of a waterbody." Furthermore, any placement of fill prior to the creation of floodplain storage capacity will only be allowed under a demonstration that the work will not aggravate high water conditions and that creation of storage capacity prior to placement of fill is impractical. The applicant is proposing 5.2 cubic yards of floodplain fill for the placement of the temporary conveyance under the Minnehaha Parkway bridge and the bridge abutments. The required flood storage capacity will be created by excavating elsewhere in the floodplain. The total creation of floodplain storage is 5.3 cubic yards, for a net gain in storage capacity of 0.1 cubic yards. As there will be a net increase in storage capacity, the rule requirement is met.

Section 3(b) of the rule requires no increase in the 100-year flood elevation of a watercourse. The bridge abutments make up 0.5% of the cross-sectional area of the channel and the temporary conveyance under the Minnehaha Parkway bridge make up 0.2% of the cross sectional area of the channel. The modification is smaller than the sensitivity of hydraulic models, therefore the applicant has determined that no impact will be made on hydraulic capacity. The District

¹ Temporary sediment basins are required under Resolution 15-054: Adoption of Policy for MS4 Compliance whenever five or more acres are disturbed draining to a common location that is a public water with construction related impairments. Minnehaha Creek is impaired for nutrients and dissolved oxygen, both of which are considered construction related.



Engineer concurs with the analysis that there will be no increase the in 100year flood elevation of the creek.

Section 3(c) of the rule states that section 3(a) of this rule does not apply to fill in a waterbasin if the applicant shows that the proposed fill, together with the filling of all other properties on the waterbody to the same degree of encroachment will not cause high water or aggravate flooding on other properties. Because the project involves a watercourse, section 3(c) of the rule does not apply to this project.

Section 3(d) of the rule requires that no new impervious surface be created in the lesser of 25 feet of the centerline of a watercourse or the 10 year floodplain, unless that surface is an integral component of a linear public roadway or trail. No impervious surface is proposed.

Section 3(e) of the rule is not applicable, as no ice ridge grading is proposed.

Section 3(f) of the rule requires that the low openings to all structures be a minimum of 2 feet above the 100 year high water elevation. No new structures are proposed as part of the project. The elevation of the temporary conveyance will vary based on site conditions but will have an invert elevation of at least 812.0 (two feet above the flood elevation) at all points.

The project will meet the Floodplain Alteration Rule.

Waterbody Crossings and Structures

The Waterbody Crossings and Structures Rule is triggered whenever a structure is placed in the bed or bank of a waterbody or by the placement of utilities beneath a waterbody. The project includes a temporary bridge, the abutments for which will be placed in the bank of Minnehaha Creek. The bridge is proposed to contact the bank of Minnehaha Creek, and is therefore regulated as a waterbody crossing. The applicant is also proposing modification to the sanitary conveyance beneath Minnehaha Creek, by constructing a liner within the tunnel. The lining of the tunnel does not propose any new utility line under or in contact with a waterbody or any change outside of the inside of the tunnel. It therefore does not meet the definition of a regulated waterbody crossing or structure, and is not subject to regulation under this rule.

Per section 3(a) of the rule, projects involving crossings or structures in public waters must meet a demonstrated public benefit. The rehabilitation of the sanitary tunnel meets a basic public utility need. The existing tunnel serves the sanitary needs of thousands of businesses and households. The rehabilitation project's goal is to ensure this critical piece of infrastructure remains functional into the future, as the existing tunnel and structures are more than 80 years old. The expected life of the tunnel with the fiberglass liner is 100 years. As such, the project has demonstrated its benefit to the public.

Per section 3(b) of the rule, use of the bed or bank shall retain adequate hydraulic capacity, and may not result in upstream or downstream increases in flood stage. The bridge abutments make up 0.5% of the cross-sectional area of the channel and the temporary conveyance under the Minnehaha Parkway bridge make up 0.2% of the cross sectional area of the channel. The



modification is smaller than the sensitivity of hydraulic models, therefore the applicant has determined that no impact will be made on hydraulic capacity. The District Engineer concurs with the analysis and that hydraulic capacity is maintained.

Per section 3(c) of the rule, the use of the bed or bank shall retain adequate navigational capacity pursuant to any requirements of the waterbody's classification by the District. The bridge will be located directly above the Hiawatha weir, which is the end of the navigable portion of the creek, therefore there will be no impact on navigational capacity.

Per section 3(d) of the rule, the use of the bed or bank shall preserve aquatic and upland wildlife passage along each bank and within the waterbody as follows:

- Where there is sufficient depth and width, waterbody crossings shall provide upland bank passage to the greatest extent feasible, graded to connect to the streambank on both the upstream and downstream ends;
- Where the depth or the width of is not sufficient to provide adequate upland bank passage, waterbody crossings shall provide multiple offset culverts;
- Where the multiple offset culverts are not feasible, waterbody crossings shall provide a wildlife shelf insert above bankfull height, unless such a structure will impact hydraulic capacity;
- Rural section low traffic roads that meet vertical and horizontal site distance for a vehicle speed of 40mph or less are exempt from the requirements.

The bridge abutments are proposed to be built on the existing retaining walls and therefore will not have any reduction in wildlife passage capacity, therefore preserving passage as required by the rule. The bridge is proposed just downstream of the Hiawatha weir, and therefore an impediment of aquatic passage is already present in that location. Additionally, the abutments are to be located on the existing retaining walls, which will prevent impact to aquatic passage.

Per section 3(e) of the rule, use of the bed or bank shall not adversely affect water quality. The bridge will not contribute pollutants through erosion or vehicle traffic. The abutments are made out of concrete and metal, which is safe for use in waterbodies and is not known to leach pollution. The applicant has provided protection against sanitary discharge (explained in additional detail below) to prevent impacts to water quality.

Per section 3(f) of the rule, the use of the bed or bank shall represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives, including, but not limited to vegetation or bioengineering for bank stabilization, structural stabilization, acquisition of additional easements, or installation of upstream control to manage stream flow. The applicant considered alternatives to the temporary conveyance including construction of a new tunnel, however, new construction was determined to be infeasible due to incompatibility with state statute regarding groundwater. The no-build scenario was also considered. However, this would result in the eventual failure of the sanitary tunnel and associated infrastructure, disrupting



sanitary service to several thousand homes and businesses and causing a significant environmental impact from the discharge of sewage.

The use of a fiberglass liner was determined to be the least impactful solution overall, and resulted in the need for a temporary conveyance. The applicant considered other routes for the conveyance including an abandoned rail line on the east side of Hiawatha Avenue, and use of the light rail bridge on the west side of Hiawatha Avenue. The applicant was unable to secure legal permissions to utilize the abandoned rail line bridge, eliminating its use as a viable option. Use of the light rail bridge would cause significant disruption to service and was dismissed as a viable option. Therefore, the construction of a temporary bridge was determined to be the minimally impactful solution for routing the temporary conveyance. The temporary bridge has been designed to place the abutments on top of the existing retaining walls on either bank of the creek, minimizing the impact of the bridge.

Section 3(g) of the rule is not applicable to the temporary bridge, as it does not involve boring under a waterbody.

Section 3(h) of the rule requires measures to prevent the discharge of sanitary sewage to waterbodies. The applicant is proposing a temporary conveyance that consists of three pipes. Each pipe is sized to accommodate the typical flows and two pipes would be used during heavy rain events. The third pipe would only be used if a leak occurs and serves as a redundancy. The pumping mechanism will include a fully redundant power supply to operate the full system with the primary power supply out of service. The pipes are proposed to exceed the pressure requirements of the maximum design pressure by 1.5 times. To prevent vandalism the applicant will be providing 24 hour security to ensure the conveyances are not tampered with. Jersey barriers will be used in all places where the temporary conveyance are located near roads. Staff and the District Engineer concur that the measures proposed will reasonably prevent sanitary discharge.

The project will meet the Waterbody Crossings and Structures Rule.

Summary:

The Metropolitan Council has applied for a permit for the lining of a sanitary conveyance beneath Minnehaha Creek and a temporary conveyance for the diversion of sanitary sewage during construction. The applicant has met the requirements of all applicable rules. Staff recommends approval of the permit with the conditions listed.

Attachments:

1. Water Resources Application Form
2. Site Plans
3. Boundary and Type NOD

WATER RESOURCE PERMIT APPLICATION FORM

Use this form to notify/apply to the Minnehaha Creek Watershed District (MCWD) of a proposed project or work which may fall within their jurisdiction. Fill out this form completely and submit with your site plan, maps, etc. to the MCWD at:
15320 Minnetonka Blvd. Minnetonka, MN 55345.

Keep a copy for your records.

YOU MUST OBTAIN ALL REQUIRED AUTHORIZATIONS BEFORE BEGINNING WORK.

1. Name of each property owner: Metropolitan Council, Att. Chad Davison
Mailing Address: 3565 Kennebec Dr City: Eagan State: MN Zip: 55122
Email Address: chad.davison@Metc.State.MN.us Phone: 651-602-4031 Fax: _____

2. Property Owner Representative Information (not required) (licensed contractor, architect, engineer, etc...)
Business Name: Brown & Caldwell Representative Name: Doug Henrichsen
Business Address: 30 East 7th Street. Suite 2500 City: St Paul State: MN Zip: 55101
Email Address: DHenrichsen@BrwnCald.com Phone: 651-468-2077 Fax: _____

3. Project Address: 3901 E. Minnehaha Parkway City: Minneapolis
State: MN Zip: 55406 Qtr Section(s): NE Section(s): 18 Township(s): 28 Range(s): 23
Lot: _____ Block: _____ Subdivision: Not platted PID: 1802823120005

4. Size of project parcel (square feet or acres): ~9.0 AC
Area of disturbance (square feet): ~174,240 SF (4 AC) Volume of excavation/fill (cubic yards): ~3,000 CY
Area of existing impervious surface: ~60,000 SF Area of proposed impervious surface: ~60,000 SF
Length of shoreline affected (feet): ~500 LF Waterbody (& bay if applicable): Minnehaha Creek

5. Type of permit being applied for (Check all that apply):
 EROSION CONTROL WATERBODY CROSSINGS/STRUCTURES
 FLOODPLAIN ALTERATION STORMWATER MANAGEMENT
 WETLAND PROTECTION APPROPRIATIONS
 DREDGING ILLICIT DISCHARGE
 SHORELINE/STREAMBANK STABILIZATION

6. Project purpose (Check all that apply):
 SINGLE FAMILY HOME MULTI FAMILY RESIDENTIAL (apartments)
 ROAD CONSTRUCTION COMMERCIAL or INSTITUTIONAL
 UTILITIES SUBDIVISIONS (include number of lots)
 DREDGING LANDSCAPING (pools, berms, etc.)
 SHORELINE/STREAMBANK STABILIZATION OTHER (DESCRIBE): _____

7. NPDES/SDS General Stormwater Permit Number (if applicable): _____

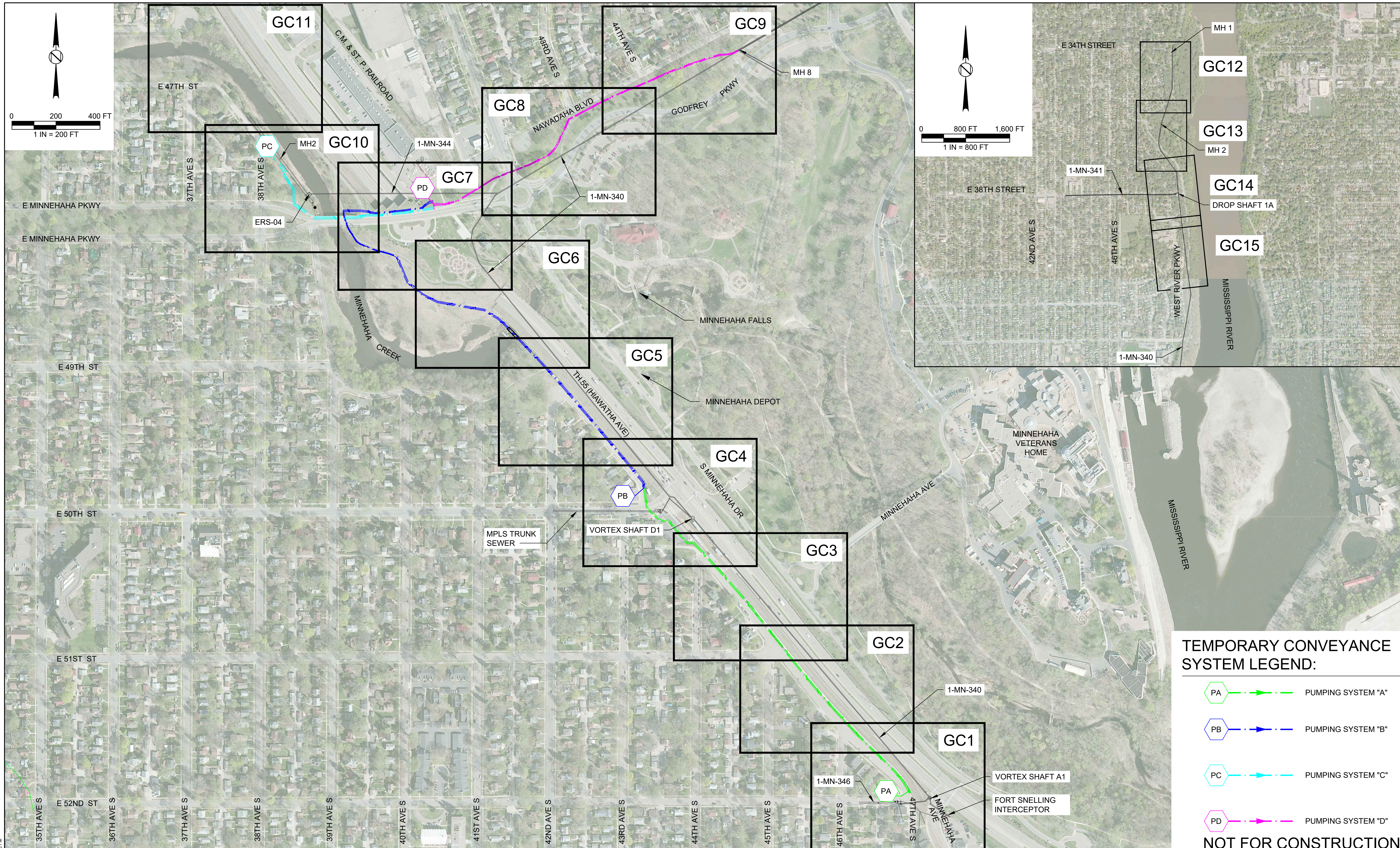
8. Waterbody receiving runoff from site: Minnehaha Creek

9. Project Timeline: Start Date: May, 2019 Completion Date: July 2021

Permits have been applied for: City x County _____ MN Pollution Control Agency x DNR _____ COE _____
Permits have been received: City _____ County _____ MN Pollution Control Agency _____ DNR _____ COE _____

By signing below, I hereby request a permit to authorize the activities described herein. I certify that I am familiar with MCWD Rules and that the proposed activity will be conducted in compliance with these Rules. I am familiar with the information contained in this application and, to the best of my knowledge and belief, all information is true, complete and accurate. I understand that proceeding with work before all required authorizations are obtained may be subject to federal, state and/or local administrative, civil and/or criminal penalties.

Jeanne Clancy 11/13/18
Signature of Each Property Owner Date



TEMPORARY CONVEYANCE SYSTEM LEGEND:

- PUMPING SYSTEM "A"
- PUMPING SYSTEM "B"
- PUMPING SYSTEM "C"
- PUMPING SYSTEM "D"

NOT FOR CONSTRUCTION

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	8/8/18	BSO	70% SUBMITTAL						

DESIGNED: BSO
 DRAWN: JKR
 CHECKED: DJH
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____
 TYPED OR PRINTED NAME: DOUGLAS J. HENRICHSEN
 DATE: _____ REG NO: 22087

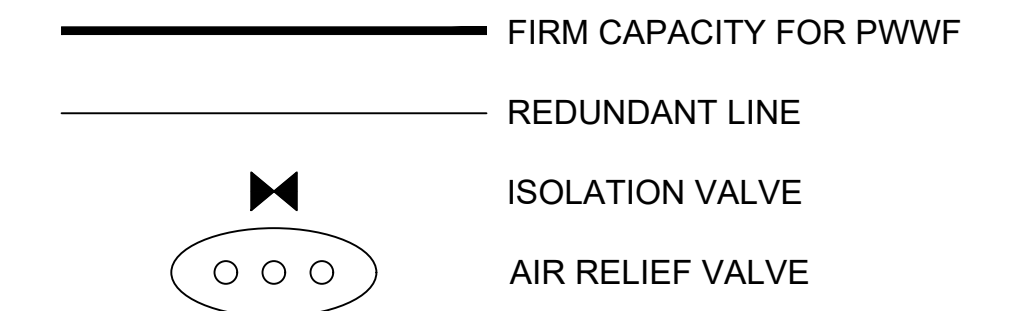


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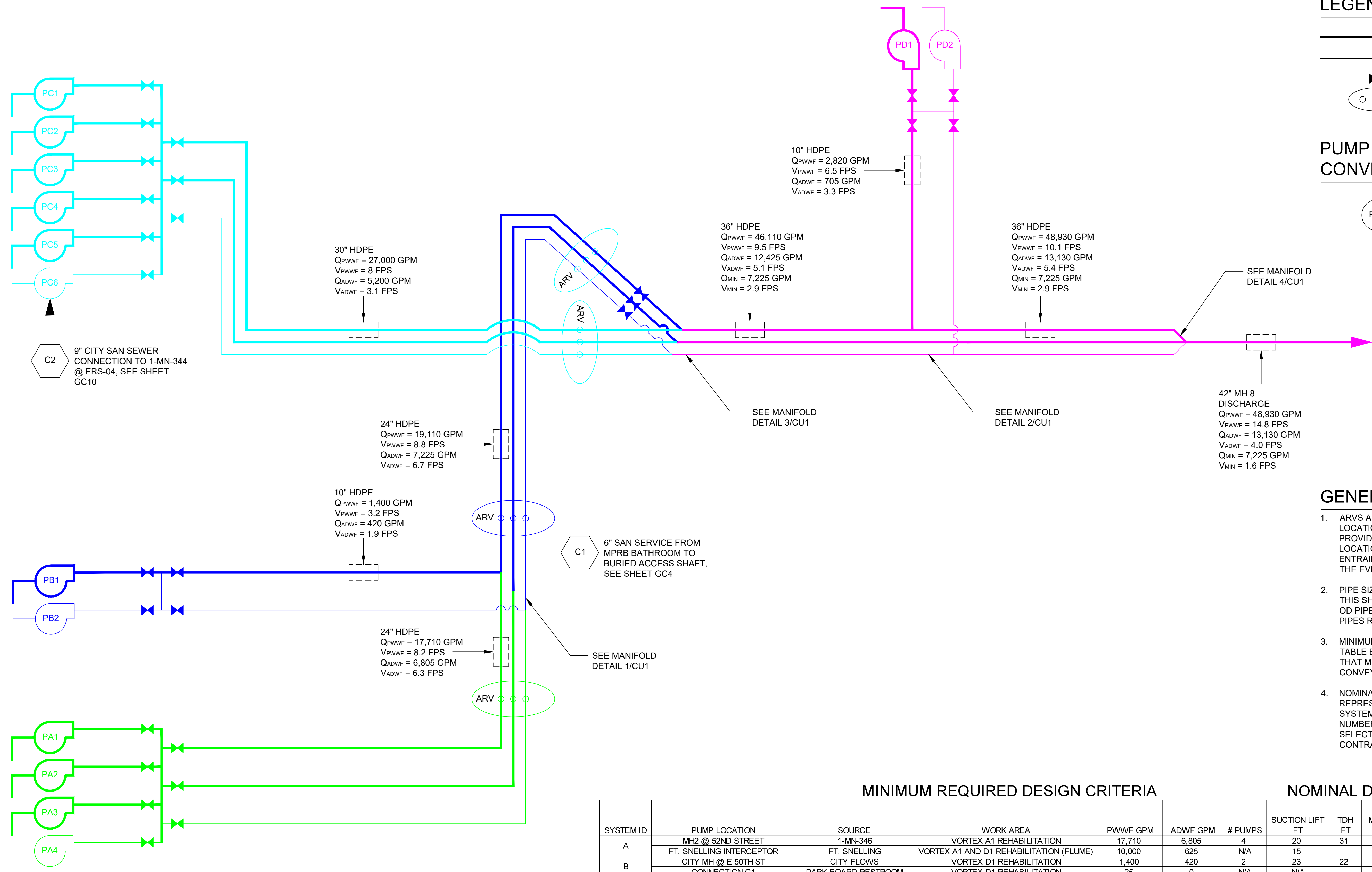
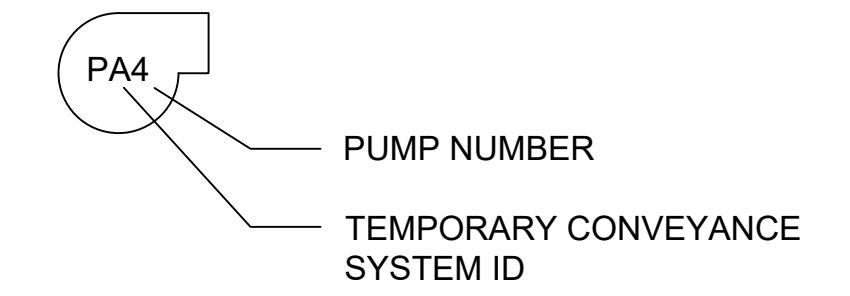
ERS-04/1-MN-344 TUNNEL REHABILITATION
 GENERAL CONTRACT SHEET INDEX

G17
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LEGEND



PUMP IDENTIFICATION CONVENTION



GENERAL NOTES:

- ARVS ARE SHOWN AT THE MINIMUM REQUIRED LOCATIONS. ADDITIONAL ARVS SHALL BE PROVIDED AT ADDITIONAL HIGH POINTS OR OTHER LOCATIONS AS NECESSARY TO AVOID AIR ENTRAINMENT OR TO PROVIDE VACUUM RELIEF IN THE EVENT OF A SUDDEN LOSS OF POWER.
- PIPE SIZES AND THE NUMBER OF PIPES SHOWN ON THIS SHEET REPRESENT THE MINIMUM NOMINAL OD PIPE SIZES AND THE MINIMUM NUMBER OF PIPES REQUIRED.
- MINIMUM REQUIRED DESIGN CRITERIA IN THE TABLE BELOW REPRESENT THE MINIMUM NOMINAL OD PIPE SIZES AND THE MINIMUM NUMBER OF PIPES REQUIRED.
- NOMINAL DESIGN CRITERIA IN THE TABLE BELOW REPRESENT GENERAL CONDITIONS FOR EACH SYSTEM. FINAL SYSTEM DESIGN INCLUDING THE NUMBER OF PUMPS, MOTOR SIZE AND PUMP SELECTION IS THE RESPONSIBILITY OF THE CONTRACTOR.

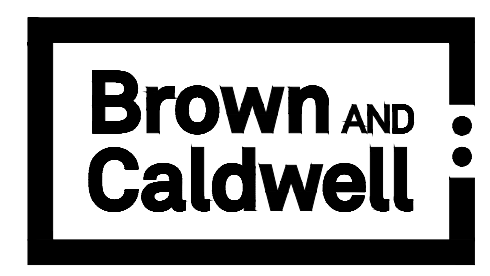
MINIMUM REQUIRED DESIGN CRITERIA							NOMINAL DESIGN CRITERIA				
SYSTEM ID	PUMP LOCATION	SOURCE	WORK AREA	PWWF GPM	ADWF GPM	# PUMPS	SUCTION LIFT FT	TDH FT	MOTOR SIZE HP	Q PER PUMP @ PWWF REQUIRED GPM	Q PER PUMP @ ADWF REQUIRED GPM
A	MH2 @ 52ND STREET	1-MN-346	VORTEX A1 REHABILITATION	17,710	6,805	4	20	31	80	5,903	6,805
	FT. SNELLING INTERCEPTOR	FT. SNELLING	VORTEX A1 AND D1 REHABILITATION (FLUME)	10,000	625	N/A	15				
B	CITY MH @ E 50TH ST	CITY FLOWS	VORTEX D1 REHABILITATION	1,400	420	2	23	22	20	1,400	420
	CONNECTION C1	PARK BOARD RESTROOM	VORTEX D1 REHABILITATION	25	0	N/A	N/A			25	
C	MH2 @ ERS-04	1-MN-344	ERS-04 AND 1-MN-344 REHABILITATION	27,000	5,200	6	20	19	50	5,400	5,200
	CONNECTION C2	7 HOMES	ERS-04 AND 1-MN-344 REHABILITATION	70	0	N/A	14	0	0	70	
D	CITY MH @ NAWADAHA ST	CITY FLOWS	1-MN-344 REHABILITATION	2,820	705	2	24	9	20	2,820	705

NOT FOR CONSTRUCTION

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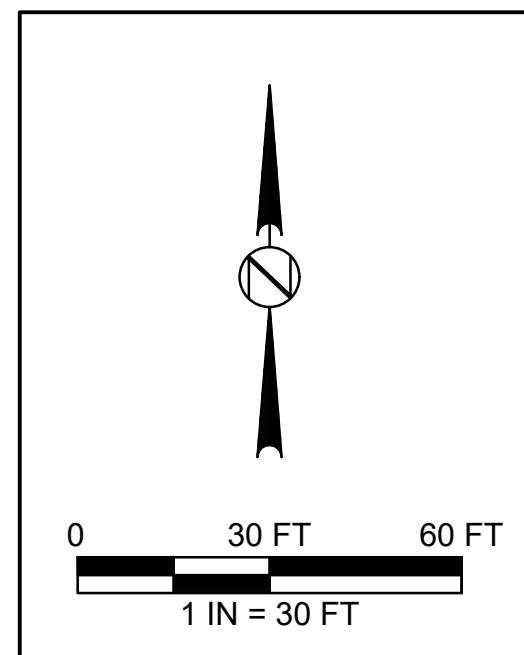
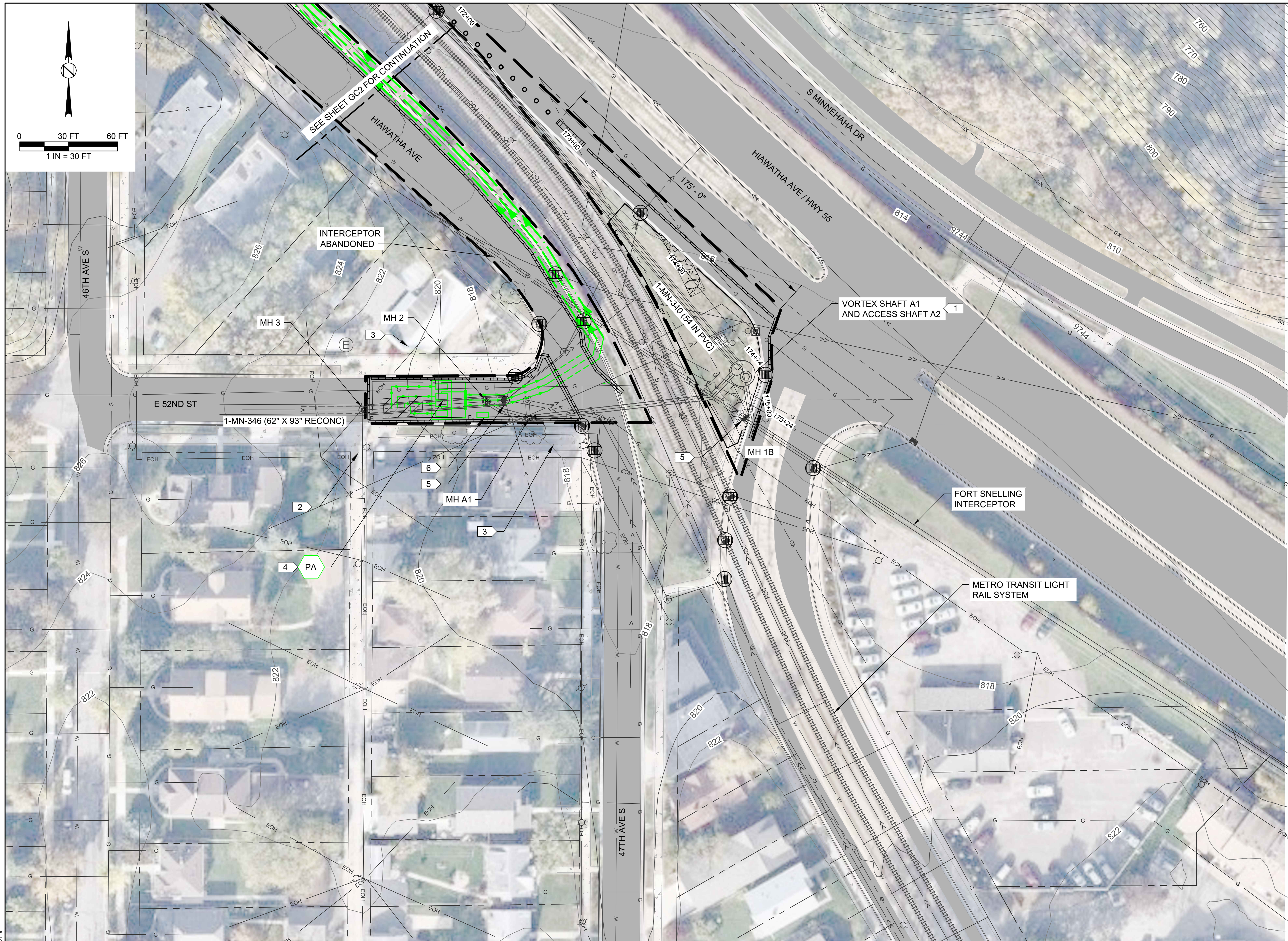
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	11/21/18	BSO	100% SUBMITTAL				
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PROJECT: 807629
 FILE NAME: G100008

ERS-04/1-MN-344 TUNNEL REHABILITATION
 TEMPORARY CONVEYANCE SYSTEMS SCHEMATIC



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
5. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. REHABILITATE STRUCTURES AS SHOWN IN STRUCTURAL DRAWINGS.
2. MAINTAIN ACCESS TO ALLEY DURING CONSTRUCTION.
3. MAINTAIN PEDESTRIAN ACCESS TO ALL BUSINESSES DURING CONSTRUCTION.
4. SEE SHEETS CU1 AND CU2 FOR MANIFOLD AND SUCTION DETAILS.
5. EXISTING BULKHEAD, DO NOT DISTURB.
6. BACKUP GENERATOR.

LEGEND:

- CONSTRUCTION LIMITS
- FILTER LOG PER DETAIL 2/CS2
- SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- ROCK ENTRANCE PER DETAIL 3/CS2
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER
- MN/DOT APPROVED IMPACT ATTENUATOR
- DRUMS
- TEMPORARY CONVEYANCE PIPING SYSTEM "A" - SEE SCHEMATIC ON SHEETS G18 AND CU2 FOR ADDITIONAL INFORMATION.
- 24" DIA TEMPORARY CONVEYANCE PIPE
- 24" BURIED TEMPORARY CONVEYANCE PIPE PER DETAIL 2/CS5
- SERVICE CONNECTION TO INTERCEPTOR - SEE SECTION 01569 FOR ADDITIONAL INFORMATION
- REMOVE PAVEMENT PER SECTION 02050

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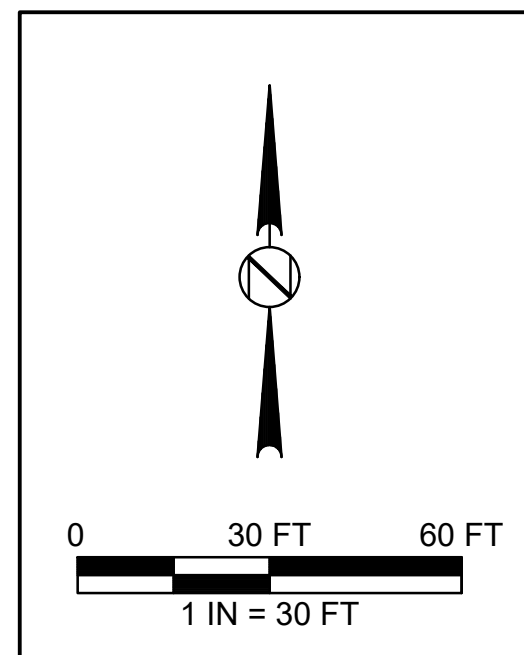
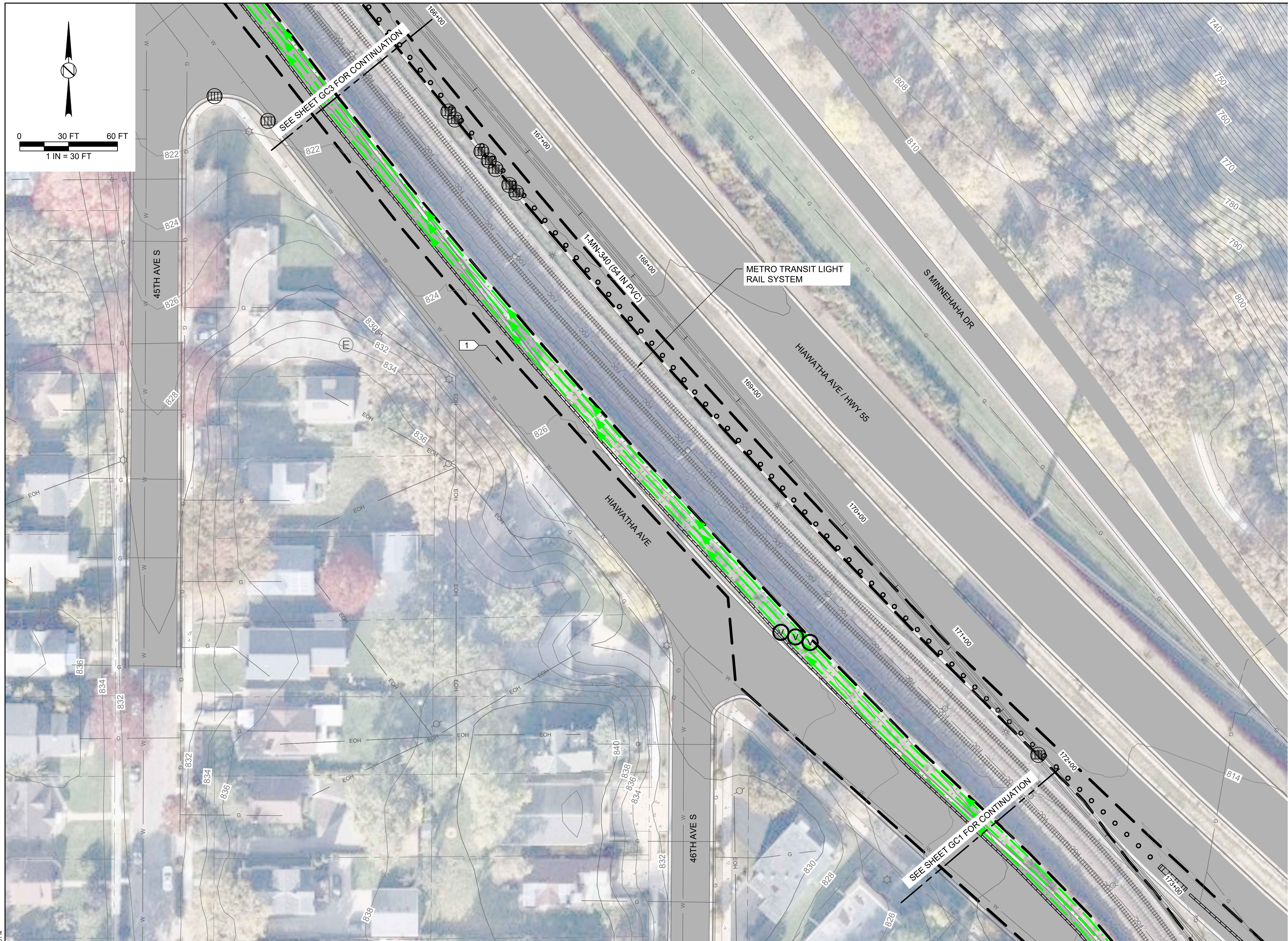
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BSO	JKR	DJH

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____
 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION
FILE NAME	GC00001	TEMPORARY CONVEYANCE - STA 174+00 - 172+00
		GC1
		09 of 98

NOT FOR CONSTRUCTION



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6. MAINTAIN ACCESS TO ALL RESIDENTIAL HOMES THROUGHOUT DURATION OF THE PROJECT.

KEY NOTES:

1. MAINTAIN SINGLE LANE TRAFFIC IN SOUTHERLY DIRECTION WHILE TEMPORARY CONVEYANCE PIPING IS IN PLACE.

LEGEND:

- CONSTRUCTION LIMITS
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER
- DRUMS
- 24" DIA TEMPORARY CONVEYANCE PIPE
- AIR RELIEF VALVE PER SECTION 01569

NOT FOR CONSTRUCTION

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	8/8/18	BSO	70% SUBMITTAL	

NO	DATE	BY	REVISIONS	REMARKS

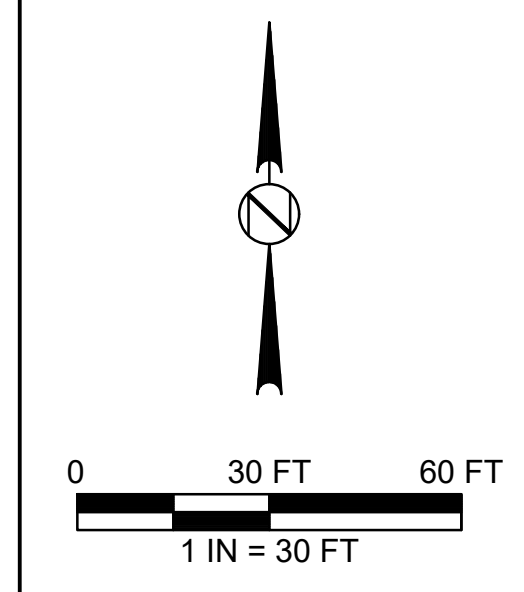
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 DRAWN: JKR
 CHECKED: DJH
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____
 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629
FILE NAME	GC00002

ERS-04/1-MN-344 TUNNEL REHABILITATION
TEMPORARY CONVEYANCE - STA 172+00 - 166+00

GC2
 10 of 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
5. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. MAINTAIN SINGLE LANE TRAFFIC IN SOUTHERLY DIRECTION WHILE TEMPORARY CONVEYANCE PIPING IS IN PLACE.

LEGEND:

- CONSTRUCTION LIMITS
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER
- DRUMS
- 24" DIA TEMPORARY CONVEYANCE PIPE

NOT FOR CONSTRUCTION

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DRAWN	JKR
CHECKED	DJH

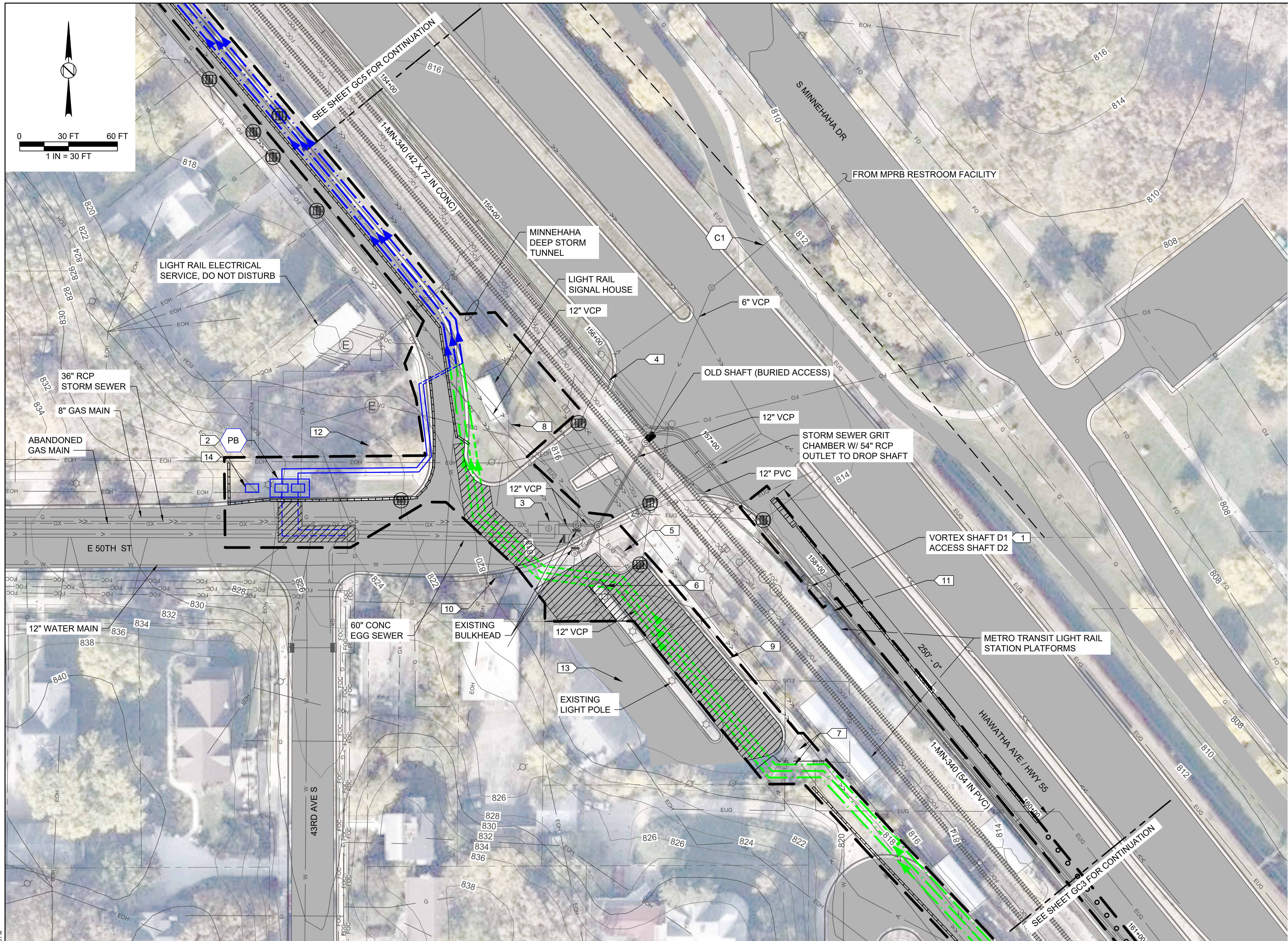
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 SIGNATURE: _____
 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629
FILE NAME	GC00003

ERS-04/1-MN-344 TUNNEL REHABILITATION
TEMPORARY CONVEYANCE - STA 166+00 - 160+00

GC3
 11 of 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. DO NOT DISTURB UTILITIES SERVING THE LIGHT RAIL.
5. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
6. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. REHABILITATE STRUCTURES AS SHOWN IN STRUCTURAL DRAWINGS.
2. SEE SHEETS CU1 AND CU3 FOR MANIFOLD AND SUCTION DETAILS.
3. OLD REGULATOR.
4. CLEAN INTERCEPTOR 1-MN-340 PIPE SEGMENTS AS SPECIFIED IN SECTION 02125.
5. PROTECT SIGN IN PLACE DURING CONSTRUCTION.
6. REMOVE CONCRETE MEDIAN AS REQUIRED TO BURY PIPING. PROTECT EXISTING LIGHT POLE IN PLACE. FIELD VERIFY LOCATION OF BURIED ELECTRICAL FEED TO LIGHTS.
7. PROTECT BICYCLE LOCKER AND TRANSFORMER DURING CONSTRUCTION.
8. ABANDONED 15" CONCRETE SANITARY SEWER.
9. ABANDONED 22" CONCRETE SANITARY SEWER.
10. 2" NON-METALLIC SHIELDED CONDUIT.
11. 3" NON-METALLIC SHIELDED CONDUIT.
12. PRIVATE GARDEN, DO NOT DISTURB.
13. DO NOT WORK ON THIS PRIVATE PROPERTY OUTSIDE THE CONSTRUCTION LIMITS SHOWN WITHOUT THE OWNER'S WRITTEN APPROVAL.
14. BACKUP GENERATOR.

LEGEND:

- CONSTRUCTION LIMITS
- FL FILTER LOG PER DETAIL 2/CS2
- XS SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3
- J-BARRIER
- MN/DOT APPROVED IMPACT ATTENUATOR
- DRUMS
- TEMPORARY CONVEYANCE PIPING SYSTEM "B" - SEE SCHEMATIC ON SHEETS G18 AND CU3 FOR ADDITIONAL INFORMATION.
- 24" DIA TEMPORARY CONVEYANCE PIPE
- 24" BURIED TEMPORARY CONVEYANCE PIPE PER DETAIL 2/CS5
- SERVICE CONNECTION TO INTERCEPTOR - SEE SECTION 01569 FOR ADDITIONAL INFORMATION
- REMOVE PAVEMENT PER SECTION 02050

NOT FOR CONSTRUCTION

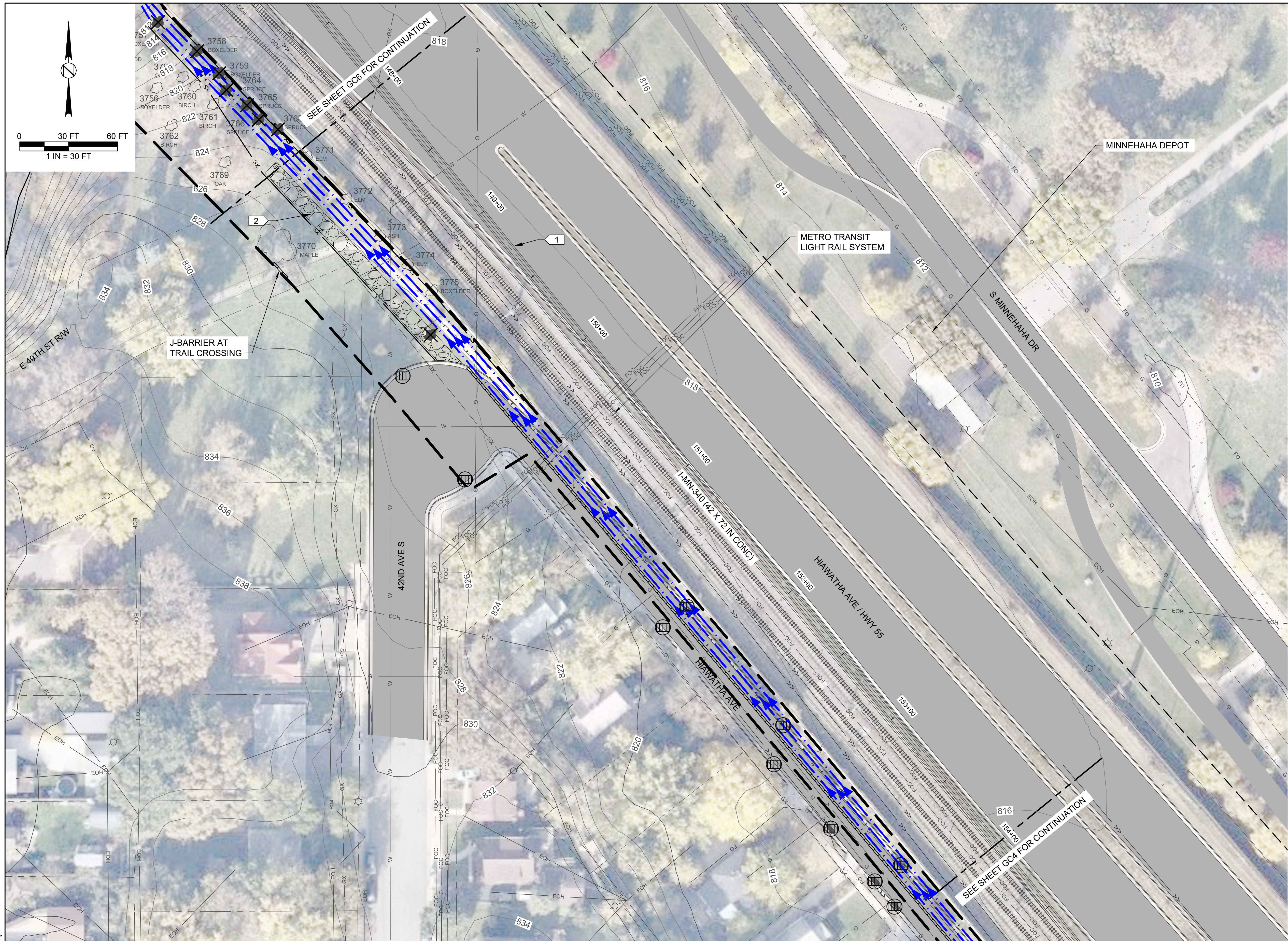
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2	8/8/18	BSO	70% SUBMITTAL	

DESIGNED	BSO
DRAWN	JKR
CHECKED	DJH
TYPED OR PRINTED NAME	BENJAMIN S. O'GRADY
DATE	REG NO 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION
FILE NAME	GC00004	TEMP CONVEYANCE, SITE PREP & 1-MN-340 CLEANING STA 160+00 - 154+00
		GC4
		12 of 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. CLEAN INTERCEPTOR 1-MN-340 PIPE SEGMENTS AS SPECIFIED IN SECTION 02125.
2. TEMPORARY ROCK ENTRANCE TO MAINTAIN CONVEYANCE SYSTEM IN THIS AREA. SEE CL SHEETS FOR RESTORATION FOLLOWING DECOMMISSIONING OF CONVEYANCE SYSTEM.
3. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.

LEGEND:

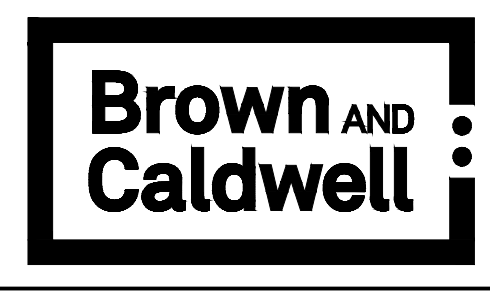
- CONSTRUCTION LIMITS
- ROCK ENTRANCE PER DETAIL 3/CS2
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER
- SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- 24" DIA TEMPORARY CONVEYANCE PIPE
- REMOVE TREE. SEE TREE REMOVAL SCHEDULE IN 02100 FOR ADDITIONAL INFORMATION.

NOT FOR CONSTRUCTION

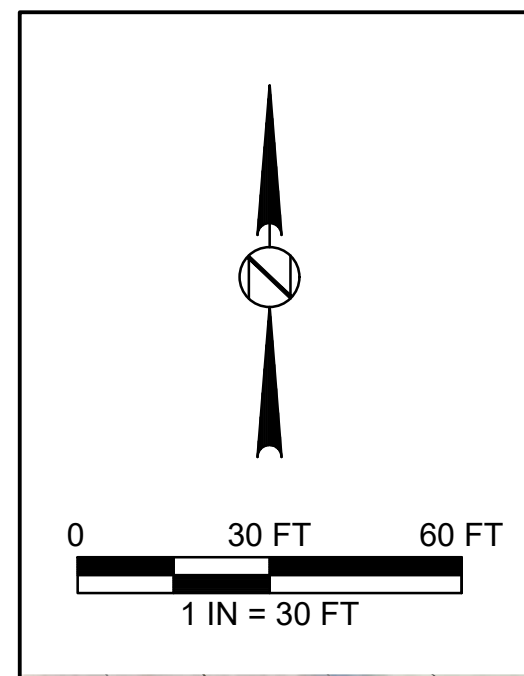
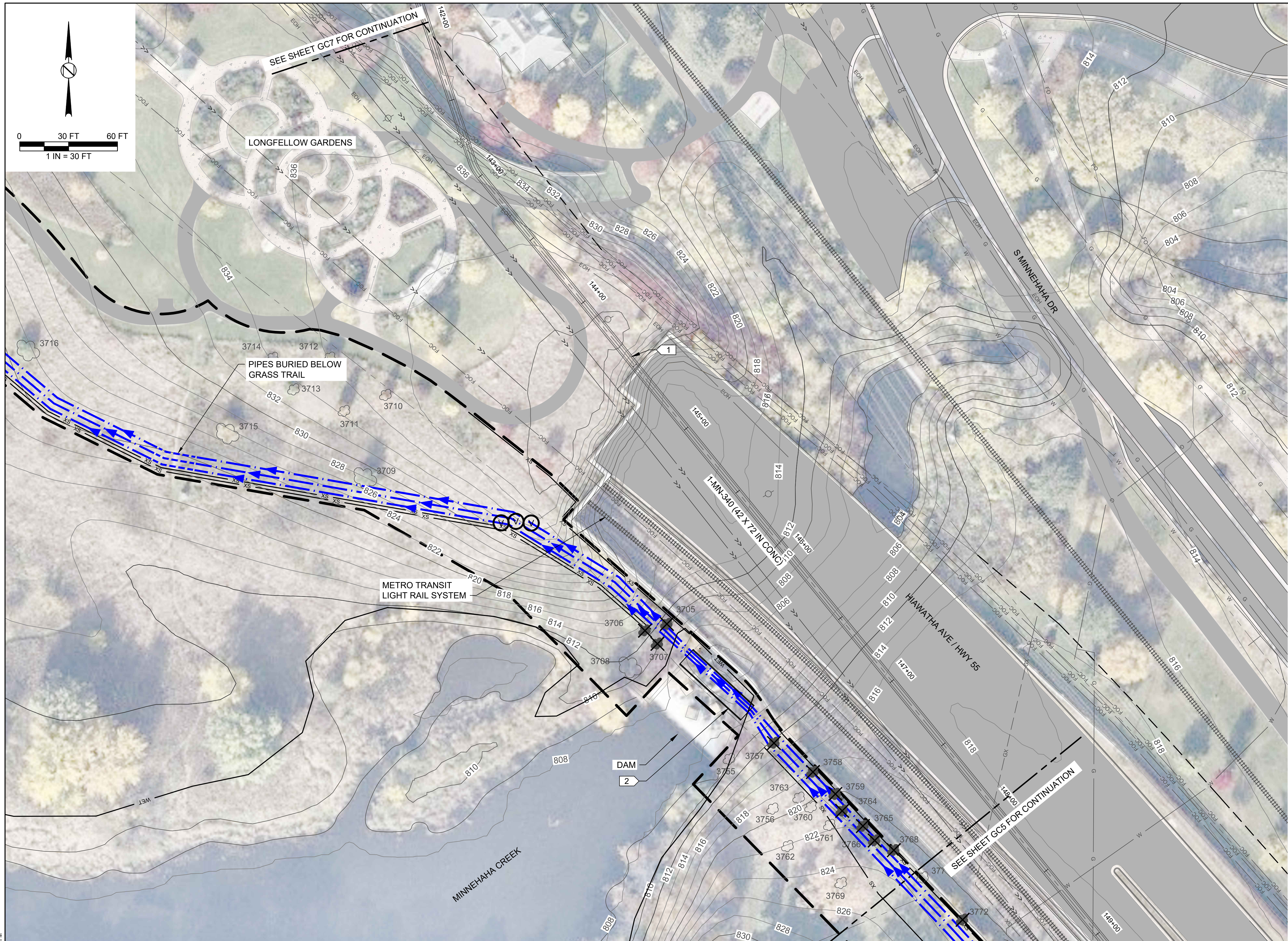
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	8/8/18	BSO	70% SUBMITTAL						

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DRAWN	JKR	
CHECKED	DIH	
DATE		
TYPED OR PRINTED NAME:	BENJAMIN S. O'GRADY	
DATE		REG NO 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	GC5
FILE NAME	GC00005		
TEMP CONVEYANCE, SITE PREP & 1-MN-340 CLEANING STA 154+00 - 148+00			13 of 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN IN SHEETS CT1-CT4.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. TWO ROWS OF SILT FENCE ARE REQUIRED FOR WORK ALONG MINNEHAHA CREEK.
5. CONTRACTOR TO DESIGN TEMPORARY CONVEYANCE PIPE SUPPORT AS REQUIRED FOR SLOPED AREAS.

KEY NOTES:

1. CLEAN INTERCEPTOR 1-MN-340 PIPE SEGMENTS AS SPECIFIED IN SECTION 02125.
2. CONSTRUCT TEMPORARY BRIDGE OVER CREEK TO SUPPORT TEMPORARY CONVEYANCE PIPE. SEE SHEET GC16 FOR ENLARGED PLAN AND DETAILS.

LEGEND:

- CONSTRUCTION LIMITS
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER
- SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- 24" DIA TEMPORARY CONVEYANCE PIPE
- 24" BURIED TEMPORARY CONVEYANCE PIPE BELOW MPRB GRASS TRAIL
- AIR RELIEF VALVE PER SECTION 01569
- REMOVE TREE. SEE TREE REMOVAL SCHEDULE IN 02100 FOR ADDITIONAL INFORMATION.

NOT FOR CONSTRUCTION

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	8/8/18	BSO	70% SUBMITTAL						

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DRAWN	JKR
CHECKED	DJH
DATE	REG NO
	52179

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 SIGNATURE: _____
 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629
FILE NAME	GC00006

ERS-04/1-MN-344 TUNNEL REHABILITATION
 TEMP CONVEYANCE, SITE PREP & 1-MN-340 CLEANING STA 148+00 - 142+00

GC6
 14 OF 98

GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. TWO ROWS OF SILT FENCE ARE REQUIRED FOR WORK ALONG MINNEHAHA CREEK.
5. CONTRACTOR TO DESIGN TEMPORARY CONVEYANCE PIPE SUPPORT AS REQUIRED FOR SLOPED AREAS.
6. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
7. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. CLEAN INTERCEPTOR 1-MN-340 PIPE SEGMENTS AS SPECIFIED IN SECTION 02125.
2. INSTALL TEMPORARY ACCESS ROAD FOR CONSTRUCTION PER DETAIL 1/CS5.
3. PROVIDE ACCESS TO NICE RIDE BICYCLES DURING CONSTRUCTION.
4. REMOVE AND DISPOSE OF EXISTING RR TRACKS.
5. INSTALL TUNNEL CROSSING, SEE SHEET CU13.
6. REHABILITATE EXISTING 1-MN-344 TUNNEL AS SHOWN ON SHEETS CU8-CU15.
7. REMOVE AND REPLACE SIGN AFTER CONSTRUCTION IS COMPLETE.
8. BURY PIPES UNDER ROADWAY, SEE SHEET CU13 FOR ADDITIONAL DETAILS.
9. BURY PIPES TO ALLOW FOR CONSTRUCTION ACCESS.
10. GENERATOR BACKUP.
11. SEE SHEET CU1 FOR MANIFOLD DETAILS.

LEGEND:

- CONSTRUCTION LIMITS
- ROCK ENTRANCE PER DETAIL 3/CS2
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER W/ SECURITY FENCE PER 2/CS6.
- SECURITY FENCE PER 1/CS6.
- SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- TEMPORARY CONVEYANCE PIPING SYSTEM "D" - SEE SCHEMATIC ON SHEETS G18 AND CU5 FOR ADDITIONAL INFORMATION.
- 36" DIA TEMPORARY CONVEYANCE PIPE
- 30" DIA TEMPORARY CONVEYANCE PIPE
- 24" DIA TEMPORARY CONVEYANCE PIPE
- AIR RELIEF VALVE PER SECTION 01569
- REMOVE TREE. SEE TREE REMOVAL SCHEDULE IN 02100 FOR ADDITIONAL INFORMATION.
- ABANDON EXISTING MONITORING WELL AS SPECIFIED IN SECTION 02050.

NOT FOR CONSTRUCTION



STACKED CONVEYANCE PIPES (TYP)
NO SCALE

PH 1
GC7

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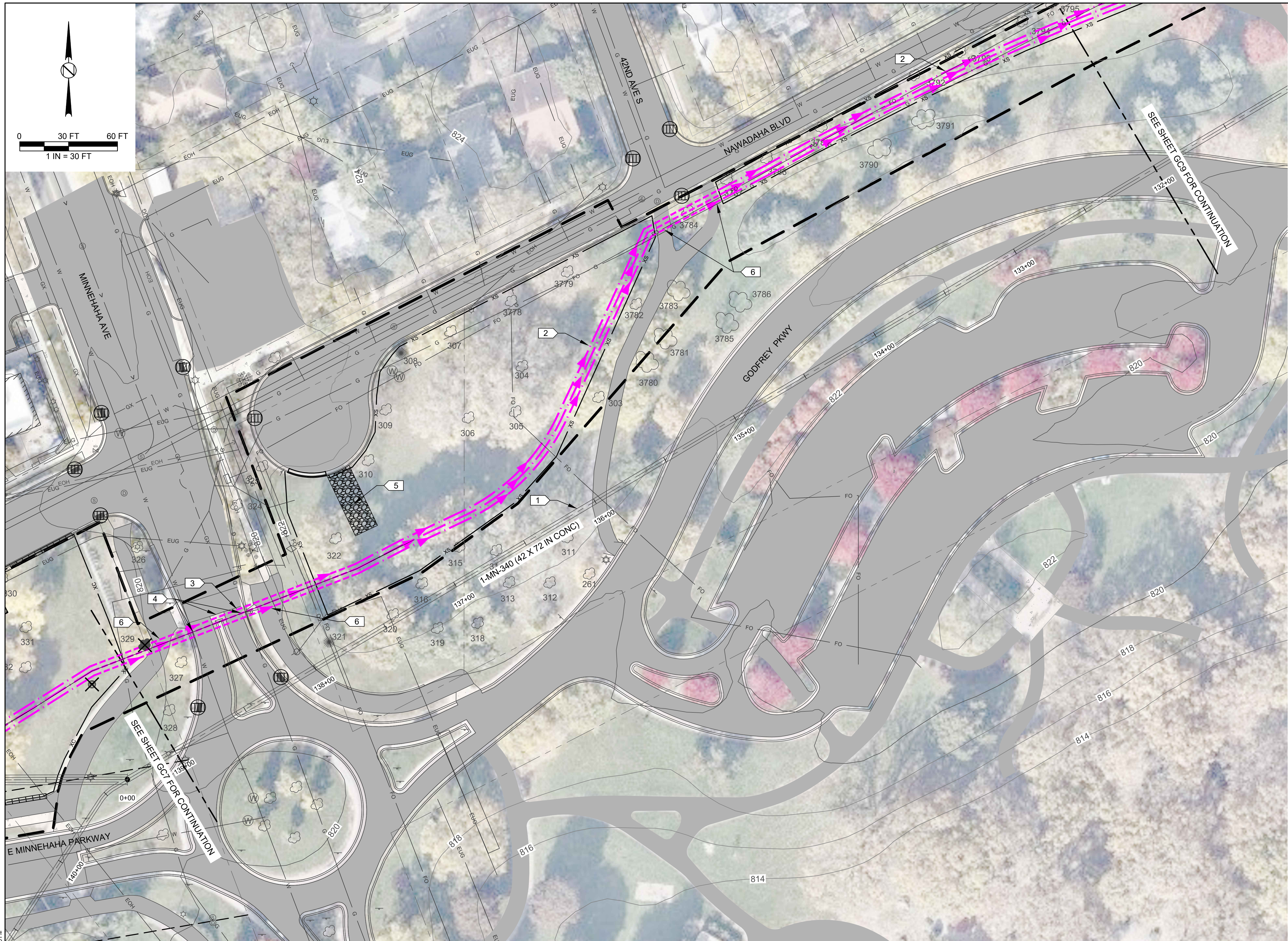
DESIGNED	BSO	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DRAWN	JKR	
CHECKED	DJH	
DATE		

Brown AND Caldwell

TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
DATE: _____ REG NO: 52179

PROJECT	807629
FILE NAME	GC00007

ERS-04/1-MN-344 TUNNEL REHABILITATION
TEMP CONVEYANCE, SITE PREP & 1-MN-340 CLEANING STA 142+00 - 139+00



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MOWING/MAINTAINING GRASS AND VEGETATION AROUND TEMPORARY CONVEYANCE PIPES. COORDINATE THIS WORK WITH MPRB.
5. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
6. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. CLEAN INTERCEPTOR 1-MN-340 PIPE SEGMENTS AS SPECIFIED IN SECTION 02125.
2. ROUTE TEMPORARY CONVEYANCE PIPES TO MINIMIZE IMPACT TO TREES IN THIS AREA. INSTALL TREE PROTECTION AS REQUIRED PER DETAILS ON SHEET CS5.
3. BURY PIPES UNDER ROADWAY, SEE SHEET CU13 FOR ADDITIONAL DETAILS.
4. INSTALL TEMPORARY BITUMINOUS CURBING DURING CONSTRUCTION. RESTORE ROADWAY, CURB AND GUTTER AND ISLAND PER SHEET CL8.
5. TEMPORARY ACCESS ROAD FOR CONSTRUCTION PER 1/CS5.
6. BURY PIPES BENEATH TRAIL PER 2/CS5 TO PROVIDE CONTINUED USE BY GENERAL PUBLIC.

LEGEND:


- — CONSTRUCTION LIMITS
- ⊠ INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- ▤ J-BARRIER W/ SECURITY FENCE PER 2/CS6.
- xc— SECURITY FENCE PER 1/CS6.
- xs— SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- ⬡ PD TEMPORARY CONVEYANCE PIPING SYSTEM "D" - SEE SCHEMATIC ON SHEET G18 FOR ADDITIONAL INFORMATION.
- ▶— 36" DIA TEMPORARY CONVEYANCE PIPE
- ▶— 36" BURIED TEMPORARY CONVEYANCE PIPE PER DETAIL 2/CS5
- ✕ REMOVE TREE. SEE TREE REMOVAL SCHEDULE IN 02100 FOR ADDITIONAL INFORMATION.
- ✕ ABANDON EXISTING MONITORING WELL AS SPECIFIED IN SECTION 02050.

NOT FOR CONSTRUCTION

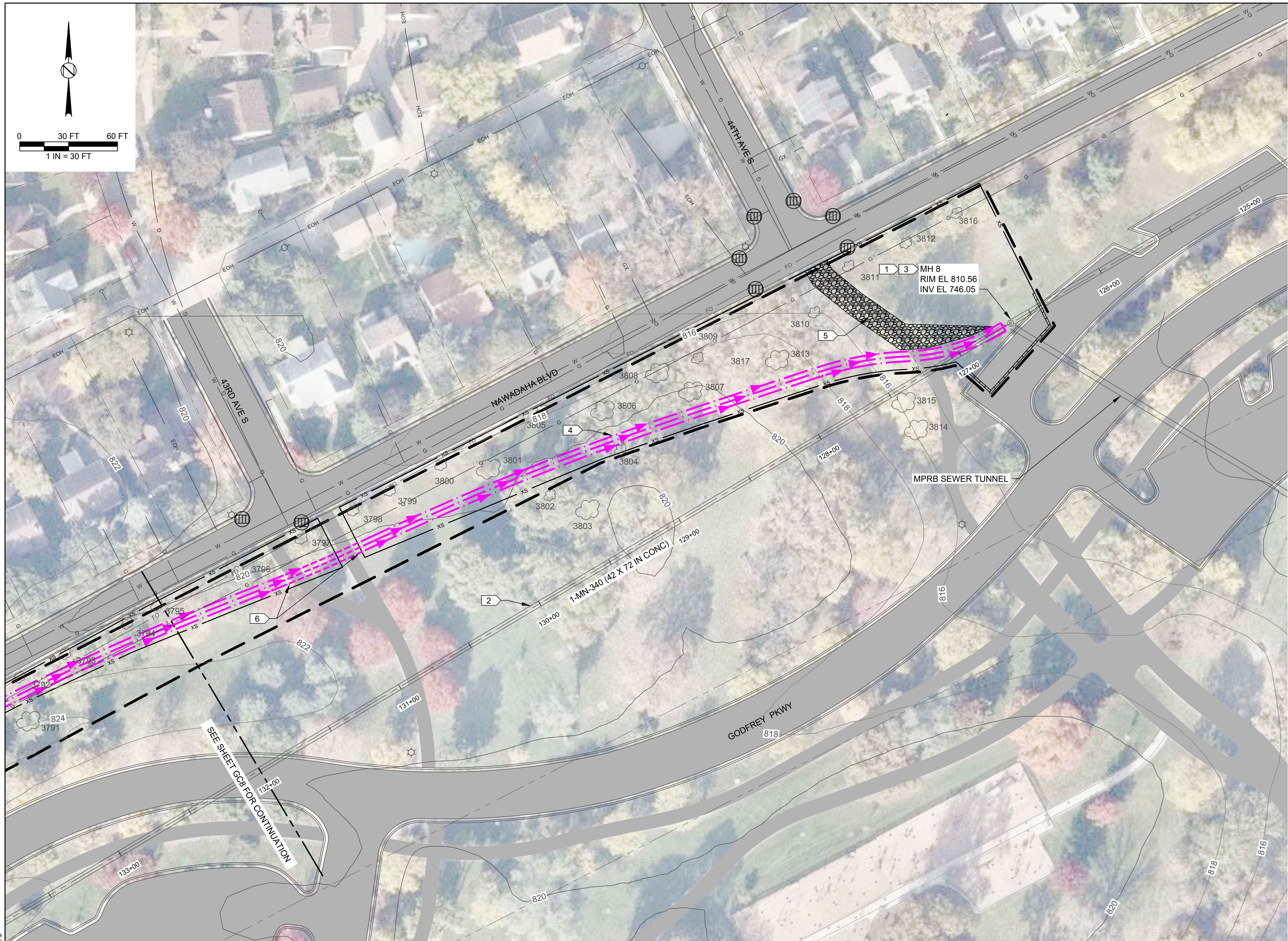
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	8/8/18	BSO	70% SUBMITTAL	

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CHECKED	DJH	
DATE		


 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179

PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	GC8
FILE NAME	GC00008		
TEMP CONVEYANCE, SITE PREP & 1-MN-340 CLEANING STA 139+00 - 132+00			16 of 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN ON SHEETS CT1-CT5.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MOWING/MAINTAINING GRASS AND VEGETATION AROUND TEMPORARY CONVEYANCE PIPES. COORDINATE THIS WORK WITH MPRB.
5. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
6. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. SEE SHEET CU6 FOR MH 8 DISCHARGE DETAILS.
2. CLEAN INTERCEPTOR 1-MN-340 PIPE SEGMENTS AS SPECIFIED IN SECTION 02125.
3. EXTRACT ALL DEBRIS FROM 1-MN-340 CLEANING AT THIS LOCATION. RESTORE CASTING AS SHOWN ON SHEET CU6.
4. ROUTE TEMPORARY CONVEYANCE PIPES TO MINIMIZE IMPACT TO TREES IN THIS AREA. INSTALL TREE PROTECTION AS REQUIRED PER DETAILS ON SHEET CS5.
5. TEMPORARY ACCESS ROAD FOR CONSTRUCTION PER 1/CS5.
6. BURY PIPES BENEATH TRAIL PER 2/CS5 TO PROVIDE CONTINUED USE BY GENERAL PUBLIC.

LEGEND:

- CONSTRUCTION LIMITS
- ⊘ INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER
- XS — SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- ▶— 36" DIA TEMPORARY CONVEYANCE PIPE
- 36" BURIED TEMPORARY CONVEYANCE PIPE PER DETAIL 2/CS5

NOT FOR CONSTRUCTION

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	8/8/18	BSO	70% SUBMITTAL						

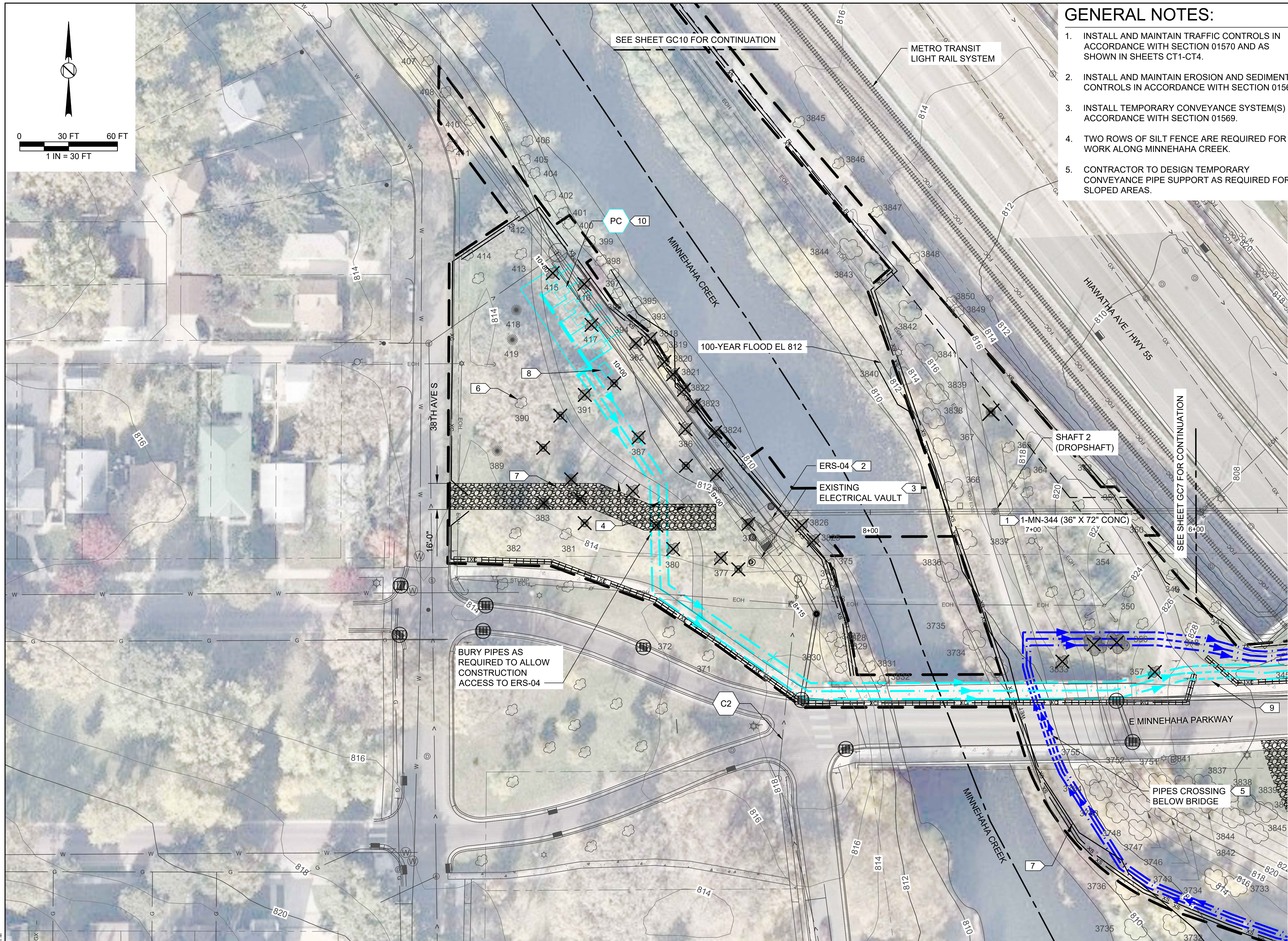
DESIGNED: BSO
 DRAWN: JKR
 CHECKED: DJH
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____
 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT: 807629
 FILE NAME: GC00009

ERS-04/1-MN-344 TUNNEL REHABILITATION
 TEMP CONVEYANCE, SITE PREP & 1-MN-340 CLEANING STA 132+00 - 126+00

GC9
 17 OF 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN IN SHEETS CT1-CT4.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. TWO ROWS OF SILT FENCE ARE REQUIRED FOR WORK ALONG MINNEHAHA CREEK.
5. CONTRACTOR TO DESIGN TEMPORARY CONVEYANCE PIPE SUPPORT AS REQUIRED FOR SLOPED AREAS.

6. PROVIDE TEMPORARY CHAINLINK PERIMETER FENCING AROUND REGULATOR ERS-04 WORK AREA AS NECESSARY TO SECURE THE WORK.
7. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
8. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. REHABILITATE EXISTING 1-MN-344 TUNNEL AS SHOWN ON SHEETS CU8-CU15.
2. REHABILITATE ERS-04 AS SHOWN ON STRUCTURAL SHEETS.
3. INSTALL NEW ELECTRICAL EQUIPMENT AS SHOWN ON THE ELECTRICAL SHEETS.
4. REMOVE AND STORE MEMORIAL BENCHES AND TRASH CAN SUPPORT POLE DURING CONSTRUCTION. REINSTALL AT EXISTING LOCATIONS. REMOVE AND REPLACE CONCRETE SLABS AS NEW IN KIND PRIOR TO REPLACING BENCHES AND POLE.
5. INVERT OF TEMPORARY CONVEYANCE PIPES TO REMAIN ABOVE EL 812.0. PROVIDE CRADLE FOR PIPES TO MAINTAIN REQUIRED ELEVATION.
6. INSTALL TREE PROTECTION FENCE PER DETAIL 4/CS5. PROVIDE 36 FT RADIUS AROUND TREE.
7. INSTALL TEMPORARY ACCESS ROAD FOR CONSTRUCTION PER DETAIL 1/CS5.
8. BACKUP GENERATOR.
9. PRIMARY ACCESS TO WORK SHAFT 2 WORK AREA VIA EXISTING TRAIL.
10. SEE SHEET CU4 FOR SUCTION DETAILS.

LEGEND:

- CONSTRUCTION LIMITS
- ⊘ INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- ▬ J-BARRIER W/ SECURITY FENCE PER 2/CS6.
- SECURITY FENCE PER 1/CS6.
- FILTER LOG PER DETAIL 2/CS2
- SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- PC TEMPORARY CONVEYANCE PIPING SYSTEM "C" - SEE SCHEMATIC ON SHEETS G18 AND CU4 FOR ADDITIONAL INFORMATION.
- C2 MINNEAPOLIS SERVICE CONNECTION TO 1-MN-344. SEE SECTION 01569 FOR ADDITIONAL INFORMATION
- 30" DIA TEMPORARY CONVEYANCE PIPE
- 24" DIA TEMPORARY CONVEYANCE PIPE
- ✕ REMOVE TREE. SEE TREE REMOVAL SCHEDULE IN 02100 FOR ADDITIONAL INFORMATION.
- ✕ ABANDON EXISTING MONITORING WELL AS SPECIFIED IN SECTION 02050.

NOT FOR CONSTRUCTION

NO	DATE	BY	REVISIONS	REMARKS
	11/21/18	BSO	100% SUBMITTAL	
	8/8/18	BSO	70% SUBMITTAL	

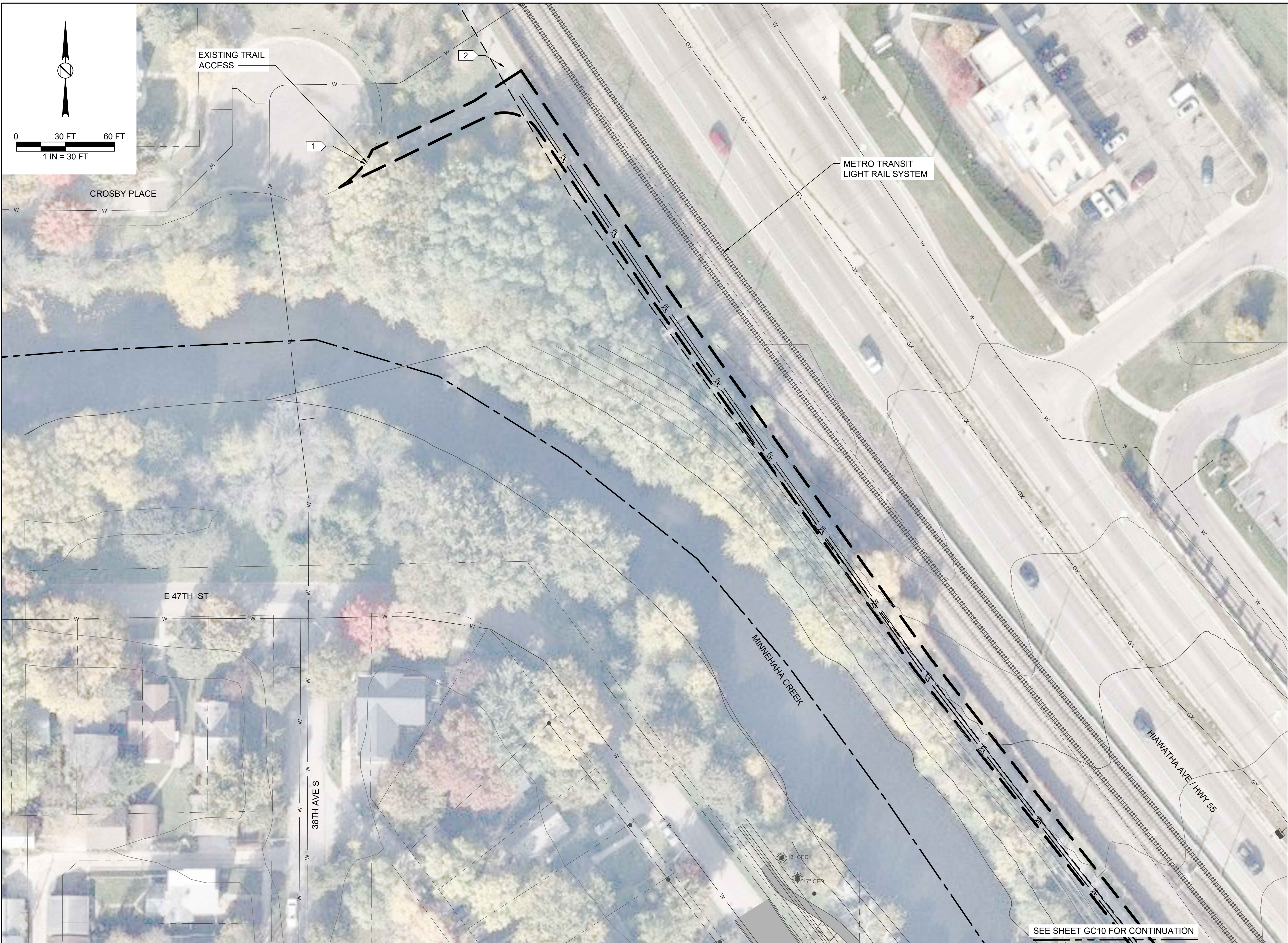
DESIGNED	BSO
DRAWN	JKR
CHECKED	DJH
TYPED OR PRINTED NAME	BENJAMIN S. O'GRADY
DATE	REG NO 52179



PROJECT	807629
FILE NAME	GC00010

ERS-04/1-MN-344 TUNNEL REHABILITATION
 TEMPORARY CONVEYANCE & SITE PREP - ERS-04

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GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN IN SHEETS CT1-CT4.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. TWO ROWS OF SILT FENCE ARE REQUIRED FOR WORK ALONG MINNEHAHA CREEK.
5. CONTRACTOR TO DESIGN TEMPORARY CONVEYANCE PIPE SUPPORT AS REQUIRED FOR SLOPED AREAS.
6. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.

KEY NOTES: □

1. SECONDARY ACCESS TO SHAFT 2 WORK AREA MAINTAIN BIKE TRAFFIC TO NORTHBOUND TRAIL.
2. NORTHBOUND BIKE TRAIL TO REMAIN OPEN DURING CONSTRUCTION. SEE SHEET CT5 FOR BIKE DETOUR ROUTE.

LEGEND:

- — — — — CONSTRUCTION LIMITS
- xs — — — — — SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- fl — — — — — FILTER LOG PER DETAIL PER DETAIL 2/CS2

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NO	DATE	BY	REVISIONS	REMARKS
	11/21/18	BSO	100% SUBMITTAL	
	8/8/18	BSO	70% SUBMITTAL	

DESIGNED	BSO
DRAWN	JKR
CHECKED	DJH
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	
SIGNATURE:	
TYPED OR PRINTED NAME:	BENJAMIN S. O'GRADY
DATE:	5/21/19
REG NO:	52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION TEMPORARY CONVEYANCE & SITE PREP - CROSBY PLACE	GC11 19 of 98
FILE NAME	GC00011		

NOT FOR CONSTRUCTION

NPDES STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

THIS PROJECT WILL REHABILITATE 8,000 LF OF EXISTING 54"-132" DIAMETER SANITARY SEWER PIPING AND MH STRUCTURES, MCES INTERCEPTORS 340 AND 344, BY CLEANING, LINING, COATING, AND OTHERWISE REHABILITATING THEM IN THE VICINITIES OF HIAWATHA AVE (MnDOT HWY 55) AND MINNEHAHA PKWY WITHIN THE MINNEHAHA REGIONAL PARK AREA OF MINNEAPOLIS, MN. THE EXISTING SEWERS FLOW FROM SOUTH TO NORTH ALONG MnDOT HWY 55 FROM E 52ND ST TO MINNEHAHA PKWY, AND FLOW FROM NORTHWEST TO SOUTHEAST ALONG THE NORTH SIDE OF MINNEHAHA PKWY FROM 39TH AVE S TO MINNEHAHA AVE AND CONTINUING EASTERLY ALONG GODFREY PKWY AS IT COMBINES WITH THE SEWER ALONG HWY 55 FROM THE SOUTH, TO 46TH AVE S. DURING CONSTRUCTION FLOW FROM THE EXISTING SEWERS WILL BE DIVERTED THROUGH A SERIES OF TEMPORARY CONVEYANCE PUMPING SYSTEMS THAT WILL RUN ALONG THE WESTERN MnDOT HWY 55 FRONTAGE ROAD AS WELL AS ALONG MINNEHAHA AND GODFREY PARKWAYS. THE CONVEYANCE SYSTEM WILL BE LAID ON THE GROUND AT GRADE WHERE POSSIBLE, AND BURIED THROUGH EXISTING ROADWAY AND TRAIL CROSSINGS AND COVERED TEMPORARILY TO ALLOW CONTINUED ACCESS. UPON REMOVAL OF THE CONVEYANCE SYSTEM THE TEMP PIPE WILL BE REMOVED AND ROADWAY/TRAIL CROSSING RESTORED TO ORIGINAL CONDITION. DURING CONVEYANCE THE EXISTING MCES INTERCEPTOR SANITARY SEWERS WILL BE CLEANED AND REHABILITATED IN AT LEAST TWO STAGES: BEING THE SOUTHERLY AREA ALONG HWY 55 (SHORTER 2019 DURATION), AND THE NORTHERLY MINNEHAHA/GODFREY PKWY (LONGER 2019-2020 DURATION). THE PROJECT IS GENERALLY IN THE PUBLIC RIGHT OF WAY AND WILL REQUIRE WORK, INCLUDING SOME EXCAVATION, MAINLY IN THE ROADWAY OR ADJACENT BOULEVARD AREAS TO ACCESS SEWER MHS, STRUCTURES, OR OTHER NECESSARY LARGE/DEEP SEWER SHAFTS. SOME WORK, INCLUDING SOME EXCAVATION, WILL TAKE PLACE OUTSIDE OF THE ROAD RIGHT-OF-WAY (ROW) WITHIN PARK PROPERTY WHERE MCES HAS ACQUIRED EASEMENTS FOR SUCH WORK.

THE TOTAL LAND AREA ANTICIPATED TO BE DISTURBED BY THE PROJECT (EXCLUSIVE OF BORROW AND DISPOSAL AREAS) IS LESS THAN 4.0 ACRES; WHEREAS THE TOTAL LAND AREA FOR THE ENTIRE PROJECT LIMITS IS APPROXIMATELY 9.0 ACRES.

CONSTRUCTION DATES ARE ESTIMATED TO BE FROM APRIL 1ST, 2019 TO DECEMBER 31ST, 2021. THE RECEIVING WATERS OF CONSTRUCTION STORMWATER RUNOFF INCLUDE MINNEHAHA CREEK, AND THE MISSISSIPPI RIVER VIA LOCAL STORM SEWER OR OTHER DRAINAGEWAYS.

SPECIAL AND IMPAIRED WATERS: MINNEHAHA CREEK IS THE MAIN RECEIVING WATER FOR THE PROJECT AND IS LISTED AS AN IMPAIRED WATER FOR IMPAIRMENTS RELATED TO CONSTRUCTION ACTIVITY. BECAUSE INDIVIDUAL AREAS OF DISTURBANCE ONLY RANGE FROM 0.5-1.5 ACRES DUE TO CONSTRUCTION SEQUENCING AND DRAINAGEWAYS, IT IS ANTICIPATED THAT SEDIMENTATION BASINS WILL NOT BE REQUIRED FOR THIS PROJECT. CHANGES BY THE CONTRACTOR TO THE AMOUNT OF AREA DISTURBED AT ANY ONE TIME THAT INCREASE THE AREA DISTURBED TO 5.0 ACRES OR MORE MAY NECESSITATE USE OF TEMPORARY SEDIMENTATION BASINS. THE MISSISSIPPI RIVER IS DOWNSTREAM AND WITHIN A MILE OF THE PROJECT SITE, BUT WILL ONLY RECEIVE STORM WATER DISCHARGES VIA MINNEHAHA CREEK AND/OR LOCAL STORM SEWER SYSTEMS, AND THIS PORTION OF THE MISSISSIPPI RIVER DOES NOT INCLUDE CONSTRUCTION STORMWATER IMPAIRMENTS. LAKES HIAWATHA AND NOKOMIS ARE LISTED AS IMPAIRED WATERS AND ARE WITHIN A MILE OF THE PROJECT SITE, BUT ARE UPSTREAM OF THE PROJECT AND WILL NOT RECEIVE STORM WATER DISCHARGES FROM THIS CONSTRUCTION PROJECT.

CONTACTS:

THE SWPPP ENGINEER IS:
PETER GLASHAGEL
BROWN & CALDWELL
30 EAST SEVENTH ST. SUITE 2500
ST. PAUL, MN 55101
(651) 468-2062
pglashagel@brwnccald.com

AREA HYDROLOGIST:
JASON SPIEGEL
MINNESOTA DNR
1200 WARNER RD.
ST PAUL, MN 55106
(651) 259-5822
jason.spiegel@state.mn.us

THE MCES PROJECT MANAGER IS:
CHAD DAVISON
MCES RMF
3565 KENNEBEC DR.
EAGAN, MN 55122
(651) 602-4533
chad.davison@metc.state.mn.us

TIMING OF BMP INSTALLATION

THE EROSION AND SEDIMENTATION CONTROL BMPs SHALL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS.

- TEMPORARY PERIMETER CONTROL BMPs WILL BE INSTALLED BEFORE ANY UP GRADIENT SOIL DISTURBANCE OCCURS.
- TOPSOIL AND RIPRAP, OR OTHER TEMPORARY EROSION CONTROL BMPs SHALL BE PLACED WITHIN 3 DAYS OF COMPLETION OF WORK ADJACENT TO ANY LAKES, RIVERS, OR CREEKS, OR ANY DRAINAGEWAYS LEADING TO SUCH WATERWAYS.
- ONCE CONSTRUCTION ACTIVITY CEASES FOR 3 DAYS OR MORE IN AN AREA ADJACENT TO ANY LAKES, RIVERS, OR CREEKS, THAT AREA WILL BE STABILIZED WITH TEMPORARY OR PERMANENT BMPs FOR EROSION.

CALCULATIONS:

EXISTING AREA OF IMPERVIOUS SURFACE = 4.0 ACRES

POST-CONSTRUCTION AREA OF IMPERVIOUS SURFACE IN ACRES = 3.1 ACRES

IMPERVIOUS NET = 0 ACRES

SOILS INFORMATION: SEE SOILS REPORT AS APPENDIX IN THE PROJECT SPECIFICATIONS.

CONSTRUCTION SHALL BE GOVERNED BY THE MnDOT STANDARD SPECIFICATIONS (2018), CITY OF MINNEAPOLIS STANDARD CONSTRUCTION SPECIFICATIONS, CEAM, AND CONSTRUCTION SPECIFICATION INSTITUTE DIVISION SECTIONS.

SWPPP TRAINING

THIS SWPPP WAS PREPARED BY THE PROJECT SWPPP ENGINEER WHO IS CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPs. A COPY OF THE ENGINEER'S CERTIFICATION IS IN THE APPENDIX. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION CONTROL SUPERVISOR THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE MCES-CAR.

THE CONTRACTOR SHALL KEEP WRITTEN INSPECTION AND MAINTENANCE LOGS (INCLUDING ALL CLEAN OUT AND CORRECTIVE ACTIONS) IN ACCORDANCE WITH THIS SWPPP AND ALL PERMITS.

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE CONTRACT DOCUMENTS.

TMDL IMPLEMENTATION PLANS CONTAINING STORM WATER REQUIREMENTS

NO TMDL IMPLEMENTATION PLANS CURRENTLY EXIST FOR THE RECEIVING WATERS ON THIS PROJECT.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN		
DESCRIPTION	TITLE	LOCATION
DIRECTION OF FLOW/DRAINAGE AREA	PLAN	SHEETS
RECEIVING SURFACE WATERS	PLAN	APPENDIX
NO DISTURBANCE AREAS AND AREAS OF PHASE CONSTRUCTION	SWPPP	APPENDIX
EROSION CONTROL DETAILS	DETAILS	SHEETS
SEDIMENT CONTROL PRACTICES	DETAILS	SHEETS
FINAL STABILIZATION	PLAN	SHEETS

CODE	QUANTITY	UNITS	COMMON BMP NAME	REMARKS
A	13,500	SY	EROSION CONTROL BLANKET	
B	76	EA	INLET PROTECTION	
C	7,760	LF	SILT FENCE	
D	30,800	SY	SEEDING	INCLUDES TEMPORARY AND PERMANENT
E	4	EA	ROCK CONSTRUCTION ENTRANCE	
F	1,000	LF	SILT FLOATATION CURTAIN	
G	X	EA	FILTER LOG	INSTALL ALONG CREEK EDGE NEAR WORK AREAS IF REQUIRED BY MCWD

SWPPP IMPLEMENTATION CONTACTS			
AGENCY	PERMIT	NAME	PHONE/E-MAIL
CONTRACTOR'S EROSION CONTROL SUPERVISOR		TBD @ BID	TBD @ BID
MPCA	NPDES	JOHN ERDMANN	(651) 757-2341 John.erdmann@state.mn.us
MINNEHAHA CREEK WATERSHED DISTRICT	NPDES	ELIZABETH SHOWALTER	(952) 641-4518 eshowalter@minnehahacreek.org
MnDNR WATERS AREA HYDROLOGIST	N/A	JASON SPIEGEL	(651) 259-5822 jason.spiegel@state.mn.us
CITY OF MINNEAPOLIS PARKS DEPARTMENT	N/A	TYLER PEDERSON	(612) 230-6418 tpederson@minneapolisparcs.org
CITY OF MINNEAPOLIS	N/A	KATRINA KESSLER	(612) 673-3038 katrina.kessler@minneapolismn.gov

EROSION CONTROL NOTES

- MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (2018 EDITION) SHALL APPLY. ALONG WITH THE MCES, THE CONTRACTOR WILL BE CO-PERMITTEE FOR THE MPCA NPDES STORMWATER CONSTRUCTION PERMIT FOR THIS PROJECT - CONTRACTORS SIGNATURE ON PERMIT IS REQUIRED. SUBMIT INITIAL EROSION CONTROL (EC) SCHEDULE AT OR BEFORE THE PRECONSTRUCTION CONFERENCE. SUBMIT EC SCHEDULE ALTERATIONS/ADJUSTMENTS WEEKLY THEREAFTER FOR ENGINEERS APPROVAL.
- THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL QUALITY CONTROL (QC) ON THIS PROJECT. CONTRACTOR SHALL PHASE/SEQUENCE THE PROJECT TO MINIMIZE EXPOSURE TO EROSION. CONTRACTOR SHALL PLACE OR OTHERWISE CONSTRUCT EROSION CONTROL AND SEDIMENT CONTAINMENT DEVICES TO MINIMIZE THE RUNOFF, TRACKING AND SEDIMENT LOSS FROM DISTURBED AREAS OF THE PROJECT SITE.
- DISTURBED SLOPES NOT ACTIVELY WORKED SHALL BE PROTECTED FROM SOIL EROSION WITH TEMPORARY OR PERMANENT COVER WITHIN 3 DAYS OF BEING WORKED. EROSION CONTROL BLANKET WITH SOIL STAPLES SHALL BE USED ADJACENT TO WATERWAY EMBANKMENTS. ALL AREAS WITH EXPOSED SOILS THAT ARE TO REMAIN WITHOUT ACTIVE CONSTRUCTION FOR MORE THAN 14 DAYS, INCLUDING STOCKPILES, SHALL BE STABILIZED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE AREA CEASES. STABILIZATION SHALL AT A MINIMUM INCLUDE SEEDING AND MULCHING.
- AT MINIMUM, THE FOLLOWING CONTROLS WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE:
 - EROSION CONTROL BLANKETS SHALL BE USED ON ALL SLOPES 3H:1V OR STEEPER.
 - SILT FENCE SHALL BE USED IN CONJUNCTION WITH OTHER EROSION BMPS. SILT FENCE WITHIN FORTY FEET OF RECEIVING WATERS WILL BE SET AT ORDINARY HIGH WATER LEVEL.
 - SILT FENCE WITH BALE BACKING DITCH CHECKS, STAKED BIOROLL DITCH CHECKS, OR APPROVED EQUAL SHALL BE USED TO REDUCE DITCH VELOCITIES AND REDUCE EROSION.
 - SILT FLOATATION CURTAINS WILL BE INSTALLED ALONG CONSTRUCTION AREAS THAT ARE WITHIN 40 LF OF A RECEIVING WATER.
 - J-HOOK BIOROLLS PLACED ON ROADS TO CONTROL RUNOFF FOR SLOPE LENGTHS GREATER THAN 75 FEET WITH A GRADE OF 2% OR STEEPER.
 - CULVERT INLETS AND OUTLET AREAS SHALL BE CONTINUOUSLY PROTECTED WITH MnDOT APPROVED DEVICES/METHODS.
 - STABILIZED CONSTRUCTION ENTRANCE, OR REUSABLE MUD MAT SHALL BE USED TO REDUCE SEDIMENT TRACKING.
 - PERMANENT VEGETATION WILL BE ESTABLISHED RIGHT AFTER TOPSOIL IS SPREAD.
 - CONTROL ALL SITE WASTE, DEBRIS, MATERIAL STORAGE, CONCRETE WASHOUT, ONSITE. NO MITIGATION OFFSITE ALLOWED.
- IF ANY STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN 7 DAYS SEDIMENT AND EROSION CONTROL DEVICES SHALL BE USED. NO STOCK PILING WILL BE PERMITTED ADJACENT TO WATERWAY EMBANKMENTS.
- WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE DIRECTED THROUGH EFFECTIVE FILTERING DEVICE(S) IN ACCORDANCE WITH MnDOT SPECIFICATION 2573 AND SPECIFICATION SECTION 01563. USE OF APPROVED FLOCCULATION MAY BE NECESSARY.
- THE CONTRACTOR SHALL TAKE ALL POSSIBLE PRECAUTIONS TO PREVENT APPRECIABLE SOIL TRACKING INTO ROADWAYS. APPRECIABLE SOIL, MUD OR DEBRIS WASHED, TRACKED OR DEPOSITED ONTO PAVED SURFACES SHALL BE REMOVED PRIOR TO THE END OF EACH WORKDAY.
- STABILIZED CONSTRUCTION ENTRANCE(S) SHALL BE REMOVED AND AREA RESTORED AFTER CONSTRUCTION IS COMPLETE.
- THE CONTRACTOR QC PROGRAM SHALL ENSURE THAT A COMPETENT INDIVIDUAL SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES WEEKLY AND AFTER EACH RAIN EVENT. ALL NONFUNCTIONAL DEVICES SHALL BE REPAIRED/REPLACED/CLEANED. MAINTAIN WRITTEN LOG OF ALL WEEKLY AND RAIN EVENT INSPECTIONS - INCLUDE THE CORRECTIVE ACTIONS THAT WERE TAKEN.
- THE CONTRACTOR SHALL MAINTAIN CAPABILITY FOR RAPID STABILIZATION METHOD 4 (MnDOT 2573.4) AT ALL TIMES. INCLUDES CAT III EROSION CONTROL BLANKET (ECB) [N. AMERICAN GREEN S150 OR APPROVED EQUAL] ALONG WITH SEEDS MIXTURE, FERTILIZER, AND SOIL STAPLES PER 275-3. THE UPGRADE END OF EACH BLANKET STRIP SHALL BE BURIED AT LEAST 6 INCHES IN A VERTICAL CHECK SLOT. STAPLES SHALL BE PLACED AT SEAMS AND THROUGHOUT THE BLANKET AT A MAXIMUM SPACING IN ALL DIRECTIONS OF 2 FEET.

NOT FOR CONSTRUCTION

NO	DATE	BY	REVISIONS	NO	DATE	BY	REVISIONS
	11/21/18	BSO	100% SUBMITTAL				
	8/8/18	BSO	70% SUBMITTAL				

DESIGNED	BSO
DRAWN	JKR
CHECKED	DJH

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____

TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY

DATE: _____ REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	CS1
FILE NAME	CS00001		
STORMWATER POLLUTION PREVENTION PLAN			25 of 98

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- INSTALL PERIMETER EROSION CONTROLS AS INDICATED IN PLANS PRIOR TO START OF WORK. HAY BALES ARE NOT ALLOWED AS EROSION & SEDIMENT CONTROL DEVICE IN MINNEAPOLIS.
- REMOVE ALL SOILS AND SEDIMENTS DEPOSITED ONTO PUBLIC AND/OR PRIVATE PAVEMENT AREA WITHIN 24 HOURS OF DEPOSITION. REMOVAL OF TRACKING MATERIALS SHALL BE COMPLETED AT THE END OF EACH WORK DAY WHEN TRACKING OCCURS. SWEEPING MAY BE ORDERED AT ANY TIME IF CONDITIONS WARRANT. SWEEPING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION AND IN SUCH A MANNER TO PREVENT DUST BEING BLOWN TO ADJACENT PROPERTIES.
- INSTALL INLET PROTECTION IN ALL DOWNSTREAM CATCH BASINS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREA. CATCH BASIN INSERTS ARE REQUIRED AT ALL LOCATIONS NOT WITHIN THE DISTURBED AREA WHICH RECEIVE RUNOFF (MNDOT TYPE C INLET PROTECTION). NOTE HAY BALES AND SILT FENCE WRAPPED GRATES ARE NOT EFFECTIVE AND ARE NOT APPROVED FOR USE AS INLET PROTECTION DEVICES.
- LOCATE ALL SOIL AND DIRT PILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. ALL STOCK PILES THAT REMAIN IN PLACE FOR 7 DAYS OR MORE SHALL BE STABILIZED BY MULCHING, VEGETATIVE COVER, TARPING OR OTHER MEANS. TEMPORARY STOCK PILES LOCATED ON PAVED SURFACES MUST BE AT LEAST 2 FEET OR MORE AWAY FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF REMAINING MORE THAN 24 HOURS.
- MAINTAIN ALL TEMPORARY EROSION CONTROL DEVICES IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. INSPECT TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ON A WEEKLY BASIS AND REPLACE DETERIORATED, DAMAGED OR ROTTED EROSION CONTROL DEVICES IMMEDIATELY.
- MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PERFORMED WHENEVER THE DEVICE IS 30% FULL. FAILURE TO MAINTAIN EROSION CONTROL DEVICES MAY LEAD TO FURTHER ENFORCEMENT ACTION. WEEKLY INSPECTIONS REQUIRED AND AFTER EACH 1/2" OR MORE RAIN EVENT WITHIN 24 HRS.
- READY MIXED CONCRETE AND BATCH PLANT WASHOUTS ARE PROHIBITED WITHIN THE PUBLIC RIGHT OF WAY. DESIGNATE CONCRETE WASHOUT AND MIXING LOCATIONS IN THE EROSION CONTROL PLANS. UNDER NO CIRCUMSTANCES MAY WASHOUT WATER DRAIN ONTO THE PUBLIC RIGHT OF WAY OR INTO THE PUBLIC STORM DRAIN.
- TEMPORARILY OR PERMANENTLY STABILIZE ALL DENUDED AREAS WHICH HAVE BEEN FINISH GRADED WITHIN 7-14 DAYS (SLOPE DEPENDENT). USE SEEDING AND MULCHING, EROSION CONTROL MATTING AND/OR SODDING WITH TEMPORARY STAKING IN GREEN SPACE AREAS. USE EARLY APPLICATION OF GRAVEL BASE FOR AREAS DESIGNATED FOR PAVED SURFACING.
- REMOVE ALL TEMPORARY SYNTHETIC, STRUCTURAL AND NON-BIODEGRADABLE EROSION AND SEDIMENT CONTROL AFTER THE SITE HAS UNDERGONE FINAL STABILIZATION AND PERMANENT VEGETATION HAS BEEN ESTABLISHED. MINIMUM VEGETATION COVER OF 70% REQUIRED. ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED UNTIL THE SITE HAS 70% ESTABLISHED VEGETATIVE COVER AND ALL PAVED AREAS HAVE BEEN STABILIZED WITH THE SELECTED PAVEMENT TYPE.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY OTHER PERMITTING AGENCIES, IT IS THE RESPONSIBILITY OF THE PROJECT ENGINEER TO VERIFY THAT THE CITY AND ALL OTHER AGENCY REQUIREMENTS ARE MET.

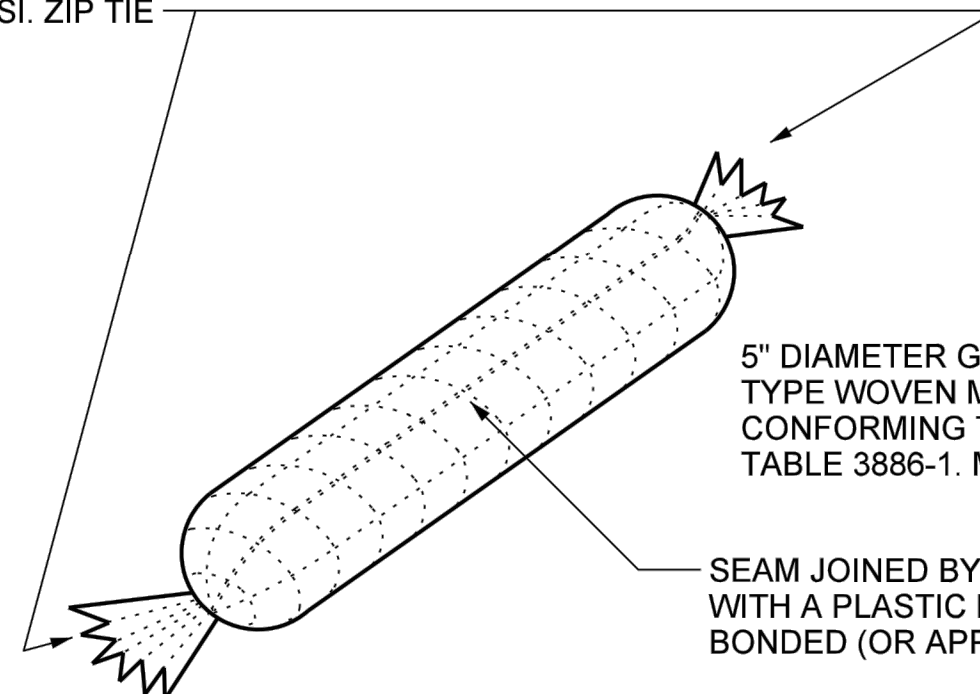
EROSION CONTROL NOTES

SEWR-8007

1 EROSION CONTROL NOTES

CS2 NO SCALE

ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL SECURED WITH 50 PSI. ZIP TIE



5" DIAMETER GEOTEXTILE SOCK, TYPE WOVEN MONOFILAMENT CONFORMING TO MNDOT SPEC. 3886, TABLE 3886-1. MACHINE SLICE

SEAM JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR HEAT BONDED (OR APPROVED EQUIVALENT)

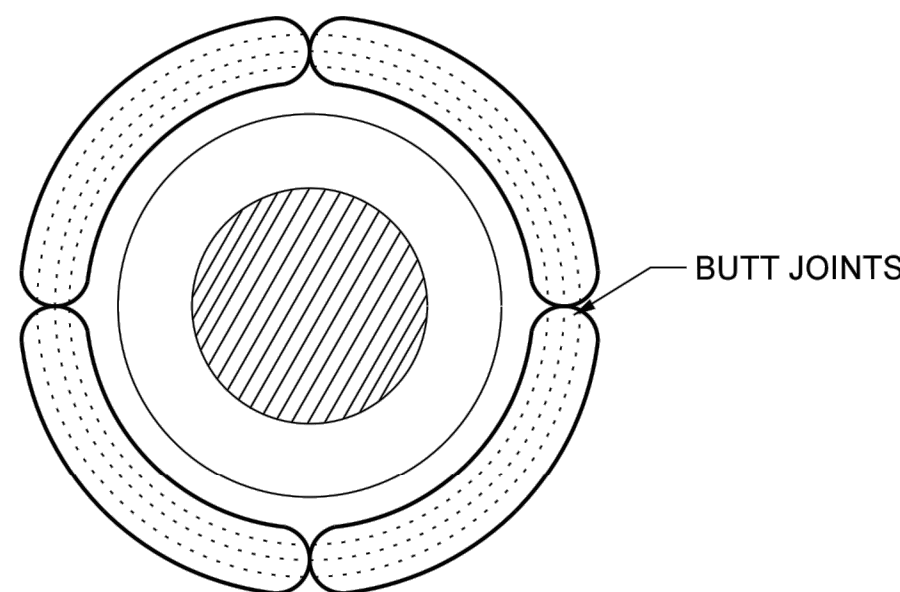
FILL ROCK LOG WITH 45 LBS. OF OPEN GRADED AGGREGATE CONSISTING OF SOUND, DURABLE PARTICLES OF CRUSHED QUARRY ROCK OR GRAVEL CONFORMING TO THE FOLLOWING GRADATION

GRADATION	
SIEVE SIZE	PERCENT PASSING
1 1/2 INCH	100
1 INCH	95-100
3/4 INCH	65-95
3/8 INCH	30-65
NO. 4	10-35
NO. 10	3-20
NO. 40	0-8
NO. 200	0-3

NOTE: CRUSHED CONCRETE OR BITUMINOUS SHALL NOT BE USED FOR OPEN GRADED AGGREGATE.

PAYMENT SHALL INCLUDE ALL MATERIALS, FILLING OF LOG, PLACEMENT, MAINTENANCE, & REMOVAL. 80% OF BID PRICE SHALL BE PAID UPON PROPER PLACEMENT WITH THE FINAL 20% PAID UPON REMOVAL.

INLET PROTECTION WITH FILTER LOG DO NOT USE IN LIVE TRAFFIC AREAS



FILTER LOGS MNDOT SPEC. 3897

GRAIN AND SEED FREE OF WEEDS, 6-9 MONTH POLYPROPYLENE NETTING EXCELSIOR FIBER LOG, 6-9 MONTH POLYPROPYLENE NETTING 30-40% WEED FREE COMPOST (3890, GRADE 2), 8" DIA GEOTECHNICAL CYLINDRICAL BAG 4"-6" DIA, SEE SIEVE SIZE CHART ABOVE

STRAW BIOROLL WOOD FIBER BIOROLL COMPOST LOG

ROCK LOG

FIBER LOG MNDOT SPEC. 3895

12" DIAMETER COCONUT FIBER (COIR), OUTER COIR NETTING REQUIRED, MINIMUM 5 YEAR LIFE

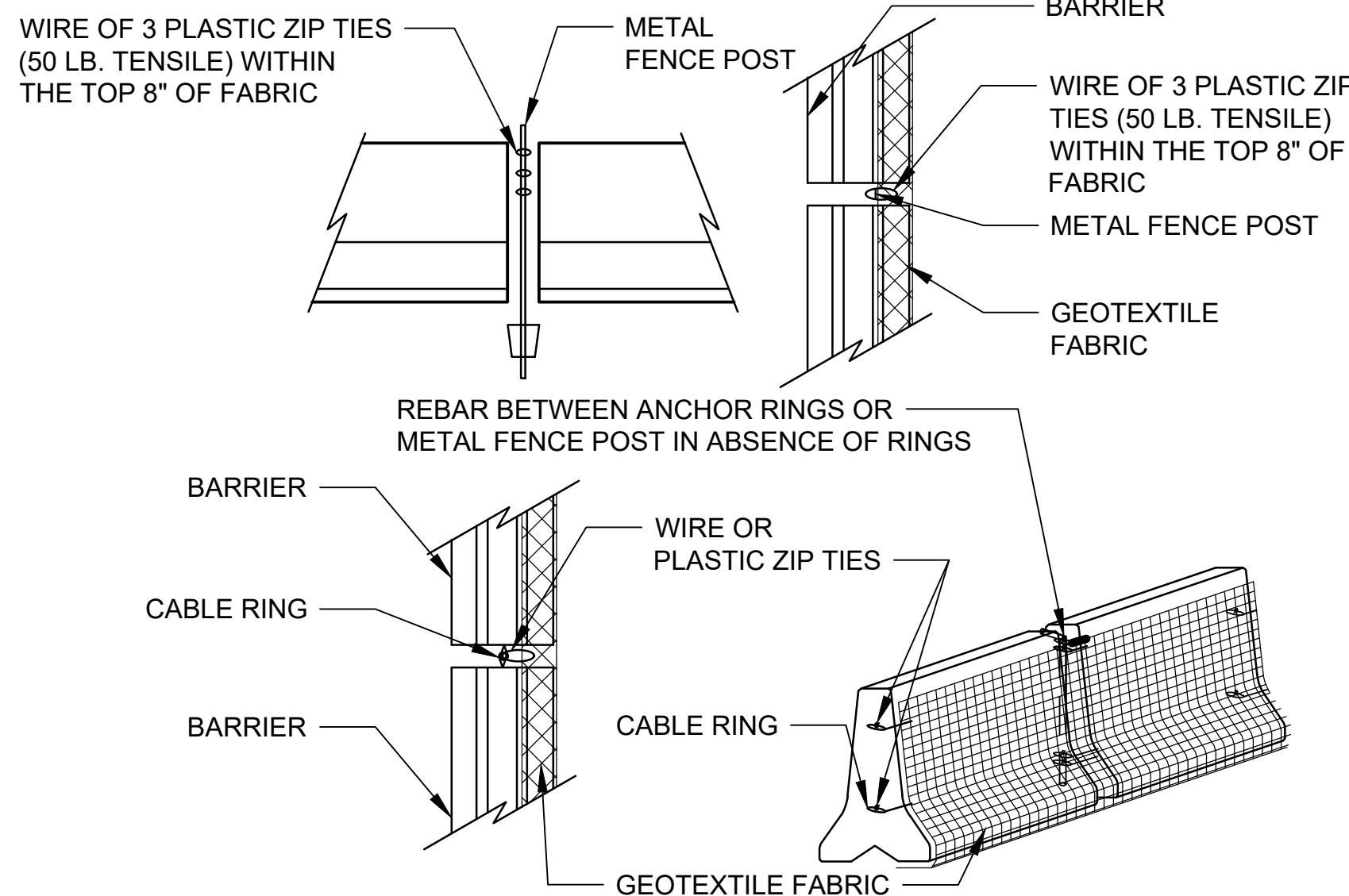
SEDIMENT CONTROL - FILTER LOG

MINNEAPOLIS CUSTOM MNDOT SPEC. REF. 3897 NOT TO SCALE

SEWR-8008

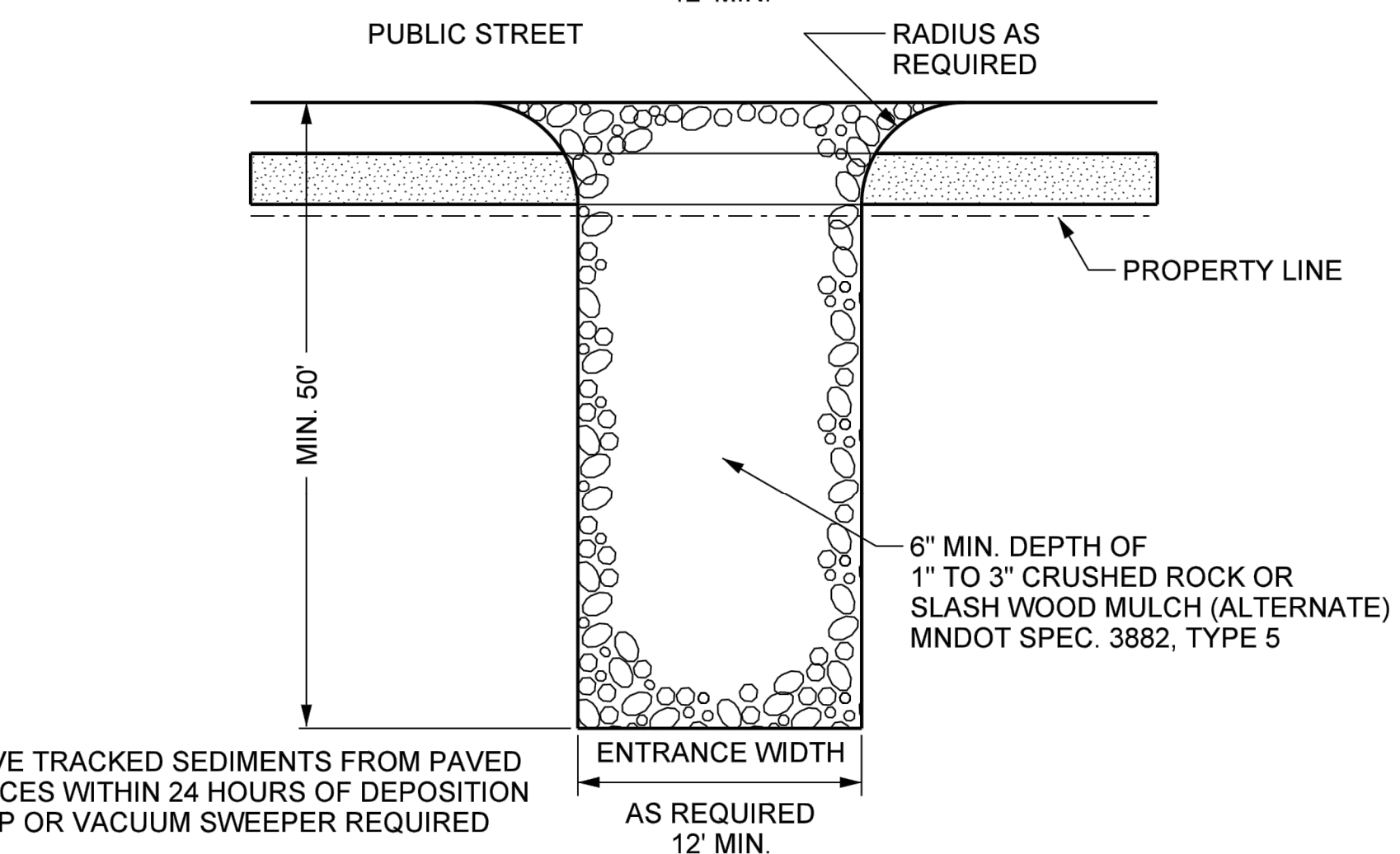
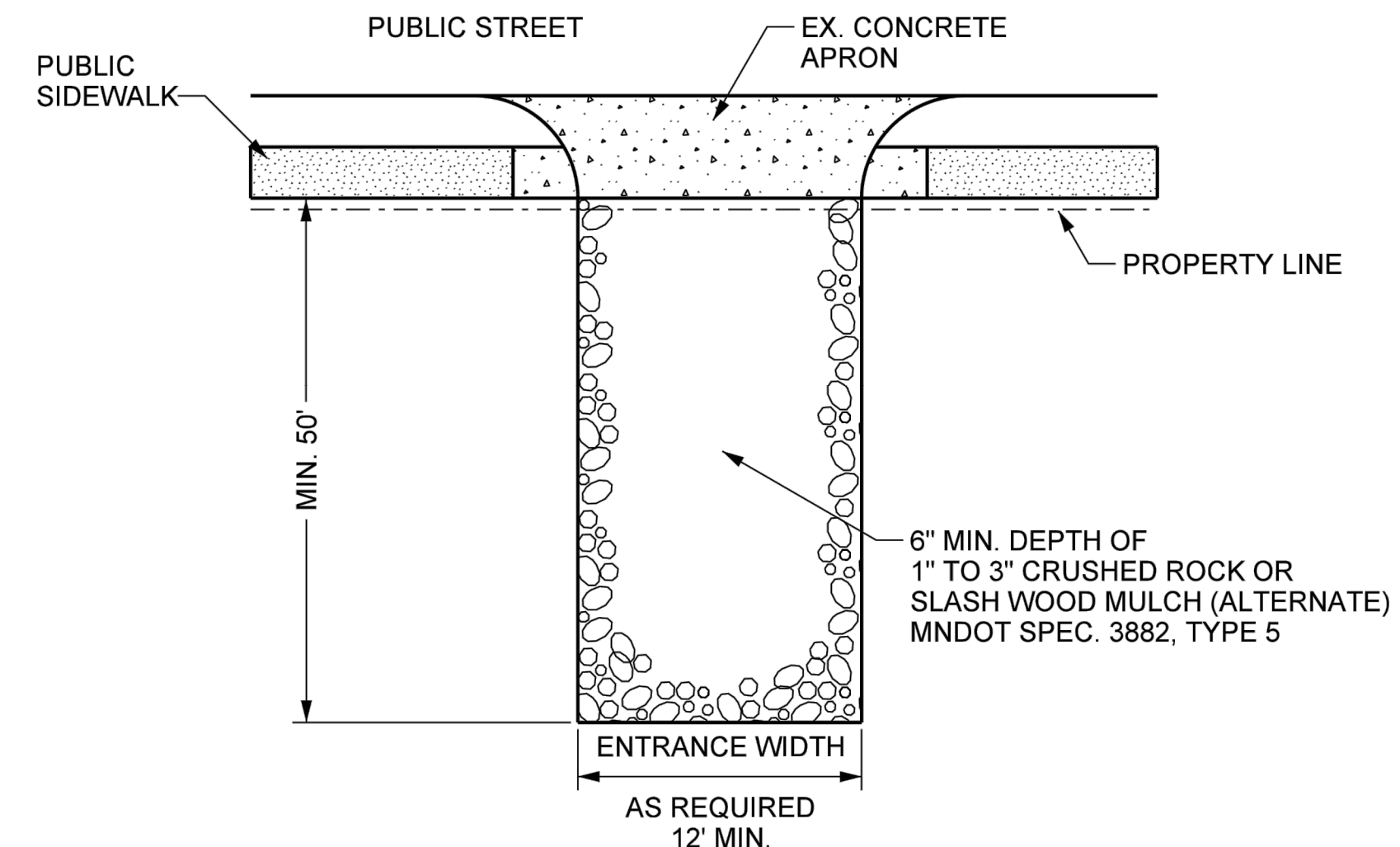
2 FILTER LOG

CS2 NO SCALE



5 SUPER DUTY SILT FENCE

CS2 NO SCALE



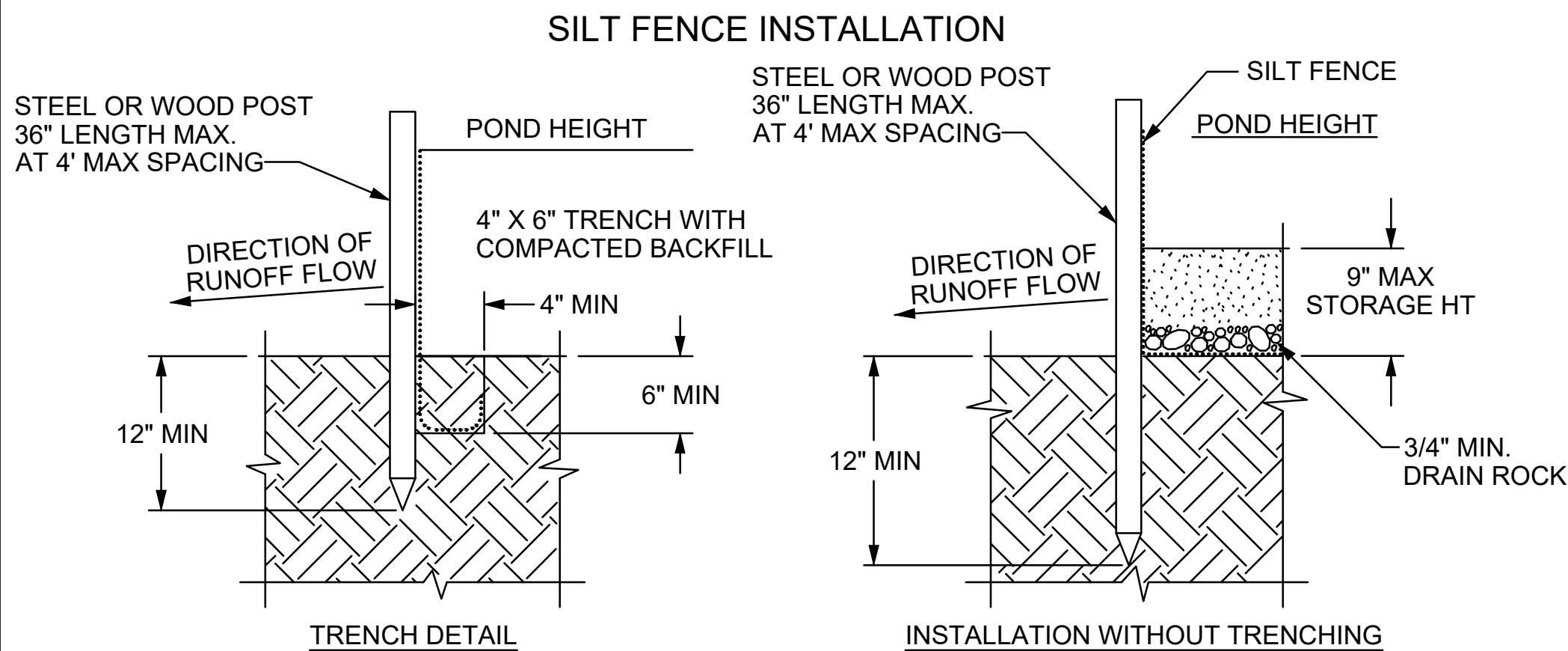
REMOVE TRACKED SEDIMENTS FROM PAVED SURFACES WITHIN 24 HOURS OF DEPOSITION PICK UP OR VACUUM SWEEPER REQUIRED

REFERENCES: MINNESOTA URBAN SMALL SITES BMP MANUAL, PP. 3-69 TO 3-73 MNDOT EROSION CONTROL HANDBOOK

MINNEAPOLIS CUSTOM MNDOT SPEC. REF. 2573 NOT TO SCALE

3 ROCK ENTRANCE

CS2 NO SCALE



USE HI-FLOW FILTER FABRIC, 200 GAL. PER MINUTE PER SQUARE FOOT

NOTES:

- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
- INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY, REQUIRED WHEN 1/3 FULL WITHIN 24 HOURS OF DISCOVERY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
- REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND PERMANENTLY STABILIZED ALSO SEE SEWR-8009.

REFERENCES: MINNESOTA URBAN SMALL SITES BMP MANUAL MNDOT EROSION CONTROL HANDBOOK

MINNEAPOLIS CUSTOM MNDOT SPEC. REF. 2573, 3886, 3889.2 TYPE I NOT TO SCALE

4 SILT FENCE

CS2 NO SCALE

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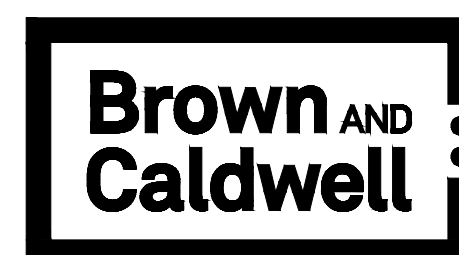
DESIGNED	BSO
DRAWN	JKR
CHECKED	DJH

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SIGNATURE: _____

TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY

DATE: _____ REG NO: 52179



PROJECT	807629
FILE NAME	CS00002

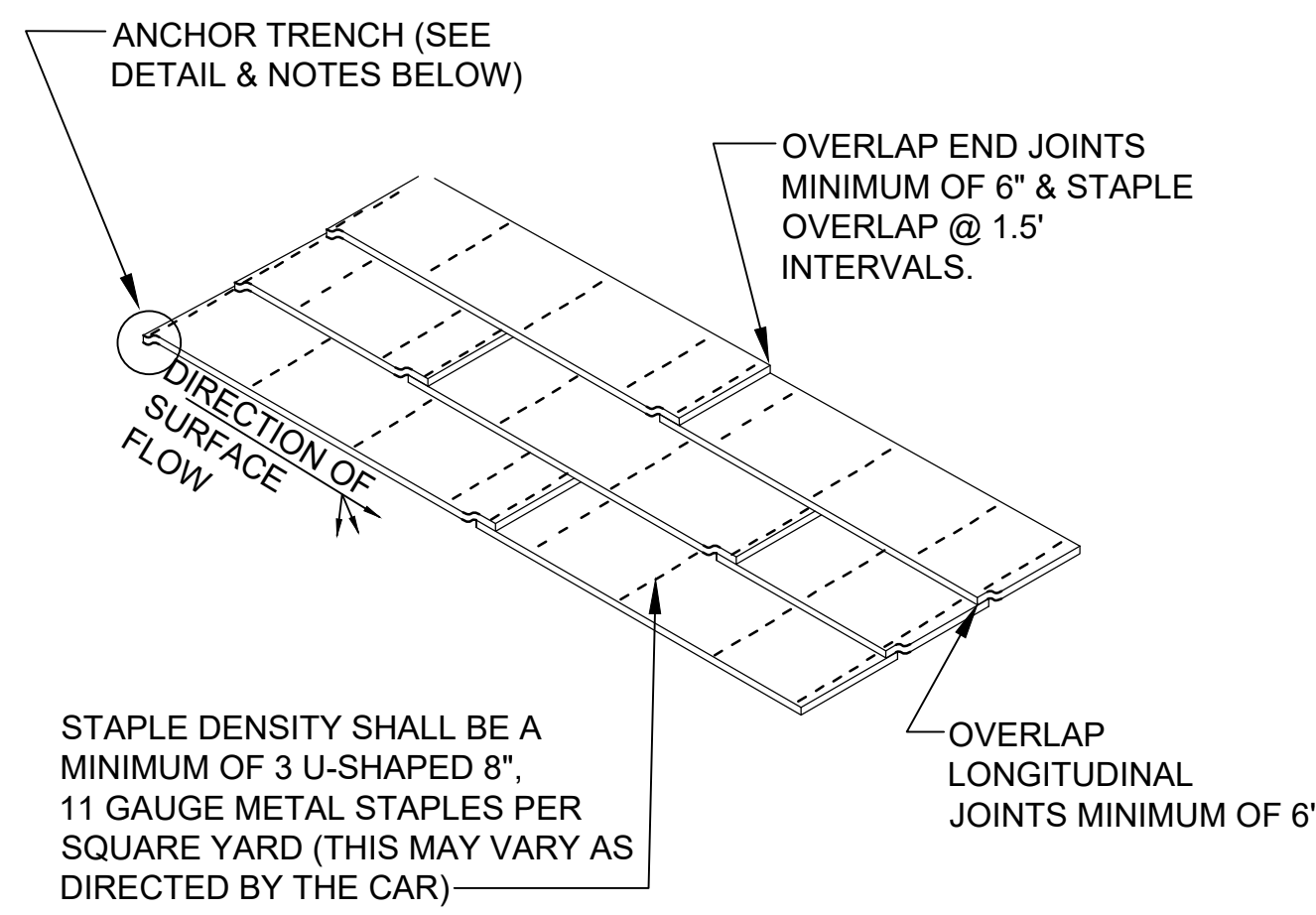
ERS-04/1-MN-344 TUNNEL REHABILITATION

EROSION & SEDIMENT CONTROL DETAILS -1

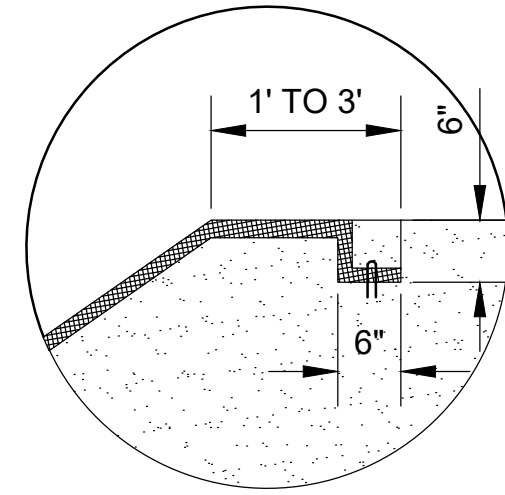
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CS2
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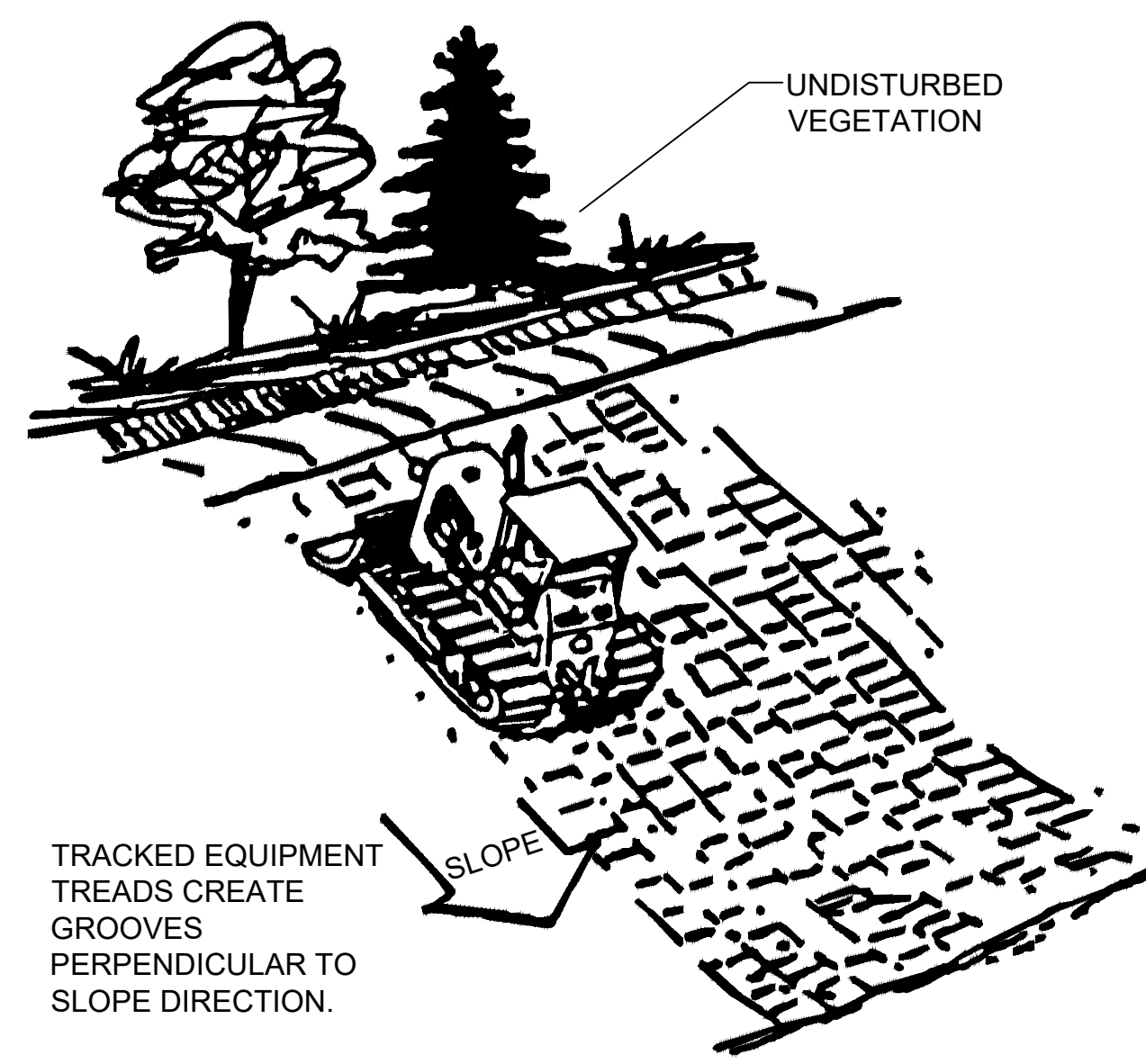
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- ANCHOR TRENCH**
1. DIG 6" X 6" TRENCH.
 2. LAY BLANKET IN TRENCH.
 3. STAPLE @ 1.5' INTERVALS.
 4. BACKFILL WITH NATURAL SOIL & COMPACT.
 5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH.
 6. WINTER INSTALLATION PER MNDOT 2575.



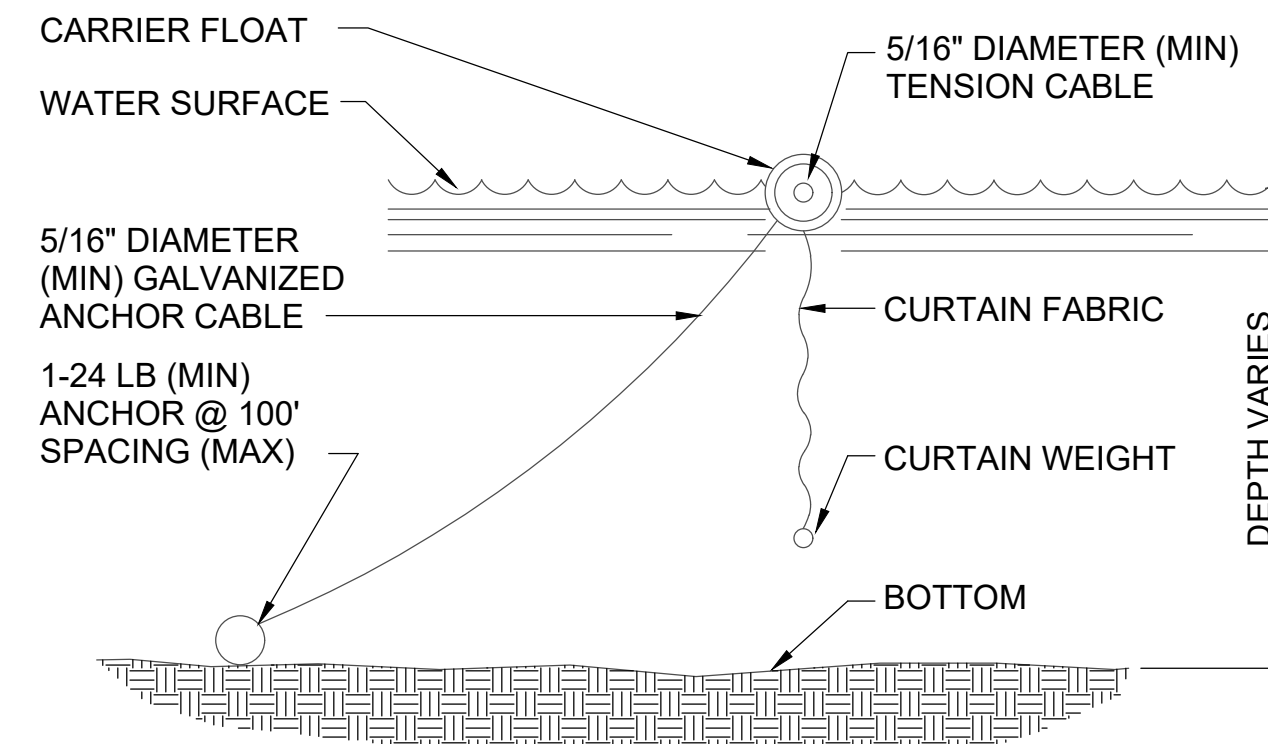
1 EROSION CONTROL BLANKET
 CS3 NO SCALE



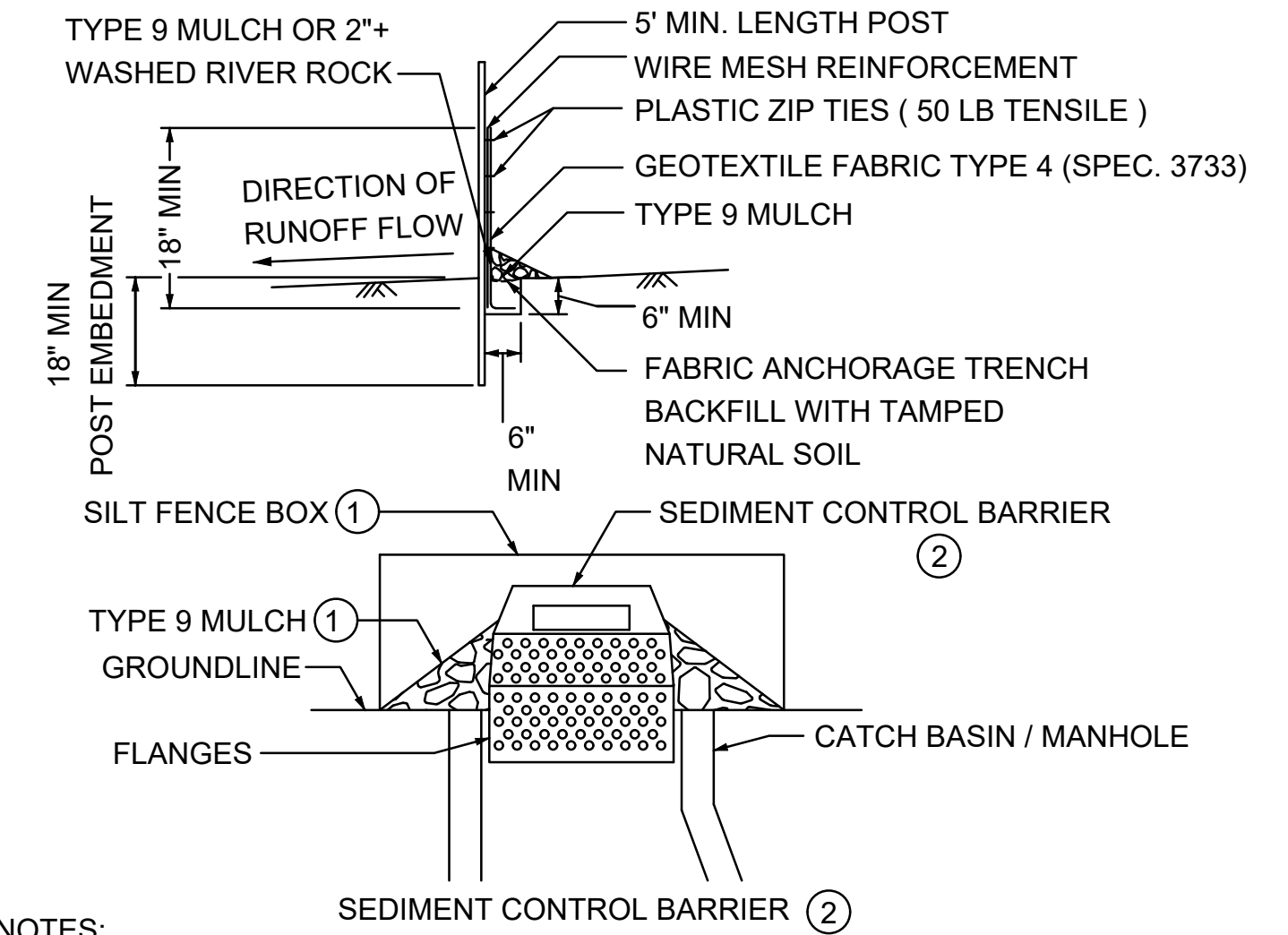
NOTE:
 ALL SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING. SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 REQUIRE SLOPE TRACKING IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.

2 SLOPE STABILIZATION
 CS3 NO SCALE

- NOTES:**
1. 6" MAXIMUM FOR WATER DEPTHS UP TO 3'-0" DEEP AND 1'-0" MAXIMUM FOR DEPTHS OVER 3'-0"
 2. ELIMINATE ANCHOR AND CABLE FOR WATER DEPTHS LESS THAN 3'-0" OR DISTANCE BETWEEN SHORE ANCHORS FOR TENSION CABLE OF LESS THAN 100'
 3. ANCHOR TENSION CABLE AT BOTH SIDES WITH STEEL POSTS OF DIAMETER AND LENGTH TO PREVENT BENDING AND PULL-OUT
 4. WEIGHT HEAVY ENOUGH TO HOLD CURTAIN VERTICAL IN CURRENT AND WAVES TYPICAL FOR SITE
 5. MATERIALS:
 CURTAIN: 22 OZ VINYL COATED NYLON FABRIC
 FLOAT: 8" MINIMUM DIAMETER PLASTIC SEGMENTS
 CURTAIN WEIGHT:
 --> CONTINUOUS GALVANIZED STEEL CHAIN
 --> 5/16" MINIMUM DIAMETER, OR SEGMENTS OF 5/16" DIAMETER STEEL CABLE
 --> 24" LONG @ 12" BETWEEN PIECES



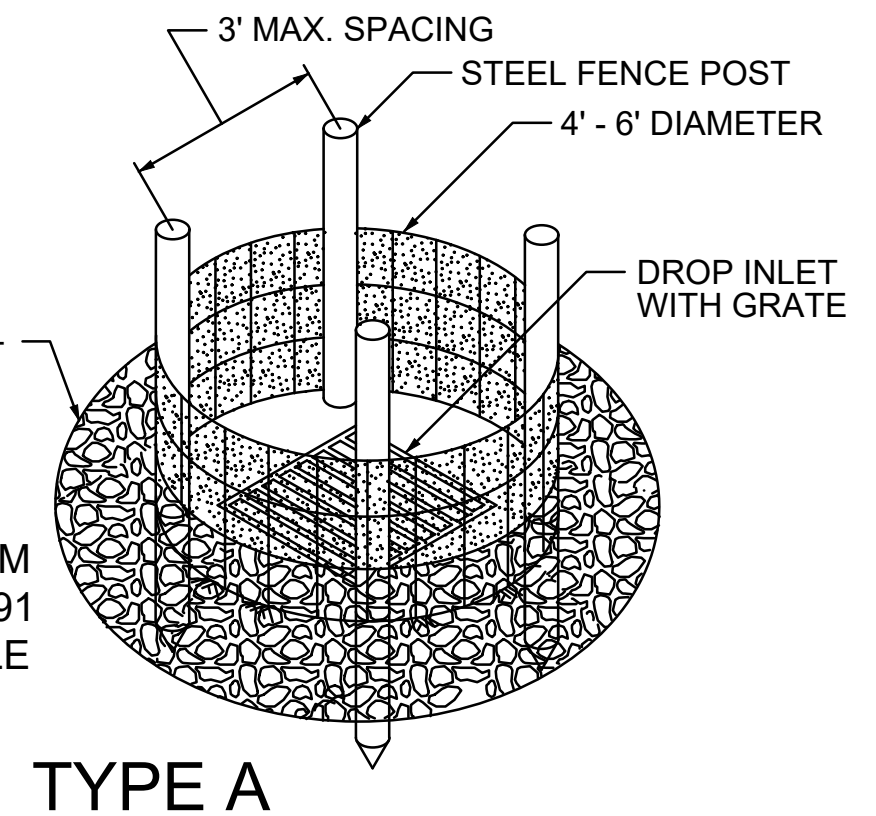
3 SILT FLOTATION CURTAIN
 CS3 NO SCALE



- TYPE A NOTES:**
 THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.
- INLET PROTECTION TYPE A (SILT FENCE TO PROTECT DROP INLETS) USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 OR LESS (TYPE A SPEC. 3891)

- ① USE INLET PROTECTION TYPE A OR TYPE 9 MULCH, AS DIRECTED BY THE ENGINEER.
- ② PAID FOR AS SEDIMENT CONTROL BARRIER.

MINNEAPOLIS CUSTOM
 MNDOT SPEC. REF. 3891
 NOT TO SCALE



- TYPE C NOTES:**
 INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE MNDOT DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

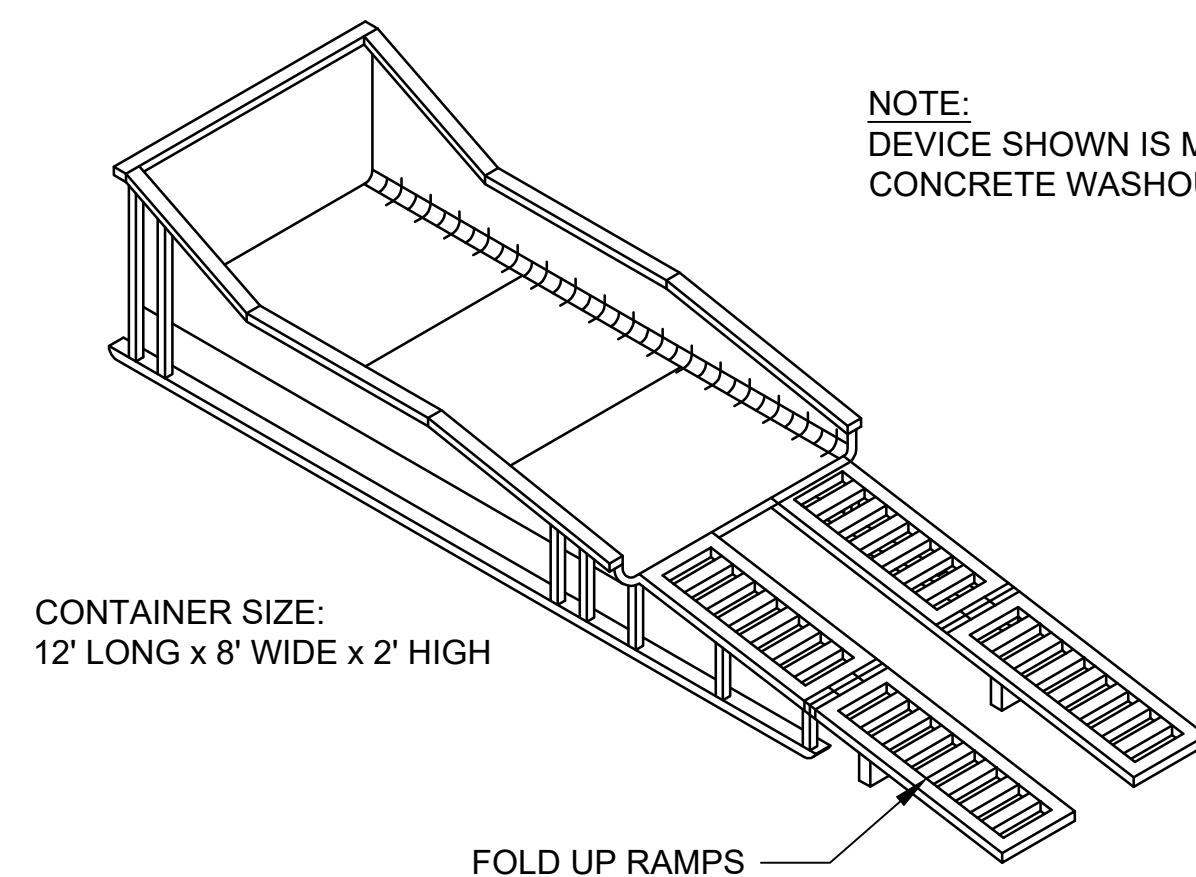
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" X 4".

- INSTALLATION NOTES:**
- ③ DO NOT INSTALL PROTECTION IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

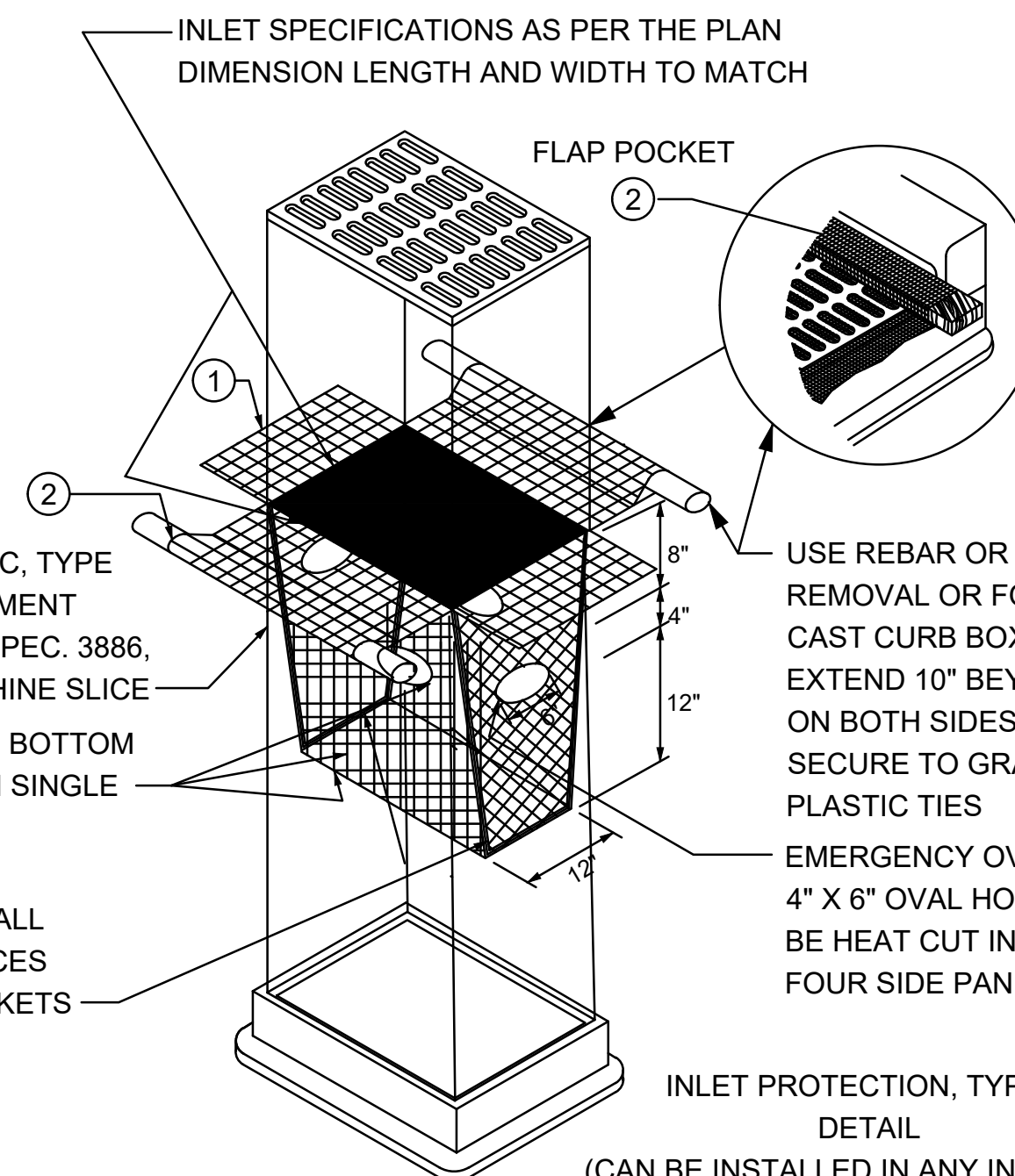
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG. BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



NOTE:
 DEVICE SHOWN IS MANUFACTURED BY CONCRETE WASHOUT SYSTEMS, INC.

- NOTES:**
1. CONTAINER IS TO BE PORTABLE, TEMPORARY, SELF-CONTAINED, AND WATERTIGHT TO CAPTURE AND CONTAIN CAUSTIC CONCRETE WASTEWATER AND WASHOUT MATERIAL TO A CAPACITY OF APPROXIMATELY 350 YARDS OF POURED CONCRETE.
 2. THE CONTAINER SHALL BE EQUIPPED WITH RAMPS. A RAMPLESS CONTAINER MAY BE USED IN CONJUNCTION WITH A RAMPED CONTAINER OR BY ITSELF IF A CONCRETE PUMP IS NOT NEEDED.
 3. THE WASHOUT MUST BE DISPOSED OF OR TREATED AND RECYCLED IN AN ENVIRONMENTALLY SAFE MANNER AND IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL REGULATIONS.
 4. INSPECT AND CLEAN OUT WHEN 3/4 FULL, NOT ALLOWING THE CONTAINER TO OVERFLOW.
 5. INSPECT SUBCONTRACTORS TO ENSURE THAT PROPER HOUSEKEEPING MEASURES ARE EMPLOYED WHEN WASHING OUT EQUIPMENT.

4 PORTABLE CONCRETE WASHOUT CONTAINER
 CS3 NO SCALE

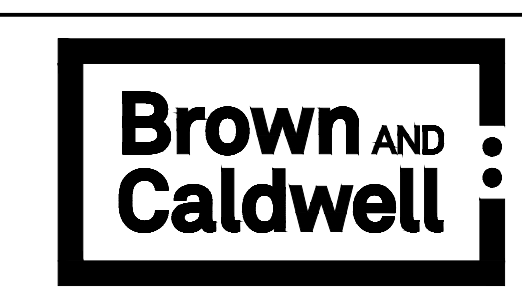


5 INLET PROTECTION TYPE A & C
 CS3 NO SCALE

NOT FOR CONSTRUCTION

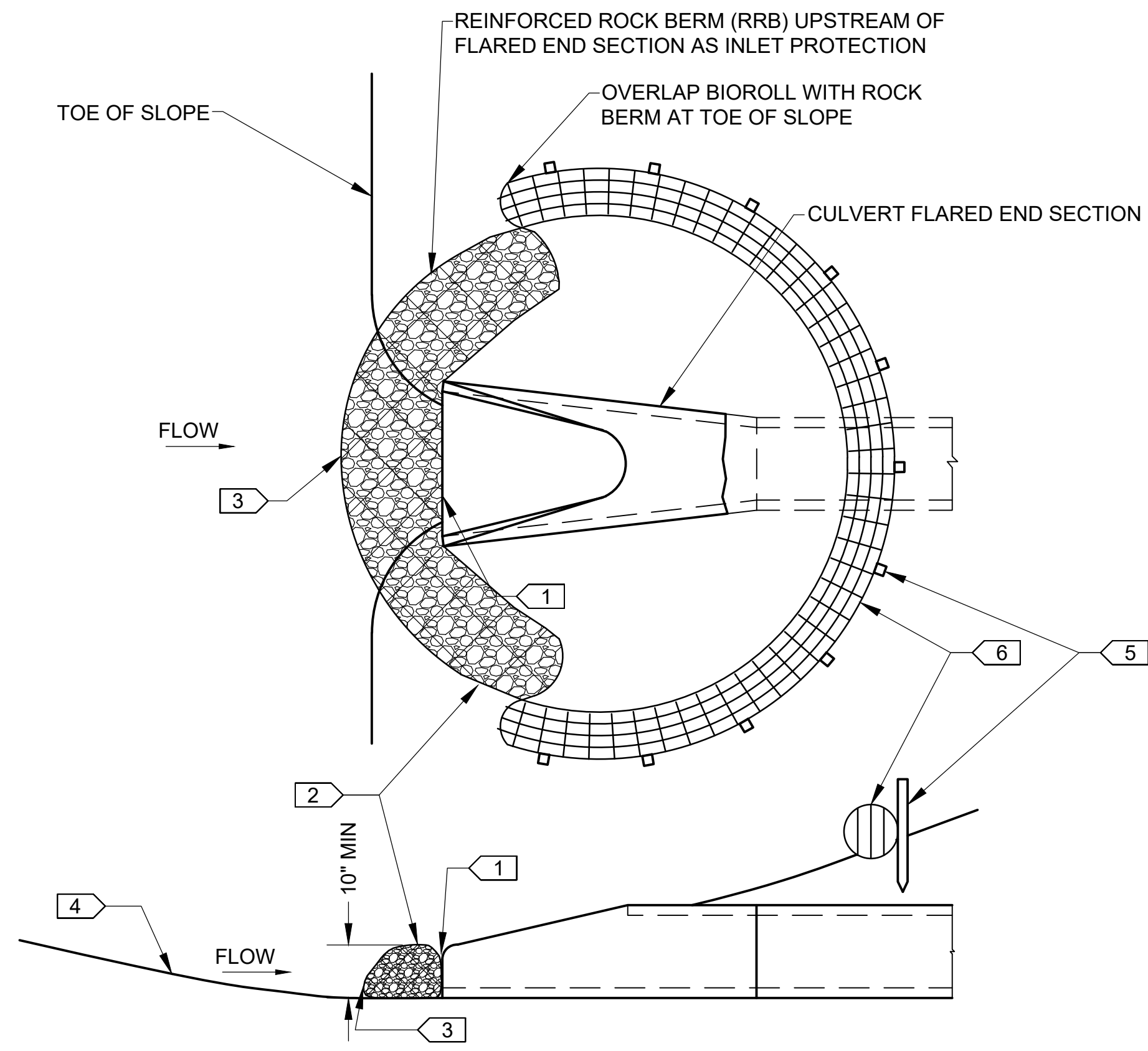
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DATE	REG NO	



PROJECT	807629
FILE NAME	CS00003

ERS-04/1-MN-344 TUNNEL REHABILITATION
EROSION & SEDIMENT CONTROL DETAILS - 2



KEY NOTES:

1. A RRB SHALL BE PLACED DIRECTLY ON THE GROUND AT THE THROAT OF ALL CULVERT FLARED END SECTIONS ON THE UPSTREAM END.
2. 1-1/2" CRUSHED ROCK OR RECYCLED CONCRETE ENCLOSED IN 10 GAUGE CHICKEN WIRE MESH. WIRE MESH SHALL COME IN 48" WIDTHS WITH A MAXIMUM 1" OPENING. WIRE MESH SHALL BE SECURED WITH WIRE TIES AT LEAST EVERY 6" ALONG THE LENGTH.
3. SEDIMENT ACCUMULATION UPSTREAM OF THE RRB SHALL BE REMOVED WHEN THE SEDIMENT HEIGHT IS HALF OF THE HEIGHT OF THE RRB.
4. RRB SHALL STAY IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED.
5. ANCHOR WITH 2 STAKES PER BALE DRIVEN INTO GROUND AT LEAST 12".
6. EMBED BIOROLL AT LEAST 3" BELOW SURROUNDING GRADE.

**CULVERT ENTRANCE PROTECTION
REINFORCED ROCK BERM (RRB)**

1
CS4
NO SCALE

NOT FOR CONSTRUCTION

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PROJECT	807629
FILE NAME	CS00004

ERS-04/1-MN-344 TUNNEL REHABILITATION
EROSION & SEDIMENT CONTROL DETAILS - 3

CS4
28 of 98



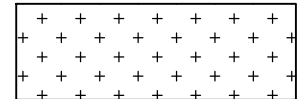
GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: 

1. RESTORE 1-MN-346 PIPE AS SHOWN ON SHEET CU2.
2. RESTORE CONCRETE WALK AND CURB AND GUTTER PER DETAILS ON SHEET CS7.

LEGEND:

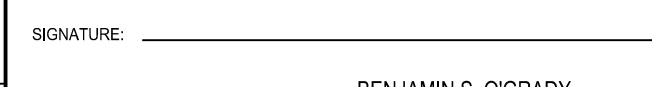
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-  BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
-  SEED MIX 25-131 AND HYDROMULCH

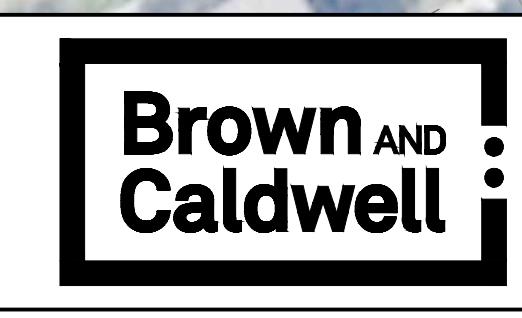
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TYPED OR PRINTED NAME:	BENJAMIN S. O'GRADY
DATE:	REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	RESTORATION PLAN - 1	CL1
FILE NAME	CL00001			
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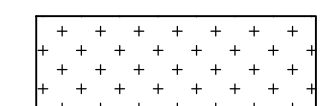
GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: 

1. RESTORE ANY CURB DAMAGED DURING CONSTRUCTION PER DETAILS ON SHEET CS7.

LEGEND:

-  CONSTRUCTION LIMITS
-  SEED MIX 25-131 AND HYDROMULCH

NOT FOR CONSTRUCTION



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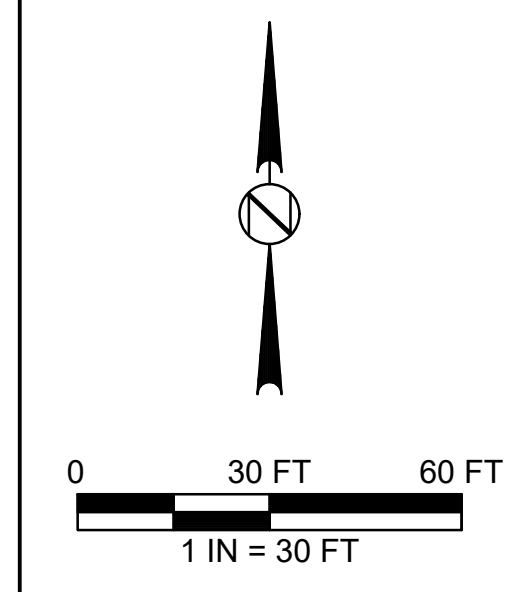
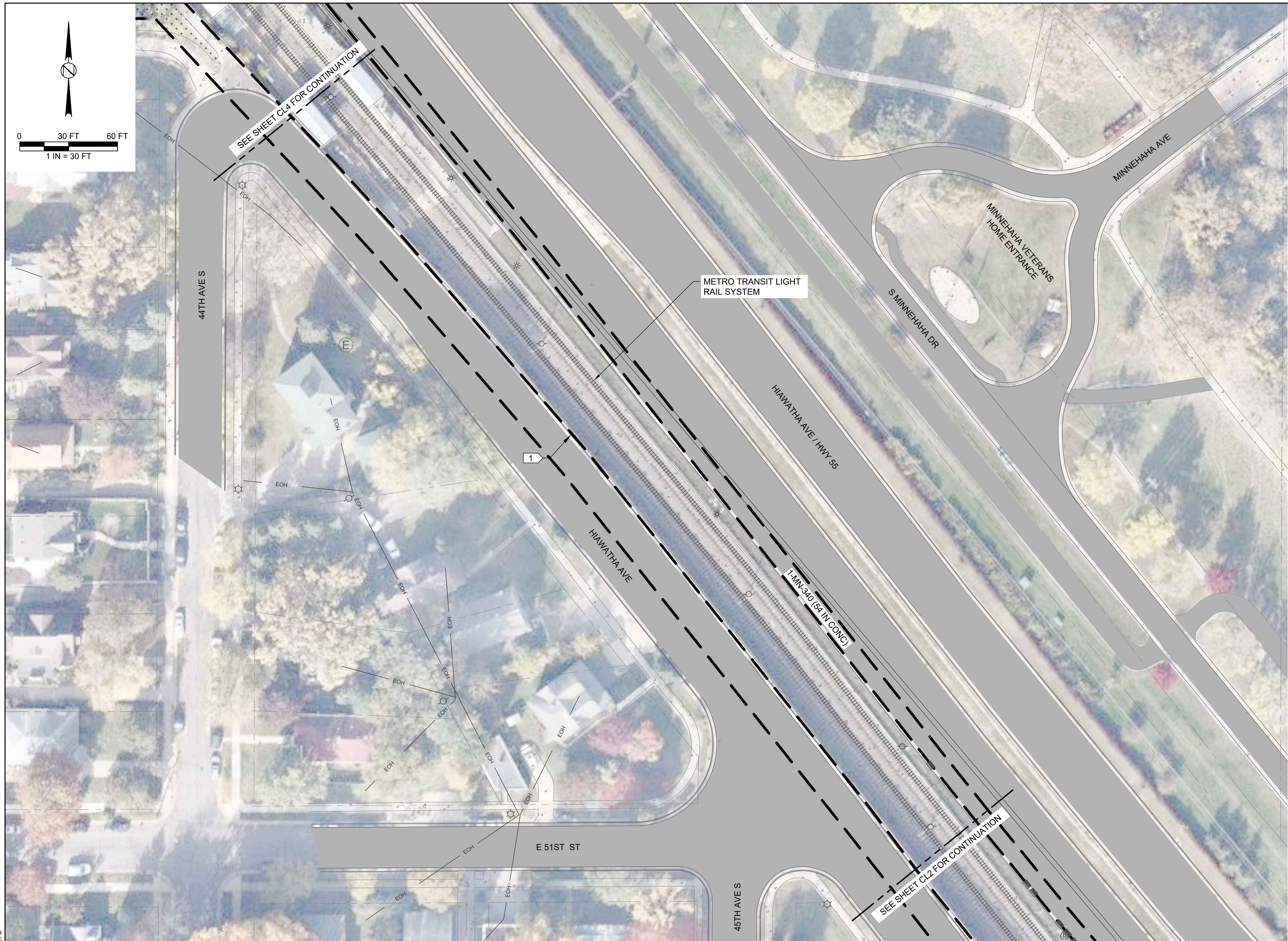
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 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	RESTORATION PLAN - 2	CL2
FILE NAME	CL00002			
			48 of 98	



GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES:

1. RESTORE ANY CURB DAMAGED DURING CONSTRUCTION PER DETAILS ON SHEET CS7.

LEGEND:

- CONSTRUCTION LIMITS
- SEED MIX 25-131 AND HYDROMULCH

NOT FOR CONSTRUCTION

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 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629
FILE NAME	CL00003

ERS-04/1-MN-344 TUNNEL REHABILITATION	
RESTORATION PLAN - 3	

CL3
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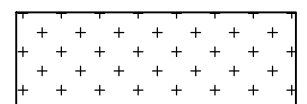

GENERAL NOTES:

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2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

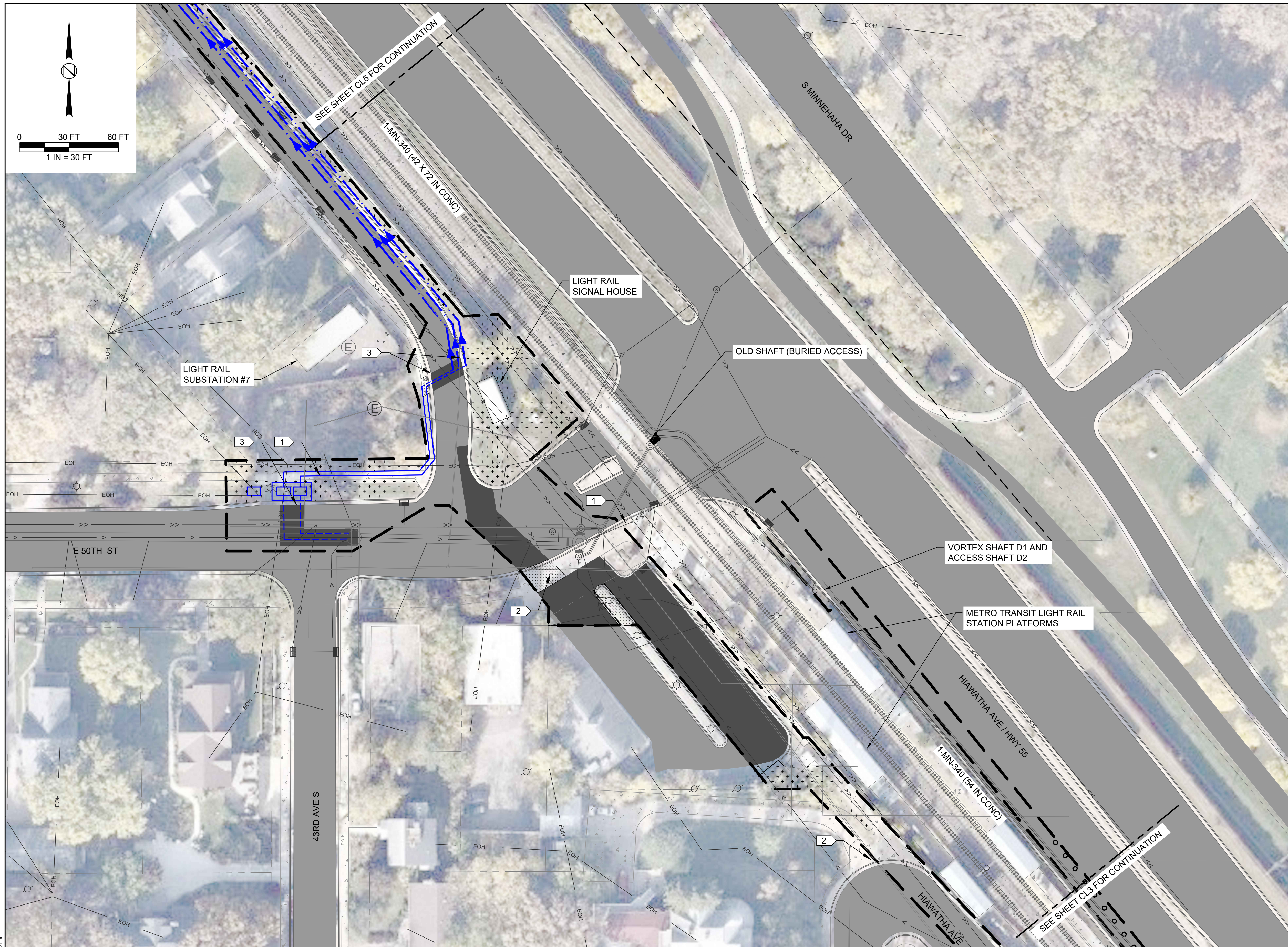
KEY NOTES: 

1. REPLACE DAMAGED CONCRETE WALK SECTIONS PER DETAIL 3/CS7 AS DIRECTED BY CAR.
2. CONCRETE DRIVEWAY RESTORATION PER DETAIL 4/CS7.
3. RESTORE CURB AND GUTTER PER DETAILS ON SHEET CS7.

LEGEND:

-  CONSTRUCTION LIMITS
-  BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
-  SEED MIX 25-131 AND HYDROMULCH
-  CONC WALK PER DETAIL 3/CS7

NOT FOR CONSTRUCTION



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DRAWN	JKR	
CHECKED	DJH	
DATE		



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	CL4
FILE NAME	CL00004		
RESTORATION PLAN - 4		50 of 98	



GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: □

1. RESTORE ANY CURB AND CONCRETE SIDEWALK DAMAGED DURING CONSTRUCTION PER DETAILS ON SHEET CS7.

LEGEND:

- — CONSTRUCTION LIMITS
- SEED MIX 25-131 AND HYDROMULCH
- SEED MIX 35-241 AND EROSION CONTROL BLANKET

NOT FOR CONSTRUCTION

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TYPED OR PRINTED NAME:	BENJAMIN S. O'GRADY
DATE:	
REG NO:	52179



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FILE NAME	CL00005			
51 of 98				



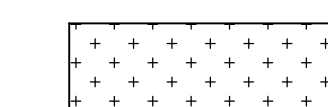

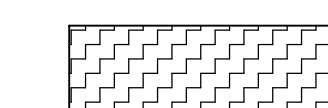
GENERAL NOTES:

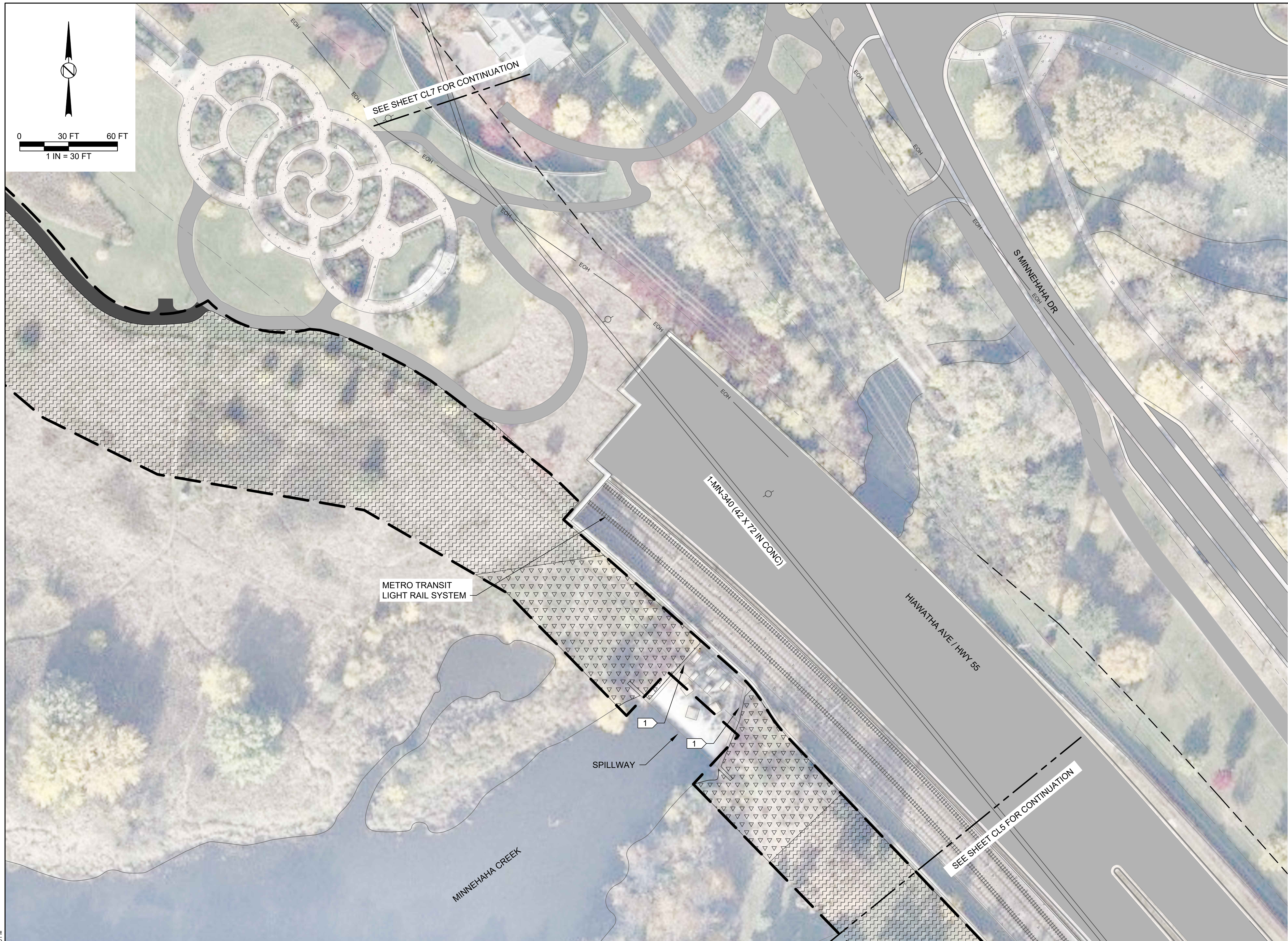
- RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
- RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: 

- REMOVE TEMPORARY BRIDGE SUPPORTS AND RESTORE CONCRETE SURFACES TO EXISTING OR BETTER CONDITIONS TO SATISFACTION OF OWNER.

LEGEND:

-  CONSTRUCTION LIMITS
-  BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
-  SEED MIX 25-131 AND HYDROMULCH
-  SEED MIX 36-211 AND EROSION CONTROL BLANKET
-  SEED MIX 35-241 AND EROSION CONTROL BLANKET



NOT FOR CONSTRUCTION

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DESIGNED AJM	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: _____ TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY DATE: _____ REG NO: 52179
DRAWN JKR	
CHECKED DJH	
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PROJECT 807629	ERS-04/1-MN-344 TUNNEL REHABILITATION RESTORATION PLAN - 6	CL6 52 of 98
FILE NAME CL00006		

GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

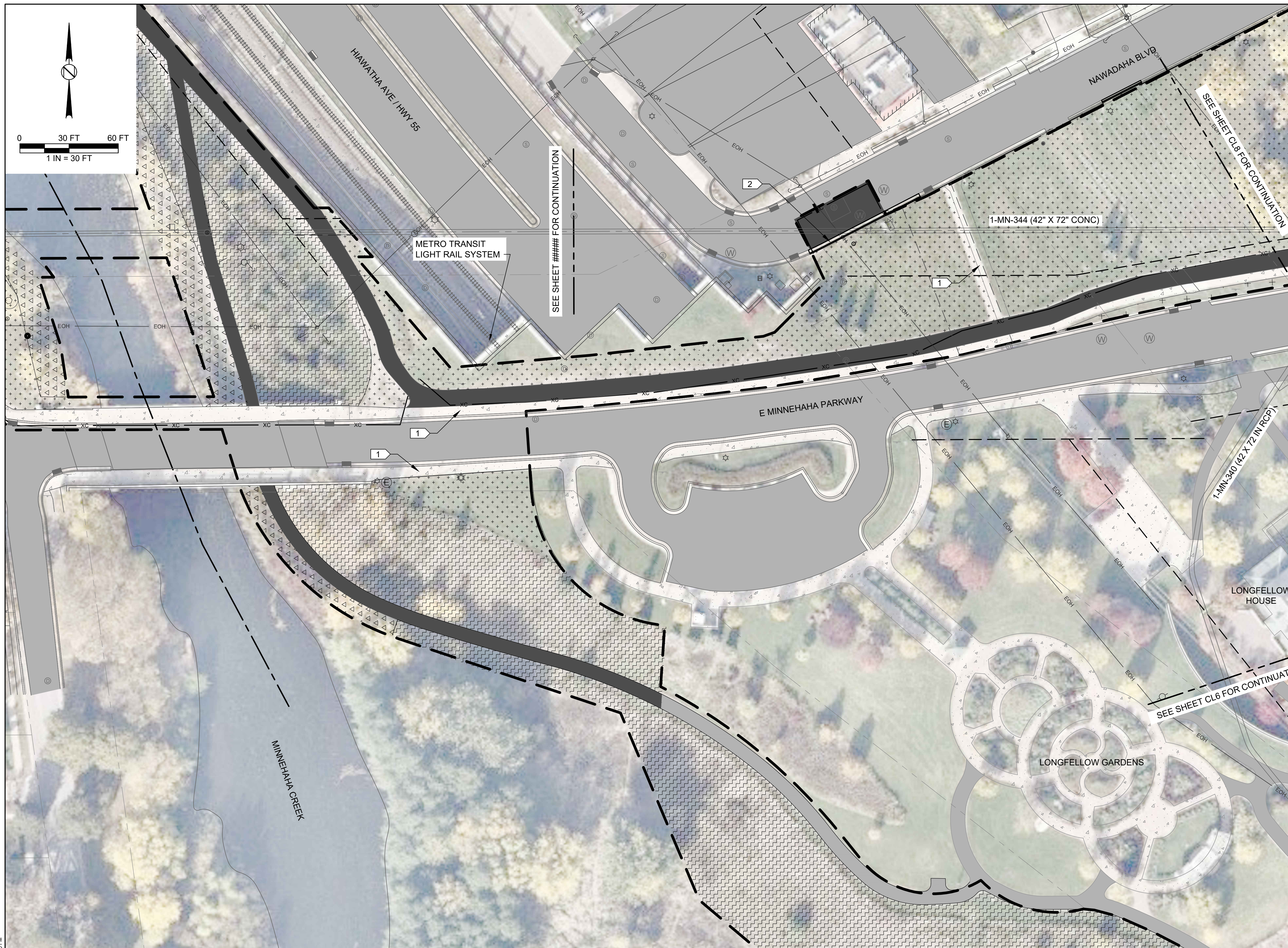
KEY NOTES:

1. REPLACE DAMAGED CONCRETE WALK SECTIONS PER DETAIL 3/CS7 AS DIRECTED BY CAR.
2. RESTORE CURB AND GUTTER PER DETAILS ON SHEET CS7.

LEGEND:

- CONSTRUCTION LIMITS
- BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
- SEED MIX 25-131 AND HYDROMULCH
- SEED MIX 36-211 AND EROSION CONTROL BLANKET
- SEED MIX 35-241 AND EROSION CONTROL BLANKET

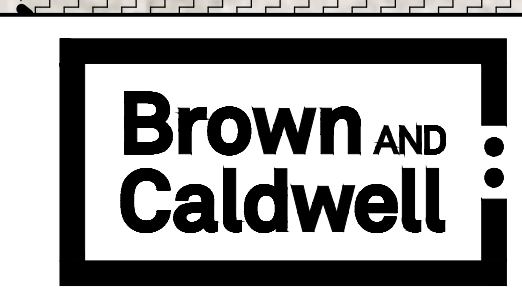
NOT FOR CONSTRUCTION



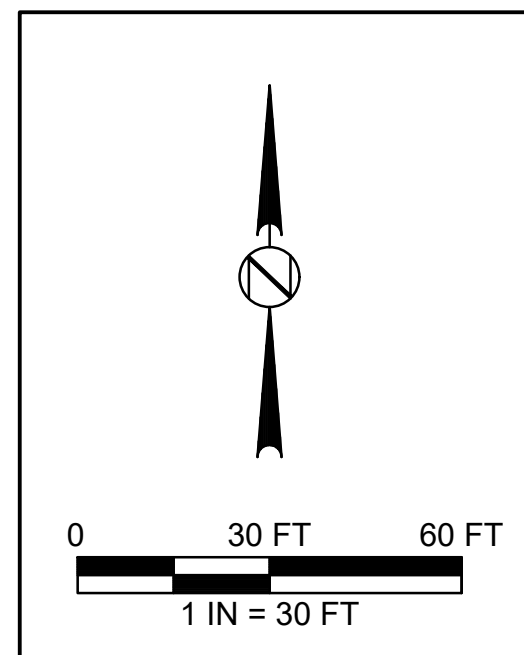
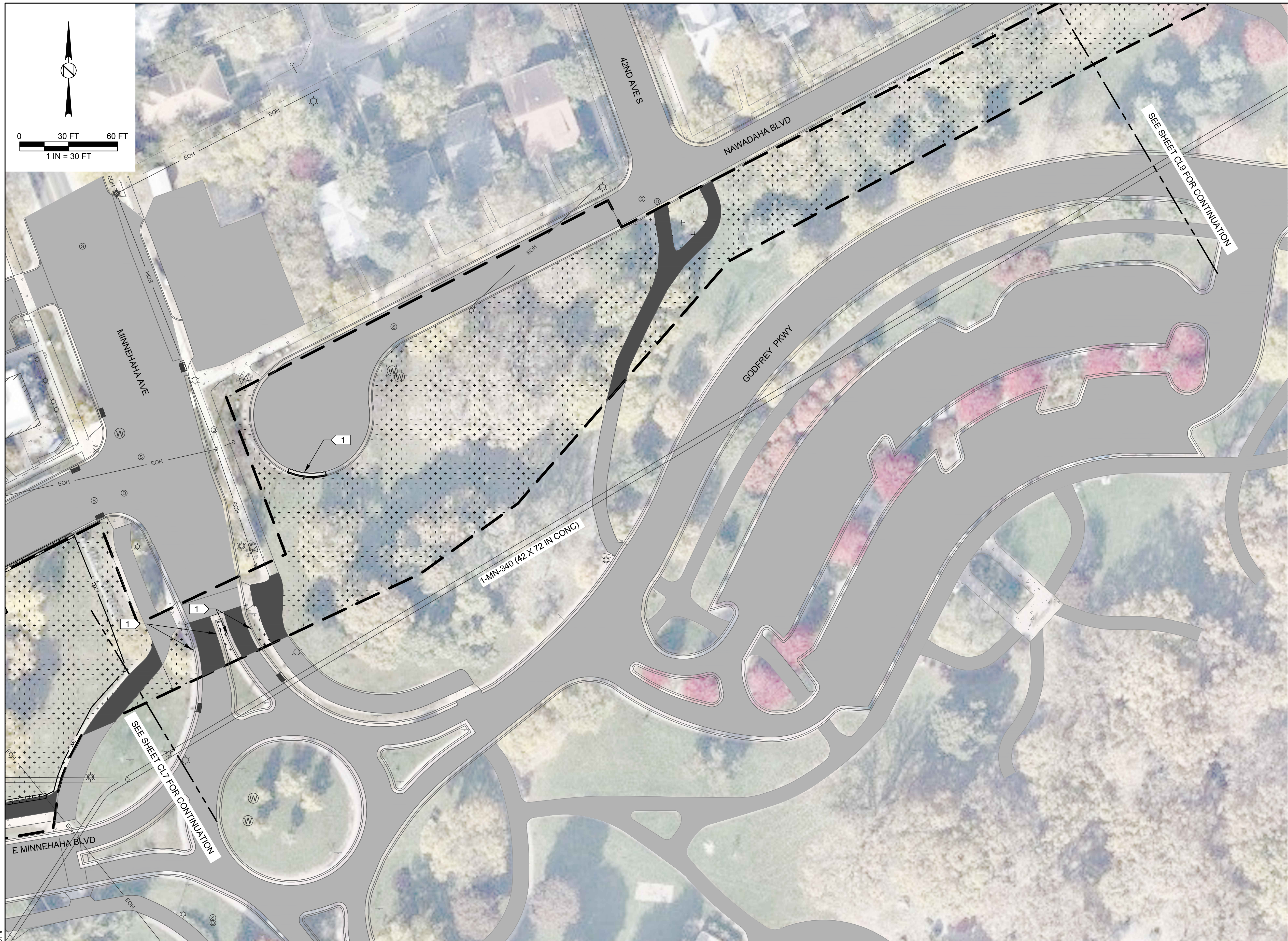
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 PLOTTED: 11/16/2018 2:05:56 PM
 MODIFIED: 11/15/2018 12:23:56 PM

NO	DATE	BY	REVISIONS	REMARKS	NO	DATE	BY	REVISIONS	REMARKS
	11/21/18	BSO	100% SUBMITTAL						
	8/8/18	BSO	70% SUBMITTAL						

DESIGNED	AJM
DRAWN	JKR
CHECKED	DJH
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	
SIGNATURE:	
TYPED OR PRINTED NAME:	BENJAMIN S. O'GRADY
DATE:	REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION
FILE NAME	CL00007	RESTORATION PLAN - 7
		CL7
		53 of 98



GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES:

1. RESTORE ANY CURB DAMAGED DURING CONSTRUCTION PER DETAILS ON SHEET CS7.

LEGEND:

- CONSTRUCTION LIMITS
- BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
- SEED MIX 25-131 AND HYDROMULCH

NOT FOR CONSTRUCTION

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NO	DATE	BY	REVISIONS	NO	DATE	BY	REVISIONS
	11/21/18	BSO	100% SUBMITTAL				
	8/8/18	BSO	70% SUBMITTAL				

DESIGNED	AJM
DRAWN	JKR
CHECKED	DJH
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	
SIGNATURE:	
TYPED OR PRINTED NAME:	BENJAMIN S. O'GRADY
DATE:	REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION RESTORATION PLAN - 8	CL8
FILE NAME	CL00008		
			54 of 98



GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: ◻

1. RESTORE ANY CURB DAMAGED DURING CONSTRUCTION PER DETAILS ON SHEET CS7.

LEGEND:

- CONSTRUCTION LIMITS
- BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
- SEED MIX 25-131 AND HYDROMULCH

NOT FOR CONSTRUCTION

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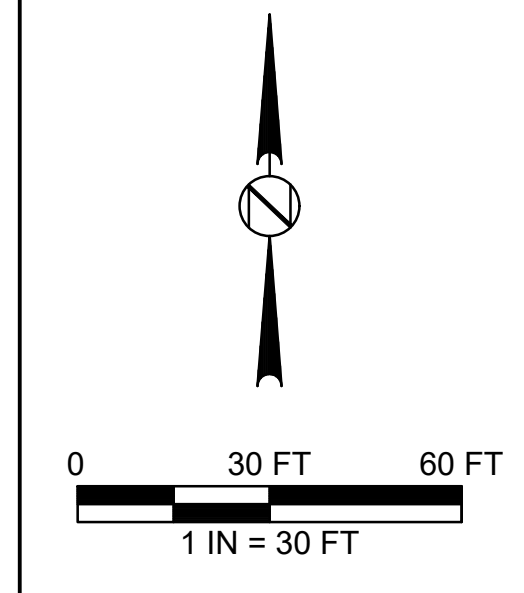
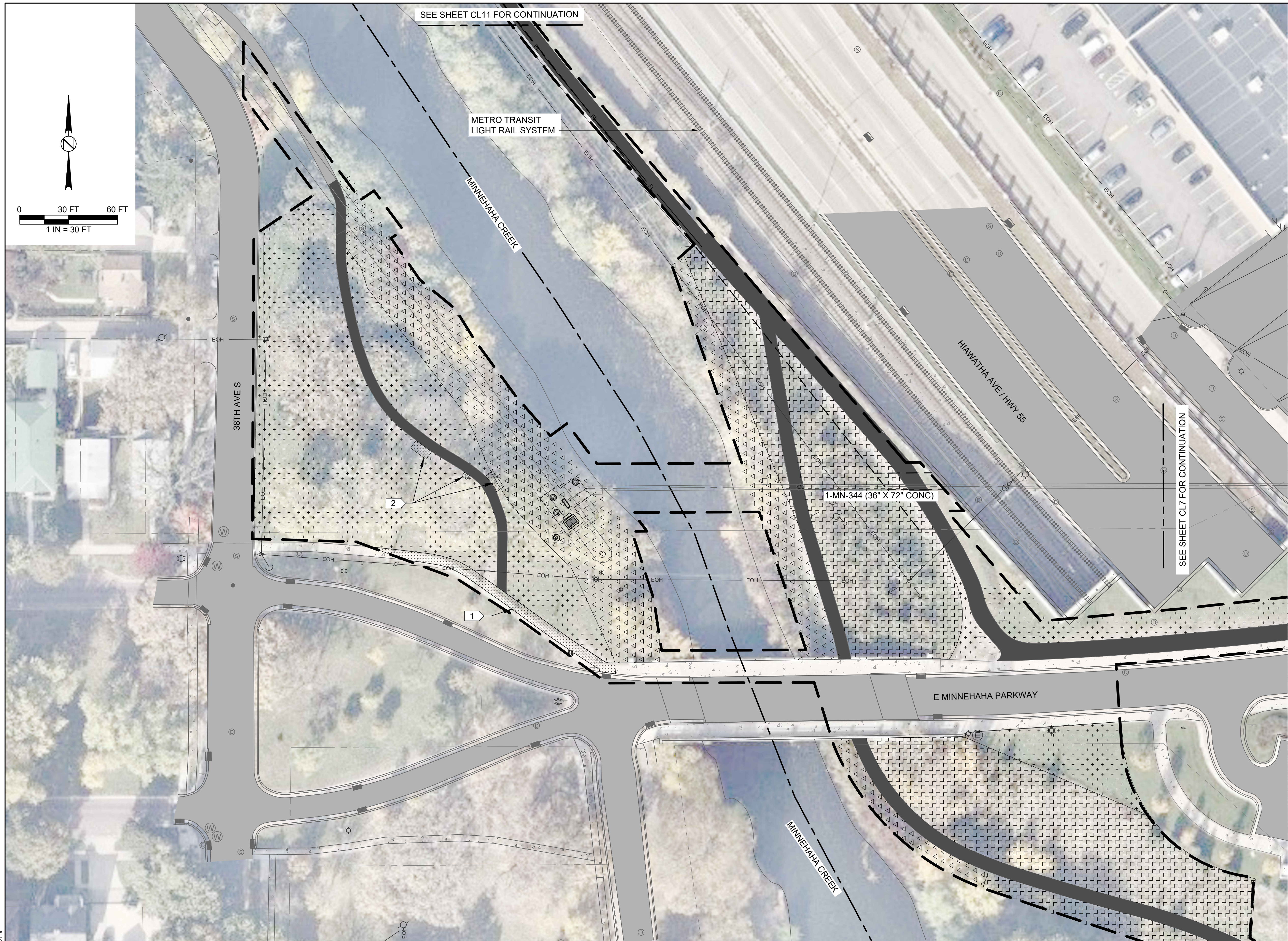
NO	DATE	BY	REVISIONS	REMARKS	NO	DATE	BY	REVISIONS	REMARKS
	11/21/18	BSO	100% SUBMITTAL						
	8/8/18	BSO	70% SUBMITTAL						

DESIGNED: **AJM**
 DRAWN: **JKR**
 CHECKED: **DJH**

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____
 TYPED OR PRINTED NAME: **BENJAMIN S. O'GRADY**
 DATE: _____ REG NO: **52179**



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	CL9
FILE NAME	CL00009		
RESTORATION PLAN - 9		55 of 98	



GENERAL NOTES:

1. RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
2. RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: □

1. REPLACE DAMAGED CONCRETE WALK SECTIONS PER DETAIL 3/CS7 AS DIRECTED BY CAR.
2. REPLACE CONCRETE SLABS FOR PARK BENCHES AND TRASH CAN POLE AS NEW AND IN-KIND IN PRE-CONSTRUCTION LOCATIONS.

LEGEND:

- CONSTRUCTION LIMITS
- BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7
- SEED MIX 25-131 AND HYDROMULCH
- SEED MIX 36-211 AND EROSION CONTROL BLANKET
- CONC WALK PER DETAIL 3/CS7

NOT FOR CONSTRUCTION

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NO	DATE	BY	REVISIONS	REMARKS
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	8/6/18	BSO	70% SUBMITTAL	

DESIGNED	AJM
DRAWN	JKR
CHECKED	DJH

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____
 TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
 DATE: _____ REG NO: 52179



PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	CL10
FILE NAME	CL00010		
RESTORATION PLAN - 10		56 of 98	



GENERAL NOTES:

- RESTORE LANDSCAPED SURFACES IN ACCORDANCE TO SECTION 02900.
- RESTORE PAVED SURFACES IN ACCORDANCE TO SECTION 02511 AND DETAILS ON SHEET CS7.

KEY NOTES: 

- SEED ANY NON-PAVED AREAS SURROUNDING TRAIL IF DISTURBED DURING CONSTRUCTION.

LEGEND:

-  CONSTRUCTION LIMITS
-  BITUMINOUS PAVEMENT PER DETAIL 1/CS7 OR 2/CS7



NOT FOR CONSTRUCTION

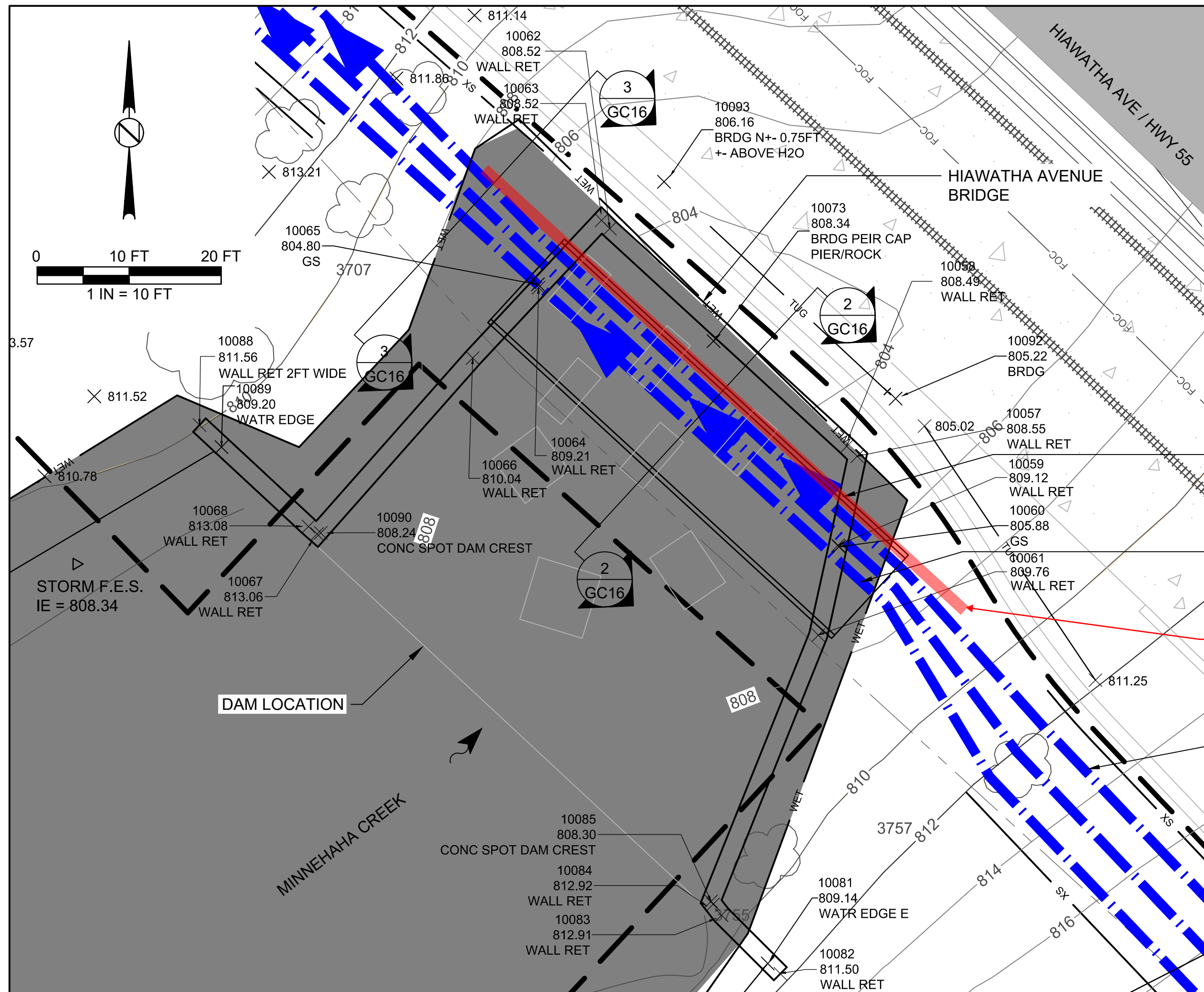
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	8/6/18	BSO	70% SUBMITTAL						

DESIGNED	AJM	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: _____ TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY DATE: _____ REG NO: 52179
DRAWN	JKR	
CHECKED	DJH	



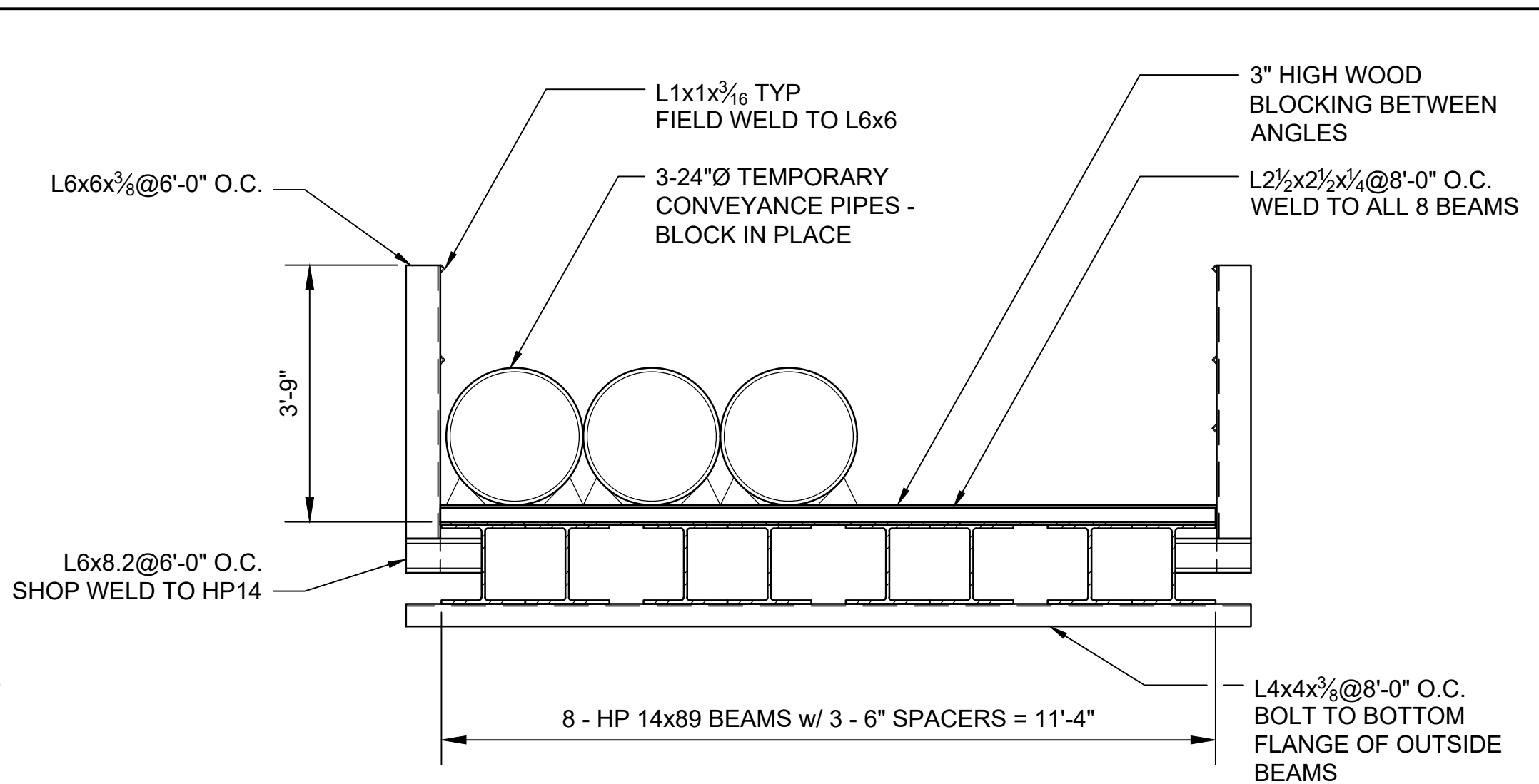
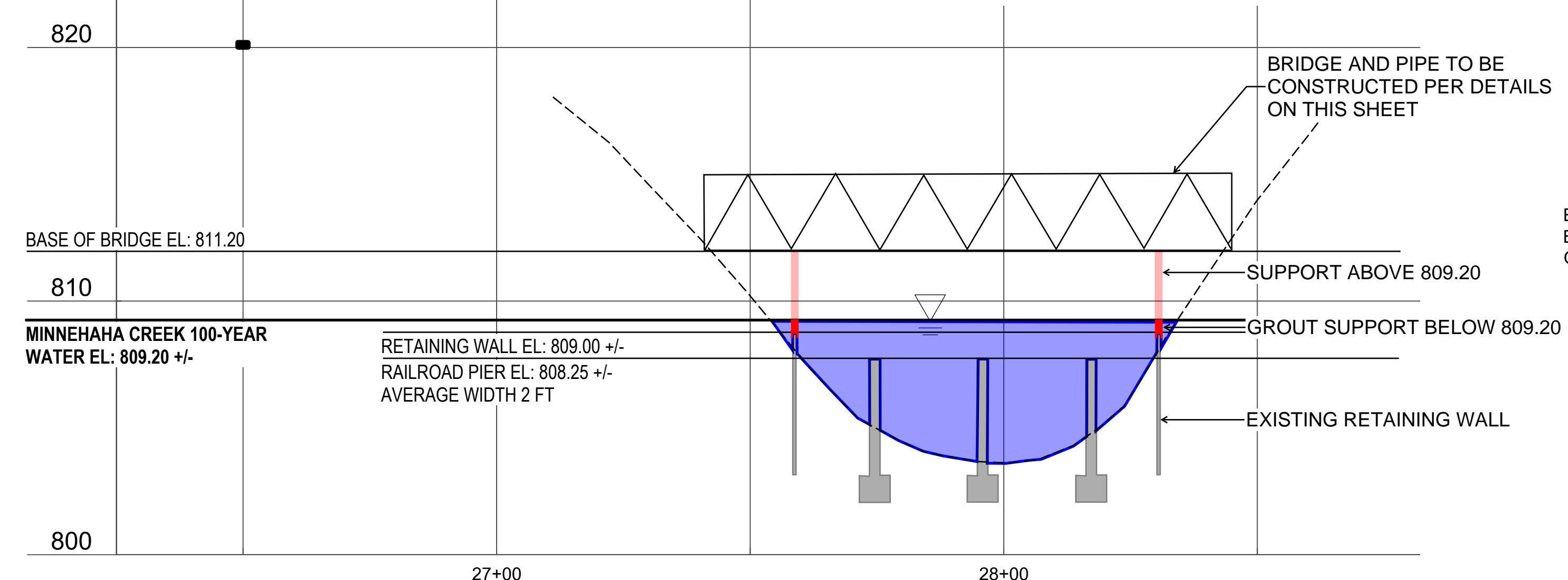
PROJECT	807629	ERS-04/1-MN-344 TUNNEL REHABILITATION	CL11
FILE NAME	CL00011		
RESTORATION PLAN - 11		57 of 98	



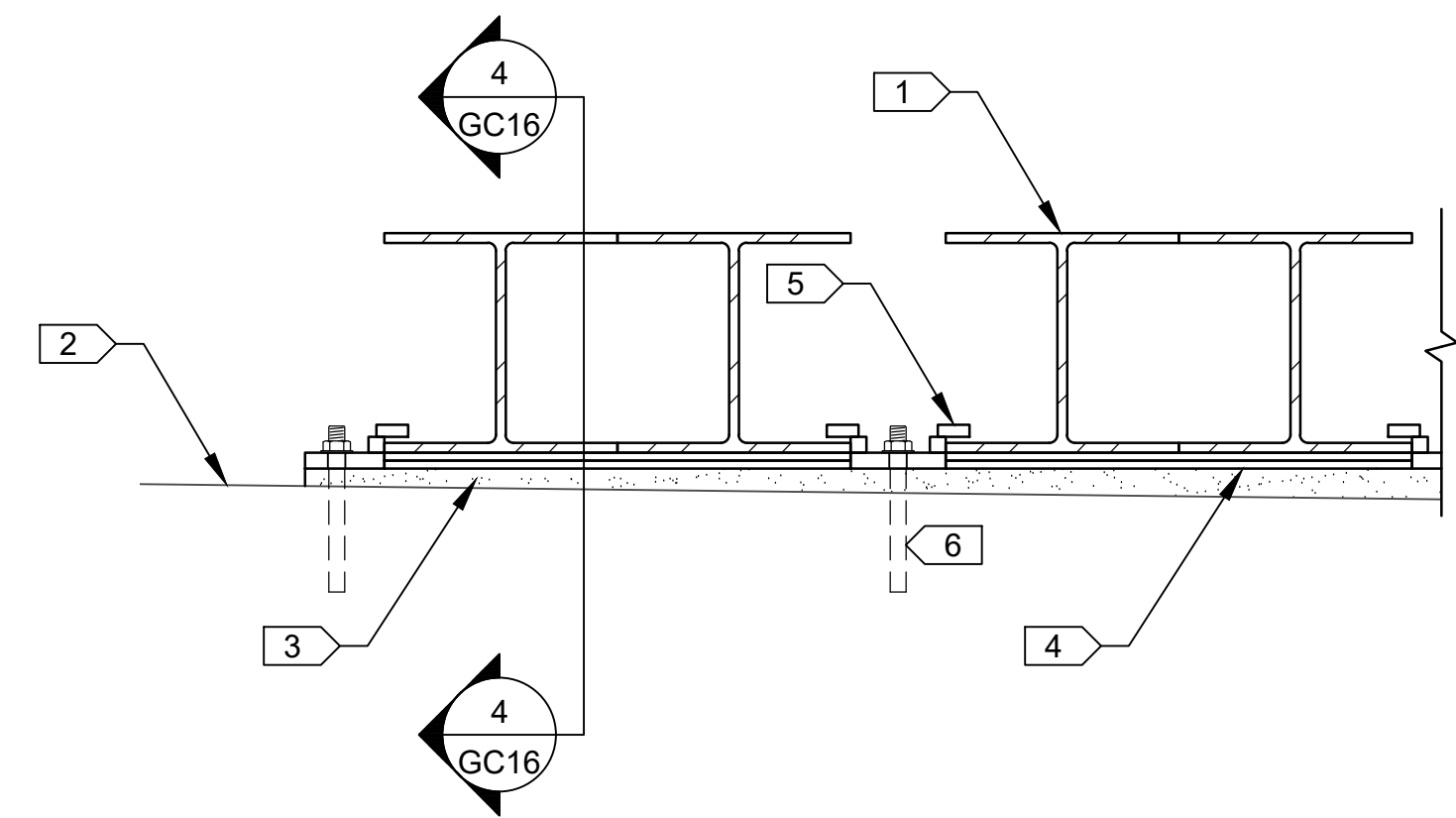
1
GC16
TEMPORARY BRIDGE - ENLARGED PLAN
1" = 10'

FILL IMPACT ON MINNEHAHA CREEK CROSS SECTIONAL AREA

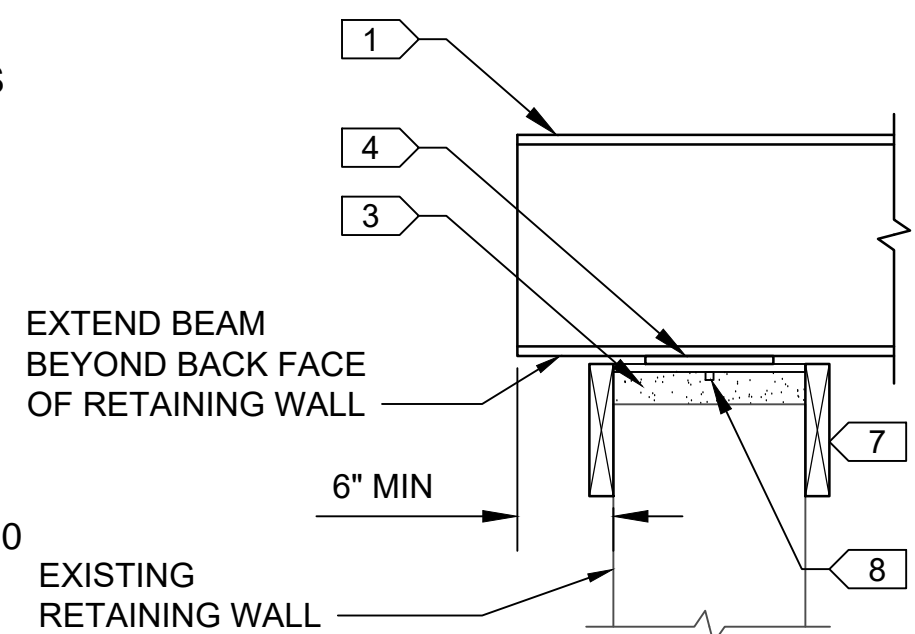
■ Existing Water Cross Section 290.28 sf
■ Total New Fill for Bridge Support 1.72 sf
PERCENT LOSS DUE TO TEMPORARY FILL = 0.59%



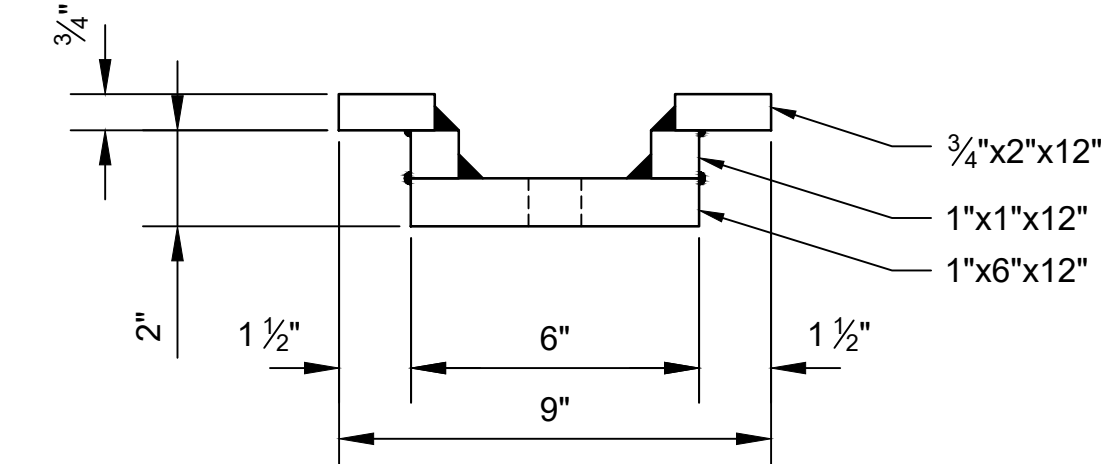
2
GC16
BRIDGE SECTION LOOKING SOUTH
NO SCALE



3
GC16
BRIDGE SUPPORT ELEVATION AT RETAINING WALL
1" = 1'-0"



4
GC16
BRIDGE END SECTION LOOKING EAST
1" = 1'-0"



5
GC16
BEAM GUIDE ASSEMBLY DETAIL
3" = 1'-0"

GENERAL NOTES:

1. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
2. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
3. TWO ROWS OF SILT FENCE ARE REQUIRED FOR WORK ALONG MINNEHAHA CREEK.
4. CONTRACTOR TO DESIGN TEMPORARY CONVEYANCE PIPE SUPPORT AS REQUIRED FOR SLOPED AREAS.

KEY NOTES:

1. HP14x89 (TYPICAL).
2. TOP OF EXISTING WALL (SLOPES).
3. GROUT FULL WIDTH OF WALL. TOP OF GROUT EL 811.20
4. TWO LAYERS OF 1/2" THICK PLATE. HDPE BOTTOM PL 28"x12". TOP PL 28"x8" (ADHERE TO BM).
5. BEAM GUIDE ASSEMBLY. SEE DETAIL 5/GC16.
6. 1-1"Ø EXPANSION ANCHOR AT CENTER OF WALL.
7. BLOCKING TO CONTAIN GROUT AND HOLD BOTTOM PLATE IN PLACE.
8. 1/2"x1/2"x24" HDPE BLOCK BONDED TO BOTTOM SIDE OF BOTTOM PLATE.

NOT FOR CONSTRUCTION

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 11/19/2018 11:45 AM

NO	DATE	BY	REVISIONS	REMARKS

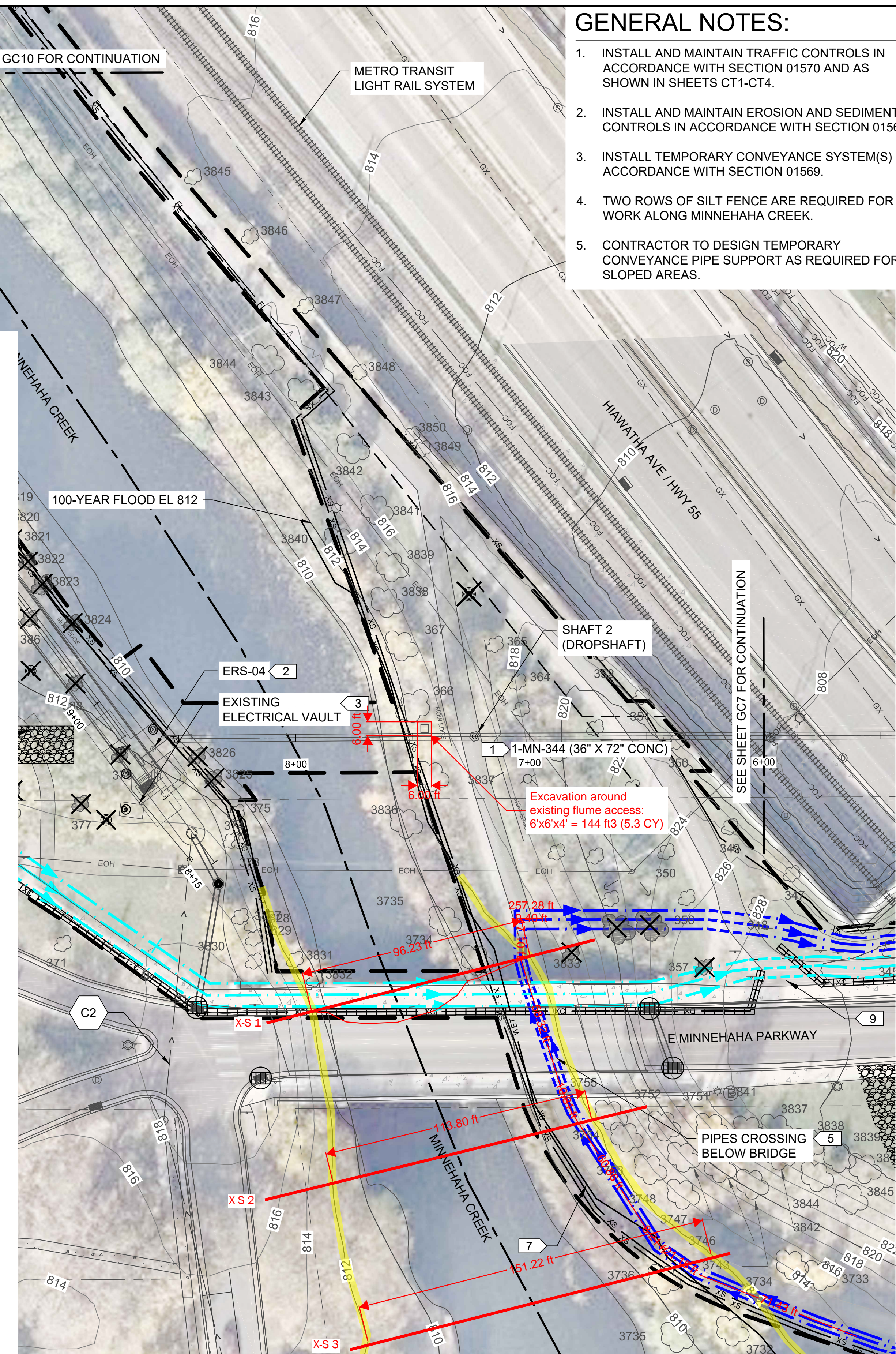
DESIGNED	CJL	HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DRAWN	JKR	SIGNATURE: _____
CHECKED	DJH	TYPED OR PRINTED NAME: CHARLES J. LEWIS
		DATE: _____ REG NO: 17322



PROJECT	807629
FILE NAME	GC00016

ERS-04/1-MN-344 TUNNEL REHABILITATION
TEMPORARY BRIDGE - ENLARGED PLAN AND DETAILS

GC16
24 of 98



GENERAL NOTES:

1. INSTALL AND MAINTAIN TRAFFIC CONTROLS IN ACCORDANCE WITH SECTION 01570 AND AS SHOWN IN SHEETS CT1-CT4.
2. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH SECTION 01563.
3. INSTALL TEMPORARY CONVEYANCE SYSTEM(S) IN ACCORDANCE WITH SECTION 01569.
4. TWO ROWS OF SILT FENCE ARE REQUIRED FOR WORK ALONG MINNEHAHA CREEK.
5. CONTRACTOR TO DESIGN TEMPORARY CONVEYANCE PIPE SUPPORT AS REQUIRED FOR SLOPED AREAS.
6. PROVIDE TEMPORARY CHAINLINK PERIMETER FENCING AROUND REGULATOR ERS-04 WORK AREA AS NECESSARY TO SECURE THE WORK.
7. ALLOW FOR CITY SNOWPLOWING ACTIVITIES AND RESPOND TO CITY TRAFFIC CONTROL REQUESTS AS SOON AS POSSIBLE.
8. TEMPORARY CONVEYANCE PIPES SHALL NOT OBSTRUCT DRAINAGE FLOW PATTERN IN STREET/GUTTER AND SHOULD NOT BLOCK ACCESS TO CITY CATCH BASINS, STORM OR SANITARY SEWER STRUCTURES.

KEY NOTES:

1. REHABILITATE EXISTING 1-MN-344 TUNNEL AS SHOWN ON SHEETS CU8-CU15.
2. REHABILITATE ERS-04 AS SHOWN ON STRUCTURAL SHEETS.
3. INSTALL NEW ELECTRICAL EQUIPMENT AS SHOWN ON THE ELECTRICAL SHEETS.
4. REMOVE AND STORE MEMORIAL BENCHES AND TRASH CAN SUPPORT POLE DURING CONSTRUCTION. REINSTALL AT EXISTING LOCATIONS. REMOVE AND REPLACE CONCRETE SLABS AS NEW IN KIND PRIOR TO REPLACING BENCHES AND POLE.
5. INVERT OF TEMPORARY CONVEYANCE PIPES TO REMAIN ABOVE EL 812.0. PROVIDE CRADLE FOR PIPES TO MAINTAIN REQUIRED ELEVATION.
6. INSTALL TREE PROTECTION FENCE PER DETAIL 4/CS5. PROVIDE 36 FT RADIUS AROUND TREE.
7. INSTALL TEMPORARY ACCESS ROAD FOR CONSTRUCTION PER DETAIL 1/CS5.
8. BACKUP GENERATOR.
9. PRIMARY ACCESS TO WORK SHAFT 2 WORK AREA VIA EXISTING TRAIL.
10. SEE SHEET CU4 FOR SUCTION DETAILS.

LEGEND:

- CONSTRUCTION LIMITS
- INLET PROTECTION - TYPE C PER DETAIL 5/CS3.
- J-BARRIER W/ SECURITY FENCE PER 2/CS6.
- SECURITY FENCE PER 1/CS6.
- FILTER LOG PER DETAIL 2/CS2
- SILT FENCE W/ TRENCH PER DETAIL 4/CS2
- TEMPORARY CONVEYANCE PIPING SYSTEM "C" - SEE SCHEMATIC ON SHEETS G8 AND CU4 FOR ADDITIONAL INFORMATION.
- MINNEAPOLIS SERVICE CONNECTION TO 1-MN-344. SEE SECTION 01569 FOR ADDITIONAL INFORMATION
- 30" DIA TEMPORARY CONVEYANCE PIPE
- 24" DIA TEMPORARY CONVEYANCE PIPE
- REMOVE TREE. SEE TREE REMOVAL SCHEDULE IN 02100 FOR ADDITIONAL INFORMATION.
- ABANDON EXISTING MONITORING WELL AS SPECIFIED IN SECTION 02050.

NOT FOR CONSTRUCTION

Cross Sections for Area Calculation

1" = 30' - 0"

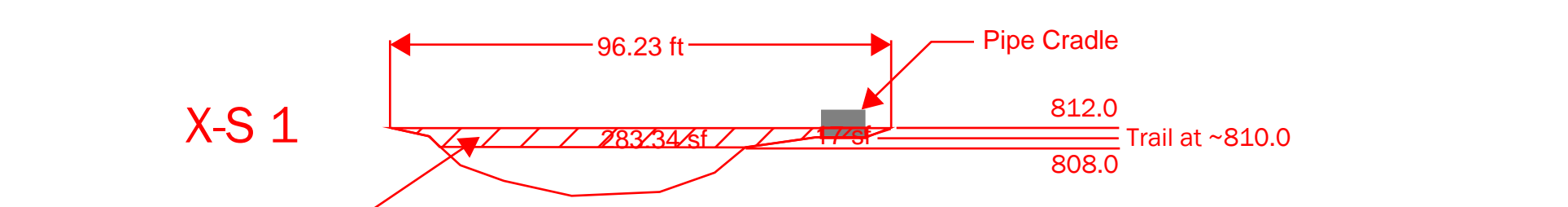
Average cross section area = (283 SF + 362 SF + 490 SF) / 3 = 378 SF

Average area occupied by cradle = 6' x 2' = 12 SF

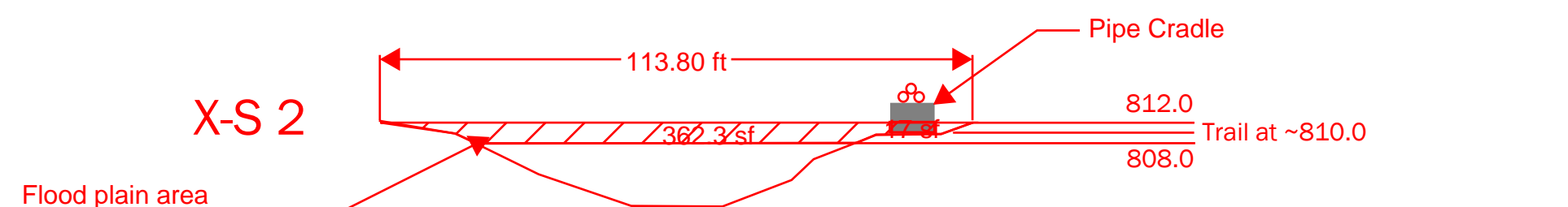
Cradle area as a percentage of cross section:

12 SF / 378 SF * 100% = 3%.

On average, 3% of the cross section area will be occupied by the cradle at the locations where the cradle is required.



Flood plain area above OWL and 100 year el.



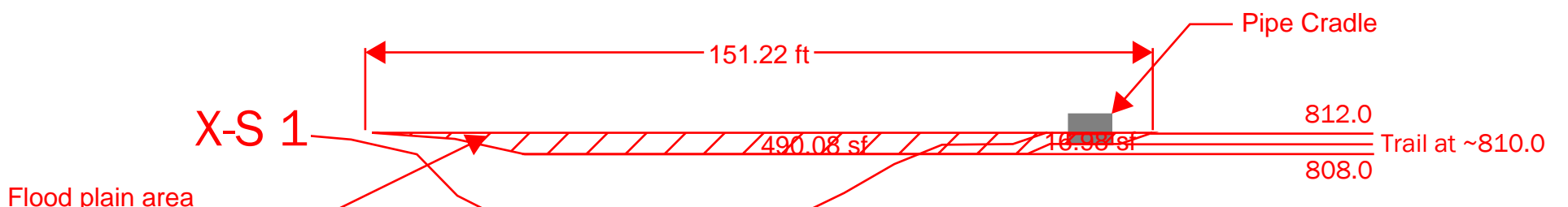
Flood plain area above OWL and 100 year el.

Volume Calculation based on 10' spacing:

Avg Volume of creek = 362.3 sf x 10' = 3,623 cf

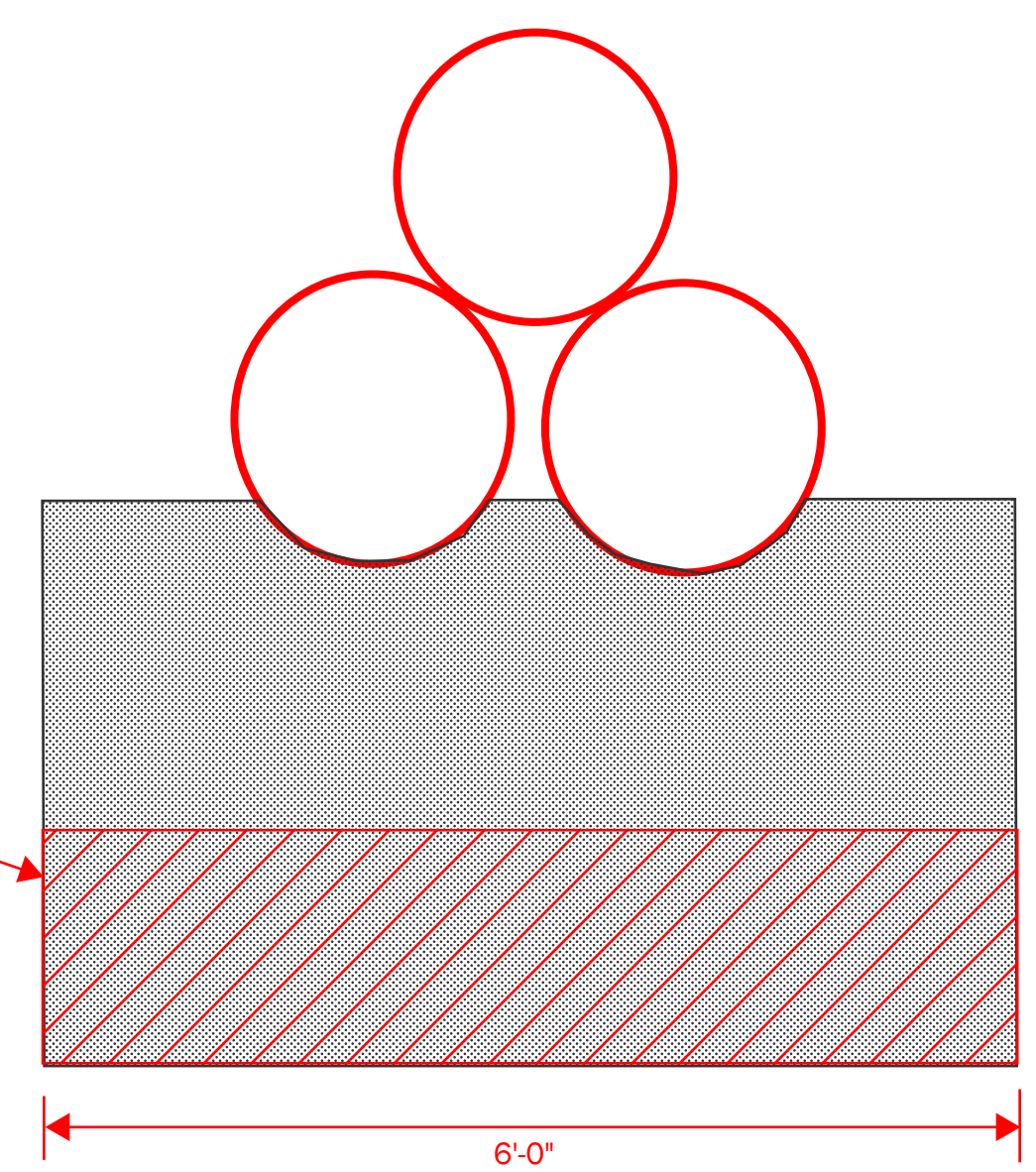
Avg Volume of Pipe cradle support = 6' x 2' x 0.5' Thick = 6 cf

Volume used = 6cf / 3,623 cf x 100 = 0.17%



Flood plain area above OWL and 100 year el.

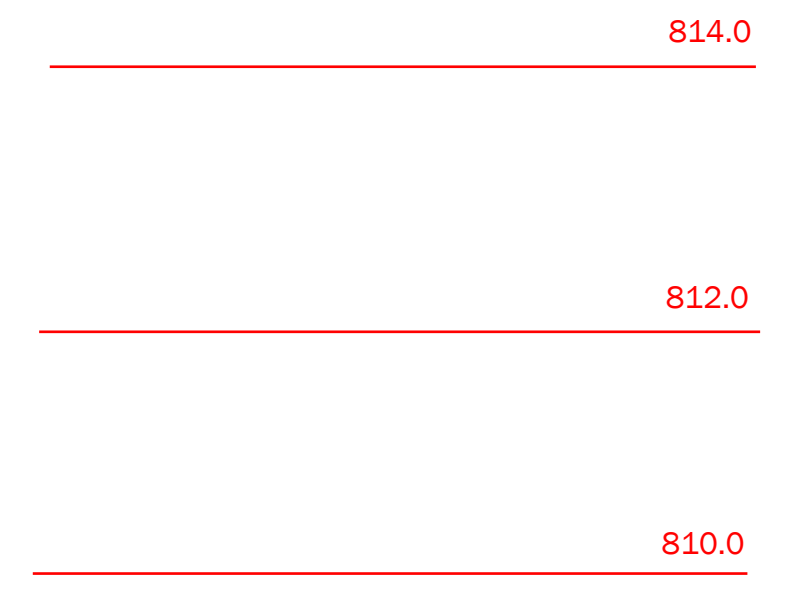
Potential Cradle Sketch (not to scale)



Volume of temp fill: 6' x 2' x 0.5' (thick) = 6 cf

Assume 10' spacing along 260 LF length of trail means ~26 cradles are required:

26 cradles x 6 cf/cradle = 156 cf of temporary fill



NO	DATE	BY	REVISIONS	REMARKS
	11/21/18	BSO	100% SUBMITTAL	
	8/8/18	BSO	70% SUBMITTAL	

NO	DATE	BY	REVISIONS	REMARKS

Brown AND Caldwell

PROJECT: 807629
FILE NAME: GC00010

DESIGNED BY: BSO
DRAWN BY: JKR
CHECKED BY: DJH

SIGNATURE: _____
TYPED OR PRINTED NAME: BENJAMIN S. O'GRADY
DATE: _____ REG NO: 52179

PROJECT: 807629
FILE NAME: GC00010

ERS-04/1-MN-344 TUNNEL REHABILITATION
TEMPORARY CONVEYANCE & SITE PREP - ERS-04

GC10
18 of 98

Minnesota Wetland Conservation Act

Notice of Decision

Local Government Unit (LGU) Minnehaha Creek Watershed District	Address 15320 Minnetonka Blvd Minnetonka, MN 55345
--	---

1. PROJECT INFORMATION

Applicant Name Metropolitan Council Environmental Services	Project Name ERS 04 Replacement	Date of Application 10/24/18	Application Number W18-43
---	---	--	-------------------------------------

Attach site locator map

Type of Decision:

Wetland Boundary or Type
 No-Loss
 Exemption
 Sequencing
 Replacement Plan
 Banking Plan

Technical Evaluation Panel Findings and Recommendation (if any):

Approve
 Approve with conditions
 Deny
 Summary (or attach):
 Ben Carlson (BWSR) attended field review and concurred with boundary.

2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision: 10/20/18

Approved
 Approved with conditions (include below)
 Denied

LGU Findings and Conclusions (attach additional sheets as necessary):

Metropolitan Council Environmental Services has applied for wetland boundary & type confirmation for the wetlands located at 3933 E. Minnehaha Parkway in the City of Minneapolis, Hennepin County, Minnesota. Legal description: Section S18, Township 28N, Range R23W. The boundary/type approval was requested on 10/24/2018.

A wetland delineation was conducted by Sambatek, Inc. on 05/31/2018 and 07/31/2018. A complete delineation report and WCA application were submitted to MCWD on 10/24/2018. One wetland was delineated on site, a 3/5/6/2/1 Shallow Marsh/Shallow Open Water/Shrub-Carr/Wet to Wet-Mesic Prairie/Floodplain Forest/Wet Meadow.

MCWD (Elizabeth Showalter), BWSR (Ben Carlson), Met Council (Chad Davidson), and Sambatek (Bruce Galer) reviewed the boundaries in the field on November 9, 2018. MCWD was in agreement with the wetland boundaries and types identified in the delineation report.

MCWD approves the wetland boundaries and types as shown in the originally submitted delineation report. This decision is valid for five years. A future project located on this property may require a permit from the MCWD.

For Replacement Plans using credits from the State Wetland Bank:


Bank Account #	Bank Service Area	County	Credits Approved for Withdrawal (sq. ft. or nearest .01 acre)
----------------	-------------------	--------	---

Replacement Plan Approval Conditions. In addition to any conditions specified by the LGU, the approval of a Wetland Replacement Plan is conditional upon the following:

- Financial Assurance:** For project-specific replacement that is not in-advance, a financial assurance specified by the LGU must be submitted to the LGU in accordance with MN Rule 8420.0522, Subp. 9 (List amount and type in LGU Findings).
- Deed Recording:** For project-specific replacement, evidence must be provided to the LGU that the BWSR “Declaration of Restrictions and Covenants” and “Consent to Replacement Wetland” forms have been filed with the county recorder’s office in which the replacement wetland is located.
- Credit Withdrawal:** For replacement consisting of wetland bank credits, confirmation that BWSR has withdrawn the credits from the state wetland bank as specified in the approved replacement plan.

Wetlands may not be impacted until all applicable conditions have been met!

LGU Authorized Signature:

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 5 provides notice that a decision was made by the LGU under the Wetland Conservation Act as specified above. If additional details on the decision exist, they have been provided to the landowner and are available from the LGU upon request.		
Name Elizabeth Showalter	Title Permitting Technician	
Signature 	Date 11/20/18	Phone Number and E-mail (952) 641-4518 eshowalter@minnehahacreek.org

THIS DECISION ONLY APPLIES TO THE MINNESOTA WETLAND CONSERVATION ACT.

Additional approvals or permits from local, state, and federal agencies may be required. Check with all appropriate authorities before commencing work in or near wetlands.

Applicants proceed at their own risk if work authorized by this decision is started before the time period for appeal (30 days) has expired. If this decision is reversed or revised under appeal, the applicant may be responsible for restoring or replacing all wetland impacts.

This decision is valid for three years from the date of decision unless a longer period is advised by the TEP and specified in this notice of decision.

3. APPEAL OF THIS DECISION

Pursuant to MN Rule 8420.0905, any appeal of this decision can only be commenced by mailing a petition for appeal, including applicable fee, within thirty (30) calendar days of the date of the mailing of this Notice to the following as indicated:

Check one:

<input checked="" type="checkbox"/> Appeal of an LGU staff decision. Send petition and \$100 fee to: Minnehaha Creek Watershed District 15320 Minnetonka Blvd Minnetonka, MN 55345	<input type="checkbox"/> Appeal of LGU governing body decision. Send petition and \$500 filing fee to: Executive Director Minnesota Board of Water and Soil Resources 520 Lafayette Road North St. Paul, MN 55155
--	---

4. LIST OF ADDRESSEES

SWCD TEP member: **Stacey Lijewski-stacey.lijewski@co.hennepin.mn.us**
 BWSR TEP member: **Ben Carlson-ben.carlson@state.mn.us**
 LGU TEP member (if different than LGU Contact):
 DNR TEP **Becky Horton-becky.horton@state.mn.us**
 DNR Regional Office (if different than DNR TEP member): **Jason Spiegel-jason.spiegel@state.mn.us**
 WD or WMO (if applicable):
 Applicant (notice only) and Landowner (if different): **Chad Davison – Chad.Davison@metc.state.mn.us**
 Members of the public who requested notice (notice only): **Elizabeth Stout-elizabeth.stout@minneapolismn.gov, Todd Ullom- tullom@sambatek.com**
 Corps of Engineers Project Manager (notice only): **Justin Berndt-Justin.T.Berndt@usace.army.mil**
 BWSR Wetland Bank Coordinator (wetland bank plan applications only)

5. MAILING INFORMATION

- For a list of BWSR TEP representatives: www.bwsr.state.mn.us/aboutbwsr/workareas/WCA_areas.pdf
- For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf
- Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol. Div. Ecol. Resources 2115 Birchmont Beach Rd. NE Bemidji, MN 56601	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1201 E. Hwy. 2 Grand Rapids, MN 55744	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1200 Warner Road St. Paul, MN 55106	Reg. Env. Assess. Ecol. Div. Ecol. Resources 261 Hwy. 15 South New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

- For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687 or send to:

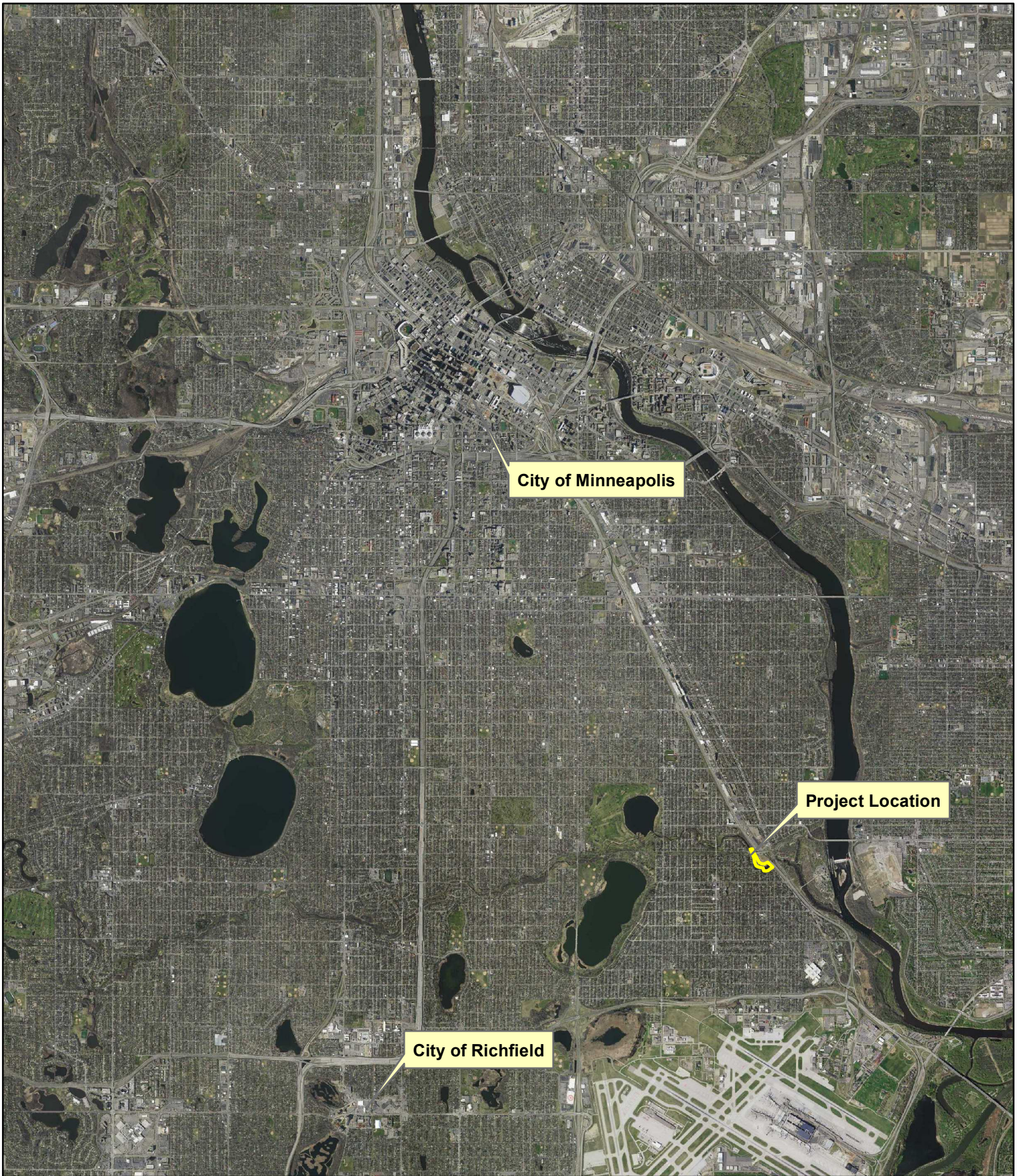
US Army Corps of Engineers
 St. Paul District, ATTN: OP-R
 180 Fifth St. East, Suite 700
 St. Paul, MN 55101-1678

- For Wetland Bank Plan applications, also send a copy of the application to:
 Minnesota Board of Water and Soil Resources
 Wetland Bank Coordinator
 520 Lafayette Road North
 St. Paul, MN 55155

6. ATTACHMENTS

In addition to the site locator map, list any other attachments:

Approved wetland boundaries



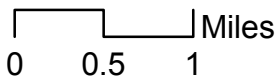
Location Map

Regulator 04

Metropolitan Council Environmental Services
Minneapolis, MN

Legend

 Project Area



Sources: MetroGIS, NRCS, LMIC



This map was created using Sambatek's Geographic Information Systems (GIS), it is a compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Sambatek is not responsible for any inaccuracies contained herein.



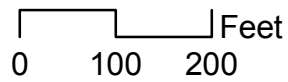
Legend

- Project Area
- Wetland 1
- ▲ Sample Transect

Wet Feature Location Map

Regulator 04

Metropolitan Council Environmental Services
Minneapolis, MN



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Sources: MetroGIS, NRCS, LMIC