Applicant:	Amber Blanchard; MnDOT
Consultant:	Gabe Gubash; HZ United, LLC.
Project:	Roadway Improvements
Location:	I-494 E-Z Pass Lanes between East Bush Lake Road to Nicollet Avenue: Bloomington, Edina, and Richfield
Rule(s):	2,3,4, and 5
Reviewer:	BCO and JMK2

# **General Background & Comments**

The Minnesota Department of Transportation is proposing the construction of two-way highoccupancy vehicle lane (12-foot wide) from T.H. 169 to Nicollet Avenue within the jurisdiction of the Nine Mile Creek Watershed District. The overall project will continue easterly to the Minneapolis/St. Paul International Airport, out of NMCWD's jurisdiction. Phase 1 of the project, proposed in the 2023 construction season, includes construction activities on I-494 from approximately 1,200 feet west of East Bush Lake Road to I-35W, construction activities on I-35W from I-494 to West 82<sup>nd</sup> Street, and interchange modifications at Nicollet Avenue. The remaining portions of the project, including improvements from T.H. 169 to the Phase 1 limits west of East Bush Lake Road and north-south along I-35W from West 86<sup>th</sup> Street to West 82<sup>nd</sup> Street will be undertaken as funding becomes available.

MnDOT is proceeding with bidding and contracting for the project under a design-build arrangement, whereby the selected contractor will have the ability to adjust the design, plans and drawings to save costs, improve the design to better suit the project purposes and/or to reduce environmental impact. Notwithstanding, MnDOT has submitted a design concept and all supporting information necessary to constitute a complete permit application and to allow NMCWD to decide on the permit application. Any adjustment to the design that involves, causes, or requires a change in the elements of the project or modeling results related to compliance or means of complying with NMCWD requirements and permit 2022-29 (e.g., stormwater facilities), if issued, will need to be submitted to NMCWD for approval. The engineer recommends that the managers delegate the necessary authority to the administrator to approve such modification requests unless a request requires approval of a variance or the administrator determines that the request raises a policy or other consideration that should be considered by the board.

Only the Phase 1 work and compliance design is before the board for conditional regulatory approval. If the managers conditionally approve the application, only the Phase 1 work will be conditionally authorized; future phase(s) of the project will need to be the subject of a future application(s).

**Rule Overview:** NMCWD rules 2.0 (Floodplain Management and Drainage Alterations), 3.0 (Wetlands Management), 4.0 (Stormwater Management) and 5.0 (Erosion and Sediment Control) apply to Phase 1 of the proposed project.

The Phase 1 roadway construction proposes filling of the existing roadway median just west of East Bush Lake Road which is within the floodplain of the stormwater basin constructed as part of the Southwest Edina storm sewer system located north of the I-494 roadway. Rule 2.3.2 states placement of fill below the 100-year flood elevation is prohibited unless fully compensatory flood storage is provided within the floodplain at the same elevation +/- 1-foot for fill in the floodplain of a watercourse. The project proposes 0.09 acre-feet (3,920 cubic feet) of floodplain fill. Compensatory storage of 0.9 acre-feet (39,204 cubic feet) of floodplain volume, at the same flood elevations to be filled, is to be provided within an additional basin (Lin Zhao Basin) to be constructed in the southeast quadrant of East Bush Lake Road and I-494. Because drainage improvements made by MnDOT after the 1987 rainstorm events hydraulically connected the area of proposed filling with the stormwater management improvements constructed in the southeast quadrant of East Bush Lake Road and I-494 (which includes the Lin Zhao Basin area), the area proposed to be filled and the Lin Zhao basin area are within the same floodplain.

MnDOT administers the requirements of the Wetland Conservation Act as the Local Government Unit (LGU) for state roadway projects. However, district rule 3.4 states any activity for which a permit is required under district rules 2.0, 3.0, 4.0, 6.0, 7.0, or 8.0 must provide buffer around the entirety of wetlands disturbed by the activity and on the upgradient edge of all wetlands downgradient from the activity. Impacts are proposed to Wetland 27 located 1200 feet east of East Bush Lake Road, north of I-494 (southwest of the former Lifetouch building parking lot) and within the Phase 1 project limits. Wetland 27 has been determined as a medium value based on a MnRAM wetland-function assessment.

The Phase 1 work qualifies as a linear project under the NMCWD stormwater rule. Rule 4.2.4 states for linear projects creating more than 1 acre of new or additional impervious surface, the NMCWD stormwater-management criteria will apply only to the net new additional impervious surface. The Phase 1 area of the project will create 11.2 acres of new impervious area within the Phase 1 construction limits in NMCWD's jurisdiction. Stormwater management (volume retention, rate control and water quality management) is to be provided within 15 basins located within the limits of Phase 1, and 17 basins located within the entire project corridor. Specifically, volume retention within the Phase 1 area will be provided with two of the 15 basins: one located in the S.W. quadrant of France Avenue and I-494 - Urusyus Basin, and another in the S.W. quadrant of I-35W and I-494 -Sayulin Basin.

NMCWD rule 5.0, Erosion and Sediment Control, is applicable because the land disturbing activities will involve excavation of 50 cubic yards or more of earth and will alter or remove 5,000 square feet or more of surface area or vegetation.

No activities within the Phase 1 area trigger the requirements of district rules 6.0 – Waterbody Crossing and Structures, 7.0 – Shoreline and Streambank Improvements and/or Rule 8.0-Sediment Removal.

#### Exhibits

- Permit Application dated February 11, 2022. The district notified the applicant that it required additional information by e-mail correspondence on April 5, April 13, April 19, May 10, and May 17, 2022, to complete the application. The applicant provided additional information on April 13, April 25, May 27 and June 6, 2022. The district determined that all materials necessary for determination of the application had been submitted on May 27, 2022. The applicant provided further additional information on June 27, 2022.
- 2. Preliminary project documentation submitted on March 22, 2022, including XP-SWMM modelling for the project.
- 3. Wetland delineation report dated February 4, 2022, prepared by SEH. Notice of Decision approving the wetland boundaries and types dated July 2, 2019.
- 4. Environmental Assessment Worksheet dated April 8, 2022.
- 5. Minnesota Routine Assessment Methodology (MnRAM) submitted on April 6, 2022.

As stated above, all material necessary to complete the application was submitted and the application was complete on May 27, 2022.

#### 2.0 Floodplain Management and Drainage Alterations

The Phase 1 roadway construction proposes filling of the existing roadway median just west of East Bush Lake Road which is within the floodplain of the stormwater basin constructed as part of the Southwest Edina storm sewer system located north of the I-494 roadway. No other areas within the Phase 1 roadway construction project trigger rule 2.0. Rule 2.3.2 states placement of fill below the 100-year flood elevation is prohibited unless fully compensatory flood storage is provided within the floodplain at the same elevation +/- 1-foot for fill in the floodplain of a watercourse.

The project submittal indicates the roadway construction in the portion of the Phase 1 work west of East Bush Lake Road will result in 3,920 cubic yards of fill within the floodplain of the existing constructed storm water basin located north of the I-494 roadway. The floodplain of the basin extends onto the roadway and becomes part of the I-494 drainage system. Compensatory floodplain volume is to be provided by expansion (excavating) of a basin in the southeast quadrant of East Bush Lake Road and I-494 referred to as Lin Zhao Basin. As previously stated, drainage improvement made by MnDOT after the 1987 rainstorm events hydraulically connected the area of proposed filling with the stormwater management improvements constructed in the southeast guadrant of East Bush Lake Road and I-494 (which includes the Lin Zhao Basin area). The proposed fill, located within the existing center grass roadway median west of East Bush Lake Road, is below elevation 816.3 M.S.L., the 100-year flood elevation of the basin. The 3,920 cubic feet of floodplain volume proposed to be filled is between elevation 813.5 M.S.L. (the bottom of the median ditch) to elevation 814.5 M.S.L., the elevation of the new roadway section. The proposed Lin Zhao Basin will create 39,204 cubic feet of floodplain volume between elevations 813.5 M.S.L. and 814.5 M.S.L. complying with the compensatory floodplain volume at the same elevation (+/- 1 foot), resulting in a net gain of 35,284 cubic yards complying with Rule 2.3.2.

A portion of the District's XP-SWMM model was provided to MnDOT's consultant (provided in 2019) to assist in the determination of effects that the proposed increase in impervious area

would have on the flood elevations of the creek and rates of runoff generated by the proposed improvements. The XP-SWMM model submitted by MnDOT's consultant shows that the proposed flood volume fill and compensatory volume to be provided results in a very slight reduction (hundredths of a foot) in the 816 M.S.L. 100-year frequency flood elevation complying with Rule 2.3.3. We agree with the results of the modelling provided.

Rule 2 criteria for floodplain and drainage alterations includes the following:

2.3.1: The low floor elevation of all new and reconstructed structures must be constructed in accordance with the NMCWD Stormwater Rule, subsection 4.3.3

NMCWD Resolution 22-02 established a policy whereby "structure," for purposes of the floodplain rule, refers only to buildings, bridges, and boardwalks; so the roadway is a structure for purposes of the rule, and no buildings, bridges or boardwalks are proposed under Phase 1. No new or reconstructed structures with low-floor elevations are proposed with the project.

2.3.2: Placement of fill below the 100-year flood elevation is prohibited unless fully compensatory flood storage is provided within the floodplain:

- a. at the same elevation +/- 1 foot for fill in the floodplain; or
- *b.* at or below the same elevation for fill in the floodplain of a water basin or constructed stormwater facility.

The 3,920 cubic feet of floodplain volume proposed to be filled west of East Bush Lake Road is between elevation 813.5 M.S.L. (the bottom of the existing roadway median ditch) to elevation 814.5 M.S.L. the elevation of the new roadway section. As previously stated, drainage improvements made by MnDOT after the 1987 rainstorm events hydraulically connected the area of proposed filling with the stormwater management improvements constructed in the southeast quadrant of East Bush Lake Road and I-494 (which includes the Lin Zhao Basin area). The proposed expansion of Lin Zhao Basin will create 39,204 cubic feet of floodplain volume between elevations 813.5 M.S.L. and 814.5 M.S.L. complying with the compensatory floodplain volume at the same elevation (+/- 1 foot), resulting in a net gain of 35,284 cubic yards of floodplain volume.

2.3.3. The District will issue a permit to alter surface flows only if it finds that the alteration is not reasonably likely to have a significant adverse impact on any upstream or downstream landowner and is not reasonably likely to have a significant adverse effect on flood risk, basin or channel stability, groundwater hydrology, stream base-flow, water quality or aquatic or riparian habitat.

The Phase 1 roadway construction does not alter surface water flows below the 100-year flood elevation of a water basin or watercourse by changing land contours, diverting or obstructing surface or channel flow, or creating a basin outlet.

2.3.4 No structure may be placed, constructed, or reconstructed and no new impervious surface may be constructed within 50 feet of the centerline of any water course, except that this provision does not apply to:

a. Bridges, culverts, and other structures and associated impervious surface regulated under Rule 6.0;

#### b. Trails 10 feet wide or less, designed primarily for nonmotorized use.

No placement, construction, or reconstruction of structures or impervious surface are being proposed within 50 feet of the centerline of any water course. The project does not propose any structures or associated impervious surface regulated by rule 6. There are no trails to be constructed as part of the project.

#### 3.0 Wetland Management

This project is located completely within MnDOT owned right-of-way therefore according to Minnesota WCA Rule 8420.0200 subpart 1(c), MnDOT is the LGU for wetland impacts within the project area. MnDOT issued a Notice of Decision dated July 2, 2019, for the wetland boundaries and types within the project corridor.

Even though NMCWD does not exercise regulatory authority over the wetland draining or filling associated with the project, the NMCWD wetland-buffer provisions apply if there is disturbance or activity upgradient of a wetland (subsection 3.2.2). A MnRAM has been prepared for Wetland 27 within,1) NMCWD's jurisdiction, 2) the Phase 1 area, and 3) or adjacent to the roadway right of way. As previously stated for compliance with the district's buffer requirements, a buffer must be provided on around the entirety of wetland disturbed by the activity and on the upgradient edge of all wetlands are downgradient from the land alteration activities.

Wetland #27 located 1200 feet east of East Bush Lake Road and north of I-494 (located southwest of the former Lifetouch building parking lot) is the only wetland within Phase 1 that triggers the district's wetland buffer requirements. The submittal indicates that 149 square feet of grading impacts are proposed requiring replacement by MnDOT in accordance with the requirements of WCA. Wetland 27 was determined to be a medium value wetland - we agree with the MnRAM determination. For a medium value wetland, Rule 3.4.b requires an average 40 foot and a minimum 20-foot buffer to be provided. Rule 3.4.4 states that a buffer is only required on property owned by the applicant and that is the subject of the district permit. The required buffer area is 7,340 square feet with a buffer area of 10,370 square feet to be provided. Because of the wetland located adjacent to the roadway, a minimum buffer width of 19.8 feet is shown at the location wetland boundary closest to the roadway. It is the engineer's opinion that the 0.2 feet (2+ inches) shortfall in minimum buffer width is within the degree of accuracy of the wetland boundary determination in relationship to the roadway and the desired function of the wetland buffer, as proposed, is being provided.

Because of the design-build for the project, the engineer recommends approval based on a stipulation requiring submission of draft post-construction (as-built) site plans delineating the buffer for approval by the NMCWD administrator prior to inclusion in the buffer-maintenance agreement required under paragraph 3.4.7 of the rule.

#### 4.0 Stormwater Management

The proposed work qualifies as a linear project under rule 4.2.4, because the construction is a public improvement within a linear corridor. For linear projects creating more than 1 acre of new or additional impervious surface, the criteria of section 4.3.1 apply only to the net new or additional impervious surface. Stormwater management to comply with the requirements of

Rule 4 for the 11.2 acres of new impervious area is to be provided within 15 basins within the Phase 1 limits.

The existing and proposed 2-, 10- and 100-year frequency discharges in Table 1 and 2 below, from MNDOT's June 6, 2022, submittal and supporting XP-SWMM models, were provided by the applicant to show compliance with the district's rate control requirements (4.3.1.b). Documentation submitted to date shows compliance with Rule 4.3.1.b. However, resubmittal of the XP-SWMM models is necessary to address some inconsistencies between the proposed project as described in the project submittal and the XP-SWMM models and to confirm that the XP-SWMM models support the documentation showing compliance with Rule 4.3.1.b. If the resubmitted modeling data does not support compliance, the applicant will need to make design revisions to either the proposed stormwater facilities or the project, or both, to support a determination of compliance.

	Existing	Discharge Phase 1	(cfs) –	Proposed Discharge (cfs) – Phase 1		
	2-year	10-year	100-year	2-year	10-year	100-year
NMC Outfall #1	840	983	1,315	840	712	1,306
WB Outfall #1	76	130	241	64	112	224
WB Outfall #2	12	25	51	12	25	50
WB Outfall #3	4	7	16	4	7	15
WB Outfall #4	<1	1	2	<1.0	1	2
WB Outfall #5	3	5	7	3	5	7
WB Outfall #6	<1	<1	3	<1	<1	3
WB Outfall #7	<1	<1	12	<1	<1	<1
WB Outfall #8	15	40	66	15	39	66
WB Outfall #9	<1	<1	4	<1	<1	4
WB Outfall #10	34	40	44	34	40	44
WB Outfall #11	4	4	5	4	4	5
WB Outfall #12	<1	<1	72	<1	<1	68
ML Outfall #1	11	21	40	11	21	40
ML Outfall #2	69	79	86	60	77	86
SP Outfall #1	60	60	74	51	57	65
SP Outfall #2	158	176	184	115	114	183
SP Outfall #3	42	51	40	4	4	8
SP Outfall #4	75	76	75	<1	<1	<1

Table 1. Comparison of existing and proposed discharge rates for Phase 1 of proposed project

Within the Phase 1 area, volume retention of 44,722 cubic feet is required from the 11.2 acres of new site impervious area. Soil borings from locations in close proximity of the infiltration areas indicate the soils as a sand, sandy-loam (SP) having an infiltration rate of 0.8

inches/hour using the Minnesota Stormwater Manual. Using this infiltration rate, an area of 14,000 square feet is required for the volume retention to be drawn down within 48-hours to comply with Rule 4.3.1a. The proposed area for infiltration (Sayulin and Urusyus Basins) is approximately 32,850 square feet (14,000 square feet required) with a retention volume of 84,400 cubic feet (44,722 cubic feet required) to be provided.

Because this is a linear project, the roadway right-of-way limits the feasibility of management of stormwater from the regulated (new impervious) areas of the site. Instead, stormwater management for compliance with rule 4.3.1a is provided at locations that manage undisturbed areas of the site that are feasible within the limits of Phase 1 project area. Because existing site conditions make it infeasible for the applicant to meet the standards in paragraphs 4.3.1a through management of runoff from the regulated area of the site, runoff from undisturbed areas of the site that are and will remain in the same or a more intensive use and drain to the same receiving water(s) as the area to be disturbed may be retained and treated to meet the standards under Rule 4.3.1. The stormwater management locations that manage undisturbed areas of the site are within the roadway (consistent land use) and drain to the same receiving water(s).

#### Rule 4.3.1a is met.

A MIDS calculator was submitted to show compliance with the district's water quality requirement of a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids. The proposed total suspended solids (TSS) and total phosphorus (TP) removal are summarized in Table 3 for Phase 1, respectively. For the Phase 1 area, the 15 basins will provide an annual removal efficiency of 93% for total suspended solids (46,613 lbs.) and 68% for total phosphorus (186 lbs.) Rule 4.3.1c is met.

Table 2, Summar	v of	proposed	TSS a	nd TP	removal fo	r Phase	1 of	pro	posed	proi	iect
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Pollutant	Site Loading (Ibs./year)	Required Load Removal (Ibs./year)	Provided Load Reduction (Ibs./year)
Total Suspended Solids (TSS)	50,068	45,061 (90%)	46,613 (93%)
Total Phosphorus (TP)	275.6	165.4 (60%)	182.4 (68%)

Rule 4.5.4d (i) requires at least three feet of separation between the bottom of an infiltration facility and groundwater. A MnDOT geotechnical evaluation identified groundwater within borings located within proximity of the volume retention areas. The following table, Table 5, provides a comparison of the bottom elevation of the infiltration basins in relation to groundwater.

Table 5. Groundwater Information

Proposed Stormwater Management Facility	Bottom Elevation of Basin M.S.L.	Groundwater Elevation M.S.L.	Separation Provided (feet)
Sayulin	822	808	14.0
Urusyus	821	811.8	9.2

The required three (3) feet of separation is provided between the bottom of an infiltration facility and groundwater.

Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that the low floor is at least two feet above the 100-year high-water elevation or one foot above the emergency overflow of a constructed facility. Additionally, Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that no opening where surface flow can enter the structure is less than two feet above the 100-year high-water elevation of an adjacent facility. From the project submittal, it appears that rule 4.3.3 applies to existing structures adjacent to the Aristu, Ephrem and Ghazali stormwater basins. Low floor and low opening elevations of structures adjacent to these basins must be field surveyed and the information provided to the district showing compliance with the requirements of rule 4.3.3. Other structures along the Phase 1 corridor appear to be outside the limits of the proposed 100-year high water elevation of stormwater facilities. The submittal of the final Phase 1 documentation must show compliance with rule 4.3.3.

In accordance with Rule 4.3.1a (i), where infiltration or filtration facilities, practices or systems are proposed, pre-treatment of runoff must be provided. The proposed concept design layout indicates constructed pretreatment surface basins will receive the runoff from the paved surfaces prior to discharging to an infiltration facility, complying with Rule 4.3.1a (i).

In accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site. Yearly updating is required for the MnDOT chloride-management plan.

Subsection 4.3.5 requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. The applicant must provide the district with a signed document signed by an official with authority assuming the maintenance obligations of the stormwater management facilities.

#### 5.0 Erosion and Sediment Control

The district's requirements for erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 5.2.1a and b.

An erosion and sediment control plan must be submitted to the district.

The contractor for the project will need to designate a contact who will remain liable to the district for performance under the District's Erosion and Sediment Control Rule 5.0, in

accordance with subsection 5.4.1e. NMCWD must be notified if the responsible individual changes during the permit term.

#### 11.0 Fees

Because the property owner is a public entity, no fees are charged.

Rules 2.0-6.0 ......\$0

# 12.0 Sureties

Because the property owner is a public entity, the district's financial assurance requirements do not apply.

Sureties for the project are:

\$0

# **Findings**

- 1. The proposed project includes the information necessary, plan sheets and erosion
- 2. Rules 2, 3, 4 and 5 are met with the documentation shown below provided to the district.

#### **Recommendation**

Approval of the Phase 1 plan, contingent upon:

#### **General Conditions**

The applicable construction documents and final design computations and models for the portion of the project within the Nine Mile Creek Watershed District must be submitted for review and approval by the district. While modeling data submitted by MnDOT supports the determination that the NMCWD rate-control criterion (4.3.1b) is met, the engineer has not seen sufficient documentation to support a determination that the modeling was correctly completed. These issues, identified in the discussion pertaining to Rule 4.3.1b, must be resolved to confirm compliance with the district rules. If the resubmitted modeling data does not support compliance, the applicant will need to make design revisions to either the proposed stormwater facilities or the project, or both, to support a determination of compliance.

The low floor and low opening elevations of existing structures adjacent to the Aristu, Ephrem and Ghazali basins, must be field surveyed to ensure compliance with the requirements of rule 4.3.3. The final Phase 1 documentation must show compliance with rule 4.3.3 for the structures previously identified and any other structures that are in close proximity of a proposed basin.

In accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site. Yearly updating is required for the MnDOT chloride-management plan.

An erosion and sediment control plan must be submitted to the district.

All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. The applicant must provide the district with a signed document signed by an official with authority assuming the maintenance obligations of the stormwater management facilities.

Further, the engineer recommends that the managers delegate the necessary authority to the administrator to approve modification requests unless the request requires approval of a variance. Revisions to the documents, plans and designs that were submitted to serve as a basis for this analysis and determination that constitute, in the district's administrator's judgment, a material revision to the terms of compliance with the applicable NMCWD rules will be reviewed as requests for a permit modification. (The administrator will have the discretion to bring a request to the board if it raises a policy, technical or legal question that, in his view, should be considered by the board).

By accepting the permit, when issued, the applicant agrees to the following stipulations:

Per Rule 4.5.6, an as-built drawing of the project conforming to the design specifications as approved by the district must be submitted.

MnDOT or its contractor must submit draft post-construction (as-built) site plans delineating the buffer for approval by the NMCWD administrator, and incorporation of final approval buffer area into the programmatic maintenance agreement between NMCWD and MnDOT, with such amendments as determined to be necessary by the administrator, on advice and consent of NMCWD counsel.

Wetland buffer markers, complying with rule 3.4.5, will be required for Wetland 27.

A permit for subsequent phases of the project will be required from the district.

# **EROSION PREVENTION AND SEDIMENT CONTROL NOTES:**

- 1. CONTRACTOR SHALL ENSURE ALL EQUIPMENT IS FREE OF PROHIBITED AQUATIC INVASIVE SPECIES.
- 2. TRACKED SEDIMENT WILL BE REMOVED FROM PAVED SURFACES VIA STREET SWEEPING WITHIN ONE CALENDAR DAY OF DISCOVERY.
- 3. PLACE REDUNDANT PERIMETER CONTROL AT LOCATIONS IDENTIFIED ADJACENT TO AREAS OF ENVIRONMENTAL SENSITIVITY. PLACE TWO ROWS OF PERIMETER CONTROL, AT LEAST FIVE FEET APART, FOR REDUNDANT PERIMETER CONTROL.
- 4. USE RAPID STABILIZATION TYPE 4 ON DISTURBED SOIL NEXT TO WETLANDS AND AREAS OF ENVIRONMENTAL SENSITIVITY (AES) IDENTIFIED WITHIN 2575.3.C.7.
- 5. WHERE DEWATERING IS NEEDED, CONTRACTOR WILL FOLLOW DEWATERING PLAN AS APPROVED BY MNDOT ECM.
- 6. SEE SWPPP AND WATER RESOURCES NOTES AND VEGETATION PRESERVATION AND REMOVAL PLAN FOR ADDITIONAL REQUIREMENTS.
- 7. WETLAND AREAS (AES) LABELED AS WET DITCHES AND STORMWATER PONDS ARE NOT SUBJECT TO THE PRESERVATION OF A 50 FOOT VEGETATION NATURAL BUFFER REQUIREMENT.
- 8. PERMANENT ENERGY DISSIPATION AT CULVERT AND STORM SEWER OUTFALLS WILL BE SHOWN IN THE DRAINAGE PLANS AND TURF ESTABLISHMENT PLANS. EROSION PREVENTION BLANKET WILL BE PROVIDED FOR TEMPORARY STABILIZATION.
- 9. EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHOWN IN GRAY SCALE IN THIS PLAN ARE INPLACE ASSOCIATED WITH PREVIOUS DESIGN PACKAGES.
- 10. SILT FENCE AND SEDIMENT CONTROL LOGS SHALL FOLLOW, AS CLOSE AS POSSIBLE, TO A SINGLE CONTOUR LINE.
- 11. CONTRACTOR SHALL PROVIDE APPROPRIATE EROSION PREVENTION AND SEDIMENT CONTROL DEVICES FOR STOCKPILE AREAS.
- 12. SLURRY WILL BE MANAGED BY USING A SWEEPER TRUCK WHEN LARGE AMOUNTS OF SAWCUTTING WILL BE DONE CONTINUOUSLY. FOR SMALLER SAWCUTTING AREAS, CONTRACTOR SHALL HAVE A 55 GALLON VACUUM TO GATHER SLURRY.

APPROXIMATE QUANTITY

TEMPORARY EROSION CONTROL ITEM	
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SILT FENCE TYPE MACHINE SLICED SEDIMENT CONTROL LOG TYPE WOOD CHIP CULVERT END CONTROL STORM DRAIN INLET PROTECTION STABILIZED CONSTRUCTION EXIT (ROCK) RAPID STABILIZATION METHOD 3 RAPID STABILIZATION METHOD 3	1502 9050 6 174 8 100 29453	LIN FT LIN FT EACH EACH EACH MGALS
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<b>C.5.</b> O	7/1 7/1	14/ RF	7055an /2023 FC					
NO DATE D	WN C	CKD	REVISIONS	C.S. McCrossan	<b>RANI</b> engineering	I HEREBY CERTIFY THAT THIS SHEET 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.	PRINT NAME: <u>AMANDA D. BERGSTROM</u> SIGNATURE: <u>A. Badar</u> DATE <u>7/14/2023</u> LICENSE <u>*52674</u>	TEMPORARY EROSION CONTROL PLAN NOTES SHEET

I-494: AIRPORT	Τ0	HWY	169	DB	(S.P. 2785-424)
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SHEET NO. 1 OF 17 SHEETS











-JUL-2023 PLOT NAME: PATH & FILEN







SCALE IN FEET

LI	EGEND	
INPLACE R/W	>	EXISTING STORM SEWER / CULVERT
PROPOSED R/W	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	EXISTING STORM SEWER / CULVERT REMOVAL
TEMPORARY EASEMENT	Q	EXISTING APRON
CONSTRUCTION LIMITS		EXISTING CATCH BASIN
DRAINAGE FLOW ARROW	OM	EXISTING MANHOLE
NON-REGULATED WET DITCH/POND	DI	EXISTING DROP INLET
	$\times$	REMOVE DRAINAGE STRUCTURE
SURFACE WATER/WETLAND		AREA NOT RELEASED FOR CONSTRUCTION

I-494: AIRPORT TO HWY 169 DB (S.P. 2785-424)

SHEET NO. 4 OF 62 SHEETS













24-JUL-2023 424 drn 2 drr РГОТТ PLOT NAME: PATH & FILEN

L	EGEND	
NPLACE R/W	>	EXISTING STORM SEWER / CULVERT
ROPOSED R/W		EXISTING STORM SEWER / CULVERT REMOVAL
EMPORARY EASEMENT	۵	EXISTING APRON
CONSTRUCTION LIMITS		EXISTING CATCH BASIN
DRAINAGE FLOW ARROW	OM	EXISTING MANHOLE
ION-REGULATED WET DITCH/POND	DI	EXISTING DROP INLET
	X	REMOVE DRAINAGE STRUCTURE
URFACE WATER/WETLAND		AREA NOT RELEASED FOR CONSTRUCTION







-JUL-2023 PLOT NAME: PATH & FILEN







PLOT NAME: PATH & FILEN

AREA OF ENVIRONMENTAL SENSITIVITY
PROFILE. DWAY PROFILE. BDRAIN TRENCH
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OUMH , t
(#M-055-005)
LEGEND
INPLACE R/W — EXISTING STORM SEWER / CULVERT
PROPOSED R/W     PROPOSED STORM SEWER / CULVERT       TEMPORARY EASEMENT    >       CONSTRUCTION LIMITS    >       DRAINAGE FLOW ARROW
NON-REGULATED WET DITCH/POND       Image: Constraint of the second
RIPRAP APRON PER STD PLATE 3133/3139     PROPOSED CONC. HEADWALL       RIPRAP APRON PER STD PLATE 3133/3139     AREA NOT RELEASED FOR CONSTRUCTION       EXISTING / PROPOSED STRUCTURE     T6XX / T5XX
I-494: AIRPORT TO HWY 169 DB (S.P. 2785-424)
SHEET NO. 16 OF 62 SHEETS





III. AT LOCATIONS WHERE PROPOSED STORM SEWER IS LOCATED AT THE VERTICAL BOUNDARY BETWEEN THE ROADWAY SUBCUT AND IN SITU SOILS, AND PARALLEL TO THE PROPOSED ROADWAY SUBDRAINS, PLACE THE SUBDRAINS AT THE OUTSIDE EDGE OF THE FINE AGGREGATE BEDDING SECTION OF THE STORM SEWER. MATCH THE PROPOSED STORM SEWER INVERT AND PROFILE. CONNECT INTO PROPOSED STORM STRUCTURES AS INDICATED ON PLANS. SEE SHEET 53 OF 62 FOR A DETAILED CROSS SECTION.					
LEGEND					
INPLACE R/W ———————————————————————————————————	M SEWER / CULVERT				
PROPOSED R/W> PROPOSED STC	DRM SEWER / CULVERT				
TEMPORARY EASEMENT EXISTING DITCH	H				
CONSTRUCTION LIMITS→ PROPOSED DIT	СН				
DRAINAGE FLOW ARROW PROPOSED SUE	BDRAIN				
NON-REGULATED WET DITCH/POND	DPOSED APRON DPOSED CATCH BASIN				
SURFACE WATER/WETLAND	DPOSED MANHOLE				
RIPRAP APRON PER STD PLATE 3133/3139	EASED FOR CONSTRUCTION				
EXISTING / PROPOSED STRUCTURE $(T6XX)/(T5XX)$ EXISTING / PRO	DPOSED TEMP STRUCTURE				
I-494: AIRPORT TO HWY 169 DB	(S.P. 2785-424)				
SHEET NO. 18 OF 62	SHEETS				

I. ALL HIGH AND LOW POINTS ARE ON THE ROADWAY PROFILE GRADE.

GENERAL NOTES:

II. SEE DRAINAGE PROFILES AND TABULATIONS FOR STORM SEWER SEGMENTS THAT REQUIRE PIPE CASING.





		GENERAL NOTES:		
		I. ALL HIGH AND LC	W POINTS ARE ON THE ROADWAY PROFILE GRADE.	
Greg Asche		II. SEE DRAINAGE PI SEGMENTS THAT	ROFILES AND TABULATIONS FOR STORM SEWER REQUIRE PIPE CASING.	<u>¥</u>
07/31/2023		III. AT LOCATIONS W VERTICAL BOUNI AND PARALLEL T	HERE PROPOSED STORM SEWER IS LOCATED AT THE DARY BETWEEN THE ROADWAY SUBCUT AND IN SITU SOILS, O THE PROPOSED ROADWAY SUBDRAINS. PLACE THE	<u> </u>
<i>C.S. McCrossan</i> 07/31/2023 RFC		SUBDRAINS AT T SECTION OF THE INVERT AND PRO INDICATED ON PI	HE OUTSIDE EDGE OF THE FINE AGGREGATE BEDDING STORM SEWER. MATCH THE PROPOSED STORM SEWER IFILE. CONNECT INTO PROPOSED STORM STRUCTURES AS LANS. SEE SHEET 53 OF 62 FOR A DETAILED CROSS SECTION.	
NO DATE DWN CKD REVISIONS	TERNATIONAL I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THA I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	D PRINT NAME: <u>JORDAN M. JESSEN</u> JI SIGNATURE: <u>JORDAN M. JESSEN</u> DATE <u>7/24/2023</u> LICENSE <u>#55618</u>	DRAINAGE PLAN AMBLVD BEGIN TO STA 205+00	

					100 SCALE IN FEET
		LE	GEND		
INPLA PROP TEMF CONS DRAII NON- SURF CLEAI RANE RIPRA EXIST	ACE R/W OSED R/W PORARY EASEME ITRUCTION LIMI NAGE FLOW ARE REGULATED WE ACE WATER/WE R ZONE DOM RIPRAP AP APRON PER S ING / PROPOSE	ENT TS ROW ET DITCH/POND TLAND TD PLATE 3133/3 D STRUCTURE	→ → → → → → → → → → → → → → → → → → →	<ul> <li>EXISTING STO</li> <li>PROPOSED ST</li> <li>EXISTING DITG</li> <li>PROPOSED DI</li> <li>PROPOSED SU</li> <li>EXISTING / PR</li> <li>PROPOSED CC</li> <li>AREA NOT RE</li> <li>EXISTING / PR</li> </ul>	RM SEWER / CULVERT ORM SEWER / CULVERT CH TCH JBDRAIN OPOSED APRON OPOSED APRON OPOSED MANHOLE OPOSED DROP INLET ONC. HEADWALL LEASED FOR CONSTRUCTION OPOSED TEMP STRUCTURE
	I-494:	AIRPORT	<b>TO HW</b> NO. 19	OF 62	(S.P. 2785-424) SHEETS



OHP	0000						
	L	EGEND					
INPLACE R	/w	>		EXISTI		M SEWER / CULV	/ERT
PROPOSED	R/W	>		PROPC	SED ST	DRM SEWER / CU	LVERT
TEMPORA	RY EASEMENT	>		EXISTI	NG DITC	н	
CONSTRUC	TION LIMITS	≻		PROPC	SED DI	СН	
DRAINAGE	FLOW ARROW			PROPC	SED SU	BDRAIN	
NON-REGL	ILATED WET DITCH/POND	⊲ /	□	EXISTI EXISTI	NG / PRO	DPOSED APRON DPOSED CATCH B	ASIN
SURFACE V	VATER/WETLAND			EXISTI	NG / PR	DPOSED MANHOL	E
CLEAR ZON	IE		ন	EXISTI	NG / PR	OPOSED DROP IN	LET
RANDOM I	RIPRAP	/	-	PROPC	SED CO	NC. HEADWALL	
RIPRAP AP	RON PER STD PLATE 3133/	3139		AREA N	NOT REL	EASED FOR CONS	TRUCTION
EXISTING /	PROPOSED STRUCTURE	(T6XX)/C	T5XX	EXISTI	NG / PRO	OPOSED TEMP ST	RUCTURE
I	-494: AIRPORT	тон	WY	169	DB	(S.P. 278	5-424)
	SHEET	NO. 2	0	OF	62	SHEETS	



SCALE IN FEET



	V.						
	l	EGEND	)				
INPLA PROP TEMF CONS	ACE R/W OSED R/W PORARY EASEMENT ITRUCTION LIMITS	;	> > >	EXISTIN PROPOS EXISTIN PROPOS	IG STOR SED STC IG DITCI SED DIT	M SEWER / CULVERT DRM SEWER / CULVERT H CH	
DRAII NON- SURF	NAGE FLOW ARROW REGULATED WET DITCH/POND ACE WATER/WETLAND		/ 0	PROPOS EXISTIN EXISTIN EXISTIN	SED SUE IG / PRC IG / PRC IG / PRC	BDRAIN DPOSED APRON DPOSED CATCH BASIN DPOSED MANHOLE	
CLEAI RANE RIPRA EXIST	R ZONE DOM RIPRAP AP APRON PER STD PLATE 3133, 'ING / PROPOSED STRUCTURE	/3139	/ 12 / 15XX	EXISTIN PROPOS AREA N EXISTIN	IG / PRC SED COI OT RELI IG / PRC	DPOSED DROP INLET NC. HEADWALL EASED FOR CONSTRUCTIO DPOSED TEMP STRUCTUR	ON RE
	I-494: AIRPOR	Т ТО	HWY	169	DB	(S.P. 2785-42	24)
	SHEET	NO.	21	OF (	62	SHEETS	











100 SCALE IN FEET
LEGEND
INPLACE R/W       >       EXISTING STORM SEWER / CULVERT         PROPOSED R/W       >       PROPOSED STORM SEWER / CULVERT         TEMPORARY EASEMENT       -       >       EXISTING DITCH         CONSTRUCTION LIMITS       -       >       PROPOSED SUBDRAIN         DRAINAGE FLOW ARROW       -       PROPOSED SUBDRAIN         NON-REGULATED WET DITCH/POND       □       / □       EXISTING / PROPOSED APRON         SURFACE WATER/WETLAND       ○M       ●       EXISTING / PROPOSED MANHOLE         CLEAR ZONE       □pi       □       EXISTING / PROPOSED DROP INLET         RANDOM RIPRAP       □pi       ■       EXISTING / PROPOSED CONC. HEADWALL         RIPRAP APRON PER STD PLATE 3133/3139       ■       EXISTING / PROPOSED TEMP STRUCTURE         EXISTING / PROPOSED STRUCTURE       □fix       / T5xx       EXISTING / PROPOSED TEMP STRUCTURE
SHEET NO. 24 OF 62 SHEETS

5371 7

610

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![](_page_39_Figure_0.jpeg)

![](_page_40_Figure_0.jpeg)

![](_page_41_Figure_0.jpeg)

![](_page_42_Figure_0.jpeg)

'REVISED: PLOTTED/ PLOT NAME: PATH & FILEN

TH EBLR LOOP F LR-LOOPF)	
PORK CHOP WET POND (EXISTING) NWL = 808.50 HWL = 813.23'	50 SCALE IN FEET
DRAIN DOWN RIPRAP SLOPE ICK) ICK) 3733) SHOULD COVER THE AREA OF ALL SIDES OF THE RIPRAP TRENCH. SPEC 3601) AS CUSHION LAYER PER SPEC : IPRAP APRON TO BOTTOM OF SLOPE.	2501.
///////////////////////////////////////	///
INPLACE R/W     >       PROPOSED R/W     >       TEMPORARY EASEMENT     -       CONSTRUCTION LIMITS     -       NON-REGULATED WET DITCH/POND     -	EXISTING STORM SEWER / CULVERT PROPOSED STORM SEWER / CULVERT PROPOSED DITCH PROPOSED SUBDRAIN MAJOR CONTOUR
SURFACE WATER/WETLAND	MINOR CONTOUR EXISTING MAJOR CONTOUR EXISTING MINOR CONTOUR EXISTING / PROPOSED APRON EXISTING / PROPOSED CATCH BASIN EXISTING / PROPOSED MANHOLE EXISTING / PROPOSED DROP INLET PROPOSED CONC. HEADWALL
I-494: AIRPORT TO HWY	169 DB (S.P. 2785-424)

SHEET NO. 57 OF 62 SHEETS

![](_page_43_Figure_0.jpeg)

![](_page_44_Figure_0.jpeg)

PLOT I

![](_page_45_Figure_0.jpeg)

-JUL-2023

PLOT NAME: PATH & FILEI

![](_page_46_Figure_0.jpeg)

![](_page_47_Figure_0.jpeg)

	610 	50 SCALE IN FEET
LEG	SEND	
INPLACE R/W - PROPOSED R/W - TEMPORARY EASEMENT - CONSTRUCTION LIMITS - NON-REGULATED WET DITCH/POND - SURFACE WATER/WETLAND - RIDRAP	EXISTING     PROPOS     PROPOS     PROPOS     PROPOS     MAJOR     MINOR     EXISTING	G STORM SEWER / CULVERT ED STORM SEWER / CULVERT ED DITCH ED SUBDRAIN CONTOUR G MAJOR CONTOUR
RIPRAP APRON PER STD PLATE 3133/313	9 ⊴ / ⊈ EXISTING	G / PROPOSED APRON
EXISTING / PROPOSED STRUCTURE		G / PROPOSED CATCH BASIN
EXISTING / PROPOSED TEMP STRUCTUR	E OM / ● EXISTING □ □ / 図 EXISTING ■ PROPOS	G / PROPOSED MANHOLE G / PROPOSED DROP INLET ED CONC. HEADWALL
I-494: AIRPORT	TO HWY 169	DB (S.P. 2785-424)

SHEET NO. 62 OF 62 SHEETS

![](_page_48_Figure_0.jpeg)

![](_page_49_Figure_0.jpeg)

![](_page_49_Figure_1.jpeg)

![](_page_49_Picture_2.jpeg)

#### GENERAL NOTES:

- TEMPORARY EROSION PREVENTION BLANKET SHALL BE INSTALLED AT ALL PIPE OUTLETS WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER OR PERMANENT STORMWATER TREATMENT SYSTEM.
- 2. TEMPORARY EROSION CONTROL BMPS SHOWN IN GREY WERE INSTALLED DURING PREVIOUS DESIGN STAGES.
- SITE MANAGEMENT PLAN IS REQUIRED FOR REGULATED WETLAND IMPACT AREAS WITHIN CONSTRUCTION LIMITS SHOWN.
- THE LOCATIONS OF ALL CONSTRUCTION EXITS WILL BE FIELD FIT BY THE CONTRACTOR BASED ON TRAFFIC CONTROL AND SITE CONDITIONS.

![](_page_49_Figure_8.jpeg)

SHEET NO. 6 OF 17 SHEETS

![](_page_50_Figure_0.jpeg)

14-JUL-2023 424 rd 1 ecp PLOT NAME: PATH & FILEN

![](_page_51_Figure_0.jpeg)

![](_page_52_Figure_0.jpeg)

![](_page_53_Figure_0.jpeg)

-JUL-2023 5 PLOT NAME: PATH & FILEN

![](_page_54_Figure_0.jpeg)

SHEET NO. 11 OF 17 SHEETS

![](_page_55_Figure_0.jpeg)

PLOT NAME: PATH & FILEI

![](_page_56_Figure_0.jpeg)

LEGEND		
DITCH CHECK		RANDOM RIPRAP
EXISTING / PROPOSED STRUCTURE		
STORM DRAIN INLET PROTECTION		STABILIZED CONSTRUCTION EXIT
CULVERT END PROTECTION		RAPID STABILIZATION METHOD 3
SEDIMENT CONTROL LOG-WOOD CHIP	* * * * * * * * * * * * * * * *	
SILT FENCE TYPE MACHINE SLICED	8333333	RAPID STABILIZATION METHOD 4
FILTER BERM TYPE 5		
RIPRAP		AREA NOT RELEASED FOR CONSTRUCTION
I-494: AIRPORT	TO HWY 16	9 DB (S.P. 2785-424)

![](_page_57_Figure_0.jpeg)

![](_page_58_Figure_0.jpeg)

14-JUL-2023 PLOTT PLOT NAME: PATH & FILEN.

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			100	
t LYN RAMPD (LYN-RAMPD)	MATCH LINE STA 3064-00	MATCH LINE STA 624+00 00+400 00+400 00+404	SCALE IN FEET	
DITCH CHECK		RANDOM	RIPRAP	
EXISTING / PROPOSED STRUCTURE		STABILIZE	CONSTRUCTION EXIT	
STORIVI DRAIN INLET PROTECTION			BILIZATION METHOD 3	
SEDIMENT CONTROL LOG-WOOD CHIP	R33333			
FILTER BERM TYPE 5	<u>R 7 7 7 7 7 7 7 7</u>		RELEASED	
RIPRAP		FOR CONS	TRUCTION	
I-494: AIRPORT T SHEET NO.	<b>0 HWY 16</b> 15 OF	<b>9 DB</b> 17	<b>(S.P. 2785-424)</b> SHEETS	

![](_page_59_Figure_0.jpeg)

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