FOUR SEASONS WATER QUALITY PROJECT

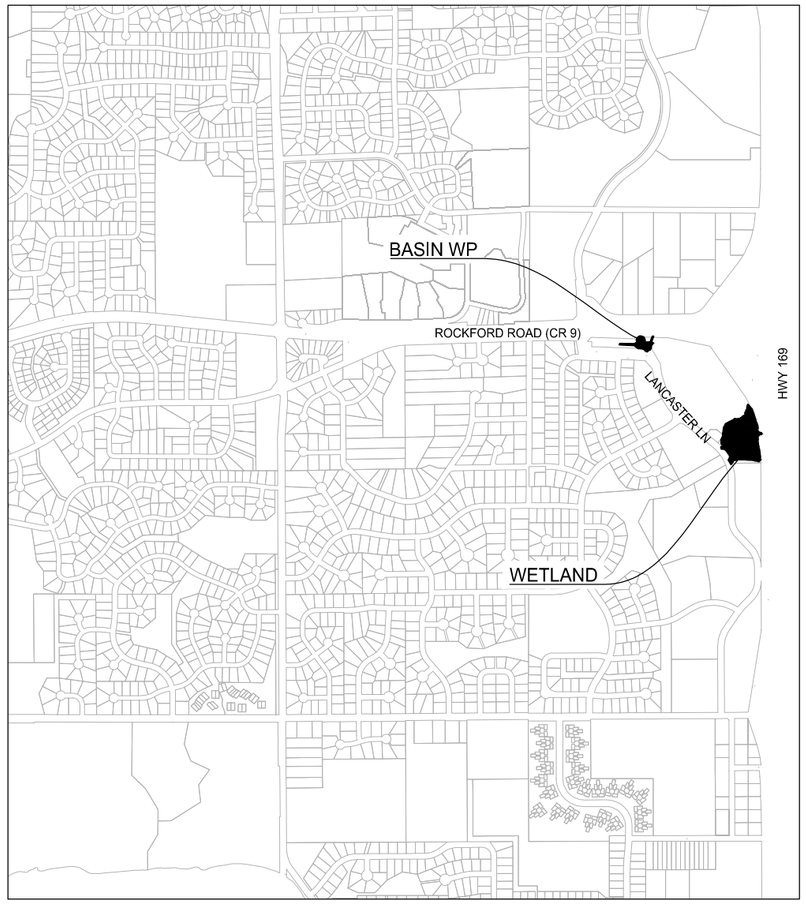
CITY OF PLYMOUTH, MN

EXISTING PLAN SYMBOLS

- PROPERTY LINES/RIGHT-OF-WAY
- UTILITY EASEMENT
- TREE LINE
- SIGN
- DECIDUOUS TREE
- SHRUB
- CONIFEROUS TREE

EXISTING UTILITY SYMBOLS

- FIBER OPTIC LINE — F
- GAS LINE — G
- COMMUNICATION LINE — C
- ELECTRIC POWER LINE — E
- WATER MAIN
- SANITARY SEWER
- STORM SEWER
- OVERHEAD UTILITY — OE
- COMMUNICATIONS PEDESTAL
- POWER POLE
- ELECTRIC BOX
- CATCH BASIN
- STORM APRON
- STORM SEWER MANHOLE
- GATE VALVE
- HYDRANT
- SANITARY SEWER MANHOLE
- SIGN



PROJECT LOCATION MAP

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

PLAN SET INDEX

THIS PLAN SET CONTAINS 13 SHEETS

THIS PLAN SET HAS BEEN PREPARED FOR:

City of Plymouth

CITY OF PLYMOUTH
3400 PLYMOUTH BLVD
PLYMOUTH MN 55447
(763) 509-5000

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

wsb

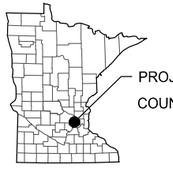
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JACOB H. NEWHALL

DATE: 11/15/2024 LICENSE NUMBER: 49170

EXCAVATION NOTICE SYSTEM

A CALL TO GOPHER STATE ONE (651-454-0002) IS REQUIRED A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.



PROJECT LOCATION
COUNTY: HENNEPIN

N

0 800 1600
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UTILITY INFORMATION

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

WSB PROJ. NO. 021322-000
CITY PROJ. NO. WR220004

SHEET 1 OF 13

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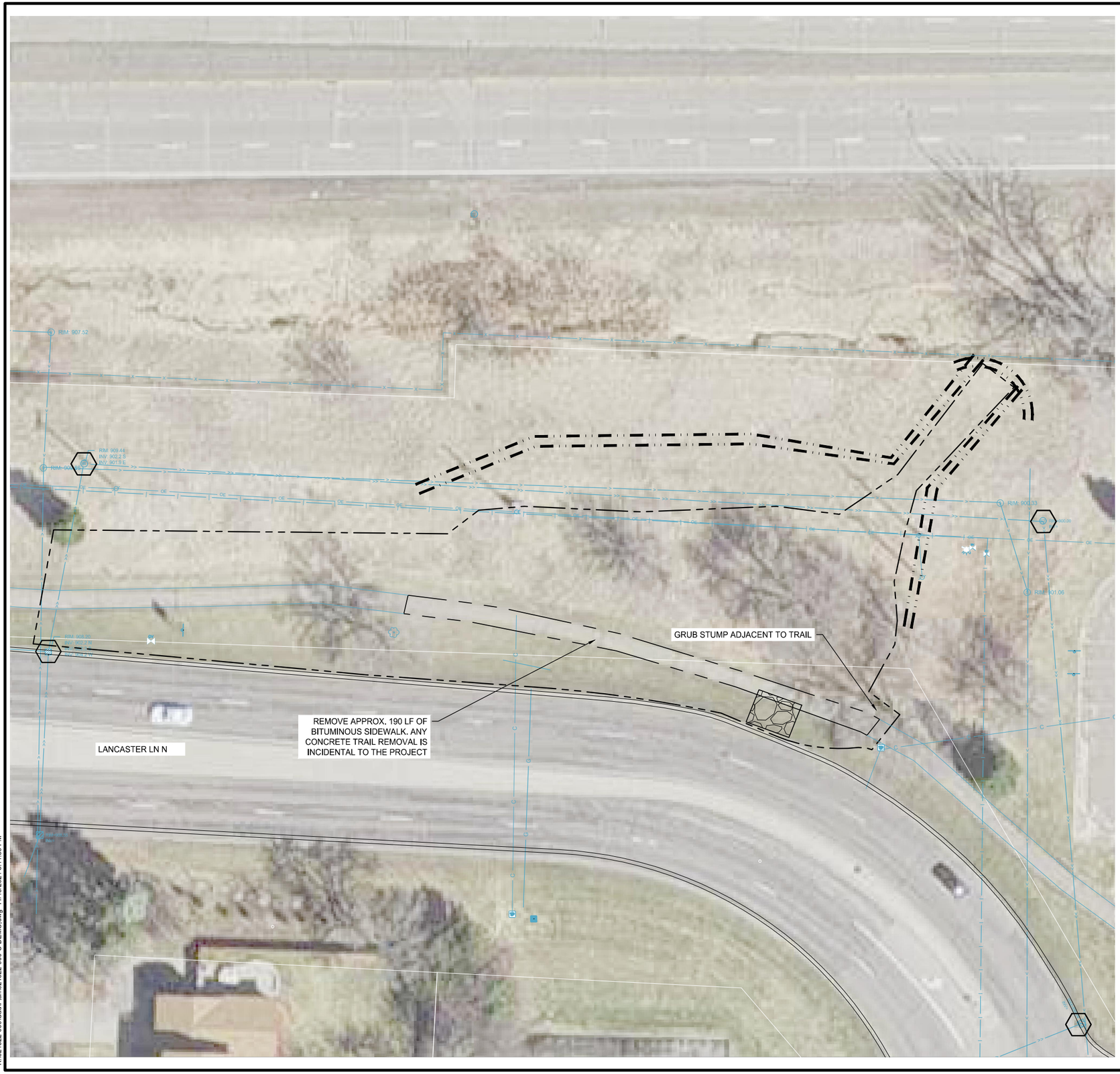

LOCATION

- CONSTRUCTION LIMITS
- WOOD FIBER BIOROLL
- PROPERTY LINE
- EXISTING FENCE
- 920 CONTOUR - MAJOR - EXISTING
- 922 CONTOUR - MINOR - EXISTING
- 920 CONTOUR - MAJOR - PROPOSED
- 922 CONTOUR - MINOR - PROPOSED
- WET DELINEATED WETLAND
- CATCH BASIN
- ST STORM SEWER MANHOLE
- S SANITARY SEWER MANHOLE
- FLARED END SECTION
- INLET PROTECTION
- CLEAR AND GRUB
- RIPRAP
- ROCK CONSTRUCTION ENTRANCE
- TURF REINFORCEMENT MAT
- BITUMINOUS PAVEMENT
- SB SOIL BORING LOCATION
- XXXX.XX SPOT ELEVATION

GENERAL CONSTRUCTION NOTES

1. IN THE EVENT THAT RESTORATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY EROSION STABILIZATION BMPS MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
2. CONTRACTOR RESPONSIBLE FOR THE DAMAGE TO STREETS, CONCRETE CURB AND GUTTER, SIDEWALKS, AND DRIVEWAYS.
3. DAILY STREET SWEEPING REQUIRED DURING HAULING OPERATIONS AND AS DIRECTED BY THE ENGINEER (INCIDENTAL TO MOBILIZATION).
4. DEWATERING/DEICING TO TAKE PLACE PRIOR TO EXCAVATION. DEWATERING PLANS MUST BE DEVELOPED IN ACCORDANCE WITH SWPPP GUIDELINES AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING. TURBID WATER IS NOT ALLOWED TO BE DISCHARGED OFFSITE OR DOWNSTREAM. SCOUR PROTECTION SHALL BE USED TO PREVENT EROSION.
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8. CONTRACTOR SHALL REMOVE TREES AS NEEDED TO ACCESS SITE AS APPROVED BY THE ENGINEER IN THE FIELD.

wsb | City of Plymouth

SCALE:	DESIGN BY:
AS SHOWN	SML
PLAN BY:	CHECK BY:
SML	JHN

REVISIONS

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JACOB NEWHALL LIC. NO: 49170

DATE: 11/15/2024

DEMO PLAN BASIN WP

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
2 OF 13

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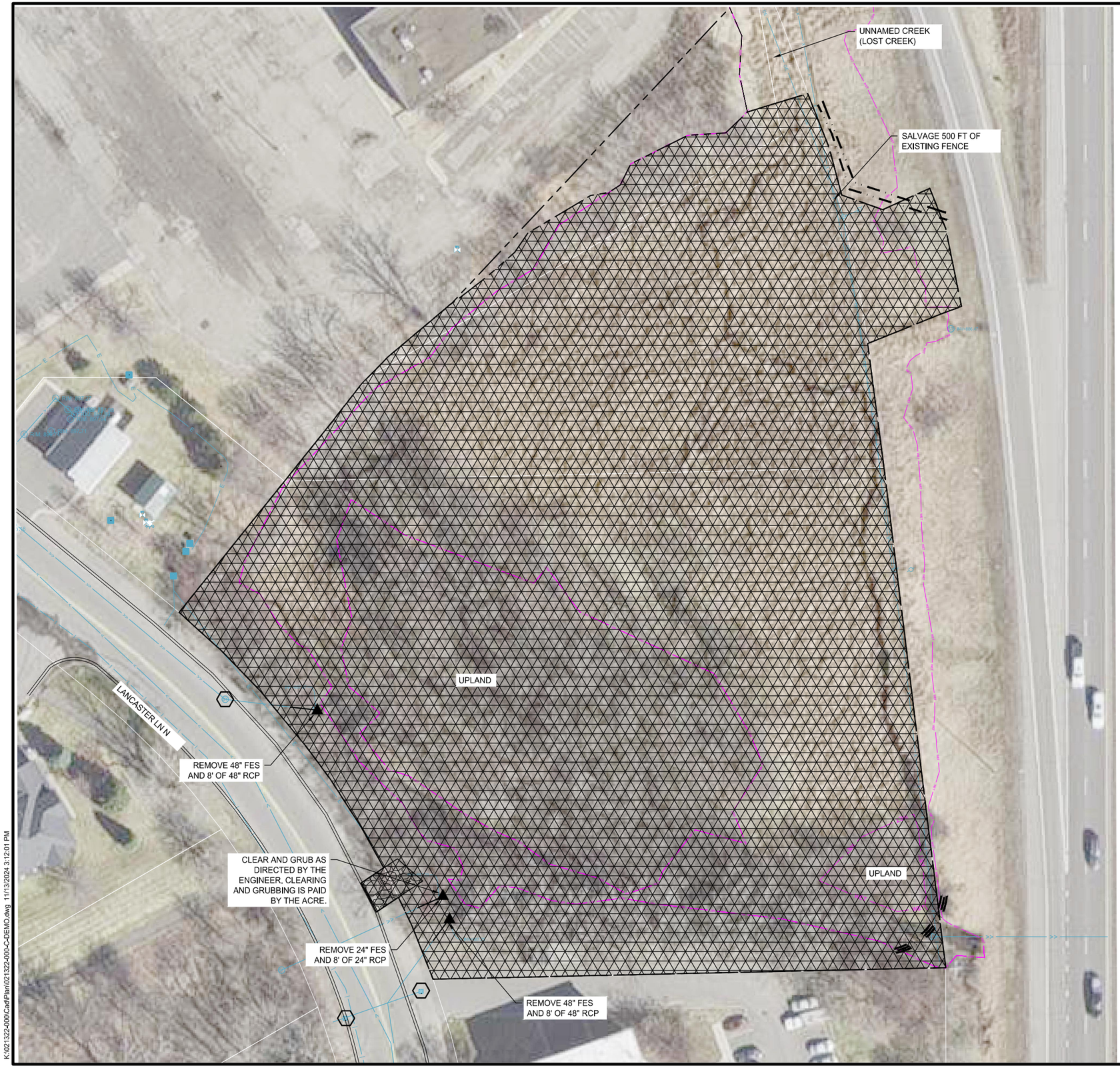

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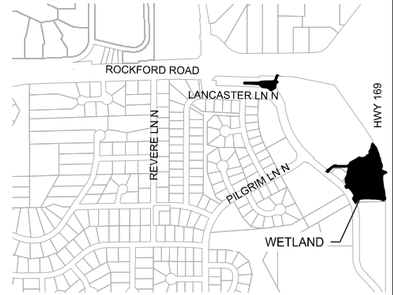
LOCATION



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DEMO PLAN WETLAND

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

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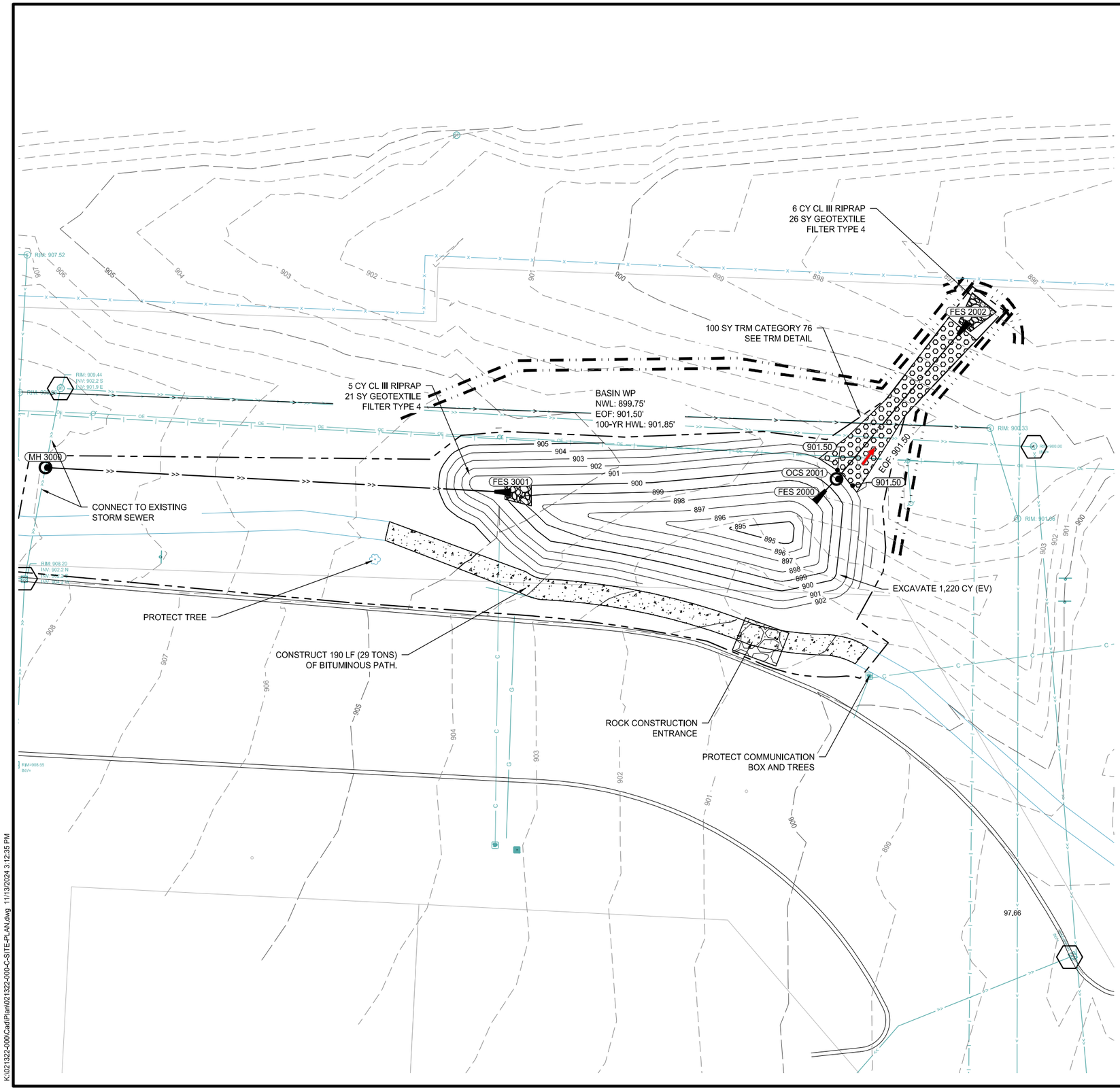
021322-000

SHEET
3 OF 13



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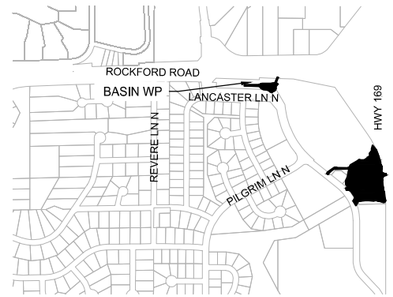

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wsb | City of Plymouth

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JACOB NEWHALL LIC. NO: 49170

DATE: 11/15/2024

BASIN WP GRADING

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
4 OF 13

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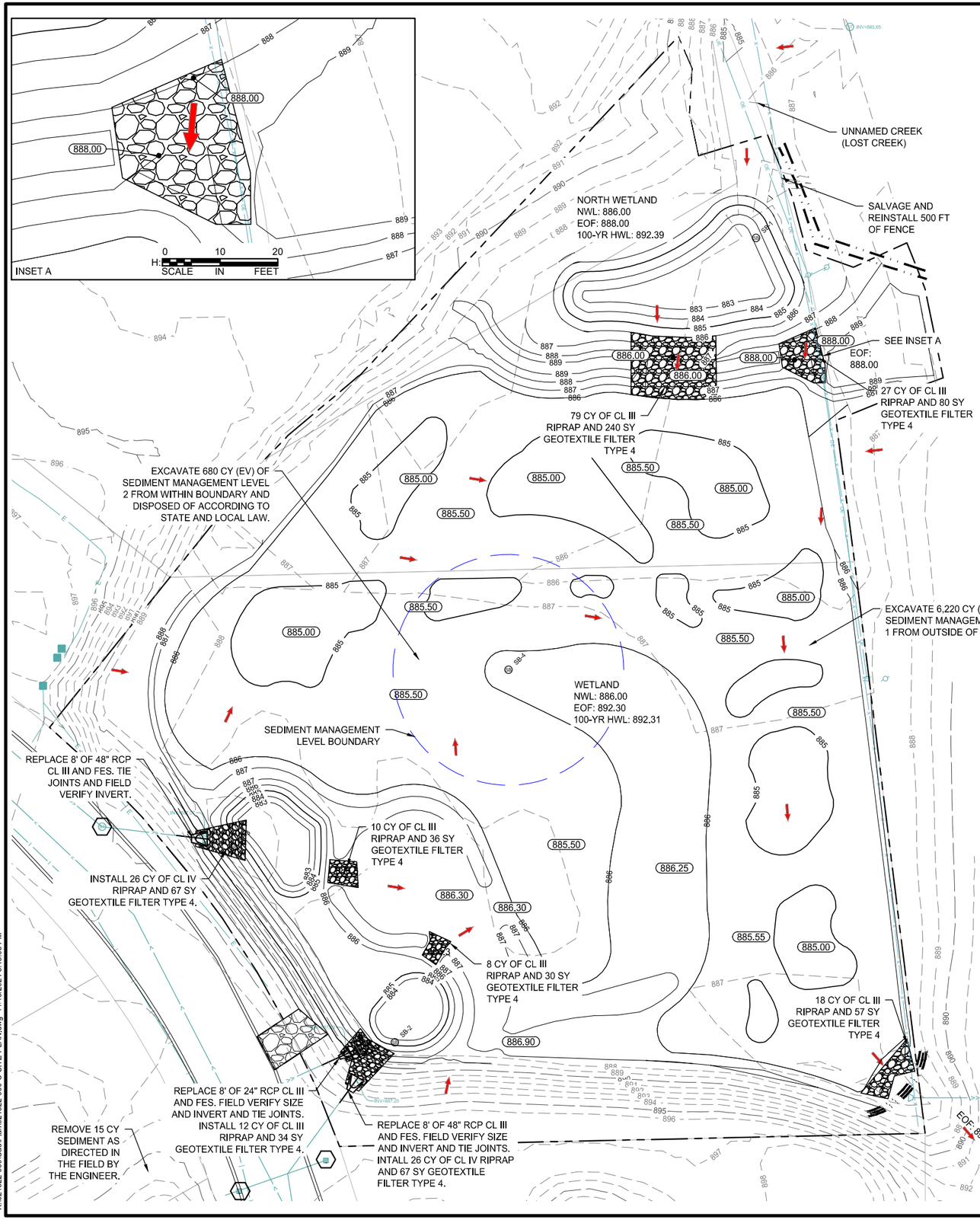

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wsb | City of Plymouth

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JACOB NEWHALL LIC. NO: 49170

DATE: 11/15/2024

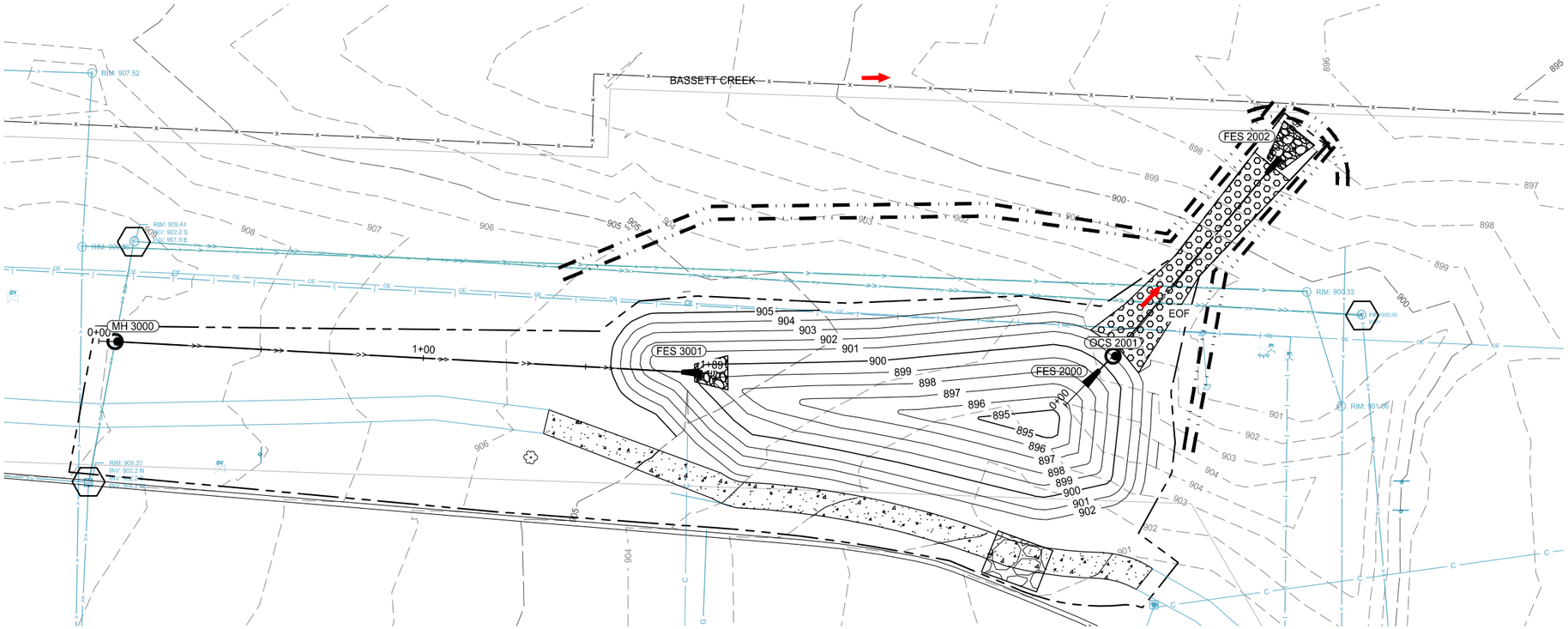
WETLAND GRADING

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

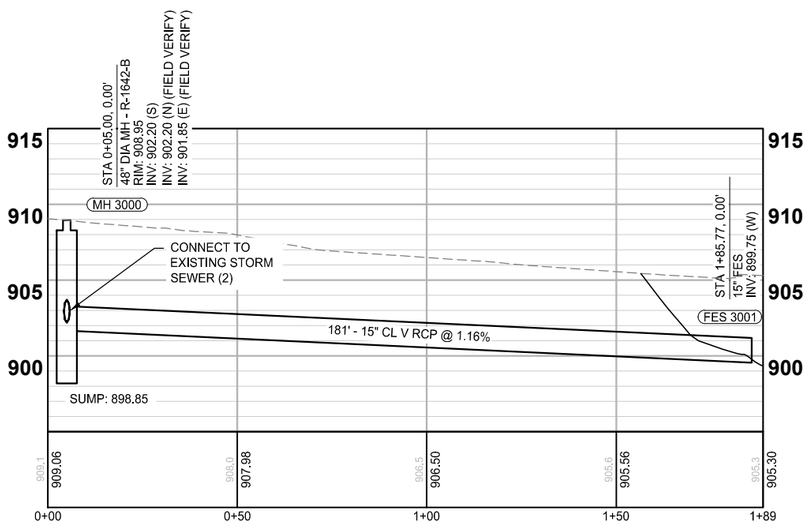
CLIENT PROJECT NO.
WR220004

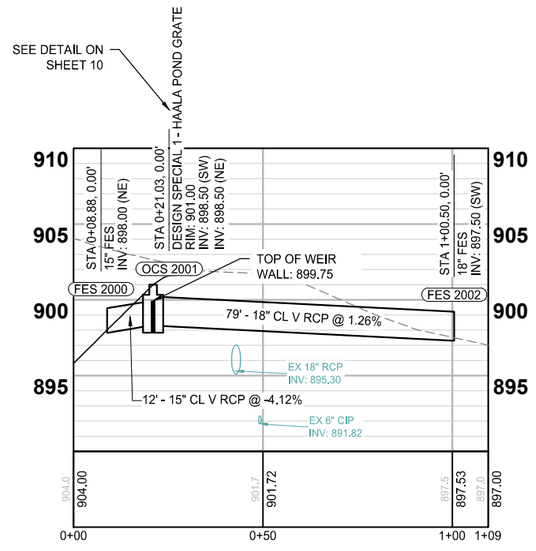
WSB PROJECT NO.
021322-000

SHEET
5 OF 13



BASIN WP





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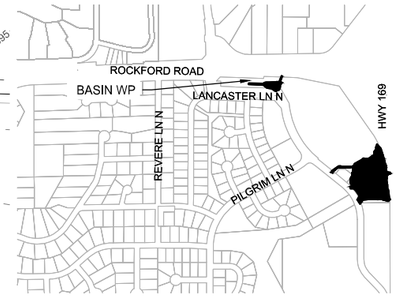

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wsb | City of Plymouth

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JACOB NEWHALL

DATE: 11/15/2024 LIC. NO: 49170

BASIN WP STORM SEWER

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
6 OF 13

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STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

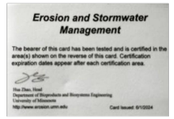
PROJECT NAME: FOUR SEASONS WATER QUALITY PROJECT **PROJECT NUMBER:** WSB 021322-000
PROJECT LOCATION: STREET: PILGRIM LN N & LANCASTER LN N CITY: PLYMOUTH COUNTY: HENNEPIN
STATE: MINNESOTA ZIP: 55447 LATITUDE/LONGITUDE:45.03001,-93.40196

THE PLANNED SCOPE OF THE PROJECT INCLUDES:
CITY OF PLYMOUTH IS PROPOSING TO COMPLETE GRADING, UTILITY, AND STORMWATER IMPROVEMENTS AS PART OF THE FOUR SEASONS WATER QUALITY PROJECT IN PLYMOUTH MN, AS SHOWN IN THE CONSTRUCTION PLANS. THIS PROJECT INCLUDES ADDING STORMWATER PONDING AND TREATMENT FACILITIES ALONG WITH RESTORATION OF THE EXSISTING ONSITE WETLAND. ALL WETLAND IMPACTS WILL BE MITIGATED AND PERMITTED THROUGH THE WCA.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
TEMPORARY SEDIMENT CONTROL BMPS & REMOVALS	JANUARY 2025
GRADING	JANUARY-MARCH 2025
STORMWATER BMPS	JANUARY-MARCH 2025
FINAL STABILIZATION	MAY-JULY 2025

PROJECT PERSONNEL AND TRAINING

SWPPP DEVELOPER:
WSB DUANE GACHNE
3701 40TH AVE NW SUITE 100
ROCHESTER, MN, 55901
507-910-2983/DGACHNE@WSBENG.COM



CONTRACTOR TO PROVIDE CERTIFICATION OF EROSION CONTROL OFFICER AND ANY OTHER CREW MEMBERS WHO WILL WORK ON THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER AND DOCUMENTED IN THE SWPPP.

CHAIN OF RESPONSIBILITY

THE CITY OF PLYMOUTH AND THE CONTRACTOR ARE CO-PERMITTEES FOR THE NPDES CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

NAME	COMPANY	TITLE	PHONE
MIKE PAYNE	CITY OF PLYMOUTH	CITY ENGINEER	763-509-5538

AGENCY CONTACTS

ORGANIZATION	CONTACT NAME	PHONE
MPCA (EMERGENCY) 24 HOUR	STATE DUTY OFFICER	1-800-422-0798
MPCA	JOSH NORMAN	651-757-2389
BCWMC	LAURA JESTER	952-270-1990

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, AND PROJECT MANUAL.

DESCRIPTION	LOCATION
TEMPORARY/PERMANENT EROSION CONTROL MEASURES	TURF ESTABLISHMENT & EROSION CONTROL PLAN
DIRECTION OF FLOW	DRAINAGE PLAN
CONSTRUCTION NOTES & STANDARD PLATES	SOILS AND CONSTRUCTION NOTES & STANDARD PLATES
DRAINAGE PLAN & CONSTRUCTION PLAN	CONSTRUCTION PLAN & DRAINAGE PLAN
BMP TABULATION	TABULATIONS

RECEIVING WATERS

A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE ON 11/12/2024. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL/IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, ANY PROJECT DISCHARGE POINTS. PARTS 23.9 & 23.10 OF THE NPDES PERMIT APPLY.

WATERBODY	IMPAIRMENT(S)
NORTHWOOD LAKE	NUTRIENTS (NO TMDL DEVELOPED AT THIS TIME)
UNNAMED CREEK (LOST CREEK)	E. COLI (NON-CONSTRUCTION RELATED)
LOST LAKE	NUTRIENTS

STORMWATER FROM THE SITE IS COLLECTED VIA PROPOSED STORM SEWER AND DIRECTED TO STORMWATER BASINS AND WETLAND BANKING. EVENTUALLY WATER FROM THE SITE WILL MAKE ITS WAY INTO BASSETT CREEK AND NORTHWOOD LAKE. BECAUSE OF THE LOCATION THIS PROJECT AND THE PROXIMITY TO AN IMPAIRED WATER BODY IT WILL BE REQUIRED TO MEET ADDITIONAL REQUIREMENTS OUTLINED IN SECTIONS 23.9, 23.10, 23.1, 23.13, AND 23.14 AS OUTLINED IN THE MINNESOTA CONSTRUCTION STORMWATER GENERAL PERMIT.

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

THE CONTRACTOR SHALL BE AWARE OF ALL AREAS OF ENVIRONMENTAL SENSITIVITY ONSITE AND ADJACENT TO THE PROJECT LOCATION. THIS INCLUDES WETLANDS INDENTIFIED IN THE PLANS. LOST CREEK IS ALSO WITHIN THE PROJECT LOCATION AND WILL NEED TO BE PROTECTED DURING CONSTRUCTION. ANY WORK WITH THE PUBLIC WATERS WILL NEED TO BE PERMITTED AND FOLLOW DNR REQUIREMENTS.

FISH EXCLUSION DATES: OPERATOR IS PROHIBITED FROM CONDUCTING IN-WATER WORK DURING THE FISH SPAWNING AND MIGRATION DATES OF MARCH 15 TO JUNE 15 FOR NON-TROUT WATERS. IF WORK MUST BE CONDUCTING DURING THIS TIMEFRAME, CONTRACTOR SHALL CONTACT THE LOCAL DNR FISHERIES MANAGER FOR WRITTEN APPROVAL PRIOR TO CONDUCTING THE IN-STREAM WORK. EXPOSED SOILS WITHIN 200' OF THE WATER'S EDGE, AND THAT DRAIN TO THESE WATERS, MUST RECEIVE STABILIZATION MEASURES IMMEDIATELY AND WITHIN 24 HOURS DURING THE RESTRICTION PERIOD.

AQUATIC INVASIVE SPECIES: ALL IN-WATER, AND DEWATERING EQUIPMENT SHALL BE DECONTAMINATED OF ALL AQUATIC PLANTS AND PROHIBITED INVASIVE SPECIES PRIOR TO USING WITHIN SURFACE WATERS ON-SITE AND TRANSPORTING OFF-SITE. ALL DECONTAMINATION ACTIVITIES SHALL MEET THE CHAPTER 1 STANDARDS OF THE MINNESOTA DNR'S BEST PRACTICES MANUAL FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001.

SOIL TYPES

ACCORDING TO A WEB SOIL SURVEY FROM THE NRCS MUSKEGO, HOUGHTON, AND URBAN LAND-UDORTHENTS SOILS ARE PREDOMINATING ALONG MOST OF THE SOUTHERN PROJECT ALIGNMENT, AND LESTER LOAM AND HAMEL COMPLEX SOILS ARE PREDOMINATING ALONG MOST OF THE NORTHERN PROJECT AREA. SOIL CLASSIFICATIONS FOR HIGHLY ERODIBLE LAND (HEL), POTENTIALLY HIGHLY ERODIBLE LAND (PHEL), AND NOT HIGHLY ERODIBLE LAND (NHEL) SOILS CAN BE FOUND ON *FIGURE 1. SWPPP RESOURCE MAP.*

NATIVE TOPSOIL WILL BE STRIPPED; IF MATERIAL NEEDS TO BE STOCKPILED, APPROPRIATE ACTION WILL TAKE PLACE TO ENSURE THE STOCKPILES HAVE ALL PROPER BMPS IN PLACE ACCORDING TO THIS SWPPP AND THE NPDES PERMIT.

ENVIRONMENTAL REVIEW

NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT. AN EAW WAS COMPLETED FOR THE ADJACENT MALL SITE AND ALL RECOMMENDATIONS FROM THAT PROPERTY WILL BE FOLLOWED WITH THIS PROJECT.

WETLANDS: THERE IS ONE WETLAND WITHIN THE PROJECT AREA, AND THERE IS 2.35 AC OF PROPOSED TEMPORARY WETLAND IMPACTS PROPOSED. THERE ARE ALSO 2.19 OF PROPOSED PERMANENT WETLAND IMPACTS. ADDITIONAL WETLAND IMPACTS TO THE PROJECT WILL GO THROUGH THE WCA PROCESS BEFORE ANY ADDITIONAL IMPACTS. ADJACENT OFFSITE WETLANDS WILL BE PROTECTED DURING THE PROJECT. MITIGATION FOR THE WETLAND IMPACTS WILL BE COMPLETED ONSITE THROUGH WETLAND RESTORATION AND ENHANCEMENT. THE PROPOSED MITIGATION HAS BEEN PERMITTED THROUGH THE WCA PROCESS AND APPROVED BY THE DNR. A COPY OF THE PERMIT CAN BE OBTAINED BY REQUEST.

THREATENED/ENDANGERED SPECIES: HENNEPIN COUNTY LISTS THE NORTHERN LONG-EARED BAT AND RUSTY-PATCHED BUMBLE BEE AS ENDANGERED, THE MONARCH BUTTERFLY AS CANDIDATE, THE WHOOPING CRANE AS EXPERIMENTAL POPULATION NON-ESSENTIAL, THE SALAMANDER MUSSEL AS PROPOSED ENDANGERED SPECIES WITHIN THE COUNTY. TREE REMOVAL SHOULD OCCUR OUTSIDE OF THE NORTHERN LONG-EARED BAT ACTIVE SEASON (APRIL 1 TO OCTOBER 31). BASED ON THE CONSTRUCTION ACTIVITIES, IT IS DETERMINED THAT THE PROJECT WILL HAVE NO EFFECT ON THESE SPECIES OR THEIR HABITATS. HOWEVER, IF THESE SPECIES ARE FOUND, CONTRACTOR TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION.

DRINKING WATER/WELLS: ACCORDING TO THE MDH, THE PROJECT IS LOCATED WITHIN A DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA). THE AREA IS PART OF AN EMERGENCY RESPONSE AREA AND CONSIDERED TO BE OF MODERATE VULNERABILITY. SPECIAL CARE MUST BE TAKEN WHEN RESPONDING TO SPILLS ON SITE AND HANDLING HAZARDOUS MATERIALS, SUCH AS CONCRETE WASHOUT, FUELING OPERATIONS, ETC. SO THAT THE DRINKING SUPPLY DOES NOT BECOME CONTAMINATED. AT THE DISCRETION OF THE PROJECT ENGINEER, A WELLHEAD PROTECTION PLAN SHALL BE DEVELOPED AND SUBMITTED AND/OR VERIFICATION OF WELL LOCATION PRIOR TO WORK BEGINNING.

CONTAMINATED PROPERTIES: THE MPCA'S "WHAT'S IN MY NEIGHBORHOOD" DATABASE WAS REVIEWED ON 10/27/22. THE RESULTS OF THIS REVIEW SHOW THERE ARE NO KNOWN CONTAMINATED SITES WITHIN OR ADJACENT TO THE PROJECT AREA. THE DEPTH OF THE GRADING IS NOT PROPOSED TO UNEARTH ANY CONTAMINATED SOIL, CONTAMINATED WATER, AND/OR REGULATED WASTE. REFER TO MNDOT SPEC 1717.1.A. FOR POTENTIAL INDICATORS OF CONTAMINATED MATERIALS AND REGULATED WASTE. IF CONTAMINATED MATERIAL, CONTAMINATED WATER, AND/OR REGULATED MATERIALS ARE FOUND, CREWS ARE TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION/TESTING.

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES ARE NOT LOCATED WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY; HOWEVER, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE PROJECT ENGINEER FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE AREA OF POTENTIAL RISK OF FLOODING. NO WORK CAN COMMENCE IN THE AREA UNTIL WRITTEN APPROVAL HAS BEEN GRANTED BY THE PROJECT ENGINEER.

ESTIMATED EROSION CONTROL QUANTITY

EROSION & SEDIENT COMTROL BMP	UNIT	QUANTITY
BIOLOG	LF	4,100
INLET PROTECTION	EACH	7
ROCK CONSTRUCTION EXIT	EACH	2
EROSION CONTROL BLANKET CAT 20	SY	4,900
TURF REINFORCEMENT MAT CAT 76	SY	130

LAND FEATURE CHANGES

TOTAL AREA TO BE DISTURBED = 4.2 ACRES
IMPERVIOUS AREA: PRE-CONSTRUCTION = 1,374 SF/POST-CONSTRUCTION = 1,525 SF
NET INCREASE OF IMPERVIOUS AREA = 151 SF

LONG TERM MAINTENANCE AND OPERATION: THE NPDES PERMANENT STORMWATER TREATMENT SYSTEM (PART 15.1) IS NOT REQUIRED BECAUSE THERE IS LESS THAN AN ACRE NEW IMPERVIOUS AREA CREATED BY THE FUTURE BUILDING PROJECT.

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AS SHOWN	SML
PLAN BY:	CHECK BY:
SML	JHN

REVISIONS

NO.	DATE	DESCRIPTION

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.

JACOB NEWHALL LIC. NO: 49170

DATE: 11/15/2024

SWPPP NARRATIVE 1

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
7 OF 13

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
EXPOSED AREAS	IMMEDIATELY AND NO LATER THAN 7 DAYS OF BEING UNWORKED	1, 4, 5
LAST 200 LINEAL FEET OF DRAINAGE DITCH/SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER/PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	7 DAYS	1

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.
2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.
4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE MULCHED OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
5. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES, AND BLANKETS.

SITE INSPECTION AND MAINTENANCE

THE EROSION CONTROL OFFICER IS TO INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE OPERATOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE AT VARIOUS MILE INTERVALS ALONG THE ALIGNMENT. INSPECT ALL TEMPORARY AND PERMANENT PROJECT BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF-SITE SEDIMENT ACCUMULATION. ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING BY THE OPERATOR AND RETAINED WITH THE SWPPP. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

A. DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
B. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
C. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPS INTENDED TO CORRECT A PROBLEM BUT FAILED.
D. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS;
E. DOCUMENTATION OF CHANGES MADE TO THE SWPPP.

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
C. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. STABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY.
D. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN ONE (1) CALENDAR DAY OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
E. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOT HAS BEEN SUBMITTED TO THE MPCA.

CONSTRUCTION ACTIVITY REQUIREMENTS: EROSION/SEDIMENT CONTROL, PROCEDURES, & MAINTENANCE STANDARDS

1. AMEND THE SWPPP AND DOCUMENT ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, ANY ADDITIONAL PLANS LISTED IN THE PROJECT SPECIFICATIONS, AND AS REQUIRED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR PROJECT ENGINEER TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
3. THERE IS NO CONSTRUCTION PHASING OR STAGING DEFINED BY THE OWNER FOR THIS PROJECT. THE SCHEDULE FOR INSTALLING TEMPORARY BMPS SHALL BE INCORPORATED INTO THE OPERATOR'S WEEKLY SCHEDULE FOR EACH CONSTRUCTION STAGE AND PRESENTED TO THE OWNER'S REPRESENTATIVE.
4. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
5. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED AND WETLANDS (EVEN AREAS THAT ARE PERMITTED FOR CONSTRUCTION) PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
6. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
7. DIRECT DISCHARGE FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
8. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100-FOOT INTERVALS.
9. ALL STOCKPILES MUST HAVE PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE.
10. STEEP SLOPES MAY BE TEMPORARILY CREATED DURING GRADING OPERATIONS. STABILIZATION OF STEEP SLOPES (3:1 OR GREATER) SHALL BE PROPERLY CAT-TRACKED AND STABILIZED PER THE EROSION CONTROL PLAN. LONG SLOPES CAN BE BROKEN UP WITH SEDIMENT CONTROL LOGS IF EROSION IS EVIDENT.
11. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
12. ALL STORM DRAIN INLETS, THAT RECEIVE PROJECT STORMWATER, MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND THE PERMITTEE(S) HAS RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP.
13. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER).
14. DEWATERING DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS/TRAPS TO THE DESIGN CAPACITY AFTER COMPLETING ALL UP-GRADIENT LAND DISTURBING ACTIVITY. USE A SKIMMER DEVICE FOR BASIN DRAINING.
    A. ALL DEWATERING IS REQUIRED TO MEET NPDES REQUIREMENTS. DOCUMENTATION OF DEWATERING IS REQUIRED FOR ADDITIONAL REPORTING.
15. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
16. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL 7 DAYS PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP'S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ANY PERMIT NECESSARY FOR THESE ACTIVITIES; THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP.
17. EFFORTS SHOULD BE MADE TO PRESERVE TOPSOIL AND MINIMIZE COMPACTION ON THE PROJECT SITE.

TEMPORARY & PERMANENT EROSION CONTROL BMPS

SEED MIX: SEED MIX SHALL BE USED IN CONSTRUCTION AND REVEGETATION PROJECTS IN ORDER TO ENHANCE SOIL NUTRIENT AVAILABILITY AND BIOLOGICAL SOIL STRUCTURE, ENCOURAGE NATIVE PLAN SUCCESSION, REDUCE EROSION, AND DISCOURAGE INVASIVE PLANT SPECIES. INOCULATION OF SOILS WITH MYCORRHIZAL FUNGI OR THE PRESENCE OF PRE-EXISTING SOIL MICROBES IS ESSENTIAL FOR THE STABILIZATION OF ADVERSE SOILS, ESTABLISHMENT OF NATIVE GRASSES, AND THE EXCLUSION OF NON-NATIVE "ANNUALS" AND NOXIOUS WEEDS.

EROSION CONTROL BLANKET: EROSION CONTROL BLANKETS (ECBS) ARE A SOIL STABILIZATION (EROSION CONTROL) BMP, INTENDED TO PROTECT DISTURBED SOIL SURFACES FROM RAINDROP IMPACT EROSION. ECBS ARE CARPET-LIKE MATS, INSTALLED OVER AND ANCHORED TO THE PROPERLY PREPARED SOIL SURFACES. PROPERLY SELECTED AND INSTALLED, ECBS CAN MIMIC THE BENEFICIAL EFFECTS OF VEGETATIVE COVER THEREBY REDUCING EROSION RATES BY OVER 90%. ECBS ALSO PROTECT SEEDS AND PROVIDE A BENEFICIAL ENVIRONMENT FOR VEGETATION TO BECOME ESTABLISHED. CONTRACTOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS AND CORRECT ALL ERODED AREAS WITHIN 7 DAYS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

STRAW MULCHING: DISTURBED SOIL AREAS SHALL BE PROTECTED WITH STRAW MULCH. MULCHING IS THE APPLICATION OF A PROTECTIVE LAYER OF STRAW OR OTHER SUITABLE MATERIAL TO THE SOIL SURFACE. STRAW MULCH SHALL BE USED IN CONJUNCTION WITH SEEDING AND HYDRO-SEEDING FOR ESTABLISHMENT OF VEGETATION. STRAW MULCH MUST BE SECURED TO THE GROUND USING DISKING OR AN OVERSPRAY OF AN HECP. MULCHING IS COMMONLY USED AS A TEMPORARY MEASURE TO PROTECT BARE OR DISTURBED SOIL AREAS THAT HAVE NOT BEEN SEEDED, UNTIL NATIVE VEGETATION RE-GROWS. CERTIFIED WEED-FREE MULCH MUST BE USED WHEN USING NATIVE SEED MIXES OR WHEN WORKING NEAR ENVIRONMENTALLY SENSITIVE AREAS.

HYDRAULIC MATRICES: HYDRAULIC MATRICES ARE EROSION CONTROL PRODUCTS THAT ARE USED TO STABILIZE EXPOSED SOILS. THESE MATRICES ARE APPLIED IN A SLURRY, PRODUCED BY MIXING FIBER, WATER AND A BINDING AGENT TOGETHER IN A MECHANICAL HYDRO-SEEDER. WOOD FIBER IS WIDELY USED BUT OTHER FIBERS CAN INCLUDE PAPER, STRAW, COIR, CORN, ETC. THE EFFECTIVENESS OF THESE HYDRAULIC MATRICES ARE DEPENDENT ON:

- PROPER SOIL PREPARATION
- APPLICATION RATES (DEPENDENT ON THE MANUFACTURERS RECOMMENDATIONS)
- THE TYPE OF FIBERS USED
- THE TYPE OF BOND AGENT(S) ADDED

THESE HYDRAULIC MATRICES ARE CLASSIFIED IN THE MNDOT SPEC BOOK AND APPROVED PRODUCTS LIST, DEPENDING ON THE PRODUCT CHARACTERISTICS, STRENGTH, AND LONGEVITY. HYDRAULIC MATRICES USED INCLUDE: ORGANIC FIBER MATRIX, HYDRAULIC MULCH MATRIX, STABILIZED FIBER MATRIX, BONDED FIBER MATRIX, AND FIBER REINFORCED MATRIX.

SOD TYPE LAWN: SOD IS A PERMANENT EROSION PREVENTION BMP THAT PROVIDES INSTANTANEOUS SOIL STABILIZATION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SOD AS OUTLINED IN THE PROJECT SPECIFICATIONS.

ENERGY DISSIPATER: AN ENERGY DISSIPATER IS A STRUCTURE DESIGNED TO CONTROL EROSION AT THE OUTLET OF A CHANNEL OR CONDUIT.

RAPID STABILIZATION METHOD #1: THIS METHOD SHALL CONSIST OF TYPE 1 MULCH (2 TON PER ACRE) WITH DISC ANCHORING BE SPREAD IN AREAS THAT HAVE BEEN UNWORKED FOR 7 DAYS. THIS METHOD SHALL BE USED ON SLOPES OF 3:1 AND LESS. OPERATOR MUST APPLY MULCH IN A UNIFORM PATTERN OVER THE DISTURBED SOILS TO ACHIEVE A MINIMUM OF 90% GROUND COVER.

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NO.	DATE	DESCRIPTION

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.

JACOB NEWHALL LIC. NO: 49170

DATE: 11/15/2024

SWPPP NARRATIVE 2

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
8 OF 13

RAPID STABILIZATION METHOD #2: THIS METHOD SHALL CONSIST OF TYPE 3 MULCH (1.5 TON PER ACRE) OR 3884 TYPE STABILIZED FIBER MATRIX (750 LBS PER ACRE) BE SPREAD IN AREAS THAT HAVE BEEN UNWORKED FOR 7 DAYS. THIS METHOD SHALL BE USED ON SLOPES LESS THAN 3:1.

RAPID STABILIZATION METHOD #3: THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS WITHIN 200 FEET OF SURFACE WATERS, TO PREVENT OFF SITE SEDIMENTATION AND OR TO COMPLY WITH PERMIT REQUIREMENTS. THIS FORM OF RAPID STABILIZATION EMPLOYS SFM, SEED MIX OATS, AND FERTILIZER TYPE 3. THIS METHOD SHALL BE USED ON SLOPES LESS THAN 3:1. INSTALL PER MNDOT SPECIFICATION 2575.3.M.1.C.

RAPID STABILIZATION METHOD #4: THIS METHOD SHALL CONSIST OF CATEGORY 20/25 EROSION CONTROL BLANKET (NATURAL NET ONLY) IN COMBINATION WITH MNDOT SEED MIX OATS (2 LBS PER 100 SQ. YD.) AND TYPE 3 SLOW RELEASE FERTILIZER (8 LBS PER 100 SQ. YD.). THIS IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

TEMPORARY & PERMANENT SEDIMENT CONTROL BMPS

SEDIMENT CONTROL LOGS: SEDIMENT CONTROL LOGS ARE MANUFACTURED FROM STRAW, WOOD EXCELSIOR, COCONUT FIBERS, AND/OR OTHER MATERIALS THAT ARE BOUND WITH POLYPROPYLENE OR BIODEGRADABLE NETTING INTO TIGHT TUBULAR ROLLS. FIBER ROLLS CONTROL THREE TYPES OF EROSIONAL PROCESSES; EROSION CONTROL, RUN OFF CONTROL, AND SEDIMENT CONTROL. SEDIMENT CONTROL LOGS CAN BE USED FOR THE FOLLOWING:

- SLOPE INTERRUPTERS TO REDUCE EROSION ON NEWLY CONSTRUCTED SLOPES
- TEMPORARY DITCH CHECKS TO REDUCE RUNOFF VELOCITIES IN DRAINAGE CHANNELS
- SEDIMENT CONTROL BARRIERS FOR SMALL DISTURBED SOIL AREAS SUCH AS STOCKPILES, DISCRETE SLOPES, OR INDIVIDUAL LOTS

MACHINE SLICED SILT FENCE: A SILT FENCE IS A TEMPORARY SEDIMENT BARRIER CONSISTING OF FILTER FABRIC ENTRENCHED INTO THE SOIL AND ATTACHED TO SUPPORTING POSTS. SILT FENCE IS INTENDED TO BE INSTALLED WHERE SEDIMENT-LADEN WATER CAN POND, THUS ALLOWING THE SEDIMENT TO FALL OUT OF SUSPENSION AND SEPARATE FROM THE RUNOFF. SILT FENCE INSTALLED WITH A TRENCHER OR BY SLICING IS THE MOST EFFECTIVE INSTALLATION METHOD TO ENSURE AGAINST COMMON SILT FENCE FAILURES. THE BMP WILL BE CLEANED OUT OR REPLACED WHEN THE SEDIMENT REACHES 1/2 THE HEIGHT OF THE FENCE.

STABILIZED CONSTRUCTION EXIT: TEMPORARY CONSTRUCTION EXITS ARE CONSTRUCTED AT THE EGRESS POINT FROM THE CONSTRUCTION AREA ONTO A PAVED ROAD. A STABILIZED CONSTRUCTION EXIT IS A TRACKING CONTROL BMP INTENDED TO PREVENT TRACKING OF SOIL FROM THE CONSTRUCTION SITE BY EQUIPMENT AND VEHICLES. THE EXITS ARE CONSTRUCTED OF LARGE ANGULAR ROCK, STEEL RIBS (RUMBLE STRIPS), OR TRACK PADS INTENDED TO KNOCK THE MUD OFF THE TIRES BEFORE TRAVELING ONTO THE ROADWAY.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MUST BE IN COMPLIANCE WITH PART 9.18.

DUST CONTROL: OPERATOR WILL COMPLY WITH STATE RULE 7011.0150 ON DUST PREVENTION REQUIREMENTS. DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

POLLUTION PREVENTION MANAGEMENT

POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE, BUT NOT LIMITED TO:

1. SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TRENCHING, TOPSOIL STRIPING STOCKPILING.
2. EXCESS NUTRIENTS FROM SOIL ADDITIVES, FERTILIZATION, MULCHING.

OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT, PART 12.1. STORAGE AND DISPOSAL OF CONSTRUCTION AND HAZARDOUS WASTES MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.

A. POSITION AND STAKE DOWN ALL PORTABLE TOILETS SO THEY CANNOT BE TIPPED OR KNOCKED OVER. SUPPLY ADEQUATE SECONDARY CONTAINMENT.
B. SECONDARY CONTAINMENT IS NEEDED AROUND ALL STATIONARY EQUIPMENT (GENERATORS, PUMPS, LIGHT PLANTS, ETC.) PROVIDE CONTAINMENT FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE.
C. NO ENGINE DEGREASING IS ALLOWED ON SITE.
D. VEHICLE AND EQUIPMENT WASHING TO OCCUR IN DESIGNATED AREA AS DETERMINED BY THE CONTRACTOR SUBMITTAL OF A MANAGEMENT PLAN FOR THESE ACTIVITIES.
E. PROPERLY CLEAN UP AND REPORT ALL SPILLS AS REQUIRED BY THE MPCA AND MNDOT SPECIFICATIONS.
F. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
G. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
H. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF.
I. A SIGN MUST BE INSTALLED ADJACENT TO EACH CONCRETE WASHOUT FACILITY.
J. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION.
K. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
L. PORTABLE TOILETS MUST BE AT LEAST TWENTY-FIVE FEET FROM STORM INLETS OR RECEIVING WATERS.

FINAL STABILIZATION

FINAL STABILIZATION IS ACHIEVED WHEN NPDES CGP PARTS 13.1-13.7 (AS APPLICABLE) ARE COMPLETED PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION (NOT) TO MPCA.

1. ALL AREAS MUST BE STABILIZED WITH A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70%.
2. ALL TEMPORARY SEDIMENT CONTROL BMP MEASURES MUST BE REMOVED PRIOR TO SUBMITTING PERMIT NOT.
3. PERMANENT STORMWATER SYSTEM IS CONSTRUCTED, MEETS ALL REQUIREMENTS, IS FREE OF ACCUMULATE CONSTRUCTION SEDIMENT, AND IS OPERATING AS DESIGNED.

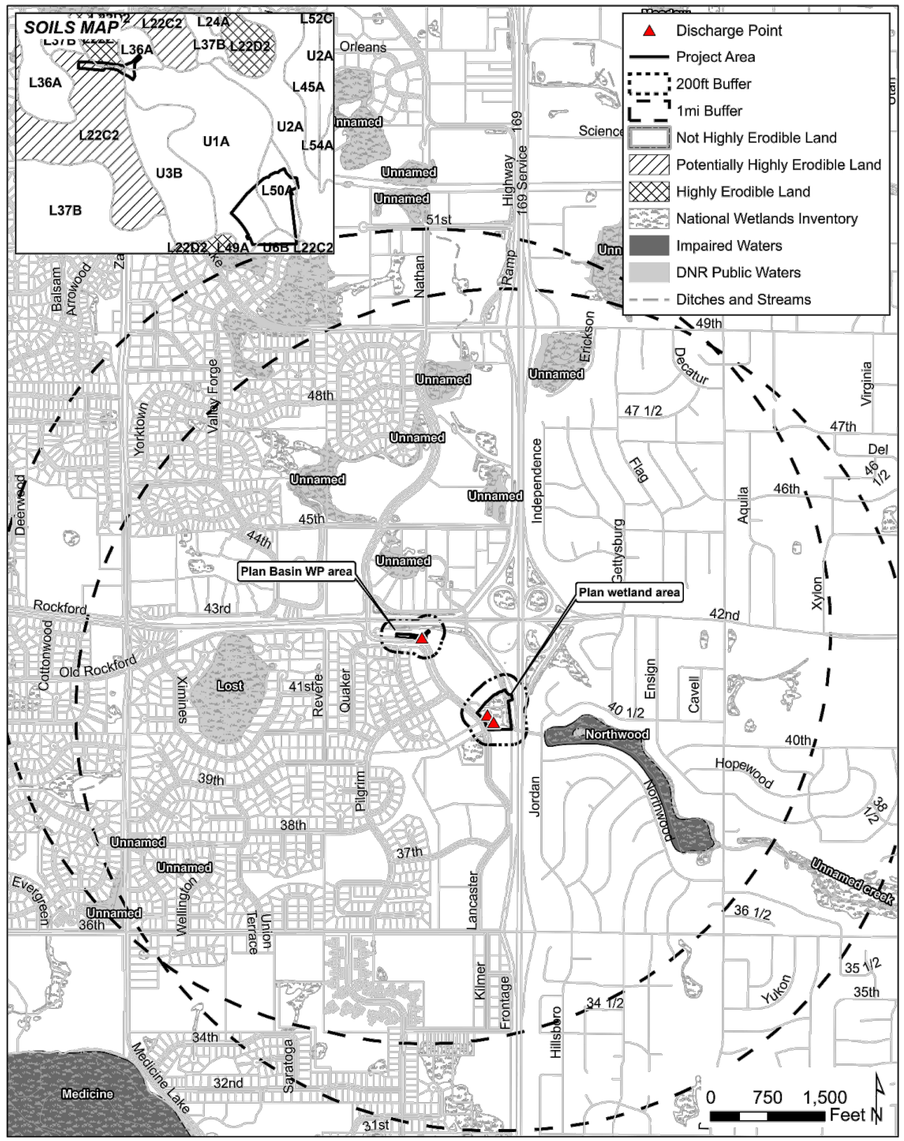


Figure 1. SWPPP Resource Map

wsb | City of Plymouth

SCALE:	DESIGN BY:
AS SHOWN	SML
PLAN BY:	CHECK BY:
SML	JHN

REVISIONS

NO.	DATE	DESCRIPTION

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.

JACOB NEWHALL

DATE: 11/15/2024 LIC. NO.: 49170

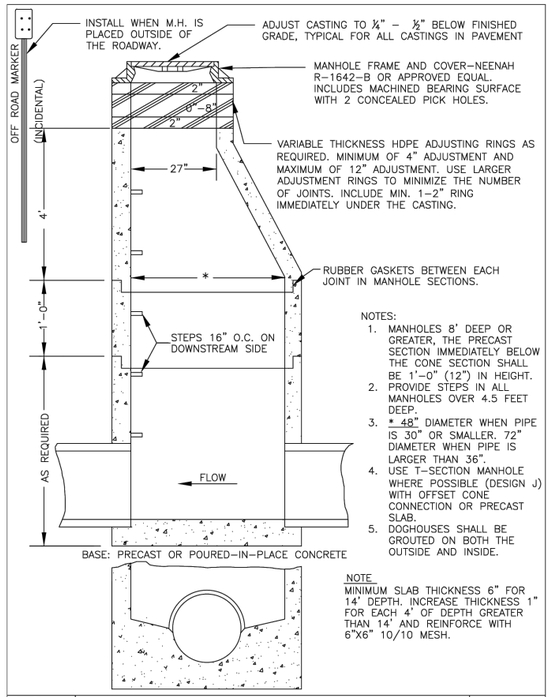
SWPPP NARRATIVE 3

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
9 OF 13



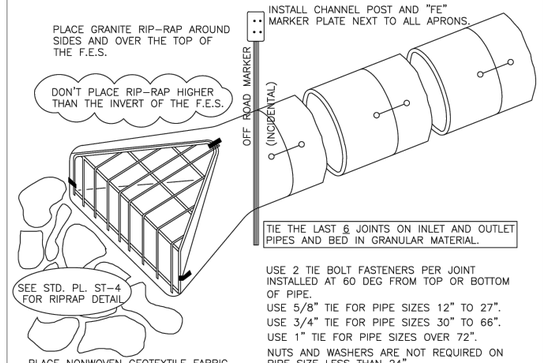
NOTES:
1. MANHOLES 8' DEEP OR GREATER, THE PRECAST SECTION IMMEDIATELY BELOW THE CONE SECTION SHALL BE 1'–0" (12") IN HEIGHT.
2. PROVIDE STEPS IN ALL MANHOLES OVER 4.5 FEET DEEP.
3. * 48" DIAMETER WHEN PIPE IS 30" OR SMALLER. 72" DIAMETER WHEN PIPE IS LARGER THAN 36".
4. USE T–SECTION MANHOLE WHERE POSSIBLE (DESIGN J) WITH OFFSET CONE CONNECTION OR PRECAST SLAB.
5. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE.

NOTE
MINIMUM SLAB THICKNESS 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14' AND REINFORCE WITH 6"X6" 10/10 MESH.

STANDARD DETAILS
STORM SEWER MANHOLE WITH CONE SECTION
CITY OF PLYMOUTH

PUBLISHED 1–24
CITY PL. NO. ST–1
REVISED 1–17

RIP–RAP REQUIRED FOR ALL APRONS: SEE STD. PLATE ST–4



PLACE NONWOVEN GEOTEXTILE FABRIC UNDER RIP–RAP AND EXTENDING 1' UNDER FES

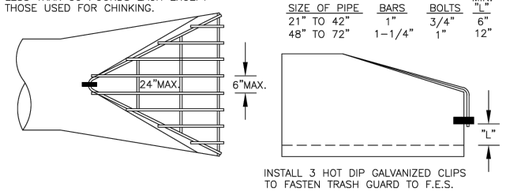
HAND PLACED GRANITE RIPRAP

INDIVIDUAL STONES SHALL NOT WEIGH LESS THAN 50 POUNDS EACH EXCEPT THOSE USED FOR CHINKING.

USE 2 TIE BOLT FASTENERS PER JOINT INSTALLED AT 60 DEG FROM TOP OR BOTTOM OF PIPE.
USE 5/8" TIE FOR PIPE SIZES 12" TO 27".
USE 3/4" TIE FOR PIPE SIZES 30" TO 66".
USE 1" TIE FOR PIPE SIZES OVER 72".
NUTS AND WASHERS ARE NOT REQUIRED ON PIPE SIZE LESS THAN 24".

TRASH GUARDS WILL BE REQUIRED ON ALL 24" OR LARGER APRONS UNLESS APPROVED BY THE CITY ENGINEER.

SIZE OF PIPE	BARS	BOLTS	MIN. "L"
21" TO 42"	1"	3/4"	6"
48" TO 72"	1–1/4"	1"	12"

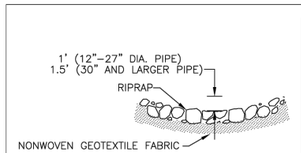


INSTALL 3 HOT DIP GALVANIZED CLIPS TO FASTEN TRASH GUARD TO F.E.S.

STANDARD DETAILS
INLET & OUTLET F.E.S. WITH TRASH GUARD
CITY OF PLYMOUTH

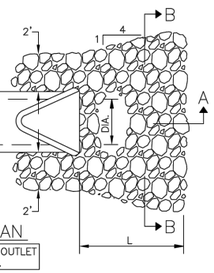
PUBLISHED 1–24
CITY PL. NO. ST–3
REVISED 1–17

MINIMUM RIPRAP REQUIRED			
DIA. OF PIPE (IN.)	L (FT.)	QUANTITY (C.Y.)	CLASS
12	8	5	III
15	8	5	III
18	10	6	III
24	12	8	III
30	14	12	III
36	16	14	III
42	18	22	IV
48	20	26	IV
>48	22–28	30–40	IV



SECTION B–B

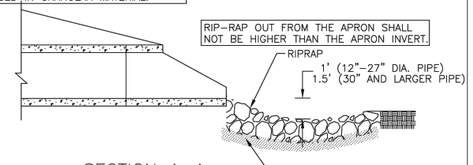
NOTE:
ONE CUBIC YARD IS APPROXIMATELY 1.4 TONS.



RIP–RAP SHALL BE CONSTRUCTED WITH GRANITE ROCK AND SHALL BE HAND PLACED.

PLAN

TIE THE LAST 6 JOINTS ON INLET AND OUTLET PIPES AND BED IN GRANULAR MATERIAL.



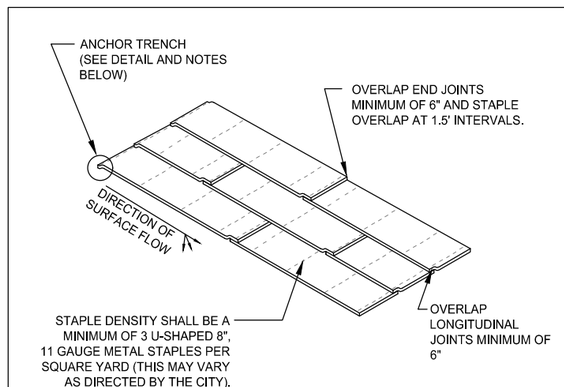
SECTION A–A

RIP–RAP REQUIRED AT ALL APRONS

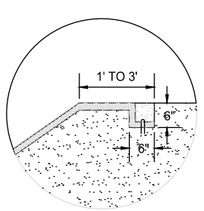
STANDARD DETAILS
RIPRAP DETAIL FOR FLARED END SECTIONS
CITY OF PLYMOUTH

PUBLISHED 1–24
CITY PL. NO. ST–4
REVISED 1–17

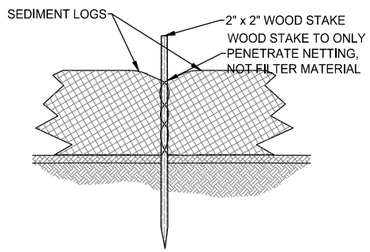
TRM CATEGORY 76
FUTERRA R45
HP-TRM BY PROFILE PRODUCTS LLC OR APPROVED EQUAL.



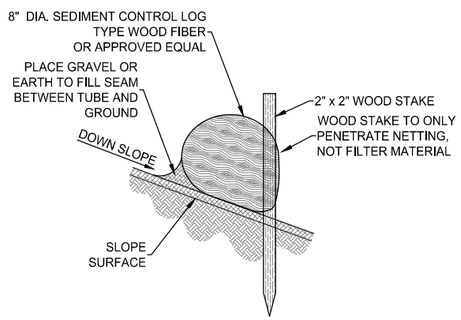
ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH



EROSION CONTROL BLANKET INSTALLATION DETAIL
SCALE: NOT TO SCALE

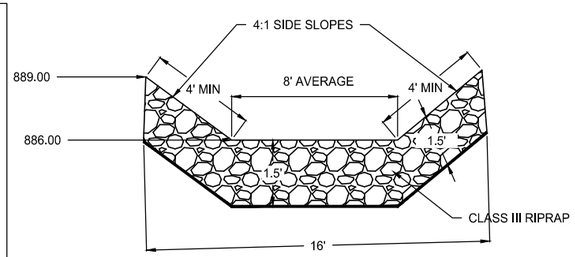


FRONT VIEW

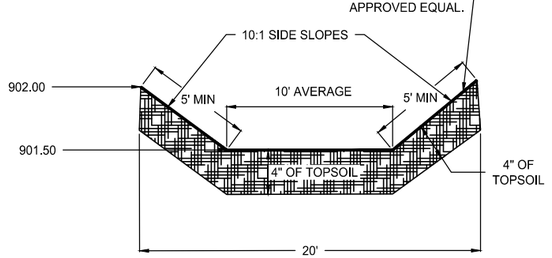


SECTION VIEW

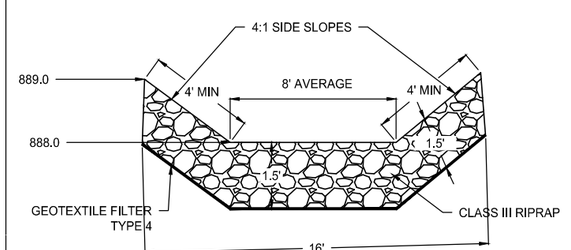
BIOROLL INSTALLATION DETAIL
SCALE: NOT TO SCALE



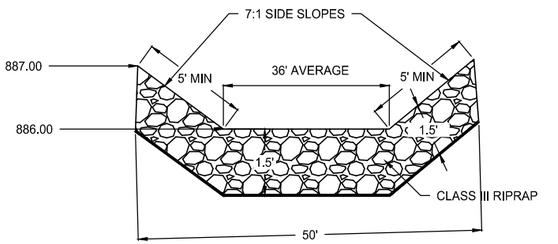
WETLAND OVERFLOW
NO SCALE



POND WP OVERFLOW
NO SCALE



CREEK AND NORTH WETLAND OVERFLOW
NO SCALE



SOUTH WETLAND OVERFLOW
NO SCALE

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wsb | City of Plymouth

SCALE:	DESIGN BY:
AS SHOWN	SML
PLAN BY:	CHECK BY:
SML	JHN

REVISIONS

NO.	DATE	DESCRIPTION

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JACOB NEWHALL
LIC. NO: 49170
DATE: 11/15/2024

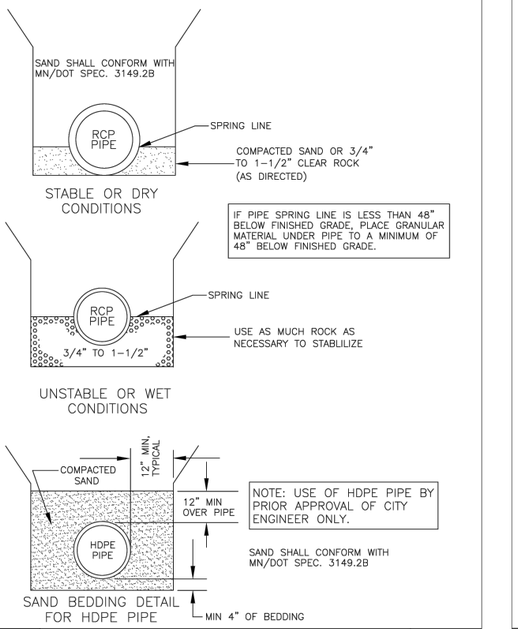
MISCELLANEOUS DETAILS

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
10 OF 13

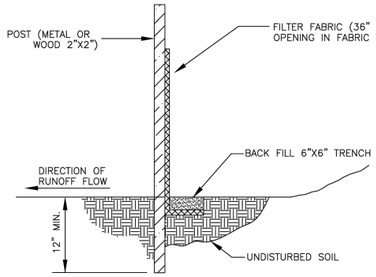


STANDARD DETAILS
STORM SEWER BEDDING
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-8
REVISED 1-24

NOTES:

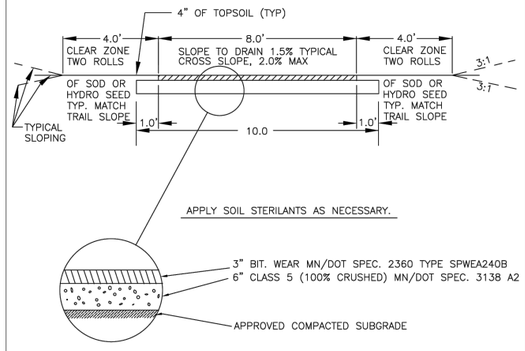
1. DIG A 6"X6" TRENCH ALONG THE INTENDED FENCE LINE.
2. DRIVE ALL POSTS INTO THE GROUND AT THE DOWNHILL SIDE OF THE TRENCH.
3. LAY OUT SILT FENCE ON THE UPHILL SIDE ALONG THE FENCE LINE, AND BACK FILL.
4. WOOD POSTS MAY BE SPACED UP TO 5 FEET APART. STEEL POSTS MAY BE SPACED UP TO 6 FEET APART
5. REMOVE SILT FENCE AFTER TURF IS ESTABLISHED.



STANDARD DETAILS
SILT FENCE DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-18
REVISED 1-20

PUBLIC OR PRIVATE TRAILS

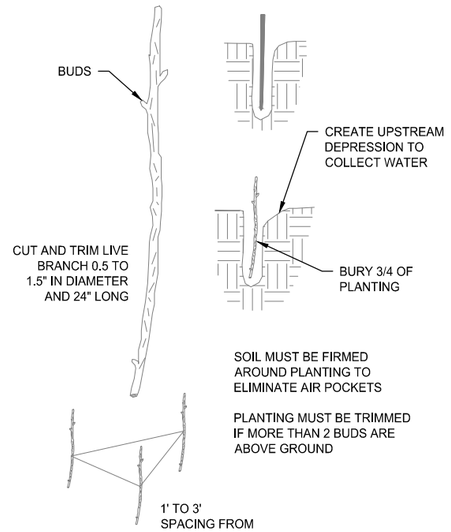


NOTES:

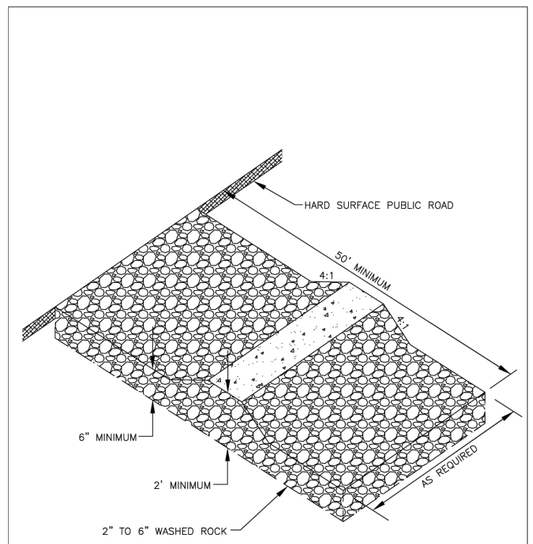
1. PLACE CONCRETE PEDESTRIAN CURB RAMPS AT ALL INTERSECTIONS SEE DETAILS STRT-3 THROUGH STRT-8.
2. PLYMOUTH CITY CODE 524.05 SUBD. 1 (J) REQUIRES THAT "SIDEWALKS AND TRAILS SHALL BE INSTALLED AT THE TIME A STREET IS CONSTRUCTED".
3. THE PROFILE GRADE OF THE TRAIL SHALL NOT EXCEED THE GRADE OF THE ADJACENT ROADWAY UNLESS AUTHORIZED BY THE CITY ENGINEER.

STANDARD DETAILS
TYPICAL TRAIL CROSS SECTION
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-15
REVISED 1-24



LIVE STAKING DETAIL
SCALE: NOT TO SCALE



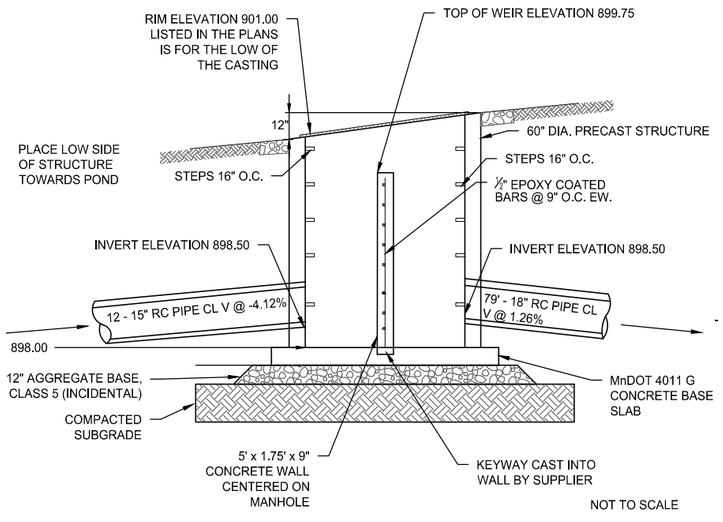
NOTES:

ROCK SHOULD BE 2" TO 6" IN SIZE SUCH AS WASHED ROCK OR CRUSHED CONCRETE

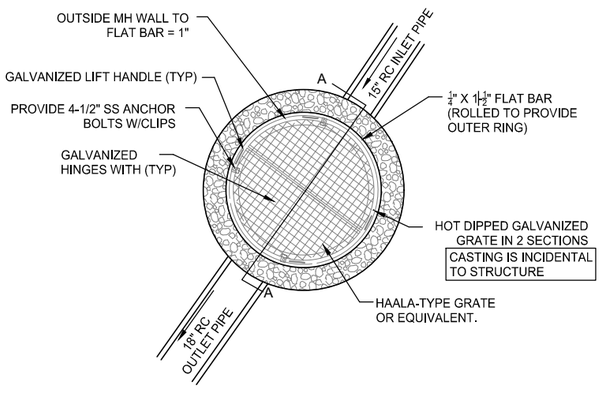
A GEOTEXTILE FABRIC MAY BE USED UNDER THE ROCK TO PREVENT MIGRATION OF THE UNDERLYING SOIL INTO THE STONE.

STANDARD DETAILS
ROCK EXIT TO CONSTRUCTION SITE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-19
REVISED 1-20



OCS 2001 - DESIGN SPECIAL 1 STRUCTURE



PLAN
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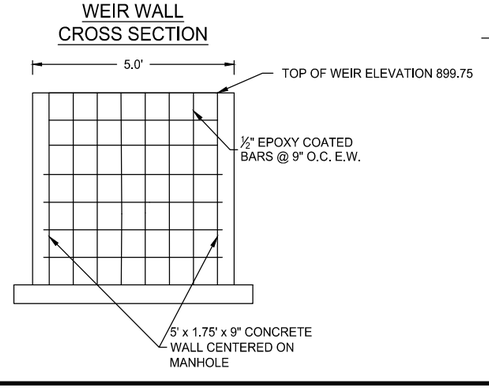

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wsb

City of Plymouth

SCALE: AS SHOWN
PLAN BY:
DESIGN BY: SML
CHECK BY: JHN

REVISIONS

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JACOB NEWHALL
LIC. NO: 49170
DATE: 11/15/2024

MISCELLANEOUS DETAILS

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
11 OF 13

RESTORE TRM MAT WITH 4" OF TOPSOIL, 33-261 AND COVER CROP 21-111

RESTORE ROCK CONSTRUCTION ENTRANCE EXCLUDING TRAIL SECTION WITH SEED MIX 25-131 ACCORDING TO NOTES IN LEGEND

MH 3000

FES 3001

FES 2002

FES 2000

OCS 2001

EOF: 901.50

901.50

RIM: 907.52

RIM: 909.44
INV: 902.2 S
INV: 901.9 E

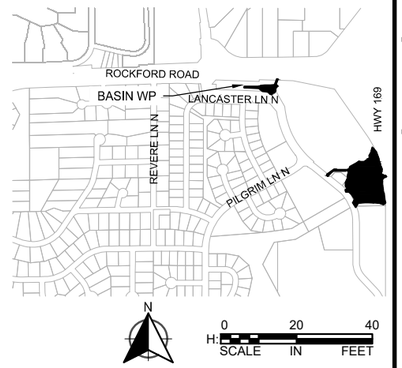
RIM: 900.33

RIM: 901.85

RIM: 908.55
INV=

97.66

LOCATION



LEGEND

- INLET PROTECTION
- CLASS III RIP RAP
- APPROX. CONSTRUCTION LIMITS
- WOOD FIBER BIOROLL
- ROCK ENTRANCE SEED MIX 25-131 (220 LBS/ACRE) WITH FERTILIZER TYPE 3 (350 LBS/ACRE) & TYPE 3 MULCH (2 TONS/ACRE) WITH DISC ANCHOR.
- SEED MIX 33-261 (35 LBS/ACRE) WITH FERTILIZER TYPE 4 (150LBS/ACRE) & CATEGORY 20 EROSION CONTROL BLANKET. TEMPORARY STABILIZATION: TYPE 3 MULCH WITH DISC ANCHOR
- SEED MIX 25-131 (220 LBS/ACRE) WITH FERTILIZER TYPE 3 (350 LBS/ACRE) & TYPE 3 MULCH (2 TONS/ACRE) WITH DISC ANCHOR.
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- PROPOSED CONTOUR (MAJOR)
- PROPOSED CONTOUR (MINOR)
- EXISTING STORM SEWER PIPE
- EXISTING STORM STRUCTURE

RESTORATION NOTES

1. ALL SOILS DISTURBED DURING CONSTRUCTION ACTIVITIES WILL BE STABILIZED WITH THE SEED MIXES, FERTILIZER, AND STABILIZING COVER OUTLINED WITHIN THESE PLANS. AREAS THAT ARE NOT ABLE TO BE FINE GRADED DUE TO FROST OR OTHER CONDITIONS WILL NEED TO BE FINE GRADED AND SEEDED AFTER APRIL 15TH.
2. IN THE EVENT THAT RESTORATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY EROSION STABILIZATION BMPS (I.E. HYRO MULCH 3884.B.2) MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
3. CONTRACTOR RESPONSIBLE FOR THE DAMAGE TO STREETS, PARKING LOTS, CONCRETE CURB AND GUTTER, TRAIL, AND TREES NOT SHOWN TO BE REMOVED.
4. AT A MINIMUM, DAILY STREET SWEEPING REQUIRED DURING HAULING OPERATIONS, MORE AS NEEDED OR AS DIRECTED BY THE ENGINEER.
5. ALL STOCKPILES MUST HAVE DOWN GRADIENT PERIMETER SEDIMENT CONTROL IMPLEMENTED AND MAINTAINED AT ALL TIMES. STOCKPILES TO RECEIVE TEMPORARY STABILIZATION IF UNWORKED FOR 7 DAYS.
6. CONTRACTOR SHALL PERFORM ALL DEWATERING AND EXCAVATION ONSITE AND OFF OF ROADWAY, AND LOAD AND HAUL OUT USING ACCESS ROUTE.
7. CONTRACTOR TO GRADE AROUND EXISTING STORM SEWER STRUCTURES AS DIRECTED BY THE ENGINEER.
8. CONTRACTOR TO COORDINATE ACCESS LIMITS WITH THE ENGINEER IN THE FIELD.
9. PLANTING AREAS 1 AND 2 ARE TYPE 3 WETLAND. EMERGENT PLUGS SHALL BE PLANTED IN THESE AREAS SPACED 3 FEET APART OR AS DIRECTED BY THE ENGINEER IN THE FIELD. AT LEAST 15 SPECIES LISTED IN THE SPECIFICATIONS SHALL BE USED.
10. PLANTING AREA 3 IS TYPE 2 WETLAND. DECIDUOUS TREES SHALL BE PLANTED LINEARLY, STAGGERED. AT LEAST 4 SPECIES LISTED IN THE SPECIFICATIONS SHALL BE USED WITH NO MORE THAN 2 EASTERN COTTONWOODS.
11. PLANTING AREA 4 IS TYPE 2 WETLAND AND SHALL BE PLANTED WITH LIVE STAKES SPACED 2-3 FEET APART. AT LEAST FIVE SPECIES LISTED IN THE SPECIFICATIONS SHALL BE USED.

wsb

City of Plymouth

SCALE:	DESIGN BY:
AS SHOWN	SML
PLAN BY:	CHECK BY:
SML	JHN

REVISIONS

NO.	DATE	DESCRIPTION

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.

JACOB NEWHALL LIC. NO: 49170

DATE: 11/15/2024

EROSION CONTROL PLAN BASIN WP

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
WR220004

WSB PROJECT NO.
021322-000

SHEET
12 OF 13

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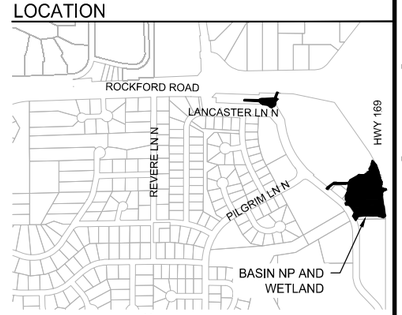
LOCATION



LEGEND

- INLET PROTECTION
- CLASS III RIP RAP
- APPROX. CONSTRUCTION LIMITS
- WOOD FIBER BIOROLL
- ROCK ENTRANCE SEED MIX 25-131 (220 LBS/ACRE) WITH FERTILIZER TYPE 3 (350 LBS/ACRE) & TYPE 3 MULCH (2 TONS/ACRE) WITH DISC ANCHOR.
- RIPARIAN SOUTH AND WEST SEED MIX 34-265 (33 LBS/ACRE) & EROSION CONTROL BLANKET CATEGORY 20
- TYPE 3 WETLAND: 6 INCHES OF WATER SEED MIX 34-266 WET PRAIRIE (33 LBS/ACRE)
- TYPE 3 WETLAND: 1-6 FEET OF WATER SEED MIX 34-182 EMERGENT WETLAND (6 LBS/ACRE)
- TYPE 2 WETLAND: ABOVE NWL SEED MIX 34-266 WET PRAIRIE (33 LBS/ACRE)
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- PROPOSED CONTOUR (MAJOR)
- PROPOSED CONTOUR (MINOR)
- EXISTING STORM SEWER PIPE
- EXISTING STORM STRUCTURE
- PLANTING AREA 1
- PLANTING AREA 2
- PLANTING AREA 3
- PLANTING AREA 4

RESTORATION NOTES

1. ALL SOILS DISTURBED DURING CONSTRUCTION ACTIVITIES WILL BE STABILIZED WITH THE SEED MIXES, FERTILIZER, AND STABILIZING COVER OUTLINED WITHIN THESE PLANS. AREAS THAT ARE NOT ABLE TO BE FINE GRADED DUE TO FROST OR OTHER CONDITIONS WILL NEED TO BE FINE GRADED AND SEEDED AFTER APRIL 15TH.
2. IN THE EVENT THAT RESTORATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY EROSION STABILIZATION BMPS (I.E. HYRO MULCH 3884.B.2) MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
3. CONTRACTOR RESPONSIBLE FOR THE DAMAGE TO STREETS, PARKING LOTS, CONCRETE CURB AND GUTTER, TRAIL, AND TREES NOT SHOWN TO BE REMOVED.
4. AT A MINIMUM, DAILY STREET SWEEPING REQUIRED DURING HAULING OPERATIONS, MORE AS NEEDED OR AS DIRECTED BY THE ENGINEER.
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JACOB NEWHALL LIC. NO: 49170

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WETLAND RESTORATION

FOUR SEASONS WATER QUALITY PROJECT
CITY OF PLYMOUTH, MN

CLIENT PROJECT NO.
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SHEET
13 OF 13

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