STORM WATER POLLUTION PREVENTION PLAN NARRATIVE:

RECORD DRAWING

GENERAL INFORMATION

THIS STORMWATER POLLUTION PREVENTION PLAN IS PREPARED IN ACCORDANCE TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NO. MN R1000001 FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.
PROJECT NAME: TRANQUIL MEADOWS RESIDENTIAL DEVELOPMENT
LOCATION: 18990 TWIN LAKES PKWY NW, ELK RIVER, MN 55330
SHERBURNE COUNTY
LAT/LONG: 45.315915, -93.542197

DESCRIPTION OF CONSTRUCTION ACTIVITY:

DEVELOPMENT CONSISTS OF PAVEMENT AND STRUCTURE DEMOLITION, MASS GRADING, EROSION CONTROL, UTILITY INSTALLATION, ROAD SECTION PLACEMENT, AND TURF ESTABLISHMENT.

PROJECT CONTACTS

PROVIDENCE S&S, LLC AND THE CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMP'S BEFORE AND DURING CONSTRUCTION.

SWPPP PREPARATION:
SWPPP PREPARER: CHRISTOPHER DAHN
-BOGART, PEDERSON & ASSOCIATES
TRAINING: ENGINEER AND SWPPP DESIGNER (EXP 2022)
ADDRESS: 13076 FIRST STREET
BECKER, MN 55308-9322
TELEPHONE: 763-262-8822
EMAIL: CDAHN@BOGART-PEDERSON.COM
OWNER:
OWNER CONTACT: STEPHEN ROHLF - PROVIDENCE S&S, LLC
ADDRESS: 17094 VANCE ST. NW, ELK RIVER, MN 55330
TELEPHONE: (763) 234-0177
EMAIL: SROHLF@CORNERSTONEAUTO.COM

CONTRACTOR (TO BE FILLED OUT BY THE CONTRACTOR):
BUSINESS NAME __________
OWNER NAME __________
MAILING ADDRESS __________
CITY __________
TELEPHONE __________
EMAIL __________
CONTACT NAME __________
MAILING ADDRESS __________
CITY __________
TELEPHONE __________
EMAIL __________

ESTIMATED DATES OF CONSTRUCTION:

START DATE ___/___/___ (TO BE FILLED IN BY CONTRACTOR)
COMPLETION DATE ___/___/___ (TO BE FILLED IN BY CONTRACTOR)

PERMANENT STORMWATER DESIGN CALCULATIONS:

SEE THE STORM WATER MANAGEMENT REPORT FOR MORE INFORMATION. CONTACT BOGART, PEDERSON & ASSOCIATES FOR REPORT. PROPOSED FLOW RATE IS LIMITED THROUGH STORM WATER BEING DIRECTED TO MULTIPLE WET RETENTION BASINS AND INFILTRATION BASIN.

SEE GEOTECHNICAL REPORT FOR MORE INFORMATION.

DESCRIPTION OF EROSION CONTROL ACTIVITY:

THE TRANQUIL MEADOWS RESIDENTIAL DEVELOPMENT EROSION CONTROL MEASURES CONSIST OF SILT FENCE INSTALLATION AROUND THE PERIMETER OF GRADING, ROCK CONSTRUCTION ENTRANCE PLACEMENT, EROSION CONTROL BLANKET LAYING ON STEEP SLOPES, AND TURF ESTABLISHMENT WITH SEEDING.

CUMULATIVE IMPERVIOUS SURFACES:

AREA OF DISTURBANCE:	11.20	ACRES
PRE-CONSTRUCTION IMPERVIOUS AREA:	0.97	ACRES
POST CONSTRUCTION IMPERVIOUS AREA:	3.70	ACRES
NEW IMPERVIOUS AREA:	2.73	ACRES

RECEIVING WATERS:

STORM WATER FROM THIS SITE WILL BE DISCHARGED TO THE WETLAND WEST OF THE SITE. THE NORTH PORTION IS DIRECTED TO A CULVERT FLOWING EAST. SEE THE STORMWATER REPORT FOR DETAILED INFORMATION.

PLANS AND SPECIFICATIONS

THE PLAN SHEETS OF THIS PLAN SET INDICATE THE FOLLOWING ITEMS:

- THE PROJECT LOCATION AND CONSTRUCTION LIMITS.
- LOCATIONS OF IMPERVIOUS SURFACES.
- LOCATIONS OF AREAS NOT TO BE DISTURBED (E.G., BUFFER ZONES, WETLANDS, ETC.).
- STEEP SLOPE LOCATIONS.
- LOCATIONS OF ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S TO BE INSTALLED ON THE PROJECT.
- THE DETAIL SHEETS INDICATE EROSION AND SEDIMENT CONTROL BMPS TO BE INSTALLED ON THE PROJECT.
- IF DEWATERING IS REQUIRED FOR THIS PROJECT, THE PUMP DISCHARGE SHALL BE TREATED PRIOR TO BEING DISCHARGED OFF-SITE OR INTO A SURFACE WATER. THE DISCHARGE SHALL BE VISUALLY CHECKED TO ENSURE THAT IT IS VISIBLY CLEAN WATER.

TEMPORARY SEDIMENT CONTROL PRACTICES

DOWN GRADIENT SILT FENCE AND SEDIMENT LOG INSTALLATIONS ARE TO BE INPLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK OPERATIONS.

TOPSOIL IS TO BE WINDROWED ALONG THE CONSTRUCTION LIMITS AND PLACED AS SLOPE DRESSING IMMEDIATELY FOLLOWING COMPLETION OF THE GRADING OPERATIONS, AS THE GRADING OPERATIONS PROCEED.

TOPSOIL PLACEMENT ALONG THE EMBANKMENT SLOPES THOUGH THE WETLANDS AREA IS TO BE SPREAD BY A LOW IMPACT CRAWLER TRACTOR OPERATING UP AND DOWN THE SLOPES SO AS TO PROVIDE TRACK PRINTS PARALLEL WITH THE CONTOURS.

INSTALLATION OF MN/DOT CATEGORY 3 EROSION CONTROL BLANKET ALONG THE EMBANKMENT SLOPES ADJACENT THE WETLANDS AREA.

ALL TEMPORARY SOILS STOCKPILES WILL REQUIRE AN EFFECTIVE MEANS OF SEDIMENT CONTROL SUCH AS AN EROSION CONTROL BLANKET COVERING OR SILT FENCE INSTALLATION ALONG THE TOE OF SLOPE.

ALL COMPLETED SWALES SLOPES AND BOTTOMS NOT DRAINING TOWARDS WETLAND AREAS ARE TO BE STABILIZED WITHIN 7 DAYS.

TEMPORARY STABILIZATION WILL BE REQUIRED IN AREAS WHERE GRADING OPERATIONS ARE SUSPENDED OR CEASED FOR A PERIOD OF 7 DAYS OR GREATER.

A ROCK CONSTRUCTION ENTRANCE FOR SEDIMENT CONTROL IS TO BE PROVIDED AT THE PROJECT ENTRANCE ON TWIN LAKES ROAD NW.

STREET SWEEPING OF THE PAVED SURFACES WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

TIMING OF EROSION CONTROL:

SILT FENCE AND SEDIMENT LOGS WILL BE INSTALLED PRIOR TO CONSTRUCTION.

CONCRETE FLEXAMAT AND FILTER BLANKET WILL BE PLACED AT THE OUTLETS WITHIN 24 HOURS OF THE OUTLET PLACEMENT.

THE CONTRACTOR MUST STABILIZE ALL EXPOSED SOIL AREAS IMMEDIATELY FOLLOWING CONSTRUCTION WHEREVER CONSTRUCTION WILL NOT OCCUR FOR A PERIOD GREATER THAN OR EQUAL TO 7 DAYS.

STABILIZATION WORK MUST BE COMPLETE WITHIN 7 CALENDAR DAYS AFTER THE CONSTRUCTION WORK IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED.

AREAS THAT ARE WITHIN 200 FT OF A PUBLIC WATER MUST BE STABILIZED WITHIN 24 HOURS OF COMPLETING CONSTRUCTION DURING PERIODS OF "WORK IN WATER RESTRICTIONS" FOR TIME PERIODS DECLARED BY THE DNR.

THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE DISTURBED AREA UNTIL VEGETATION IN ESTABLISHED.

ONCE VEGETATION IS ESTABLISHED AND CONSTRUCTION IS COMPLETE, THE SILT FENCE AND ANY OTHER TEMPORARY EROSION CONTROL THAT IS NOT BIODEGRADABLE SHALL BE REMOVED.

STREET SWEEPING TO BE PROVIDED AS DIRECTED BY THE ENGINEER OR OWNER. THE CITY REQUIRES STREET SWEEPING TO OCCUR WITHIN 8 HOURS OF NOTICE FROM THE CITY.

APPLYING MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES IS NOT ACCEPTABLE STABILIZATION IN ANY PART OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE. BLANKETS OR OTHER APPROVED, BY THE ENGINEER, METHOD SHALL BE USED.

INSPECTION AND MAINTENANCE ACTIVITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING THE WORK OF ALL OPERATIONS, INCLUDING SUBCONTRACTORS AND UTILITY COMPANIES, SUCH THAT EROSION AND SEDIMENT CONTROL MEASURES ARE FULLY EXECUTED FOR EACH OPERATION AND IN A TIMELY MANNER OVER THE DURATION OF THE PROJECT. OPERATORS HAVE DAILY ACCESS TO THE PROJECT SITE. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE SWPPP IMPLEMENTATION UNTIL THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION AND N.O.T HAS BEEN SUBMITTED TO THE MPCA.

THE CONTRACTOR IS TO PROVIDE A TRAINED INDIVIDUAL RESPONSIBLE FOR THE IMPLEMENTATION, INSPECTION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMPS ON THE PROJECT. THAT INDIVIDUAL IS TO BE IDENTIFIED AT THE PRE-CONSTRUCTION CONFERENCE AND LISTED IN THE MINUTES THEREOF.

THE APPOINTED INDIVIDUAL IS TO PERFORM A ROUTINE INSPECTION OF THE ENTIRE SITE AT LEAST ONCE EVERY SEVEN DAYS DURING CONSTRUCTION OPERATIONS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

A INSPECTION FORM WILL BE PROVIDED BY THE CONTRACTOR. ANY DEFICIENCIES IN THE EROSION AND SEDIMENT CONTROL BMPS ARE TO BE NOTED ON THE INSPECTION FORM AND CORRECTED BY THE END OF THE NEXT BUSINESS DAY.

PERIMETER CONTROL DEVICES ARE TO BE REPAIRED OR REPLACED WHEN THEY ARE NO LONGER EFFECTIVE OR WHEN THE SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE DEVICE.

TRAINING DOCUMENTATION:
SWPPP IMPLEMENTATION, REVISING, AMENDING, AND INSPECTING (TO BE FILLED IN BY THE CONTRACTOR)
NAME OF INDIVIDUAL __________
OVERSEEING & INSPECTING __________
DATE OF TRAINING __________
NAME OF INSTRUCTOR __________
ENTITY PROVIDING TRAINING __________
CONTENT OF TRAINING __________
TOTAL HOURS OF TRAINING __________

BMP INSTALLATION, MAINTENANCE, AND REPAIR (TO BE FILLED IN BY THE CONTRACTOR)
NAME OF INDIVIDUAL __________
OVERSEEING & INSPECTING __________
DATE OF TRAINING __________
NAME OF INSTRUCTOR __________
ENTITY PROVIDING TRAINING __________
CONTENT OF TRAINING __________
TOTAL HOURS OF TRAINING __________

POLLUTION PREVENTION

FERTILIZERS ARE TO BE APPLIED ONLY IN THE AMOUNTS AS SPECIFIED AND WORKED INTO THE SOIL TO MINIMIZE EXPOSURE TO STORMWATER RUNOFF.

ONSITE REFUELING OPERATIONS ARE TO BE CONDUCTED WITH CARE. ANY INADVERTENT SPILLAGE OF FUEL OR CHEMICALS IS TO BE IMMEDIATELY CLEANED UP, REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE TO STATE AND LOCAL REGULATIONS. MAJOR SPILLS ARE TO BE REPORTED TO THE MPCA 24 HOUR NOTIFICATION NETWORK AT 800 422 0798. ALL VEHICLES ON-SITE ARE TO BE MONITORED FOR LEAKS AND SUBJECT TO ROUTINE PREVENTIVE MAINTENANCE EFFORTS TO REDUCE THE LIKELIHOOD OF LEAKAGE AND OR SPILLS.

PORTABLE SANITARY WASTE FACILITIES ARE TO BE PROVIDED ONSITE AND EMPTIED ON A BI-WEEKLY BASIS.

CONCRETE BATCH TRUCKS WILL NOT BE ALLOWED TO DISCHARGE DRUM AND CHUTE WASHOUT DIRECTLY ON THE GROUND. A PORTABLE WASHOUT RECEPTACLE IS TO BE PROVIDED BY THE CONTRACTOR AT THE LOCATION AS PROVIDED BY THE OWNER.

FINAL STABILIZATION

FINAL STABILIZATION OCCURS WHEN 70 PERCENT OF THE PERVIOUS AREA IS COVERED WITH UNIFORM, PERMANENT VEGETATION.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES ARE TO BE REMOVED AND THE NPDES NOTICE OF TERMINATION IS TO BE PREPARED AND SUBMITTED TO THE MPCA.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	TITLE	LOCATION
EROSION CONTROL DETAILS	CONSTRUCTION DETAILS	C14-C19
EROSION CONTROL LOCATIONS	EROSION CONTROL LOCATIONS	C12

24 HOUR MPCA EMERGENCY NOTIFICATION:
TELEPHONE NUMBERS: 651-649-5451
800-422-0798

ESTIMATED QUANTITIES:

THE FOLLOWING QUANITITES IS AN ESTIMATED PRELIMINARY AMOUNT REQUIRED FOR SEDIMENT CONTROL BMP'S AT THE START OF THE PROJECT. THIS ESTIMATE IS PROVIDED AS REQUIRED BY THE MINNESOTA POLLUTION CONTROL AGENCY GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY. ANY ADDITIONAL AND/OR REPLACEMENT BMP'S QUANTITIES WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

ESTIMATED PRELIMINARY QUANTITIES AT START OF PROJECT:

ITEM	UNIT	ESTIMATED INITIAL QUANTITY
TEMPORARY CONSTRUCTION ENTRANCE	EA	1
TEMPORARY SEDIMENT FILTER	EA	23
TEMPORARY CONCRETE WASHOUT	EA	1
TEMPORARY PUMP SEDIMENT CONTROL DEVICE	EA	1
TEMPORARY SEDIMENT LOGS	LF	875
TEMPORARY SILT FENCE	LF	3,086
EROSION CONTROL BLANKET (3N-STRAW)	SY	13,170

TEMPORARY EROSION AND SEDIMENT CONTROL SPECIFICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. PREVENTION OF SEDIMENTATION OF WATERWAYS, OPEN DRAINAGE WAYS, AND STORM AND SANITARY SEWERS DUE TO CONSTRUCTION ACTIVITIES.

1.02 REFERENCE STANDARDS

A. GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM. MINNESOTA PERMIT NO: MN R100001.

1.03 PERFORMANCE REQUIREMENTS

A. COMPLY WITH ALL REQUIREMENTS OF THE MINNESOTA POLLUTION CONTROL AGENCY FOR EROSION AND SEDIMENT CONTROL.

B. DO NOT BEGIN CLEARING, GRADING, OR OTHER WORK INVOLVING DISTURBANCE OF GROUND SURFACE COVER UNTIL APPLICABLE PERMITS HAVE BEEN OBTAINED; FURNISH ALL DOCUMENTATION REQUIRED TO OBTAIN APPLICABLE PERMITS.
1. OBTAIN AND PAY FOR PERMITS REQUIRED BY AUTHORITY HAVING JURISDICTION.

C. TIMING: PUT PREVENTIVE MEASURES IN PLACE PRIOR TO DISTURBANCE OF SURFACE COVER AND BEFORE PRECIPITATION OCCURS.

D. EROSION OFF SITE: PREVENT EROSION OF SOIL AND DEPOSITION OF SEDIMENT ON OTHER PROPERTIES CAUSED BY WATER LEAVING THE PROJECT SITE DUE TO CONSTRUCTION ACTIVITIES FOR THIS PROJECT.
1. PREVENT TRACKING OF MUD ONTO PUBLIC ROADS OUTSIDE SITE.
2. PREVENT MUD AND SEDIMENT FROM FLOWING ONTO PAVEMENTS.

E. SEDIMENTATION OF WATERWAYS OFF SITE: PREVENT SEDIMENTATION OF WATERWAYS OFF THE PROJECT SITE, INCLUDING RIVERS, STREAMS, LAKES, PONDS, OPEN DRAINAGE WAYS, STORM SEWERS, AND SANITARY SEWERS.
1. IF SEDIMENTATION OCCURS, INSTALL OR CORRECT PREVENTIVE MEASURES IMMEDIATELY AT NO COST TO OWNER; REMOVE DEPOSITED SEDIMENTS; COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

F. MAINTENANCE: MAINTAIN TEMPORARY PREVENTIVE MEASURES UNTIL PERMANENT MEASURES HAVE BEEN ESTABLISHED.

PART 2 PRODUCTS

2.01 MATERIALS

A. TEMPORARY SILT FENCE: WOVEN POLYPROPYLENE GEOTEXTILE RESISTANT TO COMMON SOIL CHEMICALS, MILDEW, AND INSECTS; NON-BIODEGRADABLE; IN LONGEST LENGTHS POSSIBLE; FABRIC INCLUDING SEAMS WITH THE FOLLOWING MINIMUM AVERAGE ROLL LENGTHS:
1. AVERAGE OPENING SIZE: 20 U.S. STD. SIEVE, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM D4751.
2. PERMITTIVITY: 0.05 SEC^-1, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM D4491.
3. ULTRAVIOLET RESISTANCE: RETAINING AT LEAST 70 PERCENT OF TENSILE STRENGTH, WHEN TESTED IN ACCORDANCE WITH ASTM D4355/D4355M AFTER 500 HOURS EXPOSURE.
4. TENSILE STRENGTH: 100 LB-F, MINIMUM, IN CROSS-MACHINE DIRECTION; 124 LB-F, MINIMUM, IN MACHINE DIRECTION; WHEN TESTED IN ACCORDANCE WITH ASTM D4632.
5. ELONGATION: 15 TO 30 PERCENT, WHEN TESTED IN ACCORDANCE WITH ASTM D4632.
6. TEAR STRENGTH: 55 LB-F, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM D4533.
7. COLOR: MANUFACTURER'S STANDARD, WITH EMBEDMENT AND FASTENER LINES PREPRINTED.
8. SILT FENCE POSTS: ONE OF THE FOLLOWING, MINIMUM 5 FEET LONG:
   a. STEEL U- OR T-SECTION, WITH MINIMUM MASS OF 1.33 LB PER LINEAR FOOT.
   b. SOFTWOOD, 4 BY 4 INCHES IN CROSS SECTION.
   c. HARDWOOD, 2 BY 2 INCHES IN CROSS SECTION.

B. TEMPORARY SEDIMENT LOGS: FILTER LOGS SHALL CONSIST OF TYPE WOOD FIBER BIOROLLS AND THE REQUIREMENTS OF MNDOT SPEC. 3897.
1. SHALL BE ONE OF THE FOLLOWING.
   a. SHALL BE SILTSOXX PERIMETER CONTROL BY FILTREXX, INC., OR EQUAL.

C. TEMPORARY SEDIMENT FILTER.
1. SHALL BE ONE OF THE FOLLOWING.
   a. DROP-IN SEDIMENT FILTER UNIT THAT INSERTS INTO THE INLET.
      1) SHALL BE FLEXSTORM PURE: PERMANENT INLET FILTER BY ADS, INC., OR EQUAL.
         (a)PROVIDE CURB OPENING PROTECTION FOR EXISTING INLETS WITH CURB OPENINGS.

D. TEMPORARY ROCK CONSTRUCTION ENTRANCE.
1. ROCK SHALL BE CLEAN 1 TO 2 INCH WASHED ROCK.

E. TEMPORARY SLOPE EROSION PROTECTION.
1. SHALL BE ONE OF THE FOLLOWING.
   a. EROSION CONTROL BLANKET.
      1) SHALL CONSIST OF A UNIFORM WEB OF INTERLOCKING STRAW OR WOOD FIBERS SANDWICHED BETWEEN AN ATTACHED TOP AND BOTTOM LAYER OF NET BACKING.
      2) THE NETTING SHALL BE BIODEGRADABLE CONTAINING SUFFICIENT UV STABILIZATION FOR BREAKDOWN TO OCCUR WITHIN A NORMAL GROWING SEASON.
      3) STAPLES USED TO ANCHOR THE BLANKETS SHALL BE U-SHAPED, 11 GAUGE OR HEAVIER STEEL WIRE HAVING A SPAN WIDTH OF 1 INCH AND A LENGTH OF 8 INCHES OR MORE FROM TOP TO BOTTOM AFTER BENDING.
      4) THE EROSION CONTROL BLANKETS ACCEPTABLE FOR USE ON THIS PROJECT INCLUDE:
         (a)GEO-SYNTHETICS, INC., - LANDLOK 52.
         (b)NORTH AMERICAN GREEN - S150.
         (c)OR EQUAL.
   b. BONDED FIBER MATRIX.
      1) THE FIBERS SHALL BE COMPOSED OF 100% WOOD OR WOOD BY-PRODUCTS. A MINIMUM OF 25% OF THE FIBERS SHALL AVERAGE 10.16 MM (0.4 INCHES) IN LENGTH AND 50% OR MORE SHALL BE RETAINED ON A CLARK FIBER CLASSIFIER 24 MESH SCREEN. FIBERS SHALL BE COLORED WITH A WATER SOLUBLE, NON-TOXIC DYE, TO AID IN UNIFORM APPLICATION OVER THE SITE.
      2) THE BINDER SHALL BE A HYDRO COLLOID BASED (GUAR GUM) WITH ADDED SLOW-RELEASE AND AGRICULTURAL BASED FERTILIZERS. THE BINDER SHALL NOT DISSOLVE OR DISPERSE UPON REWETTING.
      3) THE BFM SLURRY SHALL DRY TO FORM A CRUST APPROXIMATELY 3-6 MM (1/8 TO 1/4 INCHES) THICK ADHERING TO THE SOIL SURFACE.
      4) THE MOISTURE CONTENT OF THE MATRIX SHALL BE 12% +/- 3% BY WEIGHT.
      5) THE MATRIX SHALL CONSIST OF MATERIALS THAT ARE 100% BIODEGRADABLE AND 100% BENEFICIAL TO PLANT LIFE.
      6) THE MATRIX SHALL PROVIDE 100% CONTINUOUS COVERAGE AND SHALL HAVE NO HOLES GREATER THAN 1MM IN SIZE.
      7) THE HYDRATED MIXTURE DENSITY SHALL BE APPROXIMATED BY A SLUMP TEST PRIOR TO APPLICATION.
      8) THE BFM MULCH: WATER RATIO SHALL BE AS MANUFACTURER RECOMMENDATIONS. THE MINIMUM BFM MULCH TO WATER RATIO IS 50LBS BFM MULCH AND 100 GALLONS WATER. THE WATER RATE WILL VARY BETWEEN 100 GALLONS AND 125 GALLONS PER 50LBS, DEPENDING ON WHICH OF THE PRODUCTS IS USED.
      9) THE BONDED FIBER MATRIX MULCH PRODUCTS ACCEPTABLE FOR USE ON THIS PROJECT INCLUDE.
         (a)ECOAEGIS - MANUFACTURED BY CANFOR.
         (b)SOIL GUARD - MANUFACTURED BY MAT, INC.
         (c)CONWED 3000 - MANUFACTURED BY CONWED FIBERS, INC.

F. TEMPORARY PUMPED SEDIMENT CONTROL DEVICE.
1. NON-WOVEN GEOTEXTILE FABRIC SEWN INTO A BAG USING A DOUBLE NEEDLE MACHINE AND HIGH STRENGTH THREAD.
   a. SEAMS SHALL HAVE AN AVERAGE WIDTH STRENGTH OF 60LB/INCH AS PER ASTM D4883 AND MEET OR EXCEED THE FOLLOWING.
      1) GRAB TENSILE OF 205 LBS AS PER ASTM D 4632.
      2) PUNCTURE OF 110 LBS AS PER ASTM D 4833.
      3) FLOW RATE OF 95 GAL/MIN/SF AS PER ASTM D 4491.
      4) PERMITTIVITY OF 1.5 SEC-1 AS PER ASTM D 4491.
      5) MULLEN BURST STRENGTH OF 350 PSI AS PER ASTM D 3786.
      6) AOS% OF 80% US SIEVE AS PER ASTM D 4751.
2. SPOUT LARGE ENOUGH TO ACCOMMODATE A 4 INCH DISCHARGE HOSE WITH STRAP TO TIE UNIT CLOSED.
3. SHALL BE ONE OF THE FOLLOWING.
   a. DIRTBAG.
      1) ACF ENVIRONMENTAL, INC., 2831 CARDWELL ROAD, RICHMOND, VIRGINIA 23234, 800-448-3636.
   b. DANDY DEWATERING BAG.
      1) DANDY PRODUCTS, INC., P.O. BOX 1980, WESTERVILLE, OHIO 43086, 800-591-2284.
   c. OR EQUAL.

PART 3 EXECUTION

3.01 PREPARATION

A. SCHEDULE WORK SO THAT SOIL SURFACES ARE LEFT EXPOSED FOR THE MINIMUM AMOUNT OF TIME.

B. THE CONSTRUCTION SITE OPERATOR SHALL FOLLOW ALL REQUIREMENTS OF THE MINNESOTA STORMWATER PERMIT NO. MN R100001.

C. THE CONTRACTOR SHALL COMPLETE AND SIGN THE NOTICE OF INTENT, OBTAIN THE OWNER'S SIGNATURE, AND SUBMIT TO THE MPCA.
1. PROVIDE A SIGNED COPY TO THE OWNER.

3.03 INSTALLATION

A. TEMPORARY ROCK CONSTRUCTION ENTRANCE.
1. THE ROCK AREA SHALL BE A MINIMUM OF 6 INCHES DEEP, EXTEND THE FULL WIDTH OF THE EGRESS AREA AND SHALL BE AT LEAST 50FT LONG, HOWEVER, LONGER ENTRANCES MAY BE REQUIRED TO ADEQUATELY CLEAN THE TIRES.
2. GEOTEXTILE FABRIC MAY BE USED TO PREVENT MIGRATION OF MUD FROM THE UNDERLYING SOIL INTO THE ROCK.

B. TEMPORARY SILT FENCES:
1. STORE AND HANDLE FABRIC IN ACCORDANCE WITH ASTM D4873.
2. USE NOMINAL 30 INCH HIGH BARRIERS, MINIMUM 60 INCH LONG POSTS SPACED AT 6 FEET MAXIMUM SPACING.
3. EMBED BOTTOM OF FABRIC IN A TRENCH ON THE UPSLOPE SIDE OF FENCE, WITH 6 INCHES OF FABRIC LAID FLAT ON BOTTOM OF TRENCH FACING UPSLOPE; BACKFILL TRENCH AND COMPACT.
4. MINIMUM POST EMBEDMENT.
   a. STEEL POST = 24 INCHES, MINIMUM.
   b. WOOD POST = 18 INCHES, MINIMUM.
5. DO NOT SPLICE FABRIC WIDTH; MINIMIZE SPLICES IN FABRIC LENGTH; SPLICE AT POST ONLY, OVERLAPPING AT LEAST 18 INCHES, WITH EXTRA POST.
6. FASTEN FABRIC TO WOOD POSTS USING ONE OF THE FOLLOWING:
   a. FOUR NAILS PER POST WITH 3/4 INCH DIAMETER FLAT OR BUTTON HEAD, 1 INCH LONG, AND 14 GAGE, 0.083 INCH SHANK DIAMETER.
   b. FIVE STAPLES PER POST WITH AT LEAST 17 GAGE, 0.0453 INCH WIRE, 3/4 INCH CROWN WIDTH AND 1/2 INCH LONG LEGS.
7. FASTEN FABRIC TO STEEL POSTS USING WIRE, NYLON CORD, OR INTEGRAL POCKETS.

C. TEMPORARY SEDIMENT LOGS:
1. PERIMETER CONTROL SHOULD BE INSTALLED PARALLEL TO THE BASE OF THE SLOPE OR OTHER DISTURBED AREA.
2. STAKES SHOULD BE INSTALLED THROUGH THE MIDDLE OF THE PERIMETER CONTROL ON 10 FT CENTERS, USING 2 IN BY 2 IN BY
   3 FT WOODEN STAKES. IN THE EVENT STAKING IS NOT POSSIBLE, I.E., WHEN PERIMETER CONTROL IS USED ON PAVEMENT, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE PERIMETER CONTROL TO HELP STABILIZE DURING RAIN EVENTS.

D. TEMPORARY SEDIMENT FILTERS.
1. DROP-IN SEDIMENT TRAP.
   a. PLACE AS RECOMMENDED BY THE MANUFACTURER.

E. TEMPORARY PUMPED SEDIMENT CONTROL DEVICE.
1. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.

F. TEMPORARY SLOPE EROSION PROTECTION.
1. PLACE AT ANY AND ALL FINISH SLOPES THAT ARE STEEPER THAN 10H:1V.
2. SEED AND FERTILIZE PER SPECIFICATION 32 9219 PRIOR TO INSTALLING TEMPORARY SLOPE EROSION PROTECTION.
3. BONDED FIBER MATRIX.
   a. INSTALL THE BFM AS PER THE MANUFACTURER'S INSTRUCTIONS WITH THE FOLLOWING MINIMUM GUIDELINES.
      1) THE BFM SHALL BE APPLIED WITH HYDRAULIC SPRAY EQUIPMENT BY A MANUFACTURER'S CERTIFIED APPLICATOR.
      2) APPLICATION SHALL BE DONE AT LEAST 24 HOURS IN ADVANCE OF PROJECTED RAINFALL TO ALLOW THE BFM MULCH ADEQUATE TIME TO DRY.
      3) THE BFM MULCH SHALL BE APPLIED IN TWO STAGES (ONE-HALF RATE) WITH AMPLE TIME TO DEWATER THE FIRST APPLICATION.
      4) THE BFM MULCH SHALL BE APPLIED FROM AT LEAST TWO ALTERNATE DIRECTIONS, PREFERABLY 90 DEGREES APART, IF POSSIBLE, TO ENSURE ALL SOIL FACES ARE COVERED.
      5) THE INSTALLATION RATE OF THE BFM MULCH SHALL BE 3500 LBS PER ACRE, MINIMUM AND 100% COVERAGE.
4. EROSION CONTROL BLANKET.
   a. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.

3.04 MAINTENANCE

A. INSPECT PREVENTIVE MEASURES WEEKLY, WITHIN 24 HOURS AFTER THE END OF ANY STORM THAT PRODUCES 0.5 INCHES OR MORE RAINFALL AT THE PROJECT SITE, AND DAILY DURING PROLONGED RAINFALL.

B. REPAIR DEFICIENCIES IMMEDIATELY.

C. TEMPORARY SILT FENCES:
1. PROMPTLY REPLACE FABRIC THAT DETERIORATES UNLESS NEED FOR FENCE HAS PASSED.
2. REMOVE SILT DEPOSITS THAT EXCEED ONE-THIRD OF THE HEIGHT OF THE FENCE.
3. REPAIR FENCES THAT ARE UNDERCUT BY RUNOFF OR OTHERWISE DAMAGED, WHETHER BY RUNOFF OR OTHER CAUSES.

D. TEMPORARY CONSTRUCTION EXIT.
1. PERIODIC ADDITION OF ROCK, OR REMOVAL AND REPLACEMENT OF PAD SHALL BE PROVIDED AS VOIDS BECOME FILLED WITH SOIL.

E. TEMPORARY PUMPED SEDIMENT CONTROL DEVICE.
1. REPLACE THE UNIT WHEN 1/2 FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE.

F. PLACE SEDIMENT IN APPROPRIATE LOCATIONS ON SITE; DO NOT REMOVE FROM SITE.

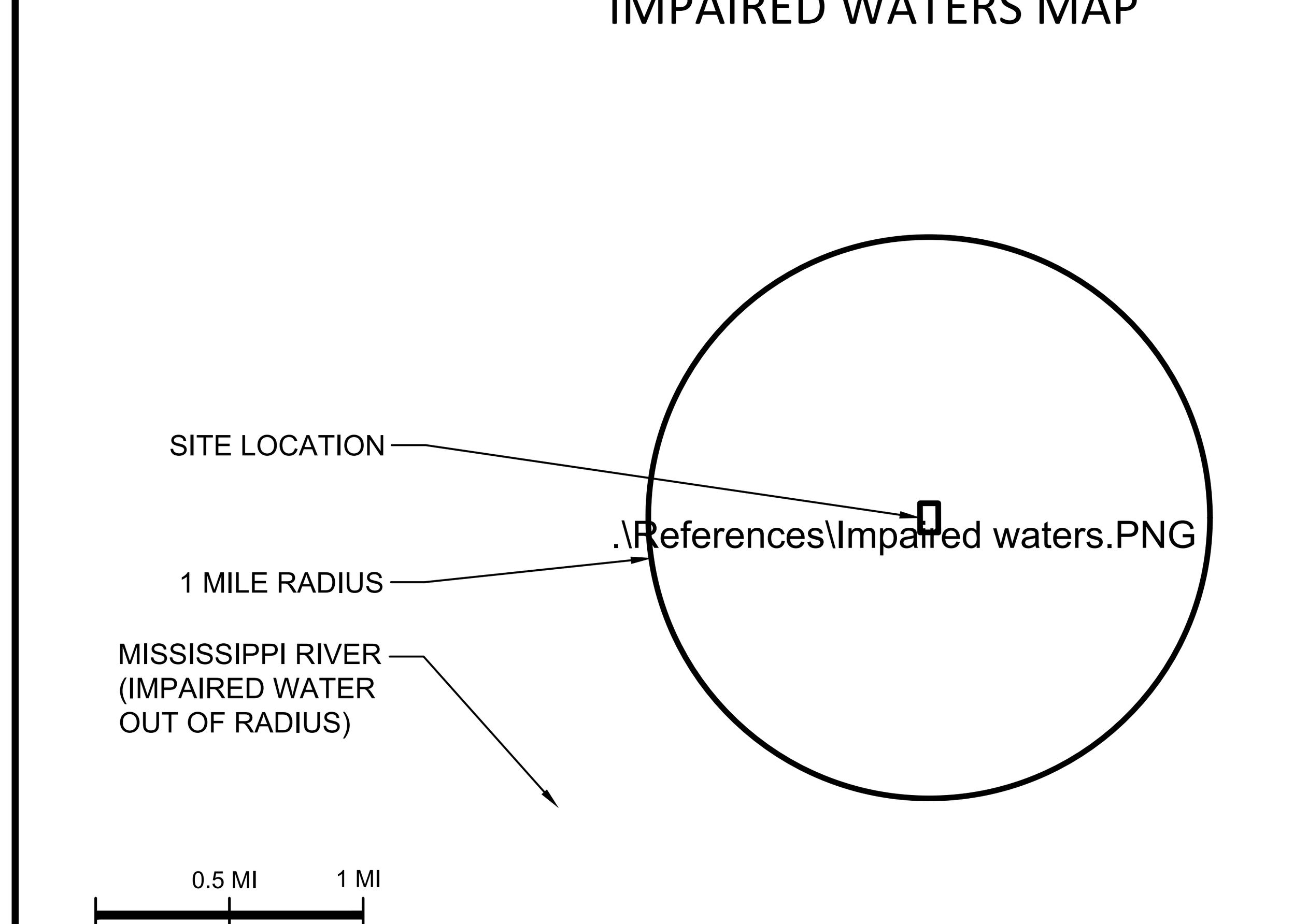
3.05 CLEAN UP

A. REMOVE TEMPORARY MEASURE AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED.

B. WHERE REMOVAL OF TEMPORARY MEASURES WOULD LEAVE EXPOSED SOIL, SHAPE SURFACE TO AN ACCEPTABLE GRADE AND FINISH TO MATCH ADJACENT GROUND SURFACES.

END OF SECTION

IMPAIRED WATERS MAP



REV NO.	DATE	DESCRIPTION
-	02/22/2021	DRAWINGS ISSUED TO CITY
1	03/12/2021	DRAWINGS REVISED PER CITY REVIEW
2	03/30/2021	MPCA REVIEW
3	04/21/2021	FINAL CONSTRUCTION PLANS
4	05/14/2021	DRAWINGS REVISED PER 2ND CITY REVIEW
5	06/30/2021	ADDENDUM 1
6	04/18/2022	RECORD AS-BUILT DRAWINGS

DATE: 02/22/2021
DESIGN BY: MJM
DRAWN BY: MJM
CHECKED BY: CJD
DWG FILE: SWPPP
FILE NO.: 21-0046.00

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.

Signed: Christopher J. Dahn
Date: 04/18/2022 Lic. No. 58628

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TRANQUIL MEADOWS
RESIDENTIAL DEVELOPMENT
PROVIDENCE S&S, LLC
City of Elk River, Sherburne County, MN

SWPPP NARRATIVE

SHEET NO.
C13

5/9/2022 3:38 PM