PROJECT #582 L
APPROXIMATE DISTURBANCE AREA: 205 SQ. YDS.
STA. 39+50
N: 4944767.0830
E: 3353789.3076

PROJECT #582 J
APPROXIMATE DISTURBANCE AREA: 186 SQ. YDS.
STA. 49+50
N: 4945112.1873
E: 3352781.4357

PROJECT #582 F
APPROXIMATE DISTURBANCE AREA: 542 SQ. YDS.
STA. 21+50
N: 4847282.9408
E: 3352557.6911

PROJECT #582 E
APPROXIMATE DISTURBANCE AREA: 133 SQ. YDS.
STA. 41+00
N: 4845522.2118
E: 3352485.6097

PROJECT #582 H
APPROXIMATE DISTURBANCE AREA: 133 SQ. YDS.
STA. 41+00
N: 4845522.2118
E: 3352485.6097

PROJECT #582 G
APPROXIMATE DISTURBANCE AREA: 255 SQ. YDS.
STA. 39+50
N: 4944767.0830
E: 3353789.3076

PROJECT #582 H
APPROXIMATE DISTURBANCE AREA: 133 SQ. YDS.
STA. 41+00
N: 4845522.2118
E: 3352485.6097

PROJECT #582 E
APPROXIMATE DISTURBANCE AREA: 133 SQ. YDS.
STA. 41+00
N: 4845522.2118
E: 3352485.6097

PROJECT #582 H
APPROXIMATE DISTURBANCE AREA: 133 SQ. YDS.
STA. 41+00
N: 4845522.2118
E: 3352485.6097

PROJECT #582 G
APPROXIMATE DISTURBANCE AREA: 255 SQ. YDS.
STA. 39+50
N: 4944767.0830
E: 3353789.3076

W COLLEGE ST
KENWOOD AVE
CHESTER BOWL DR

Approximate Disturbance Areas:

- #582 L: 205 SQ. YDS.
- #582 J: 186 SQ. YDS.
- #582 F: 542 SQ. YDS.
- #582 E: 133 SQ. YDS.
- #582 H: 133 SQ. YDS.
- #582 G: 255 SQ. YDS.
LOCATION OF ACCESS PATH TO PROJECT #582 L SITE SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL CONSISTENT WITH MINNESOTA MUTCD LAYOUT 39, RIGHT LANE CLOSURE, MULTI-LANE UNDIVIDED ROAD. SUBMIT TRAFFIC CONTROL PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

LOCATION OF ACCESS PATH TO PROJECT #582 J SITE SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR MAY UTILIZE A PORTION OF THE EXISTING FOOTPATH AND CLOSE IT TO PEDESTRIAN TRAFFIC.

LOCATION OF ACCESS PATH TO PROJECT #582 H SITE SHALL BE APPROVED BY THE ENGINEER AND MAY UTILIZE THE EXISTING FOOTPATH. THE CONTRACTOR SHALL MAKE PROVISIONS TO LEAVE THE FOOTPATH OPEN TO THE PUBLIC AND PROVIDE FOR SAFE PASSAGE.

INSTALL STONE CONSTRUCTION ENTRANCE AT KENWOOD AVE. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL CONSISTENT WITH MINNESOTA MUTCD LAYOUT 39, RIGHT LANE CLOSURE, MULTI-LANE UNDIVIDED ROAD. SUBMIT TRAFFIC CONTROL PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

EXISTING FOOTPATH (TYP.)

MAINTENANCE AND RESTORATION OF ACCESS PATHS SHALL INCLUDE AGGREGATE, TOPSOIL, SEED MIXTURE 36-311 FOR WOODED AREAS AND SEED MIXTURE 25-131 FOR ROADSIDE AREAS AND EROSION CONTROL MAT 3N-2S. ANY NECESSARY FILTER LOGS SHALL BE INCIDENTAL TO PROJECT MOBILIZATION.

LOCATION OF ACCESS PATH TO PROJECT #582 H SITE SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR MAY UTILIZE A PORTION OF THE EXISTING FOOTPATH. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL CONSISTENT WITH MINNESOTA MUTCD LAYOUT 39, RIGHT LANE CLOSURE, MULTI-LANE UNDIVIDED ROAD. SUBMIT TRAFFIC CONTROL PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

EXISTING FOOTPATH (TYP.)
CONSTRUCTION ACCESS TO PROJECT #582 XX SITE SHALL BE APPROVED BY THE ENGINEER.

CONSTRUCTION ACCESS TO PROJECT #582 F SITE SHALL BE APPROVED BY THE ENGINEER AND SHALL INCLUDE INSTALLATION OF A STONE CONSTRUCTION ENTRANCE ALONG SKYLINE PKWY AND AN APPROVED TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL INVESTIGATE THE POSSIBILITY OF USING THE SAME ACCESS ROUTE AS THE CONTRACTOR FOR PROJECT #582E1.

MAINTENANCE AND RESTORATION OF ACCESS PATHS SHALL INCLUDE AGGREGATE, TOPSOIL, SEED MIXTURE 36-311 FOR WOODED AREAS AND SEED MIXTURE 25-131 FOR ROADSIDE AREAS AND EROSION CONTROL MAT 3N-2S. ANY NECESSARY FILTER LOGS SHALL BE INCIDENTAL TO PROJECT MOBILIZATION.
CHESTER CREEK
FLOW

EX. OF BEDROCK AT THE TOE OF SLOPE

TOE OF RIP RAP (BURIED)

TRANSITION AREA

EXISTING 10' X 10' BOX CULVERT
IE = 1064.74

EXISTING 30" RCP WITH RC FES
IE = 1064.74

STA. 61+57 OFF 7' RT TO STA 61+44 OFF 25' RT.
RIP RAP SLOPE REPAIR & VRSS - TYPE B
SEE TYPICAL SECTION D/C19 AND D/C19

RESTORE EXISTING FOOT PATH AS NECESSARY AFTER SLOPE REPAIR

NOTE: ENGINEER SHALL MARK SELECT TREES IN THE FIELD THAT ARE TO BE REMOVED FROM THE EDGE OF THE FAILURE.

EROSION CONTROL MAT
V.R.S.S.
RIP RAP

ENGINEER WILL MARK SELECT STREAM ROCK IN THE FIELD TO BE RECLAIMED AND PLACED ON THE BEDROCK AT THE TOE OF SLOPE.
(SEE PHOTO "A" THIS SHEET)

TOE OF BANK SLOPE (TYP.)

DISTURBANCE LIMITS (TYP.)

DISTURBANCE LIMITS (TYP.)

EXAMPLE OF AREA TO HARVEST ROCKS

PHOTO A
CURRENT SITE CONDITIONS

PHOTO B
CURRENT SITE CONDITIONS

KNOWLEDGE AVE

STA. 60+81, OFF 26' RT. TO STA. 60+29 OFF 27' RT
RIP RAP SLOPE REPAIR & VRSS - TYPE B
SEE TYPICAL SECTION B/C17 AND D/C19

RESTORE EXISTING FOOT PATH AS NECESSARY AFTER SLOPE REPAIR

NOTE: ENGINEER SHALL MARK SELECT TREES IN THE FIELD THAT ARE TO BE REMOVED FROM THE EDGE OF THE FAILURE.

EROSION CONTROL MAT
V.R.S.S.
RIP RAP
EXISTING 36" PLASTIC
IE = 1121.46
EXISTING 6" PERFORATED CMP
DIRECTLY ABOVE EX. 36" STORM

EXISTING 36" PLASTIC
IE = 1119.87
SEE STORM SEWER IMPACT
ENERGY DISSIPATOR DETAIL
ON SHEET C-18

NATURAL TRANSITION
TO CHESTER CREEK
DO NOT DISTURB

INSTALL TOPSOIL SEED MIXTURE 36-311,
EROSION CONTROL BLANKET CATEGORY 4N-25
PER MNDOT 3885 AND LIVE STAKES SPACED 18" APART.

INSTALL RIP RAP SLOPE STABILIZATION
TO ELEV. 1121 USE MNDOT TYPE III RIP RAP
MAX SLOPE 2H:1V

EXISTING FOOT PATH

EXISTING FOOT PATH

DEADFALL & DEBRIS REMOVAL AREA

BRIDGE

KENWOOD AVE

218-722-3915  1-800-777-7380  Fax: 218-722-4548
332 W. Superior Street  Duluth, MN 55802
Web Address: www.msa-ps.com
APPROXIMATE LIMITS OF BANK EROSION
STA. 40+91 OFF 30' RT. TO STA. 40+77 OFF 30' RT. INSTALL TOPSOIL, SEED MIXTURE 36-311, EROSION CONTROL BLANKET AND LIVE STAKES. EROSION CONTROL BLANKET SHALL BE CATEGORY 4N-2S PER MNDOT 3885. LIVE STAKES SHALL BE SPACED APPROX. 18" APART.

LOCATION OF ACCESS PATH TO PROJECT #582 H SITE SHALL BE APPROVED BY THE ENGINEER AND MAY UTILIZE THE EXISTING FOOTPATH. THE CONTRACTOR SHALL MAKE PROVISIONS TO LEAVE THE FOOTPATH OPEN TO THE PUBLIC AND PROVIDE FOR SAFE PASSAGE. ANY ALTERATION TO POTENTIAL ACCESS SHOULD BE REVIEWED AND APPROVED BY THE ENGINEER.

LOCATION OF ACCESS PATH TO PROJECT #582 H SITE SHALL BE APPROVED BY THE ENGINEER AND MAY UTILIZE THE EXISTING FOOTPATH. THE CONTRACTOR SHALL MAKE PROVISIONS TO LEAVE THE FOOTPATH OPEN TO THE PUBLIC AND PROVIDE FOR SAFE PASSAGE. ANY ALTERATION TO POTENTIAL ACCESS SHOULD BE REVIEWED AND APPROVED BY THE ENGINEER.

APPROXIMATE LIMITS OF BANK EROSION
STA. 40+91 OFF 30' RT. TO STA. 40+77 OFF 30' RT. INSTALL TOPSOIL, SEED MIXTURE 36-311, EROSION CONTROL BLANKET AND LIVE STAKES. EROSION CONTROL BLANKET SHALL BE CATEGORY 4N-2S PER MNDOT 3885. LIVE STAKES SHALL BE SPACED APPROX. 18" APART.

LOCATION OF ACCESS PATH TO PROJECT #582 H SITE SHALL BE APPROVED BY THE ENGINEER AND MAY UTILIZE THE EXISTING FOOTPATH. THE CONTRACTOR SHALL MAKE PROVISIONS TO LEAVE THE FOOTPATH OPEN TO THE PUBLIC AND PROVIDE FOR SAFE PASSAGE. ANY ALTERATION TO POTENTIAL ACCESS SHOULD BE REVIEWED AND APPROVED BY THE ENGINEER.
NOTE:

1. REMOVE DEADFALL AND DEBRIS FROM STREAM AS APPROVED BY THE ENGINEER AND DNR STAFF. CONTRACTOR SHALL HARVEST LARGE BOULDERS FROM SLOPE TO BE USED ABOVE OHW TO PROVIDE A TOE FOR V.R.S.S. AND SOIL RESTORATION ABOVE. SEE PICTURE THIS SHEET.

2. CONTRACTOR SHALL REMOVE AND SALVAGE ANY NEWLY PLANTED TREES IN THE AREA OF WORK. ANY TREES THAT CAN BE SALVAGED CAN BE SUBSTITUTED FOR LIVE STAKES IN PLANTING.
EXISTING 15" DIAMETER STORM SEWER

INSTALL 16 LF OF 24-INCH HDPE CULVERT WITH APRON ENDWALLS.
RESTORE EXISTING FOOT PATH.
SEE DETAILS A/C20 AND D/C20.

NOTE: RIP RAP FOR CULVERT INTAKE AND OUTFALL WILL BE PAID AT THE CONTRACT UNIT PRICE FOR RIP RAP CLASS III. PER DETAILS A/C20 AND D/C20.

CLEAR DEADFALL/DEBRIS AS DIRECTED BY ENGINEER
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.
INSTALL V.R.S.S. - TYPE B AT 1:5.1 TO ELEV. 1170.0.
INSTALL RIP RAP TOE PROTECTION AT 1:5.1 TO ELEV. 1168.0
TOE OF BANK SLOPE

DESIGN EL.
STA. = 60+75
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.
INSTALL V.R.S.S. - TYPE B AT 1:5.1 TO ELEV. 1170.5.
INSTALL RIP RAP TOE PROTECTION AT 1:5.1 TO ELEV. 1169.0.
TOE OF BANK SLOPE

100-YR. ELEV. = 1169.08
18-MO. ELEV. = 1168.93

DESIGN EL. 1165.85
STA. = 60+66
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.
INSTALL V.R.S.S. - TYPE B AT 1:5.1 TO ELEV. 1170.0.
INSTALL RIP RAP TOE PROTECTION AT 1:5.1 TO ELEV. 1168.0
TOE OF BANK SLOPE

100-YR. ELEV. = 1169.39
18-MO. ELEV. = 1167.12

DESIGN EL. 1165.38
STA. = 61+00
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.
INSTALL V.R.S.S. - TYPE B AT 1:5.1 TO ELEV. 1170.0.
INSTALL RIP RAP TOE PROTECTION AT 1:5.1 TO ELEV. 1168.0
TOE OF BANK SLOPE

100-YR. ELEV. = 1169.08
18-MO. ELEV. = 1168.93

DESIGN EL.: 1165.00
STA. = 60+00
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.
INSTALL V.R.S.S. - TYPE B AT 1:5.1 TO ELEV. 1170.5.
INSTALL RIP RAP TOE PROTECTION AT 1:5.1 TO ELEV. 1169.0.
TOE OF BANK SLOPE

100-YR. ELEV. = 1169.39
18-MO. ELEV. = 1167.12

DESIGN EL.: 1165.00
STA. = 60+00
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.
INSTALL V.R.S.S. - TYPE B AT 1:5.1 TO ELEV. 1170.0.
INSTALL RIP RAP TOE PROTECTION AT 1:5.1 TO ELEV. 1168.0
TOE OF BANK SLOPE

100-YR. ELEV. = 1169.08
18-MO. ELEV. = 1168.93
EXISTING SURFACE

INSTALL ENERGY IMPACT DISSIPATOR
SEE DETAIL A ON SHEET C18

SECTION C-C

INSTALL TOPSOIL, SEED MIXTURE 36-311,
EROSION CONTROL BLANKET CATEGORY 4N-2S
PER MNDOT 3885 AND LIVE STAKES SPACED 18" APART.

EXISTING SURFACE

PROPOSED SURFACE
RIP RAP BOWL MNDOT TYPE III
INSTALL RIP RAP TO ELEV. 1121

SECTION B-B

INSTALL TOPSOIL, SEED MIXTURE 36-311,
EROSION CONTROL BLANKET CATEGORY 4N-2S
PER MNDOT 3885 AND LIVE STAKES SPACED 18" APART.

EXISTING SURFACE

PROPOSED SURFACE
RIP RAP BOWL MNDOT TYPE III
INSTALL RIP RAP TO ELEV. 1121

MINIMUM 18" COMPACTED
GRANULAR BASE

NATURAL TRANSITION TO
CHESTER CREEK
DO NOT DISTURB

PROPOSED SURFACE
RIP RAP BOWL MNDOT TYPE III
INSTALL RIP RAP TO ELEV. 1121

EXISTING SURFACE

INSTALL ENERGY IMPACT DISSIPATOR
SEE DETAIL A ON SHEET C18

SECTION C-C

INSTALL TOPSOIL, SEED MIXTURE 36-311,
EROSION CONTROL BLANKET CATEGORY 4N-2S
PER MNDOT 3885 AND LIVE STAKES SPACED 18" APART.

EXISTING SURFACE

PROPOSED SURFACE
RIP RAP BOWL MNDOT TYPE III
INSTALL RIP RAP TO ELEV. 1121

MINIMUM 18" COMPACTED
GRANULAR BASE

NATURAL TRANSITION TO
CHESTER CREEK
DO NOT DISTURB

PROPOSED SURFACE
RIP RAP BOWL MNDOT TYPE III
INSTALL RIP RAP TO ELEV. 1121

EXISTING SURFACE

INSTALL ENERGY IMPACT DISSIPATOR
SEE DETAIL A ON SHEET C18

SECTION C-C

INSTALL TOPSOIL, SEED MIXTURE 36-311,
EROSION CONTROL BLANKET CATEGORY 4N-2S
PER MNDOT 3885 AND LIVE STAKES SPACED 18" APART.
INSTALL TOPSOIL, SEEDING, EROSION CONTROL BLANKET AND LIVE PLANTINGS. EROSION CONTROL BLANKET SHALL BE CATEGORY 4N-2S PER MNDOT 3885
100-YR. ELEV. = 994.62
18-MO. ELEV. = 991.03

TRANSITION AREA
INSTALL EROSION CONTROL BLANKET 4N-2S
AT 1.5:1.

DESIGN EL. 990.14

STA.= 21+12

DESIGN EL. 989.14

STA.= 21+25

05/20/2015  50396

CP NO. 1349, 1350, 1352, 1353
BANK STABILIZATION
CHESTER CREEK
CROSS SECTION
REACH 582 F
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.0.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.0.

100-YR. ELEV. = 994.77

18-MO. ELEV. = 990.86

DESIGN EL. = 996.70

STA. = 21+00

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.0.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.0.

TOE OF BANK SLOPE

DESIGN EL. = 996.0

STA. = 20+88

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.5.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.

TOE OF BANK SLOPE

DESIGN EL. = 996.0

STA. = 21+00

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.0.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.0.

TOE OF BANK SLOPE

DESIGN EL. = 996.0

STA. = 21+00

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.5.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.

TOE OF BANK SLOPE

DESIGN EL. = 996.0

STA. = 20+88

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.0.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.0.

TOE OF BANK SLOPE

DESIGN EL. = 996.0

STA. = 20+88

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 996.5.

INSTALL RIP RAP TOE PROTECTION AT 1:5:1 TO ELEV. 992.

TOE OF BANK SLOPE

DESIGN EL. = 996.0

STA. = 20+88
INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

TOE OF BANK SLOPE

100-YR. ELEV. = 992.15
18-MO. ELEV. = 989.37

DESIGN EL. 987.79

INSTALL V.R.S.S. - TYPE B AT 1:5:1 TO ELEV. 993.5.

TOE OF BANK SLOPE

100-YR. ELEV. = 993.49
18-MO. ELEV. = 990.11

DESIGN EL. 987.79

STA. = 20+50

INSTALL EROSION CONTROL BLANKET 4N-2S ABOVE V.R.S.S. - TYPE B TO DISTURBANCE LIMITS.

TOE OF BANK SLOPE

100-YR. ELEV. = 993.49
18-MO. ELEV. = 990.11

DESIGN EL. 987.79

STA. = 20+75
TRANSITION TO EXISTING GRADE USE EROSION CONTROL MAT CATEGORY 3N-2S AND LIVE STAKES. LIVE STAKES SHALL BE PLANTED AT 18" SPACING. EROSION CONTROL MAT 3N-2S MAY BE SUBSTITUTED IN AREAS WHERE THE SIDE SLOPE IS 3H:1V OR FLATTER AND WITH NO LIVE STAKES TRANSITION AREA TO BE PLANTED WITH MNDOT SEED MIXTURE 36-311 PER MNDOT 3876.

DEAD STOUT STAKES (TYP)

LIVE STAKES TO BE PLANTED ON TOP SIDE OF EACH LAYER
STAKES PLACED 18" APART OR LESS

NUMBER OF LiftS Varies MATCH BOUNDING ELEVATIONS SHOWN ON PLANS

EXISTING SOIL

SQUARE Cut

MINIMUM OF 2 BUDS EXPOSED ABOVE GROUND

LENGTH

ANGLE Cut 30°-45°

TAMP SOIL AROUND LIVE STAKE

LIVE PLANTS VEGETATED REINFORCED SOIL SLOPE (V.R.S.S.) - TYPE B DETAIL

GENERAL NOTES ON V.R.S.S. - TYPE B

1. THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.


3. LAY NATURAL FIBER MATTING ON BOTTOM OF THE BENCH, OVERLAPPING ADJACENT MATTING BY 1 FOOT. THE OUTER EXPOSED FIBER MATTING LAYER OF EACH SOIL LIFT SHALL BE GEOCOR/DEKOWE 900 WOVEN COCONUT FIBER MESH, BIO-MATT 90, OR AN ENGINEER APPROVED EQUIVALENT.

4. THE INNER LAYER OF FIBER MATTING FOR EACH SOIL LIFT SHALL BE BIOMET C125N OR AN ENGINEER APPROVED EQUIVALENT AND SHALL BE LAID BENEATH THE TOPSOL LAYER. LAY THE INNER LAYER OF BIOMET ON TOP OF NATURAL FIBER MATTING OF EACH SOIL LIFT. FABRIC SHOULD BE INSTALLED SMOOTH WITH NO UNNECESSARY FOLDS OR WRINKLES. STAKE THE SHOREWARD END OF THE FIBER MATTING IN PLACE WITH WOODEN STAKES SPACED EVERY THREE FEET AS SHOWN ON THE DRAWINGS.

5. THE FIRST 6 TO 8 INCHES OF THE BOTTOM SOIL LIFT SHALL BE FILLED WITH GRANULAR MATERIAL EXCAVATED FROM THE STREAM BED. THE TOP 6 TO 8 INCHES ON THE FRONT OF THE SURFACE LAYER SHOULD BE CONSISTED OF TOPSOIL MIX AS SHOWN ON THE DRAWINGS.

6. THE TOPSOIL LAYER SHALL BE SEEDED WITH MNDOT SEED MIXTURE 34-361 PER MNDOT 3876 AT 0.7 POUNDS PER 1,000 SQUARE FEET OF LIFT SURFACE AREA AS SHOWN ON THE DRAWINGS.

7. FOLD THE FIBER MATTING OVER THE FILL MATERIAL AND STAKE IN PLACE SO THE FABRIC IS TIGHT AND SMOOTH WITH NO UNNECESSARY FOLDS OR WRINKLES. BACKFILL BEHIND THE BOTTOM SOIL LIFT WITH GRANULAR FILL MATERIAL TO MEET THE EXISTING SLOPE AS SHOWN ON THE DRAWINGS.

8. LIVE STAKES SHALL BE PLACED AT 18-INCHES APART ON CENTER AND SHALL BE SELECTED FROM TABLE 2 ON SHEET G2.


10. INSTALLATION OF V.R.S.S. - TYPE B SHALL INCLUDE FILL MIXTURE, OUTER AND INNER FABRIC TYPES SPECIFIED ABOVE, TOPSOIL AND SEED MIXTURE SPECIFIED ABOVE. LIVE STAKES ARE TO BE PAID FOR SEPARATELY.
NOTES
1. ALL ELEMENTS TO BE REINFORCED WITH #5 REBAR AT 12" ON CENTER.
2. INSTALLATION SHALL INCLUDE TRASH RACK, BOLTED TO STRUCTURE AND COMPLETELY COVERING THE VERTICAL OPENING. TRASH RACK SHALL HAVE 4" MINIMUM OPENINGS.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR STRUCTURE, INCLUDING REBAR AND TRASH RACK.
4. GRANULAR BASE SHALL BE INCIDENTAL TO CONCRETE DISSIPATOR STRUCTURE.
5. BOULDERS SHALL BE INCIDENTAL TO RIP RAP, CLASS III.
6. CONTRACTOR SHALL PROVIDE FLOW BYPASS DURING CONSTRUCTION ACTIVITY, ANY WORK RELATED SHALL BE INCLUDED UNDER PAY ITEM "CONTROL OF WATER".

A STORM SEWER IMPACT ENERGY DISSIPATOR
C18 NOT TO SCALE
NOTES:

1. PROVIDE LOCAL DRAINAGE AS DIRECTED BY ENGINEER.

2. AGGREGATE FOR FOOT PATHS SHALL BE CRUSHED STONE MEETING THE REQUIREMENTS FOR CLASS I AGGREGATE PER MNDOT 3138 - TABLE 3138-3.

3. FABRIC TYPE 3 PER MNDOT 3733.

4. Riprap shall be 3 feet thick and placed along the outer edge of the toe.

5. Riprap shall be placed at least 1 foot above the top elevation as shown on the plans.

6. Riprap shall be苓 type V.

7. Riprap installation shall include granular filter layer, geotextile fabric and type V riprap.

8. Riprap toe protection.

9. Riprap shall meet the requirements of MNDOT 3601 - TABLE 3601-2.

10. silence soil conditions. The use of staples or stake lengths greater than 6" (15 cm) may be necessary to properly secure the blankets.

11. Footpath construction & restoration shall include aggregate, erosion control, mat 3N-2S and MNDOT seed mixture 34-312.


13. Typical silt fence installation at site perimeter detail.

14. Erosion control blanket shall be category 4N-2S with all natural netting & ditching per MNDOT 3885 - TABLE 3885-3.
**PROJECT #582 XX - STORM SEWER OUTFALL DETAIL**

- **SECTION A-A (DOWNTREAM)**
  - Filter fabric along the rip rap
  - Use HDPE headwall
  - 6" min, 12" max

- **SECTION A-A (UPSTREAM)**
  - Filter fabric along the rip rap
  - Use HDPE headwall
  - 6" min, 12" max

**PROJECT #582 XX - CULVERT INTAKE DETAIL**

- **SECTION B-B**
  - Class III rip rap 24" thick
  - Flared end section

- **SECTION C-C**
  - Rip rap
  - Filter fabric

**TOPSOIL AND SEEDING DETAIL**

- Use HDPE headwall
- 6" min, 12" max
- Filter fabric along the rip rap

**FILTER LOG BLANKET SYSTEM DETAIL**

- Use HDPE headwall
- 6" min, 12" max
- Filter fabric along the rip rap

**NOTE:** Where required, plant herbaceous plugs according to plan.

**TOPSOIL**

- Straw mulch or erosion control blanket as specified
- Specified seed mix and fertilizer applied at specified rate
- Scarify subsoil to promote root penetration

**USE HDPE HEADWALL**

- 6" min, 12" max
- Filter fabric along the rip rap