

EROSION AND SEDIMENTATION CONTROL PLAN

THE PRIMARY POINTS THAT ARE EMPHASIZED BY THE EROSION AND SEDIMENTATION CONTROL PLAN TO BE IMPLEMENTED FOR THIS PROJECT ARE AS FOLLOWS:

- DEVELOPMENT OF A CAREFUL CONSTRUCTION SEQUENCE.
- RAPID REVEGETATION OF DISTURBED AREAS TO MINIMIZE THE DURATION OF SOIL EXPOSURE.
- RAPID STABILIZATION OF DRAINAGE PATHS TO AVOID RILL AND GULLY EROSION.
- THE USE OF ON-SITE MEASURES TO CAPTURE SEDIMENT (SEDIMENTATION BASINS, SILT FENCE, ETC.)

THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES WILL BE IMPLEMENTED AS PART OF THE SITE DEVELOPMENT. THESE DEVICES SHALL BE INSTALLED AND MAINTAINED WITHIN THE DISTURBED AREA UNTIL THE CONSTRUCTION IS NOT ANTICIPATED, BUT IF CONSTRUCTION IS NECESSARY IN THE WETLAND IMPACT AREA BETWEEN SEPTEMBER 15 AND APRIL 15 THE CONTRACTOR IS REFERRED TO SECTION 8.4 - WINTER STABILIZATION PLAN AND 8.5 - STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITE DURING WINTER. FOR FURTHER REFERENCE, SEE THE MAJOR EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES.

A. TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING MEASURES ARE PLANNED AS TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION:

1. A CRUSHED-STONE-STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE PROPOSED ACCESS POINT TO CROSS-COUNTRY CONSTRUCTION AREA. WATER SHALL BE UTILIZED TO CONTROL DUST.
2. SILTATION FENCE OR OTHER APPROVED SEDIMENT BARRIER SHALL BE INSTALLED DOWNSTREAM OF ANY DISTURBED AREAS TO TRAP RUNOFF-BORNE SEDIMENTS UNTIL THE SITE IS RE-VEGETATED. DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL BE INSTALLED WITH WOOD WASTE FILTER BERM AS FROZEN SOILS PREVENT PROPER INSTALLATION OF HAY BALES AND SILT FENCE. SILT FENCE SHALL BE INSTALLED PER THE DETAIL PROVIDED IN THE PLAN SET AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR IF THE FENCE BECOMES DAMAGED, TORN, OR KNOCKED OVER. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM. A DOUBLE ROW OF SILTATION FENCE SHALL BE INSTALLED ADJACENT TO WETLANDS, AS SHOWN ON THE PLANS.
3. STRAW/HAY OR HYDROMULCH IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL RE-VEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15 AND SEPTEMBER 15 ON SLOPES LESS THAN 15 PERCENT SHALL BE ANCHORED BY APPLYING WATER. MULCH PLACED ON SLOPES GREATER THAN 15 PERCENT SHALL BE COVERED BY A FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FABRIC NETTING AND STAPLES SHALL BE USED ON ALL DISTURBED AREAS WITHIN 100 FEET OF ANY STREAM OR WETLAND REGARDLESS OF THE UPSTREAM SLOPE. MULCH PLACED BETWEEN SEPTEMBER 15 AND APRIL 15 ON SLOPES GREATER THAN OR EQUAL TO 8 PERCENT SHALL BE COVERED WITH A FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SLOPES STEEPER THAN 3H:1V AND EQUAL TO OR FLATTER THAN 2H:1V THAT ARE TO BE RE-VEGETATED SHALL RECEIVE CURLEX BLANKETS BY AMERICAN EXCELOR OR APPROVED EQUIVALENT. SLOPES STEEPER THAN 2H:1V SHALL RECEIVE RIPRAP AS NOTED IN THE PLAN SET. MULCH APPLICATION RATES ARE PROVIDED IN ATTACHMENT B OF THIS SECTION. IN NO INSTANCE SHALL MULCH BE PLACED OVER SNOW.
4. TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, AND/OR COMMON EXCAVATION WILL BE PROTECTED AS FOLLOWS:
 - A) TEMPORARY STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE SWALES AND SHALL NOT BE LOCATED WITHIN 100 FEET OF ANY UNDISTURBED WETLANDS.
 - B) STOCKPILES SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OF THE TIME OF FORMATION DURING SUMMER CONSTRUCTION AND WITHIN 24 HOURS OF FORMATION DURING WINTER CONSTRUCTION BY ONE OF THE FOLLOWING METHODS:
 - TEMPORARILY SEEDING THE STOCKPILE BY A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER, OR
 - COVERING THE STOCKPILE WITH MULCH SUCH AS HAY, STRAW, OR OTHER EROSION CONTROL MIX.
 - STOCKPILES SHALL BE SURROUNDED BY SEDIMENTATION BARRIER AT THE TIME OF FORMATION.
 - C) ALL DISTURBED AREAS WITHIN 100 FEET OF UNDISTURBED WETLANDS THAT HAVE BEEN ROUGH GRADED SHALL RECEIVE MULCH OR EROSION CONTROL MESH FABRIC WITHIN SEVEN (7) DAYS OF INITIAL DISTURBANCE OF SOIL. ALL AREAS WITHIN 100 FEET OF UNDISTURBED WETLANDS SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE SEVEN-DAY WINDOW. IN OTHER AREAS THE TIME PERIOD MAY BE EXTENDED TO FOURTEEN (14) DAYS.
6. FOR WORK THAT IS CONDUCTED BETWEEN SEPTEMBER 15 AND APRIL 15 OF ANY CALENDAR YEAR, ALL DENUDED AREAS SHALL BE COVERED WITH HAY MULCH OR EROSION CONTROL MIX APPLIED AT TWICE THE NORMAL APPLICATION RATE AND ANCHORED WITH FABRIC NETTING. THE TIME PERIOD FOR APPLYING MULCH SHALL BE LIMITED TO SEVEN (7) DAYS FOR ALL AREAS.
7. THE SURROUNDING ROADWAY INFRASTRUCTURE SHALL BE SWEEPED OF MUD AND DUST AS NECESSARY TO PREVENT TRACKING AND CREATION OF DUST.
8. DURING GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINT AND AS INDICATED IN THE PLAN SET.
9. SILT FENCING WITH A MINIMUM STAKE SPACING OF SIX (6) FEET SHALL BE USED DOWNSTREAM OF ALL DISTURBED AREAS AND AS INDICATED IN THE PLAN SET. IF FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT OF MINIMUM FOURTEEN (14) GAUGE AND MAXIMUM MESH SPACING OF SIX (6) INCHES, STAKES MAY BE SPACED A MAXIMUM OF TEN (10) FEET APART. THE BOTTOM OF THE FENCE SHALL BE ANCHORED.
10. STORM DRAIN CATCH BASIN INLET PROTECTION SHALL BE PROVIDED THROUGH THE USE OF APPROVED INLET SEDIMENT FILTER BAGS; INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. THE INLET FILTER BAGS SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRS MADE AS NECESSARY. INLET FILTER BAGS SHALL BE CLEANED WHENEVER THERE IS ACCUMULATION OF ONE-HALF THE DESIGN DEPTH OF THE BAG. THE INLET FILTER BAG SHALL BE REMOVED WHEN THE TRIBUTARY DRAINAGE AREA HAS BEEN STABILIZED.
11. WATER SHALL BE FURNISHED AND APPLIED IN ACCORDANCE WITH MDT SPECIFICATIONS, SECTION 637 -DUST CONTROL.
12. LOAM AND SEED IS INTENDED TO SERVE AS THE PRIMARY PERMANENT RE-VEGETATION MEASURE FOR ALL DENUDED AREAS NOT PROVIDED WITH OTHER EROSION CONTROL MEASURES SUCH AS PAVING OR RIPRAP. APPLICATION RATES ARE PROVIDED IN ATTACHMENT B OF THIS SECTION. IN NO INSTANCE SHALL SEEDING OCCUR OVER SNOW.

B. PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE IMPLEMENTED AS PART OF THE EROSION AND SEDIMENTATION CONTROL PLAN:

1. ALL AREAS DISTURBED DURING CONSTRUCTION NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.) SHALL BE LOAMED, LIMED, FERTILIZED, MULCHED, AND SEEDED. FABRIC NETTING ANCHORED WITH STAPLES SHALL BE PLACED OVER THE MULCH IN AREAS AS NOTED IN PARAGRAPH 8.3.5.A.3. ALL AREAS WITHIN 100 FEET OF UNDISTURBED WETLANDS SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 7-DAY WINDOW. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION OPERATIONS OF BE OF SUFFICIENT QUALITY.
2. CATCH BASINS SHALL BE PROVIDED WITH SEDIMENT (SEE DETAILS) AND SEDIMENT HOODS IF CALLED FOR ON THE PLANS.

8.4 WINTER STABILIZATION PLAN

THE WINTER CONSTRUCTION PERIOD BEGINS SEPTEMBER 15 AND ENDS APRIL 15. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, ROAD GRAVEL BASE, 75 PERCENT NATIVE VEGETATION COVER OR PROTECTED WITH EROSION CONTROL MATS, A DOUBLE-LINE SEDIMENT BARRIER-WINTER STABILIZATION. AN EXPOSED AREA IS ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MAT, RIPRAP, OR GRAVEL BASE (ROAD ONLY).

WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT ANY AREA LEFT EXPOSED CAN BE CONTROLLED BY THE CONTRACTOR TO THE SATISFACTION OF THE THIRD PARTY EROSION CONTROL INSPECTOR. EXPOSED AREAS SHALL BE LIMITED TO THOSE AREAS IN WHICH WORK IS EXPECTED TO COMMENCE AND COMPLETE IN THE NEXT FIFTEEN (15) DAYS AND THAT CAN BE MULCHED WITHIN ONE DAY PRIOR TO ANY SNOW EVENT.

ALL FUTURE ROADWAY AREAS SHALL BE CLASSIFIED EXPOSED UNTIL SUBGRADE GRAVEL HAS BEEN INSTALLED; ALL FUTURE LOAM AND SEED AREAS SHALL BE CLASSIFIED EXPOSED UNTIL THEY HAVE BEEN LOAMED, SEEDED, AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT TWICE THE NORMAL RATE, OR 150 LBS./1,000 S.F. (3 TONS/ACRE) MINIMUM, AND SHALL BE PROPERLY ANCHORED.

THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL MEASURES AS NECESSARY TO CONTROL EROSION AND SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. EARTHWORK OPERATIONS ON OTHER AREAS SHALL NOT COMMENCE UNTIL THE EXPOSED SOIL SURFACE ON PREVIOUS AREAS BEING WORKED ON HAS BEEN STABILIZED IN ORDER TO MINIMIZE THE QUANTITY OF EXPOSED AREA AT ANY GIVEN TIME.

8.4.1 SOIL STOCKPILES

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER-WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE -150 LBS./1,000 S.F. (3 TONS/ACRE) -OR WITH A 4-INCH LAYER OF WOODWASTE EROSION CONTROL MIX. THIS MULCHING SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND SHALL BE RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL EVENT. NO SOIL STOCKPILE, MULCHED OR OTHERWISE, SHALL BE PLACED WITHIN 100 FEET OF ANY NATURAL RESOURCE.

8.4.2 NATURAL RESOURCE PROTECTION

ANY AREA WITHIN 100 FEET OF A NATURAL RESOURCE THAT IS NOT STABILIZED WITH A MINIMUM 75 PERCENT NATIVE VEGETATION CATCH SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH EROSION CONTROL MATS. A DOUBLE-LINE SEDIMENT BARRIER - SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX -SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. ANY NATURAL RESOURCE CROSSINGS SHALL BE PROTECTED TO MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESOURCE.

8.4.3 GENERAL MULCHING

ALL FUTURE LOAM AND SEED AREAS SHALL BE CONSIDERED DENUDED UNTIL THEY HAVE BEEN LOAMED, SEEDED, AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT TWICE THE NORMAL RATE, OR 150 LBS./1,000 S.F. (3 TONS/ACRE), AND SHALL BE PROPERLY ANCHORED. IN NO INSTANCE SHALL MULCH BE SPREAD ON TOP OF SNOW; SNOW SHALL BE REMOVED DOWN TO A MAXIMUM DEPTH OF ONE (1) INCH PRIOR TO MULCH APPLICATION.

AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY, STRAW, OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED STABILIZED WHEN EXPOSED SURFACES HAVE BEEN MULCHED WITH STRAW OR HAY AT A RATE OF 150 LBS./1,000 S.F. (3 TONS/ACRE) AND ABSOLUTELY ANCHORED TO THE EXTENT THAT THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. ALL MULCH SHALL BE ANCHORED BY PEG LINE, MULCH NETTING, TRACKING, OR WOOD CELLULOSE FIBER. MULCH SHALL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NO LONGER VISIBLE.

8.4.4 SLOPE AND DITCH MULCHING

SLOPES SHALL NOT BE LEFT EXPOSED FOR ANY EXTENDED PERIOD OF TIME UNLESS FULLY MULCHED AND ANCHORED WITH PEG AND NETTING OR EROSION CONTROL BLANKET. MULCH SHALL BE APPLIED TO ALL SLOPES GREATER THAN 8 PERCENT AT A RATE OF 230 LBS./1,000 S.F. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 3 PERCENT, FOR ALL SLOPES EXPOSED TO DIRECT WINDS, AND FOR ALL OTHER SLOPES GREATER THAN 8 PERCENT. EROSION CONTROL BLANKETS SHALL BE USED IN LIEU OF MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN OR EQUAL TO 8 PERCENT. EROSION CONTROL MIX MAY BE SUBSTITUTED FOR EROSION CONTROL BLANKETS ON ALL SLOPES NOT ASSOCIATED WITH DITCHES.

8.4.5 SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM AND SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, FINISHED AREAS SHALL BE FINE GRADED AND PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL FINAL TREATMENT CAN BE APPLIED. IF AFTER NOVEMBER 1 THE EXPOSED AREA HAS BEEN LOAMED AND FINAL GRADED WITH A UNIFORM SURFACE, THE AREA MAY BE DORMANT-SEEDED AT A RATE THREE TIMES THAT SPECIFIED FOR PERMANENT SEEDED AND MULCHED. DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH AND STAPLE-ANCHORED FABRIC NETTING. ALL DISTURBED AREAS RECEIVING DORMANT SEEDING SHALL RECEIVE FOUR (4) INCHES OF LOAM AND SHALL BE SEEDED AT A RATE OF 5 LBS./1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED AT THIS TIME (LESS THAN 75 PERCENT CATCH) SHALL BE RE-VEGETATED WITH LOAM, SEED, AND MULCH. IF DORMANT SEEDING IS NOT USED, ALL DISTURBED AREAS SHALL BE RE-VEGETATED IN THE SPRING.

8.4.6 DEWATERING AND TEMPORARY STREAM DIVERSION

WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION SHALL PASS THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. A DISCHARGE LOCATION SHALL BE SELECTED THAT AVOIDS FLOODING, ICING, AND SEDIMENT DISCHARGE TO ANY PROTECTED RESOURCE. IN NO INSTANCE SHALL FILTER BAGS OR CONTAINMENT STRUCTURES BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

8.4.7 INSPECTION AND MONITORING

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED THROUGHOUT THE ENTIRE CONSTRUCTION PHASE. AFTER EACH RAINFALL EVENT, SNOWFALL EVENT, OR PERIOD OF THAWING AND RUNOFF, CONTROL SHALL BE VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO ENSURE THEIR PROPER CONTINUOUS FUNCTION. IN THE SPRING FOLLOWING TEMPORARY AND/OR FINAL SEEDING AND MULCHING, CONTRACTOR SHALL INSPECT AND REPAIR ANY DAMAGED AND/OR UNESTABLISHED AREAS. VEGETATIVE COVER IS CONSIDERED ESTABLISHED WHEN A MINIMUM 85 TO 90 PERCENT OF VEGETATED AREAS EXHIBIT VIGOROUS GROWTH.

8.5 STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

8.5.1 DISTURBED SLOPES

CONTRACTOR SHALL CONSTRUCT AND STABILIZE STONE-LINED SLOPES BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 15. THE DEPARTMENT CONSIDERS ANY AREA HAVING A GRADE GREATER THAN 15 PERCENT TO BE A SLOPE. IF CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, CONTRACTOR SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

1. STABILIZE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -CONTRACTOR SHALL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A RATE OF 3 LBS./1,000 S.F. AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE BY OCTOBER 1. CONTRACTOR SHALL MONITOR RYE GROWTH OVER THE FOLLOWING 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75 PERCENT OF THE DISTURBED SLOPE BY NOVEMBER 1, CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF WOODWASTE COMPOST AS DESCRIBED IN ITEM 3 BELOW OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 4 BELOW.
2. STABILIZE SLOPE WITH SOD -CONTRACTOR SHALL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER SOD INSTALLATION INCLUDES PINNING TO THE UNDERLYING SOIL WITH WIRE PINS, ROLLING TO GUARANTEE CONTACT WITH UNDERLYING SOIL, WATERING TO PROMOTE ROOT GROWTH INTO UNDERLYING SOIL, AND ANCHORING WITH JUTE OR PLASTIC MESH TO PREVENT SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS. CONTRACTOR SHALL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33 PERCENT (3H:1V).
3. STABILIZE SLOPE WITH WOODWASTE COMPOST -CONTRACTOR SHALL PLACE A 6-INCH WOODWASTE COMPOST LAYER ON THE DISTURBED SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOODWASTE COMPOST, CONTRACTOR SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. CONTRACTOR SHALL NOT USE WOODWASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50 PERCENT (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

4. STABILIZE SLOPE WITH STONE RIPRAP -CONTRACTOR SHALL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. APPLICANT SHALL RETAIN A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE STONE SIZE, LINING THICKNESS, AND FILTER LAYER DESIGN REQUIRED FOR STABILITY.

8.5.2 DISTURBED SOILS

CONTRACTOR SHALL SEED AND MULCH ALL AREAS OF DISTURBED SOIL HAVING A GRADE OF LESS THAN 15 PERCENT BY SEPTEMBER 15. IF CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, CONTRACTOR SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

1. STABILIZE SOIL WITH TEMPORARY VEGETATION -CONTRACTOR SHALL SEED THE DISTURBED SOIL WITH WINTER RYE AT A RATE OF 3 LBS./1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT A RATE OF 75 LBS./1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING BY OCTOBER 1. CONTRACTOR SHALL MONITOR RYE GROWTH OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75 PERCENT OF THE DISTURBED SOIL BEFORE NOVEMBER 15, CONTRACTOR SHALL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM 3 BELOW.
2. STABILIZE SOIL WITH SOD -CONTRACTOR SHALL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER SOD INSTALLATION INCLUDES PINNING TO THE UNDERLYING SOIL WITH WIRE PINS, ROLLING TO GUARANTEE CONTACT WITH UNDERLYING SOIL, WATERING TO PROMOTE ROOT GROWTH INTO UNDERLYING SOIL, AND ANCHORING WITH JUTE OR PLASTIC MESH TO PREVENT SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.
3. STABILIZE SOIL WITH MULCH -CONTRACTOR SHALL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF 150 LBS./1,000 S.F. TO THE EXTENT THAT NO SOILS IS VISIBLE THROUGH THE MULCH BY NOVEMBER 15. PRIOR TO APPLICATION OF MULCH, CONTRACTOR SHALL REMOVE ANY SNOW ACCUMULATION FROM THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING, CONTRACTOR SHALL ANCHOR THE MULCH WITH PLASTIC NETTING TO PROTECT AGAINST DIRECT WIND.

8.6 IMPLEMENTATION SCHEDULE

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO OPTIMIZE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES. THE CONTRACTOR MAY PROPOSE ALTERNATE CONSTRUCTION SEQUENCING PROVIDED THAT THE EFFECTIVENESS OF THE OVERALL EROSION AND SEDIMENTATION CONTROL MEASURES IS PRESERVED:

NOTES:

- FOR ALL GRADING ACTIVITIES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO OVEREXPOSE THE SITE BY LIMITING THE DISTURBED AREA.
- PERMETER EROSION CONTROL MEASURES SHALL BE INSTALLED CONCURRENTLY WITH CLEARING AND GRUBBING OPERATIONS WITH CLEARING AND GRUBBING OPERATIONS SHALL BE MAINTAINED BY THE CONTRACTOR AS NECESSARY AS CONSTRUCTION PROGRESSES. CRUSHED-STONE-STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT ACCESS POINTS AND MAINTAINED DURING CONSTRUCTION.
- INSTALL PERMETER EROSION CONTROL MEASURES AS SHOWN ON SHEETS WITHIN THIS PLAN SET.
- CLEAR AND GRUB WORK AREA, BEING CONSIGNANT OF NOT OVER EXPOSING TOO MUCH AREA. STOCKPILES SHALL NOT BE PLACED WITHIN 100 FEET OF A PROTECTED RESOURCE. CLEARING SHALL NOT EXCEED LIMITS SHOWN ON THE PLANS.
- BEGIN CONSTRUCTION OF MAINTENANCE AND CONSTRUCTION ACCESS ROAD AT LLOYD AVENUE EXTENSION. CONTRACTOR MAY NOT EXCEED THE PERMANENT WETLAND IMPACTS AS SHOWN ON THE PLANS.
- BEGIN CONSTRUCTION OF NEW 24-INCH STORM DRAIN OUTFALL AND ASSOCIATED RIPRAP PLUNGE POOL.
- COMMENCE EXCAVATION FOR CONSTRUCTION OF 24-INCH STORM DRAIN AND 12-INCH SANITARY SEWER FROM FALL BROOK BACK TOWARDS THE INTERSECTION WITH VICTOR ROAD/NEPA STREET.
- THE REMAINDER OF THE PROJECT DOES NOT INCLUDE ANY ADDITIONAL WETLAND IMPACTS. CONTRACTOR TO INSTALL NECESSARY EROSION CONTROL BEST MANAGEMENT PRACTICES TO PREVENT EROSION AND SEDIMENTATION FROM ENTERING THE NEW STORM DRAIN OR EXISTING SANITARY SEWER SYSTEM. THESE MAY INCLUDE THE USE OF CATCH BASIN INLET FILTERS, SILT FENCE AND DUST SUPPRESSION.

8.7 EROSION, SEDIMENTATION AND STABILIZATION CONTROL PLAN

EROSION AND SEDIMENTATION CONTROL PLANS ARE INCLUDED IN THE PLAN SET.

8.8 DETAILS AND SPECIFICATIONS

EROSION AND SEDIMENTATION DETAILS, NOTES, AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

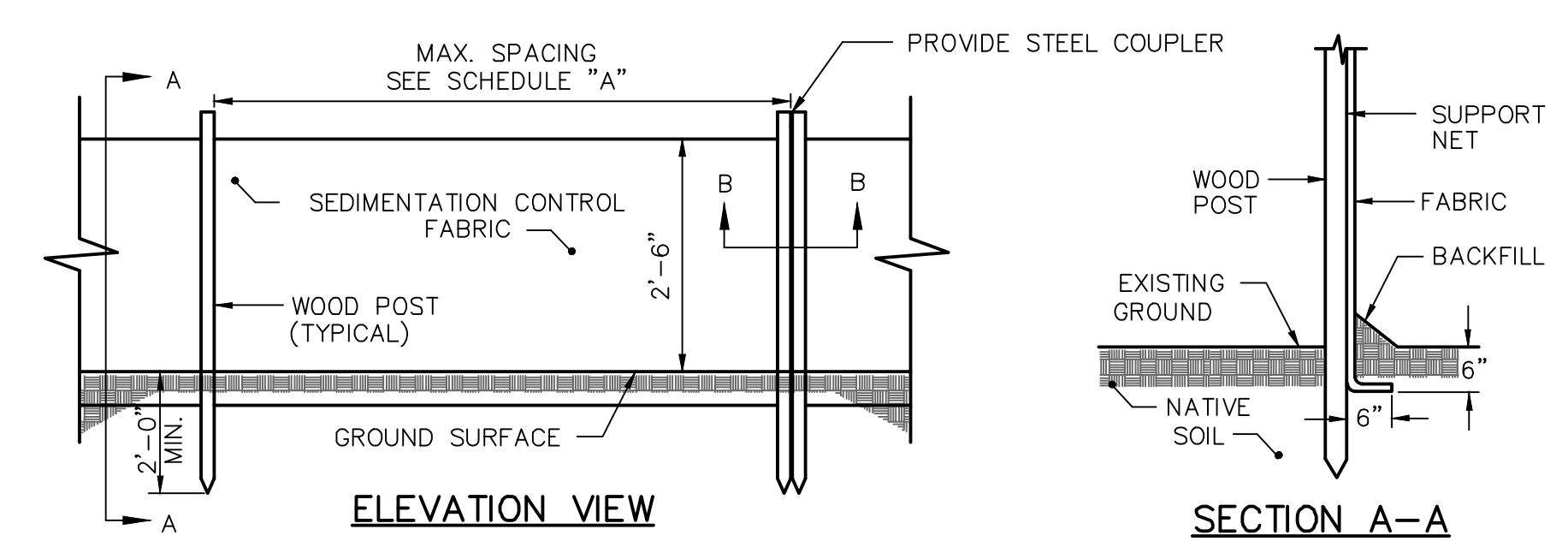
8.9 PROVISIONS FOR MAINTENANCE OF THE EROSION/SEDIMENTATION CONTROL FEATURES

THE PROPOSED PROJECT IS SUBJECT TO THE REQUIREMENTS OF MDEP NATURAL RESOURCE PROTECTION ACT PERMIT. THE CONTRACTOR SHALL PREPARE A LIST AND DESIGNATE BY NAME, ADDRESS, AND TELEPHONE NUMBER ALL INDIVIDUALS WHO WILL BE RESPONSIBLE FOR IMPLEMENTATION, INSPECTION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL MEASURES IDENTIFIED WITHIN THIS NARRATIVE AND AS CONTAINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN OF THE CONTRACT DRAWINGS. SPECIFIC RESPONSIBILITIES OF THE CONTRACTOR'S INSPECTOR(S) SHALL INCLUDE:

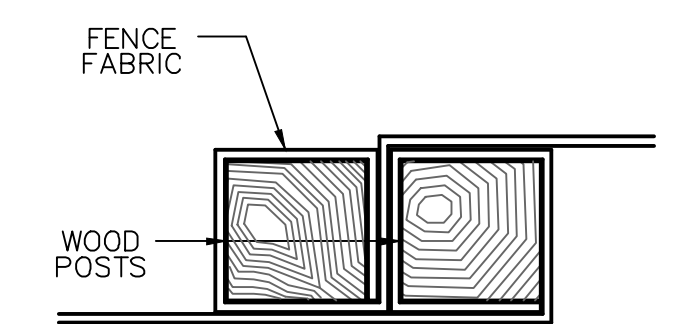
1. EXECUTION OF THE CONTRACTOR/SUBCONTRACTOR CERTIFICATION, WHICH WILL BE CONTAINED IN ATTACHMENT A WITH THE FINAL APPLICATION SUBMISSION, BY ANY AND ALL PARTIES RESPONSIBLE FOR EROSION CONTROL MEASURES ON SITE AS REQUIRED BY THE ENVIRONMENTAL PROTECTION AGENCY;
2. ASSURING AND CERTIFYING THE OWNER'S CONSTRUCTION SEQUENCE IS IN CONFORMANCE WITH THE SPECIFIED SCHEDULE OF THIS SECTION. WEEKLY CERTIFICATION STATING COMPLIANCE, ANY DEVIATIONS, AND CORRECTIVE MEASURES NECESSARY TO COMPLY WITH THE EROSION CONTROL REQUIREMENTS OF THIS NARRATIVE SHALL BE PREPARED AND SIGNED BY THE INSPECTOR(S).
3. IN ADDITION TO WEEKLY CERTIFICATIONS, THE INSPECTOR(S) SHALL MAINTAIN WRITTEN REPORTS RECORDING CONSTRUCTION ACTIVITIES ON SITE WHICH INCLUDE:
 - DATES WHEN MAJOR GRADING ACTIVITIES OCCUR IN A PARTICULAR AREA.
 - DATES WHEN MAJOR CONSTRUCTION ACTIVITIES CEASE IN A PARTICULAR AREA.
 - DATES WHEN AN AREA HAS BEEN STABILIZED.
4. INSPECTION OF THIS PROJECT WORK SITE SHALL OCCUR ON A WEEKLY BASIS BEFORE AND AFTER STORM EVENTS (0.5 INCHES OR MORE RAINFALL) DURING CONSTRUCTION UNTIL PERMANENT EROSION CONTROL MEASURES HAVE BEEN PROPERLY INSTALLED AND THE SITE HAS BEEN STABILIZED. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:
 - IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET OR AS SPECIFIED IN THIS NARRATIVE.
 - DETERMINATION THAT EACH EROSION CONTROL MEASURE IS OPERATING PROPERLY. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES NEEDED.
 - IDENTIFICATION OF AREAS THAT APPEAR VULNERABLE TO EROSION AND DETERMINATION OF ADDITIONAL EROSION CONTROL MEASURES THAT SHOULD BE USED TO IMPROVE CONDITIONS.
 - INSPECTION OF RECENTLY SEEDED AREAS TO DETERMINE PERCENT CATCH OF VEGETATION. A MINIMUM CATCH OF 90 PERCENT IS REQUIRED PRIOR TO REMOVAL OF EROSION CONTROL MEASURES.
 - REMOVAL OF ACCUMULATED SILT/SEDIMENT WHEN DEPTH OF SEDIMENT REACHES 50 PERCENT OF THE BARRIER HEIGHT; REMOVAL OF ACCUMULATED SILT/SEDIMENT FROM BEHIND SILT FENCING WHEN DEPTH OF THE SEDIMENT REACHES SIX (6) INCHES.
5. IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, EITHER TO IMPROVE EFFECTIVENESS OR TO CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.
6. ALL CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS PREPARED BY THE INSPECTOR(S) SHALL BE FILED WITH THE OWNER, WITH AN ADDITIONAL COPY SUBMITTED TO THE CITY. ALL WRITTEN CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS MUST BE FILED WITHIN ONE (1) WEEK OF THE INSPECTION DATE. A SAMPLE INSPECTION FORM WILL BE ENCLOSED IN ATTACHMENT A AS PART OF THE FINAL APPLICATION SUBMISSION.

8.10 PRECONSTRUCTION CONFERENCE

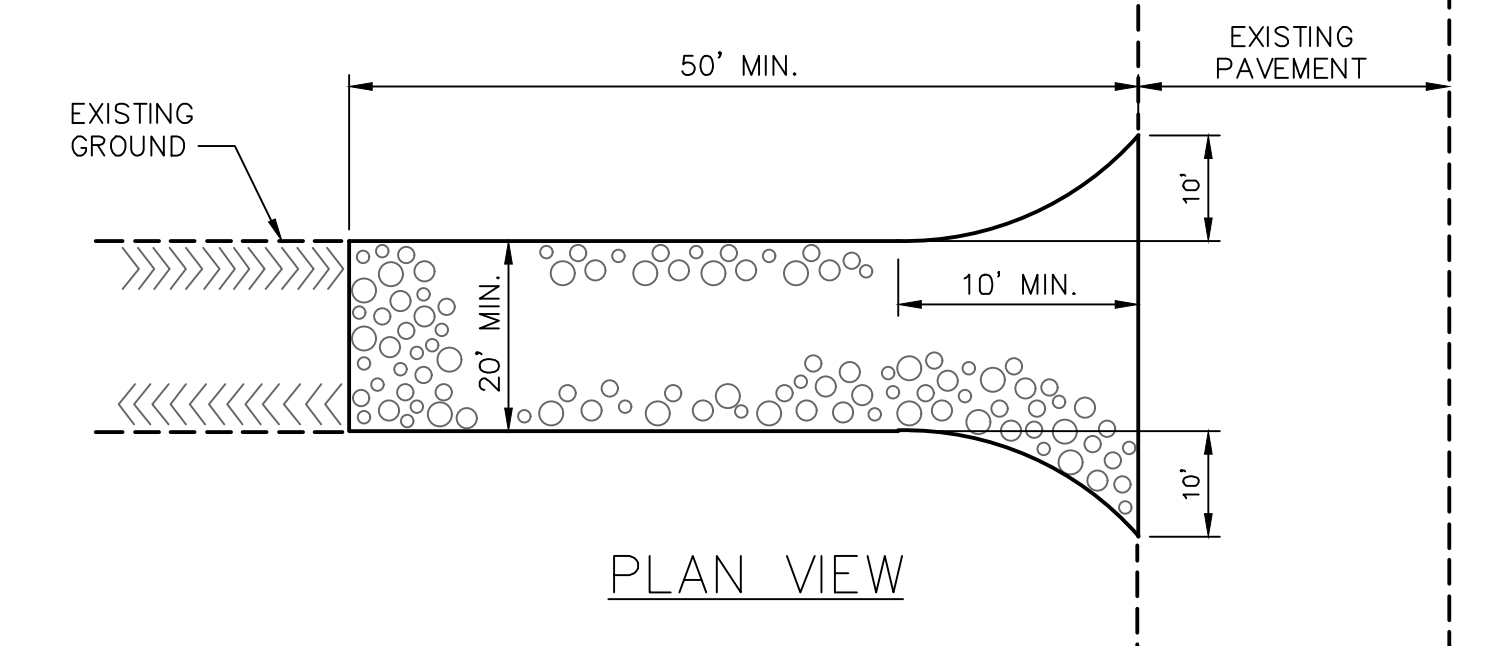
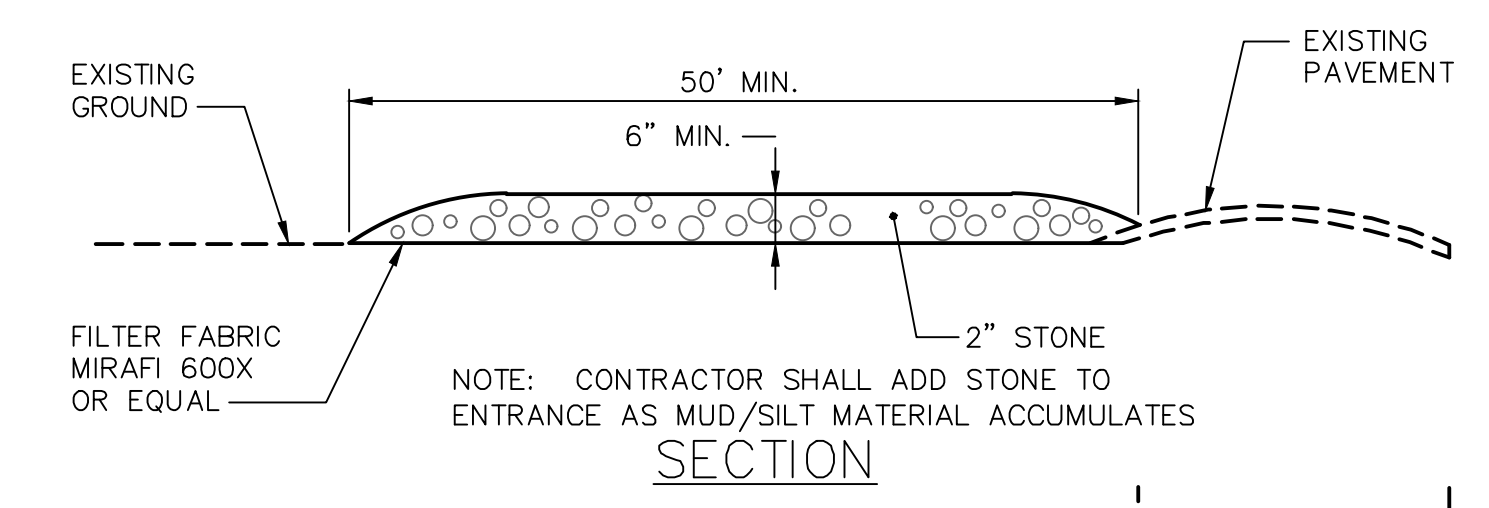
PRIOR TO ANY ON-SITE CONSTRUCTION, THE CITY AND REPRESENTATIVES OF THE CONTRACTOR SHALL ARRANGE FOR AND HOLD A MEETING TO DISCUSS SCHEDULING OF THE SITE CONSTRUCTION.



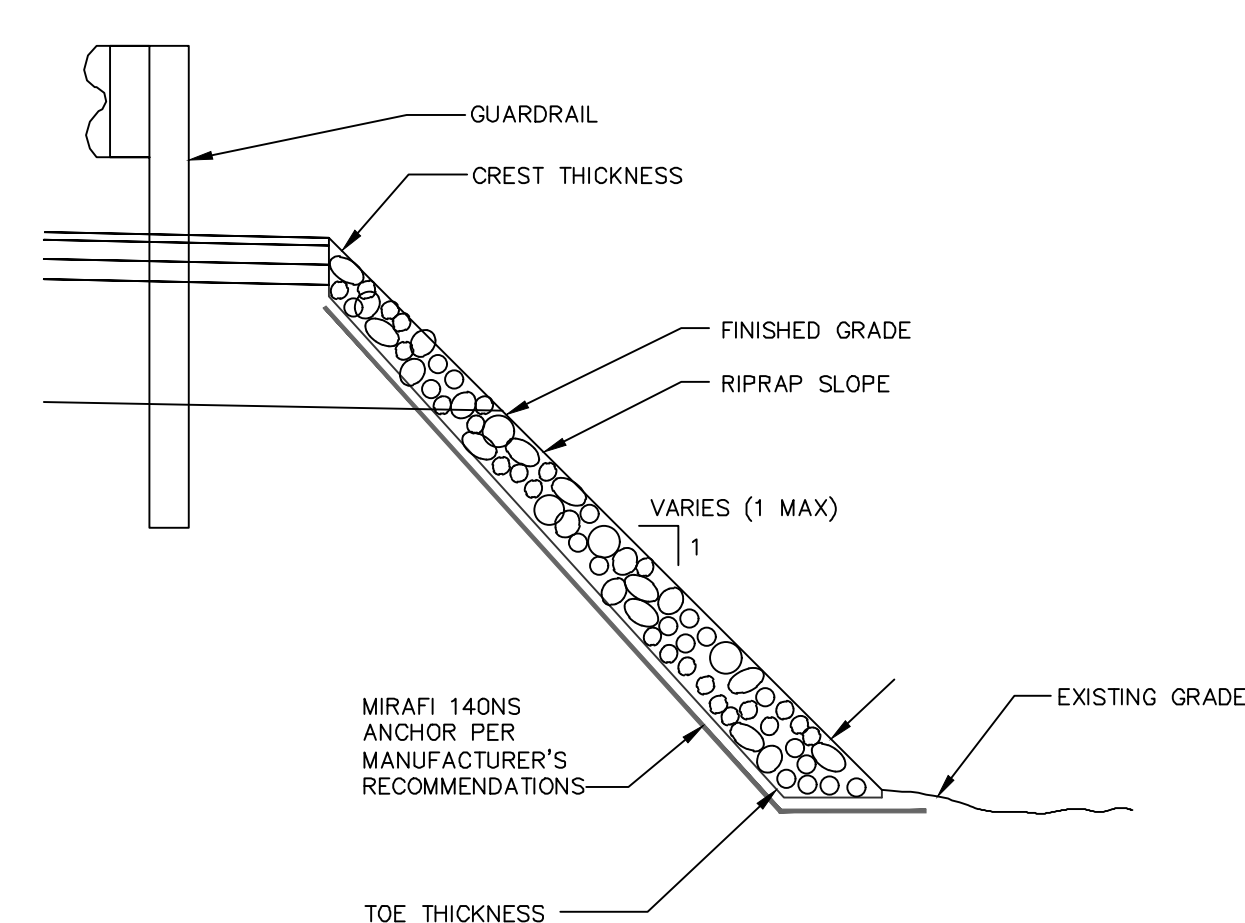
SCHEDULE "A"	
SILT FENCE REINFORCEMENT	MAX. SPACING
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'



SILTATION FENCE
NOT TO SCALE

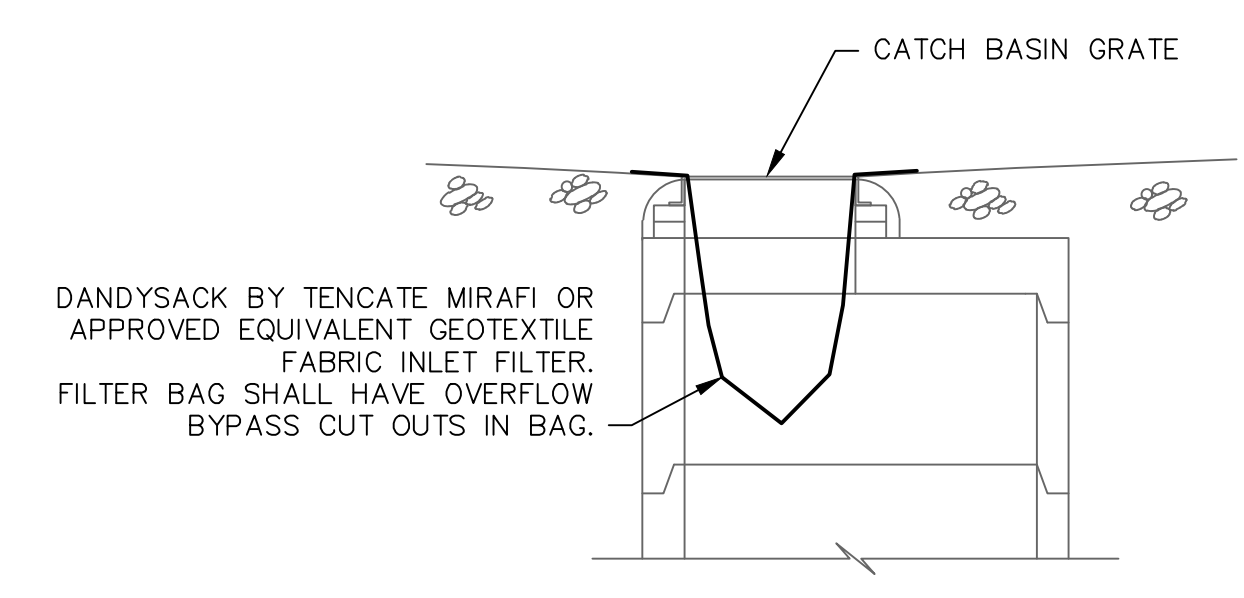


STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



SLOPE HEIGHT	TOE THICKNESS	CREST THICKNESS	D ₁₀₀	D ₅₀
12" - 14"	30"	18"	24"	16"
10" - 12"	26"	18"	22"	12"
< 10"	20"	15"	16"	8"

TYPICAL RIPRAP SLOPE
NOT TO SCALE



CATCH BASIN INLET FILTER
NOT TO SCALE

LOD PROJECT NAME: N/A
DRAWING NAME: 2835.14-DET_ALT.dwg
FIELD BOOK USED: N/A

DESIGNED BY: OCC
DRAWN BY: JAN
CHECKED BY: WCH
SCALE: AS NOTED
DATE: MAY 2016

STATE STREET & MARGINAL WAY
SEWER SEPARATION
EROSION CONTROL
DETAILS

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION



SHEET # 49 OF 49
VAULT PLAN NUMBER

60% SUBMISSION



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