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May 11, 2022

City of Gardiner
Mr. Kris McNeil, Code Enforcement Officer
6 Church Street
Gardiner, Maine 04345

Subject: Stormwater Report
Iron Mine, LLC

Dear Kris,

E.S. Coffin Engineering & Surveying has completed the hydrologic calculations for Iron Mine, LLC and their trailer park located off Brunswick Avenue in Gardiner. The 8.9-acre parcel is identified as Lots 14, 15A & 15B on Tax Map 27 in the City of Gardiner tax maps. We have been asked to address stormwater flowing down Williams Lane and towards the Griffin Street/Commonwealth Avenue intersection.

This past winter runoff from the trailer park was flooding the intersection mentioned above. Part of the issue can be contributed to the plugged 8" diameter ADS pipe flowing north under Griffin Street. We have met with Jerry Douglas, Public Works Director regarding this situation and it was agreed that the best solution is to install a new detention pond at the bottom of Williams Lane.

A detention pond located 135' south from Williams Lane was installed last fall. The pond was designed for an area of 3.77 acres with an outlet control structure having two 12" diameter orifices. Several smaller peak-storm events this past winter and spring resulted in runoff flowing through the outlet control structure and not being stored in the detention pond. We have reevaluated the pond and determined that a 6" orifice will provide the needed storage in the pond while not allowing larger peak-storm events to go over the top of the berms. Therefore, we are proposing to reduce the bottom orifice down to 6" in diameter by capping the orifice and cutting a 6" diameter hole. This should result in runoff being detained in the pond and slowly releasing this water at a controlled rate. We are also proposing to install a riprap ditch at the end of the outlet pipe to route this runoff directly into the aforementioned 8" diameter ADS pipe under Griffin Street.

The proposed detention pond will treat 41,685 sf (0.96 acres) of runoff from Williams Lane and the surrounding residential lots. This pond will be 3.5' deep and flows will be controlled by an outlet control structure.

Professionals Delivering Quality Solutions

Modeling assumptions: The “Hydro-Cad” computer program was used to determine the peak storm water runoff for the pre- and post-development conditions. Hydro-Cad is a storm water modeling system, which utilizes the TR-20 method developed by the Soil Conservation Service (SCS).

The design assumptions used for this project are:

Design storm: 24-hour, Type III rainfall distribution.

Rainfall: 24-hour precipitation values from U.S. Weather Bureau Technical Release No. 40:

- 2-year storm = 2.8 inches
- 10-year storm = 4.2 inches
- 25-year storm = 5.2 inches

Site specific parameters for the project are listed below:

Soils: Soils information to determine the hydrologic soil group for the site is derived from the Soil Survey of Kennebec County by the United States Department of Agriculture Soil Conservation Service. The soils and hydrologic group are listed below:

<u>Soil Classification</u>	<u>Hydrologic Group</u>
Lyman-Tunbridge (HrC)	“C”

Ground Cover:

Pre-Development: The existing watershed ground cover is modeled as impervious and meadow.

Post-Development: The proposed watershed ground cover is impervious and lawn.

<u>Cover Description</u>	<u>Curve Number:</u>
¼ acre Lots	83

Results:

The pond will treat 41,685 sf of area that is a combination of lawn, roofs and pavement. These results are shown on the Hydro Cad output sheets enclosed at the end of the report. A detention pond will provide the storage and outlet control structure will limit the amount of flow exiting the pond for any particular rainfall event. The outlet control structure will contain two orifices with a 5” diameter orifice at elevation 109.5’ and a 2.5” diameter orifice at the bottom of the pond (elevation 108.0’). The 2.5” orifice is small and would clog eventually and therefore a 6” diameter pvc pipe with twelve 3/4” diameter holes, which equate to a 2.5” diameter hole, will be embedded in stone (see detail on sheet C-4).

The proposed site (see plan entitled "C-1") will be comprised of impervious area and lawn. The post-development is broken down into one drainage areas and is shown on the plan entitled "POST". Summary tables showing the input values and resulting peak flows for Sub Areas and reaches are also included at the end of the report. In the post development condition without the pond and outlet control structure being implemented, the 2-, 10- and 25-year peak storm events yield 1.20 cfs, 2.30 cfs and 3.13 cfs. In the post development condition with the pond and outlet control structure being implemented, the three peak storm events yield 0.53 cfs, 0.97 cfs and 1.17 cfs. See the table below for results.

POST-DEVELOPMENT HYDROLOGIC RESULTS			
Event	No Pond	With-Pond	Difference
2 year	1.20 cfs	0.53 cfs	- 0.67 cfs
10 year	2.30 cfs	0.97 cfs	- 1.33 cfs
25 year	3.13 cfs	1.17 cfs	- 1.96 cfs

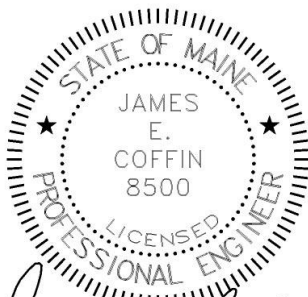
Conclusion:

By comparing the peak storm events with and without the pond in the post-development condition, the results show that there will be a decrease of 0.67 cfs, 1.33 cfs and 1.96 cfs for the three peak storm events. The implementation the 6" diameter orifice into the bottom of the outlet control structure of the existing pond will reduce flows significantly. This coupled with the proposed detention pond and outlet control structure will help mitigate the flooding issues at the corner of Griffin Street and Commonwealth Avenue. If you should have any questions or concerns, please do not hesitate to contact me at 623-9475.

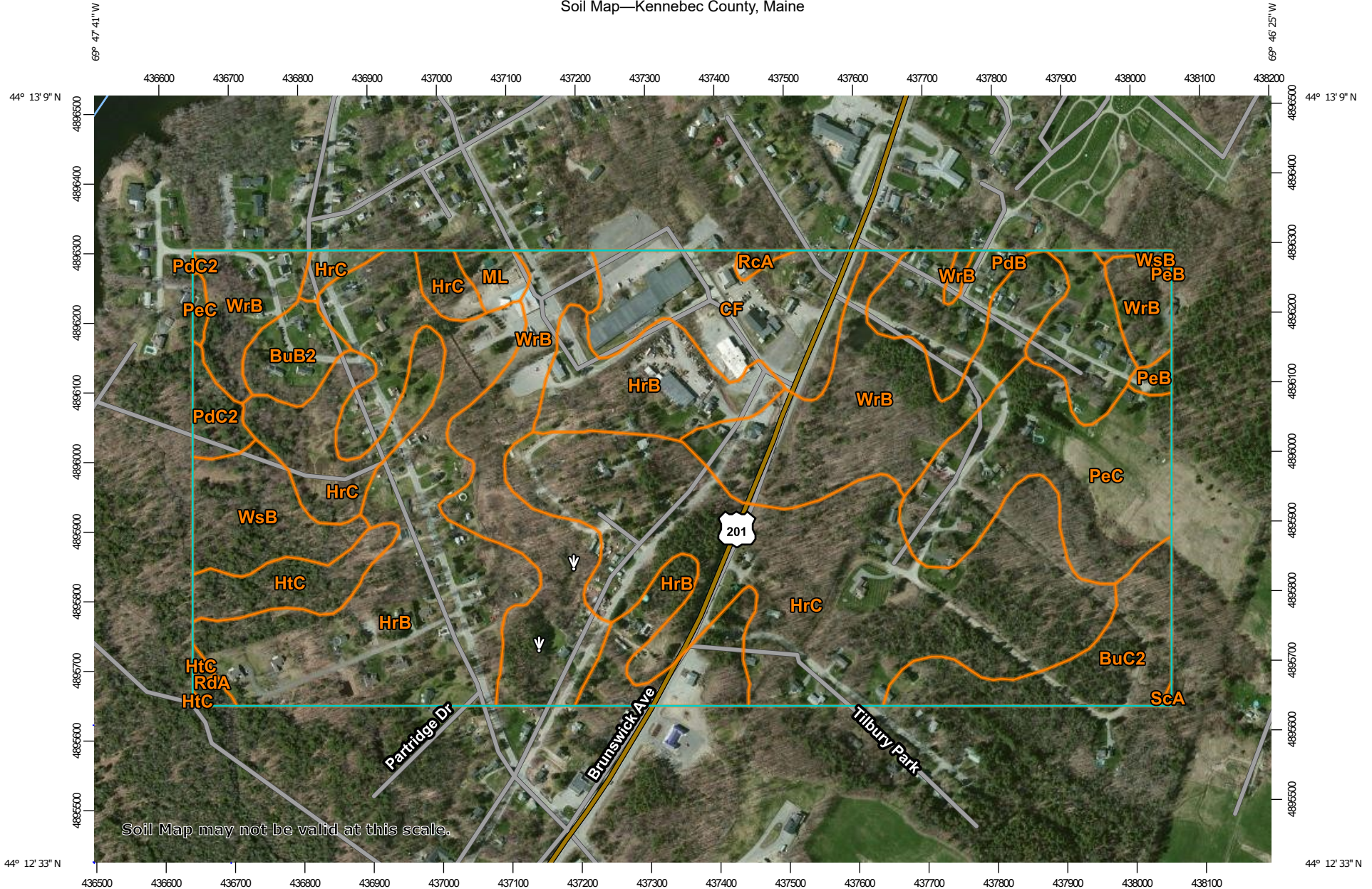
Respectfully submitted,



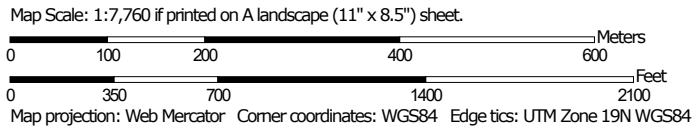
James E. Coffin, PE




Soil Map—Kennebec County, Maine



Soil Map may not be valid at this scale.




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kennebec County, Maine
Survey Area Data: Version 20, Aug 30, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB2	Lamoine silt loam, 3 to 8 percent slopes	3.7	1.6%
BuC2	Buxton silt loam, 8 to 15 percent slopes	9.1	4.0%
CF	Cut and fill land	13.9	6.1%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	51.8	22.6%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	57.1	24.9%
HtC	Lyman-Abram-Rock outcrop complex, 8 to 15 percent slopes	5.0	2.2%
ML	Made land	1.6	0.7%
PdB	Paxton-Charlton fine sandy loams, 3 to 8 percent slopes	11.7	5.1%
PdC2	Paxton-Charlton fine sandy loams, 8 to 15 percent slopes, eroded	2.2	0.9%
PeB	Paxton-Charlton very stony fine sandy loams, 3 to 8 percent slopes	0.7	0.3%
PeC	Paxton-Charlton very stony fine sandy loams, 8 to 15 percent slopes	19.1	8.3%
RcA	Ridgebury fine sandy loam	0.5	0.2%
RdA	Ridgebury very stony fine sandy loam	0.5	0.2%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.1	0.0%
WrB	Woodbridge fine sandy loam, 3 to 8 percent slopes	44.5	19.4%
WsB	Woodbridge very stony fine sandy loam, 3 to 8 percent slopes	7.8	3.4%
Totals for Area of Interest		229.2	100.0%

EROSION AND SEDIMENTATION NOTES:

1. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES OF THE KENNEBEC COUNTY SOIL CONSERVATION SERVICE AND THE MAINE DEP BEST MANAGEMENT PRACTICES HANDBOOK.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES:

EROSION/SEDIMENT CONTROL DEVICES:

THE FOLLOWING EROSION SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

- SILT FENCE:** SILT FENCE WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE IS STABILIZED. IN AREAS WHERE STORMWATER DISCHARGES THE SILT FENCE WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SILT FENCE AND TO PROVIDE ADDITIONAL TREATMENT.
- STONE CHECK DAMS:** STONE CHECK DAMS ARE TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE STONE CHECK DAMS IN FLOWING WATER OR STREAMS.
- RIPRAP:** PROVIDE RIPRAP IN AREAS WHERE CULVERTS DISCHARGE OR AS SHOWN ON THE PLANS.
- LOAM, SEED, & MULCH:** ALL DISTURBED AREAS, WHICH ARE NOT OTHERWISE TREATED, SHALL RECEIVE PERMANENT SEEDING AND MULCH TO STABILIZE THE DISTURBED AREAS. THE DISTURBED AREAS WILL BE REVEGETATED WITHIN 5 DAYS OF FINAL GRADING. SEEDING REQUIREMENTS ARE PROVIDED ARE THE END OF THIS SPECIFICATION.
- STRAW AND HAY MULCH:** USED TO COVER DENUDED AREA UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. JUTE MESH IS TO BE USED OVER MULCH ONLY. CURLEX II AND EXCELSIOR MAY BE USED IN PLACE OF JUTE MESH OVER MULCH.
- MULCH NETTING:** SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.

TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES:

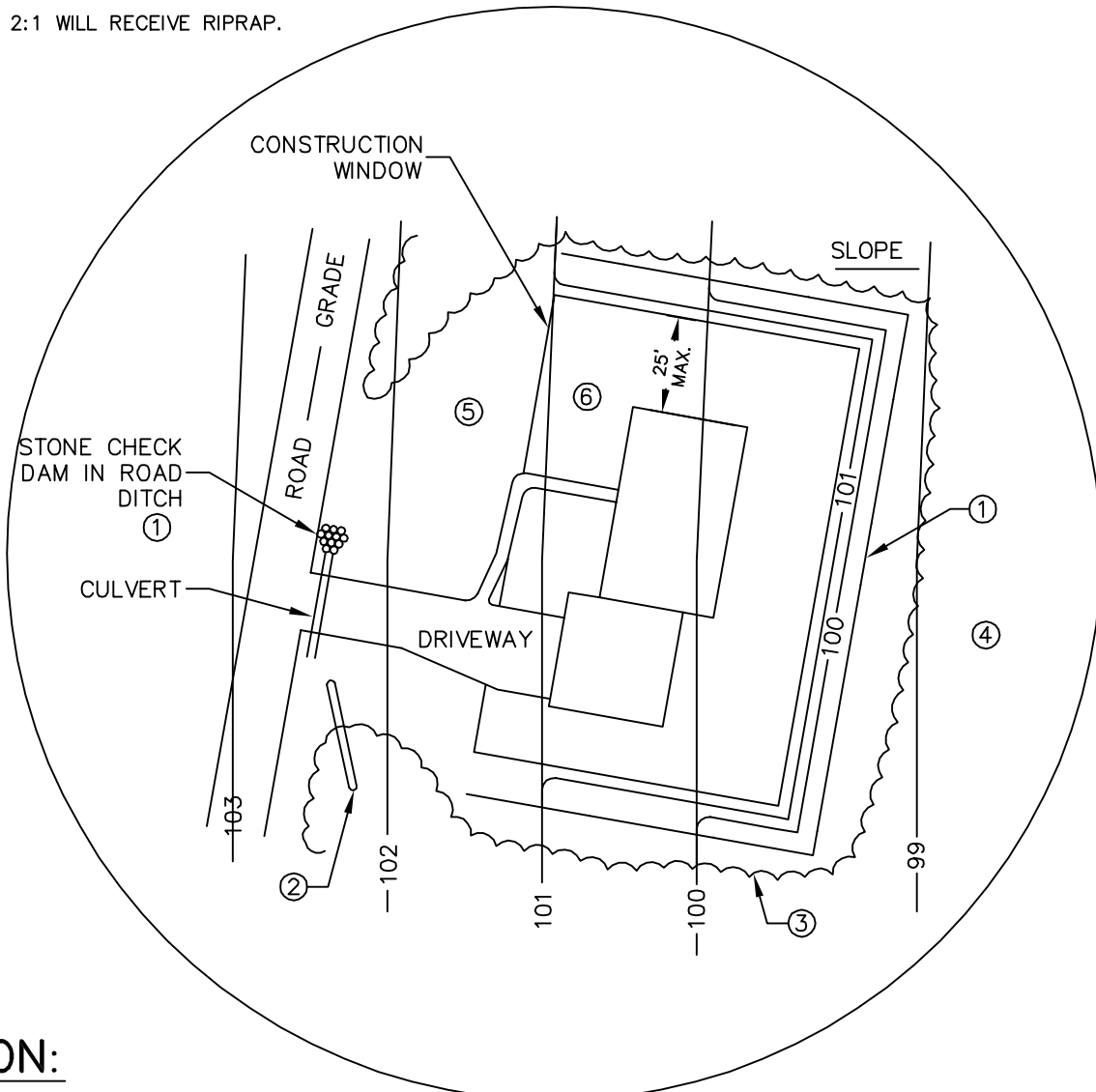
PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION OF THE DEVELOPMENT:

- SILTATION FENCE ALONG THE DOWN GRADIENT SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SILTATION FENCE WILL REMAIN IN PLACE UNTIL THE SITE IS 85% REVEGETATED.
- HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SILT FENCE.
- PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION AS FOLLOWS:
 - SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
 - AVOID PLACING TEMPORARY STOCKPILES IN AREA WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES. SEE ITEM 3 IN CONSTRUCTION PHASE NOTES BELOW.
 - THE CONTRACTOR MUST STABILIZE SOIL AND FILL STOCKPILES WITHIN 7 DAYS PRIOR TO ANY RAINFALL.
 - SURROUND STOCKPILE SOIL WITH SILTATION FENCE AT BASE OF PILE.
- ALL DENUDED AREA WHICH HAVE BEEN ROUGH GRADED AND ARE NOTE LOCATED WITHIN THE BUILDING PAD, OR PARKING AND DRIVEWAY SUBBASE AREA SHALL RECEIVE MULCH WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOIL IN ANY AREA OR WITHIN 7 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS IN ANY AREA, OR PRIOR TO ANY RAINFALL. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOD WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED.
- IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 1 DAY MAXIMUM FOR WORK COMPLETED BETWEEN OCTOBER 15TH AND APRIL 15TH.
- TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

PERMANENT EROSION CONTROL MEASURES:

THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/ SEDIMENTATION CONTROL PLAN:

- ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.
- SLOPES GREATER THAN 2:1 WILL RECEIVE RIPRAP.



INSTALLATION:

- INSTALL SEDIMENT BARRIERS ON YOUR SITE BEFORE DISTURBING SOILS. SEE THE "SEDIMENT BARRIERS" MEASURE FOR DETAILS ON INSTALLATION AND MAINTENANCE.
- CONSTRUCT A DIVERSION DITCH TO KEEP UPSLOPE RUNOFF OUT OF WORK AREA.
- MARK CLEARING LIMITS ON THE SITE TO KEEP EQUIPMENT OUT OF AREAS WITH STEEP SLOPES, CHANNELIZED FLOW, OR ADJACENT SURFACE WATERS AND WETLANDS.
- PRESERVE BUFFERS BETWEEN THE WORK AREA AND ANY DOWNSTREAM SURFACE WATERS AND WETLANDS. SEE THE "BUFFERS" MEASURE FOR BUFFER PRESERVATION.
- USE TEMPORARY MULCH AND RYE-SEED TO PROTECT DISTURBED SOIL OUTSIDE THE ACTIVE CONSTRUCTION AREA. SEE THE "MULCHING" MEASURE AND "VEGETATION" MEASURE FOR DETAILS AND SPECIFICATIONS FOR THESE CONTROLS.
- PERMANENTLY SEED AREAS NOT TO BE PAVED WITHIN SEVEN DAYS OF COMPLETING FINAL GRADING. SEE "VEGETATION" MEASURE FOR INFORMATION ON PROPER SEEDING.

MAINTENANCE:

EVERY MONTH THE FIRST YEAR AFTER CONSTRUCTION AND YEARLY THEREAFTER, INSPECT FOR AREAS SHOWING EROSION OR POOR VEGETATION GROWTH. FIX THESE PROBLEMS AS SOON AS POSSIBLE. EACH SPRING REMOVE ANY ACCUMULATION OF DEBRIS OR WINTER SAND THAT WOULD IMPEDE RUNOFF FROM ENTERING A BUFFER OR DITCH.

HOUSE SITE - BEST MANAGEMENT PRACTICES

NOT TO SCALE

CONSTRUCTION PHASE:

THE FOLLOWING PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

- ONLY THOSE AREAS UNDER ACTIVE CONSTRUCTION WILL BE CLEARED AND LEFT IN AN UNTREATED OR UNVEGETATED CONDITION. IF FINAL GRADING, LOAMING AND SEEDING WILL NOT OCCUR WITHIN 7 DAYS, SEE ITEM NO. 4.
- PRIOR TO THE START OF CONSTRUCTION IN A SPECIFIC ARE, SILT FENCING AND/OR HAY BALES WILL BE INSTALLED AT THE TOE OF SLOPE AND IN AREAS AS LOCATED ON THE PLANS TO PROTECT AGAINST ANY CONSTRUCTION RELATED EROSION. IMMEDIATELY FOLLOWING CONSTRUCTION OF CULVERTS AND SWALES, RIP RAP APRONS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
- TOPSOIL WILL BE STOCKPILED WHEN NECESSARY IN AREAS WHICH HAVE MINIMUM POTENTIAL FOR EROSION AND WILL BE KEPT AS FAR AS POSSIBLE FROM THE EXISTING DRAINAGE COURSE. NO STOCKPILE SHALL BE CLOSER THAN 100' OF A RESOURCE INCLUDING, BUT NOT LIMITED TO, WETLANDS, STREAMS, AND OPEN WATER BODIES. ALL STOCKPILES SHALL HAVE A SILTATION FENCE BELOW THEM REGARDLESS OF TIME OF PRESENCE. ALL STOCKPILES EXPECTED TO REMAIN LONGER THAN 15 DAYS SHALL BE:
 - ALL STOCKPILES ANTICIPATED TO REMAIN IN PLACE FOR LESS THAN 30 DAYS SHALL BE TREATED WITH ANCHORED MUGH (WITHIN 5 DAYS OF THE LAST DEPOSIT OF STOCKPILED SOIL), OR PRIOR TO ANY RAINFALL OR COVERED WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
 - ALL STOCKPILES ANTICIPATED TO REMAIN IN PLACE LONGER THAN 30 DAYS SHALL BE SEEDED WITH CONSERVATION MIX OF ANNUAL RYE GRASS (0.9 LB/1,000 SQ. FT.) AND MULCHED WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL OR COVERED WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
 - INSTALL SILT FENCE AROUND STOCKPILE AT BASE OF PILE, STOCKPILES TO HAVE SILT FENCE INSTALLED AT TIME ESTABLISHMENT AT BASE OF PILE.
- DISTURBED AREAS:
 - DISTURBED AREAS ANTICIPATED REMAINING UNDISTURBED FOR LESS THAN 30 DAYS UNTIL PERMANENTLY STABILIZED SHALL BE TREATED WITH ANCHORED MULCH WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
 - DISTURBED AREAS ANTICIPATED TO REMAIN UNDISTURBED FOR MORE THAN 30 DAYS UNTIL PERMANENTLY STABILIZED SHALL BE TREATED SEEDED WITH CONSERVATION MIX OF ANNUAL RYE GRASS (0.9 LBS/1,000 SQ. FT.) AND MULCHED AT A RATE OF 150 LB. PER 1000 S.F. WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
- ALL GRADING WILL BE HELD TO A MAXIMUM 2:1 SLOPE WHERE PRACTICAL. ALL SLOPES WILL BE STABILIZED WITH PERMANENT SEEDING, OR WITH STONE, WITHIN 5 DAYS AFTER FINAL GRADING IS COMPLETE. (SEE POST-CONSTRUCTION REVEGETATION FOR SEEDING SPECIFICATION.) ALL SLOPES HAVING A GRADE GREATER THAN 8% WILL BE STABILIZED WITH RIP RAP OR PERMANENT SEEDING WITHIN 5 DAYS OF COMPLETING THE SLOPES FINAL GRADING.
- THE CONTRACTOR SHALL WITHIN 24 HOURS OF PLACING A CULVERT PLACE STONE RIP RAP, APRON OR PLUNGE POOL, AT THE CULVERTS OUTLET. ALL CULVERTS WILL BE PROTECTED WITH STONE RIP RAP (D50 = 6" UNLESS OTHERWISE SPECIFIED) AT INLETS AND OUTLETS.
- ANY DITCH SECTION BROUGHT TO FINAL GRADE WILL BE STABILIZED WITH RIP RAP LINED OR PROPERLY INSTALLED EROSION CONTROL BLANKETS (USED OVER PERMANENT SEEDING) WITHIN 5 DAYS.

POST-CONSTRUCTION REVEGETATION:

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION AS SOON AS AN AREA IS READY TO UNDERGO FINAL GRADING.

- A MINIMUM OF 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND GRADED TO A UNIFORM DEPTH AND NATURAL APPEARANCE, OR STONE WILL BE PLACED ON SLOPES TO STABILIZE SURFACES.
- IF FINAL GRADING IS REACHED DURING THE NORMAL GROWING SEASON (4/15 TO 9/15), PERMANENT SEEDING WILL BE DONE AS SPECIFIED BELOW. PRIOR TO SEEDING, LIMESTONE SHALL BE APPLIED AT A RATE OF 138 LBS/1,000 SQ. FT. AND 10:20:20 FERTILIZER AT A RATE OF 18.4 LBS/1,000 SQ. FT. WILL BE APPLIED. BROADCAST SEEDING AT THE FOLLOWING RATES:

LAWNS
 KENTUCKY BLUEGRASS 0.46 LBS/1,000 S.F.
 CREEPING RED FESCUE 0.46 LBS/1,000 S.F.
 PERENNIAL RYE GRASS 0.11 LBS/1,000 S.F.

SWALES
 RED TOP 0.05 LBS/1,000 S.F.
 TALL FESCUE 0.46 LBS/1,000 S.F.
- AN AREA SHALL BE MULCHED IMMEDIATELY AFTER IS HAS BEEN SEEDED. MULCHING SHALL CONSIST OF HAY MULCH, HYDRO-MULCH, JUTE NET OVER MULCH, PRE-MANUFACTURED EROSION MATS OR ANY SUITABLE SUBSTITUTE DEEMED ACCEPTABLE BY THE DESIGNER.
 - HAY MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. HAY MULCH SHALL BE SECURED BY EITHER: (NOTE: SOIL SHALL NOT BE VISIBLE)
 - BEING DRIVEN OVER BY TRACKED CONSTRUCTION EQUIPMENT ON GRADES OF 5% AND LESS.
 - BLANKETED BY TACKED PHOTODEGRADABLE/BIODEGRADABLE NETTING, OR WITH SPRAY, ON GRADES GREATER THAN 5%.
 - SEE NOTE 6, GENERAL NOTES, AND NOTE 8, WINTER CONSTRUCTION.
- HYDRO-MULCH SHALL CONSIST OF A MIXTURE OF EITHER ASPHALT, WOOD FIBER OR PAPER FIBER AND WATER SPRAYED OVER A SEEDED AREA. HYDRO-MULCH SHALL NOT BE USED BETWEEN 9/15 AND 4/15.
- CONSTRUCTION SHALL BE PLANNED TO ELIMINATE THE NEED FOR SEEDING BETWEEN SEPTEMBER 15 AND APRIL 15. SHOULD SEEDING BE NECESSARY BETWEEN SEPTEMBER 15 AND APRIL 15 THE FOLLOWING PROCEDURE SHALL BE FOLLOWED. ALSO REFER TO NOTE 9 OF WINTER CONSTRUCTION.
 - ONLY UNFROZEN LOAM SHALL BE USED.
 - LOAMING, SEEDING AND MULCHING WILL NOT BE DONE OVER SNOW OR ICE COVER. IF SNOW EXISTS, IT MUST BE REMOVED PRIOR TO PLACEMENT OF SEED.
 - WHERE PERMANENT SEEDING IS NECESSARY, ANNUAL WINTER RYE (1.2 LBS/1,000 SQ. FT.) SHALL BE ADDED TO THE PREVIOUSLY NOTED AREAS.
 - WHERE TEMPORARY SEEDING IS REQUIRED, ANNUAL WINTER RYE (2.6 LBS/1,000 SQ.FT.) SHALL BE SOWN INSTEAD OF THE PREVIOUSLY NOTED SEEDING RATE.
 - FERTILIZING, SEEDING AND MULCHING SHALL BE APPLIED TO LOAM THE DAY THE LOAM IS SPREAD BY MACHINERY.
 - ALTERNATIVE HAY MULCH SHALL BE SECURED WITH PHOTODEGRADABLE/BIODEGRADABLE NETTING. TRACKING BY MACHINERY ALONE WILL NOT SUFFICE.
- FOLLOWING FINAL SEEDING, THE SITE WILL BE INSPECTED EVERY 30 DAYS UNTIL 85% COVER HAS BEEN ESTABLISHED. THE CONTRACTOR WILL CARRY OUT RESEEDING WITHIN 10 DAYS OF NOTIFICATION BY THE ENGINEER THAT THE EXISTING CATCH IS INADEQUATE.

MONITORING SCHEDULE:

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING, MONITORING, MAINTAINING, REPAIRING, REPLACING AND REMOVING ALL OF THE EROSION AND SEDIMENTATION CONTROLS OR APPOINTING A QUALIFIED SUBCONTRACTOR TO DO SO. MAINTENANCE MEASURES WILL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL, A VISUAL INSPECTION WILL BE MADE OF ALL EROSION AND SEDIMENTATION CONTROLS AS FOLLOWS:

- HAY BALE BARRIERS, SILT FENCE, AND STONE CHECK DAMS SHALL BE INSPECTED AND REPAIRED ONCE A WEEK OR IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL. SEDIMENT TRAPPED BEHIND THESE BARRIERS SHALL BE EXCAVATED WHEN IT REACHES A DEPTH OF 6" AND REDISTRIBUTED TO AREA UNDERGOING FINAL GRADING. SHOULD THE HAY BALE BARRIERS PROVE TO BE INEFFECTIVE, THE CONTRACTOR SHALL INSTALL SILT FENCE BEHIND THE HAY BALES.
- VISUALLY INSPECT RIP RAP ONCE A WEEK OR AFTER EACH SIGNIFICANT RAINFALL AND REPAIR AS NEEDED. REMOVE SEDIMENT TRAPPED BEHIND THESE DEVICES ONCE IT ATTAINS A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE DAM OR RISER. DISTRIBUTE REMOVED SEDIMENT OFF-SITE OR TO AN AREA UNDERGOING FINAL GRADING.
- REVEGETATION OF DISTURBED AREAS WITHIN 25' OF DRAINAGE-COURSE/STREAM WILL BE SEEDED WITH THE "MEADOW AREA MIX" AND INSPECTED ON A WEEKLY BASIS OR AFTER EACH SIGNIFICANT RAINFALL AND RESEEDED AS NEEDED. EXPOSED AREAS WILL BE RESEEDED AS NEEDED UNTIL THE AREA HAS OBTAINED 100% GROWTH RATE. PROVIDE PERMANENT RIP RAP FOR SLOPES IN EXCESS OF 3:1 AND WITHIN 25' OF DRAINAGE COURSE.

EROSION CONTROL DURING WINTER CONSTRUCTION:

- WINTER CONSTRUCTION PRIOR: NOVEMBER 1 THROUGH APRIL 15.
- WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
- EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. ATE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
- CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH TAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
- AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1,000 B.F. (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH TAT SOIL SURFACE IS NOT VISIBLE THROUGH THEY MULCH. NOTE: AN AREA TO BE USED AS A ROAD OR VEHICLE PARKING LOT IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH COMPACTED GRAVEL SUBBASE OR COMPACTED STRUCTURAL SAND.
- BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS EITHER CONDITIONS ALLOW, DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SILT FENCE OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHOULD NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS ABOVE 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
- MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8% VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.
- MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1 THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
- WINTER RYE IS RECOMMENDED FOR STABILIZATION UNTIL OCTOBER 1ST. AFTER OCTOBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
- IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

GUIDELINES FOR STABILIZING SITES FOR THE WINTER:

- STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS. THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 15TH. THE CONTRACTOR WILL CONSTRUCTION AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 1ST. IF THE CONTRACTOR FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 1ST, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.
 - INSTALL A SOD LINING IN THE DITCH: THE CONTRACTOR WILL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING SOD AT THE BASE OF THE DITCH WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD FROM SLOUGHING DURING FLOW CONDITIONS.
 - INSTALL A STONE LINING IN THE DITCH: THE CONTRACTOR WILL LINE THE DITCH WITH STONE RIP RAP BY NOVEMBER 15TH. THE DEVELOPMENT'S OWNER WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINE THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE CONTRACTOR WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO AS TO PREVENT THE STONE LINING FORM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.
- STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES. THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 1. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.
 - STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS BY OCTOBER 1. THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF WOOD-WASTE COMPOST AS DESCRIBED IN ITEM 3 OF THIS STANDARD OR WITH STONE RIP RAP AS DESCRIBED IN ITEM 4 OF THIS STANDARD.
 - STABILIZE THE SLOPE WITH SOD: THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
 - STABILIZE THE SLOPE WITH WOOD-WASTE COMPOST: THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF WOOD-WASTE COMPOST ON THE SLOPE BY NOVEMBER 15. THE CONTRACTOR WILL NOT USE WOOD-WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H: 1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
 - STABILIZE THE SLOPE WITH STONE RIP RAP: THE CONTRACTOR WILL PLACE A LAYER OF STONE RIP RAP ON THE SLOPE BY NOVEMBER 15. THE DEVELOPMENT'S OWNER WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIP RAP.
- STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS: BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON THE SITE. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.
 - STABILIZE THE SOIL WITH TEMPORARY VEGETATION: BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1,000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1, THEN THE CONTRACTOR WILL MULCH THE AREA FOR OVER PROTECTION AS DESCRIBED IN ITEM 3 OF THIS STANDARD.
 - STABILIZE THE SOIL WITH SOD: THE CONTRACTOR WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PRONTO ROOT GROWTH INTO THE DISTURBED SOIL.
 - STABILIZE THE SOIL WITH MULCH: BY NOVEMBER 15 THE CONTRACTOR WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1,000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, THE CONTRACTOR WILL ANCHOR THE MULCH WITH NETTING OR OTHER METHOD TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

SITE INSPECTION AND MAINTENANCE:

- WEEKLY INSPECTIONS, AS WELL AS ROUTINE INSPECTIONS FOLLOWING RAIN FALLS, SHALL BE CONDUCTED BY GENERAL CONTRACTOR OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES UNTIL FINAL ACCEPTANCE OF THE PROJECT (85% GRASS CATCH). NECESSARY REPAIRS SHALL BE MADE TO CORRECT UNDERMINING OR DETERIORATION. FINAL ACCEPTANCE SHALL INCLUDE A SITE INSPECTION TO VERIFY THE STABILITY OF ALL DISTURBED AREAS AND SLOPES. UNTIL FINAL INSPECTION, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL IMMEDIATELY BE CLEANED, AND REPAIRED BY THE GENERAL CONTRACTOR AS REQUIRED. DISPOSAL OF ALL TEMPORARY EROSION AND CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

IT IS RECOMMENDED THAT THE OWNER HIRE THE SERVICES OF THE DESIGN ENGINEER TO PROVIDE COMPLIANCE INSPECTIONS (DURING ACTIVE CONSTRUCTION) RELATIVE TO IMPLEMENTATION OF THE STORMWATER AND EROSION CONTROL PLANS. SUCH INSPECTIONS SHOULD BE LIMITED TO ONCE A WEEK OR AS NECESSARY AND BE REPORTABLE TO THE OWNER, TOWN AND DEP.

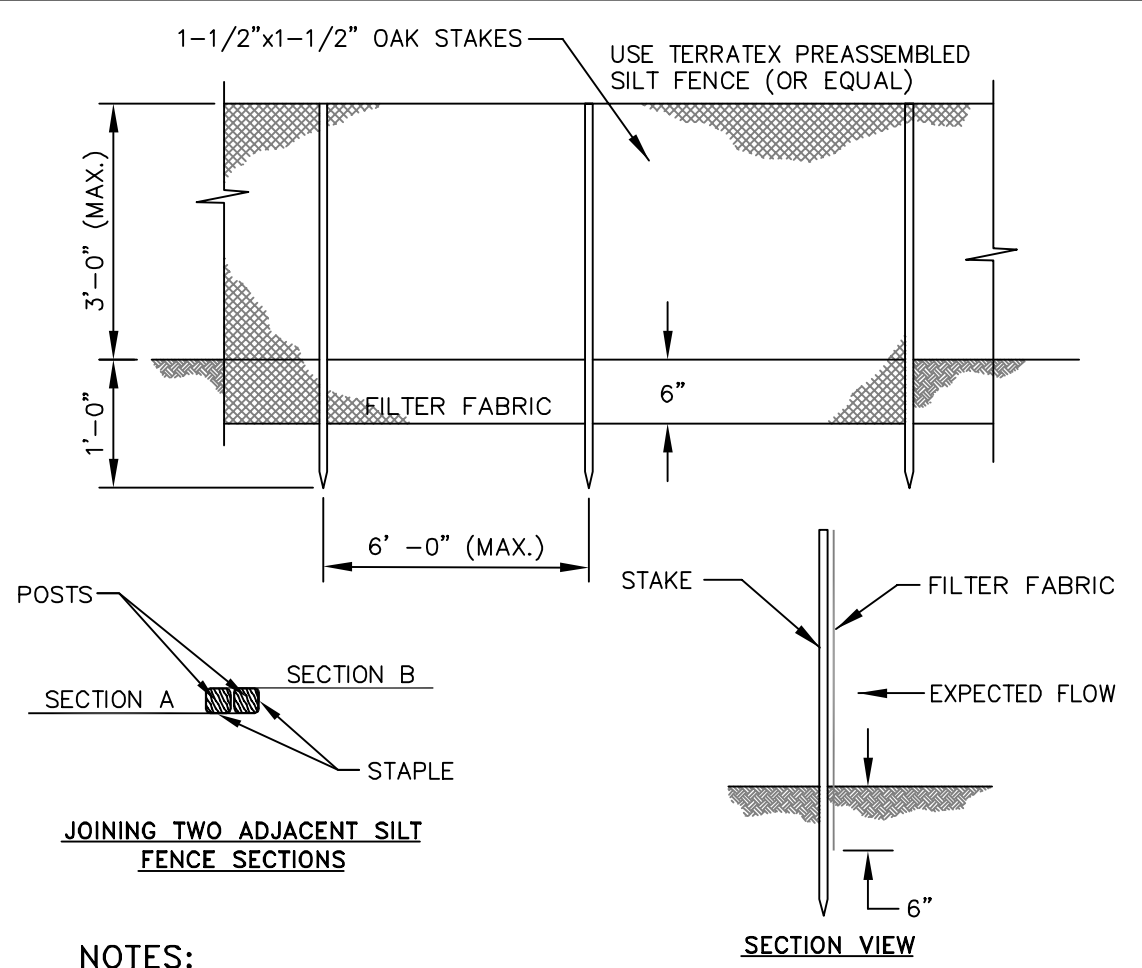
SHORT-TERM SEDIMENTATION MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT ALL SWALES AND STRUCTURES PRIOR TO TURNING PROJECT OVER.

LONG-TERM PROVISIONS FOR PERMANENT MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES AFTER ACCEPTANCE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER, TOWN OR THEIR DESIGNEE.

STATE OF MAINE
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 RAINWATER REUSE ENGINEERING © 2019
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NO.	DATE	REVISIONS

CLIENT/PROJECT: IRON MINE TRAILER PARK MAINE HOME DEALS, INC.
 LOCATION: OLD BRUNSWICK ROAD
 TOWN: GARDINER COUNTY: KENNEBEC STATE: MAINE
 SCALE: AS SHOWN
 DRAWN BY: TCH
 CHECKED BY: JEC
 DATE: MAY 11, 2022
 SHEET TITLE: DETAILS I
 PROJ. NO. 2020-122
C-2



NOTES:

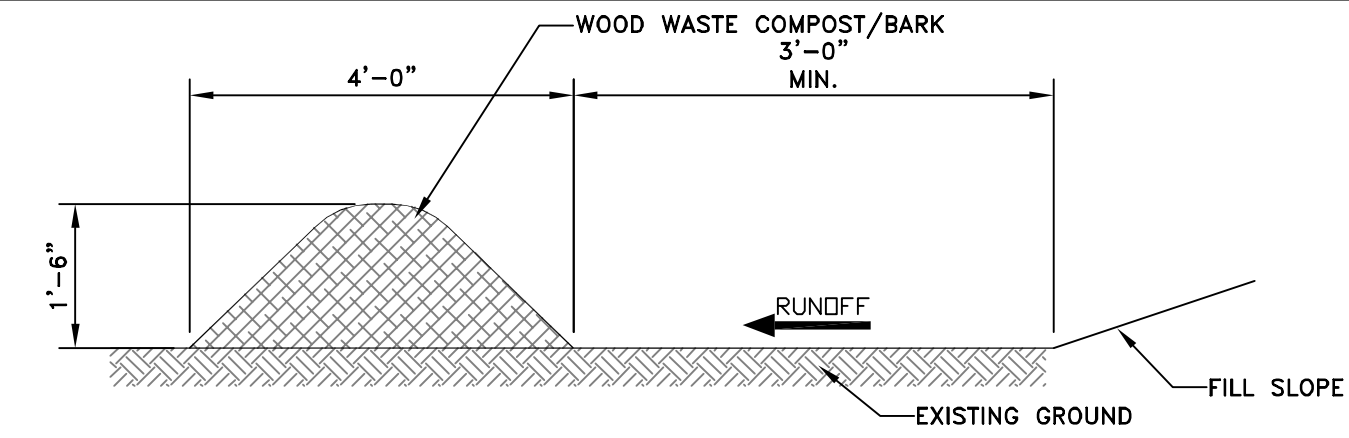
SILT FENCE AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.

SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

SILT FENCE DETAIL
NOT TO SCALE



WOOD WASTE COMPOST/BARK FILTER BERMS

THE FILTER BERM SHALL CONSIST OF A WOOD WASTE COMPOST/BARK MULCH MIX OR RECYCLED COMPOSTED BARK FLUME GRIT AND FRAGMENTED WOOD GENERATED FROM WATER-FLUME LOG HANDLING SYSTEMS. COMPOSTED MIXES CAN BE USED UPON APPROVAL OF THE OFFICE OF ENVIRONMENTAL SERVICES LANDSCAPE UNIT.

THE MIX SHALL CONFORM TO THE FOLLOWING STANDARDS:

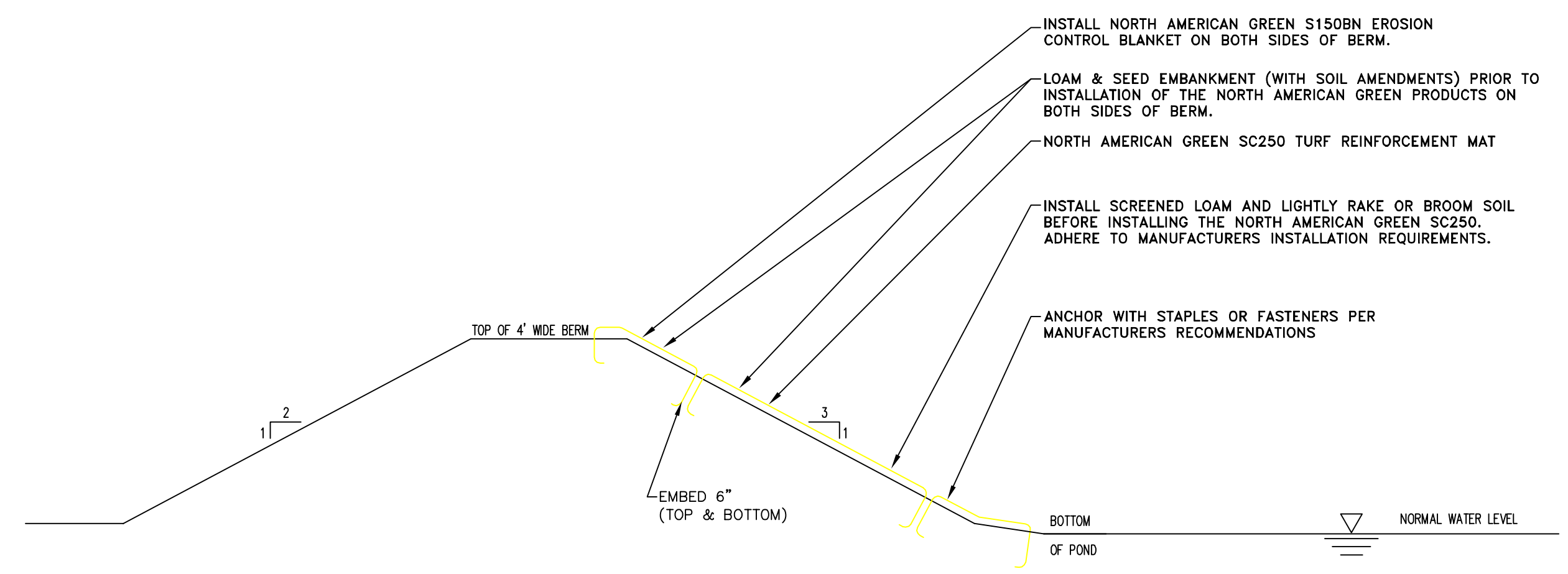
- MOISTURE CONTENT - 30-60%
- pH - 5.0-8.0
- SCREEN SIZE - 100% LESS THAN 3", MAXIMUM 70% LESS THAN 1".
- NO LESS THAN 40% ORGANIC MATERIAL (DRY WEIGHT) BY LOSS OF IGNITION
- NO STONES LARGER THAN 2" IN DIAMETER

THE COMPOSTED BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.

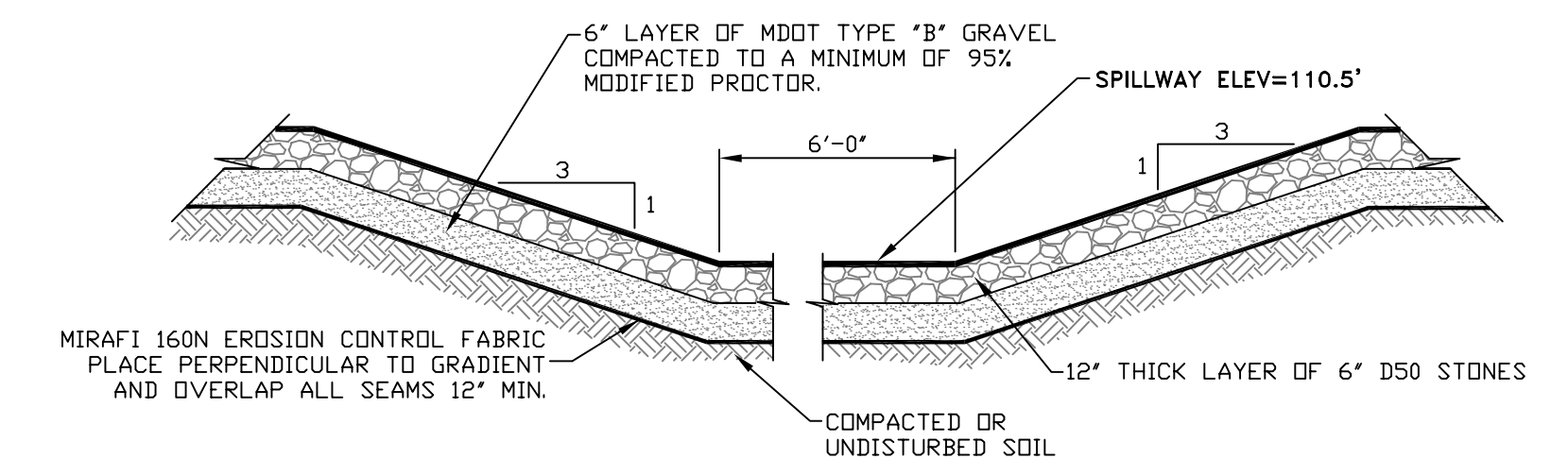
NOTE:

WOOD WASTE COMPOST/BARK FILTER BERMS MAY BE USED IN COMBINATION WITH SILT FENCE TO IMPROVE SEDIMENT REMOVAL AND PREVENT CLOGGING OF THE WOOD WASTE COMPOST/BARK BERM BY LARGER SEDIMENT PARTICLES. (SILT FENCE PLACED TO FILTER RUNOFF BEFORE WOOD WASTE COMPOST/BARK)

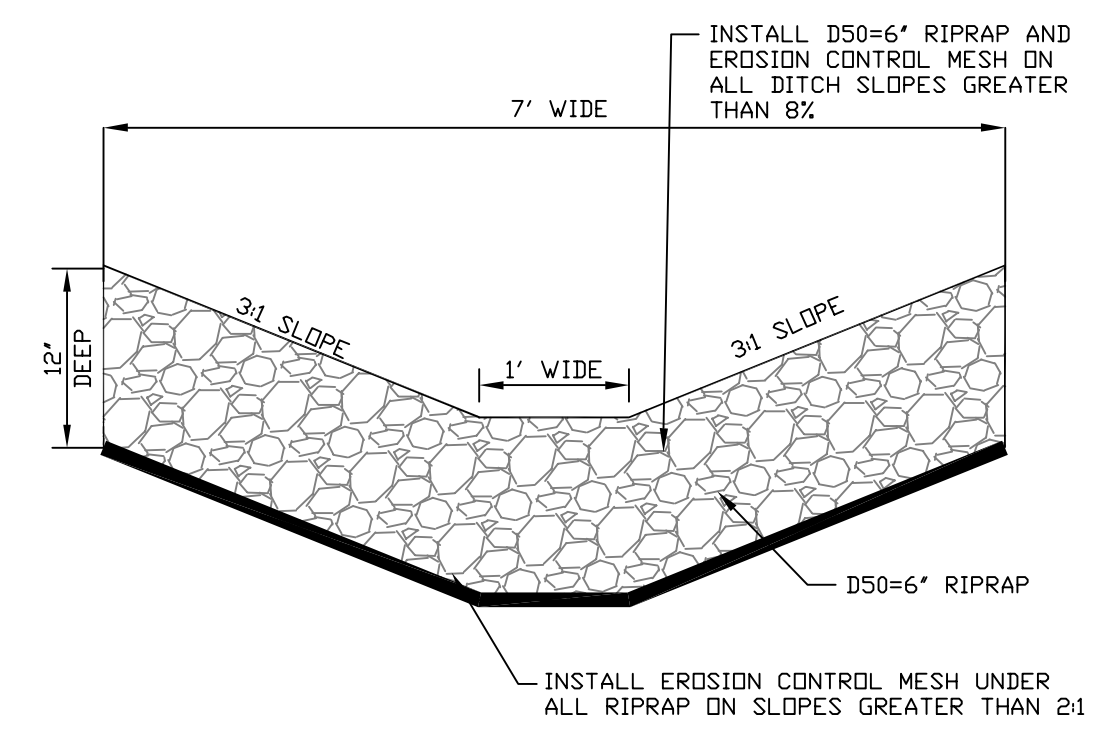
WOOD WASTE COMPOST/BARK FILTER BERM ALTERNATIVE
NOT TO SCALE



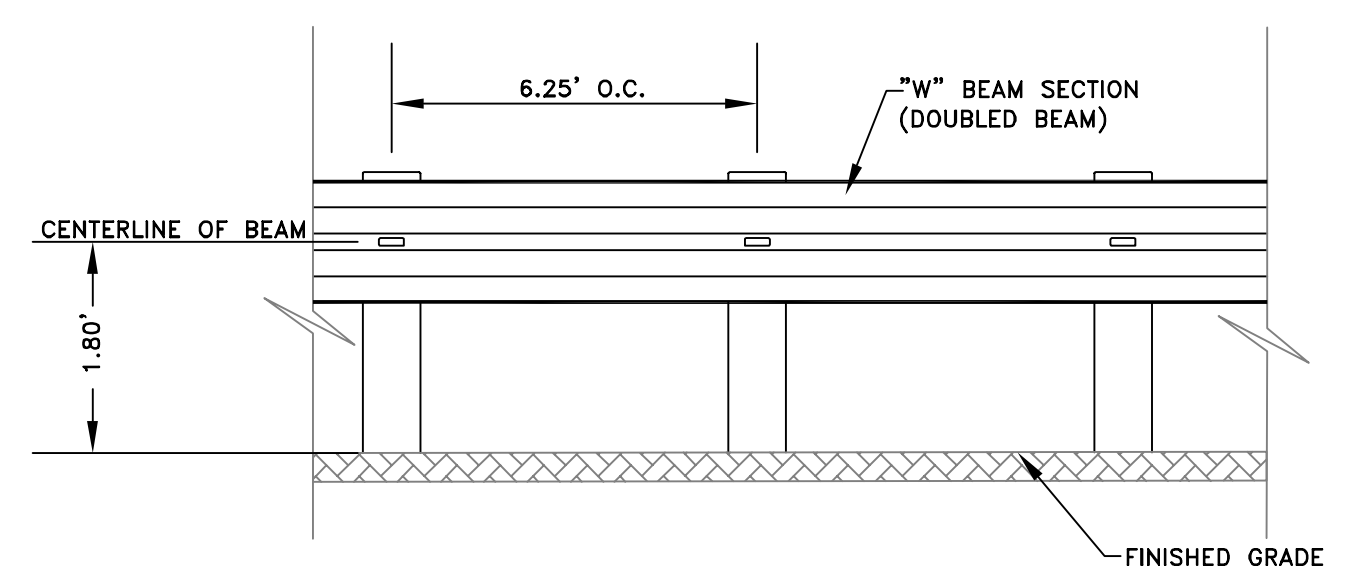
PROTECTIVE LINING AT POND FILL SLOPE (BOTH SIDES)
NOT TO SCALE



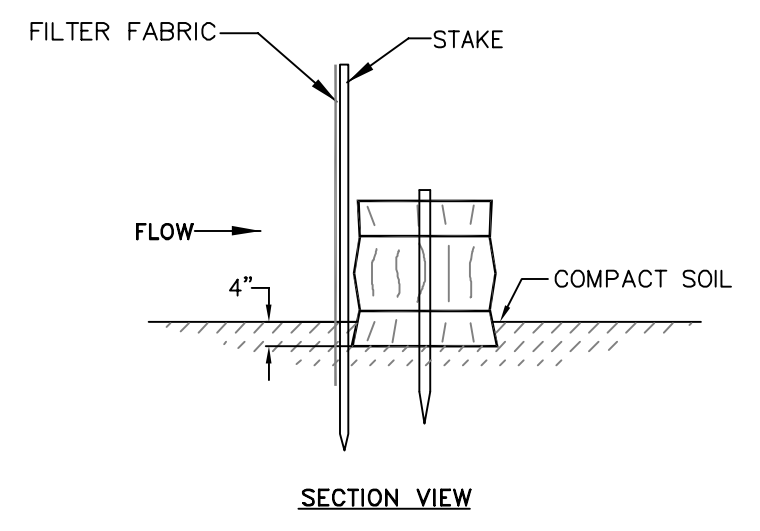
TYPICAL SPILLWAY SECTION
NOT TO SCALE



RIPRAP DITCH DETAIL
NOT TO SCALE



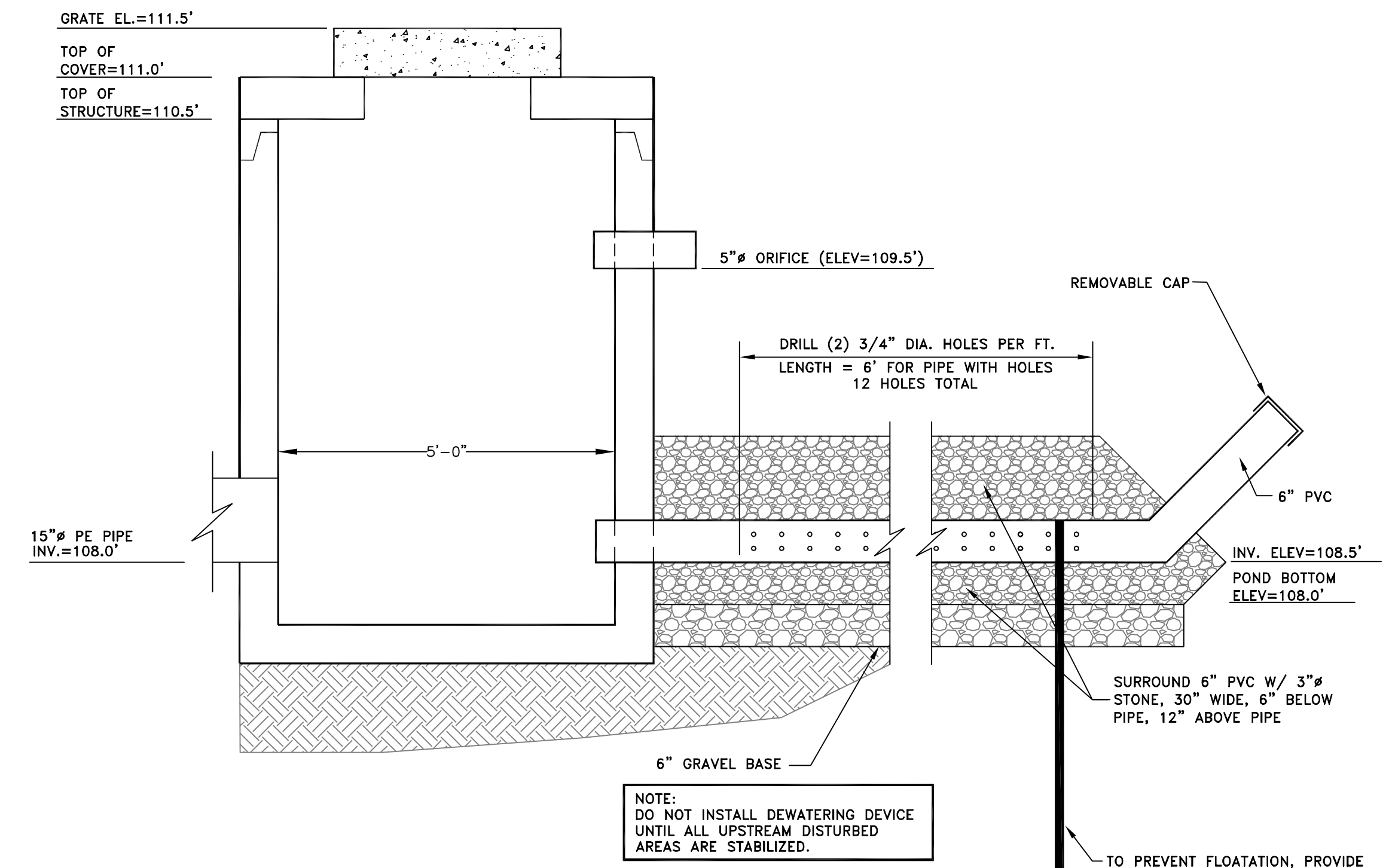
MDOT TYPE 3B METAL GUARDRAIL
NOT TO SCALE



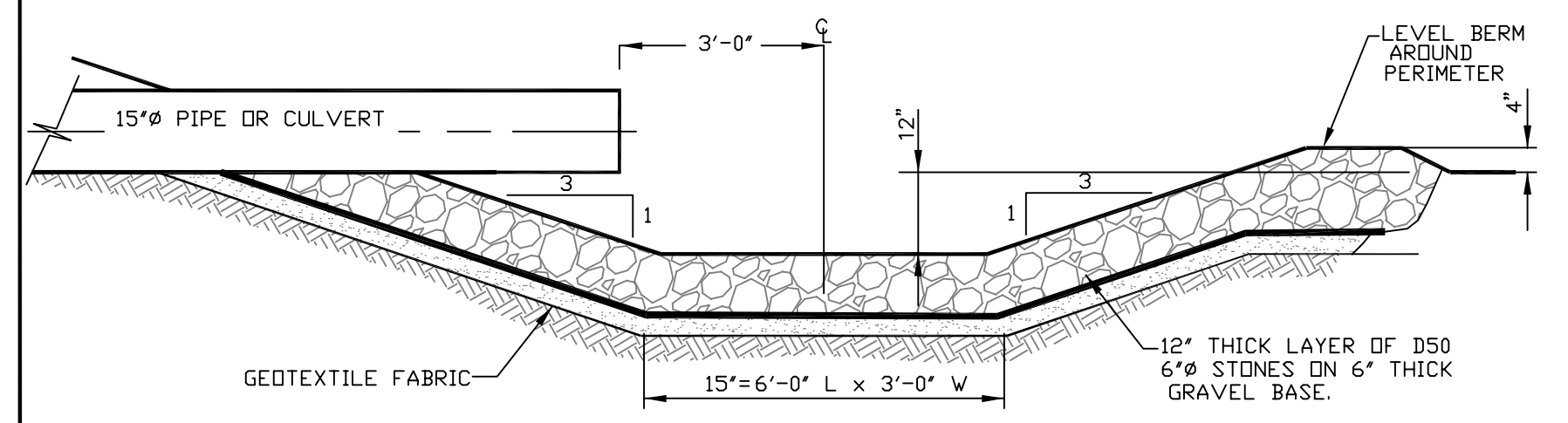
SILT FENCE/BALE BARRIER DETAIL
NOT TO SCALE

NOTES:

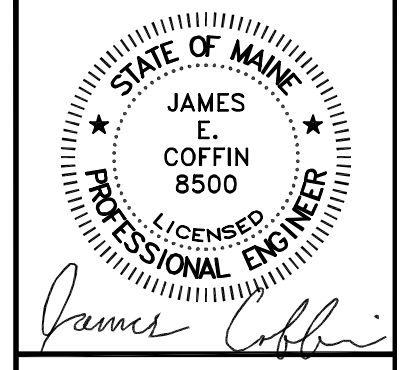
ANY SEDIMENT BARRIERS LOCATED AT LOW POINTS OR SUBJECT TO PONDING ALONG THE FENCE SHALL BE REINFORCED AS SHOWN ABOVE WITH A COMBINATION OF HAYBALES & SILT FENCE. THE CONTRACTOR SHALL REMOVE SEDIMENT TRAPPED AT THESE LOW POINTS AFTER EVERY STORM EVENT.



OUTLET CONTROL STRUCTURE
NOT TO SCALE



PLUNGE POOL SECTION
NOT TO SCALE

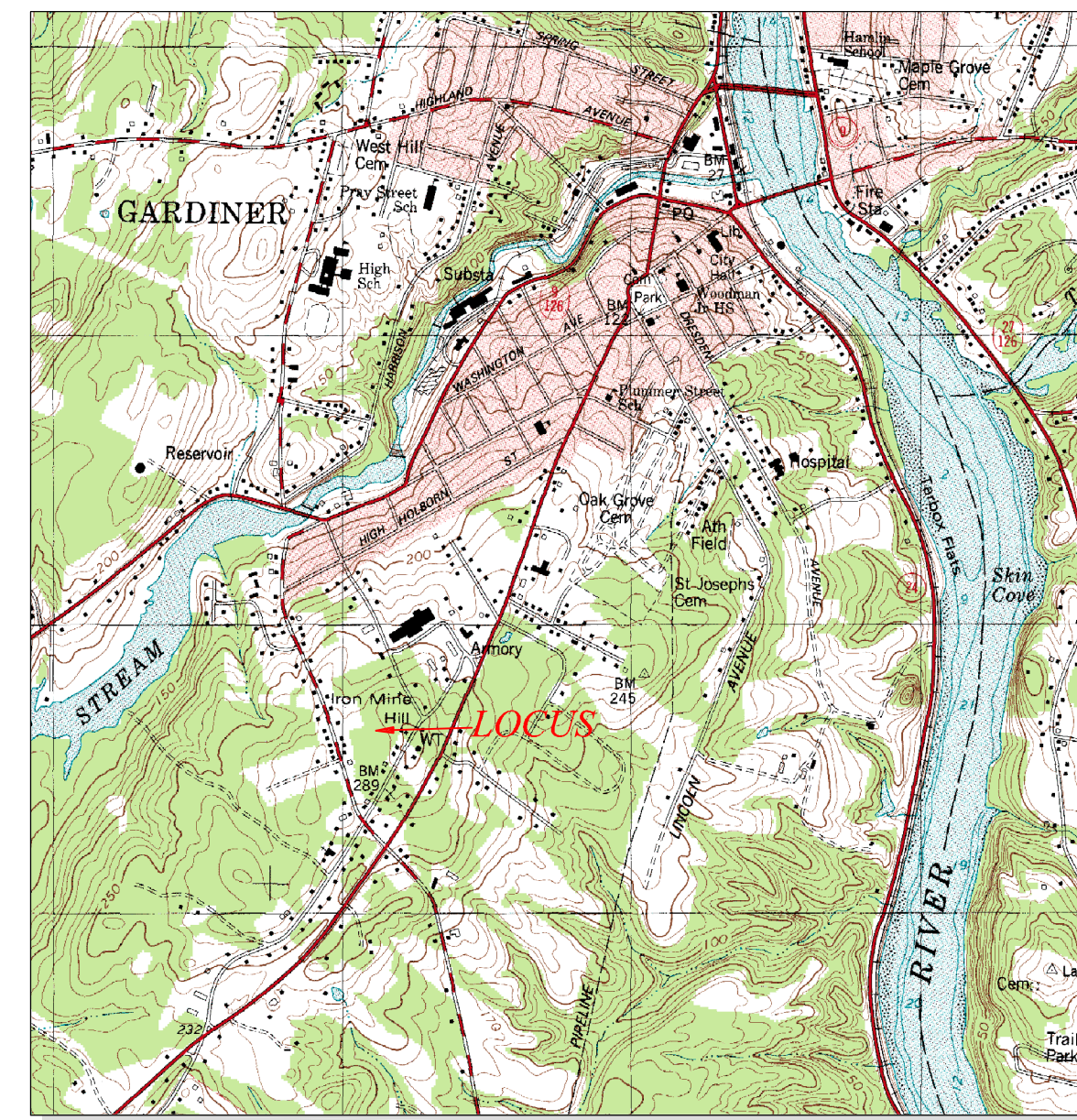


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NO.	REVISIONS	DATE

CLIENT/PROJECT: IRON MINE TRAILER PARK MAINE HOME DEALS, INC.	SHEET TITLE: DETAILS II	SCALE: AS SHOWN	DRAWN BY: TGH
		DATE: MAY 11, 2022	CHECKED BY: JEC
LOCATION: OLD BRUNSWICK ROAD	TOWN: GARDNER	COUNTY: KENNEBEC	STATE: MAINE

PROJ. NO. 2020-122
C-3

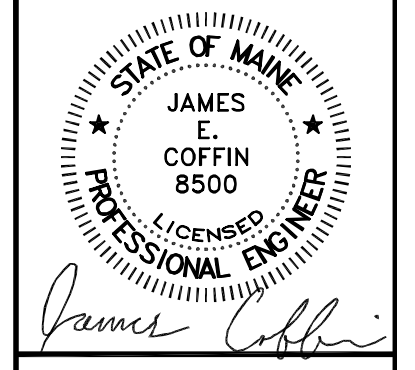
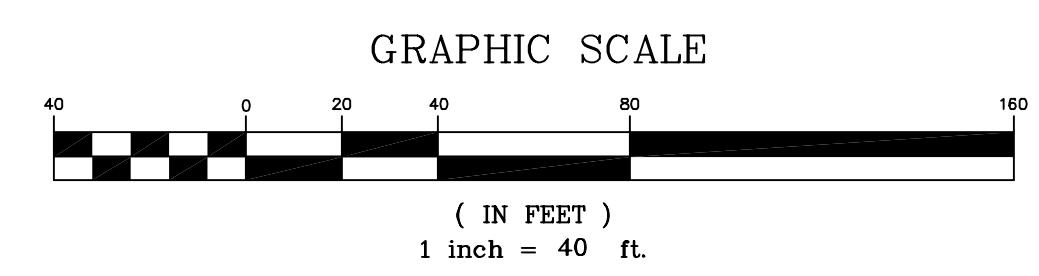


LOCUS MAP
GARDINER
USGS QUAD SHEET
SCALE 1"=2000'

NOTES:

- 1) This plan is based on the Boundary Survey & Amended Subdivision Plan for Home Deals of Maine LLC. by Bombahook Land Surveys dated August 27, 2019. E.S. Coffin Engineering & Surveying assumes no liability from these plans.
- 2) Lidar contours shown on the plan are two footers derived from the United States Geological Survey (USGS).

LEGEND	
	IRON ROD FOUND
	DRILL HOLE IN LEDGE
	5/8" REBAR PROPOSED
	UTILITY POLE
	GUY ANCHOR
	WATER VALVE
	WELL
	1 5/8" CULVERT
	DRAINAGE FLOW ARROW
	SANITARY MANHOLE
	MAILBOX
	SIGN
	EXISTING CONTOUR
	PROPOSED CONTOUR
	SURVEYED LINE
	STONE WALL
	EXISTING TRAILER
	PROPOSED TRAILER
	PROPOSED GRAVEL
	PROPOSED PLUNGE POOL



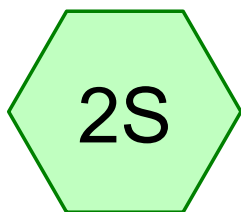
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E.S. COFFIN ENGINEERING & SURVEYING, INC.
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NO.	REVISIONS	DATE

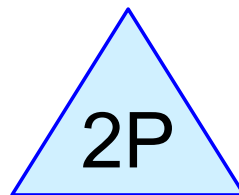
SHEET TITLE: **POST-DEVELOPMENT PLAN**
SCALE: **1 INCH=40 FEET**
DRAWN BY: **TCH**
CHECKED BY: **JEC**

CLIENT/PROJECT: **IRON MINE TRAILER PARK
MAINE HOME DEALS, INC.**
LOCATION: **OLD BRUNSWICK ROAD**
TOWN: **GARDINER** COUNTY: **KENNEBEC** STATE: **MAINE**
PROJ. NO. **2020-122**

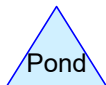
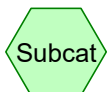
POST



Sub 2



Det. Pond



Williams Lane Pond

Type III 24-hr 2-Year Event Rainfall=2.80"

Prepared by E.S. Coffin Engineering & Surveying

Printed 5/11/2022

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Page 2

Summary for Subcatchment 2S: Sub 2

Runoff = 1.20 cfs @ 12.16 hrs, Volume= 0.095 af, Depth> 1.19"

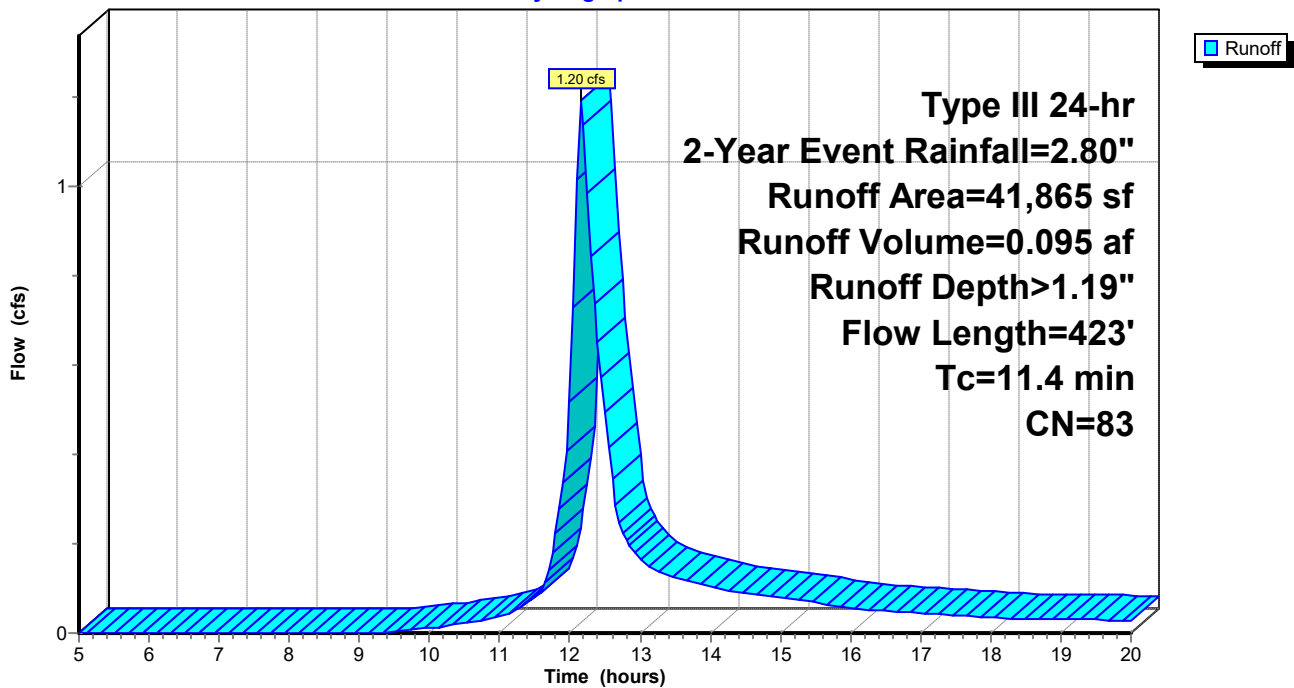
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Event Rainfall=2.80"

Area (sf)	CN	Description
41,865	83	1/4 acre lots, 38% imp, HSG C
25,956		62.00% Pervious Area
15,909		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0200	0.2		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 2.80"
0.9	323	0.0929	6.2		Shallow Concentrated Flow, BC
					Paved Kv= 20.3 fps
11.4	423	Total			

Subcatchment 2S: Sub 2

Hydrograph



Williams Lane Pond

Type III 24-hr 2-Year Event Rainfall=2.80"

Prepared by E.S. Coffin Engineering & Surveying

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Page 3

Summary for Pond 2P: Det. Pond

Inflow Area = 0.961 ac, 38.00% Impervious, Inflow Depth > 1.19" for 2-Year Event event
 Inflow = 1.20 cfs @ 12.16 hrs, Volume= 0.095 af
 Outflow = 0.53 cfs @ 12.48 hrs, Volume= 0.094 af, Atten= 56%, Lag= 18.8 min
 Primary = 0.53 cfs @ 12.48 hrs, Volume= 0.094 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 109.93' @ 12.48 hrs Surf.Area= 1,004 sf Storage= 1,229 cf

Plug-Flow detention time= 45.9 min calculated for 0.094 af (99% of inflow)
 Center-of-Mass det. time= 41.6 min (846.9 - 805.3)

Volume	Invert	Avail.Storage	Storage Description
#1	108.00'	3,393 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
108.00	320	0	0	320
109.00	640	471	471	649
110.00	1,035	830	1,300	1,057
111.00	1,500	1,260	2,561	1,539
111.50	1,835	832	3,393	1,881

Device	Routing	Invert	Outlet Devices
#1	Primary	108.00'	15.0" Round Culvert L= 25.0' Ke= 0.9? Inlet / Outlet Invert= 108.00' / 107.00' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.22718463030851?
#2	Device 1	108.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	109.50'	5.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.53 cfs @ 12.48 hrs HW=109.93' (Free Discharge)

- ↑ **1=Culvert** (Passes 0.53 cfs of 5.33 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.22 cfs @ 6.5 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.31 cfs @ 2.3 fps)

Williams Lane Pond

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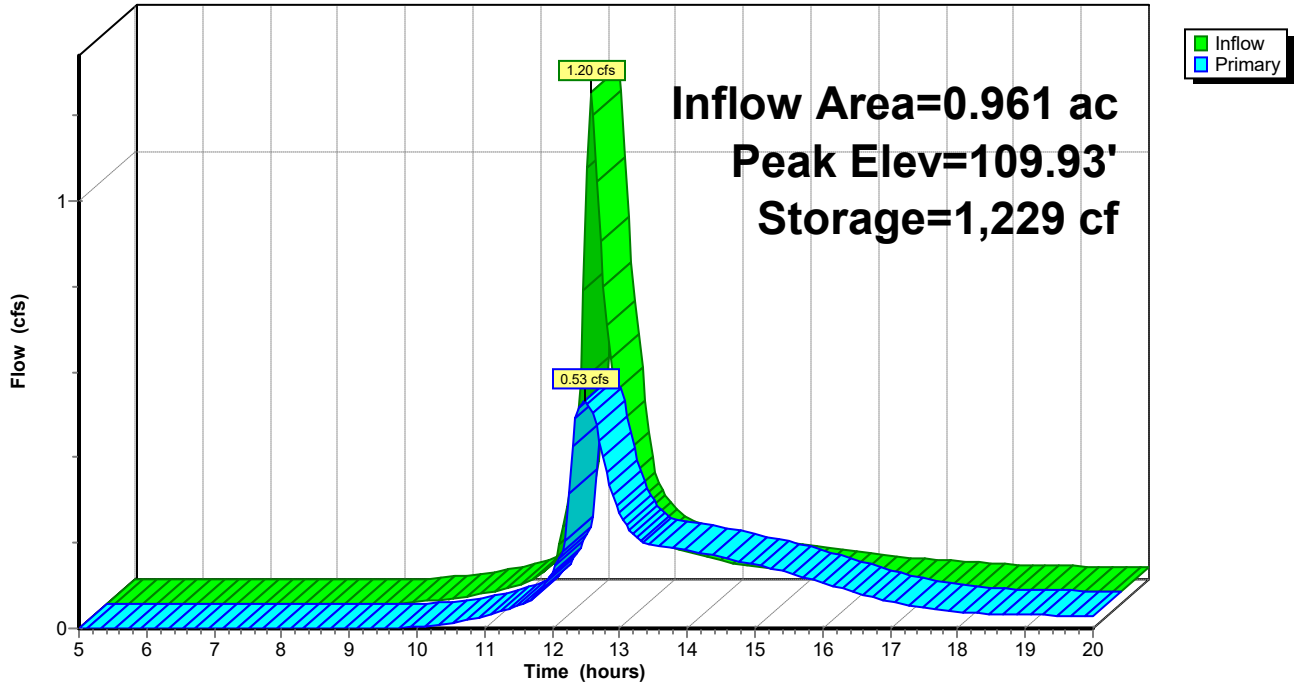
Type III 24-hr 2-Year Event Rainfall=2.80"

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Page 4

Pond 2P: Det. Pond

Hydrograph



Williams Lane Pond

Type III 24-hr 10-Year Event Rainfall=4.20"

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Page 5

Summary for Subcatchment 2S: Sub 2

Runoff = 2.30 cfs @ 12.16 hrs, Volume= 0.184 af, Depth> 2.30"

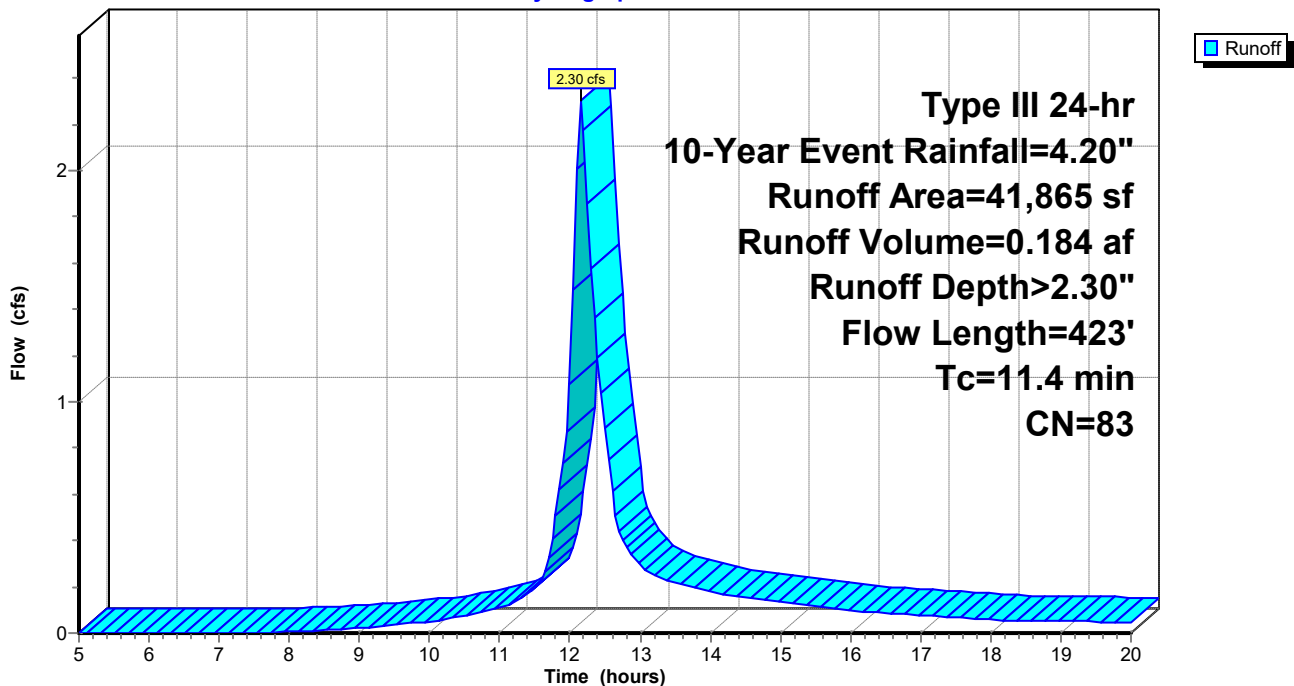
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Event Rainfall=4.20"

Area (sf)	CN	Description
41,865	83	1/4 acre lots, 38% imp, HSG C
25,956		62.00% Pervious Area
15,909		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0200	0.2		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 2.80"
0.9	323	0.0929	6.2		Shallow Concentrated Flow, BC
					Paved Kv= 20.3 fps
11.4	423	Total			

Subcatchment 2S: Sub 2

Hydrograph



Williams Lane Pond

Type III 24-hr 10-Year Event Rainfall=4.20"

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Summary for Pond 2P: Det. Pond

Inflow Area = 0.961 ac, 38.00% Impervious, Inflow Depth > 2.30" for 10-Year Event event
 Inflow = 2.30 cfs @ 12.16 hrs, Volume= 0.184 af
 Outflow = 0.97 cfs @ 12.47 hrs, Volume= 0.182 af, Atten= 58%, Lag= 18.7 min
 Primary = 0.97 cfs @ 12.47 hrs, Volume= 0.182 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 110.84' @ 12.47 hrs Surf.Area= 1,421 sf Storage= 2,330 cf

Plug-Flow detention time= 43.9 min calculated for 0.182 af (99% of inflow)
 Center-of-Mass det. time= 40.4 min (830.8 - 790.4)

Volume	Invert	Avail.Storage	Storage Description
#1	108.00'	3,393 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
108.00	320	0	0	320
109.00	640	471	471	649
110.00	1,035	830	1,300	1,057
111.00	1,500	1,260	2,561	1,539
111.50	1,835	832	3,393	1,881

Device	Routing	Invert	Outlet Devices
#1	Primary	108.00'	15.0" Round Culvert L= 25.0' Ke= 0.9? Inlet / Outlet Invert= 108.00' / 107.00' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.22718463030851?
#2	Device 1	108.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	109.50'	5.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.97 cfs @ 12.47 hrs HW=110.84' (Free Discharge)

- ↑ **1=Culvert** (Passes 0.97 cfs of 6.94 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.27 cfs @ 8.0 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.70 cfs @ 5.1 fps)

Williams Lane Pond

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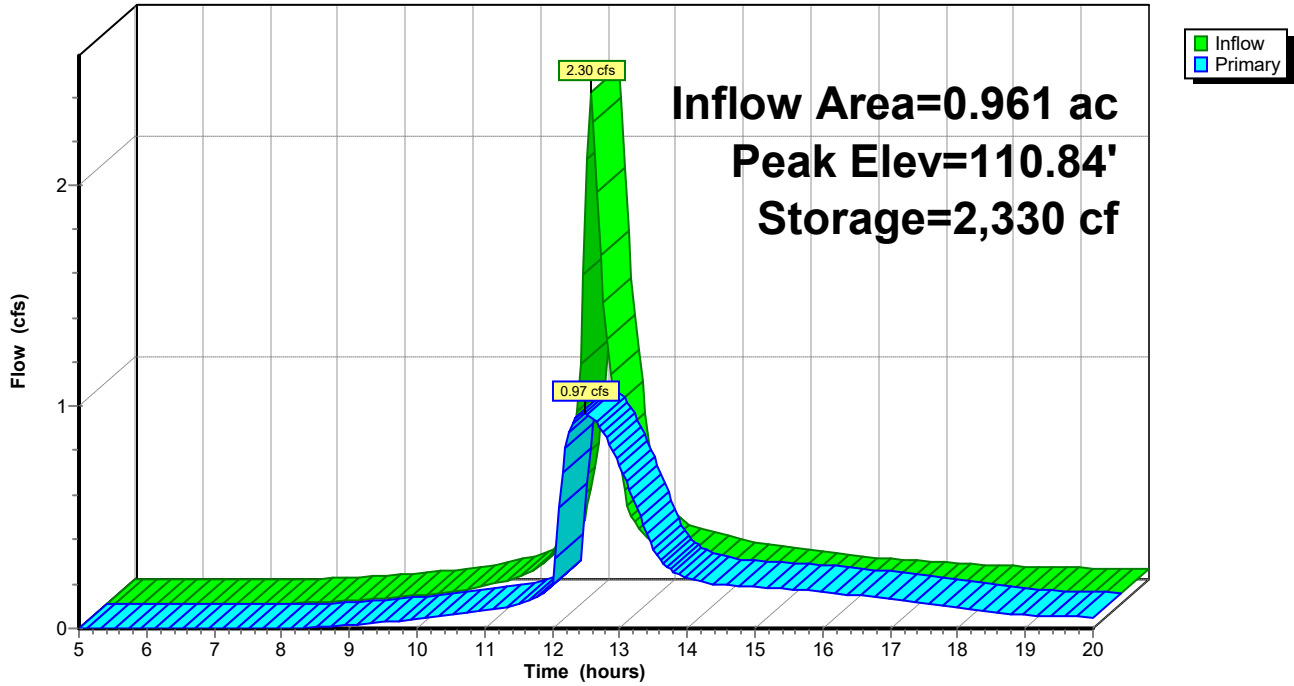
Type III 24-hr 10-Year Event Rainfall=4.20"

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Pond 2P: Det. Pond

Hydrograph



Williams Lane Pond

Type III 24-hr 25-Year Event Rainfall=5.20"

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Summary for Subcatchment 2S: Sub 2

Runoff = 3.13 cfs @ 12.16 hrs, Volume= 0.252 af, Depth> 3.14"

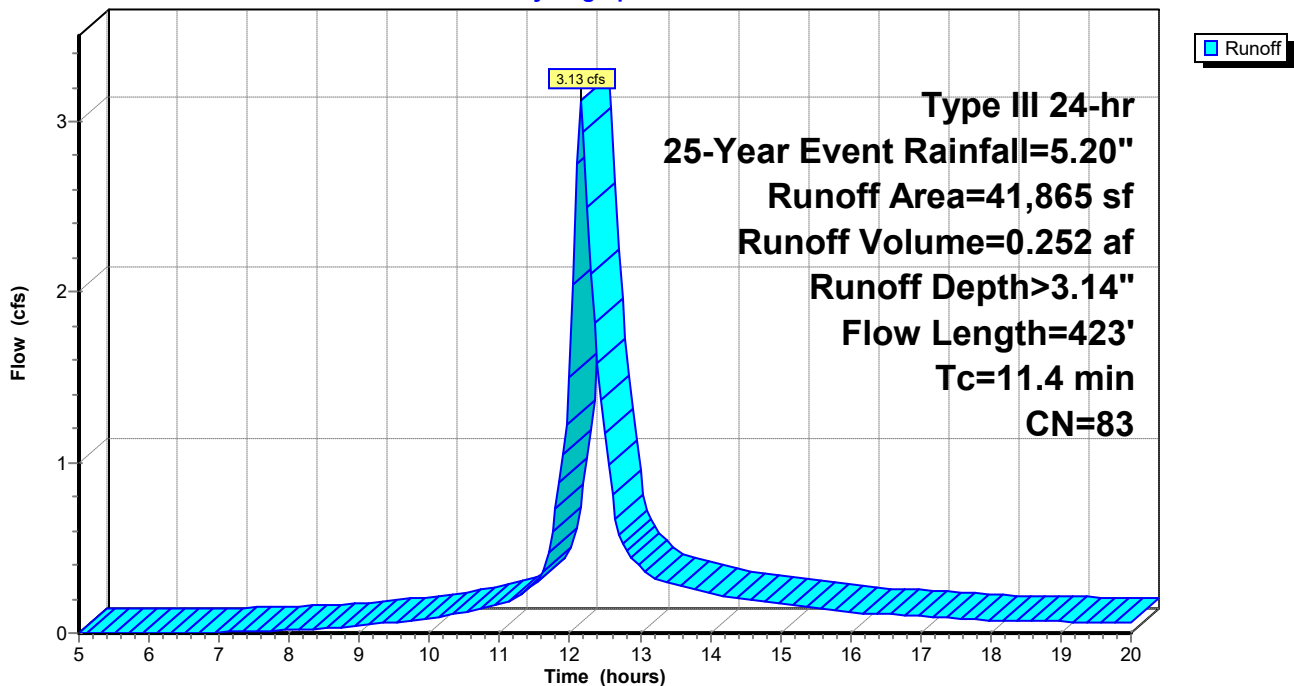
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Event Rainfall=5.20"

Area (sf)	CN	Description
41,865	83	1/4 acre lots, 38% imp, HSG C
25,956		62.00% Pervious Area
15,909		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0200	0.2		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 2.80"
0.9	323	0.0929	6.2		Shallow Concentrated Flow, BC
					Paved Kv= 20.3 fps
11.4	423	Total			

Subcatchment 2S: Sub 2

Hydrograph



Williams Lane Pond

Type III 24-hr 25-Year Event Rainfall=5.20"

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Summary for Pond 2P: Det. Pond

Inflow Area = 0.961 ac, 38.00% Impervious, Inflow Depth > 3.14" for 25-Year Event event
 Inflow = 3.13 cfs @ 12.16 hrs, Volume= 0.252 af
 Outflow = 1.17 cfs @ 12.50 hrs, Volume= 0.249 af, Atten= 62%, Lag= 20.6 min
 Primary = 1.17 cfs @ 12.50 hrs, Volume= 0.249 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 111.47' @ 12.50 hrs Surf.Area= 1,815 sf Storage= 3,341 cf

Plug-Flow detention time= 45.4 min calculated for 0.249 af (99% of inflow)
 Center-of-Mass det. time= 41.6 min (824.7 - 783.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	108.00'	3,393 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
108.00	320	0	0	320	
109.00	640	471	471	649	
110.00	1,035	830	1,300	1,057	
111.00	1,500	1,260	2,561	1,539	
111.50	1,835	832	3,393	1,881	

Device	Routing	Invert	Outlet Devices		
#1	Primary	108.00'	15.0" Round Culvert L= 25.0' Ke= 0.9? Inlet / Outlet Invert= 108.00' / 107.00' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.22718463030851?		
#2	Device 1	108.00'	2.5" Vert. Orifice/Grate	C= 0.600	
#3	Device 1	109.50'	5.0" Vert. Orifice/Grate	C= 0.600	

Primary OutFlow Max=1.17 cfs @ 12.50 hrs HW=111.47' (Free Discharge)

- ↑ **1=Culvert** (Passes 1.17 cfs of 7.87 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.30 cfs @ 8.8 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.87 cfs @ 6.4 fps)

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Type III 24-hr 25-Year Event Rainfall=5.20"

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Pond 2P: Det. Pond

Hydrograph

