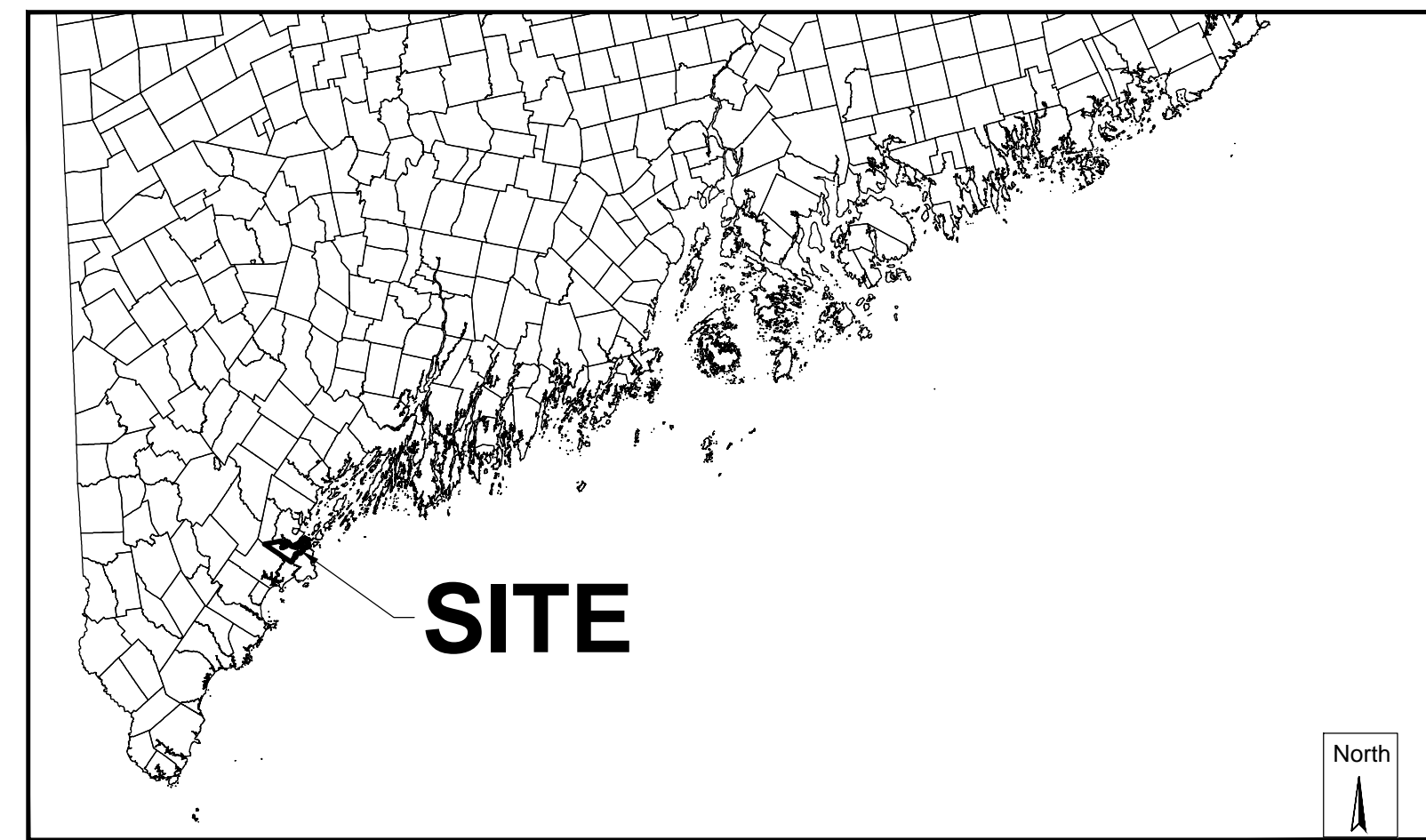
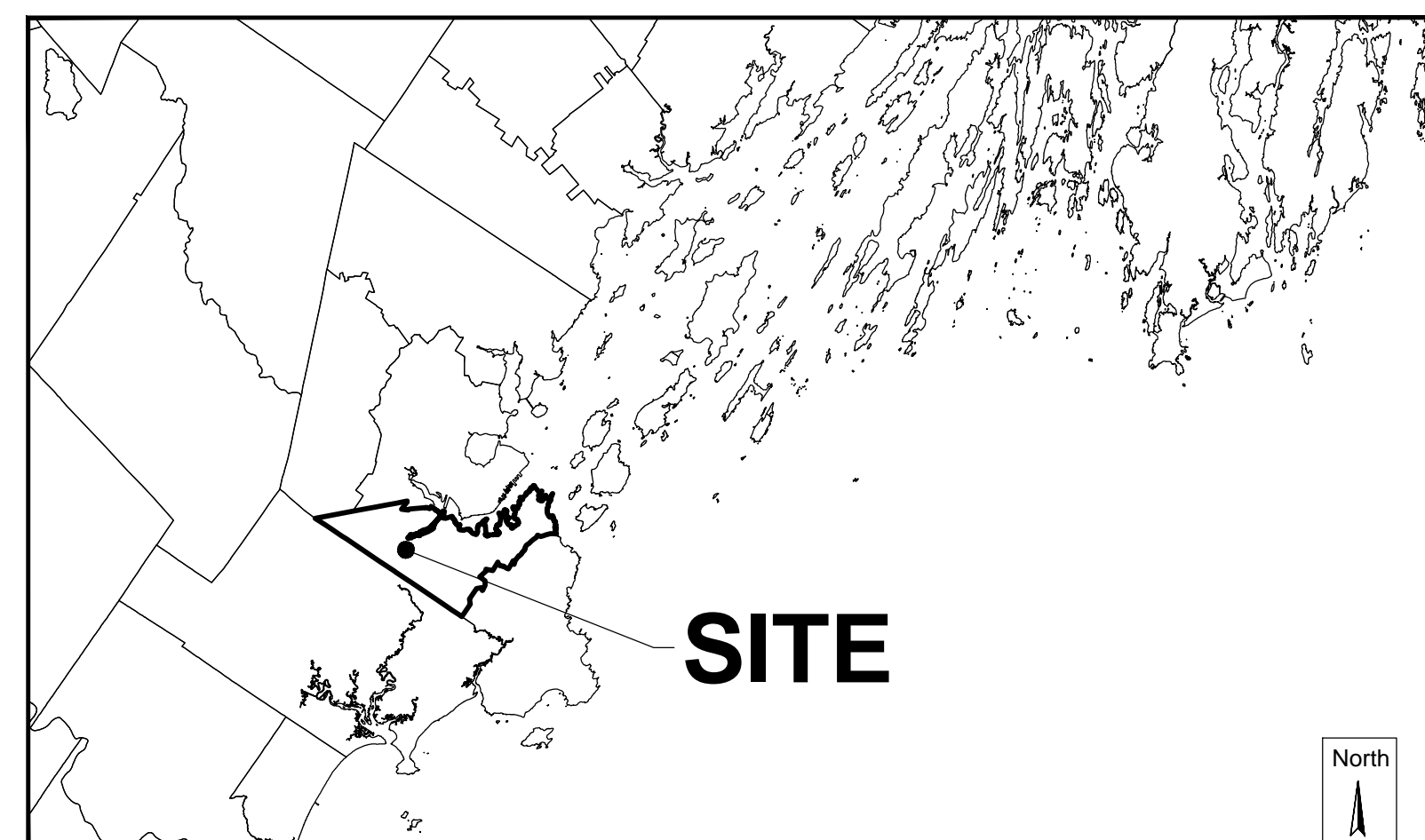


# MAINE MALL- GGP GRAVEL WETLAND LONG CREEK WATERSHED MANAGEMENT DISTRICT SOUTH PORTLAND, MAINE FEBRUARY 2015



**MAINE**  
Graphic Scale  
0 150000  
SCALE IN FEET  
1:150000



**SOUTH PORTLAND**  
Graphic Scale  
0 12000  
SCALE IN FEET  
1:12000



**VICINITY MAP**  
Graphic Scale  
1-inch = 5000-feet

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Plan Set:  
**MAINE MALL- GGP GRAVEL WETLAND  
LONG CREEK WATERSHED MANAGEMENT DISTRICT  
SOUTH PORTLAND, MAINE**

Prepared For Applicant:  
Long Creek Development Watershed Management District  
c/o Cumberland County Soil & Water Conservation District  
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Windham, ME 04062

Site Owner:  
**General Growth Properties, Maine Mall Land, LLC**  
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Designed By: KMH		2/26/15 SLK RAC Revisions For Bidding	Sheet Number: 1 of 11
Drawn By: GSC			Drawing Number: C - 1
Checked By: RAC		Rev. Date By Appr. Description	



last modified: 02/25/15 by mc\_H:\Projects\2014\14057\14057-CV.dwg

**SITE PLAN NOTES**

- 1. THE SITE IS IN THE CCR, CENTRAL AND REGIONAL COMMERCIAL DISTRICT, ZONING AREA. APPLICABLE SPACE AND BULK REGULATIONS INCLUDE:
SHORELAND AND FLOODPLAIN MANAGEMENT REGULATIONS: ANY LOT OF PORTION OF LOT LOCATED WITHIN THE SHORELAND AREA SHALL BE SUBJECT TO THE PROVISIONS OF ARTICLE XIII OF CHAPTER 27 AND/OR ARTICLE IV OF CHAPTER 5.
2. THERE ARE NO EXISTING OR PROPOSED BUILDINGS ON THE SITE. THE EXISTING DRAINAGE BASIN IS APPROXIMATELY 1.68 ACRES IN SIZE WITH AN APPROXIMATE 0.23 MAINTENANCE AREA. THE PROPOSED GRAVEL WETLAND WILL BE APPROXIMATELY 1.94 ACRES IN SIZE WITH AN APPROXIMATE 0.23 ACRES MAINTENANCE AREA.
3. THE PROPOSED GRAVEL WETLAND WILL STORE APPROXIMATELY 10.30 ACRES, OR 448,668 CF OF RUNOFF.

**SURVEY NOTES**

- 1. THE TOPOGRAPHY AND EXISTING SITE DETAIL DEPICTED HEREON WERE OBTAINED FROM AN INSTRUMENT SURVEY CONDUCTED ON THE GROUND BY OWEN HASKELL, INC ON MAY 20, 2014.
2. THE ELEVATIONS DEPICTED HEREON WERE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
3. ALL PROPERTY AND BOUNDARY LINES DEPICTED ARE APPROXIMATE ONLY.
4. EXISTING CONTOUR INTERVALS ARE EQUAL TO ONE FOOT.
5. THE ACCURACY OF MEASURED PIPE INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER CONDITIONS.

**GENERAL CONSTRUCTION NOTES**

- 1. ALL SITE WORK TO COMPLETE THIS PROJECT AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONNEL AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING THE INSTALLATION OF TEMPORARY FENCING BARRICADES, SAFETY LIGHTING, CONES, POLICE DETAIL AND/OR FLAGMEN AS DETERMINED NECESSARY BY THE CITY OF SOUTH PORTLAND AND THE PROPERTY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF SAFETY AND MAINTENANCE AND PROTECTION OF TRAFFIC.
3. MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS, PAY ALL FEES INCLUDING POLICE DETAILS AND POST ALL BONDS, IF NECESSARY, ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE OWNER AND THE ENGINEER.
4. ALL EXISTING CONDITIONS SHOWN ARE APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. PRIOR TO THE START CONSTRUCTION VERIFY THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLING ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
5. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS INDICATED ON THE DRAWINGS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE CITY OF SOUTH PORTLAND, AND "DISGAGE" (811) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR MUST RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD-LOCATED UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACCURATELY SHOWN. THE CONTRACTOR MUST MAINTAIN ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
6. COORDINATE ALL ALTERATIONS, RELOCATIONS, AND CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS REQUIRED.
7. THE CONTRACTOR MUST MAINTAIN ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ALL COST RELATED TO THE REPAIR OF UTILITIES. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES MUST BE DONE BY HAND.
8. COORDINATE ALL TRENCHING WORK WITHIN ROADWAYS WITH THE PROPER LOCAL & STATE AGENCY. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY INCLUDING ANY LOCAL AND/OR STATE PERMITS REQUIRED FOR THE TRENCH WORK. IF THIS WORK IS REQUIRED TO OCCUR OUTSIDE THE AGREED UPON HOURS OF OPERATION FOR THE FACILITY, THE CONTRACTOR MUST PLAN ACCORDINGLY.
9. SAWCUT ALL TRENCH WORK WITHIN EXISTING PAVEMENT AS INDICATED ON THE DRAWINGS. BACKFILL AND COMPACT TRENCH WORK AS INDICATED ON THE DRAWING AND IN THE SPECIFICATIONS. IF SETTLEMENT OCCURS DUE TO INADEQUATE COMPACTION, AS DETERMINED BY THE ENGINEER, WITHIN THE WARRANTY PERIOD, CONTRACTOR IS REQUIRED TO REMOVE, PATCH AND REPAVE AFTER ONE COMPLETE 12-MONTH CYCLE.
10. IMPORT ONLY CLEAN MATERIAL PER STATE REGULATIONS.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH AND MAINTAIN ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. COORDINATE WITH THE ENGINEER THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS.
12. SITE LAUNCH SURVEY REQUIRED FOR CONSTRUCTION MUST BE PROVIDED BY THE CONTRACTOR AND PERFORMED BY A MAINE REGISTERED PROFESSIONAL LAND SURVEYOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SURVEYOR FOR ALL SITE SURVEY WORK.
13. MAINTAIN ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES ARE TO REMAIN UNTIL A FINAL INSPECTION OF THE ITEM HAS BEEN COMPLETED BY THE ENGINEER. RE-STAKING OF PREVIOUSLY SURVEYED SITE FEATURES IS THE RESPONSIBILITY (INCLUDING COST) OF THE CONTRACTOR.
14. UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
15. PROVIDE ALL CONSTRUCTION SERVICE IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION CONTAMINANT, AND TRENCH WORK.
16. COLLECT SOLID WASTES AND STORE IN A SECURED DUMPSTER. THE DUMPSTER MUST MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
17. RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE PER SPECIFICATIONS. LEAVE ALL AREAS NOT DISTURBED BY CONSTRUCTION IN THEIR NATURAL STATE. TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES, OTHER LANDSCAPING AND/OR NATURAL FEATURES. WHEREAS THE PLANS DO NOT SHOW ALL LANDSCAPE FEATURES, EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF THE WORK.
18. LEDGE OR BOLDER EXCAVATION IS NOT ANTICIPATED FOR THIS SITE. HOWEVER, PROVIDE A UNIT PRICE COST IN CUBIC YARD MEASURE FOR LEDGE AND/OR BOLDER REMOVAL. LEDGE AND/OR BOLDERS LESS THAN 1 CUBIC YARD IN SIZE BASED ON THE AVERAGE DIMENSIONS WILL NOT BE CONSIDERED PAYABLE ROCK. PROVIDE UNIT PRICES FOR BOTH ON AND OFF SITE DISPOSAL. IF ADDITIONAL FILL MATERIAL IS REQUIRED INCLUDE THE COST OF ALL FILL MATERIAL.
19. REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. PROMPTLY REMOVE ALL DEMOLITION DEBRIS FROM THE SITE TO AN APPROVED DUMP SITE.
20. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.
21. DO NOT WASH ANY CONCRETE TRUCKS ONSITE. REMOVE BY HAND ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA.
22. BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOLDERS ONSITE IS PROHIBITED. DO NOT USE ROAD SALT OR OTHER DE-ICING CHEMICALS ON THE ACCESS ROADWAY.
23. IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED.
24. AT THE END OF CONSTRUCTION, REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. PERFORM A THOROUGH INSPECTION OF THE WORK PERIMETER. COLLECT AND REMOVE ALL MATERIALS AND BLOWN OR WATER CARRIED DEBRIS FROM THE SITE.

**GENERAL DEMOLITION NOTES**

- THIS PLAN SET DOES NOT INCLUDE DETAILS & SPECIFICATIONS FOR ALL DEMOLITION WORK REQUIRED WITHIN THE PROPOSED CONSTRUCTION LIMITS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER AND PROJECT ENGINEER INVOLVED WITH THE PROPOSED NEW CONSTRUCTION TO DEVELOP A SUITABLE DEMOLITION PLAN, WHICH WILL ALLOW THE FACILITIES TO REMAIN IN OPERATION DURING THE ENTIRETY OF CONSTRUCTION.
1. UNLESS OTHERWISE NOTED, THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION, DEMOLITION, REMOVAL AND DISPOSAL, IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING SITE ELEMENTS AND STRUCTURES INCLUDING, BUT NOT LIMITED TO BITUMINOUS CONCRETE, CEMENT CONCRETE, GRAVEL, FENCES, TREES, SHRUBS, UTILITIES, DRAINAGE STRUCTURES AND ALL OTHER STRUCTURES SHOWN AND NOT SHOWN WITHIN CONSTRUCTION LIMITS, AND WHERE NEEEDED, TO ALLOW FOR NEW CONSTRUCTION. ALL FACILITIES TO BE REMOVED ARE TO BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL, PER SPECIFICATIONS.
2. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
3. REMOVE ALL DEBRIS FROM THE SITE AND DISPOSE OF THE DEBRIS IN A PROPER AND LEGAL MANNER.
4. OBTAIN ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
5. COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. COORDINATE WITH THE UTILITY COMPANIES CONCERNING PORTIONS OF THE WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
6. REFER TO PLANS AND SPECIFICATIONS FOR ALL WORK WHICH REQUIRES UTILITIES TO BE REMOVED, RELOCATE OR ABANDONED AND LEFT IN PLACE.
7. PROVIDE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL UTILITY LINES, AS REQUIRED, BEFORE PROCEEDING WITH THE WORK.
8. MAINTAIN CONTINUOUS ACCESS AND OPERATION FOR SURROUNDING FACILITIES, AS DEEMED BY THE OWNER, AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.

**BASIC CONSTRUCTION SEQUENCE**

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND LANDSCAPE ARCHITECTS AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

- 1. SURVEY AND STAKE THE PROPOSED LIMIT OF DISTURBANCE AND LIMIT OF SEDIMENTATION BARRIERS.
2. PLACE SEDIMENTATION BARRIERS (TUBULAR SEDIMENT BARRIER, STRAWBALES, SILT FENCE, ETC.) AS INDICATED ON DRAWINGS AND STAKED OUT IN THE FIELD. UNDER NO CIRCUMSTANCES IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS/LIMIT OF DISTURBANCE AS INDICATED ON DRAWINGS AS APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP).
3. INSTALL TEMPORARY CONSTRUCTION ENTRANCES IN LOCATIONS INDICATED ON DRAWINGS. NO OTHER ENTRANCES ARE TO BE USED TO GAIN ACCESS TO THE SITE BY ANY CONSTRUCTION OR DELIVERY VEHICLES.
4. BEGIN CLEARING THE SITE AS REQUIRED.
5. SURVEY AND STAKE LIMITS OF EXCAVATION FOR THE GRAVEL WETLAND AND DRAINAGE LINES.
6. TOPSOIL IS TO BE STRIPPED FROM THE UPLAND AREA OF THE DETENTION BASIN AND STOCKPILED IN APPROVED LOCATIONS. TOPSOIL STOCKPILES MUST BE PROTECTED BY A SEDIMENT BARRIER.
7. MODIFY THE EXISTING OUTLET STRUCTURE AS INDICATED IN THE DRAWINGS.
8. INSTALL TEMPORARY CONVEYANCE SYSTEM FOR SITE DEWATERING AND THE DEWATERING SYSTEM TO CONVEY GROUNDWATER AND SITE RUNOFF AWAY FROM CONSTRUCTION AREA. DO NOT DISCHARGE UNTREATED WATER TO THE RESOURCE AREAS DURING THE DEWATERING PROCESS. SEE DEWATERING NOTES. CONTRACTOR TO SUBMIT A DEWATERING PLAN TO THE ENGINEER FOR PRIOR APPROVAL.
9. BEGIN ROUGH GRADING. BRING ROUGH GRADING TO FINAL ELEVATIONS AS SOON AS PRACTICABLE. COORDINATE WORK TO MINIMIZE THE TIME SOILS ARE UN-STABILIZED.
10. CONSTRUCT FOREBAY AND MICROPOOL AREAS. INSTALL GABION WALLS AS INDICATED ON DRAWINGS.
11. INSTALL DRAINAGE PIPES, DRAINAGE MANHOLES, OUTLET STRUCTURES, AND STORM CHAMBER DRAINAGE SYSTEM. INSTALL SEDIMENT BARRIERS AT ALL POINTS OF ENTRY INTO THE DRAINAGE NETWORK. TAKE PARTICULAR CARE TO PROTECT THE DRAINAGE SYSTEM FROM SEDIMENT.
12. BACKFILL DRAINAGE SYSTEM WITH CRUSHED STONE.
13. COMPLETE SITE GRADING AND CONSTRUCT THE PROPOSED EMBANKMENT AREAS.
14. PERMANENTLY SEED ALL DISTURBED AREAS UNLESS OTHERWISE INDICATED ON DRAWINGS.
15. FINISH PERMANENT STABILIZATION. SWEEP THE ROADWAY AND STAGING AREA TO REMOVE ALL SEDIMENTS. REPAIR DRAINAGE OUTLETS AND BASINS AS REQUIRED. CLEAN THE DRAINAGE STRUCTURES AND PIPES AT THE END OF CONSTRUCTION AND REMOVE ALL ACCUMULATED SEDIMENTS IN THE DRAINAGE BASINS. CONTRACTOR MUST INSPECT THE DRAINAGE NETWORK AND REPAIR ANY DAMAGE IMMEDIATELY.
16. COMPLETE PERMANENT DRAINAGE BASIN SEEDING AND PLANTING AFTER THE CONTRIBUTING AREA TO THE BASIN HAS REACHED A MINIMUM OF 80% STABILIZATION AND IS NO LONGER REQUIRED AS A CONSTRUCTION SEDIMENTATION BASIN. COMPLETE ALL REMAINING PLANTING AND SEEDING.
17. ENGINEER TO APPROVE THE REMOVAL OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS AND DETERMINE WHEN THE CONTRIBUTING AREA HAS REACHED A MINIMUM OF 80% STABILIZATION.

**GENERAL GRADING AND DRAINAGE NOTES**

- 1. ALL CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
2. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
3. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
4. PROPOSED ELEVATIONS ARE SHOWN TO FINISH OR GRADE UNLESS NOTED OTHERWISE.
5. ALL EARTHWORK AND SITE PREPARATION MUST BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF ANY SUBSURFACE INVESTIGATION OR GEOTECHNICAL REPORTS PREPARED FOR THIS SITE.
6. PLACE BACKFILL IN HORIZONTAL LAYERS NOT TO EXCEED SIX INCHES IN THICKNESS AND COMPACTED TO A DENSITY OF 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF OPTIMUM. ALL COMPACTION IS TO BE DETERMINED BY ASTM D1557 (MODIFIED PROCTOR). TESTING OF BACKFILL MATERIAL IS THE RESPONSIBILITY OF THE CONTRACTOR.

**DEWATERING NOTES**

- 1. THE CONTRACTOR IS TO SUPPLY THE DEWATERING SYSTEMS TO:
A. DEVELOP A SUBSTANTIALLY DRY AND STABLE SUBGRADE FOR THE PROPOSED WORK;
B. PREVENT DAMAGE TO ADJACENT PROPERTIES, STRUCTURES, UTILITIES AND RESOURCES AREAS, AND
C. RETAIN ALL SEDIMENTS ON-SITE WITHIN THE WORK AREA.
2. LOCATE DEWATERING FACILITIES WHERE THEY WILL NOT INTERFERE WITH CONSTRUCTION WORK OR ABUTTING RESOURCES.
3. MODIFY DEWATERING EQUIPMENT AND PROCEDURES WHEN OPERATIONS THREATEN TO CAUSE DAMAGE TO NEW OR EXISTING FACILITIES OR ADJACENT AREAS NOT WITHIN THE LIMIT OF WORK.
4. PRIOR TO INSTALLATION OF THE DEWATERING SYSTEM, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH A SCHEDULE OF DEWATERING PROCEDURES. DEWATERING SCHEDULE AND PROCEDURES ARE SUBJECT TO THE LOCAL AUTHORITY AND ENGINEER'S REVIEW AND APPROVAL AND TO INCLUDE AT A MINIMUM THE FOLLOWING INFORMATION:
A. THE PROPOSED TYPES OF DEWATERING SYSTEMS;
B. ARRANGEMENT, LOCATION AND DEPTHS OF SYSTEM COMPONENTS;
C. COMPLETE DESCRIPTION OF EQUIPMENT AND INSTRUMENTATION TO BE USED INCLUDING INSTALLATION, OPERATION AND MAINTENANCE PROCEDURES;
D. TYPES AND SIZES OF TANKS AND FILTERS (IF APPLICABLE);
E. A PLAN AND DESIGN CALCULATIONS DEMONSTRATING ADEQUACY OF THE PROPOSED SYSTEM AND EQUIPMENT TO MANAGE ALL STANDING GROUNDWATER ENCOUNTERED DURING EXCAVATION;
F. A PLAN AND DESIGN CALCULATIONS DEMONSTRATING ADEQUACY OF THE PROPOSED SYSTEM AND EQUIPMENT TO MANAGE UP TO THE 1-YEAR STORM EVENT OR 2.62 INCHES OF RAIN;
G. PROVISIONS AND METHODS OF SEDIMENT REMOVAL AND DISPOSAL OF WATER; AND
H. ALL PERMITS REQUIRED FOR THE WORK, IF NECESSARY.
5. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIAL/PRODUCTS REQUIRED TO ADEQUATELY PROVIDE DEWATERING WITHOUT DAMAGE TO SURROUNDING PROPERTIES, EXISTING UTILITIES, AND/OR RESOURCE AREA. ALL MATERIAL/PRODUCTS TO BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
6. INTERCEPT AND DIVERT SURFACE WATER RUNOFF AWAY FROM EXCAVATIONS THROUGH THE USE OF DIKES, DITCHES, PIPES, SUMPS OR OTHER APPROVED MEANS.
7. THE PUMP INTAKE LINE SHOULD NOT BE ALLOWED TO SETTLE TO THE BOTTOM OF THE EXCAVATION OR DEWATERING SLUMP.
8. PROVIDE AND MAINTAIN HOLDING AREAS/TEMPORARY SETTLING BASINS OF ADEQUATE SIZE TO COLLECT AND PREVENT SURFACE AND SUBSURFACE WATER SEEPAGE FROM ENTERING THE EXCAVATIONS. DIVERT THE WATER TO SETTLING BASINS, FRACTIONATION TANKS OR OTHER APPROVED EQUIPMENT REQUIRED TO REDUCE THE AMOUNT OF FINE PARTICLES BEFORE DISCHARGE INTO DRAINAGE PIPES AND NATURAL WATER COURSES. IF A DRAINAGE SYSTEM OR WATER COURSE BECOMES BLOCKED DUE TO DEWATERING OPERATION, IT MUST BE CLEANED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ANY ENFORCEMENT ACTIONS OR FINES RESULTING FROM IMPROPER DEWATERING AND/OR DISCHARGE OF TURBID WATER AND SEDIMENT TO PROTECTED AREAS IS TO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
9. ACCOMPLISH DEWATERING IN ACCORDANCE WITH THE MEANS AND METHODS SUBMITTED AND APPROVED BY THE ENGINEER. KEEP THE ENGINEER ADVISED OF ANY CHANGES REQUIRED TO ACCOMMODATE FIELD CONDITIONS AND, ON COMPLETION OF THE DEWATERING SYSTEM INSTALLATION, REVISE AND RESUBMIT THE INFORMATION REQUIRED TO SHOW THE INSTALLED SYSTEM.

- A. PERFORM DEWATERING OPERATIONS TO LOWER THE GROUNDWATER LEVEL IN EXCAVATIONS AS REQUIRED TO PROVIDE A STABLE, DRY SUBGRADE FOR THE PROSECUTION OF THE PROPOSED WORK.
B. MAINTAIN DEWATERING OPERATIONS IN A MANNER THAT PREVENTS BUILDUP OF EXCESSIVE HYDROSTATIC PRESSURE AND DAMAGE TO STRUCTURES, AND THE SUBGRADE.
C. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. CONTRACTOR TO PROVIDE AND MAINTAIN AT ALL TIMES AMPLE MEANS AND DEVICES TO REMOVE PROMPTLY, AND TO DISPOSE OF PROPERLY, ALL WATER ENTERING EXCAVATIONS AND TO KEEP THEM DRY UNTIL THE PROPOSED WORK IS COMPLETED.
D. DO NOT DISCHARGE WATER TO PROTECTED ENVIRONMENTAL RESOURCES WITHOUT TREATMENT TO REMOVE SUSPENDED SOLIDS AND SEDIMENTS.
E. DO NOT LAY PIPE IN WATER. CONTRACTOR TO CONSTANTLY GUARD AGAINST THE POSSIBILITY OF FLOATION OF PIPE OR STRUCTURES AFTER INSTALLATION. PLACEMENT OF BACKFILL OR OTHER MEANS TO BE PLACED PROMPTLY TO PREVENT THIS OCCURRENCE.

**STORMWATER FACILITY OPERATION & MAINTENANCE:**

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES AS OUTLINED BELOW FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF SUBSTANTIAL COMPLETION AS DEEMED BY THE OWNER AND ENGINEER.

- 1. INSPECT AND RESTORE/CLEAN ALL FACILITIES (INLETS, MANHOLES, BASINS, ETC.) OF SEDIMENT AND DEBRIS PRIOR TO THE OWNER'S ACCEPTANCE.
2. REMOVE AND DISPOSE ALL SEDIMENT AND DEBRIS TO A PRE-APPROVED LOCATION AS APPROVED BY THE CITY OF SOUTH PORTLAND.
3. DURING CONSTRUCTION, REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION PERTAINING TO STORMWATER FACILITY OPERATION AND MAINTENANCE REQUIREMENTS. MAINTAIN A WORKING COPY OF THE SWPPP ON SITE AT ALL TIMES.
4. INSPECT AFTER EVERY RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND DURING THE FIRST 3 MONTHS AFTER SUBSTANTIAL COMPLETION TO ENSURE PROPER STABILIZATION AND CONSTRUCTION THEREAFTER AND UP TO ONE YEAR FOLLOWING SUBSTANTIAL COMPLETION, INSPECT ACCORDING TO THE DIRECTIVES BELOW IN ITEM #5.
5. SPECIFIC MAINTENANCE REQUIRED AS FOLLOWS:
A. DRAINAGE STRUCTURES (INLETS, MANHOLES & CATCHBASINS): ALL DRAINAGE STRUCTURES WILL BE INSPECTED TWICE ANNUALLY FOR THE FIRST YEAR TO MONITOR FOR PROPER OPERATION, COLLECTION OF LITTER OR TRASH, AND STRUCTURAL DETERIORATION. THE BASINS WILL BE CLEANED OF SEDIMENT (INCLUDING SUMPS) AS NECESSARY, AND REPAIRED WHEN REQUIRED.
B. RIP-RAP CHANNEL/SLOPE PROTECTION: INSPECT TWICE ANNUALLY FOR FIRST YEAR AND REPAIR AS NECESSARY.
C. SEDIMENT FOREBAY: INSPECT TWICE ANNUALLY TO ENSURE PROPER FUNCTIONING. REMOVE SEDIMENT BUILD-UP ON THE FLOOR OF THE FOREBAY AT END OF THE REQUIRED CONTRACTOR MAINTENANCE PERIOD AND PROPERLY DISPOSE.
D. GRAVEL WETLAND SYSTEM: INSPECT TWICE ANNUALLY FOR THE FIRST YEAR OF OPERATION. REMOVE AND REPLACE ILL-ESTABLISHED, DEAD OR SEVERELY DISEASED PLANTS.
E. ROUTINE MAINTENANCE: OTHER ROUTINE MAINTENANCE INCLUDES THE REMOVAL OF TRASH AND LITTER FROM PAVED AND PERIMETER AREAS, AND STREET AND PARKING LOT SWEEPING AFTER THE SPRING THAW TO AVOID EXCESSIVE ACCUMULATION OF SEDIMENT IN THE DRAINAGE SYSTEM. COORDINATE PAVEMENT SWEEPING ACTIVITIES WITH THE SITE OWNER. INSPECT THE PIPES DRAINING THE PROJECT TWICE ANNUALLY FOR THE FIRST YEAR FOR PROPER FLOW.
NOTE: OPERATION AND MAINTENANCE CHECKLIST AVAILABLE UPON REQUEST

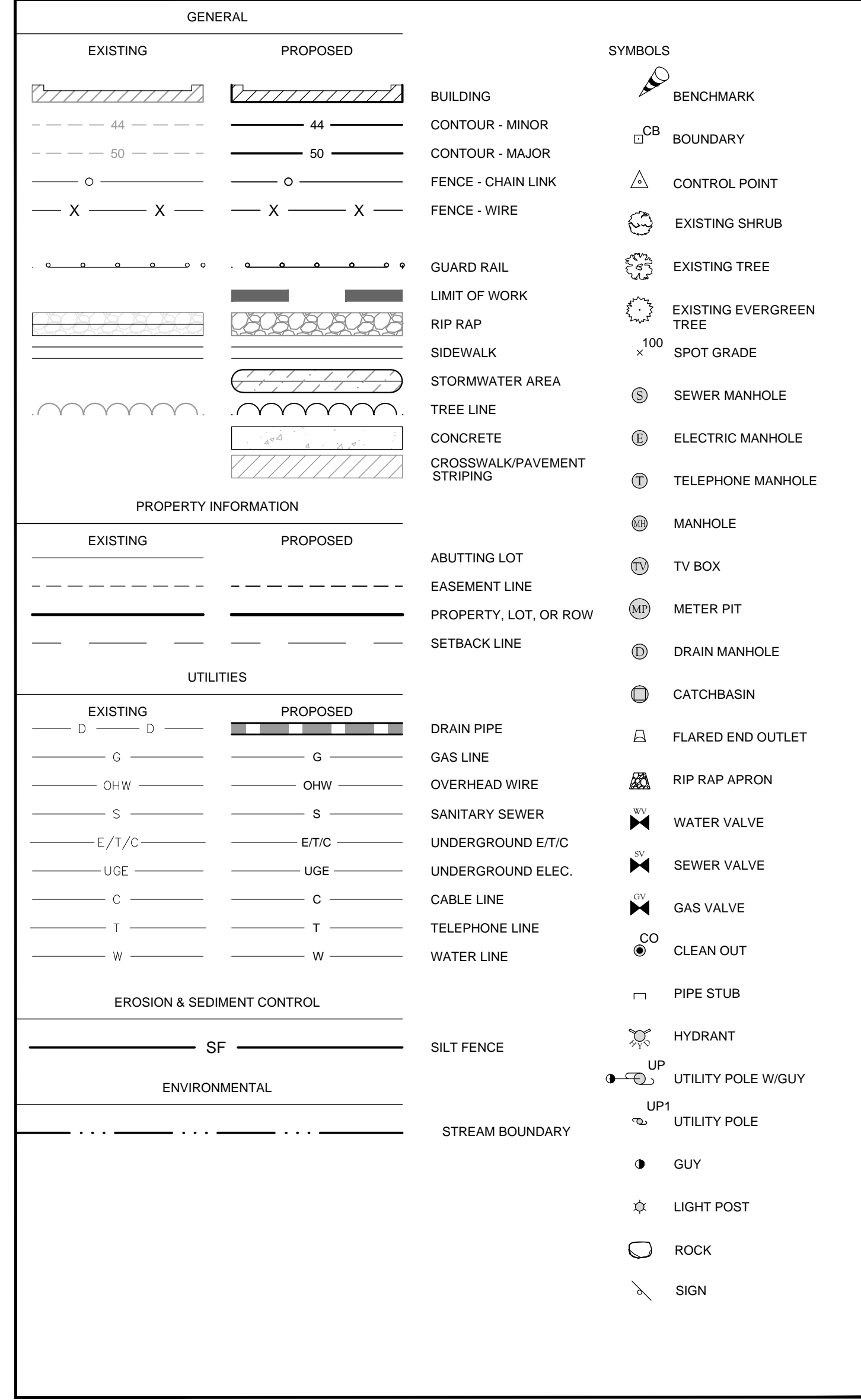
**EROSION & SEDIMENT CONTROL NOTES**

- 1. PRIOR TO THE START OF CONSTRUCTION A NOTICE OF INTENT (NOI) MUST BE FILED WITH NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES). REFER TO THE STORMWATER AND POLLUTION PREVENTION PLAN (SWPPP) REGARDING ALL EROSION CONTROL MATTERS. MAINTAIN A WORKING COPY OF THE SWPPP ON SITE AT ALL TIMES. FOLLOW THE SWPPP PROTOCOL FOR SITE MAINTENANCE, INSPECTIONS AND PROPER DOCUMENTATION UNTIL THE SITE HAS BEEN ACCEPTED BY THE OWNER. AT THE COMPLETION OF THE PROJECT THE CONTRACTOR OR OWNER MUST FILE A NOTICE OF TERMINATION WITH NPDES. IN ACCORDANCE WITH NPDES REGULATIONS, THE COMPLETED SWPPP MUST INCLUDE ALL OF THE SITE EROSION CONTROL DOCUMENTATION. WEEKLY EROSION INSPECTION REPORTS COMPLETED BY THE DESIGNATED SITE PERSONNEL, AND ANY OTHER PERTINENT SITE DOCUMENTATION MUST BE RETAINED FOR A MINIMUM OF 3 YEARS FROM THE DATE OF TERMINATION.
2. DESIGNATE THE SITE CONSTRUCTION FOREMAN AS THE ON-SITE PERSONNEL RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROLS AND IMPLEMENTATION OF ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE.
3. INSTALL ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES AS INDICATED ON DRAWINGS IN CONSULTATION WITH THE LONG CREEK WATERSHED MANAGEMENT DISTRICT, AND ENGINEER BEFORE ANY CONSTRUCTION ACTIVITIES BEGIN. INSPECT, MAINTAIN REPAIR AND REPLACE EROSION CONTROL MEASURES, AS NECESSARY, DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. THE SITE PERIMETER EROSION CONTROLS ARE THE DESIGNATED LIMIT OF WORK. INFORM ALL PERSONNEL WORKING ON THE PROJECT SITE THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGHOUT THE CONSTRUCTION PERIOD.
4. MAINTAIN A MINIMUM SURPLUS OF 100 FEET OF EROSION CONTROL BARRIER (TUBULAR SEDIMENT BARRIER, SILT FENCE, & STRAWBALE) ONSITE AT ALL TIMES.
5. PROTECT ADJACENT STREAM AND ASSOCIATED WETLANDS FROM SEDIMENTATION DURING PROJECT CONSTRUCTION UNTIL ACCEPTANCE BY THE OWNER & IN CONFORMANCE WITH THE APPROVED PLANS.
6. PROVIDE CONSTRUCTION ENTRANCES AS INDICATED ON DRAWINGS TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. CLEAN AND/OR REPLACE THE CRUSHED STONE PAD, AS NECESSARY, TO MAINTAIN ITS EFFECTIVENESS.
7. KEEP THE LIMIT OF CLEARING, GRADING AND DISTURBANCES TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED SOIL. IF TREES ARE TO BE CUT ON THE SITE, CLEAR AND GRUB ONLY THOSE AREAS WHICH ARE ACTIVELY UNDER CONSTRUCTION. PROPERLY INSTALL SEDIMENTATION CONTROLS PRIOR TO BEGINNING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK.
8. MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH LEAVE LARGE DISTURBED AREAS UNSTABILIZED. IF INCLEMENT WEATHER IS PREDICTED, USE BEST PROFESSIONAL JUDGEMENT AND GOOD CONSTRUCTION PRACTICES WHEN SCHEDULING CONSTRUCTION ACTIVITIES AND ENSURE THE NECESSARY EROSION CONTROL DEVICES ARE INSTALLED AND FUNCTIONING PROPERLY TO MINIMIZE EROSION FROM ANY IMPENDING WEATHER EVENTS.
9. INSPECT EROSION AND SEDIMENT CONTROL DEVICES AND STABILIZED SLOPES ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF 0.25 INCHES OR GREATER. REPAIR OR REPLACE WITHIN 24 HOURS TO ENSURE EROSION AND SEDIMENT CONTROLS ARE IN GOOD WORKING ORDER. RESET OR REPLACE MATERIALS AS REQUIRED.
10. SURROUND THE PERIMETER OF SOIL STOCKPILES WITH TUBULAR SEDIMENT BARRIER, SILT FENCE, STRAWBALES, OR A COMBINATION OF SILT FENCE WITH STRAWBALE, AS DETERMINED NECESSARY. COVER STOCKPILES WITH PLASTIC SHEETING.
11. DISTURBED AREAS AND SLOPES MUST NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. PROVIDE APPROPRIATE PRACTICES ON ALL DISTURBED AREAS TO PREVENT EROSION AS FAR AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED. REINFORCE TEMPORARY AREAS HAVING A SLOPE GREATER THAN 4:1 WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERLY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER.
12. INSTALL CATCH-BASIN INSERTS OR APPROVED EQUIVALENT IN EXISTING CATCH-BASINS/INLETS RECEIVING RUNOFF FROM THE SITE AS NOTED ON PLAN. INSERTS OR EQUIVALENTS MUST BE INSTALLED PRIOR TO ANY SIGNIFICANT STORM EVENT AND REMOVE AND EMPTY AS NEEDED FOR THE DURATION OF THE CONSTRUCTION PERIOD.
13. SMALL SEDIMENTATION BASINS MAY BE CONSTRUCTED ON AN AS-NEEDED BASIS DURING CONSTRUCTION TO AID IN THE CAPTURE OF SITE RUNOFF SEDIMENT. IT WILL BE THE RESPONSIBILITY OF THE SITE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER, TO SIZE AND CREATE THESE BASINS IN APPROPRIATE LOCATIONS.
14. CONTAIN ALL SEDIMENT ONSITE. SWEEP ALL EXITS FROM THE SITE AS NECESSARY INCLUDING ANY SEDIMENT TRACKING. SWEEP PAVED AREAS AS NEEDED TO REMOVE SEDIMENT AND POTENTIAL POLLUTANTS ACCUMULATED DURING SITE CONSTRUCTION.
15. REMOVE ACCUMULATED SEDIMENT FROM ALL TEMPORARY PRACTICES AND DISPOSE OF IN A PRE-APPROVED LOCATION.
16. PROVIDE ON SITE OR MAKE READILY AVAILABLE THE NECESSARY EQUIPMENT AND SITE PERSONNEL DURING CONSTRUCTION HOURS FOR THE DURATION OF THE PROJECT TO ENSURE ALL EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER. IF SITE WORK IS SUSPENDED DURING THE WINTER MONTHS THE CONTRACTOR MUST CONTINUE TO PROVIDE PERSONNEL AND EQUIPMENT EITHER ON SITE OR READILY AVAILABLE TO PROPERLY MAINTAIN AND REPAIR ALL EROSION AND SEDIMENTATION CONTROL DEVICES IN A TIMELY AND RESPONSIBLE MANNER.
17. CONTROL DUST BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE ENGINEER.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE DURING CONSTRUCTION OF ALL STORMWATER FACILITIES INSTALLED OR AFFECTED BY THE PROJECT. REMOVE SEDIMENT OR DEBRIS COLLECTED WITHIN THESE FACILITIES FROM THE PROJECT WORK PRIOR TO THE OWNER'S ACCEPTANCE.

**EMBANKMENT SOIL AND COMPACTION SPECIFICATIONS**

- 1. EMBANKMENT SOIL AND COMPACTION MUST COMPLY SECTION 02300 "EARTH MOVING" OF THE SPECIFICATIONS AND WITH MAINDOT STANDARD SPECIFICATIONS SECTION 200.
2. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PER CONSTRUCTION DRAWINGS PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8-INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.
3. ALL FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8' LIFT. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT. ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM AREAS ON WHICH FILL IS TO BE PLACED AND SHALL BE SCARIFIED PRIOR TO FILL PLACEMENT.
4. A KEY TRENCH SHALL BE PROVIDED BENEATH ALL FILL AREAS OF THE EMBANKMENT. THE TRENCH SHALL EXTEND A MINIMUM OF 2 FT BELOW EXISTING GRADE AND SHALL HAVE A MINIMUM BOTTOM WIDTH OF 2 FT. THE KEY TRENCH SIDE SLOPES SHALL BE A MINIMUM OF 1:1 (H:V). THE KEY TRENCH SHALL BE COMPACTED TO THE SAME SPECIFICATIONS OF THE EMBANKMENT SOILS.
5. ALL FILL SOILS USED IN THE EMBANKMENT/KEY TRENCH CONSTRUCTION SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE A GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY ASTM D1557 (MODIFIED PROCTOR).
6. THE FILL SHOULD BE COMPACTED USING A SHEEPFOOT TYPE COMPACTOR. IN ORDER TO PREVENT DAMAGE TO THE EXISTING DRAINAGE PIPE, NO COMPACTION EQUIPMENT SHALL CROSS ANY PIPE UNLESS MINIMUM COVER IS ESTABLISHED ALONG THE PIPE.
7. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH GEOTECHNICAL REPORTS TO VERIFY THAT THE EMBANKMENT MEETS THE SPECIFIED COMPACTION REQUIREMENTS. COMPACTION REPORTS WILL BE NEEDED DURING THE AS-BUILT CERTIFICATION PROCESS FOR THIS STORMWATER FACILITY. THEREFORE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPACTION TESTS ARE PROPERLY PERFORMED DURING CONSTRUCTION.
8. SIX INCHES OF TOP SOIL SHALL BE USED ON THE OUTER SHELL OF THE BERM AND MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE BERM.

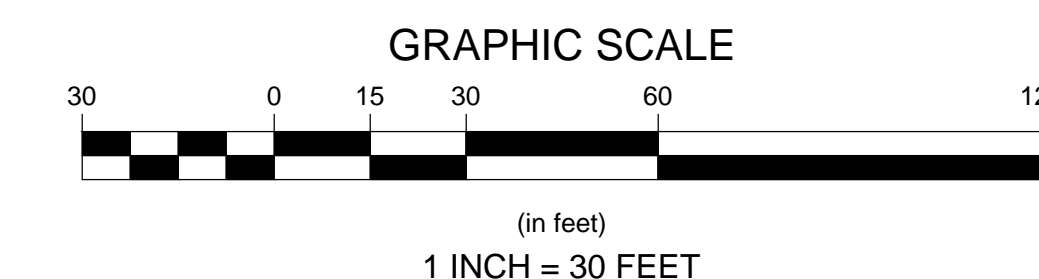
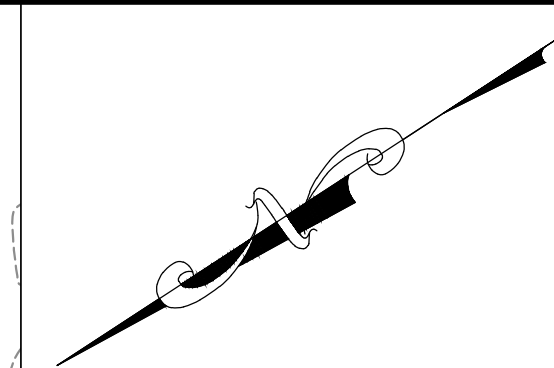
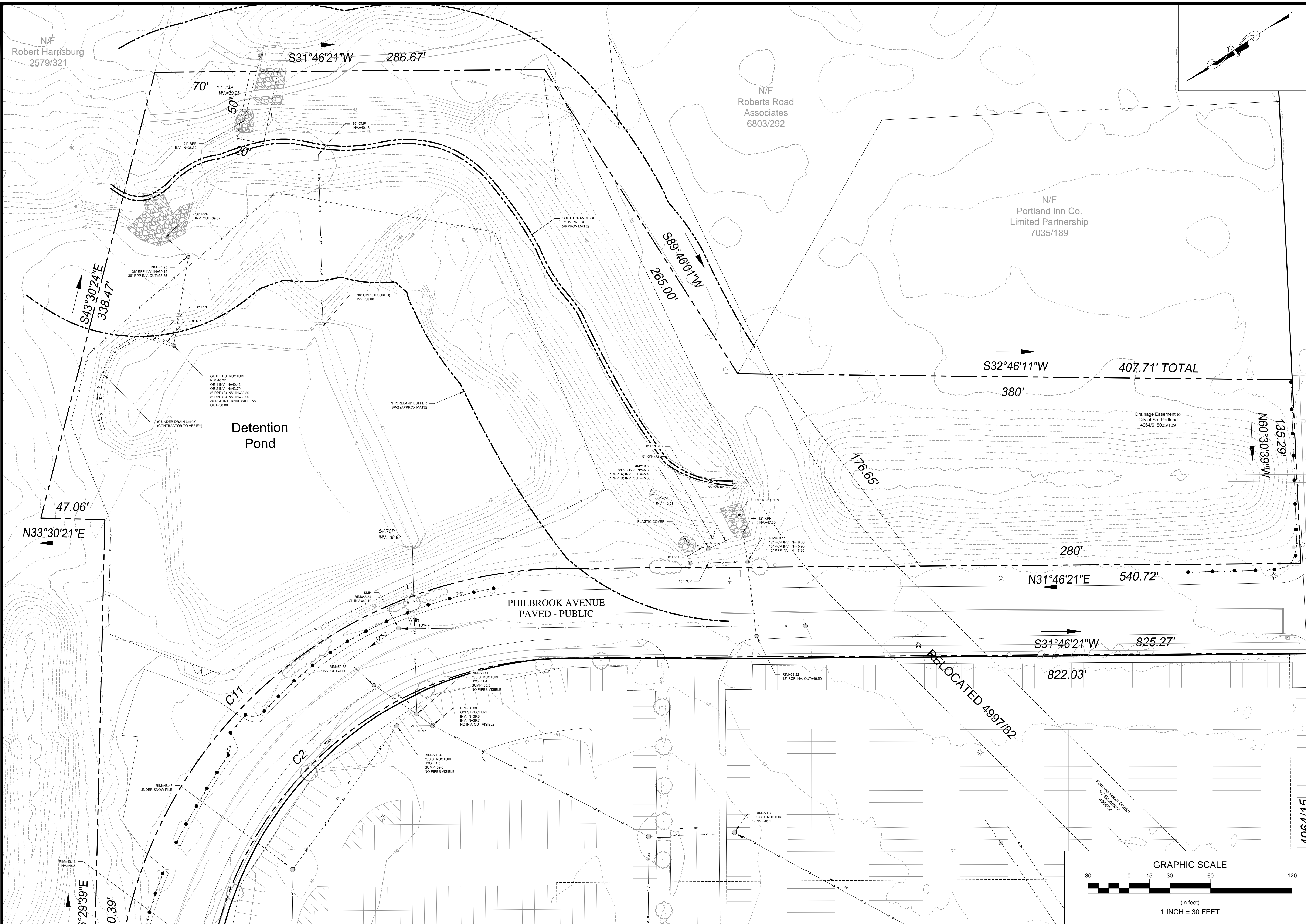
**LEGEND:**



Revisions table with columns for No., Date, By, Appr., Description. Includes project information for MAINE MALL-GGP GRAVEL WETLAND LONG CREEK WATERSHED MANAGEMENT DISTRICT SOUTH PORTLAND, MAINE. Lists project number 14057 and sheet 2 of 11. Includes logos for Horskley Witten Group, Inc. and State of Maine Professional Engineers.



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Revisions	Date	By	Appr.	Description
1	2/26/15	SLK	RAC	Revisions for Bidding
2				
3				
4				
5				

**Horsley Witten Group, Inc.**  
 Sustainable Environmental Solutions  
 40 Route 6A, Suite 200  
 Sandwich, MA 02563  
 508-833-6600 voice  
 508-833-3150 fax

Drawn By: SSC  
 Checked By: RAC  
 Design By: KMH  
 Date: FEBRUARY 2015

MAINE MALL- GGP GRAVEL WETLAND  
 LONG CREEK WATERSHED MANAGEMENT  
 DISTRICT  
 SOUTH PORTLAND, MAINE  
 EXISTING CONDITIONS PLAN

Prepared For:  
**Long Creek Watershed Management District**  
 c/o Cumberland County Soil & Water Conservation District  
 35 Main St., Suite 3  
 Phone: Windham, ME 04062

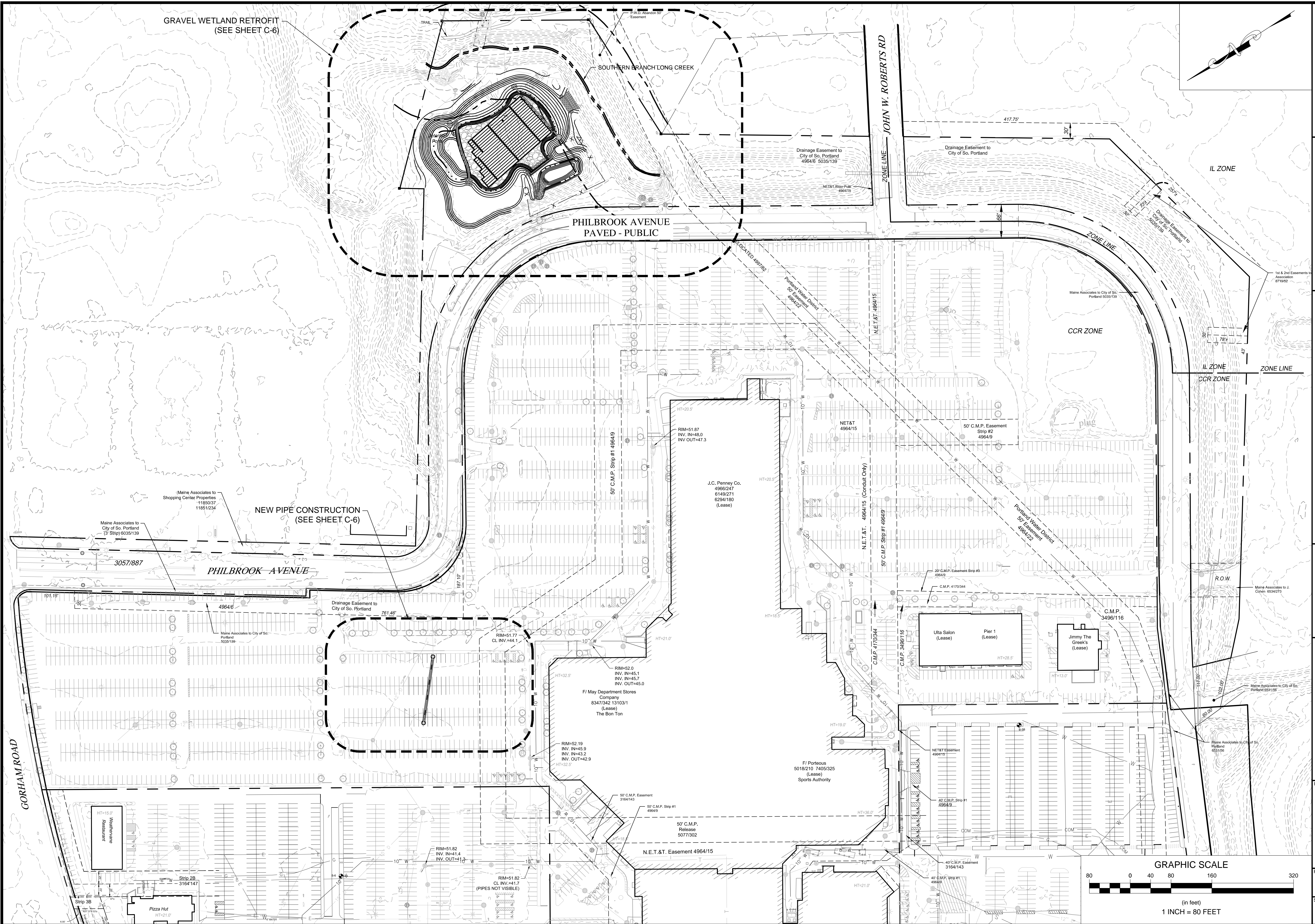
Survey Provided By:  
**Owen Haskell Inc.**  
 390 U.S. Route 1, Unit 10  
 Falmouth, ME 04105  
 Phone: (207) 774-0424  
 Fax: (207) 774-0511  
 Dated: May 20, 2014

4964/15

Project Number: 14057  
 Sheet: 3 of 11  
 Sheet Number: C-3



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**REVISIONS**

Rev.	Date	By	Appr.	Description
1	2/26/15	SLK	RAC	Revisions for Building

**Horsley Witten Group, Inc.**  
Sustainable Environmental Solutions  
www.horsleywitten.com  
40 Route 6A  
Sandwich, MA 02563  
508-833-6600 voice  
508-833-3150 fax

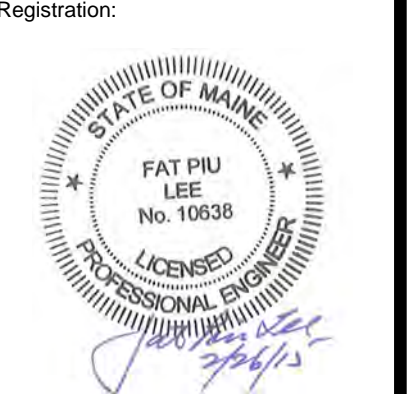
Checked By: RAC  
Drawn By: GSC  
Designed By: KMH  
Date: FEBRUARY 2015

**MAINE MALL- GGP GRAVEL WETLAND  
LONG CREEK WATERSHED MANAGEMENT  
DISTRICT  
SOUTH PORTLAND, MAINE**

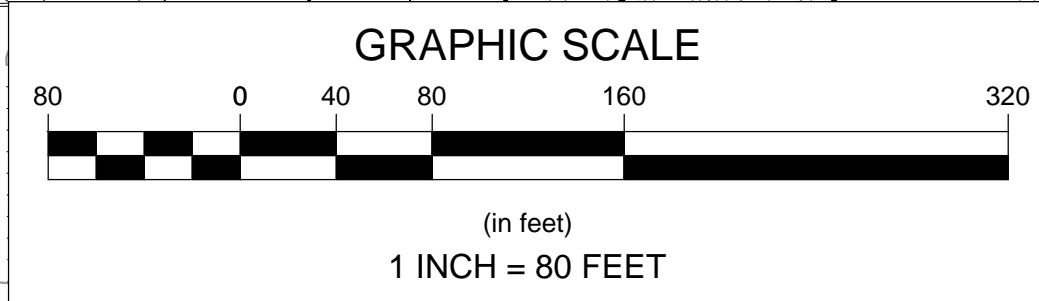
Plan Title: **LOCUS PLAN**

Prepared For:  
**Long Creek Development  
Watershed Management  
District**  
c/o Cumberland County Soil & Water  
Conservation District  
35 Main St., Suite 3  
Phone: Wintham, ME 04602  
Fax: \_\_\_\_\_

Survey Provided By:  
**Owen Haskell Inc.**  
390 U.S. Route 1, Unit 10  
Falmouth, ME 04105  
Phone: (207) 774-0424  
Fax: (207) 774-0511  
Dated: May 20, 2014

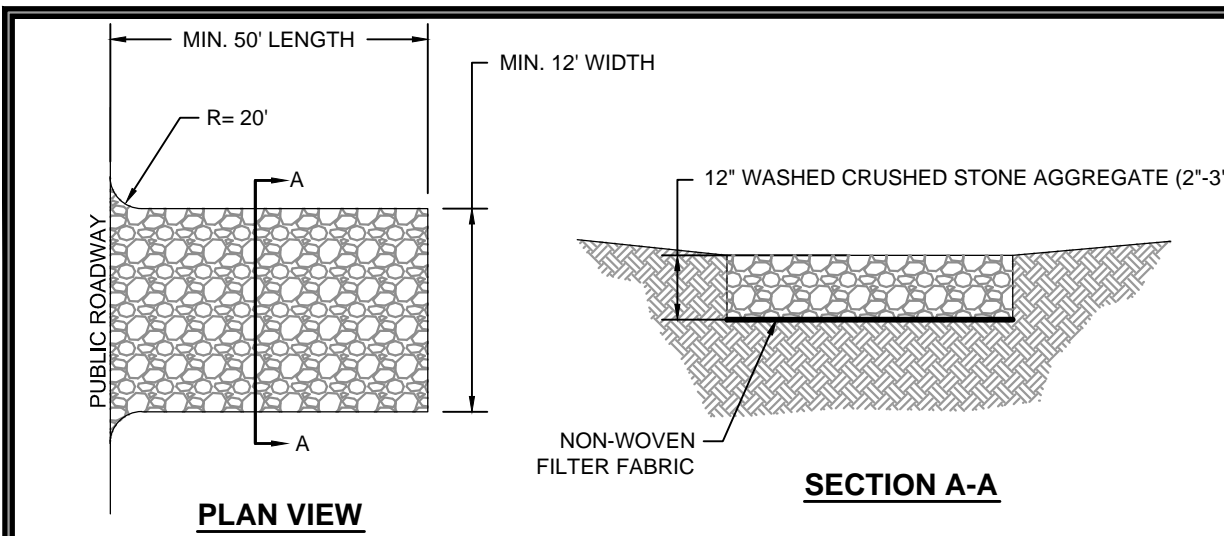


Project Number: 14057  
Sheet: 4 of 11  
Sheet Number: C-4

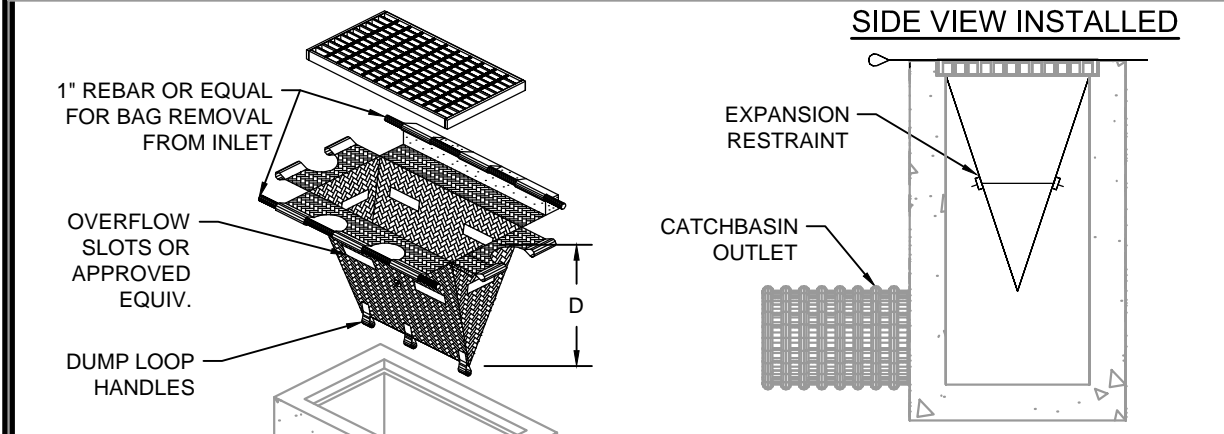




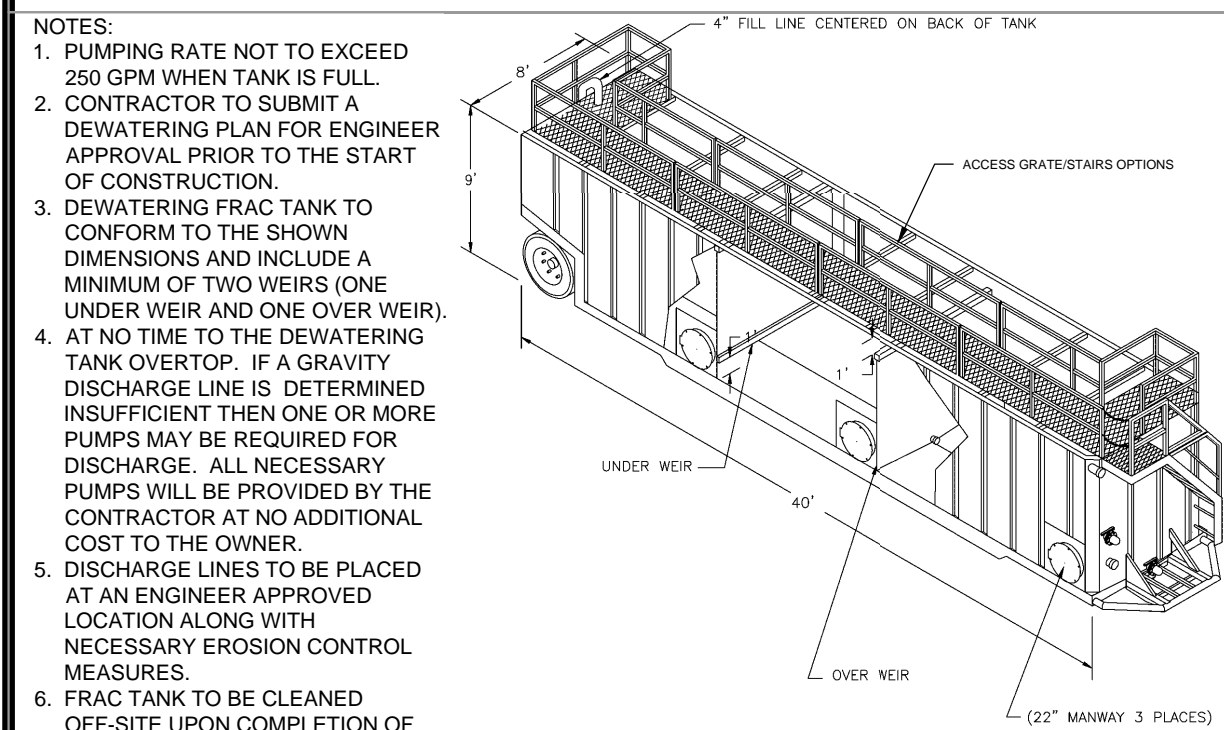
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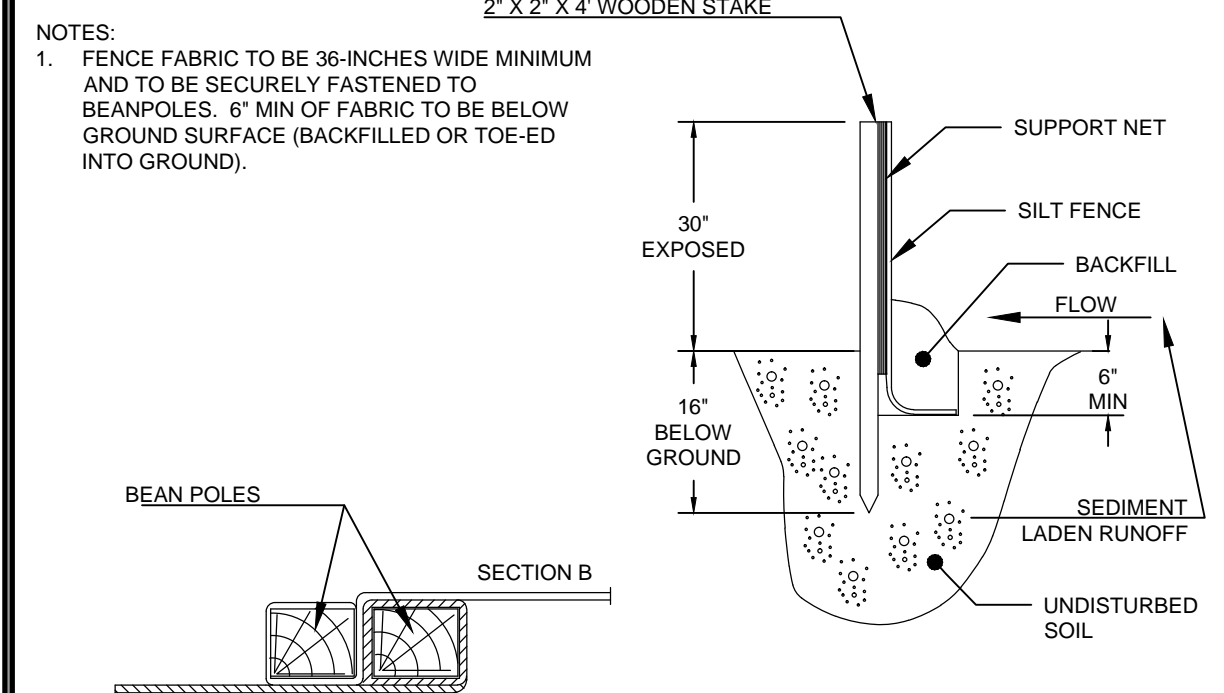
- NOTE:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR, AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  2. WHEN NECESSARY, WHEELS WILL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
  3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
  4. SEE SITE PLAN FOR LOCATION & ACTUAL DIMENSIONS.



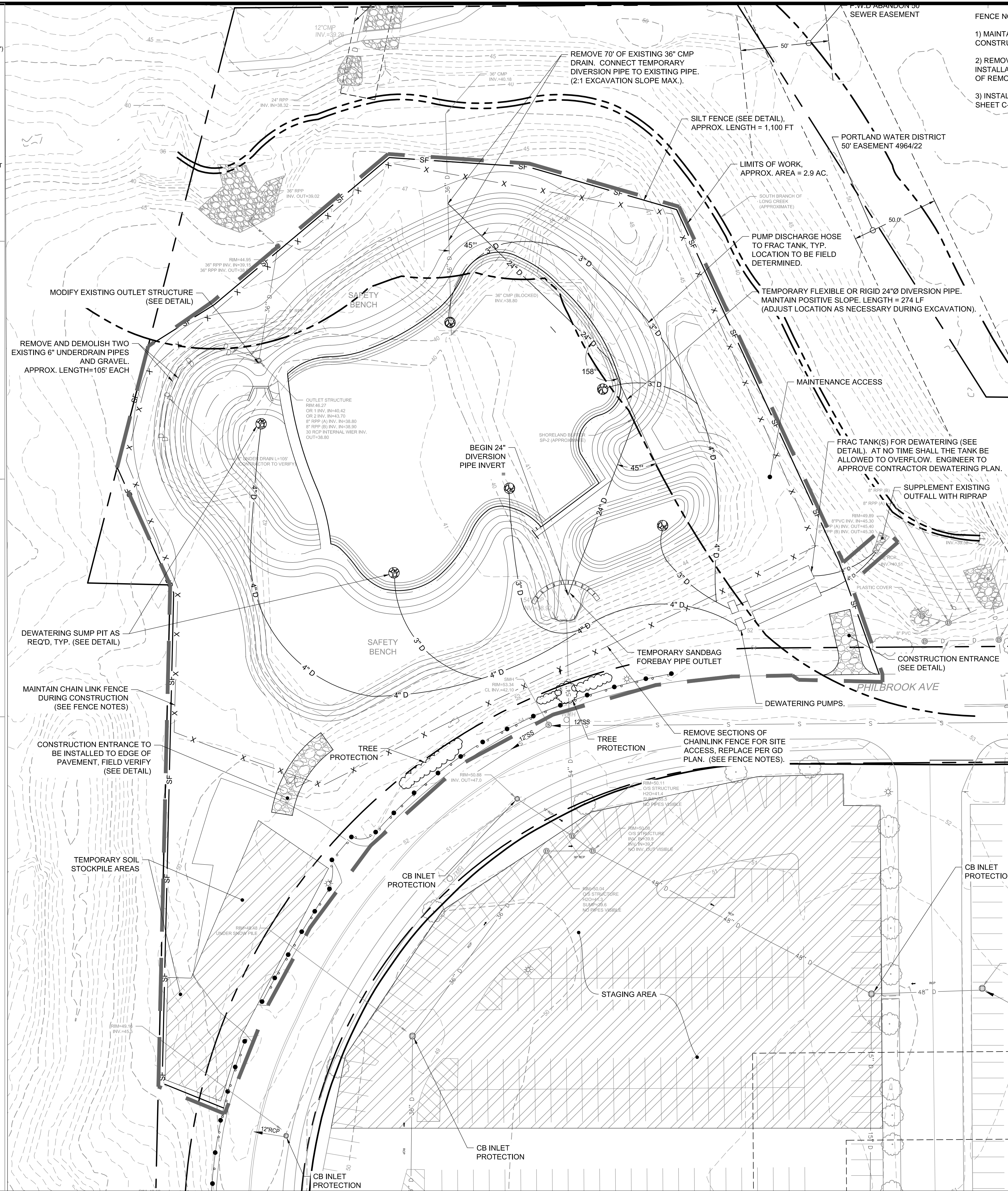
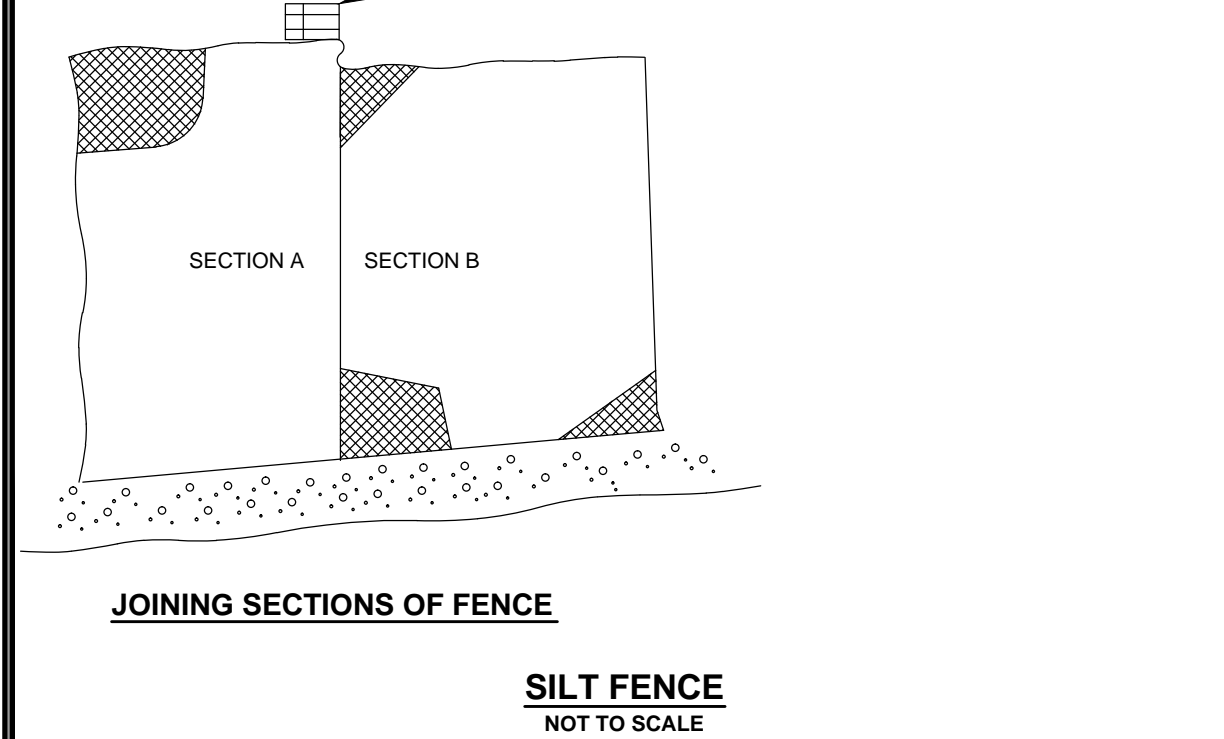
- NOTES:
1. SEDIMENT CONTROL INSERTS TO BE INSTALLED OVER ALL CATCHBASINS/INLETS THAT WILL RECEIVE RUNOFF FROM THE PROJECT SITE.
  2. TEMPORARY INLET PROTECTION TO BE REMOVED AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
  3. DEPTH (D) TO BE A MINIMUM OF 16-INCHES.
  4. MANUFACTURER TO BE SILT SACK OR APPROVED EQUIVALENT.



- NOTES:
1. PUMPING RATE NOT TO EXCEED 250 GPM WHEN TANK IS FULL.
  2. CONTRACTOR TO SUBMIT A DEWATERING PLAN FOR ENGINEER APPROVAL PRIOR TO THE START OF CONSTRUCTION.
  3. DEWATERING FRAC TANK TO CONFORM TO THE SHOWN DIMENSIONS AND INCLUDE A MINIMUM OF TWO WEIRS (ONE UNDER WEIR AND ONE OVER WEIR).
  4. AT NO TIME TO THE DEWATERING TANK OVERTOP. IF A GRAVITY DISCHARGE LINE IS DETERMINED INSUFFICIENT THEN ONE OR MORE PUMPS MAY BE REQUIRED FOR DISCHARGE. ALL NECESSARY PUMPS WILL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
  5. DISCHARGE LINES TO BE PLACED AT AN ENGINEER APPROVED LOCATION ALONG WITH NECESSARY EROSION CONTROL MEASURES.
  6. FRAC TANK TO BE CLEANED OFF-SITE UPON COMPLETION OF DEWATERING PRACTICES.

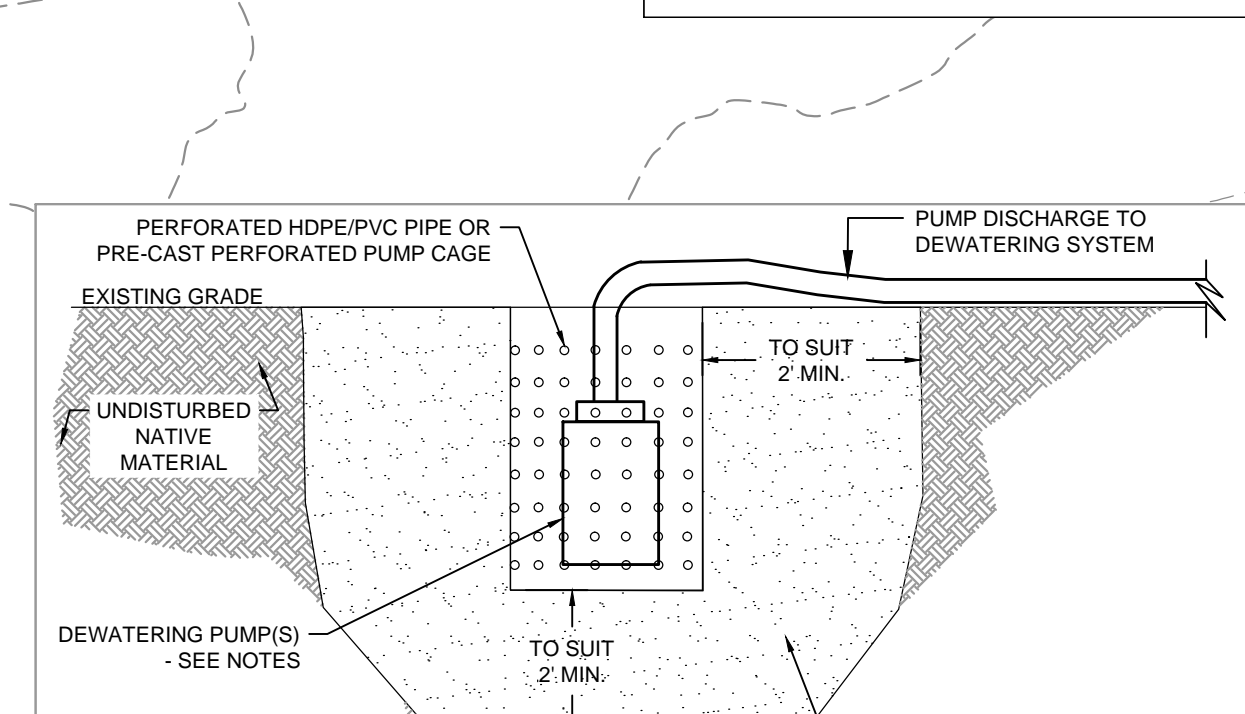


- NOTES:
1. FENCE FABRIC TO BE 36-INCHES WIDE MINIMUM AND TO BE SECURELY FASTENED TO BEANPOLES. 6\"/>

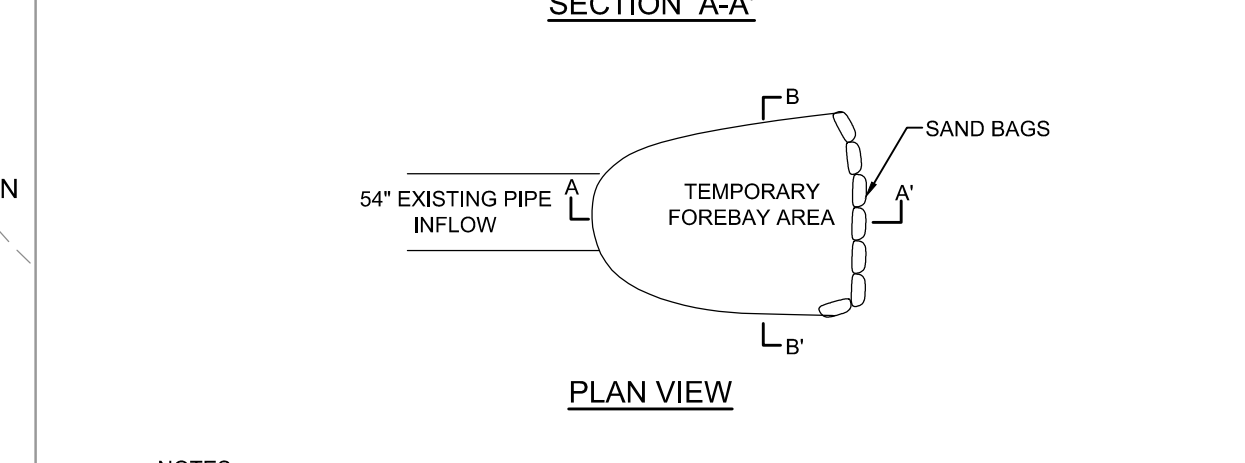
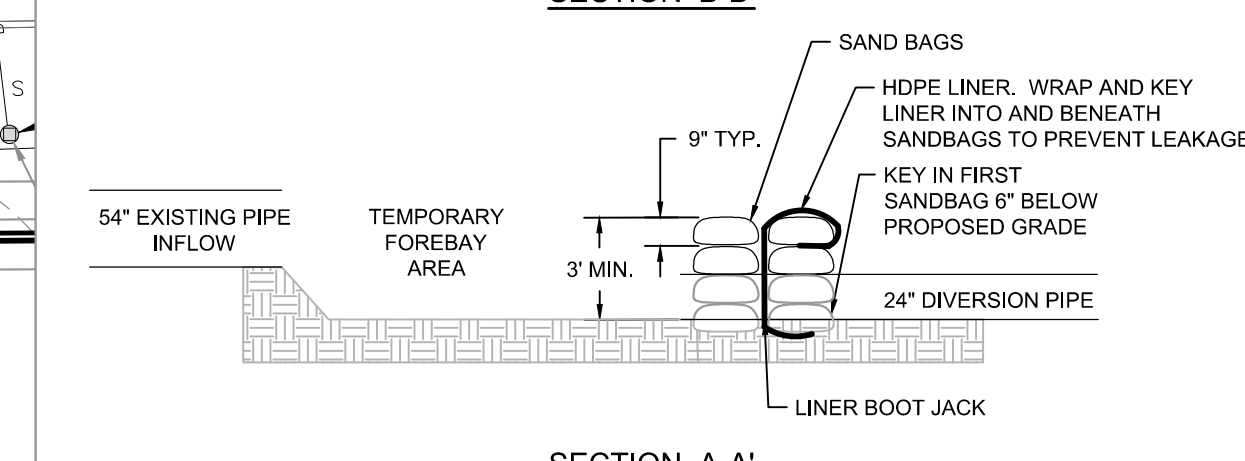
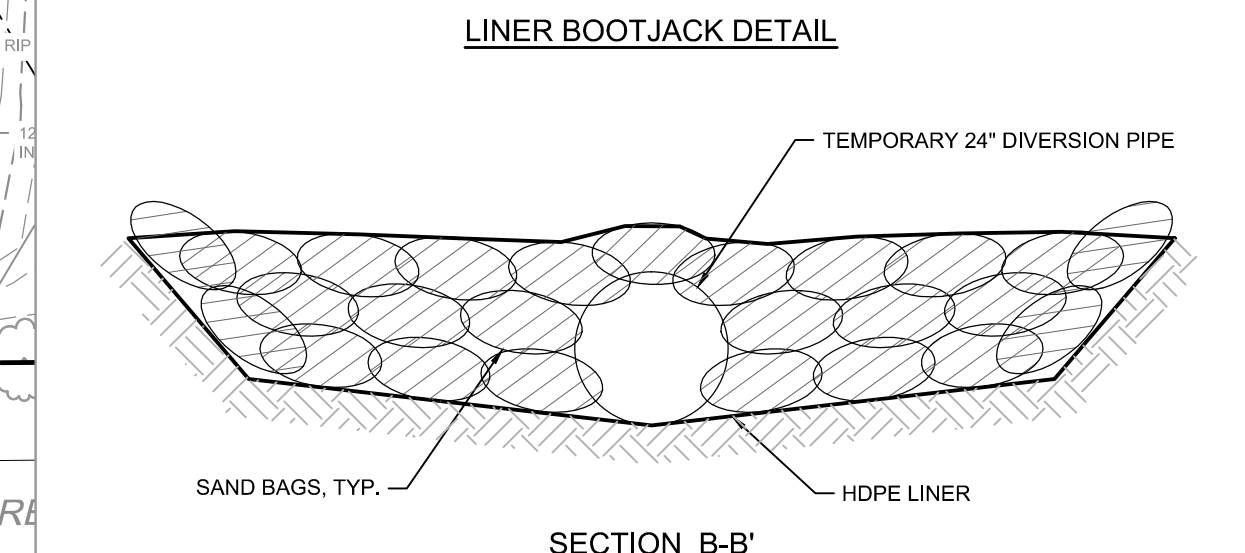
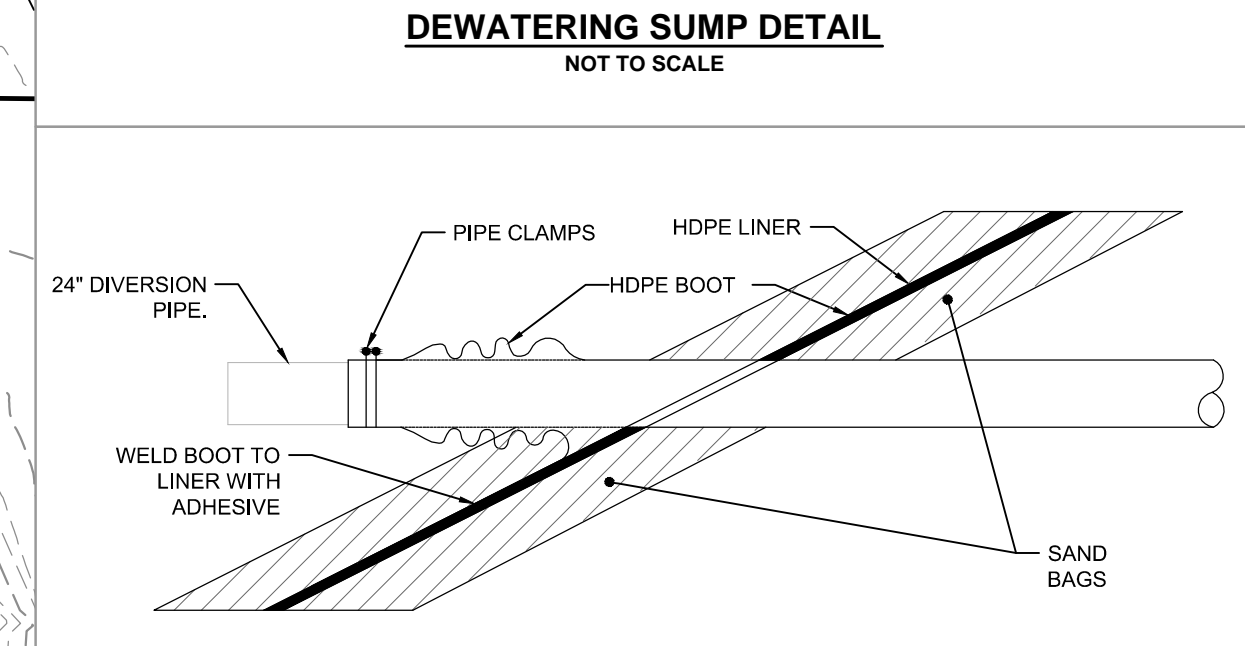


**FENCE NOTES:**

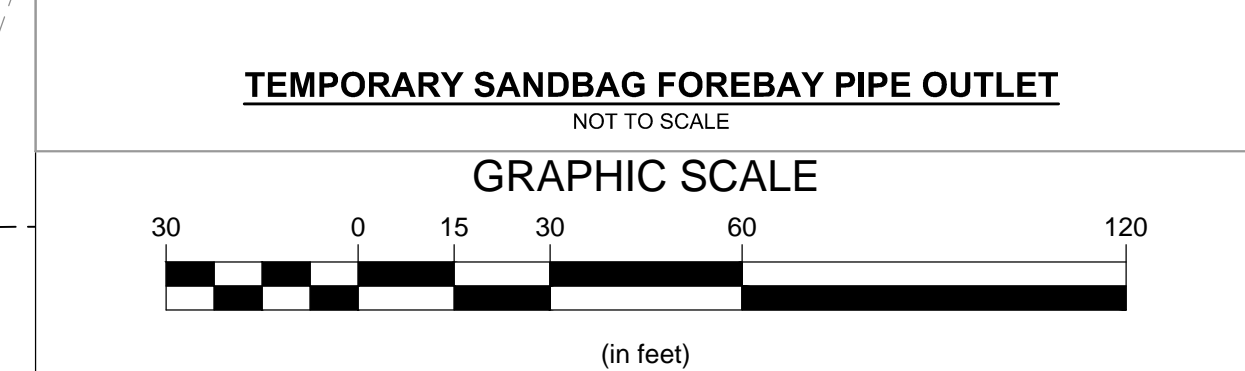
- 1) MAINTAIN EXISTING FENCE FOR DURATION OF CONSTRUCTION.
- 2) REMOVE EXISTING CHAIN LINK FENCE PRIOR TO INSTALLATION OF NEW FENCE. APPROXIMATE LENGTH OF REMOVAL = 990 LF
- 3) INSTALL NEW CHAIN LINK FENCE AS SHOWN ON SHEET C-6 PRIOR TO FINAL COMPLETION.



- NOTES:
1. ALL EQUIPMENT IS TEMPORARY AND MUST BE REMOVED AFTER USE. STONE AND/OR NATURAL MATERIAL CAN REMAIN.
  2. PUMP LOCATION TO SUIT WORK. PUMP SIZE/HP TO SUIT SITE REQUIREMENTS. MULTIPLE PUMPS TO BE INSTALLED WHERE NECESSARY.
  3. PUMP CHAMBER SIZE TO BE DETERMINED BASED ON PUMP DIMENSIONS.
  4. FINAL DEPTH TO BE DETERMINED BY CONTRACTOR BASED ON EXISTING GRADE.



- NOTES:
1. KEY IN SAND BAGS MINIMUM 6\"/>



Revisions	By	Date	Description
1	SKL/RAC	2/26/15	Revisions For Bidding

**Horsley Witten Group, Inc.**  
Sustainable Environmental Solutions  
40 Route 6A  
Sandwich, MA 02563  
508-833-6600 voice  
508-833-3150 fax

**MAINE MALL- GGP GRAVEL WETLAND  
LONG CREEK WATERSHED MANAGEMENT  
DISTRICT  
SOUTH PORTLAND, MAINE**

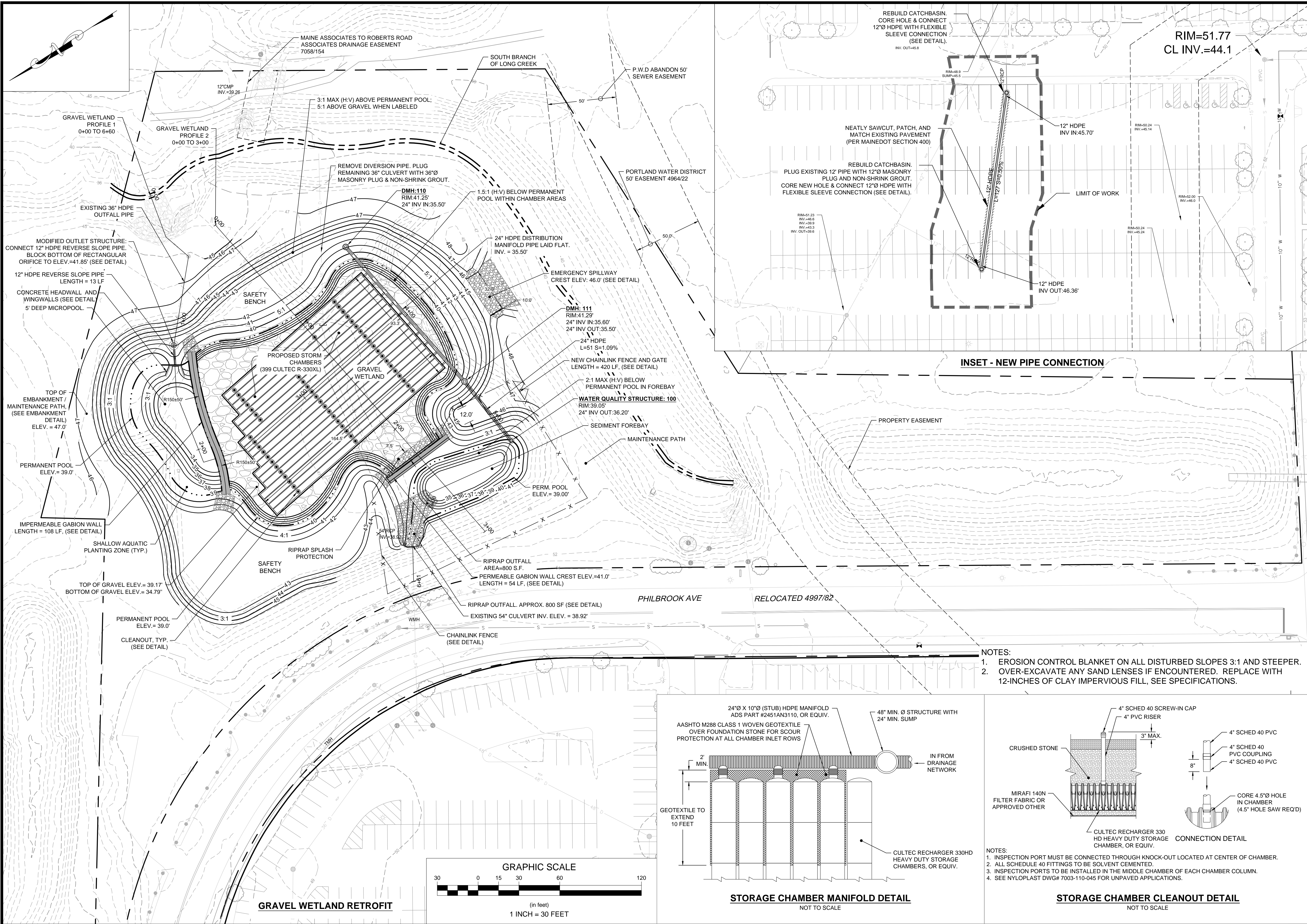
**Long Creek  
Development  
Watershed  
Management District**  
c/o Cumberland County Soil &  
Water Conservation District  
35 Main St., Suite 3  
Phone: Windham, ME 04062

Survey Provided By:  
**Owen Haskell Inc.**  
390 U.S. Route 1, Unit 10  
Falmouth, ME 04105  
Phone: (207) 774-0424  
Fax: (207) 774-0511  
Dated: May 20, 2014

Registration:  
  
Project Number: 14057  
Sheet: 5 of 11  
Sheet Number: C-5



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Revisions	Date	By	Appr	Description
1	2/26/15	SLK	RAC	Revisions For Bidding

**Horsley Witten Group, Inc.**  
Sustainable Environmental Solutions  
40 Route 64  
Sandwich, MA 02563  
508-833-6600 voice  
508-833-3150 fax

Drawn By: KMH  
Checked By: GSC  
Design Date: FEBRUARY 2015

**MAINE MALL- GGP GRAVEL WETLAND  
LONG CREEK WATERSHED MANAGEMENT  
DISTRICT  
SOUTH PORTLAND, MAINE**

Plan Title: GRADING & DRAINAGE PLAN

Prepared For:  
**Long Creek Development  
Watershed Management  
District**  
c/o Cumberland County Soil & Water  
Conservation District  
345 Main St., Suite 3  
Phone: Windham, ME 04662  
Fax: \_\_\_\_\_

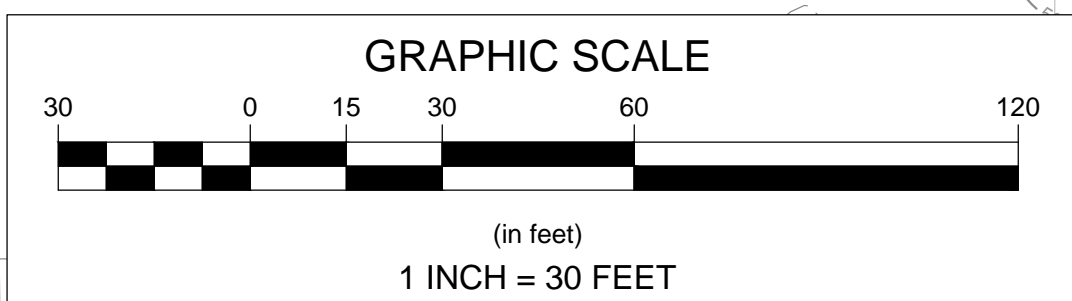
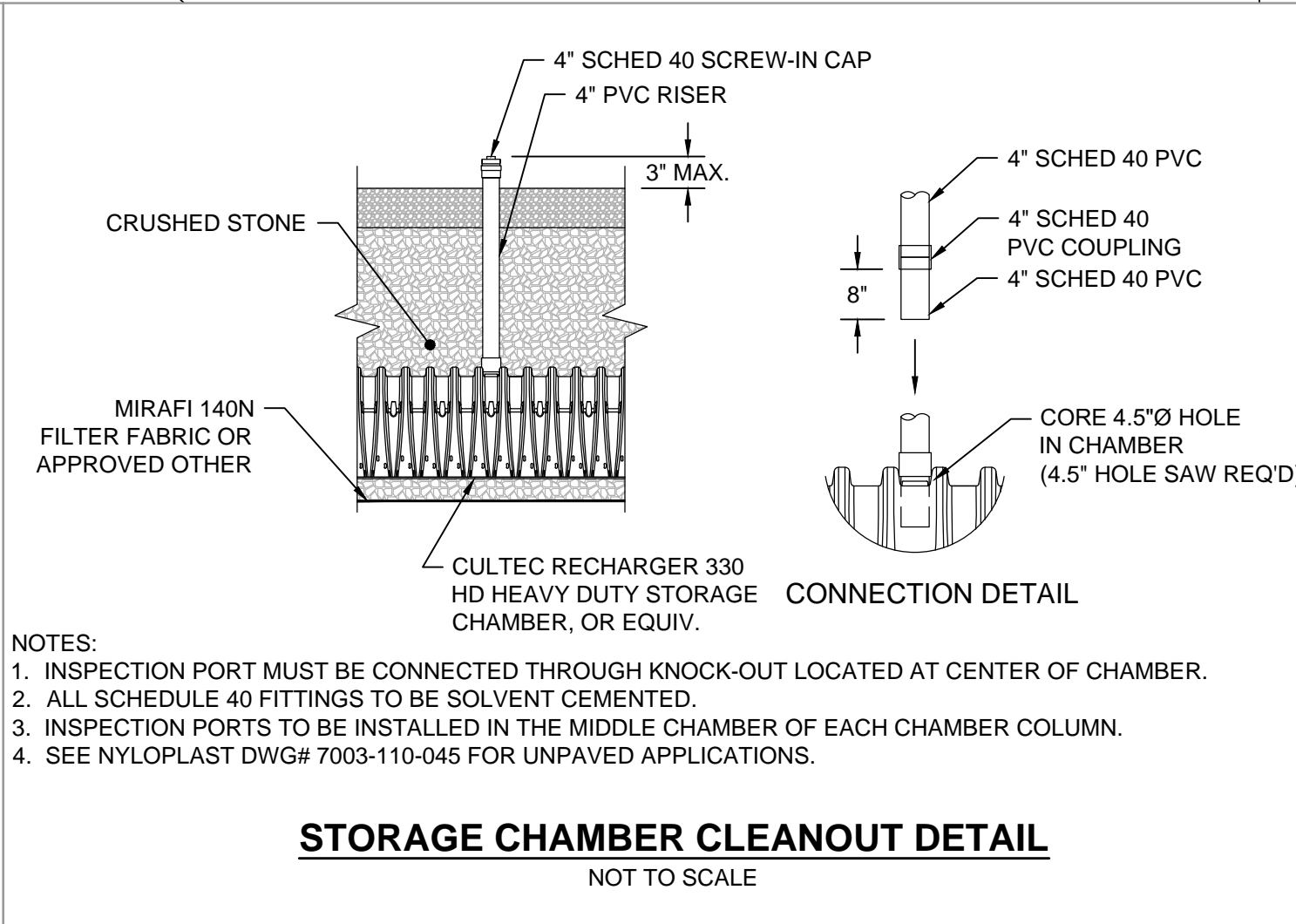
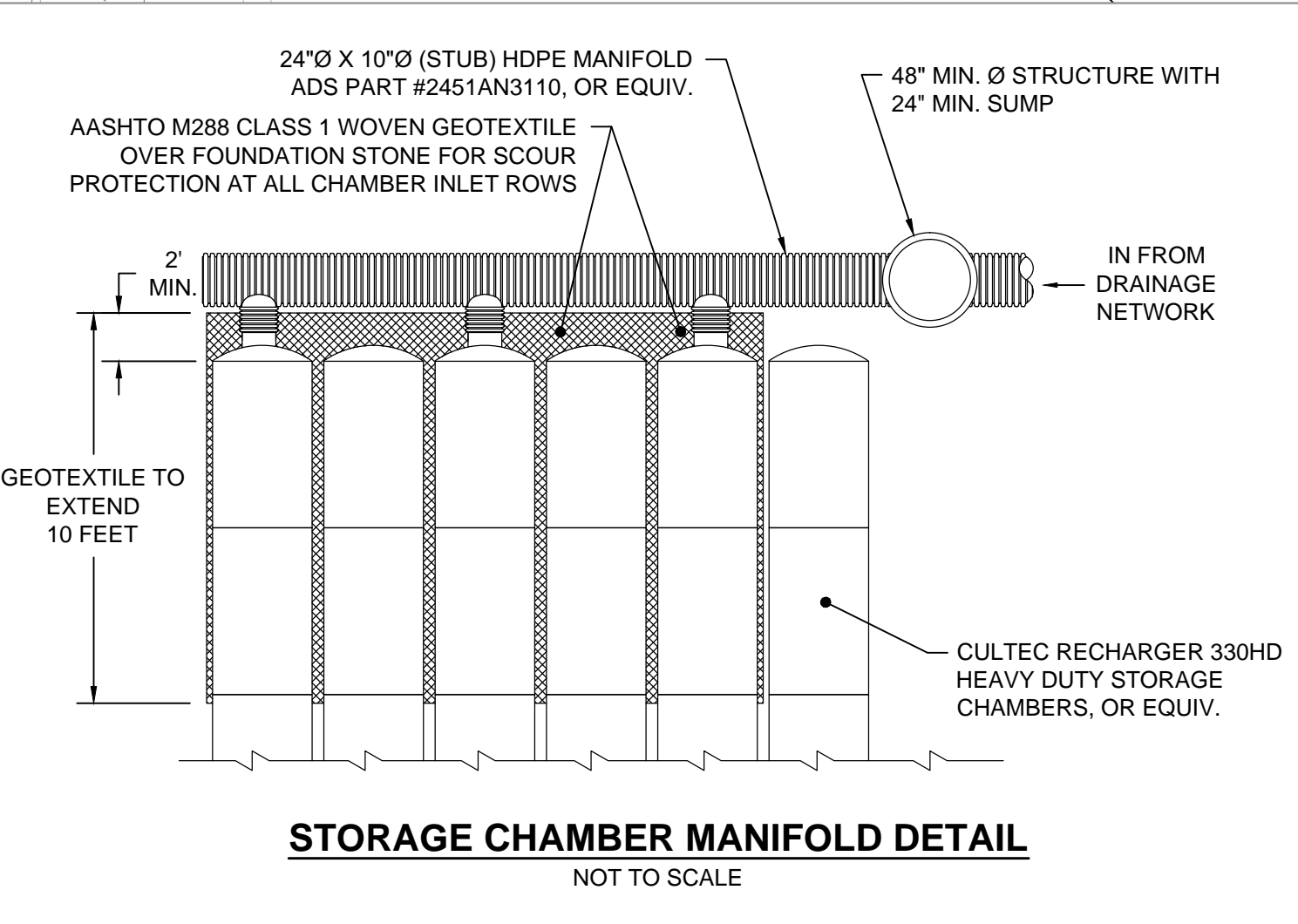
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**Owen Haskell Inc.**  
390 U.S. Route 1, Unit 10  
Falmouth, ME 04105  
Phone: (207) 774-0424  
Fax: (207) 774-0511  
Date: May 20, 2014

Registration:

Project Number: 14057 Sheet: 6 of 11

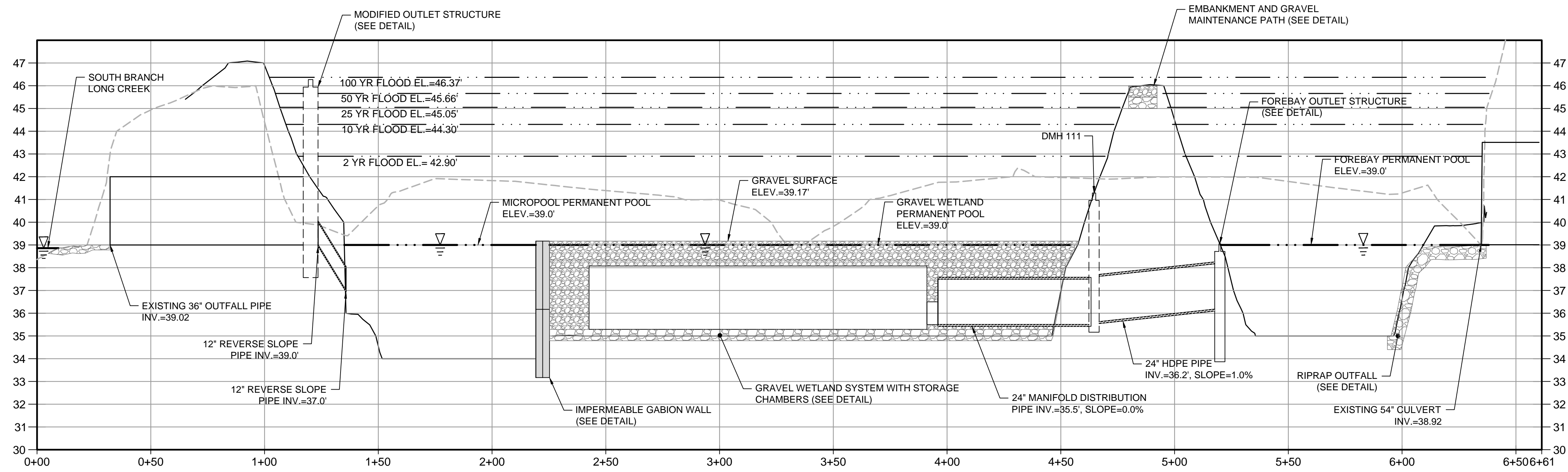
Sheet Number: C-6

- NOTES:**
1. EROSION CONTROL BLANKET ON ALL DISTURBED SLOPES 3:1 AND STEEPER.
  2. OVER-EXCAVATE ANY SAND LENSES IF ENCOUNTERED. REPLACE WITH 12-INCHES OF CLAY IMPERVIOUS FILL, SEE SPECIFICATIONS.

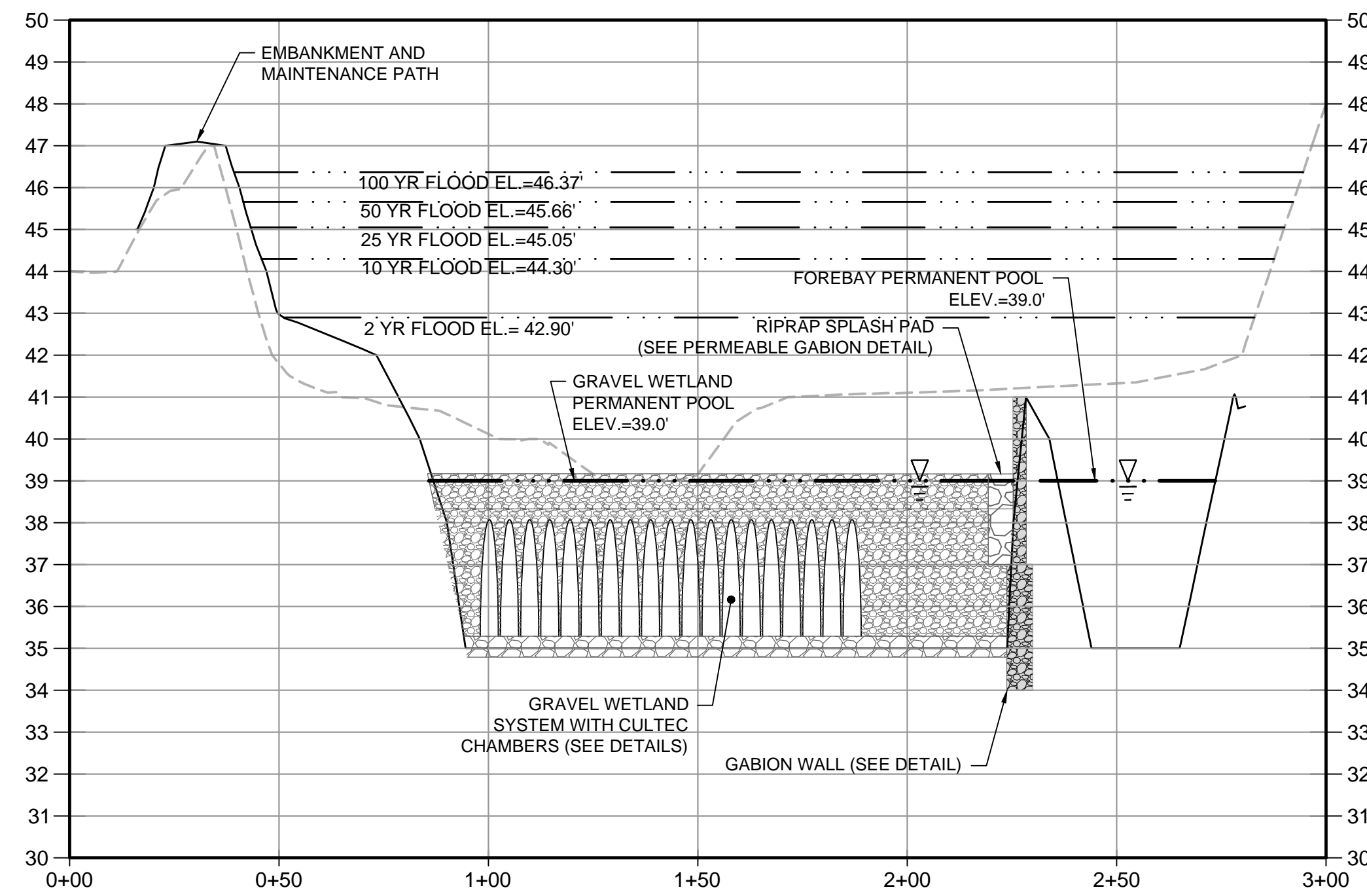




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**GRAVEL WETLAND PROFILE 1**  
 HORIZONTAL SCALE: 1" = 30'  
 VERTICAL SCALE: 1" = 3'

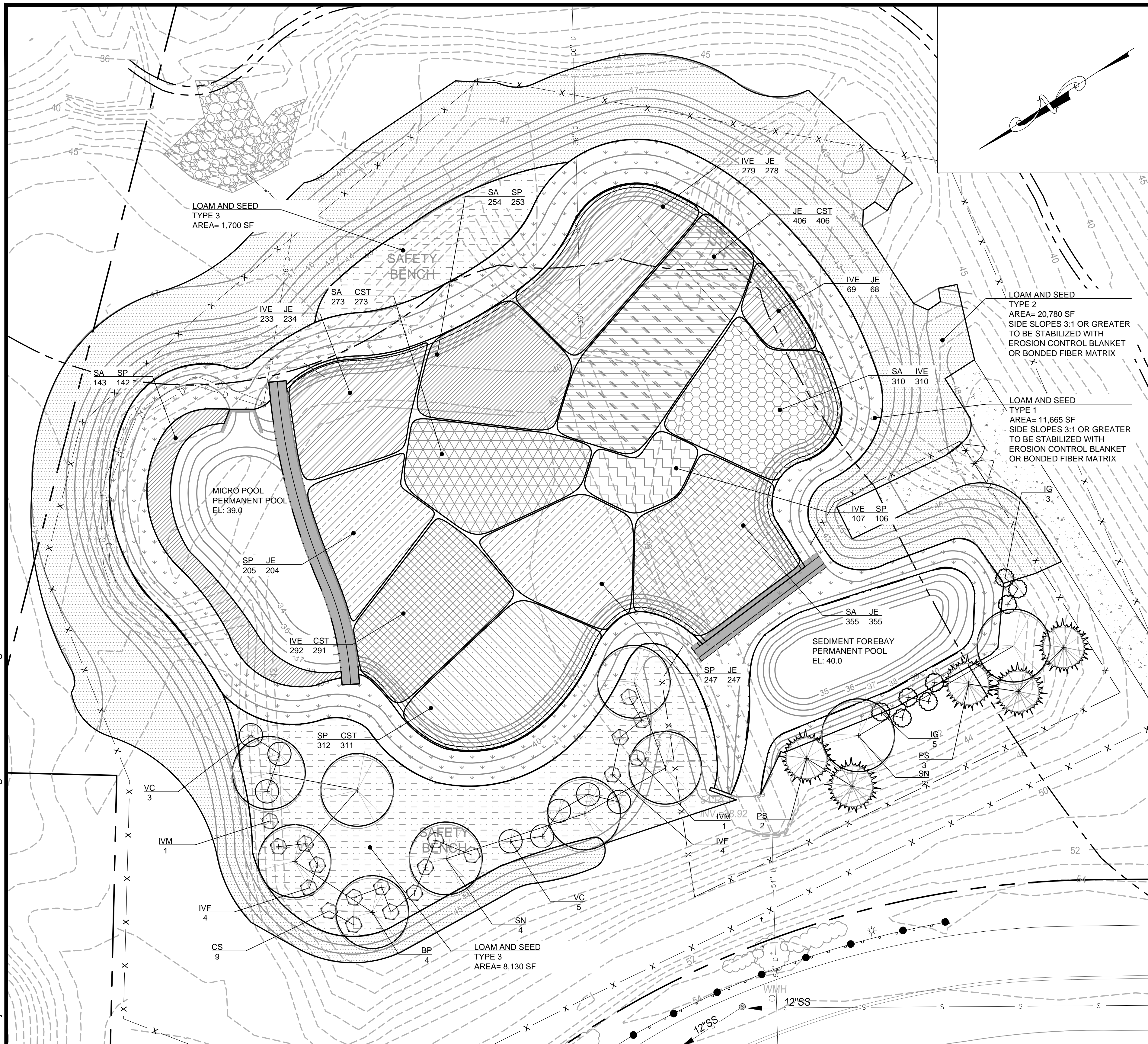


**GRAVEL WETLAND PROFILE 2**  
 HORIZONTAL SCALE: 1" = 30'  
 VERTICAL SCALE: 1" = 3'

<p>Revisions</p> <table border="1"> <tr> <th>Rev.</th> <th>Date</th> <th>By</th> <th>Appr.</th> <th>Description</th> </tr> <tr> <td>1</td> <td>2/26/15</td> <td>SLK</td> <td>RAC</td> <td>Revisions For Bidding</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Rev.	Date	By	Appr.	Description	1	2/26/15	SLK	RAC	Revisions For Bidding	2					3					4					5				
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<p><b>Horsley Witten Group, Inc.</b>                  Sustainable Environmental Solutions                  www.horsleywitten.com                  40 Route 6A, 02563                  Sandwich, MA                  508-833-6600 voice                  508-833-3150 fax</p>																															
<p>Checked By: RAC</p>	<p>Drawn By: SSC</p>																														
<p>Designed By: KMH</p>	<p>Date: FEBRUARY 2015</p>																														
<p>Plan Set: MAINE MALL- GGP GRAVEL WETLAND LONG CREEK WATERSHED MANAGEMENT DISTRICT SOUTH PORTLAND, MAINE DRAINAGE PROFILES</p>																															
<p>Prepared For: Long Creek Watershed Development Management District                  c/o Cumberland County Soil &amp; Water Conservation District                  35 Main St., Suite 3                  Windham, ME 04092</p>																															
<p>Survey Provided By: Owen Haskell Inc.                  390 U.S. Route 1, Unit 10                  Falmouth, ME 04105                  Phone: (207) 774-0424                  Fax: (207) 774-0511                  Dated: May 20, 2014</p>																															
<p>Registration: STATE OF MAINE                  FAT PIU                  LEE                  No. 1038                  LICENSED PROFESSIONAL ENGINEER</p>																															
<p>Project Number: 14057</p>	<p>Sheet: 7 of 11</p>																														
<p>Sheet Number: C-7</p>																															



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**LANDSCAPE PLAN**  
SCALE: 1"=30'

- NOTES:**
- ALL DISTURBED AREA WITH IN LIMIT OF WORK FOR GRAVEL WETLAND TO BE SEEDED WITH NEW ENGLAND ROADSIDE SEED MIX, UNLESS OTHERWISE NOTED ON PLANS AS INDICATED WITH HATCHES AND CALL OUTS.
  - IN THE HATCHED PLANTING AREAS, PLACE PLANTS IN GROUPS OF 3 OR 5 TO CREATE A MORE RANDOM APPEARANCE .

**SEED MIX- TYPE 1**  
NEW ENGLAND WETMIX  
APPLICATION: 18 LBS/ACRE (2500 SF/LB)

Lurid Sedge, (*Carex lurida*), Blunt Broom Sedge, (*Carex scoparia*), Blue Vervain, (*Verbena hastata*), Hop Sedge, (*Carex lupulina*), Green Bulrush, (*Scirpus atrovirens*), Redtop Panic Grass, (*Panicum rigidulum*), Tufted Hairgrass, (*Deschampsia cespitosa*), Tickseed Sunflower/Bur Marigold, (*Bidens aristosa*), Creeping Spike Rush, (*Eleocharis palustris*), Soft Rush, (*Juncus effusus*), Fringed Sedge, (*Carex crinita*), Square Stemmed Monkey Flower, (*Mimulus ringens*), Swamp Aster, (*Aster puniceus*), Boneset, (*Eupatorium perfoliatum*), Rattlesnake Grass, (*Glyceria canadensis*), Swamp Milkweed, (*Asclepias incarnata*), Common Sneezeweed, (*Helenium autumnale*), Ditch Stonecrop, (*Penthorum sedoides*)

**SEED MIX- TYPE 2**  
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR MOIST SITES  
APPLICATION: 35 LBS/ACRE (1250 SF/LB.)

Virginia Wild Rye, (*Elymus virginicus*), Creeping Red Fescue, (*Festuca rubra*), Little Bluestem, (*Schizachyrium scoparium*), Big Bluestem, (*Andropogon gerardii*), Fox Sedge, (*Carex vulpinoidea*), Switch Grass, (*Panicum virgatum*), Rough Bentgrass, (*Agrostis scabra*), New England Aster, (*Aster novae-angliae*), Boneset, (*Eupatorium perfoliatum*), Grass Leaved Goldenrod, (*Euthamia graminifolia*), Green Bulrush, (*Scirpus atrovirens*), Blue Vervain, (*Verbena hastata*), Soft Rush, (*Juncus effusus*), Wool Grass, (*Scirpus cyperinus*).

**SEED MIX- TYPE 3**  
NEW ENGLAND ROADSIDE SEED MIX  
APPLICATION: 35 LBS/ACRE (1250 SF/LB.)

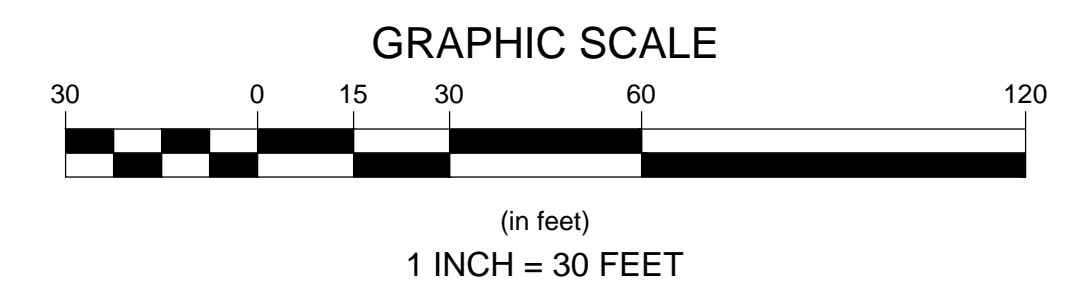
**Grasses**  
Riverbank Wild Rye (*Elymus riparius*), Virginia Wild Rye (*Elymus virginicus*), Creeping Red Fescue (*Festuca rubra*), Switch Grass (*Panicum virgatum*), Blunt Broom Sedge (*Carex scoparia*), Fowl Bluegrass (*Poa palustris*) Tufted Hairgrass (*Deschampsia cespitosa*), Redtop (*Agrostis alba*), Creeping Bentgrass (*Agrostis stolonifera*), Soft Rush (*Juncus effusus*), Wool Grass (*Scirpus cyperinus*)

**Wildflowers**  
Blue Vervain (*Verbena hastata*), Calico Aster (*Aster lateriflorus*), Nodding Bur Marigold (*Bidens cernua*), Common Sneezeweed (*Helenium autumnale*), Showy Tick Trefoil (*Desmodium canadense*), Boneset (*Eupatorium perfoliatum*), New England Aster (*Aster novaeangliae*), Spotted Joe Pye Weed (*Eupatorium maculatum*), New York Ironweed (*Vernonia noveboracensis*), Monkey Flower (*Mimulus ringens*)

**Shrubs**  
Elderberry (*Sambucus canadensis*), Silky Dogwood (*Cornus amomum*), Arrow Wood (*Viburnum dentatum*), Steeple Bush (*Spiraea tomentosa*)

**Gravel Wetland Planting Schedule**

Key	Botanical Name	Common Name	Size	Spacing
<b>Trees</b>				
BP 4	<i>Betula populifolia</i>	Gray Birch	2.5'-3"	As Shown
SN 6	<i>Salix nigra</i>	Black Willow	OPEN	As Shown
<b>Evergreens</b>				
PS 5	<i>Pinus strobus</i>	Eastern White Pine	8'-10' h	As Shown
<b>Shrubs</b>				
CS 9	<i>Cornus sericea</i>	Bailey's Red Twig Dogwood	3' - 4' h.	As Shown
IG 8	<i>Ilex glabra</i>	Inkberry	3'-4" B&B	As Shown
IVF 8	<i>Ilex verticillata</i>	Female Sparkleberry Winterberry	3' - 4' h.	As Shown
IVM 2	<i>Ilex verticillata</i>	Male Winterberry	18" - 24"	As Shown
VC 8	<i>Vaccinium corymbosum</i>	Highbush Blueberry	3' - 4' h.	As Shown
<b>Groundcovers/Grasses</b>				
CST 1281	<i>Carex stricta</i>	Tussock Sedge	PLUG	24" O.C.
IVE 1290	<i>Iris versicolor</i>	Blue Flag	PLUG	24" O.C.
JE 1792	<i>Juncus effusus</i>	Soft Rush	PLUG	24" O.C.
SP 1265	<i>Scirpus pungens</i>	Three-Square Bullrush	PLUG	24" O.C.
SA 1335	<i>Sparganium americanum</i>	American Burreed	PLUG	24" O.C.



Revisions

Rev.	By	Date	Description

**Horsley Witten Group, Inc.**  
Sustainable Environmental Solutions  
www.horsleywitten.com  
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Portland, ME 04102  
Tel: 207-833-6600  
Fax: 207-833-3150

Project Number: 14057  
Sheet: 8 of 11

Project Title: MAINE MALL- GGP GRAVEL WETLAND  
LONG CREEK WATERSHED MANAGEMENT DISTRICT  
SOUTH PORTLAND, MAINE  
Landscape Plan

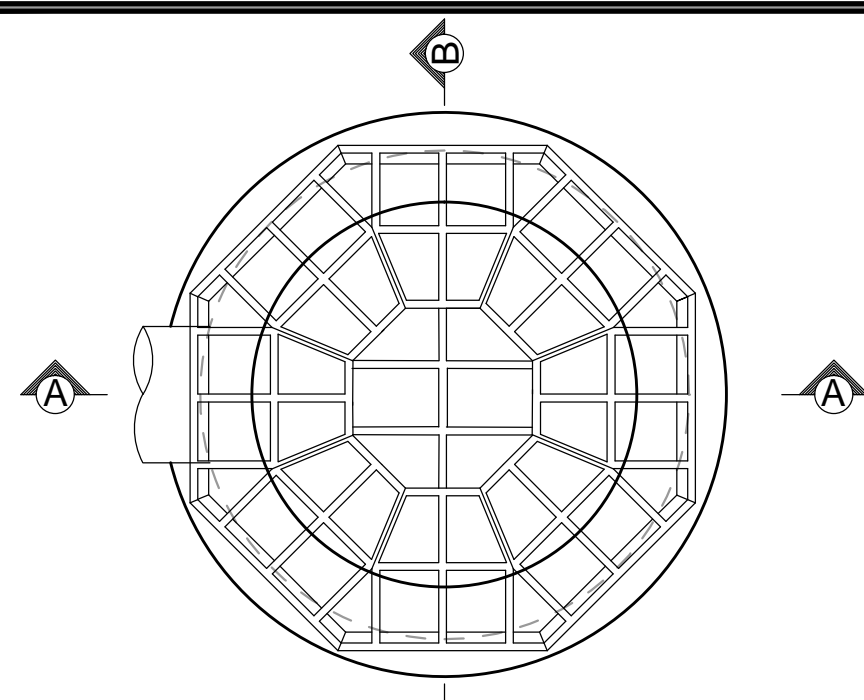
Prepared For: Long Creek Development Watershed Management District  
c/o Cumberland County Soil & Water Conservation District  
35 Main St., Suite 3  
Windham, ME 04092  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

Survey Provided By: Owen Haskell Inc.  
390 U.S. Route 1, Unit 10  
Farmouth, ME 04105  
Phone: (207) 774-0424  
Fax: (207) 774-0511  
Dated: May 20, 2014

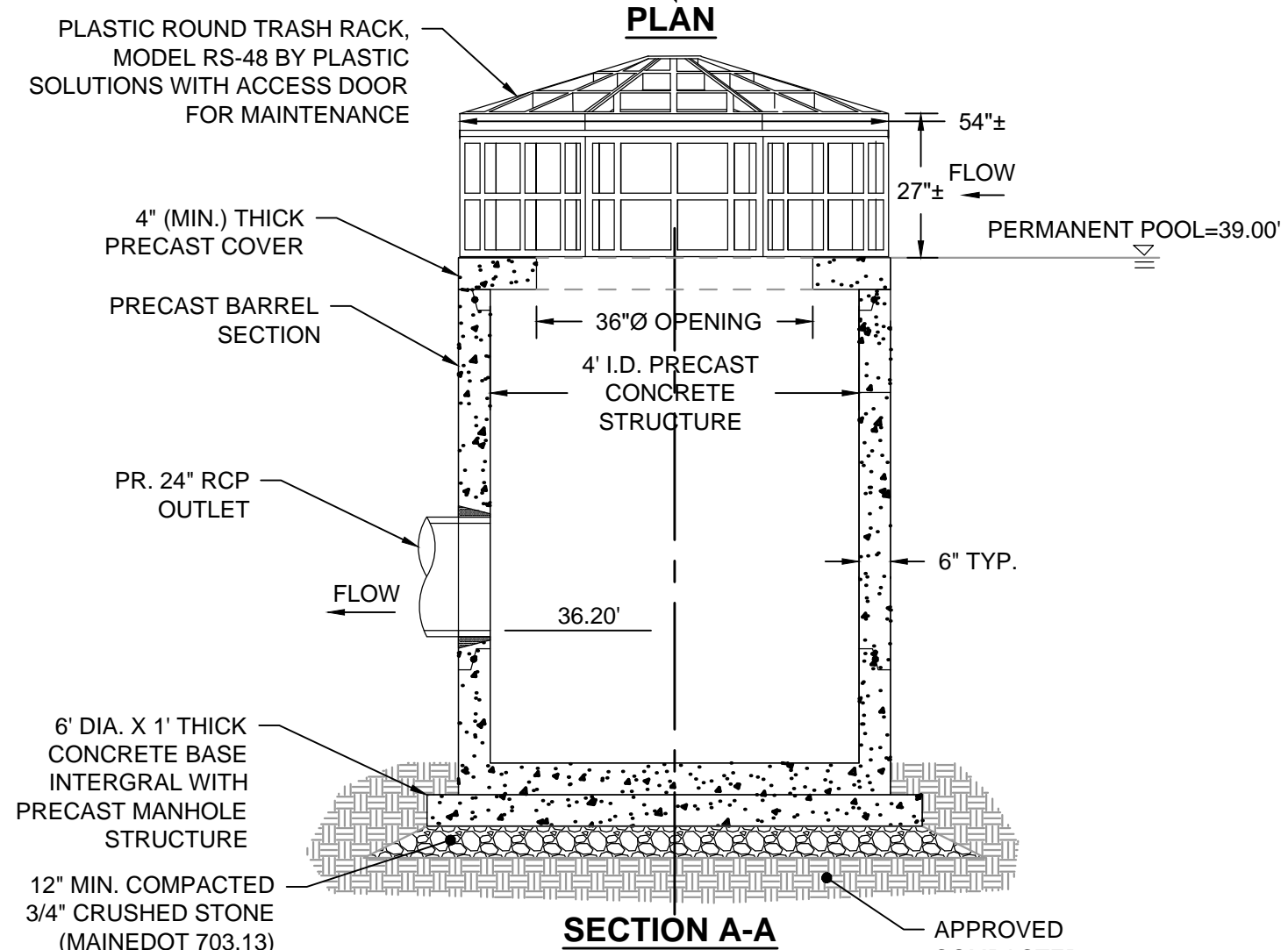
Registration: **C - 8**



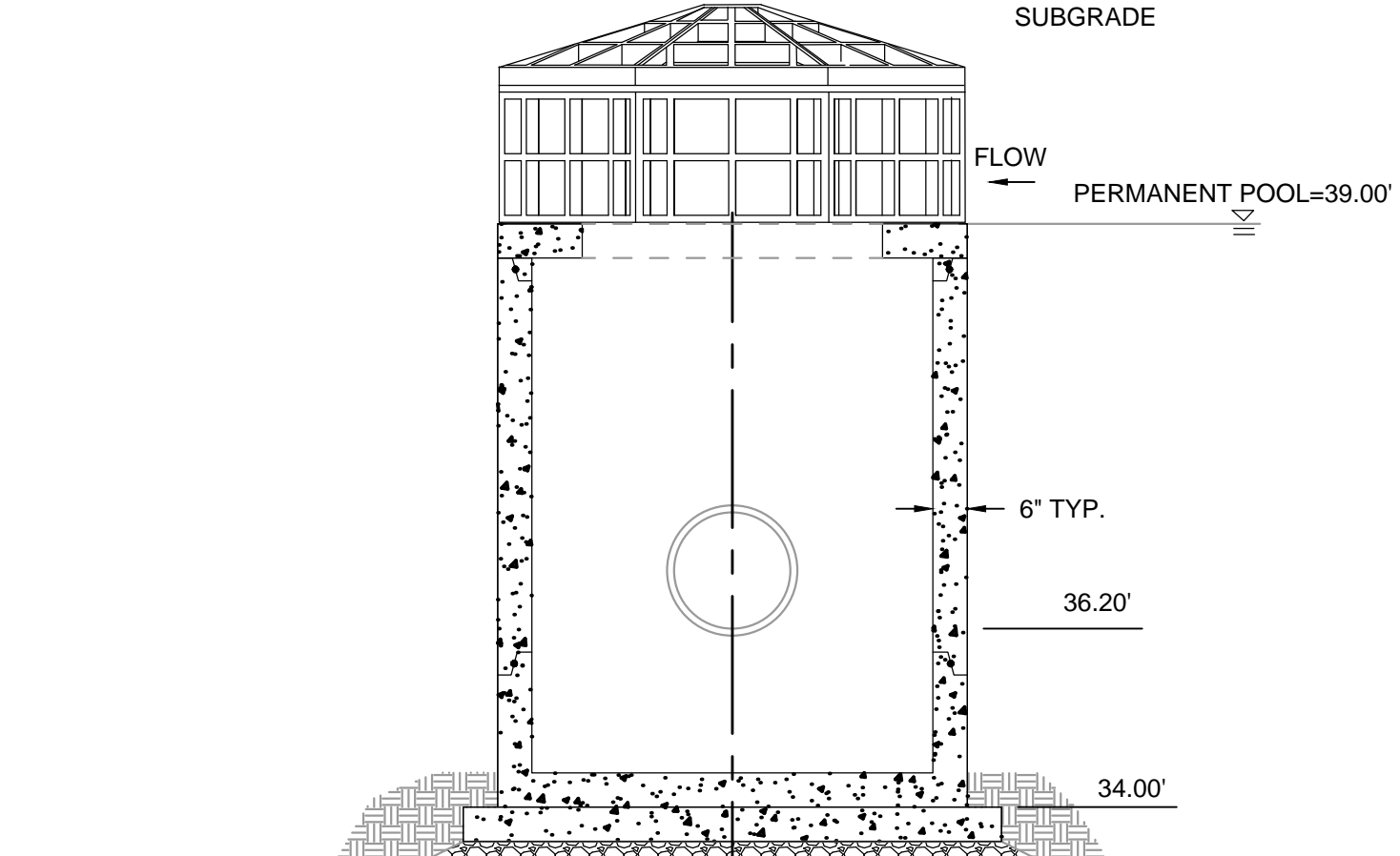
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**PLAN**



**SECTION A-A**

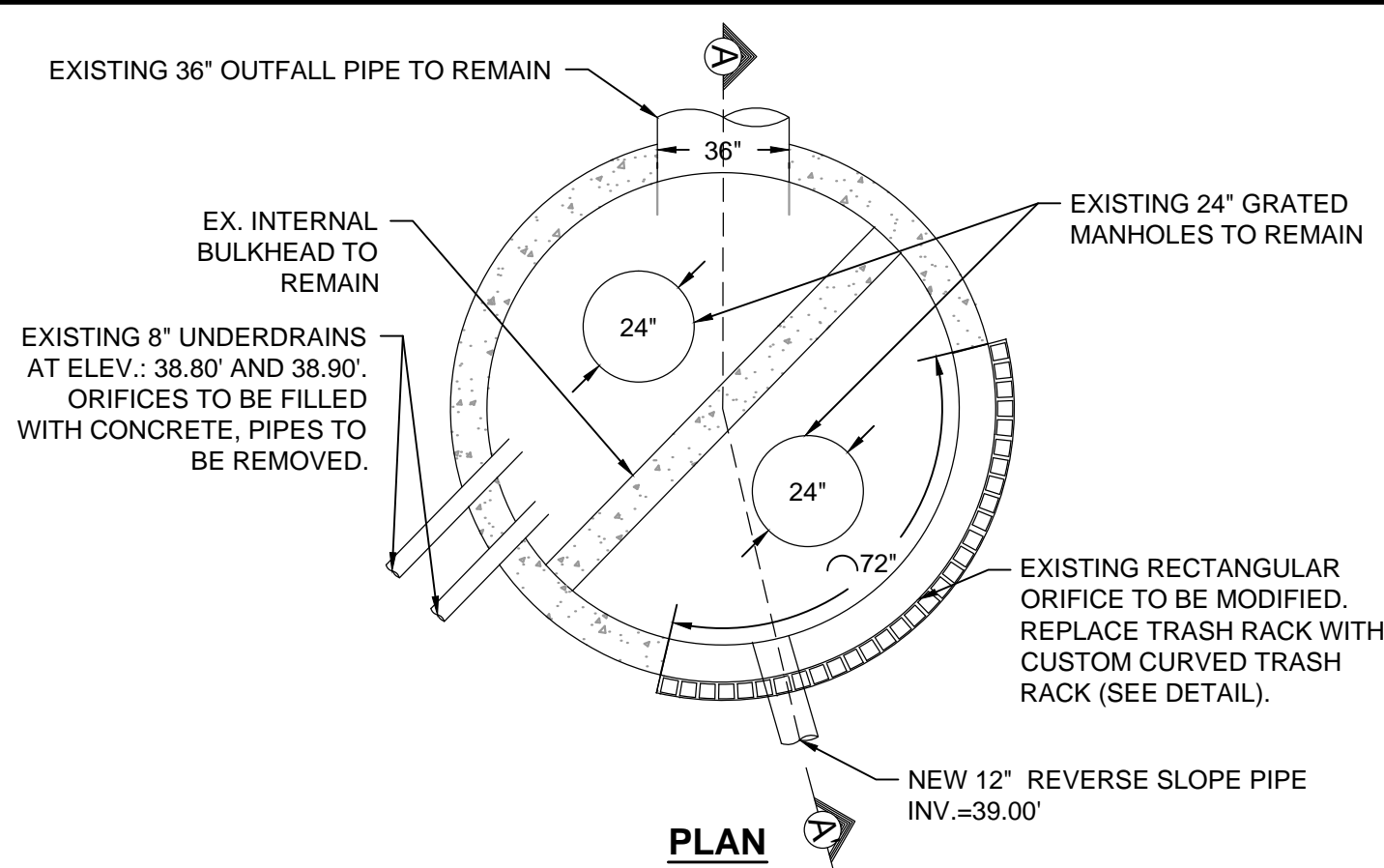


**SECTION B-B**

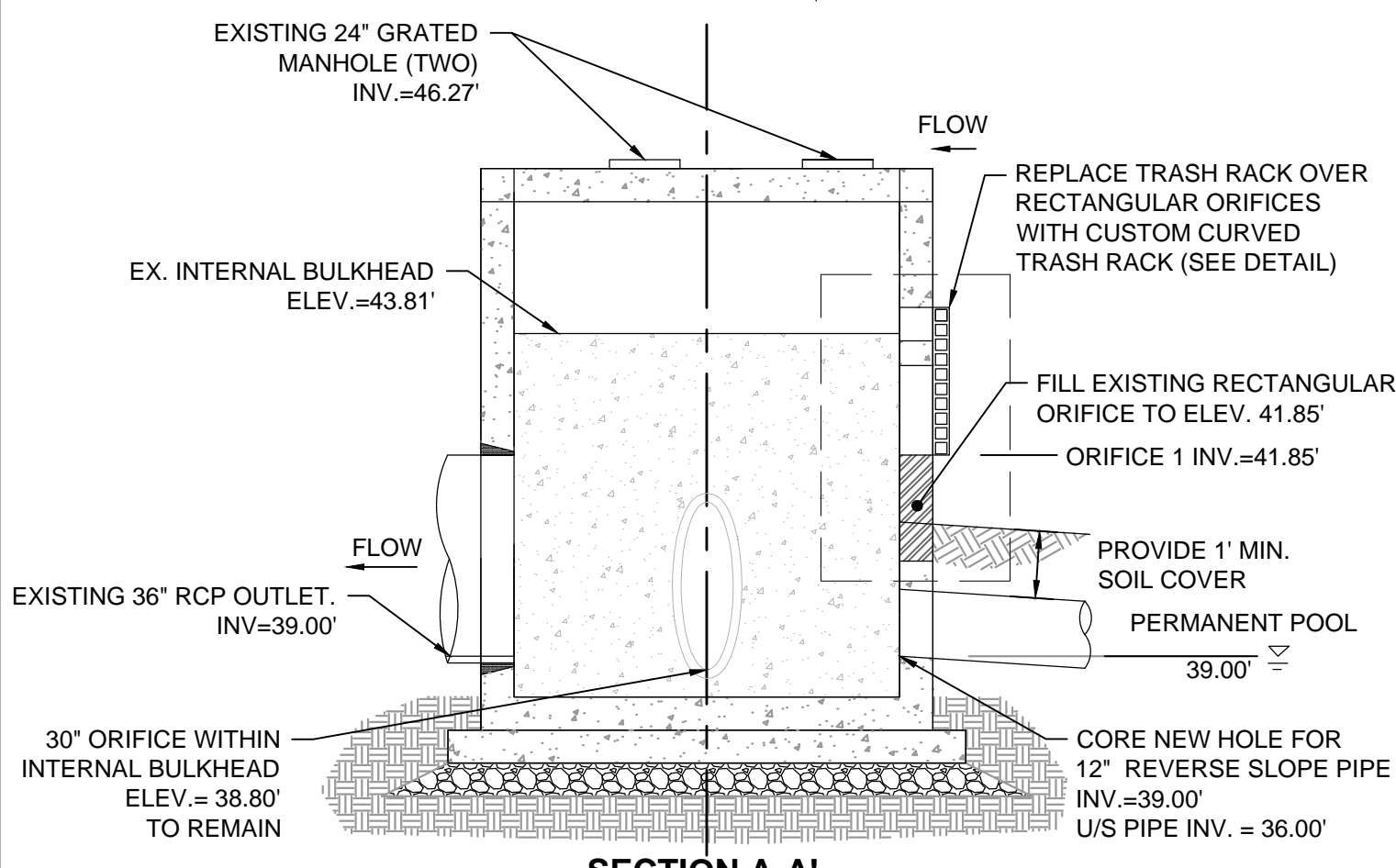
- NOTES:
- STRUCTURE TO BE 4' I.D. PRECAST CONCRETE BASE AND BARREL SECTION(S).
  - PROVIDE PRECAST OPENINGS OR "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
  - JOINT SEALANT TO BE PROVIDED BETWEEN PRECAST SECTIONS.
  - PLASTIC ROUND TRASH RACK BY PLASTIC SOLUTIONS, INC. OR APPROVED EQUAL.
  - PROVIDE AN ACCESS IN THE TRASH RACK FOR MAINTENANCE ACCESS.

**FOREBAY OUTLET STRUCTURE DETAIL**

NOT TO SCALE



**PLAN**

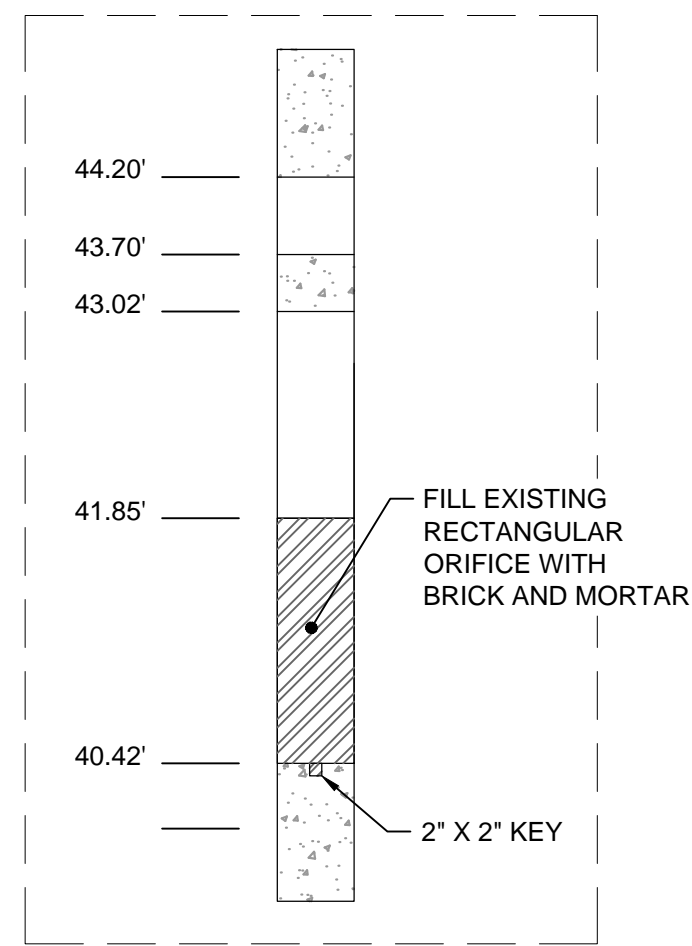


**SECTION A-A'**

- NOTES:
- FILL EXISTING ORIFICE WITH CONCRETE AS SHOWN. PROVIDE 2" BY 2" KEY.
  - EXISTING TRASH RACK TO BE REMOVED. REPLACE WITH CUSTOM CURVED TRASH RACK (SEE DETAIL).

**MODIFIED OUTLET CONTROL STRUCTURE**

NOT TO SCALE



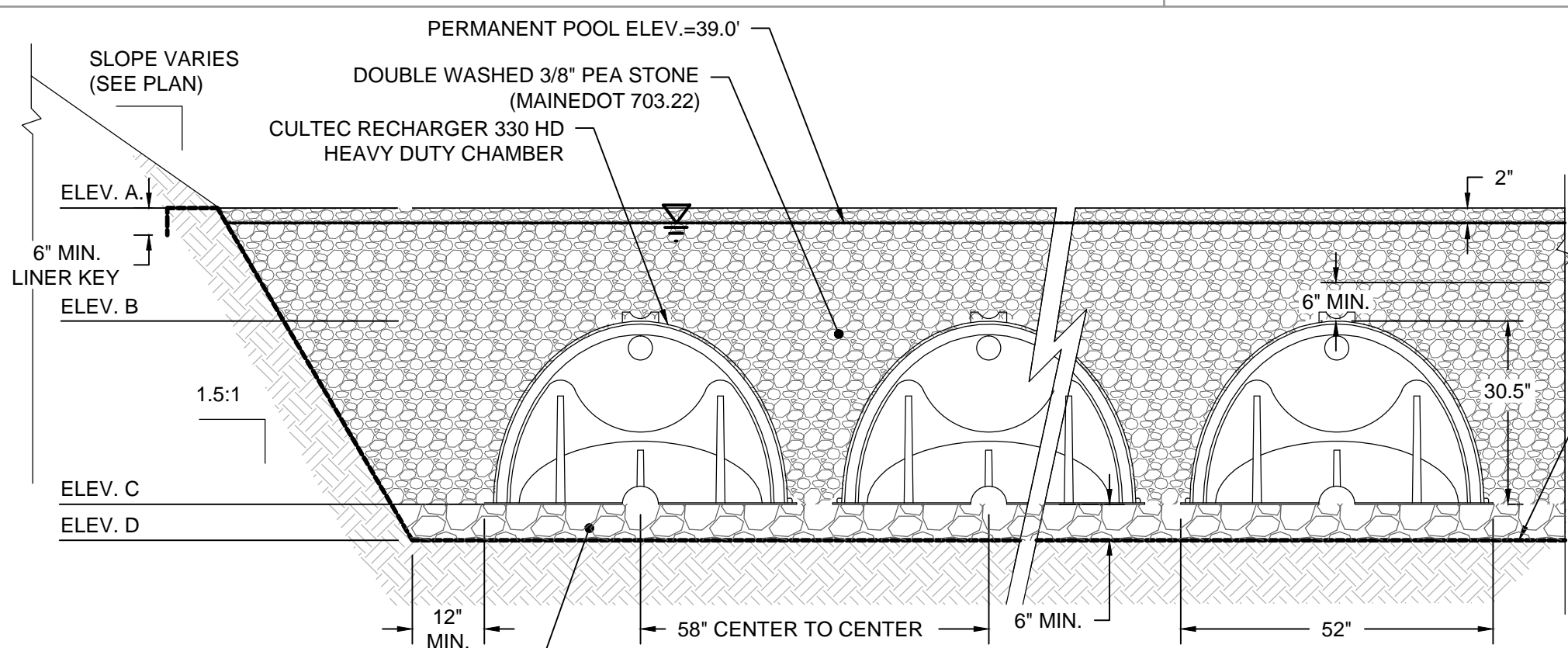
**ELEVATIONS SCHEDULE**

ELEV	FEET
A	39.17
B	37.83
C	35.29
D	34.79

- NOTES:
- OVER-EXCAVATE SAND LENSES. REPLACE WITH CLAY. SEE SPECIFICATIONS.
  - KEY LINER AND FILTER FABRIC MINIMUM 6-INCHES.
  - PROVIDE 3-INCH MINIMUM COVER FOR LINER AND FILTER FABRIC.

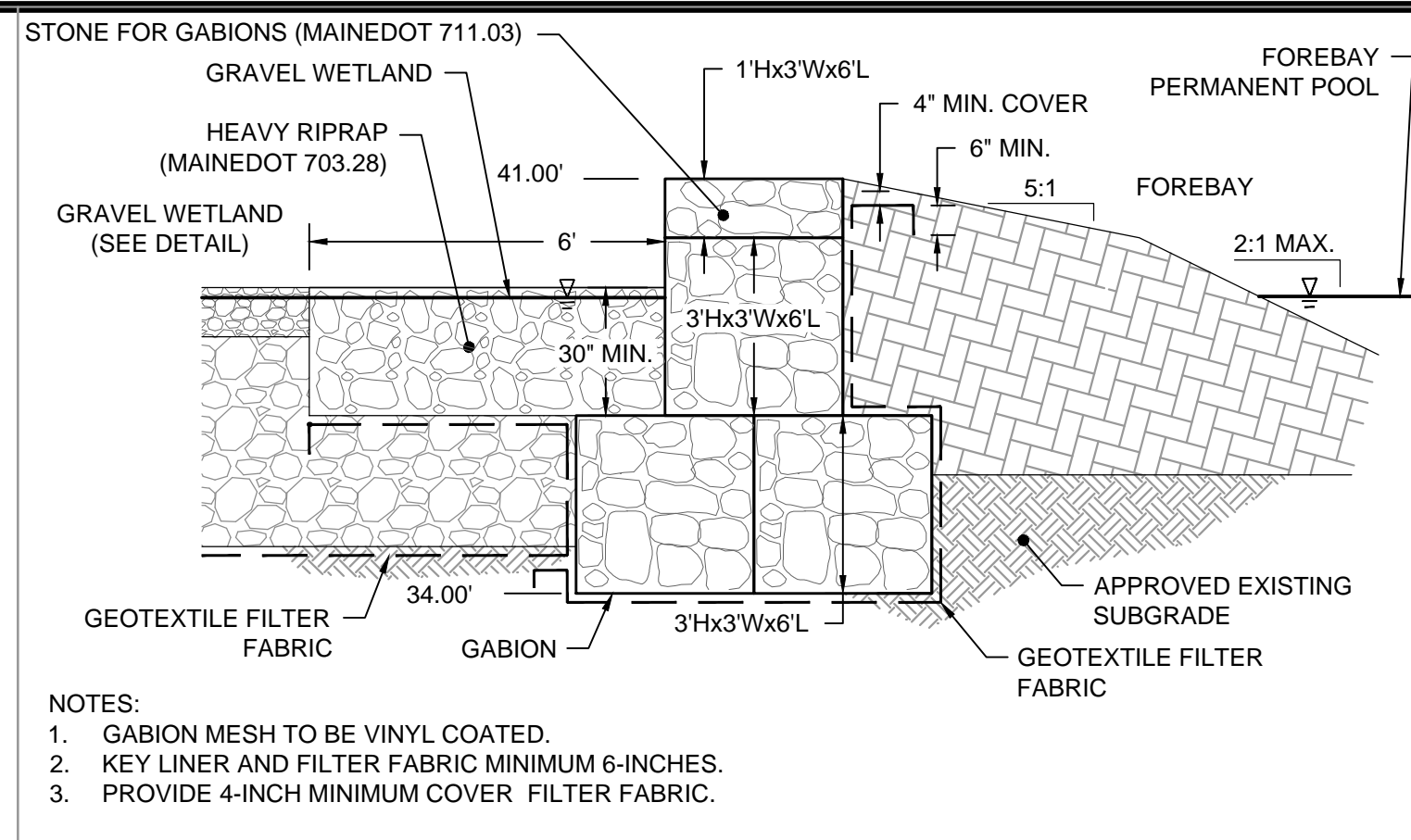
**STORAGE CHAMBER CROSS SECTION DETAIL**

NOT TO SCALE



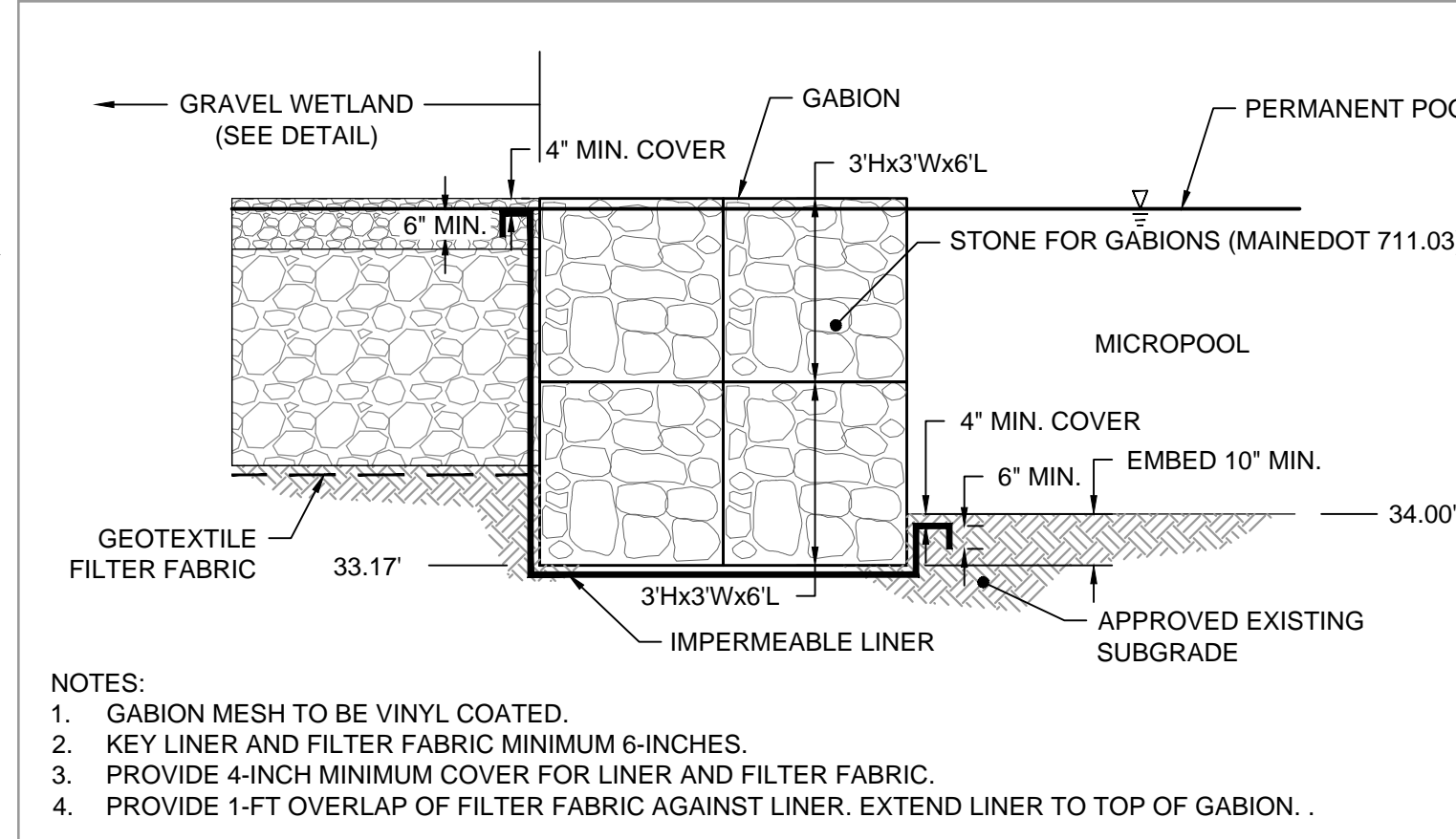
**STORAGE CHAMBER CROSS SECTION DETAIL**

NOT TO SCALE



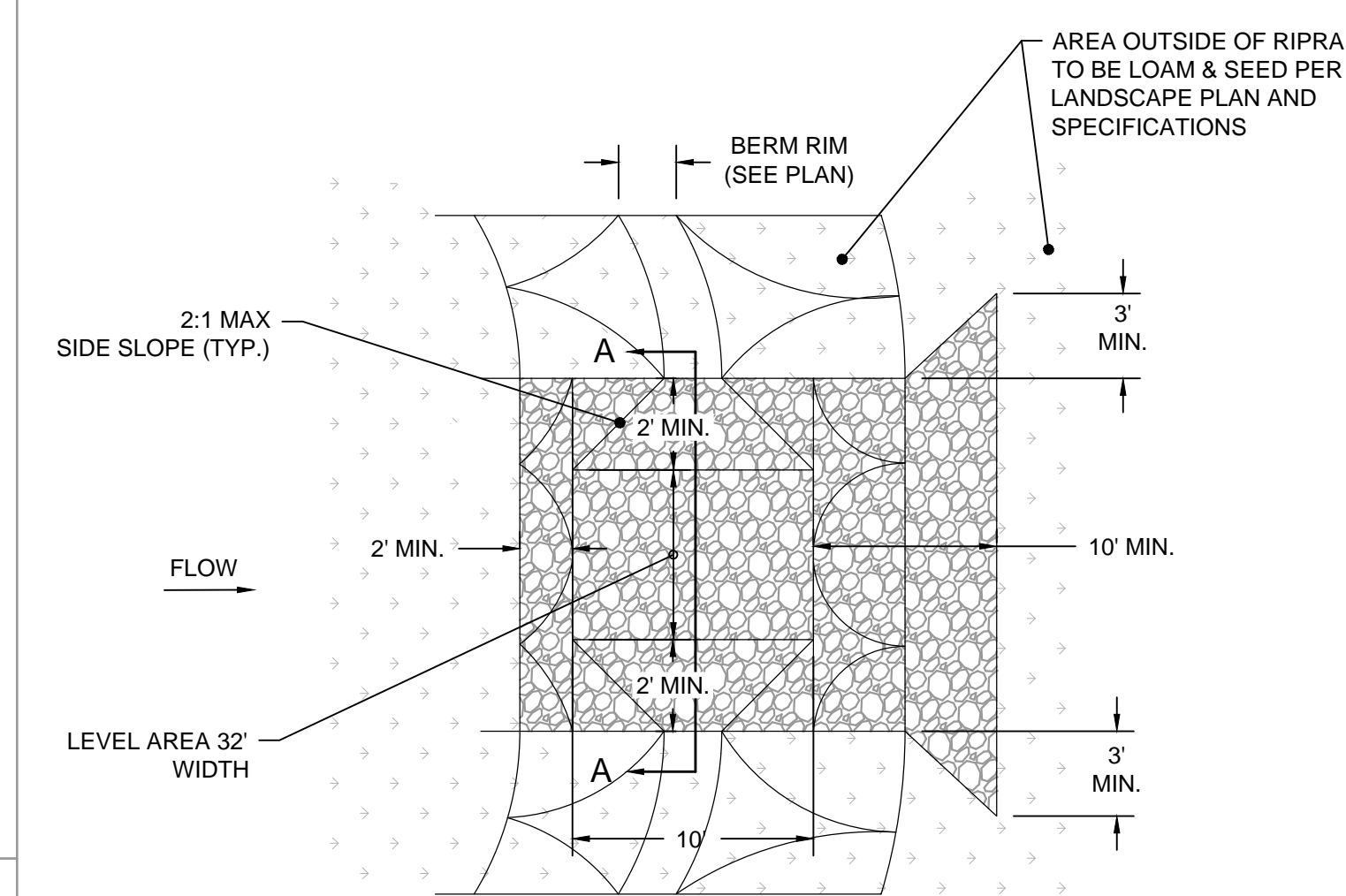
**PERMEABLE FOREBAY GABION DETAIL**

NOT TO SCALE

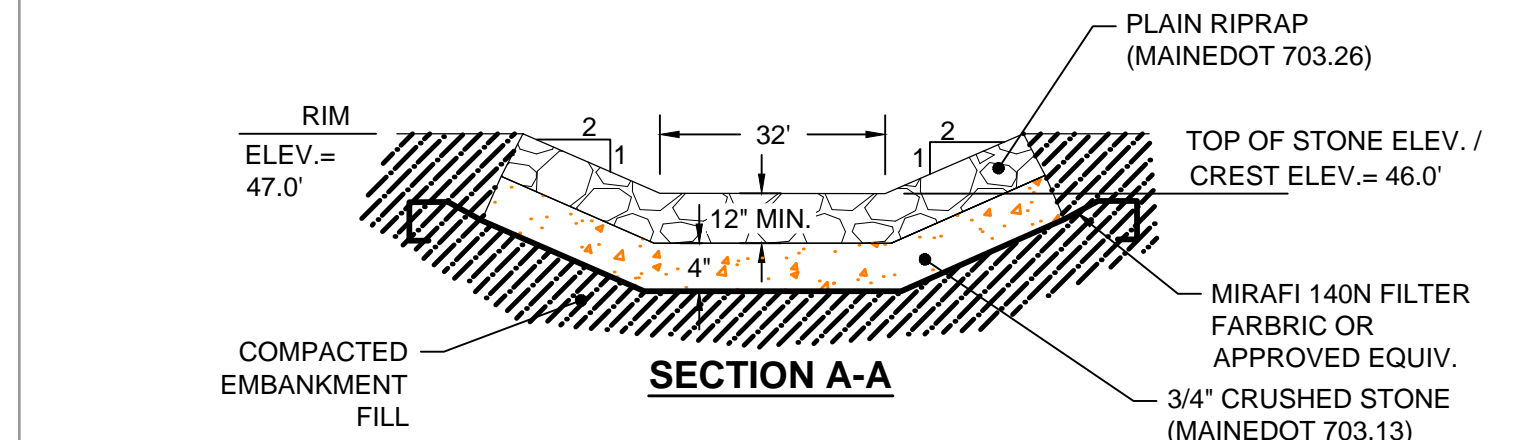


**IMPERMEABLE MICROPOOL GABION DETAIL**

NOT TO SCALE



**PLAN VIEW**

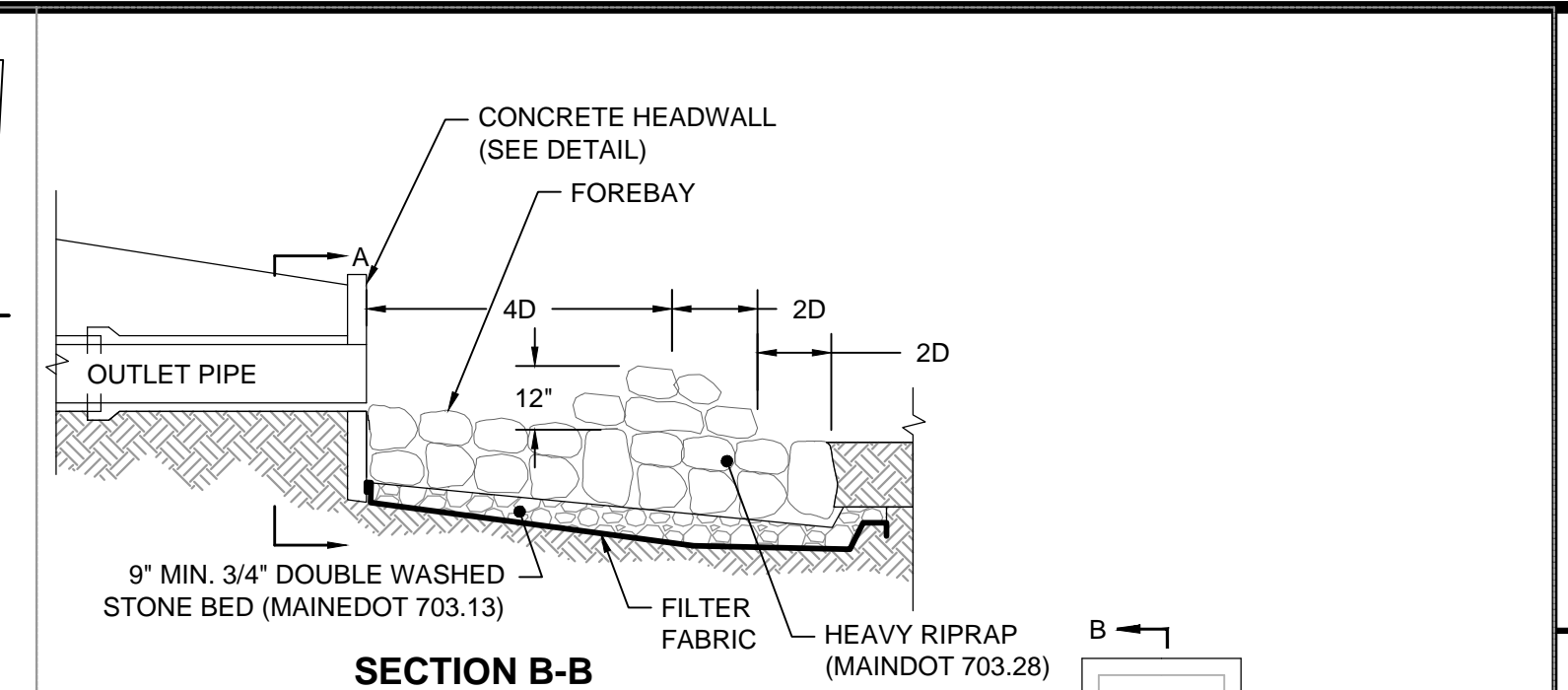


**SECTION A-A**

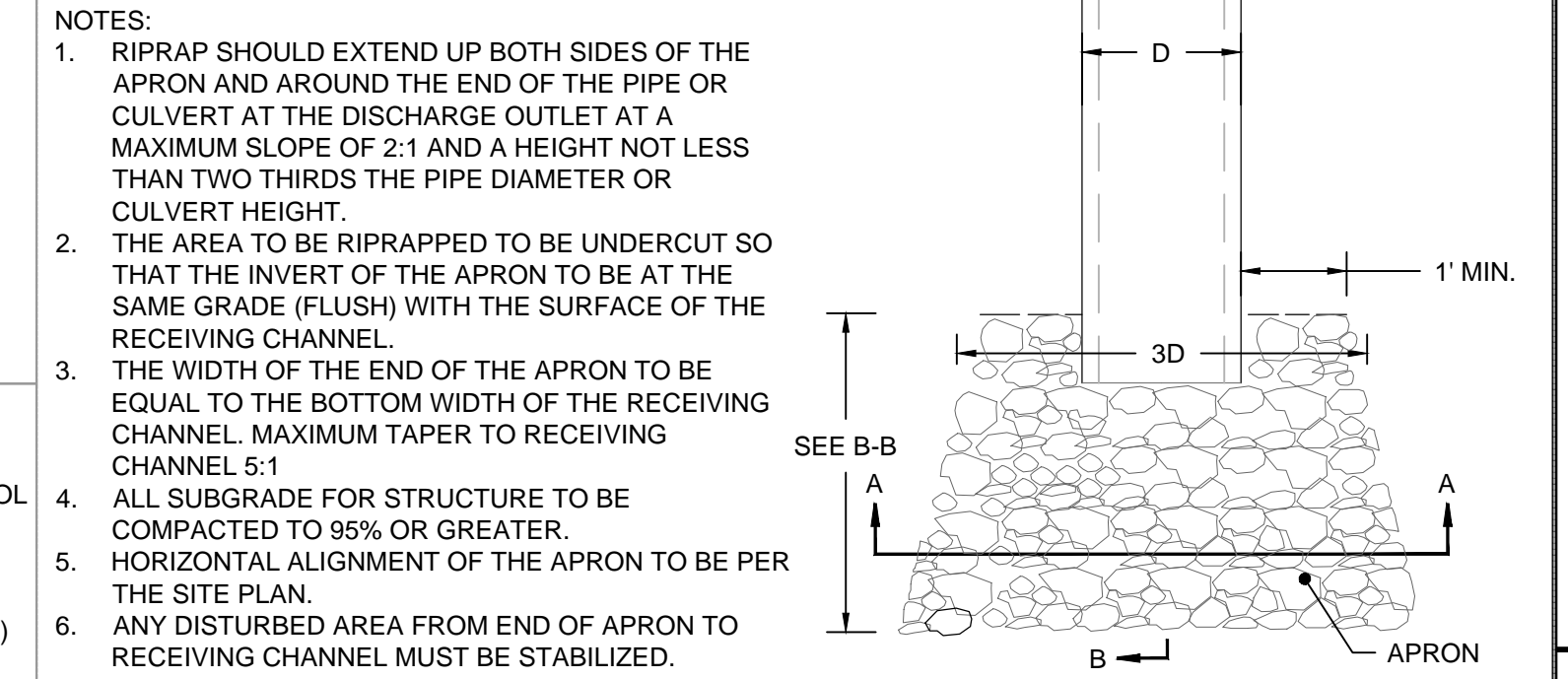
- NOTES:
- FILTER FABRIC TO EXTEND AT LEAST 12 INCHES BEYOND THE RIPRAPPED AREA IN ALL DIRECTIONS AND TO BE KEYED INTO THE SOIL AS SHOWN.

**EMERGENCY SPILLWAY DETAIL**

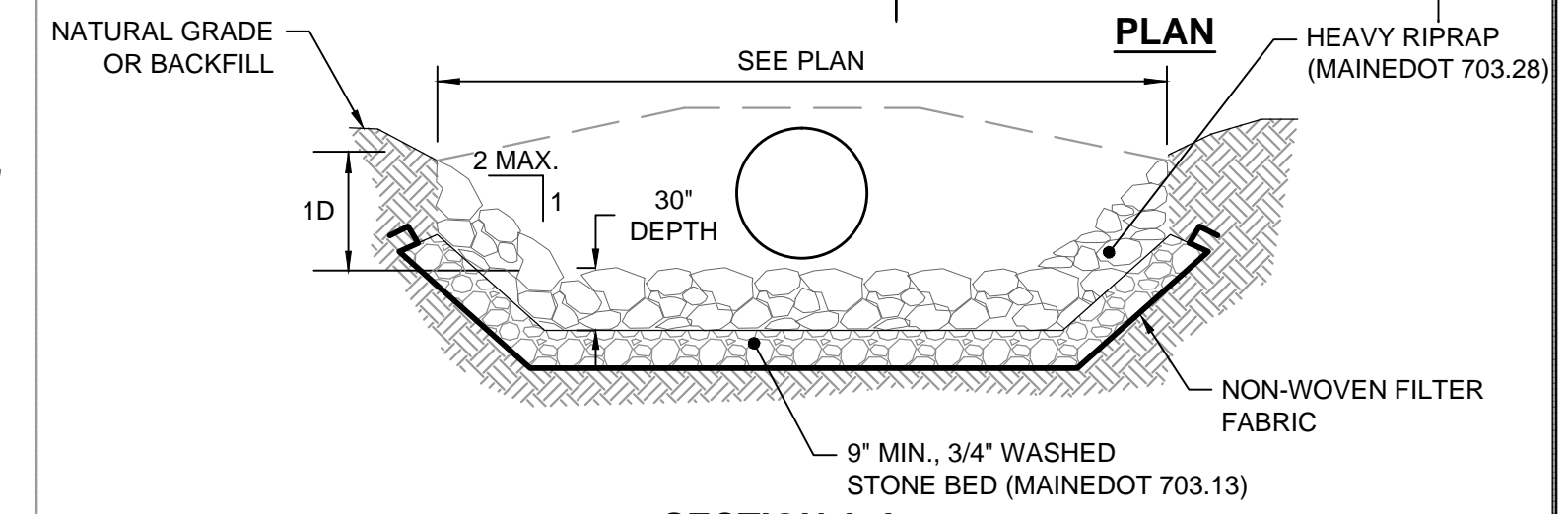
NOT TO SCALE



**SECTION B-B**



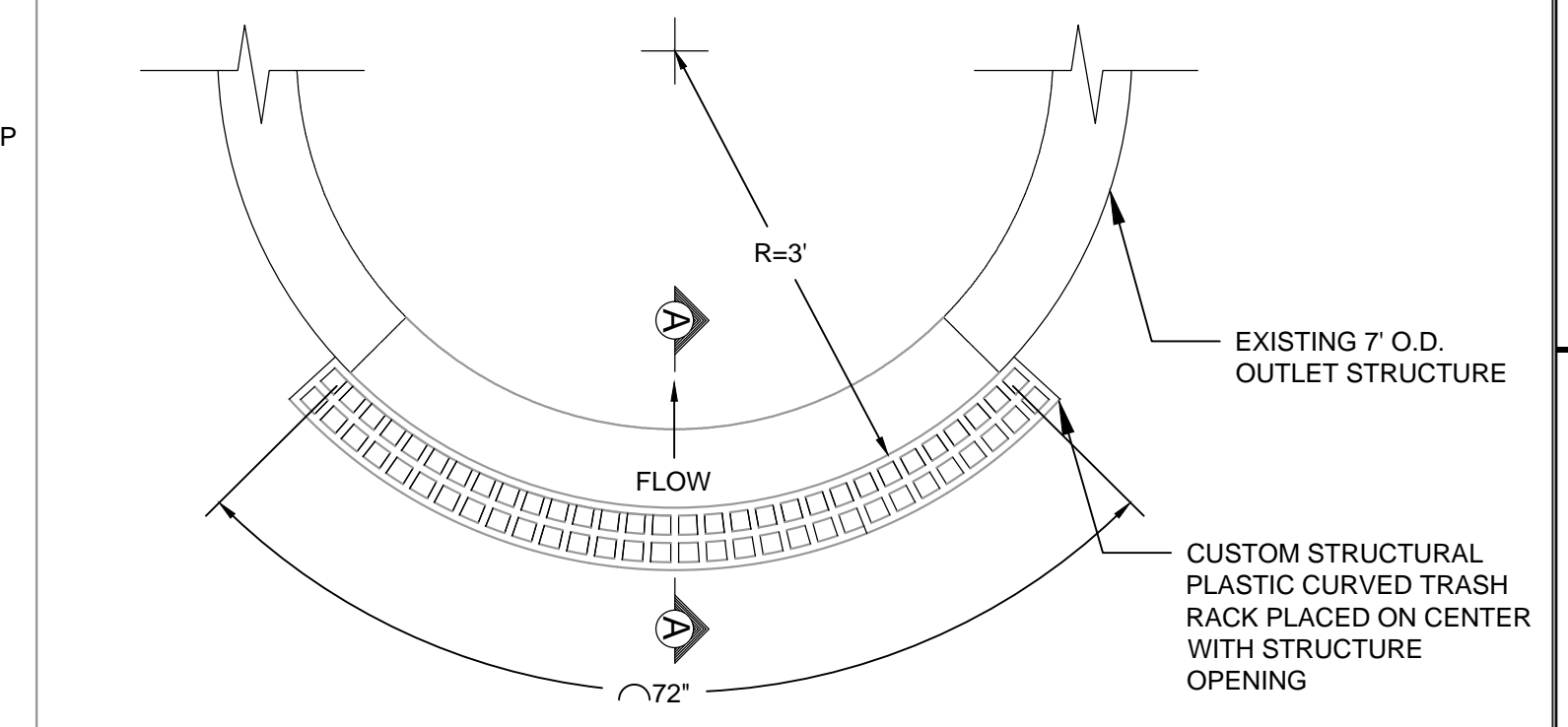
**PLAN**



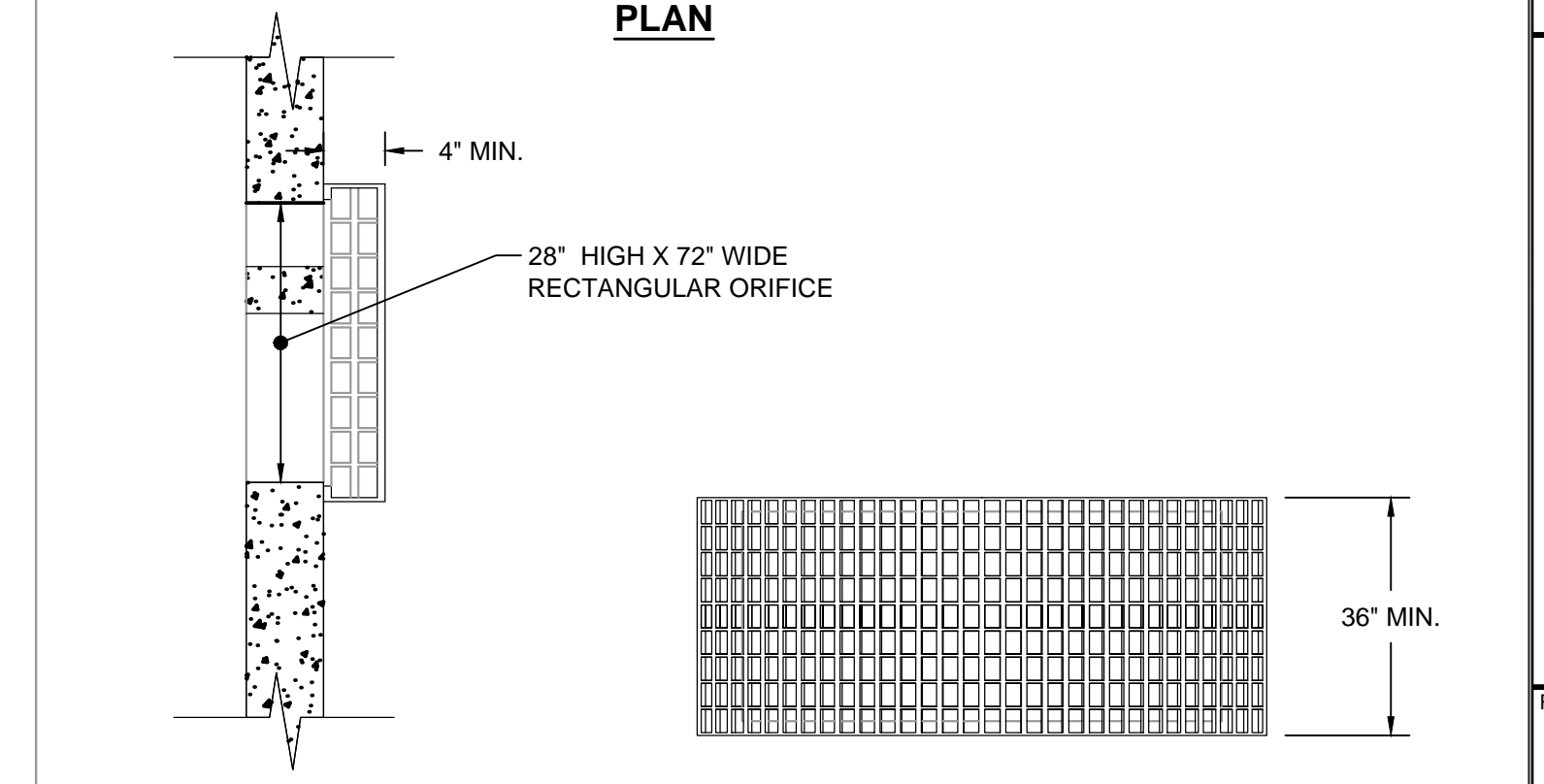
**SECTION A-A**

**RIP RAP OUTFALL DETAIL**

NOT TO SCALE



**PLAN**



**SECTION A-A**

**ELEVATION**

- NOTES:
- TRASH RACK TO BE MOUNTED TO FACE OF CONCRETE OUTLET STRUCTURE WITH 3/8" STAINLESS STEEL (S.S.) ANCHOR BOLTS AND SECURED WITH S.S. FLAT WASHERS AND S.S. NUTS PER MANUFACTURER SPECIFICATIONS.
  - ANCHOR BOLT MOUNTING LOCATION AND SPACING TO BE DETERMINED BY PRE-DRILLED MOUNTING HOLES ON TRASH RACK PER MANUFACTURER SPECIFICATIONS.
  - PRIOR TO FABRICATION, RADIUS OF THE TRASH RACK TO BE VERIFIED WITH ENGINEER.
  - CUSTOM CURVED TRASH RACK BY PLASTIC SOLUTIONS, INC. OR APPROVED EQUAL.

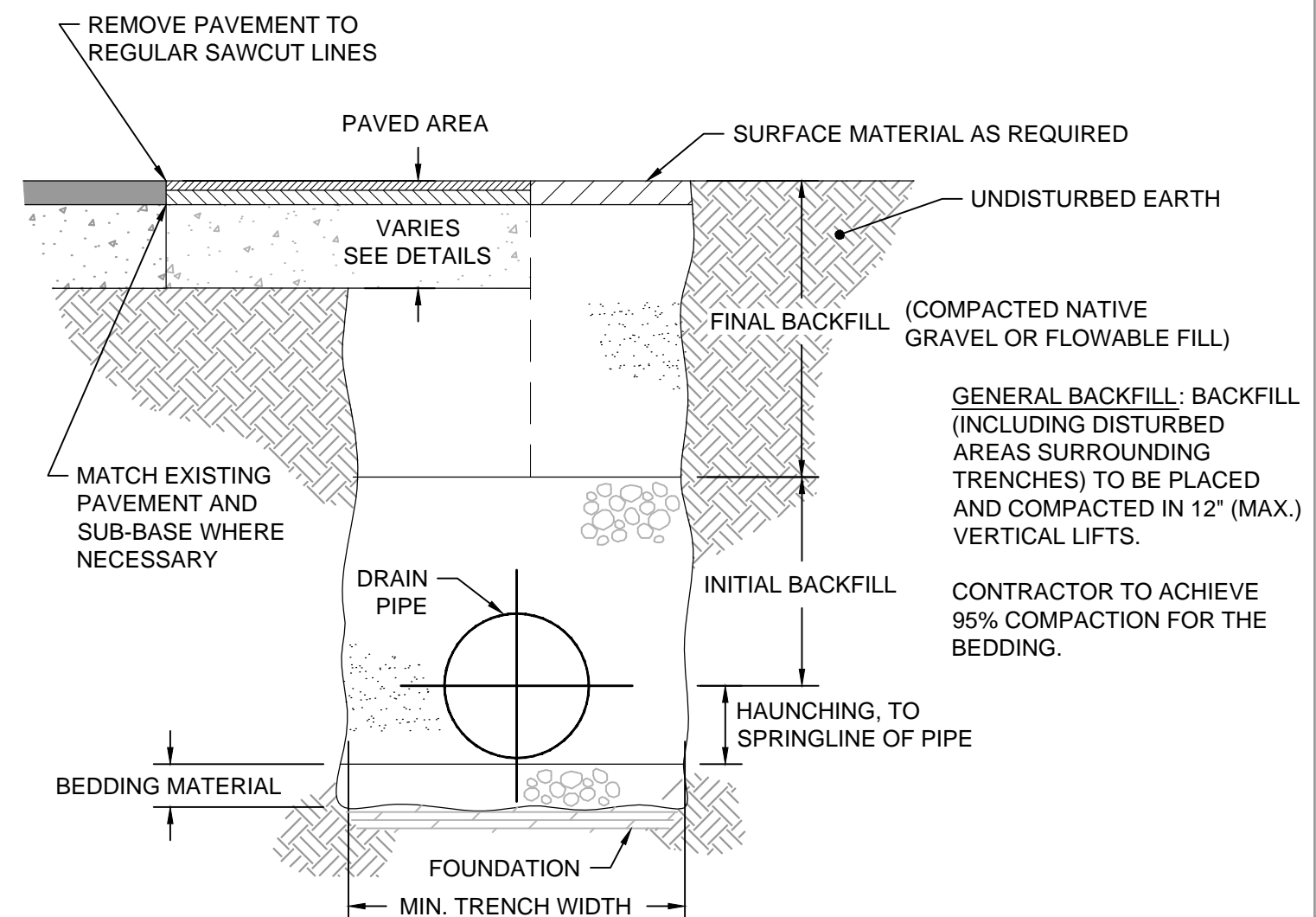
**CUSTOM CURVED TRASH RACK DETAIL**

NOT TO SCALE

<p>Revisions</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>By</th> <th>Appr.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2/26/15</td> <td>SLK</td> <td>RAC</td> <td>Revisions For Bidding</td> </tr> </tbody> </table>		No.	Date	By	Appr.	Description	1	2/26/15	SLK	RAC	Revisions For Bidding
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<p>Checked By: <b>RAC</b></p> <p>Drawn By: <b>SSC</b></p> <p>Design By: <b>KMH</b></p> <p>Date: <b>FEBRUARY 2015</b></p>											
<p>Project Number: <b>14057</b></p> <p>Sheet: <b>9 of 11</b></p>											
<p>Sheet Number: <b>C - 9</b></p>											
<p>Prepared For: <b>Long Creek Watershed Development Management District</b>                  c/o Cumberland County Soil &amp; Water Conservation District                  35 Main St., Suite 3                  Phone: Windham, ME 04092</p>											
<p>Plan Set: <b>MAINE MALL- GGP GRAVEL WETLAND LONG CREEK WATERSHED MANAGEMENT DISTRICT SOUTH PORTLAND, MAINE CONSTRUCTION DETAILS 1</b></p>											
<p>Survey Provided By: <b>Owen Haskell Inc.</b>                  390 U.S. Route 1, Unit 10                  Falmouth, ME 04105                  Phone: (207) 774-0424                  Fax: (207) 774-0511                  Dated: May 20, 2014</p>											
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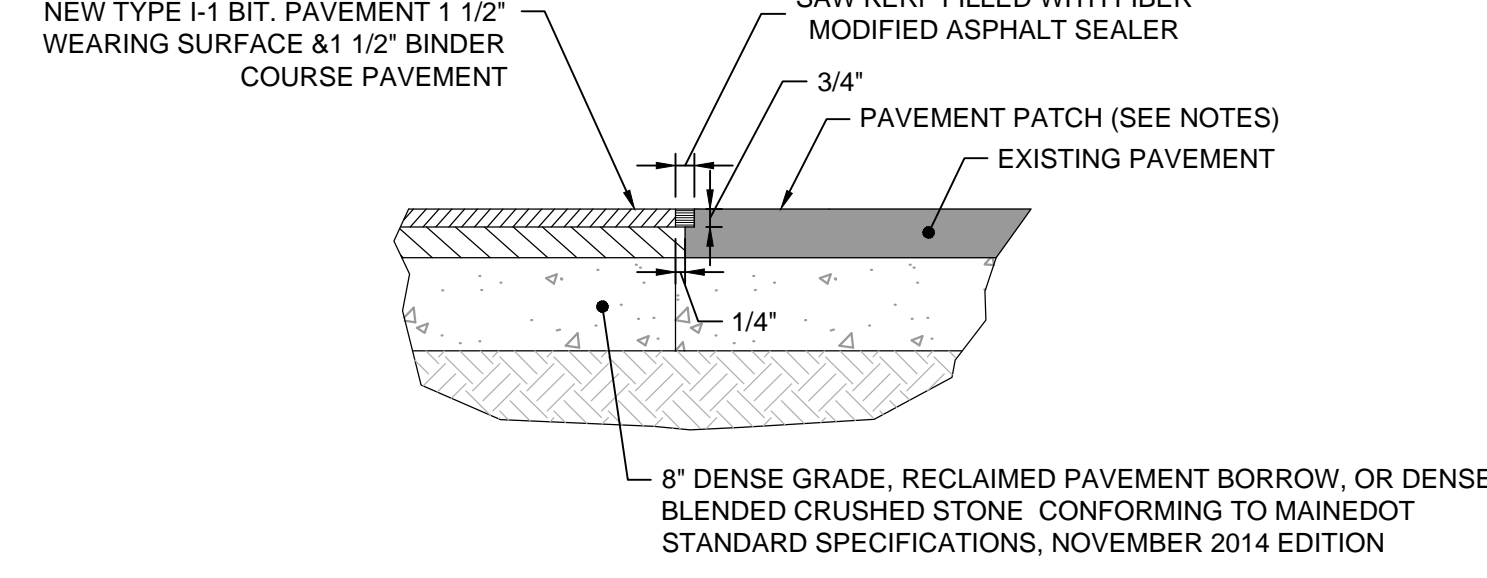
- NOTES:**
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR TO EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321. "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
  - BEDDING, HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL TO CONSIST OF CLEAN, HARD, PARTICLES OF GRAVEL MEETING THE FOLLOWING:
 

SIEVE SIZE	PERCENT PASSING
3/8"	85-95
NO. 4	5-15
NO. 8	0-2
  - MINIMUM TRENCH WIDTHS TO BE AS FOLLOWS:
 

NOMINAL Ø in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
8 (200) 10 (250) 12 (300) 15 (375) 18 (450)	25 (630) 28 (710) 31 (790) 34 (860) 39 (990)
  - MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.
 

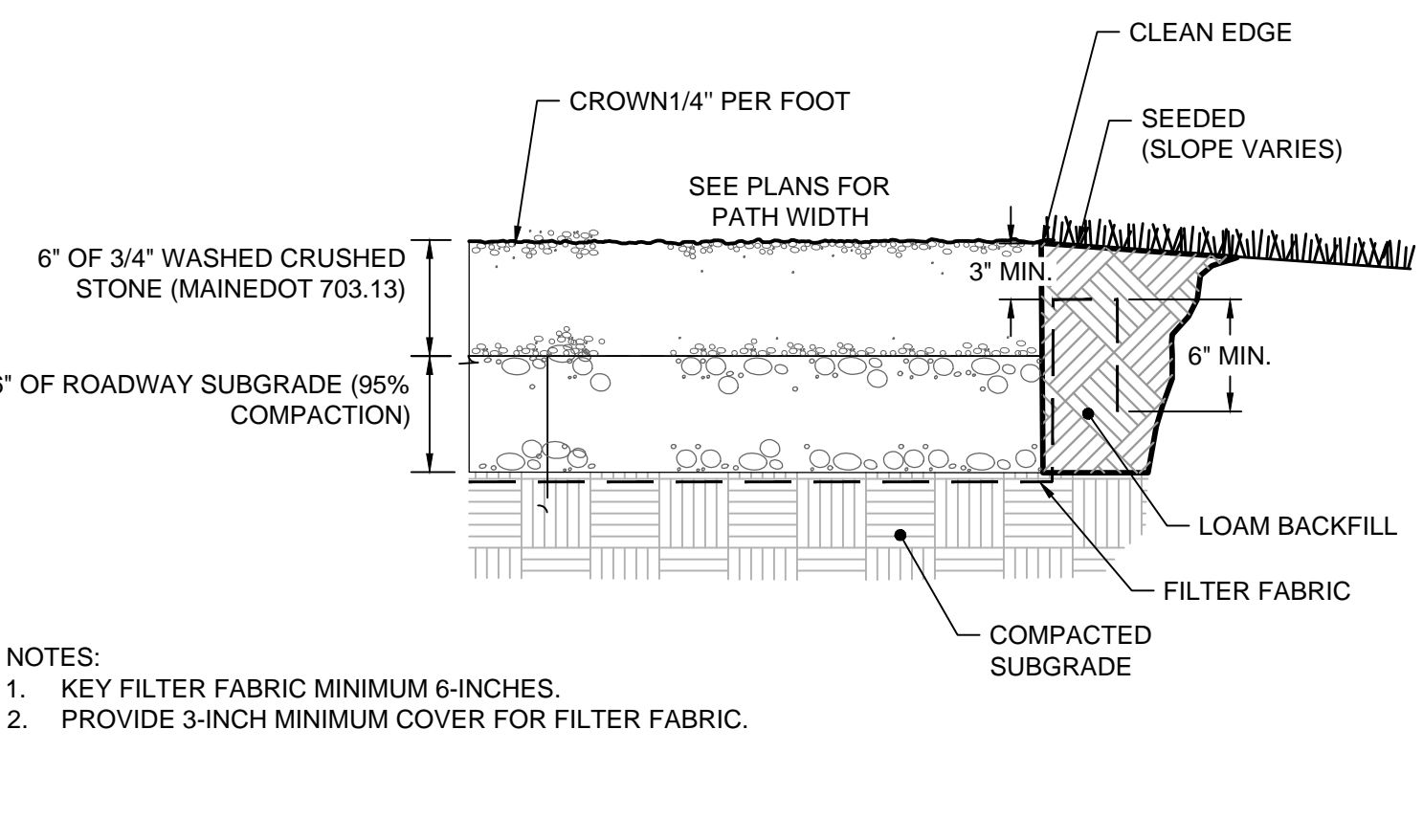
SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300) *12
H25 (RIGID PAVEMENT) E80	(300) 24
RAILWAY HEAVY CONSTRUCTION	(610) 48 (1220)
- MATERIAL TO BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.  
MINIMUM BEDDING THICKNESS TO BE 4" (100mm) FOR 4"-24" PIPE (100-600mm).

**HDPE DRAIN PIPE TRENCH DETAIL**  
NOT TO SCALE

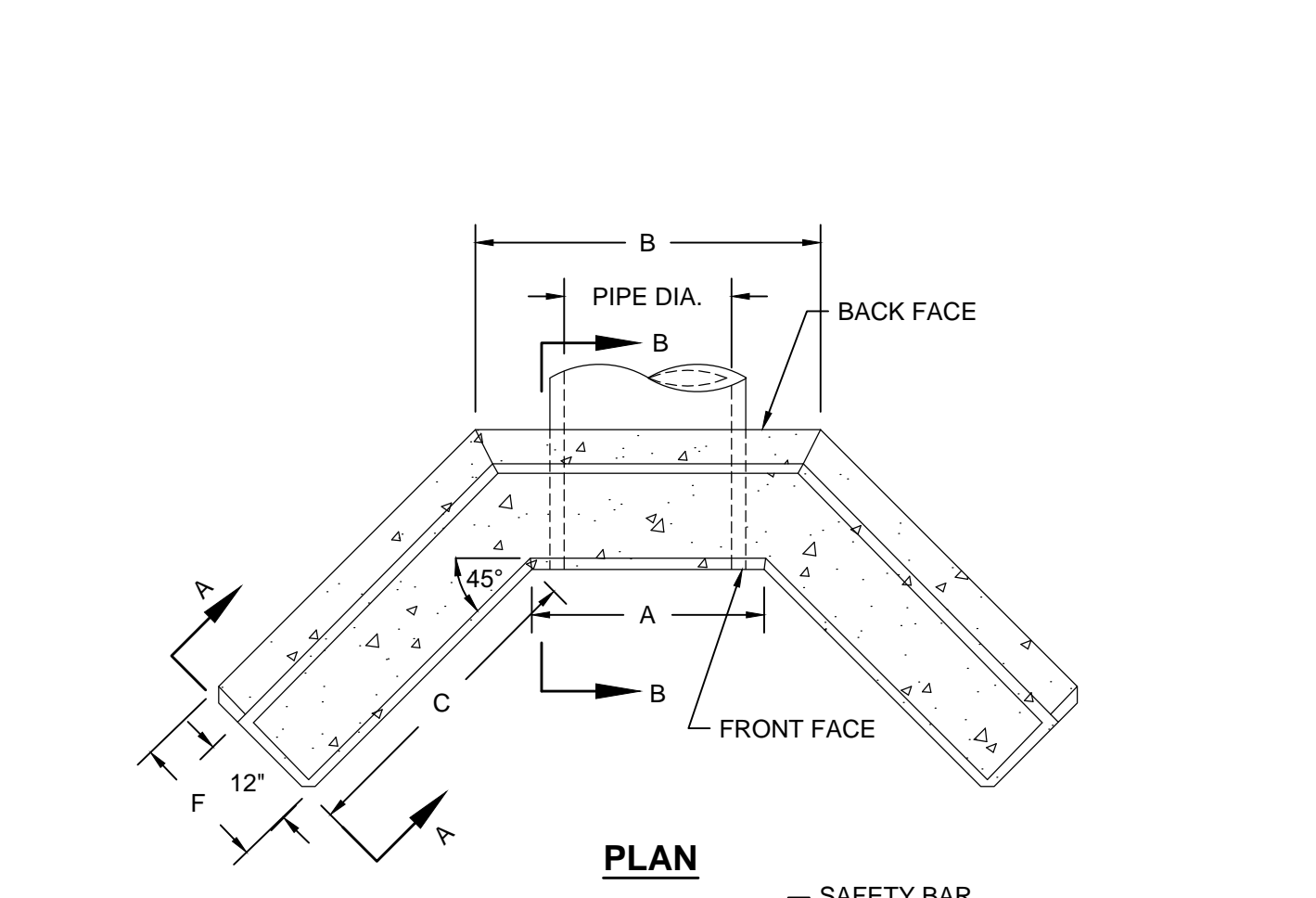


- NOTES:**
- EXISTING BITUMINOUS PAVEMENT SHALL BE REMOVED TO A CLEAN STRAIGHT EDGE VIA SAW CUTTING. THE SAW CUT SHALL BE COMPLETED PERPENDICULAR TO THE ROADWAY/SIDEWALK.
  - PRIOR TO INSTALLING THE WEARING COURSE THE EXISTING VERTICAL PAVEMENT SURFACE SHALL BE SWEEPED COMPLETELY CLEAN.
  - AFTER PROPER COMPACTION (SEE PAVEMENT DETAIL) SAW CUT NEW PAVEMENT ABUTMENT 3/4" DEEP AND FILL WITH FIBER MODIFIED ASPHALT SEALER AS SHOWN.

**PAVEMENT PATCH DETAIL**  
NOT TO SCALE



**GRAVEL PATH DETAIL**  
NOT TO SCALE

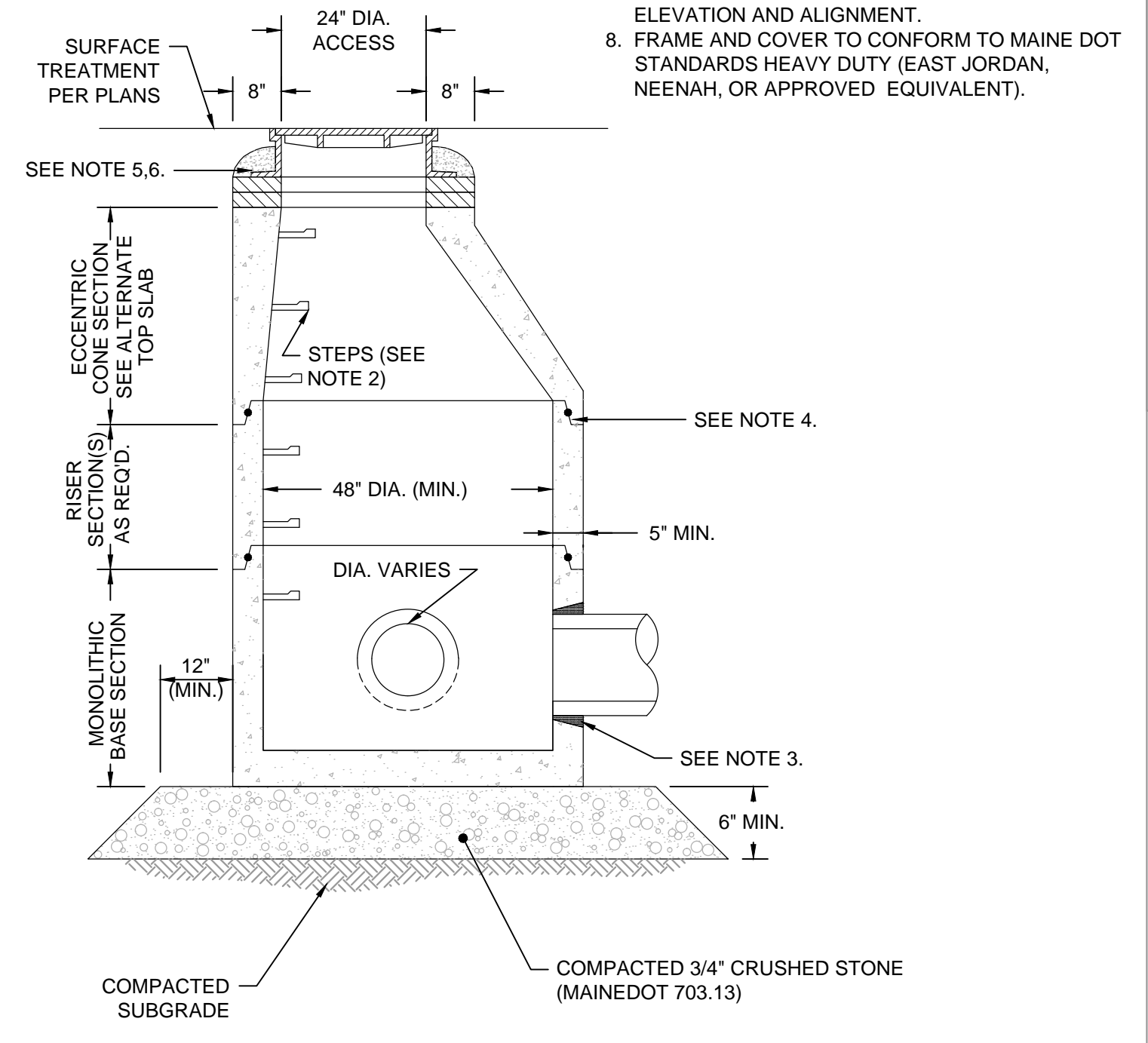
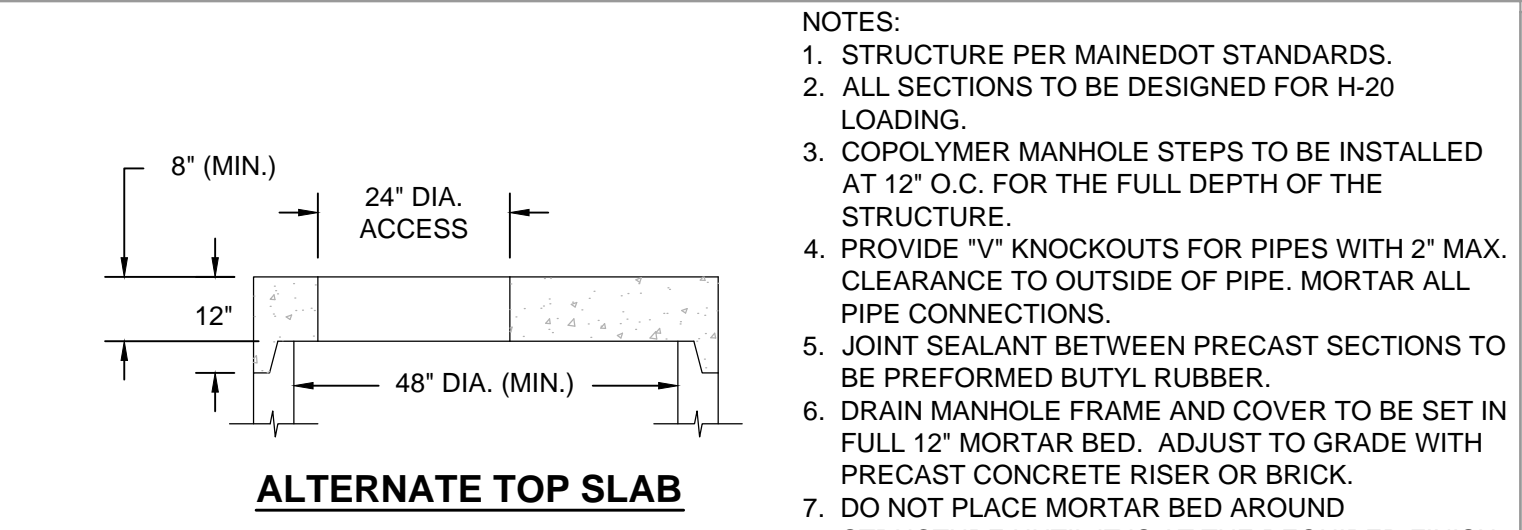


**DIMENSIONAL TABLE**

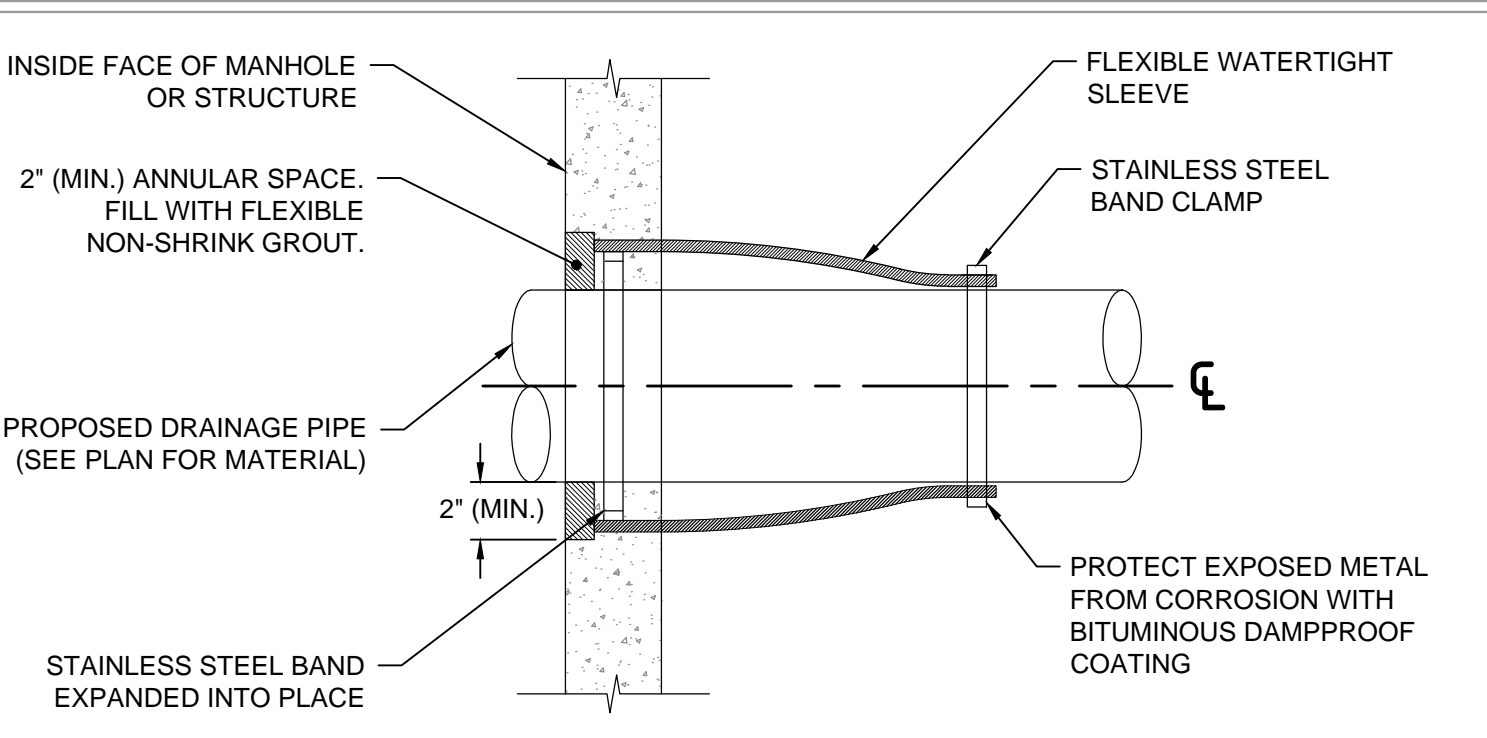
PIPE DIA.	A	B	C	D	E	F	SAFETY BARS REQUIRED
12"	2'-6"	3'-8"	2'-11"	4'-0"	3'-3"	1'-6"	YES

- NOTES:**
- CONCRETE TO BE COMPRESSIVE STRENGTH 4000 PSI AIR ENTRAINED TYPE II CEMENT.
  - INSTALL IMPERMEABLE TRENCH DAM ANTI-SEEP COLLAR AROUND DRAIN PIPE PRIOR TO HEADWALL LOCATION.
  - SAFETY BARS TO BE OMITTED WHERE INDICATED ON PLANS.
  - SAFETY BARS TO BE SET TO CREATE EQUAL OPENING DIMENSIONS.

**CONCRETE HEADWALL WITH WINGWALLS**  
NOT TO SCALE

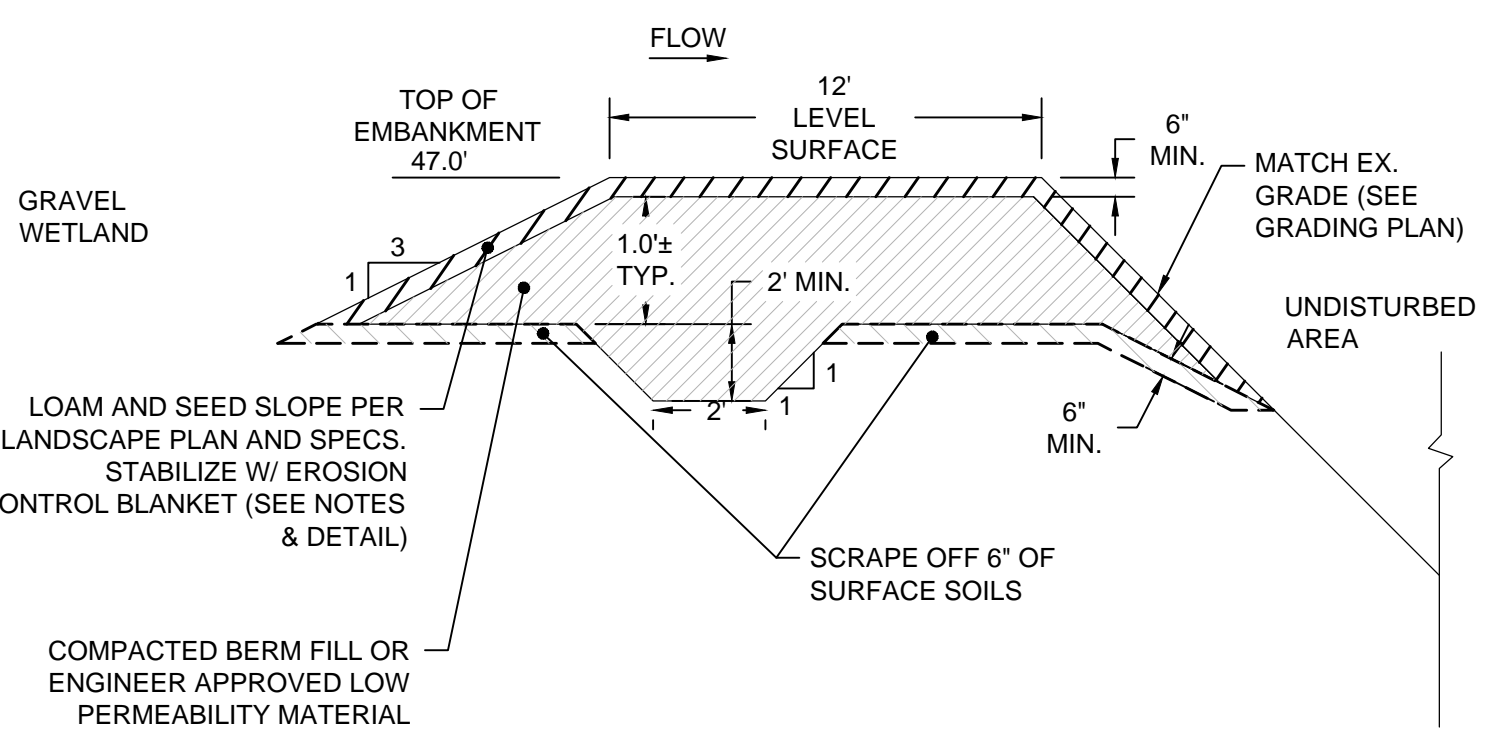


**PRECAST DRAIN MANHOLE (DMH)**  
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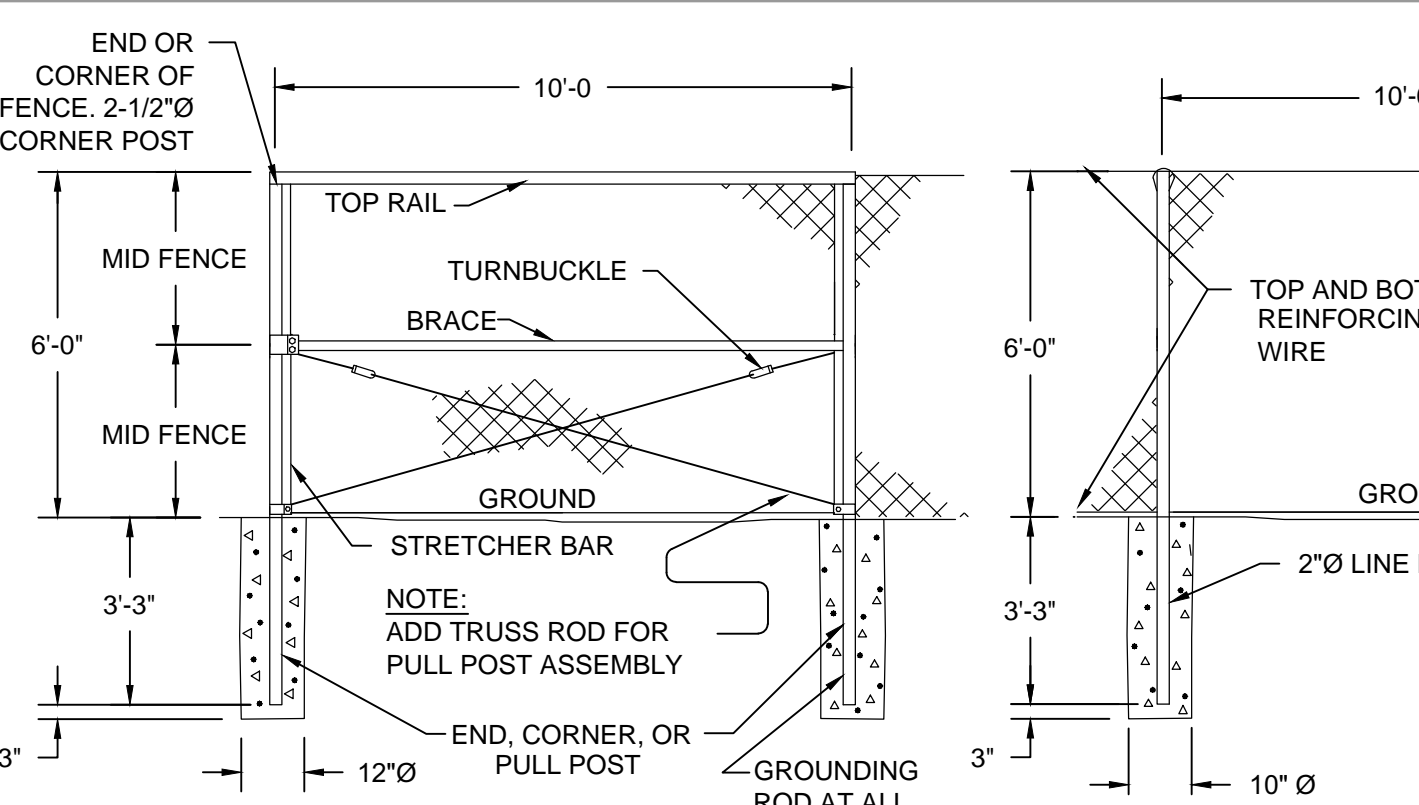


- NOTES:**
- PRECAST OPENING OR CORE DRILLED INTO EXISTING STRUCTURE. SIZE VARIES TO ACCOMMODATE EXTENSION BONNET FLANGE DIAMETER OR PIPE.
  - FLEXIBLE SLEEVE CONNECTION TO BE USED IN THE INSTALLATION OF ALL HDPE, PVC, AND DUCTILE IRON PIPE WHERE APPLICABLE.

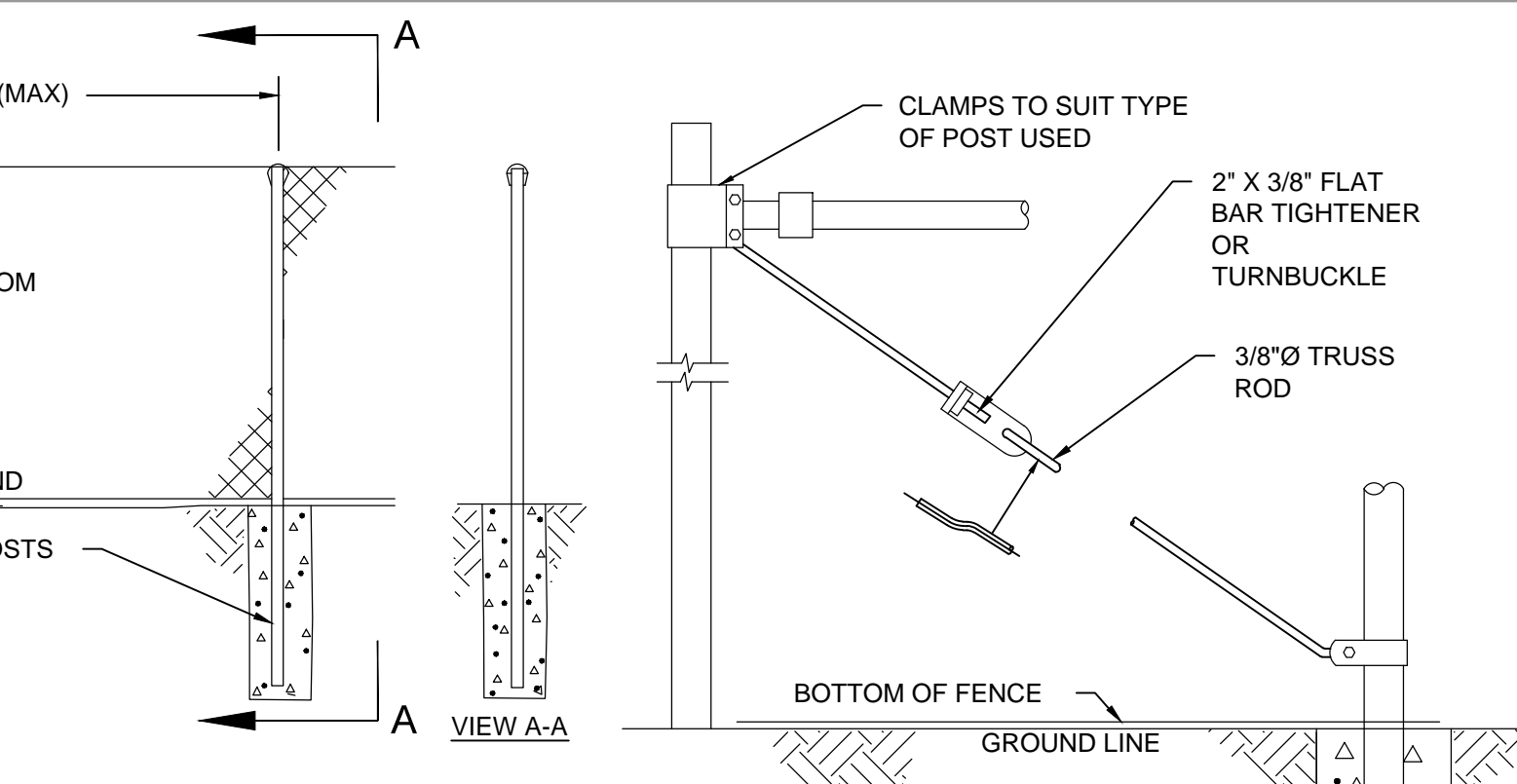
**FLEXIBLE SLEEVE CONNECTION DETAIL**  
NOT TO SCALE



**EMBANKMENT DETAIL**  
NOT TO SCALE

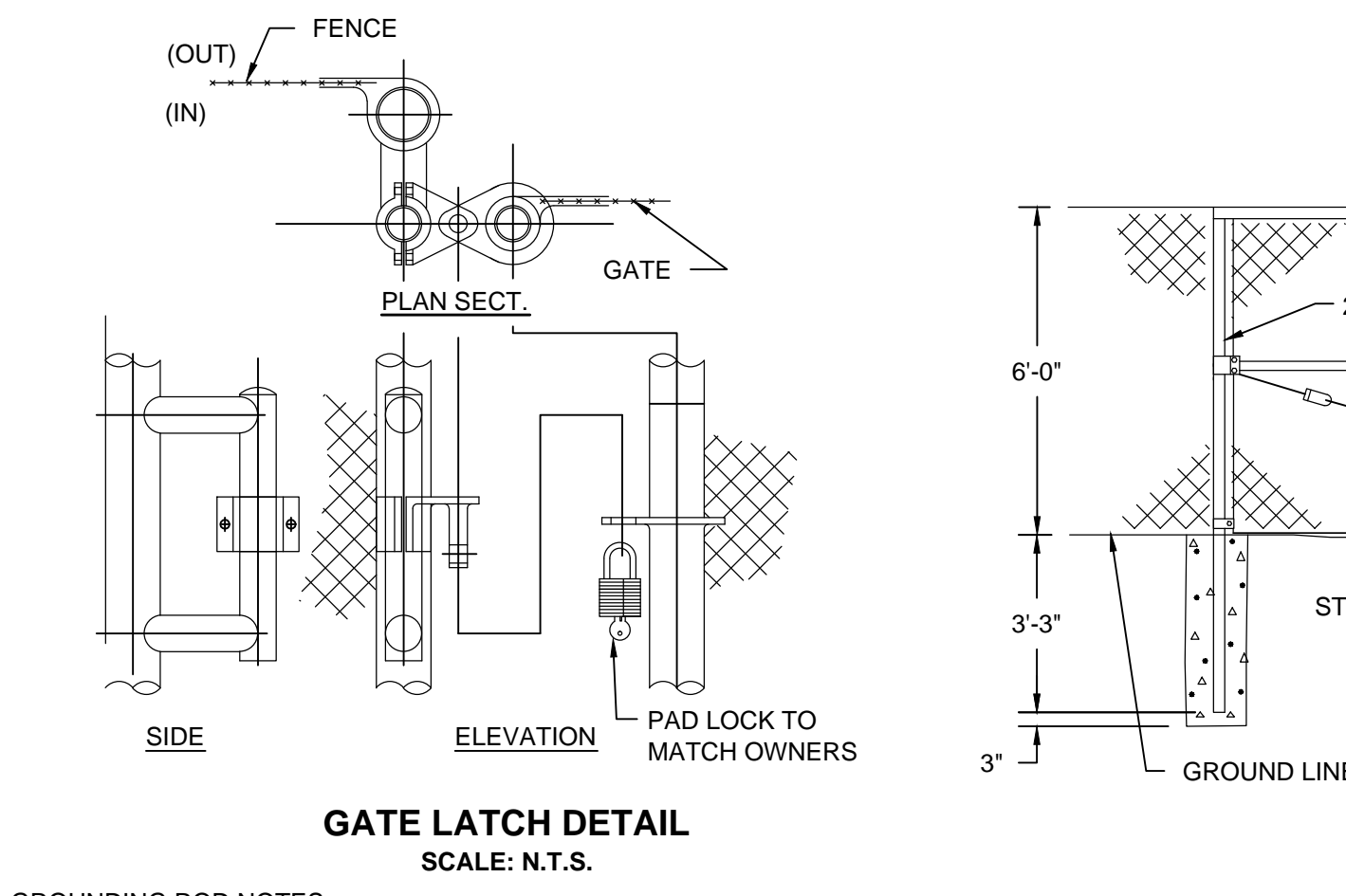


**CORNER OR END PANEL ASSEMBLY PULL POST ASSEMBLY SIMILAR**  
SCALE: N.T.S.

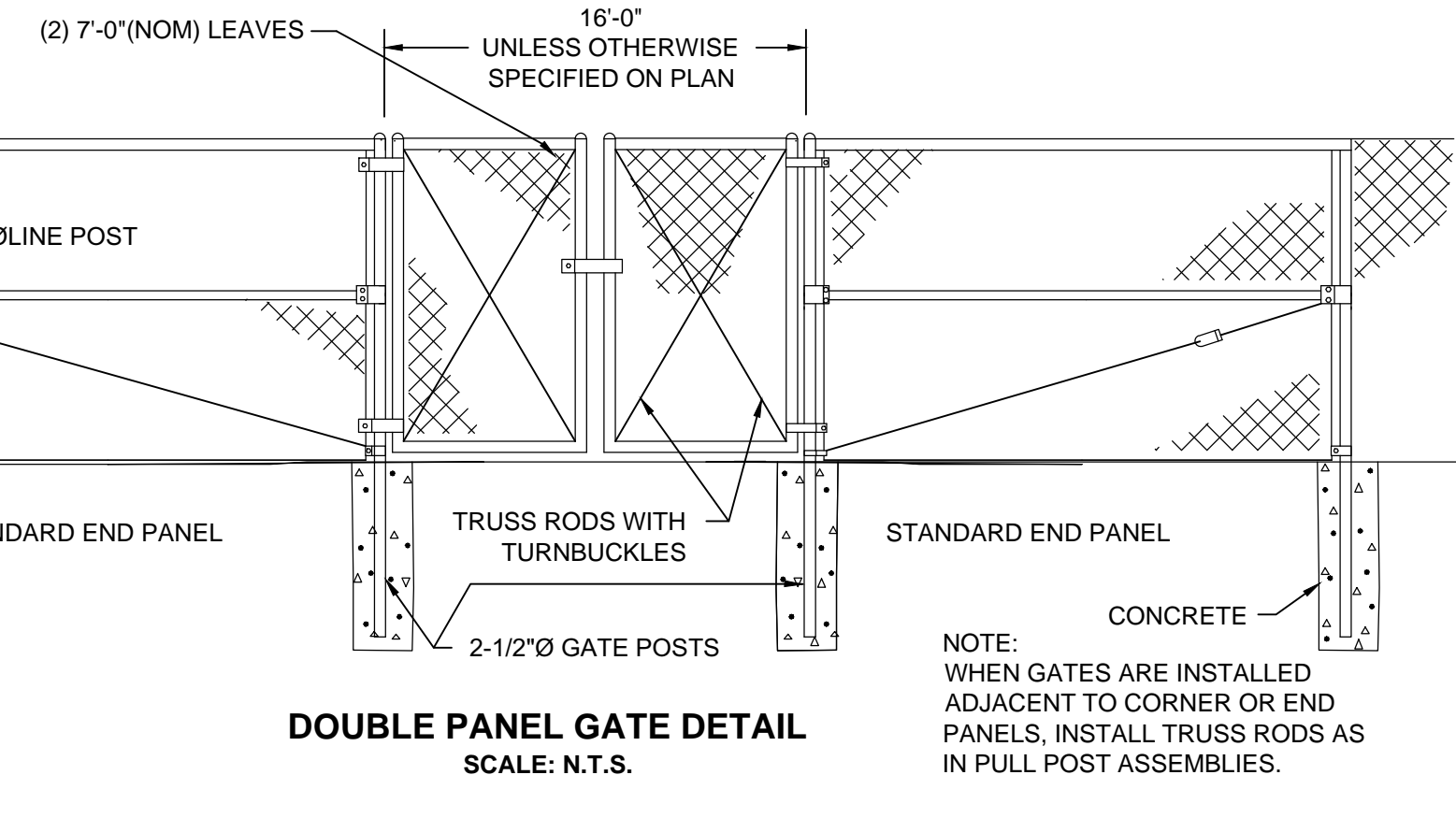


**TYPICAL LINE FENCE DETAIL**  
SCALE: N.T.S.

**TYPICAL DETAIL TRUSS ROD TIES**  
SCALE: N.T.S.



**GATE LATCH DETAIL**  
SCALE: N.T.S.



**DOUBLE PANEL GATE DETAIL**  
SCALE: N.T.S.

- GROUNDING ROD NOTES:**
- GROUNDING RODS TO BE INSTALLED AT ALL END OR CORNERS OF FENCE WITHIN 100' OF ANY ELECTRICAL EASEMENT.
  - GROUNDING ROD TO BE A 10-FT LONG 3/4" COPPER CLAD STEEL ROD. ROD TO BE DRIVEN 6" BELOW GRADE AND ATTACHED TO THE END/CORNER POST CLAMPS TO SUIT AND COPPER ROD.

**CHAINLINK FENCE AND GATE DETAIL**  
NOT TO SCALE

**Revisions**

No.	Date	By	Appr.	Description
1	2/26/15	SLK	RAC	Revisions For Bidding

**Horsley Witten Group, Inc.**  
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508-833-3150 fax

**MAINE MALL-GGP GRAVEL WETLAND  
LONG CREEK WATERSHED MANAGEMENT  
DISTRICT  
SOUTH PORTLAND, MAINE**

**CONSTRUCTION DETAILS 2**

Prepared For: **Long Creek Watershed Management District**  
c/o Cumberland County Soil & Water Conservation District  
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Dated: May 20, 2014

Registration: **STATE OF MAINE**  
FAT PIU  
LEE  
No. 10538  
LICENSED PROFESSIONAL ENGINEER

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Sheet Number: **C - 10**



last modified: 02/25/15 printed: 02/25/15 by mc H:\Projects\2014114057 LCWMD Maine Mall\Drawings - 14057\14057-LA.dwg

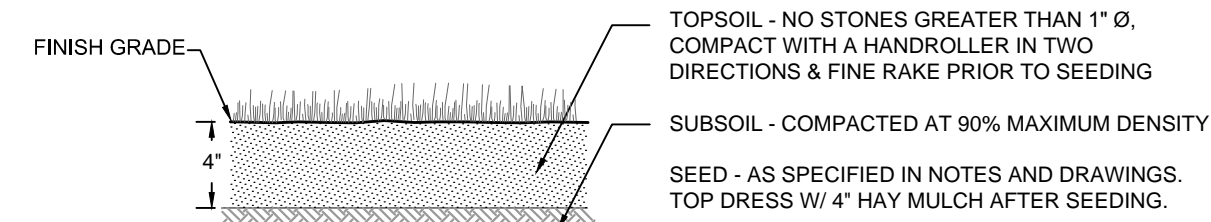
**GENERAL PLANTING NOTES:**

- THE FOLLOWING NOTES ARE PROVIDED AS GENERAL PLANTING GUIDELINES ONLY. THOROUGHLY REVIEW THE PROJECT SPECIFICATIONS FOR ALL LANDSCAPE REQUIREMENTS PRIOR TO THE COMMENCEMENT OF ANY LANDSCAPE WORK. SUBMIT IN WRITING TO THE LANDSCAPE ARCHITECT ANY QUESTIONS OR CLARIFICATIONS REQUIRED AT A MINIMUM OF 30 DAYS PRIOR TO ORDERING ANY MATERIALS OR BEGINNING ANY LANDSCAPE CONSTRUCTION.
- SUBMIT TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL ALL REQUIRED LANDSCAPE SUBMITTALS AS DESCRIBED IN THE SPECIFICATIONS INCLUDING A PLANT LIST WITH PLANT SIZE AND QUANTITIES TO BE ORDERED PRIOR TO DELIVERY TO THE PROJECT SITE.
- FURNISH AND INSTALL ALL PLANTS AS SHOWN ON THE DRAWINGS AND IN THE SIZE AND QUANTITIES SPECIFIED ON THE PLANTING SCHEDULE. PLANT SUBSTITUTION SELECTION MUST BE APPROVED BY BIOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- ALL PLANTS TO COMPLY WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK," LATEST EDITION, PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION INC.
- PLANTS TO BE GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST TWO (2) YEARS. USE HEALTHY NURSERY GROWN PLANTS, FREE OF DISEASE, INSECTS, AND PESTS. EGGS OR LARVAE, AND HAVE A WELL DEVELOPED ROOT SYSTEM.
- INSTALL PLANTS WITHIN ONE (1) WEEK OF PURCHASE. IF PLANTS ARE TO BE STORED AT THE SITE PRIOR TO PLANTING, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THEY ARE PROPERLY MAINTAINED, WATERED, AND REMAIN HEALTHY.
- PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT. SUBMIT TO THE LANDSCAPE ARCHITECT IN WRITING THE PROPOSED PLANTING SCHEDULE. OBTAIN APPROVAL OF PLANTING SCHEDULE FROM THE LANDSCAPE ARCHITECT PRIOR TO PERFORMING ANY WORK.
- SEASONS FOR PLANTING:
 

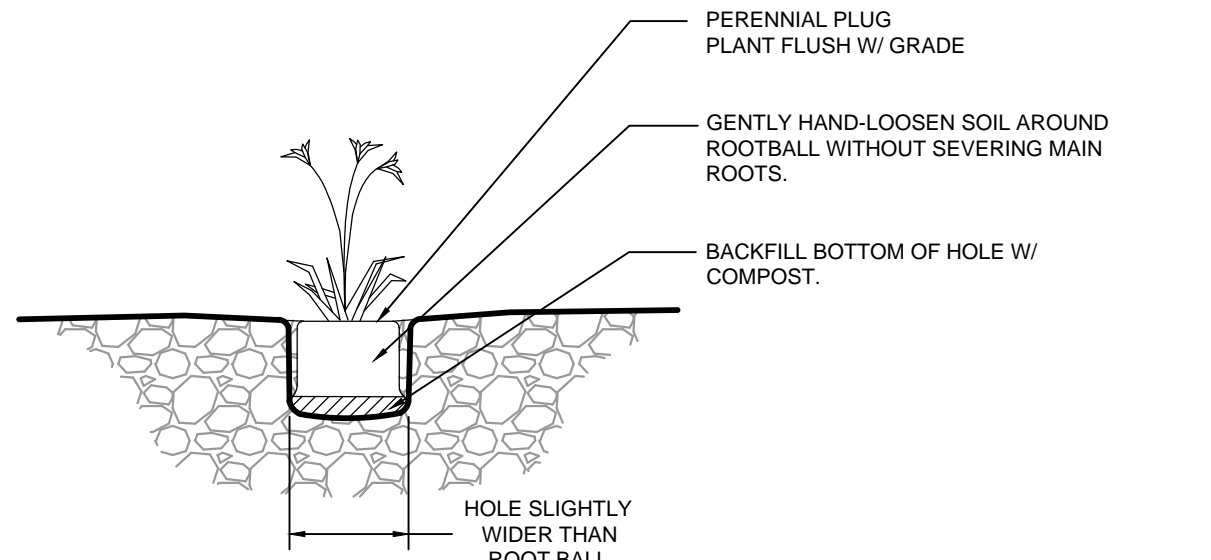
SPRING:	DECIDUOUS:	APRIL 1 TO JUNE 15
	EVERGREEN:	APRIL 1 TO JUNE 15
	PERENNIALS:	APRIL 15 TO JUNE 1
	GROUNDCOVERS:	APRIL 15 TO JUNE 1
FALL:	DECIDUOUS:	SEPTEMBER 15 TO NOVEMBER 15
	EVERGREEN:	SEPTEMBER 15 TO NOVEMBER 15
	PERENNIALS:	SEPTEMBER 15 TO NOVEMBER 15
	GROUNDCOVERS:	SEPTEMBER 15 TO NOVEMBER 15
- LIVE STAKES: PLANTS WHILE DORMANT FROM DECEMBER 1ST THROUGH MARCH 31ST
- PLANTING UNDER FROZEN CONDITIONS IN EITHER THE SPRING OR FALL WILL NOT BE PERMITTED. PLANTING BEFORE OR AFTER THE ABOVE REFERENCED PLANTING DATES WILL INCREASE THE LIKELIHOOD OF PLANT OR GRASS SEED ESTABLISHMENT FAILURE. ANY DEVIATION FROM THE ABOVE REFERENCED PLANTING DATES IS UNDERTAKEN AT SOLE RISK OF THE CONTRACTOR AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY ADDITIONAL MAINTENANCE AND WATERING WHICH MAY BE REQUIRED TO ENSURE SATISFACTORY PLANT AND SEED ESTABLISHMENT.
- FURNISH ONE YEAR MANUFACTURER WARRANTY FOR TREES, PLANTS, AND GROUND COVER AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLECT, OR ABUSE BY OWNER, OR ABNORMAL WEATHER CONDITIONS UNUSUAL FOR WARRANTY PERIOD. THE DATE OF FINAL ACCEPTANCE OF ALL COMPLETED PLANTING WORK ESTABLISHES THE END OF INSTALLATION AND INITIAL MAINTENANCE PERIOD AND THE COMMENCEMENT OF THE GUARANTEE PERIOD.
- INSPECT ALL AREAS TO BE PLANTED OR SEEDED PRIOR TO STARTING ANY LANDSCAPE WORK. REPORT ANY DEFECTS SUCH AS INCORRECT GRADING, INCORRECT SUBGRADE ELEVATIONS OR DRAINAGE PROBLEMS, ETC. TO THE LANDSCAPE ARCHITECT AND ENGINEER PRIOR TO BEGINNING WORK. COMMENCEMENT OF WORK INDICATES ACCEPTANCE OF SUBGRADE AREAS TO BE PLANTED, AND THE LANDSCAPE CONTRACTOR ASSUMES RESPONSIBILITY FOR ALL LANDSCAPE WORK.
- PROVIDE PROPER PREPARATION OF ALL PROPOSED PLANTED AND SEEDED AREAS PER THE NOTES AND SPECIFICATIONS.
- ALL PLANT LAYOUT AND ACTUAL PLANTING LOCATIONS ARE TO BE FIELD VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING. NOTIFY THE LANDSCAPE ARCHITECT AT A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO SCHEDULING ANY FIELD INSPECTIONS.
- BALL AND BURLAP: REMOVE BURLAP AND WIRE BASKETS FROM TOPS OF BALLS AND FROM TOP HALF OF ROOTBALL AS INDICATED ON DRAWINGS. REMOVE PALLETS, IF ANY, BEFORE SETTING.
- POTTED PLANTS: REMOVE THE PLANT FROM THE POT AND LOOSEN OR SCORE THE ROOTS BEFORE PLANTING TO PROMOTE OUTWARDS ROOT GROWTH INTO THE SOIL.
- PLUGS: PLANT UPRIGHT AND NOT AT AN ANGLE. DIG PLANTING HOLES LARGE ENOUGH AND DEEP ENOUGH TO ACCOMMODATE THE ENTIRE ROOT MASS. PLANT PLUGS WITH NO TWISTED OR BALLED ROOTS AND WITH NO ROOTS EXPOSED ABOVE THE GRADE LINE. HAND PACK THE SOIL AROUND THE ENTIRE PLUG ROOT MASS.
- DIG THE THE PLANTING HOLE TO THE SAME DEPTH AS THE ROOT BALL AND TWO TO THREE TIMES WIDER. SCORE ALL SIDES OF THE HOLE. PLACE THE PLANT IN THE HOLE SO THE TOP OF ROOT BALL IS EVEN WITH SURFACE. FILL THE HOLE HALFWAY AND THEN ADD WATER ALLOWING IT TO SEEP INTO BACK FILLED MATERIAL. BE SURE TO REMOVE ALL AIR POCKETS FROM BACK FILLED SOIL. DO NOT SPREAD SOIL ON TOP OF THE ROOTBALL. IF SOIL IS EXTREMELY POOR, REPLACE BACK FILL WITH GOOD QUALITY TOP SOIL. AMEND THE SOIL, AS NECESSARY.
- CREATE A 2" TO 4" BERM AROUND THE EDGE OF PLANTING HOLE WITH REMAINING SOIL TO RETAIN WATER.
- REMOVE ALL PLANT TAGS AND FLAGS FROM THE PLANTS.
- MULCH ALL PLANTING BEDS AS INDICATED ON DRAWINGS. UNLESS NOTED OTHERWISE, ALL PLANTS TO RECEIVE 2-3 INCHES OF MULCH. DO NOT PILE OR MOUND MULCH AROUND THE PLANT STEMS OR TRUNK.
- TRIM BROKEN AND DEAD BRANCHES FROM TREES AND SHRUBS AFTER PLANTING. NEVER CUT A LEADER.
- DO NOT USE NITROGEN CONTAINING FERTILIZERS, PESTICIDES OR CHEMICALS DURING PLANTING AND MAINTENANCE OF THE LANDSCAPING OR LAWN AREAS. ADDITIONALLY, DO NOT USE PESTICIDES OR HERBICIDES CONTAINING INORGANIC COMPOUNDS OR SYNTHETIC ORGANIC COMPOUNDS OR VOLATILE ORGANIC COMPOUNDS.

**GENERAL SEEDING NOTES:**

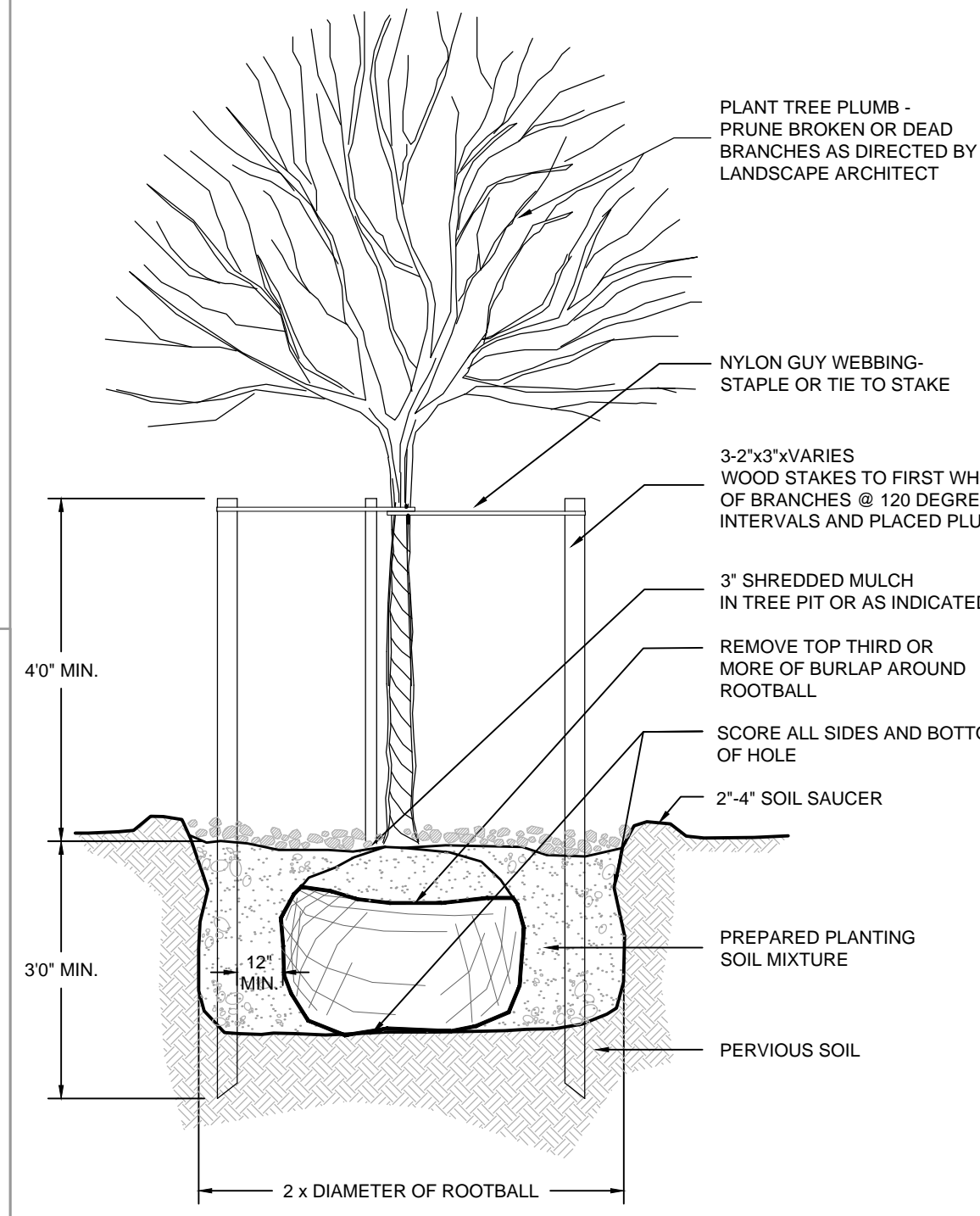
- SEND A REPRESENTATIVE SAMPLE OF THE TOPSOIL TO A TESTING LABORATORY FOR STANDARD SOIL ANALYSIS AS DESCRIBED IN THE SPECIFICATIONS. SUBMIT TO THE LANDSCAPE ARCHITECT AND ENGINEER TEST RESULTS WITH RECOMMENDED SOIL TREATMENTS TO PROMOTE PLANT AND GRASS GROWTH. CORRECT DEFICIENCIES IN THE LOAM AND STOCKPILED TOPSOIL AS DIRECTED BY THE TESTING AGENCY.
  - ALL AREAS THAT ARE DISTURBED AND/OR GRADED DURING CONSTRUCTION ARE TO BE BROUGHT TO FINISHED GRADE WITH AT LEAST 4" MINIMUM DEPTH OF GOOD QUALITY LOAM AND SEEDED WITH A QUICK GERMINATING GRASS SEED SUCH AS NEW ENGLAND EROSION CONTROL RESTORATION MIX OR AS SPECIFIED ON THE PLANS.
  - PRIOR TO THE PLACEMENT OF TOP SOIL, LOOSEN THE SUBGRADE OF ALL PROPOSED SEEDED AREAS TO A DEPTH OF 6" AND RAKE TO REMOVE STONES LARGER THAN 1 INCH, STICKS, ROOTS, RUBBISH AND OTHER EXTRANEIOUS MATTER AND LEGALLY DISPOSE TO AN OFF SITE LOCATION.
  - DO NOT SPREAD TOPSOIL IF THE SUBGRADE IS FROZEN, EXCESSIVELY WET, COMPACTED OR NOT PROPERLY PREPARED PER THE NOTES AND SPECIFICATIONS.
- WATERING NOTES:**
- PROVIDE PROPER PLANT CARE, MAINTENANCE AND WATERING ON SITE UNTIL SUCH TIME AS THE LANDSCAPING IS ACCEPTED BY THE PROPERTY OWNER AS SATISFACTORY PER THE SPECIFICATIONS OR AS DETERMINED BY ANY WRITTEN AGREEMENTS BETWEEN THE CONTRACTOR AND PROPERTY OWNER.
  - ESTABLISH AN APPROPRIATE WATERING SCHEDULE FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDE IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. ADHERE TO THE APPROVED SCHEDULE UNTIL PLANTS ARE FULLY ESTABLISHED.
  - AT A MINIMUM THE NEWLY SEEDED AND/OR HYDROSEEDED LAWNS SHOULD BE WATERED 2-3 TIMES A DAY. SPECIAL CARE SHOULD BE TAKEN TO ENSURE THAT THE LAWN IS NOT SATURATED DURING WATERING. IF AN IRRIGATION SYSTEM IS NOT PROVIDED, A TEMPORARY IRRIGATION SYSTEM OR HANDHELD GARDEN HOSE SHALL BE USED FOR WATERING SEEDED AREAS. THE AREA MUST BE MAINTAINED CONSISTENTLY MOIST FOR THE BEST GERMINATION RESULTS. ADDITIONAL WATERING WILL BE REQUIRED IF PLANTING AND SEEDING OCCUR OUTSIDE OF THE RECOMMENDED PLANTING SEASONS.



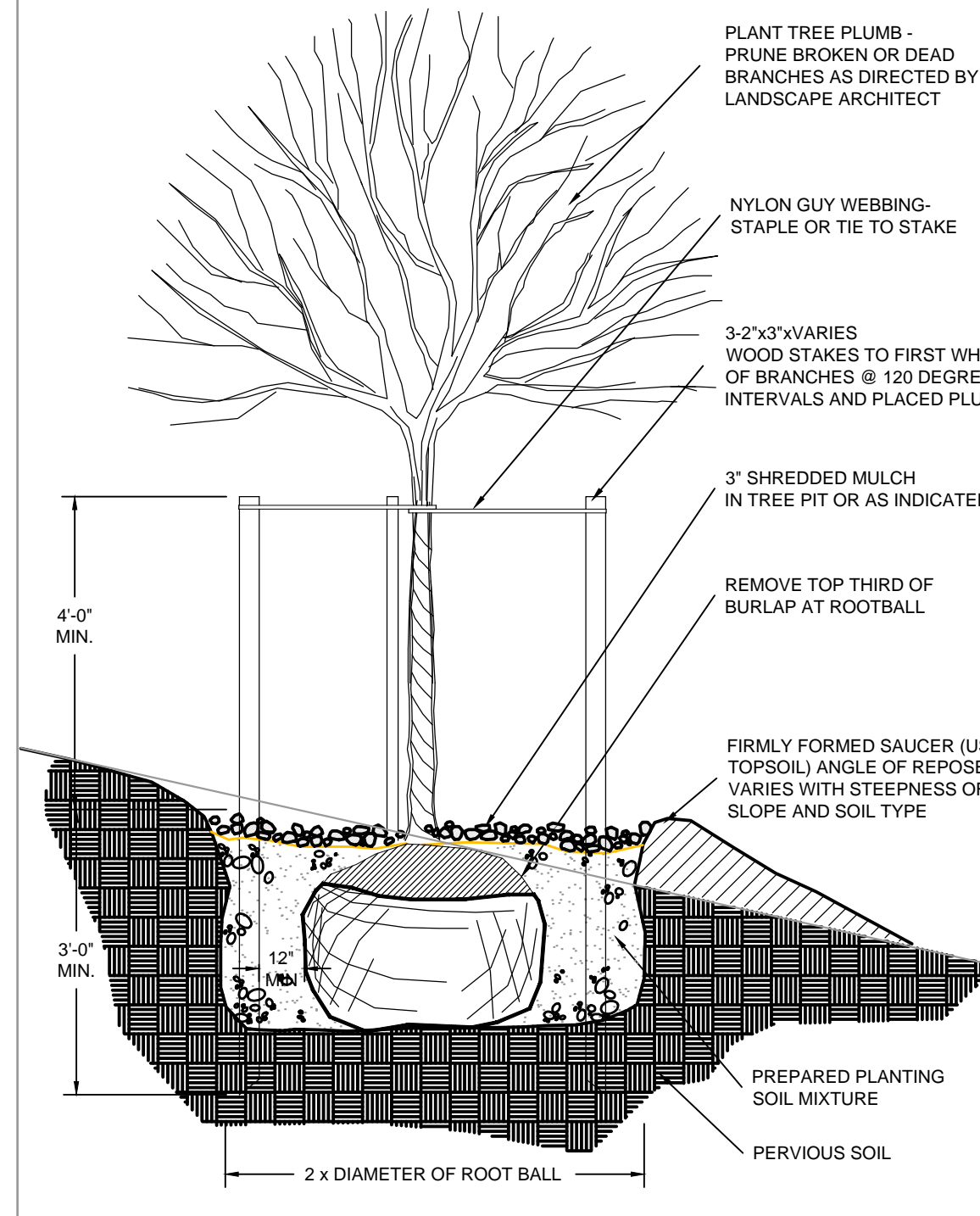
**LOAM AND SEED DETAIL**  
NOT TO SCALE



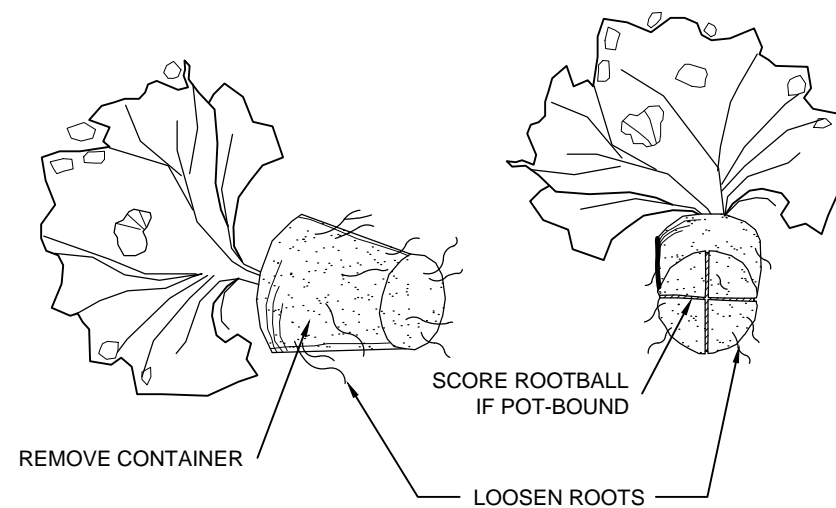
**GRAVEL WETLAND PLANTING DETAIL**  
NOT TO SCALE



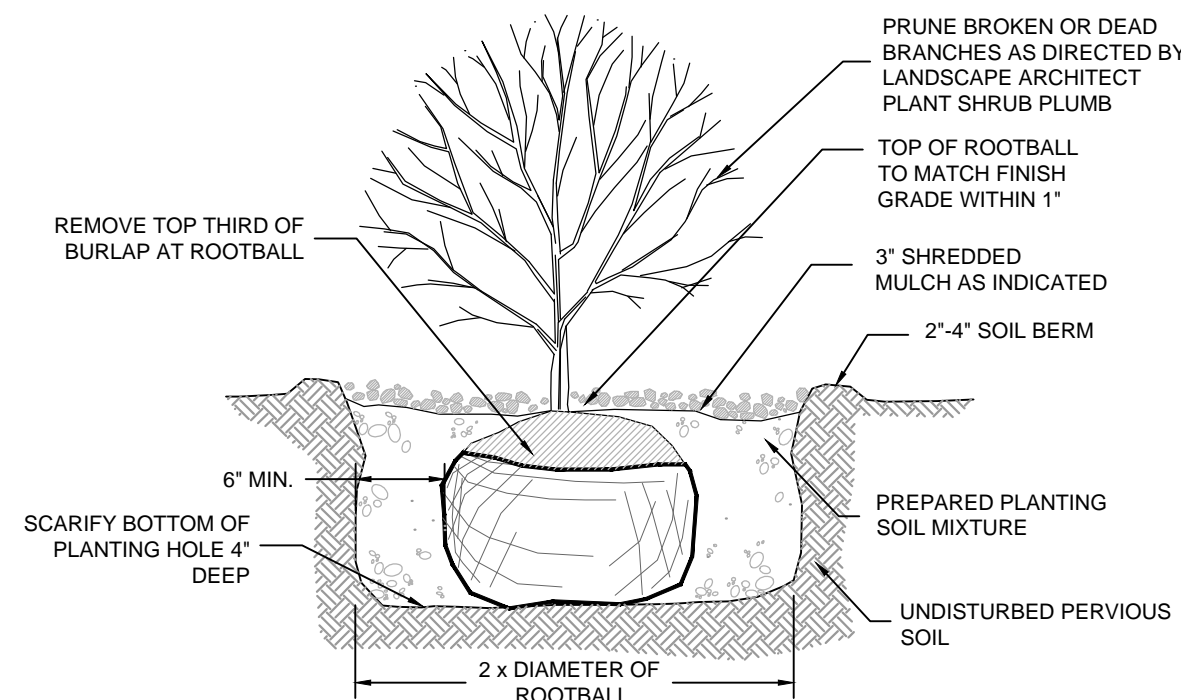
**TREE PLANTING DETAIL**  
NOT TO SCALE



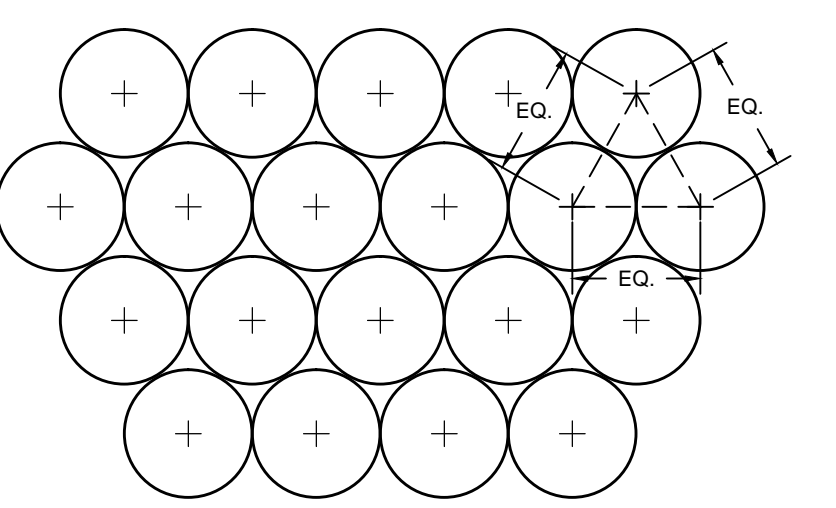
**TREE PLANTING ON SLOPE DETAIL**  
NOT TO SCALE



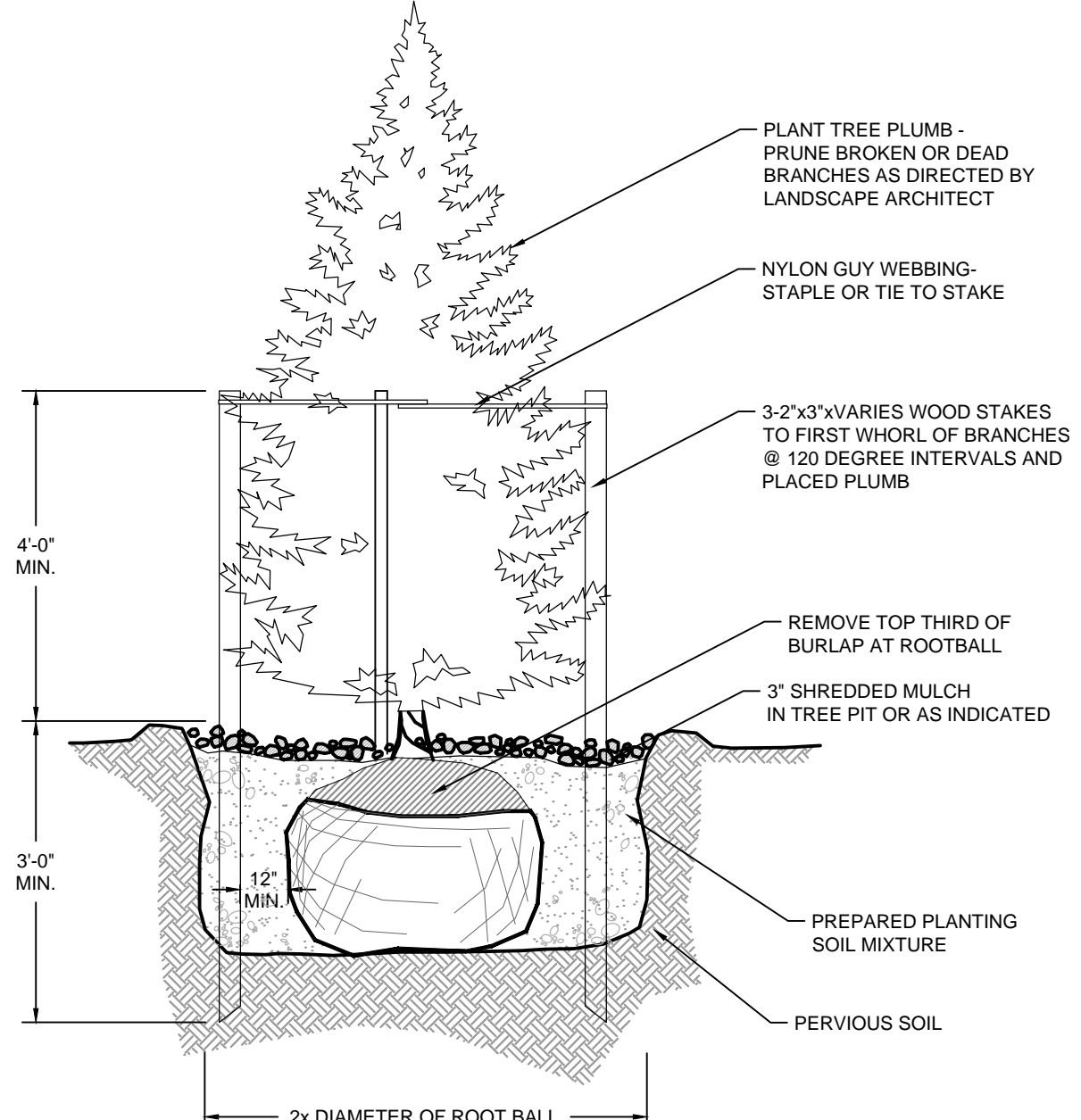
**CONTAINER PLANT ROOTBALL TREATMENT**  
NOT TO SCALE



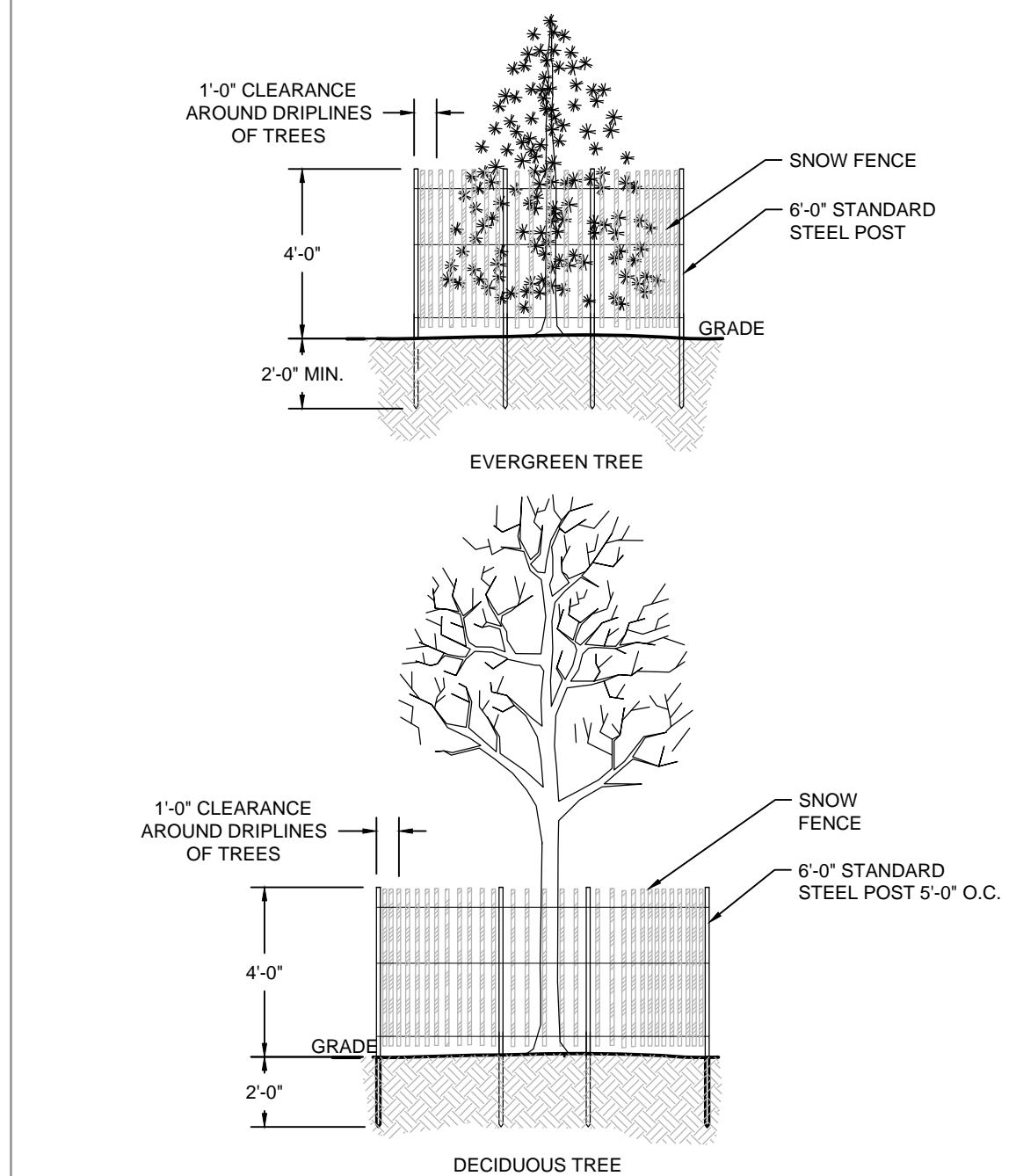
**SHRUB PLANTING DETAIL**  
NOT TO SCALE



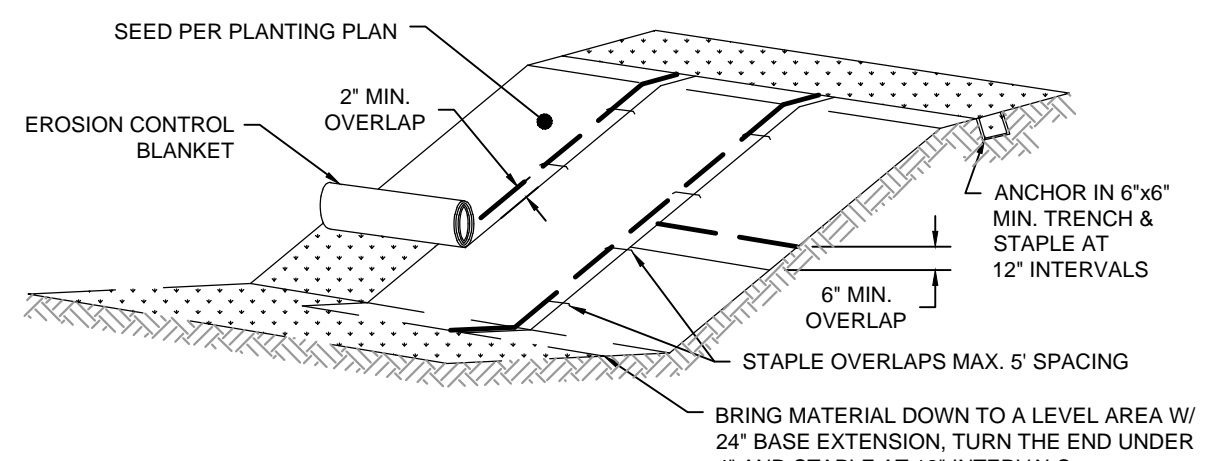
**PLANTING SPACING DETAIL**  
NOT TO SCALE



**EVERGREEN TREE PLANTING DETAIL**  
NOT TO SCALE



**TREE PROTECTION DETAIL**  
NOT TO SCALE



**EROSION CONTROL BLANKET DETAIL**  
NOT TO SCALE

- NOTES:**
- EROSION CONTROL BLANKET TO BE NORTH AMERICAN GREEN BIONET S150BN OR APPROVED EQUIVALENT.
  - SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT.
  - STAPLING PATTERN AS PER MANUFACTURER'S RECOMMENDATIONS.
  - DO NOT STRETCH BLANKETS/MATTINGS TIGHT. ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES.
  - FOR SLOPES LESS THAN 3H:1V, ROLLS MAY BE PLACED IN HORIZONTAL STRIPS.
  - LIME, FERTILIZE AND SEED BEFORE INSTALLATION. PLANTING OF SHRUBS, TREES, ETC. SHOULD OCCUR AFTER INSTALLATION.

<p>Revisions</p> <table border="1"> <tr> <th>No.</th> <th>Date</th> <th>By</th> <th>Appr.</th> <th>Description</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		No.	Date	By	Appr.	Description					
No.	Date	By	Appr.	Description							
<p>Drawn By: GGC Checked By: GGC Date: FEBRUARY 2015</p>											
<p>Unassigned By: GGC</p>											
<p>Project Number: 14057</p>											
<p>Sheet: 11 of 11</p>											
<p>Sheet Number: C-11</p>											
<p>Project Title: MAINE MALL - GGP GRAVEL WETLAND LONG CREEK WATERSHED MANAGEMENT DISTRICT SOUTH PORTLAND, MAINE</p>											
<p>Project Description: LANDSCAPE DETAILS</p>											
<p>Prepared For: Long Creek Development Watershed Management District c/o Cumberland County Soil &amp; Water Conservation District 35 Main St., Suite 3 Windham, ME 04092 Phone: (207) 774-0511 Fax: (207) 774-0511 Dated: May 20, 2014</p>											
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