# EROSION & SEDIMENTATION CONTROL PLAN

Unitil Regulator and Meter Station Relocation Project
40 West Commercial Street
Portland, Maine

Prepared For:

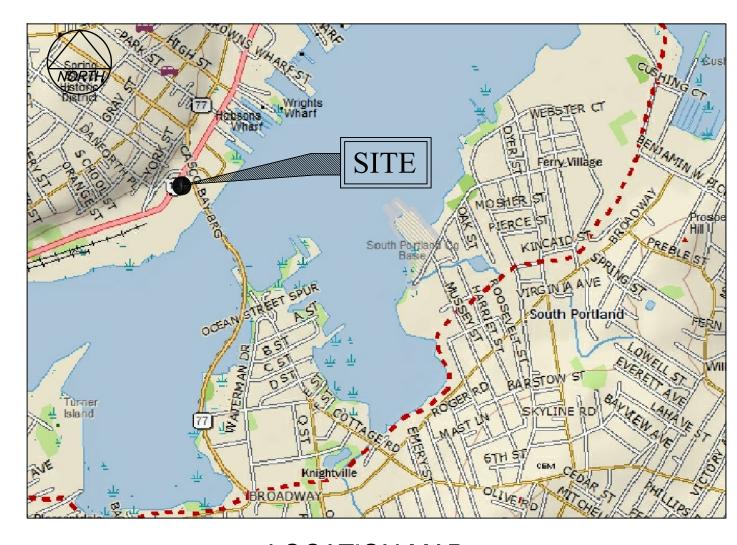
# City of Portland Planning Department

389 Congress St. Portland, Maine 04101

Prepared By:

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.

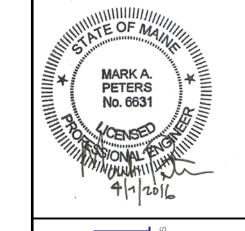
511 Congress Street Portland, Maine 04101



LOCATION MAP

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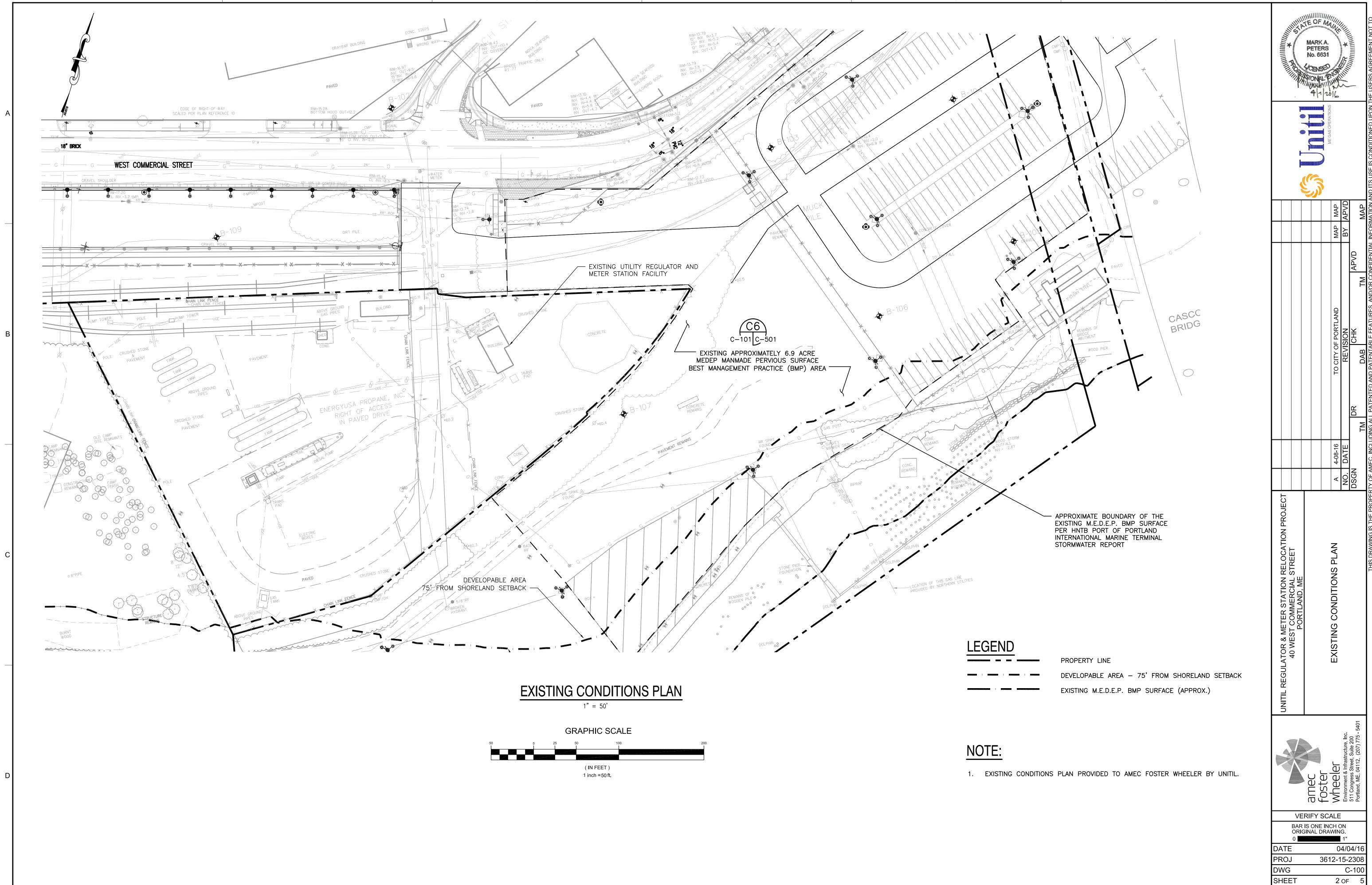
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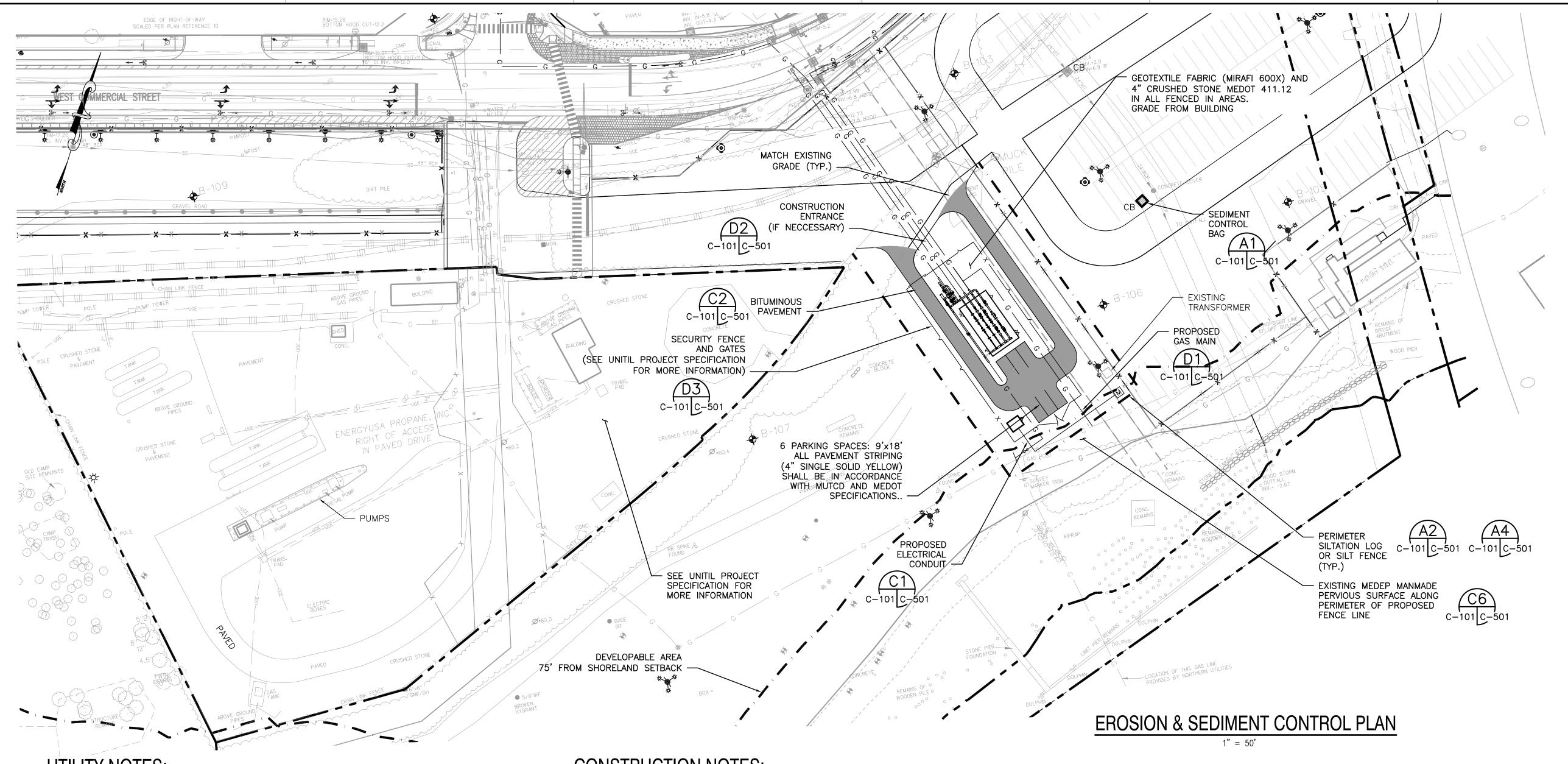
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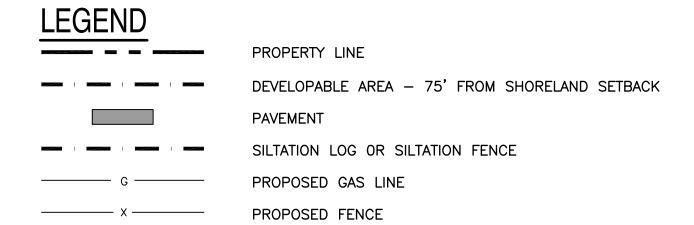
- 1. EXISTING UTILITIES SHOWN ON THE PROJECT DRAWINGS ARE LOCATED BY OTHERS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL DISTURBED UTILITIES DURING CONSTRUCTION AT NO EXPENSE TO THE MEDOT AND CITY.
- 2. EXISTING UTILITIES TO REMAIN IN OPERATION SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. ANY DAMAGE TO EXISTING UTILITIES TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE MEDOT AND CITY.
- 3. THE CONTRACTOR IS RESPONSIBLE FOR CALLING DIG-SAFE (1-800-344-7233) 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR IS ALSO RESPONSIBLE FOR CONTACTING OTHER NON DIG-SAFE MEMBER UTILITIES FOR UTILITY LOCATES 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 4. WHERE CONTRACTOR REMOVES EXISTING SITE FEATURES, THAT ARE TO REMAIN TO FACILITATE INSTALLATION OF WORK OF THIS PROJECT, CONTRACTOR SHALL REPLACE SUCH SITE FEATURES AT NO COST TO MEDOT AND CITY.

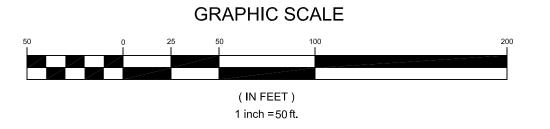
# **CONSTRUCTION NOTES:**

- 1. THE CONTRACTOR SHALL COORDINATE MATERIAL STORAGE AND LAYDOWN AREAS WITH MDOT REPRESENTATIVE. PARKING FOR CONTRACTOR EMPLOYEES AND SUBCONTRACTOR EMPLOYEES SHALL BE IN THE MATERIAL STORAGE AND LAYDOWN AREA. CONTRACTOR PARKING WITHIN THE WORK AREA OR IN THE ROAD RIGHT OF WAY WILL NOT BE PERMITTED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW DURING THE CONSTRUCTION.
- 3. ALL CONSTRUCTION MATERIALS SHALL BE TRANSPORTED TO AND FROM THE SITE IN COVERED VEHICLES. THE CONTRACTOR SHALL SWEEP WITH A STREET SWEEPER TO KEEP TRAFFIC AREAS CLEAN.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SECURITY AT ALL TIMES DURING CONSTRUCTION.
- 5. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE O.S.H.A. REGULATIONS AND SAFETY REQUIREMENTS.
- 6. CONTRACTOR SHALL PROVIDE QUALIFIED PERSONNEL ON SITE CAPABLE OF PROVIDING HORIZONTAL AND VERTICAL CONTROL.
- 7. EXISTING PROPERTY AND RIGHT OF WAY PINS AND MONUMENTATION SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTOR'S EXPENSE BY A REGISTERED MAINE PROFESSIONAL LAND SURVEYOR.
- 8. EXCESS SURPLUS EXCAVATED MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL EXISTING LOCAL, STATE AND FEDERAL REGULATIONS AT CONTRACTORS EXPENSE.
- 9. ALL UTILITY PIPE AND STRUCTURES REMOVED AS PART OF THE CONSTRUCTION SHALL BE DISPOSED OF OFF SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS AT THE CONTRACTORS EXPENSE.
- 10. WORKING HOURS SHALL COMPLY WITH THE REQUIREMENTS OF MEDOT AND CITY.
- 11. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL OF THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, AS SPECIFIED ON THE PLANS, HAVE BEEN INSTALLED.

## NOTE:

1. THE APPROXIMATELY 0.38 ACRE WATERSHED FOR THE UNITIL STATION RELOCATION PROJECT IS BOUNDED BY THE PROPOSED FENCE LINE AND EDGE OF PROPOSED PAVEMENT FOR AREAS OUTSIDE THE PROPOSED FENCE LINE.





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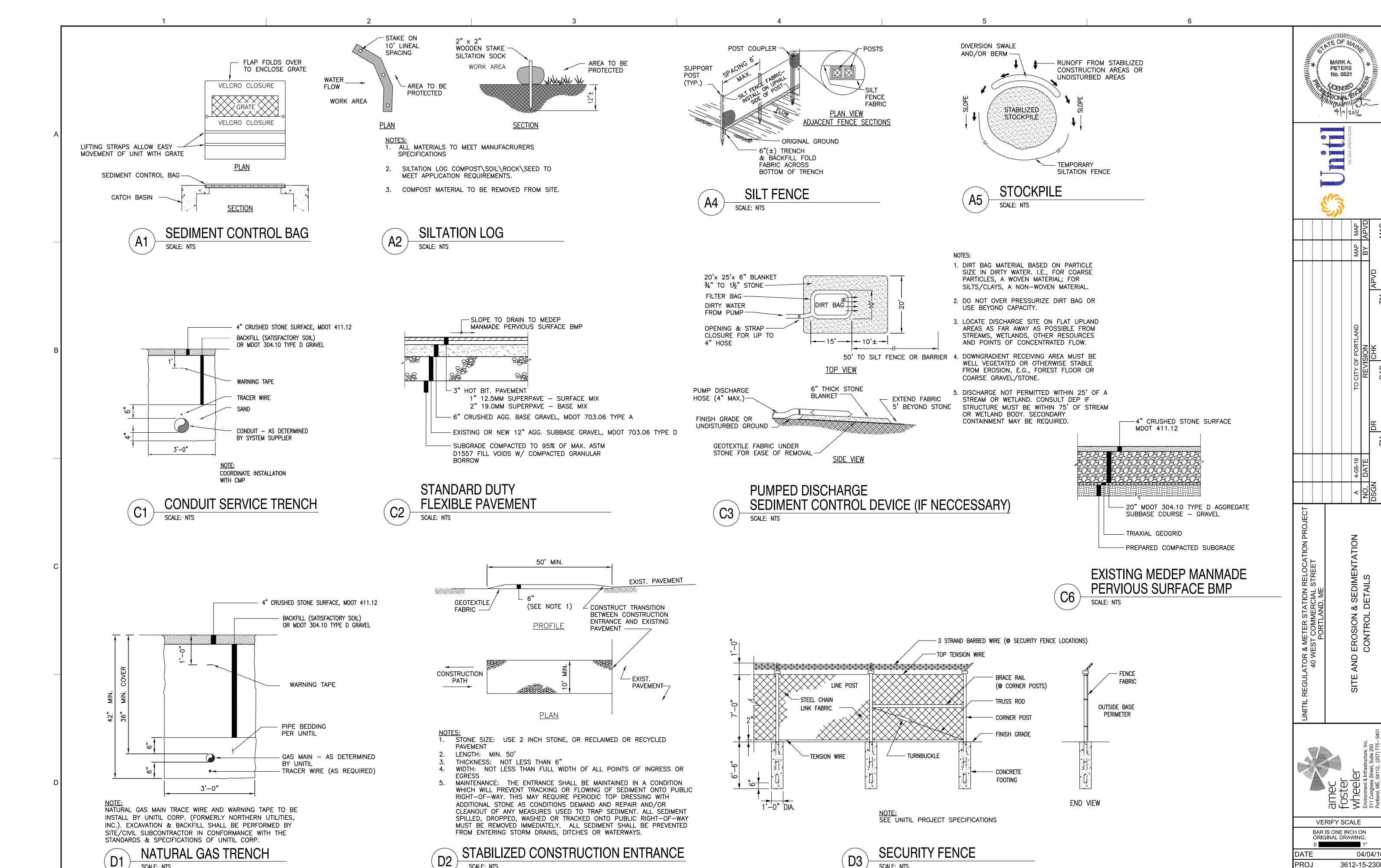
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THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR CONTROLLING SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROPOSED DEVELOPMENT. THIS PLAN IS BASED ON STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN DEVELOPING AREAS AS CONTAINED IN MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES, 2003.

#### GENERAL CONSTRUCTION DETAILS

THE EQUIPMENT ANTICIPATED TO BE USED FOR THE CONSTRUCTION INCLUDES THE FOLLOWING: BACKHOES, LOADERS, TRUCKS, CRANES, AND COMPACTORS. THE FOLLOWING MEASURES SHALL BE UNDERTAKEN TO PROVIDE MAXIMUM PROTECTION TO THE SOIL, WATER, AND ABUTTING LANDS:

- 1. PRIOR TO ANY EARTH MOVING OPERATION, SILTATION FENCE OR LOG SHALL BE INSTALLED ACROSS THE SLOPE ON THE CONTOUR AT THE DOWNHILL LIMIT OF THE WORK AS PROTECTION AGAINST CONSTRUCTION RELATED EROSION.
- 2. IN AREAS OF CONSTRUCTION DEWATERING, PUMPED DISCHARGE SEDIMENT DEVICES SHALL BE UTILIZED ADJACENT TO THE ACTIVITY. SEDIMENT TRAPS SHALL BE CONSTRUCTED UTILIZING DIRTBAGS, OR OTHER SIMILAR DEVICES THAT DO NOT REQUIRE ADDITIONAL SOIL DISTURBANCE. ADDITIONAL SEDIMENTATION PROTECTION SHALL BE PROVIDED BY THE INSTALLATION OF HAYBALE BARRIERS BETWEEN THE SEDIMENT TRAPS AND THE RECEIVING DRAINAGE COURSE.
- 3. ALL SILTATION BARRIERS SHALL BE INSPECTED BY THE CONTRACTOR ON A WEEKLY BASIS OR FOLLOWING ANY SIGNIFICANT RAINFALL (1/2 INCH OR MORE) OR SNOWMELT. ALL DAMAGED EROSION CONTROL DEVICES SHALL BE REPAIRED AND/OR REPLACED IMMEDIATELY. TRAPPED SEDIMENT SHALL BE REMOVED BEFORE IT HAS ACCUMULATED TO ONE—HALF OF THE INSTALLED SILTATION BARRIER HEIGHT. DEVICES NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION SHALL ALSO BE REPAIRED AND/OR REPLACED AS NECESSARY.
- 4. INTERCEPTED SEDIMENT SHALL BE RETURNED TO THE SITE AND INCORPORATED INTO THE PROJECT AREA.
- 5. SHOULD CONSTRUCTION OCCUR AFTER NOVEMBER 15, ADDITIONAL EROSION CONTROL METHODS SHALL BE IMPLEMENTED. ALL DISTURBED AREAS SHALL BE MINIMIZED AS MUCH AS POSSIBLE. PRIOR TO FREEZING, ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS APPROPRIATE. INSPECTION OF THESE EROSION CONTROL ITEMS SHALL BE CONSTANT, WITH PARTICULAR ATTENTION PAID TO WEATHER PREDICTIONS TO ENSURE THAT THESE MEASURES ARE PROPERLY IN PLACE TO HANDLE LARGE AMOUNTS OF RUNOFF FROM HEAVY RAINS OR THAWS.
- 6. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

  -BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.

-A MINIMUM OF 3" OF NON-EROSIVE MATERIAL, SUCH AS CRUSHED STONE OR RIPRAP HAS BEEN INSTALLED.

#### MONITORING PROGRAM

SEDIMENTATION AND EROSION CONTROL STRUCTURES SHALL BE INSPECTED CONTINUALLY BY THE CONTRACTOR AND ALL STRUCTURES DAMAGED BY CONSTRUCTION EQUIPMENT, VANDALS, OR THE ELEMENTS SHALL BE REPAIRED IMMEDIATELY. FOLLOWING RAINSTORMS AND DURING RUNOFF EVENTS, THE SITE AND ALL STRUCTURES SHALL BE INSPECTED FOR EROSION AND DAMAGE. ALL DAMAGED STRUCTURES SHALL BE REPAIRED AND/OR ADDITIONAL EROSION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO CONTINUING THE CONSTRUCTION.

### DUST CONTROL PROGRAM

IF DUSTY CONDITIONS OCCUR ON—SITE AS A RESULT OF INCREASED VEHICULAR TRAFFIC DURING DRY CONDITIONS, DUST CONTROL MEASURES SHALL NEED TO BE IMPLEMENTED.

- 1. WATER: WATER SHOULD BE APPLIED AT A RATE SUFFICIENT ENOUGH TO MOISTEN EXPOSED SOIL TO PREVENT DUST TRANSPORT BUT NOT AT A RATE THAT PRODUCES ANY AMOUNT OF SILT—LADEN RUNOFF OR MUDDY POOLS IN THE TRAVEL WAY.
- 2. CALCIUM CHLORIDE: LIQUID OF FINE—FLAKED CALCIUM CHLORIDE MAY BE USED. CALCIUM CHLORIDE SHOULD NOT BE APPLIED ADJACENT TO WETLANDS, LAKES, POOLS OR OTHER NATURALLY SENSITIVE AREAS. LIMIT APPLICATION RATES TO 30% CALCIUM CHLORIDE OR AS RECOMMENDED BY MANUFACTURER.

#### WINTER CONSTRUCTION (IF NECESSARY)

THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 1 THROUGH APRIL 15. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75 % MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT; VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDER TAKEN DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. ALL AREA SHALL BE CONSIDERED TO BE DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 LBS./1,000 S.F. (3 TONS/ACRE) TO 4" THICK AND SHALL BE PROPERLY ANCHORED. THE CONTRACTOR SHALL INSTALL ADDITIONAL MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

1. SOIL STOCKPILES
STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER
WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL
RATE OR AT 150 LBS/1,000 S.F. (3 TONS PER ACRE) OR WITH A
FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS
SHALL BE DONE WITHIN 24 HOURS OF STOCK PILING AND

REESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. SOIL STOCKPILES SHALL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

2. NATURAL RESOURCES PROTECTION
AREAS WITHIN 100 FEET FROM NATURAL RESOURCES, IF NOT
STABILIZED WITH A MINIMUM OF 75 % MATURE VEGETATION CATCH,
SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC
NETTING OR PROTECTED WITH EROSION CONTROL MATS. DURING
WINTER CONSTRUCTION, A DOUBLE LINE OF SEDIMENT BARRIERS (I.E.
SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX)
SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE
DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE
SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON

SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL CONSIST OF WOOD WASTE FILTER BERMS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES AND SEDIMENT SILT FENCES.

4. TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION
WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY
STREAM DIVERSION SHALL PASS FIRST THROUGH A FILTER BAG OR
SIMILAR DEVICE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID
FLOODING, ICING, AND SEDIMENT DISCHARGES TO A PROTECTED
RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT
STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED
NATURAL RESOURCE.

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