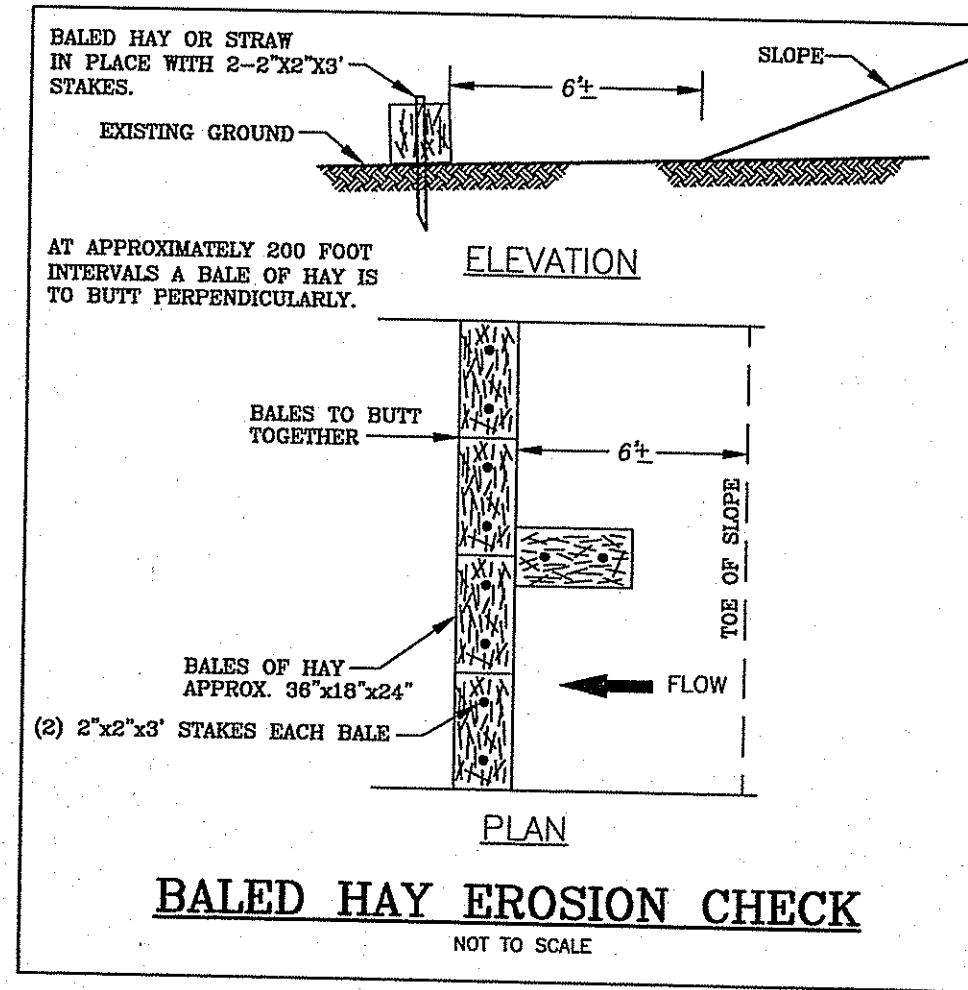


LOCUS MAP
NOT TO SCALE

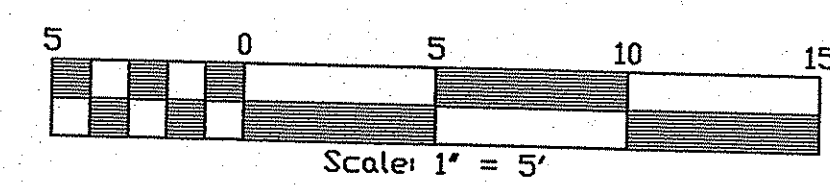
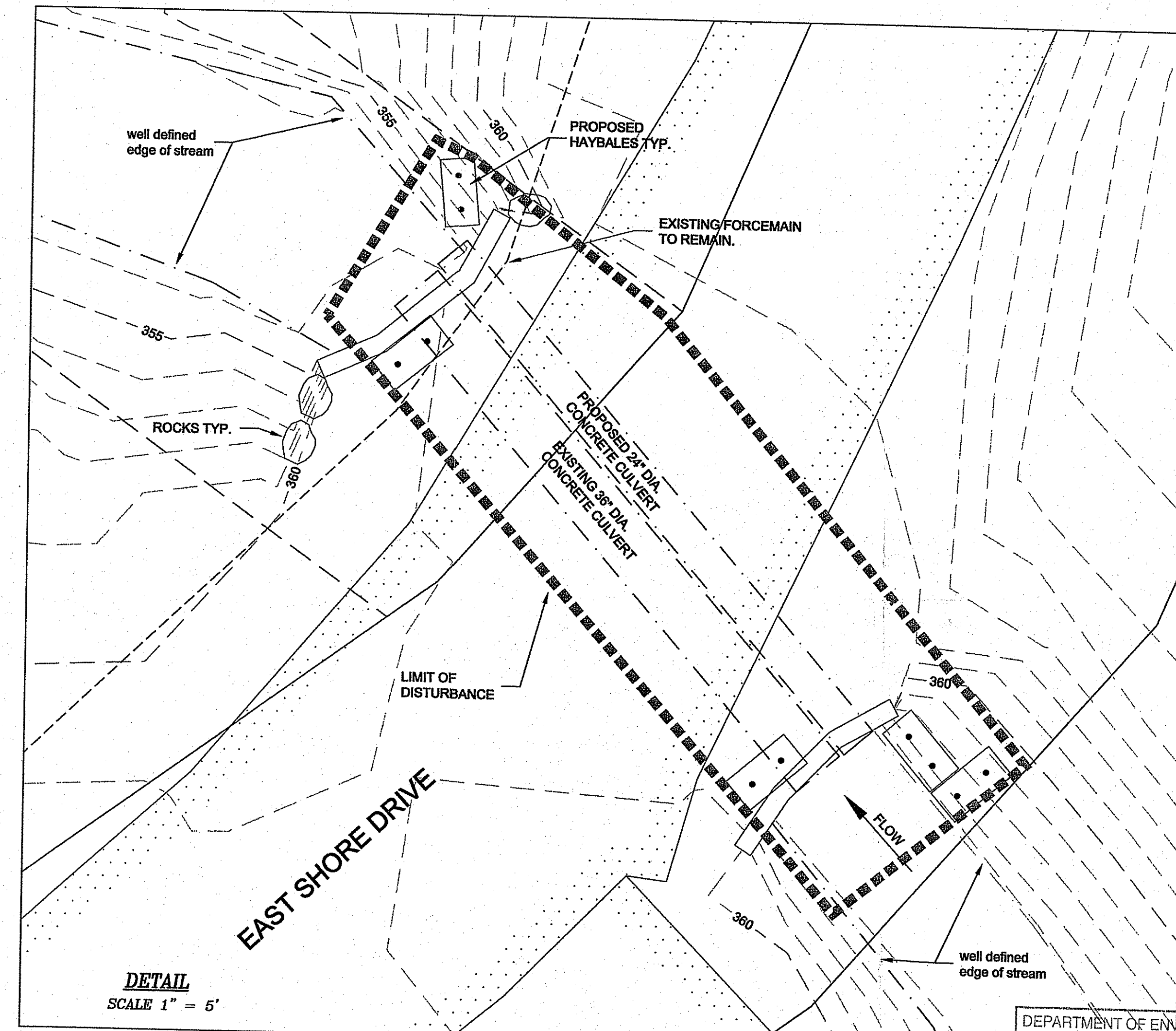
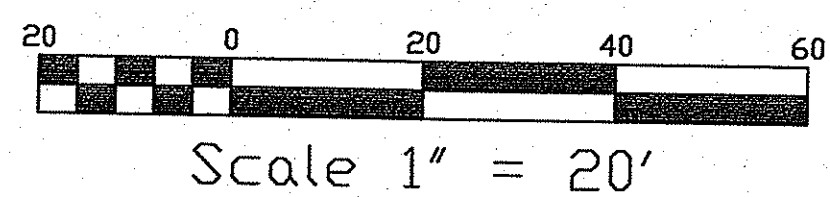
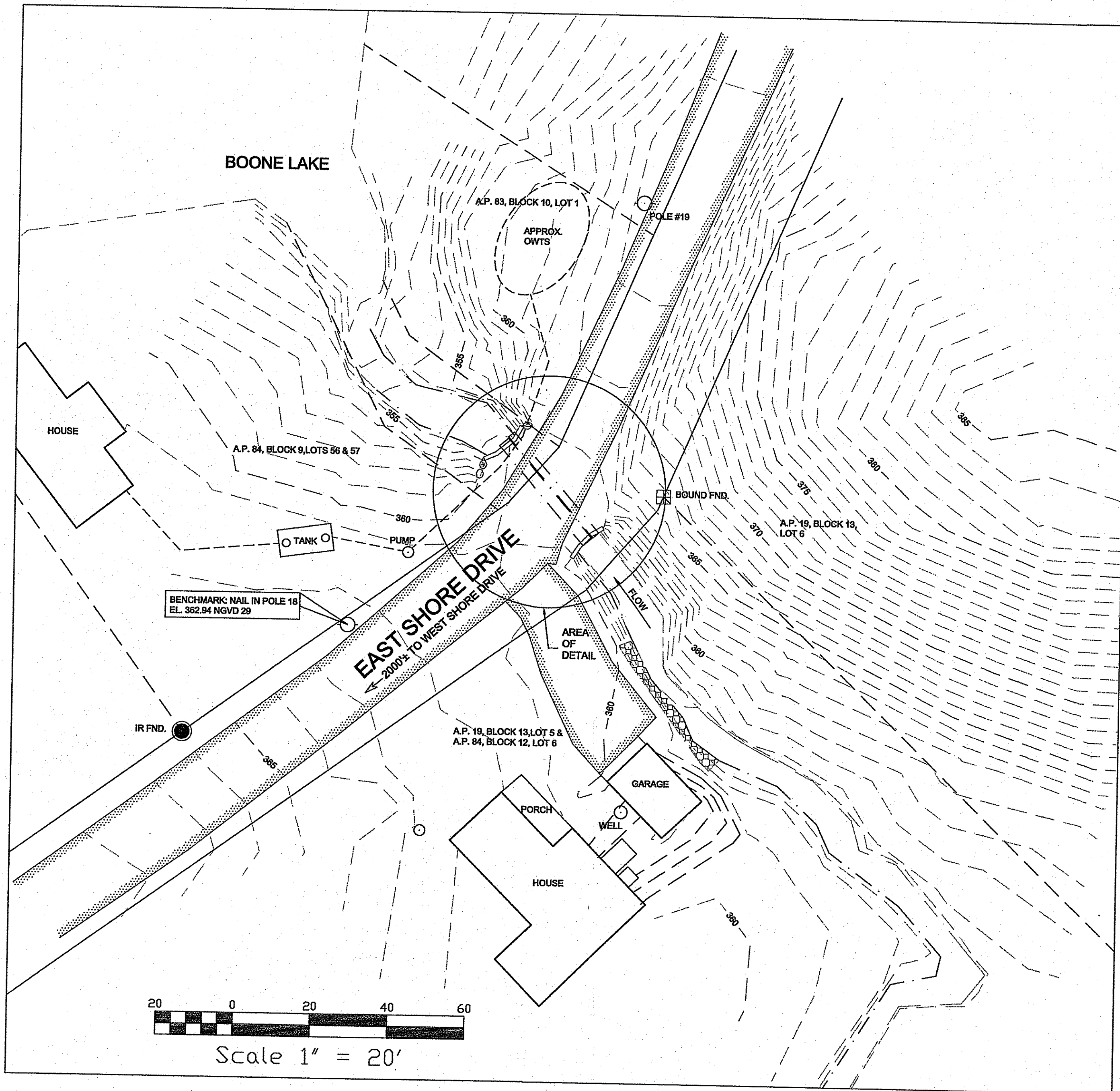


SCOPE OF WORK

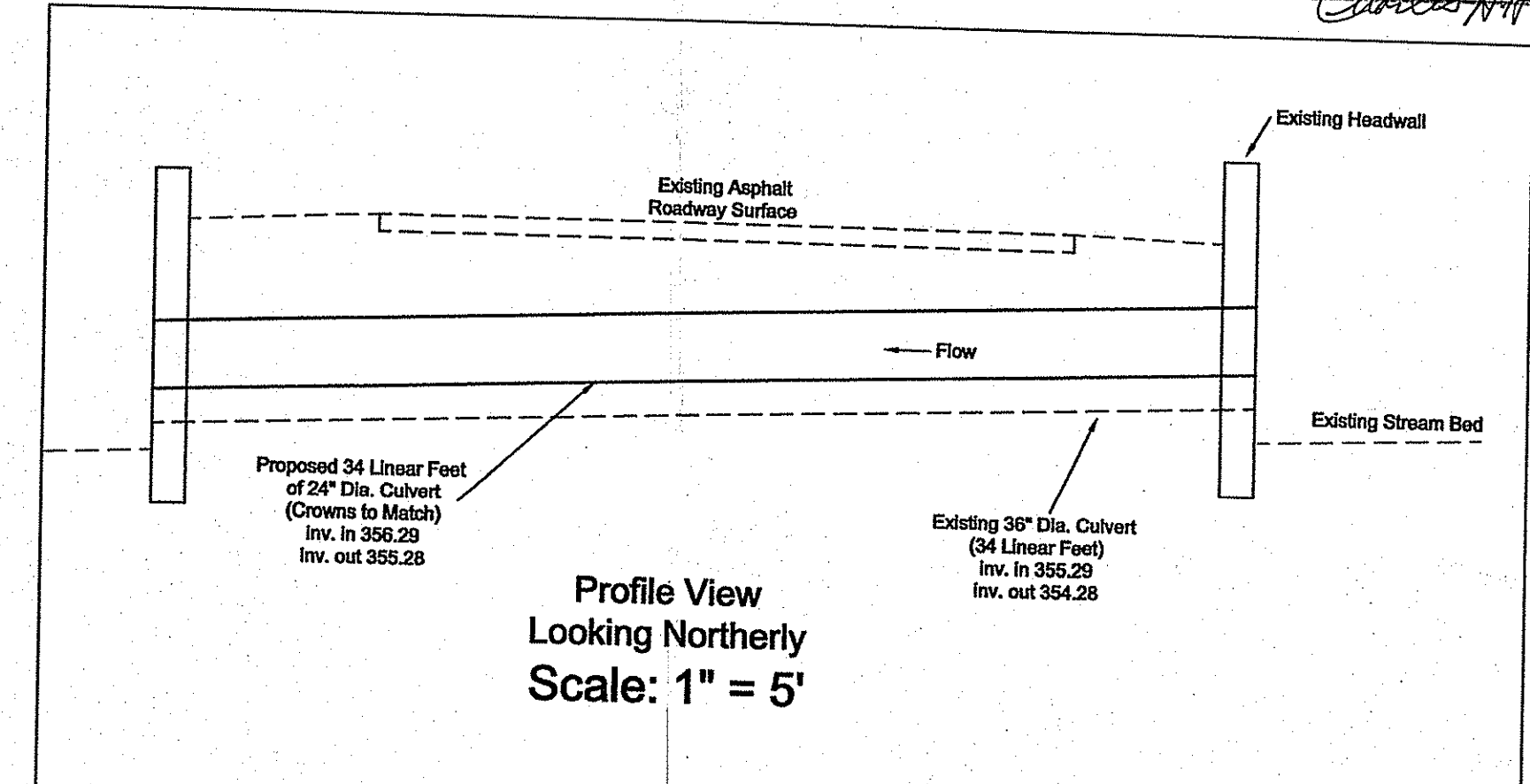
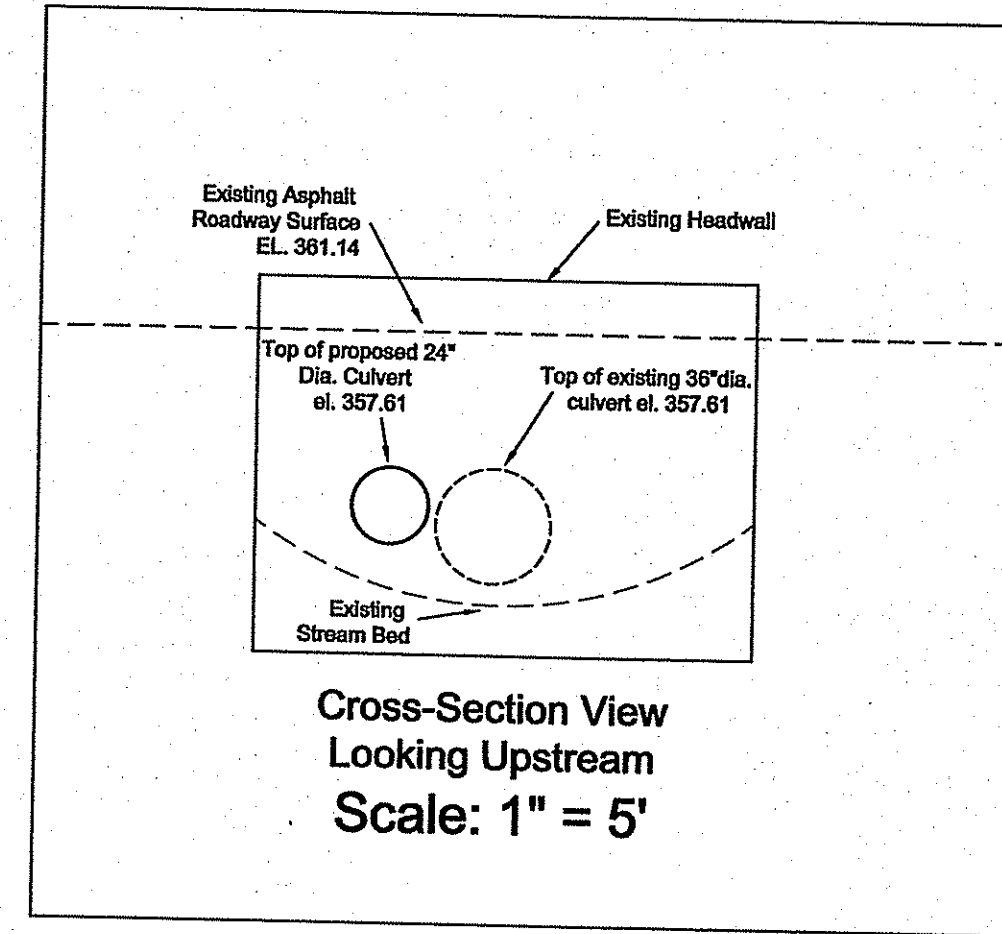
The proposed project involves the installation of an additional 24" diameter concrete culvert to supplement the existing 36" diameter concrete culvert currently in place. The additional culvert will be placed at a higher elevation to serve as an emergency overflow during periods of high flow. The existing roadway would need to remain open during construction. The total width of the roadway from outside face of the existing headwall is wide enough to allow for phased construction (proposed culvert is wide enough to allow for phased construction). The existing pavement will be cut to the limits shown on the plan. One half of the road bed will be excavated to a depth to accommodate the proposed overflow culvert. All excavated material will be loaded directly into a truck and removed to a suitable upland location. Once the bed has been prepared, the headwalls will be saw-cut to accommodate the overflow culvert. All work can be performed from the existing roadway surface. The existing stream will continue to flow through the existing culvert. After the new culvert, then compacted gravel will be installed. Upon completion of the first half, the traffic would be rerouted over the installed culvert while the other half of the culvert is installed in the same manner. After the entire culvert has been installed and compacted gravel brought to final grade the road will be resurfaced with pavement.

ORDER OF PROCEDURES

1. Proper erosion control shall be placed at edge of stream or where shown on this plan prior to work beginning. (See Baled Hay Erosion Check Detail)
2. Care shall be taken to prevent any material from entering the existing culvert and/or stream.
3. Saw cut minimum amount of pavement necessary to install the proposed culvert. (Existing roadway shall be left open during construction to allow access for automobiles.)
4. Excavate and prepare one half of the bed for proposed culvert.
5. All excavated material shall be placed directly onto trucks with no stock piling in or around the site.
6. Saw cut minimum amount of headwall concrete necessary to put in proposed culvert.
7. Care shall be taken in regards to existing force main on north side of street.
8. Install proposed culvert to the grades shown on this plan.
9. Headwall shall be placed back to its original state after installation is complete.
10. Backfill the culvert in lifts ensuring proper compaction between lifts. See RIDPW Standard Specifications, Section 202.
11. Reroute traffic and repeat steps 4-10 on remaining half of the project.
12. Repave to match existing.
13. Remove erosion control.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 26 2009 FILE # 09-0124
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION



LEGEND

	EXISTING POLE
	EXISTING PLACED STONES
	EDGE OF PAVEMENT

- NOTES:**
1. Basemap information taken from on-site survey.
 2. No changes to existing grade are proposed for this project.

FEMA DETERMINATION
ZONE "C" - AREA OF MINIMAL FLOODING
PANEL NO. - 440032 0010 A
REVISED - MARCH 1, 1982

Culvert Upgrade Plan
FOR
TOWN OF EXETER
LOCATED AT
POLE #18 - EAST SHORE DRIVE
EXETER, R.I. 02822

Checked By: DrC
Drawn By: MjC
Scale: AS SHOWN
Date: 3/13/2009

NO.	REVISION	BY	DATE

DANIEL R. COTTA
1918
REGISTERED PROFESSIONAL LAND SURVEYOR
5/15/09

DANIEL R. COTTA
1947
REGISTERED PROFESSIONAL ENGINEER

AMERICAN ENGINEERING, INC.
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Sheet
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of 2 sheets
Drawing No.:
Dr. _____ Sh. _____

EROSION CONTROL & SOIL STABILIZATION PROGRAM

- DENUDED SLOPES SHALL NOT BE UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON.
- ALL DISTURBED SLOPES EITHER NEWLY CREATED OR EXPOSED PRIOR TO OCTOBER 15, SHALL BE SEEDED OR PROTECTED BY THAT DATE FOR ANY WORK COMPLETED DURING EACH CONSTRUCTION PERIOD.
- THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS, AND SHALL CONFORM WITH R. I. STANDARD SPECIFICATION M. 20.
- THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS, BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
- THE DESIGN MIX SHALL BE COMPRISED OF THE FOLLOWING:
 PERMANENT SEEDING MIXTURES:
 A - MOWED AREA: ALL FLAT OR SLOPES LESS THAN 3:1

MIXTURE	% BY WT.	SEEDING DATES
RED FESCUE	75	APRIL 1 - JUNE 15
KENTUCKY BLUEGRASS	15	AUG. 15 - OCT. 15
COLONIAL BENTGRASS	5	
PERENNIAL RYEGRASS	5	

TOTAL 100#/ACRE

 PERMANENT SEEDING MIXTURES:
 B - UNMOWED AREA OR INFREQUENTLY MOWED: FLAT OR SLOPES GREATER THAN 3:1

MIXTURE	% BY WT.	SEEDING DATES
RED FESCUE	75	APRIL 1 - JUNE 15
PERENNIAL RYEGRASS	5	AUG. 15 - OCT. 15
COLONIAL BENTGRASS	5	
BIRDSFOOT TREFLOIL	15	

TOTAL 100#/ACRE
- TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW OR FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE ENGINEER.
- HAY OR STRAW APPLICATIONS SHOULD BE IN THE AMOUNT OF 3000-4000 LBS/AC.
- ALL HAYBALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED. IF NEEDED, TEMPORARY SEEDING CAN BE USED TO HELP MINIMIZE EROSION. A TEMPORARY SEEDING GUIDE MUST BE INCLUDED AS A REFERENCE. THE FOLLOWING SPECIES ARE RECOMMENDED:

SPECIES	LBS/ACRE	LBS/1,000 SQ. FT.	SEEDING DATES
ANNUAL RYEGRASS	60	1.5	MAR. 15 - JUNE 15
PERENNIAL SUDAN GRASS	40	1.0	MAY 15 - AUGUST 15
MILLET	40	1.0	MAY 15 - AUGUST 15
WINTER RYE	120	3.0	AUGUST 15 - JUNE 15
OATS	120	3.0	MAR. 15 - JUNE 15
WEEPING LOVEGRASS	20	0.5	MAY 1 - JUNE 30
- THE CONTRACTOR MUST REPAIR AND OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE.
- THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST THRU OCT. 15TH.
- ALL FILL SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH THE R.I.D.P.W. STANDARD SPECIFICATIONS SECTION 202.
- STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN 15 DAYS OF FINAL GRADING.
- STOCKPILES OF TOPSOILS SHALL NOT BE LOCATED NEAR WATERWAYS OR WETLANDS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 30% AND STOCKPILES SHALL ALSO BE SEEDED AND/OR STABILIZED.
- ON BOTH STEEP AND LONG SLOPES CONSIDERATION SHOULD BE GIVEN TO "CRIMPING" OR "TRACKING" TO TACK DOWN MULCH APPLICATIONS.
- REFERENCE THE SEDIMENTATION CONTROL PROGRAM AND ORDER OF PROCEDURE FOR PROPER COORDINATION.
- ANY DETENTION/RETENTION FACILITIES AND THE DRAINAGE SYSTEM SHALL RECEIVE ONE FINAL CLEANING PRIOR TO ACCEPTANCE OF THE OVERALL PROJECT BY THE OWNER. SEDIMENTS SHALL BE DISPOSED OF IN A PROPER MANNER.

SEDIMENTATION CONTROL PROGRAM

- RIP-RAP SPLASH PADS SHALL BE INSTALLED AT THE OUTLETS FOR ALL CULVERTS DISCHARGED INTO A WATERWAY.
- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE WETLANDS.
- ALL DISTURBED AREAS SUBJECT TO EROSION TENDENCIES WHETHER THEY ARE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SUITABLE SLOPE PROTECTION.
- DURING CONSTRUCTION, THE CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING STORMS AND PERIODS OF RAINFALL.
- CARE SHALL BE TAKEN SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING EITHER EXISTING OR PROPOSED DRAINAGE OR SEWER STRUCTURES.
- SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY AND AFTER PERIODS OF RAINFALL. SUCH DEVICES SHALL BE REPAIRED OR REPLACED AS NEEDED.
- CARE SHALL BE TAKEN SO AS NOT TO PLACE "REMOVED SEDIMENTS" WITHIN THE PATH OF EXISTING, NEWLY CREATED (BOTH TEMPORARY AND PERMANENT) OR PROPOSED WATERCOURSES OR THOSE AREAS SUBJECT TO STORM WATER FLOW.
- ADDITIONAL HAYBALES, SILT FENCE OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
- ALL SEDIMENTS SHALL BE REMOVED FROM THE DETENTION BASIN OR STRUCTURES WHEN DIRECTED BY THE ENGINEER OR THE LOCAL CONSERVATION COMMISSION.
- REFERENCE THE "RHODE ISLAND EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE U.S. DEPT. OF AGRICULTURE, SOIL CONSERVATION SERVICE, 1989, WITH ANY AMENDMENTS, AS A GUIDE.

ORDER OF PROCEDURE

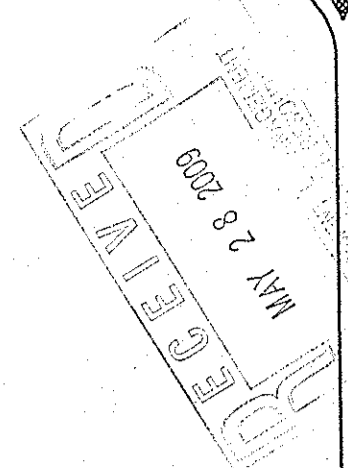
- IMMEDIATELY UPON COMPLETION OF THE CLEARING AND GRUBBING OPERATION AND PRIOR TO ANY GRADING, TEMPORARY HAYBALES, SILTFENCE OR SANDBAGS SHALL BE PLACED OUTSIDE THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS. (I.E. ALONG NEW ROADWAYS, STREAMBANKS, CRITICAL AREAS, ETC.)
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PERIODICALLY CLEANED AND MAINTAINED AS PER THE RESPECTIVE PROGRAMS DURING THE CONSTRUCTION.
- IF WORK PROGRESS IS TO BE INTERRUPTED AT ANY TIME, REFERENCE EROSION AND SEDIMENTATION CONTROL PROGRAMS FOR TEMPORARY CONTROL.
- TEMPORARY HAYBALES, SILTFENCE AND SANDBAGS ALONG AND AT THE EDGE OF ROADWAYS MAY BE REMOVED AFTER FINAL SOIL STABILIZATION HAS BEEN ACHIEVED AND APPROVED.
- EROSION CONTROL MEASURES LOCATED AT DRAINAGE OUTLETS MUST REMAIN UNTIL SUCH TIME THAT A DESIRABLE STAND OF GRASS OR GROUND COVER, HAS BEEN ESTABLISHED AND THE PROJECT RECEIVES A FAVORABLE APPROVAL FOR FINAL ACCEPTANCE FROM THE ENGINEER.

GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY AND ALL PERMITS REQUIRED BY THE STATE OF RHODE ISLAND AND THE MUNICIPALITY PRIOR TO COMMENCING ANY WORK.
- IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF ALL EXISTING UTILITIES, STRUCTURES, AND ADJUTING PROPERTIES. THE COST OF ANY REPAIR OR REPLACEMENT OF DAMAGED ITEMS SHALL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE MUNICIPAL ENGINEERING DEPARTMENT AND ALL UTILITY INSTALLATIONS AND INSPECTIONS WITH THE APPROPRIATE UTILITY CO.. A 48 HOUR ADVANCE NOTICE IS REQUIRED BEFORE WORK COMMENCEMENT.
- ALL WORK PERFORMED HEREIN SHALL BE GOVERNED BY THE "R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (REVISION OF 1997)," WITH ALL CORRECTIONS AND ADDENDA AND THE 1998 R.I. STANDARD DETAILS WITH ALL CORRECTIONS AND ADDENDA.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR QUANTITY TAKE OFF IN COMPUTING ANY ESTIMATES.
- EMBANKMENT SLOPES AND ALL DISTURBED AREAS ARE TO RECEIVE 4" OF TOPSOIL AND SEED. SEE EROSION CONTROL PROGRAM DETAILS.
- UNLESS OTHERWISE SPECIFIED, ALL STORM DRAINS SHALL BE REINFORCED CONCRETE CLASS III PIPE WITH MORTAR JOINTS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION INDICATED ON THESE PLANS. THAT INCLUDES ANY CONSTRUCTION TO BRING UTILITIES TO THE SITE, ANY REPAIRS, ANY TRENCHING REQUIRED, HYDRANTS, FIRE ALARMS, ANY AND ALL CONSTRUCTION FOR ACCEPTANCE OF ROAD AND EASEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL TEMPORARY SEDIMENTATION AND SOIL EROSION CONTROL MEASURES.
- THE LOCATION OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANIES. CALL DIG-SAFE 1(888)344-7233.
- IN ALL EXCAVATION AND PLACEMENT OF FILL THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE R.I. STANDARD SPECIFICATION SECTION 202.
- FLARED END SECTIONS ARE TO BE R.I. STANDARD 2.3.0 WITH CLASS C RIP-RAP END SECTION (UNLESS OTHERWISE NOTED).
- CATCH BASINS ARE TO BE R.I. STANDARD 4.31, TYPE "F" WITH R.I. STANDARD 5.17 FRAME AND GRATE (UNLESS OTHERWISE NOTED).
- DRAIN MANHOLES ARE TO BE R.I. STANDARD 4.2.0 WITH A R.I. STANDARD 6.2.1 HEAVY DUTY FRAME AND COVER.
- BRICK AND BLOCK MANHOLES AND CATCH BASINS MAY BE USED IN LIEU OF THE MENTIONED STRUCTURES WITH PRIOR APPROVAL OF THE ENGINEER.
- PIPE BEDDING SHALL CONFORM TO R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 701. CLASS B BEDDING WILL BE USED FOR ALL STORM DRAINS UNLESS OTHERWISE SPECIFIED ON THE PLANS.

MAINTENANCE AND RESPONSIBILITY

- THE CONSTRUCTION SUPERINTENDENT SHALL HAVE THE SOLE RESPONSIBILITY FOR THE DESIGN IMPLEMENTATION. HE SHALL ALSO BE RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION WORKERS AND SUB-CONTRACTORS ARE AWARE OF THE PROVISIONS OF THE PLAN AND THE ENGINEER'S REPORT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ASPECTS OF THE DESIGN PRIOR TO FINAL APPROVAL BY THE TOWN. DURING THAT TIME, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHOULD BE CHECKED ON A WEEKLY BASIS AS WELL AS AFTER EACH SIGNIFICANT RAINFALL. ALL SUCH MEASURES SHOULD BE CLEANED OR REPLACED AS NECESSARY.
- UPON FINAL APPROVAL OF THE PROJECT BY THE TOWN THE OWNER SHALL BE RESPONSIBLE FOR THE UPKEEP AND MAINTENANCE OF THE SITE.
- ALL NON-AQUATIC VEGETATION SHOULD BE MOWED AT LEAST TWICE A YEAR.
- REPLANTING, REGRADING OR OTHER REPAIRS NEEDED AS A RESULT OF EROSION AND SEDIMENTATION SHOULD BE DONE PROMPTLY.
- TRASH, DEBRIS, ETC. SHOULD BE REMOVED FROM THE DRAINAGE SWALE AND DETENTION PONDS AT LEAST TWICE A YEAR.
- REMOVAL OF SEDIMENTS FROM THE DETENTION PONDS SHOULD TAKE PLACE IMMEDIATELY AFTER THE VEGETATION HAS BEEN STABILIZED AND AGAIN WHEN THE SEDIMENT REACHES ELEVATION 203.50 (EL. 204 FOR POND A - NORTH). THESE CLEANINGS SHOULD BE AT APPROXIMATELY 10 YEARS INTERVALS.
- ANY REQUIRED REPAIR OR REPLACEMENT MUST BE DONE PROMPTLY TO ENSURE PROPER FUNCTIONING OF THE SYSTEM. THIS INCLUDES BUT IS NOT LIMITED TO SIDE SLOPES AND BOTTOM OF THE PROPOSED DETENTION PONDS, OUTLET STRUCTURES, DRAINAGE SWALE, PLANTINGS, DRIVEWAYS, ETC.
- AN INSPECTION OF THE INTEGRITY AND STABILITY OF THE DRAINAGE SWALE AND DETENTION POND SHOULD TAKE PLACE AT LEAST ONCE A YEAR.
- ALL VEGETATION NOT SURVIVING AT LEAST ONE FULL GROWING SEASON SHALL BE REPLACED AT THE OWNERS EXPENSE.



EROSION CONTROL PLAN FOR

TOWN OF EXETER

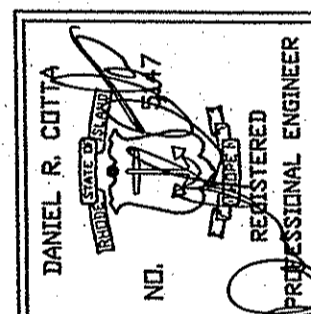
LOCATED AT

POLE #18 - EAST SHORE DRIVE
EXETER, R.I. 02822

Checked By: DrC
Date: 4/07/2009

Scale: AS SHOWN

NO. REVISION BY DATE



AMERICAN ENGINEERING

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Exeter, Rhode Island 02822

PHONE (401) 294-4090

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 26 2009 FILE # 09-D124
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE BY CONSTRUCTION SET

Sheet

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of 2 sheets

Drawing No. _____
Dr. _____ Sh. _____