

# SITE DEVELOPMENT PLAN

# NEW ENERGY FACILITY

# ZAMBARANO HOSPITAL

Environmental Management  
 JAN 24 2012  
 Office of Water Resources

**2090 WALLUM LAKE ROAD  
 PASCOAG, RHODE ISLAND**

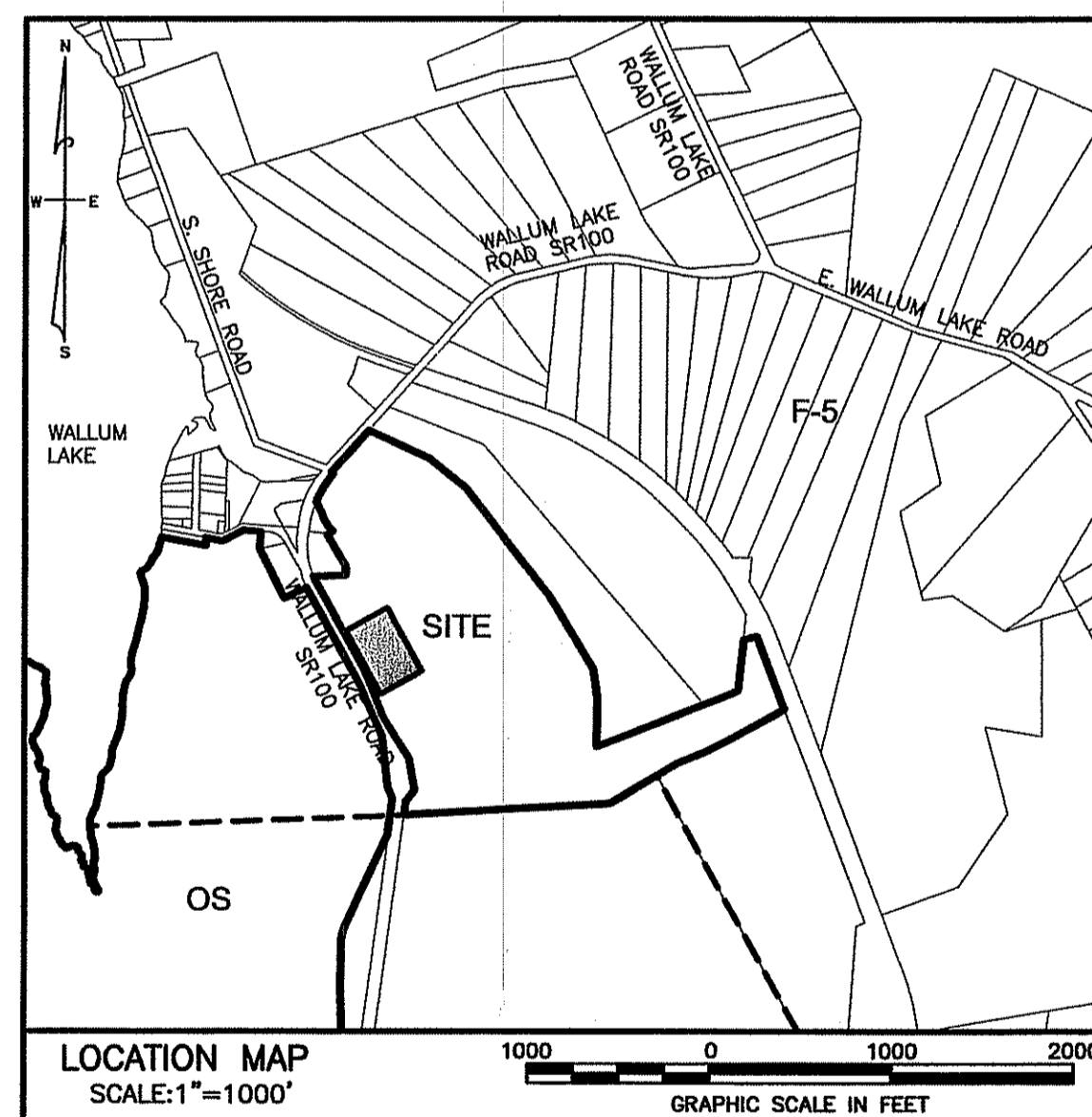
**DATE: JUNE 21, 2011**

**REVISED: NOVEMBER 1, 2011**

**REVISED: JANUARY 23, 2012**

**PROPERTY OWNER / APPLICANT:**

STATE OF RHODE ISLAND  
 DEPARTMENT OF ADMINISTRATION –  
 ELEANOR SLATER HOSPITAL/ZAMBARANO UNIT



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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED MAR 08 2012 FILE # 11-0164  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

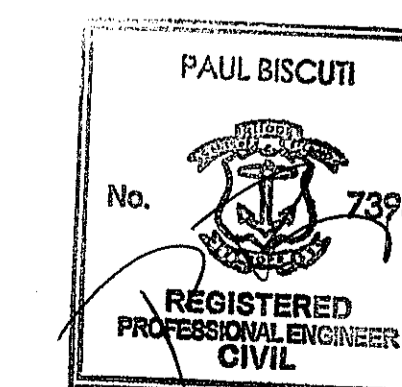
*Charles R. Harker*



Prepared by:  
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**DiCESARE-BENTLEY ENGINEERS, INC.**  
**100 FORT HILL ROAD, GROTON, CONNECTICUT 06340**  
**(860) 448-0400**

THIS SURVEY AND PLAN  
 CONFORM TO A CLASS I  
 STANDARD AS ADOPTED BY  
 THE RHODE ISLAND BOARD  
 OF REGISTRATION FOR  
 PROFESSIONAL LAND  
 SURVEYORS.  
 MICHAEL J. SCANLON  
 REGISTRATION # 1843  
 DATE 1-23-12



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**SURVEY NOTES:**

- HORIZONTAL AND VERTICAL ACCURACY WITHIN SURVEY SITE AREA CONFORMS TO CLASS 1 HORIZONTAL AND CLASS II VERTICAL.
- UNDERGROUND UTILITIES WERE TAKEN FROM PLANS BY OTHERS AND MARKED IN THE FIELD BY UNDERGROUND SURVEYING, LLC. NEED TO BE FIELD VERIFIED PRIOR TO EXCAVATION.
- THIS PLAN REPRESENTS THE LOCATION OF THE SITE CONDITIONS AS DETERMINED BY FIELD SURVEY ON JULY 28, 2010 AND APRIL 29, 2011.
- ELEVATIONS AREA REFERENCED TO A BENCHMARK TAKEN FROM MAP REFERENCE.

**MAP REFERENCE:**

STATE OF RHODE ISLAND DEPARTMENT OF MENTAL HEALTH, RETARDATION AND HOSPITALS, DR. J.E. ZAMBARANO MEMORIAL HOSPITAL, WALLUM LAKE, BURRILLVILLE, RHODE ISLAND, WASTEWATER TREATMENT FACILITY IMPROVEMENTS, SITE PLAN-2"YARD PIPING, SCALE: 1"=10', JOB NO.1122, SHEET 5 OF 20, TUTELA ENGINEERING ASSOCIATES, PROVIDENCE, RHODE ISLAND.

**EROSION AND SEDIMENTATION (E&S) CONTROL PLAN**

**NARRATIVE:**

- THE FOLLOWING EROSION AND SEDIMENTATION CONTROL (E&S) NOTES APPLY TO THE CONSTRUCTION OF A NEW FUEL STORAGE BUILDING AND CONVEYOR SYSTEM LOCATED ON A 1.0-ACRE PORTION OF THE STATE OF RHODE ISLAND ZAMBARANO HOSPITAL CAMPUS IN PASCOAG, RHODE ISLAND. THE PROJECT INVOLVES THE CLEARING OF EXISTING VEGETATION, ERECTION OF A NEW METAL BUILDING/STORAGE BIN AND CONVEYOR SYSTEM AND CONSTRUCTION OF A NEW SEDIMENTATION BASIN/FOREBAY AND BIO-RETENTION BASIN.
- REGULATED STATE OF RHODE ISLAND INLAND WETLANDS EXIST ON-SITE.
- SOILS AT THE SITE CONSIST OF MISCELLANEOUS FILL OVERLYING DENSELY COMPACTED FINE TO MEDIUM SAND WITH SILT, GRAVEL AND BOULDERS. THESE POORLY-DRAINED SOILS ARE NOT SUSCEPTIBLE TO EXCESSIVE EROSION WHEN EXPOSED TO RAINFALL.
- EROSION CONTROL MEASURES INCLUDE:
  - THE INSTALLATION OF HAYBALE BACKED SILT FENCE AT THE TOP OF AN EMBANKMENT ADJACENT TO THE BIO-RETENTION BASIN UP-GRADE THROUGH WETLAND AREAS.
  - THE IMMEDIATE STABILIZATION OF DISTURBED AREAS THROUGH THE PLACEMENT OF TEMPORARY SEED AND MULCH OR FINAL TOPSOIL, SEED AND MULCH.
- IT IS ANTICIPATED THAT SITE WORK CONSTRUCTION WILL BEGIN IN THE WINTER OF 2011 AND BE COMPLETED IN THE SPRING OF 2012.

**GENERAL E&S REQUIREMENTS:**

- THE CONTRACTOR SHALL INSTALL HAYBALE BACKED SILT FENCING AS SHOWN ON THE E&S CONTROL PLAN PRIOR TO INITIATION OF MAJOR SITE WORK ACTIVITIES.
- THE CONTRACTOR SHALL SEED AND MULCH SOIL STOCKPILES EXPECTED TO REMAIN UNSTABILIZED FOR A PERIOD OF MORE THAN 30 DAYS.
- THE CONTRACTOR SHALL COMPLETE PERMANENT SEEDING BETWEEN APRIL 15TH THROUGH JUNE 15TH AND AUGUST 15TH THROUGH SEPTEMBER 15TH. APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE.
- E&S CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE OF RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK. ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE E&S CONTROL PLAN AND SHALL INFORM ALL SUBCONTRACTORS OF THE OBJECTIVES AND REQUIREMENTS OF THE PLAN.
- IF NECESSARY DURING CONSTRUCTION, THE CONTRACTOR SHALL INSTALL ADDITIONAL CONTROL MEASURES AS REQUIRED. INSPECTIONS SHALL BE CONDUCTED WEEKLY AND/OR WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF 1/8 INCH OR GREATER. MONTHLY WRITTEN REPORTS SHALL BE PREPARED DESCRIBING OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIONS.
- A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS.

**CONSTRUCTION SEQUENCE:**

- CLEAR TREES AND BRUSH FROM SITE AS REQUIRED FOR CONSTRUCTION.
- INSTALL TEMPORARY CONSTRUCTION ENTRANCE.
- INSTALL HAYBALE BACKED SILT FENCE AS SHOWN ON THE E&S PLAN.
- STRIP AND STOCKPILE TOPSOIL AT THE SITE.
- RELOCATE CONFLICTING UNDERGROUND AND OVERHEAD UTILITIES
- BEGIN CONSTRUCTION OF NEW BUILDING FOUNDATION AND CONSTRUCT BUILDING AND CONVEYOR SYSTEM.
- INSTALL NEW CATCH BASIN AND PIPING AND PLACE FILL FOR NEW DRIVEWAY TO BUILDING. BLOCK CATCH BASIN GRATE INLET UNTIL SEDIMENT BASIN/FOREBAY AND BIORETENTION BASIN IS INSTALLED.
- CONSTRUCT SEDIMENT BASIN/FOREBAY AND BIORETENTION BASIN.
- INSTALL ROOF GUTTERS AND LEADERS.
- INSTALL UNDERGROUND UTILITIES AND PAVE NEW DRIVEWAY TO BUILDING.
- STABILIZE ALL FINAL GRADED AREAS THROUGH PLACEMENT OF TOPSOIL, SEED AND MULCH.
- UPON COMPLETE STABILIZATION OF THE SITE, REMOVE ALL SILT FENCE, HAYBALES AND OTHER E&S MEASURES.

**SEEDING GUIDELINES:**

SEE SITE PLAN FOR SEEDING GUIDELINES.

**LEGEND:**

- ELEC ELECTRICAL
- MH MANHOLE
- UPFD 168 UTILITY POLE W/#
- +63.28 NEW SPOT ELEVATION
- NEW CONTOUR
- 57--- EXISTING CONTOUR
- WETLAND FLAG WITH NUMBER
- WEA 108 RIVER EDGE FLAG WITH NUMBER
- A-105 AREA SUBJECT TO STORM FLOWAGE
- ASSF 1
- E ELECTRIC LINE
- G GAS LINE
- T TELEPHONE LINE
- OHU OVERHEAD UTILITY LINE
- W WATER LINE
- UN UNIDENTIFIED LINE
- S SANITARY SEWER
- STREAM
- ADJOINER LINE

**TECHNICAL SPECIFICATIONS:**

AS USED THROUGHOUT THESE SPECIFICATIONS "STANDARD SPECIFICATIONS" REFERS TO THE STATE OF RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED DECEMBER 2010.

**02100 SITE PREPARATION AND DEMOLITION**

**DESCRIPTION:**

- THE PROTECTION OF EXISTING PAVEMENT, WALKS, VEGETATION, TREES AND FENCES INDICATED ON THE DRAWINGS.
- CLEARING AND GRUBBING.
- THE PLACEMENT OF EROSION AND SEDIMENTATION CONTROLS.
- THE DISPOSAL OF TREES AND STUMPS.
- THE REMOVAL/RELOCATION OF CONFLICTING UNDERGROUND AND OVERHEAD UTILITIES.
- FILLING OF VOIDS IN SUBGRADE CREATED AS A RESULT OF REMOVALS OR DEMOLITION. LAWS AND REGULATIONS:

- CONFORM TO APPLICABLE CODES FOR DUST CONTROL AND RUNOFF CONTROL.
- CONFORM TO STATE OF RHODE ISLAND AND OSHA CONSTRUCTION STANDARDS AND ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
- OBTAIN REQUIRED PERMITS AND LICENSES FROM THE APPLICABLE AUTHORITIES. PAY ASSOCIATED FEES INCLUDING DISPOSAL CHARGES.
- NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS. NOTIFY "DIG SAFE" BY TELEPHONE AT 888-DIG-SAFE (888-344-7233).
- DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS OR HYDRANTS WITHOUT PERMITS.
- CONFORM TO APPLICABLE REGULATORY PROCEDURES WHEN DISCOVERING CONTAMINATED MATERIALS.

**ENVIRONMENTAL REQUIREMENTS:**

- CONSTRUCT TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE PLANS TO PROTECT ADJACENT PROPERTIES AND WATER RESOURCES FROM EROSION AND SEDIMENTATION.

**PROTECTION:**

- PROTECT MONUMENTS, EXISTING IMPROVEMENTS, ADJACENT PROPERTY, AND FACILITIES FROM DAMAGE.
- CONDUCT OPERATIONS WITH A MINIMUM OF INTERFACE TO PUBLIC OR PRIVATE ACCESSES AND FACILITIES.
- CLEAR OR SWEEP ACCESS ROAD DAILY, OR AS REQUIRED BY THE GOVERNING AUTHORITY.
- PROTECT BENCHMARKS, PROPERTY CORNERS AND ALL OTHER SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. IF A MARKER NEEDS TO BE REMOVED, IT SHALL BE REFERENCED BY A CONNECTICUT LICENSED LAND SURVEYOR AND REPLACED, AS NECESSARY, BY THE SAME.

**UTILITIES:**

- LOCATE AND IDENTIFY EXISTING UTILITIES THAT ARE TO REMAIN AND PROTECT THEM FROM DAMAGE.
- NOTIFY ALL CORPORATIONS, COMPANIES, INDIVIDUALS OR LOCAL AUTHORITIES OWNING, OR HAVING JURISDICTION OVER, UTILITIES RUNNING TO, THROUGH OR ACROSS AREAS DISTURBED BY SITE OPERATIONS.

**CLEARING AND GRUBBING:**

- CLEARING SHALL INCLUDE CUTTING, REMOVAL, AND OFF-SITE DISPOSAL OF TREES, BUSHES, SHRUBS, STUMPS, FALLEN TIMBER, REFUSE, TRASH, AND OTHER INCIDENTAL MATERIALS WITHIN THE INDICATED LIMITS.
- THE CONTRACTOR SHALL COMPLETELY GRUB THE AREA WITHIN THE CLEARING LIMITS TO COMPLETELY REMOVE STUMPS AND ROOT SYSTEMS.
- DEPRESSIONS FROM THE REMOVAL OF STUMPS OR ROOTS SHALL BE FILLED AND COMPACTED WITH SUITABLE MATERIAL.

**FILLING VOIDS:**

- COMPLETELY FILL BELOW GRADE AREAS AND VOIDS RESULTING FROM DEMOLITION OR REMOVAL OF STRUCTURES USING APPROVED FILL MATERIALS FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS, AND OTHER ORGANIC MATTER.
- ENSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROST, FROZEN, OR UNSUITABLE MATERIAL, TRASH, AND DEBRIS PRIOR TO FILL PLACEMENT.
- PLACE FILL MATERIALS IN HORIZONTAL LAYERS NOT EXCEEDING 8 INCHES IN LOOSE DEPTH AND COMPACT EACH LAYER AT OPTIMUM MOISTURE CONTENT OF FILL MATERIAL TO PROPOSED DENSITY, UNLESS SUBSEQUENT EXCAVATION FOR NEW WORK IS REQUIRED.
- GRADE THE NEW SURFACE TO MATCH ADJACENT GRADES AND TO PROVIDE FOR THE FLOW OF SURFACE DRAINAGE AFTER FILL PLACEMENT AND COMPACTION.

**DISPOSAL OF DEMOLISHED MATERIAL:**

- REMOVE FROM THE SITE ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS.
- NO BURNING OF ANY MATERIAL, DEBRIS, OR TRASH ON-SITE OR OFF-SITE WILL BE ALLOWED.

**02140 DEWATERING AND DRAINAGE CONTROL**

**DESCRIPTION:**

- THE CONTRACTOR SHALL PREVENT SURFACE WATER AND SUBSURFACE OR GROUNDWATER FROM FLOWING INTO EXCAVATIONS OR EARTHWORK AREAS WHICH WOULD CAUSE FLOODING OF THE PROJECT SITE AND SURROUNDING AREA, OR SOFTENING OR LOOSENING OF THE SOIL AT EXCAVATION OR EARTHWORK SUBGRADE.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE AND SATISFACTORY DEWATERING AND DRAINAGE OF EXCAVATIONS AND FURNISH ALL MATERIALS AND EQUIPMENT AND DO ALL INCIDENTAL WORK REQUIRED IN CONJUNCTION WITH THE FURNISHING, INSTALLING, AND MAINTAINING OF SAME TO PERMIT PROPER AND TIMELY COMPLETION OF ALL WORK REQUIRED. PUMPING EQUIPMENT AND DEVICES TO PROPERLY REMOVE AND DISPOSE OF ALL WATER ENTERING THE TRENCHES AND EXCAVATION FOR STRUCTURES SHALL BE PROVIDED.
- SUBSURFACE SOILS AT THE SITE MAY BE IMPACTED FROM PREVIOUS SITE USES. AS SUCH, GROUND WATER, AND/OR SURFACE THAT HAVE COME INTO CONTACT WITH SUBSURFACE SOILS, SHALL NOT BE DISCHARGED TO WETLANDS. ALL CONSTRUCTION DEWATERING WASTEWATER SHALL BE CONTAINERIZED USING A LEAK-PROOF MOBILE WASTEWATER TANK, SUCH AS A FRAC TANK OR OTHER SUCH MEANS AND CONTAINERIZED WASTEWATER WILL BE DISPOSED OF OFF-SITE AT AN APPROPRIATELY LICENSED FACILITY SUBJECT TO THE APPROVAL OF THE OWNER. PRIOR TO TRANSPORT, WASTEWATER WILL BE SAMPLED AND CHEMICALLY ANALYZED IN ACCORDANCE WITH THE TREATMENT FACILITY PROTOCOLS. THE CONTRACTOR SHALL SUBMIT DETAILED INFORMATION REGARDING THE WASTEWATER TANK, TREATMENT FACILITY AND SAMPLING AND ANALYSIS PROTOCOLS TO THE OWNER AND SHALL ASSUME ALL RESPONSIBILITY FOR THE ADEQUACY OF THE METHODS, MATERIALS, AND EQUIPMENT EMPLOYED.

**LAWS AND REGULATIONS:**

- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF LOCAL, COUNTY, STATE AND FEDERAL AGENCIES.

**02200 EARTHWORK**

**DESCRIPTION:**

- STRIPPING AND STOCKPILING OF TOPSOIL.
- EXCAVATION, FILL, AND BACKFILL, AS INDICATED OR REQUIRED, INCLUDING COMPACTION.
- EXCAVATION SHALL INCLUDE REMOVAL AND SATISFACTORY DISPOSAL OF ALL UNCLASSIFIED MATERIAL ENCOUNTERED THROUGHOUT THE SITE.
- ROUGH GRADING, INCLUDING PLACEMENT, MOISTURE CONDITIONING AND COMPACTION OF FILLS AND BACKFILLS.
- TRENCH EXCAVATION, BEDDING AND BACKFILL FOR ALL DRAINAGE IMPROVEMENTS INCLUDING COMPACTION.
- THE REMOVAL, HAULING AND STOCKPILING OF SUITABLE EXCAVATED MATERIALS FOR SUBSEQUENT USE IN THE WORK.
- ALL RE-HANDLING, HAULING AND PLACING OF STOCKPILED MATERIALS FOR USE IN REFILLING, FILLING, BACKFILLING, GRADING AND SUCH OTHER OPERATIONS.
- PROTECTION OF EXISTING PAVEMENTS, AND UTILITIES TO REMAIN.
- FURNISHING AND PLACING OF ENVIRONMENTAL CONTROLS.
- OBTAINING ALL REQUIRED PERMITS, LICENSES, AND APPROVALS OF APPROPRIATE MUNICIPAL AND UTILITY AUTHORITIES, PRIOR TO COMMENCING THE WORK OF THIS SECTION, AND PAY ALL COSTS INCURRED THEREFOR.

**LAWS AND REGULATIONS:**

- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF LOCAL, COUNTY, STATE AND FEDERAL AGENCIES.

- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF LOCAL, COUNTY, STATE AND FEDERAL AGENCIES.

**MATERIALS:**

THE CONTRACTOR SHALL PROVIDE SUFFICIENT APPROVED MATERIALS AS REQUIRED TO MEET THE LINES AND GRADES OF THE PROPOSED IMPROVEMENTS.

**GENERAL FILL:** GENERAL FILL MAY BE EITHER APPROVED MATERIAL AVAILABLE FROM ON-SITE EXCAVATIONS OR APPROVED MATERIAL OBTAINED FROM OFF-SITE SOURCES CERTIFIED TO CONFORM TO THE FOLLOWING GRAIN SIZE GRADATION.

SQUARE MESH SIZE	% PASSING (BY WEIGHT)
3 1/2"	100
2"	90
3/4"	30-80
#40	5-15
#100	0-15

THIS MATERIAL SHALL BE CLEAN, FREE OF CLAY AND ORGANIC MATERIAL, WEAK OR COMPRESSIBLE MATERIAL, HIGHLY PLASTIC CLAYS, FROZEN AND OTHER UNSUITABLE MATERIAL.

**CONTROLLED FILL:** CONTROLLED FILL APPROVED MATERIAL OBTAINED FROM OFF-SITE SOURCES CERTIFIED TO CONFORM TO THE FOLLOWING GRAIN SIZE GRADATION. THIS MATERIAL SHALL BE USED AS BACKFILL AGAINST WALLS AND EXCAVATIONS AT FOOTINGS AND COLUMNS PLUS SLAB AT GRADE UNDERLAYMENT.

SQUARE MESH SIZE	% PASSING (BY WEIGHT)
3 1/2"	100
3/4"	90-100
1/4"	30-80
#4	5-15
#200	<15

**FILTER STONE:** FILTER STONE SHALL CONFORM TO SECTION M.01.07- TABLE 1 COLUMN V OF THE STANDARD SPECIFICATIONS.

**RIP RAP:** RIP RAP SHALL CONFORM TO SECTION M.10.03.2, GRADATION R-4 OF THE STANDARD SPECIFICATIONS.

**SAND:** SAND SHALL BE NATURAL SAND CONFORMING TO SECTION M.01.02 OF THE STANDARD SPECIFICATIONS.

**TOPSOIL:** TOPSOIL SHALL CONFORM TO SECTION M.13.01 OF THE STANDARD SPECIFICATIONS.

**SAMPLES AND TESTS:**

- THE CONTRACTOR SHALL ARRANGE FOR A QUALIFIED LABORATORY TO PERFORM QUALITY CONTROL MATERIALS TESTING OF ALL FILL MATERIALS AND THEIR PLACEMENT. TEST RESULTS AND LABORATORY RECOMMENDATIONS SHALL BE SUBMITTED TO THE OWNER.
- THE LABORATORY WILL DETERMINE MAXIMUM DRY DENSITY AND OPTIMUM WATER CONTENT IN ACCORDANCE WITH ASTM D1557, METHOD D, AND THE IN-PLACE DENSITY IN ACCORDANCE WITH ASTM D1556, OR D2922 AND D3017.
- COOPERATE WITH LABORATORY IN OBTAINING FIELD SAMPLES OF IN-PLACE MATERIALS AFTER COMPACTION. FURNISH INCIDENTAL FIELD LABOR IN CONNECTION WITH THESE TESTS.
- WHEN INITIAL TESTS INDICATE NON-COMPLIANCE WITH THE SPECIFICATION, SUBSEQUENT RETESTING OCCASIONED BY THE NON-COMPLIANCE SHALL BE PERFORMED BY THE SAME TESTING AGENCY AT NO ADDITIONAL EXPENSE TO THE OWNER.

**STRIPPING AND STOCKPILING OF TOPSOIL:**

- STRIP ALL TOPSOIL TO ITS FULL DEPTH WITHIN THE CONTRACT LIMITS. TOPSOIL SHALL BE PROCESSED TO REMOVE ALL ROOTS, STONES LARGER THAN 2 INCHES IN DIAMETER AND OTHER DELETERIOUS MATERIALS. PROTECT TOPSOIL FROM CONTAMINATION FROM OTHER MATERIALS.

**EXCAVATION CLASSIFICATION:**

- UNCLASSIFIED EXCAVATION:** EXCAVATIONS REQUIRED FOR THE BUILDING FOUNDATION AND DRIVE RAMP SHALL BE UNCLASSIFIED AND NO CONSIDERATION WILL BE GIVEN TO THE NATURE OF THE MATERIALS. UNCLASSIFIED EXCAVATION SHALL COMPRISE AND INCLUDE THE SATISFACTORY REMOVAL AND DISPOSAL OF ALL MATERIALS ENCOUNTERED REGARDLESS OF THE NATURE OF THE MATERIALS AND SHALL BE UNDERSTOOD TO INCLUDE, BUT NOT BE LIMITED TO, RIPABLE ROCK, SHALE, EARTH, HARDBOAM, FILL, COBBLESTONES, BRICKS, CONCRETE, PREVIOUSLY ABANDONED DRAINAGE STRUCTURES AND UTILITY STRUCTURES ABANDONED AND NOT REMOVED BY THE UTILITY AND MISCELLANEOUS DEBRIS. THE CONTRACTOR SHALL FURNISH, PLACE AND REMOVE ALL SHEETING, BRACING OR OTHER EXCAVATION SUPPORT SYSTEMS REQUIRED TO SUPPORT THE SIDES OF ALL EXCAVATIONS FOR THIS PROJECT.

**TRENCH EXCAVATION:**

- TRENCH EXCAVATION SHALL INCLUDE THE REMOVAL AND SATISFACTORY DISPOSAL OF ALL MATERIALS ENCOUNTERED IN THE CONSTRUCTION OF DRAINAGE UTILITIES AND UNDERGROUND UTILITIES.
- EXCAVATE ALL EARTH AND ROCK TO AT LEAST 6 INCHES BELOW DRAINAGE LINES AND CONDUITS. BACKFILL WITH COMPACTED BEDDING MATERIAL AS SPECIFIED.
- TRENCH EXCAVATION SHALL BE OF SUFFICIENT WIDTH AND DEPTH AT ALL POINTS TO ALLOW PIPES TO BE LAID AND ADJUTANT WORK TO BE BUILT IN A WORKMAN-LIKE MANNER AND, WHEN NEEDED, TO ALLOW FOR SHEETING AND SHORING, PUMPING AND DRAINING, AND/OR FOR REMOVING AND REPLACING ANY MATERIALS UNSUITABLE FOR FOUNDATIONS.
- TRENCHES SHALL BE EXCAVATED TO THE MINIMUM LIMITS SHOWN ON THE DRAWINGS.
- IF, AT OR BELOW THE ELEVATION OF THE BOTTOM OF THE PIPE OR RELATED APPURTENANCES, THE MATERIAL IS MUCK, PEAT, HEAVY SAND OR OTHER MATERIAL NOT SUITABLE TO SUPPORT THE PIPE OR RELATED APPURTENANCES, NOTIFY THE OWNER IMMEDIATELY AND DO NO FURTHER TRENCH EXCAVATION IN THIS AREA UNTIL THE OWNER'S INSTRUCTIONS ARE RECEIVED.
- THE CONTRACTOR SHALL FURNISH, PLACE AND REMOVE ALL SHEETING AND BRACING REQUIRED TO SUPPORT THE SIDES OF ALL TRENCHES OF OTHER EXCAVATIONS FOR THIS PROJECT.

**CONTAMINATED SOILS:**

- THE CONTRACTOR SHALL IMMEDIATELY HALT SOIL MOVEMENT ACTIVITIES AND NOTIFY THE OWNER IF VISUAL, OLFACTORY OR OTHER EVIDENCE SUGGESTS THAT CONTAMINATED SOILS MAY BE PRESENT. NO EARTHWORK OPERATIONS SHALL BE ALLOWED IN THE AREA OF SUSPECTED CONTAMINATED SOIL UNTIL TEST RESULTS SHOW NON-CONTAMINATED MATERIAL, OR THE CONTAMINATED MATERIAL HAS BEEN PROPERLY REMOVED.
- UPON APPROVAL FROM THE OWNER, THE CONTRACTOR SHALL TEST ANY SUSPECT CONTAMINATED SOIL AND SHALL NOTIFY THE OWNER OF THE RESULTS IMMEDIATELY UPON RECEIPT. CONTAMINATED SOILS SHALL BE HANDLED AND TRANSPORTED IN FULL COMPLIANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

**PLACEMENT AND COMPACTION OF MATERIALS:**

**GENERAL AND CONTROLLED FILL:** GENERAL FILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH SECTION 2.02.03 OF THE STANDARD SPECIFICATIONS.

**TRENCH BACKFILL:**

- TRENCHES SHALL BE BACKFILLED AS SOON AS PRACTICABLE WITH SUITABLE APPROVED MATERIAL.
- BACKFILL MATERIAL FOR PIPE BEDDING SHALL BE DEPOSITED IN THE TRENCH, UNIFORMLY ON BOTH SIDES OF THE PIPE, FOR THE ENTIRE WIDTH OF THE TRENCH. THE BACKFILL MATERIAL SHALL BE PLACED BY HAND SHOVELS, IN LAYERS NOT MORE THAN 4 INCHES THICK IN LOOSE DEPTH AND EACH LAYER SHALL BE THOROUGHLY AND EVENLY COMPACTED BY TAMPING ON EACH SIDE OF THE PIPE TO PROVIDE UNIFORM SUPPORT AROUND THE PIPE, FREE FROM VOIDS. THE BALANCE OF BACKFILL SHALL BE SPREAD IN LAYERS NOT EXCEEDING 12 INCHES IN LOOSE DEPTH. EACH LAYER SHALL BE DAMPENED, THOROUGHLY COMPACTED BY TAMPING OR OTHER APPROVED METHOD AND SHALL MEET THE COMPACTION REQUIREMENTS OF SECTION 2.05.3.5 OF THE STANDARD SPECIFICATIONS.
- ALL TRENCH BACKFILLING SHALL BE DONE WITH SPECIAL CARE AND MUST BE CAREFULLY PLACED SO AS NOT TO DISTURB THE WORK AT ANY TIME.
- ANY TRENCHES OR EXCAVATIONS IMPROPERLY BACKFILLED OR WHERE SETTLEMENT OCCURS SHALL BE REOPENED, TO THE DEPTH REQUIRED FOR PROPER COMPACTION, THEN REFILLED AND COMPACTED WITH THE SURFACE RESTORED TO THE REQUIRED GRADE AND CONDITION, AT NO ADDITIONAL EXPENSE TO THE OWNER.

**SECTION 02270 EROSION CONTROL**

**DESCRIPTION:**

- PROVIDE ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS DURING THE LIFE OF THE CONTRACT TO CONTROL SOIL EROSION AND WATER POLLUTION.
- THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BERMS, DITCHES, CONSTRUCTION ENTRANCES/EXITS, MULCHES, GRASSES AND OTHER APPROVED EROSION CONTROL DEVICES OR METHODS.

**LAWS AND REGULATIONS:**

- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF LOCAL, COUNTY, STATE AND FEDERAL AGENCIES.

- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF LOCAL, COUNTY, STATE AND FEDERAL AGENCIES.

**SATISFACTORY PERFORMANCE:**

- SOIL EROSION AND WATER POLLUTION CONTROL MEASURES SHALL AT ALL TIMES BE SATISFACTORY TO THE OWNER AND SHALL MEET THE REQUIREMENTS OF SECTION 206 OF THE STANDARD SPECIFICATIONS.

**2400 BIO-RETENTION BASIN AND STORM DRAINAGE SYSTEMS**

**DESCRIPTION:**

- CONSTRUCTION OF A STORM DRAIN SYSTEM, LINED BIO-RETENTION BASIN AND SEDIMENT FOREBAY AND SUBSURFACE DRAINAGE FACILITY AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

**MATERIALS:**

YARD DRAIN SHALL BE H-20 LOADING WITH HEAVY DUTY CAST IRON FRAME AND GRATE AS MANUFACTURED BY UNITED CONCRETE PRODUCTS OR EQUAL.

CATCH BASIN SHALL BE RI STANDARD 3.4.5 TYPE F CONFORMING TO SECTION 702 OF THE STANDARD SPECIFICATIONS.

PERFORATED AND SOLID HIGH DENSITY CORRUGATED POLYETHYLENE PIPE, FITTINGS AND YARD DRAINS: FOUR-INCH INCH PIPE SHALL BE SMOOTH INTERIOR HIGH DENSITY POLYETHYLENE (HDPE) PER ASTM D3350 AND ASHMO TO M 252 (ADS N-12 PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS INC. OR APPROVED EQUAL). ALL ACCESSORIES AND FITTINGS SHALL BE OF THE SAME MATERIAL AS PIPE MOLDED OR FORMED TO SUIT PIPE SIZE AND END DESIGN.

FILTER FABRIC FOR UNDERDRAINS SHALL BE MIRAFI 140N, OR APPROVED EQUIVALENT.

GEOMEMBRANE LINER: 40 MIL HDPE MANUFACTURED BY POLY-FLEX.

**LINER AND PIPE INSTALLATION:**

- AS SOON AS THE EXCAVATION IS COMPLETED TO THE NORMAL GRADE OF THE BOTTOM OF THE BASIN LINER, THE CONTRACTOR SHALL IMMEDIATELY PLACE THE LINER, SAND BEDDING ANCHORED PER THE DRAWINGS, THE FILTER STONE AND PIPE. FILTER STONE SHALL BE COVERED WITH FILTER FABRIC PRIOR TO PLACEMENT OF FILTER SOIL MEDIA. ASSURE ADEQUATE WRAP DIMENSION OF FILTER FABRIC. SEE DRAWINGS FOR SOIL MEDIA MX.
- INSTALL ALL PIPE, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- CLEANOUTS: FORM BOTTOM OF EXCAVATION CLEAN AND SMOOTH TO CORRECT ELEVATION. ESTABLISH ELEVATIONS AND PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED. MOUNT LID AND FRAME LEVEL IN ACCORDANCE WITH MANUFACTURED INSTALLATION INSTRUCTIONS TO ELEVATION INDICATED.

**SECTION 02444 CHAIN LINK FENCING**

**1.01 DESCRIPTION**

- THE FORMING OF PIPE SLEEVE ANCHORAGES FOR POSTS;
- THE INSTALLATION OF FENCE FABRIC AND POSTS.

**2.01 MATERIALS**

CHAIN LINK FENCE SHALL CONFORM TO SECTION M08.02 OF THE STANDARD SPECIFICATIONS.

**2.04 FENCE INSTALLATION**

- PROVIDE SECURE, ALIGNED INSTALLATION WITH LINE POSTS SPACED AT 10' - 0" O.C. MAXIMUM.
- SLEEVE SET POSTS: ANCHOR POSTS BY MEANS OF PIPE SLEEVES PRESET AND ANCHORED INTO CONCRETE. AFTER THE POSTS HAVE BEEN INSERTED INTO THE SLEEVES, FILL THE ANNULAR SPACE BETWEEN POST AND SLEEVE SOLIDLY WITH NON-SHRINK, NON-METALLIC GROUT.

**SECTION 02500 BITUMINOUS CONCRETE PAVEMENT**

**1.01 DESCRIPTION**

- PROVIDE AGGREGATE, GRAVEL BASE COURSE AND BITUMINOUS CONCRETE PAVING FOR DRIVEWAYS.
- SAW CUT EXISTING PAVEMENTS FOR PAVEMENT BUTT JOINT.

**2.01 MATERIALS**

- THE FURNISHING AND PLACEMENT OF BITUMINOUS CONCRETE PAVEMENT SHALL CONFORM TO SECTION PART 400 OF THE STANDARD SPECIFICATIONS.
- BANK RUN AND PROCESSED SAND AND GRAVEL SHALL CONFORM TO SECTION 301 AND SECTION M.01.02.1 OF THE STANDARD SPECIFICATIONS.

**3.01 EXECUTION**

- ALL VERTICAL SURFACES OF STRUCTURES AND EXISTING CONCRETE SURFACES IN CONTACT WITH NEW BITUMINOUS PAVEMENT SHALL BE PAINTED WITH A UNIFORM COATING OF A BITUMINOUS EMULSION MATERIAL.
- WHERE NEW PAVEMENTS ARE TO MEET EXISTING PAVEMENTS, EXISTING PAVEMENTS SHALL BE SAW CUT SO THAT THERE WILL BE A VERTICAL BUTTING SURFACE BETWEEN OLD AND NEW PAVEMENTS.

**2936 TURF AND PLANTINGS**

**DESCRIPTION:**

- ESTABLISH NEW TURF AREAS BIO-RETENTION BASIN PLANTINGS TO THE LIMITS SHOWN ON THE DRAWINGS.

**QUALITY ASSURANCE:**

- NEW TURF SHALL BE ESTABLISHED IN GENERAL ACCORDANCE WITH SECTION L- LANDSCAPING, OF THE STANDARD SPECIFICATIONS.

**MATERIALS:**

- SEED: SEE DRAWINGS.
- PLANTS: SEE DRAWINGS

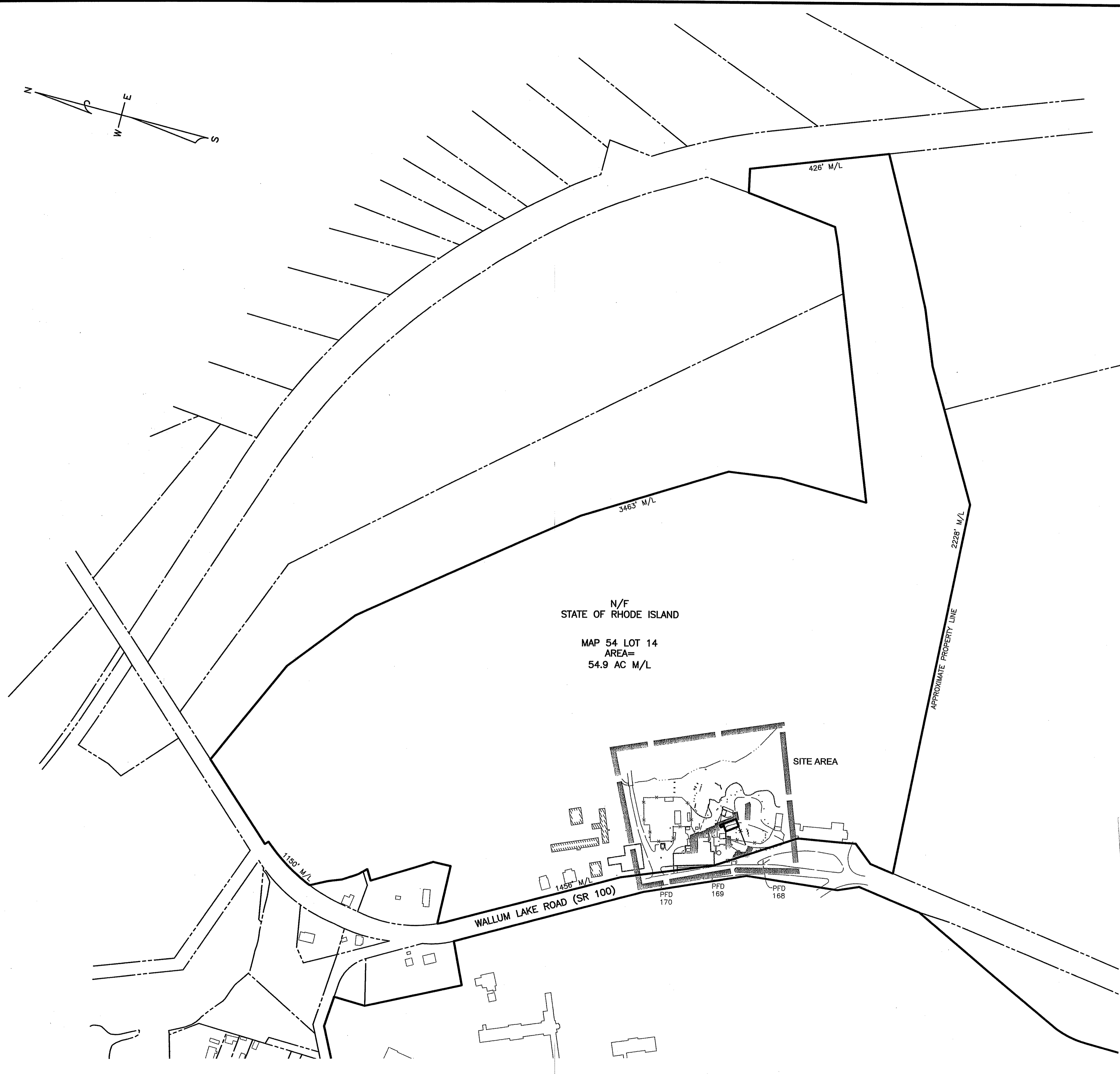
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAR 08 2012 FILE # 11-0164  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles A. Hulse*

Environmental Management  
Office of Water Resources  
JAN 24 2012

CHEVRON ENERGY SERVICES  
A Division of Chevron U.S.A. Inc.  
LABORALE, MA OFFICE  
100 FORT HILL ROAD, CHESTER, MA 01024  
TEL: 978 899 0200 FAX: 978 899 0700

REV	DATE	DESCRIPTION
1	11/7/11	PER CLIENT AND RHODE ISLAND DEM
2	1/23/12	BASED INSPECTION AND MAINTENANCE NOTES

DCESARE BENTLEY  
ENGINEERS / SURVEYORS / PLANNERS  
100 FORT HILL ROAD, CHESTER, CT 06640  
PH: 860 444 4800 FAX: 860 444 4899  
WWW.DCBENGINEERS.COM



Environmental Management  
 Office of Water Resources  
 Prepared By:  
 JAN 24 2012

**Chevron**  
 CHEVRON ENERGY SOLUTIONS COMPANY  
 A Division of Chevron U.S.A., Inc.  
 1200 S. BRAD STREET, SUITE 130  
 PASCOAG, RI 02880  
 TEL: 401-441-9400  
 FAX: 401-441-9400

REV	DATE	BY	DESCRIPTION
1	11/7/11	SEP	PER CLIENT AND RHODE ISLAND DEM
2	1/23/12	SEP	BASED INSPECTION AND MAINTENANCE NOTES

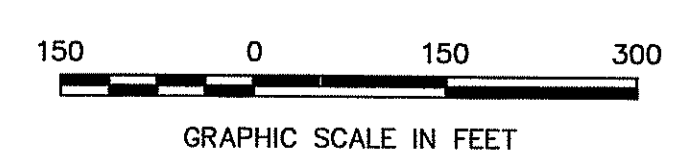
**DCESARE BENTLEY**  
 ENGINEERS / SURVEYORS / PLANNERS  
 100 FORTY-FIVE ROAD, GROTON, CT 06040  
 WWW.DCBENGINEERS.COM

**ENERGY FACILITY  
 ZAMBARANO HOSPITAL  
 2090 WALLUM LAKE ROAD  
 PASCOAG, RHODE ISLAND 02859**

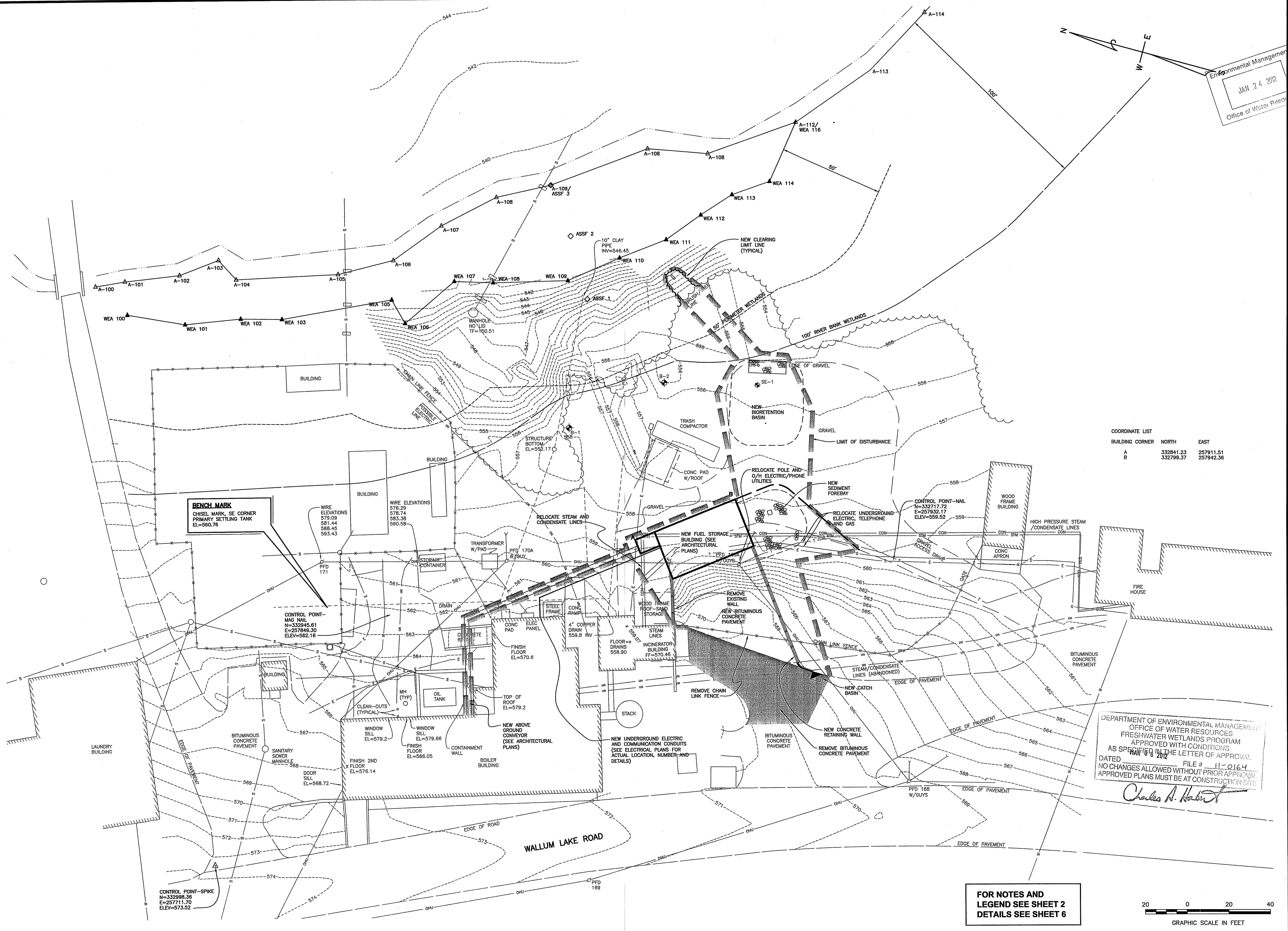
**OVERALL SITE  
 PORTION OF ZAMBARANO HOSPITAL  
 VICINITY OF THE BOILER BUILDING**

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
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 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles A. Herbert*

FOR NOTES AND  
 LEGEND SEE SHEET 2



H:\2010\10038 Chevron Corp - Pascoag RI\Code Engineering - Survey\3117 Plan 111110.dwg, 1/23/2012 8:28:07 AM, .sep



Environmental Management  
 Office of Water Resources  
 JAN 24 2012

Prepared by:  
**CHEVRON ENVIRONMENTAL SOLUTIONS COMPANY**  
 A Division of Chevron U.S.A. Inc.  
 100 FORT HILL ROAD, GROTON, CT 06340  
 PH: 860/448-0400 FX: 860/448-0899  
 WWW.DRENENERS.COM

REV	DATE	DESCRIPTION
1	11/17/11	SEP PER CLIENT AND RHODE ISLAND DEPT
2	1/23/12	SEP BASIN INSPECTION AND MAINTENANCE NOTES

**DICESARE BENTLEY**  
 ENGINEERS / SURVEYORS / PLANNERS  
 100 FORT HILL ROAD, GROTON, CT 06340  
 PH: 860/448-0400 FX: 860/448-0899  
 WWW.DICESAREENGINEERS.COM

COORDINATE LIST

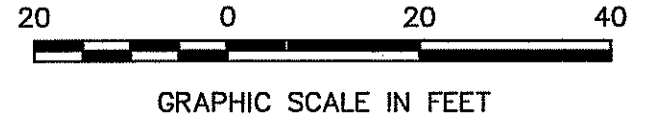
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B	332799.37	257942.36

**ENERGY FACILITY**  
**ZAMBARANO HOSPITAL**  
**2090 WALLUM LAKE ROAD**  
**PASCOAG, RHODE ISLAND 02859**

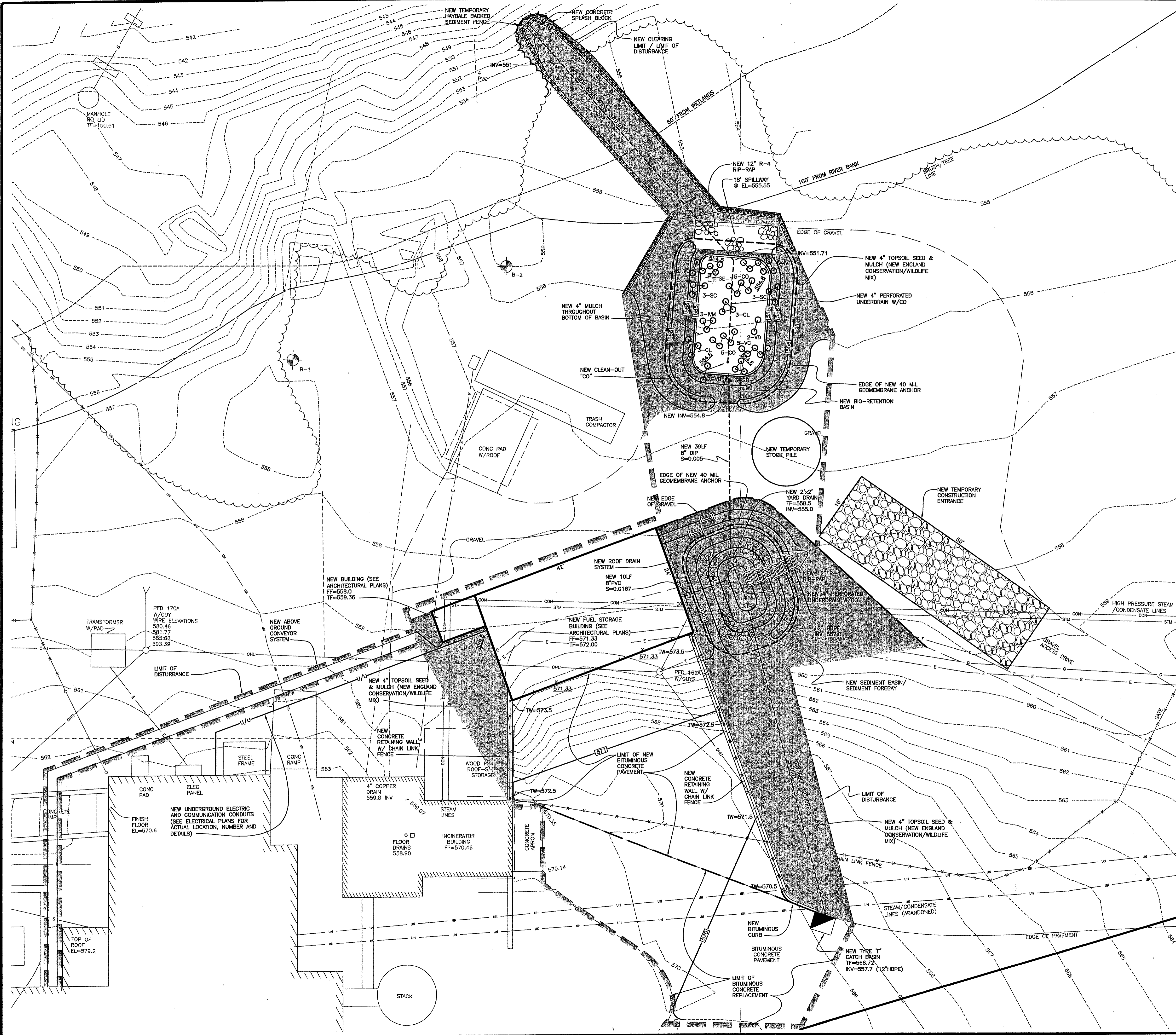
**SITE DESIGN**  
**FUEL STORAGE BUILDING**  
**PORTION OF ZAMBARANO HOSPITAL**  
**VICINITY OF THE BOILER BUILDING**

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED 1/16/12 FILE # 11-0164  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles A. Hackett*

**FOR NOTES AND  
 LEGEND SEE SHEET 2  
 DETAILS SEE SHEET 6**



SCALE: 1"=20'  
 PROJECT NO.:  
 DESIGNED BY: PB  
 DRAWN BY: SEP  
 CHECKED BY: PB  
 DATE: JUNE 21, 2011  
**4 OF 6**



**BIO-RETENTION BASIN NOTES**

**PLANT LIST**

SHRUBS	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
CO	CEPHALANTHUS OCCIDENTALIS	BUTTON BUSH	10	3'-4'
CL	CLETHRA ALNIFOLIA	WHITE SUMMER SWEET	6	3'-4'
IV	LLEX VERTICILLATA (FEMALE)	WINTERBERRY	6	3'-4'
NA	LLEX VERTICILLATA (MALE)	WINTERBERRY	3	3'-4'
SC	SAMBUCUS CANADENSIS	AMERICAN ELDERBERRY	9	3'-4'
VC	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	11	3'-4'
VD	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	4	3'-4'

**SEED MIX**

2009 - NEW ENGLAND CONSERVATION/WILDLIFE MIX

BOTANICAL NAME	COMMON NAME	IND.
ANDROPOGON GERARDII	BIG BLUESTEM	FAC
ASCLEPAS SYRACA	COMMON MILKWEED	FACU
ASTER NOVAE-ANGIAE	NEW ENGLAND ASTER	FACU
CHARMAECRISTA FASCICULATA	PARTRIDGE PEA	FACU
DESMODIUM CANADENSE	SHOWY TICK TREFOIL	FAC
ELIUS VIRGINICUS	VIRGINIA WILD RYE	FACU
EUPATORIUM MACULATUM	SPOTTED JOE PYE WEED	FACU
EUTHAMIA GRAMINIFOLIA	GRASS LEAVED GOLDENROD	FAC
FESTUCA RUBRA	CREeping RED FESCUE	FACU
HELIPHSIS HELIANTHOIDES	OX EYE SUNFLOWER	UPL
ANCIUM CLANDESTINUM	DEER TONGUE	FAC
ANCIUM VIRGATUM	SWITCH GRASS	FAC
RUDBECKIA LACINIATA	TALL/REDHEADED CONEFLOWER	FACU
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
SOLIDAGO JUNCEA	EARLY GOLDENROD	FACU
SORGHASTRUM NUTANS	INDIAN GRASS	UPL

THIS MIX IS A NO MAINTENANCE SEEDING THAT PROVIDES GOOD EROSION CONTROL AND WILDLIFE HABITAT VALUE. THE MIX CAN BE APPLIED BY HYDRO-SEEDING, MECHANICAL SPREADER OR BY HAND SPREADING. APPLICATION RATE: 25 LBS/ACRE (1750 SQ.FT./ACRE).

- PLANT MATERIAL GUIDANCE**
- ALL PLANT MATERIAL IS SUBJECT TO INS AND APPROVAL BY THE OWNER PRIOR TO AND AFTER PLANTING.
  - ALL PLANT MATERIAL SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION. ALL REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
  - MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE OWNER. MAINTENANCE SHALL INCLUDE WATERING, MAINTAINING MULCH, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTling PLANTS TO PROPER GRADE OR UPRIGHT (FLUME) POSITION AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
  - WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF THE PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.

**MULCH**  
MULCH SHALL BE A 3-INCH THICK LAYER OF WELL-AGED SHREDDED HARDWOOD FREE OF ROOTS, SOIL AND WEEDS INCLUDING PURPLE LOOSESTRIPE (LYTHRUM SALICARIA), COMMON REED (PHRAGMITES AUSTRALIS) OR REED CANARYGRASS (PHALARIS ARUNDINACEA).

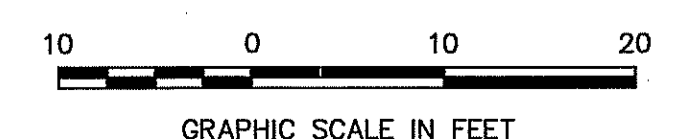
**SOIL MIX**  
SOIL MIX SHALL CONSIST OF A LOAM/SAND MIX WITH 85-88% SAND, 3-5% TOPSOIL AND 7-12% PEAT MOSS. THE MIX SHALL BE FREE OF STONES, STUMPS, ROOTS, OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER OR BRUSH/SEEDS FROM NOXIOUS WEEDS. MIX PLACEMENT SHALL BE IN 12 TO 18 INCH LIFTS, LOOSELY COMPACTED BY LIGHT TAMPING WITH DOZER OR BACKHOE BUCKET. DO NOT LIME OR FERTILIZE.

**BASIN INSPECTION, MAINTENANCE & REPAIR**

- BASIN MAINTENANCE SHALL BE PERFORMED BY HOSPITAL MAINTENANCE PERSONNEL. INSPECTIONS SHALL BE CONDUCTED EVERY SIX MONTHS AND/OR AFTER STORM EVENTS OF 2 INCHES OF RAINFALL OR GREATER AS FOLLOWS:
  - INSPECT FILTER MEDIA STANDING WATER OR OTHER EVIDENCE OF CLOGGING.
  - CHECK FOR SEDIMENT ACCUMULATION, TRASH, AND DEBRIS IN SEDIMENTATION FOREBAY.
  - CHECK FOR BLOCKAGES, STRUCTURAL INTEGRITY, AND EVIDENCE OF EROSION AT INLETS, OUTLETS, AND OVERFLOW SPILLWAYS.
- REMOVE SEDIMENT GREATER THAN 1.5 INCH DEEP ANNUALLY IN THE FILTER MEDIA BED.
- SEDIMENT GREATER THAN 12 INCHES DEEP ANNUALLY IN THE SEDIMENT FOREBAY.
- REMOVE AND REPLACE TOP SEVERAL INCHES OF THE FILTER BED MATERIAL ANNUALLY.
- ADD MULCH AND/OR RE-MULCH VOID AREAS SEASONALLY OR AS NECESSARY.
- TREAT DISEASED TREES AND SHRUBS SEASONALLY OR AS NECESSARY.
- INSPECT SOIL AND REPAIR ERODED AREAS SEASONALLY OR AS NECESSARY.
- REMOVE LITTER AND DEBRIS SEASONALLY OR AS NECESSARY.
- PRUNE SHRUBS AS REQUIRED OR EVERY THREE YEARS TO REMOVE DEAD OR DYING VEGETATION AND/OR TO PREVENT OVERCROWDING.
- REINFORCE PLANTINGS AND SEED AS NEEDED OR AFTER TWO YEARS TO MAINTAIN 80% COVERAGE FOR TURF AREAS AND 50% COVERAGE FOR FIBROUS CARPONENTIAL MANAGEMENT.
- IF THERE IS STANDING WATER IN BIODETENTION AREA 48 HOURS AFTER STORM EVENT ROTOTILL OR CULTIVATE SURFACE OF FILTER MEDIA BED TO BREAK UP SEDIMENT AND RE-VEGETATE.

AS SPECIFIED IN THE LETTER OF APPROVAL DATED MAR 08 2012 FILE # 11-0164  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles H. Barber*

**FOR NOTES AND LEGEND SEE SHEET 2  
DETAILS SEE SHEET 6**



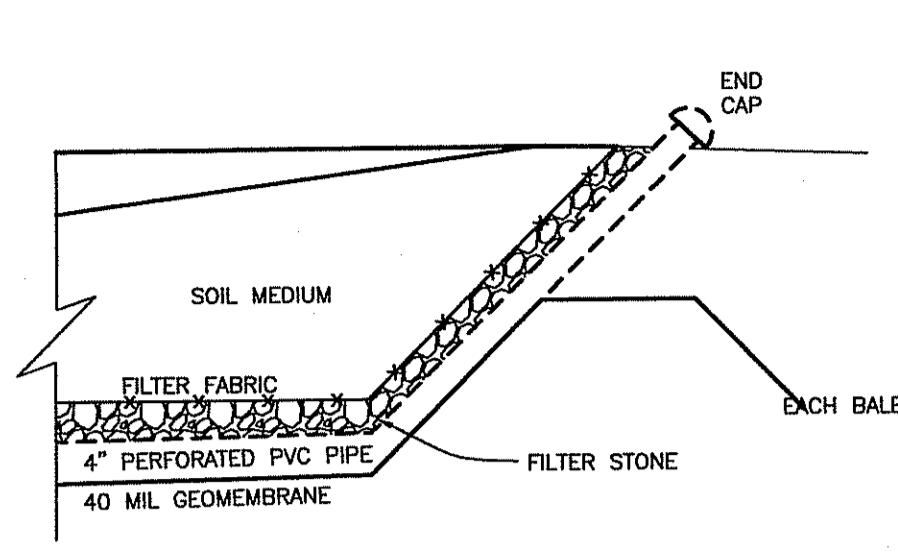
Environmental Management  
Office of Water Resources  
JAN 24 2012  
Chevron  
SOLUTIONS COMPANY  
A Division of Chevron U.S.A., Inc.  
1200 S. BRAD STREET, SUITE 130  
PASADENA, CA 91106  
TEL: 213.699.0700

**ENERGY FACILITY**  
**ZAMBARANO HOSPITAL**  
**2090 WALLUM LAKE ROAD**  
**PASCOAG, RHODE ISLAND 02859**

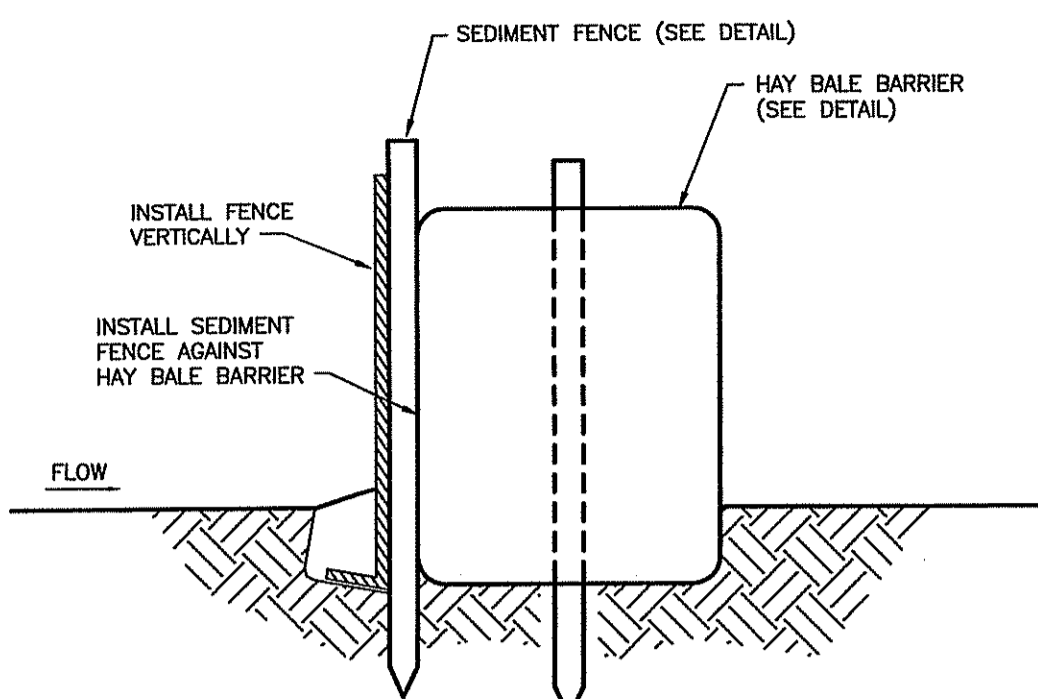
**GRADING, DRAINAGE, EROSION AND SEDIMENT CONTROL PLAN**  
**PORTION OF ZAMBARANO HOSPITAL**  
**VICINITY OF THE BOILER BUILDING**

SCALE: 1"=10'  
PROJECT NO.:  
DESIGNED BY: FB  
DRAWN BY: SP  
CHECKED BY: FB  
DATE: NOVEMBER 1, 2011

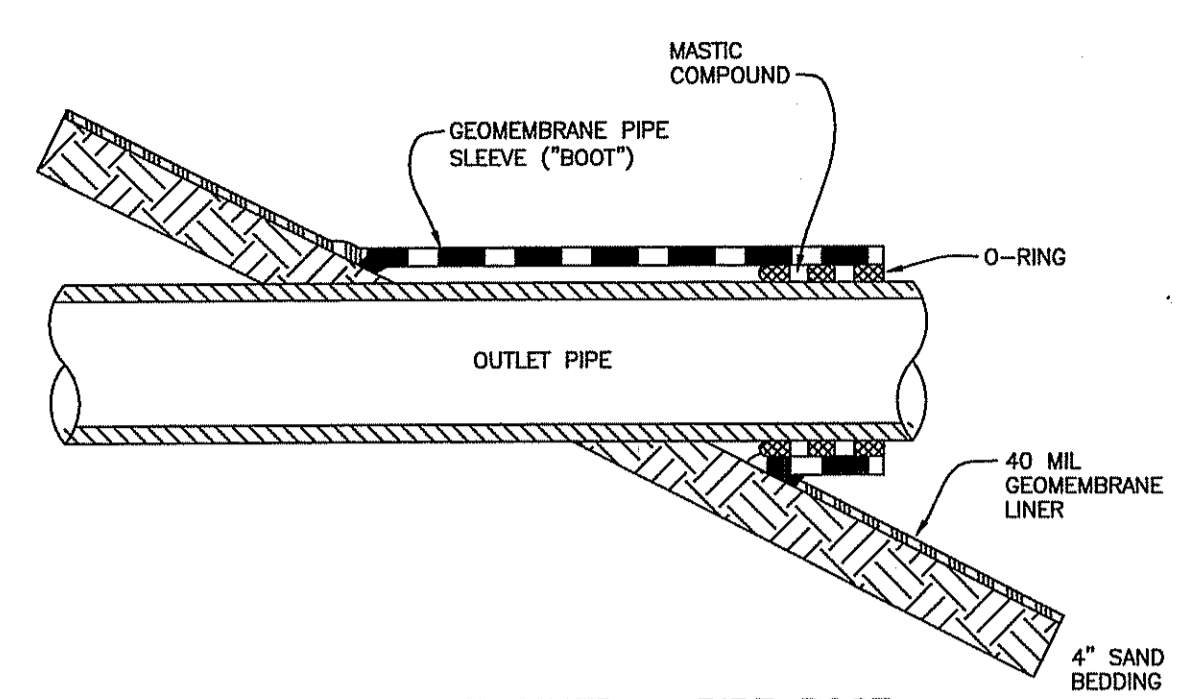
**5 OF 6**



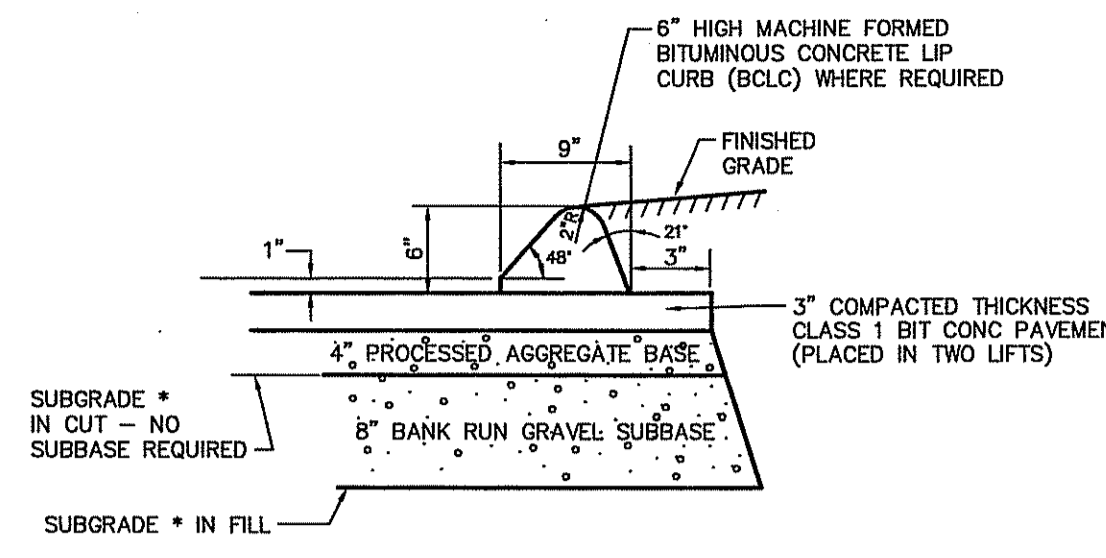
**BASIN CLEAN-OUT**  
NOT TO SCALE



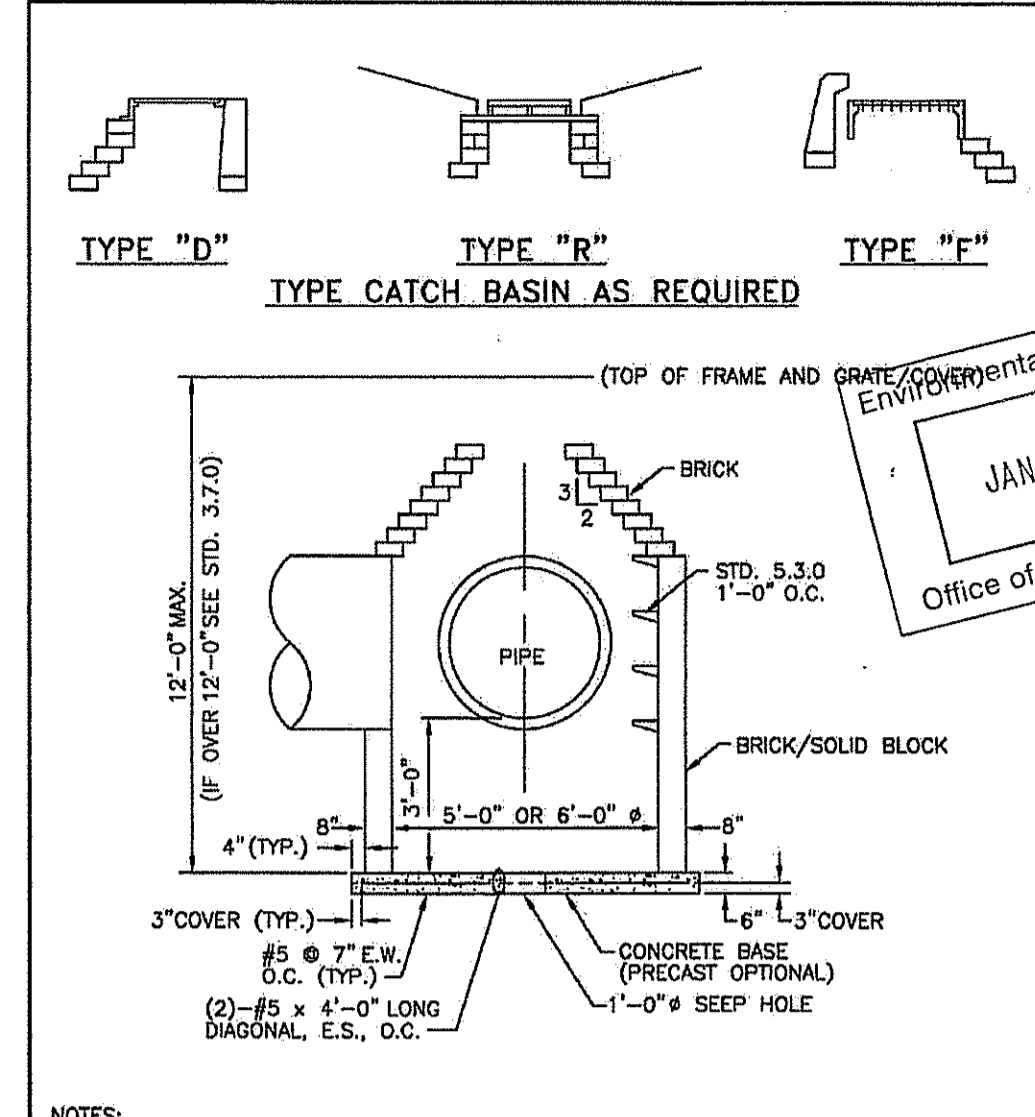
**HAYBALE BACKED SEDIMENT FENCE**  
NOT TO SCALE



**GEOMEMBRANE LINER + PIPE BOOT**  
NOT TO SCALE



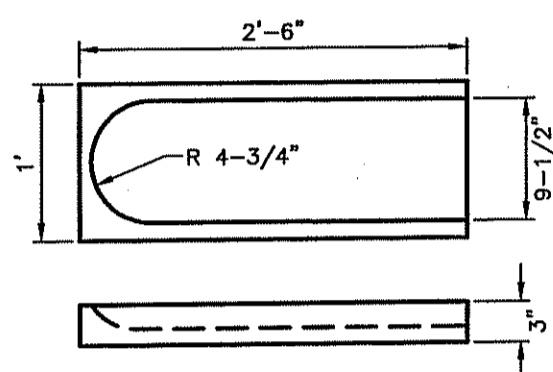
**PAVEMENT AND CURB SECTION**  
NOT TO SCALE



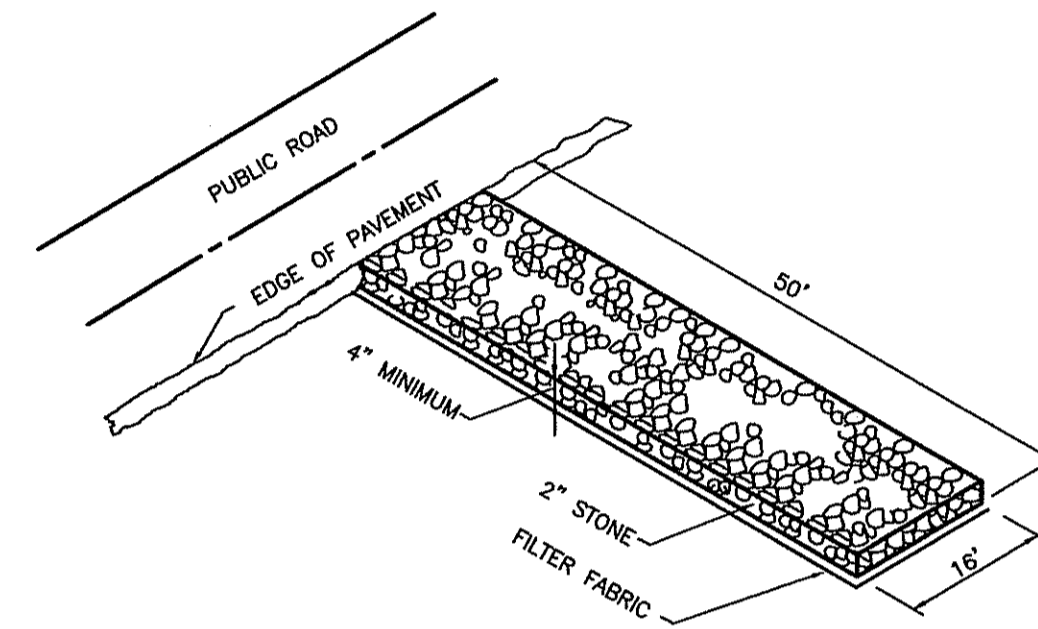
**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**  
BRICK/SOLID BLOCK  
5'-0" OR 6'-0" ROUND CATCH BASIN  
R.I. STANDARD 3.4.5

NO.	BY	DATE	DESCRIPTION
1	J.P.	11/17/11	PER CLIENT AND RIDGE ISLAND DEN
2	J.P.	1/23/12	SEP BASIN INSPECTION AND MAINTENANCE NOTES

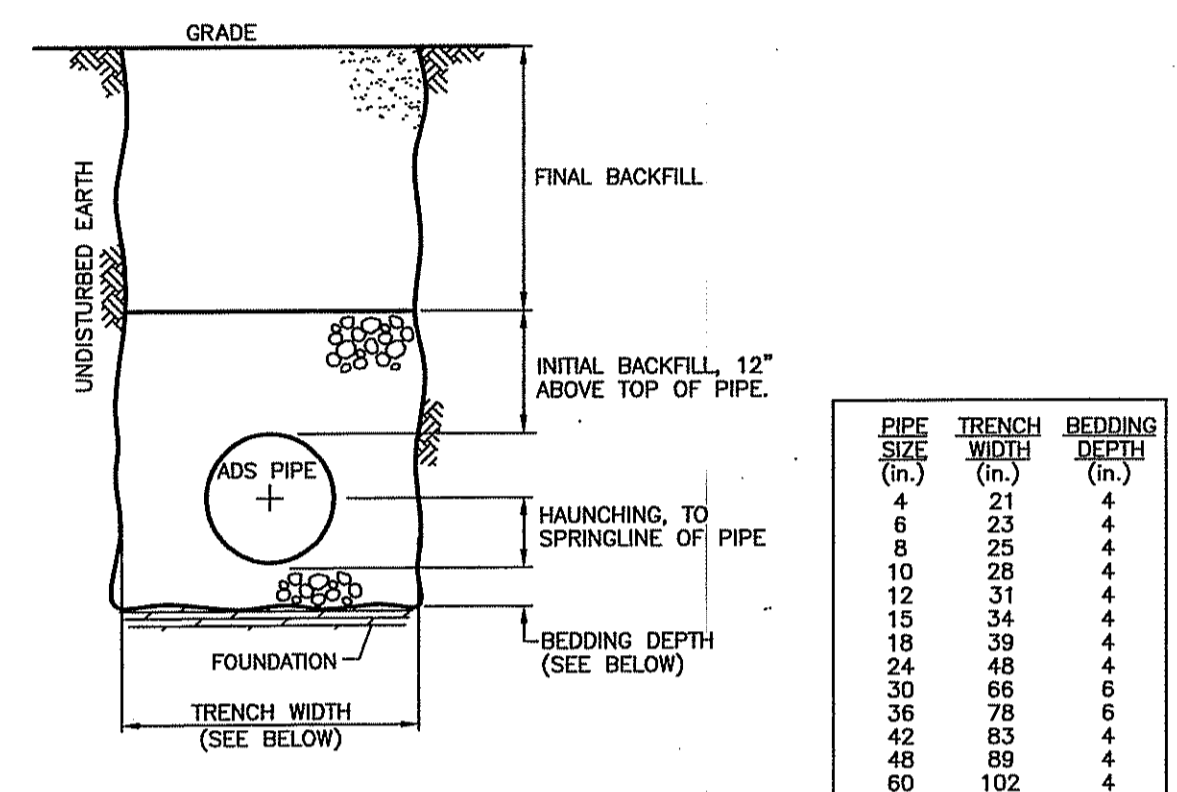
NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.  
2. 3/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.  
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.



**CONCRETE SPLASH BLOCK**  
NOT TO SCALE

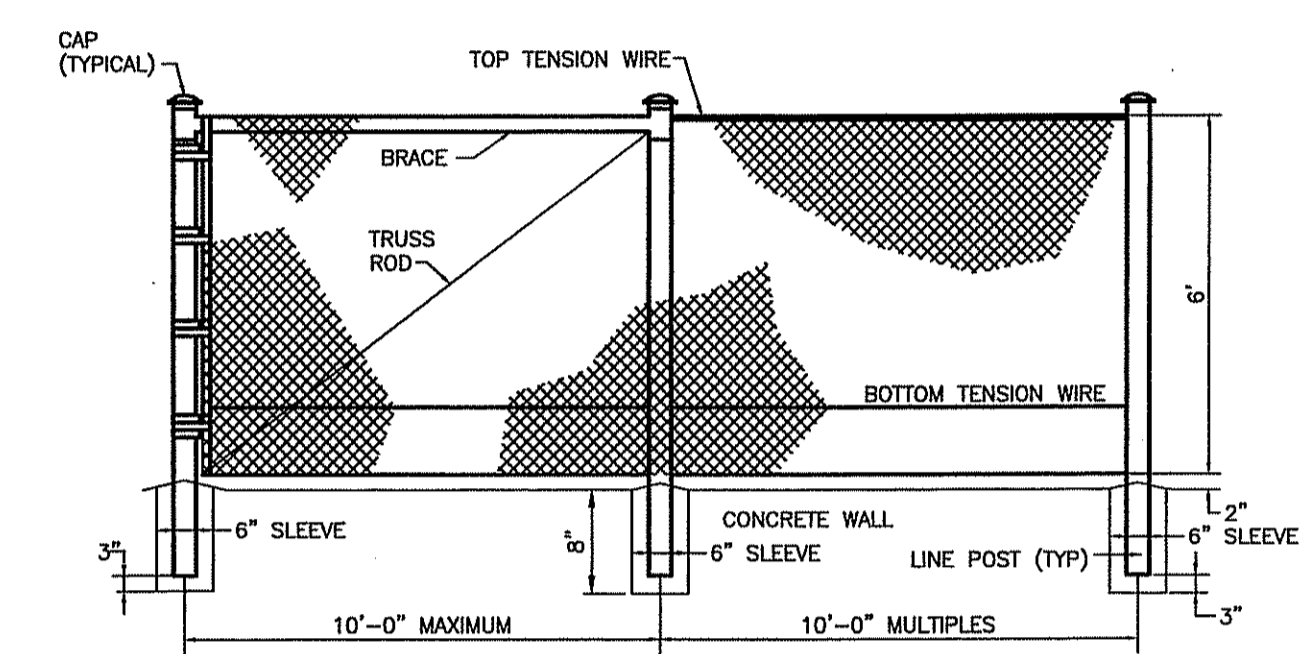


**TEMPORARY CONSTRUCTION ENTRANCE**  
NOT TO SCALE

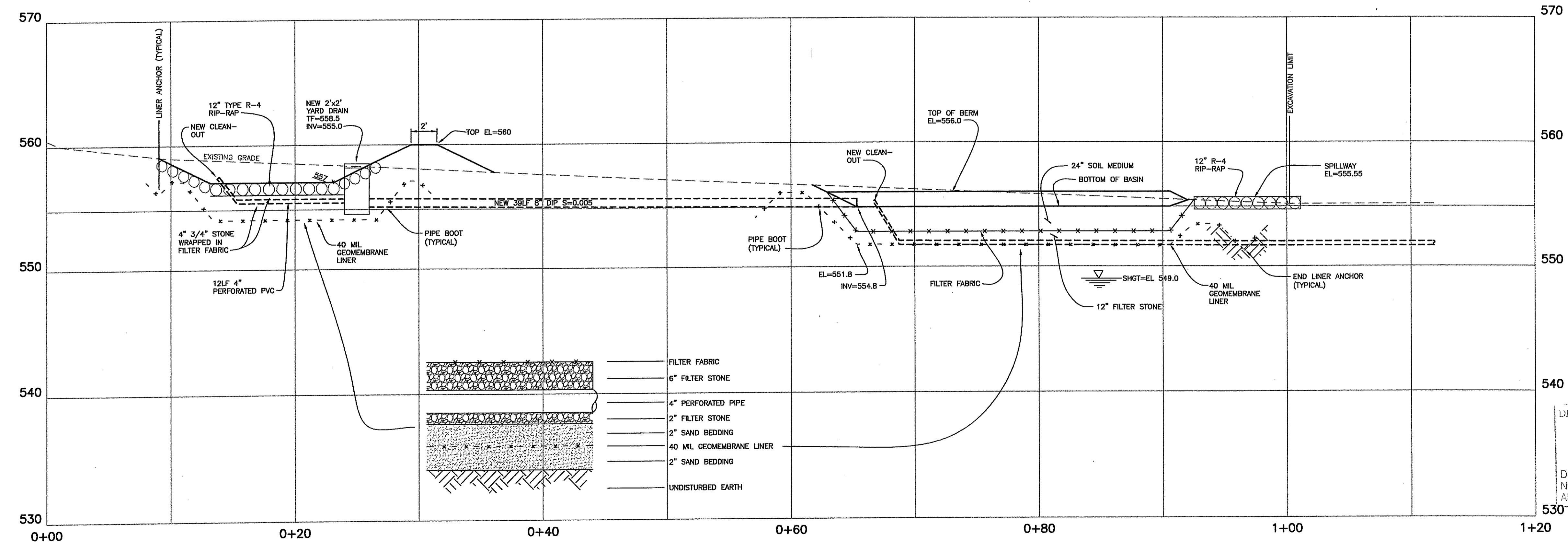


**HIGH DENSITY POLYETHYLENE PIPE (HDPE) TRENCH**  
NOT TO SCALE

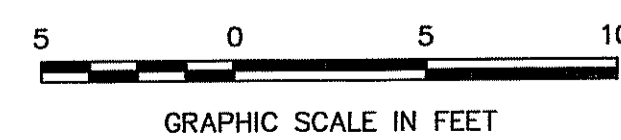
PIPE SIZE (in.)	TRENCH WIDTH (in.)	BEDDING DEPTH (in.)
4	21	4
6	23	4
8	25	4
10	28	4
12	31	4
15	34	4
18	39	4
24	48	4
30	56	6
36	78	6
42	83	4
48	89	4
60	102	4



**CHAIN LINK FENCE**  
NOT TO SCALE



**SECTION A-A**  
SCALE: 1"=5'



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAR 09 2012 FILE # 11-0164  
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Charles A. Herbert*

**FOR NOTES AND LEGEND SEE SHEET 2**

Prepared by:  
**SOLUTIONS COMPANY**  
A Division of Chevron U.S.A. Inc.  
UNIONDALE, PA OFFICE  
17215 690 030  
PH: 717 690 0300  
FAX: 717 690 0900

REV	DATE	DESCRIPTION
1	11/17/11	SEP PER CLIENT AND RIDGE ISLAND DEN
2	1/23/12	SEP BASIN INSPECTION AND MAINTENANCE NOTES

**DICESARE BENTLEY**  
ENGINEERS / SURVEYORS / PLANNERS  
100 FORT HILL ROAD GROTON, CT 06340  
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WWW.DICESAREENGINEERS.COM

**ENERGY FACILITY**  
**ZAMBARANO HOSPITAL**  
**2090 WALLUM LAKE ROAD**  
**PASCOAG, RHODE ISLAND 02859**

**GRADING, DRAINAGE, EROSION AND SEDIMENT CONTROL PLAN**  
**PORTION OF ZAMBARANO HOSPITAL**  
**VICINITY OF THE BOILER BUILDING**

SCALE	VARIABLES
PROJECT NO.	
DESIGNED BY	PB
DRAWN BY	SEP
CHECKED BY	PB
DATE	NOVEMBER 1, 2011

H:\2011\10238 Chevron Corp - Pascoag RI\Cad Engineering - Survey\SIF PLAN 111110.dwg, 1/23/2012 8:35:15 AM, sep