

BOUNDARY LEGEND:

■	GB FND	GRANITE BOUND FOUND
●	RHFB FND	RI HIGHWAY BOUND FOUND
○	IP FND	IRON PIPE FOUND
○	IR SET	IRON ROD SET
○	DH SET	DRILL HOLE SET
○	AP	STONE WALL
○	DB PG	TAX ASSESSOR'S PLAT
○	PB PG	DEED BOOK AND PAGE
○	N/F	PLAT BOOK AND PAGE
○	SQ. FT.	NOW OR FORMERLY
○	AC.	SQUARE FEET
○	P#	ACRES
○		UTILITY POLE AND NUMBER

WETLANDS LEGEND:

---	TRAILS
---	APPROXIMATE LIMITS OF 100 YEAR FLOODPLAIN BASED ON FIRM MAP, TOWN OF GLOUCESTER, RI (PANEL 15 OF 15, MARCH 3, 1992)
---	FORESTED FRESHWATER WETLAND/ AREA SUBJECT TO STORM FLOWAGE (ASSF)
---	50' PERIMETER WETLAND
---	100' OR 200' RIVERBANK WETLAND
---	AREA SUBJECT TO STORM FLOWAGE (ASSF)
---	STREAM (<10' WIDE)
---	WETLAND AREAS (SHADED ON SHEETS C3 - 6)
---	PROJECT LIMITS OF DISTURBANCE
---	SILT FENCE WITH HAY BALES

AERIAL (TECHMAP) LEGEND:

LINE TYPES	
---	ROAD, PAVED
---	ROAD, UNPAVED
---	CURB/PARALLEL
---	DROP CURB/PARALLEL
---	IRON ROD TRACK
---	SHOULDER, HARD
---	SHOULDER, SOFT
---	GUARDRAIL
---	BRIDGE
---	RAILROAD TRACK
---	PARKING, PAVED
---	PARKING, UNPAVED
---	DRIVEWAY, PAVED
---	DRIVEWAY, UNPAVED
---	SIDEWALK, PUBLIC
---	SIDEWALK, PRIVATE
---	TRAIL
---	BUILDING
---	BUILDING, U/C
---	POOL, ABOVE GROUND
---	POOL, INGROUND
---	DECK
---	PATIO
---	CELLAR DOOR
---	STEPS/STAIRS
---	STRUCTURE, MISC.
---	PILE
---	ROCK OUTCROP
---	FENCE
---	WALL
---	WALL, STONE
---	WALL, RETAINING
---	WALL, RETAINING, CAP
---	LAKE/POND
---	RIVER
---	STREAM
---	SWAMP/MARSH/WETLAND
---	DRAINAGE DITCH
---	ULIQUET
---	AQUEDUCT
---	AQUEDUCT STRUCTURE
---	TREELINE
---	BRUSHLINE
---	HEDGE
---	TREE ROW
---	PLAYGROUND
---	PLAYGROUND EQUIPMENT
---	ATHLETIC FIELD
CONTOURS	
---	INDEX
---	INDEX DEPRESSION
---	INDEX OBSCURED
---	INDEX OBSC. DEPR.
---	INTERMEDIATE
---	INTERMEDIATE DEPRESSION
---	INTERMEDIATE OBSCURED
---	INTERMEDIATE OBSC. DEP.
---	PROPERTY LINE
SYMBOLS	
⊕	SIGN POST
○	TRAFFIC SIGNAL POST
*	TRAIL LIGHT
□	MAILBOX, PRIVATE
×	POST
×FP	FLAG POLE
VARIABLE	
○	AREA TEXT
○	POLE, UTILITY
○	POLE, UTILITY W/ LIGHT
○	POLE, LIGHT
○	MANHOLE
○	VALVE
⋈	HYDRANT
⋈	MARSH SYMBOL
□	CATCH-BASIN, RECT.
□	AQUEDUCT FEATURE
○	TREE
○	BUSH
-100-	CONTOUR ANNOTATION
+ 101.3	SPOT ELEVATION
△ H101	CONTROL POINT, HORIZ.
○ V202	CONTROL POINT, VERT.
△ HV304	CONTROL POINT, H.V.
⊕ T101	CONTROL POINT, TARGET
102	TRAVERSE POINT
304	PROPERTY POINT

NOTES:

- 1) AERIAL MAPPING BY TECHMAP INCORPORATED, 973 GREENVILLE AVENUE, SMITHFIELD, RI 02828, TEL. (401) 949-4090, DEVELOPED FROM AERIAL PHOTOGRAPHS TAKEN 3-23-2000 AND AERIAL CONTROL PROVIDED BY FOSTER SURVEY COMPANY (8 NORTH ROAD FOSTER, R.I. 02825) UTILIZING A GLOBAL POSITIONING SURVEY GRADE TRIMBLE 4800 GPS SYSTEM. ADDITIONAL MAPPING PERFORMED BY ON THE GROUND SURVEY BY FOSTER SURVEY COMPANY IN AUGUST AND SEPTEMBER 2007.
- 2) THE HORIZONTAL DATUM IS NAD'83 AND THE VERTICAL DATUM IS NGVD'29.
- 3) WETLANDS DELINEATION AND LOCATION OF WETLANDS FLAGS PROVIDED BY GEOSPHERE.
- 4) THE PROPERTY SURVEY SHOWN UPON THIS PLAN CONFORMS TO A CLASS I STANDARD AS ADOPTED BY THE R.I. BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. THOSE PROPERTY LINES BEING THE MOST SOUTHERLY AND SOUTHWESTERLY PROPERTY LINES OF THE SUBJECT PROPERTIES HAVE NOT BEEN RESOLVED BY THE SURVEYOR AT THIS TIME AND AS SUCH CONFORM TO A CLASS IV STANDARD AND ARE SUBJECT TO SUCH CHANGES AS AN ACCURATE SURVEY MAY DISCLOSE.
- 5) THE TOPOGRAPHIC SURVEY SHOWN UPON THIS PLAN CONFORMS TO A CLASS III STANDARD AS ADOPTED BY THE R.I. BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.
- 6) SEE EXISTING CONDITIONS PLAN BY FOSTER SURVEY COMPANY DATED SEPTEMBER 28, 2007.

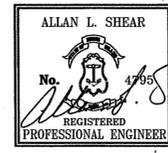
DRAWING INDEX

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Kindly be advised that this Permit is not a substitute for a verification of the type or amount of freshwater wetlands on site.

THIS SURVEY AND PLAN CONFORM TO A CLASS III STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.

BY: *David T. Bray* 5/16/08
REGISTERED PROFESSIONAL LAND SURVEYOR



ASSESSORS PLAT 2 LOT 4
OWNER
FACTORY MUTUAL ENGINEERING CORPORATION
743 REYNOLDS ROAD
GLOUCESTER, RI 02814

JUN 27 2008
JUN 26 2008



EXISTING SITE PLAN

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Proposed Design for:
FM Global
Research Campus
743 Reynolds Road
West Gloucester, RI 02814

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 27 2008 FILE # 08-0129
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE ADOPTED AT CONSTRUCTION SITE

SHEET CONTENTS:
TITLE SHEET / EXISTING
SITE PLAN

PROJECT #2707F
NATURAL HAZARDS
FACILITY

DATE: MAY 1, 2008

RIDEM PERMIT SET

C-1

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DRAINAGE SYSTEM OPERATION & MAINTENANCE NOTES:

STORMWATER COLLECTION SYSTEM:

THE STORM WATER COLLECTION SYSTEM SERVING THIS SITE IS INTENDED TO BOTH COLLECT STORM WATER RUNOFF AND TO PROVIDE PARTIAL TREATMENT OF THE STORM WATER PRIOR TO DISCHARGE. THIS SYSTEM COLLECTS RUNOFF GENERATED FROM THE SITE THROUGH THE USE OF CATCH BASINS. EACH CATCH BASIN IS EQUIPPED WITH A DEEP SUMP (WHICH COLLECTS SEDIMENTS AND DEBRIS) AND AN OIL/GAS TRAP (WHICH PREVENTS THE INTRUSION OF HYDROCARBONS AND OTHER FLOATING MATERIALS FROM ENTERING THE DRAINAGE SYSTEM). WHEN THESE TWO BASIC CONTROL MECHANISMS ARE FUNCTIONING PROPERLY THEY WILL PROVIDE A REDUCTION OF CONTAMINANTS AND DEBRIS ENTERING THE STORM WATER COLLECTION AND IMPROVE DISCHARGE QUALITY TO DOWNSTREAM RECEIVING WETLANDS AND/OR OTHER AREAS.

THE DESCRIBED SYSTEMS RELY UPON PROPER MONITORING, OPERATIONS AND MAINTENANCE TO FUNCTION AS DESIGNED AND INTENDED. A PROGRAM OF MONITORING, OPERATIONS AND MAINTENANCE MUST BE ON-GOING THROUGHOUT THE LIFE AND USE OF THE SITE, AND IS THE OWNER'S RESPONSIBILITY. THE ACTIVITIES, DESCRIBED BELOW, ARE TO BE INITIATED AFTER COMPLETION OF THE PROJECT AND ARE NOT DIRECTLY RELATED TO CONSTRUCTION OF THE SITE, EXCEPT AS SPECIFICALLY PROVIDED.

MONITORING:

THE DRAINAGE SYSTEMS ARE TO BE MONITORED BY THE OWNER, WHO SHALL DIRECT AN INDIVIDUAL TO ACT AS THE SYSTEMS MANAGER. THIS INDIVIDUAL SHALL KEEP A LOG OF ALL INSPECTIONS, OBSERVATIONS AND MAINTENANCE ACTIVITIES. THE LOG SHALL BE MADE AVAILABLE TO THE RIDEM WITHIN TEN (10) DAYS OF ANY WRITTEN REQUEST BY THAT AGENCY.

MONITORING FOR THIS PROJECT SHALL CONSIST OF THE FOLLOWING:

1. ALL CATCH BASINS SHALL BE INSPECTED SEMI-ANNUALLY TO ENSURE THEY HAVE ADEQUATE SUMP CAPACITY, ALL OIL/GAS TRAPS ARE IN-PLACE, ALL GRATES AND FRAMES ARE FREE FROM STRUCTURAL DAMAGE, AND ARE DRAINING FREELY.
2. ALL DRAINAGE MANHOLES SHALL BE ANNUALLY INSPECTED TO ENSURE THAT THEY ARE FREE FROM STRUCTURAL DAMAGE, ARE DRAINING FREELY AND ARE NOT PONDING WATER.
3. ALL OUTLET DRAINAGE SYSTEMS SHALL BE ANNUALLY INSPECTED TO ENSURE THAT NO EROSION IS OCCURRING AT OUTLETS, ALL OUTLETS ARE FREE-FLOWING AND NO DAMAGE HAS OCCURRED AS PART OF SITE MAINTENANCE OR RELATED ACTIVITIES.
4. UPON COMPLETION OF PROJECT CONSTRUCTION, AND PRIOR TO VACATING THE SITE, THE CONTRACTOR WILL CONDUCT A FINAL INSPECTION OF ALL DRAINAGE SYSTEM COMPONENTS, CLEAN THE SYSTEM AND ALL ASSOCIATED STRUCTURES, REPAIR ANY VEGETATIVE SOIL EROSION AND SEDIMENT CONTROL MEASURES (SEEDING, PLANTINGS, ETC.) WHERE REQUIRED, AND REPAIR (OR REMOVE WHERE APPROPRIATE) TEMPORARY SOIL EROSION AND SEDIMENT CONTROL DEVICES (SILT FENCES, HAYBALES, CHECK DAMS, ETC.). AFTER PERMANENT SOIL STABILIZATION HAS OCCURRED, ALL TEMPORARY CONTROL MEASURES (EXCLUDING STAKED HAYBALES) WILL BE REMOVED.

MAINTENANCE:

1. PARKING AREAS AND ACCESS WAYS SHALL BE SWEEPED CLEAN OF DEBRIS AND ACCUMULATION OF SILT OR SAND ON A REGULAR BASIS. A SPRING AND FALL CLEANING SCHEDULE IS RECOMMENDED.
2. ALL CATCH BASINS SHALL HAVE THE SUMPS CLEANED AT ANY TIME OF THE YEAR WHEN 2' OR LESS SPACE EXISTS BELOW THE OUTLET INVERT, OR A MINIMUM OF ONCE PER YEAR, REGARDLESS OF SUMP ACCUMULATION. ALL DEBRIS FROM THE CLEANING SHALL BE DISPOSED OF IN NON-WETLAND AREAS AND IN A MANNER AS PRESCRIBED BY LOCAL AND STATE REGULATIONS.
3. ALL HYDROCARBON TRAPS SHALL BE CHECKED FOR PHYSICAL INTEGRITY AND RE-SEALED IMMEDIATELY AFTER EACH CATCH BASIN CLEANING.
4. OIL ABSORBING "PILLOWS" OR OTHER MEANS SHALL BE USED TO REMOVE ACCUMULATIONS OF HYDROCARBONS (OIL/GREASE) IN CATCH BASINS THAT ARE REGULARLY OBSERVED TO CONTAIN HYDROCARBONS.
5. ALL BROKEN, LEAKING OR OTHERWISE DAMAGED STRUCTURES SHALL BE REPAIRED PROMPTLY UPON DISCOVERY. CATCH BASIN GRATES OR MANHOLE COVERS SHALL BE REPLACED WITH SIMILAR HEIGHT AND LOADING-CHARACTERISTIC REPLACEMENT PARTS. THE REPLACEMENT PARTS FOR ANY PIPE OR DRAINAGE STRUCTURE SHALL MATCH THE ORIGINAL DESIGN SPECIFICATIONS.
6. ACCUMULATED SEDIMENTS SHOULD BE REMOVED FROM DETENTION BASINS AT THE END OF THE FIRST (INITIAL) YEAR OF OPERATION TO RESOLVE ANY CONSTRUCTION RELATED IMPACTS. THEREAFTER, ACCUMULATED SEDIMENTS SHOULD BE REMOVED, IF DEEMED NECESSARY BY THE INSPECTOR, AT THE TIME OF YEARLY INSPECTIONS. AT A MINIMUM, SEDIMENT SHOULD BE REMOVED ONCE EVERY TEN (10) YEARS OR ONCE SEDIMENT ACCUMULATION HAS SIGNIFICANTLY REDUCED THE STORMWATER CAPACITY OF THE BASIN.
7. DETENTION BASIN OUTLET STRUCTURES SHOULD BE INSPECTED EVERY SIX MONTHS TO INSURE PROPER OPERATION. DURING THE FIRST SIX MONTHS OF OPERATION, ADDITIONAL INSPECTIONS SHOULD BE MADE TO OBSERVE AND CORRECT ANY OPERATIONAL PROBLEMS.
8. GRASSED PORTIONS OF DETENTION BASINS AND GRASSED SWALES SHOULD BE INSPECTED AT LEAST TWICE EACH YEAR TO CHECK FOR SOIL EROSION RELATED PROBLEMS. PROBLEM AREAS SHOULD BE RESEEDING IMMEDIATELY TO STABILIZE EXPOSED SOILS AND PREVENT FURTHER EROSION OR POTENTIAL CLOSING OF OUTFLOW DEVICES. IF IT BECOMES NECESSARY TO REMOVE HERBACEOUS VEGETATION DURING MAINTENANCE OPERATIONS, THE CUTTINGS SHOULD BE DISPOSED OF AT AN APPROPRIATE UPLAND LOCATION, OUTSIDE OF ANY REGULATED FRESHWATER WETLAND AREA.
9. ACCUMULATED SEDIMENTS SHOULD BE REMOVED FROM GRASSED SWALES AT THE END OF THE FIRST (INITIAL) YEAR OF OPERATION TO RESOLVE ANY CONSTRUCTION RELATED IMPACTS. THEREAFTER, ACCUMULATED SEDIMENTS SHOULD BE REMOVED, IF DEEMED NECESSARY BY THE INSPECTOR, AT THE TIME OF YEARLY INSPECTIONS.
10. IN AREAS WHERE TREES AND/OR SHRUBS HAVE NOT BEEN INSTALLED, SIDE SLOPES, EMBANKMENTS, AND SWALES SHOULD BE MOWED AT LEAST ONCE AFTER AUGUST 15TH OF EACH CALENDAR YEAR TO PREVENT THE GROWTH OF UNWANTED WOODY VEGETATION. THE HEIGHT OF THE GRASS STAND AFTER CUTTING SHOULD BE NO LESS THAN 6 INCHES.
11. TRASH, DEBRIS, ETC. SHOULD BE REMOVED FROM DETENTION BASIN AND PIPE INLETS AND OUTLETS ON A CONTINUOUS BASIS.
12. REPLANTING, REGRADING OR RESEEDING REQUIRED AT THE SITE TO ADDRESS SOIL EROSION SHOULD BE ACCOMPLISHED PROMPTLY TO ENSURE PROPER FUNCTIONING OF THE ENTIRE SYSTEM WHEN NECESSARY. APPROPRIATE FERTILIZER AND PESTICIDES SHOULD BE APPLIED BY A LICENSED PROFESSIONAL AT MINIMAL APPLICATION RATES IN ORDER TO PREVENT THE CONTAMINATION OF GROUNDWATER.
13. CATCH BASINS SHOULD BE INSPECTED AT LEAST ONCE/YEAR AND CLEANED IF NECESSARY. ALL SILT, DEBRIS, AND OIL/GREASE (HYDROCARBON) PRODUCTS THAT ARE REMOVED DURING CLEANING PROCEDURES SHOULD BE LEGALLY DISPOSED OF IN A PROPER FASHION.

SITE CONSTRUCTION NOTES:

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM WITH THE PROVISIONS OF THE RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2004), THE PROJECT SPECIFICATIONS AND APPLICABLE TOWN OF GLOUCESTER STANDARDS OR REQUIREMENTS.
2. UNDERGROUND UTILITY INFORMATION SHOWN ON THE DRAWINGS HAS BEEN PLOTTED FROM RECORD DATA AND MAY NOT BE CORRECT. PRIOR TO ANY EXCAVATION, CONTACT DIG-SAFE TO ESTABLISH MORE PRECISE LOCATIONS ON THE GROUND.
3. INSTALL 4 INCHES OF LOAM AND SEED IN ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT DESIGNATED FOR ANOTHER SURFACE TREATMENT.

GENERAL CONSTRUCTION REQUIREMENTS:

1. ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL TAKE PLACE AT LEAST 100 FEET DISTANCE FROM WETLAND AREAS. FUELING AND MECHANICAL ADJUSTMENTS TO EQUIPMENT SHALL NOT OCCUR NEAR THE ENTRANCE TO ANY DRAINAGE SYSTEM.
2. ANY ON-SITE DISPOSAL OF SOLID WASTE, INCLUDING EARTH MATERIALS SHALL NOT OCCUR WITHIN 100 FEET OF WETLAND AREAS OR WITHIN THE CONSTRUCTION AREA (UNLESS OTHERWISE DESIGNATED). ANY MATERIAL NOT RE-USED ON SITE SHALL BE HAULED OFF SITE TO AN AUTHORIZED, LEGAL LOCATION.
3. ALL CONTRACTORS AND SUBCONTRACTORS SHALL BE INFORMED THAT THE CLEANING OF EQUIPMENT IS PROHIBITED IN AREAS WHERE THE WASH-WATER WILL DRAIN DIRECTLY TO SITE DRAINAGE SYSTEMS.
4. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL, THIS OPERATION SHALL INCLUDE SHEEPING ALL PAVED SURFACES LOCATED IN THE SITE AREA AND ANY OFF-SITE AREAS THAT ARE IMPACTED BY SITE CONSTRUCTION ON A REGULAR BASIS.
5. THE CONTRACTOR SHALL LIMIT OPERATIONS THAT RESULT IN THE GENERATION OF AIRBORNE SEDIMENT. ONLY CLEAN, POTABLE WATER SHALL BE USED TO CONTROL DUST.

EROSION AND SEDIMENTATION CONTROL

1. ALL PERIMETER EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF EARTHWORK AT THE SPECIFIC AREAS INDICATED ON THE PLANS. VEGETATIVE CLEARING MAY OCCUR PRIOR TO INSTALLATION OF SUCH CONTROLS, BUT NO GRUBBING, GRADING, FILLING, OR OTHER SOIL DISTURBANCE SHALL OCCUR PRIOR TO CONTROL INSTALLATION.
2. NO WORK IS TO OCCUR ON THE WETLAND SIDE OF PERIMETER EROSION AND SEDIMENTATION CONTROLS. ALL PERIMETER CONTROLS SERVE AS THE PROJECT LIMIT OF CLEARING AND SURFACE DISTURBANCE.
3. STONES, BRUSH, CONSTRUCTION DEBRIS, LITTER, OR OTHER SUCH MATERIALS SHALL NOT BE DEPOSITED ON THE WETLAND SIDE OF PERIMETER EROSION AND SEDIMENTATION CONTROLS.
4. ALL PERIMETER EROSION AND SEDIMENTATION CONTROLS MUST BE PROPERLY MAINTAINED AND MUST REMAIN IN PLACE UNTIL SOILS HAVE STABILIZED TO THE SATISFACTION OF THE ENGINEER AND/OR RIDEM. CONTROLS ARE TO BE INSPECTED WEEKLY AND IMMEDIATELY FOLLOWING ALL PRECIPITATION EVENTS THAT INCLUDE RAINFALL OF 0.1" OR MORE.
5. THE ENGINEER RESERVES THE RIGHT TO SPECIFY ADDITIONAL CONTROLS AS CONDITIONS MAY WARRANT. ACCESSIBLE RESERVES OF HAY BALES AND STAKES ARE TO BE MAINTAINED ON SITE FOR ROUTINE MAINTENANCE AND IN THE EVENT OF UNANTICIPATED PROBLEMS REQUIRING IMMEDIATE RESPONSE.
6. THE TOE OF FILL SLOPES SHALL REMAIN AT LEAST ONE FOOT INSIDE OF ALL EROSION CONTROLS. UNDER NO CIRCUMSTANCE SHALL THE EROSION CONTROLS BE COVERED WITH FILL MATERIAL. ANY FILL MATERIAL THAT IS PLACED ON OR AGAINST EROSION CONTROLS SHALL BE IMMEDIATELY REMOVED.
7. ALL HAY BALES ARE TO BE INSTALLED IN ACCORDANCE WITH THE DETAILS. THEY SHALL BE DOUBLE STAKED AND INSTALLED WITH THE LOWER 4 INCHES BURIED AND BACK FILLED WITH COMPACTED SOIL MATERIAL.
8. HAY BALE CHECK DAMS ARE TO BE INSTALLED AT ANY AREA WHERE STORM WATER HAS THE OPPORTUNITY TO DRAIN AND SCOUR ALONG THE TOE OF NEWLY-CREATED SLOPES LOCATED INSIDE THE PERIMETER HAY BALES.
9. ALL DISTURBED SOILS EITHER NEWLY CREATED, OR EXPOSED, LOCATED WITHIN 50 FEET OF WETLANDS PRIOR TO OCTOBER 15 OF ANY CALENDAR YEAR SHALL BE SEEDED OR PROTECTED BY THAT DATE. ANY AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION BY NOVEMBER 15 OF THE SAME YEAR MUST BE STABILIZED BY INSTALLING EROSION CONTROL MATTING, HAY MULCH, OR EQUIVALENT.
10. SOIL STOCKPILES TO REMAIN IDLE MORE THAN 30 CALENDAR DAYS ARE TO BE RINGED WITH EITHER SILT FENCE OR STAKED HAY BALES AND SEEDED WITH A CONSERVATION GRASS MIX.
11. ANY DISTURBED SOILS NOT DESIGNATED FOR OTHER SURFACE TREATMENT ARE TO BE LOAMED (4 INCHES) AND SEEDED IMMEDIATELY FOLLOWING FINAL GRADING.
12. APPROPRIATE PRECAUTIONS SHOULD BE TAKEN TO PREVENT CONSTRUCTION EQUIPMENT FROM TRACKING SOIL BEYOND PROJECT LIMITS. TEMPORARY CRUSHED-STONE CONSTRUCTION ENTRANCES ARE TO UTILIZED TO CONTROL SUCH TRACKING. STONE IS TO BE REPLACED ROUTINELY WHEN IT BECOMES LADEN WITH SOIL AND LOOSES IT EFFECTIVELY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROPER EROSION CONTROL BOTH ON AND OFF SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE CONTROLS ARE SPECIFIED ON THE SITE PLAN.

DRAINAGE WORK:

1. THE DRAINAGE SYSTEM SHALL BE INSTALLED BY STARTING AT THE DOWNGRADIENT END AND WORKING UPGRADIENT.
2. RIP-RAP SHALL BE INSTALLED AT PIPE INLETS AND OUTLETS IMMEDIATELY AFTER INSTALLING PIPE. SILT FENCE SHALL BE INSTALLED AT THE OUTFALL OF ALL TEMPORARY BASINS AND SWALES AND SHALL REMAIN IN PLACE UNTIL ALL TRIBUTARY AREAS ARE STABILIZED.
3. RUNOFF SHALL NOT BE ALLOWED TO ENTER PIPES FROM UN-STABILIZED SURFACES.
4. TRENCH EXCAVATIONS SHALL BE LIMITED TO THE MINIMUM LENGTH REQUIRED FOR DAILY PIPE INSTALLATION. ALL TRENCHES SHALL BE BACK FILLED AS SOON AS POSSIBLE. THE UPSTREAM ENDS OF PIPES SHALL BE CLOSED NIGHTLY WITH PLYWOOD CAPS.
5. IT IS IMPORTANT THAT BINDER COURSE BE INSTALLED IN PARKING AND ACCESS ROADWAYS AS SOON AS FEASIBLE AS THESE AREAS WILL FUNCTION AS A CONDUIT FOR RUNOFF. FRAME & GRATE/COVER SETS MUST BE INSTALLED TO THE ELEVATION OF THE TOP OF THE BINDER COURSE. A SECOND ADJUSTMENT WILL BE NECESSARY PRIOR TO INSTALLING THE SURFACE COURSE.

WATER SUPPLY, SEWER AND SITE UTILITIES:

1. CARE SHALL BE TAKEN TO ASSURE THAT UTILITY TRENCHES DO NOT CHANNELIZE RUNOFF TOWARDS WETLAND AREAS, EXISTING STREETS AND OTHER OFF-SITE SENSITIVE AREAS.
2. WATER LINES AND AFFURTEANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AND LOCAL OR STATE REQUIREMENTS.
3. SEWER LINES, MANHOLES AND AFFURTEANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AND LOCAL OR STATE REQUIREMENTS.

LANDSCAPING:

1. LANDSCAPING SHALL OCCUR AS SOON AS POSSIBLE AFTER GENERAL CONSTRUCTION OPERATIONS IN ORDER TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.
2. THE CONTRACTOR SHALL UTILIZE SLOPE STABILIZATION METHODS AND MATERIALS THAT MAY BE ADJUSTED TO VARYING SITE CONDITIONS. EROSION CONTROL BLANKETS OR MIRAFI MIRAMET (OR SIMILAR PRODUCTS) SHALL BE MADE AVAILABLE ON SITE FOR EMERGENCY USE.
3. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT PERMIT PROPER GROWTH OF VEGETATION, TEMPORARY MULCHING WITH STRAW OR OTHER METHODS SHALL BE PROVIDED.
4. ALL DISTURBED SURFACES TO BE PLANTED SHALL RECEIVE A MINIMUM OF 4" OF TOPSOIL WITH THE SURFACE SMOOTHED TO THE SPECIFIED GRADES. REFER TO LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.
5. SEED APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS.

SEEDING MATERIAL

MIXTURE:	% BY WEIGHT:	SEEDING DATES:
RED FESCUE	70	APRIL 1 - JUNE 15
KENTUCKY BLUEGRASS	15	AUGUST 15 - OCTOBER 15
PERENNIAL RYEGRASS	15	
TOTAL:	200 LBS./AC.	

MIXTURE:	% BY WEIGHT:	SEEDING DATES:
RED FESCUE	70	APRIL 1 - JUNE 15
KENTUCKY BLUEGRASS	15	AUGUST 15 - OCTOBER 15
BIRDFOOT TREFOLI	15	
TOTAL:	200 LBS./AC.	

MIXTURE:	LBS. / 1000 SF.	LBS. / AC.	SEEDING DATES:
ANNUAL RYEGRASS	1.0 - 1.5	40 - 60	1/1 - 6/1
PERENNIAL RYEGRASS	1.0 - 1.5	40 - 60	3/1 - 6/1
SUDAN GRASS	0.7 - 1.0	30 - 40	5/15 - 8/15
MILLET	0.7 - 1.0	30 - 40	5/15 - 8/15
WINTER RYE	3.0	120	1/1 - 6/15 or 10/15 - 12/31
OATS	0.5 - 5.0	85 - 120	3/1 - 6/15
KEEPING COVER GRASS	0.5 - 5.0	15 - 50	5/1 - 7/1

TEMPORARY TREATMENTS SHALL INCLUDE A HAY, STRAW, FIBER MULCH OR OTHER PROTECTIVE COVER SUCH AS A MAT OR FIBER COVER (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKET, ETC.) HAY OR STRAW APPLICATIONS SHOULD BE APPLIED AT 3,000 - 4,000 LBS./AC.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED BY THE LETTER OF APPROVAL
DATED JUN 27 2008 FILE # 06-0139
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

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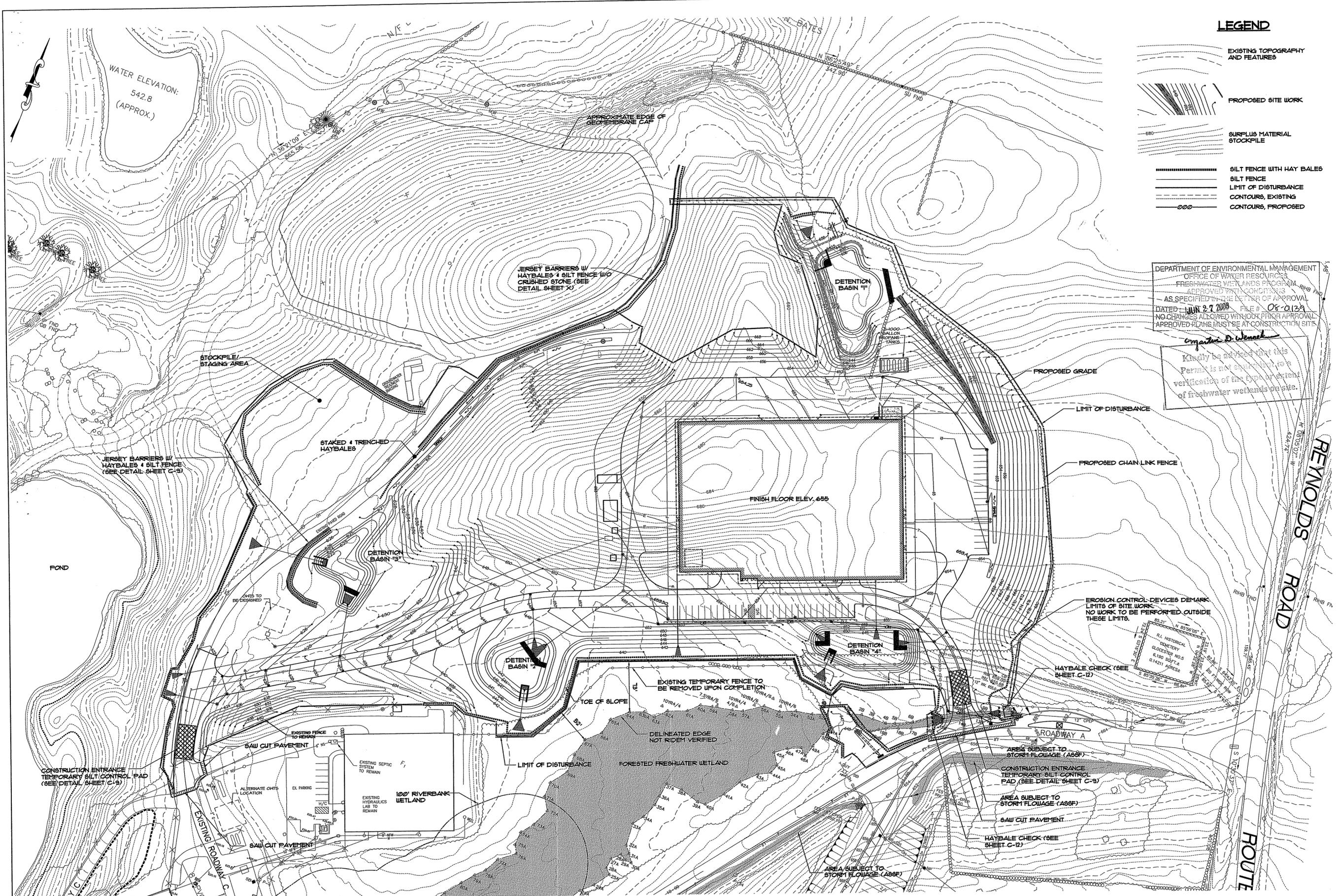
FM Global

Proposed Design for:
FM Global
Research Campus
743 Reynolds Road
West Gloucester, RI 02814

SHEET CONTENTS:
CONSTRUCTION NOTES

PROJECT #2707F
NATURAL HAZARDS
FACILITY
DATE: MAY 1, 2008

RIDEM PERMIT SET



LEGEND

- EXISTING TOPOGRAPHY AND FEATURES
- PROPOSED SITE WORK
- SURPLUS MATERIAL STOCKPILE
- SILT FENCE WITH HAY BALES
- SILT FENCE
- LIMIT OF DISTURBANCE
- CONTOURS, EXISTING
- CONTOURS, PROPOSED

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED JUN 27 2008 FILE # 08-0129
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Signature: D. Wenech
 Kindly be advised that this
 Permit is not equivalent to a
 verification of the type/extent
 of freshwater wetlands on site.

EROSION CONTROL PLAN
 SCALE: 1" = 60'

Ed Wojcik
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B BOWERMAN ASSOCIATES, INC.
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 Fax: 401-654-6666
 bowerman@ed.com

CAPUTO AND WICK LTD.
 1150 PAWTUCKET AVE.
 RUMFORD, R.I. 02916
 401-434-8880

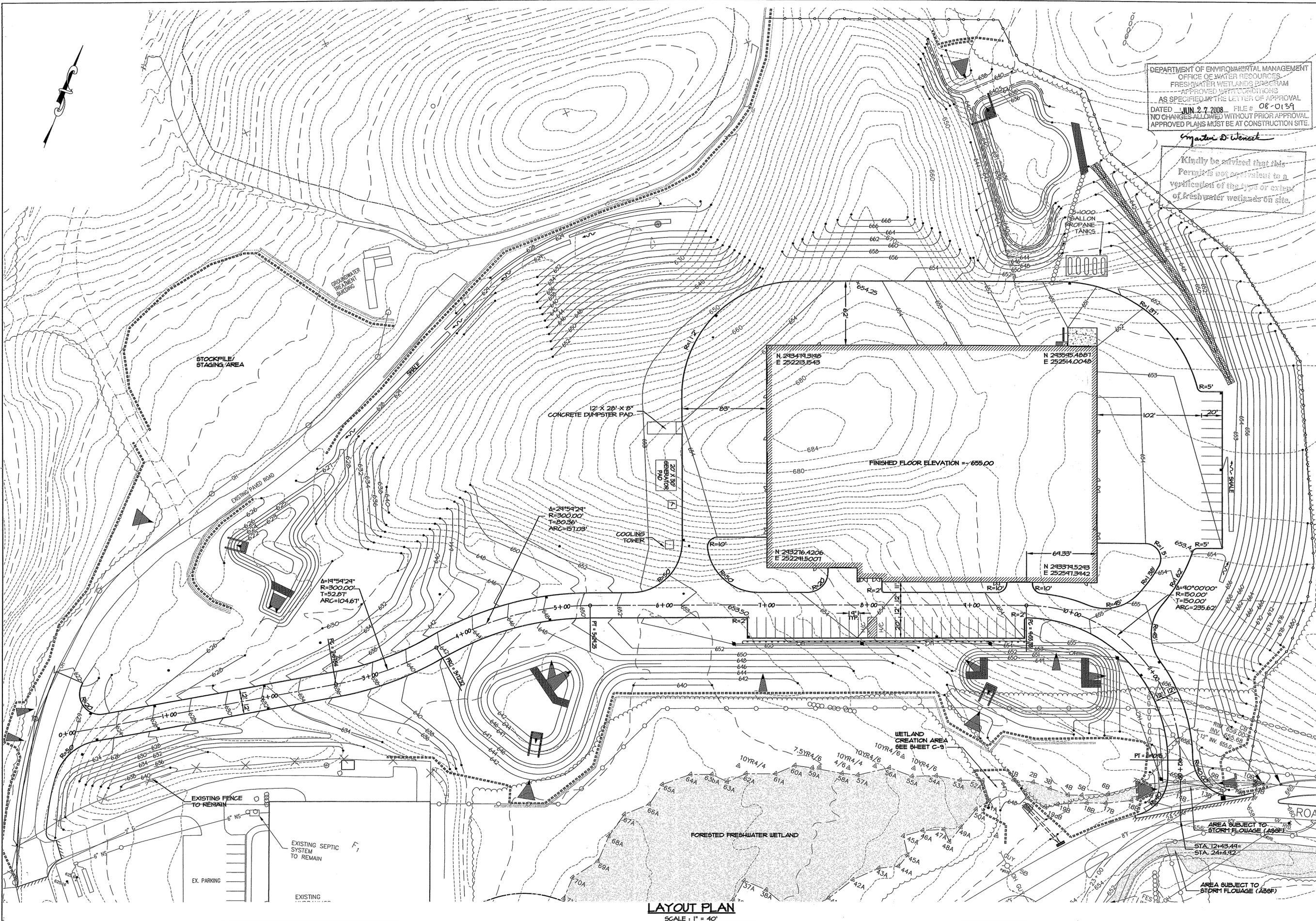


Proposed Design for:
FM Global
 Research Campus
 743 Reynolds Road
 West Glocester, RI 02814

ALLAN L. SHEAR
 No. 4795
 REGISTERED
 PROFESSIONAL ENGINEER

SHEET CONTENTS:
 EROSION CONTROL
 PLAN

PROJECT #2707F
 NATURAL HAZARDS
 FACILITY
 DATE: MAY 1, 2008



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
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Master D. Wencel

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LAYOUT PLAN
 SCALE: 1" = 40'

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Proposed Design for:
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 743 Reynolds Road
 West Glocester, RI 02814

ALLAN L. SHEAR
 No. 4795
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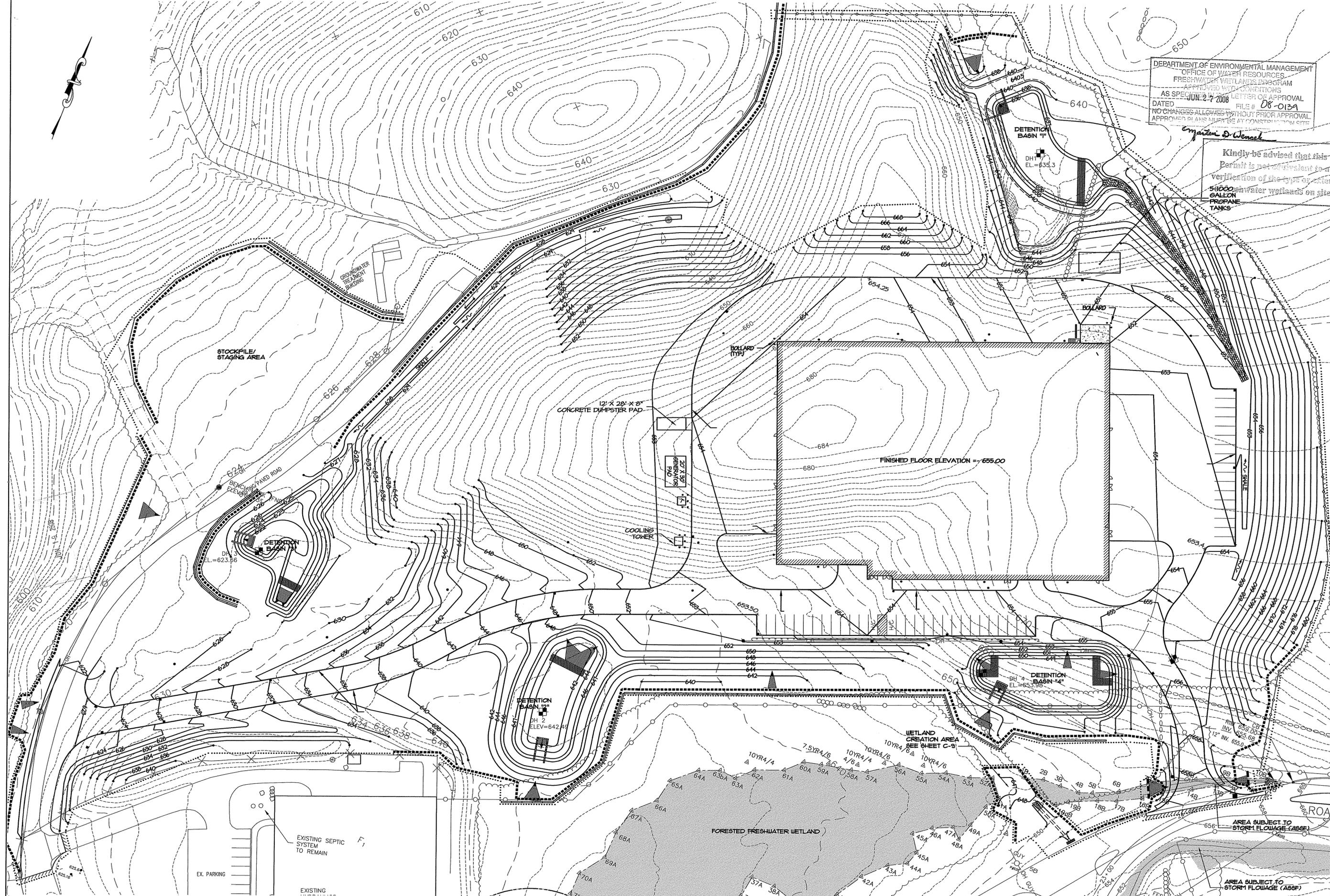
SHEET CONTENTS:
 LAYOUT PLAN

PROJECT #2707F
 NATURAL HAZARDS
 FACILITY

DATE: MAY 1, 2008

C-4

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
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 DATED 06-27-2008 FILE # 08-0129
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Signature: Stephen D. Wencel

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 of freshwater wetlands on site.

GRADING PLAN
 SCALE: 1" = 40'

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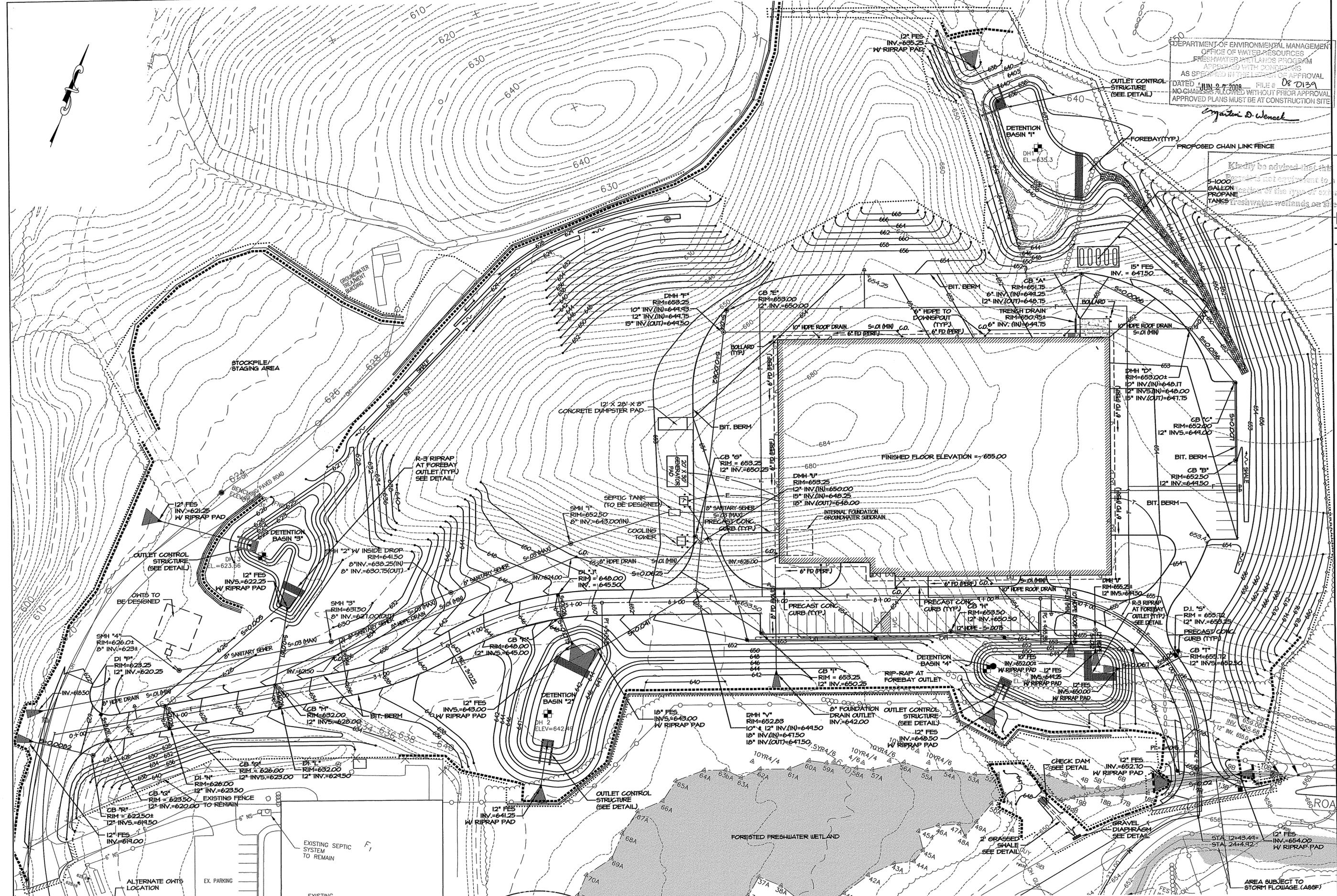
Proposed Design for:
FM Global
 Research Campus
 743 Reynolds Road
 West Glocester, RI 02814

ALLAN L. SHEAR
 No. 4795
 REGISTERED
 PROFESSIONAL ENGINEER

SHEET CONTENTS:
 GRADING PLAN

PROJECT # 2707F
 NATURAL HAZARDS
 FACILITY
 DATE: MAY 1, 2008
 REV.: JUNE 17, 2008

C-5



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
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 DATED JUN 27 2008 FILE # 08 0139
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Christopher D. Wenczel

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Proposed Design for:
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ALLAN L. SHEAR
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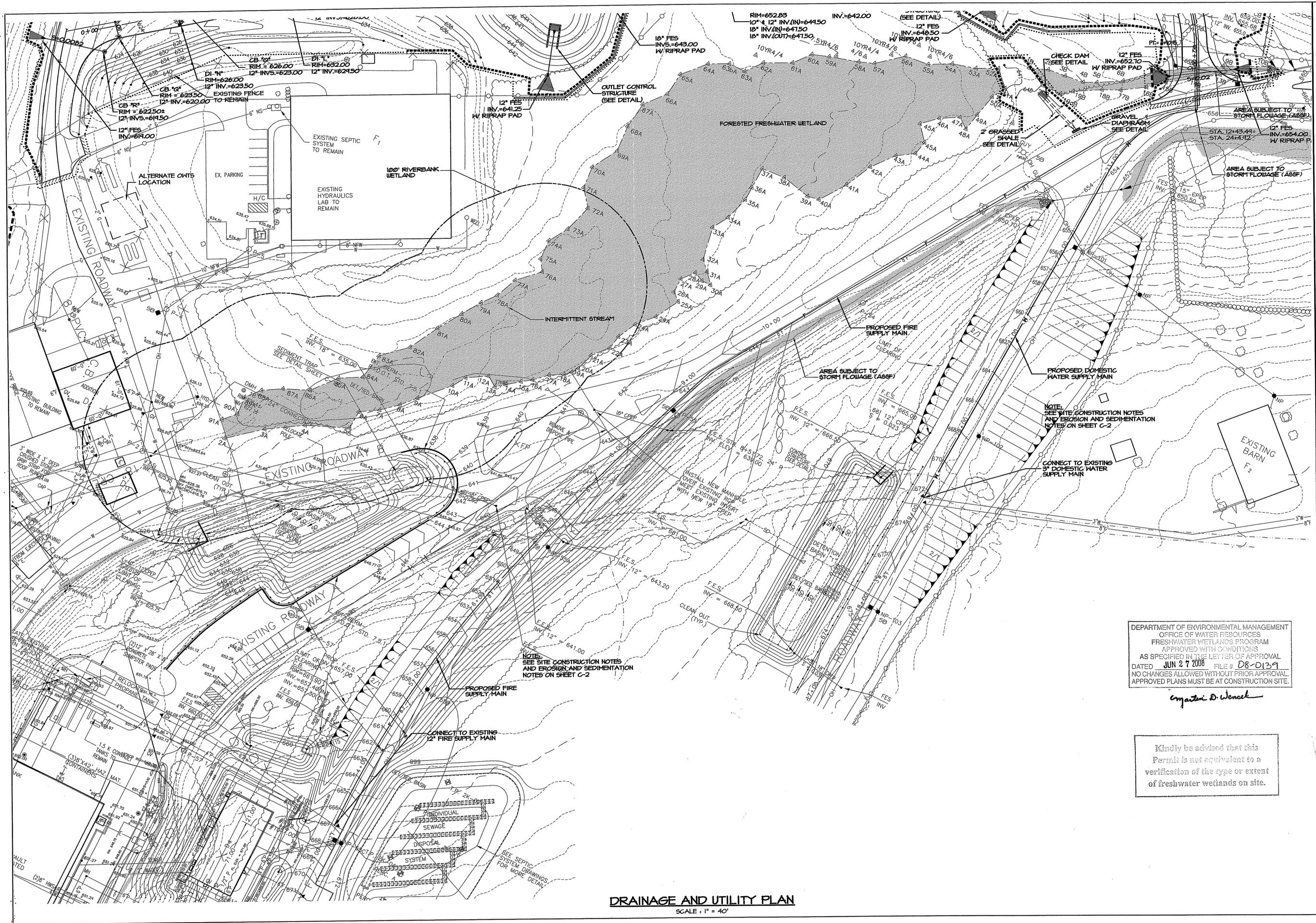
SHEET CONTENTS:
 DRAINAGE AND
 UTILITY PLAN
 JUN 25 2008

PROJECT # 2707F
 NATURAL HAZARDS
 FACILITY

DATE: MAY 1, 2008
 REV.: JUNE 17, 2008

C-6

DRAINAGE AND UTILITY PLAN
 SCALE: 1" = 40'



DRAINAGE AND UTILITY PLAN
SCALE: 1" = 40'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED JUN 27 2008 FILE # D8-0139
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Ernest D. Wencel

Kindly be advised that this
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of freshwater wetlands on site.

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Proposed Design for:
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West Glocester, RI 02814

ALLAN L. SHEAR
No. 4795
REGISTERED
PROFESSIONAL ENGINEER

SHEET CONTENTS:
DRAINAGE AND
UTILITY PLAN

MAY 6 2008

PROJECT # 2707F
NATURAL HAZARDS
FACILITY

DATE: MAY 1, 2008



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Master D. Wencel

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Proposed Design for:
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 Research Campus
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 West Glocester, RI 02814

ALLAN L. SHEAR
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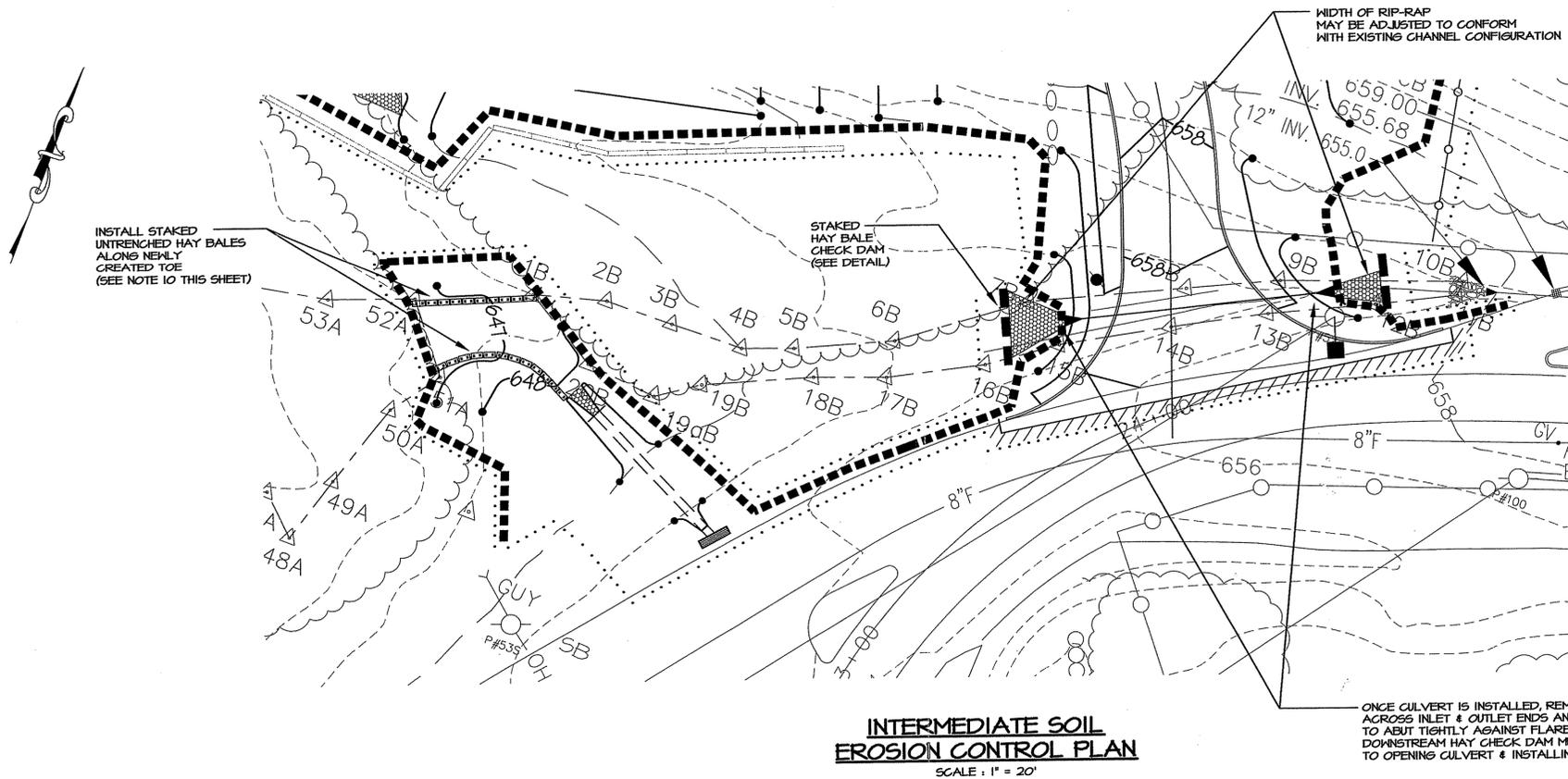
SHEET CONTENTS:
 DRIVEWAY PROFILE

MAY 6 2008

PROJECT #2707F
 NATURAL HAZARDS
 FACILITY

DATE: MAY 1, 2008

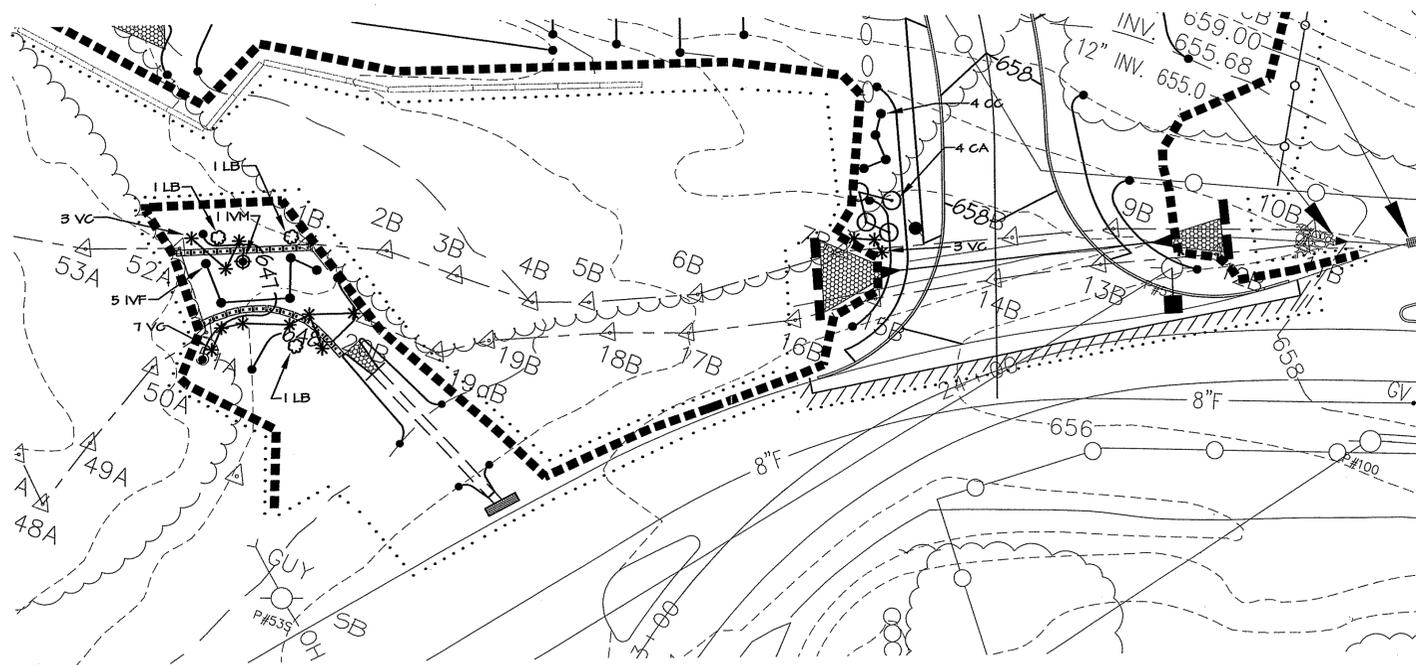
C-8



INTERMEDIATE SOIL EROSION CONTROL PLAN
SCALE: 1" = 20'

WETLAND CREATION NOTES:

- NO WETLAND-CREATION WORK IS TO COMMENCE WITHOUT FIRST NOTIFYING CAPUTO AND WICK LTD. AT LEAST 12 HOURS IN ADVANCE. THE ENGINEER/BIOLOGIST WILL REVIEW IN THE FIELD PROJECT LIMITS AND GENERAL CONSTRUCTION SEQUENCE AND METHODS.
- MACHINERY ACCESS SHALL BE FROM THE SOUTH, OVER EXISTING GRASSED SURFACE.
- NO TREE CLEARING IS REQUIRED OR SHALL OCCUR.
- NO WORK IS TO OCCUR ON THE WETLAND SIDE OF APPROVED PROJECT LIMITS. PERIMETER HAY BALES ARE TO BE INSTALLED PRIOR TO EARTHWORK AND WILL SERVE AS WORK LIMITS. NO STONES, BRUSH, DEBRIS, LITTER, OR OTHER MATERIALS ARE TO BE DEPOSITED ON THE WETLAND SIDE OF THE HAY BALES.
- THE WETLAND FLOOR SHALL BE OVER-EXCAVATED TO ACCOMMODATE 6 INCHES OF EVENLY-SPREAD ORGANIC-MIX SOIL. ALL SOILS EXCAVATED AS PART OF THE PROJECT SHALL BE EITHER RE-USED ON SITE WITHIN APPROVED PROJECT LIMITS OR SHALL BE RESPONSIBLY HAULLED OFF SITE AND DEPOSITED IN AN APPROVED UPLAND LOCATION OUTSIDE OF WETLAND AREAS.
- THE EXCAVATED WETLAND FLOOR SHALL BE GRADED TO GRADUALLY BLEND WITH THE UNDISTURBED WETLAND FLOOR.
- A SLIGHT (4") BERM SHALL BE RETAINED AT THE UPSLOPE LIMIT OF EXCAVATION, APPROXIMATELY BETWEEN FLAGS B-1 AND B-20, TO MAINTAIN THE FUNCTION OF A SEDIMENT AND LEAF TRAP.
- FOLLOWING FINAL SHAPING OF THE CREATED WETLAND AREA THE ORGANIC-MIX SOIL SHALL BE SPREAD ON THE CREATED WETLAND FLOOR (AND ON THE LOWER PORTION OF SIDE SLOPES) TO A DEPTH OF SIX INCHES. CARE SHALL BE TAKEN TO AVOID MECHANICAL COMPACTION OF THE ORGANIC-MIX SOIL ONCE IT IS LAYED AND SPREAD ON THE WETLAND FLOOR. SIX INCHES OF PLANTABLE LOAM SHALL BE SPREAD ON THE UPPER PORTION OF THE SIDE SLOPES.
- THE ORGANIC MIX SOIL SHALL COMPRISE LOAM BLENDED WITH PEAT MOSS AND/OR HUMUS AT A RATIO OF THREE PARTS MINERAL SOIL TO ONE PART PEAT/HUMUS.
- A LINE OF STAKED, UNTRENCHED HAY BALES SHALL BE INSTALLED ON THE WETLAND FLOOR ALONG THE TOE OF THE GRADED SLOPES WHERE SHOWN ON THE PLAN IMMEDIATELY FOLLOWING SPREADING OF THE ORGANIC-MIX SOIL.
- THE ENGINEER/BIOLOGIST RESERVES THE RIGHT TO SPECIFY THE INSTALLATION OF ADDITIONAL STAKED HAY BALES DURING CONSTRUCTION AS NECESSARY BASED ON FIELD CONDITIONS.
- SHRUBS SHALL BE PLANTED AS SHOWN ON THE PLANS.
- THE WETLAND FLOOR AND LOWEST ONE-FOOT OF THE SIDE SLOPES SHALL BE SEEDED WITH A HYDRIC GRASS/HERB SEED MIX TO BE APPROVED BY THE ENGINEER/BIOLOGIST.
- WETLAND SIDE SLOPES AND ALL UPLAND AREAS EXPOSED AS A RESULT OF WETLAND RESTORATION ACTIVITIES SHALL BE SEEDED WITH A CONSERVATION GRASS MIX (THE LOWEST ONE-FOOT OF THE SIDE SLOPES SHALL BE SEEDED WITH BOTH SEED MIXES).
- UPON COMPLETION OF ALL ITEMS LISTED ABOVE, STRAW MULCH SHALL BE LIGHTLY SPREAD ON THE WETLAND FLOOR, SLOPES, AND OTHER AREAS DISTURBED AS A RESULT OF CREATING THE WETLAND.
- THE PERIMETER AND INTERIOR HAY-BALE LINES ARE TO REMAIN IN PLACE UNTIL SOILS HAVE STABILIZED TO THE SATISFACTION OF THE ENGINEER/BIOLOGIST AND/OR RIDER.
- THE CONTRACTOR IS RESPONSIBLE FOR WATERING SHRUBS AND SEED AS NECESSARY TO ENSURE GERMINATION AND SURVIVAL.



PLANTING PLAN
SCALE: 1" = 20'

ENTRY ROAD PLANTING SCHEDULE

* 3	VC	HIGHBUSH BLUEBERRY	VACCINIUM CORYMBOSUM	4' MIN	B&B
⊙ 4	CA	SWEET PEPPERBUSH	CLETHRA ALNIFOLIA	4' MIN.	B&B
● 4	CC	AMERICAN HAZELNUT/ OR BEAKED HAZELNUT	CORYLIUS AMERICANA/ CORYLIUS CORNUTA	3-4' MIN.	B&B

WETLAND CREATION PLANTING SCHEDULE

● 5	IVF	WINTERBERRY (FEMALE)	ILEX VERTICILLATA	4' MIN	B&B
⊙ 1	IVM	WINTERBERRY (MALE)	ILEX VERTICILLATA	4' MIN.	B&B
* 10	VC	HIGHBUSH BLUEBERRY	VACCINIUM CORYMBOSUM	4' MIN.	B&B
⊙ 3	LB	SPICEBUSH	LINDERA BENZOIN	4' MIN.	B&B

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Myranda D. Wencsek

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CAPUTO AND WICK LTD.
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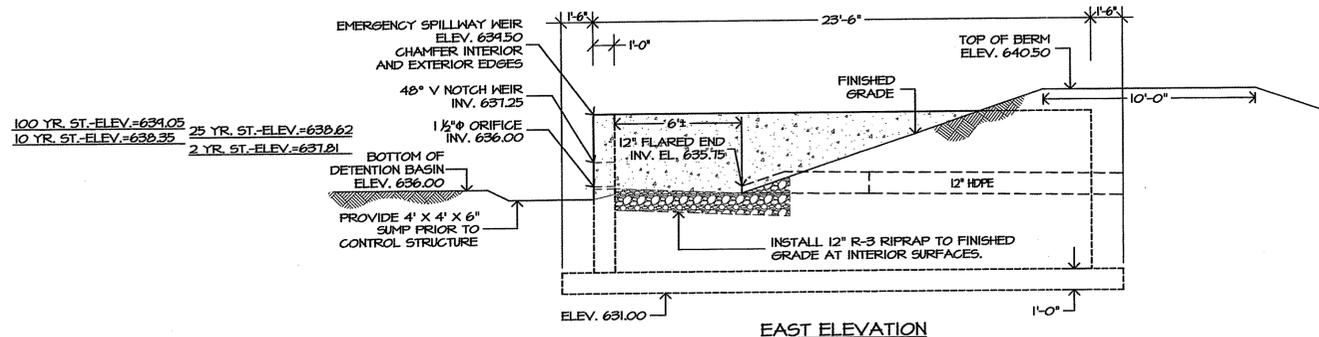


Proposed Design for:
FM Global
Research Campus
743 Reynolds Road
West Gloucester, RI 02814

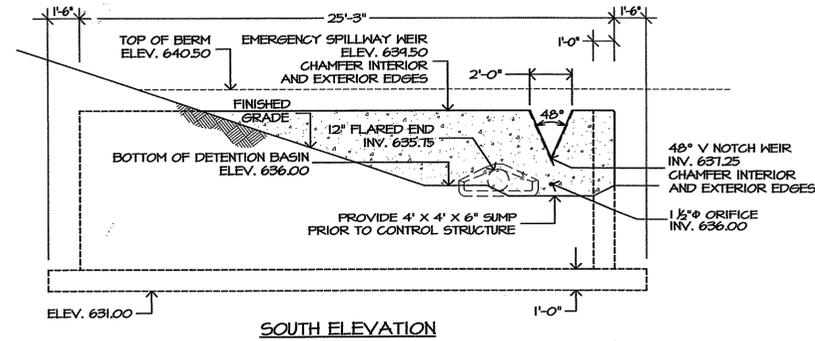
ALLAN L. SHEAR
No. 4795
REGISTERED PROFESSIONAL ENGINEER

SHEET CONTENTS:
WETLAND
DISPLACEMENT AND
CREATION PLAN

PROJECT #2707F
NATURAL HAZARDS
FACILITY
DATE: MAY 1, 2008



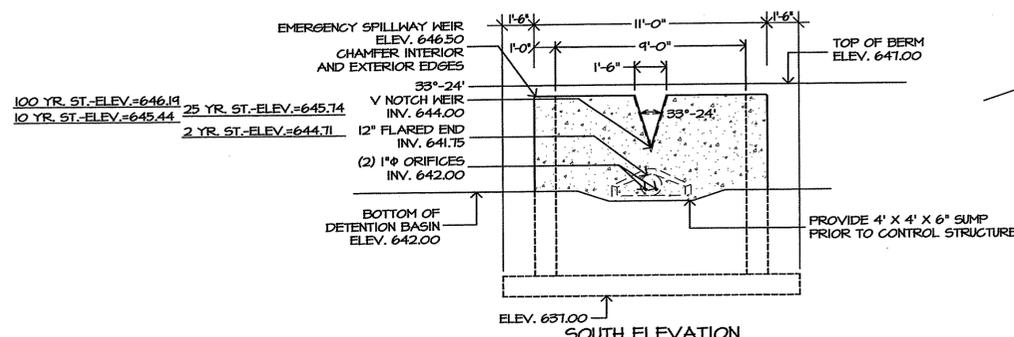
DETENTION BASIN #1 CONTROL STRUCTURE
SCALE: 1/4" = 1'-0"



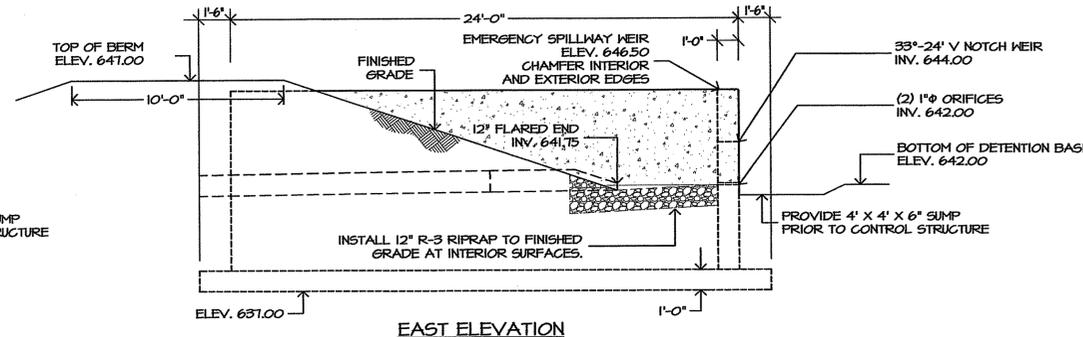
SOUTH ELEVATION

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 27 2008 FILE # 08-013A
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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Christopher D. Wenczek

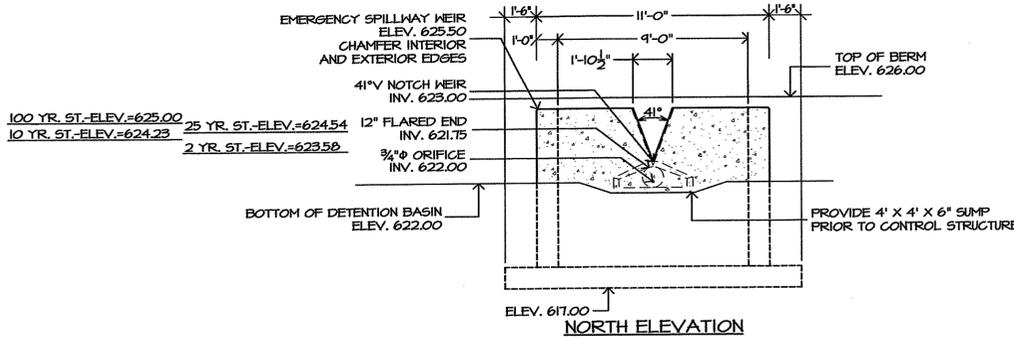
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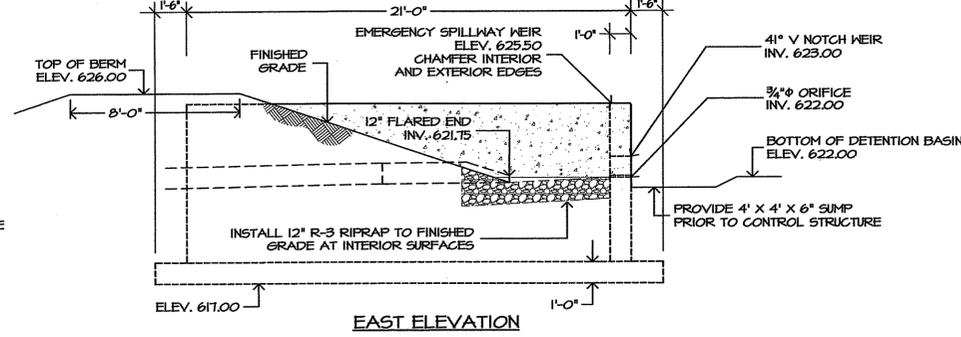
DETENTION BASIN #2 CONTROL STRUCTURE
SCALE: 1/4" = 1'-0"



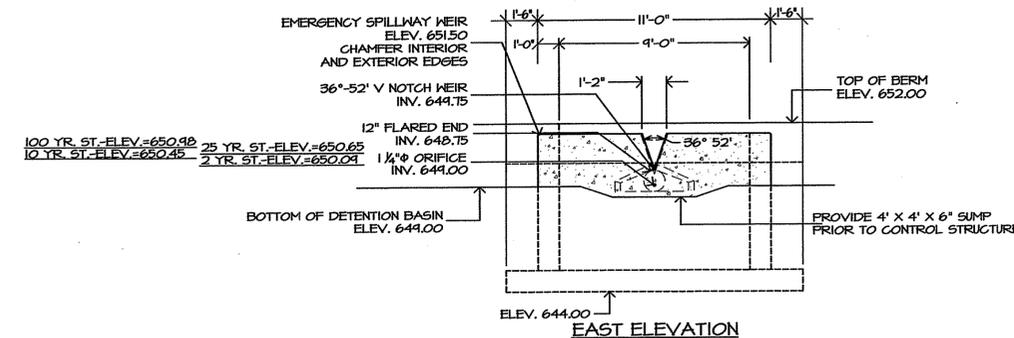
EAST ELEVATION



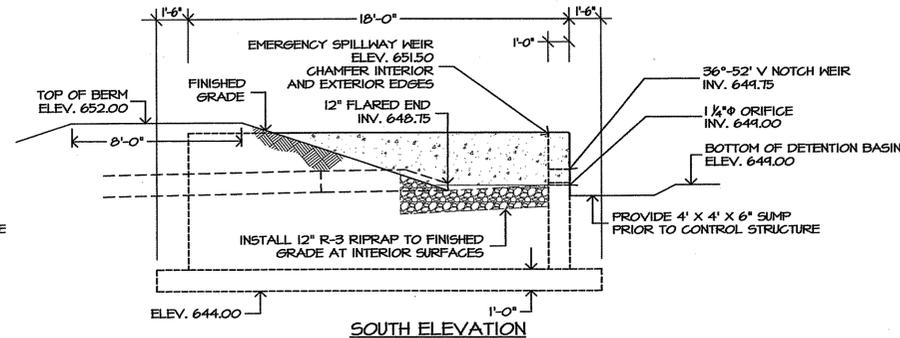
DETENTION BASIN #3 CONTROL STRUCTURE
SCALE: 1/4" = 1'-0"



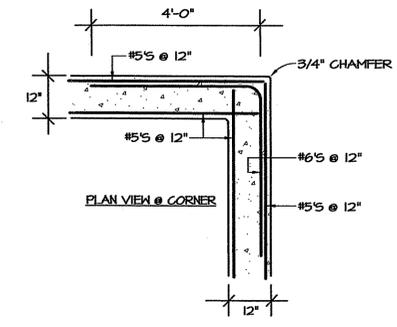
EAST ELEVATION



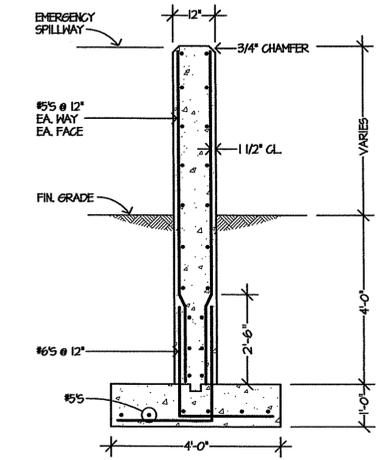
DETENTION BASIN #4 CONTROL STRUCTURE
SCALE: 1/4" = 1'-0"



SOUTH ELEVATION



CORNER BAR DETAIL
SCALE: 1/2" = 1'-0"



NOTE: CONCRETE TO BE 4000 PSI @ 28 DAYS
TYPICAL WALL SECTION
SCALE: 1/2" = 1'-0"

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FM Global

Proposed Design for:
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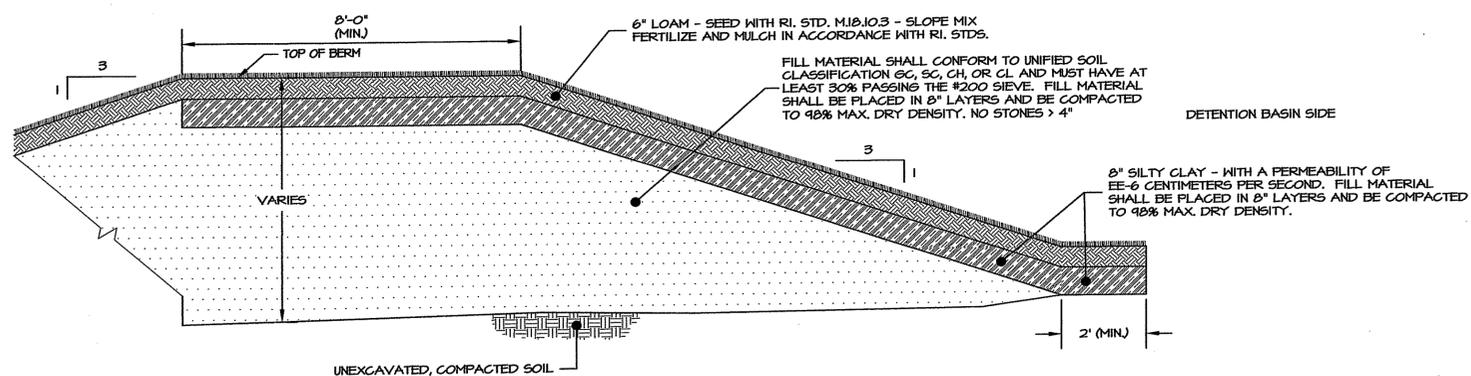
ALLAN L. SHEAR
No. 4795
REGISTERED PROFESSIONAL ENGINEER

SHEET CONTENTS:
DRAINAGE DETAILS

MAY 6 2008

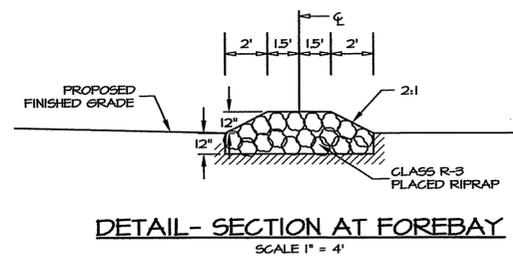
PROJECT #2707F
NATURAL HAZARDS FACILITY

DATE: MAY 1, 2008



STRIP ALL TOPSOIL, SUBSOIL AND UNSUITABLE MATERIAL, TREE ROOTS AND STUMPS AND ANY OTHER UNSUITABLE SOIL IN THE AREA OF THE EMBANKMENT AND 5 FEET BEYOND HORIZONTALLY IN ALL DIRECTIONS, WHERE POSSIBLE. STRIP MATERIAL VERTICALLY 3" MINIMUM INTO THE C HORIZON.

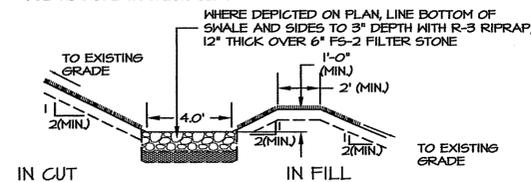
DETAIL - DETENTION BASIN EMBANKMENT
SCALE 1" = 2'



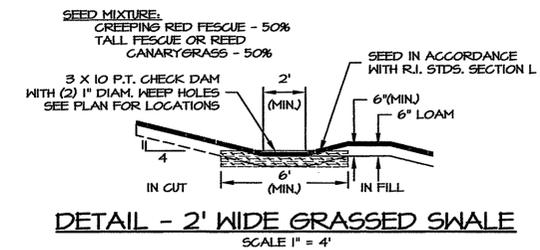
DETAIL - SECTION AT FOREBAY
SCALE 1" = 4'

SEED MIXTURE:
CREEPING RED FESCUE - 50%
TALL FESCUE OR REED CANARYGRASS - 50%

SOIL MIXTURE:
SOIL TO BE A SANDY LOAM WITH 10-20% ORGANIC MATTER AND NO MORE THAN 20% CLAY



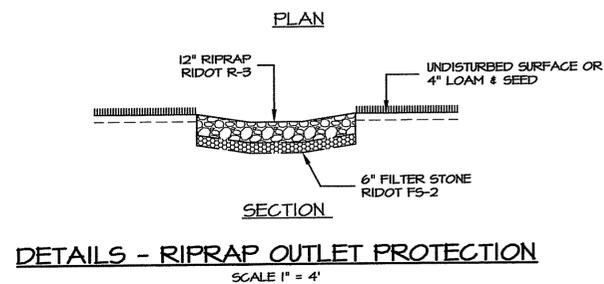
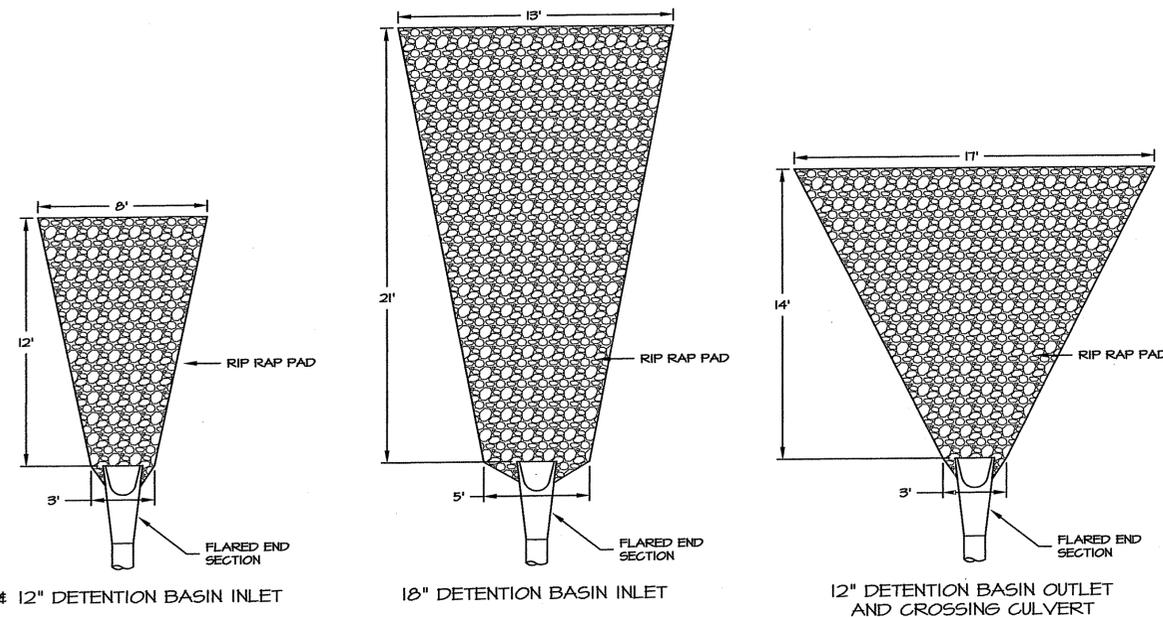
DETAIL - SWALE
SCALE 1" = 4'



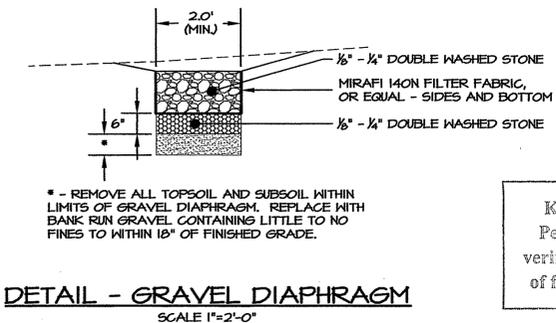
DETAIL - 2' WIDE GRASSED SWALE
SCALE 1" = 4'

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Christopher D. Wencel



DETAILS - RIPRAP OUTLET PROTECTION
SCALE 1" = 4'



* - REMOVE ALL TOPSOIL AND SUBSOIL WITHIN LIMITS OF GRAVEL DIAPHRAGM. REPLACE WITH BANK RUN GRAVEL CONTAINING LITTLE TO NO FINES TO WITHIN 18" OF FINISHED GRADE.

DETAIL - GRAVEL DIAPHRAGM
SCALE 1" = 2'-0"

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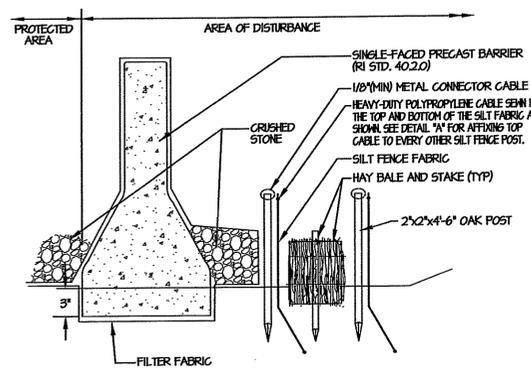
ALLAN L. SHEAR
No. 4795
REGISTERED PROFESSIONAL ENGINEER

SHEET CONTENTS:
DRAINAGE DETAILS

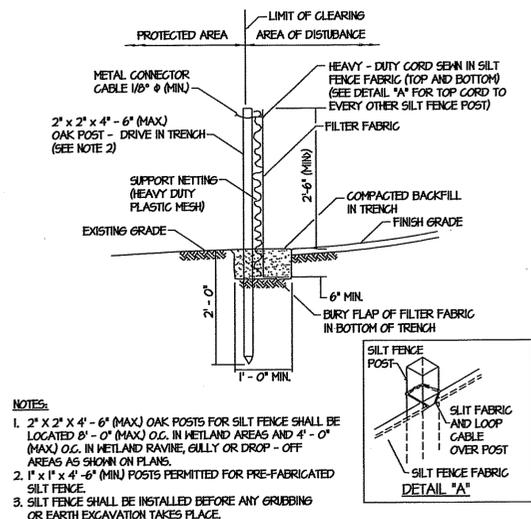
MAY 6 2008

PROJECT #2707F
NATURAL HAZARDS FACILITY

DATE: MAY 1, 2008

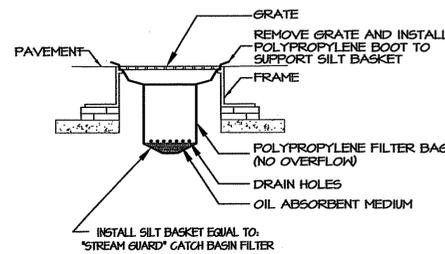


JERSEY BARRIER W/ HAYBALES & SILT FENCE
NOT TO SCALE



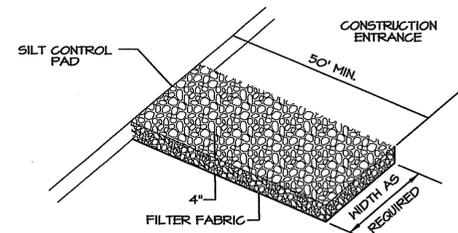
- NOTES:**
- 2" x 2" x 4" - 6" (MAX) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8' - 0" (MAX) O.C. IN WETLAND AREAS AND 4' - 0" (MAX) O.C. IN WETLAND RAVINE, GULLY OR DROP - OFF AREAS AS SHOWN ON PLANS.
 - 1" x 1" x 4" - 6" (MIN) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
 - SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

SILT FENCE DETAIL
NOT TO SCALE



- NOTE:** MONITOR SILT BASKET AFTER ALL STORM EVENTS AND REMOVE SILT WHEN DEPTH EXCEEDS ONE INCH. ALSO MONITOR OIL ABSORBENT MEDIUM AND REPLACE WHEN NECESSARY.

CATCH BASIN SILT BASKET DETAIL
NOT TO SCALE

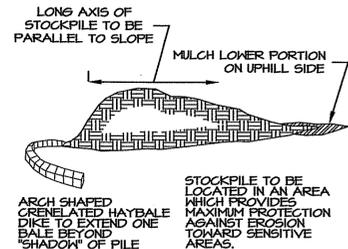


MATERIALS SIZE

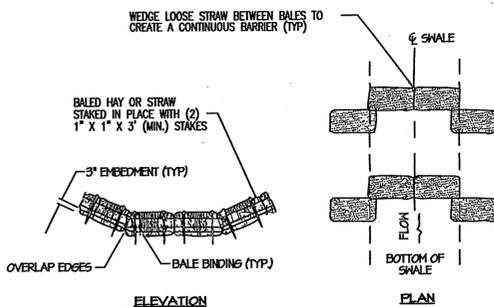
SQUARE MESH SIEVES	2" CRUSHED STONE OR GRAVEL	ASTM C-33 NO.2	ASTM C-33 NO.3
	% FINER	% FINER	% FINER
2-1/2 INCHES	100	90-100	100
2 INCHES	95-100	35-70	90-100
1-1/2 INCHES	30-55	0-15	35-70
1-1/4 INCHES	0-25	-	-
1 INCH	0-5	0-5	0-15
3/4 INCH	-	-	0-5
1/2 INCH	-	-	-
3/8 INCH	-	-	-

- NOTE:** SILT CONTROL PAD TO BE INSTALLED AND MAINTAINED IN CONFORMANCE WITH STANDARDS SET FORTH IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (1994 EDITION)

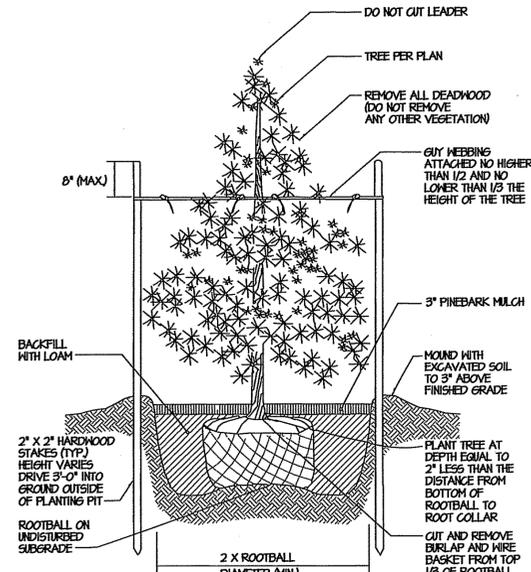
TEMPORARY SILT CONTROL PAD
NOT TO SCALE



TEMPORARY STOCKPILE
NOT TO SCALE

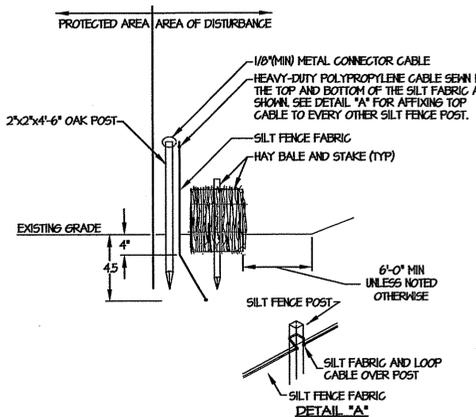


TEMP. EROSION CONTROL HAY BALE CHECK
NOT TO SCALE



- NOTE:** MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION L06 OF THE RIDOT STANDARD SPECIFICATIONS.

TREE PLANTING DETAIL
NOT TO SCALE



- NOTES:**
- HAY BALES ARE TO BE PLACED WITHIN A 4\"/>

SILT FENCE WITH HAY BALES
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 27 2008 FILE # 08-0139
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE STAMPED BY AN APPROVED PROFESSIONAL ENGINEER

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

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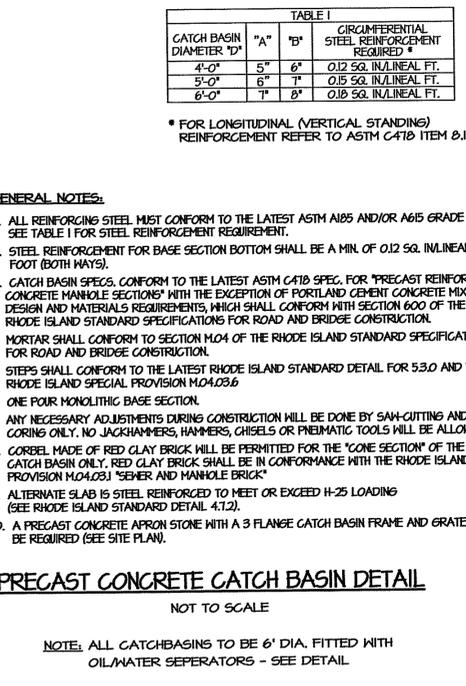
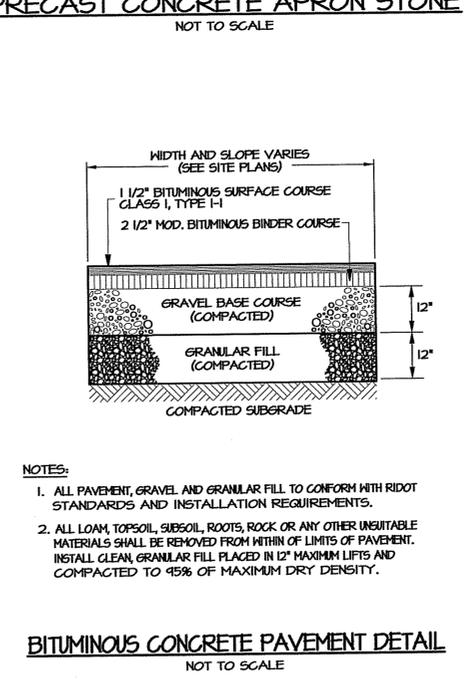
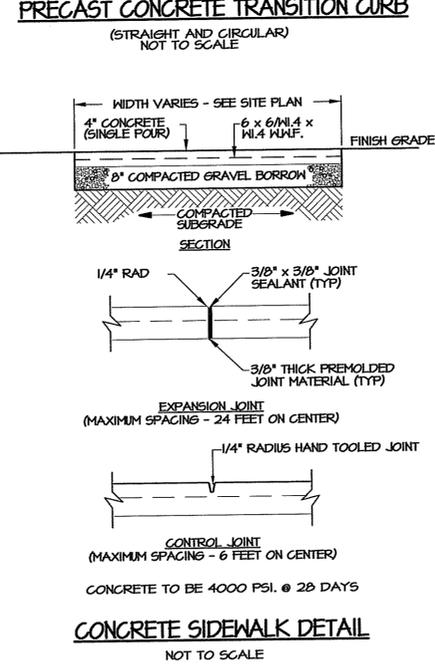
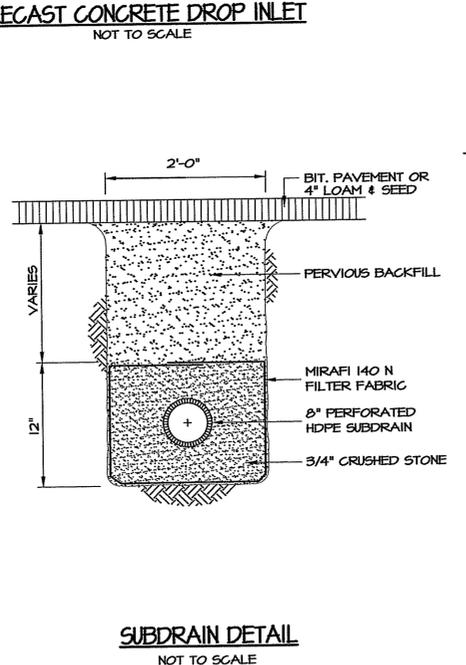
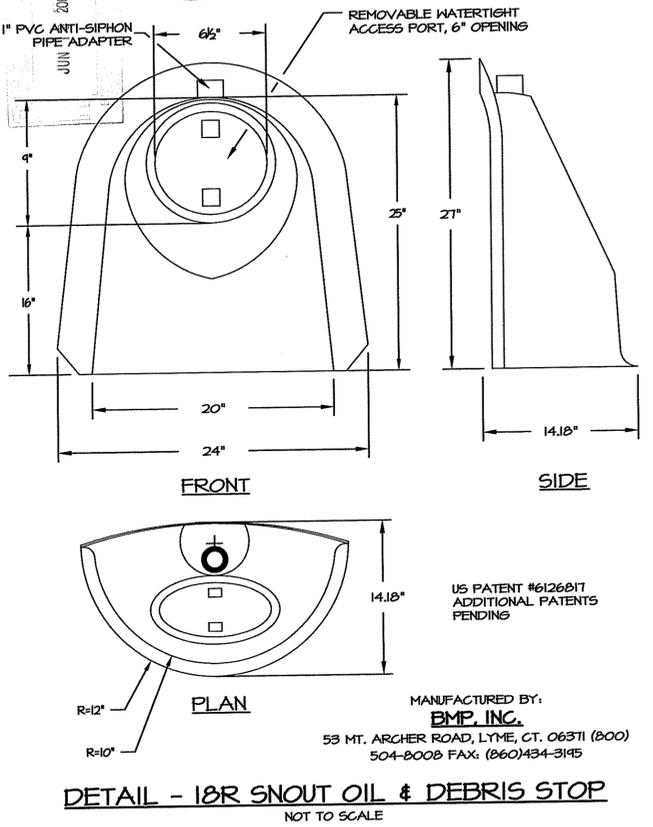
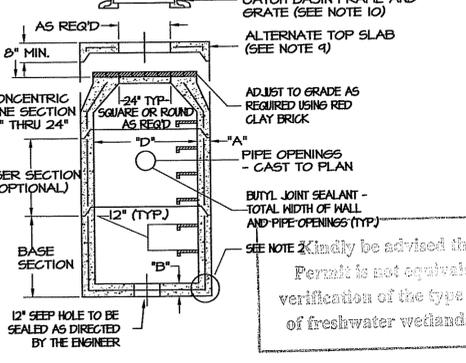
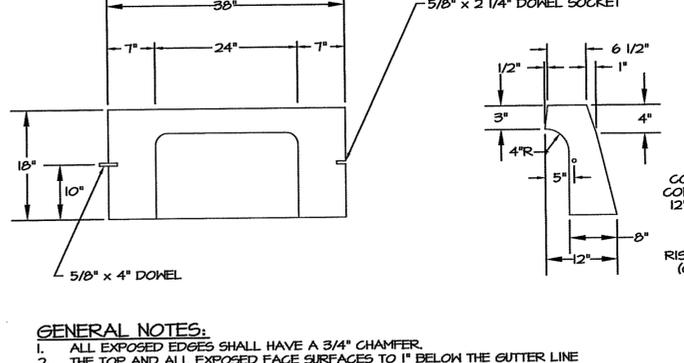
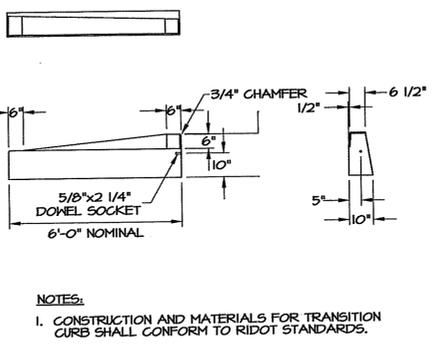
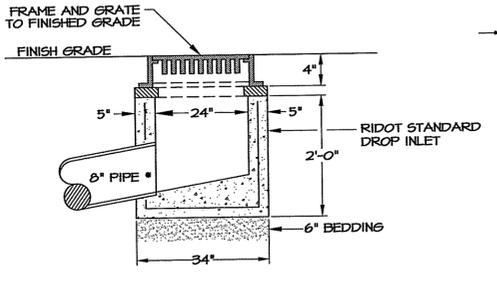
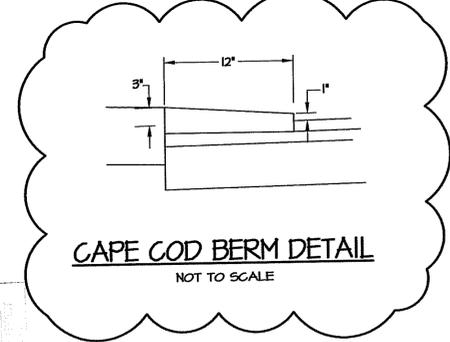
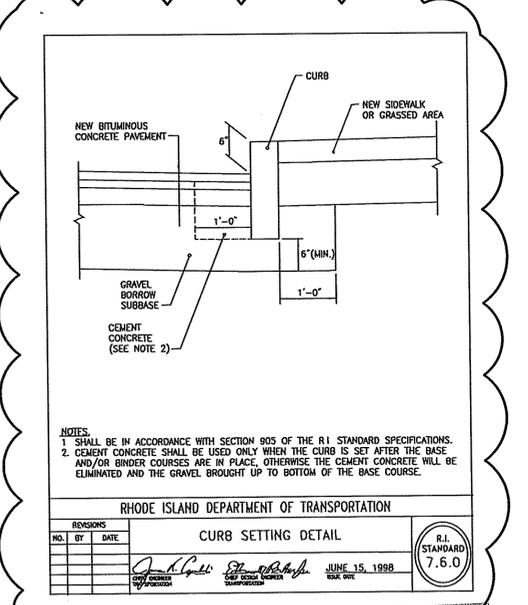
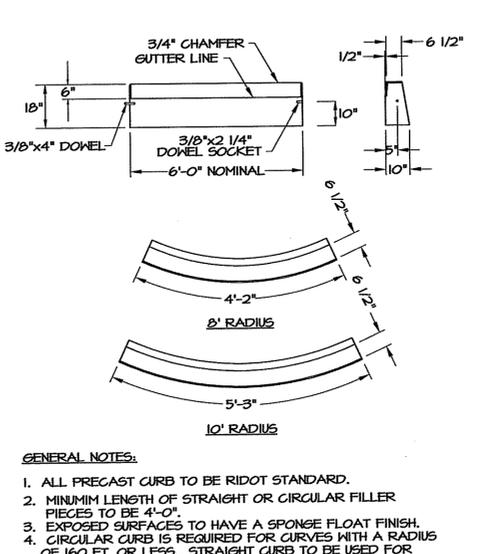
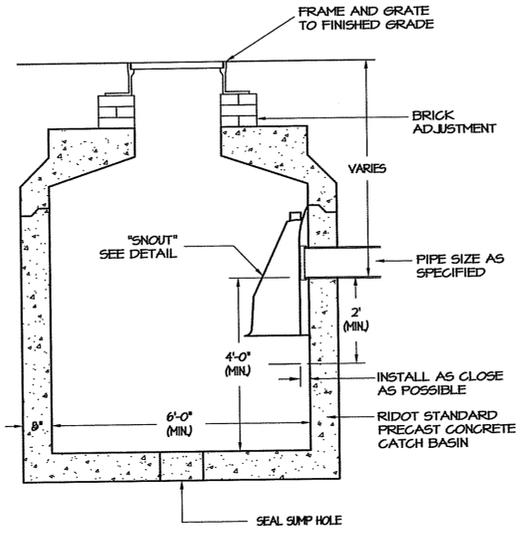
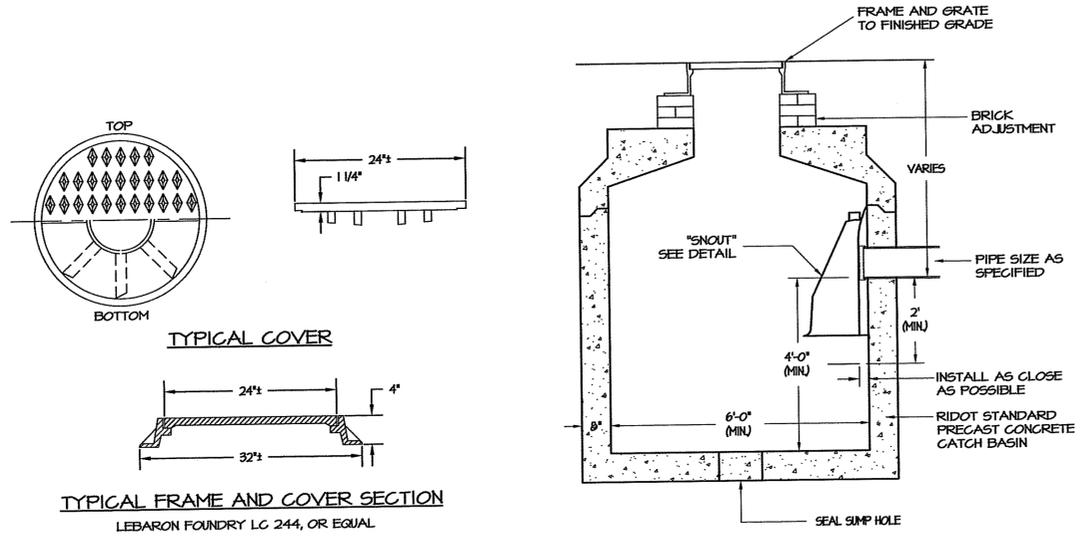
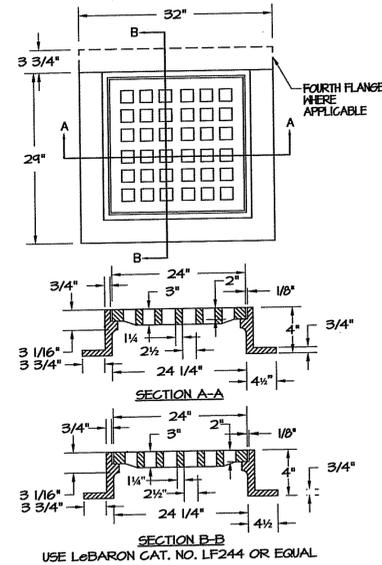
FM Global

Proposed Design for:
FM Global
Research Campus
743 Reynolds Road
West Gloucester, RI 02814

SHEET CONTENTS:
SITE DETAILS

PROJECT #2707F
NATURAL HAZARDS FACILITY

DATE: MAY 1, 2008



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APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Catherine D. Wensink

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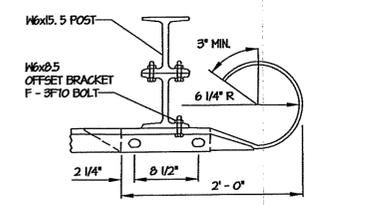
FM GLOBAL
NATURAL HAZARDS
FACILITY

DATE: APRIL 2008
REV.: JUNE 17, 2008

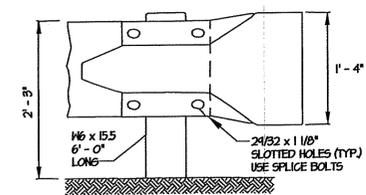
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
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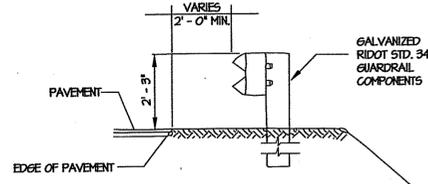
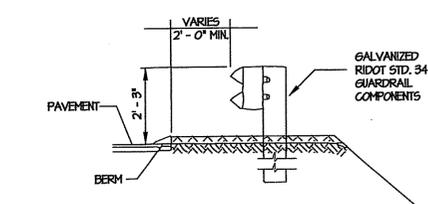
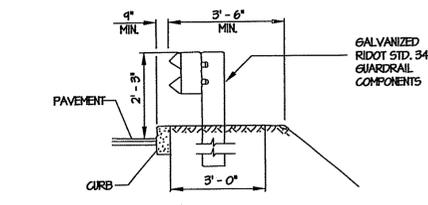


FLAN



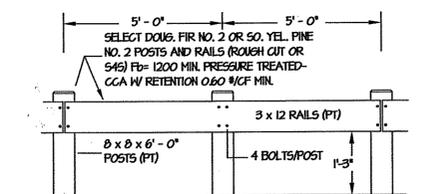
ELEVATION

GUARD RAIL TERMINAL END DETAIL
 NOT TO SCALE

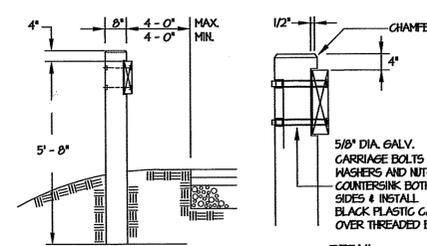


GUARD RAIL DETAIL
 NOT TO SCALE

NOTES:
 1. ALL COMPONENTS AND INSTALLATION TO CONFORM WITH RIDOT STANDARDS



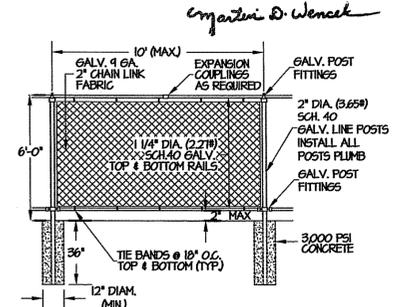
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SECTION

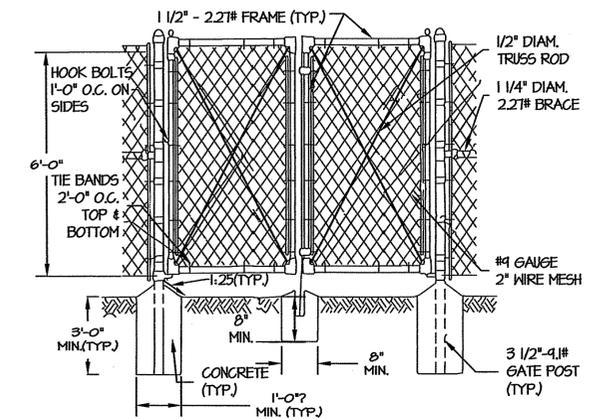
DETAIL

WOOD GUARDRAIL DETAILS
 NOT TO SCALE



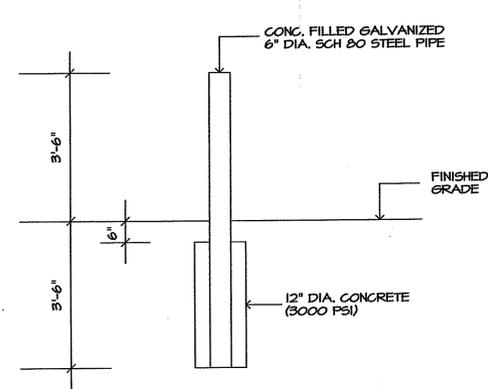
NOTES:
 1. PROVIDE 2 1/2\"/>

CHAIN LINK FENCE DETAIL
 NOT TO SCALE



NOTES:
 1. SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE R.I. STANDARD SPECIFICATIONS.
 2. 6 GAUGE STREET CLIPS TO BE USED TO FASTEN SPRING TENSION WIRE TO LINE POST.
 3. SPRING TENSION WIRE - NO. 7 GAUGE CORRUGATED HEAVILY GALVANIZED (20 OZ. PER SQUARE FOOT) ALUMINUM COATED (0.4 OZ. PER SQUARE FOOT).
 4. ALL PIPES REFER TO SCHEDULE 40 NOMINAL PIPE SIZES.

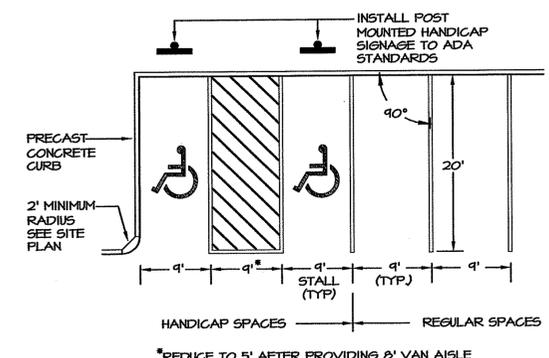
DOUBLE GATE DETAIL
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BOLLARD DETAIL

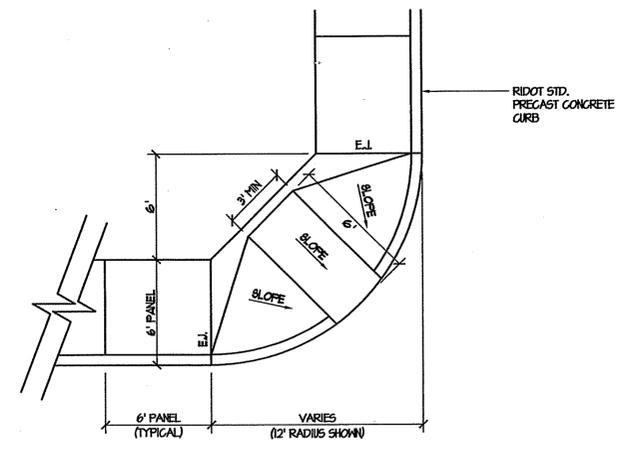
SCALE: 1/2\"/>

INSTALL BOLLARDS AT EACH SIDE OF OVERHEAD DOORS AND AT BUILDING CORNERS THAT ARE EXPOSED TO TRUCK OR MATERIALS HANDLING TRAFFIC.

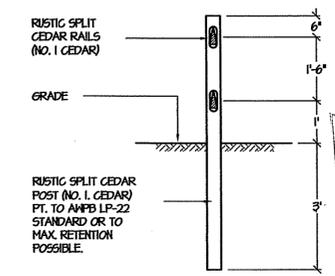


GENERAL NOTES:
 1. ALL PAVEMENT MARKINGS TO BE 4\"/>

PARKING SPACE DETAIL
 NOT TO SCALE



HANDICAP RAMP DETAIL
 NOT TO SCALE



SPLIT RAIL FENCE DETAIL
 SCALE 1/2\"/>

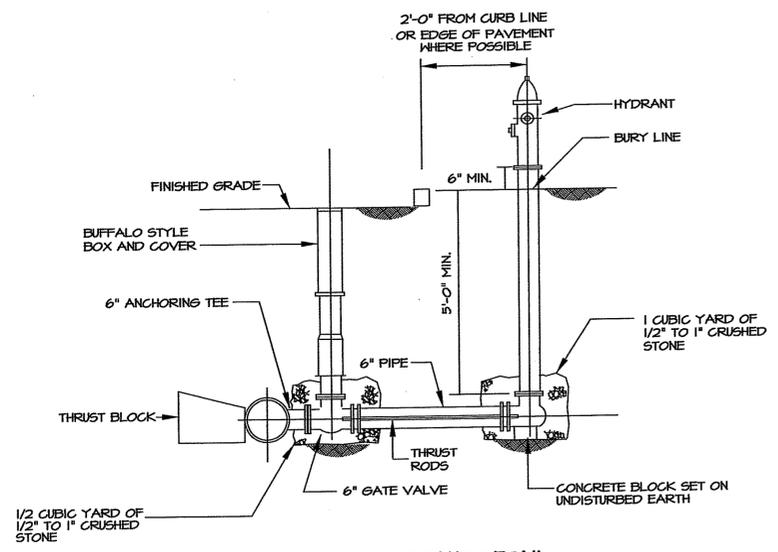
Kindly be advised that this Permit is not applicable to a verification of the type of freshwater wetlands

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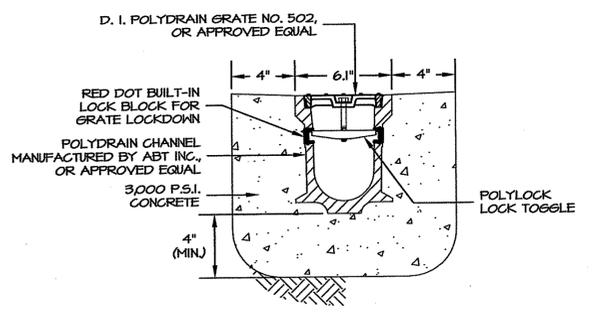
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 NATURAL HAZARDS FACILITY

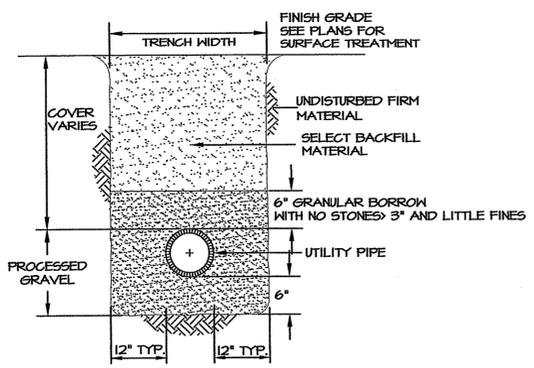
DATE: MAY 1, 2008



TYPICAL HYDRANT DETAIL
NOT TO SCALE



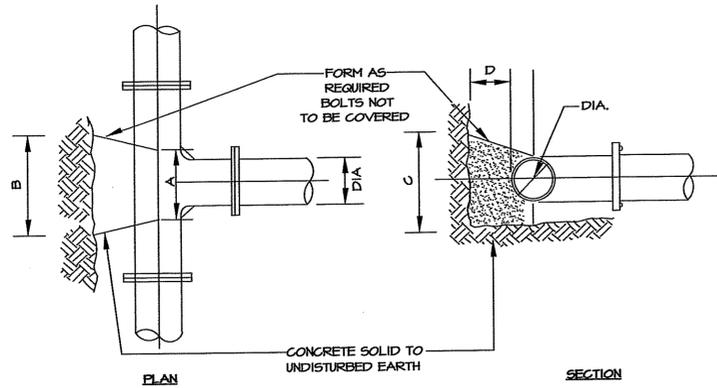
TYPICAL POLYDRAIN INSTALLATION
NOT TO SCALE



GENERAL NOTES:
FINISH GRADE MATERIAL VARIES (SEE SITE PLAN).
COMPACT BACKFILL IN 8" LIFTS TO 95% OF MAX. DRY DENSITY.

UTILITY TRENCH DETAIL
NOT TO SCALE

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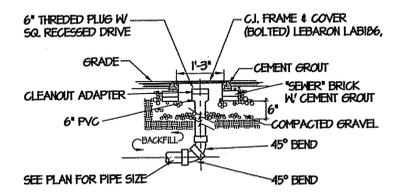


CONCRETE THRUST BLOCK REQUIREMENTS	
FITTING	MINIMUM BEARING AREA "C" X "B"
6-IN. TEE OR CAP	3 SQ. FT.
HYDRANT	3 SQ. FT.

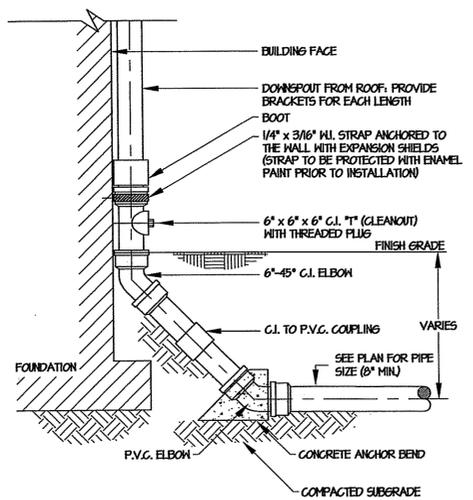
TYPICAL THRUST BLOCK DETAIL
NOT TO SCALE

- TEES AND END CAPS**
- NOTES**
1. ALL CONCRETE SHALL BE 4000 PSI @ 28 DAYS
 2. CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH
 3. TO BE USED WHERE RESTRAINED PIPE IS NOT INSTALLED
 4. ALL DEAD END PIPE SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKS PRIOR TO PRESSURE TESTING
 5. SIZE TABLE :

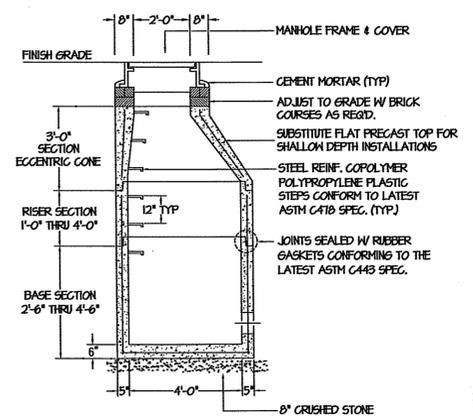
	TEES				
	PIPE SIZE DIA.				
	6"	8"	12"	16"	18"
A	8"	10"	1'-0"	1'-3"	1'-6"
B	8"	10"	1'-0"	1'-4"	1'-6"
C	10"	1'-0"	1'-3"	1'-6"	1'-8"
D	8"	10"	1'-2"	1'-6"	1'-10"



CLEANOUT DETAIL
NOT TO SCALE



DOWNSPOUT DETAIL
NOT TO SCALE



- GENERAL NOTES:**
1. REIN. STEEL TO CONFORM WITH LATEST ASTM A 185.
 2. PRECAST CONCRETE TO CONFORM WITH ASTM C478. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
 3. CONCRETE COMPRESSIVE STRENGTH - 4000 PSI MINIMUM.

PRECAST CONCRETE MANHOLE DETAIL
NOT TO SCALE

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