

**PRELIMINARY PLAN FILING OF A MAJOR LAND DEVELOPMENT PROJECT
FOR A PROPOSED 21,530± SQ. FT. WAREHOUSE ADDITION**

HANNA INSTRUMENTS

**270 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RHODE ISLAND
AP 46, LOT 69 AND AP 49, LOT 102D**

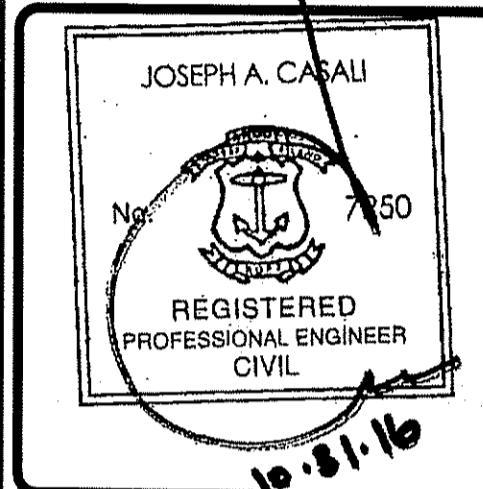
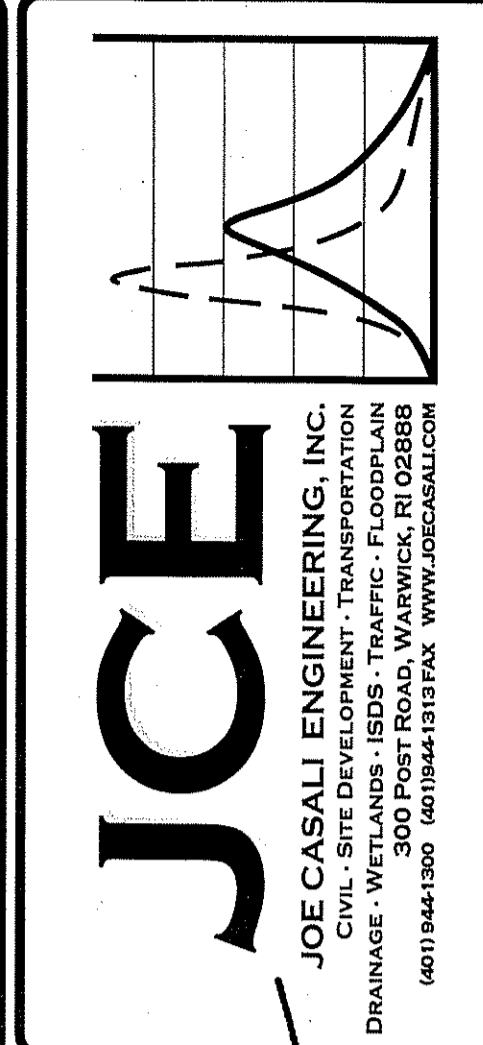
**ZONING DISTRICT: PLANNED CORPORATE (PC)
ECONOMIC GROWTH OVERLAY DISTRICT (EGOD)**

APPROVALS:

- SMITHFIELD PLANNING BOARD - MASTER PLAN (JUNE 16, 2016)**
- SMITHFIELD PLANNING BOARD - PRELIMINARY PLAN (SEPTEMBER 15, 2016)**
- SMITHFIELD FIRE MARSHAL - SITE PLAN REVIEW**

FILINGS:

- RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT - DIVISION OF FRESHWATER WETLANDS - PRELIMINARY DETERMINATION**
- SMITHFIELD TOWN ENGINEER'S OFFICE - SOIL EROSION APPLICATION #16-955**
- SMITHFIELD WATER DEPARTMENT**



HANNA INSTRUMENTS
270 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RHODE ISLAND
AP 46 LOT 69, AP 49 LOT 102D

PROJECT TEAM

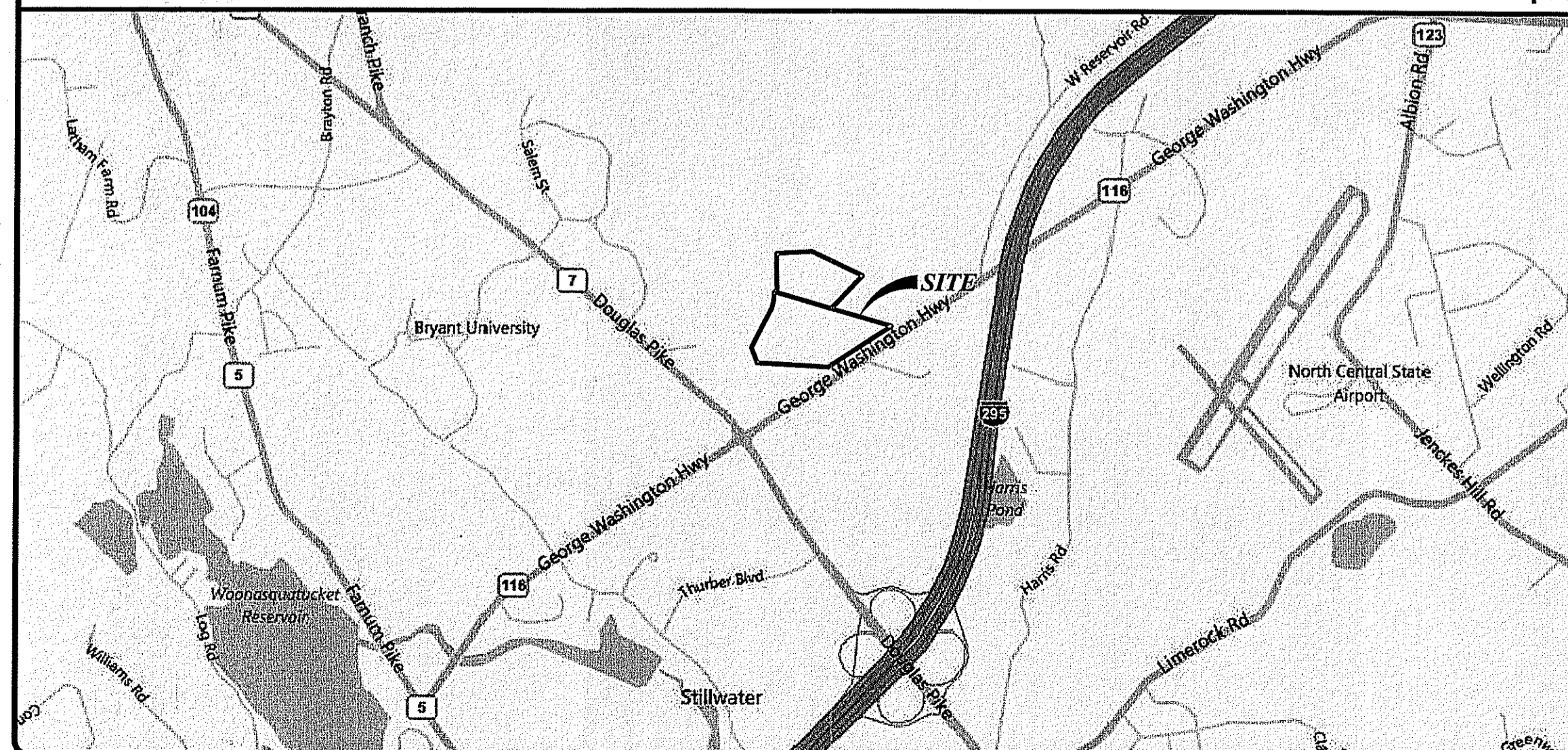
OWNER / APPLICANT: HANNA INSTRUMENTS, INC.
584 PARK EAST DRIVE
WOONSOCKET, RI 02895

CIVIL ENGINEER: JOE CASALI ENGINEERING, INC.
300 POST ROAD
WARWICK, RI 02888
PHONE: 401-944-1300
FAX: 401-944-1313
JOECASALI.COM

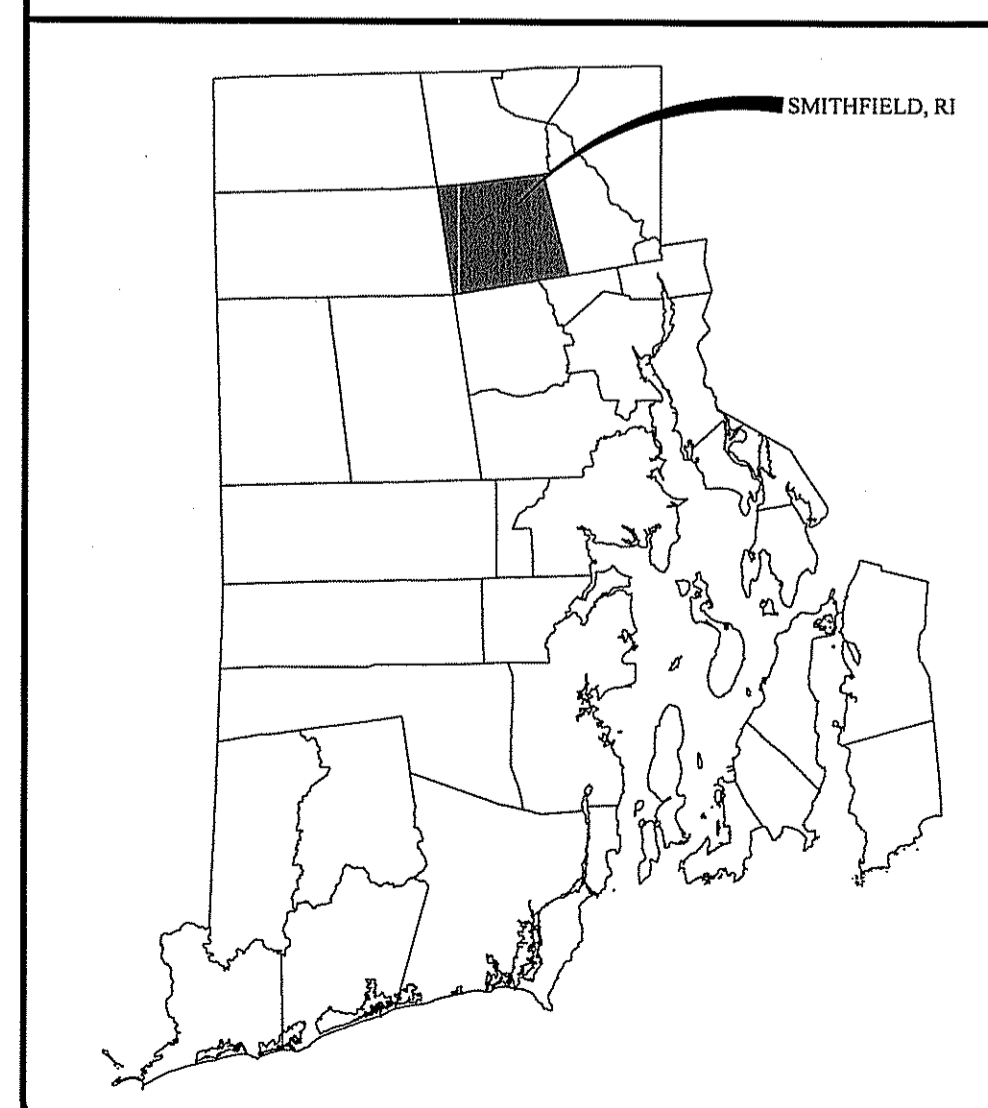
LAND SURVEYOR: INTERNATIONAL MAPPING & SURVEYING CORP.
19 INDUSTRIAL DRIVE
SMITHFIELD, RI 02917
PHONE: 401-232-2620

WETLAND BIOLOGIST: NATURAL RESOURCE SERVICES, LLC
180 TINKHAM LANE
HARRISVILLE, RI 02830
PHONE: 401-568-7390

LOCUS MAP (1" = 2000')



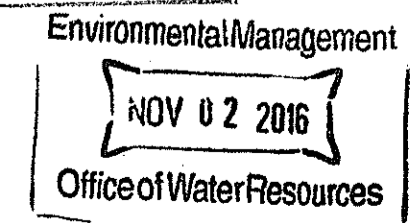
STATE WIDE MAP



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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 DEC 02 2016 FILE # 16-0211
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



REVISIONS:

NO.	DATE	DESCRIPTION

DESIGNED BY: JMM/JWH
DRAWN BY: JMM/JWH
CHECKED BY: DRD
DATE: OCTOBER 2016
PROJECT NO: 03-80uu

PRELIMINARY, NOT FOR CONSTRUCTION

COVER SHEET

SHEET 1 OF 7

Q:\03-90-Vision III Architects\03-90-Hanna Instruments\ACAD\Hanna Instruments (RIDE).RTCP-RI.dwg, Nov. 01, 2016 3:14pm

GENERAL NOTES:

- CLASS I PROPERTY LINE AND CLASS III TOPOGRAPHIC SURVEY COMPLETED BY INTERNATIONAL MAPPING & SURVEYING CORP., 19 INDUSTRIAL DRIVE, SMITHFIELD, RI IN MAY 2011 AND SUPPLEMENTED IN JULY 2016 AND AUGUST 2016.
- WETLAND DELINEATION PERFORMED BY NATURAL RESOURCE SERVICES, INC. IN APRIL 2016. THE SITE IS LOCATED WITHIN THE WOONASQUATUCKET WATERSHED (RIDEM INVENTORY NO. 010900340502).
- PORTIONS OF THIS SITE LIE WITHIN ZONE A (AREAS OF 1% ANNUAL CHANCE FLOOD), AS SHOWN ON THE FIRM MAP FOR THE TOWN OF SMITHFIELD, RI, COMMUNITY PANEL NO. 44007C0167H, EFFECTIVE DATE OCTOBER 2, 2015.
- THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR CITY WHOSE FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.
- SOILS ON THE SITE CONSIST OF CANTON-URBAN LAND COMPLEX (CB), CANTON AND CHARLTON FINE SANDY LOAMS, VERY ROCKY, 3 TO 15 PERCENT SLOPES (C&C), FREETOWN MUCK, 0 TO 1 PERCENT SLOPES (FeA), AND RIDGEBURY, LEICESTER, AND WHITMAN SOILS, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY (Rf). HYDROLOGIC GROUPS B, B/D AND D, RESPECTFULLY.
- THERE ARE NO KNOWN EASEMENTS ON THE SUBJECT PROPERTY. THERE ARE NO KNOWN EXISTING PUBLIC RECREATIONAL OR CULTURAL RESOURCES LOCATED WITHIN THE SUBJECT SITE.

SITE NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) OF ALL MATERIALS INDICATED ON THE PLANS.
- ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS, AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICAN WITH DISABILITIES ACT AND WITH ALL APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS, WHICHEVER IS MORE STRINGENT.
- STOCKPILES OF EARTH MATERIALS SHALL NOT BE LOCATED ADJACENT TO DRAINAGE STRUCTURES.
- ALL DISTURBED AREAS OUTSIDE OF THE PAVED AREAS WILL RECEIVE A MINIMUM OF 6" OF LOAM AND SEED.
- THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEMS FOUND WHICH DO NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SURVEY LAYOUT SERVICES FOR THE WORK AND SHALL SUBMIT "AS-BUILT" DRAWINGS OF ALL WORK, WHICH SHALL BE STAMPED AND CERTIFIED BY A RHODE ISLAND REGISTERED PROFESSIONAL LAND SURVEYOR.
- ANY ITEM OF WORK NOT SPECIFICALLY INDICATED ON THE PLANS BUT IS REQUIRED FOR THE COMPLETE CONSTRUCTION OF THE PROJECT WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND INCLUDED IN THE CONTRACT BID PRICE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SITE CONDITIONS.
- WHERE NECESSARY TO REMOVE CURBS, CATCH BASINS OR DRAINS TO COMPLETE WORK, THE CONTRACTOR SHALL REPLACE SUCH ITEMS TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
- ANY EXISTING PIPE OR UTILITY DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER OR THE TOWN OF SMITHFIELD.
- THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION OR REPLACE TREES, SHRUBS, FENCES, SIGNS, GUARDRAILS, DRIVEWAYS, SIDEWALKS AND ANY OTHER OBJECT AFFECTED BY THIS OPERATION, UNLESS OTHERWISE NOTED ON THE SITE PLANS.
- THE TOPS OF ALL VALVE BOXES AND CURB BOXES SHALL BE FLUSH WITH GROUND OR PAVEMENT SURFACE LEVEL AND PLUMB, UNLESS OTHERWISE DIRECTED.
- ROADWAYS SHALL BE LEFT PASSABLE AT ALL TIMES. CLOSURE OF ROADWAY IS NOT PERMITTED.
- WATER SERVICE SHALL BE MAINTAINED AT ALL TIMES.
- ALL LEDGE TO BE REMOVED BY MECHANICAL MEANS.
- ALL CONSTRUCTION WORK SHALL BE PERFORMED IN THE DRY. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL PUMPS, DRAINS, WET POINTS, SCREENS, OR OTHER FACILITIES NECESSARY TO CONTROL, COLLECT AND DISPOSE OF ALL SURFACE AND SUBSURFACE WATER ENCOUNTERED IN THE PERFORMANCE OF THE WORK.
- ALL SITE WORK, INCLUDING BUT NOT LIMITED TO, BITUMINOUS PAVEMENT, ROADWAY CONSTRUCTION, AGGREGATE MATERIALS, DRAINAGE STRUCTURES, CURBING, SIDEWALK, LANDSCAPING, SAW CUTTING, ETC. SHALL CONFORM TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, AMENDED DECEMBER 2010 (WITH LATEST ADDENDA) AND THE RIDOT STANDARD DETAILS, 1998 EDITION (WITH LATEST ADDENDA).

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION. ALL TEMPORARY AND VEHICULAR SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION.
- TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DIVIDES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
- THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS SHALL NOT BE PARKED IN THE STATE OR TOWN RIGHT-OF-WAY.
- ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS CHANNELING DEVICES, ETC. SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION.
- SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE RIDOT SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

DRAINAGE SYSTEM NOTES:

- THE PROPOSED DRAINAGE LINES SHALL BE ADS N-12 HDPE PIPE OR AN APPROVED EQUAL UNLESS OTHERWISE NOTED ON THE SITE PLANS.
- ALL RIM ELEVATIONS SHOWN ARE APPROXIMATE AND ARE TO BE SET FLUSH WITH FINAL GRADES.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES

- THE SILT FENCE LINE ILLUSTRATED ON THESE PLANS SHALL SERVE AS THE STRICT LIMIT OF DISTURBANCE FOR THE PROJECT WITHIN OR ADJACENT TO REGULATED FRESHWATER WETLAND AREAS.
- THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THESE LIMITS, AS DEPICTED ON THE PLAN SHALL BE TOTALLY UNDISTURBED, TO REMAIN IN NATURAL CONDITION.
- ALL CATCH BASINS AND CULVERTS SHALL BE PROTECTED WITH STAKED HAYBALES (R.I. STD. 9.8.0) DURING CONSTRUCTION ACTIVITIES. ALL PROPOSED STORM WATER DISCHARGE AREAS SHALL BE LINED WITH A RIPRAP SPLASH PAD AND PROTECTED WITH STAKED HAYBALE OUTLET PROTECTION (R.I. STD. 9.1.0), OR STAKED HAYBALE WITH SILT FENCE (R.I. STD. 9.3.0) OUTLET PROTECTION (STAKED HAYBALE OR STAKED HAYBALE WITH SILT FENCE) SHALL ALSO BE INSTALLED AT ALL EXISTING STORMWATER DISCHARGE LOCATIONS WHERE DISTRIBUTING PIPES, CATCH BASINS, AND MANHOLES ARE TO BE CLEANED AND FLUSHED.
- ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED, PROTECTED AND MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL REGULARLY CHECK ALL SEEDED AREAS TO ENSURE THAT A GOOD STAND IS MAINTAINED.
- ALL SILT FENCE, TEMPORARY TREATMENT (HAY, STRAW, ETC.) AND TEMPORARY EROSION PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
- STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES OF NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEEDED AND/OR STABILIZED PER CONTRACT SPECIFICATIONS.
- THE SILT FENCE SHALL BE CHECKED BY THE CONTRACTOR ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY SILT FENCE AS NEEDED. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE SILT FENCE BECOMES FILLED WITH SEDIMENTS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL SOIL EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE FOR THE ENTIRE DURATION OF THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL FOLLOW THE DIRECTION OF THE RESIDENT ENGINEER WITH REGARD TO INSTALLATION, MAINTENANCE, AND REPAIR OF ALL SOIL EROSION AND SEDIMENTATION CONTROLS ON THE PROJECT SITE. TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS (HAYBALES, SILT FENCE, ETC.) SHALL BE MAINTAINED UNTIL ALL EXPOSED SOILS ARE SATISFACTORILY STABILIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND/OR RESEEDING ALL AREAS THAT DO NOT DEVELOP WITHIN ONE YEAR FROM THE COMPLETION OF CONSTRUCTION.
- ALL REFERENCED SOIL EROSION AND SEDIMENTATION CONTROLS INCLUDING MATERIALS USED, APPLICATION RATES AND THE INSTALLATION PROCEDURES SHALL BE PERFORMED PER THE "RHODE ISLAND EROSION AND SEDIMENTATION HANDBOOK", DATED 1993 AMENDED 2014.

MISCELLANEOUS UTILITY NOTES:

- PRIOR TO CONSTRUCTION ALL POTENTIAL UTILITY/DRAINAGE CONFLICTS MUST BE IDENTIFIED BY THE CONTRACTOR. ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- OVERHEAD AND/OR UNDERGROUND ELECTRIC, GAS AND COMMUNICATIONS SERVICES ARE TO BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY.
- THE CONTRACTOR SHALL AT ALL TIMES PROVIDE A SUFFICIENT NUMBER OF WORKMEN AND GUARDS AS MAY BE NECESSARY TO PROPERLY SAFEGUARD THE PUBLIC FROM THEIR OPERATIONS.
- THE CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OF PAVING, SIDEWALKS, UTILITIES, OR PRIVATE PROPERTIES AND SHALL PROMPTLY REPAIR AT HIS OWN EXPENSE ANY DAMAGE TO SUCH PAVING, SIDEWALKS, UTILITIES, OR PRIVATE PROPERTIES TO THE SATISFACTION OF THE OWNER AND/OR THE TOWN OF SMITHFIELD.
- EXISTING UTILITY FRAMES AND COVERS FOR SANITARY SEWER, WATER, GAS, STORM DRAINAGE AND OTHER UTILITIES SHALL BE ADJUSTED TO GRADE AS REQUIRED IN NEW PAVING AND PAVEMENT OVERLAY AREAS.
- ALL NEW SEWER PIPES AND MANHOLES SHALL BE CLEANED AND TESTED PRIOR TO ACCEPTANCE. GRAVITY SEWER PIPES SHALL BE REQUIRED TO PASS BOTH LOW PRESSURE AIR AND DEFLECTION (IE., MANDELL) TESTING. LOW PRESSURE SEWER PIPING SHALL BE REQUIRED TO PASS A LOW PRESSURE (IE., HYDROSTATIC) TEST.
- A BACKFLOW PREVENTION DEVICE MUST BE INSTALLED AT EACH SEWER SERVICE BUILDING CONNECTION THAT IS BELOW THE RIM ELEVATION OF THE NEAREST SEWER MANHOLE, AS REQUIRED BY THE INTERNATIONAL PLUMBING CODE.
- APPLICANT IS REQUIRED TO PROVIDE TWO SETS OF FINAL AS-BUILT PLANS UPON COMPLETION OF CONSTRUCTION, PRIOR TO FINAL ACCEPTANCE. AS-BUILT PLANS SHALL INCLUDE FIELD MEASUREMENTS OF ALL INSTALLED PIPE AND APPURTENANCES, INCLUDING LENGTH, SLOPE, MANHOLE RIMS AND INVERTS, AS WELL AS SWING TIES/MEASUREMENTS TO ALL MANHOLES, SEWER STUBS, AND/OR LATERAL SERVICE CONNECTIONS.
- APPLICANT IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM LOCAL, STATE, AND/OR FEDERAL AGENCIES WITH REGULATORY JURISDICTION OVER THE PROPOSED WORK. ALL SEWER CONSTRUCTION SHALL BE PERFORMED BY A DRAIN LAYER LICENSED IN THE STATE OF RHODE ISLAND AND THE TOWN OF SMITHFIELD.
- NO FLOW WILL BE ACCEPTED UNTIL A COMPLETION CERTIFICATE IS ISSUED.
- THE CONTRACTOR SHALL CONFINE HIS CONSTRUCTION OPERATIONS AND ACTIVITIES TO WITHIN THE STREET LINES, EASEMENT AND/OR RIGHT-OF-WAY, AS SHOWN ON THE DRAWINGS.
- ALL CONSTRUCTION MATERIALS, AS WELL AS ALL MATERIAL SHOP DRAWINGS AND MANUFACTURERS DATA SHEETS SHALL BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER, OR HIS/HER REPRESENTATIVE PRIOR TO FABRICATION AND INSTALLATION.

BMP MAINTENANCE SCHEDULE:

- ALL MAINTENANCE (INCLUDING CLEANING) REQUIRED DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL INCLUDE:
 - MEASURES NEEDED TO ENSURE THE PROPER OPERATION OF THE STORMWATER RUNOFF (DRAINAGE) AND WATER QUALITY CONTROL SYSTEMS TO INCLUDE INSPECTION, CLEANING AND REPAIRS ALL PIPES, INTAKE AND DISCHARGE STRUCTURES, CATCH BASIN SUMPS, AND MANHOLES.
 - INSPECTION OF ALL SLOPES, BERMS, AND OTHER CONTROL STRUCTURES FOR STRUCTURAL INTEGRITY/STABILITY AND EVIDENCE OF SOIL EROSION PROCESSES, AND MAINTENANCE OF THESE STRUCTURES IF NECESSARY. INSPECTIONS SHALL BE PERFORMED FOLLOWING ALL RAIN EVENTS OF 1/2 INCH RAINFALL OR MORE IN A 24-HOUR PERIOD, OR BI-MONTHLY IF NO RAINFALL EVENT OCCURS.
- UPON COMPLETION OF THE PROJECT CONSTRUCTION, AND PRIOR TO VACATING THE SITE, THE CONTRACTOR SHALL CONDUCT A FINAL INSPECTION AND CLEANING OF THE DRAINAGE SYSTEM AND ALL ASSOCIATED STRUCTURES.
- ALL INSTALLATION, CLEANING, AND MAINTENANCE OF THE STORMWATER DRAINAGE SYSTEM SHALL FOLLOW AT LEAST THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION MINIMUM STANDARDS, SECTION 212 AND SECTION 708. WHERE APPROPRIATE, PROCEDURES REGARDING THE DRAINAGE INSTALLATION, CLEANING, INSPECTION, AND MAINTENANCE OF THE STORMWATER DRAINAGE SYSTEM SHALL BE FOLLOWED AS OUTLINED IN THE "RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" (RIDEM/RICRMC, 2010).
- AFTER CONSTRUCTION, STORMWATER BMPs SHALL BE INSPECTED AND MAINTAINED BY THE OWNER AS FOLLOWS:
 - ROOF DRAIN LEADERS
 - PERFORM ROUTINE ROOF INSPECTIONS QUARTERLY.
 - KEEP ROOFS CLEAN AND FREE OF DEBRIS.
 - KEEP ROOF DRAINAGE SYSTEMS CLEAR.

GRASS SWALES

- GRASS SWALES ARE TO BE INSPECT ON AN ANNUAL BASIS AND SEDIMENT REMOVED WHEN SEDIMENT TO A DEPTH OF 1/4 OF THE ORIGINAL DEPTH AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL STANDARDS.
- SWALES SHOULD BE MOWED AT LEAST 2 TIMES A YEAR
- ALL TRASH AND DEBRIS SHALL BE REMOVED FROM THE SWALE AND PROPERTY DISPOSED.

PEA GRAVEL DIAPHRAGMS

- PEA GRAVEL DIAPHRAGMS SHALL BE INSPECTED BI-ANNUALLY FOR SEDIMENT BUILDUP AND SEDIMENT SHOULD BE REMOVED WHEN IT REACHES 25% OF TOTAL STORAGE VOLUME.
- PEA GRAVEL DIAPHRAGMS SHALL BE KEPT FREE FROM FLOATING DEBRIS.
- SNOW STORAGE IS PROHIBITED WITH IN PEA GRAVEL DIAPHRAGMS

SAND FILTER SYSTEMS

- DURING THE SIX MONTHS IMMEDIATELY AFTER CONSTRUCTION, THE SAND FILTER SHALL BE INSPECTED AFTER THE FIRST TWO RAINFALL EVENTS OF AT LEAST 1.0 INCH TO ENSURE THE SYSTEM IS FUNCTIONING PROPERLY. THEREAFTER INSPECTIONS SHALL BE CONDUCTED ON AN ANNUAL BASIS AND AFTER STORM EVENTS OF GREATER THAN OR EQUAL TO 2 INCHES.
- SILT/SEDIMENT SHALL BE REMOVED FROM THE FILTER BED WHEN THE ACCUMULATION EXCEEDS ONE INCH. WHEN THE FILTERING CAPACITY OF THE SAND FILTER DIMINISHES SUBSTANTIALLY (I.E. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 48 HOURS), THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH MATERIAL. THE REMOVED SEDIMENTS SHALL BE DISPOSED IN AN ACCEPTANCE MANNER AT AN APPROVED AND PERMITTED LOCATION.

DETENTION BASIN

- DURING THE SIX MONTHS IMMEDIATELY AFTER CONSTRUCTION, THE DETENTION BASIN SHALL BE INSPECTED AFTER THE FIRST TWO RAINFALL EVENTS OF AT LEAST 1.0 INCH TO ENSURE THE SYSTEM IS FUNCTIONING PROPERLY. THEREAFTER INSPECTIONS SHALL BE CONDUCTED ON AN ANNUAL BASIS AND AFTER STORM EVENTS OF GREATER THAN OR EQUAL TO 2 INCHES.
- SILT/SEDIMENT SHALL BE REMOVED FROM THE DETENTION BASIN WHEN THE ACCUMULATION EXCEEDS ONE INCH. THE REMOVED SEDIMENTS SHALL BE DISPOSED IN AN ACCEPTANCE MANNER AT AN APPROVED AND PERMITTED LOCATION.

LOAMING & SEEDING

SEEDING ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH SECTION L.02 SEEDING OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2010 EDITION (WITH LATEST ADDENDA), AND SHALL ALSO CONFORM TO THE FOLLOWING:

- AFTER ROUGH GRADING IS COMPLETED, ALL DISTURBED AREAS AND AREAS LABELED AS "LOAM AND SEED" ARE TO BE BROUGHT TO AN ELEVATION OF 6" BELOW THE PROPOSED FINISHED GRADE. SCARIFY THE SUBGRADE TO A DEPTH OF 12" WITH THE TEETH OF A BACKHOE OR A POWER RAKE TO RESULT IN AN UNCOMPACTED SUBSOIL. 6" OF GOOD QUALITY TOPSOIL IS TO BE APPLIED AND RAKED TO FINISHED GRADE.
- UNLESS SPECIFIED OTHERWISE, THE TOPSOIL IS TO BE GOOD QUALITY LOAM, FERTILE AND FREE OF WEEDS, STICKS AND STONES OVER 3/4" IN SIZE AND OTHERWISE COMPLYING WITH SECTION M.18.01 OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2010 EDITION (WITH LATEST ADDENDA).
- PRIOR TO SEEDING OR SODDING, FERTILIZE WITH 10-10-10 OR EQUIVALENT MIXTURE. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 1-2" OF THE PLANTING SOIL. APPLY AT A RATE OF 8 LBS. PER 1000 SQUARE FEET.
- APPLY LIME AT A RATE OF ONE TON PER ACRE AND UNIFORMLY INCORPORATE INTO THE TOP 1-2" OF TOPSOIL.
- SEEDING
 - AFTER THE SEED BED IS PREPARED, SEED IS TO BE BROADCAST EVENLY OVER THE SURFACE AND WORKED INTO THE TOP 1" OF SOIL. SEED SHALL BE APPROVED URI #2 OR APPROVED EQUAL. APPLY AT A RATE OF 4-5 LBS. PER 1000 SQUARE FEET OR AS OTHERWISE DIRECTED BY THE MANUFACTURER.

URI #2 IMPROVED SEED MIX, % BY WEIGHT:

- 40% CREEPING RED FESCUE
- 20% IMPROVED PERENNIAL RYEGRASS
- 20% IMPROVED KENTUCKY BLUEGRASS
- 20% KENTUCKY BLUEGRASS

RECOMMENDED SEEDING DATES ARE MARCH 15 TO JUNE 15 AND SEPTEMBER 15 TO NOVEMBER 15. AT THE CONTRACTORS DISCRETION, SEED MAY BE APPLIED BY HYDROSEEDING RATHER THAN THE METHOD DESCRIBED ABOVE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 02 2016 FILE # 16-0211
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

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

Environmental Management
NOV 02 2016
Office of Water Resources

HANNA INSTRUMENTS
270 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RHODE ISLAND
AP 46 LOT 69, AP 49 LOT 102D

REVISIONS:

NO.	DATE	DESCRIPTION

DESIGNED BY: JMM/JWH
DRAWN BY: JMM/JWH
CHECKED BY: DRD
DATE: OCTOBER 2016
PROJECT NO: 03-80au

PRELIMINARY, NOT FOR CONSTRUCTION

GENERAL NOTES

SHEET 2 OF 7

LEGEND

- EXISTING PROPERTY LINE
- - - ABUTTING PROPERTY LINE
- - - BUILDING SETBACK LINE
- - - WETLAND EDGE
- WF WETLAND FLAG
- 50' PERIMETER WETLAND
- 100' RIVERBANK WETLAND
- 200' RIVERBANK WETLAND
- EXISTING EASEMENT
- 100' EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STONE WALL
- IRON PIN
- DRILL HOLE
- CONCRETE BOUND
- EXISTING CURB
- GUARD RAIL
- DRAIN LINE
- DRAINAGE MANHOLE
- CATCH BASIN
- UTILITY POLE
- OVERHEAD WIRES
- UNDERGROUND ELECTRIC
- WATER LINE
- WATER SHUT OFF VALVE
- WELL
- SEWER
- SMH
- N/F NOW OR FORMERLY
- TREELINE
- LOD LIMIT OF DISTURBANCE
- TH-1 SOIL EVALUATION

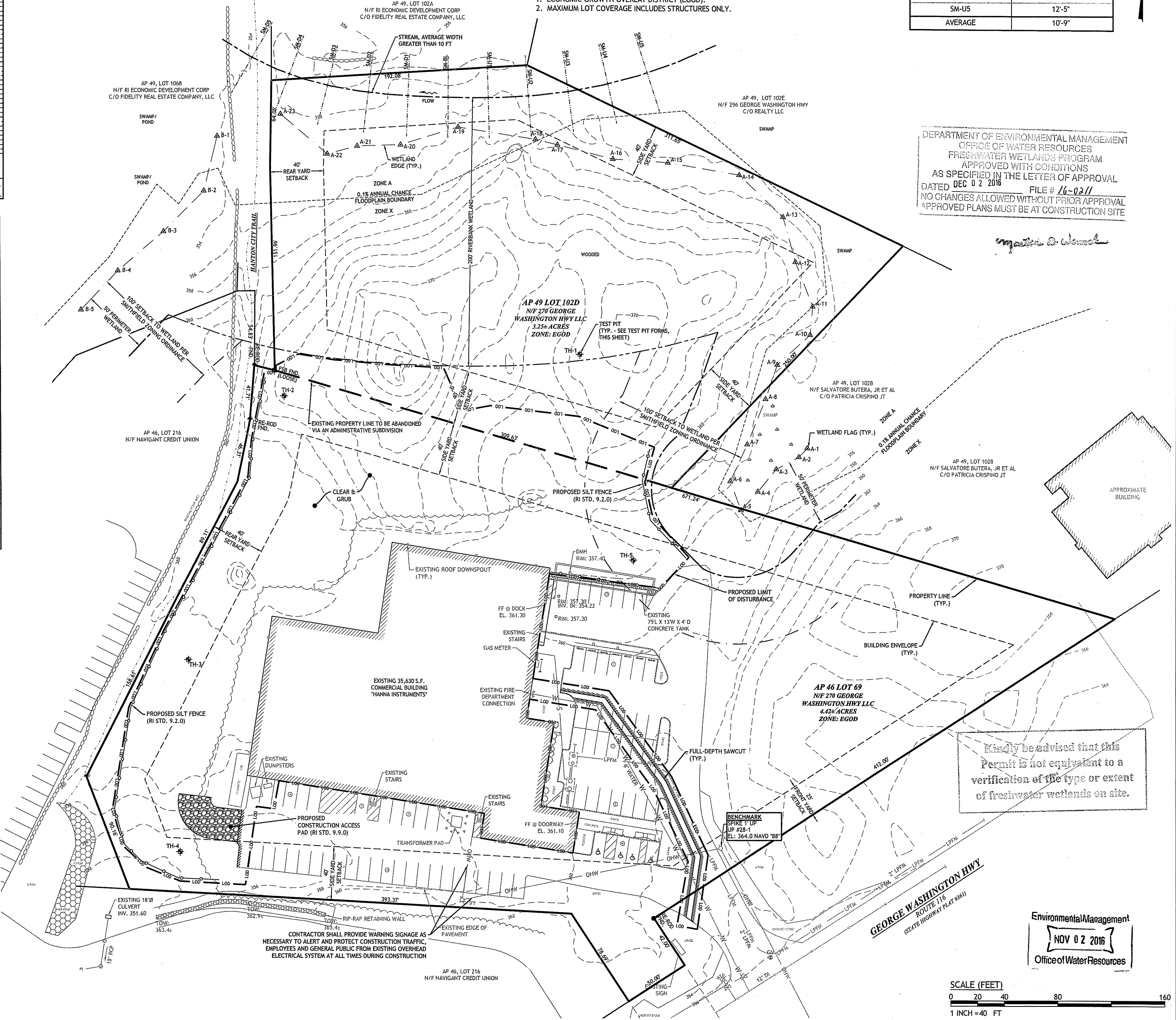
Depth (ft)	Sample Type	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
0-12"	CLAY	Occasional cobbles and boulders to size 3/4" max. Moist. 18%.	(0-12") SILTY SAND WITH GRAVEL (SM) - 10% fine to coarse sand, 20% nonplastic fines, 10% fine to coarse gravel, black brown, brown, or tan. Gravelly sandy loam.	HSG B (1.41 kD)
12-24"	CLAY	Occasional cobbles and boulders to size 3/4" max. Moist. 18%.	(12-24") SILTY SAND WITH GRAVEL (SM) - 10% fine to coarse sand, 20% nonplastic fines, 10% fine to coarse gravel, brown, or tan. Gravelly sandy loam.	HSG B (1.41 kD)
24-36"	CLAY	Occasional cobbles and boulders to size 3/4" max. Moist. 18%.	(24-36") SILTY SAND WITH GRAVEL (SM) - 10% fine to coarse sand, 20% nonplastic fines, 10% fine to coarse gravel, brown, or tan. Gravelly sandy loam.	HSG B (1.41 kD)
36-48"	CLAY	Occasional cobbles and boulders to size 3/4" max. Moist. 18%.	(36-48") SILTY SAND WITH GRAVEL (SM) - 10% fine to coarse sand, 20% nonplastic fines, 10% fine to coarse gravel, brown, or tan. Gravelly sandy loam.	HSG B (1.41 kD)
48-60"	CLAY	Occasional cobbles and boulders to size 3/4" max. Moist. 18%.	(48-60") SILTY SAND WITH GRAVEL (SM) - 10% fine to coarse sand, 20% nonplastic fines, 10% fine to coarse gravel, brown, or tan. Gravelly sandy loam.	HSG B (1.41 kD)

TEST PIT DATA	SURFACE EL.		SHWT / EL.	
	TH-1	367.00	52"	362.67
TH-2	367.00	48"	363.00	
TH-3	361.00	48"	357.00	
TH-4	355.00	24"	353.00	
TH-5	358.00	46"	354.17	

ZONING CRITERIA	REQUIRED	EXISTING	EXISTING
		AP 46 LOT 69	AP 49 LOT 102D
ZONING DISTRICT	EGOD ⁽¹⁾	EGOD	EGOD
MINIMUM LOT AREA	10,000 SF	192,535 SF	141,570 SF
MINIMUM FRONTAGE & WIDTH	50 FT	412 FT	250 FT
MINIMUM FRONT YARD SETBACK	25 FT	78 FT	N/A
MAXIMUM FRONT YARD SETBACK	40 FT	78 FT	N/A
MINIMUM SIDE YARD SETBACK	40 FT	77 FT	N/A
MINIMUM REAR YARD SETBACK	40 FT	70 FT	N/A
MAXIMUM LOT COVERAGE ⁽²⁾	80%	18.5%	N/A
MINIMUM PERVIOUS SURFACES	10%	62.7%	N/A
MAXIMUM STRUCTURE HEIGHT	48 FT	< 48 FT	N/A

RIVERBANK WIDTH MEASUREMENT DATA	
LOCATION	MEASURED WIDTH (FT)
SM-D5	18'-5"
SM-D4	10'-0"
SM-D3	9'-4"
SM-D2	9'-2"
SM-D1	6'-9"
SM-BL	12'-11"
SM-U1	10'-0"
SM-U2	11'-2"
SM-U3	8'-9"
SM-U4	9'-1"
SM-U5	12'-5"
AVERAGE	10'-9"

NOTES:
 1. ECONOMIC GROWTH OVERLAY DISTRICT (EGOD).
 2. MAXIMUM LOT COVERAGE INCLUDES STRUCTURES ONLY.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED DEC 02 2016 FILE # 16-0211
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

HANNA INSTRUMENTS
 270 GEORGE WASHINGTON HIGHWAY
 SMITHFIELD, RHODE ISLAND
 AP 46 LOT 69, AP 49 LOT 102D

NO.	DATE	DESCRIPTION

DESIGNED BY: JMM/JWH
 DRAWN BY: JMM/JWH
 CHECKED BY: DRD
 DATE: OCTOBER 2016
 PROJECT NO: 03-80au

PRELIMINARY, NOT FOR CONSTRUCTION

EXISTING CONDITIONS & SITE PREP PLAN

SHEET 3 OF 7

C:\00-300-Vision III Architects\03-80au\Hanna Instruments\RDEN\RTCL\RTCL.dwg, Nov. 01, 2016 3:23 pm

CERTIFICATION:
 THIS SURVEY AND PLAN CONFORM TO THE FOLLOWING STANDARDS AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS: AP 46, LOT 69: CLASS I / CLASS III AP 49, LOT 102D: CLASS III (CLASS I IN PROGRESS)

ANTHONY E. MUSCATELLI
 No. 1718
 PROFESSIONAL LAND SURVEYOR

BY: *Anthony E. Muscatelli* JULY 2016
 REGISTERED PROFESSIONAL LAND SURVEYOR DATE

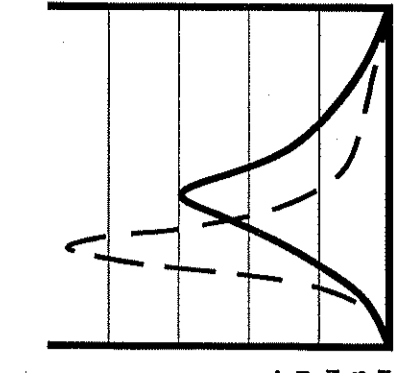
Environmental Management
 NOV 02 2016
 Office of Water Resources

SCALE (FEET)
 0 20 40 80 160
 1 INCH = 40 FT

CONTRACTOR SHALL PROVIDE WARNING SIGNAGE AS NECESSARY TO ALERT AND PROTECT CONSTRUCTION TRAFFIC, EMPLOYEES AND GENERAL PUBLIC FROM EXISTING OVERHEAD ELECTRICAL SYSTEM AT ALL TIMES DURING CONSTRUCTION

JCE
 JOE CASALI ENGINEERING, INC.
 CIVIL - SITE DEVELOPMENT - TRANSPORTATION
 DRAINAGE - WETLANDS - I&DS - TRAFFIC - FLOODPLAIN
 6031 8445100 6031844100 FAX WWW.JCEENGINEERING.COM

JOSEPH A. CASALI
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 10.31.16



JCE
 JOE CASALI ENGINEERING, INC.
 CIVIL ENGINEERING CORPORATION
 300 POST ROAD, WARWICK, RI 02888
 (401) 944-1900 (401) 944-1313 FAX WWW.JCEENGINEERING.COM

JOSEPH A. CASALI
 No. 1750
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 10-21-16

HANNA INSTRUMENTS
 270 GEORGE WASHINGTON HIGHWAY
 SMITHFIELD, RHODE ISLAND
 AP 46 LOT 69, AP 49 LOT 102D

REVISIONS:

NO.	DATE	DESCRIPTION

DESIGNED BY: JMM/JWH
 DRAWN BY: JMM/JWH
 CHECKED BY: DRD
 DATE: OCTOBER 2016
 PROJECT NO: 03-80au

PRELIMINARY, NOT FOR CONSTRUCTION

SITE & UTILITY PLAN

SHEET 4 OF 7

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
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Matthew A. W...

PARKING REQUIREMENTS

Per section 7.4.C.1 of the Smithfield Zoning Ordinance:
 OFFICE GENERAL
 4 PER 1000 SF OF GROSS FLOOR AREA
 13,050 SF OF TOTAL OFFICE GROSS FLOOR AREA / 1000 * 4 = 53 SPACES

Per section 7.4.F.1 of the Smithfield Zoning Ordinance:
 WAREHOUSING
 1 PER 1000 SF OF GROSS FLOOR AREA
 17,486 SF OF TOTAL WAREHOUSE GROSS FLOOR AREA / 1000 = 18 SPACES

PROPOSED WAREHOUSE ADDITION
 21,583 SF OF TOTAL WAREHOUSE GROSS FLOOR AREA / 1000 = 22 SPACES

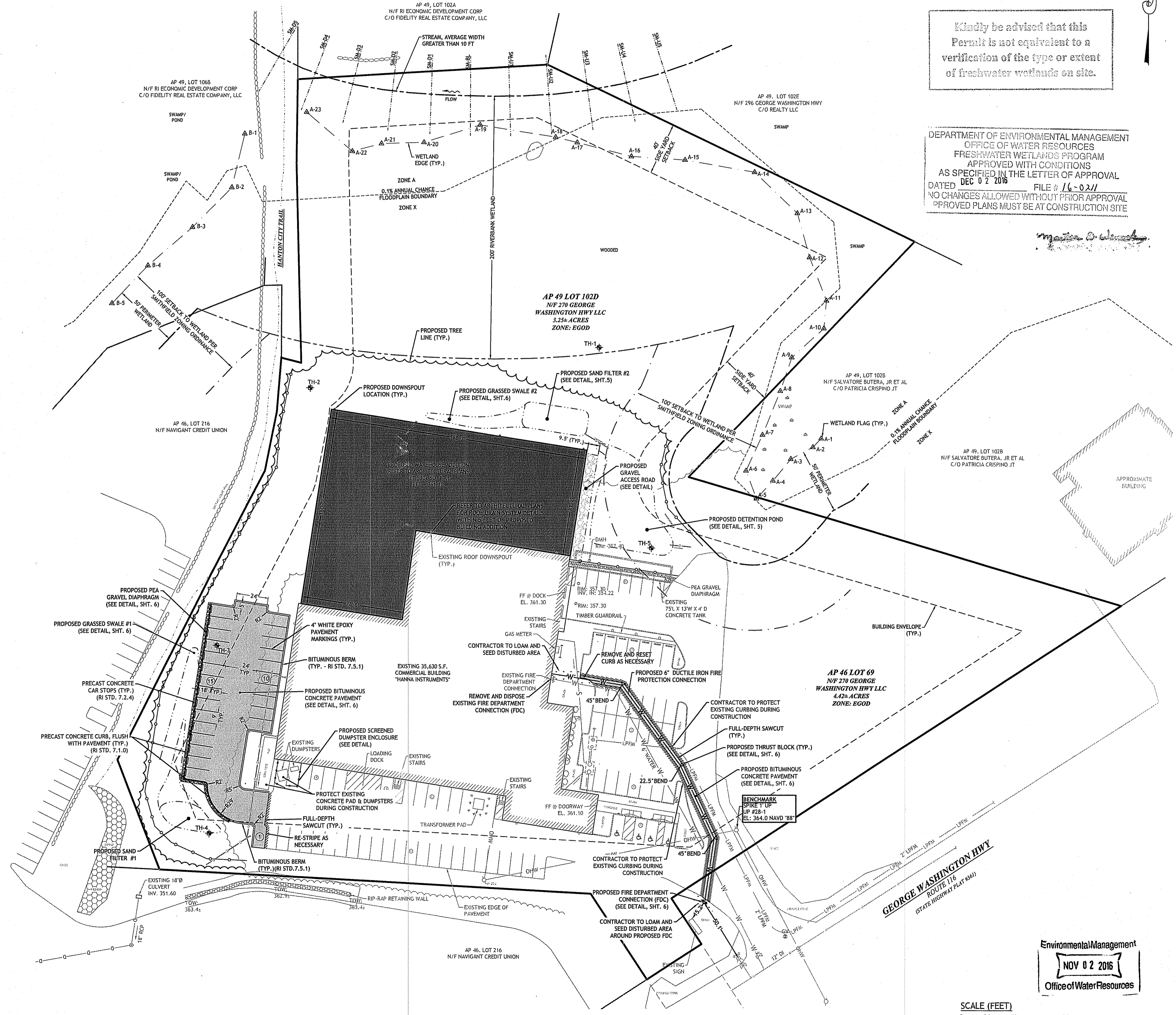
Per section 7.4.F.3 of the Smithfield Zoning Ordinance:
 WHOLESALE ESTABLISHMENTS, MANUFACTURING, AND INDUSTRIAL DISTRICT USES
 1 PER 500 SF OF FLOOR AREA DEVOTED TO MANUFACTURING, COMPOUNDING, ASSEMBLING, OR PACKAGING OPERATIONS
 3,934 SF OF ASSEMBLY GROSS FLOOR AREA / 500 = 8 SPACES

TOTAL PARKING SPACES REQUIRED: 101 SPACES
 TOTAL EXISTING & PROPOSED PARKING SPACES: 101 SPACES

ADA ACCESSIBLE PARKING SPACES REQUIRED: 4 SPACES
 EXISTING ACCESSIBLE PARKING SPACES: 4 SPACES

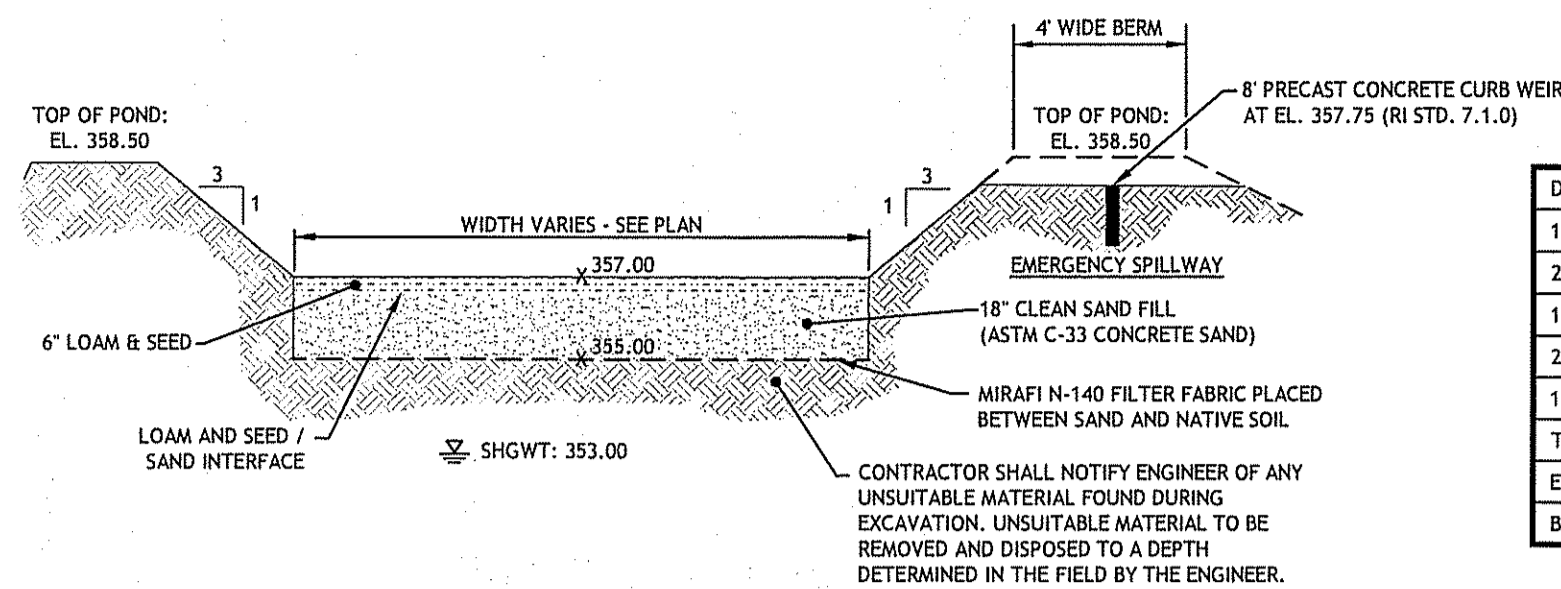
ZONING CRITERIA	REQUIRED	EXISTING AP 46 LOT 69	EXISTING AP 49 LOT 102D	PROPOSED COMBINED ⁽³⁾
ZONING DISTRICT	EGOD ⁽¹⁾	EGOD	EGOD	EGOD
MINIMUM LOT AREA	10,000 SF	192,535 SF	141,570 SF	334,105 SF
MINIMUM FRONTAGE & WIDTH	50 FT	412 FT	250 FT	412 FT
MINIMUM FRONT YARD SETBACK	25 FT	78 FT	N/A	78 FT ⁽⁴⁾
MAXIMUM FRONT YARD SETBACK	40 FT	78 FT	N/A	78 FT
MINIMUM SIDE YARD SETBACK	40 FT	77 FT	N/A	77 FT
MINIMUM REAR YARD SETBACK	40 FT	70 FT	N/A	70 FT
MAXIMUM LOT COVERAGE ⁽¹⁾	80%	18.5%	N/A	17.1%
MAXIMUM PERVIOUS SURFACES ⁽²⁾	10%	41.4%	N/A	32.8%
MAXIMUM STRUCTURE HEIGHT	48 FT	< 48 FT	N/A	< 48 FT

- NOTES:
1. MAXIMUM LOT COVERAGE INCLUDES STRUCTURES ONLY.
 2. MAXIMUM IMPERVIOUS SURFACES INCLUDES STRUCTURES, PAVEMENT, SIDEWALKS AND OTHER IMPERVIOUS SURFACES.
 3. PROPOSED SITE LAYOUT ASSUMES AP 46, LOT 69 AND AP 29 LOT 102D WILL BE COMBINED VIA AN ADMINISTRATIVE SUBDIVISION.
 4. EXISTING, LEGAL NON-CONFORMING CONDITION.



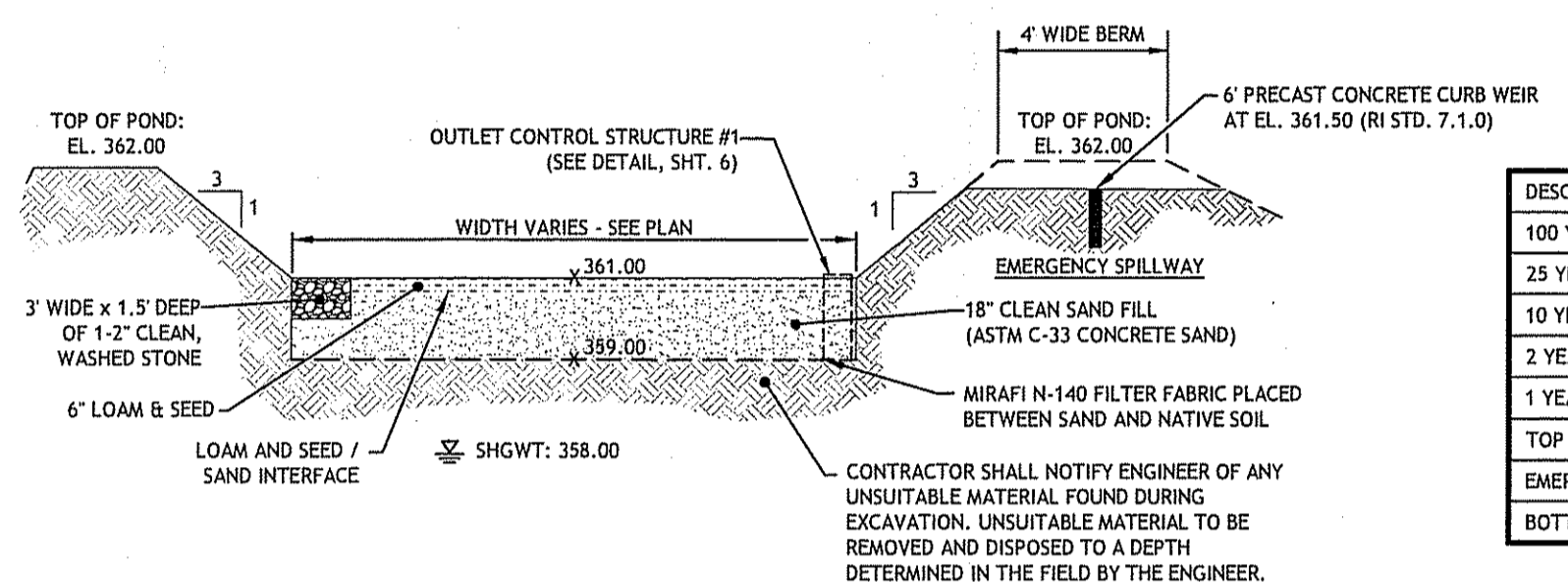
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 1 INCH = 40 FT

Environmental Management
 NOV 02 2016
 Office of Water Resources



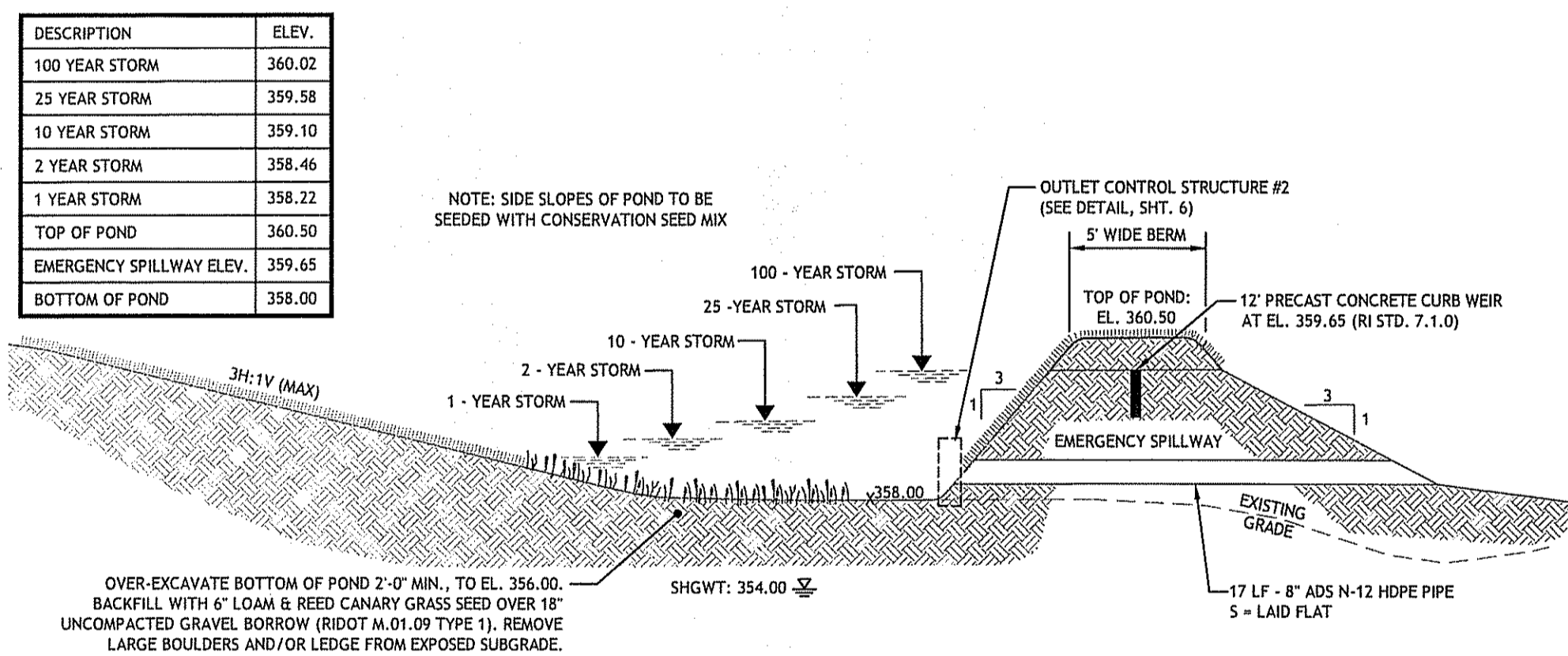
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100 YEAR STORM	358.03
25 YEAR STORM	357.88
10 YEAR STORM	357.80
2 YEAR STORM	357.27
1 YEAR STORM	357.04
TOP OF POND	358.50
EMERGENCY SPILLWAY ELEV.	357.75
BOTTOM OF POND	357.00

1 SAND FILTER #1 DETAIL
NOT TO SCALE



DESCRIPTION	ELEV.
100 YEAR STORM	361.87
25 YEAR STORM	361.60
10 YEAR STORM	361.47
2 YEAR STORM	361.32
1 YEAR STORM	361.28
TOP OF POND	362.00
EMERGENCY SPILLWAY ELEV.	361.50
BOTTOM OF POND	357.00

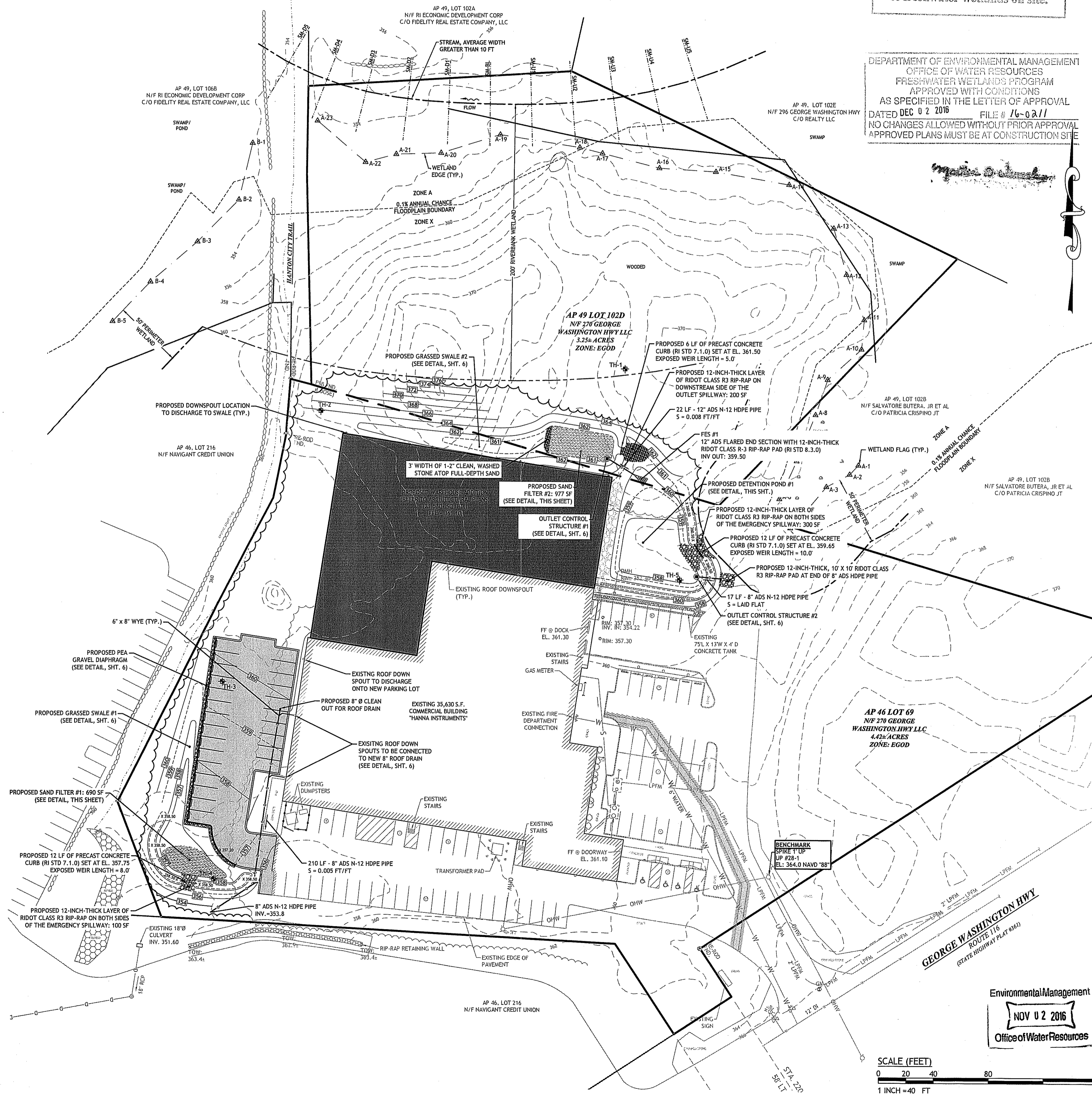
2 SAND FILTER #2 DETAIL
NOT TO SCALE



3 PROPOSED DETENTION POND DETAIL
NOT TO SCALE



4 EXISTING 18"Ø CULVERT ADJACENT TO SAND FILTER #1
NOT TO SCALE



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
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JOE CASALI ENGINEERING, INC.
CIVIL - SITE DEVELOPMENT - TRANSPORTATION
DRAINAGE - WETLANDS - I&DS - TRAFFIC - FLOODPLAIN
603.944.1500 603.944.9374 FAX WWW.JOECSAL.COM

JOSEPH A. CASALI
REGISTERED PROFESSIONAL ENGINEER
CIVIL
16-81-16

HANNA INSTRUMENTS
270 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RHODE ISLAND
AP 46 LOT 69, AP 49 LOT 102D

REVISIONS:
NO. DATE DESCRIPTION

DESIGNED BY: JMM/JWH
DRAWN BY: JMM/JWH
CHECKED BY: DRD
DATE: OCTOBER 2016
PROJECT NO: 03-80du

PRELIMINARY, NOT FOR CONSTRUCTION

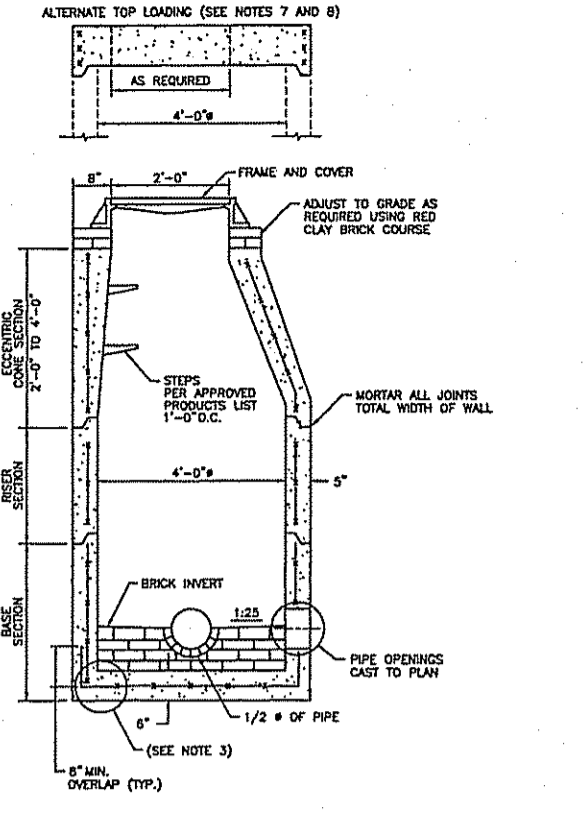
GRADING & DRAINAGE PLAN

SHEET 5 OF 7

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Environmental Management
NOV 02 2016
Office of Water Resources

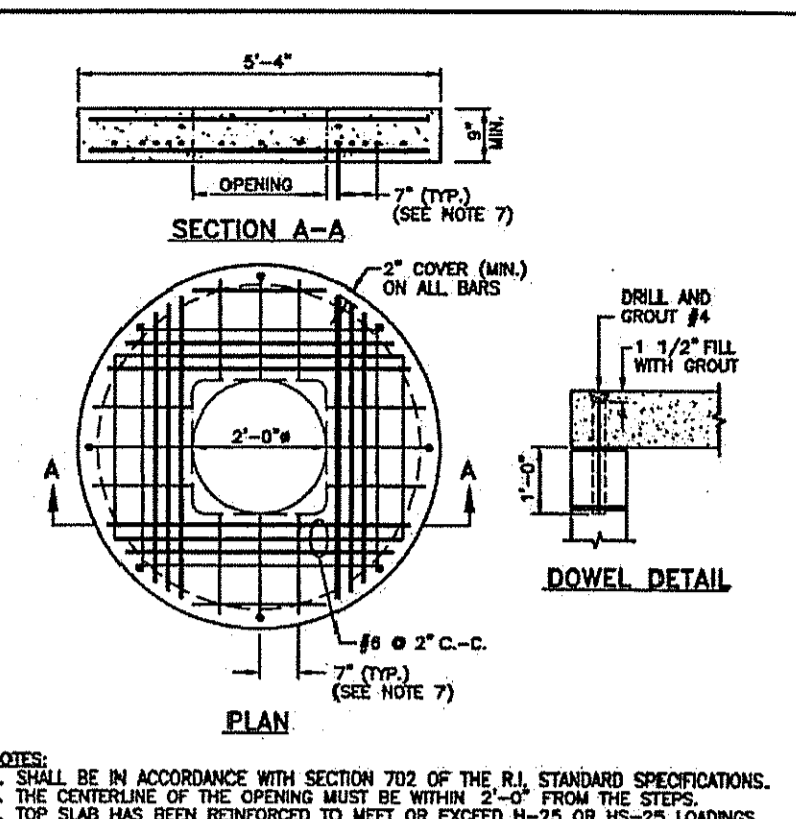
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1 INCH = 40 FT



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST 4" ROUND MANHOLE

NO. BY DATE
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 2. J.M. JUN 15, 1998

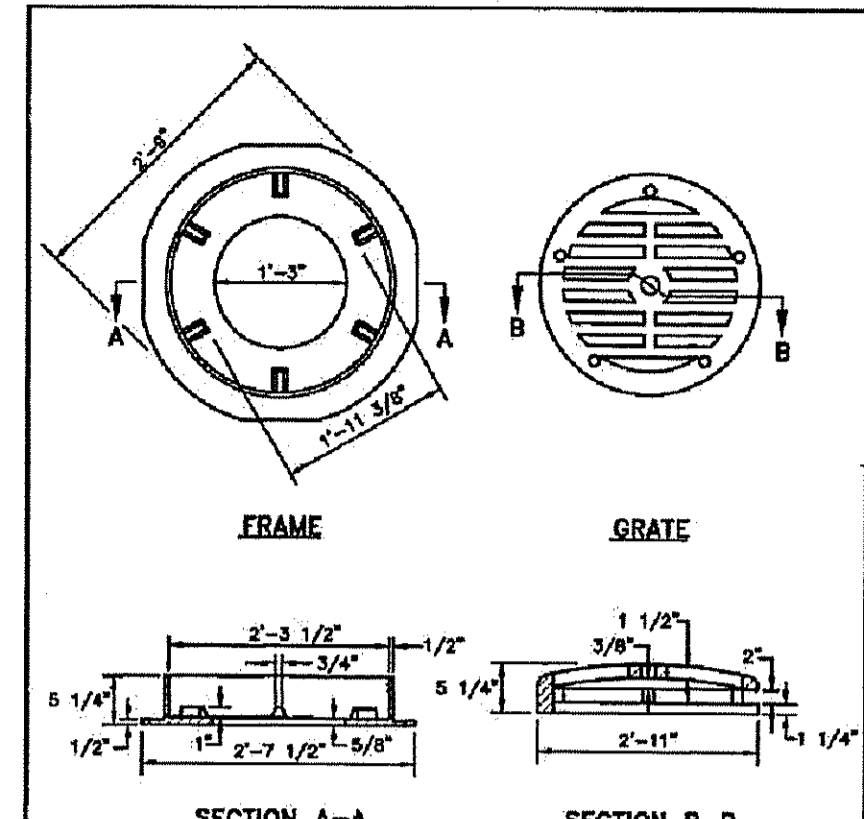
R.I. STANDARD 7.2.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
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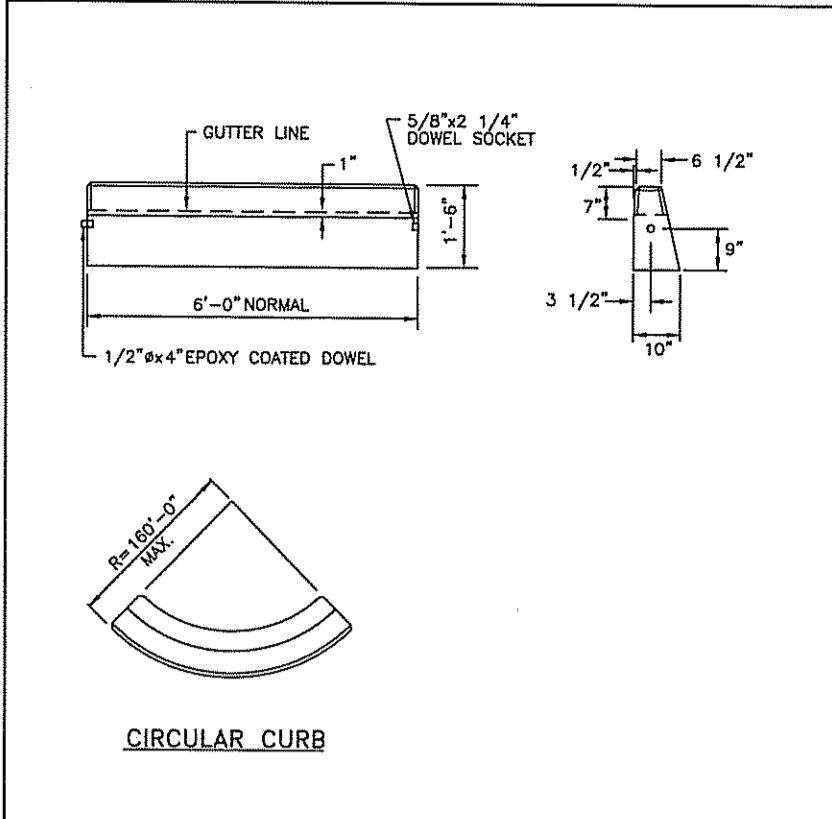
R.I. STANDARD 4.6.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
ROUND FRAME AND GRATE

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 2. J.M. JUN 15, 1998

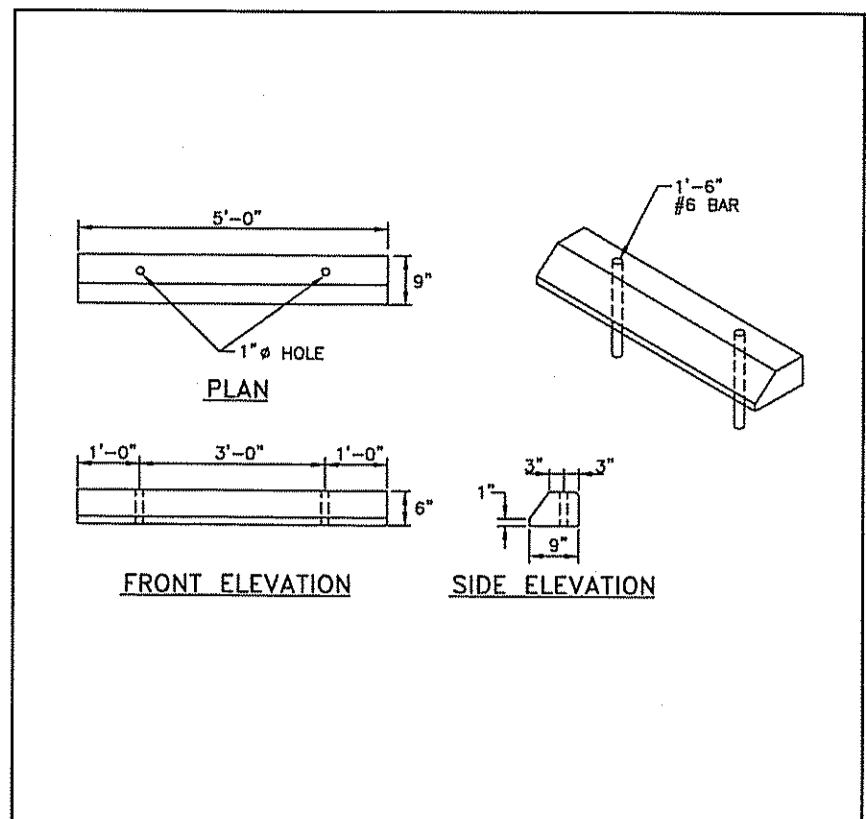
R.I. STANDARD 6.4.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE CURB

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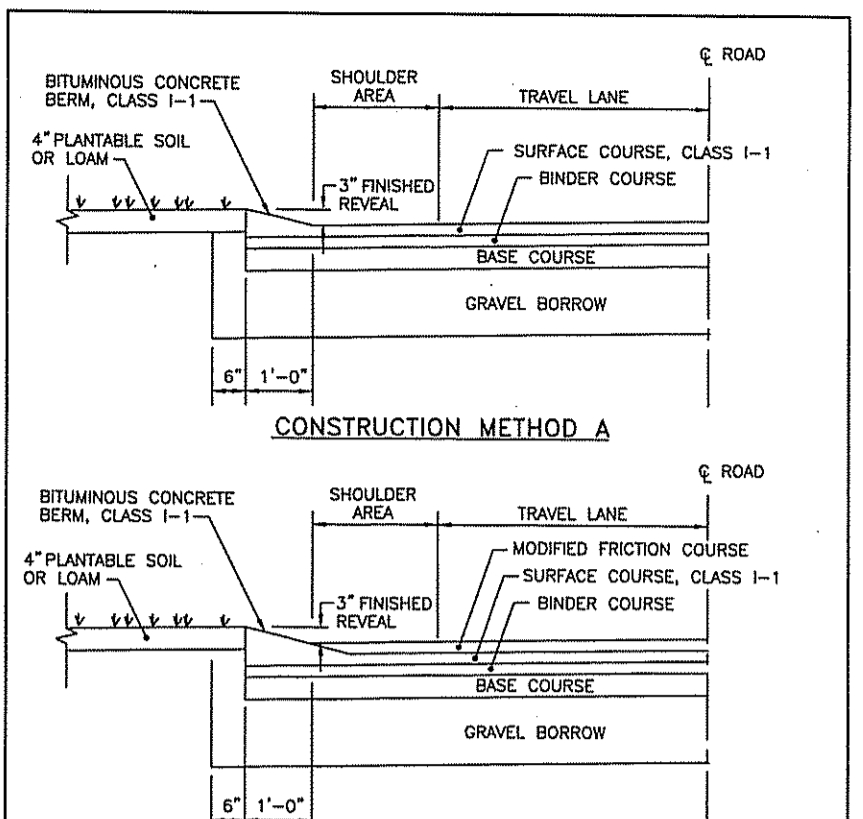
R.I. STANDARD 7.1.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE CAR STOPS

NO. BY DATE
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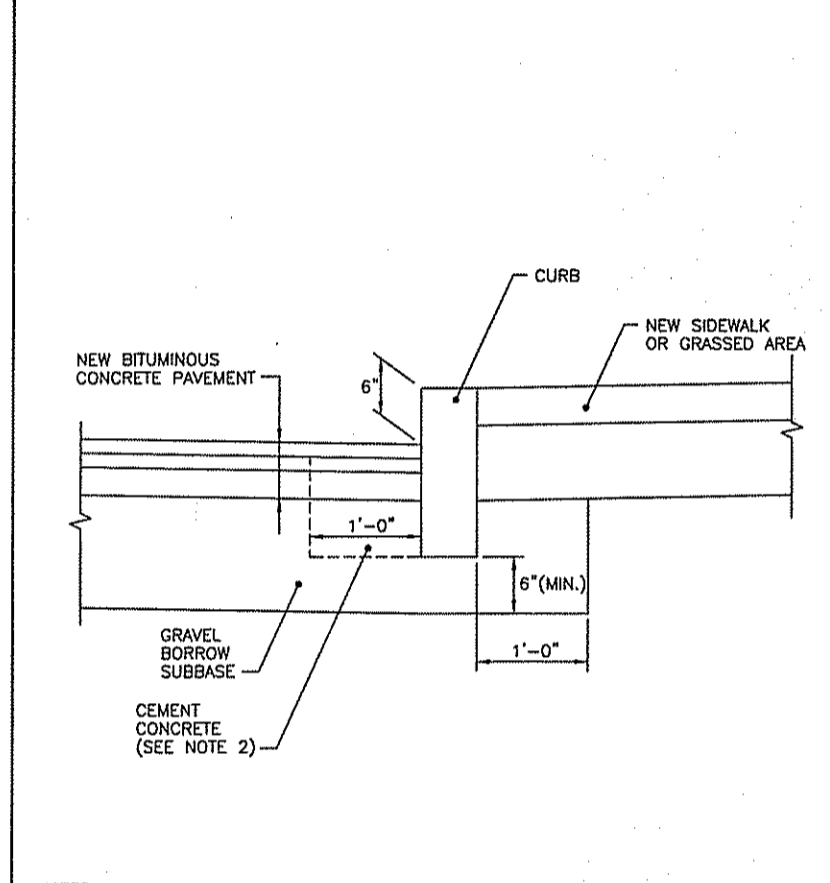
R.I. STANDARD 7.2.4



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
BITUMINOUS BERM

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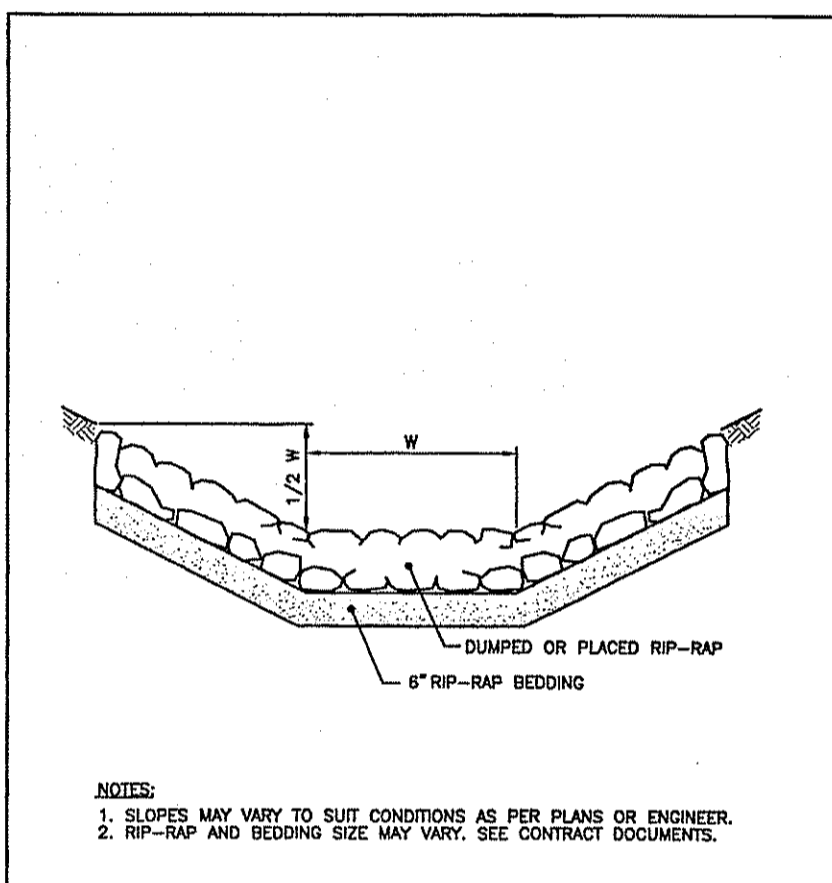
R.I. STANDARD 7.5.1



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
CURB SETTING DETAIL

NO. BY DATE
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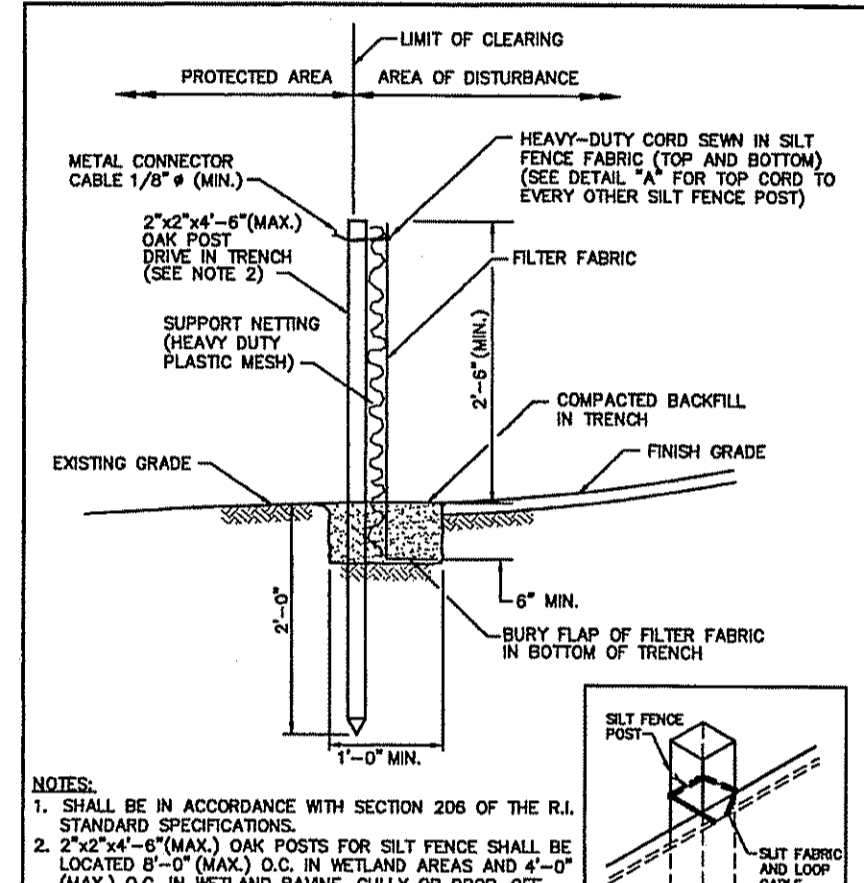
R.I. STANDARD 7.5.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
RIP-RAP DITCH

NO. BY DATE
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 2. J.M. JUN 15, 1998

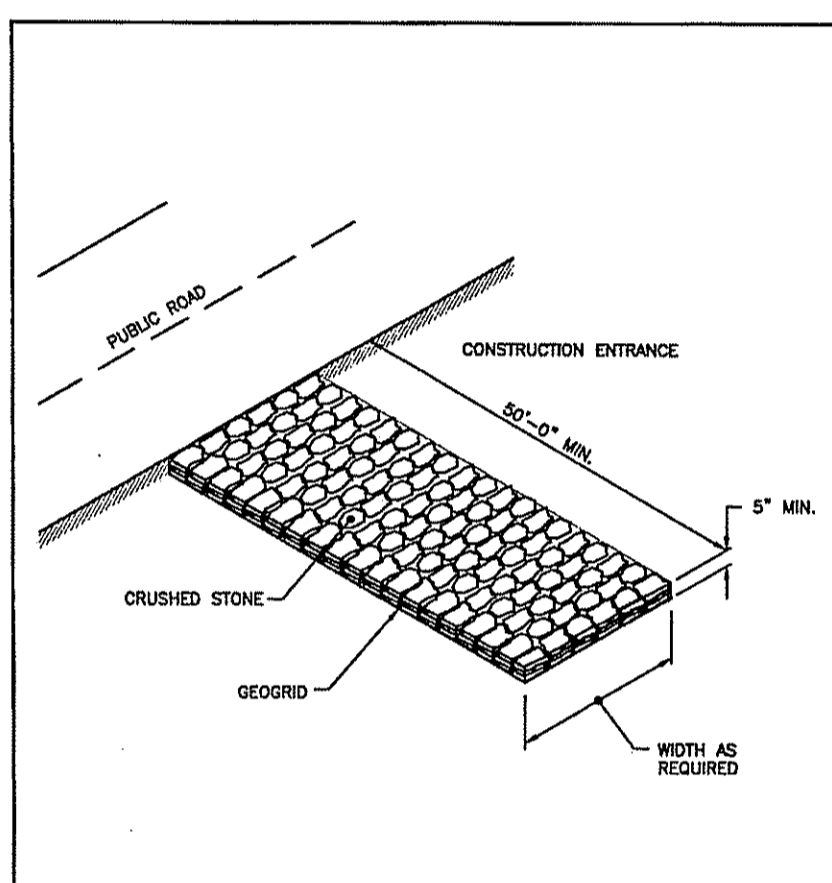
R.I. STANDARD 8.3.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SILT FENCE DETAIL

NO. BY DATE
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 2. J.M. JUN 15, 1998

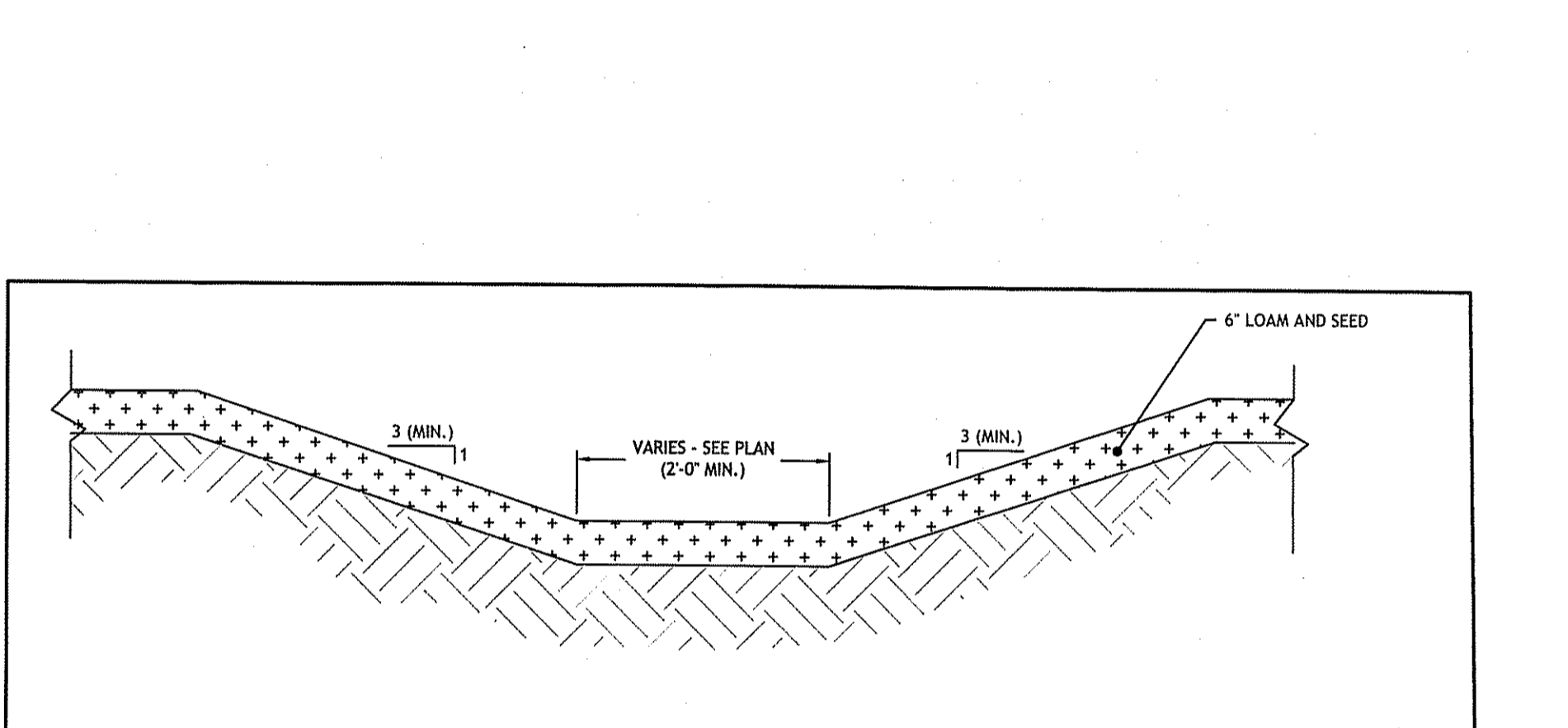
R.I. STANDARD 9.2.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
CONSTRUCTION ACCESS

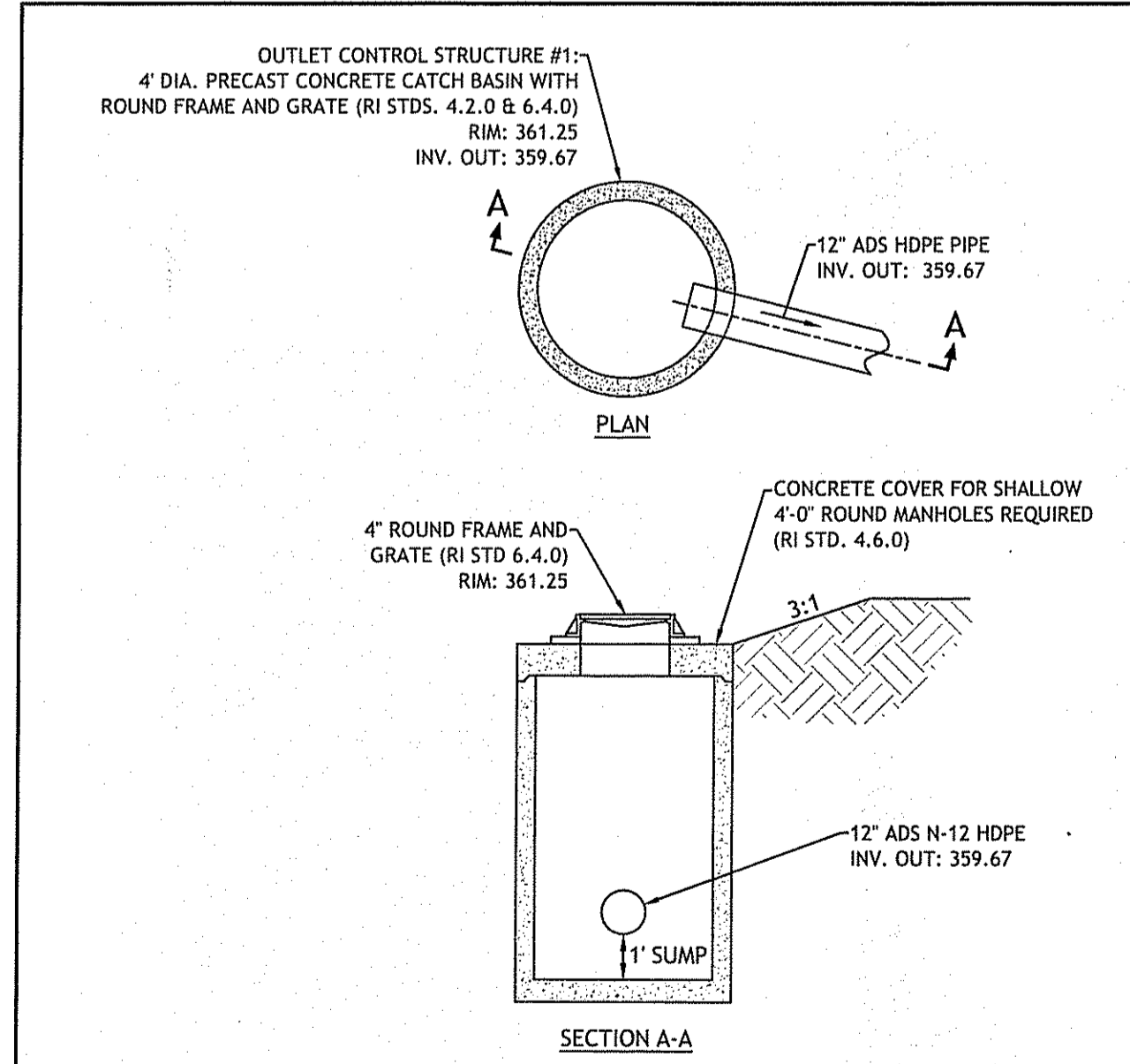
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R.I. STANDARD 9.9.0

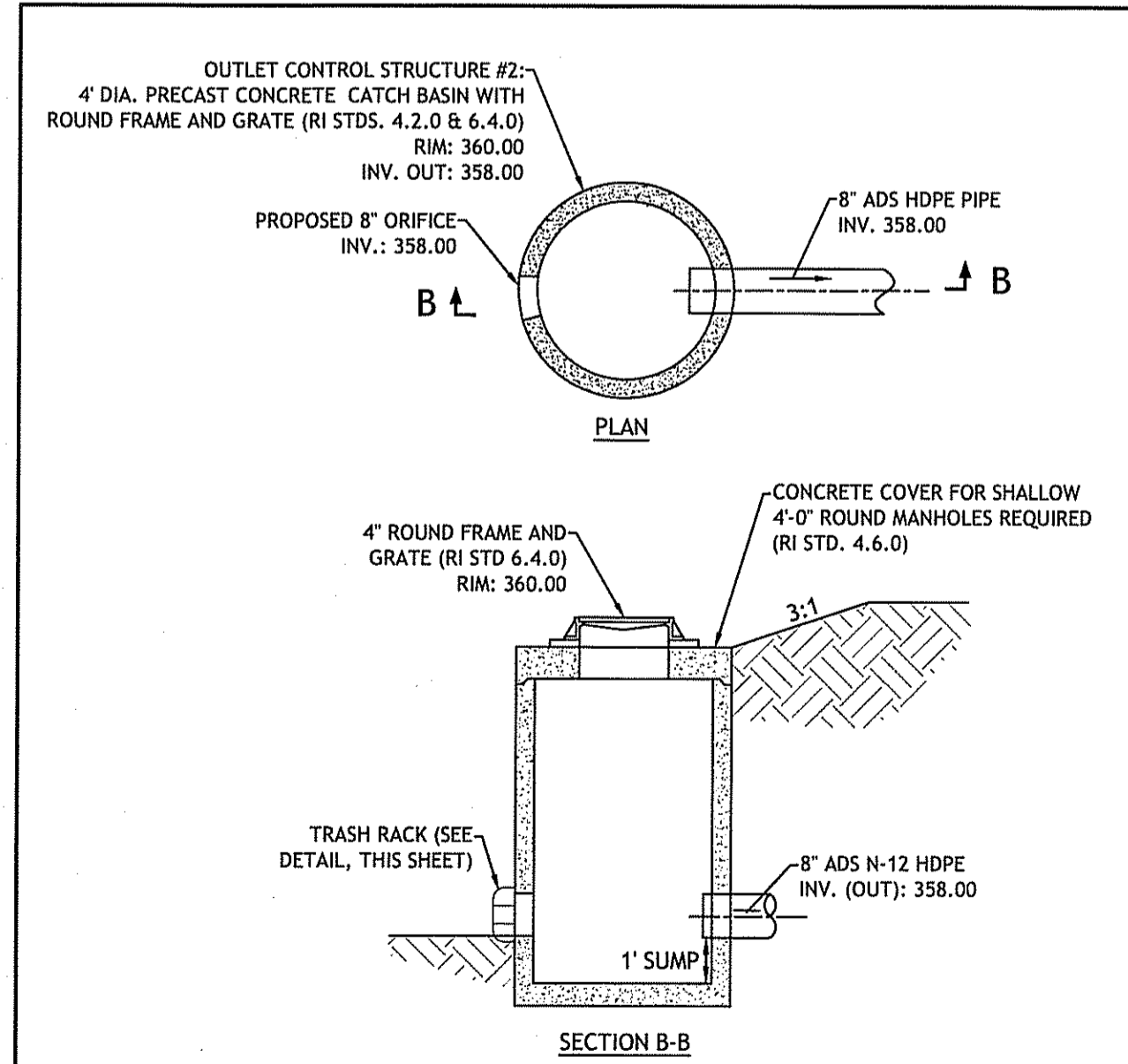


5 GRASSED SWALE - TYPICAL SECTION
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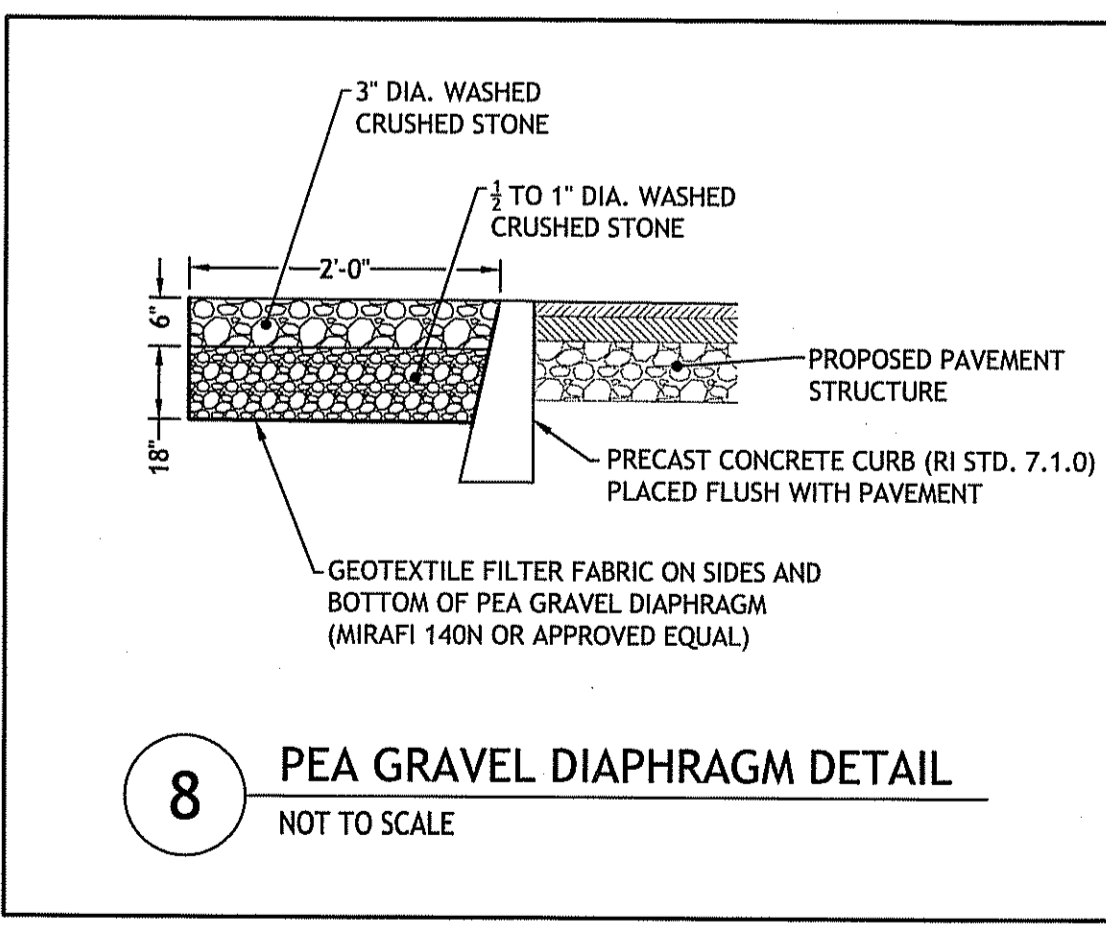
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
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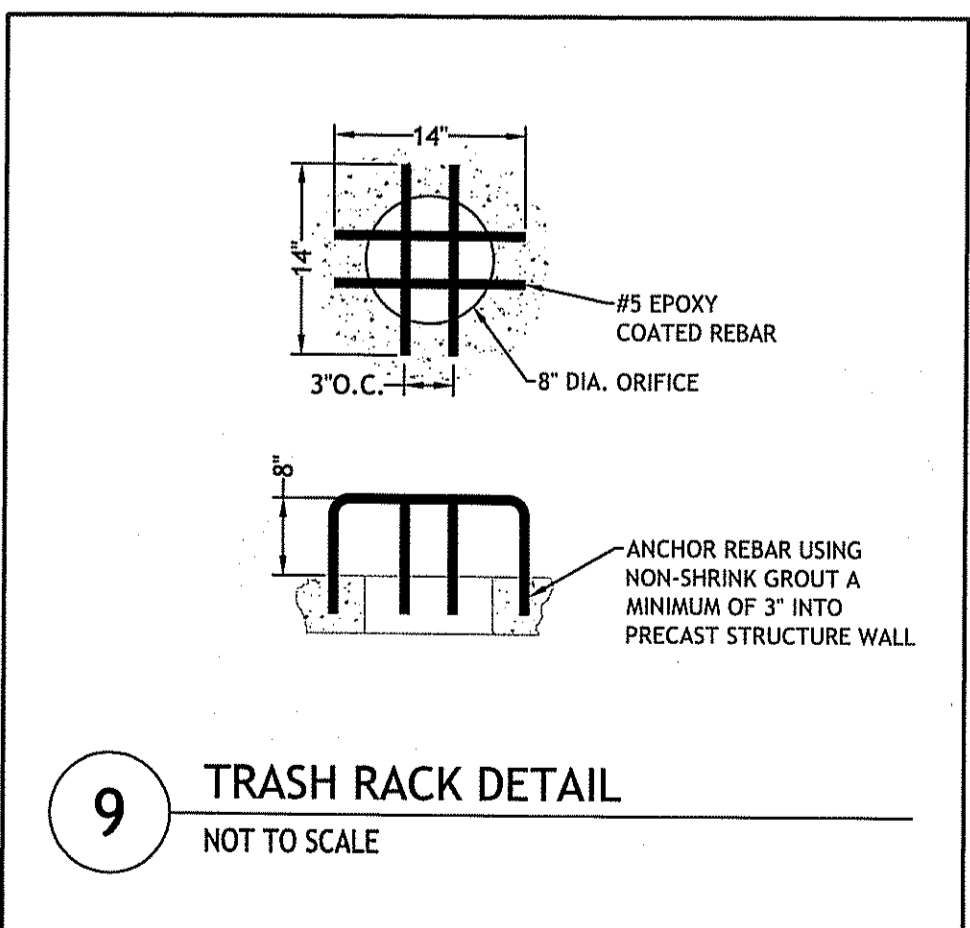
6 OUTLET CONTROL STRUCTURE #1
 NOT TO SCALE



7 OUTLET CONTROL STRUCTURE #2
 NOT TO SCALE



8 PEA GRAVEL DIAPHRAGM DETAIL
 NOT TO SCALE



9 TRASH RACK DETAIL
 NOT TO SCALE

Environmental Management
 NOV 02 2016
 Office of Water Resources

JCE
 JOSEPH A. CASALI
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 No. 750
 10-01-16

HANNA INSTRUMENTS
 270 GEORGE WASHINGTON HIGHWAY
 SMITHFIELD, RHODE ISLAND
 AP 46 LOT 69, AP 49 LOT 102D

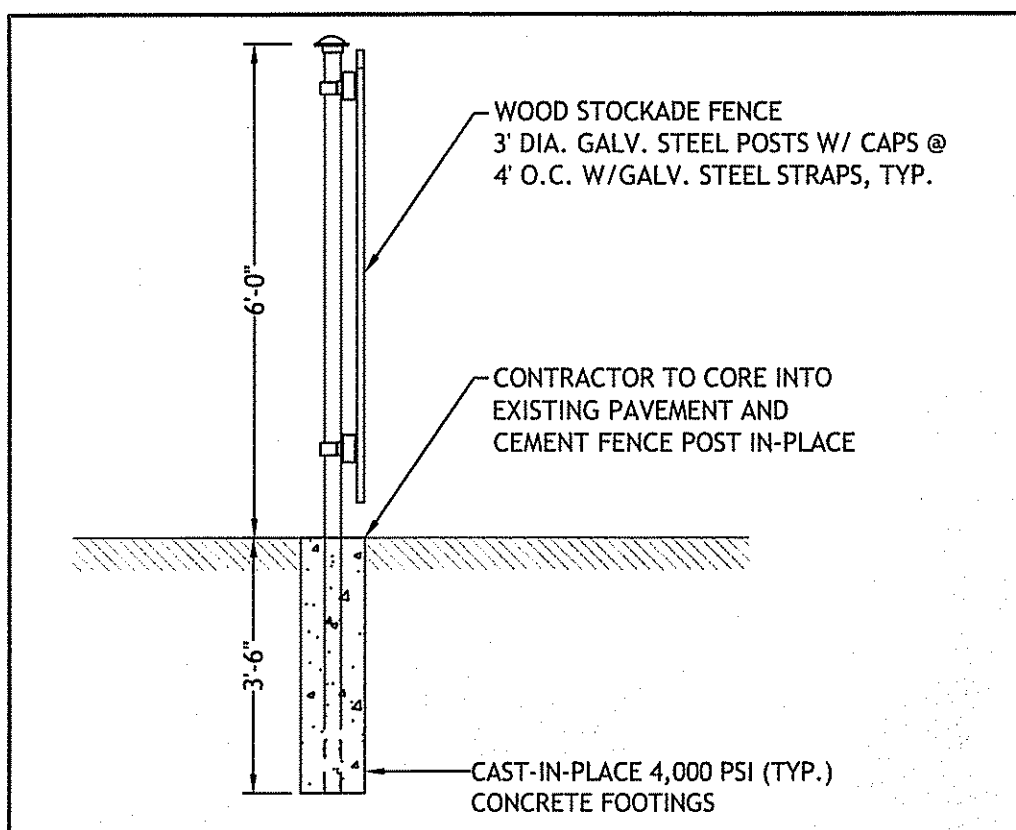
REVISIONS:
 NO. DATE DESCRIPTION

DESIGNED BY: JMM/JWH
 DRAWN BY: JMM/JWH
 CHECKED BY: DRD
 DATE: OCTOBER 2016
 PROJECT NO: 03-50aa

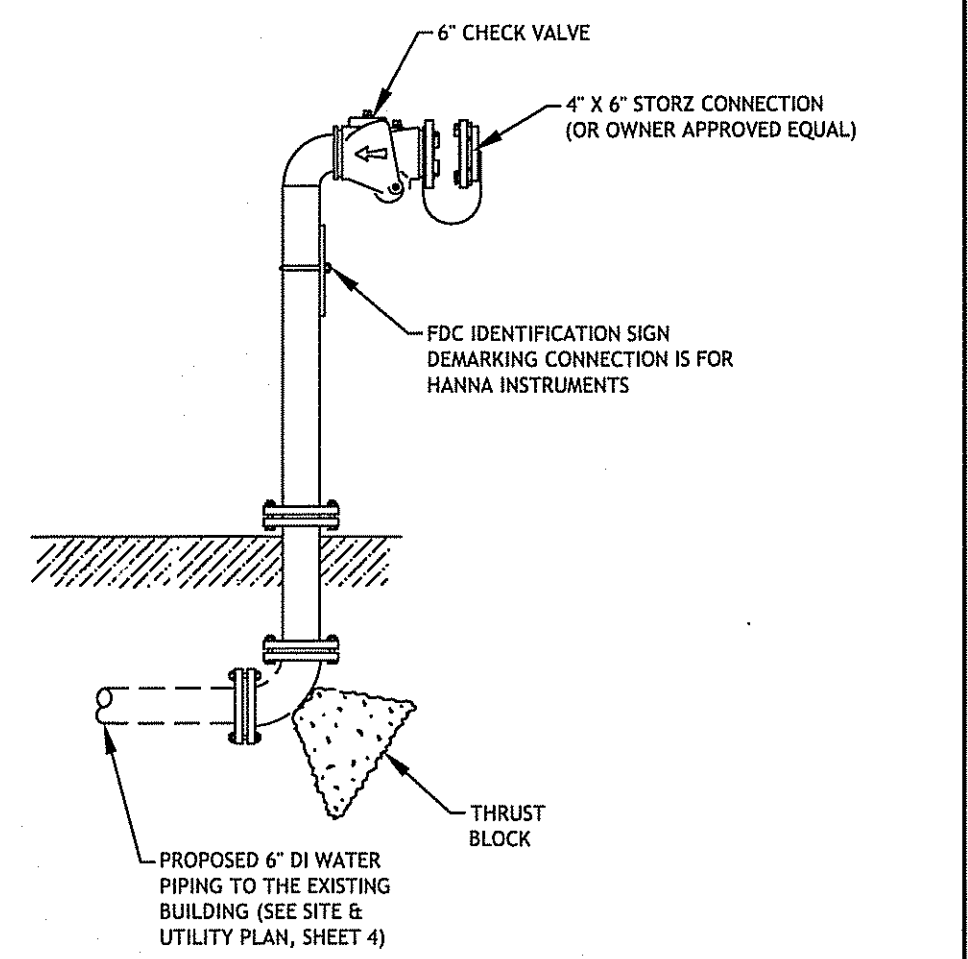
PRELIMINARY, NOT FOR CONSTRUCTION

SITE DETAILS I

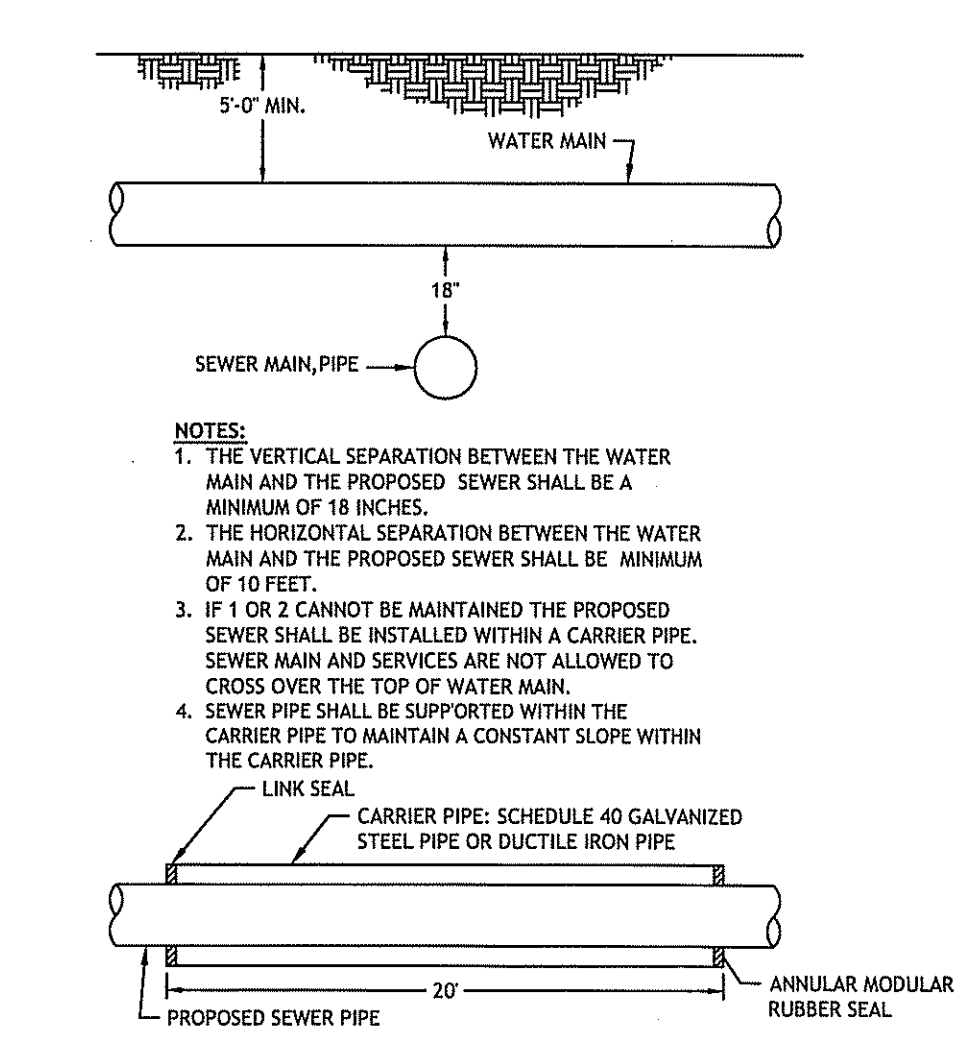
SHEET 6 OF 7



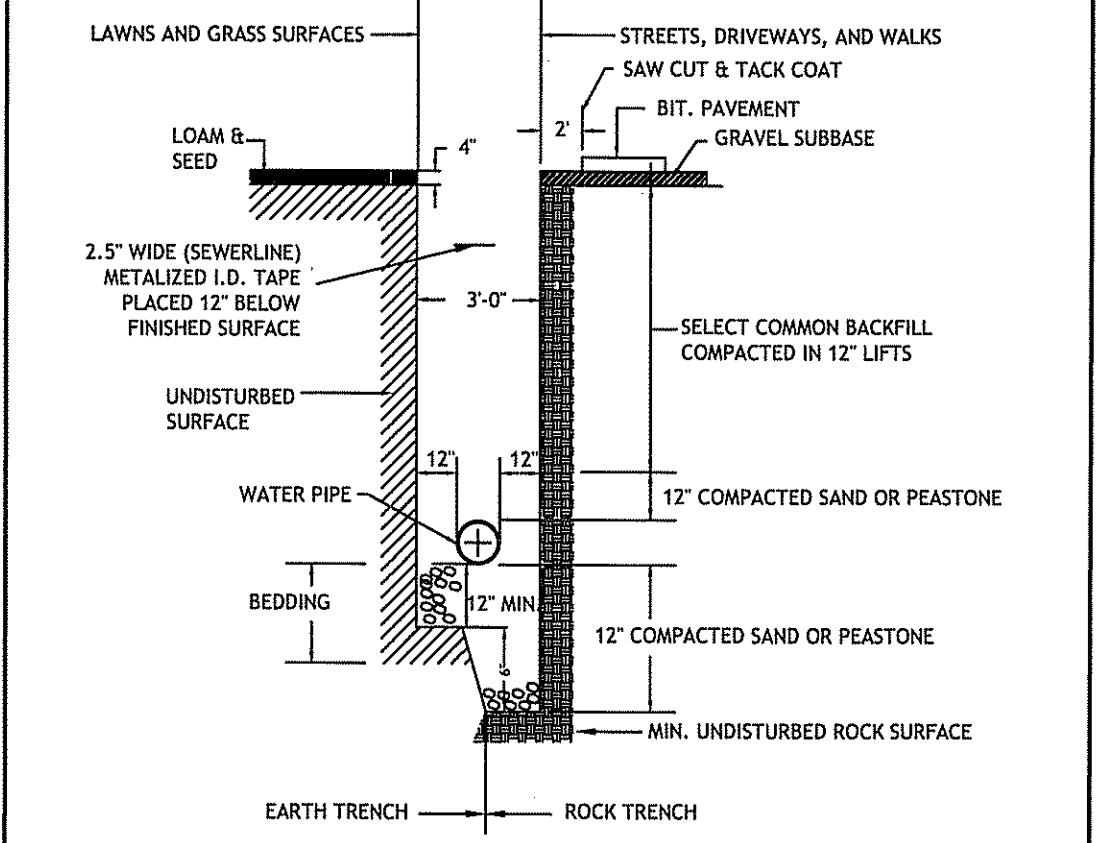
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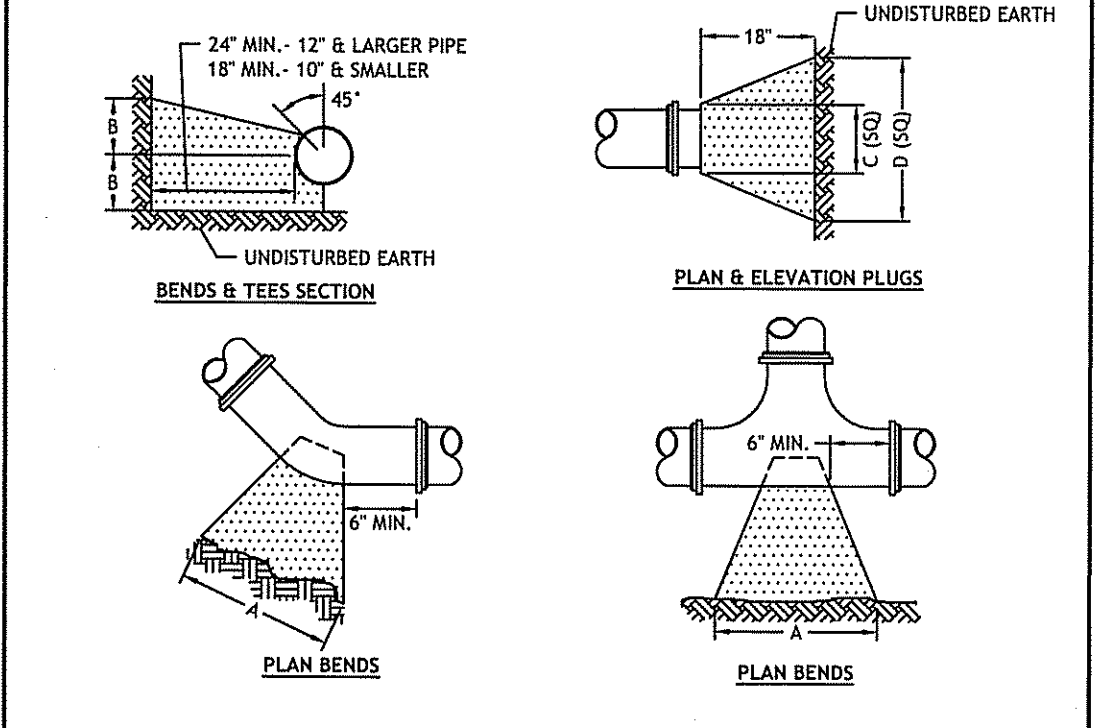
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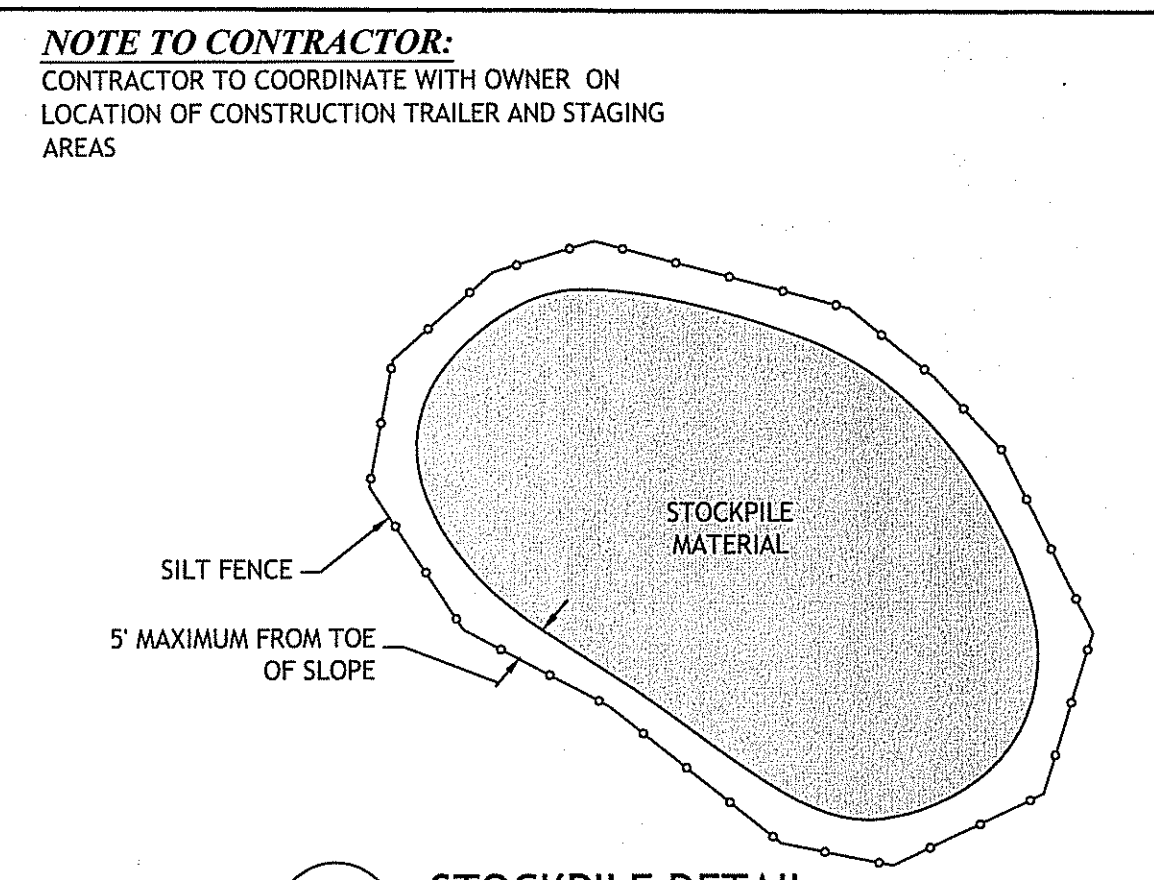
12 SEWER/WATER SEPERATION DETAIL
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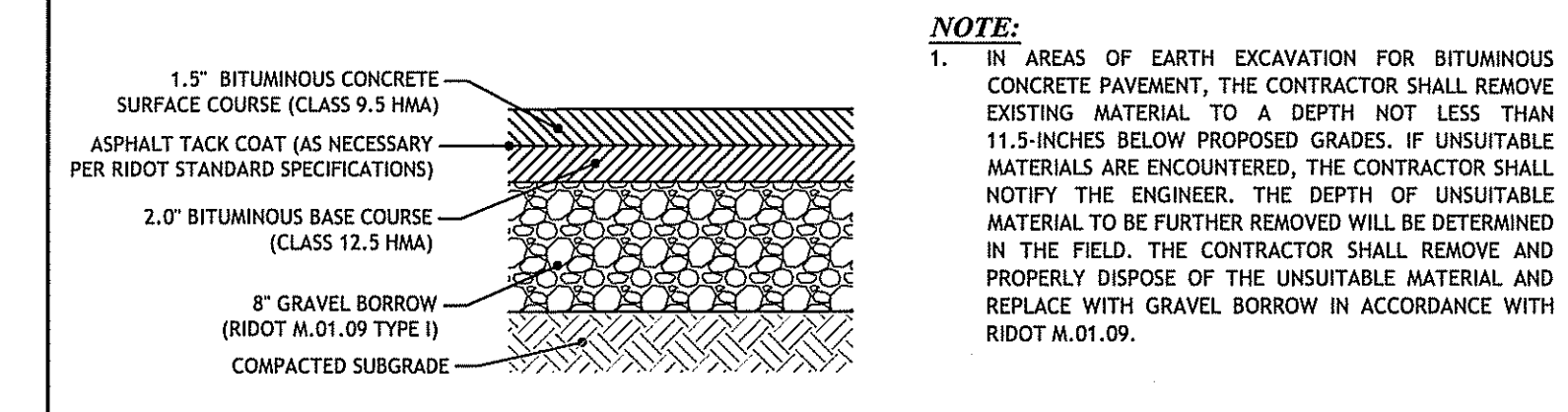
13 WATER PIPE TRENCH DETAIL
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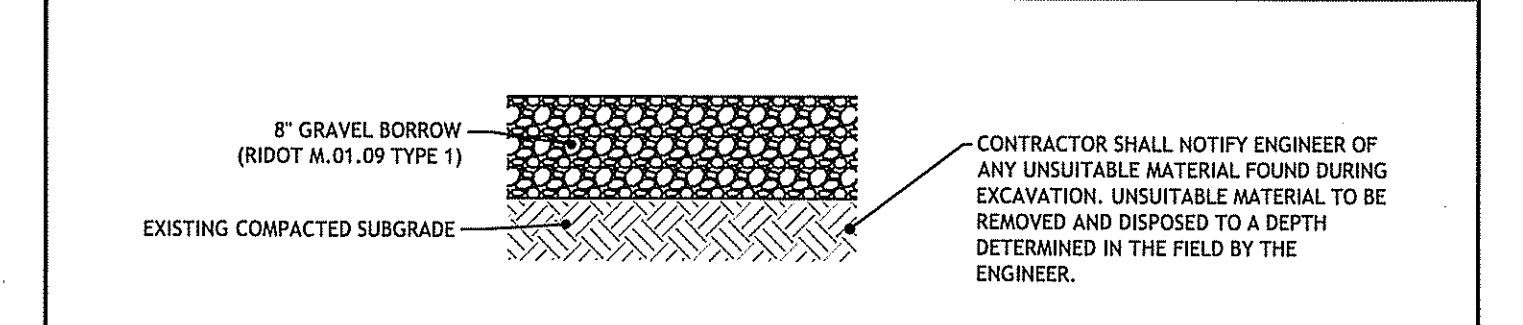
14 THRUST BLOCK DETAIL
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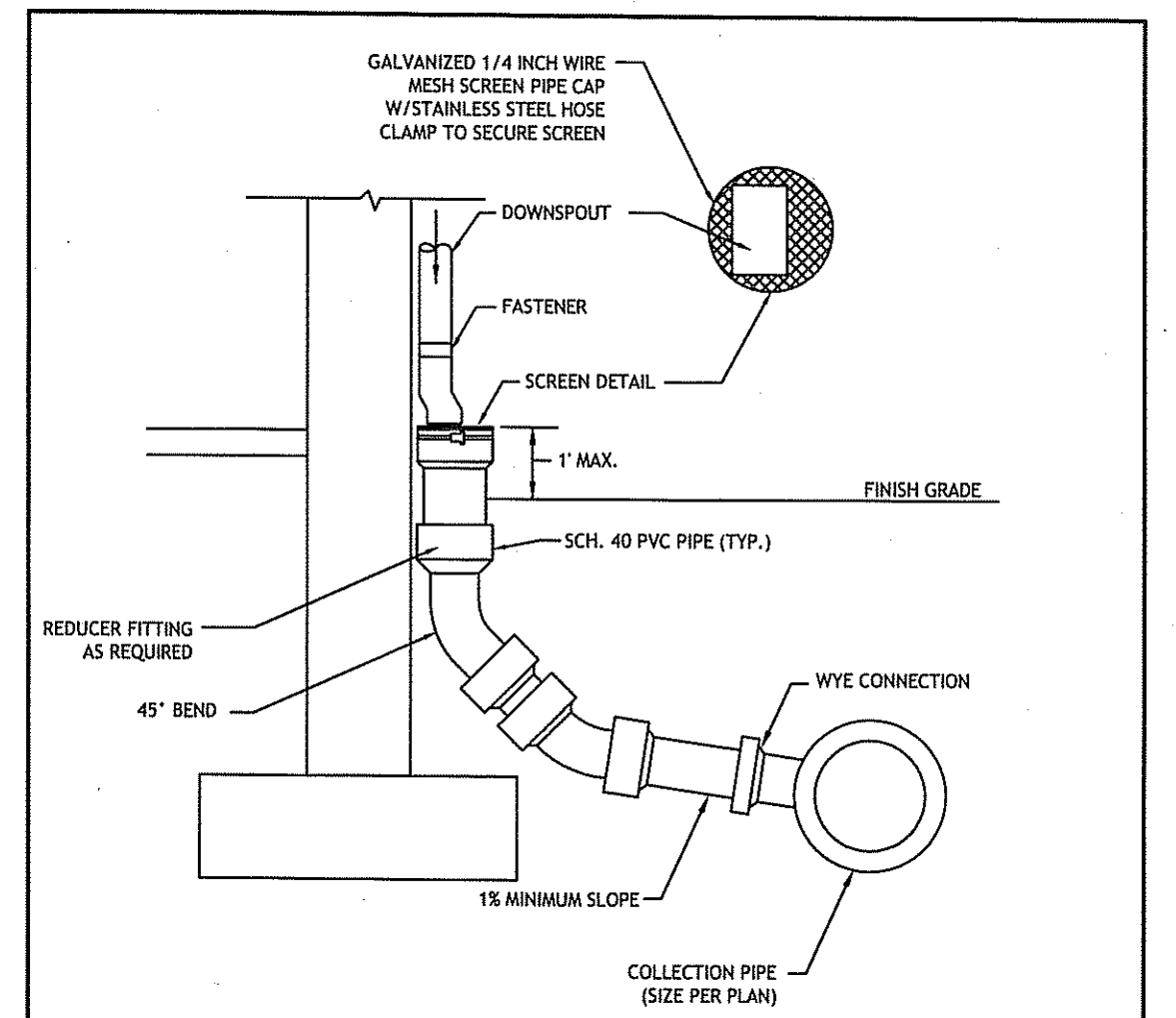
15 STOCKPILE DETAIL
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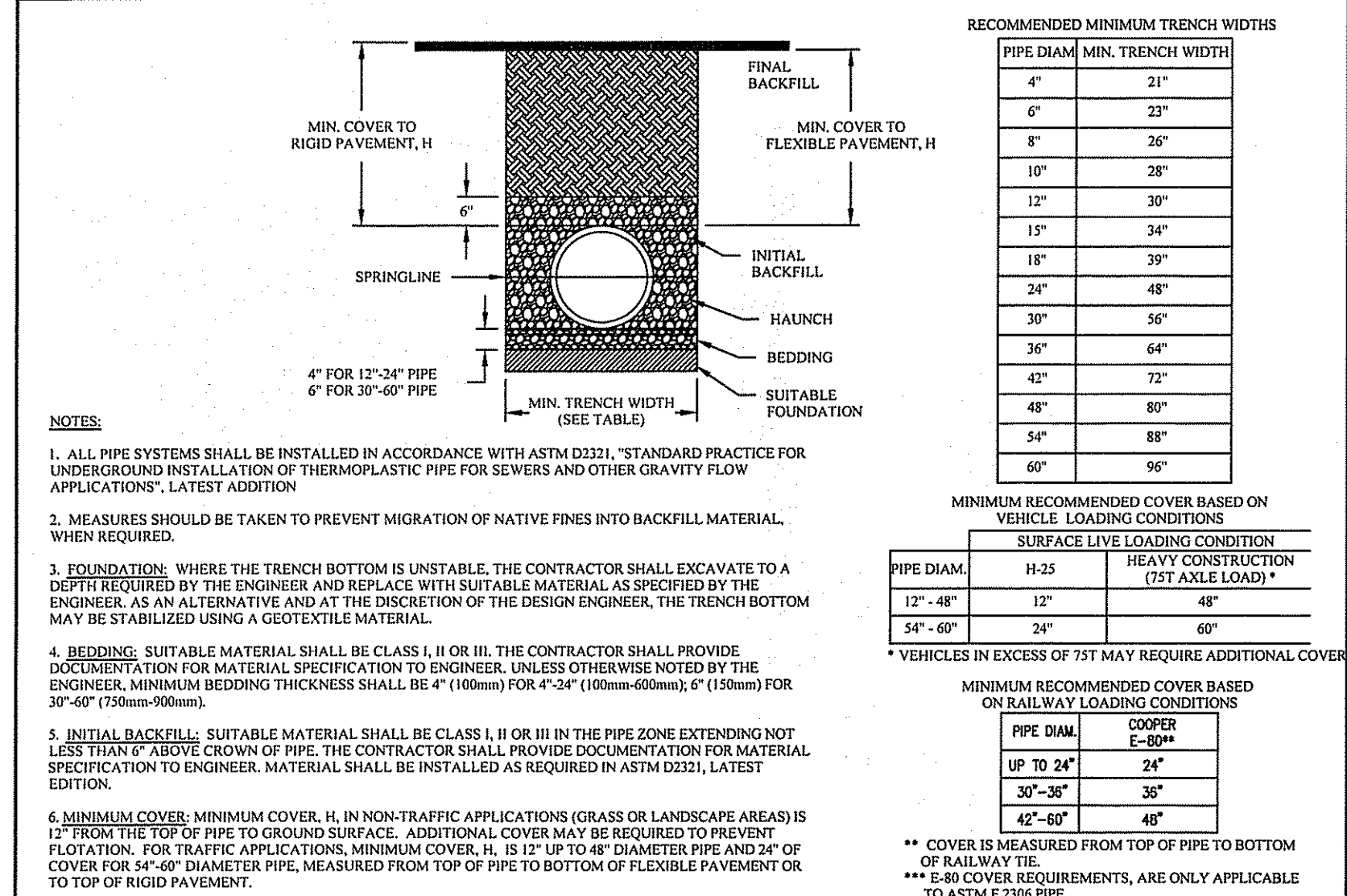
16 BITUMINOUS CONCRETE PAVEMENT
NOT TO SCALE



17 GRAVEL ACCESS ROAD
NOT TO SCALE



18 DOWNSPOUT LEADER CONNECTION DETAIL
NOT TO SCALE



19 DRAIN PIPE TRENCH INSTALLATION DETAIL
NOT TO SCALE

JCE
JOE CASALI ENGINEERING, INC.
Civil, Site Development, Transportation
300 POST ROAD, WARWICK, RI 02886
(401) 944-1300 (401) 944-1313 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI
REGISTERED PROFESSIONAL ENGINEER
CIVIL
10-81-16

HANNA INSTRUMENTS
270 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RHODE ISLAND
AP 46 LOT 69, AP 49 LOT 102D

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SITE DETAILS II

SHEET 7 OF 7

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