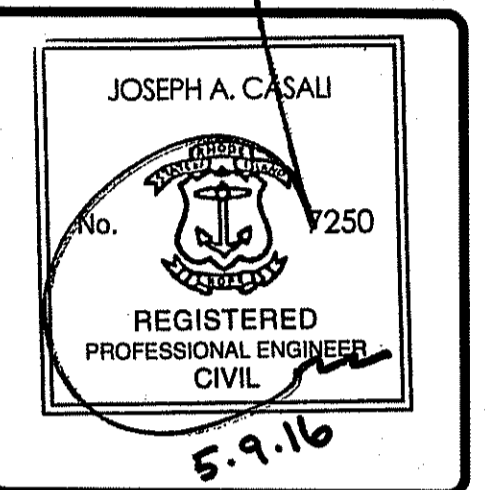
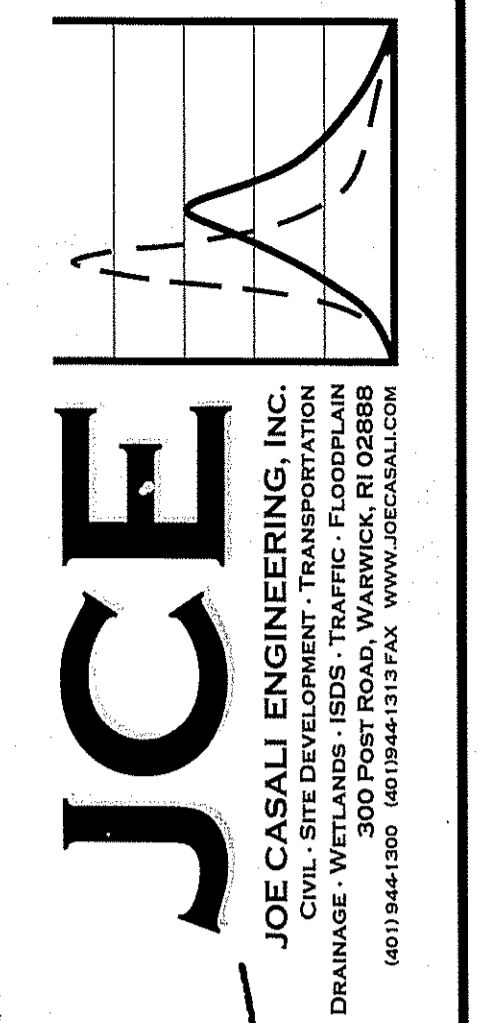
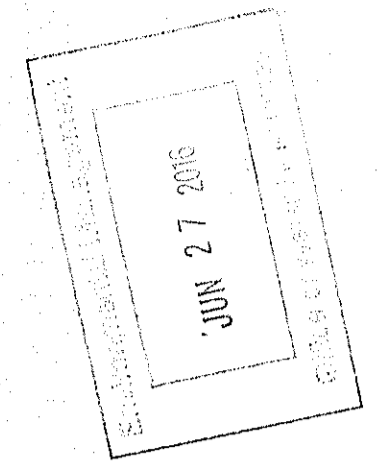


# SITE PLANS FOR A PROPOSED SINGLE FAMILY HOME AT 78 STILLWATER ROAD

AP 22, LOT 2C  
SMITHFIELD, RHODE ISLAND

ZONING DISTRICT: R-20



78 STILLWATER ROAD  
SMITHFIELD, RHODE ISLAND  
AP 22, LOT 2C

**APPROVED BY:**

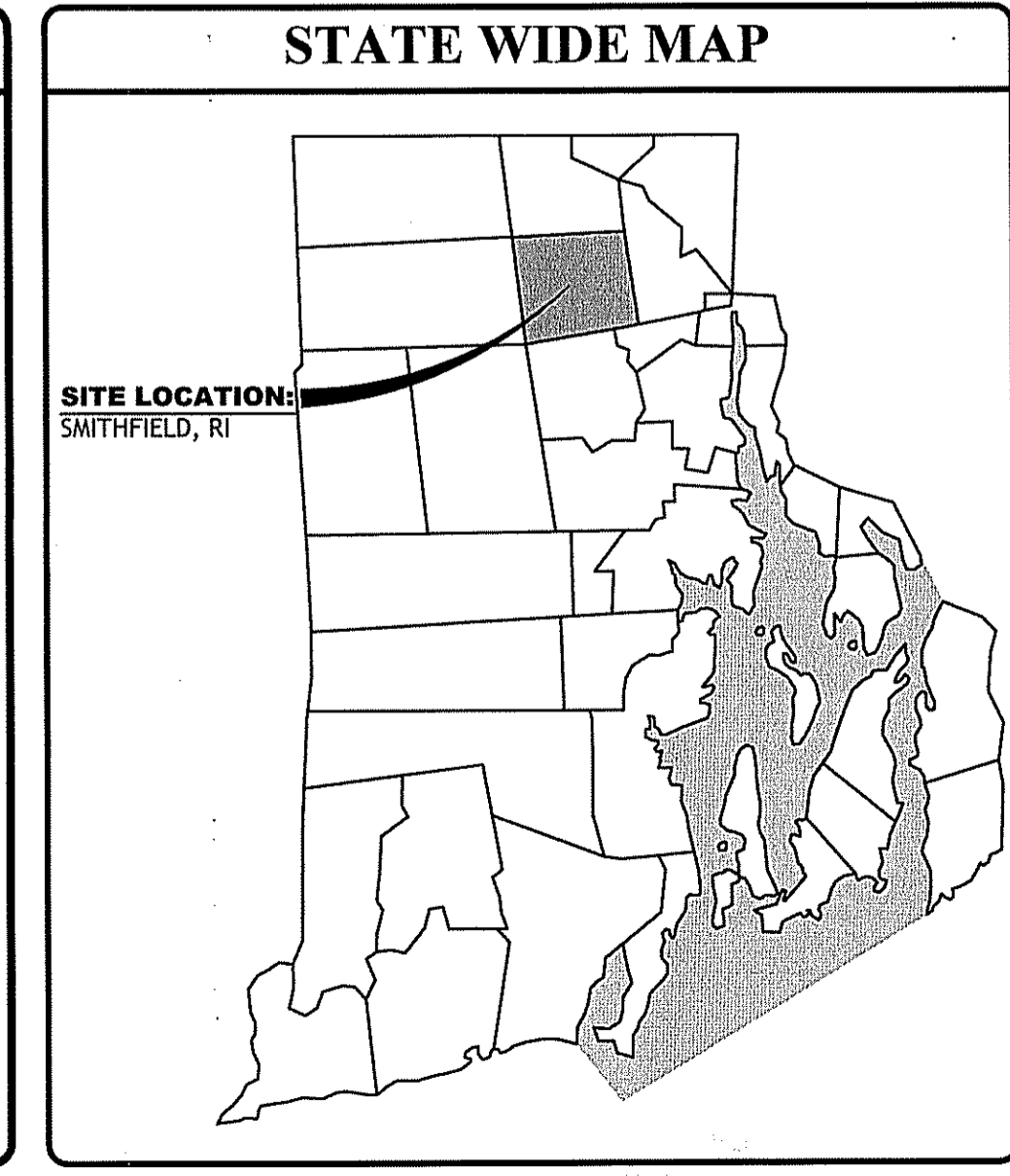
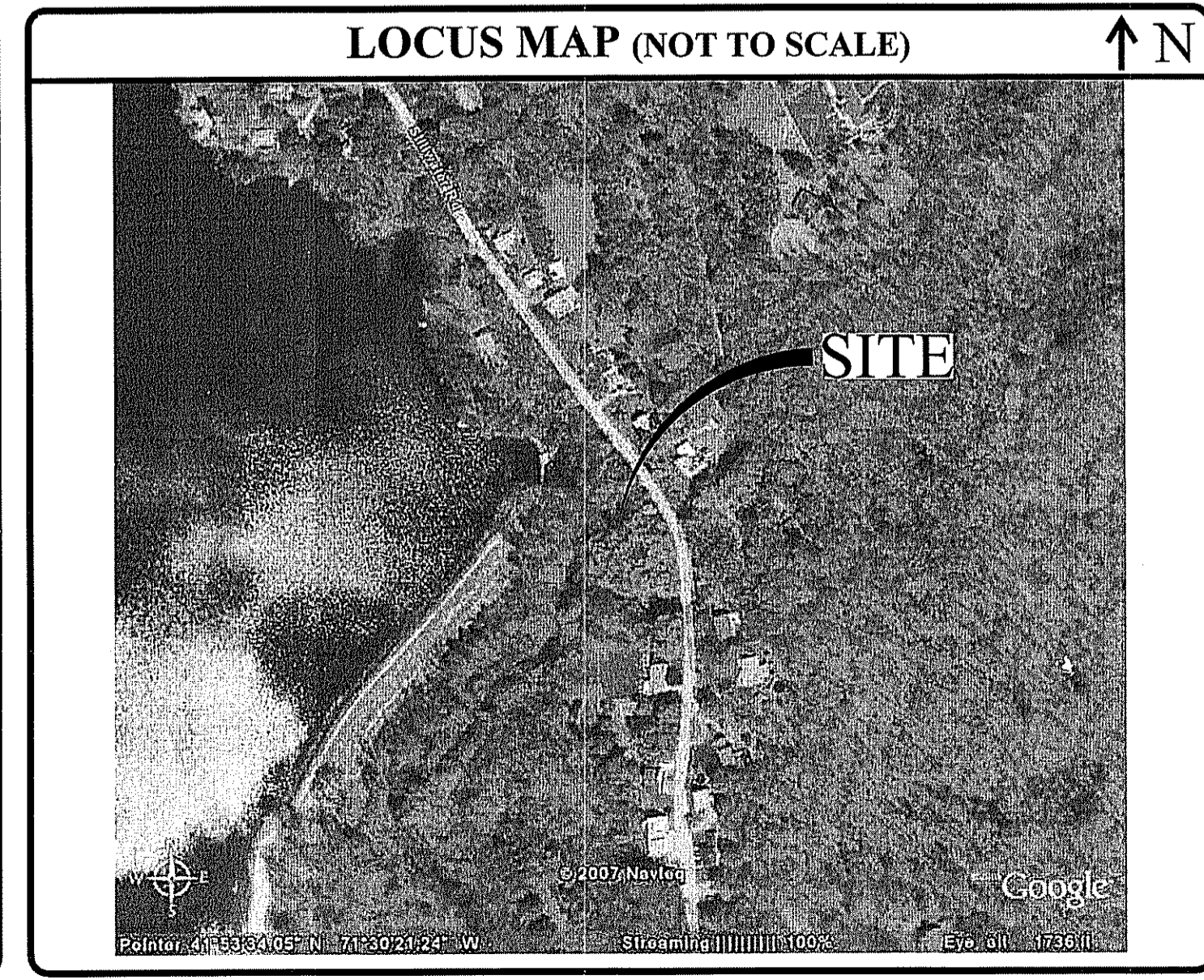
- TOWN OF SMITHFIELD ZONING BOARD - MARCH 31, 2008 (FILE #08-002) BOOK 629, PAGE 49 - VARIANCE RECEIVED FOR:
  - FRONT YARD SETBACK (REQUIRED 30', PROVIDED 12', RELIEF RECEIVED 18')
  - CONSTRUCTION ACTIVITIES WITHIN 100' OF WETLAND (REQUIRED 100', PROVIDED 31', RELIEF RECEIVED 69')

**SUBMITTED TO:**

- RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT - APPLICATION TO ALTER FRESHWATER WETLANDS (PREVIOUS APPLICATION #07-0431)
- TOWN OF SMITHFIELD - SOIL EROSION COMMITTEE - PLAN REVIEW

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED DEC 08 2016 FILE # 16-0071  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PROJECT TEAM	
<b>OWNER/APPLICANT:</b>	JOSEPH A. CASALI REVOCABLE TRUST 365 BUNGY ROAD SCITUATE, RI 02857
<b>CIVIL ENGINEER:</b>	JOE CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RI 02888 PHONE: 401-944-1300 FAX: 401-944-1313
<b>SURVEYOR:</b>	INTERNATIONAL MAPPING & SURVEYING CORP. 19 INDUSTRIAL DRIVE SMITHFIELD, RI 02917 PHONE: 401-232-2620
<b>WETLAND BIOLOGISTS:</b>	NATURAL RESOURCE SERVICES, INC. P.O. BOX 311 190 TINKHAM LANE HARRISVILLE, RI 02830 PHONE: 401-568-7390 FAX: 401-568-7490



**INDEX OF DRAWINGS**

SHEET NO.	PLAN
1	COVER SHEET
2	EXISTING CONDITIONS PLAN
3	SITE PLAN
4	GRADING & DRAINAGE PLAN
5	RHODE ISLAND STANDARD DETAILS
6	DETAILS SHEET I
7	UTILITY DETAILS

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	5-9-16	RIDEM RTC

DESIGNED BY: JMM  
DRAWN BY: JMM  
CHECKED BY: JAC  
DATE: MARCH 2016  
PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

**COVER SHEET**

**SHEET 1 OF 7**

Q:\07-43 - Stillwater Road Smithfield\CAD\PLANS\SET\STILLWATER RD PLAN-SET (2016) RI.dwg, May-10, 2016 10:04am

- LEGEND**
- EXISTING PROPERTY LINE
  - ABUTTING PROPERTY LINE
  - BUILDING SETBACK LINE
  - EXISTING CONTOUR
  - 100' PROPOSED CONTOUR
  - EXISTING STONE WALL
  - EXISTING CURB
  - PROPOSED CURB
  - EXISTING GUARD RAIL
  - EXISTING DRAIN LINE
  - PROPOSED DRAIN LINE
  - EXISTING DRAINAGE MANHOLE
  - PROPOSED DRAINAGE MANHOLE
  - EXISTING CATCH BASIN
  - PROPOSED CATCH BASIN
  - EXISTING UTILITY POLE
  - PROPOSED UTILITY POLE
  - TEL EXISTING TELECOM DUCTBANK
  - E EXISTING ELECTRIC DUCTBANK
  - E RELOCATED ELECTRIC DUCTBANK
  - GAS EXISTING GAS LINE
  - GAS PROPOSED GAS LINE
  - W EXISTING WATER LINE
  - W PROPOSED WATER LINE
  - EXISTING WATER SHUT OFF VALVE
  - PROPOSED WATER SHUT OFF VALVE
  - S EXISTING SEWER LINE
  - S PROPOSED SEWER LINE
  - EXISTING SEWER MANHOLE
  - PROPOSED SEWER MANHOLE
  - N/F NOW OR FORMERLY
  - TREELINE
  - HAY BALES
  - SILT FENCE
  - LOD LIMIT OF DISTURBANCE
  - (T)LOD TEMPORARY LIMIT OF DISTURBANCE
  - TEST HOLE

ZONING CRITERIA	REQUIRED	EXISTING
ZONING DISTRICT	R-20	R-20
MINIMUM LOT AREA	20,000 Sq.Ft.	30,175 SF
MINIMUM LOT FRONTAGE	125'	303'
MINIMUM FRONT YARD SETBACK	30'	N/A
MINIMUM SIDE YARD SETBACK	30'	N/A
MINIMUM REAR YARD SETBACK	15'	N/A
MAXIMUM BUILDING HEIGHT	39' / 3 STORY	N/A

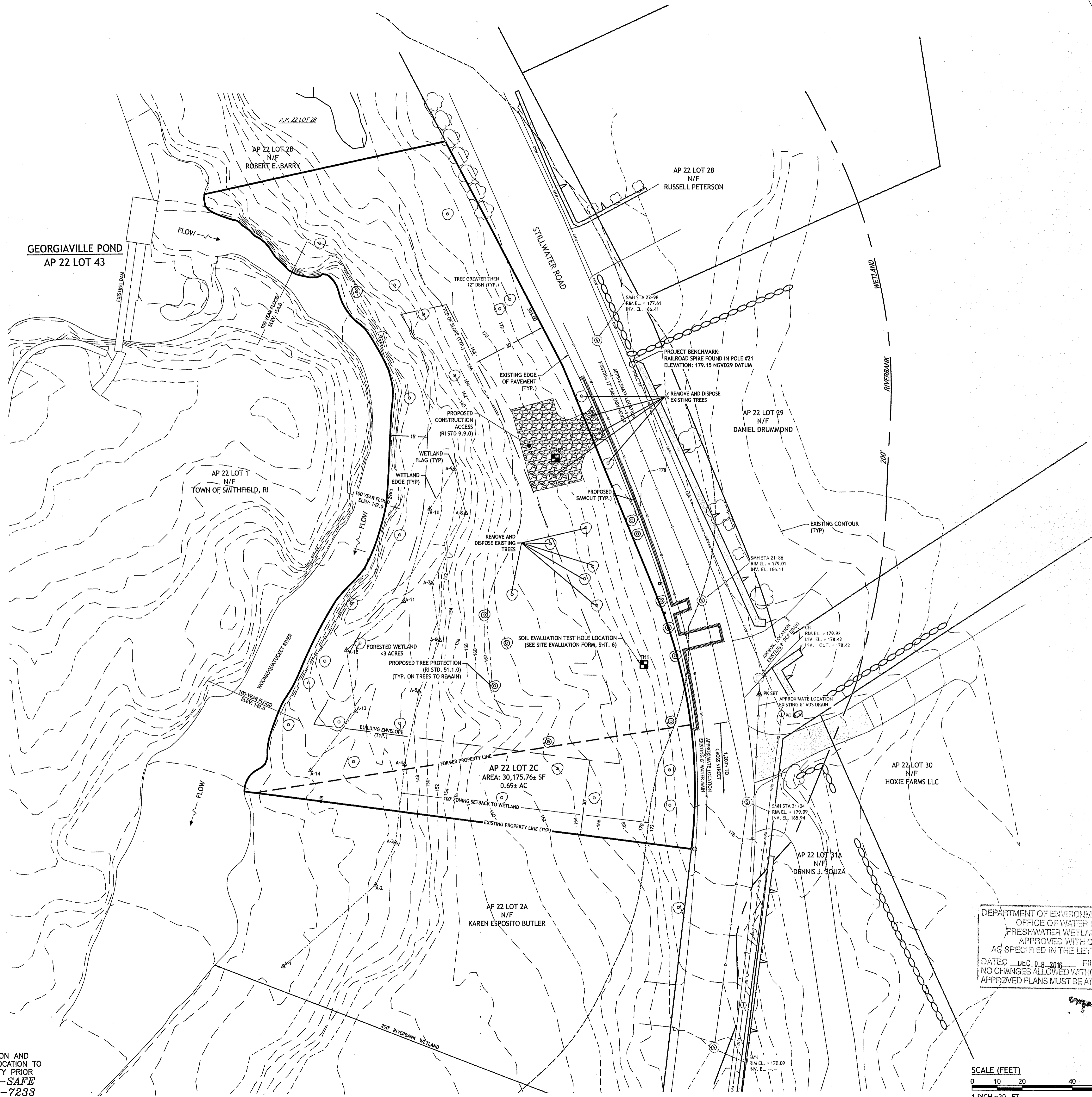
\*INDICATES A NONCONFORMING CONDITION

**GENERAL NOTES:**

- SURVEY INFORMATION FROM PLAN ENTITLED "ADMINISTRATIVE SUBDIVISION ESPOSITO PROPERTY" FOR ROBERT ESPOSITO & KAREN ESPOSITO BUTLER ON STILLWATER ROAD IN SMITHFIELD RI, AP 22 LOT 2A & LOT 2C COMPLETED BY INTERNATIONAL MAPPING, DATED 6/21/07.
- THE TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAN WAS COMPILED FROM AN AERIAL PHOTOGRAMMETRIC SURVEY, PROVIDED BY INTERNATIONAL MAPPING AND SURVEYING CORP. THE HORIZONTAL AND VERTICAL DATUMS ARE NAD83 AND NGVD88 RESPECTIVELY.
- BASED ON THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF SMITHFIELD, COMMUNITY-PANEL NUMBER 44007C0169H, REVISED OCTOBER 2, 2015, PORTIONS OF THE WESTERN SIDE OF THE SITE LIE WITHIN ZONE AE. ZONE AE AREAS ARE IDENTIFIED AS AREAS INUNDATED BY THE 100-YEAR FLOOD. FLOOD ELEVATIONS ON THE SITE RANGE FROM ELEVATIONS 142 TO 154 (SEE FIGURE 4- FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 44007C0169H).
- THE WETLANDS (FORESTED WETLAND, AREA SUBJECT TO STORM FLOWAGE) WERE DELINEATED BY NATURAL RESOURCE SERVICES, INC. IN OCTOBER, 2002 AND LOCATED IN THE FIELD BY SCITUATE SURVEYS, INC. IN FEBRUARY 2003. THE WOONASQUATUCKET RIVER (PERENNIAL RIVER GREATER THAN 10' IN OVERALL WIDTH) WAS DELINEATED BY AERIAL PHOTOGRAMMETRY. WETLAND FLAGS RE-ESTABLISHED AND SURVEYED BY INTERNATIONAL MAPPING & SURVEYING CORP. IN MARCH 2016. THE ENTIRE SITE IS LOCATED WITHIN THE 200 FOOT RIVERBANK WETLAND ASSOCIATED WITH THE WOONASQUATUCKET RIVER.
- EXCEPT WHERE INDICATED SITE IS ENTIRELY WOODED.
- EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY. DIG SAFE AND APPROPRIATE UTILITY COMPANIES SHALL BE NOTIFIED PRIOR TO ANY CONSTRUCTION FOR ACCURATE UTILITY LOCATIONS.



LOCATION OF EXISTING UTILITIES SHOWN, ARE FROM GATE LOCATION AND EXISTING DOCUMENTATION AND MAY NOT BE ACCURATE. EXACT LOCATION TO BE DONE BY THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY PRIOR TO ANY EXCAVATION CALL **DIGSAFE** AT **1-888-DIG-SAFE** OR **1-888-344-7233**



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
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DATED 06-09-2016 FILE # 16-0071  
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SCALE (FEET)  
0 10 20 40 80  
1" = 20 FT

**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL, SITE DEVELOPMENT, TRANSPORTATION  
DRAINAGE, WETLANDS, ENVIRONMENTAL  
300 POST ROAD, WARWICK, RI 02888  
(401) 944-1300 (401) 944-1313 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
5.9.16

**78 STILLWATER ROAD  
SMITHFIELD, RHODE ISLAND  
AP 22, LOT 2C**

REVISIONS:

NO.	DATE	DESCRIPTION
1	5-9-16	RIDEM RTC

DESIGNED BY: JMM  
DRAWN BY: JMM  
CHECKED BY: JAC  
DATE: MARCH 2016  
PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

**EXISTING CONDITIONS PLAN**

**SHEET 2 OF 7**

Q:\07-43-Stillwater Road\Smithfield\ACAD\PLANS\SET\2016\RI.dwg, May, 10, 2016 10:04am

ZONING CRITERIA	REQUIRED	EXISTING	PROPOSED	DONATED
ZONING DISTRICT	R-20	R-20	R-20	R-20
MINIMUM LOT AREA	20,000 Sq.Ft	30,175 SF	27,079 SF	**3,096 SF
MINIMUM LOT FRONTAGE	125'	303'	268'	**35'
MINIMUM FRONT YARD SETBACK	30'	N/A	*12'	N/A
MINIMUM SIDE YARD SETBACK	30'	N/A	57'	N/A
MINIMUM REAR YARD SETBACK	15'	N/A	64'	N/A
MAXIMUM BUILDING HEIGHT	39' / 3 STORY	N/A	<39'	N/A

NOTE:  
 \*DIMENSIONAL VARIANCE RECEIVED FOR FRONT YARD SETBACK  
 \*\*ADMINISTRATIVE SUBDIVISION REQUIRED

**NOTES:**

- NO WORK IS ALLOWED WITHIN STATE REGULATED WETLANDS EXCEPT AS SPECIFICALLY SHOWN.
- HAYBALE EROSION CHECK (R.I. STANDARD 9.1.0) AND SILT FENCE/ HAYBALE COMBINATION (RI STANDARD 9.3.0) SHALL BE INSTALLED AT THE LIMIT OF DISTURBANCE PRIOR TO EARTH DISTURBING ACTIVITIES AND SHALL BE MAINTAINED UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITH 4" LOAM AND SEED OR SOD, PROPOSED SLOPES SHALL BE 3:1 (MAXIMUM), EXCEPT AS NOTED.
- ALL DISTURBED AREAS EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEED, PROTECTED AND MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL REGULARLY CHECK ALL SEEDED AREAS TO ENSURE THAT A GOOD STAND IS MAINTAINED.
- 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/ HAYBALES AS NEEDED. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE SILT FENCE/ HAYBALES 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/ HAYBALES, 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.
- ALL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF THE D.E.M. WETLANDS PERMIT AND IN COMPLIANCE WITH ALL TOWN REGULATIONS.
- ALL IMPROVEMENTS SHALL BE ACCURATELY LOCATED AND STAKED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

**PLANTING SCHEDULE:**

- THE PERMANENT LIMIT OF DISTURBANCE SHALL BE REPLANTED WITH ROSEBAY RHODODENDRON (RHODODENDRON MAXIMUM) 5' TALL PLANTED 5' ON CENTER, 30 REQUIRED.
- AN EVERGREEN BUFFER SHALL BE PLANTED AT THE BASE OF THE PROPOSED WALL CONSISTING OF NORTHERN WHITE CEDAR 5' TALL PLANTED 6' ON CENTER, 14 REQUIRED
- BUFFER ENHANCEMENT CONSISTING OF ROSEBAY RHODODENDRON (RHODODENDRON MAXIMUM) 3' TALL PLANTED 10' ON CENTER, 10 REQUIRED

NOTE: PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH RI STD. 50.3.2. CONTRACTOR TO TAKE SPECIAL CARE NOT TO DISTURB EARTH OUTSIDE THE LIMIT OF DISTURBANCE BEYOND WHAT IS NEEDED FOR PROPOSED BUFFER ENHANCEMENT PLANTINGS. ALL PLANTINGS TO BE MULCHED TO PREVENT EXPOSED SOILS.

**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:

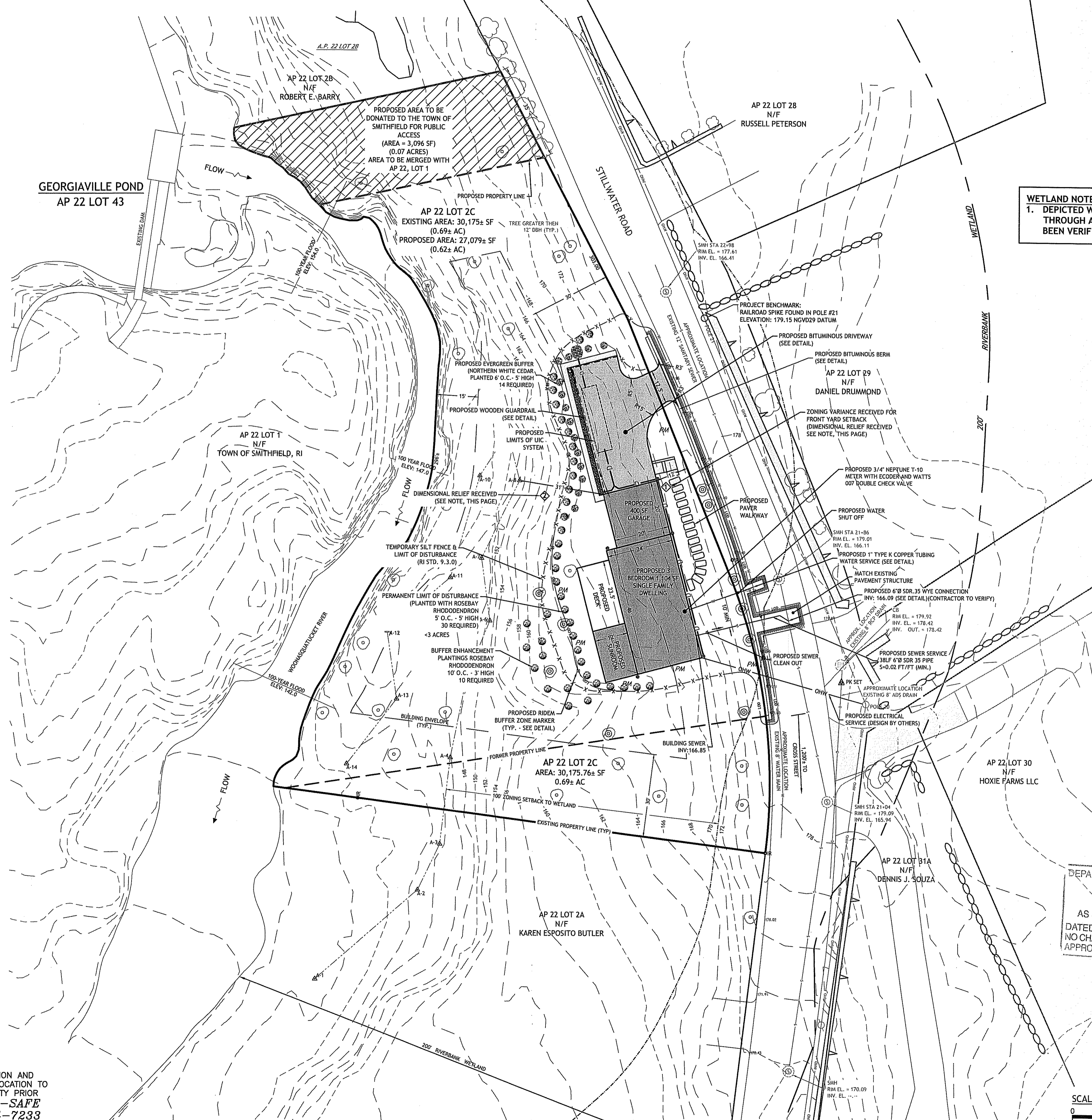
- AFTER ROUGH GRADING IS COMPLETED, ALL DISTURBED AREAS AND AREAS LABELED AS LOAM AND SEED ARE TO BE BROUGHT TO AN ELEVATION OF 6" BELOW THE PROPOSED FINISHED GRADE. SCARIFY THE SUBGRADE TO A DEPTH OF 12" WITH THE TEETH OF A BACKHOE OR A POWER RAKE TO RESULT IN AN UNCOMPACTED SUBSOIL. 6" OF GOOD QUALITY TOPSOIL IS TO BE APPLIED AND RAKED TO FINISHED GRADE.
- 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 ANALYSIS. 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.

- DIMENSIONAL VARIANCE RECEIVED FOR CONSTRUCTION ACTIVITIES WITHIN 30' OF FRONT YARD SETBACK (REQUIRED 30', PROVIDED 12', RELIEF RECEIVED 18')
- DIMENSIONAL VARIANCE RECEIVED FOR CONSTRUCTION ACTIVITIES WITHIN 100' OF WETLAND (REQUIRED 100', PROVIDED 31', RELIEF RECEIVED 69')



**WETLAND NOTES:**  
 1. DEPICTED WETLAND EDGE BETWEEN FLAGS A-1 THROUGH A-3 AND A-10 THROUGH A-14 HAVE NOT BEEN VERIFIED AS PART OF THIS APPLICATION.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED DEC 08 2016 FILE # 16-0071  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
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**JCE**  
 JOE CASALI ENGINEERING, INC.  
 CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
 DRAINAGE - WETLANDS - IBCS - TRAFFIC - FLOODPLAIN  
 (401) 844-1300 (401) 844-1313 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI  
 No. 1250  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL  
 5.9.16

78 STILLWATER ROAD  
 SMITHFIELD, RHODE ISLAND  
 AP 22, LOT 2C

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	5-9-16	RIDEM RTC

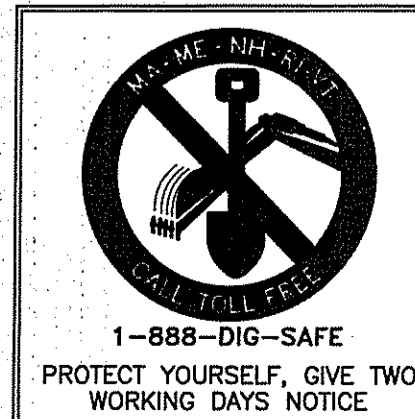
DESIGNED BY: JMM  
 DRAWN BY: JMM  
 CHECKED BY: JAC  
 DATE: MARCH 2016  
 PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

**SITE PLAN**

**SHEET 3 OF 7**

Q:\07-43 - Stillwater Road Smithfield\ACAD\PLANS\SET\STILLWATER RD PLAN-SET (2016) (R1).dwg May, 10, 2016 10:04am



LOCATION OF EXISTING UTILITIES SHOWN, ARE FROM GATE LOCATION AND EXISTING DOCUMENTATION AND MAY NOT BE ACCURATE. EXACT LOCATION TO BE DONE BY THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY PRIOR TO ANY EXCAVATION CALL DIGSAFE AT 1-888-DIG-SAFE 1-888-344-7233

**BMP MAINTENANCE SCHEDULE:**

1. ALL MAINTENANCE (INCLUDING CLEANING) REQUIRED DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL INCLUDE:

A. 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.

B. 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.

2. 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.

3. 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).

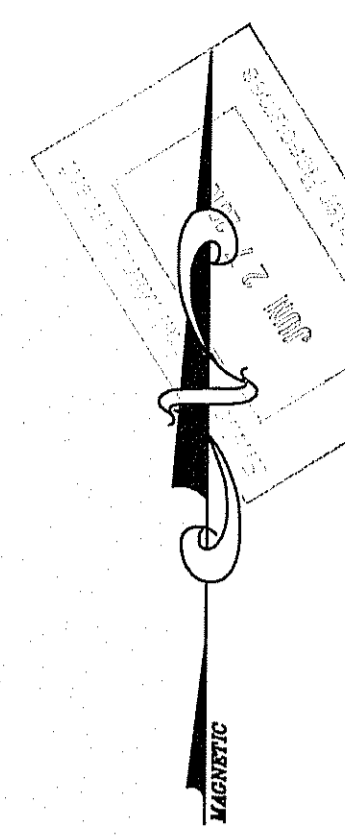
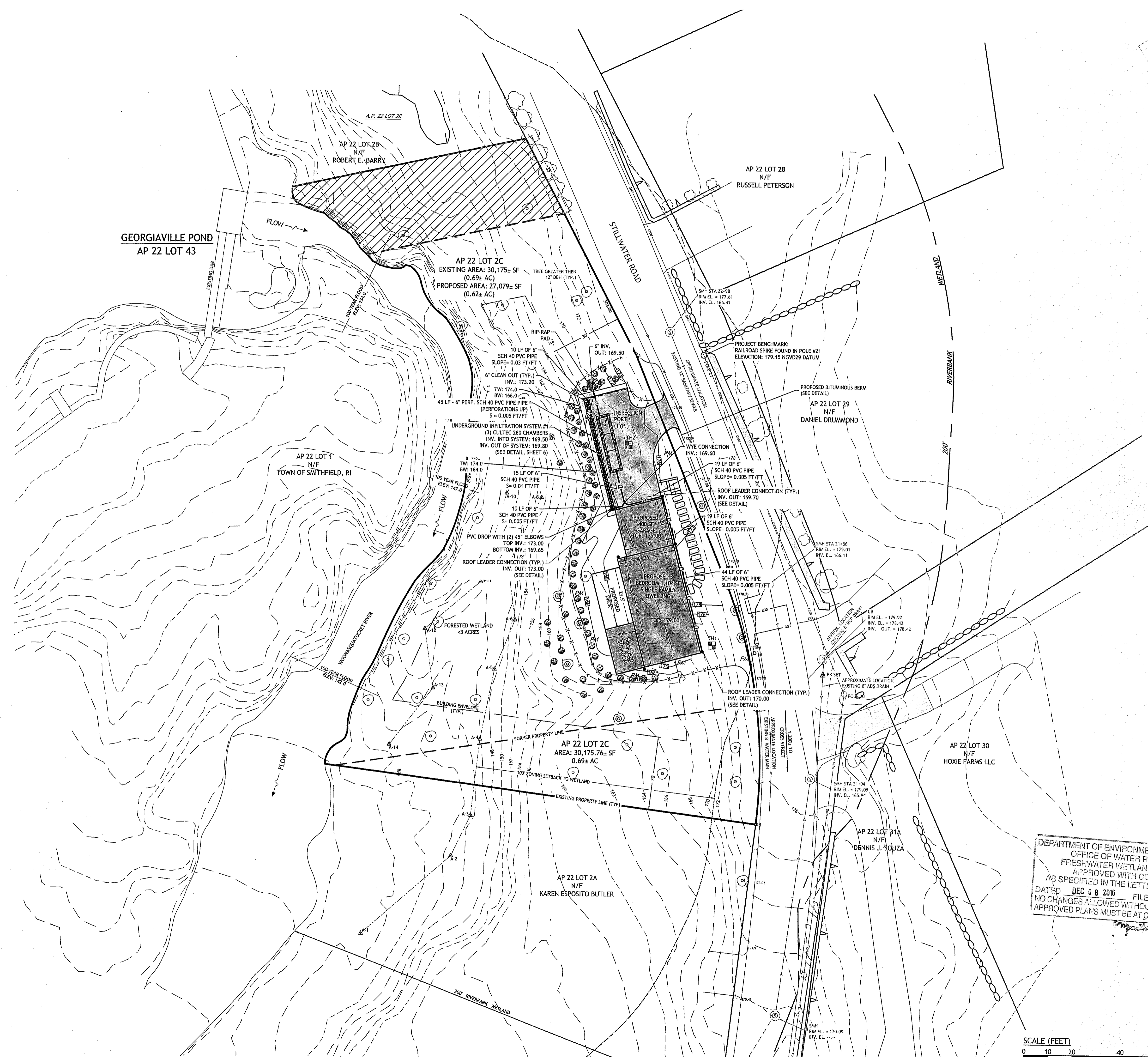
4. AFTER CONSTRUCTION, STORMWATER BMPs SHALL BE INSPECTED AND MAINTAINED BY THE HOMEOWNER AS FOLLOWS:

**ROOF DRAIN LEADERS**

- PERFORM ROUTINE ROOF INSPECTIONS QUARTERLY.
- KEEP ROOFS CLEAN AND FREE OF DEBRIS.
- KEEP ROOF DRAINAGE SYSTEMS CLEAR.

**UNDERGROUND SAND FILTER SYSTEM**

- 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 ACCEPTABLE MANNER AT AN APPROVED AND PERMITTED LOCATION.



**JCE**  
 JOE CASALI ENGINEERING, INC.  
 CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
 DRAINAGE - WETLANDS - TBDS - TRAFFIC - FLOODPLAIN  
 (401) 944-1300 (401) 944-1313 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI  
 No. 250  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL  
 5.9.16

78 STILLWATER ROAD  
 SMITHFIELD, RHODE ISLAND  
 AP 22, LOT 2C

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
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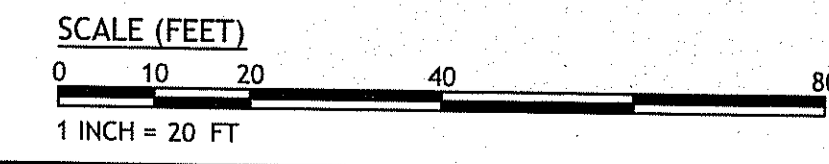
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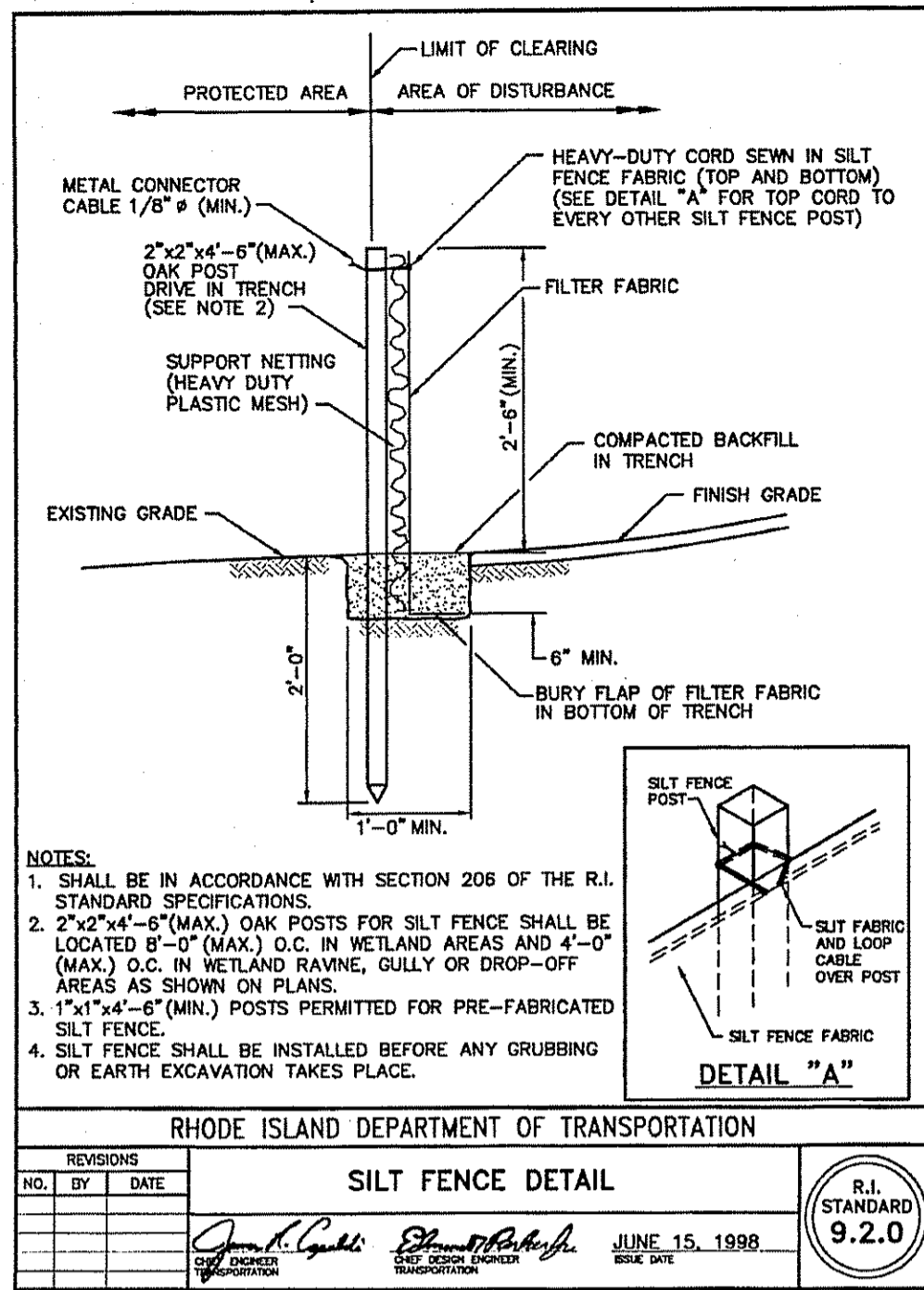
DESIGNED BY: JMM  
 DRAWN BY: JMM  
 CHECKED BY: JAC  
 DATE: MARCH 2016  
 PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

**GRADING & DRAINAGE PLAN**

**SHEET 4 OF 7**





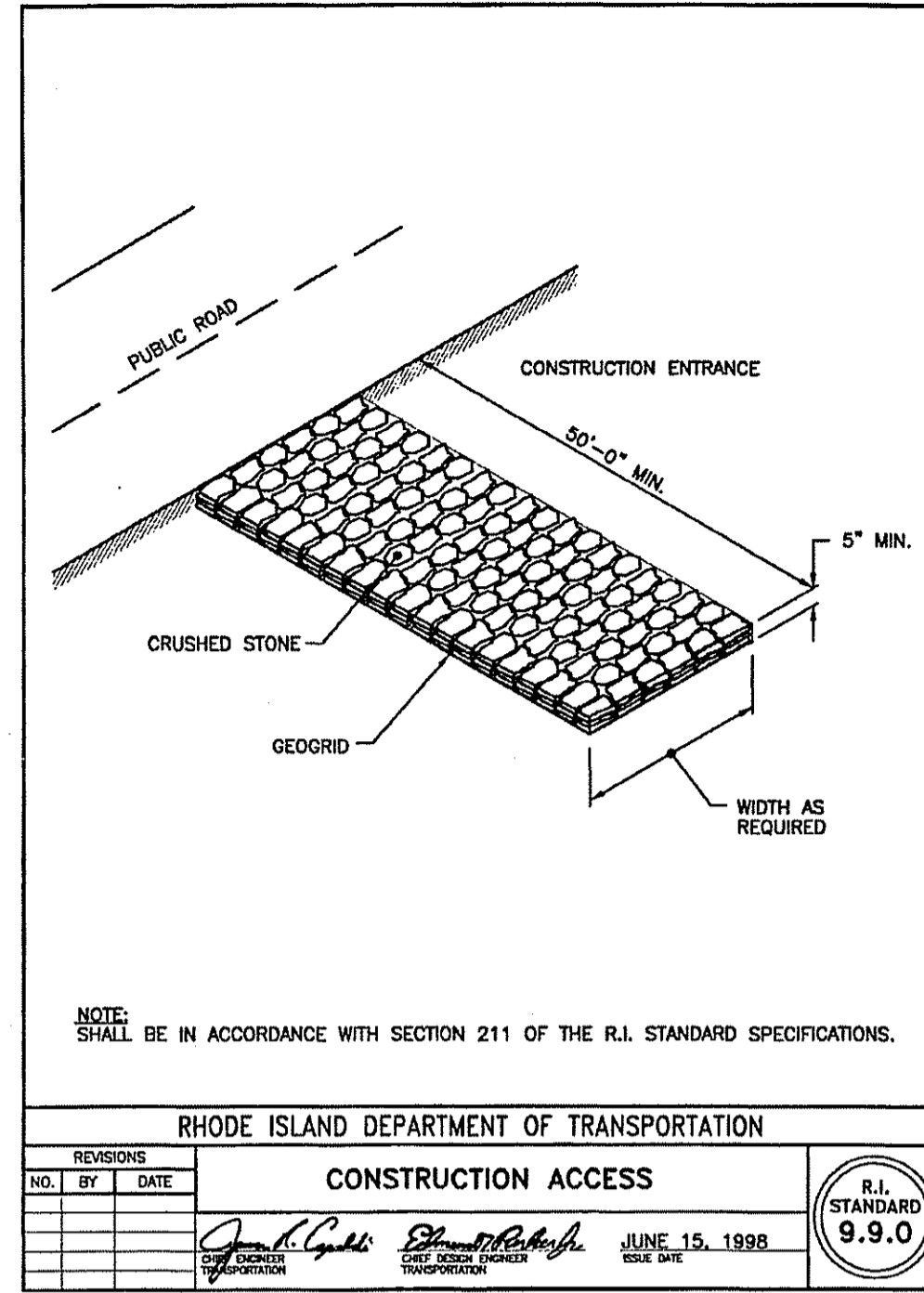
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**SILT FENCE DETAIL**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 9.2.0



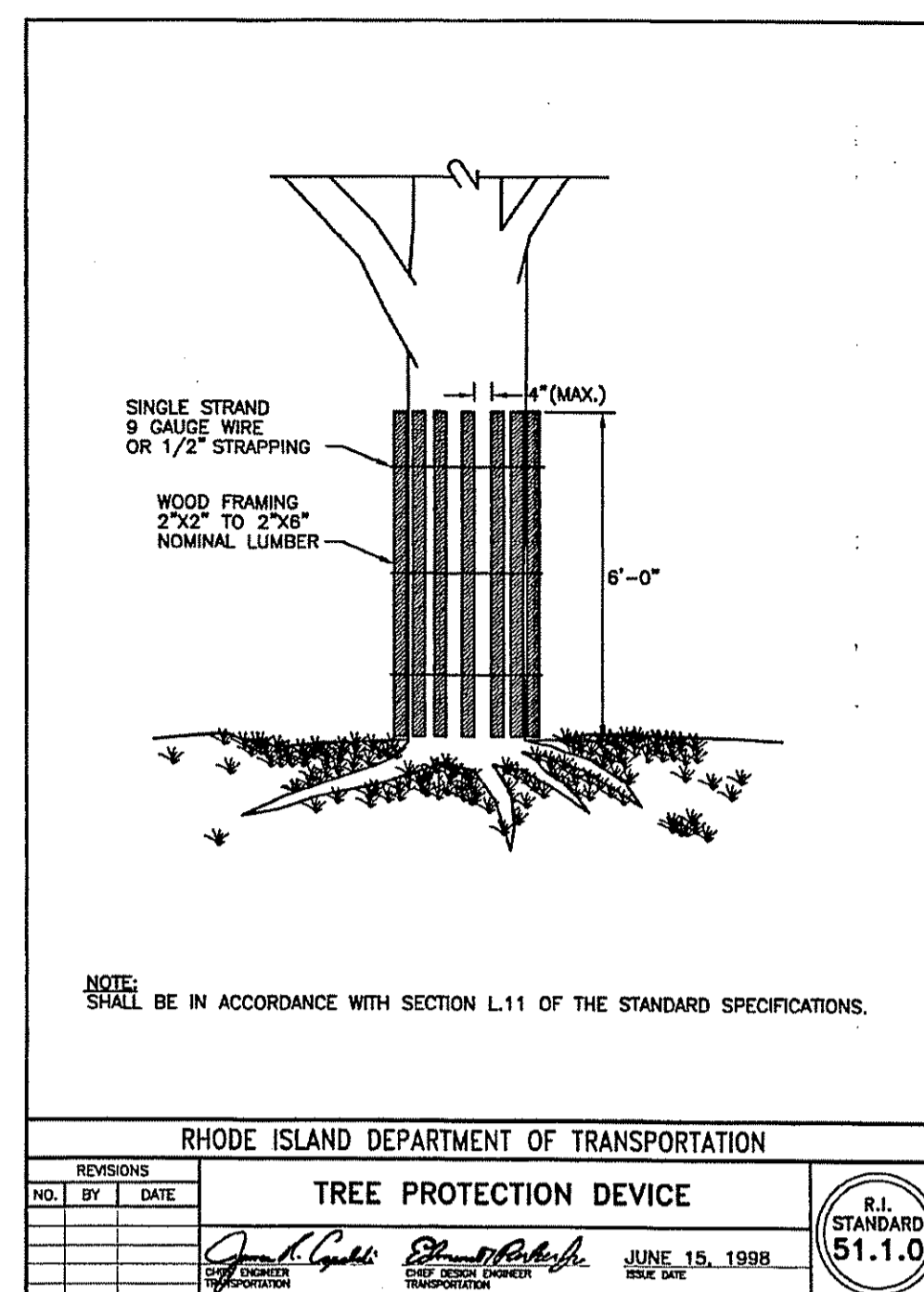
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**CONSTRUCTION ACCESS**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 9.9.0



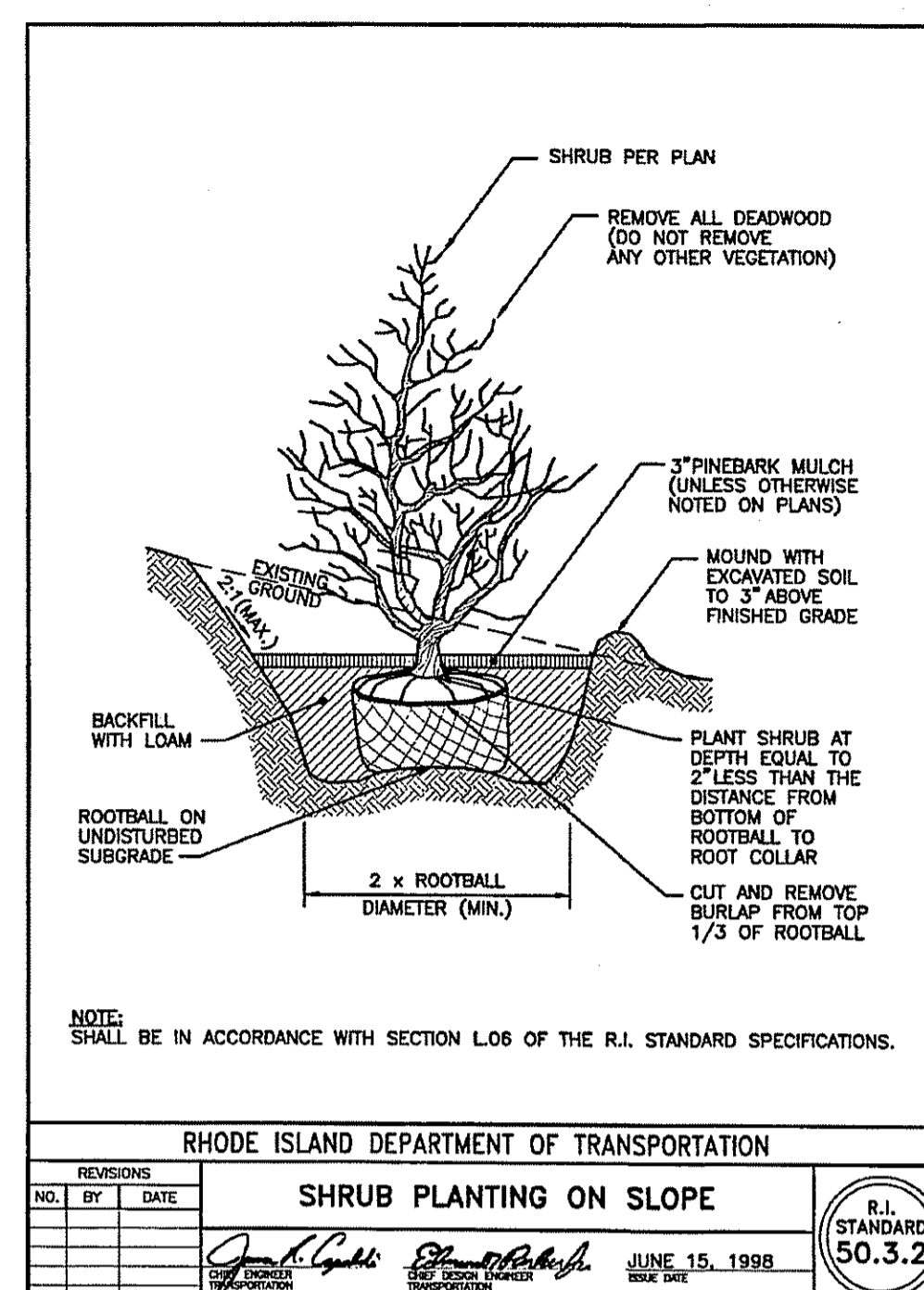
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**TREE PROTECTION DEVICE**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 51.1.0



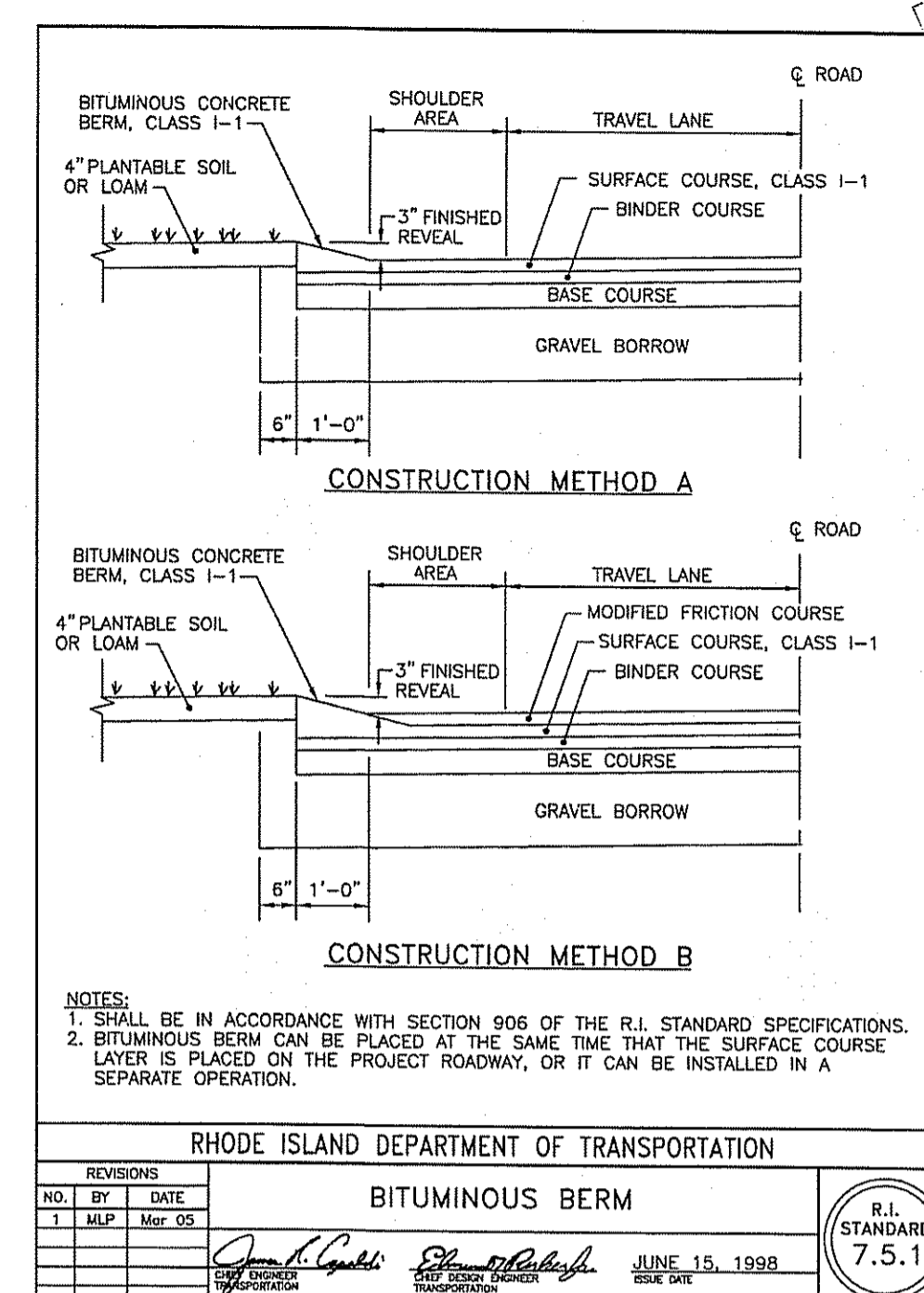
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**SHRUB PLANTING ON SLOPE**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 50.3.2



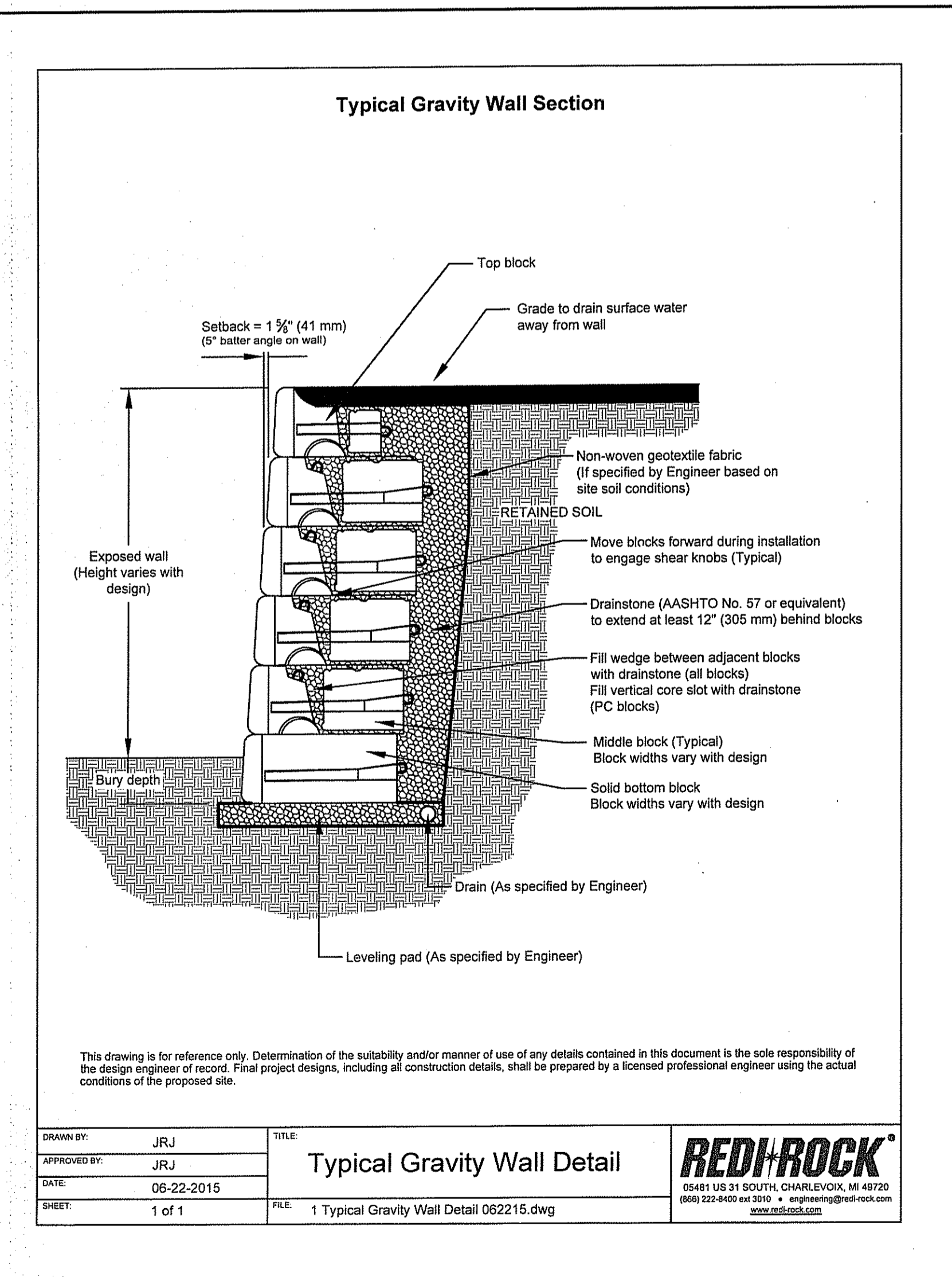
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**BITUMINOUS BERM**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 7.5.1



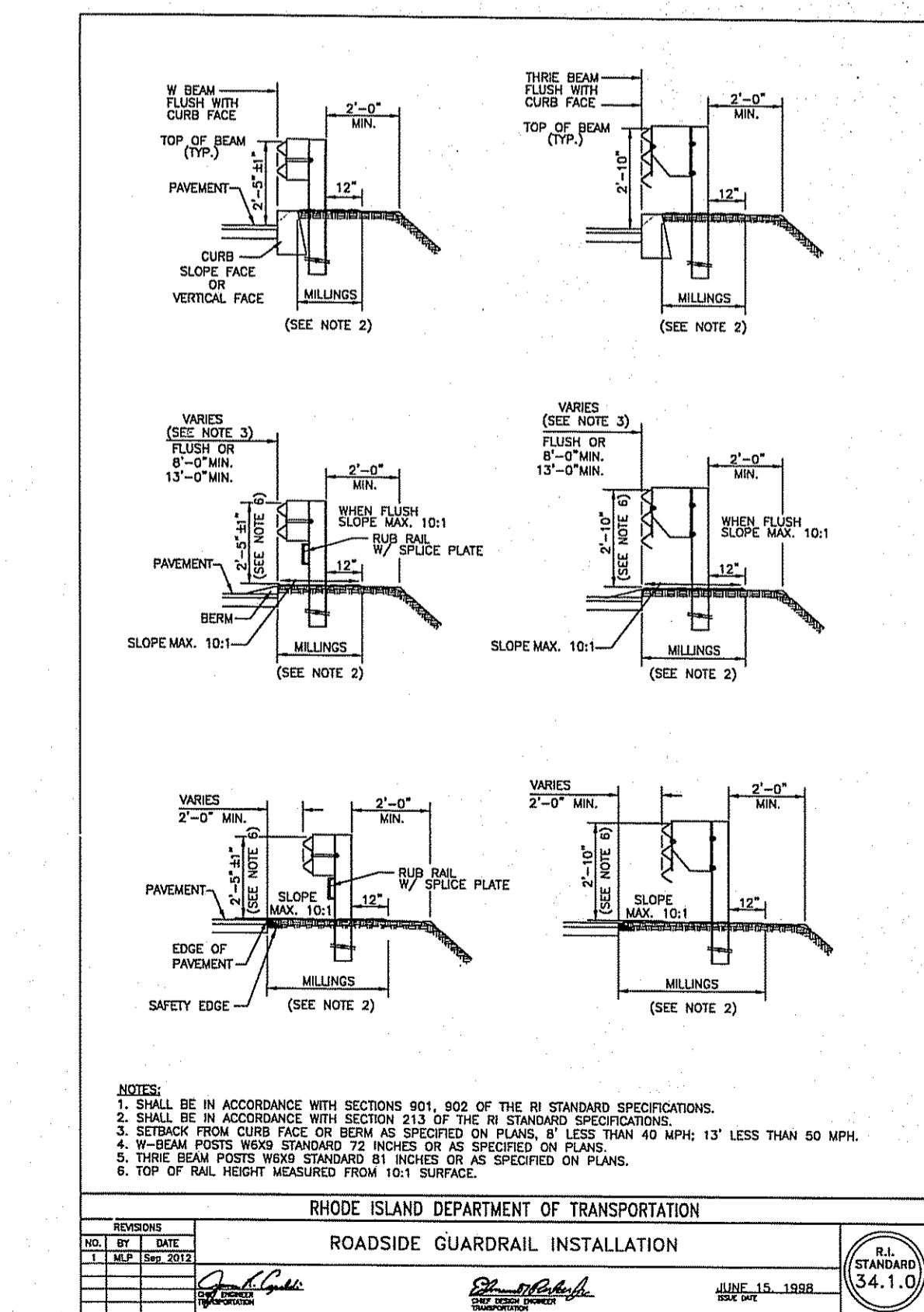
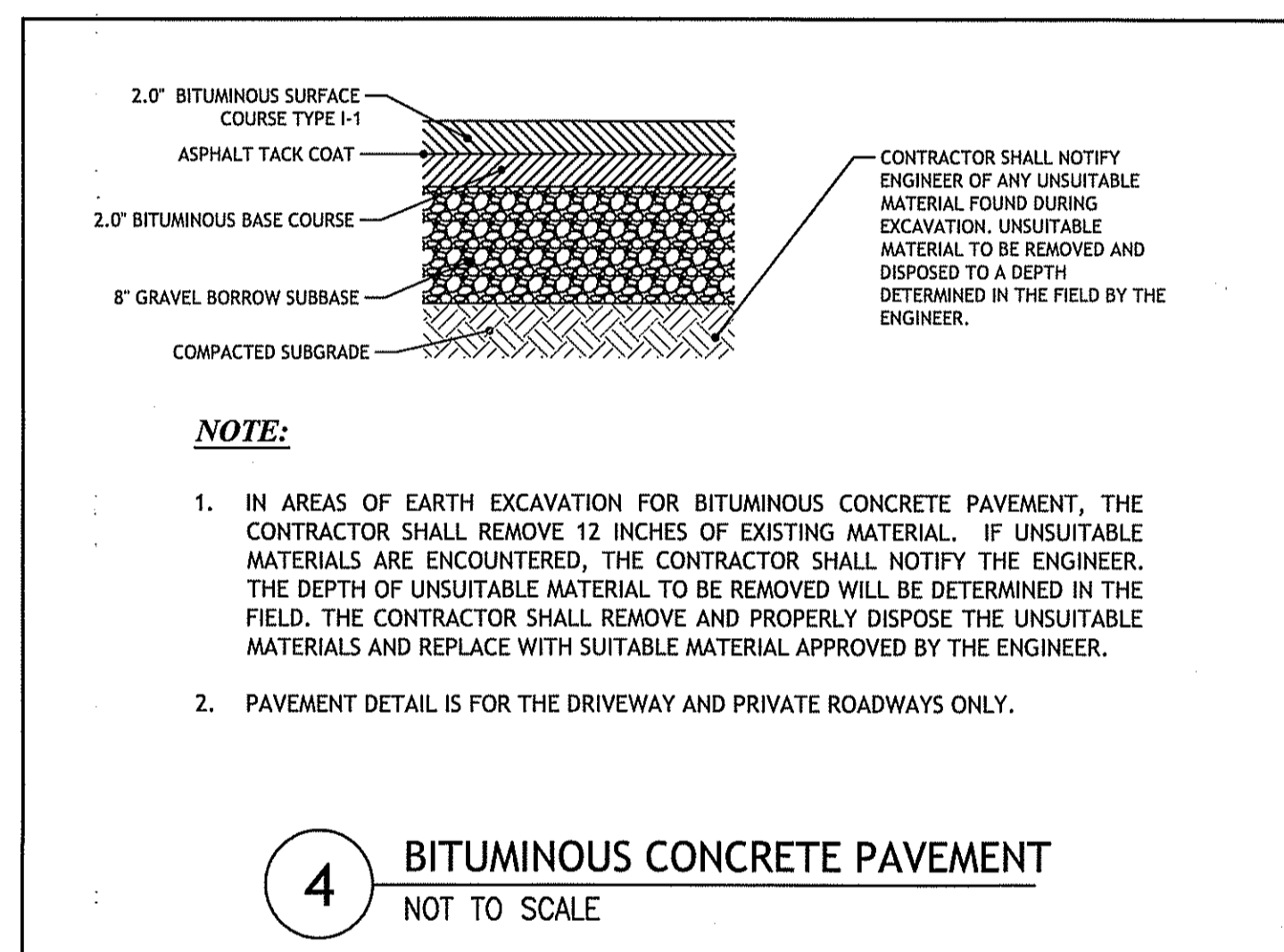
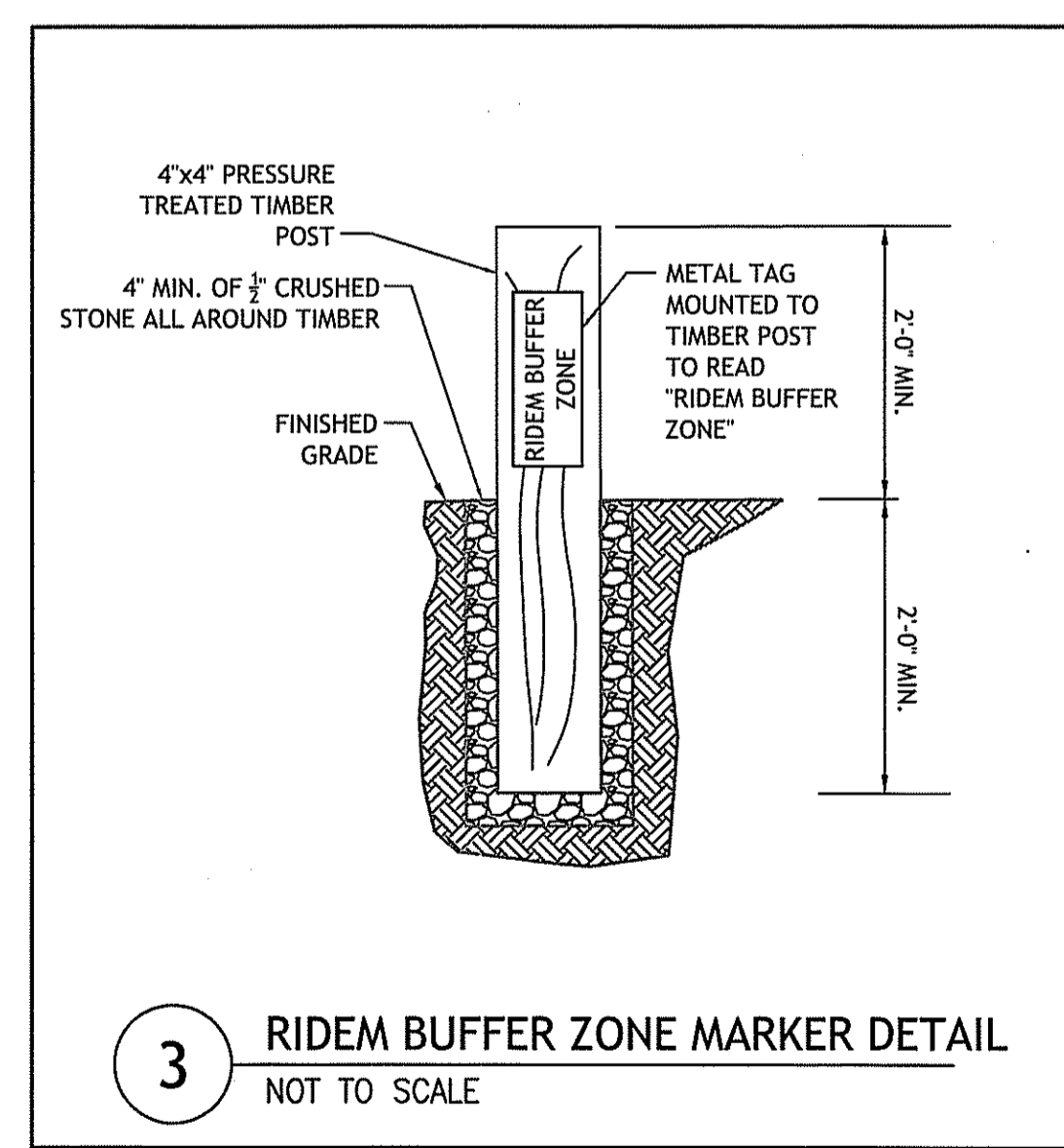
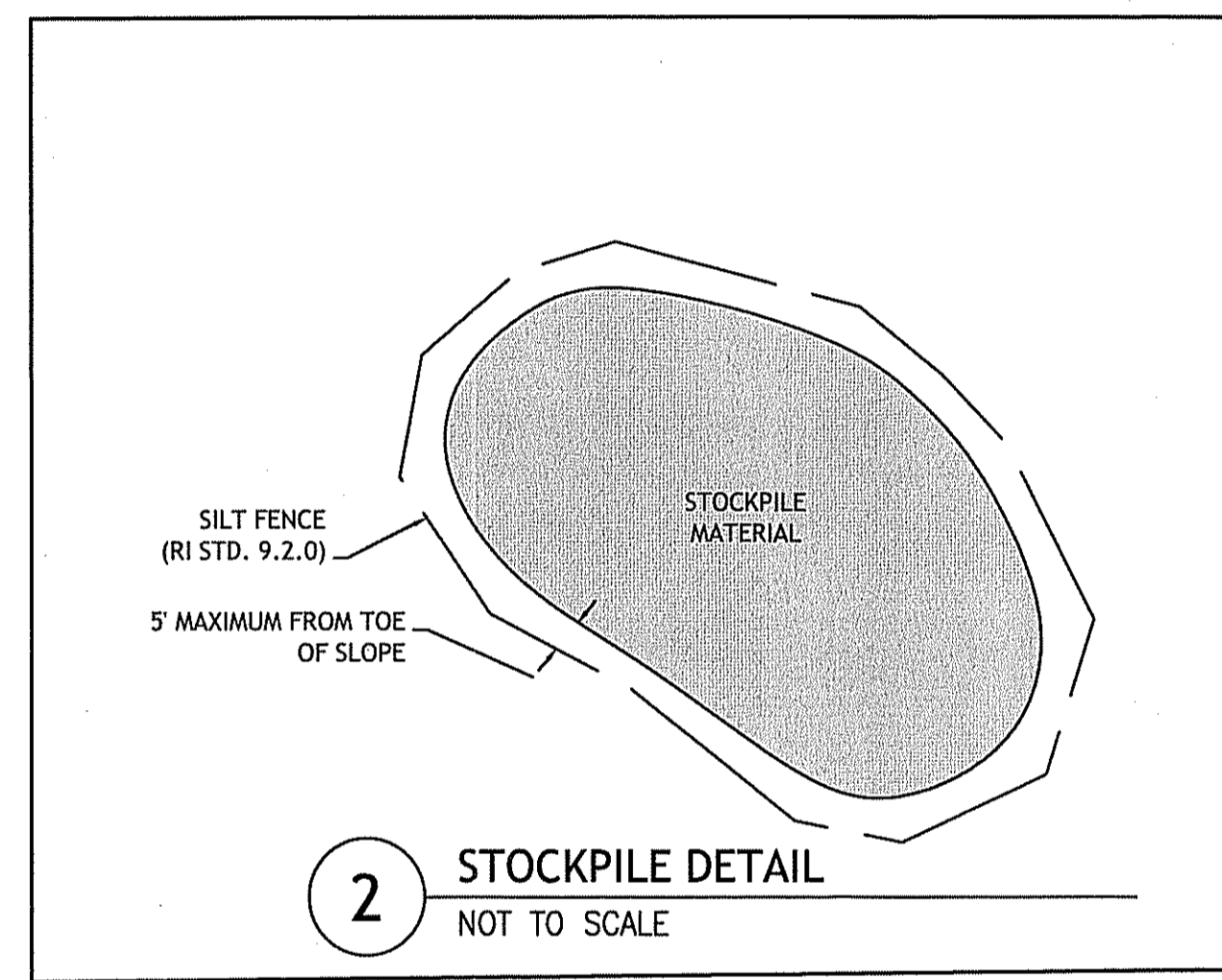
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**Typical Gravity Wall Detail**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 9.2.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**ROADSIDE GUARDRAIL INSTALLATION**

NO.	BY	DATE
1	JAC	MAR 05

JUNE 15, 1998

R.I. STANDARD 34.1.0

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED DEC 08 2016 FILE # 16-007L  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - EROSION CONTROL - PAVEMENT DESIGN  
300 W. MAIN ST. SUITE 200  
SMITHFIELD, RI 02896  
(401) 944-1300 (401) 944-1313 FAX WWW.JOECASALI.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
5.9.16

78 STILLWATER ROAD  
SMITHFIELD, RHODE ISLAND  
AP 22, LOT 2C

REVISIONS:

NO.	DATE	DESCRIPTION
1	5-9-16	RIDEM RTC

DESIGNED BY: JMM  
DRAWN BY: JMM  
CHECKED BY: JAC  
DATE: MARCH 2016  
PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

**RHODE ISLAND STANDARD DETAILS**

SHEET 5 OF 7

O:\07-43 - Stillwater Road Smithfield\ACAD\PLANS\SET\STILLWATER RD PLAN-SET (2016)\RI.dwg May 10, 2016 10:04am

Test Pit Location: 78 Stillwater Road, Smithfield - See Plan		Date Start / Finish: February 26, 2016	TH-1		
Ground Surface El. / Datum: 174 / NAVD83		Conditions: Clear, 30°F			
Excavator Type: CAT 304 Mini-Excavator		Excavator Reach: Approx. 10-feet	Page 1 of 1		
Operator: Jay Desiva, Desiva Building and Excavation		JCE Rep.: Daniel R. Decasali (P.E. No. 10162)			
Depth (ft)	Sample Type/No.	Layer	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
1		TOPSOIL		(0 - 12"): SILTY SAND (SM); ~70% fine to medium sand, ~20% nonplastic fines, ~10% fine gravel, dark brown and black, roots throughout, TOPSOIL. (loamy sand).	
2		SILTY SAND WITH GRAVEL	Significant cobble content from 0 - 48". Max. size = 8".	(12 - 48"): SILTY SAND WITH GRAVEL (SM); ~70% fine to coarse sand, ~15% nonplastic fines, ~15% fine to coarse gravel, dark brown, dry. (gravelly loamy sand).	
3		SILTY SAND	Occasional cobbles and boulders 48 - 86". Max. size = 18".	(48 - 86"): SILTY SAND (SM); ~60% fine to medium sand, ~30% nonplastic fines, ~10% fine gravel, light brown and gray, dry. (gravelly sandy loam).	HSG B (2.41 in/H)
4		SILTY SAND	Iron oxide staining observed at 62-inches.	(62 - 86"): SILTY SAND (SM); ~60% fine to medium sand, ~30% nonplastic fines, ~10% fine gravel, light brown and gray with reddish brown iron oxide staining throughout, moist. (gravelly sandy loam).	
5			Bottom of test hole at 86", practical refusal on probable bedrock. Test hole backfilled with previously excavated material upon completion.		

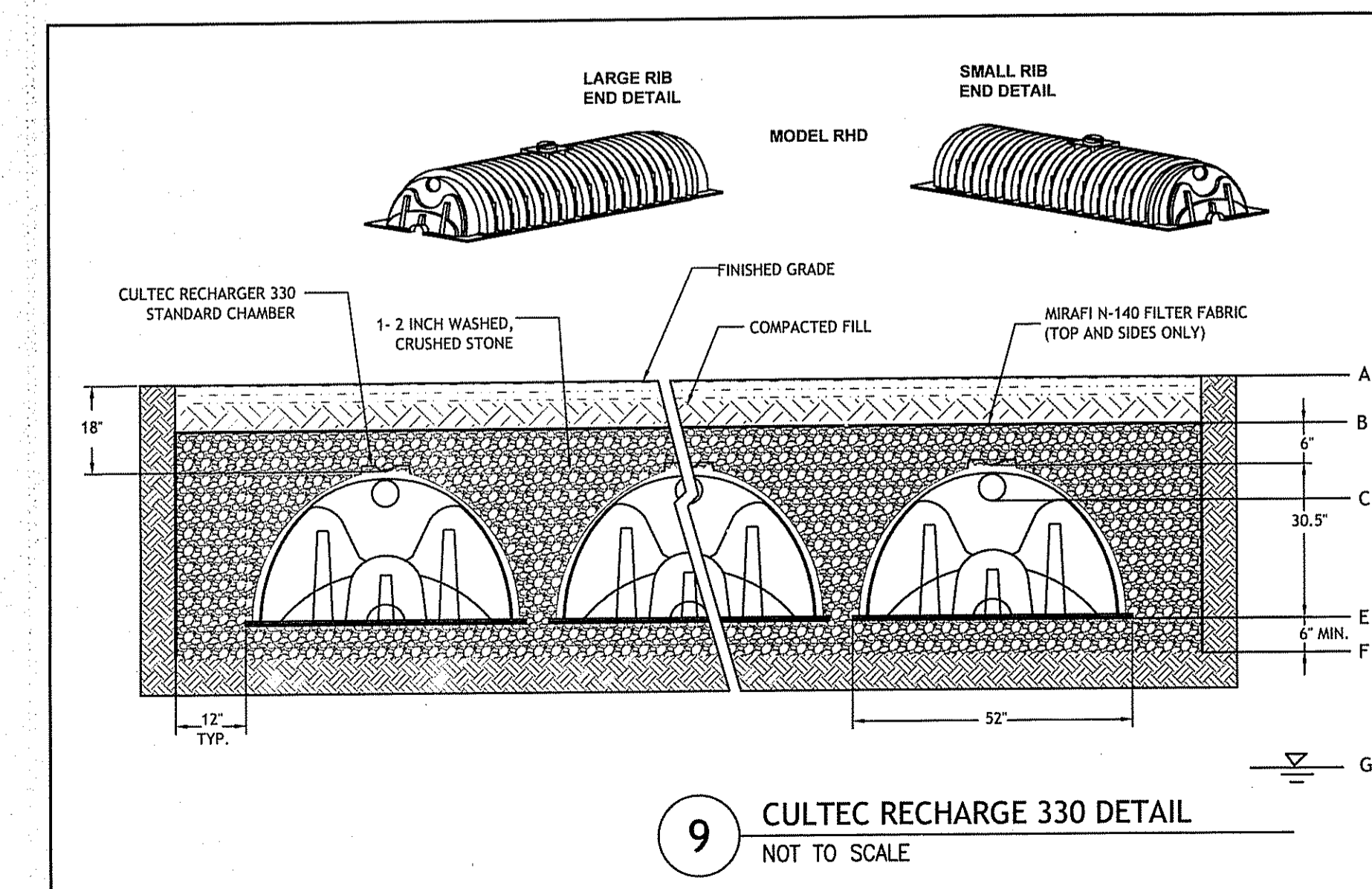
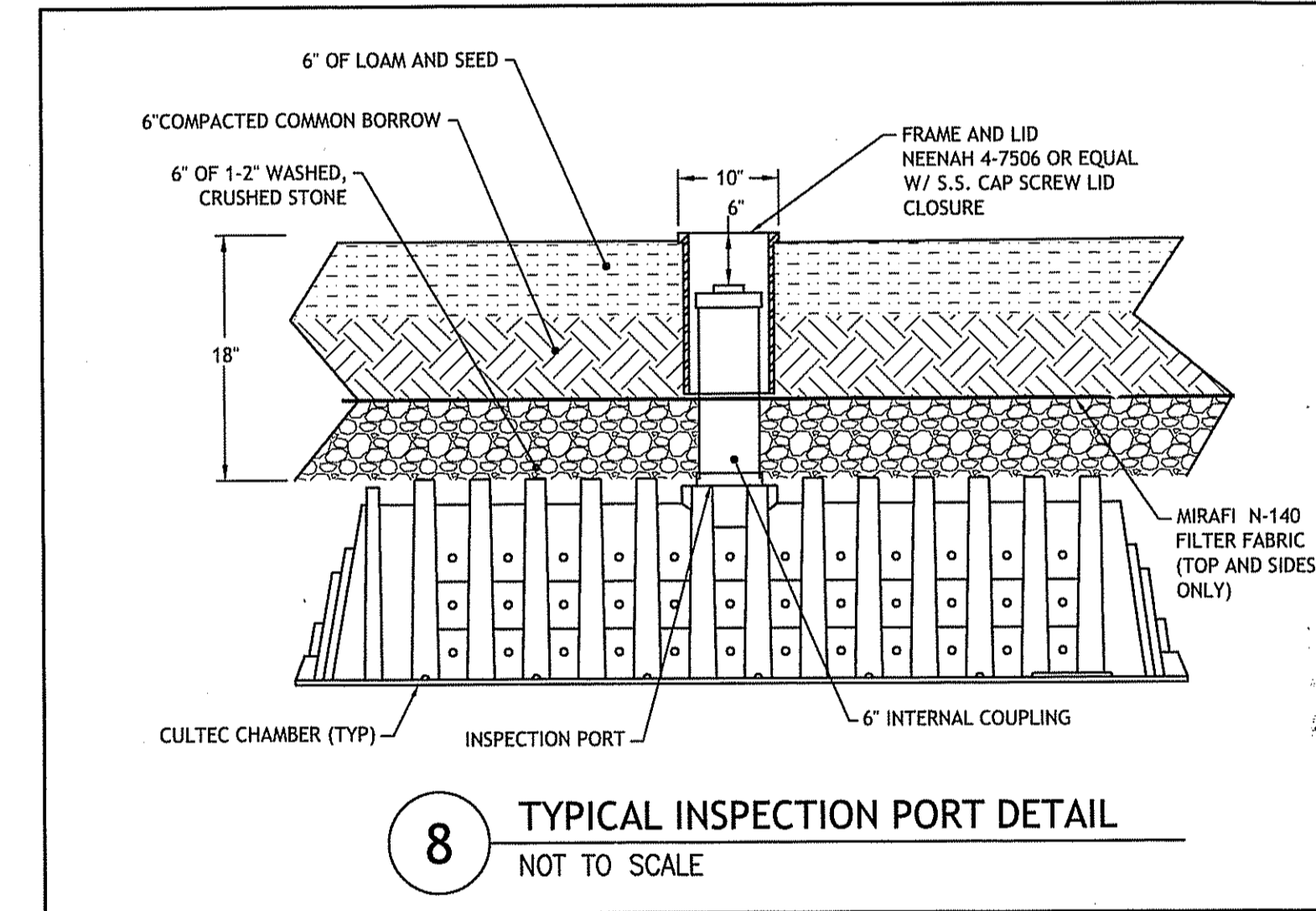
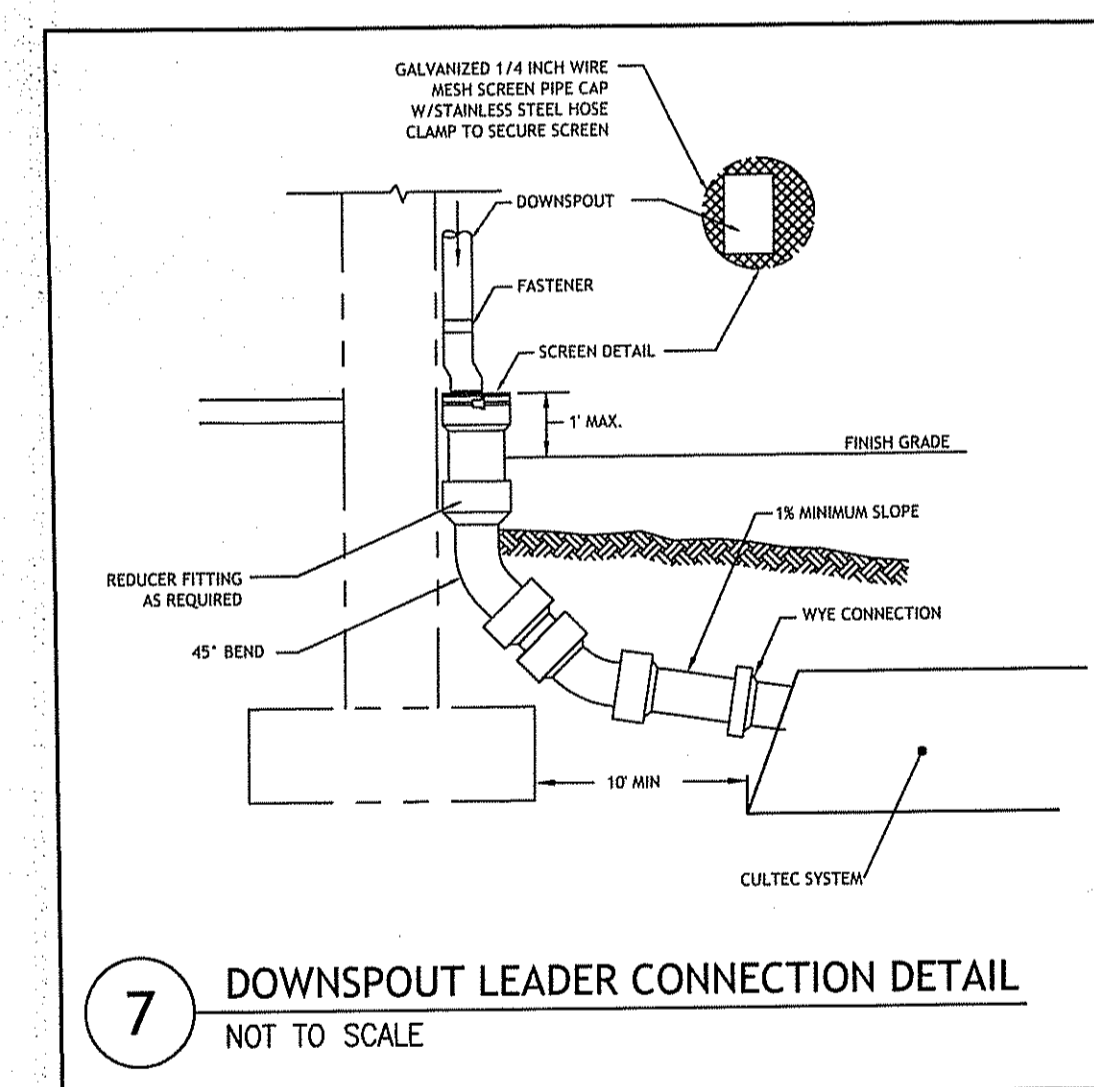
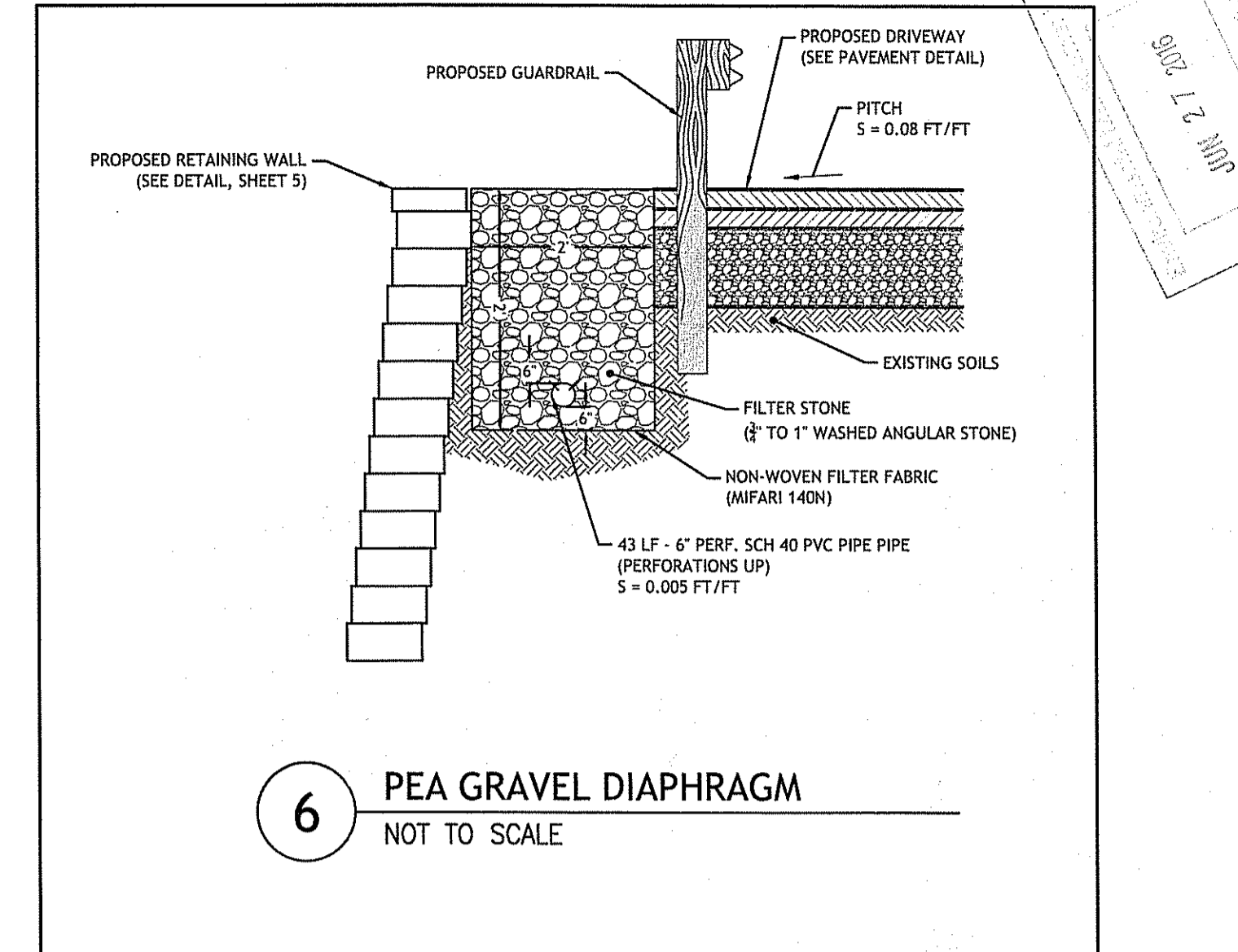
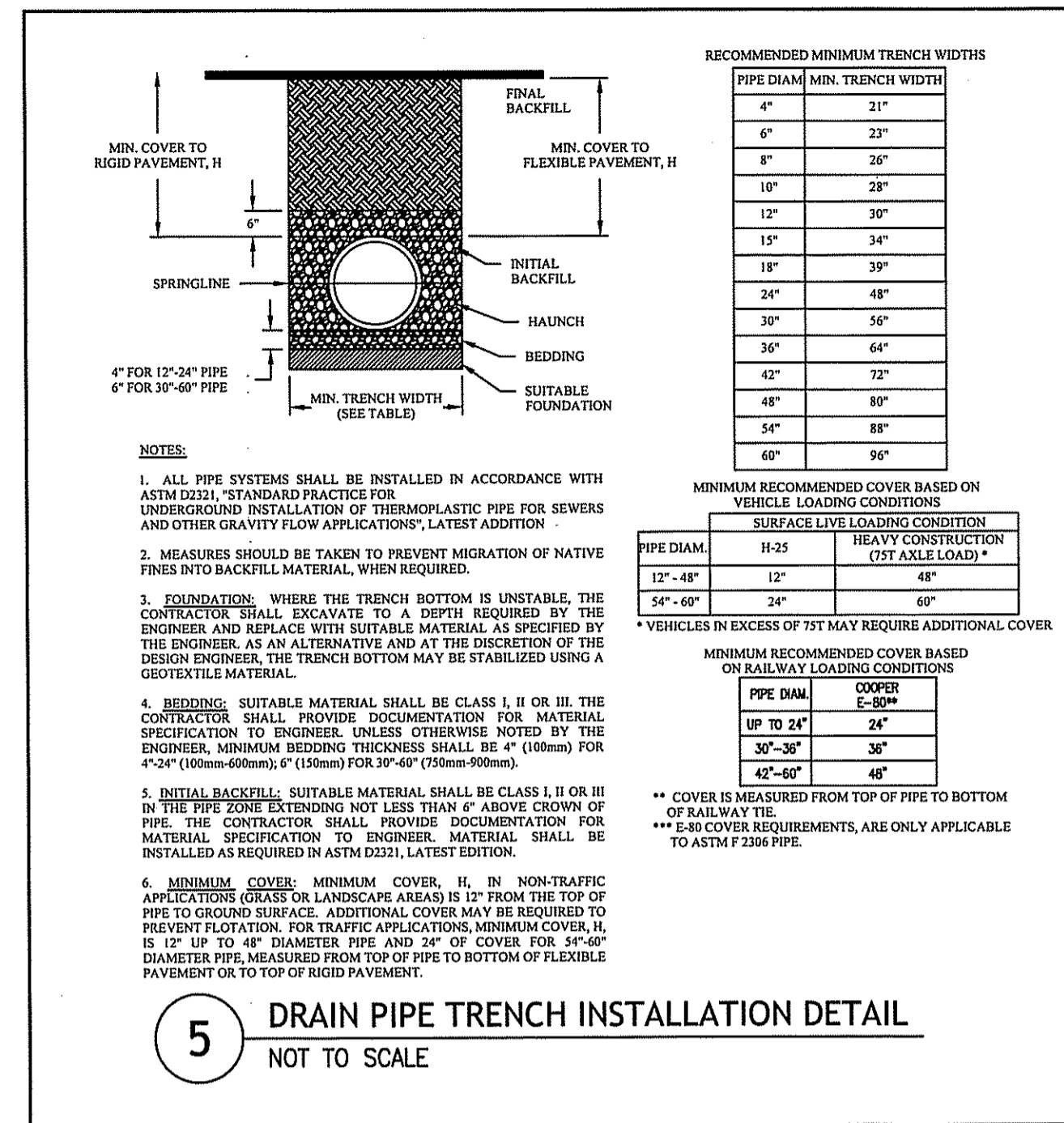
Notes: SHWT: 62-inches  
Impervious/Limiting Layer Depth: 86-inches

Project Name: 78 Stillwater Road, Smithfield  
Project Number: 07-43  
JOE CASALI ENGINEERING, INC.

Test Pit Location: 78 Stillwater Road, Smithfield - See Plan		Date Start / Finish: February 26, 2016	TH-2		
Ground Surface El. / Datum: 170 / NAVD83		Conditions: Clear, 30°F			
Excavator Type: CAT 304 Mini-Excavator		Excavator Reach: Approx. 10-feet	Page 1 of 1		
Operator: Jay Desiva, Desiva Building and Excavation		JCE Rep.: Daniel R. Decasali (P.E. No. 10162)			
Depth (ft)	Sample Type/No.	Layer	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
1		TOPSOIL		(0 - 12"): SILTY SAND (SM); ~70% fine to medium sand, ~15% nonplastic fines, ~15% fine gravel, dark brown and black, roots throughout, TOPSOIL. (loamy sand).	
2		SILTY SAND	Significant cobble content from 0 - 28". Max. size = 8".	(12 - 28"): SILTY SAND WITH GRAVEL (SM); ~70% fine to coarse sand, ~15% nonplastic fines, ~15% fine to coarse gravel, brown to dark brown, dry. (gravelly loamy sand).	
3		SILTY SAND	Iron oxide staining observed at 48-inches.	(28 - 48"): ~60% fine to medium sand, ~30% nonplastic fines, ~10% fine gravel, light brown and gray, dry. (gravelly sandy loam).	HSG B (2.41 in/H)
4		SILTY SAND	Occasional cobbles and boulders 28 - 70". Max. size = 24".	(48 - 70"): SILTY SAND (SM); ~60% fine to medium sand, ~30% nonplastic fines, ~10% fine gravel, light brown and gray with reddish brown iron oxide staining throughout, moist. (gravelly sandy loam).	
5			Bottom of test hole at 70", practical refusal on probable bedrock. Test hole backfilled with previously excavated material upon completion.		

Notes: SHWT: 48-inches  
Impervious/Limiting Layer Depth: 70-inches

Project Name: 78 Stillwater Road, Smithfield  
Project Number: 07-43  
JOE CASALI ENGINEERING, INC.



UIC SYSTEM #	ELEVATION
1	174-175
A	171.00
B	171.00
C (INLET)	169.50
D (OUTLET)	169.80
E	168.00
F	167.50
G	164.00

**CULTEC RECHARGER 330XL HD SPECIFICATIONS**

**GENERAL**  
CULTEC RECHARGER 330XL CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION, CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

- CHAMBER PROPERTIES**
- THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT (203-775-4416).
  - CONTACT CULTEC, INC. AT 203-775-4416 FOR SUBMITTAL PACKAGES AND TO PURCHASE PRODUCT.
  - THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 330XL SHALL BE 30.5 INCHES TALL, 52 INCHES WIDE AND 8.5 FEET LONG. THE INSTALLED LENGTH OF INTERMEDIATE UNITS SHALL BE 7 FEET.
  - MAXIMUM INLET OPENING IS 24 INCHES.
  - THE HEAVY DUTY CHAMBER WILL HAVE 16 CORRUGATIONS.
  - THE NOMINAL STORAGE VOLUME OF THE RECHARGER 330XL WILL BE 7.45 CF/LF.
  - THE CHAMBERS WILL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) IN AN ISO-9001:2000 CERTIFIED FACILITY.
  - THE CHAMBER EXTERIOR IS GREY WITH A COLORED STRIPE. THE CHAMBER INTERIOR IS BLACK.
  - CHAMBERS ARE MANUFACTURED WITH AN OPEN BOTTOM, INTEGRALLY FORMED END WALLS AND PERFORATED SIDEWALLS.
  - THE CHAMBERS WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
  - THE CHAMBER'S END WALL WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE INLET OR END PLATES CANNOT BE USED WITH THIS UNIT.
  - THE RECHARGER 330XL STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL END WALLS.
  - THE RECHARGER 330XLS STARTER CHAMBER MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 40.5 INCHES X 10.5 INCHES.
  - THE RECHARGER 330XLI INTERMEDIATE CHAMBER MUST BE FORMED AS A WHOLE CHAMBER HAVING AT LEAST ONE FULLY FORMED INTEGRAL END WALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 40.5 INCHES X 10.5 INCHES.
  - THE RECHARGER 330XLE END CHAMBER MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL.
  - ALL CHAMBERS WILL BE ARCHED IN SHAPE. THE HEAVY DUTY CHAMBER WILL HAVE FIFTY-SIX 3/4 INCH ROUND DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE INFILTRATION/EXFILTRATION.
  - CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
  - RECHARGER 330XLHD HEAVY DUTY CHAMBERS ARE DESIGNED TO WITHSTAND AASHTO H20 LOAD RATING (32,000 LBS/AXLE) WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
  - POLYETHYLENE CHAMBERS MUST HAVE THE ABILITY TO ACCEPT AND CARRY PIPE THROUGH ITS INTEGRALLY FORMED VERTICAL SUPPORT WALL WITHOUT THE USE OF SEPARATE PIPE HANGERS.
  - UNITS WILL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
  - THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
  - REPEATING SUPPORT PANELS AND END WALLS OF THE ELONGATED CHAMBER SHALL BE SPACED EVERY 7 FEET.
  - THE UNIT WILL ALSO HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLF F-24 FEED CONNECTORS. NOMINAL DIMENSIONS OF THE SIDE PORTAL ARE 10.5 INCHES HIGH BY 12 INCHES WIDE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
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DATED DEC 08 2016 FILE # 16-0071  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

JOSEPH A. CASALI  
No. 1250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
5.9.16

78 STILLWATER ROAD  
SMITHFIELD, RHODE ISLAND  
AP 22, LOT 2C

NO.	DATE	DESCRIPTION
1	5-9-16	RIDEM RTC

DESIGNED BY: JMM  
DRAWN BY: JMM  
CHECKED BY: JAC  
DATE: MARCH 2016  
PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

**DETAIL SHEET**

**SHEET 6 OF 7**

DATE: 5-9-16  
 DRAWN BY: JMM  
 CHECKED BY: JAC

**JCE**  
 JOE CASALI ENGINEERING, INC.  
 CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
 DRAINAGE - WETLANDS - ISDS - TRAFFIC - FLOODPLAIN  
 10019441300 10019441313 FAX WWW.JCEENGINEERING.COM

JOSEPH A. CASALI  
 No. 7250  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL  
 5.9.16

78 STILLWATER ROAD  
 SMITHFIELD, RHODE ISLAND  
 AP 22, LOT 2C

REVISIONS:

NO.	DATE	DESCRIPTION
1	5-9-16	RIDEM RTC

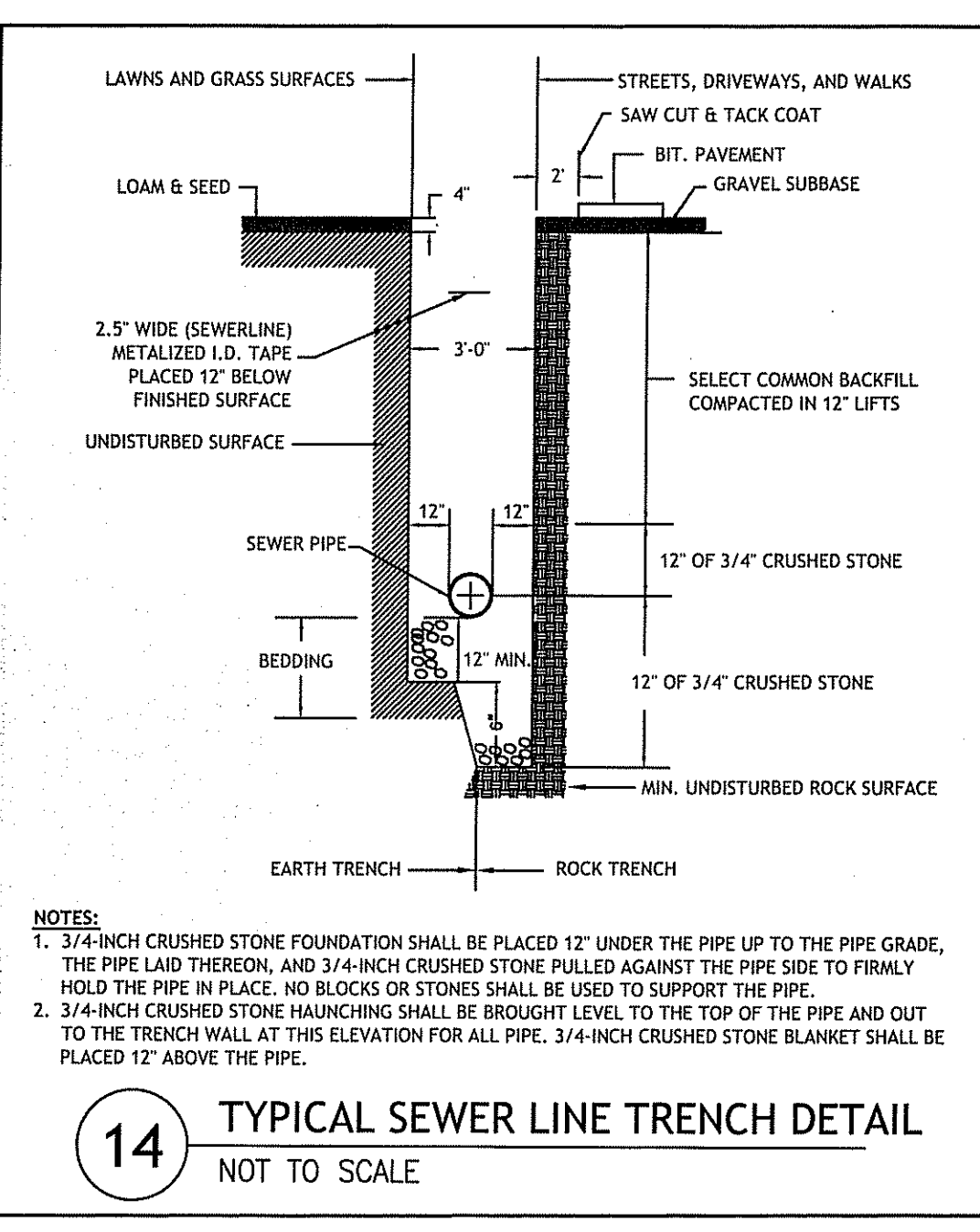
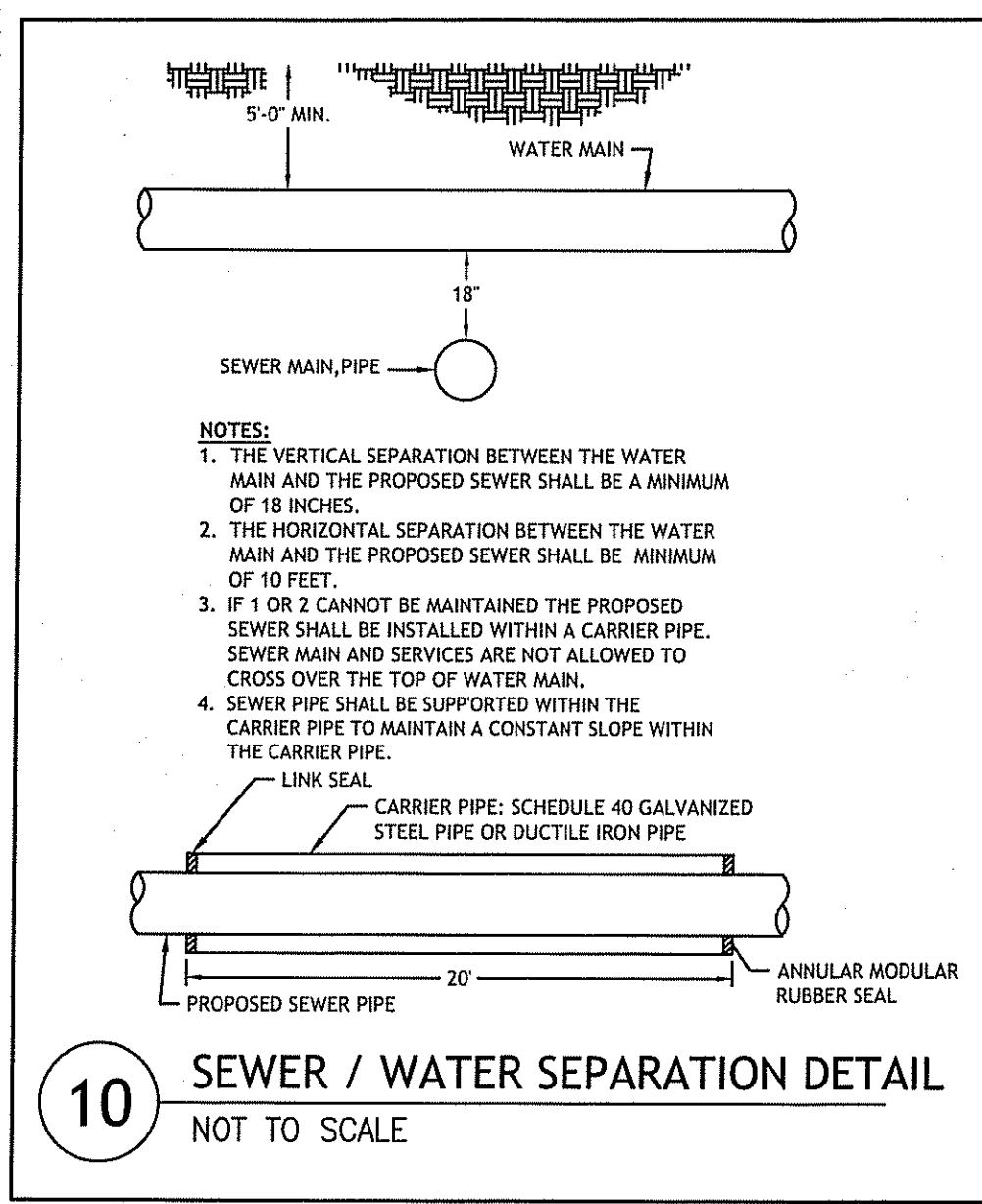
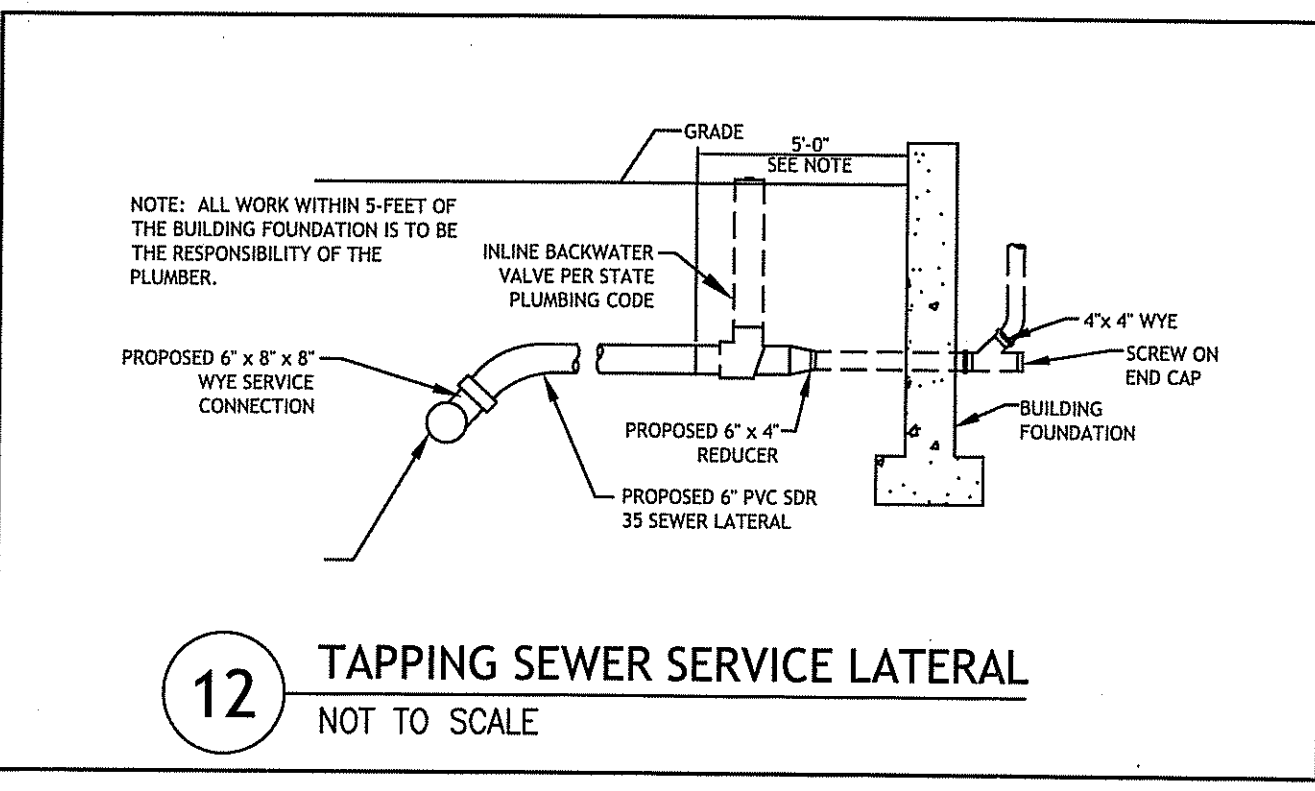
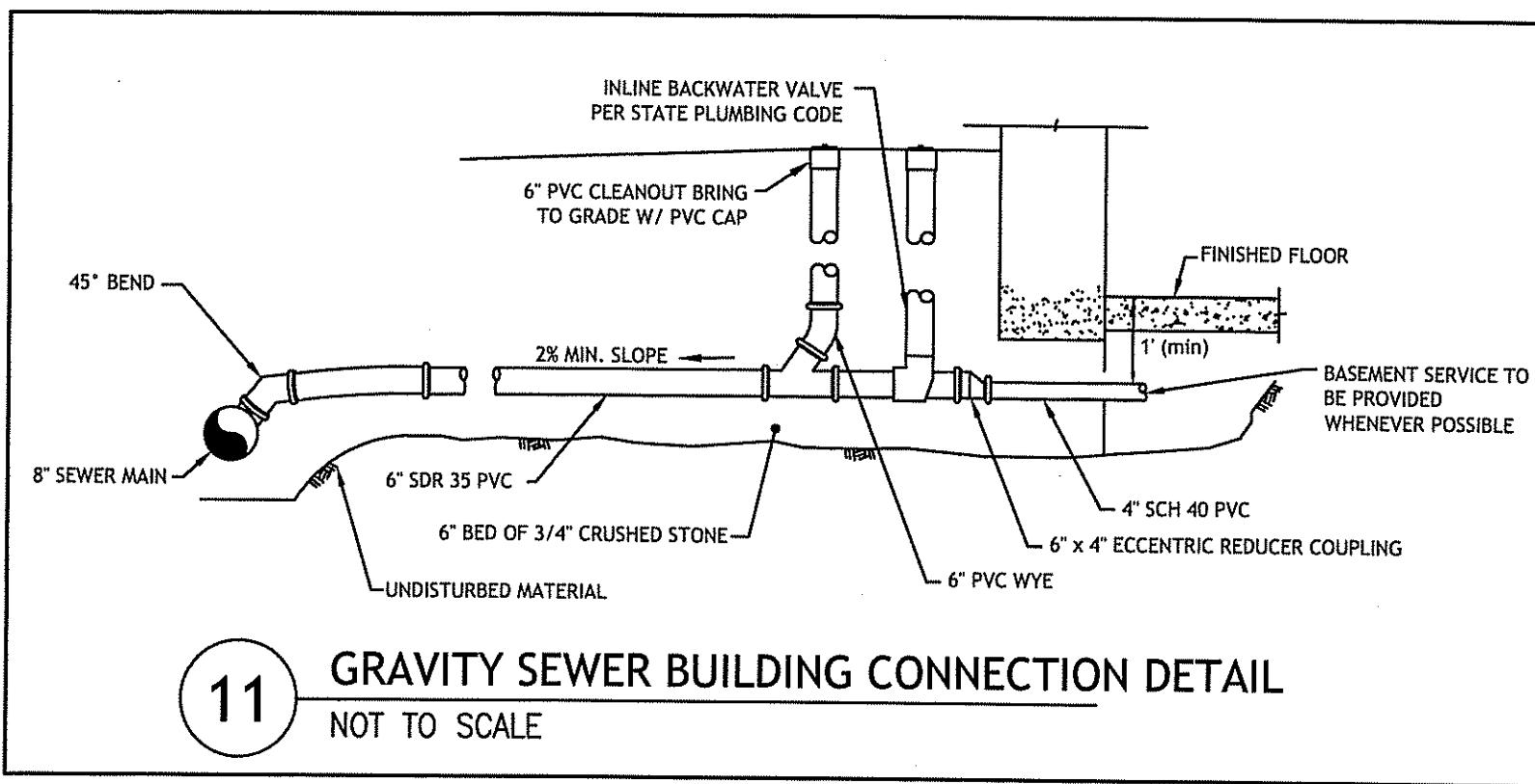
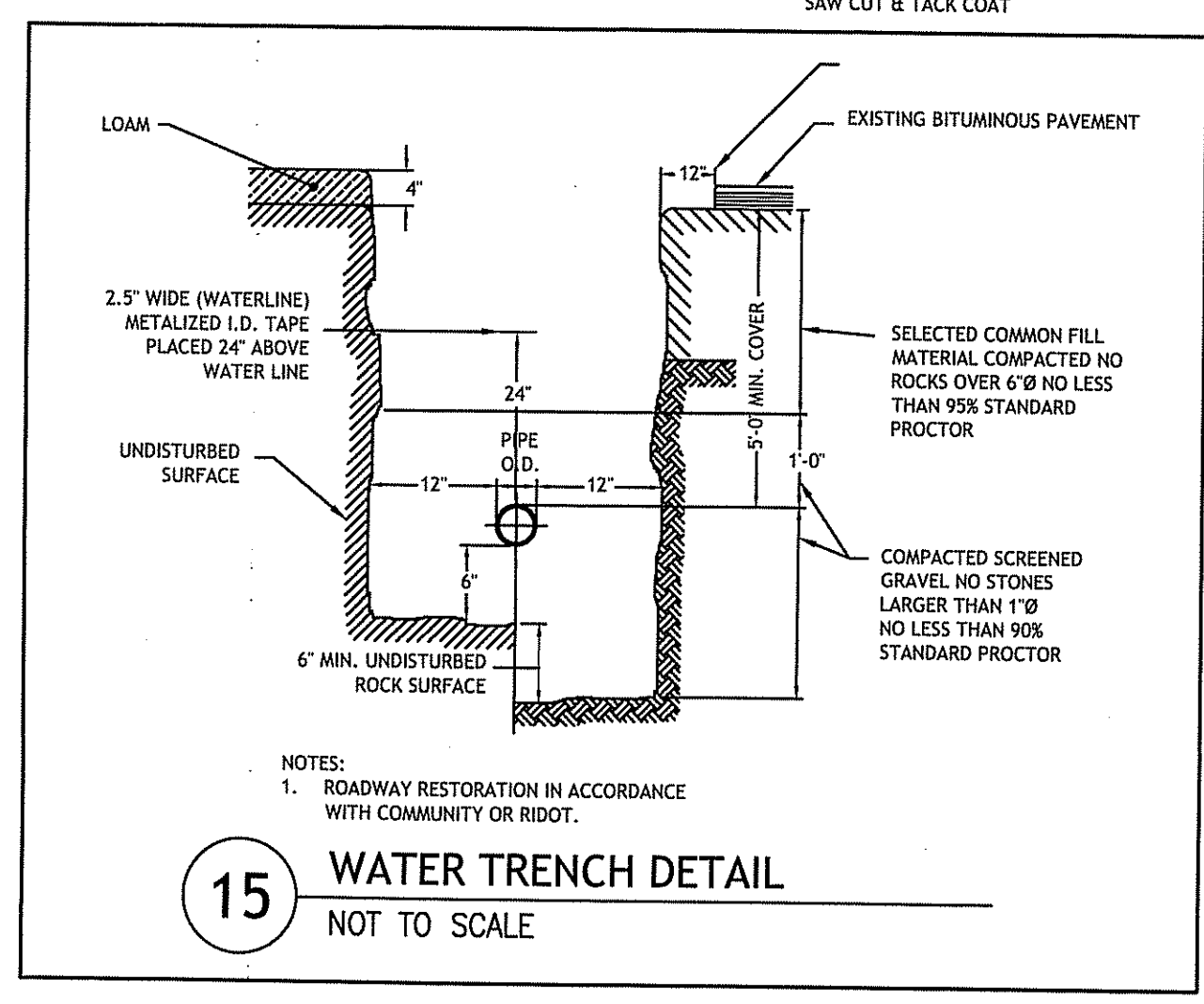
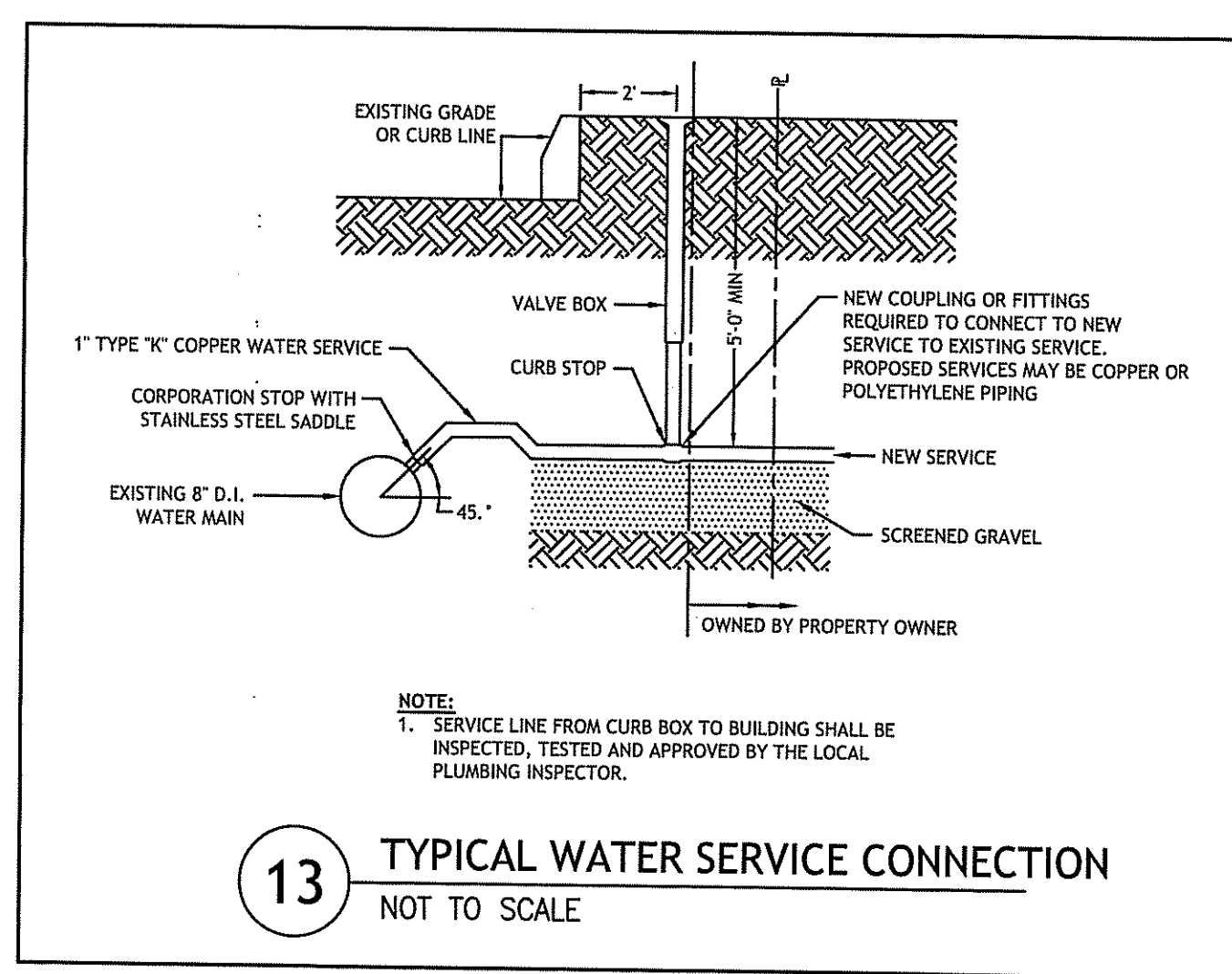
DESIGNED BY: JMM  
 DRAWN BY: JMM  
 CHECKED BY: JAC  
 DATE: MARCH 2016  
 PROJECT NO: 07-43

PRELIMINARY, NOT FOR CONSTRUCTION

UTILITY DETAILS

SHEET 7 OF 7

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
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01007-49 - Stillwater Road Smithfield CAD PLAN SET STILLWATER RD PLAN SET (2016)R1.dwg May. 10, 2016 10:04am