

# SITE PLANS FOR A PROPOSED INFILTRATION GALLERY TO SERVICE THE PASCOAG UTILITY DISTRICT

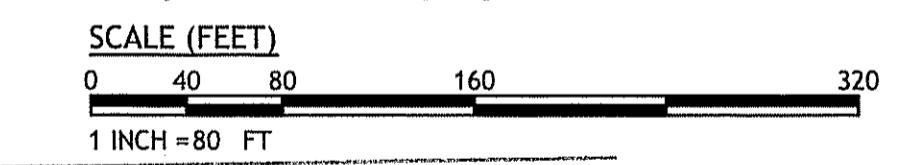
PASCOAG MAIN STREET  
BURRELLVILLE, RHODE ISLAND  
AP 158, LOTS 29, 45, 46 & 47

<b>OWNER / APPLICANT</b> PASCOAG UTILITY DISTRICT C/O MR. MICHAEL KIRKWOOD, GENERAL MANAGER 253 PASCOAG MAIN STREET PO BOX 107 PASCOAG, RI 02859	<b>WATER RESOURCE ENGINEER</b> NORTHEAST WATER SOLUTIONS 567 SOUTH COUNTY TRAIL EXETER, RI 02822 (401) 667-7463 phone
<b>CIVIL ENGINEER</b> JOE CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RI 02888 (401) 944-1300 phone (401) 944-1313 fax	<b>SURVEYOR</b> INTERNATIONAL MAPPING CORP. 19 INDUSTRIAL DRIVE SMITHFIELD, RI 02917 (401) 232-2620 phone

**JOE CASALI ENGINEERING, INC.**  
CIVIL, SITE DEVELOPMENT, TRANSPORTATION  
DRAINAGE, WETLANDS, ISDS, TRAFFIC, FLOODPLAIN  
300 Post Road, Warwick, RI 02888  
(401) 944-1300 (401) 944-1313 fax

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

**PASCOAG UTILITY DISTRICT**  
**PROPOSED INFILTRATION GALLERY**  
along the CLEAR RIVER  
BURRELLVILLE, RHODE ISLAND  
AP 158, LOT 29, 45, 46 & 47

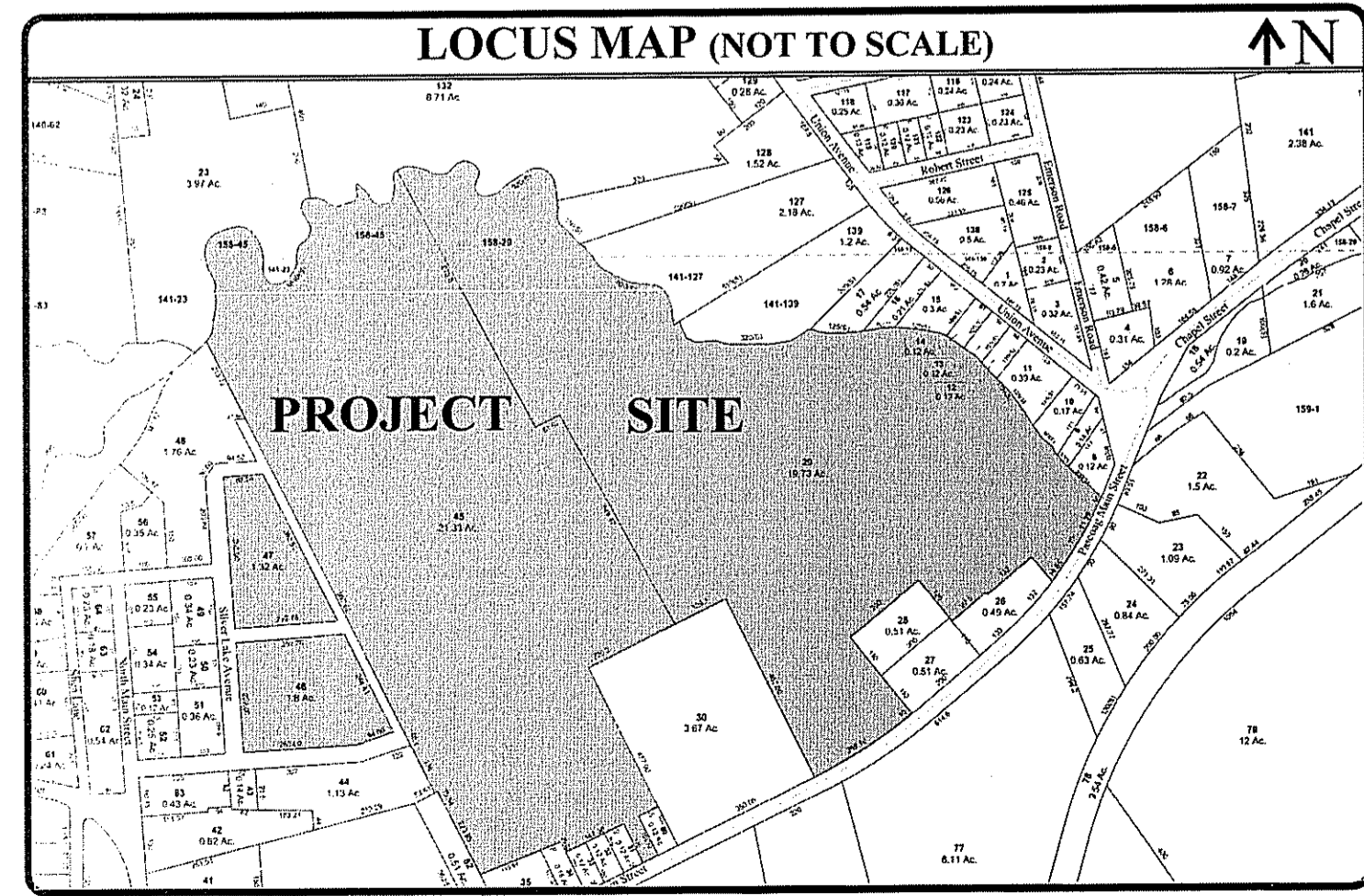


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATE: AUG 13 2015 FILE # 15-0070  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Matthew D. Wenzel*

- GENERAL NOTES:**
- CLASS III TOPOGRAPHIC SURVEY COMPLETED BY INTERNATIONAL MAPPING CORPORATION IN SEPTEMBER 2014. PROPERTY LINE BOUNDARIES OBTAINED FROM THE TOWN OF BURRELLVILLE GIS.
  - PORTIONS OF THE PROJECT SITE ARE LOCATED WITHIN ZONE "AE" (SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - NO BASE FLOOD ELEVATIONS DETERMINED), AS SHOWN ON FLOOD INSURANCE RATE MAP FOR PROVIDENCE COUNTY, RHODE ISLAND (ALL JURISDICTIONS), MAP NO. 44007C0130G, EFFECTIVE DATE MARCH 2, 2009.
  - NATURAL AND MANMADE FEATURES SHOWN WERE OBTAINED FROM RIDEM ENVIRONMENTAL RESOURCE MAPPING AND FROM AERIAL PHOTOGRAPHY.
  - WETLAND EDGE DELINEATION PERFORMED BY NATURAL RESOURCE SERVICES INC. IN MAY OF 2014.

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



**LEGEND:**

—	EXISTING PROPERTY LINE	— G-1	EXISTING GAS LINE
—	ABUTTING PROPERTY LINE	— W-1	EXISTING WATER LINE
—	BUILDING SETBACK LINE	WG	WATER GATE
163.8x	EXISTING SPOT ELEVATION	— WS	EXISTING SEWER LINE
100	EXISTING CONTOUR	—	EXISTING SEWER MANHOLE
—	50' PERIMETER WETLAND	N/F	NOW OR FORMERLY TREELINE
—	100' RIVERBANK WETLAND	—	TEST HOLE
—	EXISTING STONE WALL	—	BOLLARD
—	EXISTING CURB	—	SILT FENCE
—	EXISTING METAL FENCE	—	LIMIT OF DISTURBANCE
—	CHAIN LINK FENCE	D-63	WETLAND FLAG
—	EXISTING DRAIN LINE	PZ-4	PROPOSED PIEZOMETER
—	EXISTING DRAINAGE MANHOLE	—	EXISTING WELL
—	EXISTING CATCH BASIN	—	PROPOSED WELL
UP/ITZ	EXISTING UTILITY POLE	—	
—	EXISTING TELECOM DUCTBANK		
—	EXISTING ELECTRIC DUCTBANK		

**INDEX OF DRAWINGS**

SHEET NO.	PLAN
1	EXISTING CONDITIONS AND OVERALL SITE PLAN
2	SITE PLAN
3	DETAILS

REFERENCE PLANS (PREPARED BY INTERNATIONAL MAPPING AND SURVEYING)  
SHEET 1 OF 1 SURVEY PLAN WITH EXISTING CONDITIONS

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	7/10/15	RIDEM COMMENTS

DESIGNED BY: DRD  
DRAWN BY: JMM  
CHECKED BY: JAC  
DATE: APRIL 2015  
PROJECT NO: 14-28a

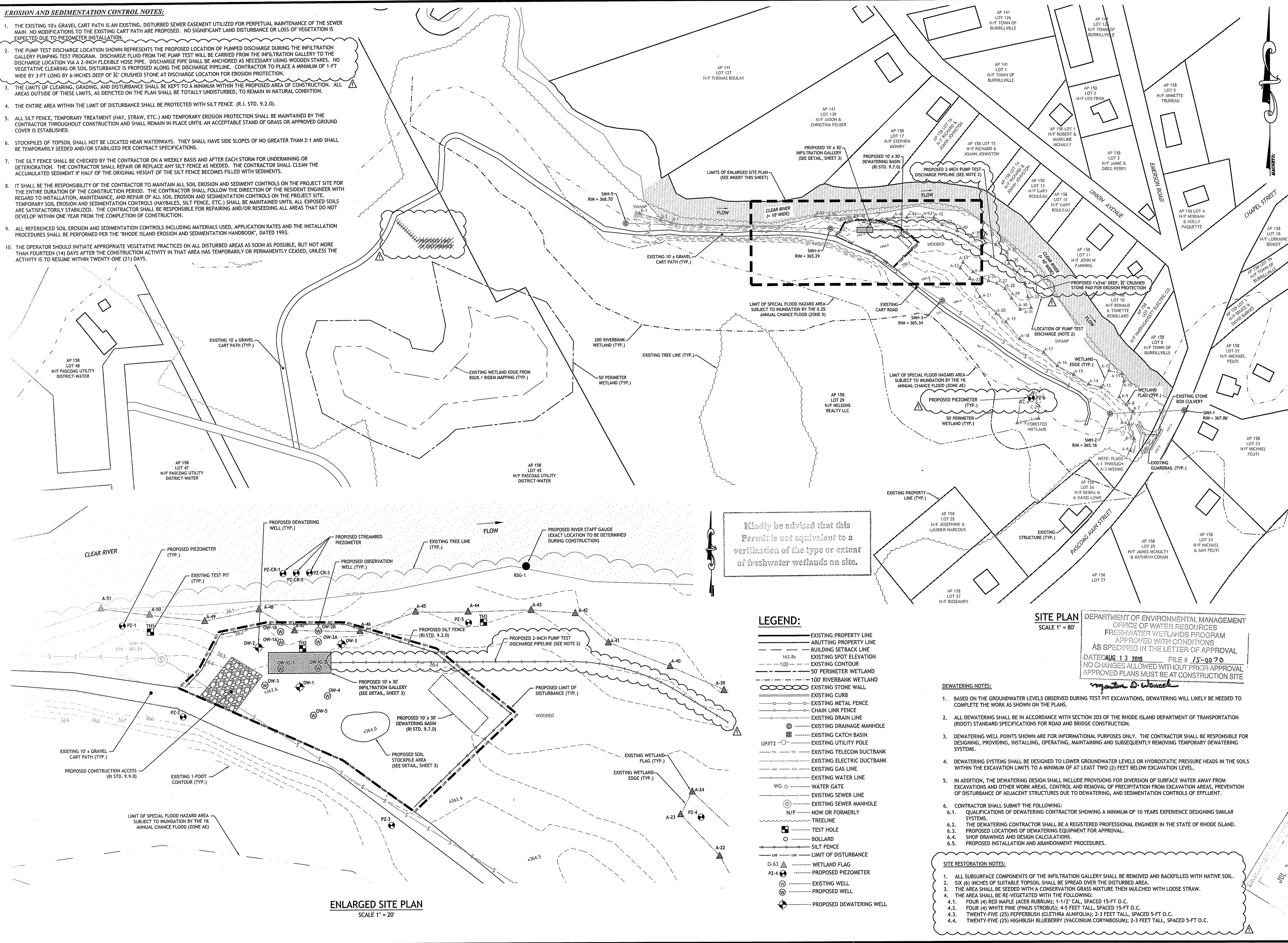
PRELIMINARY, NOT FOR CONSTRUCTION

**EXISTING CONDITIONS AND OVERALL SITE PLAN**

**SHEET 1 OF 3**

**EROSION AND SEDIMENTATION CONTROL NOTES:**

1. THE EXISTING 10'± GRAVEL CART PATH IS AN EXISTING, DISTURBED SEWER EASEMENT UTILIZED FOR PERPETUAL MAINTENANCE OF THE SEWER MAIN. NO MODIFICATIONS TO THE EXISTING CART PATH ARE PROPOSED. NO SIGNIFICANT LAND DISTURBANCE OR LOSS OF VEGETATION IS EXPECTED DUE TO PIEZOMETER INSTALLATION.
2. THE PUMP TEST DISCHARGE LOCATION SHOWN REPRESENTS THE PROPOSED LOCATION OF PUMPED DISCHARGE DURING THE INFILTRATION GALLERY PUMPING TEST PROGRAM. DISCHARGE FLUID FROM THE PUMP TEST WILL BE CARRIED FROM THE INFILTRATION GALLERY TO THE DISCHARGE LOCATION VIA A 2-INCH FLEXIBLE HOSE PIPE. DISCHARGE PIPE SHALL BE ANCHORED AS NECESSARY USING WOODEN STAKES. NO VEGETATIVE CLEARING OR SOIL DISTURBANCE IS PROPOSED ALONG THE DISCHARGE PIPELINE. CONTRACTOR TO PLACE A MINIMUM OF 1-FT WIDE BY 3-FT LONG BY 6-INCHES DEEP OF 3/4" CRUSHED STONE AT DISCHARGE LOCATION FOR EROSION PROTECTION.
3. 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.
4. THE ENTIRE AREA WITHIN THE LIMIT OF DISTURBANCE SHALL BE PROTECTED WITH SILT FENCE (R.I. STD. 9.2.0).
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. THE OPERATOR SHOULD INITIATE APPROPRIATE VEGETATIVE PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS.



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**LEGEND:**

- EXISTING PROPERTY LINE
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- 163.8x — EXISTING SPOT ELEVATION
- 100 — EXISTING CONTOUR
- 50' PERIMETER WETLAND
- 100' RIVERBANK WETLAND
- EXISTING STONE WALL
- EXISTING CURB
- EXISTING METAL FENCE
- CHAIN LINK FENCE
- EXISTING DRAIN LINE
- EXISTING DRAINAGE MANHOLE
- EXISTING UTILITY POLE
- EXISTING CATCH BASIN
- EXISTING TELECOM DUCTBANK
- EXISTING ELECTRIC DUCTBANK
- EXISTING GAS LINE
- EXISTING WATER LINE
- WATER GATE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- N/F — NOW OR FORMERLY
- TREELINE
- TEST HOLE
- BOLLARD
- SILT FENCE
- LIMIT OF DISTURBANCE
- D-6.3 — WETLAND FLAG
- PROPOSED PIEZOMETER
- EXISTING WELL
- PROPOSED WELL
- PROPOSED DEWATERING WELL

**SITE PLAN**  
SCALE 1" = 80'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED AUG 13 2015 FILE # JS-0070  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
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**DEWATERING NOTES:**

1. BASED ON THE GROUNDWATER LEVELS OBSERVED DURING TEST PIT EXCAVATIONS, DEWATERING WILL LIKELY BE NEEDED TO COMPLETE THE WORK AS SHOWN ON THE PLANS.
2. ALL DEWATERING SHALL BE IN ACCORDANCE WITH SECTION 203 OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION (RIDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3. DEWATERING WELL POINTS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, PROVIDING, INSTALLING, OPERATING, MAINTAINING AND SUBSEQUENTLY REMOVING TEMPORARY DEWATERING SYSTEMS.
4. DEWATERING SYSTEMS SHALL BE DESIGNED TO LOWER GROUNDWATER LEVELS OR HYDROSTATIC PRESSURE HEADS IN THE SOILS WITHIN THE EXCAVATION LIMITS TO A MINIMUM OF AT LEAST TWO (2) FEET BELOW EXCAVATION LEVEL.
5. IN ADDITION, THE DEWATERING DESIGN SHALL INCLUDE PROVISIONS FOR DIVERSION OF SURFACE WATER AWAY FROM EXCAVATIONS AND OTHER WORK AREAS, CONTROL AND REMOVAL OF PRECIPITATION FROM EXCAVATION AREAS, PREVENTION OF DISTURBANCE OF ADJACENT STRUCTURES DUE TO DEWATERING, AND SEDIMENTATION CONTROLS OF EFFLUENT.
6. CONTRACTOR SHALL SUBMIT THE FOLLOWING:
  - 6.1. QUALIFICATIONS OF DEWATERING CONTRACTOR SHOWING A MINIMUM OF 10 YEARS EXPERIENCE DESIGNING SIMILAR SYSTEMS.
  - 6.2. THE DEWATERING CONTRACTOR SHALL BE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF RHODE ISLAND.
  - 6.3. PROPOSED LOCATIONS OF DEWATERING EQUIPMENT FOR APPROVAL.
  - 6.4. SHOP DRAWINGS AND DESIGN CALCULATIONS.
  - 6.5. PROPOSED INSTALLATION AND ABANDONMENT PROCEDURES.

**SITE RESTORATION NOTES:**

1. ALL SUBSURFACE COMPONENTS OF THE INFILTRATION GALLERY SHALL BE REMOVED AND BACKFILLED WITH NATIVE SOIL.
2. SIX (6) INCHES OF SUITABLE TOPSOIL SHALL BE SPREAD OVER THE DISTURBED AREA.
3. THE AREA SHALL BE SEEDED WITH A CONSERVATION GRASS MIXTURE THEN MULCHED WITH LOOSE STRAW.
4. THE AREA SHALL BE RE-VEGETATED WITH THE FOLLOWING:
  - 4.1. FOUR (4) RED MAPLE (ACER RUBRUM); 1-1/2" CAL., SPACED 15-FT O.C.
  - 4.2. FOUR (4) WHITE PINE (PINUS STROBUS); 4-5 FEET TALL, SPACED 15-FT O.C.
  - 4.3. TWENTY-FIVE (25) PEPPERBUSH (CLETHRA ALNIFOLIA); 2-3 FEET TALL, SPACED 5-FT O.C.
  - 4.4. TWENTY-FIVE (25) HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM); 2-3 FEET TALL, SPACED 5-FT O.C.

**ENLARGED SITE PLAN**  
SCALE 1" = 20'

**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - ISDS - TRAFFIC - FLOODING  
(603) 944-1900 (603) 944-1313 FAX WWW.JOECASALI.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
2015

**PASCOAG UTILITY DISTRICT**  
**PROPOSED INFILTRATION GALLERY**  
along the CLEAR RIVER  
BURRILLVILLE, RHODE ISLAND  
AP 158, LOT 29, 45, 46 & 47

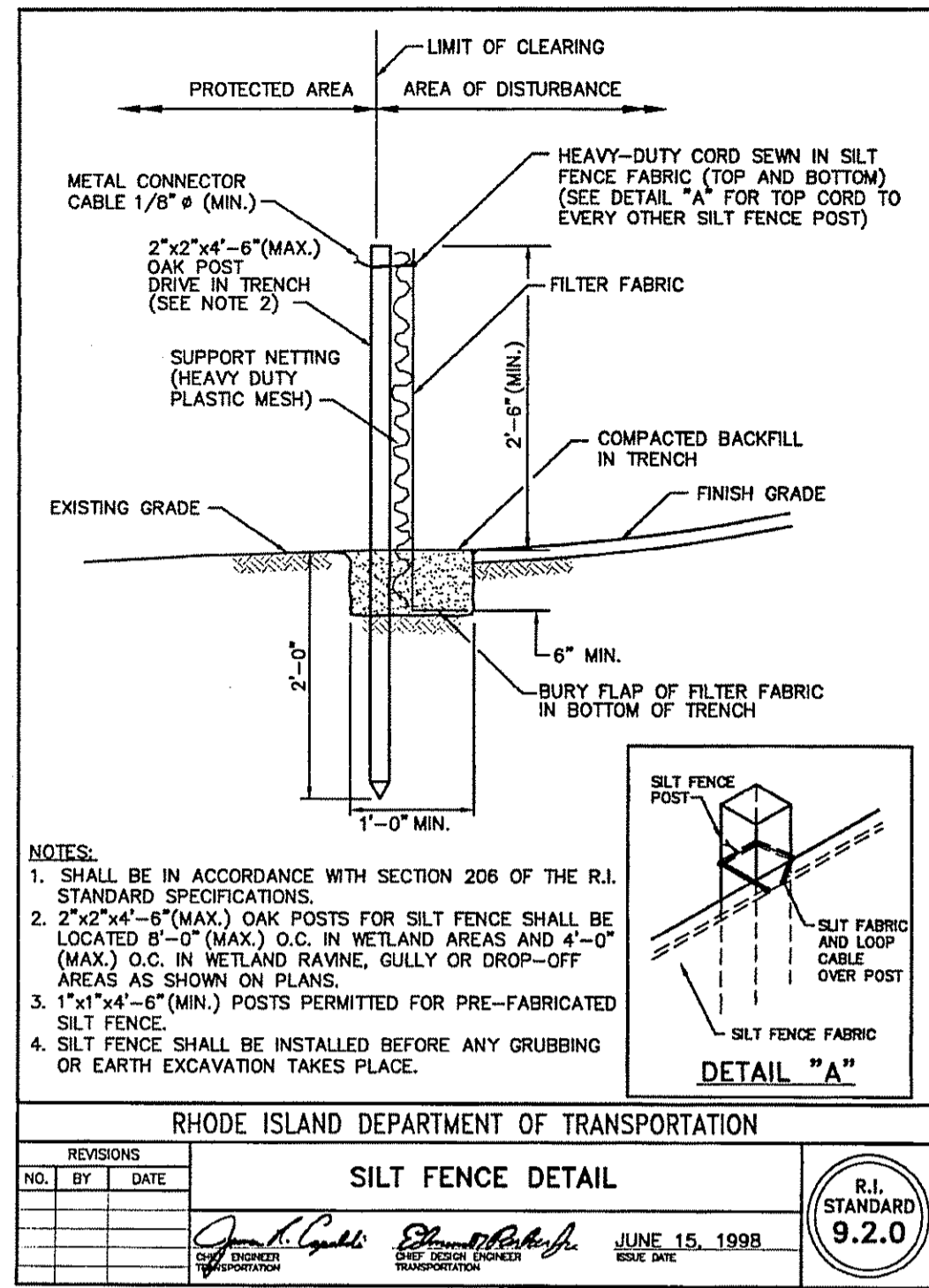
**REVISIONS:**

NO.	DATE	DESCRIPTION
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DESIGNED BY: DRD  
DRAWN BY: JMM  
CHECKED BY: JAC  
DATE: APRIL 2015  
PROJECT NO: 14-28a

PRELIMINARY, NOT FOR CONSTRUCTION

**SITE PLAN**  
**SHEET 2 OF 3**



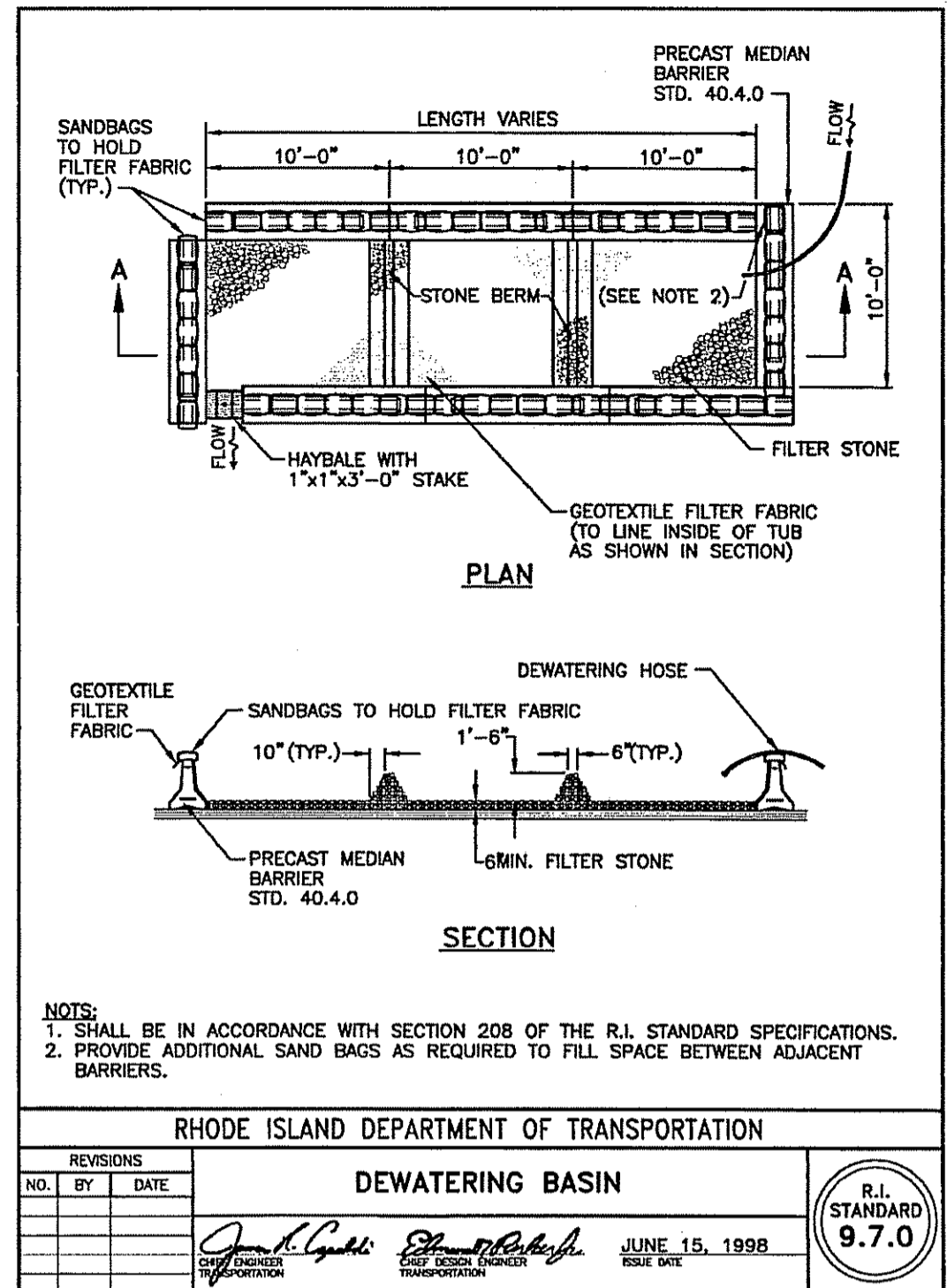
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

NO.	BY	DATE

**SILT FENCE DETAIL**

JUNE 15, 1998

R.I. STANDARD 9.2.0



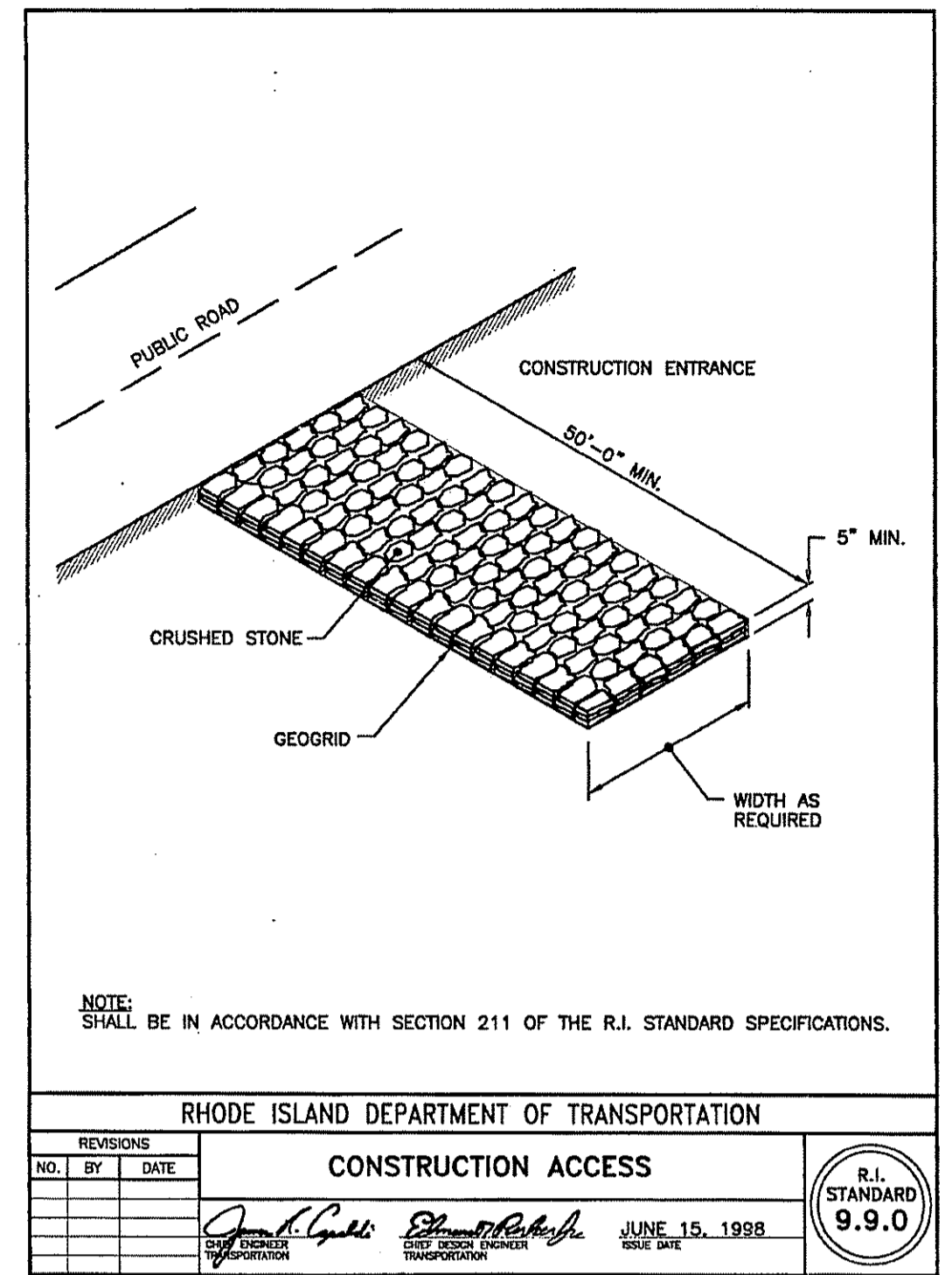
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

NO.	BY	DATE

**DEWATERING BASIN**

JUNE 15, 1998

R.I. STANDARD 9.7.0



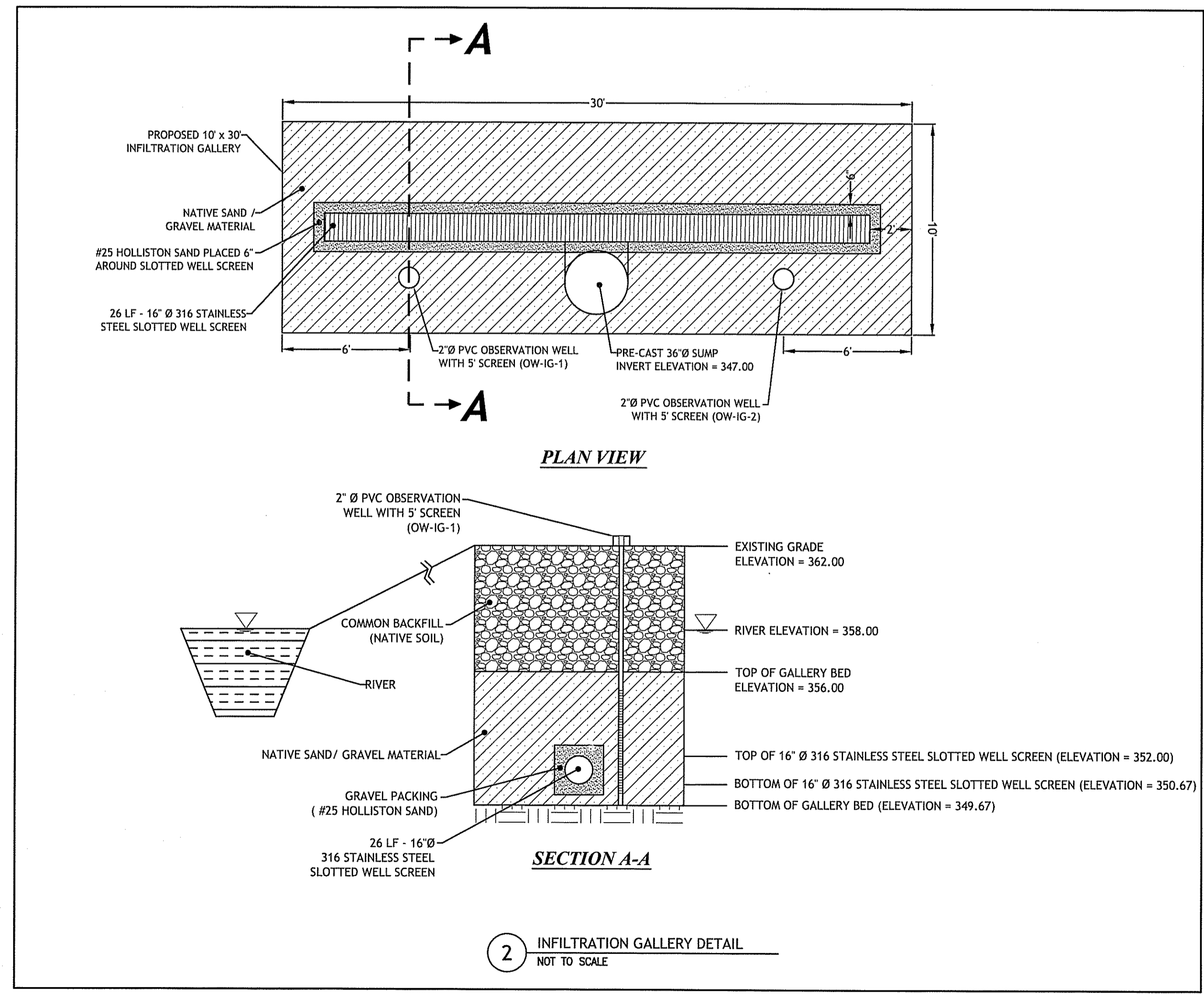
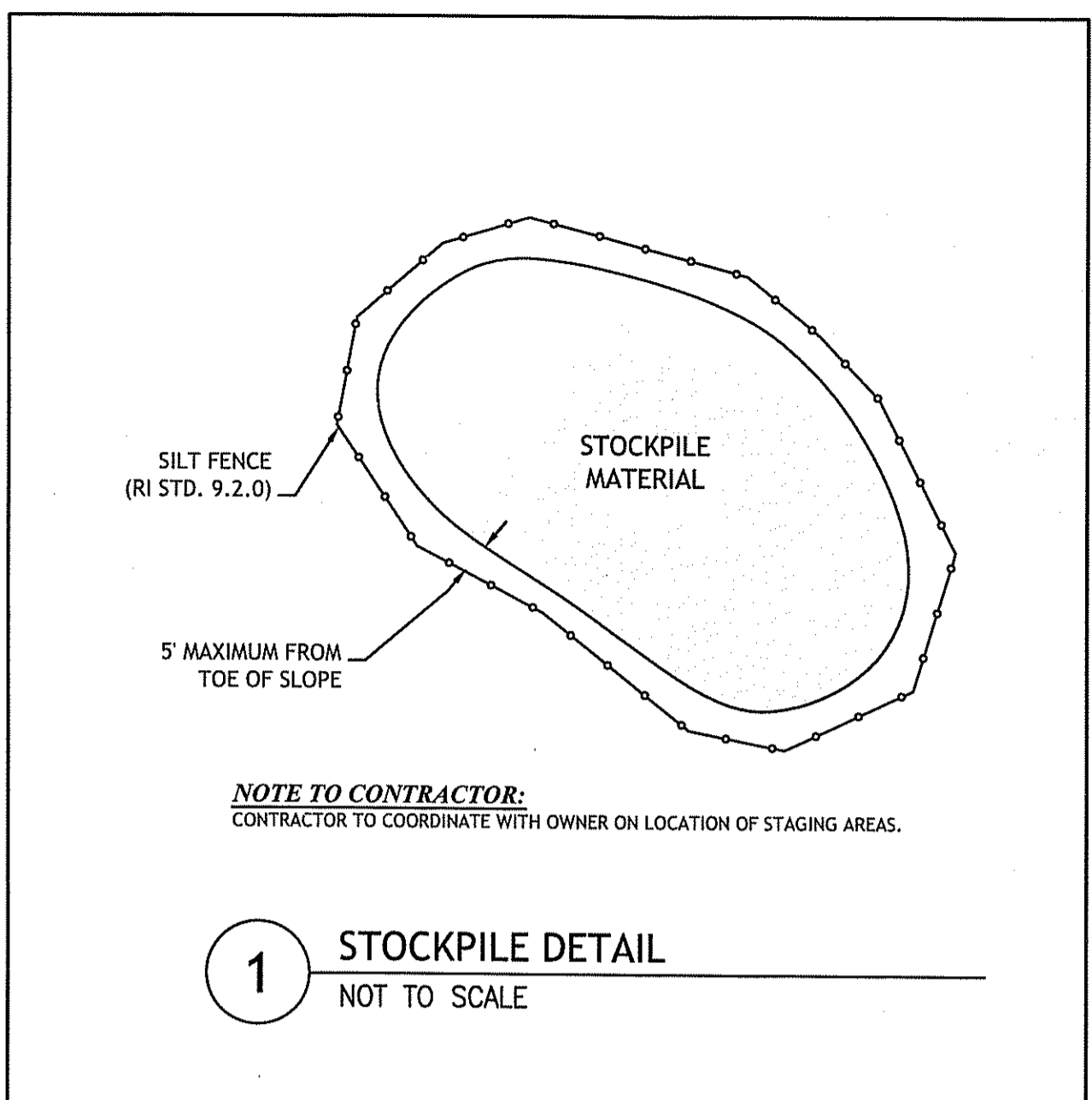
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

NO.	BY	DATE

**CONSTRUCTION ACCESS**

JUNE 15, 1998

R.I. STANDARD 9.9.0



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
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DATED AUG 13 2015 FILE # 15-0070  
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*Maxim D. Wessell*

APPROVED FOR CONSTRUCTION  
JUL 23 2015

PASCOAG UTILITY DISTRICT  
PROPOSED INFILTRATION GALLERY  
along the CLEAR RIVER  
BURRILLVILLE, RHODE ISLAND  
AP 158, LOT 29, 45, 46 & 47

REVISIONS:

NO.	DATE	DESCRIPTION
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DATE: APRIL 2015  
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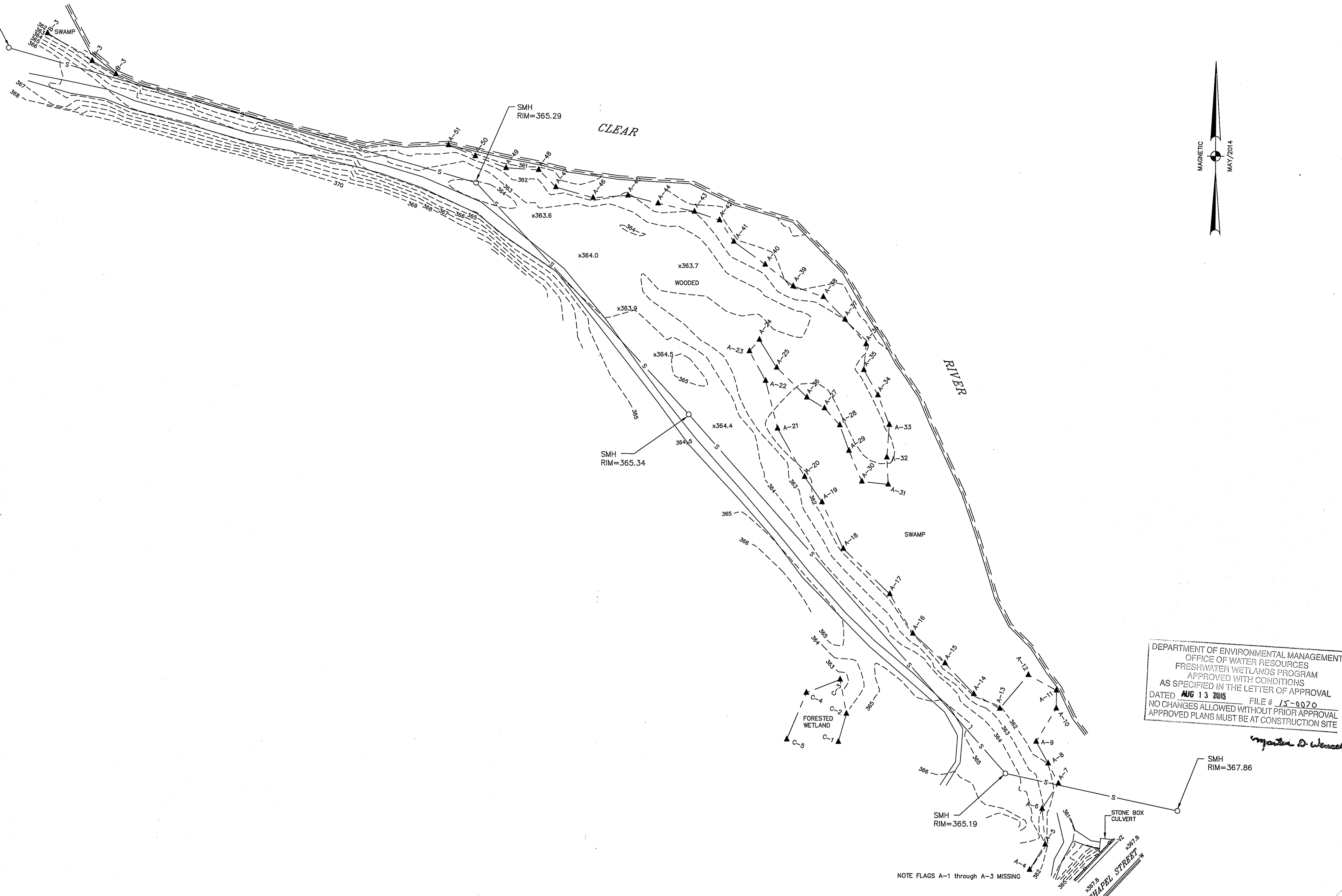
**DETAILS**  
1

**SHEET**  
3 OF 3

**JOE CASALI ENGINEERING, INC.**  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - TRAFFIC - FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
(401) 944-1300 (401) 944-0374 FAX (401) 944-0374

JOSEPH A. CASALI  
No. 1250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

SMH  
RIM=368.70



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED **AUG 13 2015** FILE # **15-0020**  
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*Matthew D. Woodcock*

**LEGEND:**

- EXISTING CONTOUR      - - - 365 - - -
- SPOT ELEVATION        x363.9
- SANITARY SEWER        S
- VERIZON                VZ
- WATER                  W
- WETLAND EDGE  
W/FLAG                ▲
- RIVERBANK             ---
- GUARD RAIL            - - - - -
- EDGE OF PAVEMENT  
W/ASPHALT BERM      = = = = =

**NOTES:**

WETLAND DELINEATION BY NATURAL RESOURCE SERVICES MAY 2014.

**REFERENCE:**

TOWN OF BURRILLVILLE CLEAR RIVER SEWER INTERCEPTOR MAP  
CONTRACT 76-2. VERTICAL DATUM NGVD "1929".

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

**CERTIFICATION:**

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

BY: \_\_\_\_\_ DATE \_\_\_\_\_  
REGISTERED PROFESSIONAL LAND SURVEYOR



**INTERNATIONAL MAPPING & SURVEYING CORP.**  
 LAND SURVEYING CIVIL ENGINEERING PHOTOGRAMMETRIC MAPPING  
 19 INDUSTRIAL DRIVE, SMITHFIELD, R.I. 02917 (401) 232-2620

**EXISTING CONDITIONS PLAN**  
 along a portion of THE CLEAR RIVER  
 off of CHAPEL STREET  
 in BURRILLVILLE, RI

ADDITIONAL TOPS	10/04/14	1
REVISIONS	DATE	NO.
DRAWN BY	P.A.K./K.R.R.	
CKD. BY	A.E.M.	
APPRD. BY	A.E.M.	
DATE	9/13/14	
SCALE	1"=40'	
SHEET	1 OF 1	
DWG.	140802-SP	