

**MASTER / PRELIMINARY PLAN SUBMISSION  
FOR A PROPOSED 4-LOT RESIDENTIAL COMPOUND (MINOR SUBDIVISION)**

**HIGHLAND MEADOWS (PHASE II)**

**CENTRAL AVENUE  
JOHNSTON, RHODE ISLAND  
AP 43-4, LOT 94**

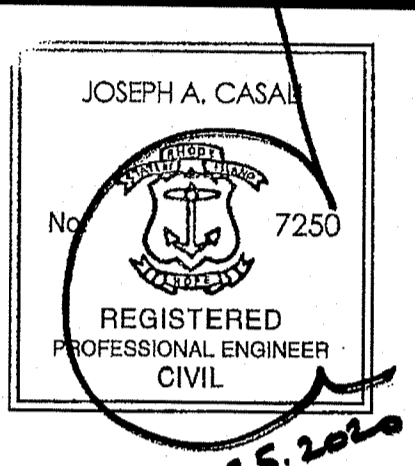
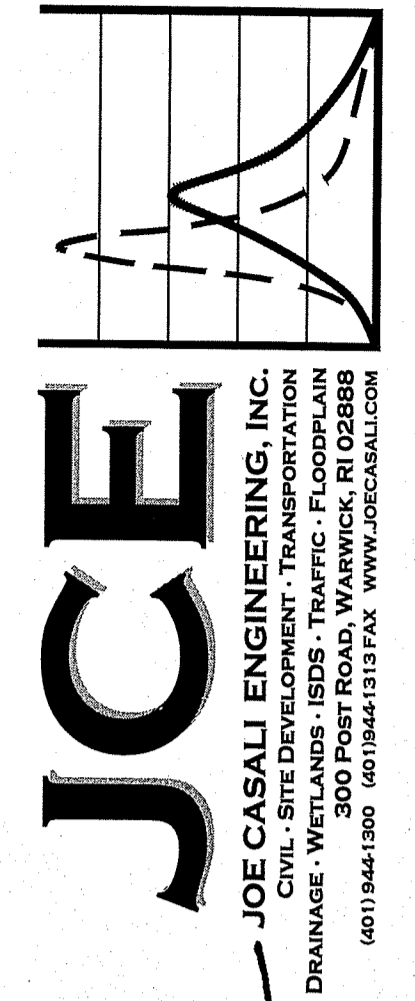
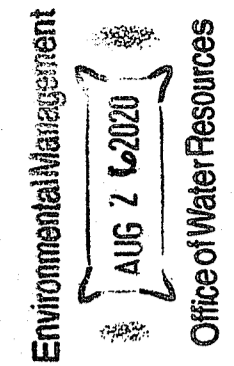
**ZONING DISTRICT: RESIDENCE R-40**

**APPROVALS:**

**JOHNSTON PLANNING BOARD - MASTER PLAN (NOVEMBER 30, 2016); PRELIMINARY PLAN / FINAL PLAN (PHASE I) (DECEMBER 2016)**

**FILINGS:**

**JOHNSTON PLANNING BOARD - MASTER / PRELIMINARY PLAN (PHASE II)  
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT - PRELIMINARY DETERMINATION APPLICATION  
JOHNSTON WATER CONTROL DISTRICT  
TOWN OF JOHNSTON ENGINEERING**

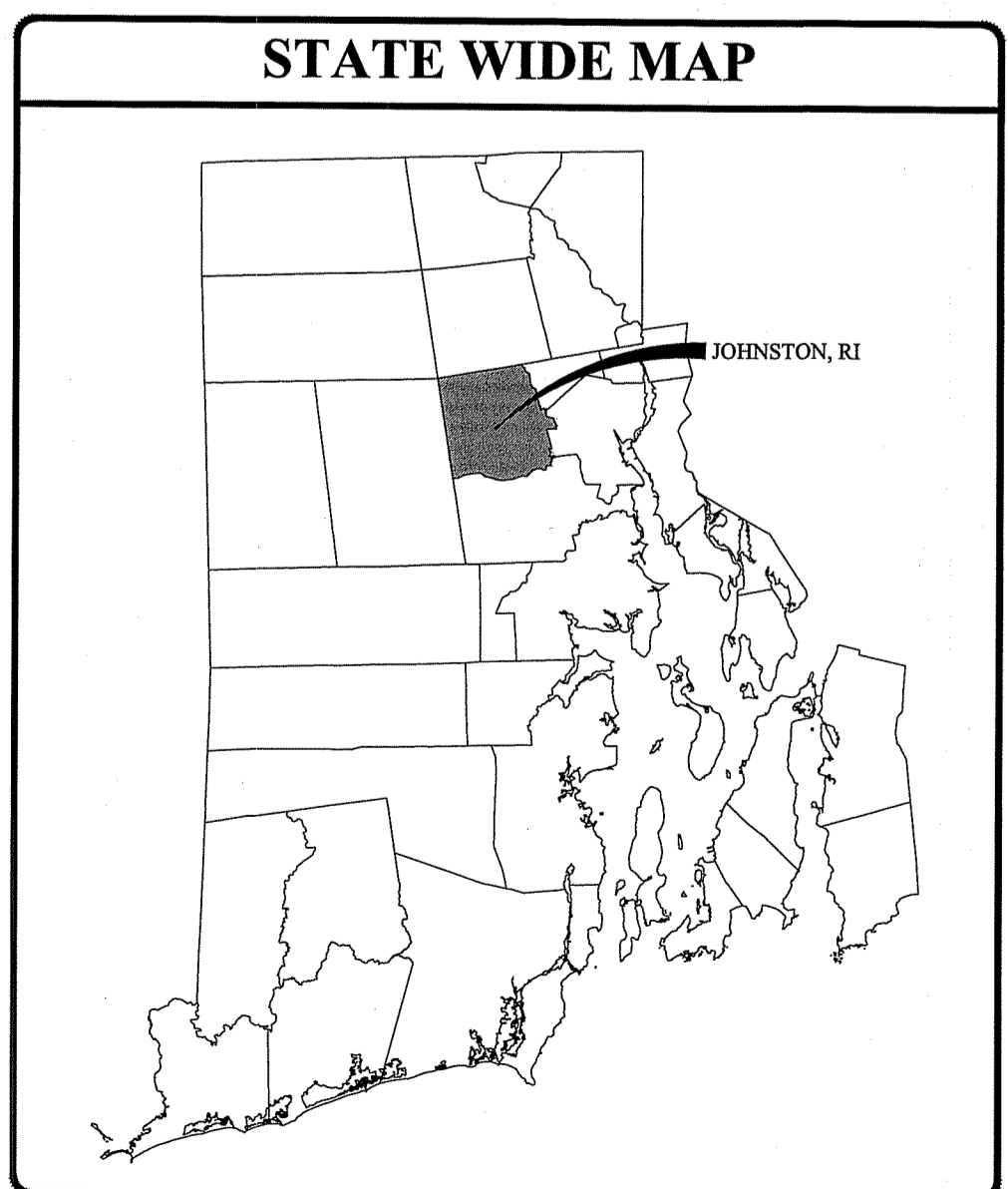
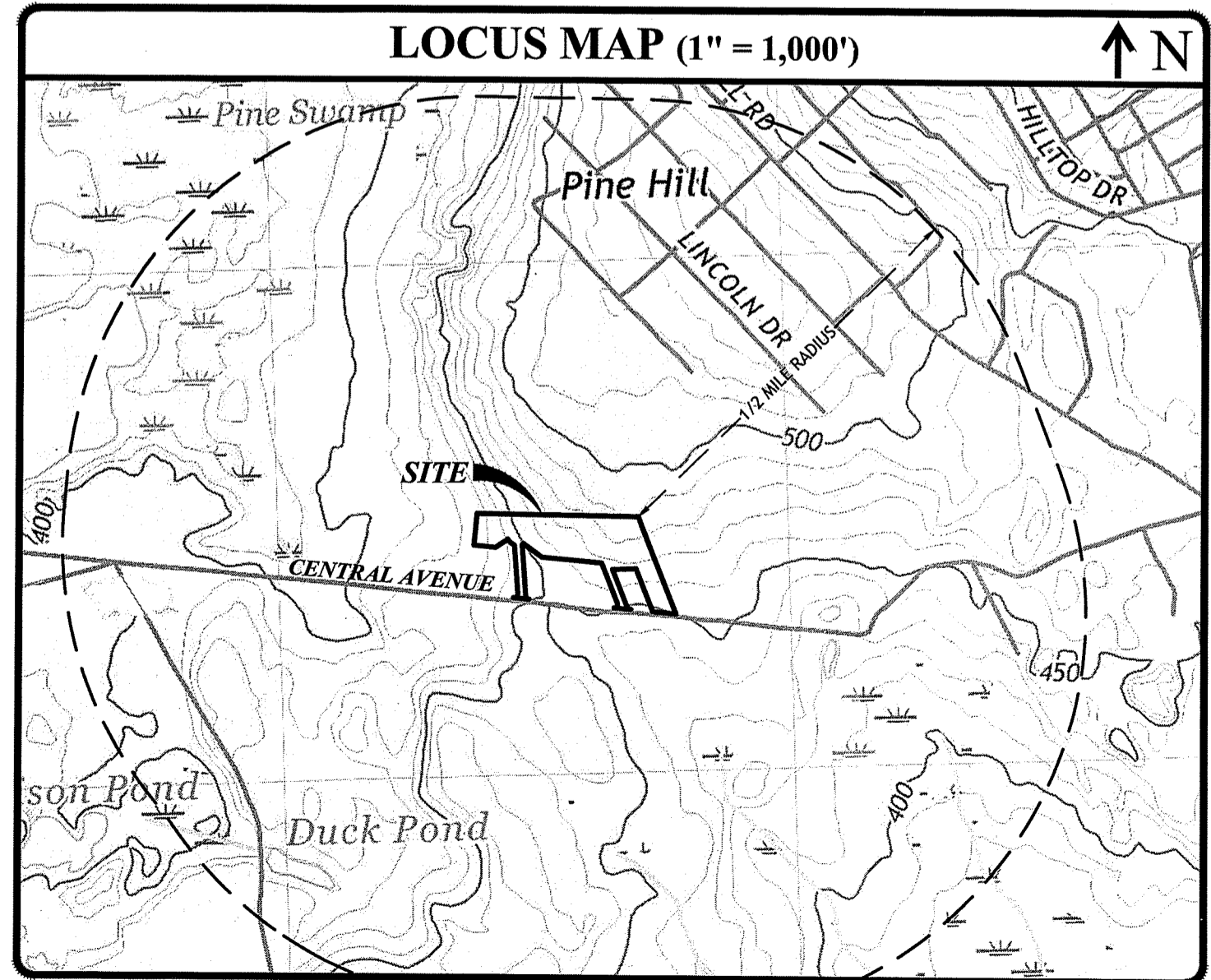


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
REVIEWED SITE PLAN APPLICATION NO.: 20-0027  
DATED NOV 23 2020  
SEE LETTER OF SAME DATE.  
*Nauly L. Freeman*

**HIGHLAND MEADOWS (PHASE II)  
PROPOSED MINOR SUBDIVISION  
CENTRAL AVENUE  
JOHNSTON, RHODE ISLAND  
AP 43-4, LOT 94**

03:19:33 Northeast Equity Partners\19-35- Highland Meadows Phase II\Minor Subdivision [PERMIT SET] Rev. 2, dwg. Aug. 26, 2020 8:30am

PROJECT TEAM			
<b>OWNER/ APPLICANT:</b>	T&G REALTY, LLC C/O ANTHONY THOMAS, MEMBER 115 BEAVERTAIL ROAD JAMESTOWN, RI 02853	<b>LAND SURVEYOR:</b>	WATERMAN ENGINEERING CO. 46 SUTTON AVENUE EAST PROVIDENCE, RI 02914 PHONE: 401-438-5775
<b>CIVIL ENGINEER:</b>	JOE CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RI 02888 PHONE: 401-944-1300 FAX: 401-944-1313 JOECASALI.COM	<b>WETLAND BIOLOGIST:</b>	NATURAL RESOURCE SERVICES 180 TINKHAM LANE PO BOX 311 HARRISVILLE, RI 02830 PHONE: (401) 568-7490



INDEX OF DRAWINGS	
SHEET NO.	SHEET DESCRIPTION
1	COVER SHEET
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3	SITE PREPARATION PLAN
4	SITE PLAN
5	GRADING AND DRAINAGE PLAN
6	UTILITY PLAN
7	CIVIL/SITE DETAILS
8	TYPICAL OWTS DETAILS
R1	BOUNDARY & TOPOGRAPHIC SURVEY PLAN, PREPARED BY WATERMAN ENGINEERING COMPANY, NOVEMBER 2019.

REVISIONS:		
NO.	DATE	DESCRIPTION
1	2/17/2020	PLANNING RTC
2	4/24/2020	CONCEPT REVIEW
3	6/2020	MASTER-PREL.
4	8/25/20	RIDEM RTC

DESIGNED BY:	DRD
DRAWN BY:	SEP/SD
CHECKED BY:	JAC
DATE:	FEB. 2020
PROJECT NO.:	19-55a

PRELIMINARY, NOT FOR CONSTRUCTION

**COVER SHEET**

**SHEET 1 OF 8**

GENERAL NOTES:

- 1. CLASS I PROPERTY LINE AND CLASS III TOPOGRAPHIC SURVEY COMPLETED BY WATERMAN ENGINEERING COMPANY, 46 SUTTON AVENUE, EAST PROVIDENCE, RI 02914 IN NOVEMBER 2019; UPDATED IN MARCH 2020.
2. THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION.
3. THIS SITE LIES IN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD), AS SHOWN ON THE FIRM MAPS FOR THE TOWN OF JOHNSTON, COMMUNITY PANEL NO. 44007C0283G, EFFECTIVE OCTOBER 2, 2015.
4. SOILS EXISTING ON THE SITE CONSISTS OF WOODBRIDGE FINE SANDY LOAM, 0-8 PERCENT SLOPES, VERY STONY (WoB), WOODBRIDGE FINE SANDY LOAM, 3-8 PERCENT SLOPES (WnB), PAXTON FINE SANDY LOAM, 3-8 PERCENT SLOPES (PaB), AND RIDGEBURY, LEICESTER AND WHITMAN SOILS, 0-8 PERCENT SLOPES, EXTREMELY STONY (Rf).
5. WETLANDS WERE DELINEATED IN JUNE 2016 BY NATIONAL RESOURCES SERVICES, INC., P.O. BOX 311 HARRISVILLE, RI 02830.
6. THE PROPOSED DEVELOPMENT IS LOCATED WITHIN THE POCASSET RIVER WATERSHED (RIDEM INVENTORY #01090040608).
7. THERE ARE NO KNOWN EASEMENTS WITHIN THE SUBJECT PARCEL.
8. TELEPHONE, ELECTRIC AND WATER SERVICES ARE AVAILABLE FROM WITHIN CENTRAL AVENUE.

SITE NOTES:

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) OF ALL MATERIALS INDICATED ON THE PLANS.
2. 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.
3. STOCKPILES OF EARTH MATERIALS SHALL NOT BE LOCATED ADJACENT TO DRAINAGE STRUCTURES.
4. ALL DISTURBED AREAS OUTSIDE OF THE PAVED AREAS WILL RECEIVE A MINIMUM OF 6" OF LOAM AND SEED.
5. 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.
6. 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.
7. 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.
8. WHERE NECESSARY TO REMOVE CURBS, CATCH BASINS OR DRAINS TO COMPLETE WORK, THE CONTRACTOR SHALL REPLACE SUCH ITEMS TO THE SATISFACTION OF THE ENGINEER AND THE TOWN AT NO ADDITIONAL COST TO THE OWNER.
9. ANY EXISTING PIPE OR UTILITY DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER.
10. THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION OR REPLACE TREES, SHRUBS, FENCES, GUARDRAILS, DRIVEWAYS, SIDEWALKS AND ANY OTHER OBJECT AFFECTED BY THIS OPERATION, UNLESS OTHERWISE NOTED ON THE SITE PLANS.
11. THE TOPS OF ALL VALVE BOXES AND CURB BOXES SHALL BE FLUSH WITH GROUND OR PAVEMENT SURFACE LEVEL AND PLUMB, UNLESS OTHERWISE DIRECTED.
12. ROADWAYS SHALL BE LEFT PASSABLE AT ALL TIMES. CLOSURE OF ROADWAY IS NOT PERMITTED.
13. WATER SERVICE SHALL BE MAINTAINED AT ALL TIMES.
14. ALL LEDGE TO BE REMOVED BY MECHANICAL MEANS.
15. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN THE DRY.
16. 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).

SOIL EROSION AND SEDIMENTATION CONTROL NOTES

- 1. 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.
2. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION.
3. ALL CATCH BASINS AND CULVERTS SHALL BE PROTECTED WITH SILT SACK SEDIMENT TRAPS AND/OR STRAW WATTLES DURING CONSTRUCTION ACTIVITIES.
4. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEED, PROTECTED AND MAINTAINED BY THE CONTRACTOR.
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.
7. THE SILT FENCE SHALL BE CHECKED BY THE CONTRACTOR ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION.
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.
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", ISSUED 1989 (REVISED 2014, UPDATED 2016).

DRAINAGE SYSTEM NOTES:

- 1. THE PROPOSED DRAINAGE LINES SHALL BE ADS N-12 HDPE PIPE OR AN APPROVED EQUAL UNLESS OTHERWISE NOTED ON THE SITE PLANS.
2. ALL RIM ELEVATIONS SHOWN ARE APPROXIMATE AND ARE TO BE SET FLUSH WITH FINAL GRADES.
BMP MAINTENANCE SCHEDULE:
1. PRIOR TO THE START OF CONSTRUCTION, THE SITE CONTRACTOR SHALL STAKE OUT AND PROTECT ALL SURFICIAL STORMWATER INFILTRATION AREAS, INCLUDING THE SEDIMENT FOREBAY AND SAND FILTER BASIN.
2. 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.
3. 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.
4. 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.
5. STORMWATER BMPs SHALL BE INSPECTED AND MAINTAINED BY THE OWNER AS FOLLOWS:

RAIN GARDENS

- RAIN GARDENS SHALL BE INSPECTED FOLLOWING AT LEAST THE FIRST TWO PRECIPITATION EVENTS OF AT LEAST 1.0 INCH TO ENSURE THAT THE SYSTEM IS FUNCTIONING PROPERLY.
• SILTS/SEDIMENT SHALL BE REMOVED FROM THE RAIN GARDEN WHEN ACCUMULATION EXCEEDS ONE INCH, OR WHEN WATER PONDS ON THE SURFACE OF THE RAIN GARDEN FOR MORE THAN 48 HOURS.
• PRUNING OR REPLACEMENT OF WOODY VEGETATION SHALL OCCUR WHEN DEAD OR DYING VEGETATION IS OBSERVED.
• FERTILIZER OR PESTICIDES SHALL NOT BE APPLIED TO PLANTS WITHIN RAIN GARDENS.
• PERENNIAL PLANTS AND GROUND COVER SHALL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE VEGETATED GROUND COVER.
• SNOW STORAGE IS PROHIBITED WITHIN RAIN GARDENS.

PEA GRAVEL DIAPHRAGMS

- PEA GRAVEL DIAPHRAGMS SHALL BE INSPECTED BI-ANNUALLY FOR SEDIMENT BUILDUP AND SEDIMENT SHALL BE REMOVED WHEN IT REACHES 25% OF THE TOTAL STORAGE VOLUME.
• PEA GRAVEL DIAPHRAGMS SHALL BE KEPT FREE FROM LITTER AND DEBRIS.
• SNOW STORAGE IS PROHIBITED WITHIN PEA GRAVEL DIAPHRAGMS.

INFILTRATION TRENCHES

- AFTER CONSTRUCTION, THE INFILTRATION TRENCHES SHALL BE INSPECTED ON AN ANNUAL BASIS FOR SEDIMENT BUILDUP AND SEDIMENT SHALL BE REMOVED WHEN IT REACHES 25% OF THE TOTAL STORAGE VOLUME.
• LITTER AND DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED OF.
• VEGETATION ALONG THE SYSTEM SHOULD BE MOWED AS FREQUENTLY AS NEEDED TO MAINTAIN HEIGHTS BETWEEN 2 TO 3 INCHES.
• SNOW STORAGE IS PROHIBITED WITHIN INFILTRATION TRENCHES.

- 6. ALL REMOVED SEDIMENT IS TO BE TESTED TO DETERMINE POLLUTANT CONTENT. THE SEDIMENT IS TO BE PROPERLY DISPOSED OF BASED UPON THE TEST RESULTS AND LOCAL, STATE, AND FEDERAL REGULATIONS.

LOADING & 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:

- 1. 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.
2. 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).
3. PRIOR TO SEEDING OR SODDING, FERTILIZE WITH 10-10-10 OR EQUIVALENT ANALYSIS.
4. APPLY LIME AT A RATE OF ONE TON PER ACRE AND UNIFORMLY INCORPORATE INTO THE TOP 1-2" OF TOPSOIL.
5. SEEDING
AFTER THE SEED BED IS PREPARED, SEED IS TO BE BROADCAST EVENLY OVER THE SURFACE AND WORKED INTO THE TOP 1" OF SOIL.
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.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION.
2. TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
3. THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS SHALL NOT BE PARKED IN THE STATE OR TOWN RIGHT-OF-WAY.
4. 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.
5. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE RIDOT SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

MISCELLANEOUS UTILITY NOTES:

- 1. PRIOR TO CONSTRUCTION ALL POTENTIAL UTILITY/DRAINAGE CONFLICTS MUST BE IDENTIFIED BY THE CONTRACTOR.
2. OVERHEAD AND/OR UNDERGROUND ELECTRIC, GAS AND COMMUNICATIONS SERVICES ARE TO BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.

LEGEND:

- EXISTING PROPERTY LINE
ABUTTING PROPERTY LINE
BUILDING SETBACK LINE
WETLAND EDGE
WETLAND FLAG
EXISTING CONTOUR
PROPOSED CONTOUR
EXISTING CURB
PROPOSED CURB
EXISTING METAL FENCE
CHAIN LINK FENCE
EXISTING DRAIN LINE
PROPOSED DRAIN LINE
EXISTING DRAINAGE MANHOLE
PROPOSED DRAINAGE MANHOLE
EXISTING CATCH BASIN
PROPOSED CATCH BASIN
EXISTING UTILITY POLE
PROPOSED UTILITY POLE
EXISTING TELECOM DUCTBANK
EXISTING ELECTRIC DUCTBANK
PROPOSED GAS LINE
EXISTING WATER LINE
PROPOSED WATER LINE
WATER GATE
WATER VALVE
EXISTING SEWER LINE
PROPOSED SEWER LINE
EXISTING SEWER MANHOLE
PROPOSED SEWER MANHOLE
NOW OR FORMERLY
TREELINE
SILT FENCE
LIMIT OF DISTURBANCE
TEST HOLE
BOLLARD
HYDRANT
LAMP POLE
FIRE DEPARTMENT CONTROL
EXISTING HANDICAP
PROPOSED HANDICAP
EXISTING TREE

JOE CASALI ENGINEERING, INC. CIVIL, SITE DEVELOPMENT, TRANSPORTATION, DRAINAGE, WETLANDS, ISDS, TRAFFIC, FLOODPLAIN, 300 Post Road, Warwick, RI 02888 (401) 944-1300 (401) 944-0174 FAX: (401) 944-0174 WWW.JOE-CASALI.COM

JOSEPH A. CASALI No. 7250 REGISTERED PROFESSIONAL ENGINEER CIVIL

HIGHLAND MEADOWS (PHASE II) PROPOSED MINOR SUBDIVISION CENTRAL AVENUE JOHNSTON, RHODE ISLAND AP 43-4, LOT 94

Environmental Management AUG 26 2020 Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF WATER RESOURCES FRESHWATER WETLANDS PROGRAM REVIEWED SITE PLAN APPLICATION NO.: 20-0037 DATED NOV 23 2020 SEE LETTER OF SAME DATE.

Table with 2 columns: NO. DATE DESCRIPTION. Rows include 1/17/2020 PLANNING RTC, 4/24/2020 CONCEPT REVIEW, 6/2020 MASTER-PREL, 8/25/20 RIDEM RTC.

Table with 2 columns: DESIGNED BY: DRD, DRAWN BY: SEP/SD, CHECKED BY: JAC, DATE: FEB. 2020, PROJECT NO: 19-35a.

PRELIMINARY, NOT FOR CONSTRUCTION

GENERAL NOTES & LEGEND

SHEET 2 OF 8

ZONING CRITERIA	REQUIRED	EXISTING (LOT 94)
ZONING DISTRICT	R-40	R-40
MINIMUM LOT AREA	40,000 SF	372,449 SF
MINIMUM LOT WIDTH AND FRONTAGE (1)	140 FT	NA
MINIMUM FRONT YARD DEPTHS	40 FT	NA
MINIMUM SIDE YARD DEPTH	35 FT	NA
MINIMUM REAR YARD DEPTH	75 FT	NA
MAXIMUM STRUCTURE HEIGHT (MAIN)	30 FT	NA
MAXIMUM BUILDING COVERAGE	15%	0%

(1) LOT WIDTH AND FRONTAGE SHALL BE CONTINUOUS, NOT INTERRUPTED BY ANY OTHER LOT AND ON A TOWN-ACCEPTED ROAD.

	SOIL EVALUATION TEST PIT DATA		
	SURFACE EL.	SHWT / EL.	LEDGE / EL.
TH-1	472.0	24' / 470.0	93' / 464.3
TH-2	475.0	18' / 473.5	48' / 471.0
TH-3	479.5	18' / 478.0	75' / 473.3
TH-4	477.0	20' / 475.3	48' / 473.0
TH-5	470.0	18' / 468.5	84' / 463.0
TH-6	469.5	18' / 468.0	84' / 462.5
TH-7	468.5	18' / 467.0	NE
TH-8	466.0	21' / 464.3	NE
TH-9	466.5	18' / 465.0	NE
TH-10	464.0	18' / 462.5	NE
TH-11	459.0	21' / 457.3	NE
TH-12	456.7	20' / 455.0	NE
TH-13	449.0	24' / 447.0	60' / 444.0
TH-14	444.0	28' / 441.7	62' / 438.8
TH-15	443.0	30' / 440.5	68' / 437.3
TH-16	469.0	36' / 466.0	42' / 465.5
TH-17	462.5	NE	24' / 460.5
TH-18	458.0	NE	26' / 455.8
TH-19	451.5	35' / 448.6	46' / 447.7
TH-20	463.0	28' / 460.7	74' / 456.8
TH-21	458.5	30' / 456.0	96' / 450.5
TH-22	456.0	32' / 453.3	64' / 450.7
TH-23	452.0	34' / 449.2	64' / 446.7

	LEDGE TEST DATA	
	SURFACE EL.	LEDGE / EL.
LT-1	480.3	68' / 474.6
LT-2	477.7	50' / 473.5
LT-3	474.3	58' / 469.5
LT-4	476.9	72' / 470.9
LT-5	471.0	110' / 461.8
LT-6	470.2	98' / 462.0
LT-7	468.8	99' / 460.6
LT-8	468.4	97' / 460.3
LT-9	473.6	68' / 467.9
LT-10	475.7	48' / 471.7
LT-11	474.0	36' / 471.0
LT-12	471.0	90' / 463.5
LT-13	475.9	54' / 471.4
LT-14	469.3	36' / 466.3
LT-15	467.5	24' / 465.5
LT-16	467.5	36' / 464.5
LT-17	466.0	12' / 465.0

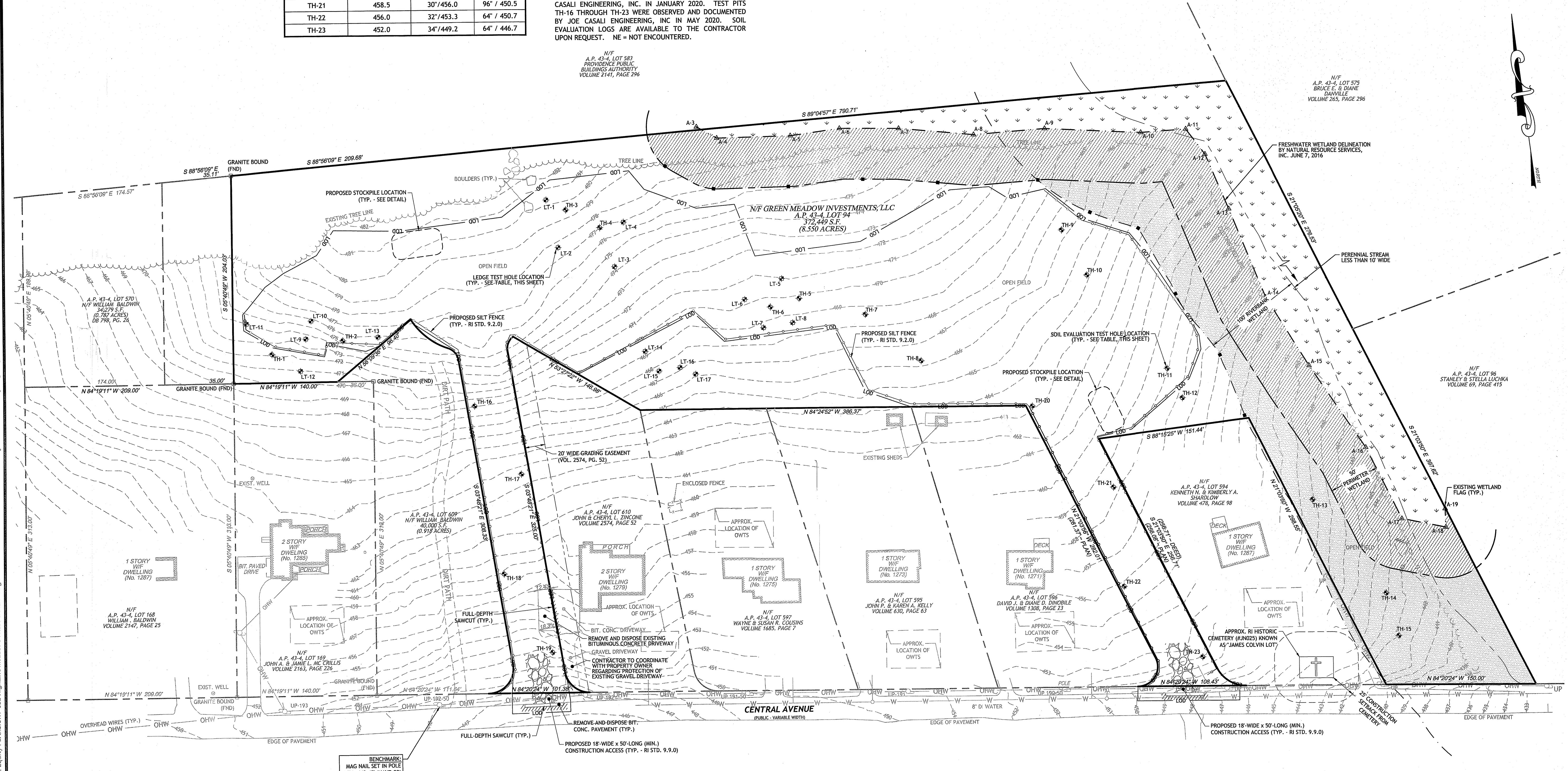
NOTE: TEST PITS TH-1 THROUGH TH-12 AND LEDGE TESTS WERE OBSERVED AND DOCUMENTED BY NATIONAL RESOURCE SERVICES, INC., IN DECEMBER 2019. TEST PITS TH-13 THROUGH TH-15 WERE OBSERVED AND DOCUMENTED BY JOE CASALI ENGINEERING, INC. IN JANUARY 2020. TEST PITS TH-16 THROUGH TH-23 WERE OBSERVED AND DOCUMENTED BY JOE CASALI ENGINEERING, INC. IN MAY 2020. SOIL EVALUATION LOGS ARE AVAILABLE TO THE CONTRACTOR UPON REQUEST. NE = NOT ENCOUNTERED.

N/F A.P. 43-4 LOT 583 PROVIDENCE PUBLIC BUILDINGS AUTHORITY VOLUME 2141, PAGE 296

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
REVIEWED SITE PLAN APPLICATION NO.: 20-0037  
DATED NOV 23 2020  
SEE LETTER OF SAME DATE.

JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - EROSION CONTROL - FLOODPLAIN  
MANAGEMENT - TRAFFIC - PLANNING - PAVEMENT  
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JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
10.5.2020



**HIGHLAND MEADOWS (PHASE II)  
PROPOSED MINOR SUBDIVISION**  
CENTRAL AVENUE  
JOHNSTON, RHODE ISLAND  
AP 43-4, LOT 94

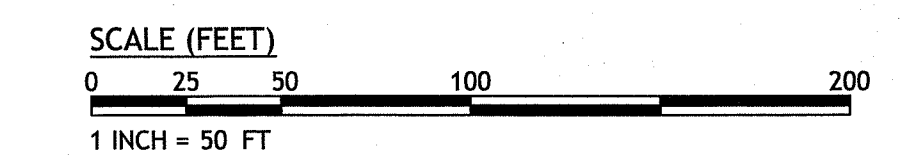
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DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: FEB 2020  
PROJECT NO: 19-35a

PRELIMINARY, NOT FOR CONSTRUCTION

**SITE PREPARATION PLAN**

**SHEET 3 OF 8**



Q:\19-35 Northeast Equity Partners\19-35a Highland Meadows Phase II\Minor Subdivision\PERMIT SET Rev. 21 Aug. 26, 2020 8:30am

ZONING CRITERIA	REQUIRED	EXISTING	PROPOSED			
			LOT 1	LOT 2	LOT 3	LOT 4
ZONING DISTRICT	R-40	RS-40	RS-40	RS-40	RS-40	RS-40
MINIMUM LOT AREA	40,000 SF	372,449 SF	70,084 SF	73,269 SF	88,305 SF	133,576 SF
MINIMUM LOT WIDTH AND FRONTAGE (1) (2)	140 FT	NA	204.87 FT	186.80 FT	140.00 FT	152.94 FT
MINIMUM FRONT YARD DEPTHS	40 FT	NA	>40 FT	>40 FT	>40 FT	>40 FT
MINIMUM SIDE YARD DEPTH	35 FT	NA	>35 FT	>35 FT	>35 FT	>35 FT
MINIMUM REAR YARD DEPTH	75 FT	NA	>75 FT	>75 FT	>75 FT	>75 FT
MAXIMUM STRUCTURE HEIGHT (MAIN)	30 FT	NA	<30 FT	<30 FT	<30 FT	<30 FT
MAXIMUM BUILDING COVERAGE	15%	0%	2.3%	2.2%	1.8%	1.2%

(1) LOT WIDTH AND FRONTAGE SHALL BE CONTINUOUS, NOT INTERRUPTED BY ANY OTHER LOT AND ON A TOWN-ACCEPTED ROAD.  
(2) LOT FRONTAGE IS CALCULATED AS FRONTAGE ALONG THE PRIVATE RIGHT-OF-WAY.

- SUBDIVISION NOTES:**
- THIS OVERALL SUBDIVISION PROJECT RECEIVED MASTER PLAN APPROVAL BY THE TOWN OF JOHNSTON PLANNING BOARD ON NOVEMBER 1, 2016 (BOOK 2555, PAGES 204 THROUGH 208). IN ADDITION, PHASE I OF THIS PROJECT RECEIVED PRELIMINARY PLAN APPROVAL BY THE TOWN OF JOHNSTON PLANNING BOARD ON NOVEMBER 1, 2016. PHASE I OF THIS PROJECT RECEIVED FINAL PLAN APPROVAL ADMINISTRATIVELY BY THE TOWN OF JOHNSTON PLANNER IN DECEMBER 2016.
  - THE SCOPE OF THIS PRELIMINARY PLAN IS RELATIVE TO PHASE II OF THE OVERALL SUBDIVISION PROJECT, AS SHOWN ON THE MASTER PLAN DOCUMENTS, AS RECORDED IN THE TOWN OF JOHNSTON LAND EVIDENCE RECORDS (BOOK 2555, PAGES 204 THROUGH 208).
  - PROPOSED LOTS ARE TO BE SERVICED BY INDIVIDUAL ON-SITE WASTEWATER TREATMENT SYSTEMS (OWTS) AND INDIVIDUAL PRIVATE WELLS. ELECTRICAL SERVICE IS PROPOSED TO BE PROVIDED VIA OVERHEAD ELECTRIC WITH POLES AS NECESSARY.
  - A HOMEOWNERS ASSOCIATION WILL BE DEVELOPED FOR PURPOSES OF ENSURING LONG-TERM MONITORING AND MAINTENANCE OF SHARED DRIVEWAYS AND STORMWATER MANAGEMENT AREAS.

**JOHNSTON LAND DEVELOPMENT & SUBDIVISION REVIEW REGULATIONS**

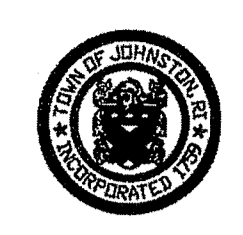
**SECTION II, ARTICLE C.2.e:** DENSITY CALCULATION WAIVER REQUEST TO ROUND UPWARD TO NEXT LOWER WHOLE NUMBER FOR THE MAXIMUM NUMBER OF DWELLING UNITS IN A RESIDENTIAL COMPOUND.

**SECTION II, ARTICLE C.2.e.2:** RESIDENTIAL DRIVEWAY AND GRASSPAVE POROUS GRASS PAVEMENT PROPOSED FOR TURNAROUND IN LIEU OF CUL-DE-SAC OR HAMMERHEAD.

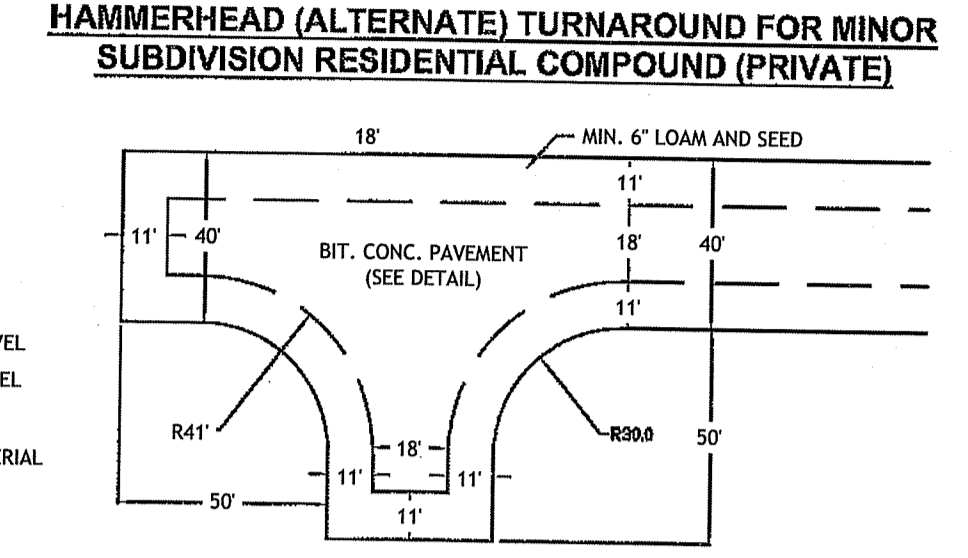
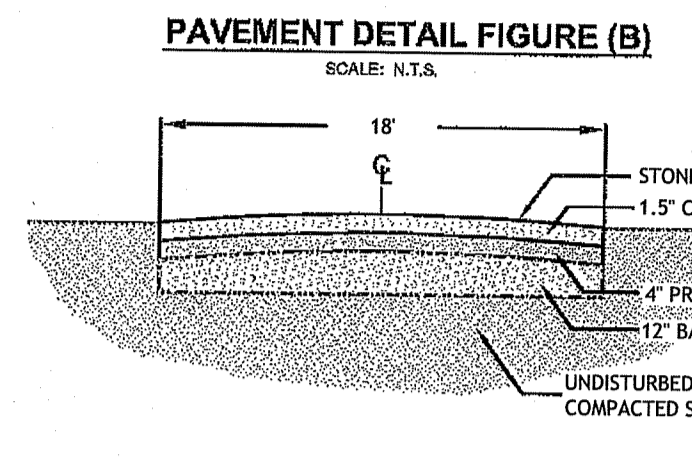
**YIELD CALCULATION:**

TOTAL AREA OF LOT 94: 372,449 SF  
YIELD = 372,449 SF / 100,000 SF = 3.72

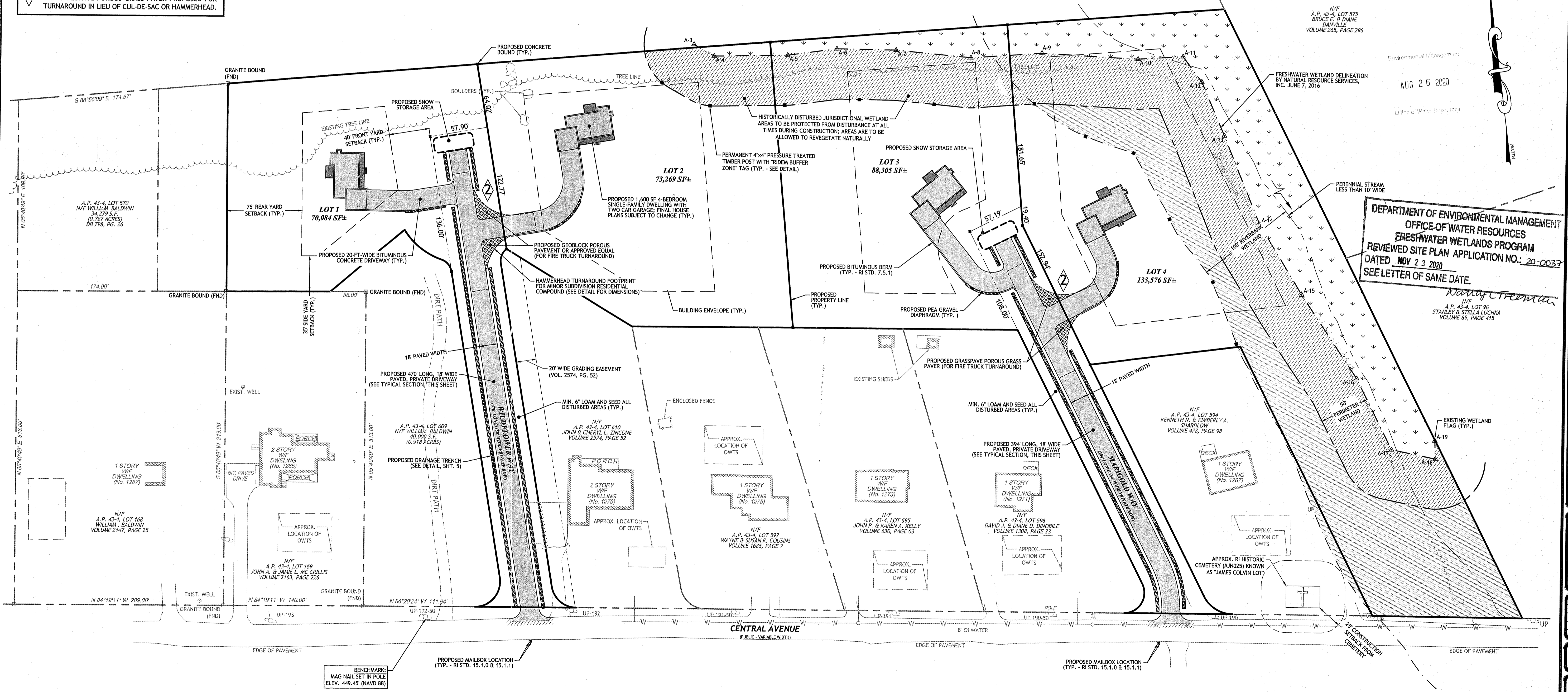
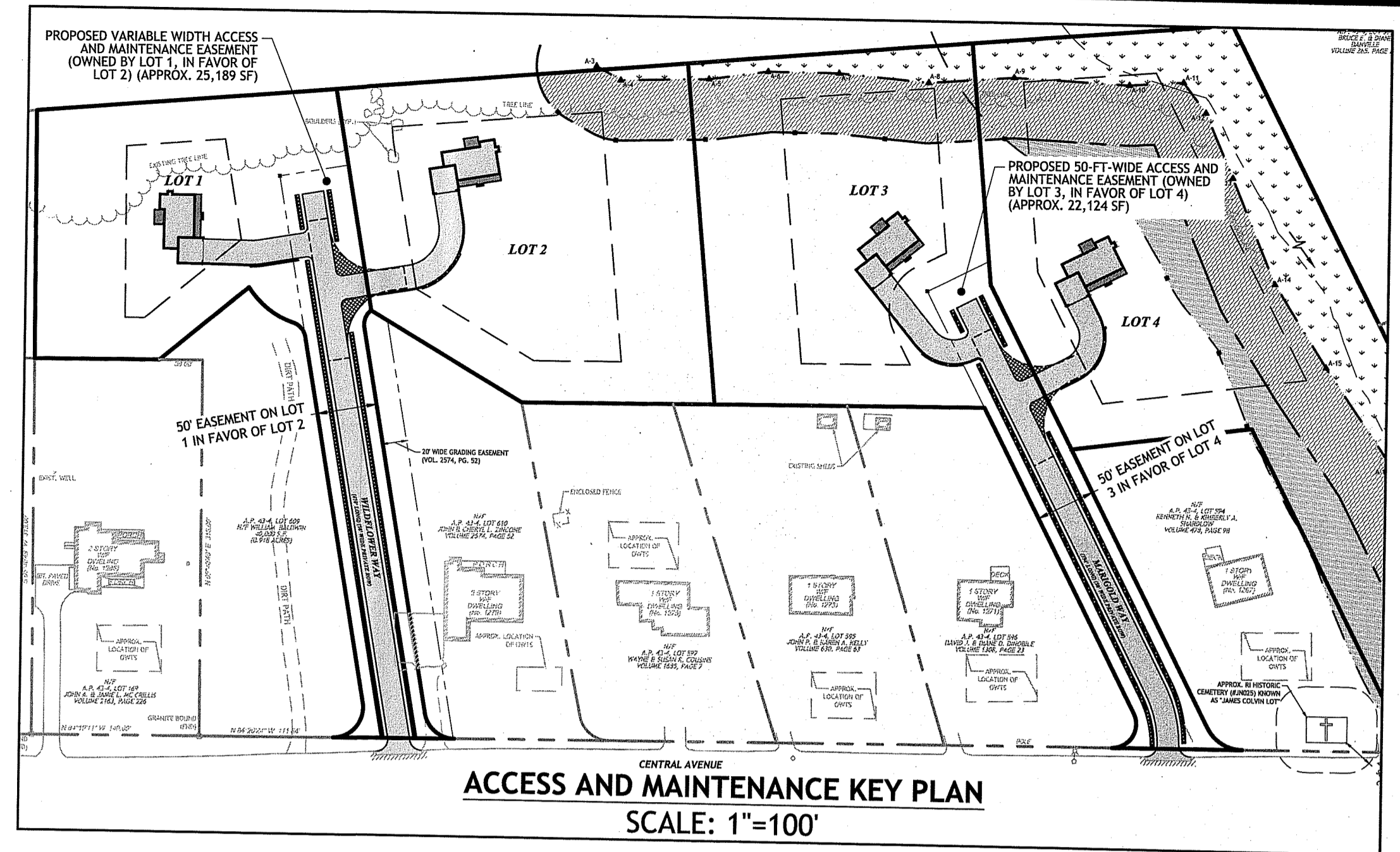
ALLOWED YIELD: 3 LOTS  
PROPOSED: 4 LOTS\* (WAIVER REQUEST)



**Town of Johnston Planning Department**  
**RESIDENTIAL COMPOUND / PRIVATE STREETS**  
**IN MINOR SUBDIVISIONS**



**1 TOWN OF JOHNSTON PRIVATE ROADWAY CROSS-SECTION & HAMMERHEAD TURN-AROUND**  
NOT TO SCALE



AUG 26 2020

**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF WATER RESOURCES**  
**FRESHWATER WETLANDS PROGRAM**  
**REVIEWED SITE PLAN APPLICATION NO. 20-0037**  
**DATED NOV 23 2020**  
**SEE LETTER OF SAME DATE.**

**JOE CASALI ENGINEERING, INC.**  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - EDES - TRAFFIC - FLOODPLAIN  
100 POST ROAD, WARWICK, RI 02888  
(401) 844-1200 - FAX (401) 844-1201 - WWW.JOEENGINEERING.COM

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

**HIGHLAND MEADOWS (PHASE II)**  
**PROPOSED MINOR SUBDIVISION**  
**CENTRAL AVENUE**  
**JOHNSTON, RHODE ISLAND**  
**AP 43-4, LOT 94**

**REVISIONS:**

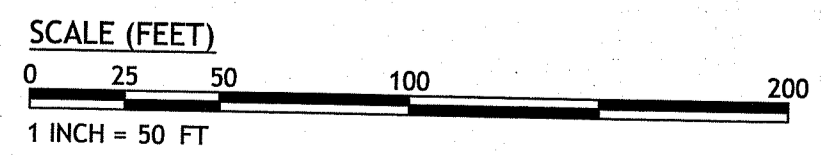
NO.	DATE	DESCRIPTION
1	2/17/2020	PLANNING RTC
2	4/24/2020	CONCEPT REVIEW
3	6/20/20	MASTER-PREL
4	8/25/20	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: FEB. 2020  
PROJECT NO: 19-35a

PRELIMINARY, NOT FOR CONSTRUCTION

**SITE PLAN**

**SHEET 4 OF 8**



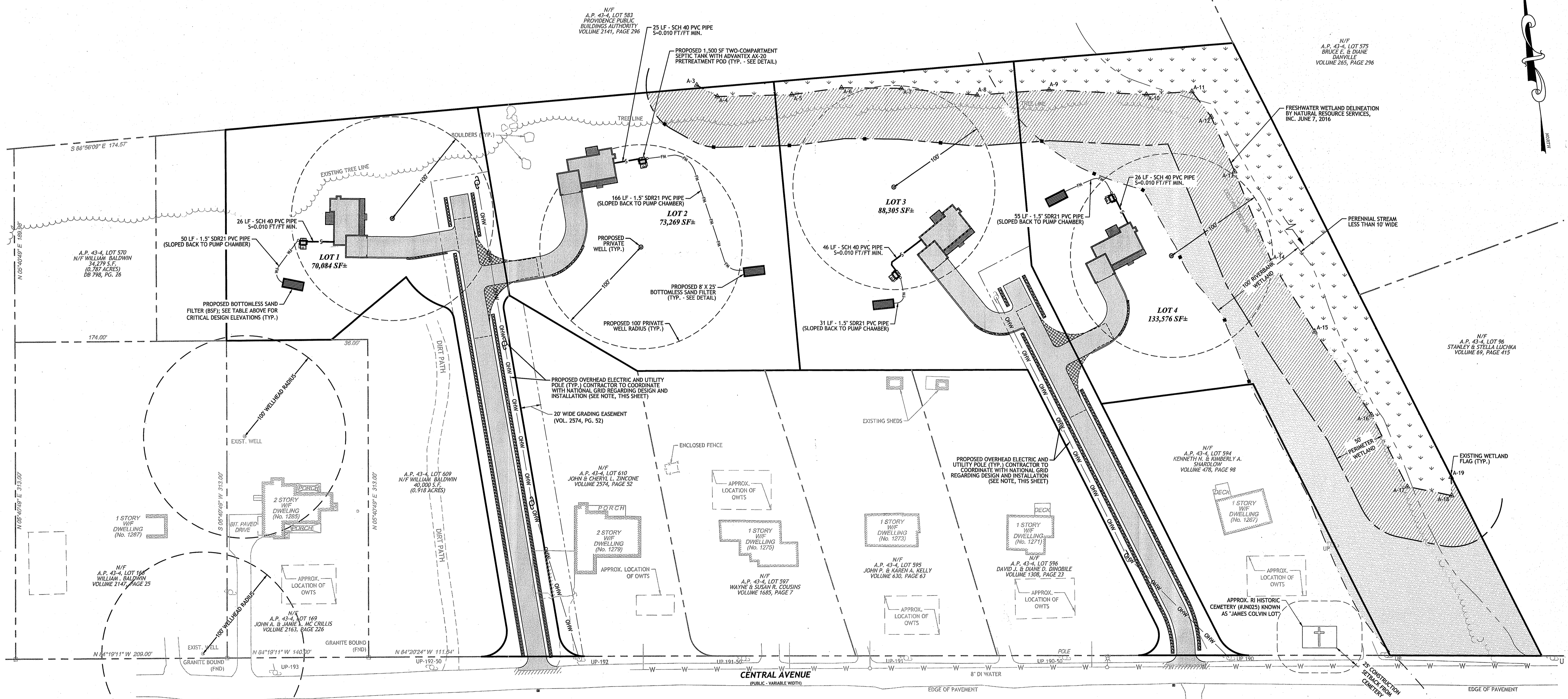
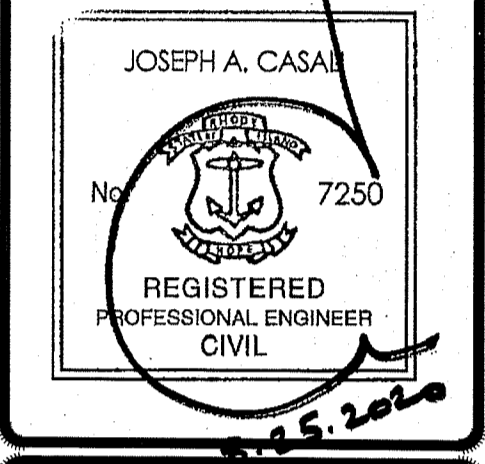
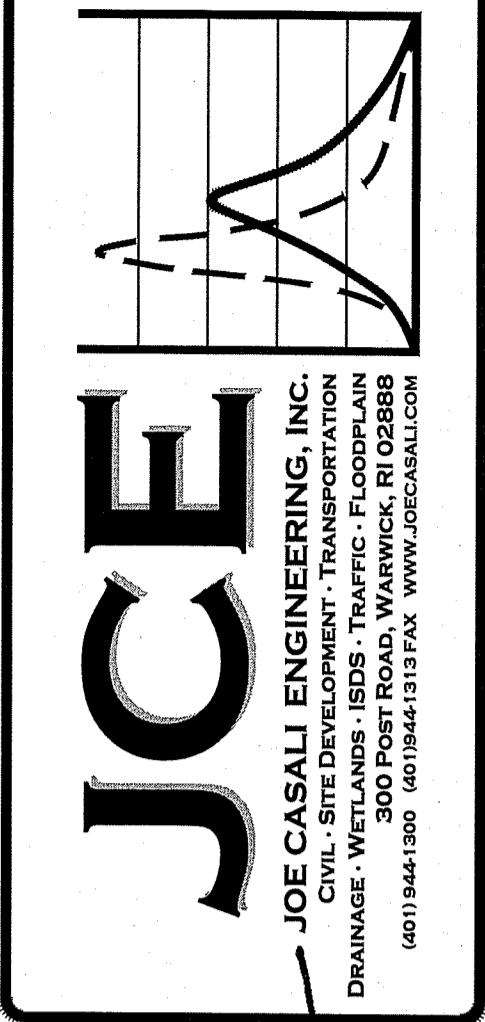
Q:\19-35 Northeast Equity Partners\19-35a Highland Meadows Phase II Minor Subdivision (PERMIT SET Rev. 2).dwg Aug. 26, 2020 8:30am



- GENERAL NOTE:**
1. ALL ELECTRIC UTILITIES TO BE INSTALLED ABOVE-GROUND.
- SITE LIGHTING NOTE:**
1. SITE LIGHTING ALONG SHARED DRIVEWAYS IS NOT ANTICIPATED.

Environmental Management  
 AUG 26 2020  
 Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 REVIEWED SITE PLAN APPLICATION NO.: 20-0037  
 DATED NOV 23 2020  
 SEE LETTER OF SAME DATE.



**HIGHLAND MEADOWS (PHASE II)**  
**PROPOSED MINOR SUBDIVISION**  
 CENTRAL AVENUE  
 JOHNSTON, RHODE ISLAND  
 AP 43-4, LOT 94

REVISIONS:

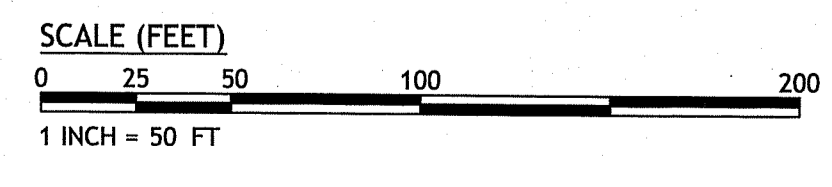
NO.	DATE	DESCRIPTION
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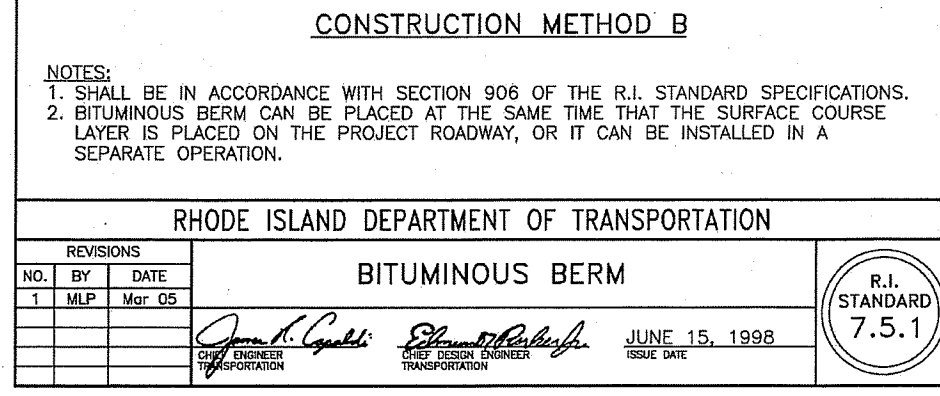
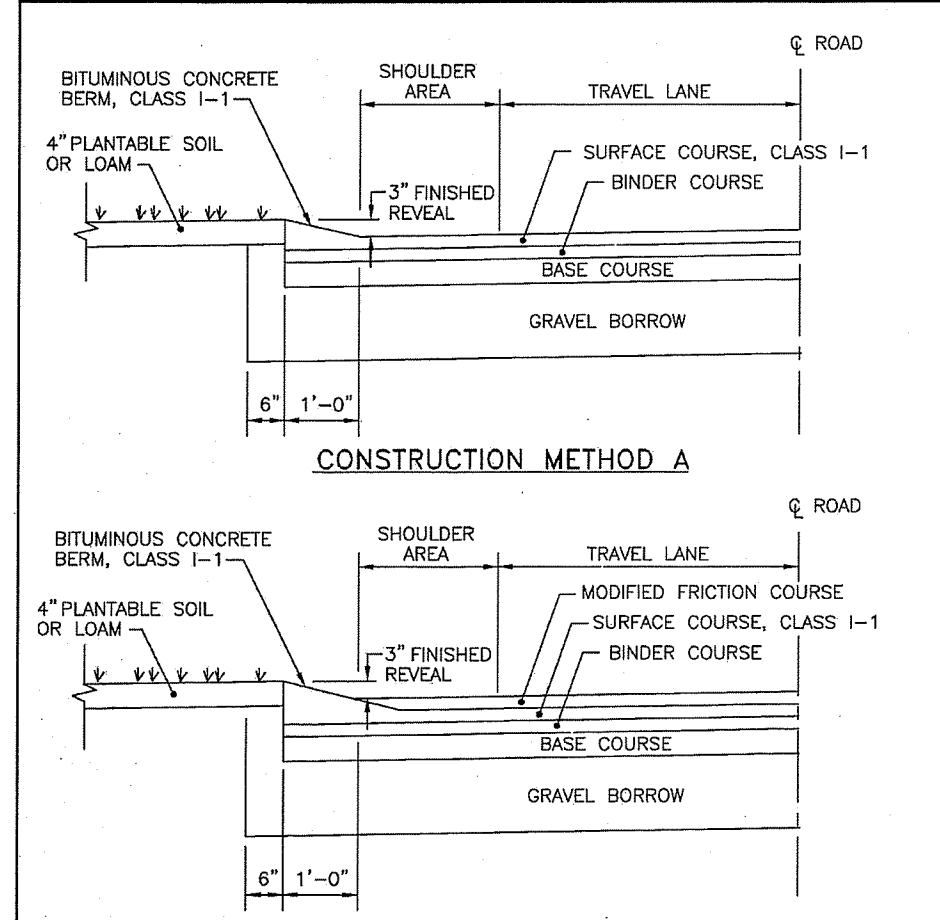
PRELIMINARY, NOT FOR CONSTRUCTION

**UTILITY PLAN**

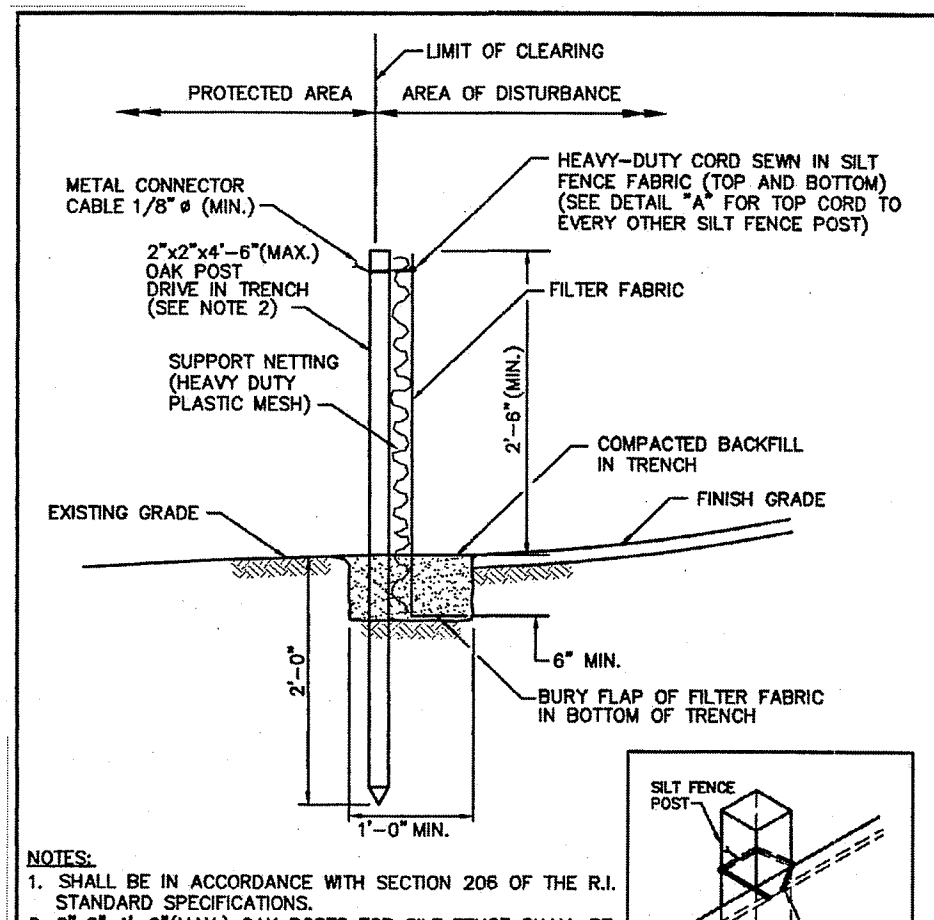
**SHEET 6 OF 8**



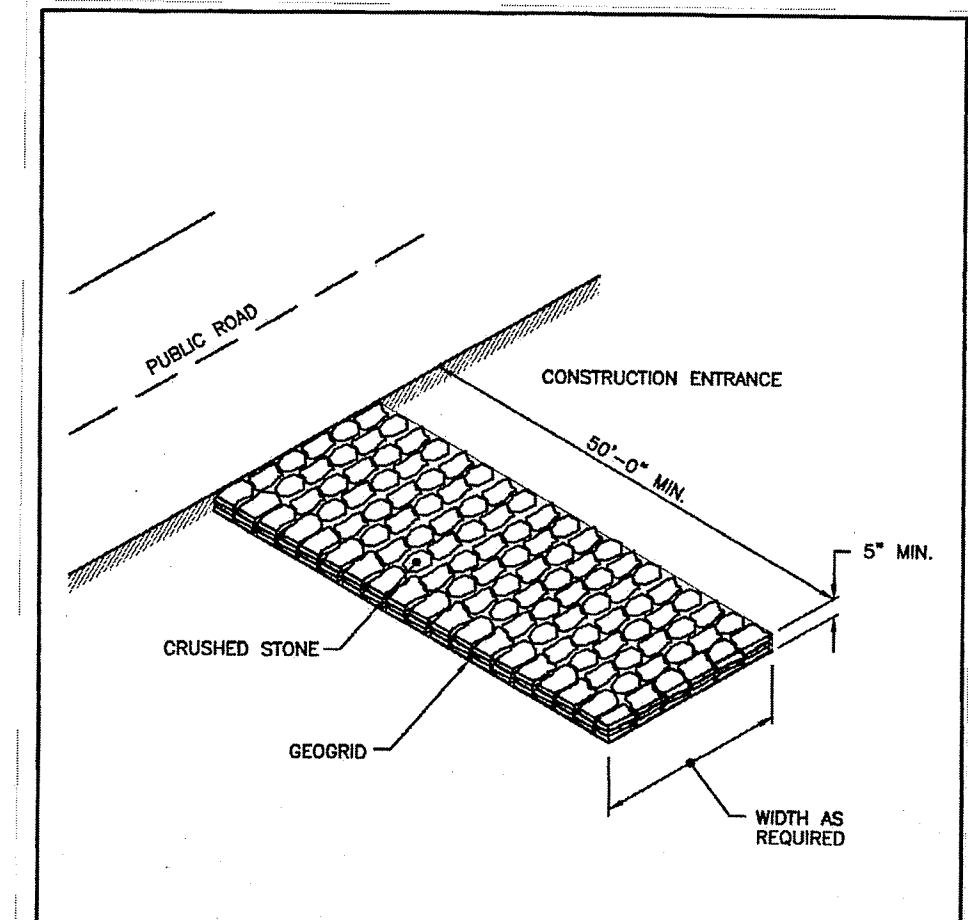
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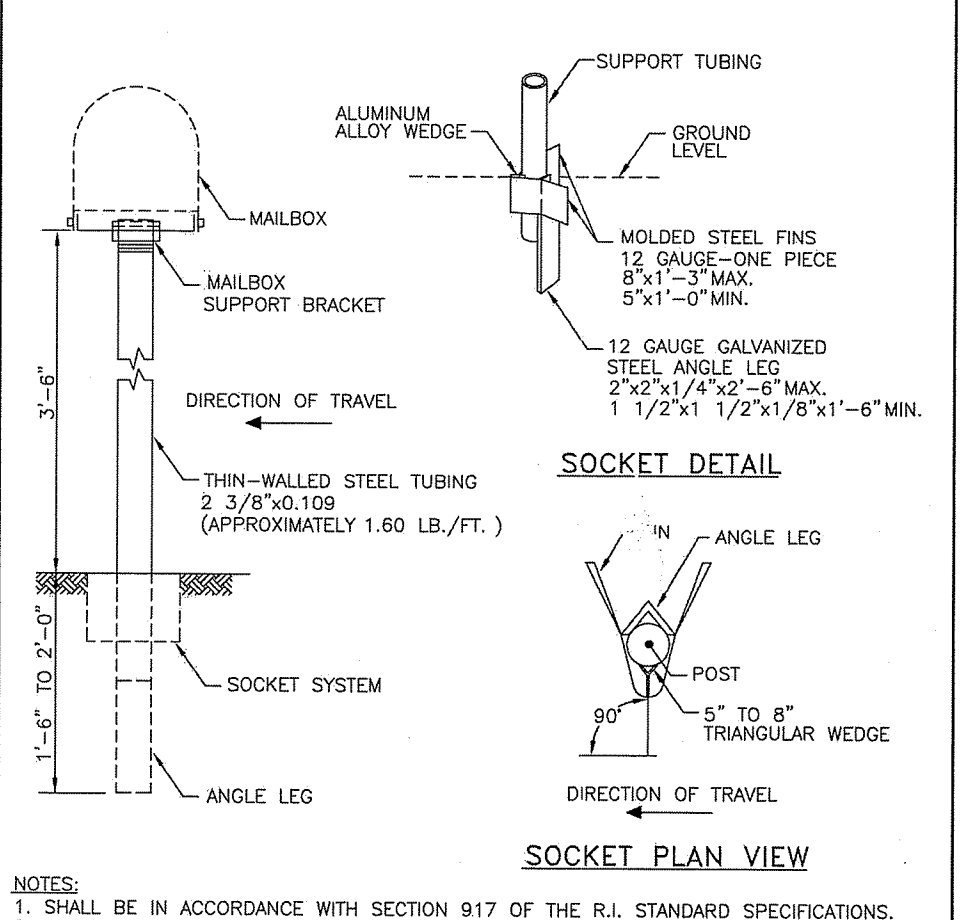
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
BITUMINOUS BERM  
R.I. STANDARD 7.5.1  
DATE: JUNE 15, 1998



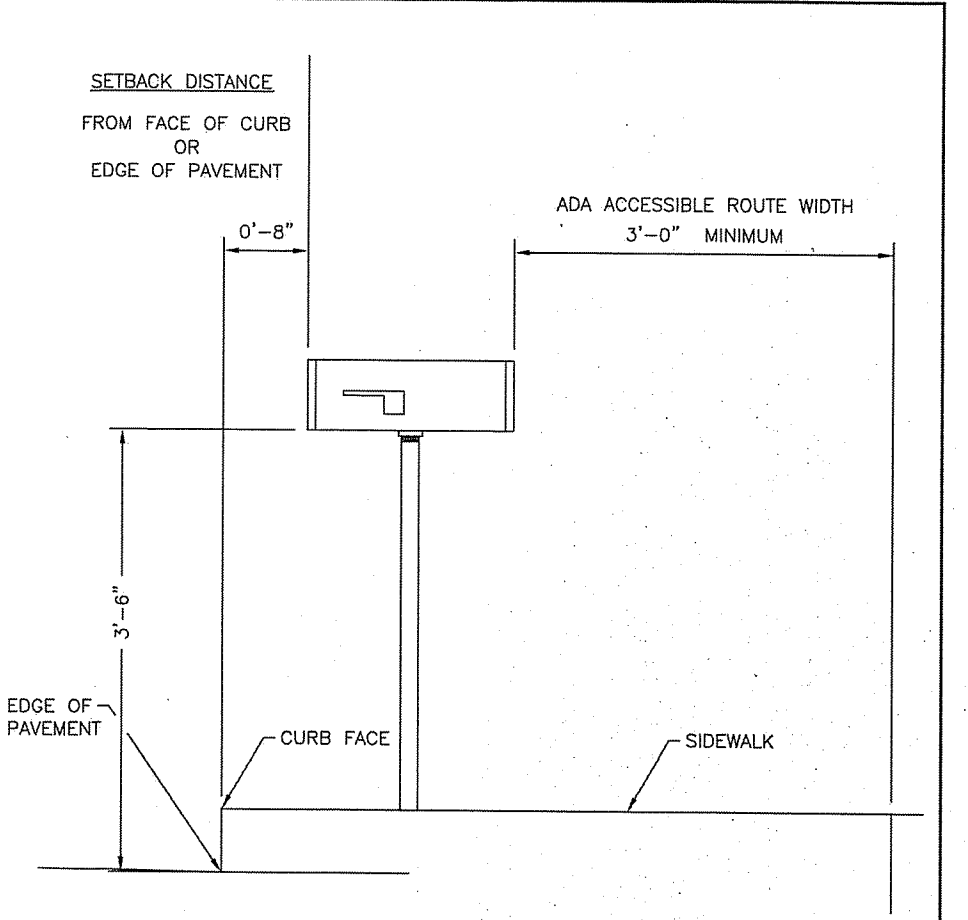
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
SILT FENCE DETAIL  
R.I. STANDARD 9.2.0  
DATE: JUNE 15, 1998



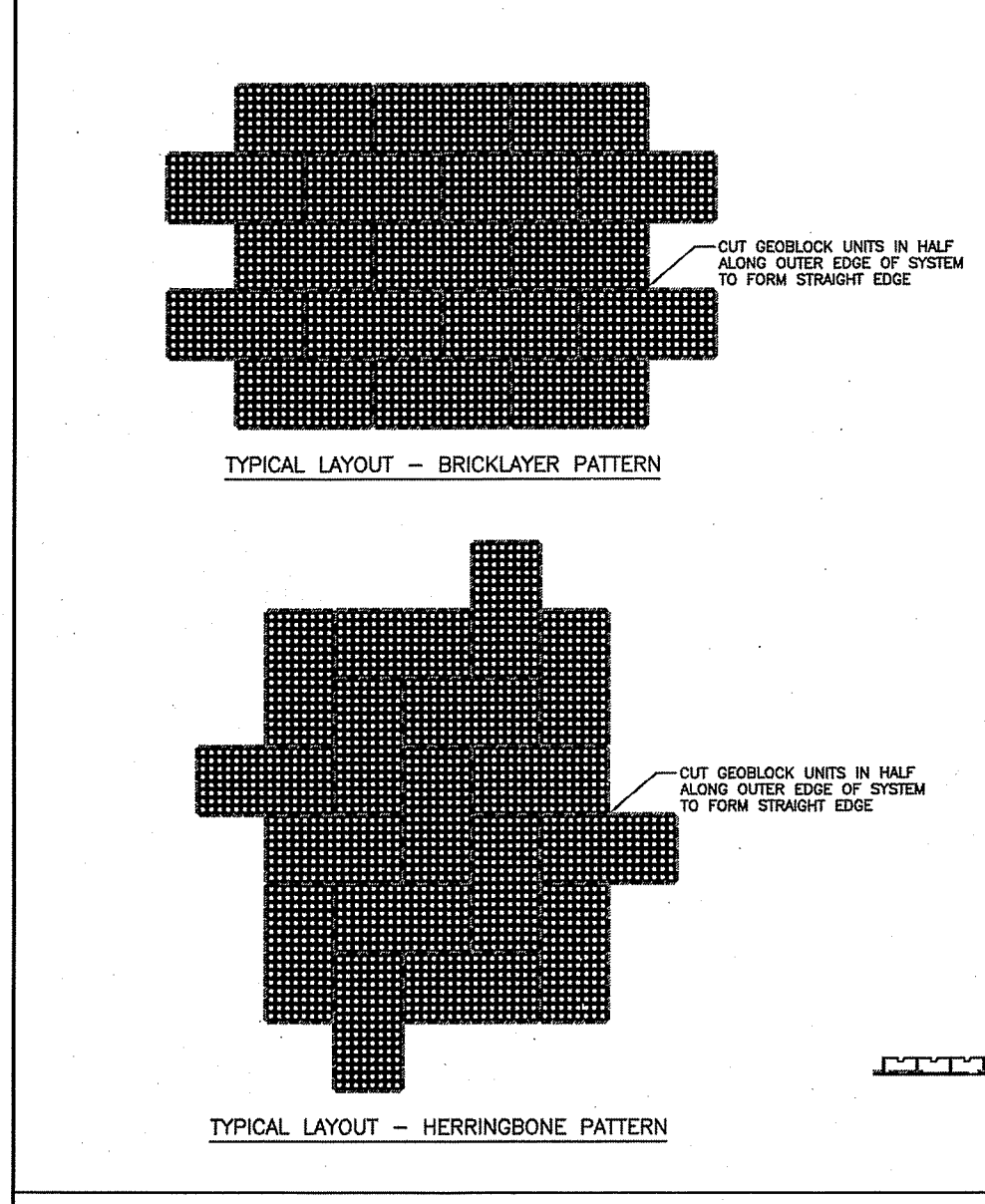
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION ACCESS  
R.I. STANDARD 9.9.0  
DATE: JUNE 15, 1998



RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
POST AND MOUNTING FOR RURAL MAILBOX  
R.I. STANDARD 15.1.0  
DATE: JUNE 15, 1998

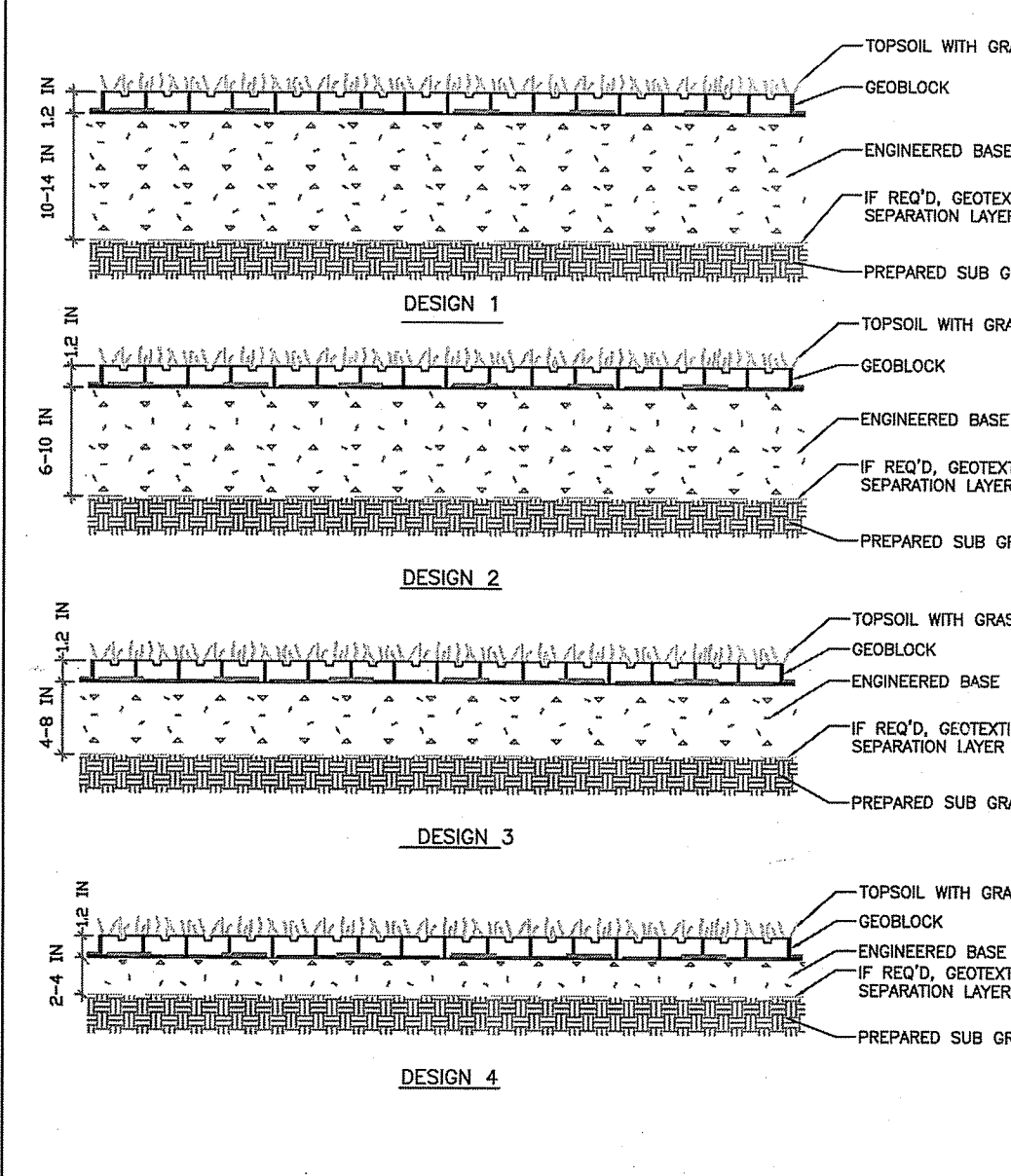


RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
SETTING AND MOUNTING DIMENSIONS FOR RURAL MAILBOX  
R.I. STANDARD 15.1.1  
DATE: JUNE 1, 2010



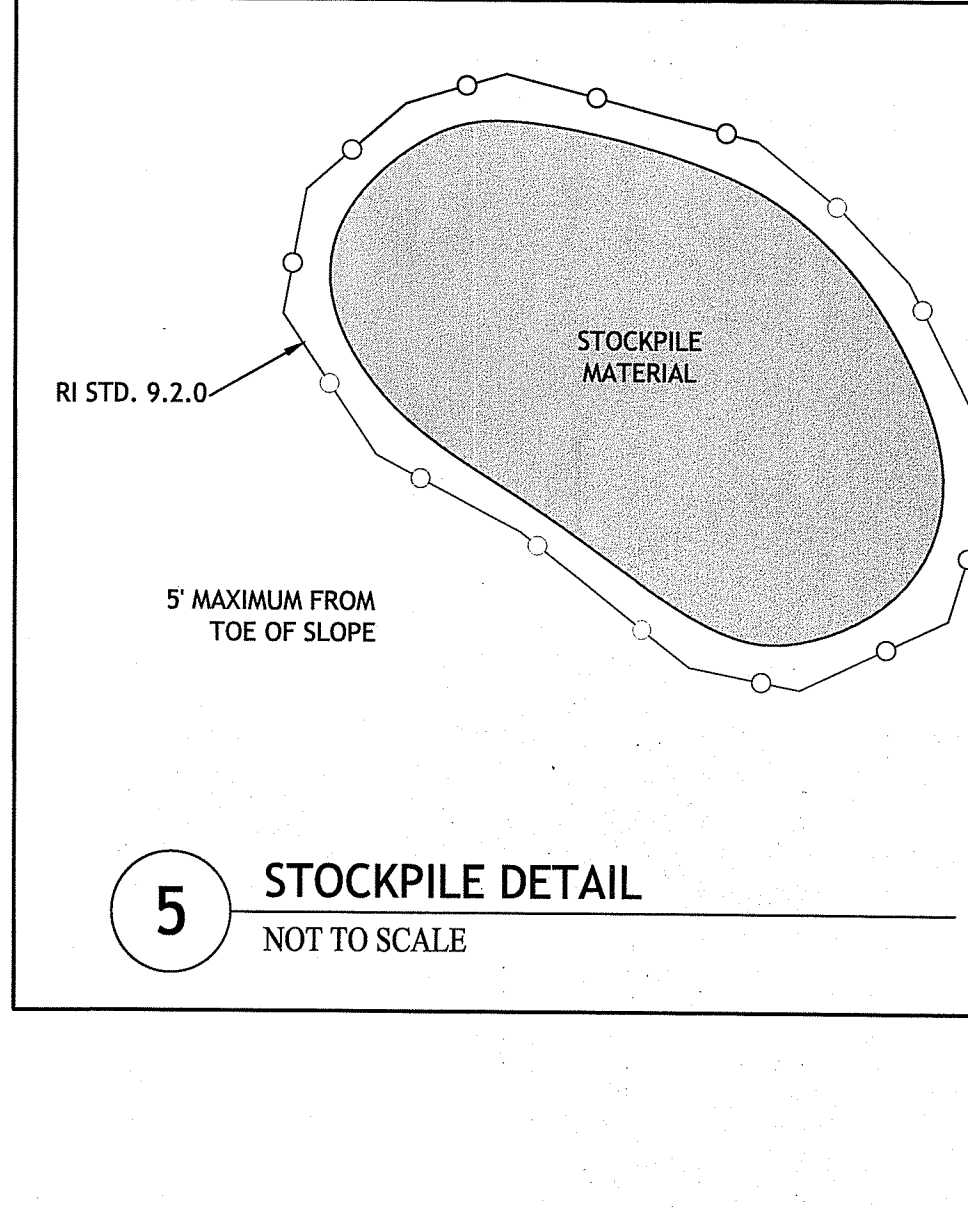
**GEOBLOCK MATERIAL SPECIFICATION**

MATERIAL	UP TO 1000 RECYCLED POLYETHYLENE
COLOR	HARDEST DARK SHADES ONLY TO BLACK
CHEMICAL RESISTANCE	SUPERIOR
CARBON BLACK FOR STABILIZATION, %	1.5 TO 2.0%
UNIT MIN CRUSH STRENGTH - EMPTY @ 70° (210)	420 PSI (2,800 KPa)
UNIT MIN CRUSH STRENGTH - SAND FILLED @ 70° (210)	5,980 PSI (41,285 KPa)
FLEXURAL MODULUS @ 73° (210)	35,000 PSI (240,000 KPa)
NOMINAL DIMENSIONS - WIDTH X LENGTH	20 x 40 IN (0.5 x 1.0 M)
NOMINAL UNIT DEPTH	1.2 IN (30 MM)
NORMAL AREA	5.3 SQ FT (0.5 SQHR)
CELL SIZE	2.25 X 2.25 IN (57 X 57 MM)
TOP OPEN AREA PER UNIT	1.6%
BOTTOM OPEN AREA PER UNIT	56%
INTERLOCKING OFFSET SHEAR TRANSFER PINS	12 TABS PER 40 IN (PER 1 M)
NOMINAL WEIGHT PER UNIT	4.7 LBS (2.1 KG)
RUNOFF COEFFICIENT @ 2.5 IN/HRS (64 MM) RAIN	0.15
UNITS PER PALLET	92

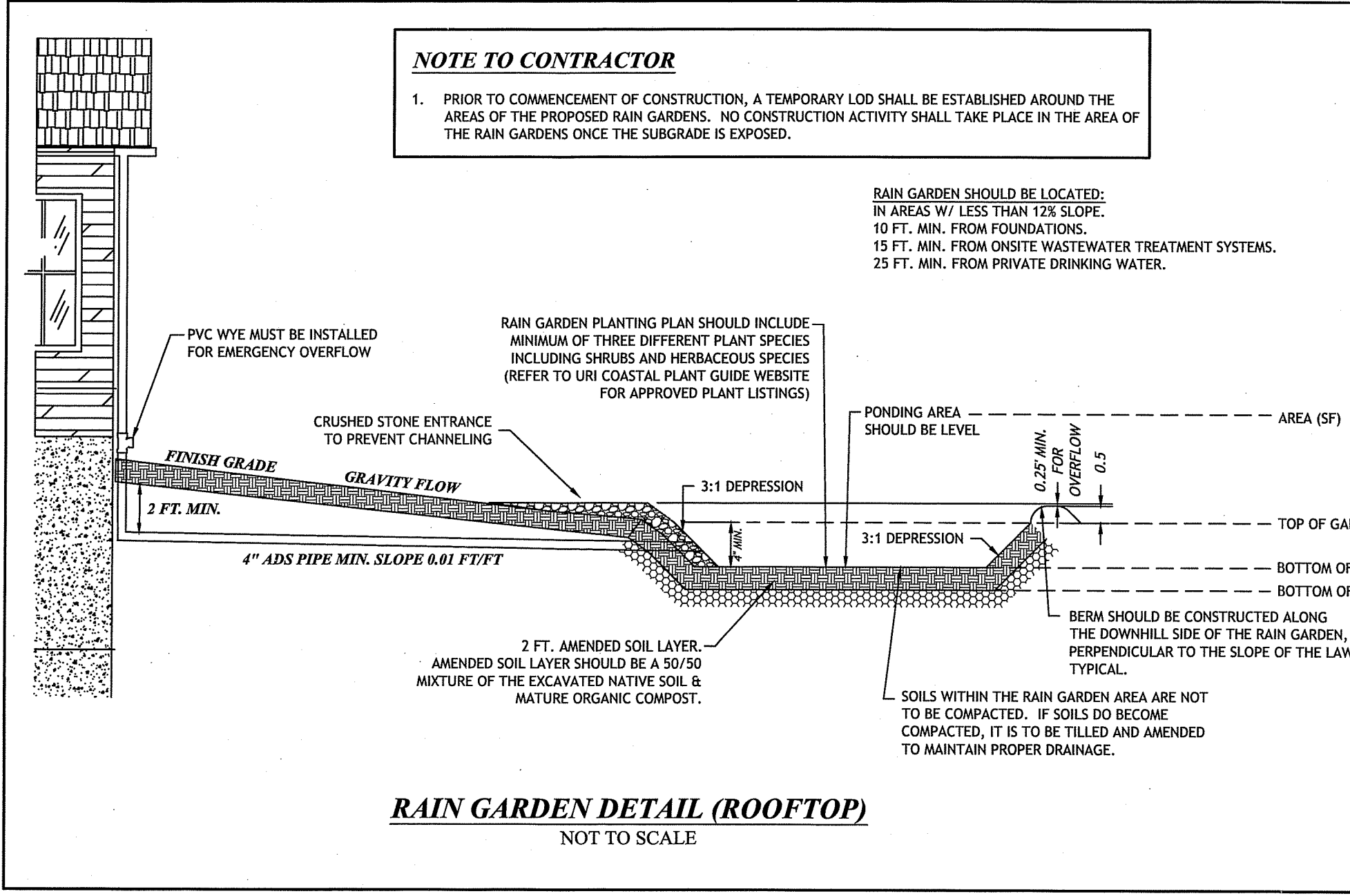


**DESIGN GUIDELINES**

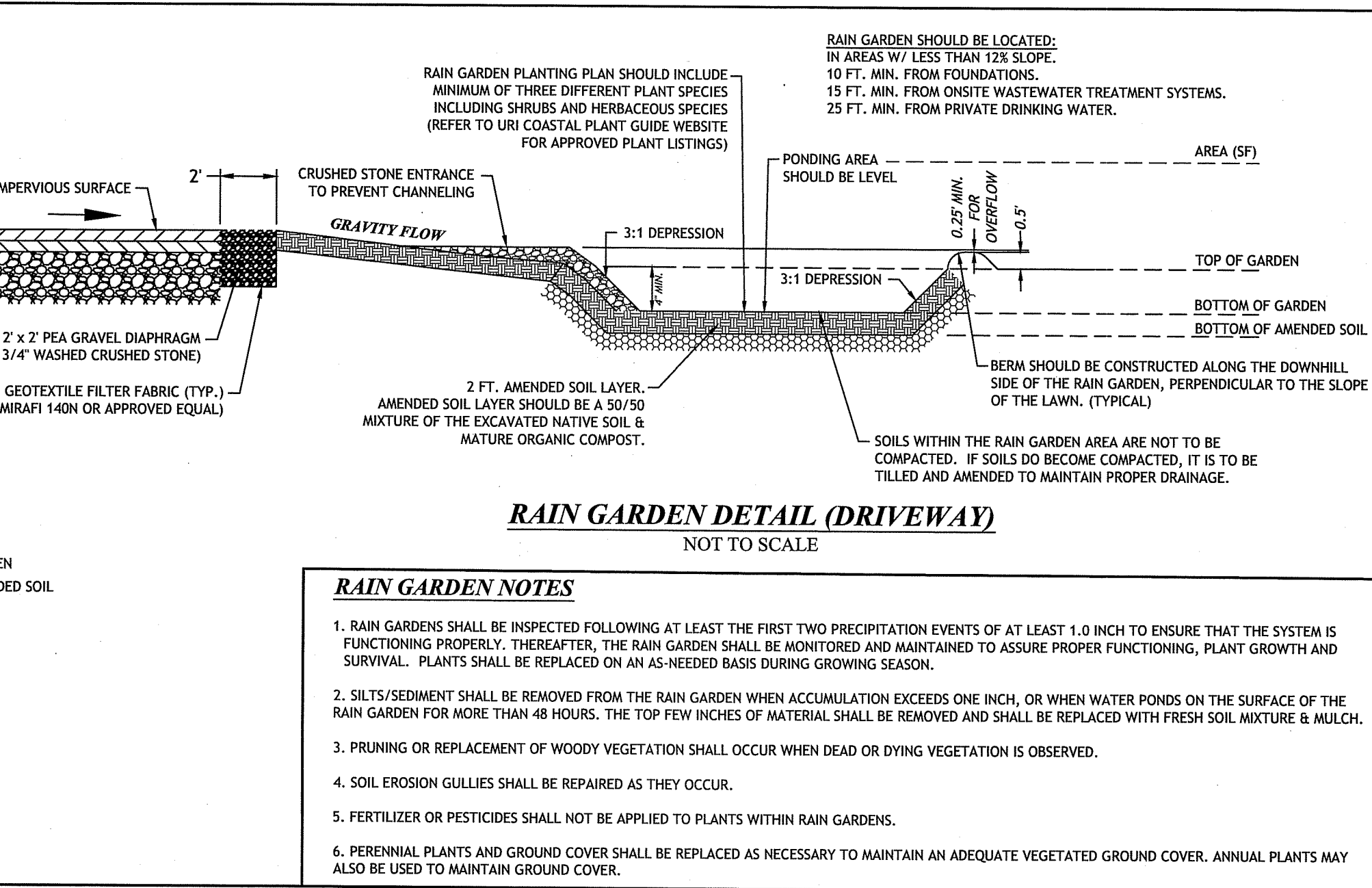
LOAD DESCRIPTION	CBR 2 - 4%	CBR > 4%
Heavy Fire Truck Access & H/HS-20 loading, Typical 110 psi (758 kPa) tire pressure. Single axle loadings of 32 kips (145 kN), tandem axle loadings of 48 kips (220 kN). Gross vehicle weight of 80,000 lbs (36.3 MT). Infrequent passes.	Design 1 - 14\"/>	



4 GEOBLOCK POROUS PAVEMENT  
NOT TO SCALE



4 GEOBLOCK POROUS PAVEMENT  
NOT TO SCALE



5 STOCKPILE DETAIL  
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
REVIEWED SITE PLAN APPLICATION NO.: 20-0037  
DATED NOV 23 2020  
SEE LETTER OF SAME DATE.

**RAIN GARDEN CRITICAL ELEVATIONS**

	LOT 1	LOT 2	LOT 3	LOT 4
RAIN GARDEN ID (SEE SHT. 5)	1A	1B	2A	2B
EXIST. GROUND ELEVATION	477.0	477.0	474.5	474.0
TOP OF GARDEN (BERM)	479.0	479.0	477.0	476.0
BOTTOM OF GARDEN	478.0	478.0	476.0	475.0
BOTTOM OF AMENDED SOIL	476.0	476.0	473.0	466.0
SHGWT ELEV.	475.5	475.5	473.0	466.0
SEPARATION TO SHGWT	2.5'	2.5'	3.0'	2.0'
LEDGE ELEV.	473.0	473.0	469.7	469.2
SEPARATION TO LEDGE	5.0'	5.0'	6.3'	5.8'
TEST HOLE REFERENCE	TH-2	TH-2	TH-3/LT-3	TH-3/LT-3

RAIN GARDEN DETAIL (ROOFTOP)  
NOT TO SCALE

RAIN GARDEN DETAIL (DRIVEWAY)  
NOT TO SCALE

RAIN GARDEN CRITICAL ELEVATIONS

**JCE**  
JOE CASALI ENGINEERING, INC.  
DRAINAGE, WETLANDS, EROSION CONTROL, TRAFFIC, FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
(401) 944-1500 (401) 944-9334 FAX WWW.JCEONLINE.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**HIGHLAND MEADOWS (PHASE II)**  
**PROPOSED MINOR SUBDIVISION**  
CENTRAL AVENUE  
JOHNSTON, RHODE ISLAND  
AP 43-4, LOT 94

AUG 26 2020

REVISIONS:

NO.	DATE	DESCRIPTION
1	2/17/2020	PLANNING RTC
2	4/24/2020	CONCEPT REVIEW
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DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: FEB. 2020  
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PRELIMINARY, NOT FOR CONSTRUCTION

**CIVIL/SITE DETAILS**

**SHEET 7 OF 8**

03/19/25 Northeast Equity Partners/19-35a Highland Meadows Phase II Minor Subdivision (PERMIT SET Rev. 2), Aug. 26, 2020 8:20am

**GENERAL OWTS NOTES:**

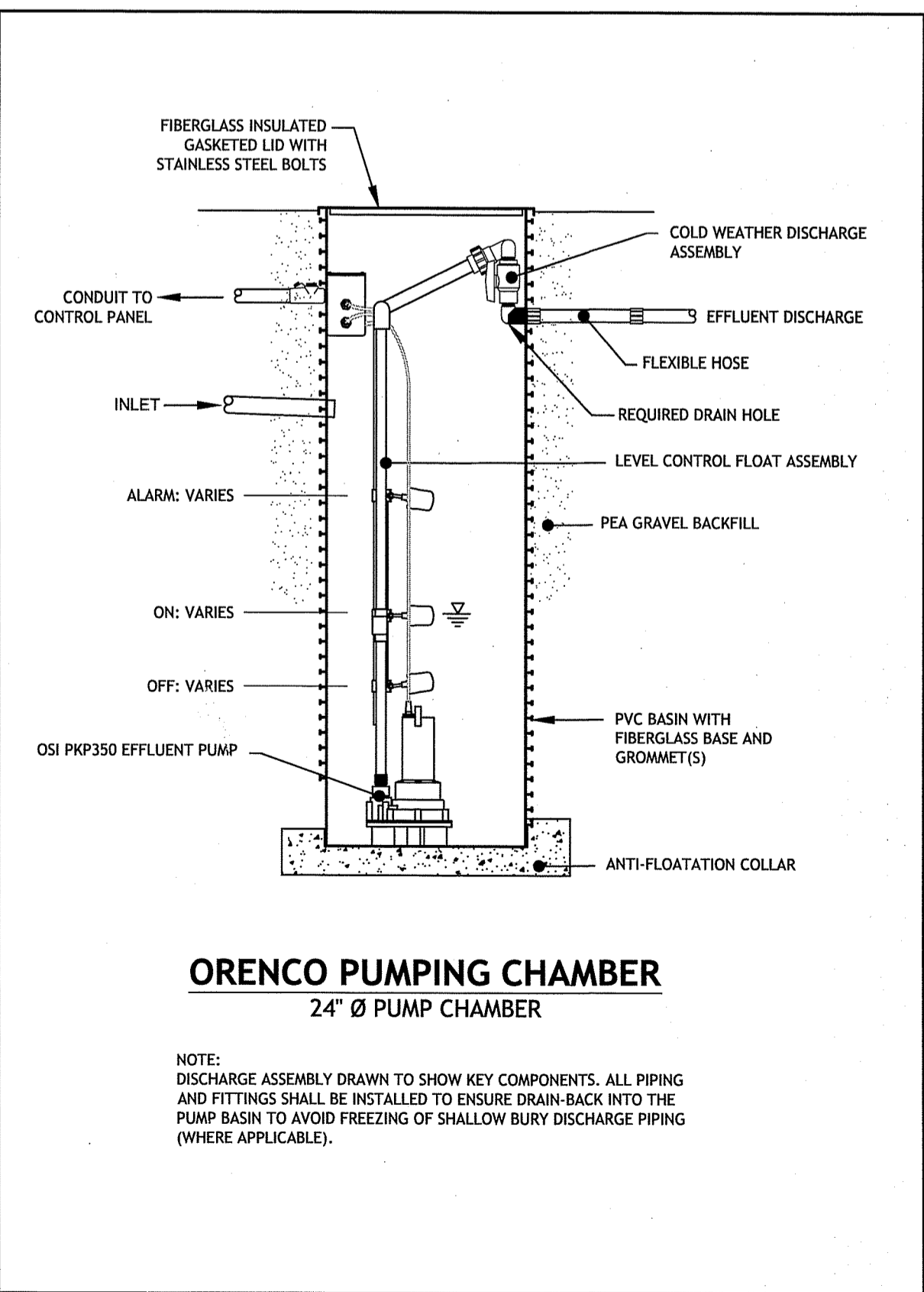
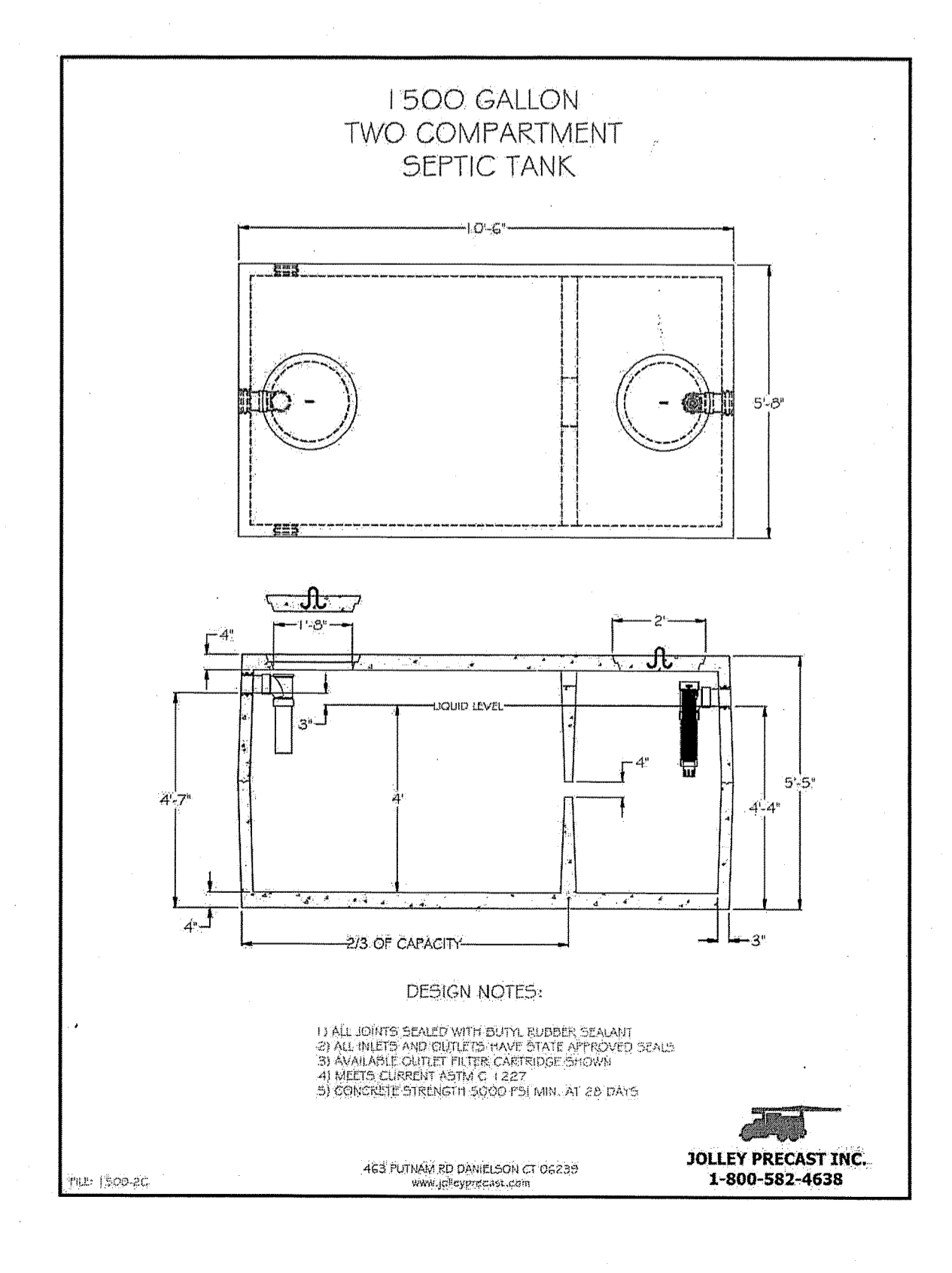
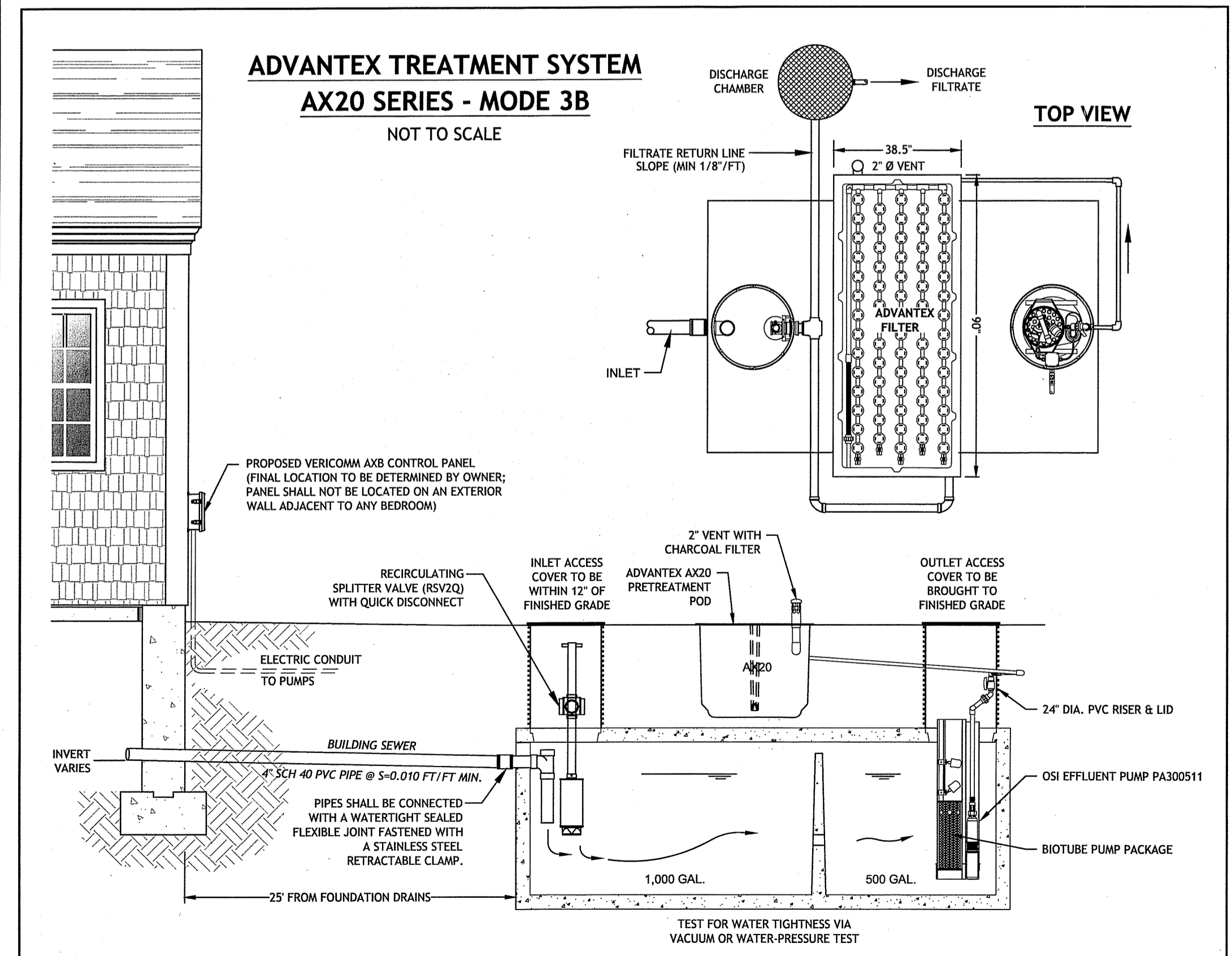
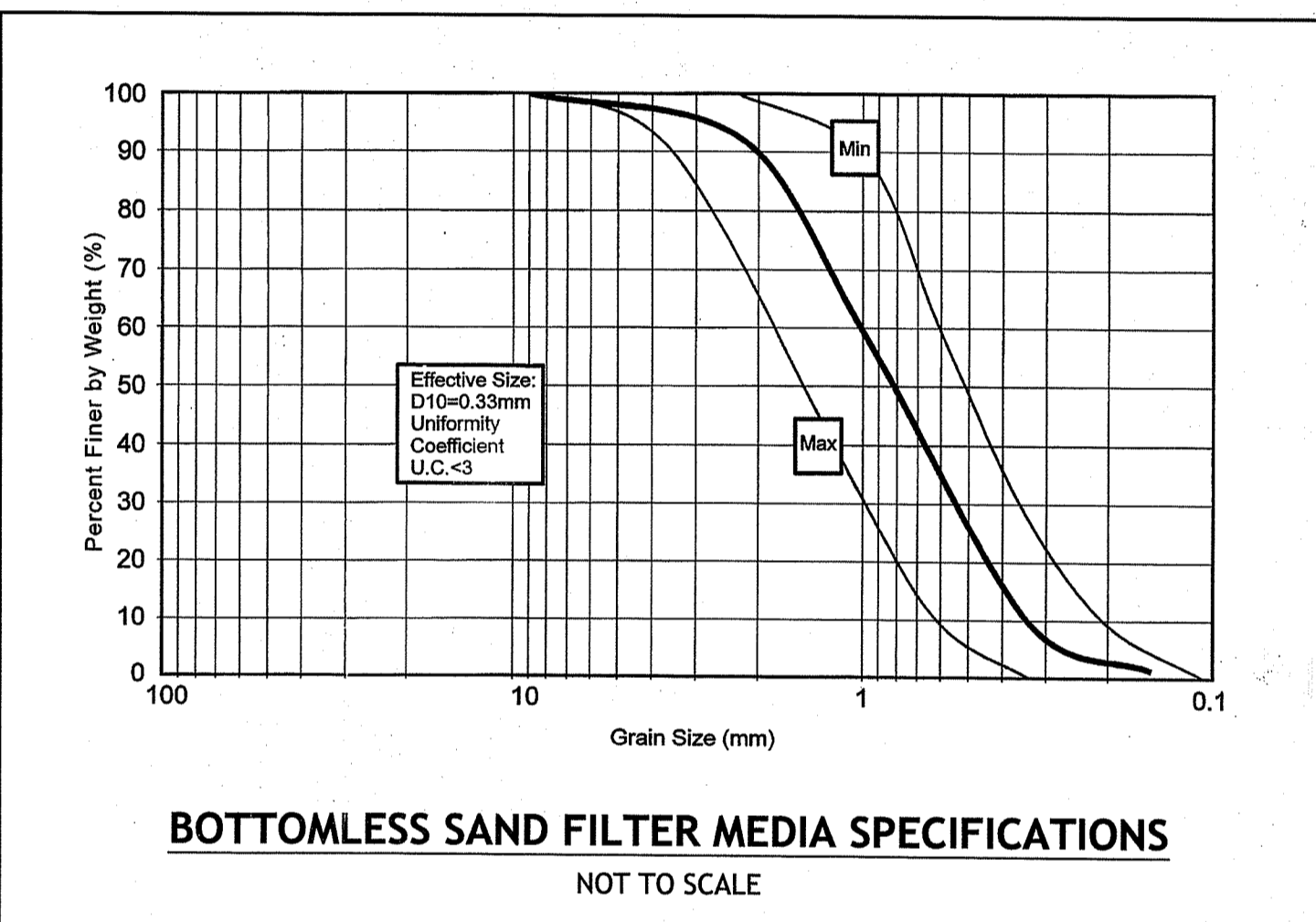
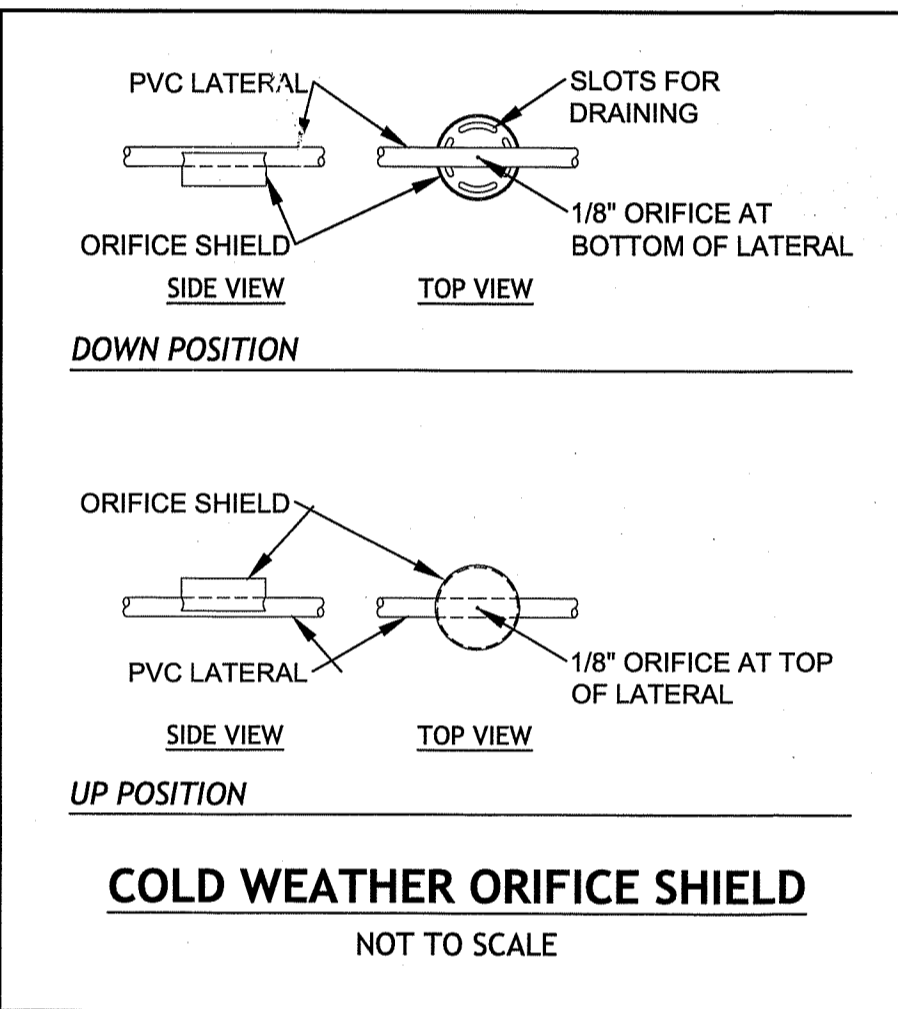
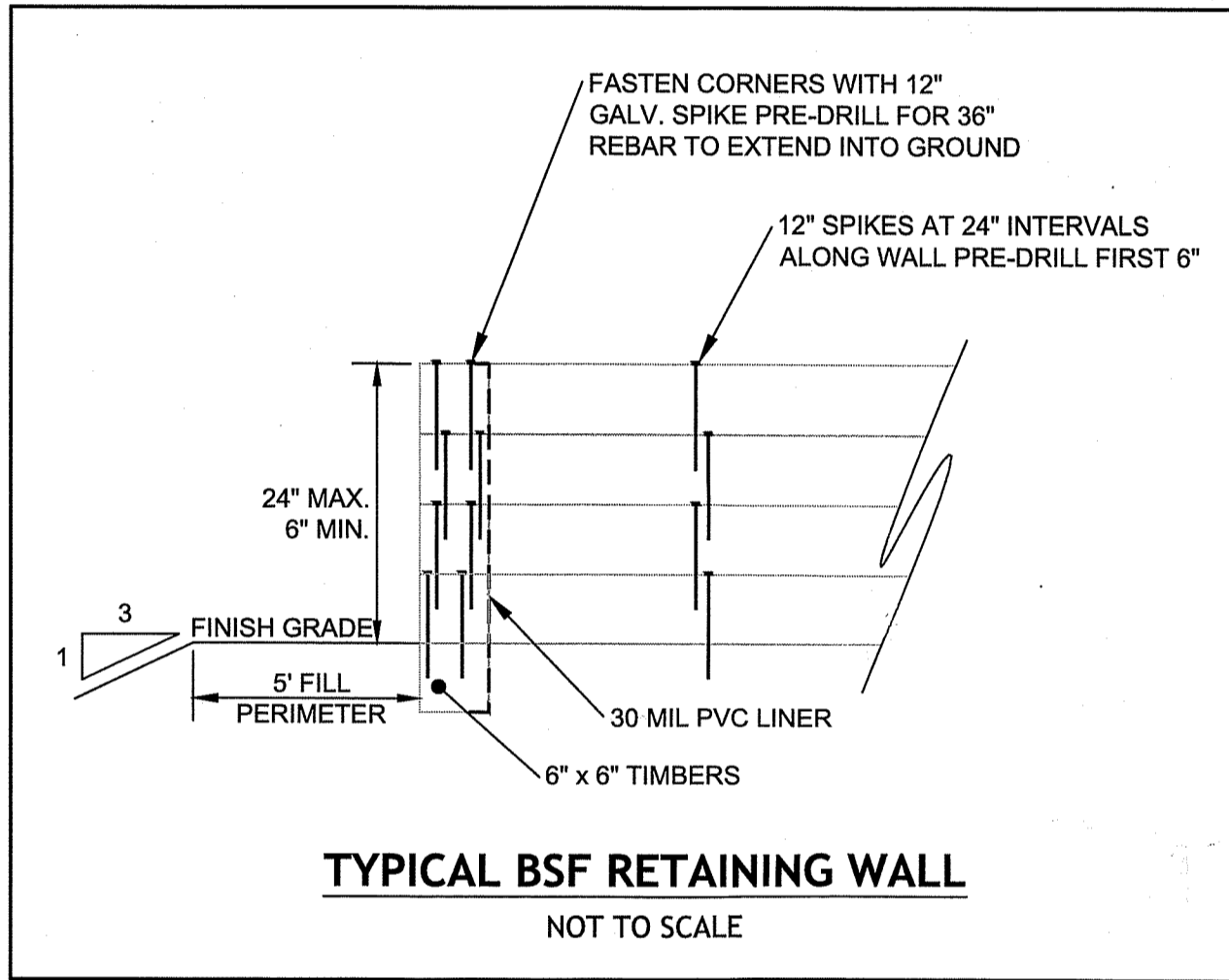
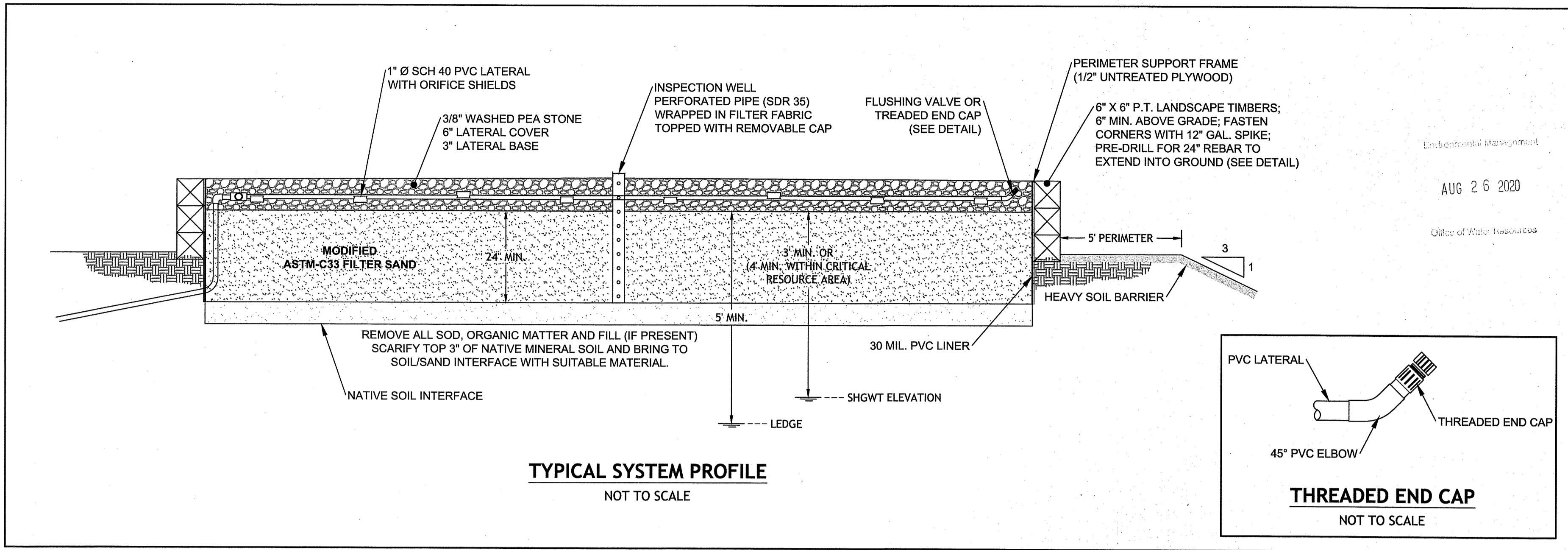
- THIS DESIGN IS SUBMITTED TO RIDEM TO BE REVIEWED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. CONSTRUCTION OF THIS SYSTEM WILL REQUIRE THE DESIGNER'S CERTIFICATE OF CONSTRUCTION FOR OWTS.
- UNLESS OTHERWISE SPECIFIED, THE SYSTEM HAS NOT BEEN DESIGNED WITH THE PROVISIONS FOR GARBAGE GRINDERS.
- THERE ARE NO KNOWN PUBLIC WELLS, EXISTING OR PROPOSED, WITHIN 500 FEET OF THE DESIGNED SYSTEM UNLESS SHOWN.
- NO DRIVING, PARKING OR PAVING WITHIN 10' OF BSF.
- THIS SEWERAGE DISPOSAL SYSTEM SHALL CONFORM TO ALL THE REGULATIONS UNDER SECTIONS 42-17.1-2(1), (M) (R) AND (S) AND SECTION 23-19.5-4 AND CHAPTER 42-35 OF THE GENERAL LAWS OF RHODE ISLAND.
- ALL PIPES EXCEPT IN THE LEACHING FIELD SHALL BE SOLID 4 INCH DIAMETER SDR 35 WITH WATER TIGHT JOINTS OR EQUIVALENT UNLESS OTHERWISE SPECIFIED.
- ALL GRAVITY PIPES UNLESS OTHERWISE SPECIFIED SHALL HAVE A SLOPE NOT LESS THAN 1/8 INCH PER FOOT BUT NO GREATER THAN 3%.
- SEPTIC TANK AND DOSING TANK SHALL BE SET ON A LEVEL STABLE BASE THAT WILL NOT SETTLE.
- INSPECTIONS OR AS-BUILT PLANS ARE REQUIRED. DESIGNER MUST BE NOTIFIED 48 HOURS IN ADVANCE AND COMPONENTS OF SYSTEM MUST BE LEFT EXPOSED.

**OPERATIONAL AND MAINTENANCE NOTES:**

- THIS SYSTEM SHALL PROVIDE FOR AN AUDIBLE ALARM FOR HIGH WATER IN THE PUMP CHAMBERS WHICH MAY BE SILENCED BY PUSHING A BUTTON ON THE CONTROL PANEL. THIS SITUATION MAY DEVELOP WITH UNUSUALLY HIGH WATER USAGE AND WILL NOT INDICATE AN ONGOING PROBLEM. REPEATED ALARMS, OR ALARMS WITH NO UNUSUAL WATER USAGE SHOULD BE REPORTED TO YOUR MAINTENANCE PROVIDER.
- THE PROPERTY OWNER SHALL ENTER INTO MAINTENANCE CONTRACTS FOR BOTH THE ADVANTEK AX SYSTEM AND THE BSF DISPOSAL FIELD. EACH UNIT SHOULD HAVE A MINIMUM OF 2 INSPECTIONS ANNUALLY.
- THE MAINTENANCE PROVIDER SHALL AFFIX THEIR NAME AND 24-HOUR CONTACT PHONE INSIDE THE CONTROL BOX LOCATED ON THE EXTERIOR OF THE HOUSE.
- THE BSF INSPECTION SHALL INCLUDE A SAMPLING OF THE BSF INFLUENT TO CHECK FOR CLARITY.
- BSF LATERALS SHALL BE CLEANED ANNUALLY BY OPENING THE LATERAL THREADED END CAP AND CLEANING THE ENTIRE LENGTH OF THE LATERAL WITH A BOTTLE BRUSH. THE ACCUMULATED CLEANED MATERIAL MAY BE DEPOSITED IN THE INLET OF THE SEPTIC TANK. EACH LATERAL IS TO BE FLUSHED AS REQUIRED.
- THE TOP OF THE BSF FIELD IS TO BE KEPT CLEAN OF DEBRIS AND UNWANTED VEGETATION (WEEDS, LEAVES, BRUSH, ETC.). LANDSCAPE TIMBERS AS DESIGNED SHALL BE MAINTAINED TO PREVENT CRUSHING OF THE SYSTEM BY UNWANTED LOADS, AND SURFACE WATER INDICATION OF THE SYSTEM.
- ELECTRONIC COMPONENTS OF THE ADVANTEK AND THE BSF SYSTEMS SHALL BE CHECKED ANNUALLY FOR OPERATION.
- ALL FLOATS IN THE PUMP CHAMBERS SHALL BE HOSED DOWN AND CLEANED FROM BUILD-UP.
- THE INLET OF THE SEPTIC TANK AND THE DOSING TANK SHALL BE INSPECTED FOR SLUDGE AND SCUM ACCUMULATION. WHEN THESE MATERIALS BUILD UP TO 33% OF THE SEPTIC TANK HEIGHT, THE TANK SHOULD BE PUMPED AND THE ACCUMULATIONS APPROPRIATELY REMOVED.
- THE FILTER IN THE PUMP CHAMBERS SHALL BE CLEANED ANNUALLY.
- SHOULD THE PUMP ASSEMBLY BE REMOVED, THE VAULT SHALL BE CLEANED AND FILLED WITH CLEAN WATER TO PREVENT THE SCREEN FROM BEING FOULED WITH SOLIDS.
- TIMER SETTINGS SHALL BE CHECKED AT EVERY ESTABLISHED MAINTENANCE AND INSPECTION VISIT AND ADJUSTED AS NEEDED BY THE SERVICE PROVIDER.
- ALL TANKS AND BASINS SHALL BE VISUALLY INSPECTED FOR WATER TIGHTNESS.
- PROPERTY OWNER TO REDUCE ANY SHADING IN THE AREA OF THE BOTTOMLESS SAND FILTER TO REDUCE FREEZE POTENTIAL. ANY ACTIVITY TO REDUCE SHADING MUST BE IN ACCORDANCE WITH THE RIDEM WETLANDS APPROVALS.

**BOTTOMLESS SAND FILTER NOTES:**

- THE BOTTOMLESS SAND FILTER (BSF) IS INCORPORATED AS THE DISPOSAL BED IN THIS DESIGN TO MAXIMIZE THE REMOVAL OF PATHOGENIC ORGANISMS (PAGE 6 RIDEM TRC GUIDELINES).
- PER RIDEM NOTICE 4/30/04, TOTAL PEA STONE DEPTH IS INCREASED TO 9" TO REDUCE WINTER FREEZE POTENTIAL.
- THE BSF AREA IS TO BE LOCATED AND STAKED IN THE FIELD BY THE INSTALLER PRIOR TO CONSTRUCTION. PROTECTION AGAINST HEAVY VEHICLE TRAFFIC MUST BE ESTABLISHED IN THE BSF AREA PRIOR TO INITIATING ANY CONSTRUCTION OPERATIONS ON THE SITE. DEGRADATION OF THE PROPOSED SITE AREA WILL REQUIRE A RE-DESIGN.
- SYSTEM COMPONENTS WITHIN THIS DESIGN ARE AVAILABLE FROM ORENCO SYSTEMS INC., 814 AIRWAY AVENUE, SUTHERLIN, OR. 97479. LOCAL DEALER INFORMATION IS AVAILABLE AT 1-800-348-9843 OR WWW.ORENCO.COM.
- A MINIMUM TEN (10) FEET MUST BE MAINTAINED BETWEEN THE BSF AND ADJACENT TREES AND SHRUBS.
- INTERMITTENT PRESSURE DOSED EFFLUENT WILL PROVIDE A UNIFORM DISTRIBUTION OF WASTE WATER OVER THE BSF AREA, MINIMIZING LOCALIZED SATURATION. LATERAL GATE VALVES ARE DESIGNED FOR PLACEMENT OFF THE HEADER LINE SO AS TO EQUALIZE HYDRAULIC PRESSURE IN THE DISPERSAL.
- THE PRESSURE LINE IS TO BE SLOPED BACK TOWARDS THE PUMP CHAMBER FROM THE BSF FIELD TO ELIMINATE FREEZING.
- THE BSF SAND MEDIA MUST CONFORM TO ASTM C-33 SPECIFICATIONS. EFFECTIVE SIZE (D10) OF 0.3 mm AND A UNIFORMITY COEFFICIENT (D60/D10) OF 3.0 TO 4.0. MAXIMUM MATERIAL PASSING THE NUMBER 200 SIEVE SHALL BE 1%. THE INSTALLER SHALL PRODUCE GRADATION ANALYSIS RESULTS FOR THE MATERIAL PROVIDED FROM THE SUPPLIER.
- PERIMETER STRIPPING OF THE SOIL MATERIAL BELOW THE BSF IS PROHIBITED, UNLESS FILL MATERIAL IS PRESENT.
- THE WALLS OF THE BSF ENCLOSURE MUST BE LINED WITH A 30 MIL PVC LINER WITH ALL BOOTS, PATCHES, REPAIRS, AND SEAMS HAVING THE SAME PROPERTIES AS THE LINER.
- ANY PENETRATION THROUGH THE PVC LINER WALL SHALL BE DONE WITH A PVC BOOT ATTACHMENT GLUED TO THE LINER WITH APPROPRIATE RESILIENT SEALER.
- EXCAVATOR/BACKHOE BUCKET USED TO PLACE MEDIA SHALL BE WASHED THOROUGHLY BEFORE LOADING PROCESS.
- SAND MEDIA SHALL BE PLACED IN 6 INCH LIFTS AND WETTED TO PROVIDE EVEN SETTLING. AFTER PLACEMENT OF EACH LIFT EDGES OF THE FILTER SHALL BE WALKED DOWN, CLEAN SHOES ARE REQUIRED FOR THIS PROCESS.
- AFTER SAND MEDIA HAS SETTLED, 3 INCHES OF 3/8 INCH WASHED PEA STONE SHALL BE PLACED OVER SAND MEDIA. AFTER INSTALLATION OF DISTRIBUTION LATERALS ADD 6 INCHES OF WASHED PEA STONE TO COVER THE SYSTEM. NO FILTER FABRIC OF ANY KIND IS TO BE USED BETWEEN THE SAND AND OVERLYING PEA STONE LAYERS.
- THE ELEVATION OF THE BSF INVERT SHALL EXTEND 5 FEET BEYOND THE WALL PERIMETER.
- WHILE NOT NORMALLY EXPERIENCED, THERE HAVE BEEN REPORTED INSTANCES WHERE SAND FILTER SYSTEMS HAVE BEEN KNOWN TO EXPERIENCE PROBLEMS WITH FREEZING OF PIPES UNDER EXTREME COLD CONDITIONS. WHILE MOST SAND FILTER INSTALLATIONS OPERATE PROPERLY AND WITHOUT FREEZING PROBLEM, THE POSSIBILITY OF FREEZING MAY EXIST UNDER CERTAIN CIRCUMSTANCES. SHOULD THE OWNER WISH TO MAXIMIZE THE AVOIDANCE OF THIS POSSIBILITY, THE OWNER MAY ELECT THE OPTION OF INSTALLING AN ELECTRIC HEAT TRACING SYSTEM ON THE PIPELINES. OWNER SHOULD CONTACT MANUFACTURERS/SUPPLIERS OF SUCH EQUIPMENT FOR FURTHER INFORMATION.
- SUPPORT WALLS ARE NEEDED TO PREVENT CAVING OF FILTER WALLS DURING CONSTRUCTION. THESE WALLS SHALL BE RIGID AND MADE OF PLYWOOD (OR EQUIVALENT) AND 2" x 4" SUPPORT BOARDS.
- A PERMANENT TOP FRAME STRUCTURE MUST BE PROVIDED ON ANY PORTION OF THE BSF THAT IS INSTALLED ABOVE GRADE (MAX OF 24" ABOVE GRADE). THE PERIMETER OF THE BSF, BELOW THE REQUIRED PERIMETER OF TIMBERS, MAY BE BERMED WITH NATIVE SOIL OR OTHER MATERIAL SUCH AS LANDSCAPE STONE OR OTHER NON-DEGRADING MATERIAL. BELOW GRADE USE OF TIMBERS IS PROHIBITED.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
REVIEWED SITE PLAN APPLICATION NO.: 20-0037  
DATED NOV 23 2020  
SEE LETTER OF SAME DATE.

**JOE CASALI ENGINEERING, INC.**  
CIVIL, SITE DEVELOPMENT, TRANSPORTATION  
DRAINAGE, WETLANDS, ISDS, TRAFFIC, FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02886  
(401) 844-1500 (401) 844-1515 FAX WWW.JECENAL.COM

JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**HIGHLAND MEADOWS (PHASE II)**  
**PROPOSED MINOR SUBDIVISION**  
CENTRAL AVENUE  
JOHNSTON, RHODE ISLAND  
AP 43-4, LOT 94

REVISIONS:

NO.	DATE	DESCRIPTION
1	2/17/2020	PLANNING RTC
2	4/24/2020	CONCEPT REVIEW
3	6/2020	MASTER-PREL
4	8/25/20	RIDEM RTC

DESIGNED BY: DRD  
DRAWN BY: SEP/SD  
CHECKED BY: JAC  
DATE: FEB. 2020  
PROJECT NO.: 19-35a

PRELIMINARY, NOT FOR CONSTRUCTION

**TYPICAL OWTS DETAILS**

**SHEET 8 OF 8**

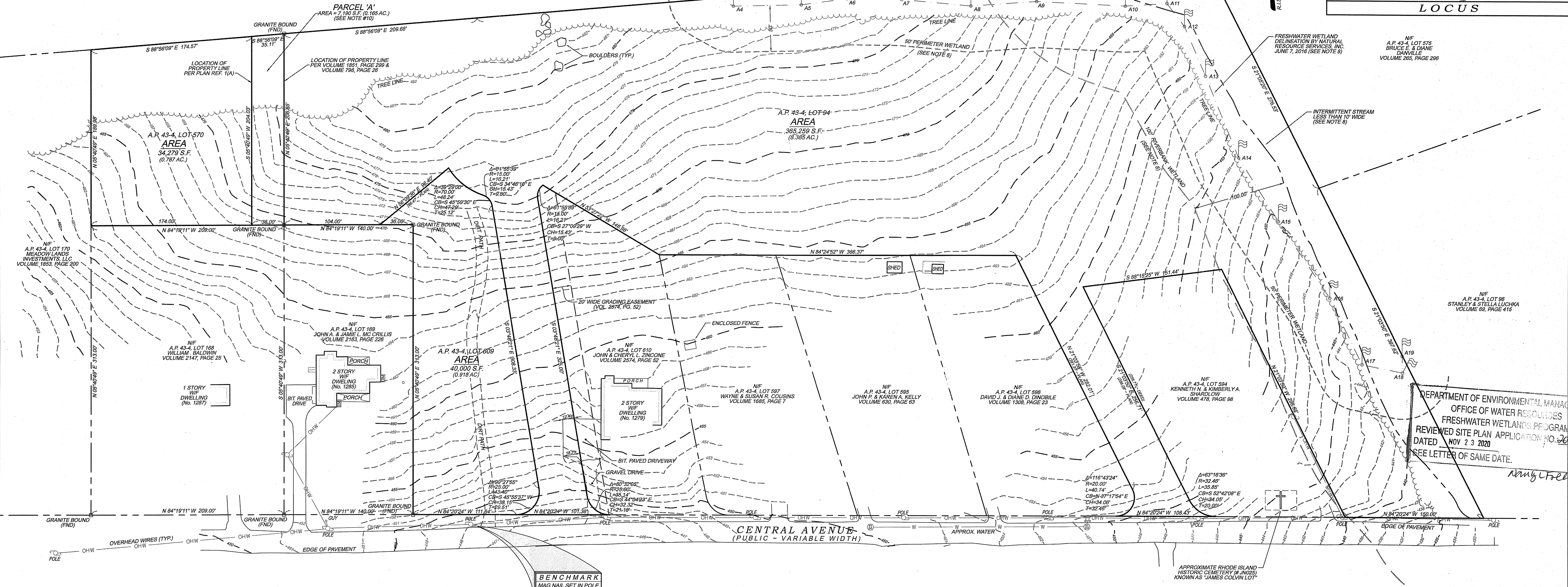
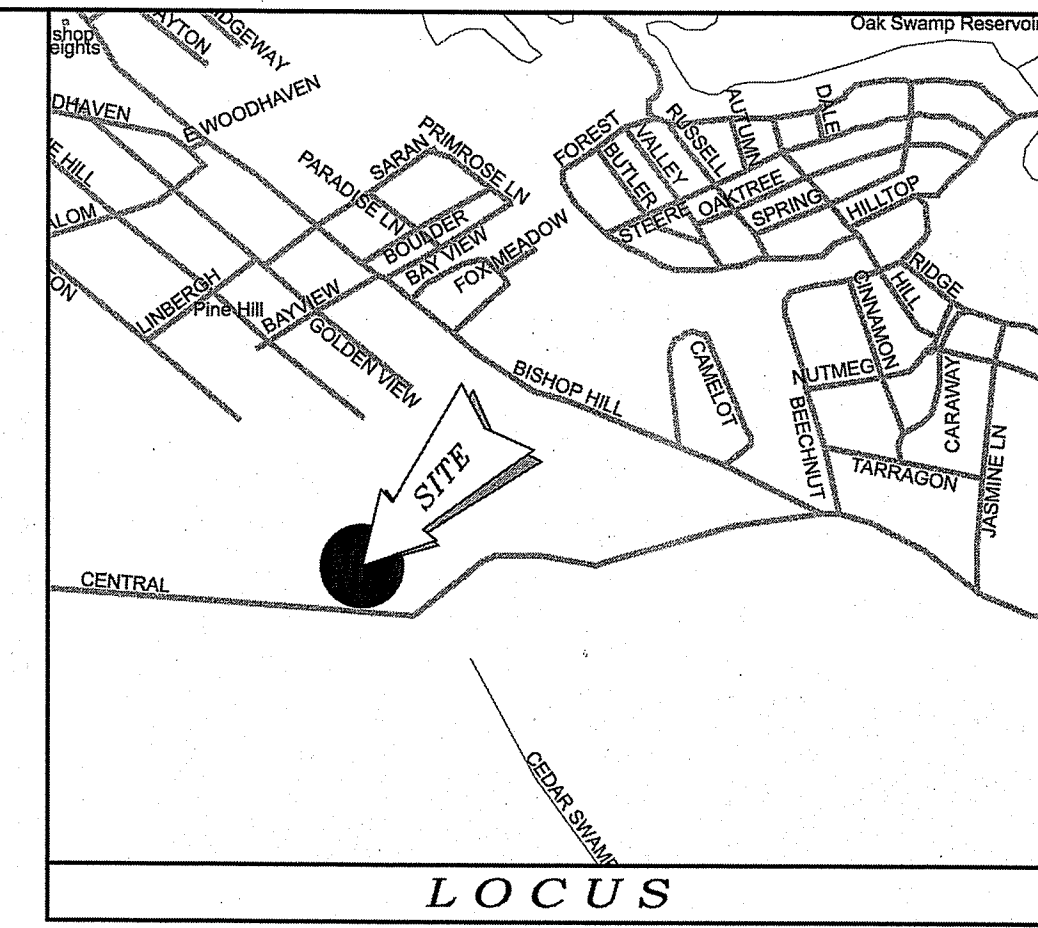
**NOTES / REFERENCES**

- REFERENCE IS MADE TO THE FOLLOWING MAPS AND PLANS OF RECORD:
  - PLAN ENTITLED "MINOR SUBDIVISION - FINAL - PHASE I HIGHLAND MEADOWS PREPARED FOR GREEN MEADOW INVESTMENTS, LLC & WILLIAM BALDWIN A.P. 43-4, LOTS 94, 598 & PORTION OF 570 TOTAL AREA = 10.09 AC. - JOHNSTON, RHODE ISLAND PREPARED BY N. VELTRI SURVEY, INC. SCALE: 1" = 60', DATED: 01/31/18, LAST REVISED: 12/09/16"
  - PLAN ENTITLED "ADMINISTRATIVE PLAT PLAN, A.P. 43-2 LOTS 94, 168, AND 169, JOHNSTON RHODE ISLAND, OWNER: GREEN MEADOW INVESTMENTS L.L.C. & WILLIAM BALDWIN, PREPARED BY HUDSON PLACE ASSOCIATES, SCALE: 1" = 60', DATED: NOVEMBER 2007."
  - PLAN ENTITLED "ADMINISTRATIVE PLAT - FINAL PLAN, A.P. 43-4 LOTS 94, 168, AND 169, JOHNSTON RHODE ISLAND, OWNER: GREEN MEADOW INVESTMENTS L.L.C. & WILLIAM BALDWIN, PREPARED BY HUDSON PLACE ASSOCIATES, SCALE: 1" = 60', DATED: SEPTEMBER 2010."
- REFERENCE IS MADE TO THE FOLLOWING TOWN OF JOHNSTON LAND EVIDENCE RECORDS REGARDING RECORDED TITLE TO THE PREMISES SURVEYED:
  - A.P. 43-4, LOTS 94 & 609 - GREEN MEADOW INVESTMENTS LLC - VOLUME 2147, PAGE 29
  - A.P. 43-4, LOT 570 - WILLIAM J. BALDWIN - VOLUME 798, PAGE 26
- THESE PREMISES MAY BE SUBJECT TO THE FOLLOWING EASEMENTS, RIGHTS OF WAY OR AGREEMENTS OF RECORD:
  - LOT 610 - SUBJECT TO 20 FOOT WIDE GRADING EASEMENT
  - REFERENCE IS MADE TO "CERTIFICATE OF COMPLETENESS AND APPROVAL FINAL PLAN HIGHLAND MEADOWS - PHASE I, AS APPROVED DECEMBER 21, 2016 AS RECORDED IN VOLUME 2660, PAGE 53.

- THESE PREMISES ARE SITUATED IN AN "R-40 ZONE":
 

DIMENSIONAL REQUIREMENTS	SINGLE FAMILY
MIN. LOT AREA	= 40,000 SQ. FT.
MIN. FRONTAGE WIDTH	= 140 FT.
MIN. S/B FRONT YARD	= 40 FT.
MIN. S/B REAR YARD	= 75 FT.
MIN. S/B SIDE YARD	= 35 FT.
MAX. STRUCTURE HEIGHT	= 30 FT.
MAX. BUILDING COVERAGE	= 15%

NOTE - ZONING INFORMATION IS FROM CURRENT ZONING AND MAY NOT REFLECT THE CONDITIONS AT THE TIME OF CONSTRUCTION OR ANY VARIANCES GRANTED.
- THESE PREMISES ARE SITUATED IN A ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DESIGNATED ON THE "NATIONAL FLOOD INSURANCE PROGRAM, FIRM FLOOD INSURANCE RATE MAP PROVIDENCE COUNTY, RHODE ISLAND (ALL JURISDICTIONS) PANEL 283 OF 451 CITY OF PROVIDENCE MAP NUMBER 44007C0283H, MAP REVISED: OCTOBER 2, 2015. FEDERAL EMERGENCY MANAGEMENT AGENCY."
- ANY UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING PLANS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM ALL AVAILABLE INFORMATION. (PLEASE CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION AT PHONE NO. 1-888-DIG-SAFE AND/OR ALL LOCAL UTILITY COMPANIES.)
- THE HORIZONTAL DATUM FOR THIS PROJECT IS THE R.I.S.P.C.S. (NA83) AND THE VERTICAL DATUM FOR THIS PROJECT IS NAVD 88. THE PROJECT DATUMS WERE ESTABLISHED FROM REFERENCE STATIONS AND GNSS CORRECTIONS RECEIVED FROM THE LEICA SMARTNET NORTH AMERICA RTK NETWORK VIA CARLSON BRX6 GNSS ANTENNAS / RECEIVERS.
- A WETLAND DELINEATION OF THE SUBJECT SITE WAS NOT PERFORMED AS PART OF THIS PROJECT. THE INTERMITTENT STREAM, WETLAND FLAGGING & BUFFERS DEPICTED HAVE BEEN SCALED & APPROXIMATED FROM PLANS ORIGINALLY PREPARED BY N. VELTRI SURVEY, INC. (SEE PLAN REFERENCE 1(A)).
- PLANIMETRICS AND TOPOGRAPHY FROM AERIAL MAPPING WITH AERIAL PHOTOS EXPOSED OCTOBER, 2019 SUPPLEMENTED BY FIELD EDITS. GROUND CONTROL BY WATERMAN ENGINEERING CO.
- PARCEL 'A' SHOWN HEREON WAS SHOWN TO BE MERGED WITH A.P. 43-4, LOT 94 AS DELINEATED ON PLAN REF 1(A) AS APPROVED AND RECORDED AT THE TOWN OF JOHNSTON. REFERENCE IS MADE TO THE FINAL APPROVAL OF "HIGHLAND MEADOWS - PHASE I" AS APPROVED DECEMBER 21, 2016 AND RECORDED IN VOLUME 2660, PAGE 53. NO CONVEYANCE OF THIS STRIP OF LAND TO GREEN MEADOW INVESTMENTS, LLC COULD BE FOUND ON RECORD.



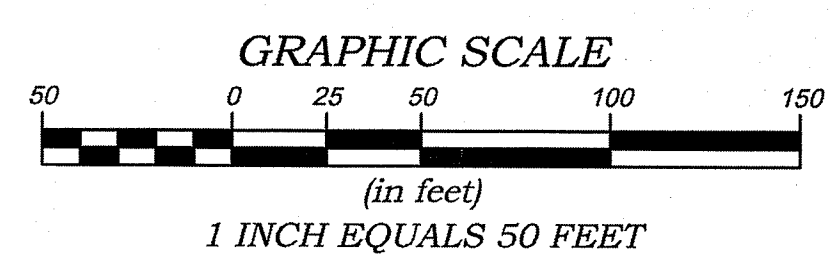
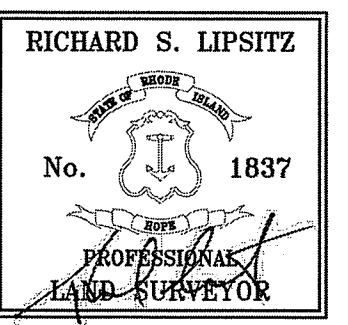
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 REVIEWED SITE PLAN APPLICATION NO. 20-037  
 DATED NOV 23 2020  
 SEE LETTER OF SAME DATE.  
 Nancy L. Forrester

**LEGEND & ABBREVIATIONS**

NF - NOW OR FORMERLY	— — — — —	PROPERTY LINE
A.P. - ASSESSORS PLAT	- - - - -	ZONING SETBACK LINE
S.F. - SQUARE FEET	- - - - -	EXISTING CONTOUR
AC. - ACRES	- - - - -	NEW CONTOUR
+ - PLUS OR MINUS	— — — — —	STONE WALL
STY - STORY	— — — — —	FENCE
WF - WOOD FRAMED	— — — — —	SEWER LINE
SHP - STATE HIGHWAY PLAT	— — — — —	DRAIN LINE
RET. - RETAINING WALL	— — — — —	WATER LINE
PEB. - PEDESTRIAN	— — — — —	GAS LINE
(FND.) - FOUND	— — — — —	ELECTRIC LINE
RHB - RI HIGHWAY BOUND	— — — — —	SANITARY SEWER MANHOLE
PK NAIL - MASONRY NAIL	— — — — —	CATCH BASIN
FE. - FLARED END	— — — — —	STORM DRAIN MANHOLE
RCP - REINFORCED CONCRETE PIPE	— — — — —	WATER GATE
CLF - CHAIN LINK FENCE	— — — — —	GAS VALVE
INV. - INVERT	— — — — —	ELECTRIC MANHOLE
X 10.80 - EXISTING SPOT GRADE	— — — — —	GRANITE BOUND
X 10.25 - NEW SPOT GRADE	— — — — —	DRILL HOLE
	— — — — —	IRON PIPE

**CERTIFICATION**  
 THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO 435-RICR-00-00-1.9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON APRIL 28, 2018, AS FOLLOWS:  
 TYPE OF BOUNDARY SURVEY: COMPREHENSIVE BOUNDARY SURVEY  
 MEASUREMENT / ACCURACY SPECIFICATION: I  
 OTHER TYPE OF SURVEY: TOPOGRAPHIC SURVEY  
 DATA ACCUMULATION: III  
 THE PURPOSE FOR CONDUCTING THIS SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS:  
 BOUNDARY & TOPOGRAPHIC SURVEY PLAN FOR THE FUTURE DEVELOPMENT OF THE SUBJECT PARCEL.

BY: *[Signature]* 1837 03/12/20  
 RICHARD S. LIPSITZ, P.L.S. REG. NO. LS.0004483  
 WATERMAN ENGINEERING COMPANY (COA No. LS.0004483)



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 WATERMAN ENGINEERING CO.  
 CIVIL ENGINEERS & SURVEYORS  
 45 SUTTON AVENUE  
 EAST PROVIDENCE, RI 02914-2096

NO.	DATE	REVISION	CHECKED BY
1	03/12/20	DELIMITED STRIP OF LAND TO BE MERGED PER APPROVED SUB.	RSL
BOUNDARY & TOPOGRAPHIC SURVEY PLAN A.P. 43-4, LOTS 94, 570 & 609 CENTRAL AVENUE JOHNSTON, RHODE ISLAND			PROJECT NO. 19-080 SCALE: 1" = 50' DATE: 11/04/19 DRAWN BY: MS / EBP CHECKED BY: BUT / RSL FILENAME: 19-080_SU1 1 of 1 SHEETS DRAWING # SU1
JOB CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RHODE ISLAND 02888			45 Sutton Avenue East Providence, RI Phone: (401) - 438 - 5775 Fax: (401) - 438 - 5772 www.watermanengineering.net