

| GROUNDWATER MONITORING | | | | | | | | | | |
|------------------------|----------------|---------|-----------------------|-----------|----------|-----------------------|-----------|----------|-----------------------|-----------|
| LOCATION | ELEV. AT GRADE | DATE | READING (BELOW GRADE) | GW. ELEV. | DATE | READING (BELOW GRADE) | GW. ELEV. | DATE | READING (BELOW GRADE) | GW. ELEV. |
| TEST PIT 1 | 206.31 | 10/8/08 | 102" | 197.81 | 12/16/08 | 90" | 198.81 | 03/13/09 | 89" | 198.98 |
| TEST PIT 2 | 203.24 | 10/8/08 | 66" | 197.74 | 12/16/08 | 51" | 198.99 | 03/13/09 | 50" | 199.08 |
| TEST PIT 3 | 210.70 | 10/8/08 | DRY @ 106" | 201.87 | 12/16/08 | 105" | 201.95 | 03/13/09 | DRY @ 106" | 201.87 |

NOTE:
ON 10-8-08 TEST PITS 1, 2 and 3 HAVE BEEN WITNESSED BY A RI CLASS IV SOIL EVALUATOR FOR PRELIMINARY REVIEW OF THE EXISTING SOIL CONDITIONS. GROUNDWATER MONITORING HAS BEEN RECORDED AT THESE TEST PIT LOCATIONS.

TEST PIT DATA

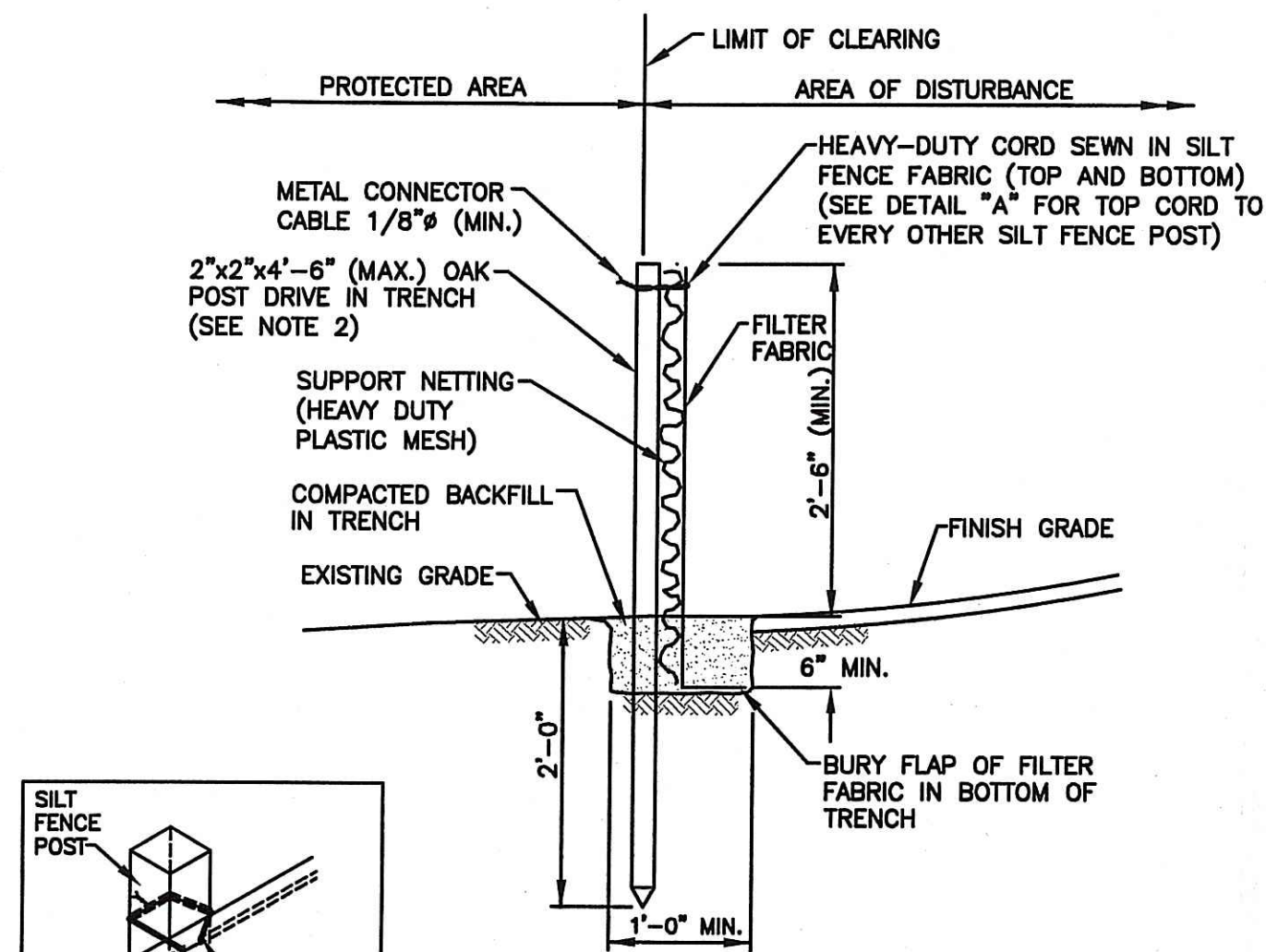
TEST PITS CONDUCTED ON DECEMBER 16, 2008 AND WITNESSED BY R.I.D.E.M. (APPLICATION No. 0830-1231)

| TEST PIT A | | | TEST PIT B | | |
|------------|-------|--|------------|-------|--|
| ELEV. | DEPTH | SOIL TYPE | ELEV. | DEPTH | SOIL TYPE |
| 209.86 | 3" | Organic Litter | 209.53 | 4" | Organic Litter |
| | 0" | Dark Brown Sandy Loam | | 0" | Dark Brown Sandy Loam |
| | 6" | Dark Yellowish Brown Very Fine Sandy Loam | | 4" | Dark Yellowish Brown Very Fine Sandy Loam |
| | 13" | Yellowish Brown Very Fine Sand Loam | | 13" | Yellowish Brown Very Fine Sand Loam |
| | 34" | Light Olive Brown Loamy Very Fine Sand | | 34" | Light Olive Brown Loamy Very Fine Sand |
| | 52" | Light Yellowish Brown Stony Fine Sand/Loamy Sand | | 64" | Light Yellowish Brown Stony Fine Sand/Loamy Sand |
| | 120" | | | 118" | |

No Refusal
No Water Seepage
96" Design GWT (ELEV.=201.86)
No Redox Features
R.I.D.E.M. Soil Category = 4
GWT (3-13-09): Dry

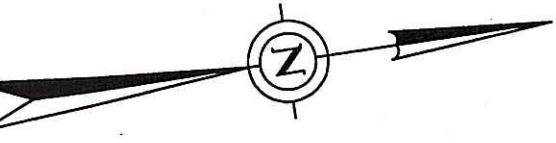
OWTS GRADES

| TRENCH | EXISTING GROUND ELEVATION | ESHWT DEPTH | ESHWT (ELEVATION) | BTM OF STONE | INVERT | PROPOSED GROUND ELEVATION |
|----------|---------------------------|------------------------|-------------------|--------------|--------|---------------------------|
| TRENCH 1 | 211.5-211.75 | 96" | 203.75 | 208.0 | 209.5 | 212.0-212.5 |
| TRENCH 2 | 209.5-210.0 | 96" | 202.0 | 206.5 | 208.0 | 210.0-210.5 |
| TRENCH 3 | 208.0-208.8 | 88" | 201.50 | 205.0 | 207.5 | 209.0-209.5 |
| TRENCH 4 | 205.5-207.4 | USE TRENCH 3 GWT ELEV. | 201.50 | 204.5 | 206.0 | 207.5-208.0 |

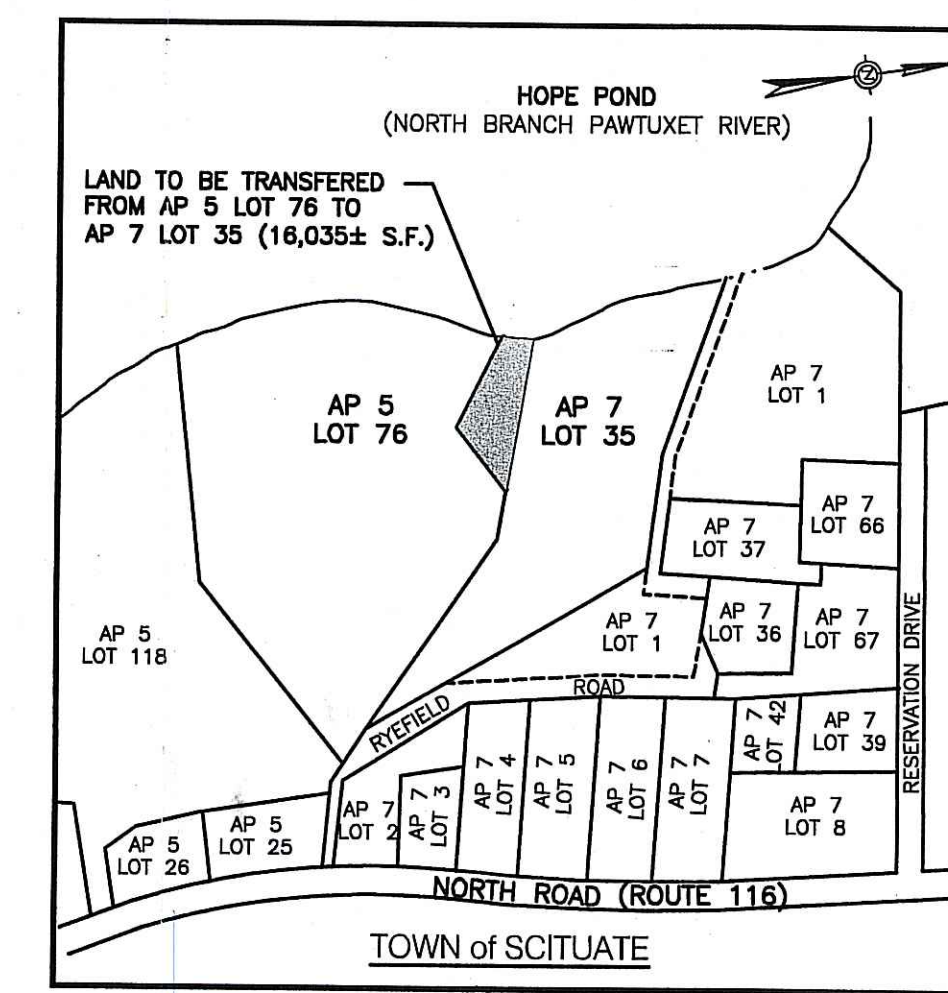
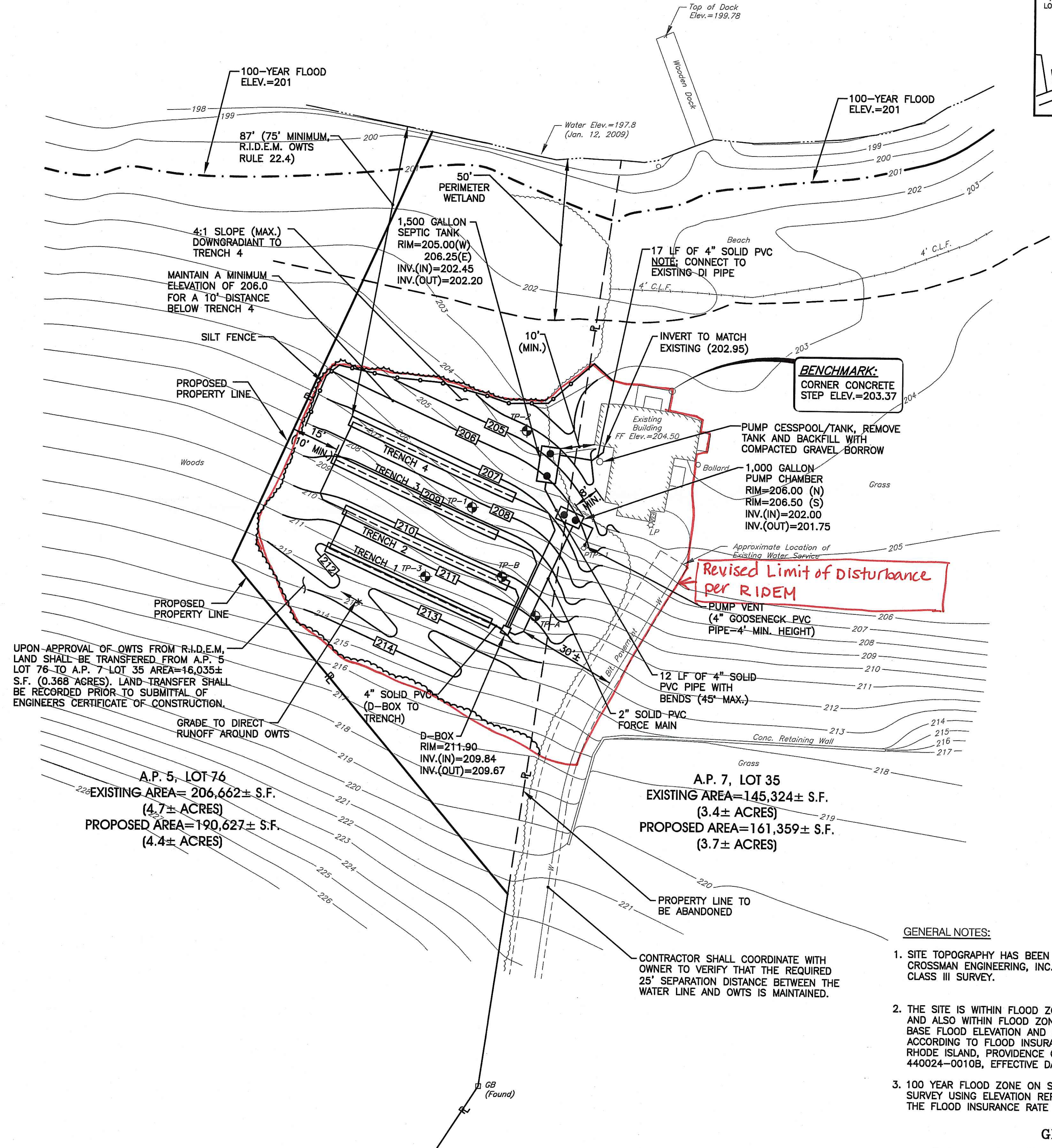


- NOTES:
- SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
 - 2"x2"x4"-6" (MAX.) OAK POSTS FOR SILT FENCE TO BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVIDE, GULLY OR DROP OFF AREAS AS SHOWN ON PLANS.
 - 1"x1"x4"-6" (MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
 - SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

SILT FENCE DETAIL
NOT TO SCALE



HOPE POND
NORTH BRANCH PAWTUXET RIVER
(PONDED, DUE TO DAM)

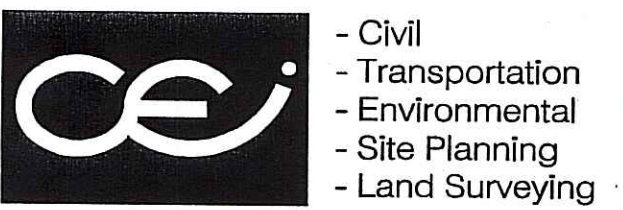
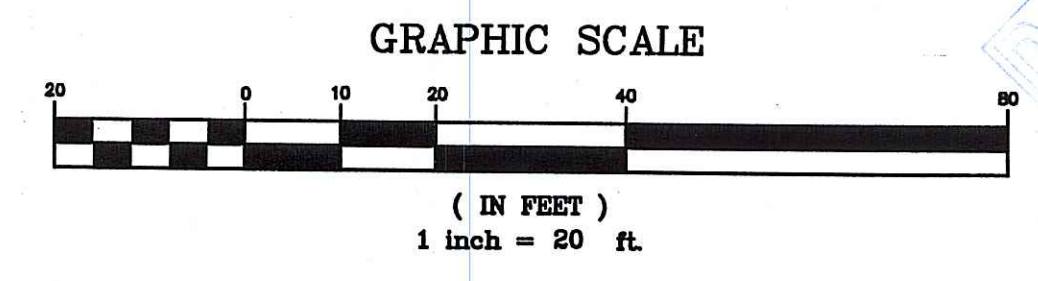


LOCATION MAP
NOT TO SCALE

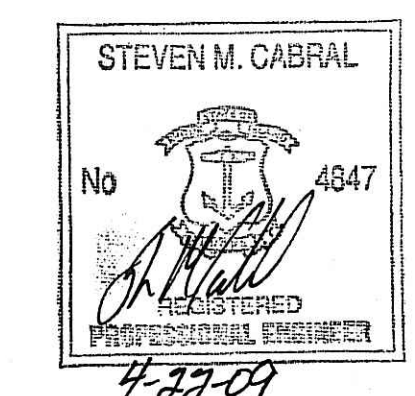
Kindly be advised that this determination is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED SITE PLAN APPLICATION NO. 09-0100
DATED MAY 20 2009
SEE LETTER OF SAME DATE.
Nancy L. Freeman

- GENERAL NOTES:
- SITE TOPOGRAPHY HAS BEEN OBTAINED FROM FIELD SURVEY BY CROSSMAN ENGINEERING, INC. AND CONFORMS TO R.I. STANDARD CLASS III SURVEY.
 - THE SITE IS WITHIN FLOOD ZONE C, AREAS OF MINIMAL FLOODING, AND ALSO WITHIN FLOOD ZONE A3, AREAS OF 100 YEAR FLOOD; BASE FLOOD ELEVATION AND FLOOD HAZARD FACTORS DETERMINED, ACCORDING TO FLOOD INSURANCE RATE MAP, TOWN OF SCITUATE RHODE ISLAND, PROVIDENCE COUNTY, COMMUNITY PANEL NUMBER 440024-0010B, EFFECTIVE DATE JANUARY 2, 1981.
 - 100 YEAR FLOOD ZONE ON SITE HAS BEEN DETERMINED BY FIELD SURVEY USING ELEVATION REFERENCE MARK RMS, AS SHOWN ON THE FLOOD INSURANCE RATE MAP.



CROSSMAN ENGINEERING, INC.
151 Centerville Road
Warwick, Rhode Island 02886
Phone: (401) 738-6860 - Fax: (401) 738-8157
Email: cel@crossmaneng.com



PROJECT TITLE:
OWTS REPAIR
ASSESSOR'S PLAT 7, LOT 35
and ASSESSOR'S PLAT 5, LOT 76
ZONING DISTRICT RSW-60/80
SINGLE FAMILY RESIDENTIAL WATER
HOPE VILLAGE OVERLAY DISTRICT

RYEFIELD ROAD
HOPE, RHODE ISLAND

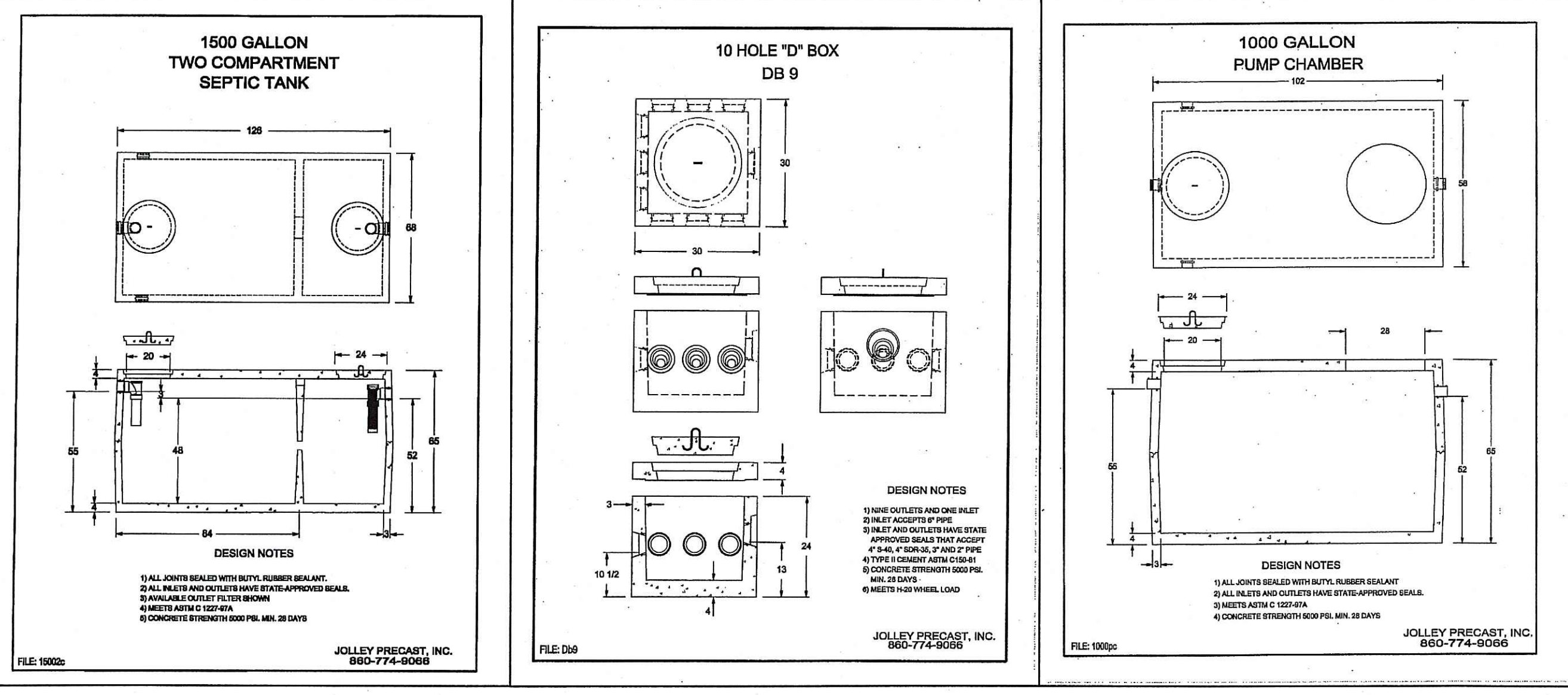
PREPARED FOR:
HOPE ASSOCIATES, INC.
6 RYEFIELD ROAD
HOPE, RHODE ISLAND 02831

DRAWING TITLE:
ONSITE WASTEWATER TREATMENT
SYSTEM REPAIR PLAN

DATE: APRIL 2009
SCALE: 1"=20'
DWG. NAME: 1545-C1.1-OWTS.dwg

| REVISIONS | NUMBER | REMARKS | DATE |
|-----------|--------|---------|------|
| | | | |
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| | | | |

DRAWING NUMBER
C1.1
SHEET: 1 OF 2
R.I.D.E.M. SUBMISSION



DESIGN FLOW NOTES:

- THE PARK/RECREATION AREA IS TYPICALLY OPEN DURING THE SUMMER MONTHS FROM THE THIRD WEEK IN JUNE TO MID AUGUST, AVERAGING 8 WEEKS PER YEAR. AN AVERAGE OF APPROXIMATELY 100 TO 110 PEOPLE VISIT THE PARK/RECREATION AREA ON A DAILY BASIS. (INFORMATION PROVIDED BY HOPE ASSOCIATES, INC.)
- LISTED BELOW IS THE WATER COMPSUMPTION DATA FROM 2005-2008, FROM KENT COUNTY WATER AUTHORITY.

| YEAR | YEARLY * COMPSUMPTION (CUBIC FT.) | GALLONS PER YEAR (7.48 gal/cf) | GALLONS PER DAY (GPD) |
|------|-----------------------------------|--------------------------------|-----------------------|
| 2008 | 1,000 | 7,480 | 134 |
| 2007 | 700 | 5,236 | 94 |
| 2006 | 2,400 | 17,952 | 320 |
| 2005 | 2,600 | 19,448 | 347 |

* YEARLY CONSUMPTION IS SEASONAL (AVERAGE 8 WEEKS PER YEAR)

3. THE DESIGN FLOW FOR THE OWTS REPAIR IS BASED UPON THE WASTEWATER DESIGN FLOWS LISTED IN TABLE 21.1 (RULE 21).

DESIGN FLOW:

| USE | DESIGN UNITS | UNIT FLOW RATE (gpd/unit) | DESIGN FLOW (gpd) |
|----------------------------------|--------------|---------------------------|-----------------------|
| BEACH (PUBLIC PARK) WITH TOILETS | PER PERSON | 5 gpd/PERSON | 550 gpd (110 PERSONS) |

ON-SITE WASTEWATER TREATMENT SYSTEM NOTES:

- REMOVE TOP SOIL AND SUBSOIL AND ANY UNDESIRABLES FROM THE TRENCH ONLY. THE SOIL BETWEEN TRENCHES SHALL REMAIN UNDISTURBED. REMOVE ALL TREES AND BRUSH AROUND SYSTEM PLUS (10) FEET.
- STRIPPING SHALL NOT BE DONE INTO THE WATER TABLE.
- NO VEHICULAR TRAFFIC IS ALLOWED ON LEACH FIELD.
- THERE ARE NO KNOWN EXISTING OR PROPOSED PRIVATE WELLS WITHIN 200' OF THE SYSTEM, AND THERE ARE NO KNOWN EXISTING OR PROPOSED PUBLIC WELLS WITHIN 500'.
- ALL PVC PIPING IN LEACH FIELD TO BE SCHEDULE 35 (PERFORATED AND SOLID PIPE).
- MINIMUM ELEVATION OF TRENCH INVERT TO BE MAINTAINED WITHIN 10 FEET OF TRENCHES.
- SURFACE RUNOFF TO BE DIVERTED FROM SYSTEM.
- UNLESS OTHERWISE SHOWN, ALL PVC PIPING FOR BLDG. SEWER TO BE SCHEDULE 35 SDR 3034 AND WATER TIGHT.
- THE LICENSED INSTALLER MUST FOLLOW ALL R.I.D.E.M. "RULES AND REGULATIONS ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF ON-SITE WASTEWATER TREATMENT SYSTEMS, JANUARY 1, 2008."
- NO KNOWN DRAINS, PROPOSED DRAINS OR UNDERDRAINS DISCHARGING INTO A SURFACE WATER SUPPLY ARE WITHIN 200' OF LEACH FIELD.
- PROVIDE TEE AND EFFLUENT SCREEN (RULE 26.6.2) FOR SEPTIC TANK OUTLET PIPE.
- ALL DISTURBED AREAS ARE TO RECEIVE 4" OF LOAM & SEED, UNLESS OTHERWISE NOTED.
- WETLANDS WITHIN 50' OF THE PROPOSED OWTS ARE SHOWN.
- THE CONTRACTOR MUST ADHERE TO ALL CONSTRUCTION INSPECTION PROCEDURES AND REQUIREMENTS OF R.I.D.E.M. AND CROSSMAN ENGINEERING, INC.
- ALL TREES AND BRUSH WITHIN 10' OF THE LEACH FIELD SHALL BE REMOVED.
- NO GARBAGE DISPOSAL GRINDER IS ALLOWED TO BE USED.
- DISTRIBUTION BOX SHALL BE A JOLLEY PRECAST (DB-9) OR APPROVED EQUAL DISTRIBUTION PIPES SHALL EXTEND 1" INTO THE DISTRIBUTION BOX. AN INLET TEE SHALL BE PROVIDED.
- THERE ARE NO PUBLIC SEWERS WITHIN 200' OF THE PARCEL.
- THERE ARE NO KNOWN DRAINS OR UNDERDRAINS WITHIN 200' OF THE OWTS.
- THE SITE IS NOT WITHIN THE WATERSHED OF PUBLIC WATER SYSTEM SURFACE WATER SUPPLY OR CRITICAL RESOURCE AREA, AS DEFINED BY SECTION 38.3.1-38.3.3 OF THE OWTS RULES AND REGULATIONS.
- MATERIAL BELOW TRENCHES TO BE REMOVED TO A MINIMUM DEPTH OF 6" BELOW STONE AND REPLACED WITH GRAVEL.
- PIPE BENDS FOR THE BUILDING SEWER AND FROM THE SEPTIC TANK TO THE PUMP CHAMBER SHALL BE 45" OR LESS.

SEPTIC SIZING (NON-RESIDENTIAL BUILDING)

REQUIRED = 2 x 550 GALLONS = 1,100 GALLON TANK
 PROPOSED = 1,500 GALLON TANK

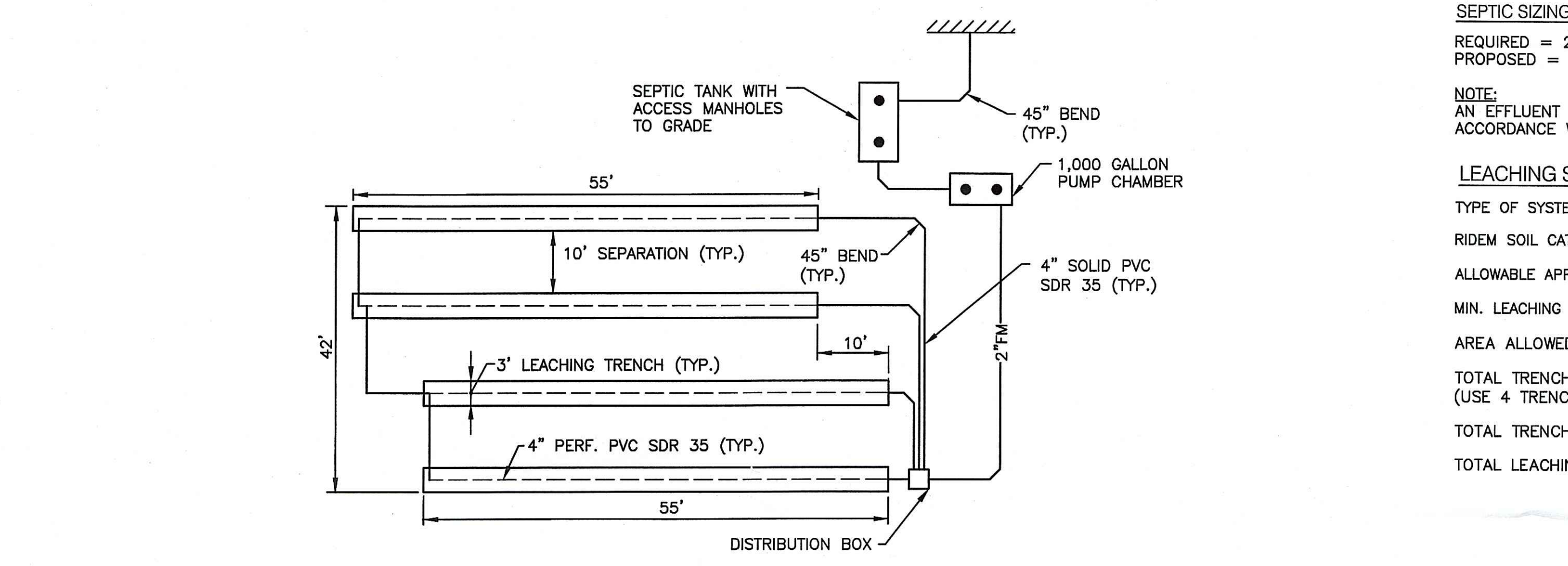
NOTE:
 AN EFFLUENT SCREEN SHALL BE INSTALLED ON SEPTIC TANK OUTLET PIPE IN ACCORDANCE WITH RULE 26.6.2.

LEACHING SYSTEM SIZING:

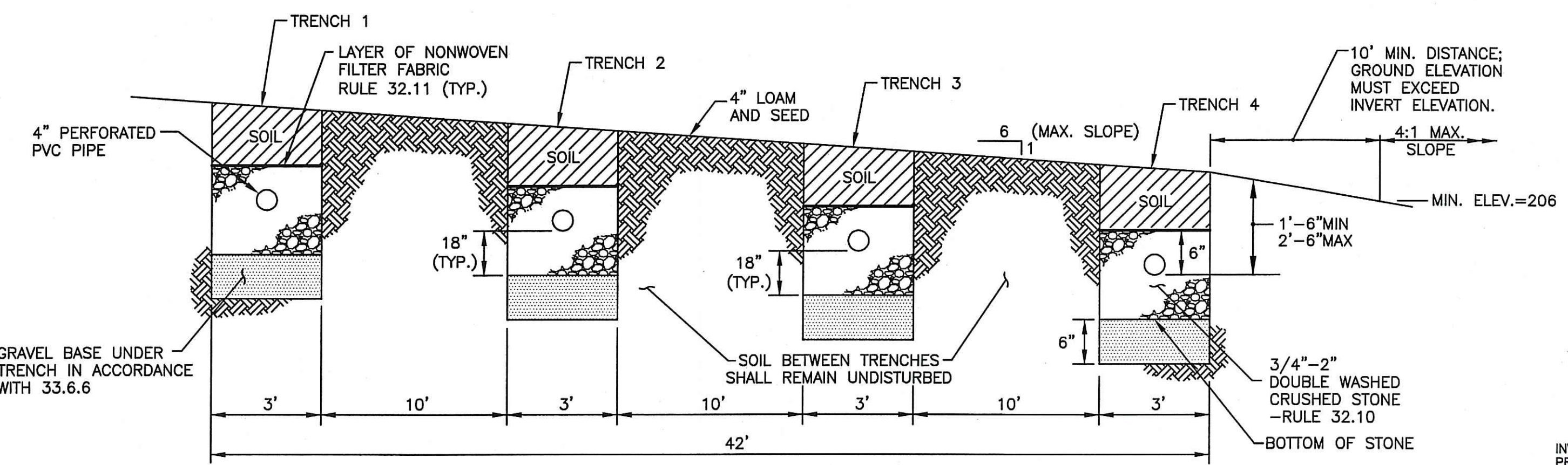
TYPE OF SYSTEM: 36" WIDE TRENCH (18" STONE BELOW INVERT)
 RIDEM SOIL CATEGORY = 4
 ALLOWABLE APPLICATION RATE = .61 GALS./S.F./DAY
 MIN. LEACHING AREA REQUIRED = 550 GPD ÷ .61 GAL./S.F./DAY = 902 S.F.
 AREA ALLOWED PER LINEAR FOOT OF TRENCH = 4.2 SF/LF
 TOTAL TRENCH LENGTH REQUIRED = 215 LF.
 (USE 4 TRENCHES @ 55 LF)
 TOTAL TRENCH LENGTH PROVIDED = 220 LF.
 TOTAL LEACHING AREA PROVIDED = 924 S.F.

ON-SITE WASTEWATER TREATMENT SYSTEM CONSTRUCTION SEQUENCE NOTES:

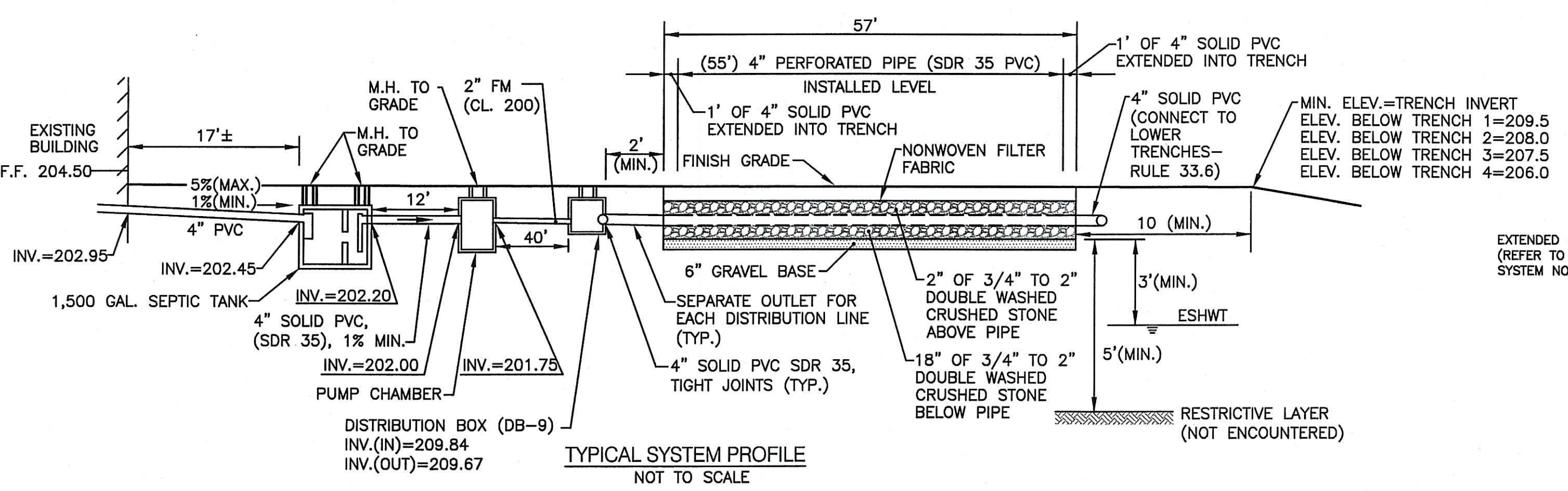
- THE OWTS INSTALLER SHALL NOTIFY THE OWTS DESIGNER OF THE CONSTRUCTION START DATE AT LEAST THREE (3) WORKING DAYS IN ADVANCE.
- NO OWTS CONSTRUCTION SHALL BEGIN UNTIL AUTHORIZED BY R.I.D.E.M. AND THE OWTS DESIGNER.
- PRIOR TO PURCHASE/ORDER OF PRODUCTS, THE INSTALLATION MUST PROVIDE "SHOP DRAWINGS" FOR ALL MATERIALS (PIPE, GRAVEL, STONE, TANKS, FILTER FABRIC ETC.) APPROVAL MUST BE GRANTED BY THE DESIGNER PRIOR TO PURCHASE/ORDER.



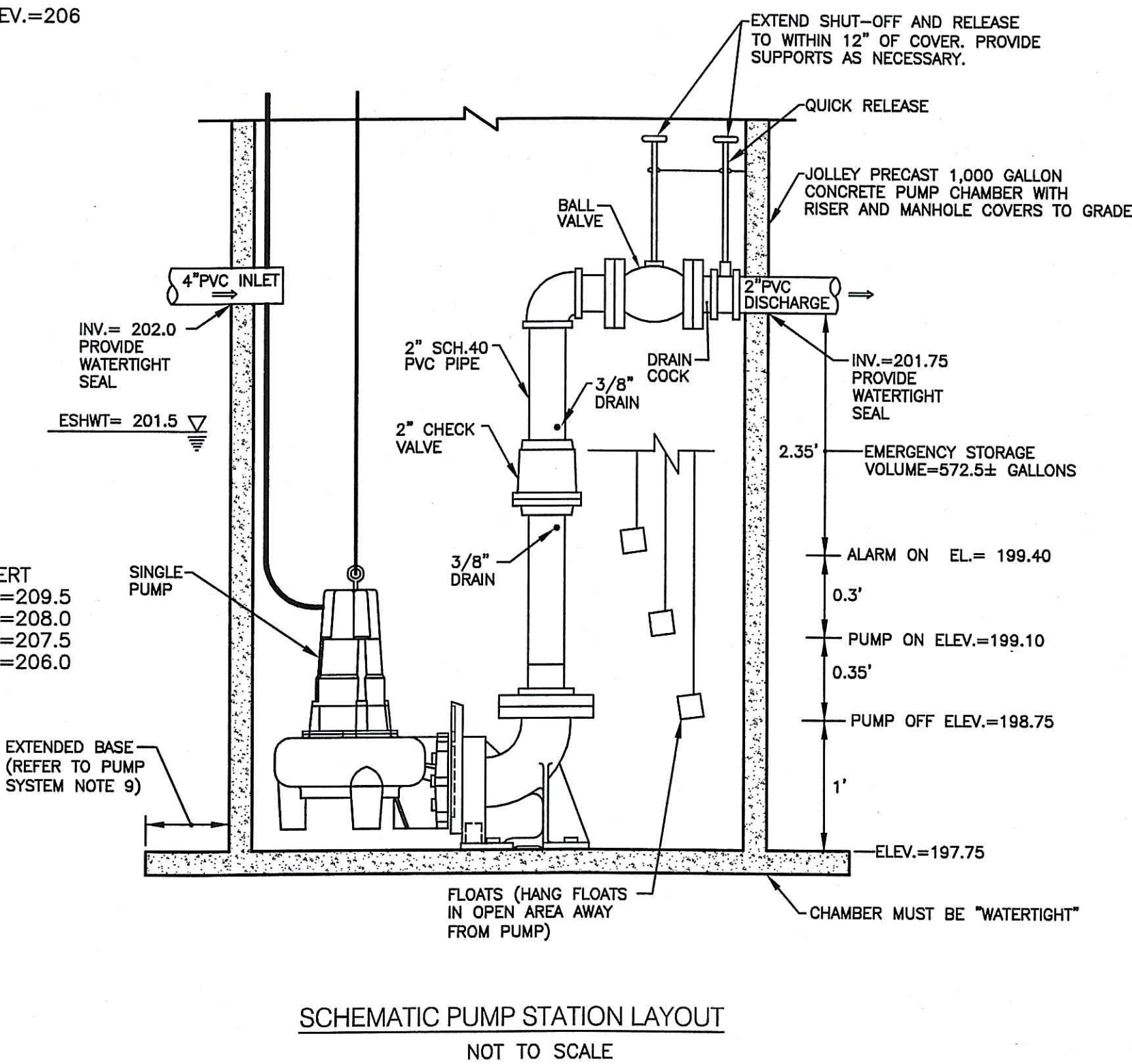
TYPICAL LEACHING SYSTEM (TRENCH TYPE)
 NOT TO SCALE



TYPICAL TRENCH CROSS SECTION
 NOT TO SCALE



TYPICAL SYSTEM PROFILE
 NOT TO SCALE



SCHEMATIC PUMP STATION LAYOUT
 NOT TO SCALE

PUMP SYSTEM NOTES:

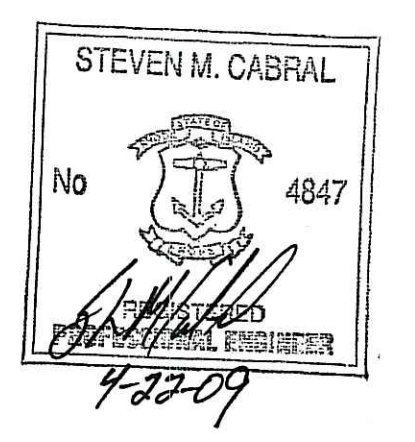
- "PUMP STATION" PUMP SHALL BE A "ZOLLER PUMP CO. SERIES 282 "WASTE MATE", 2" DISCHARGE, OR EQUAL.
- ALL PLUMBING AND ELECTRICAL WORK AND MATERIALS SHALL CONFORM TO ALL STATE, FEDERAL AND LOCAL CODES.
- FORCE MAIN SHALL BE 2" CL 200 PVC (MIN.) OR EQUAL.
- INSTALLATION MUST MEET MANUFACTURER'S RECOMMENDATIONS.
- A HIGH WATER LEVEL ALARM (VISIBLE AND AUDIBLE POWERED BY CIRCUIT SEPARATE FROM THE PUMP POWER SHALL BE LOCATED IN A NORMALLY OCCUPIED AREA OF THE BUILDING).
- THE PUMP CHAMBER SHALL BE WATERTIGHT, AND ALL UNSUITABLE OR SOFT MATERIAL BELOW THE PUMP CHAMBER SHALL BE REMOVED AND REPLACED WITH GRAVEL BEDDING. A MINIMUM 6" LAYER OF GRAVEL SHALL BE SET LEVEL TO FORM A STABLE BASE.
- STANDBY POWER SUPPLY IS RECOMMENDED. (EMERGENCY GENERATOR OR BACKUP POWER SUPPLY IS NECESSARY FOR AUTOMATIC USE DURING POWER OUTAGES).
- DOSING VOLUME FOR PUMP = 90.76 GALLONS (63% OF DISTRIBUTION PIPE VOLUME)
- PUMP STATION MANUFACTURER MUST PROVIDE BUOYANCY CALCULATIONS TO DETERMINE THE NEED OF ANTI-FLOTATION DEVICES USING THE MAX. WATER TABLE OF 201.5.
- PUMP OPERATION DATA:
 PUMP RATE=51± GPM @ 16.75± HEAD
 DOSE VOLUME=90.76 GALLONS
 CYCLES=6.1 CYCLES/DAY
 CYCLE TIME=1 MIN., 47 SEC.
- THE PUMP CHAMBER MANUFACTURER SHALL CERTIFY THAT THE PUMP CHAMBER IS WATER TIGHT. ALSO, THE CONTRACTOR SHALL COORDINATE WATER TIGHT FIELD TESTING WITH THE ENGINEER PRIOR TO PUMP USE.
- PUMP SHALL RUN TEST CYCLES WITNESSED BY THE ENGINEER PRIOR TO USE.

DOSING VOLUME:

VOLUME OF 4" DISTRIBUTION LINE (LEACH FIELD)
 LENGTH = 220'
 VOLUME = (PIPE AREA x L) = 0.088 x 220 = 19.27 CF
 VOLUME = 19.27 CF OR 144.1 GALLONS
 DOSING VOLUME = 60% TO 70% OF 144.1 GALLONS
 DOSING VOLUME = 90.76 GALLONS = 63%

CROSSMAN ENGINEERING, INC.
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 Phone: (401) 738-5660 - Fax: (401) 738-8157
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- Civil
- Transportation
- Environmental
- Site Planning
- Land Surveying



PROJECT TITLE:
 OWTS REPAIR
 ASSESSOR'S PLAT 7, LOT 35
 AND ASSESSOR'S PLAT 5, LOT 76
 ZONING DISTRICT RSW-60/80
 SINGLE FAMILY RESIDENTIAL WATER
 HOPE VILLAGE OVERLAY DISTRICT

**RYEFIELD ROAD
 HOPE, RHODE ISLAND**

PREPARED FOR:
 HOPE ASSOCIATES, INC.
 6 RYEFIELD ROAD
 HOPE, RHODE ISLAND 02831

DRAWING TITLE:
 ON-SITE WASTEWATER TREATMENT
 SYSTEM REPAIR DETAIL PLAN

DATE: APRIL 2009
SCALE: AS SHOWN

DWG. NAME: 1545-C1.2-OWTS-DETAIL.dwg

REVISIONS

| NUMBER | REMARKS | DATE |
|--------|--|------|
| 1 | REVIEWED SITE PLAN APPLICATION NO. 09-0100 DATED MAY 20 2009 SEE LETTER OF SAME DATE | |

DRAWING NUMBER

C1.2

SHEET: 2 OF 2

R.I.D.E.M. SUBMISSION

S:\1545 - Longlot - Septic Repair\Current\ACAD Draw\02 Design Plans\01 R.I.D.E.M. Submission\1545-C1.2-OWTS-DETAIL.dwg, Model, 4/24/2009 8:25:42 AM, 1:1