

GENERAL NOTES

- THE EXISTING CONDITIONS AND UTILITIES SHOWN ARE FROM BOYER ASSOCIATES. CROSSMAN ENGINEERING HAS NOT CONDUCTED FIELD SURVEY FOR THIS SITE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING CONDITIONS AND UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH "DIG SAFE PROGRAM LAW" ENACTED BY THE R.I. LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY CITY, STATE OR FEDERAL AGENCY THAT MAY APPLY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- SPECIFICATIONS TO GOVERN THIS PROJECT FOR ALL EXCAVATION, PLACEMENT OF FILL, PIPE INSTALLATION, BITUMINOUS PAVEMENT, GRADING AND STABILIZATION SHALL BE PERFORMED BY THE CONTRACTOR IN FULL COMPLIANCE WITH THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED AUGUST 2013, WITH LATEST REVISIONS UNLESS OTHERWISE SHOWN ON PLANS. THE "METHOD OF MEASUREMENT" AND "BASIS OF PAYMENT" WITHIN THE R.I.D.O.T. SPECIFICATIONS ARE NOT APPLICABLE. THESE SPECIFICATIONS CAN BE OBTAINED ON-LINE AT:
[HTTP://WWW.DOT.RI.GOV/DOCUMENTS/DOINGBUSINESS/BLUEBOOK.PDF](http://www.dot.ri.gov/documents/doingbusiness/bluebook.pdf)
- RHODE ISLAND STANDARDS REFERENCED ARE ACCORDING TO THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS "RHODE ISLAND STANDARD DETAILS" DATED MAY 20, 2015, WITH ALL REVISIONS AS PREPARED BY THE DEPARTMENT OF TRANSPORTATION.
- THE PRE-CONSTRUCTION SITE TOPOGRAPHY HAS BEEN LOCATED BY BOYER ASSOCIATES IN MAY 2016. THE WETLANDS HAVE BEEN DELINEATED BY NATURAL RESOURCE SERVICES IN JULY 2016, AND SURVEY LOCATED BY BOYER ASSOCIATES.
- THE SITE HAS BEEN DISTURBED SINCE THE ORIGINAL EXISTING CONDITIONS SURVEY HAD BEEN PREPARED. THE CONTRACTOR SHALL VISIT THE SITE TO REVIEW THE CURRENT CONDITIONS, PRIOR TO BIDDING. SOME EXISTING CONTOURS REFERENCED ON THESE PLANS MAY REPRESENT PRE-DISTURBANCE CONDITIONS.
- THE CONTRACTOR MUST VERIFY PRIOR TO CONSTRUCTION THAT ALL REQUIRED AUTHORIZATION TO PERFORM WORK HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION OPERATIONS INCLUDING ALL ACTIONS OR OMISSIONS OF ANY SUBCONTRACTORS, AGENTS OR EMPLOYEES. THE CONTRACTOR MUST ENSURE THAT THE CONDITIONS OF ALL PERMITS, SPECIFICATIONS AND FEDERAL, STATE AND LOCAL REGULATIONS ARE STRICTLY ENFORCED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ASPECTS OF ON-SITE SAFETY INCLUDING ANY DAMAGE TO EXISTING STRUCTURES.
- WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS OR SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE. THE BID PRICE SHALL INCLUDE ALL LABOR, INCIDENTALS, TOOLS AND EQUIPMENT, TESTING, SERVICES AND MATERIALS NECESSARY TO COMPLETE THE PROJECT. ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM FOR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER AND OWNER.
- CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY WORK AND PRIOR TO PURCHASING PRODUCTS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT PRIOR TO THE INITIATION OF WORK. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS, RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.
- ALL DISTURBED AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN.
- THE CONTRACTOR IS RESPONSIBLE TO OBTAIN COPIES OF ALL PERMITS ISSUED FOR THIS SITE, AND RETAIN THEM ON SITE DURING CONSTRUCTION. PERMIT CONDITIONS SHALL BE MET BY THE CONTRACTOR.
- A SOIL EROSION AND SEDIMENT CONTROL MANUAL HAS BEEN DEVELOPED FOR THIS SITE WHICH INCLUDES PLACEMENT, MAINTENANCE, AND INSPECTION OF EROSION CONTROL.

LAYOUT NOTE

THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.

DRAINAGE NOTE

PROJECT-WIDE, DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SURFACE RUNOFF TO DRAIN FREELY AND TO PREVENT PONDING OR PUDDLING ON PAVEMENT SURFACES.

FLOOD ZONE NOTE

THE PROJECT IS LOCATED WITHIN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AND ZONE A, SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, AS SHOWN ON THE FLOOD INSURANCE RATE MAP, PROVIDENCE COUNTY, RHODE ISLAND (ALL JURISDICTIONS) PANEL 304 OF 451, MAP NUMBER 44007C0304J, MAP REVISED OCTOBER 2, 2015.

PROPOSED POROUS PAVEMENT STRUCTURE

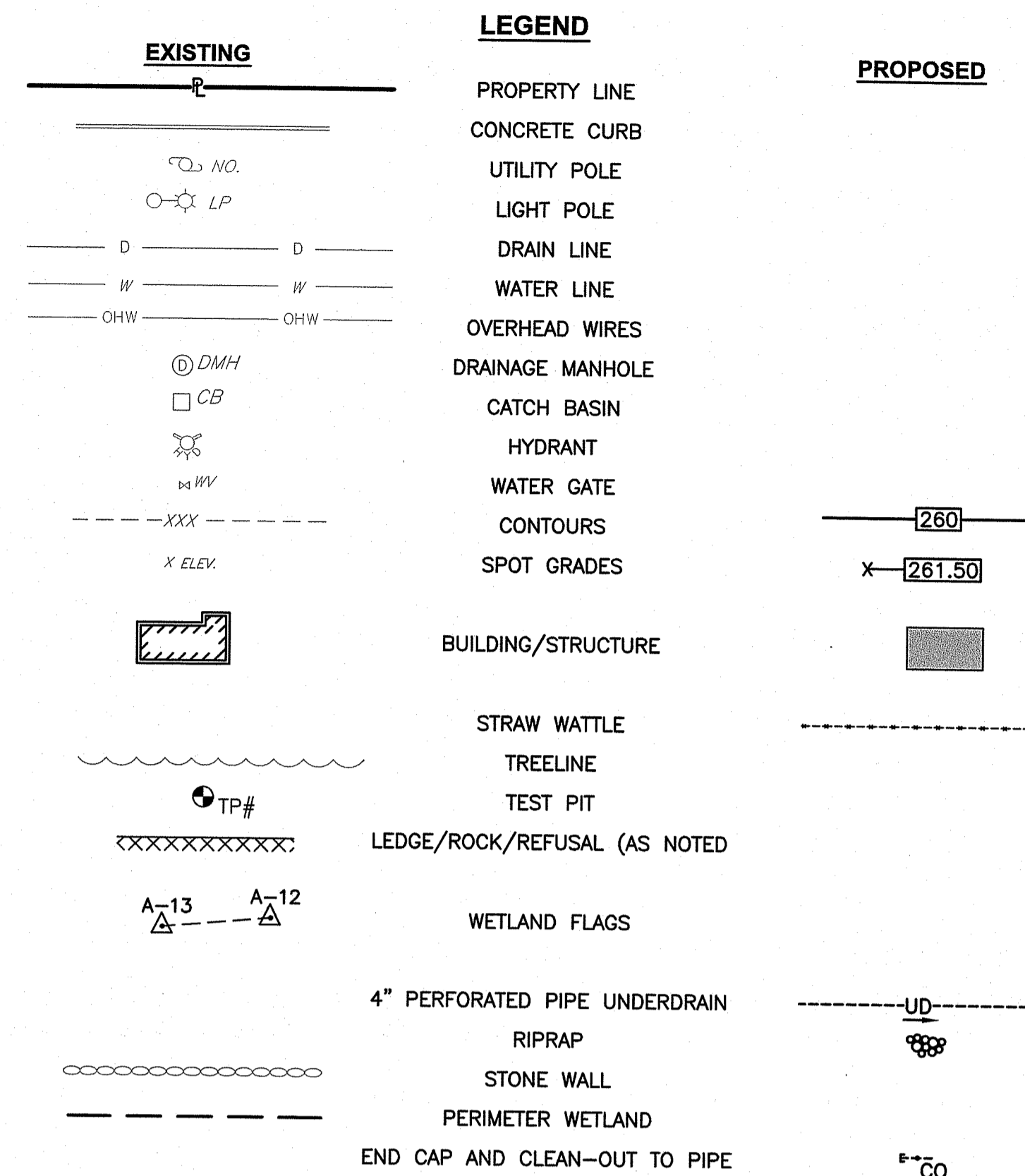
- 4" POROUS BITUMINOUS PAVEMENT
- 8" AASHTO M-6 OR ASTM C-33 (FILTER COURSE)
- FILTER FABRIC
- 3" (3/8") DOUBLE WASHED PEA GRAVEL (FILTER BLANKET)
- 12" 1 1/4" TO 1 1/2" DOUBLE WASHED CRUSHED STONE (RESERVOIR COURSE)
- FILTER FABRIC
- PVC LINER

NOTE:

- TO AVOID DUST AND DEBRIS FROM ENTERING THE STONE AFTER PLACEMENT, THE STONE SHOULD BE COVERED WITHIN 24 HOURS.
- DEPTH OF RESERVOIR COURSE IS REDUCED TO A 6" DEPTH AT THE LOCATION SHOWN ON GRADING AND DRAINAGE PLAN.
- THE BOTTOM OF RESERVOIR COURSE SHALL BE GRADED TO DRAIN INTO THE PERFORATED PIPE.
- THE PERFORATED PIPE SHALL BE WRAPPED IN FILTER FABRIC.

SITE NOTES

- THIS PLAN SET PROVIDES SUPPLEMENTAL INFORMATION TO A PRIOR SUBMITTAL, UNDER RIDEM APPLICATION 16-0233.
- THE SITE HAS UNDERGONE RECENT DISTURBANCE, WHICH AS SINCE BEEN CEASED. THE EXISTING TOPOGRAPHY SHOWN ON THIS PLAN HAS BEEN TAKEN FROM A PLAN PREPARED BY BOYER ASSOCIATES, INC. JUNE 15, 2016. REFER TO THE DRAINAGE NARRATIVE AND ASSESSMENT FOR 2010 GIS INFORMATION REFERENCING EXISTING CONDITIONS PRIOR TO SITE DISTURBANCE.
- THIS PLAN SET REFERENCES THE CURRENT GRADES AND VEHICLE SHELTER AND ALSO PROPOSED IMPROVEMENTS. THE PROPOSED IMPROVEMENTS HAVE BEEN DESIGNED TO CONFORM TO THE RIDEM STORMWATER DESIGN GUIDELINES.
- THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND DISPOSE THE CURRENT SURFACE MATERIAL AS REQUIRED TO INSTALL THE PROPOSED IMPROVEMENTS ON SITE. COORDINATE WITH ENGINEER AND OWNER. THE EXISTING TOPOGRAPHY SHOWN ON THIS PLAN HAS BEEN TAKEN FROM A PLAN PREPARED BY BOYER ASSOCIATES, INC. JUNE 15, 2016. REFER TO THE DRAINAGE NARRATIVE AND ASSESSMENT FOR 2010 GIS INFORMATION REFERENCING EXISTING CONDITIONS PRIOR TO SITE DISTURBANCE.

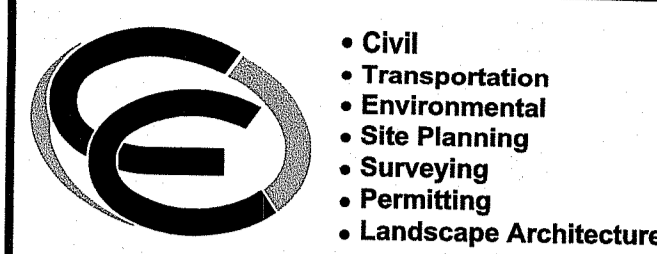


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 07 2019 FILE # 19-0244
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Wally L. Freeman

SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING ON JUNE 28, 2017

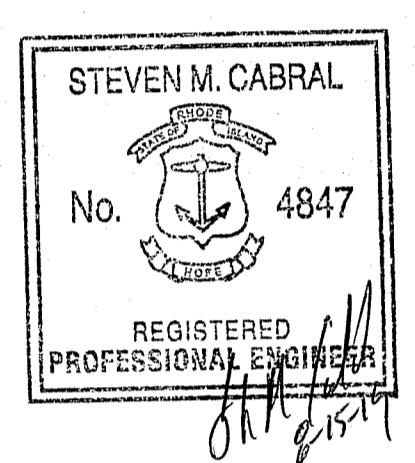
TEST PIT 1	TEST PIT 2	TEST PIT 3
0" - 1.5" Compacted Crushed Asphalt (HTM - Very Firm)	0" - 1" Fibric (Oe)	0" - 2" Compacted Crushed Asphalt (HTM)
1.5" - 4" Dark Yellowish Brown Silt Loam (Bw1 - Friable/Firm in Place)	1" - 5" Black Very Fine Sandy Loam (A - Very Friable)	2" - 30" Fine Sandy Loam Mix (HTM - Original Grade)
4" - 24" Light Olive Brown Very Fine Sand/Silt Loam (C1 - Friable/Firm in Place)	5" - 7" Dark Yellowish Brown Very Fine Sandy Loam/Silt Loam (Bw1 - Friable)	30" - 36" Very Dark Brown Silt Loam (Ab)
24" - 108" Light Olive Brown Stony Gravelly Fine Sand (2C1 - Friable/Firm in Place)	7" - 22" Dark Yellowish Brown Silt Loam (Bw2 - Friable)	36" - 42" Dark Yellowish Brown Silt Loam (Bw1 - Friable)
90" Water Seepage 10"-24" Redox Features 42" Estimated SHWT Test Pit Grade = 262.0 Design SHWT = 258.50	22" - 30" Light Olive Brown Silt Loam (C1 - Friable/Firm in Place)	42" - 54" Dark Yellowish Brown Silt Loam (Bw2 - Friable/Firm in Place)
NOTE: A&B HORIZON SOIL HAS BEEN REMOVED	30" - 46" Light Olive Brown Very Fine Sand/Silt Loam (C2 - Friable/Firm in Place)	54" - 68" Light Olive Brown Very Fine Sand/Silt Loam (C1 - Friable/Firm in Place)
	46" - 78" Light Olive Brown Stony Gravelly Fine Sand (2C1 - Friable/Firm in Place)	68" - 122" Light Brownish Brown Stony Gravelly Fine Sand (2C1 - Friable/Firm in Place)
	60" Water Seepage 22" Redox Features 22" Estimated SHWT Test Pit Grade = 257.50 Design SHWT = 255.70	80" Water Seepage 54" Redox Features (Current Grade) 28" Estimated SHWT (Original Grade) 58" Estimated SHWT (Current Grade) Test Pit Grade = 258.75 Design SHWT = 253.92



CROSSMAN ENGINEERING
Rhode Island: 151 Centerville Road, Warwick, RI 02886, Phone: (401) 738-5660
Massachusetts: 103 Commonwealth Avenue, North Attleboro, MA 02763, Phone: (508) 695-1700
Email: cel@crossmaneng.com

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KEY PLAN



PROJECT TITLE:
PROPOSED SITE IMPROVEMENTS
A.P. 30, LOT 96
WEST WARWICK INDUSTRIAL PARK
CRUDALE DRIVE
WEST WARWICK, RHODE ISLAND
02893

PREPARED FOR:
J BACH REALTY LLC
c/o HENRY DIPIETRO
6 CRUDALE DRIVE
WEST WARWICK, RI

DRAWING TITLE:
GENERAL NOTES and LEGEND

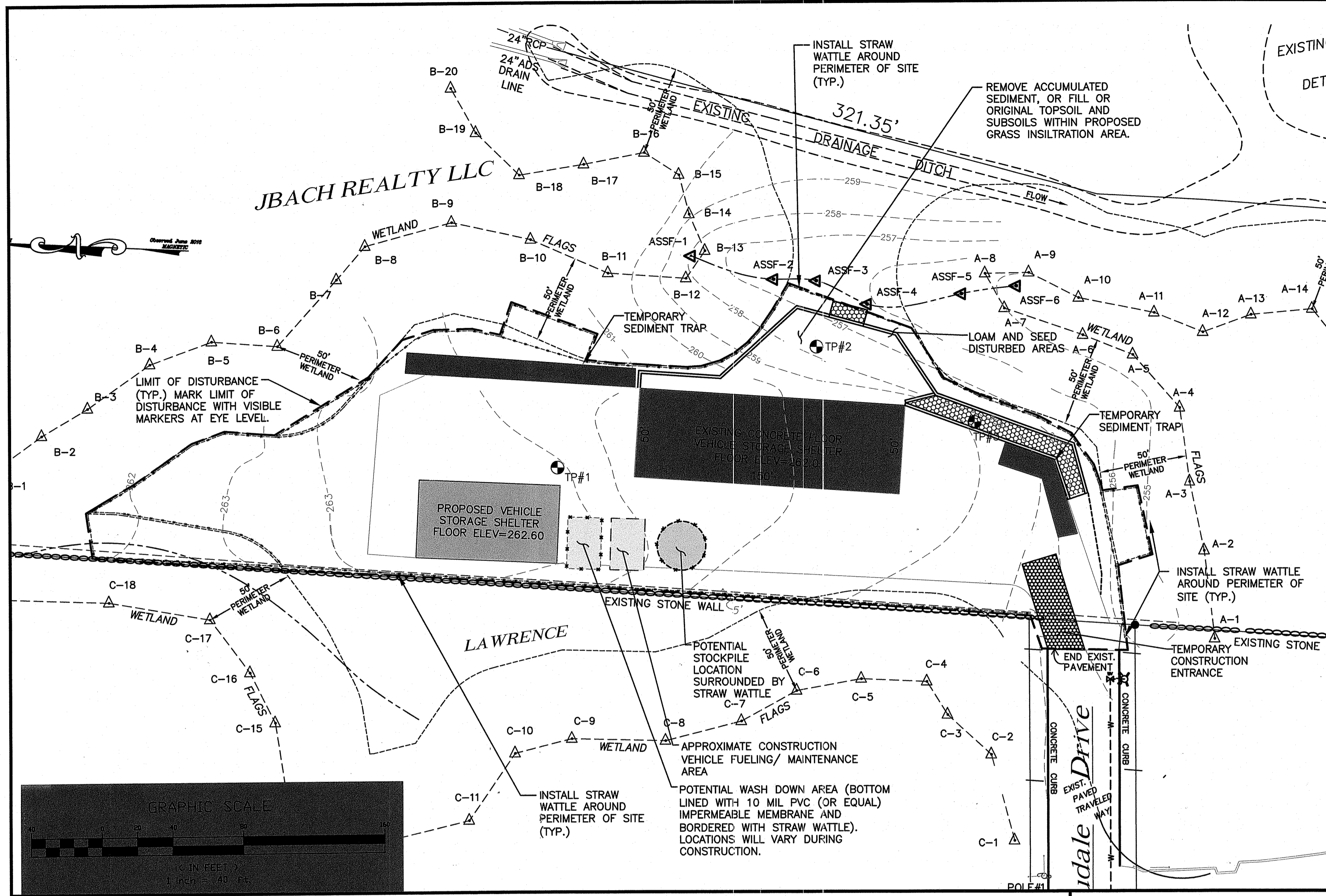
DATE: MAY 2018 **SCALE:** NO SCALE

DWG. NAME: 2253-C1-NOTE.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	RIDEM COMMENTS	8/9/19

DRAWING NUMBER
C1
SHEET: 2 OF 5



SEQUENCE OF CONSTRUCTION:

1. INSTALL PERIMETER EROSION CONTROLS AT LIMIT OF DISTURBANCE (WITHIN 50' PERIMETER WETLAND) PRIOR TO ANY SOIL DISTURBANCE.
2. MARKING OF ALL AREAS TO BE LEFT UNDISTURBED OR TO BE PROTECTED.
3. INSTALLATION OF CONSTRUCTION ENTRANCE.
4. REESTABLISH PREVIOUSLY DISTURBED AREAS WITHIN PERIMETER WETLAND AS NOTED ON PLANS.
5. ONCE WETLAND AREAS ARE STABILIZED, REMOVE EROSION CONTROLS WITHIN WETLAND PERIMETER AND INSTALL PERIMETER EROSION CONTROLS AT LIMIT OF DISTURBANCE FOR SITE IMPROVEMENTS (OUTSIDE OF 50' PERIMETER WETLAND).
6. STRIPPING AND STOCKPILING OF TOPSOIL AT DESIGNATED LOCATION.
7. EARTHWORK AND GRADING OF INFILTRATION AREAS.
8. INSTALLATION OF POROUS PAVEMENT SURFACE AND UNDERDRAINS AND INSTALLATION OF BUILDINGS.
9. PLACE STOCKPILED LOAM AND SEED DISTURBED AREAS.
10. ONCE SEEDED AREAS ARE STABILIZED, AND AFTER APPROVAL OF OWNER, REMOVAL OF ALL EROSION CONTROL MEASURES.

GENERAL PROJECT WIDE NOTES

1. STRAW WATTLE SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, MAINTAINED ON A REGULAR BASIS, AND SHALL BE PLACED TO PREVENT SEDIMENTATION ONTO ADJACENT PROPERTY AND WETLANDS.
2. THE CONTRACTOR MUST REPLACE AND/OR RESEED ANY VEGETATION THAT DOES NOT DEVELOP/SURVIVE WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. ALL PERIMETER CONTROLS OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED.
4. TREES AND OTHER EXISTING VEGETATION SHALL BE RETAINED WHENEVER FEASIBLE; THE AREA BEYOND THE DRIPLINE SHALL BE FENCED OR ROPED OFF TO PROTECT TREES FROM CONSTRUCTION EQUIPMENT.
5. AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESEDED, RESEEDING, OR OTHERWISE RESTORED AT THE CONTRACTOR'S EXPENSE.

EROSION CONTROL AND SOIL STABILIZATION PROGRAM

1. TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, OR FIBER MULCH PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE OWNER.
2. HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 3,000-4,000 LBS/ACRE.
3. STOCKPILES SHALL HAVE NO SLOPE STEEPER THAN 2:1 AND SHALL BE SURROUNDED BY SILT FENCE.
4. STOCKPILES EXPOSED FOR EXCESSIVE PERIODS SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW OR FIBER MATTING.

INSPECTION/MAINTENANCE NOTES

1. PRIOR TO COMMENCING GRUBBING OPERATIONS AND EARTHWORK, STRAW WATTLE SHALL BE PLACED INSIDE SAWCUT EDGE AND AT DOWNGRADIENT AREAS AROUND THE SITE PERIMETER TO PREVENT SEDIMENT FROM ENTERING EXISTING ROADWAY DRAINAGE SYSTEM, WETLAND AREAS, AND ADJUTING PROPERTIES.
2. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM, WETLAND AREAS, ADJACENT PROPERTY AND ROADWAYS.
3. ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSION TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION - SUCH AS RIP-RAP.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL.
5. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT / REPLACE DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL AND WEEKLY DURING NON CONSTRUCTION PERIODS.
6. ADDITIONAL STRAW WATTLE OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
7. THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE RHODE ISLAND STATE CONSERVATION COMMITTEE, 2014, MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT-DOWN PERIODS, MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.
9. STOCKPILE AREAS SHALL BE LOCATED WITHIN PERIMETER EROSION CONTROLS AND SHALL BE SURROUNDED BY SILT FENCE.
10. WASH DOWN AREAS SHALL BE LOCATED WITHIN PERIMETER EROSION CONTROLS, ON GRAVEL SURFACES, AND ON 10 MIL PLASTIC LINING. NO DETERGENTS ARE ALLOWED.
11. EQUIPMENT/VEHICLE FUELING SHALL BE WITHIN THE PERIMETER EROSION CONTROLS UP-GRADE FROM THE TEMPORARY SEDIMENT TRAP.

DUST CONTROL NOTES

ON AN AS-NEEDED BASIS OR AS DIRECTED BY R.I.D.E.M. OR OWNER, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS (AS RECOMMENDED BY THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK") TO CONTROL DUST:

A. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.

B. CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

CROSSMAN ENGINEERING
 Rhode Island: 151 Centerville Road, Warwick, RI 02886, Phone: (401) 738-5660
 Massachusetts: 103 Commonwealth Avenue, North Attleboro, MA 02763, Phone: (508) 695-1700
 Email: ce@crossmaneng.com

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STEVEN M. CABRAL
 No. 4847
 REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:
PROPOSED SITE IMPROVEMENTS
 A.P. 30, LOT 96
 WEST WARWICK INDUSTRIAL PARK
 CRUDALE DRIVE
 WEST WARWICK, RHODE ISLAND
 02893

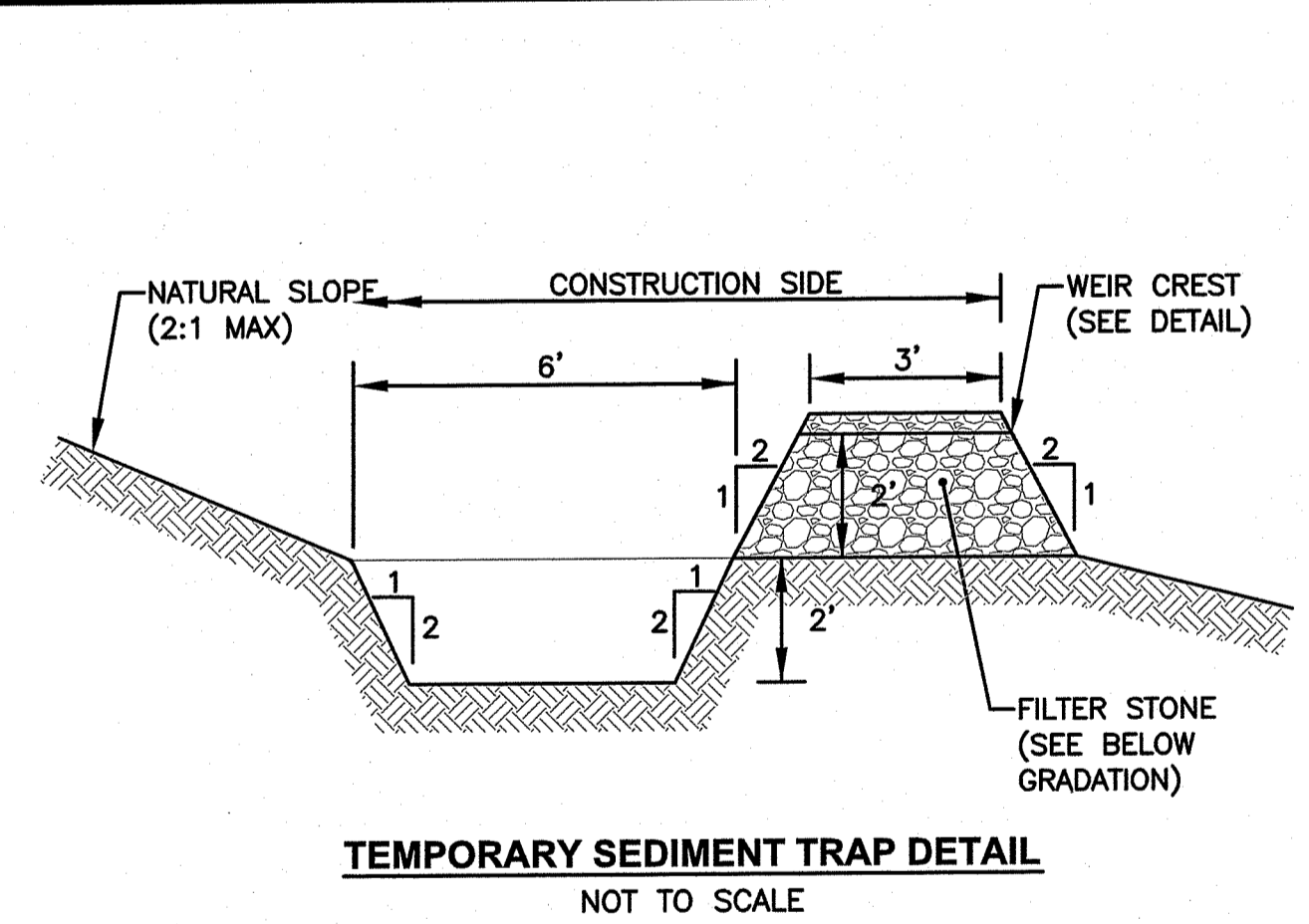
PREPARED FOR:
J BACH REALTY LLC
 c/o HENRY DIPIETRO
 6 CRUDALE DRIVE
 WEST WARWICK, RI

DRAWING TITLE:
SOIL EROSION AND SEDIMENT CONTROL PLAN

DATE: MAY 2018 SCALE: AS SHOWN
 DWG. NAME: 2253-C3-SOIL.dwg

REVISIONS	NUMBER	REMARKS	DATE
△	1	RIDEM COMMENTS	8/9/19

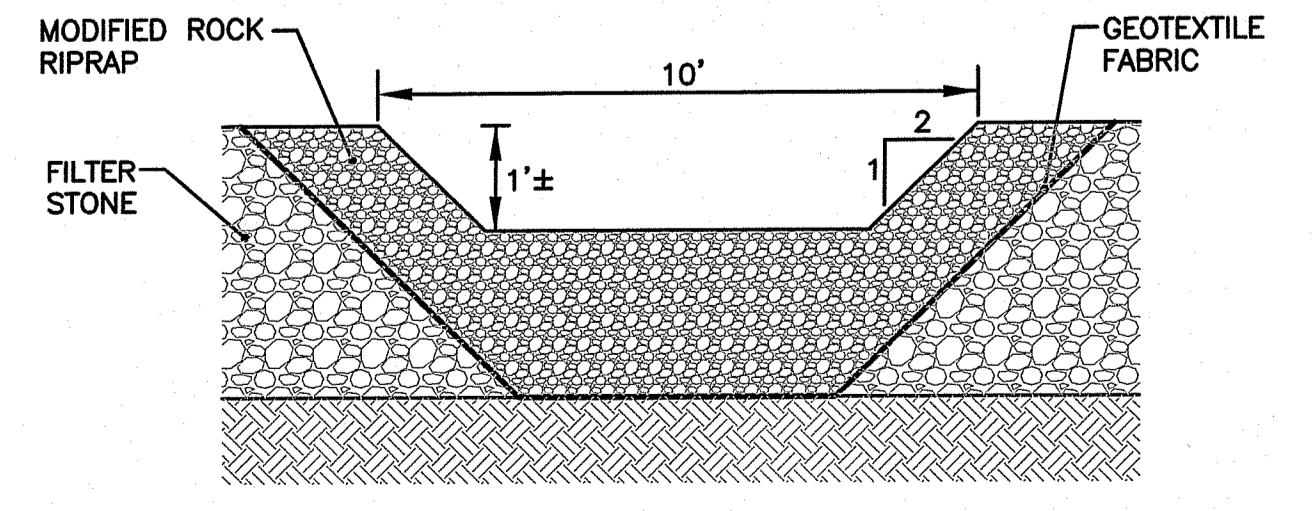
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C3
 SHEET: 4 OF 5



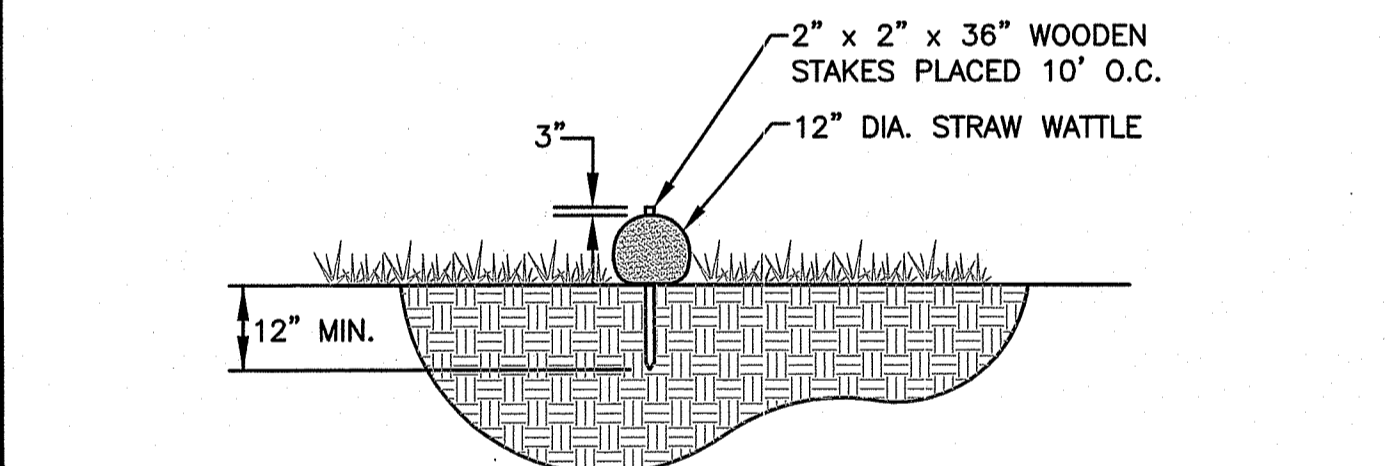
NOTES:
 1. FILTER STONE SHALL MEET THE REQUIREMENTS OF R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.09 TABLE 1, COLUMN V FILTER STONE.

US STANDARD SIEVE SIZE (INCHES)	FILTER STONE
1	100
3/4	70-85
1/2	10-40
3/8	0-20
#4	0-5

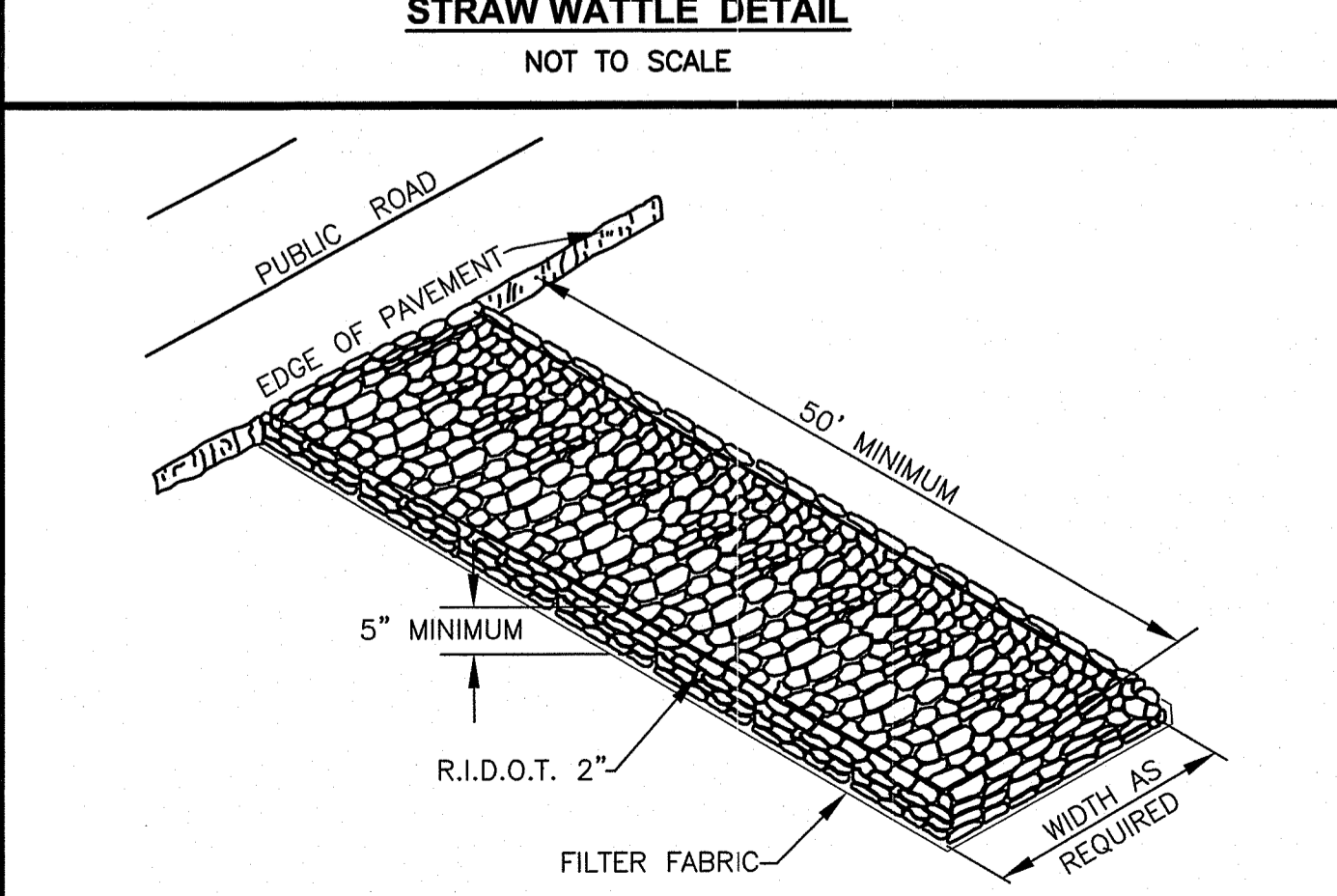
GRADATION OF FILTER STONE MATERIAL
 DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESH WATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED NOV 07 2019 FILE # 19-0241
 NO CHANGES ALLOWED WITHOUT REPERMITSION
 APPROVED: [Signature]



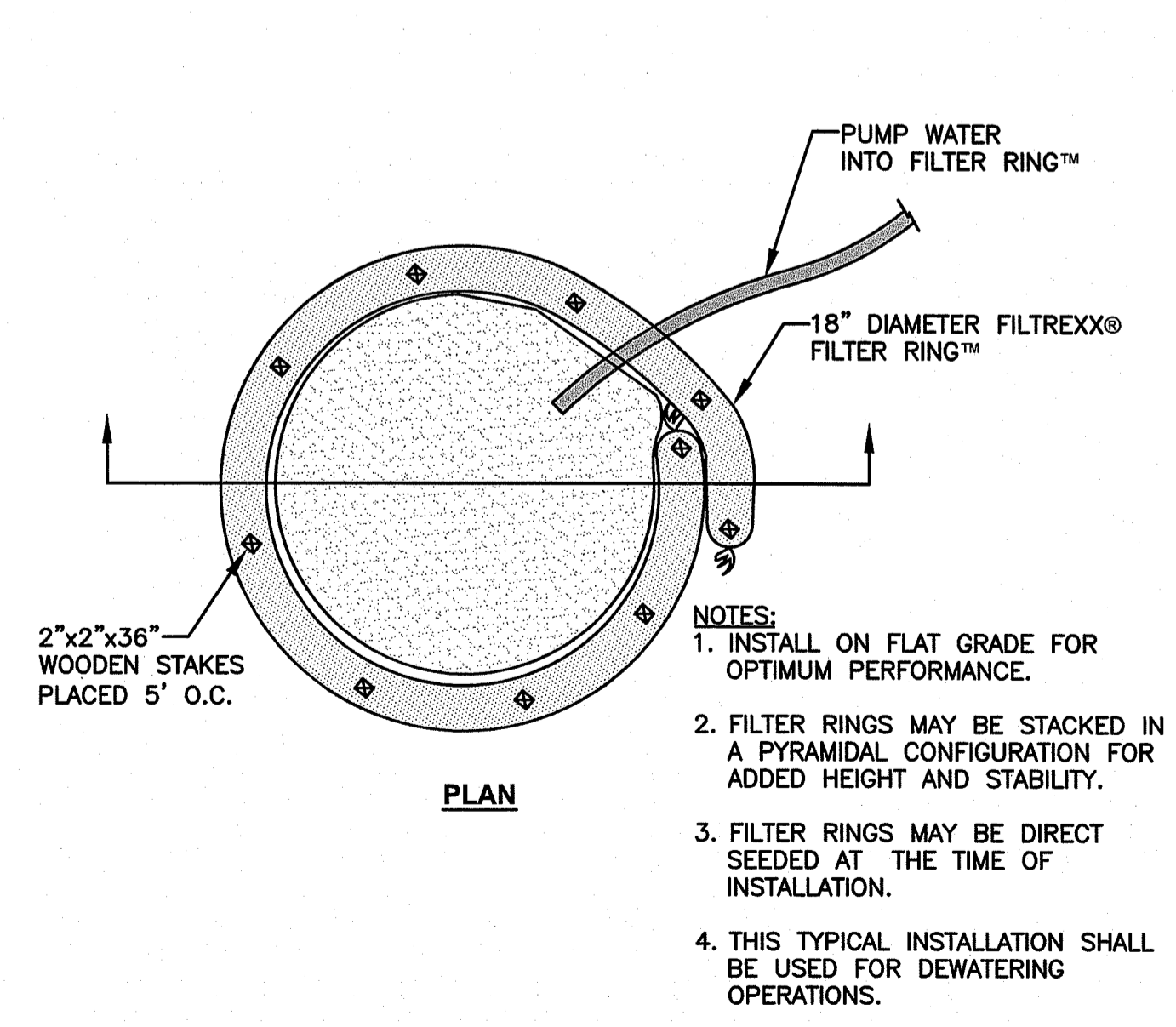
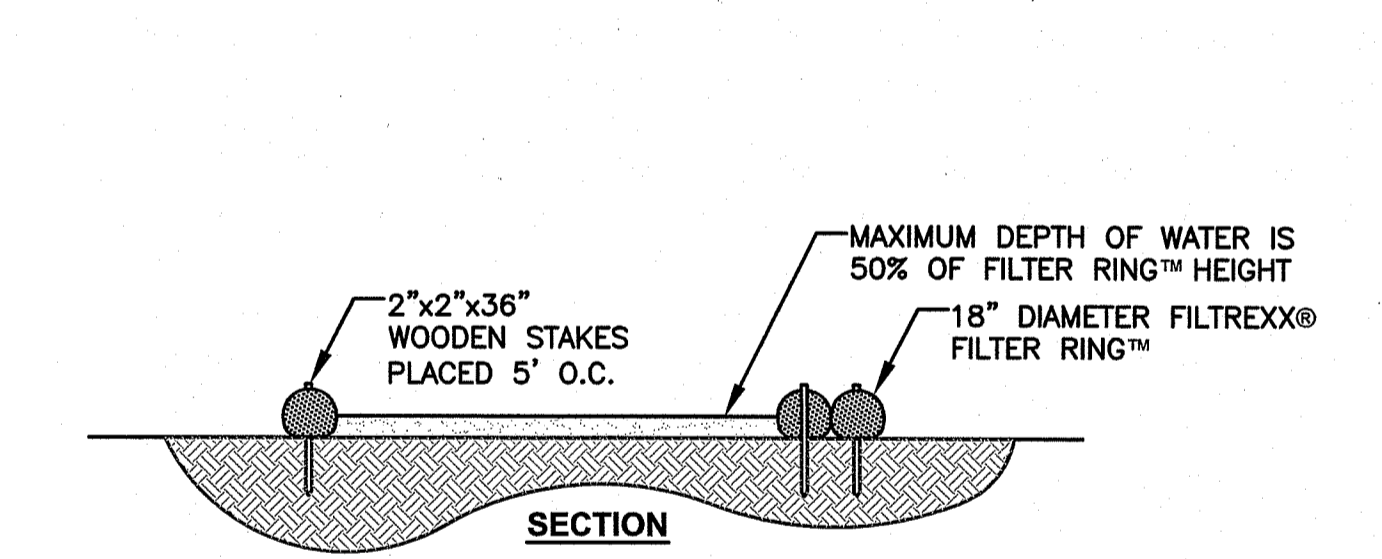
- NOTES:
1. THE TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO UNDISTURBED, STABILIZED GROUND.
 2. CONTRACTOR SHALL INSTALL 1 OUTLET PER 100' LENGTH OF TEMPORARY SEDIMENT TRAP (1 OUTLET MIN. PER TEMPORARY SEDIMENT TRAP).
 3. THE MODIFIED ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF THE R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.10.0.3.2.
 4. CONTRACTOR MUST REFER TO THE INSTALLATION, INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS PROVIDED IN THE R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, AS AMENDED.



- NOTES
- STRAW WATTLE SECTION**
1. CONTRACTOR SHALL SUBMIT STRAW WATTLE CONTROL TO ENGINEER FOR APPROVAL.
 2. CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE PRODUCT AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT.
 3. WATTLE MATERIAL TO BE DISPERSED ON SITE AS DETERMINED BY ENGINEER.
 4. ALTERNATE CONTROL MAY BE USED UPON APPROVAL BY ENGINEER.

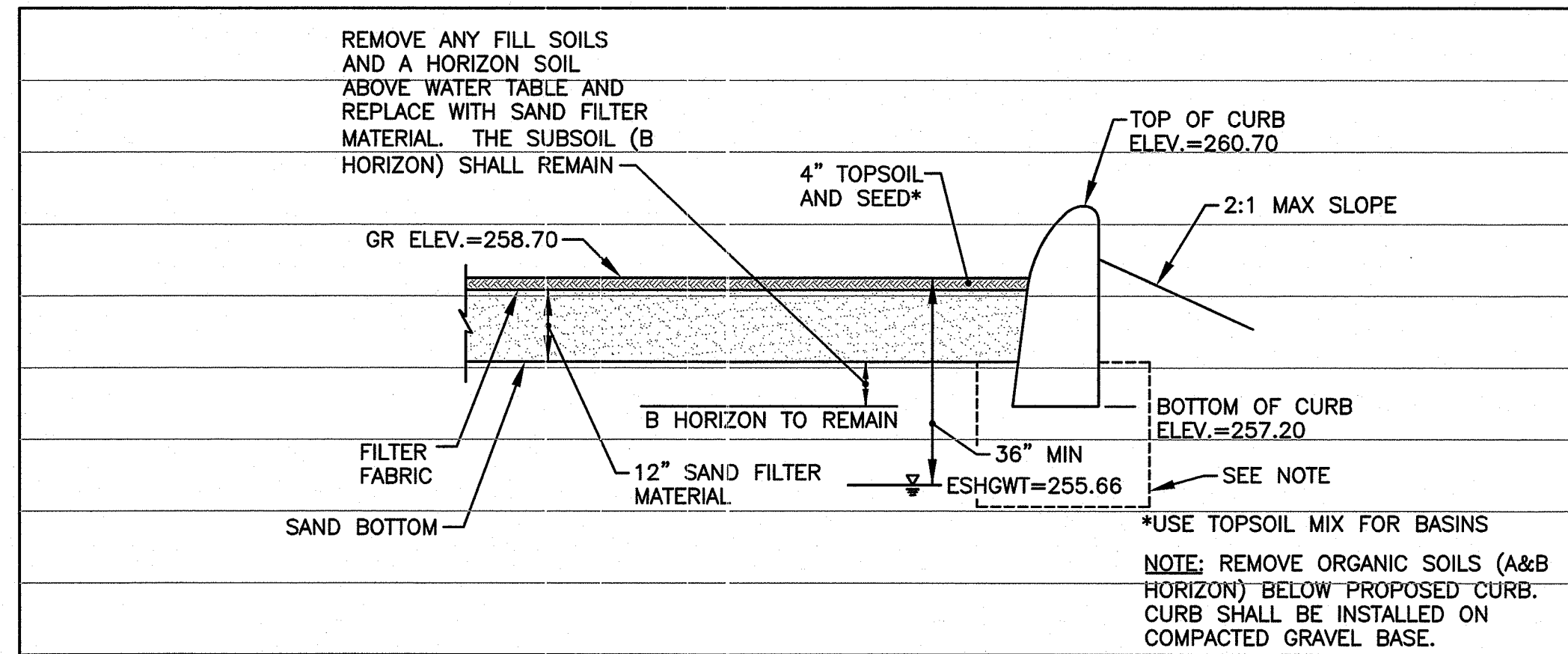


CONSTRUCTION ENTRANCE DETAIL
 NOT TO SCALE



- NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
 2. FILTER RINGS MAY BE STACKED IN A PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT AND STABILITY.
 3. FILTER RINGS MAY BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
 4. THIS TYPICAL INSTALLATION SHALL BE USED FOR DEWATERING OPERATIONS.

FILTREXX® FILTER RING™
 NOT TO SCALE



GRASS INFILTRATION AREA TYPICAL SECTION
NOT TO SCALE

SEED MIX NO. 2 (INFILTRATION AREA)

- 20% FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)
- 16% VIRGINIA WILD RYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
- 15% RIVERBANK WILD RYE, PA ECOTYPE (ELYMUS RIPARIUS, PA ECOTYPE)
- 15% JAPANESE MILLET (ECHINOCHLOA CRUSGALLI VAR. FRUMENTACEA)
- 15% DEER TONGUE, 'TIOGA' (PANICUM CLANDESTINUM (DICHANTHELIUM C.), 'TIOGA')
- 9% BLUNT BROOM SEDGE, PA ECOTYPE (CAREX SCOPARIA, PA ECOTYPE)
- 5% SWITCHGRASS, 'CAVE-IN-ROCK' (PANICUM VIRGATUM, 'CAVE-IN-ROCK')
- 2% GREEN BULRUSH, PA ECOTYPE (SCIRPUS ATROVIRENS, PA ECOTYPE)
- 2% AWL SEDGE, PA ECOTYPE (CAREX STIPATA, PA ECOTYPE)
- 1% AUTUMN BENTGRASS, APB (AGROSTIS PERENNANS, APB)

TOPSOIL MIX (INFILTRATION AREA)

PLANTING SOIL SHALL MEET THE BELOW COMPOSITION;

SAND: 85-88%
SOIL FINES: 8-12% (NO MORE THAN 2% CLAY)
ORGANIC MATTER: 3-5% (SAND FILTER BASIN)

NOTE: PROVIDE 5%-20% ORGANIC MATTER FOR DETENTION BASIN.

SAND FILTER MATERIAL FOR GRASS INFILTRATION

1. SAND FILTER MATERIAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, APPENDIX F.5, CONSTRUCTION STANDARDS/SPECIFICATIONS FOR FILTER BMP'S.
2. MATERIAL USED SHALL MEET THE REQUIREMENTS OF TABLE F-16 IN APPENDIX F.5.
3. THE CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE ABOVE REFERENCED MANUAL. THE MANUAL CAN BE FOUND AT <http://www.dem.ri.gov/pubs/regs/water/swmanual.pdf>.
4. CONTRACTOR IS RESPONSIBLE TO SUBMIT SHOP DRAWINGS AND SPECIFICATIONS FOR SAND FILTER MATERIAL PRIOR TO START OF CONSTRUCTION.
5. FILTER FABRIC SHALL BE MIRAFI 160 N OR APPROVED EQUAL.

SAND FILTER MATERIAL BOTTOM BED NOTE

THE SAND FILTER BOTTOM BED SHALL BE AASHTO M6 OR ASTM 33 CONCRETE SAND.

FILTER FABRIC PLACED BETWEEN SAND FILTER BOTTOM BED AND TOPSOIL LAYERS SHALL BE MIRAFI 180-N OR APPROVED EQUAL.

SEEDING NOTES (OUTSIDE GRASS INFILTRATION AREA)

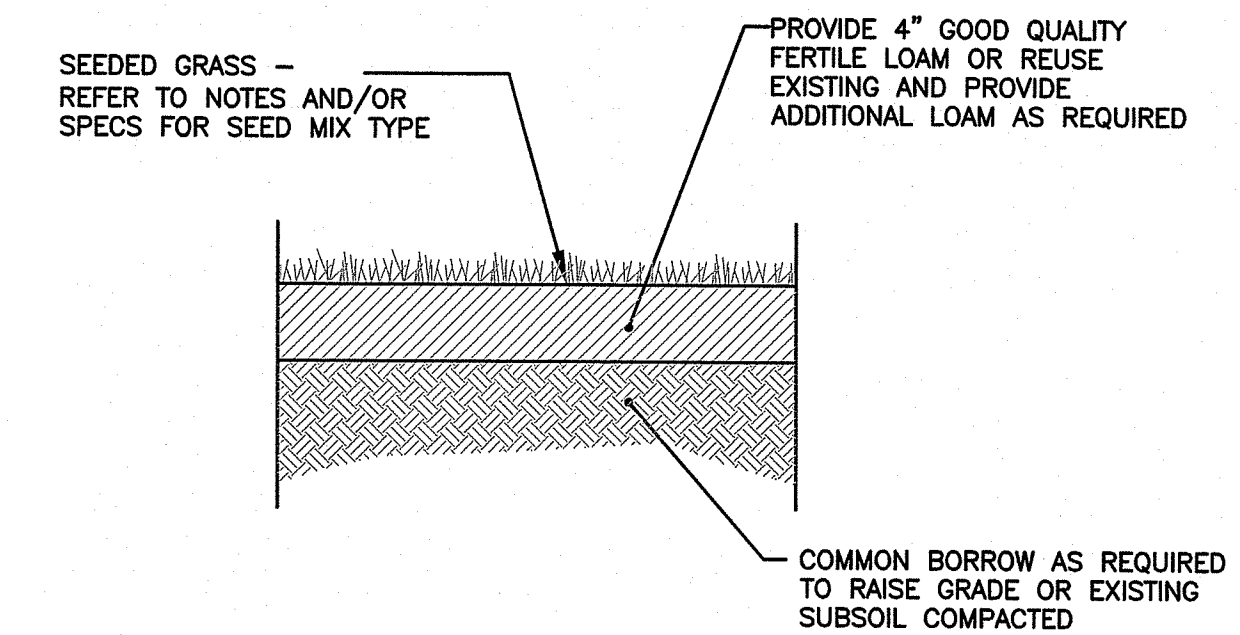
1. LOAM SHALL BE SPREAD TO A MINIMUM DEPTH OF 4" OVER ALL AREAS DESIGNATED ON PLANS.
2. SHAPE AND SMOOTH THE SURFACE TO THE LINES AND GRADES AS SHOWN ON PLANS.
3. FERTILIZER WITH 10-10-10 OR EQUIVALENT ANALYSIS. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN A SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 3 TO 4 INCHES OF THE PLANTING SOIL. APPLY AT THE RATE OF 8 POUNDS PER 1,000 SQUARE FEET AT SEEDING.
4. LIME: SPREAD EVENLY AND WORK INTO THE SOIL DURING PREPARATION OF SEED BED AT THE RATE OF ONE TON PER ACRE. INCORPORATE INTO THE SOIL BY DICING OR OTHER APPROVED METHOD. DISTRIBUTE LIME UNIFORMLY AND WORK INTO TOP 4 INCHES OF TOP SOIL (MINIMUM) AND UNIFORMLY BLEND BY DICING OR ROTOTILLING.
5. APPLICATION OF SEED:
 - A. RATE OF APPLICATION OF SEED SHALL BE 8 POUNDS PER 1,000 SQUARE FEET OR AS INDICATED ON PLANS.
 - B. SEEDING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS, AND ONLY DURING THE FOLLOWING DATES:
SPRING SEEDING: MARCH 15 TO MAY 31
FALL SEEDING: AUGUST 15 TO OCTOBER 15
 - C. THE CONTRACTOR SHALL KEEP ALL SEEDED AREAS WATERED AND IN GOOD CONDITION, RESEEDING IF AND WHEN NECESSARY FOR AN 8 WEEK PERIOD OR UNTIL A GOOD, HEALTHY, UNIFORM GROWTH IS ESTABLISHED OVER THE ENTIRE AREA. THE CONTRACTOR SHALL ALSO MAINTAIN THESE AREAS IN AN APPROVED CONDITION UNTIL PROVISIONAL ACCEPTANCE.
 - D. DURING THIS PERIOD, WATER TURF AS NECESSARY TO MAINTAIN AN ADEQUATE SUPPLY OF MOISTURE WITHIN THE ROOT ZONE. AN ADEQUATE SUPPLY OF MOISTURE IS EQUIVALENT OF ONE INCH OF ABSORBED WATER PER WEEK THAT IS DELIVERED AT WEEKLY INTERVALS IN THE FORM OF NATURAL RAIN OR IS AUGMENTED AS REQUIRED BY PERIODIC WATERING.
 - E. OVERSEED WHEN NECESSARY TO PROMOTE GRASS GROWTH.
 - F. REPLANT AREAS VOID OF TURF ONE SQUARE FOOT OR LARGER.
6. SEED:
 - a. SEED ALL AREAS DESIGNATED ON PLAN AS WELL AS ALL DISTURBED EXISTING AREAS WITH THE FOLLOWING SEED MIX:

SEED MIX NO. 1

(SLOPES & UN-MOWED AREA)

% BY WEIGHT	TYPE
70	CREeping RED FESCUE
5	ASTORIA BENTGRASS
15	BIRDSFOOT TREFOIL
10	PERENNIAL RYE GRASS

APPLICATION RATE = 200 lbs. / ACRE

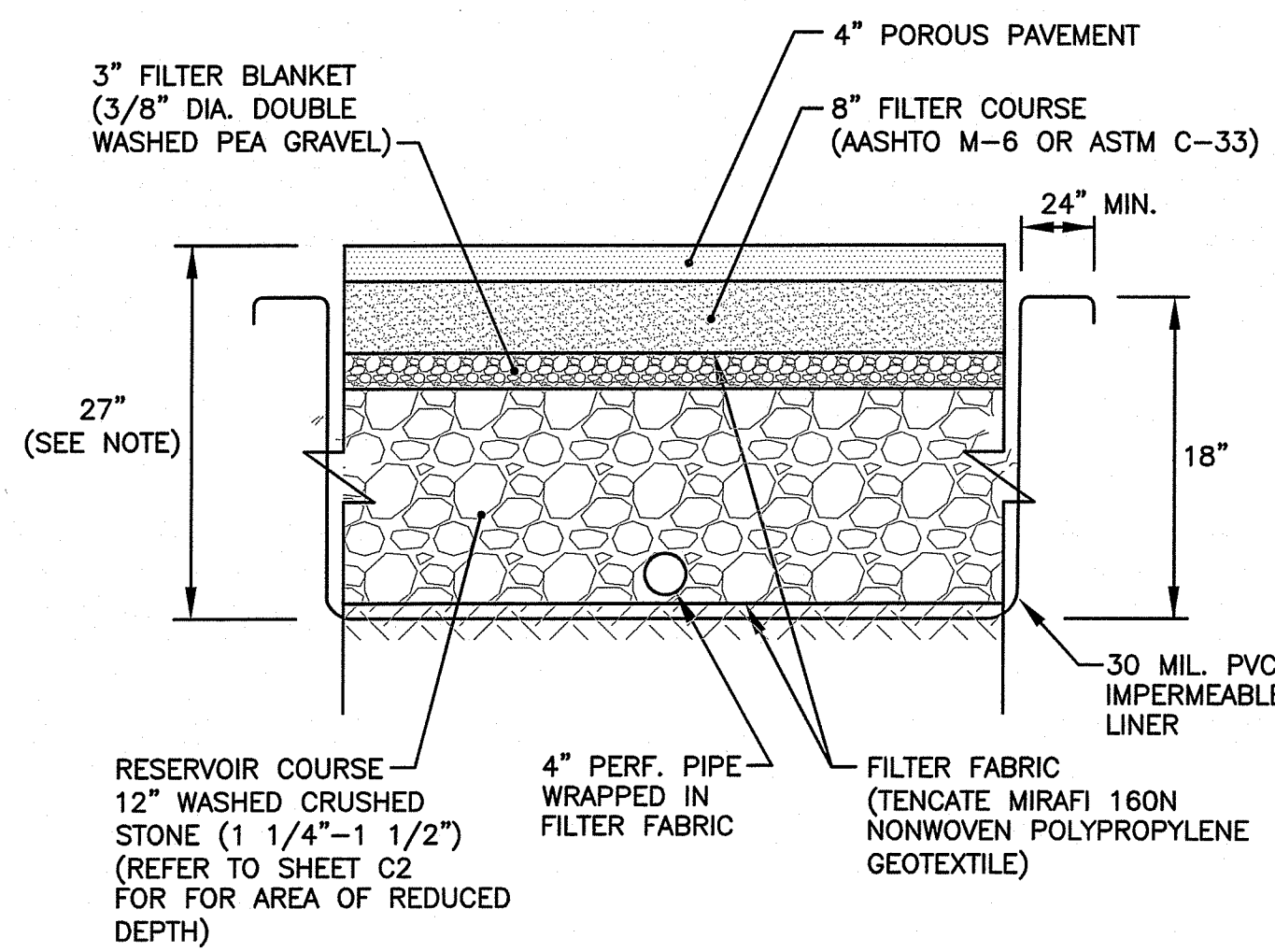


NOTE:

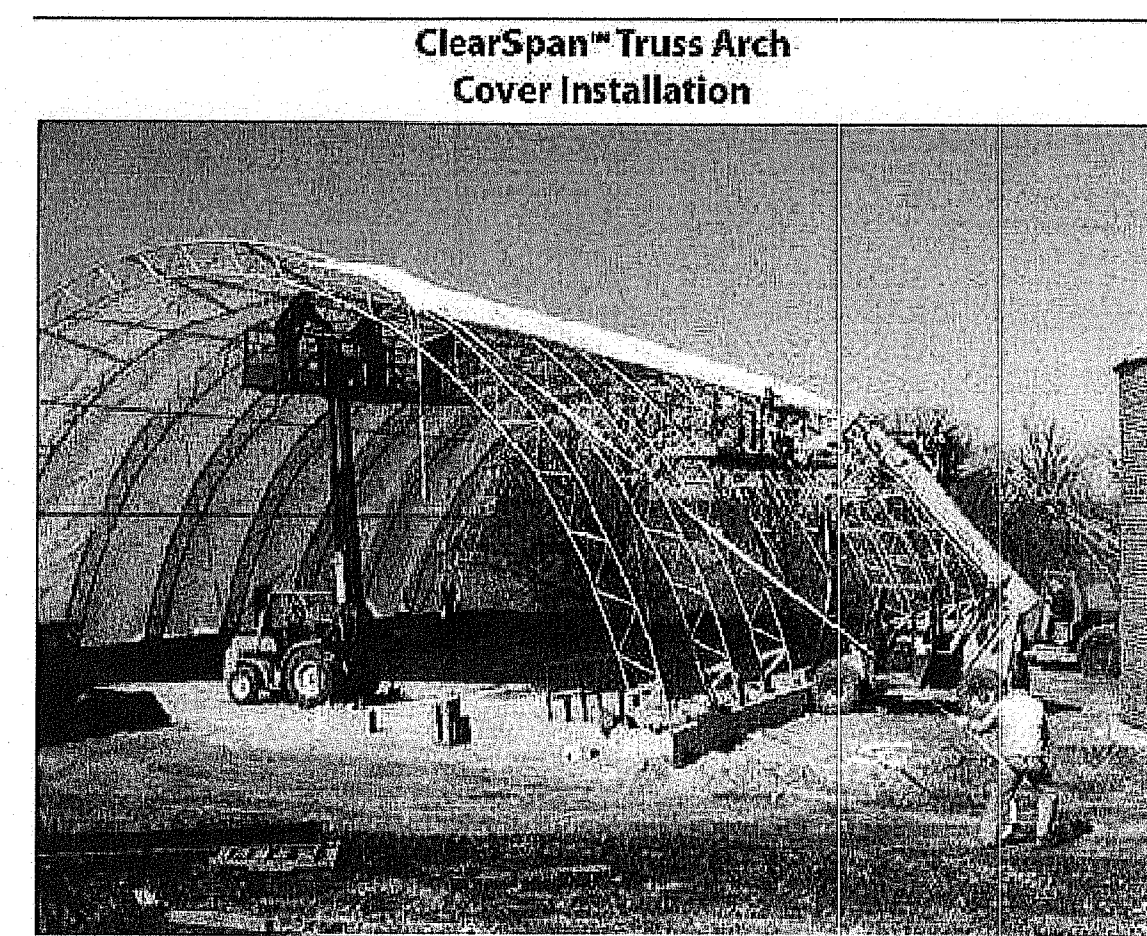
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR WATERING LAWN DURING THE COURSE OF THE GROWING SEASON FOR A PERIOD OF ONE (1) YEAR.
2. FOR STABILIZATION OUTSIDE OF THE SAND FILTER AND DETENTION BASIN, REFER TO RIDOT 'BLUE BOOK' SECTION M.18 LANDSCAPING MATERIALS.

LOAM-SEED DETAIL (OUTSIDE INFILTRATION AREA)
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 07 2019 FILE # 19-0244
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy L. Freeman



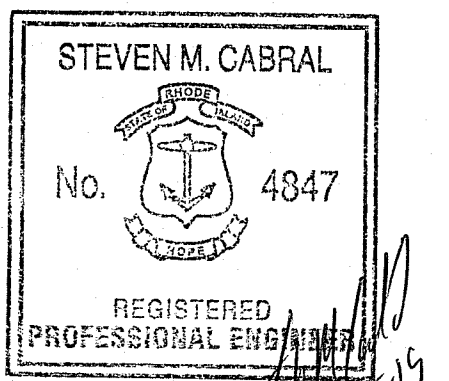
TYPICAL LINED POROUS STRUCTURE DETAIL
NOT TO SCALE



PROPOSED VEHICLE SHELTER
NOT TO SCALE

Crossman Engineering
Rhode Island: 151 Centerville Road, Warwick, RI 02886
Massachusetts: 103 Commonwealth Avenue, North Attleboro, MA 02763
Phone: (401) 738-6660, (508) 695-1700
Email: ce@crossmaneng.com

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PROJECT TITLE:
PROPOSED SITE IMPROVEMENTS

A.P. 30, LOT 96
WEST WARWICK INDUSTRIAL PARK
CRUDALE DRIVE
WEST WARWICK, RHODE ISLAND
02893

PREPARED FOR:
J BACH REALTY LLC
c/o HENRY DIPIETRO
6 CRUDALE DRIVE
WEST WARWICK, RI

DRAWING TITLE:
MISCELLANEOUS DETAIL PLAN

DATE: MAY 2018 SCALE: AS SHOWN
DWG. NAME: 2253-C4-DETAIL.dwg

REVISIONS	NUMBER	REMARKS	DATE
△	1	RIDEM COMMENTS	8/9/19

DRAWING NUMBER
C4
SHEET: 5 OF 5