

# SITE PLAN SET FOR PROPOSED SINGLE FAMILY HOME

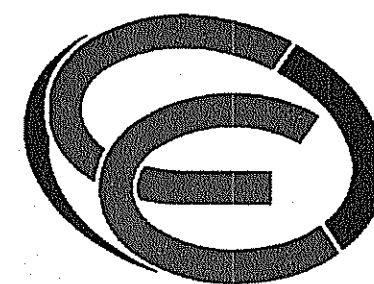
**PLAT MAP D, LOT 205-5  
ZONING DISTRICT R10  
RESIDENTIAL-HIGH DENSITY DISTRICT**

**CONGDON STREET  
NARRAGANSETT, RHODE ISLAND**

**OWNER / APPLICANT**

**MARY LOUISE AND RAFAEL FONSECA  
P.O. BOX 515  
HARMONY, RHODE ISLAND 02829**

**ENGINEERS and LAND SURVEYORS**



- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

**CROSSMAN ENGINEERING**

<u>Rhode Island</u>	<u>Massachusetts</u>
151 Centerville Road	103 Commonwealth Avenue
Warwick, RI 02886	North Attleboro, MA 02763
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**FEBRUARY 2016  
SHEET 1 of 8**

**WETLAND SCIENTIST**

**NATURAL RESOURCE SERVICES INC.  
P.O. BOX 311  
HARRISVILLE, RHODE ISLAND 02830**

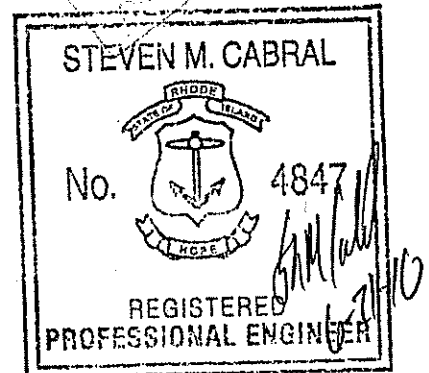


**LOCATION MAP**  
NOT TO SCALE

**INDEX OF DRAWINGS**

<u>DRAWING No.</u>	<u>PLAN</u>
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C2	AERIAL
C3	EXISTING CONDITIONS PLAN
C4	SITE LAYOUT PLAN
C5	GRADING and DRAINAGE PLAN
C6	WETLAND HABITAT AND MITIGATION PLAN
C7	SOIL EROSION and SEDIMENT CONTROL PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED: FEB 13 2017 FILE # 16-0067  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



PLAN FOR NOTICE

**REVISIONS:**

No.:	DATE:	DESCRIPTION:
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**GENERAL NOTES**

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE 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 MUNICIPALITY, STATE OR FEDERAL AGENCY THAT MAY APPLY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE PLANS MAY NOT DEPICT ALL UNDERGROUND UTILITY SYSTEMS.
2. FOR ALL EXCAVATION AND PLACEMENT OF FILL, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE R.I. STANDARD SPECIFICATION SECTION 202.
3. 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.
4. 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. 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.
5. 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 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.
6. 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.
7. 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.
8. ALL DISTURBED AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN.

**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. THE CONTRACTOR IS RESPONSIBLE TO ACCURATELY LOCATE ALL ITEMS WITHIN THE PROPERTY AS NOTED ON THE PLANS.

**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. ALL TEMPORARY CONSTRUCTION SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
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 WILL NOT BE PARKED IN ANY ROADWAY RIGHT-OF-WAY.
4. ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION, INCLUDING REVISION 2, MAY 2012, AND SUBSEQUENT ADDENDA.
5. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE STATE D.O.T. SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.
6. SPECIAL CARE SHALL BE GIVEN TO CONSTRUCTION WITHIN THE RIGHT OF WAY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PROTECTION AROUND WORK AREAS.

**STORMWATER MANAGEMENT SYSTEM - MAINTENANCE OPERATION**

UPON PROJECT COMPLETION, THE SITE OWNER SHALL ADHERE TO THE FOLLOWING MAINTENANCE RECOMMENDATIONS.

**1. SAND FILTER SWALE:**

THE SAND FILTER SHALL BE INSPECTED ANNUALLY AND AFTER STORM EVENTS GREATER THAN OR EQUAL TO THE 1-YEAR, 24-HOUR TYPE III PRECIPITATION EVENT. ALL OIL, SLUDGE, SEDIMENT, SOLIDS, TRASH, DEBRIS AND FLOATABLE MATERIAL SHALL BE REMOVED FROM THE SAND FILTER. MATERIALS DEPOSITED ON THE SURFACE OF THE SAND FILTER (E.G., TRASH AND LITTER) SHALL BE REMOVED MANUALLY. OIL AND SLUDGE REMOVAL SHALL BE ACCOMPLISHED VIA CATCH VAC OR VACTOR TRUCK AND THE SAND FILTER BOTTOM SHALL BE RESTORED TO ITS ORIGINAL DESIGN CRITERIA. AFTER CLEANING, ALL RESULTING WASTE INCLUDING OIL, SLUDGE, SEDIMENT, AND WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL AND LOCAL REGULATIONS.

SEDIMENT SHALL BE CLEANED OUT OF THE SEDIMENT FOREBAY WHEN IT ACCUMULATES TO A DEPTH OF MORE THAN 1/2 THE DESIGN DEPTH. VEGETATION WITHIN THE SEDIMENT FOREBAY SHALL BE LIMITED TO A HEIGHT OF 18 INCHES. SILT/SEDIMENT SHALL BE REMOVED FROM THE FILTER BED WHEN THE ACCUMULATION EXCEEDS ONE INCH. WHEN THE FILTERING CAPACITY OF THE FILTER DIMINISHES SUBSTANTIALLY (I.E., WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 48 HOURS), THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH MATERIAL. THE REMOVED SEDIMENT SHALL BE DISPOSED IN AN ACCEPTABLE MANNER AT AN APPROVED AND PERMITTED LOCATION.

**2. PERMEABLE PAVER BLOCK SYSTEMS**

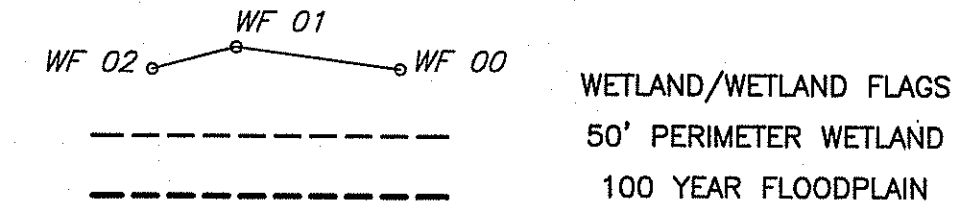
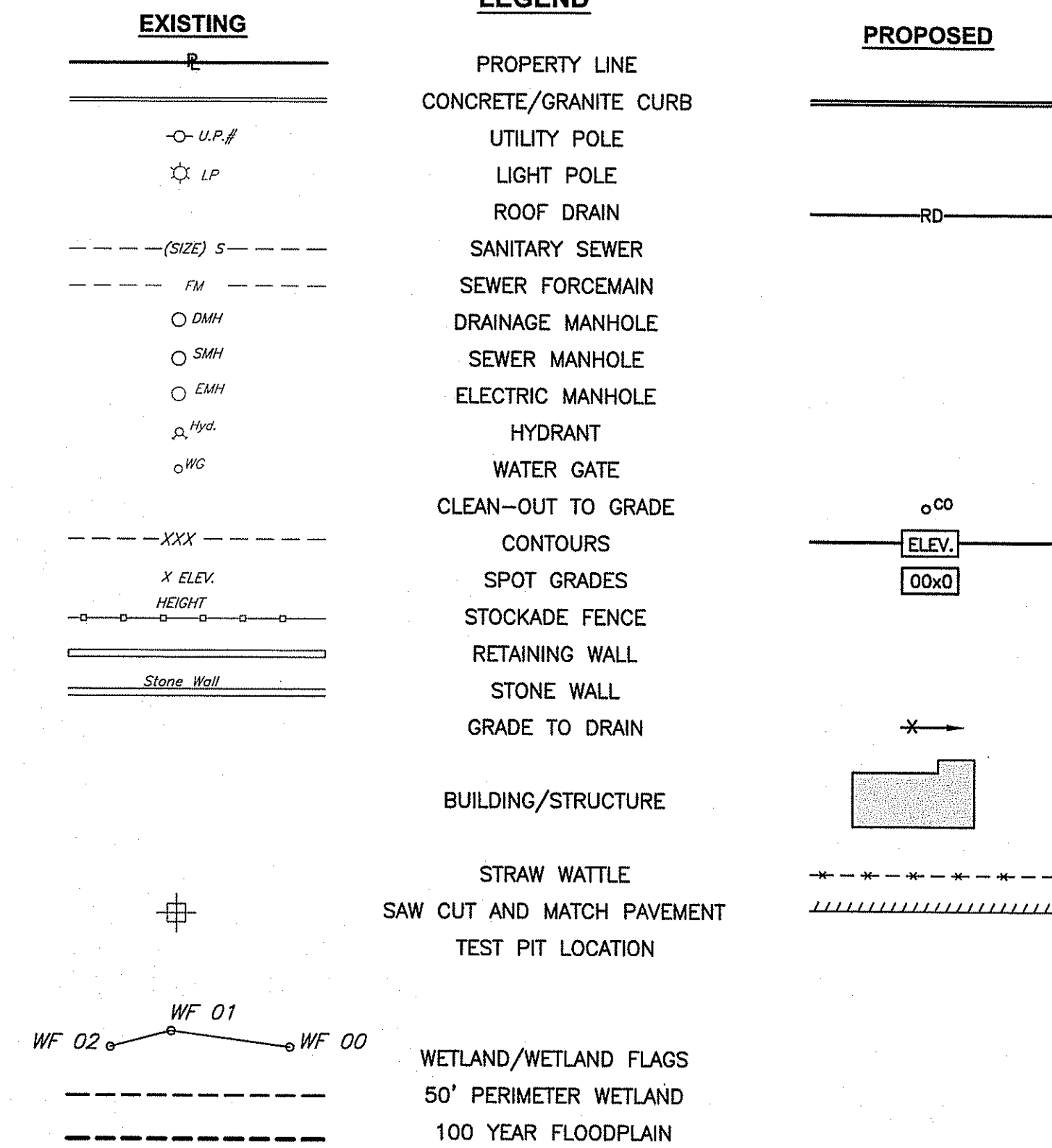
THE PERMEABLE PAVER BLOCK SYSTEMS SHALL BE INSPECTED REGULARLY TO ENSURE THAT THE SURFACE DRAINS PROPERLY AND THAT SURFACE IS NOT CLOGGED. THE PAVER BLOCK SURFACE SHALL BE INSPECTED ANNUALLY FOR DETERIORATION AND REPAIRED WITH NEW BLOCKS AS NECESSARY. THE PERMEABLE PAVER BLOCK SYSTEM WILL REQUIRE REGULAR VACUUM SWEEPING OR HOSING TO KEEP THE SURFACE FROM CLOGGING. THE PAVER BLOCK AREA SHALL NOT BE SEALED WITH IMPERMEABLE MATERIALS. MAINTENANCE ACTIVITIES AND PREVENTATIVE MEASURES INCLUDE MINIMIZING THE USE OF SAND AND SALT IN WINTER MONTHS, MAINTAINING AND STABILIZING ADJACENT LANDSCAPE AREAS, ADDING JOINT MATERIAL, AND REPLACING PAVING STONES/BRICKS IF NEEDED.

**3. SEDIMENT REMOVAL:**

FOLLOWING CONSTRUCTION, SEDIMENT REMOVAL SHALL BE CONDUCTED AS DEEMED NECESSARY BY THE SYSTEM INSPECTIONS. ALL REMOVED SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

**FLOOD ZONE NOTE**

THE SITE IS LOCATED IN ZONE AE, SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD WITH BASE FLOOD ELEVATION = 14.00, AS SHOWN ON THE FLOOD INSURANCE RATE MAP, WASHINGTON COUNTY, RHODE ISLAND (ALL JURISDICTIONS), PANEL 212 OF 368, MAP NUMBER 44009C0212J, EFFECTIVE DATE OCTOBER 16, 2013.



**SOIL EVALUATION DATA**  
SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING ON JULY 23, 2015

TEST PIT 1		TEST PIT 2			
0"	Very Dark Brown Silty Loam	A (Friable)	0"		A
18"	Dark Gray Very Fine Sand/Silt	C1 (Friable/Firm)	17"	Dark Gray Very Fine Sand	C1 (Friable)
30"	Olive Brown Very Fine Sand (Damp)	C2 (Friable)	34"	Dark Gray Very Fine Sand/Silt	C2 (Firm)
40"	Olive Brown Very Fine Sand and Stone (Damp)	C3 (Friable)	56"	Olive Brown Fine Sand/Very Fine Sand and Stone	C3 (Friable/Very Friable)
77"			87"		

40" Water Seepage  
18" Redox Features  
18" ESHWT

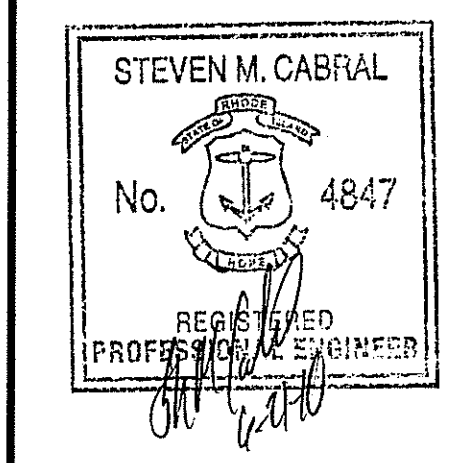
39" Water Seepage  
17" Redox Features  
17" ESHWT

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
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**Crossman Engineering**  
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**MARY LOUISE and RAFAEL FONSECA**  
P.O. BOX 515  
HARMONY, RI  
02829

**PROPOSED SINGLE FAMILY HOME**  
PLAT MAP D, LOT 205-5  
ZONING DISTRICT R-10  
RESIDENTIAL-HIGH DENSITY  
CONGDON STREET  
NARRAGANSETT, RI

**MARK AND HEATHER TRENTSEAU**  
NARRAGANSETT, RI  
02882

**GENERAL NOTES AND LEGEND**

DATE:	FEBRUARY 2016	SCALE:	NO SCALE						
DWG. NAME:	2102-C01-NOTE.dwg								
REVISIONS	<table border="1"> <thead> <tr> <th>NUMBER</th> <th>REMARKS</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>---</td> <td>---</td> <td>---</td> </tr> </tbody> </table>			NUMBER	REMARKS	DATE	---	---	---
NUMBER	REMARKS	DATE							
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DRAWING NUMBER  
**C1**  
SHEET: 2 OF 8



- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

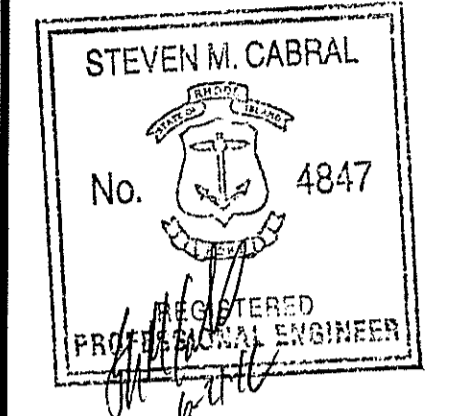
**CROSSMAN ENGINEERING**

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**OWNER:**

**MARY LOUISE and RAFAEL FONSECA**

**P.O. BOX 515  
HARMONY, RI  
02829**

**PROJECT TITLE:**

**PROPOSED SINGLE FAMILY HOME**

**PLAT MAP D, LOT 205-5  
ZONING DISTRICT R-10  
RESIDENTIAL-HIGH DENSITY  
CONGDON STREET  
NARRAGANSETT, RI**

**PREPARED FOR:**

**MARK and HEATHER TRENTSEAU**

**NARRAGANSETT, RI  
02882**

**DRAWING TITLE:**

**AERIAL**

**DATE:** FEBRUARY 2016      **SCALE:** 1"=20'

**DWG. NAME:** 2102-C02-AERIAL.dwg

**REVISIONS**

NUMBER	REMARKS	DATE
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**DRAWING NUMBER**

**C2**

**SHEET: 3 OF 8**

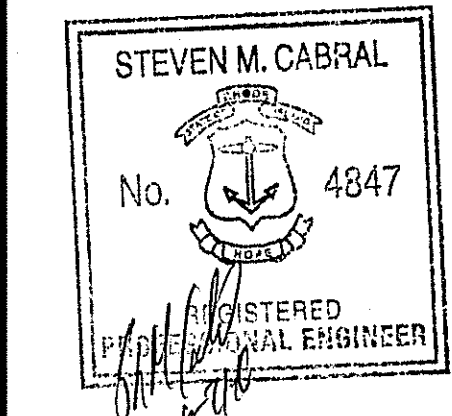




**CROSSMAN ENGINEERING**

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 Phone: (401) 738-5660 Email: cel@crossmaneng.com

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 HARMONY, RI 02829

PROJECT TITLE:  
**PROPOSED SINGLE FAMILY HOME**  
 PLAT MAP D, LOT 205-5  
 ZONING DISTRICT R-10  
 RESIDENTIAL-HIGH DENSITY  
 CONGDON STREET  
 NARRAGANSETT, RI

PREPARED FOR:  
**MARK AND HEATHER TRENTESAUX**  
 NARRAGANSETT, RI 02882

DRAWING TITLE:  
**SITE LAYOUT PLAN**

DATE: FEBRUARY 2016 SCALE: 1"=20'

DWG. NAME: 2102-C04-SITE.dwg

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
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REVISIONS	NUMBER	REMARKS	DATE
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DRAWING NUMBER  
**C4**  
 SHEET: 5 OF 8

**FLOOD ZONE NOTE**

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**NARRAGANSETT ZONING REQUIREMENTS**

ZONING DISTRICT: R-10 - RESIDENTIAL HIGH DENSITY  
 COASTAL AND FRESHWATER WETLANDS OVERLAY DISTRICT  
 COASTAL RESOURCES OVERLAY DISTRICT  
 HIGH WATER TABLE LIMITATIONS OVERLAY DISTRICT  
 FLOODPLAIN OVERLAY DISTRICT

MINIMUM LOT REQUIREMENTS	REQUIRED	PROVIDED
MINIMUM LOT AREA	10,000 S.F.	12,441 S.F.
MINIMUM LOT WIDTH	100'	110'
FRONT YARD SETBACK	25'	15'
SIDE YARD SETBACK	10'	11'
REAR YARD SETBACK	20'	67'
MAXIMUM STRUCTURE HEIGHT	35'	<35'
MAXIMUM BUILDING COVERAGE	25%	12% *

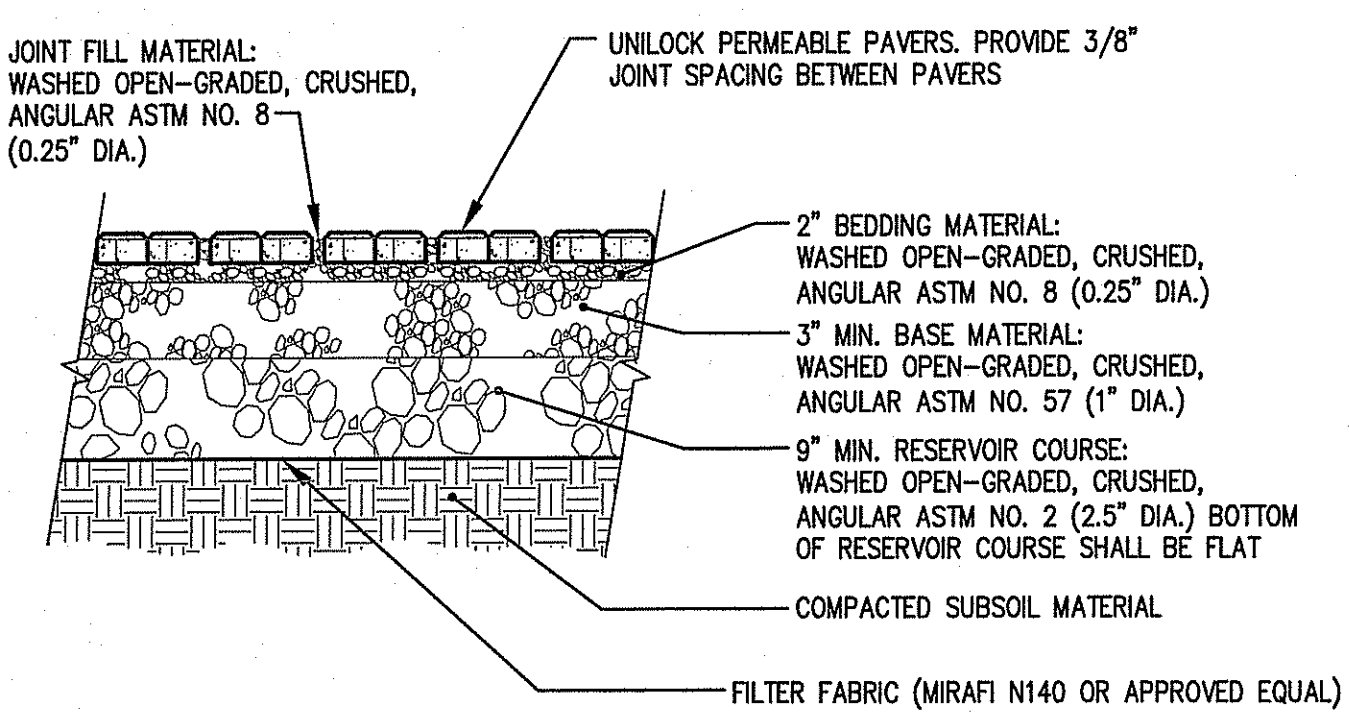
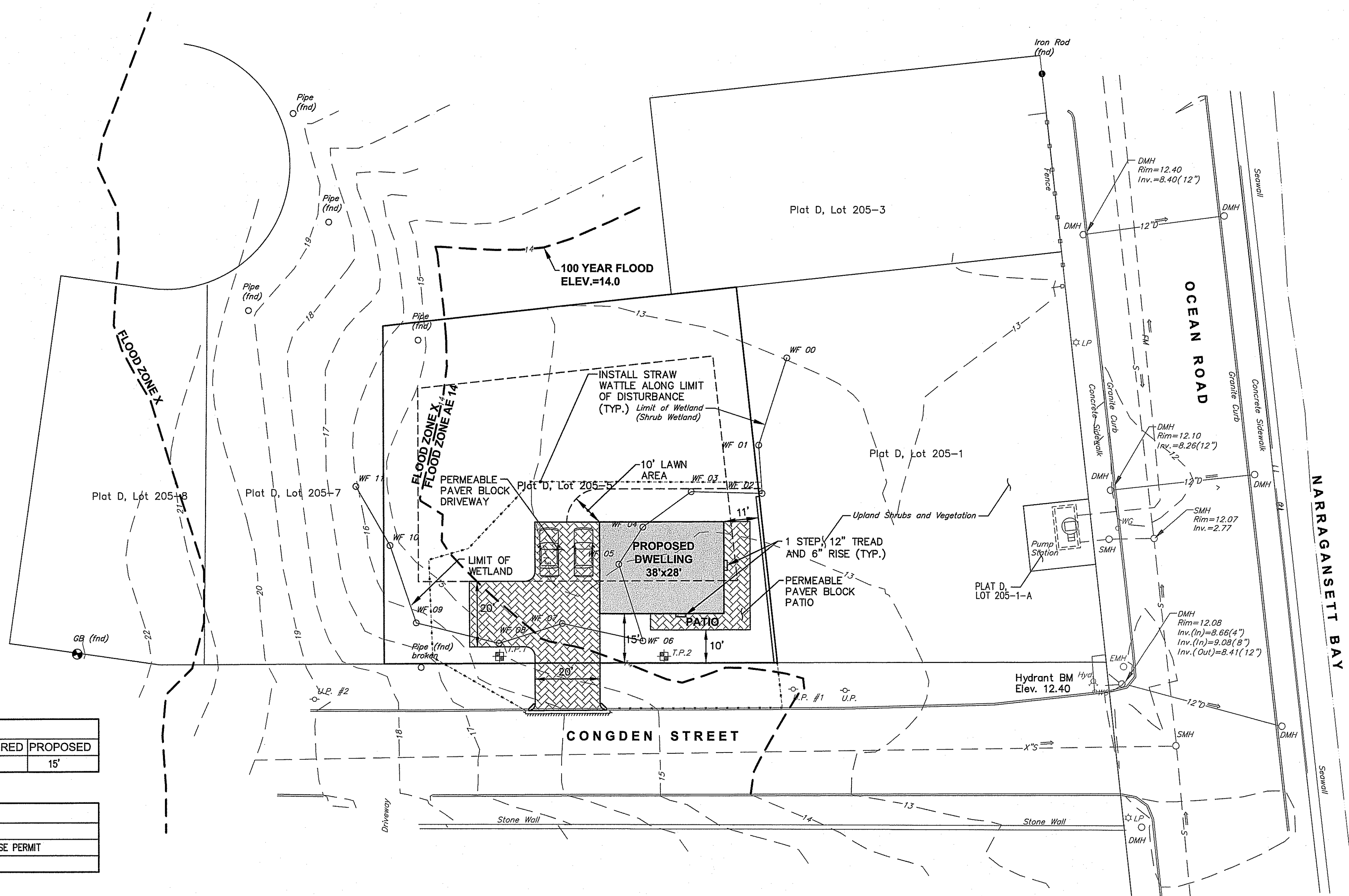
\*MAXIMUM BUILDING COVERAGE INCLUDES ALL PRINCIPAL AND ACCESSORY BUILDINGS AND STRUCTURES; WHICH INCLUDES THE HOUSE AND SAND FILTER BASIN.

**ZONING VARIANCES**

ZONING CODE SECTION	REQUIRED	PROPOSED
SECTION 6.4 DIMENSIONAL REGULATIONS (FRONT YARD SETBACK)	25'	15'

**ZONING SPECIAL USE PERMIT**

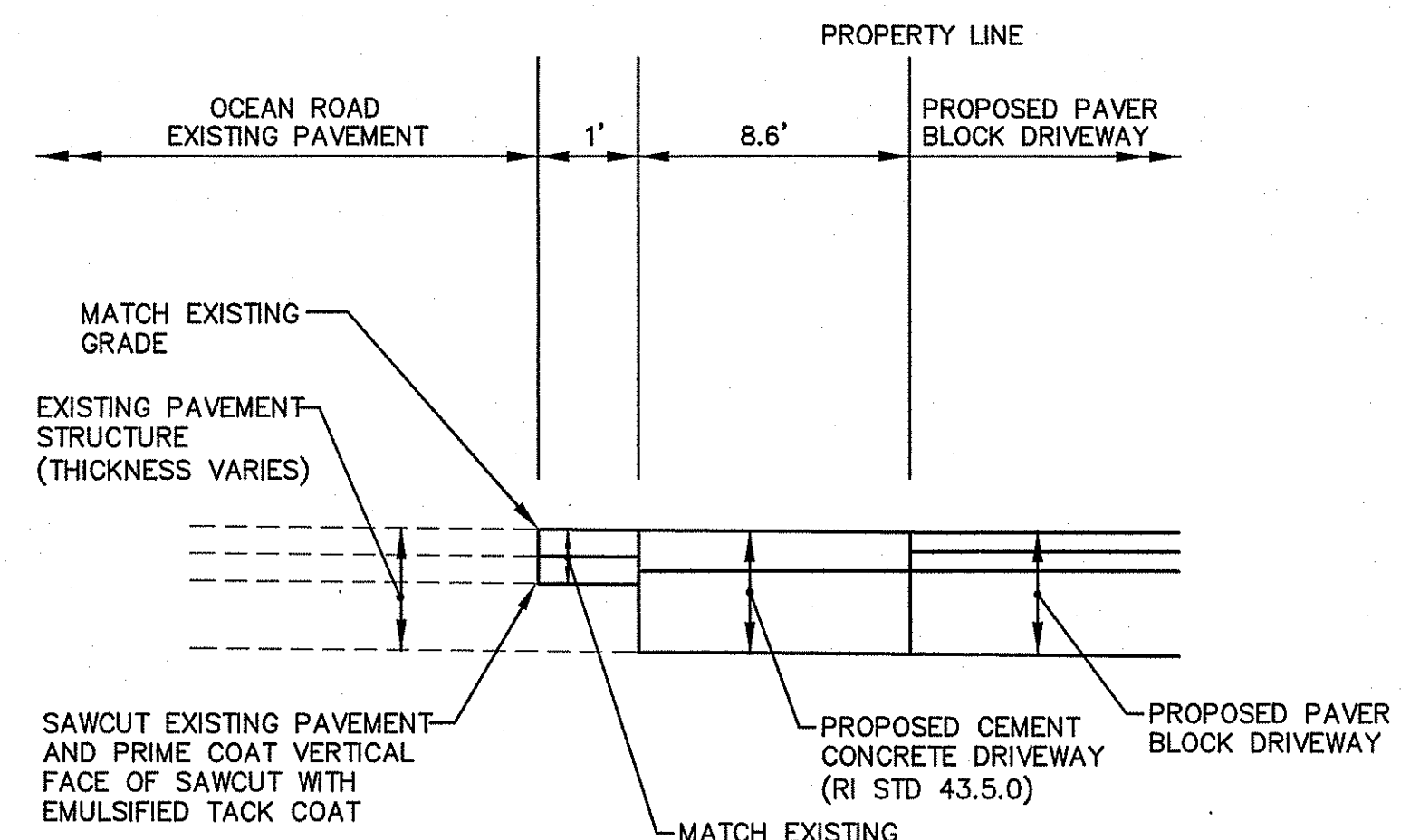
ZONING CODE SECTION
SECTION 4.3 (3-a,b,c,d) (4a) COASTAL AND FRESHWATER WETLANDS OVERLAY DISTRICT- SPECIAL USE PERMIT
SECTION 4.4 (b-1,3,4) COASTAL RESOURCES OVERLAY DISTRICT- SPECIAL USE PERMIT



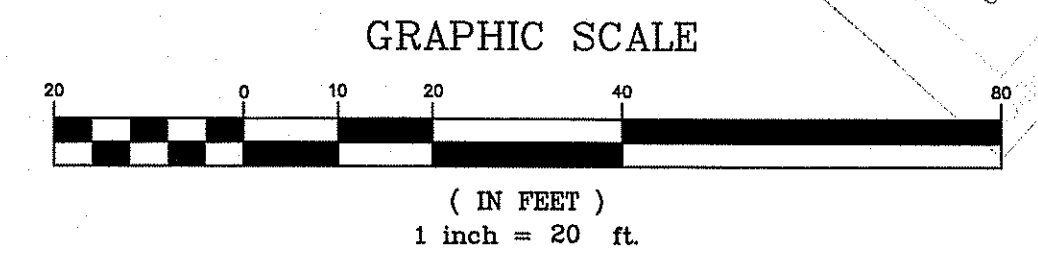
**PERMEABLE PAVER BLOCK DETAIL**  
 NOT TO SCALE

**PERMEABLE PAVER BLOCK NOTES:**

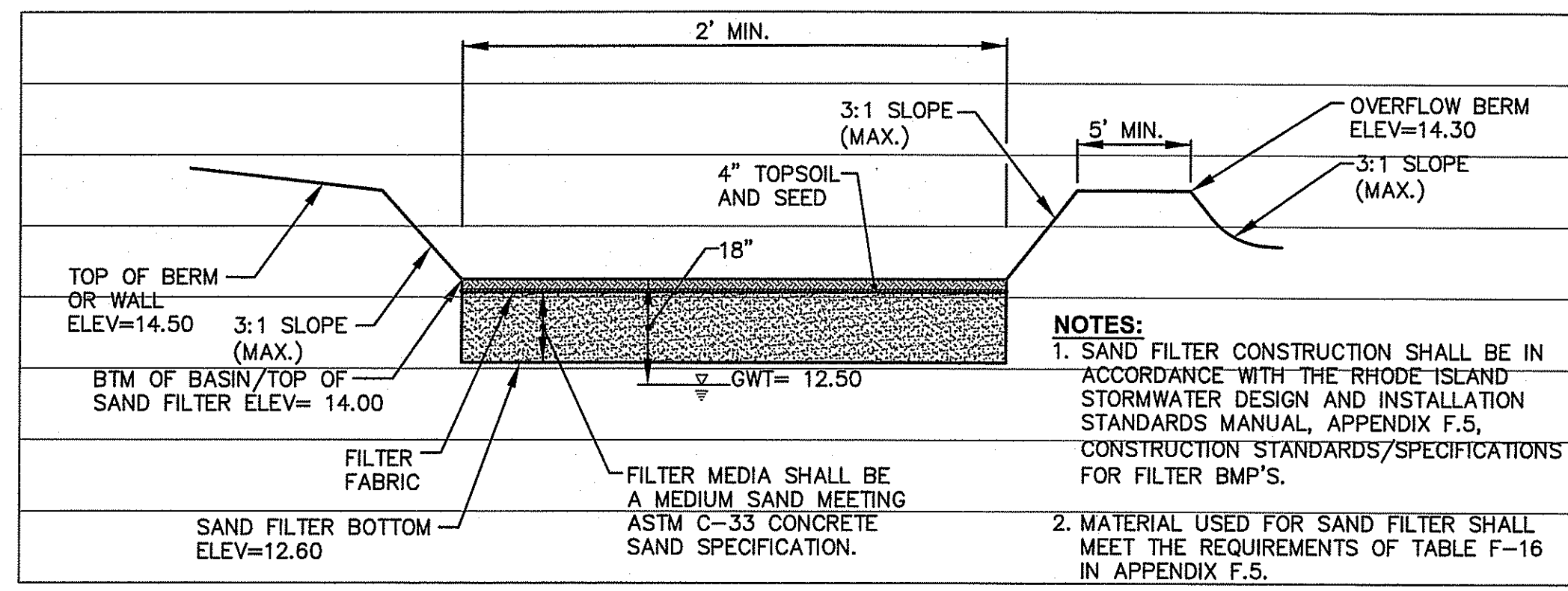
- 1) PRODUCT STYLE AND COLOR SHALL BE COORDINATED WITH OWNER. ALL INSTALLATION SHALL MEET MANUFACTURERS RECOMMENDATIONS/STANDARDS.
- 2) ALL AGGREGATE MATERIAL SHALL BE WASHED, CRUSHED, ANGULAR STONE AND FREE OF FINES.
- 3) REMOVE ALL FILL AND ORGANIC MATERIAL TO NATIVE SOILS. REPLACE WITH GRAVEL BORROW (GRAVEL BORROW: <0% PASSING 200 SIEVE).
- 4) THE PROVIDED AGGREGATE THICKNESSES ARE AFTER COMPACTION.
- 5) CONTRACTOR SHALL COORDINATE WITH MANUFACTURER TO HAVE A REPRESENTATIVE ONSITE FOR THE FIRST WEEK OF PAVEMENT INSTALLATION.
- 6) CONTRACTOR SHALL TOP DRESS STONE IN VOIDS AFTER BLOCKS ARE COMPACTIONED AND 3-6 MONTHS AFTER INITIAL INSTALLATION.
- 7) RECOMMENDATION - PERMEABLE PAVER BLOCK SURFACE SHALL BE SWEEPED FREQUENTLY. REFER TO MANUFACTURER'S MAINTENANCE GUIDE FOR ADDITIONAL MAINTENANCE RECOMMENDATIONS.



**SAWCUT AND MATCH DETAIL AT EXISTING PAVEMENT**  
 NOT TO SCALE



GRAPHIC SCALE  
 ( IN FEET )  
 1 inch = 20 ft.

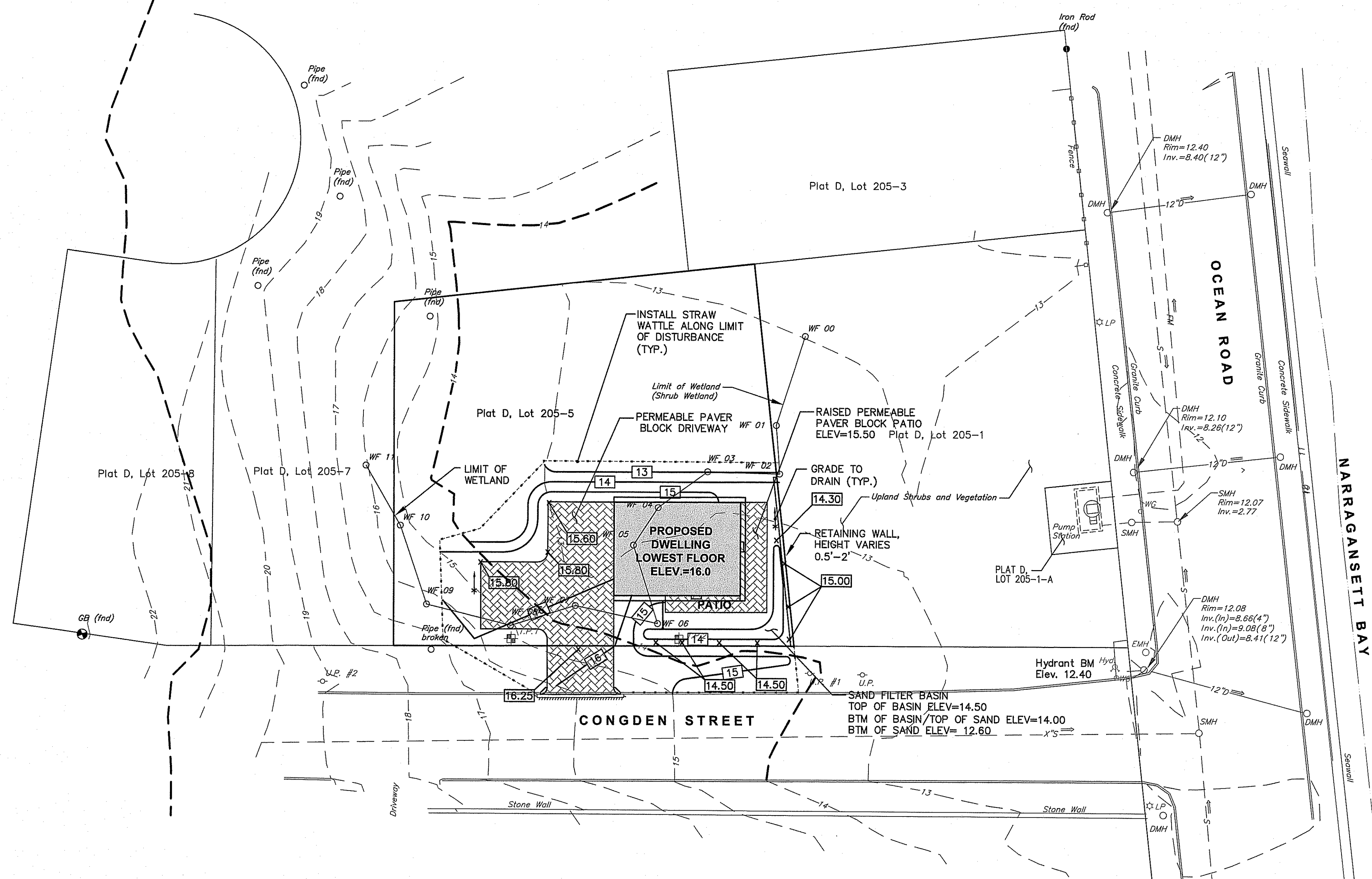


**SAND FILTER TYPICAL SECTION**  
NOT TO SCALE

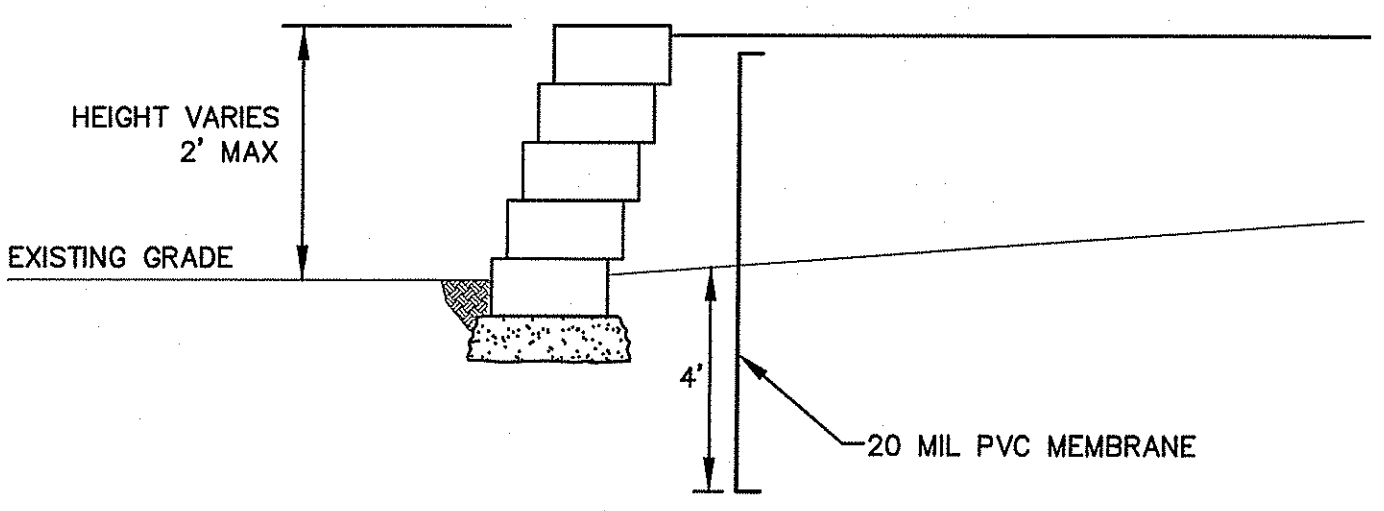
**SAND FILTER/GRASS SWALE SEED MIX**

APPLICATION RATE = 15-25 LBS. / ACRE  
(SEASONALLY FLOODED MIX)  
(SAND FILTER BOTTOM AREA)  
20% FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)  
16% VIRGINIA WILD RYE, PA ECOTYPE (ELYMUS RIPARIUS, 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 (DICANTHELIUM 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 ECOTPE (SCIRPUS ATROVIRENS, PA ECOTYPE)  
2% AWL SEDGE, PA ECOTYPE (CAREX STIPATA, PA ECOTYPE)  
1% AUTUMN BENTGRASS, APB (AGROSTIS PERENNANS, APB)

- NOTES:**
- SAND FILTER 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.
  - MATERIAL USED FOR SAND FILTER SHALL MEET THE REQUIREMENTS OF TABLE F-16 IN APPENDIX F.5.



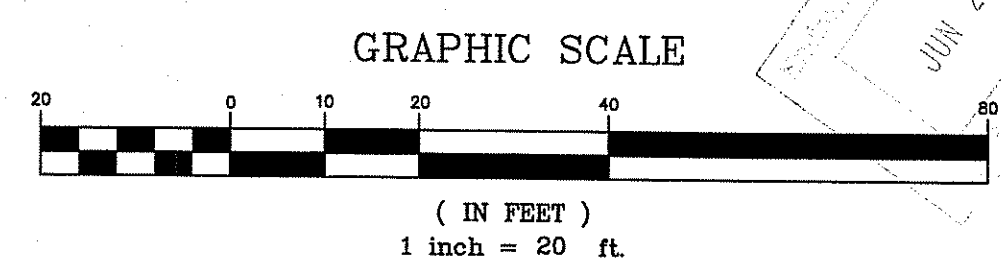
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**MSE RETAINING WALL NOTES**

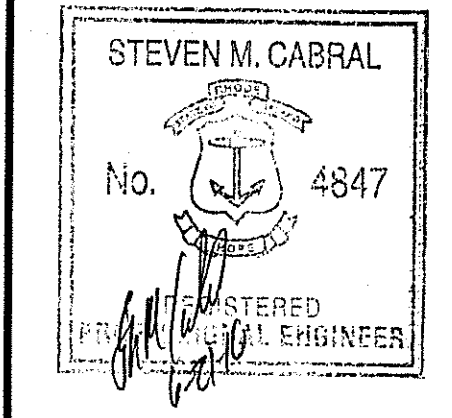
- THE WALL SUPPLIER SHALL RETAIN THE SERVICES OF A LICENSED RHODE ISLAND STRUCTURAL ENGINEER FOR THE FINAL WALL DESIGN. DESIGN SHALL BE SUBMITTED TO OWNER AND ENGINEER FOR APPROVAL OF MATERIALS. THE CONTRACTOR SHALL INCLUDE THE COST FOR THIS SERVICE IN THE PROJECT BID PRICE.
- RETAINING WALL SHALL BE MSE REINFORCED WALL OR APPROVED EQUAL.
- UPON APPROVAL BY THE OWNER, THE CONTRACTOR MAY SUBMIT ALTERNATE WALL DESIGNS BY A RHODE ISLAND PROFESSIONAL ENGINEER FOR USE ON THE SITE.
- THE WALL SECTION SHOWN IS CONCEPTUAL AND DOES NOT REPRESENT A FINAL DESIGN.

**MSE REINFORCED RETAINING WALL**  
NOT TO SCALE



**Crossman Engineering**  
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**OWNER:**  
**MARY LOUISE and RAFAEL FONSECA**  
P.O. BOX 515  
HARMONY, RI 02829

**PROJECT TITLE:**  
**PROPOSED SINGLE FAMILY HOME**  
PLAT MAP D, LOT 205-5  
ZONING DISTRICT R-10  
RESIDENTIAL-HIGH DENSITY  
CONGDON STREET  
NARRAGANSETT, RI

**PREPARED FOR:**  
**MARK AND HEATHER TRENTESAUX**  
NARRAGANSETT, RI 02882

**DRAWING TITLE:**  
**GRADING AND DRAINAGE PLAN**

**DATE:** FEBRUARY 2016  
**SCALE:** 1"=20'  
**DWG. NAME:** 2102-C05-GRADE.dwg

REVISIONS	NUMBER	REMARKS	DATE
△			

**DRAWING NUMBER:**  
**C5**  
SHEET: 6 OF 8

**INVASIVE SPECIES MANAGEMENT NOTES:**

- 1.) ALL WORK SHALL BE MONITORED BY A PROFESSIONAL WETLAND SCIENTIST (PWS) OR CRMC CERTIFIED INVASIVE SPECIES MANAGER (IM).
- 2.) ALL HERBICIDE APPLICATIONS SHALL BE MADE BY A RI LICENSED PESTICIDE APPLICATOR IN ACCORDANCE WITH THE ACCOMPANYING PESTICIDE LABEL REQUIREMENTS.
- 3.) PRIOR TO APPLICATION OF HERBICIDES, A PERMIT TO CONTROL AQUATIC NUISANCES SHALL BE OBTAINED FROM THE DEM, DIVISION OF AGRICULTURE.
- 4.) LIMITS OF THE MANAGEMENT AREAS SHALL BE DEMARCATED IN THE FIELD BY THE PWS PRIOR TO TREATMENT.
- 5.) JAPANESE KNOTWEED SHALL BE TREATED USING A 2% SOLUTION OF IMAZAPYR WITH A CROP OIL SURFACTANT OR A TANK MIX OF IMAZAPYR AND GLYPHOSATE WITH A CROP OIL SURFACTANT. ALL FOLIAR TREATMENT SHALL BE ACCOMPLISHED USING A LOW-VOLUME BACK PACK SPRAYER. HAND SWIPING, WICKING OR STEM-INJECTION TECHNIQUES SHALL BE USED WHEN THE JAPANESE KNOTWEED IS INTERMIXED WITH DESIRABLE VEGETATION.
- 6.) CUT PLANTS SHALL BE STOCKPILED AND TRANSFERRED TO A ROLL-OFF DUMPSTER FOR REMOVAL FROM THE SITE.
- 7.) HERBICIDE SPOT TREATMENTS ARE RECOMMENDED FOR A PERIOD OF AT LEAST THREE (3) ADDITIONAL YEARS FOLLOWING THE INITIAL TREATMENT. SPOT TREATMENTS SHALL BE PERFORMED FROM JULY 1ST-OCTOBER 1ST. ALL SPOT TREATMENTS SHALL BE MADE USING CUT-STEM, HAND-SWIPING OR WICKING APPLICATION METHODS TO REDUCE NON-TARGET SPECIES MORTALITY.
- 8.) THE PWS SHALL INSPECT THE MANAGEMENT AREA EACH YEAR PRIOR TO THE REQUIRED SPOT TREATMENT. A MONITORING REPORT SHALL BE GENERATED. THE REPORT SHALL OUTLINE THE TREATMENT PROCEDURES FOR THE SUBSEQUENT YEAR.
- 9.) THE MANAGEMENT AREA SHALL BE PLANTED WITH NATIVE SHRUBS 6-8 WEEKS AFTER THE FIRST SPOT TREATMENT OCCURS, BUT NO LATER THAN NOVEMBER 1ST OF THAT YEAR.
- 10.) SHRUB PLANTINGS SHALL CONSIST OF THE FOLLOWING:  
 30-PUSSY WILLOW (SALIX DISCOLOR) 3-5 GALLON STOCK; SPACED 6 FEET ON CENTER  
 30-ARROWWOOD (VIBURNUM DENTATUM) 3-5 GALLON STOCK; SPACED 6 FEET ON CENTER  
 30-SHADBUSH (AMELANCHIER CANADENSIS) 3-5 GALLON STOCK; SPACED 6 FEET ON CENTER
- 11.) THE PWS SHALL MONITOR THE MANAGEMENT AREA FOR TWO (2) YEARS FOLLOWING THE SHRUB PLANTING. A MONITORING REPORT SHALL BE GENERATED AND SUBMITTED TO THE DEM, OWR. THIS REPORT SHALL INCLUDE AN ASSESSMENT OF SHRUB SURVIVAL. THE APPLICANT SHALL REPLACE ANY SHRUBS WHICH FAIL TO SURVIVE THE FIRST GROWING SEASON OR AS DIRECTED BY THE PWS.
- 12.) AT THE CONCLUSION OF THE 3 YEAR TIMEFRAME FOLLOWING THE INITIAL TREATMENT, THE AREA SHALL BE ALLOWED TO REVERT TO A NATURAL CONDITION WITH THE CESSATION OF FURTHER MANAGEMENT ACTIVITIES.

**INVASIVE PLANT MANAGEMENT SCHEDULE:**

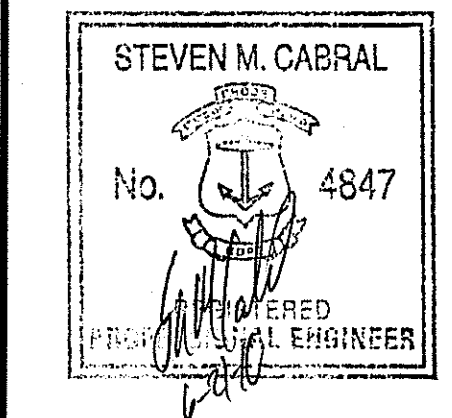
INVASIVE SPECIES TO BE TREATED	HERBICIDE APPLICATION METHOD	HERBICIDE/SURFACTANT	TREATMENT TIMING
JAPANESE KNOTWEED (Fallopia japonica)	<ul style="list-style-type: none"> <li>• FOLIAR TREATMENT USING LOW-VOLUME BACKPACK SPRAYER</li> <li>• HAND SWIPING, WICKING OR STEM INJECTION WHEN INTERMIXED WITH DESIRABLE VEGETATION</li> </ul>	2% SOLUTION OF IMAZAPYR (E.G. HABITAT) WITH CROP OIL SURFACTANT OR TANK MIX OF IMAZAPYR AND GLYPHOSATE (E.G. RODEO) WITH CROP OIL SURFACTANT	<p>TARGET APPLICATION TIME FOR FOLIAR SPRAYING LATE AUGUST-SEPTEMBER 30TH</p> <p>FOLLOW-UP SPOT TREATMENTS JULY-OCTOBER 1ST</p>



**CROSSMAN ENGINEERING**

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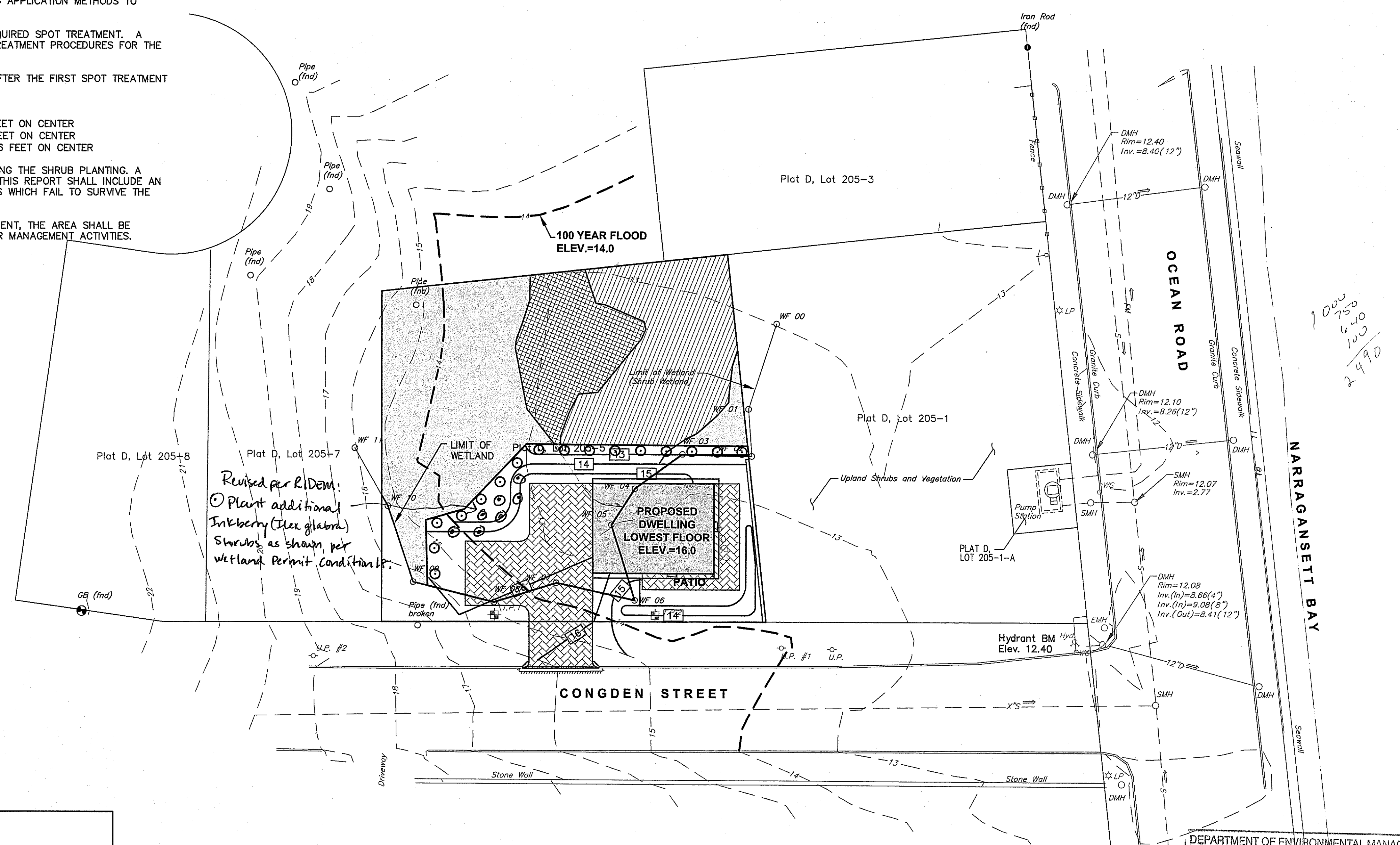
**DRAWING TITLE:**  
**WETLAND HABITAT AND MITIGATION PLAN**

**DATE:** FEBRUARY 2016 **SCALE:** 1"=20'

**DWG. NAME:** 2102-C06-WETLAND.dwg

REVISIONS	NUMBER	REMARKS	DATE

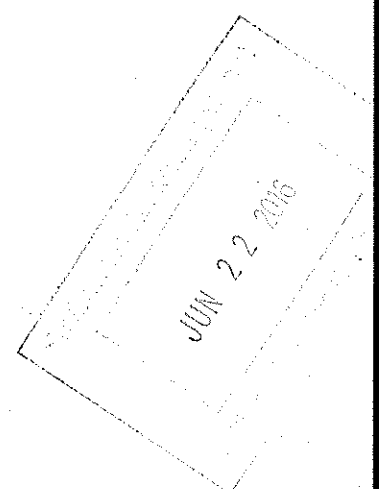
**DRAWING NUMBER**  
**C6**  
 SHEET: 7 OF 8



Revised per R.Dem:  
 Plant additional Inkberry (Ilex glabra) shrubs as shown per wetland permit conditions.

1000  
 750  
 650  
 100  
 2490

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIC IN THE LETTER OF APPROVAL  
 DATED FEB 15 2017 FILE # 16-0037  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE



**LEGEND**

	SHRUB DOMINATED WETLAND HABITAT= 2,243 SQ FT ± (TO REMAIN UNDISTURBED)
	EMERGENT DOMINATED PLANT WETLAND HABITAT= 1,254 SQ FT ± (TO REMAIN UNDISTURBED)
	INVASIVE PLANT DOMINATED WETLAND HABITAT= 3,390 SQ FT ± (SUBJECT TO MANAGEMENT)
	PROPOSED WETLAND ALTERATION= 2,614 SQ FT ±
	SCREENING VEGETATION- INKBERRY (ILEX GLABRA)- 3-4' TALL- SPACED 8' ON CENTER

