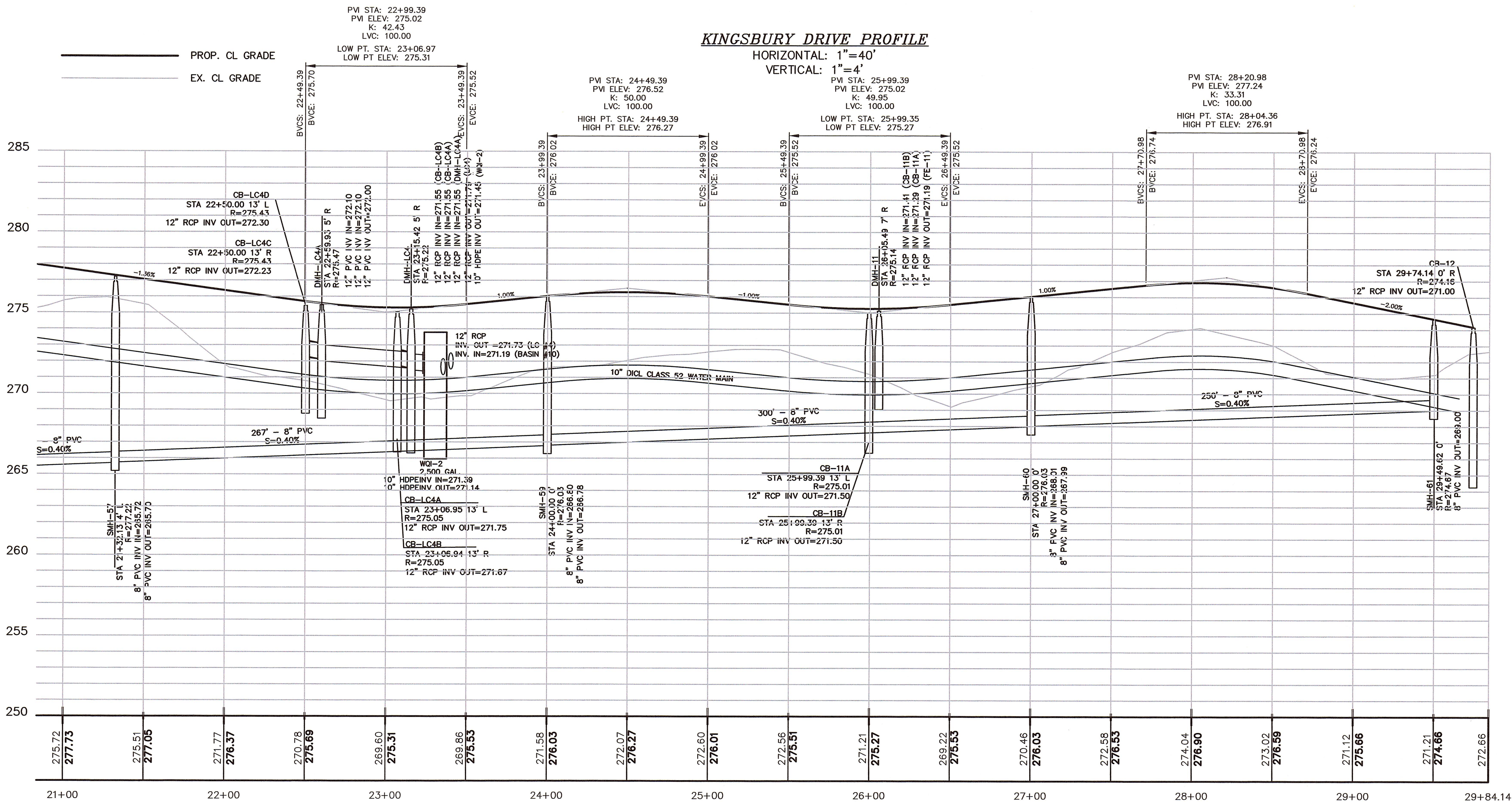






\\nas01\proj\proj\2016\12-5-19 Kingsbury Drive\12-5-19 Kingsbury Drive.dwg



12-5-19 JAP CUV  
12-5-19

FOR REGISTRY USE ONLY  
I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

JEFFREY D. YOUNG  
CIVIL ENGINEER  
No. 37702  
12-5-19 JAP CUV  
DATE PROFESSIONAL LAND SURVEYOR

APPROVED SUBJECT TO TERMS AND CONDITIONS OF A COMPREHENSIVE PERMIT PER ZONING BOARD OF APPEALS DECISION, AS AUTHORIZED BY CHAPTER 40B OF THE MASSACHUSETTS GENERAL LAWS, SECTIONS 20-23.

DATE: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

MEDWAY ZONING BOARD OF APPEALS

THIS PLAN IS SUBJECT TO A COVENANT TO BE RECORDED HEREWITH

I CERTIFY THAT 20 DAYS HAVE ELAPSED SINCE ZONING BOARD APPROVAL, AND THAT NO APPEAL HAS BEEN FILED AT THIS OFFICE.

TOWN CLERK—TOWN OF MEDWAY

PROFILE  
KINGSBURY DRIVE  
STA 21+50 TO 29+84  
HOLLY COURT  
& LINDEN PATH

"KINGSBURY VILLAGE"  
IN  
MEDWAY  
MASSACHUSETTS

**Outback Engineering**  
Incorporated

165 EAST GROVE STREET  
MIDDLEBOROUGH, MA 02346  
TEL: (508)-946-9231  
FAX: (508)-947-8873  
www.outback-eng.com

DATE: NOVEMBER 29, 2019

DRAWN BY: CUV CHECKED BY: JAP

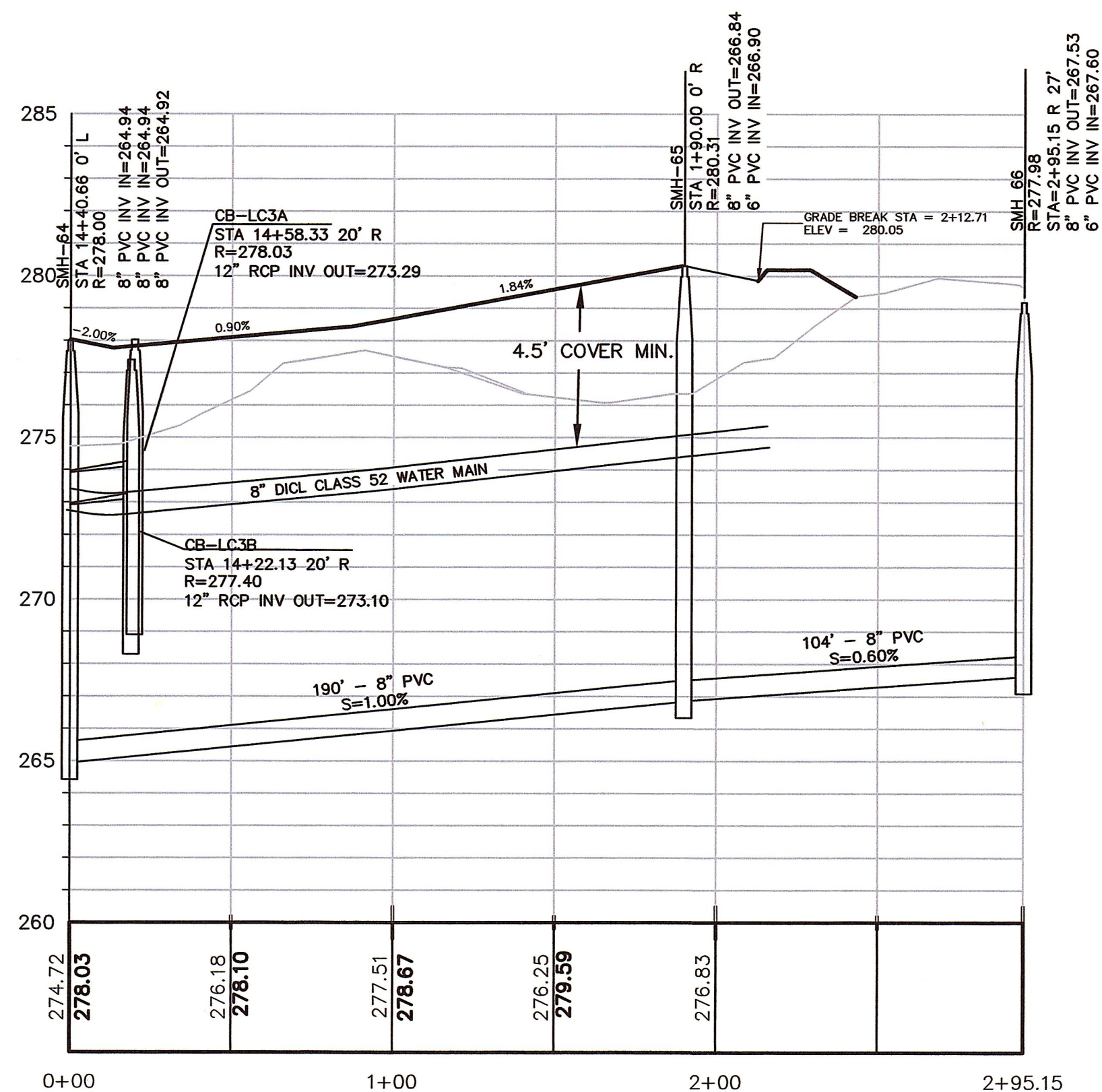
SCALE: 1"=40' SHEET 50 OF 61

0' 40' 80' 120'

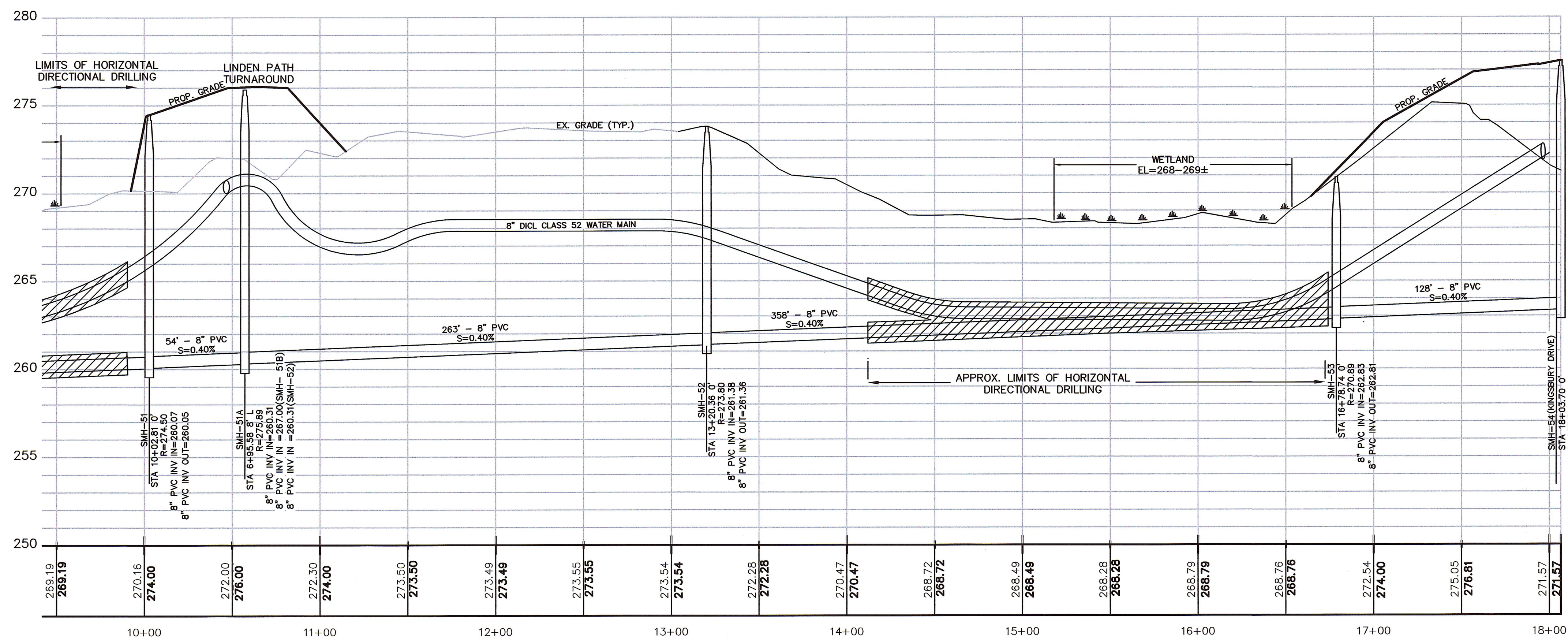
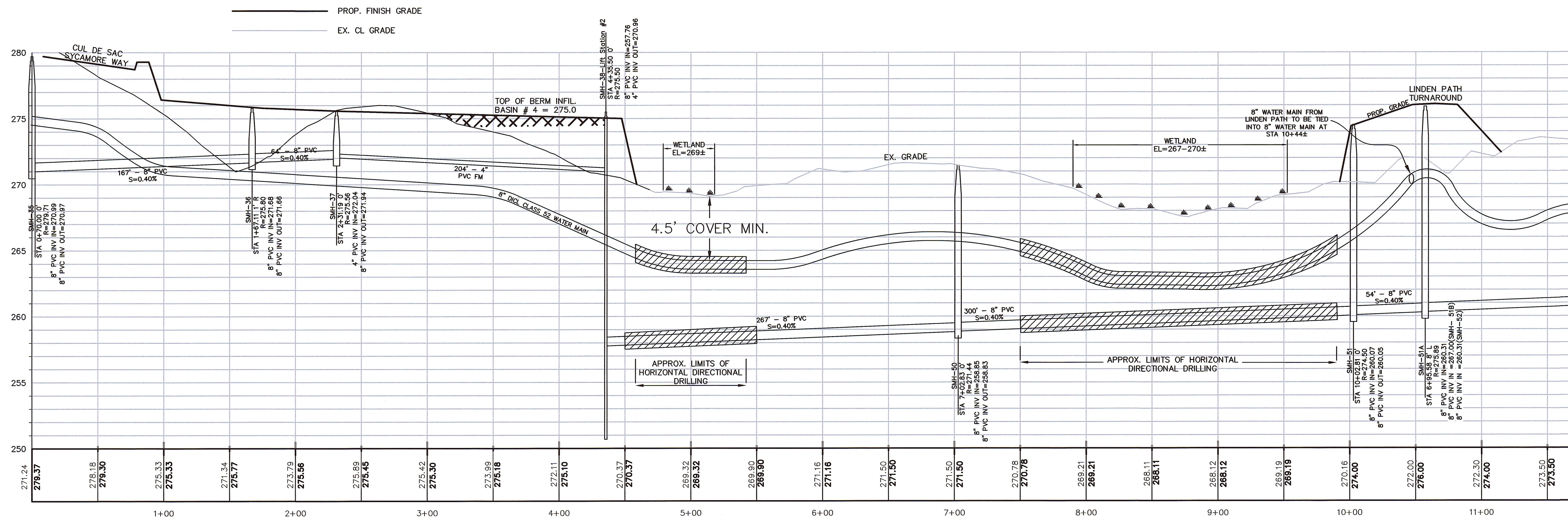
OE-2765

**HOLLY COURT PROFILE**

HORIZONTAL: 1"=40'  
VERTICAL: 1"=4'

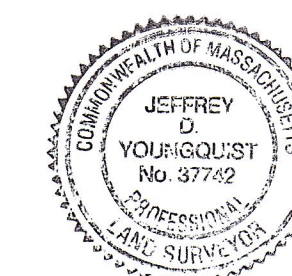






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12-5-19  
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40B OF THE MASSACHUSETTS GENERAL  
LAWS, SECTIONS 20-23.

DATE: \_\_\_\_\_

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MEDWAY ZONING BOARD OF APPEALS

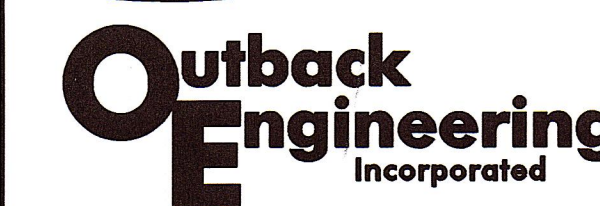
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TOWN CLERK—TOWN OF MEDWAY

## PROFILE EAST-WEST UTILITY CONNECTION

*"TIMBER CREST  
ESTATES  
&  
KINGSBURY VILLAGE"  
IN  
MEDWAY  
MASSACHUSETTS*



165 EAST GROVE STREET  
MIDDLEBOROUGH, MA 02346  
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[www.outback-eng.com](http://www.outback-eng.com)

DATE: NOVEMBER 29, 2019

DATE: NOVEMBER 29, 2019	
DRAWN BY: CJV	CHECKED BY: JAM

SCALE: 1"=40'	SHEET 51 OF 61
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0'	40'	80'	120'
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OE-2765



OE-2765



OE-2765



Z:\Land Projects 2004\CE-2765-Medway\DWG\\_\_28A Permitting Plans\53 to 61\_\_CE2765 - Detail Sheets.dwg



CONCRETE ARCH DESIGN NOTES

- ### BRIDGE CONSTRUCTION SEQUENCE

42" MIN. HEIGHT RETAINING WALL  
(OR OPEN BRIDGE RAIL)

ROAD CL  
EL=272.83

S=1.36% PAVED ROAD

CONTECH T88 OR O-SERIES TWIN-LEAF 01372T  
PRECAST CONCRETE ARCH (67'± CLEAR SPAN)

RETAINING WALL

EROSION CONTROL  
BARRIER  
(TYP.)

PROTECTED  
WETLAND  
ZONE

EXISTING GRADE (TYP.)

BW

EL=260.7±

EL=257.5

EL=260.2±

EL=259.2±

INTERMITTENT STREAM  
ELEV.=257.7±

9.3'±

EL=263.0±

EL=257.5

POURED  
CONC.  
FOOTING

BEBOBLOC™  
FOUNDATION  
BLOCK

TRIPLE 12" BIODEGRADABLE  
COMPOST SOCK (TYP.)  
WITH SILT FENCE

APPROXIMATE LIMIT OF  
EXCAVATION (TYP.)

BEBOBLOC™  
FOUNDATION  
BLOCK

**LONGITUDINAL SECTION**  
HORIZONTAL SCALE: 1"=10'

LONGITUDINAL SECTION

HORIZONTAL SCALE: 1"=10'

HORIZONTAL SCALE: 1"=10'  
VERTICAL SCALE: 1"=5'



NOT TO SCALE

### AMPHIBIAN BARRIER DETAIL

NOT TO SCALE

- 



SCALE: 1"=10'

**NOTE**  
STRUCTURAL ENGINEERED PLANS & DETAILS  
TO BE PROVIDED PRIOR TO CONSTRUCTION.



SCALE: 1"=20'

### BOX CULVERT CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCE PER PLANS.
2. CLEAR AND GRUB UNSUITABLE SOILS.
3. INSTALL WATER AND SEWER LINES PER PLANS, AND RESTORE STREAM CHANNEL LINES AND GRADES.
4. EXCAVATE FOR NEW CULVERT AND WALL FOOTINGS PER STRUCTURAL PLANS.
  - 4.1. EXCAVATED AREA SHOULD EXTEND 24" HORIZONTALLY BEYOND THE EDGE OF THE PROPOSED CULVERT AND WALL FOUNDATIONS.
  - 4.2. SCRAPE BOTTOM OF FOOTING TRENCH WITH NON-TOOTHED MACHINE, IMMEDIATELY FOLLOWED BY PLACEMENT OF A REINFORCING GEOTEXTILE AND A 12" LAYER OF 1" SIZE CRUSHED STONE, IF REQUIRED.
  - 4.3. CONTRACTOR SHALL UTILIZE THE STONE FOOTING TRENCH FOR GROUNDWATER CONTROL IF NECESSARY. A SUMP MAY BE DUG ADJACENT TO THE UPSTREAM END OF FOOTING TRENCHES WHERE A PUMP MAY BE INSTALLED TO MAINTAIN WATER LEVELS BELOW THE FOOTINGS. THE PUMP DISCHARGE SHALL BE ROUTED TO A TEMPORARY STRAW-BALE FILTER AT DOWNGRADIENT END.
  - 4.4. WHERE WORK IS TO BE DONE DURING NO FLOW/DRY CONDITIONS, IT IS NOT ANTICIPATED THAT TEMPORARY BY-PASS PIPING OR PUMPS SHALL BE NECESSARY. HOWEVER, CONTRACTOR SHALL BE PREPARED TO IMPLEMENT A CONTINGENCY PLAN IF WEATHER CONDITIONS ARISE (SUCH AS A HURRICANE FORECAST) TO PROVIDE AN OPEN STREAM CHANNEL WITH A CRUSHED STONE CHECK DAM AND STRAW BALES/SILT FENCE AT OUTLET END OF STREAM.
5. INSTALL FOOTINGS PER STRUCTURAL CULVERT PLANS.
6. INSTALL BOX CULVERT AND BACKFILL INTERIOR AS SECTIONS ARE PLACED.
  - 6.1. COMPACT BED MATERIAL.
  - 6.2. WASH BED MATERIAL TO ENSURE THAT FINE MATERIALS FILL VOIDS.
  - 6.3. BY-PASS PIPING MAY BE REMOVED, IF ANY.
7. INSTALL RETAINING WALLS PER PLANS.
8. BACKFILL WALLS AND RESTORE/CONSTRUCT WELL-GRADED BANKS FOR ROUGHNESS AND PASSAGE BY SMALL WILDLIFE AND IN-STREAM BANK-EDGE HABITAT. USING NATIVE SUBSOIL OVERLAID WITH 6" LAYER OF COMPOST, SAND AND LOAM MIXTURE (EQUAL PARTS). BLEND CONSTRUCTED BANKS INTO EXISTING BANKS.
9. IMPLEMENT RESTORATION PLAN PER GODDARD CONSULTING.



## WETLAND CROSSING #1

BOX CULVERT & RETAINING WALL DETAIL  
EMERGENCY ACCESS ROAD TO OHLSON CIRCLE

NOT TO SCALE

## BOX CULVERT DESIGN NOTES

1. STRUCTURAL ENGINEERED PLANS & DETAILS TO BE PROVIDED PRIOR TO CONSTRUCTION
2. ALL UNSUITABLE MATERIAL SUCH AS ORGANIC LAYERS SHALL BE REMOVED BENEATH FOOTING .
3. BOX CULVERT CALCULATIONS FOR MASSACHUSETTS STREAM CROSSING GUIDELINES:
  - OPENNESS RATIO = (CROSS SECTIONAL AREA) / LENGTH  $\geq 0.82$   
=  $(2.0' \times 12') / 22' = 1.09$
  - MIN. SPAN= 1.2 X BANKFULL WIDTH = 1.2 X 8' = 9.6' (USE 12')
  - AVERAGE WIDTH OF TOP
4. EXISTING STREAM BED TO BE RESTORED TO LINE AND GRADE AFTER INSTALLATION OF WATER AND SEWER LINES.

SEWER MAINS BELOW  
FOOTINGS PER PLAN

FOR REGISTRY USE ONLY

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APPROVED SUBJECT TO TERMS AND  
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DATE: \_\_\_\_\_

MIDWAY ZONING BOARD OF APPEALS

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TOWN CLERK—TOWN OF MEDWAY

DETAIL SHEET

*TIMBER CREST  
ESTATES  
&  
KINGSBURY VILLAGE  
OFF  
WINTHROP STREET,  
OHLSON CIRCLE  
FAIRWAY LANE &  
FERN PATH  
IN  
MEDWAY  
MASSACHUSETTS*



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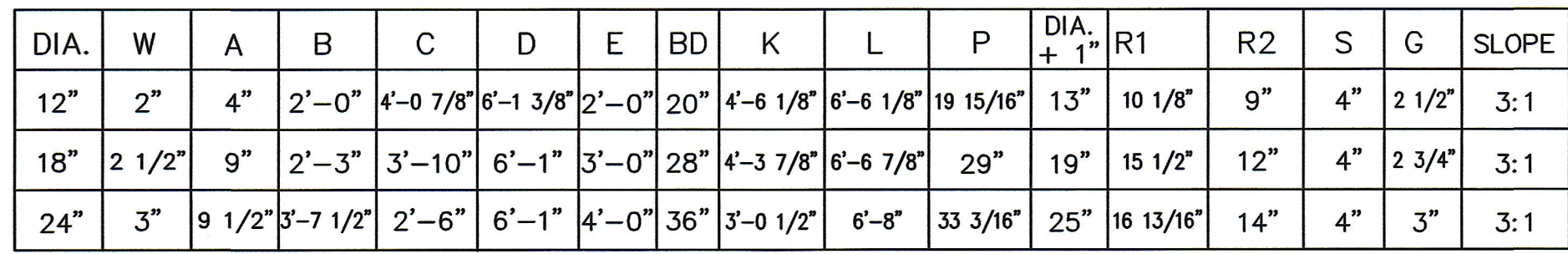
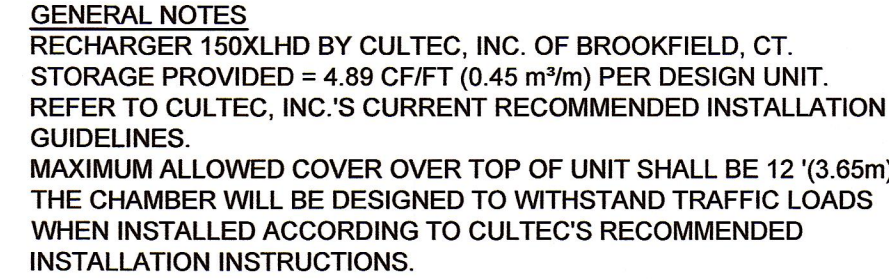
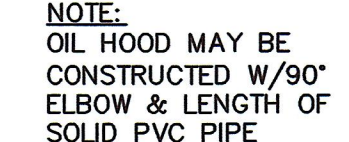
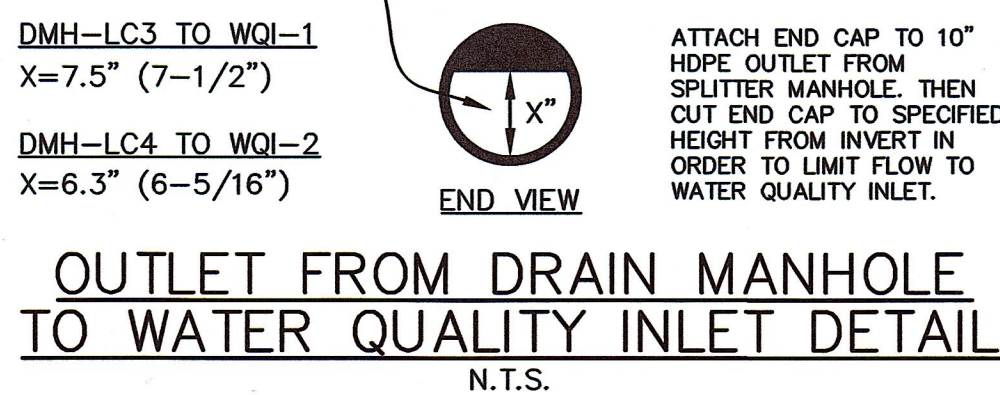
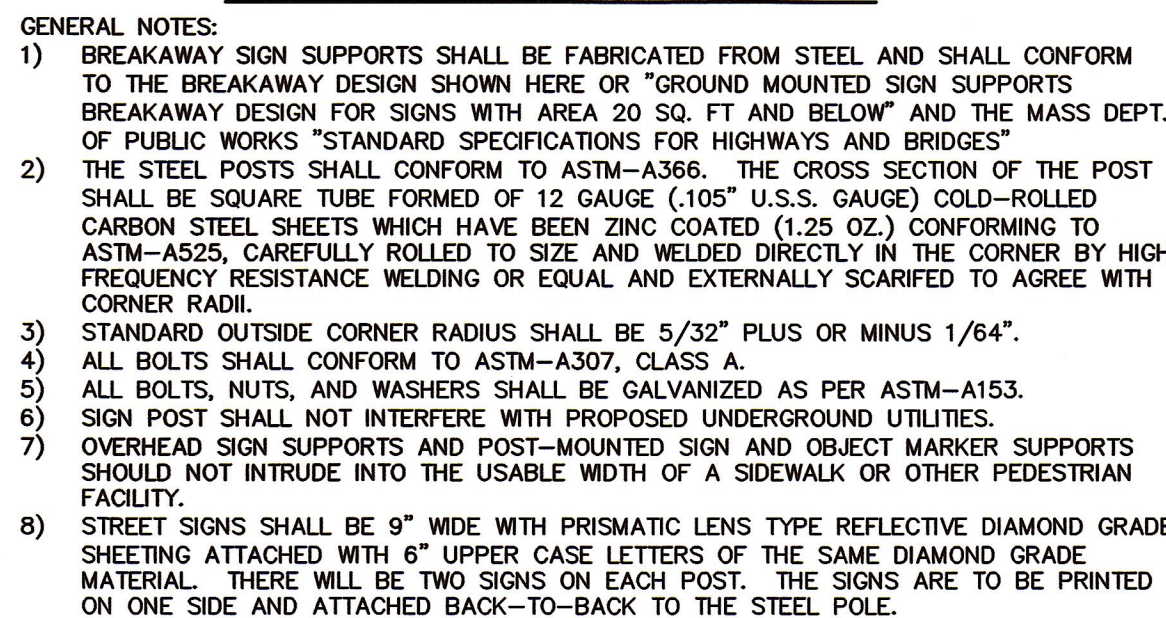
DATE: NOVEMBER 29, 2019

DATE: NOVEMBER 29, 2019	
DRAWN BY: C.IV	CHECKED BY: J.A.

DRAWN BY: GSV	CHECKED BY: GSA
NOT TO SCALE	SHEET 54 OF 61

OE-2765





NOTE: ALL FLARED ENDS MUST BE RCP (ADS FLARED END ARE NOT ALLOWED)

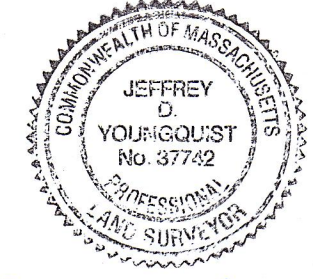
REINFORCED CONCRETE PIPE FLARED ENDS

FOR BELL AND SPIGOT PIPE

NOT TO SCALE

FOR REGISTRY USE ONLY

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12-5-19   
DATE PROFESSIONAL LAND SURVEYOR

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DATE: \_\_\_\_\_  
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MEDWAY ZONING BOARD OF APPEALS

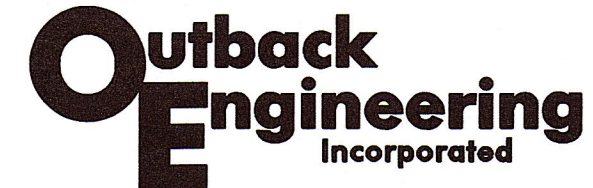
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TOWN CLERK—TOWN OF MEDWAY

*DETAIL SHEET*

*TIMBER CREST  
ESTATES  
&  
KINGSBURY VILLAGE  
IN  
MEDWAY  
MASSACHUSETTS*

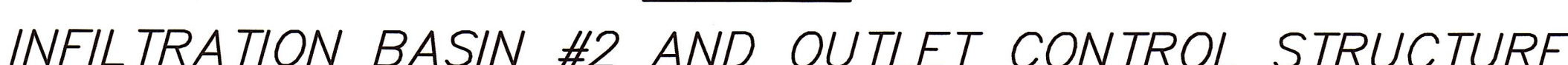
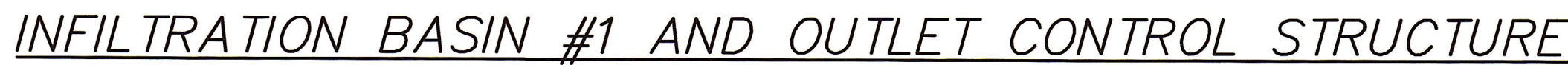


165 EAST GROVE STREET  
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DATE: NOVEMBER 29, 2019	
DRAWN BY: CJV	CHECKED BY: JAP
NOT TO SCALE	SHEET 55 OF 61

OE-2765



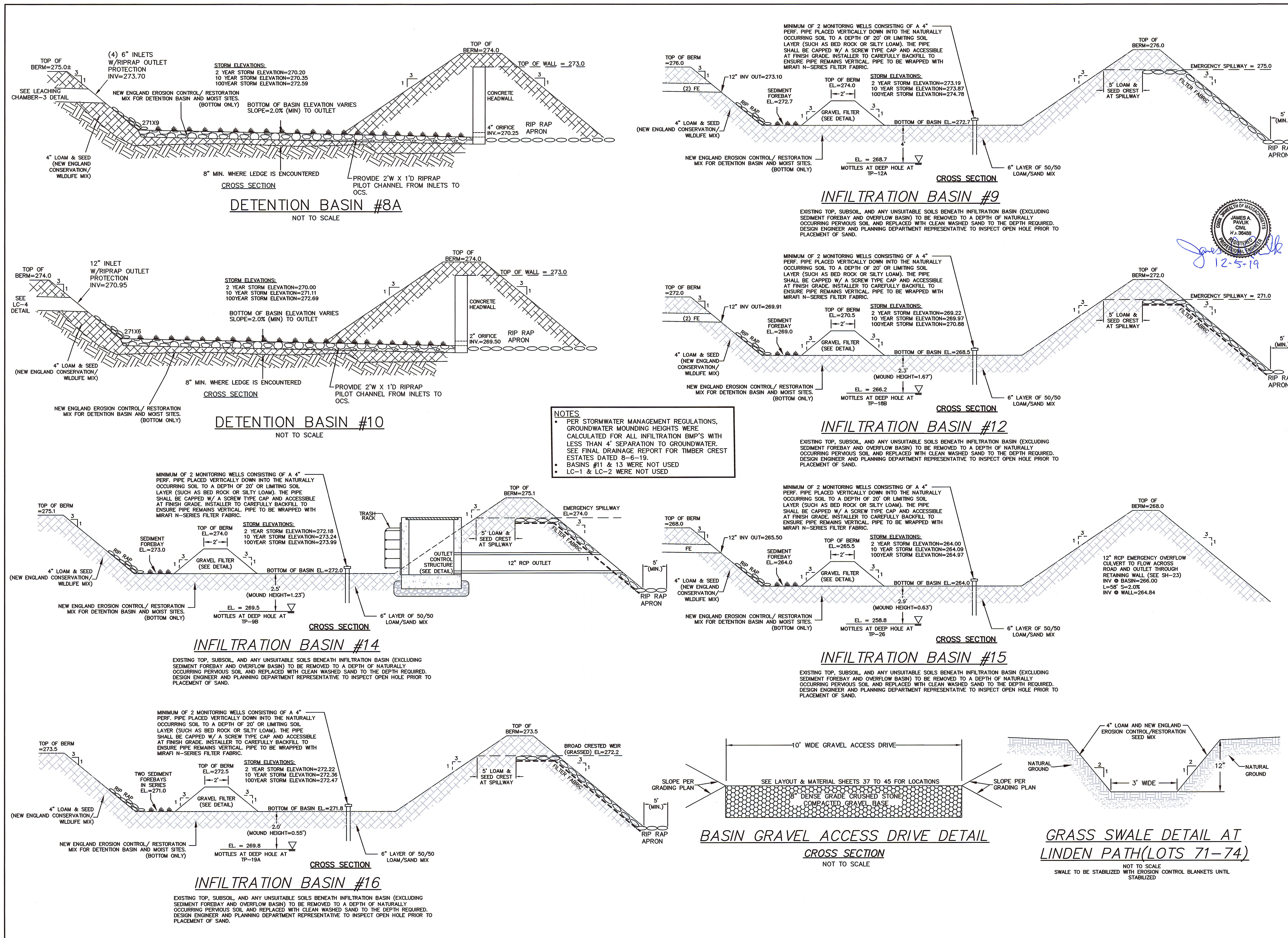


EXISTING TOP, SUBSOIL, AND ANY UNSUITABLE SOILS BENEATH INFILTRATION BASIN (EXCLUDING SEDIMENT FOREBAY AND OVERFLOW BASIN) TO BE REMOVED TO A DEPTH OF NATURALLY OCCURRING PERVIOUS SOIL AND REPLACED WITH CLEAN WASHED SAND TO THE DEPTH REQUIRED. DESIGN ENGINEER AND PLANNING DEPARTMENT REPRESENTATIVE TO INSPECT OPEN HOLE PRIOR TO PLACEMENT OF SAND.

OE-2765



2. Detail Sheet  
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100. Detail Sheet



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TOWN CLERK-TOWN OF MEDWAY

**DETAIL SHEET**

**TIMBER CREST ESTATES & KINGSBURY VILLAGE IN MEDWAY MASSACHUSETTS**

**Outback Engineering Incorporated**

165 EAST GROVE STREET  
MIDDLEBOROUGH, MA 02346  
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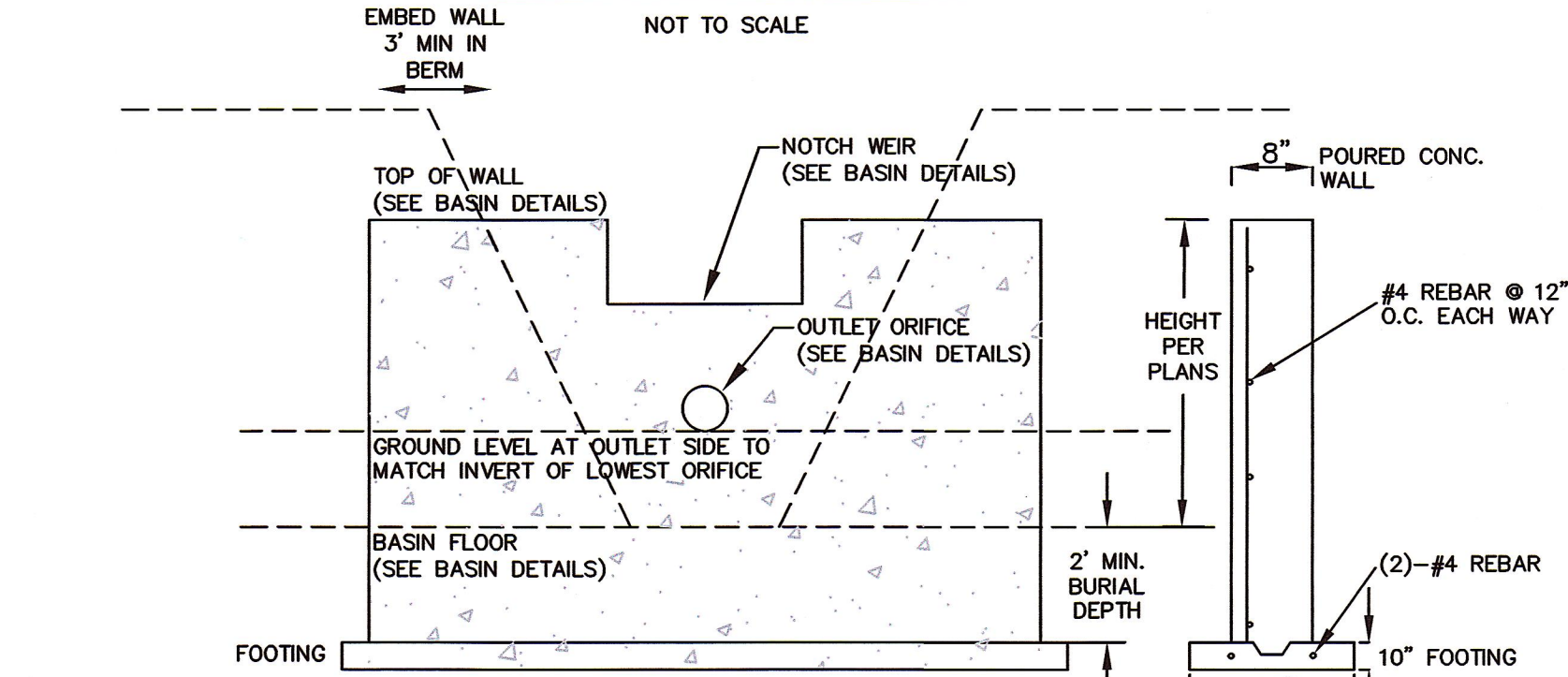
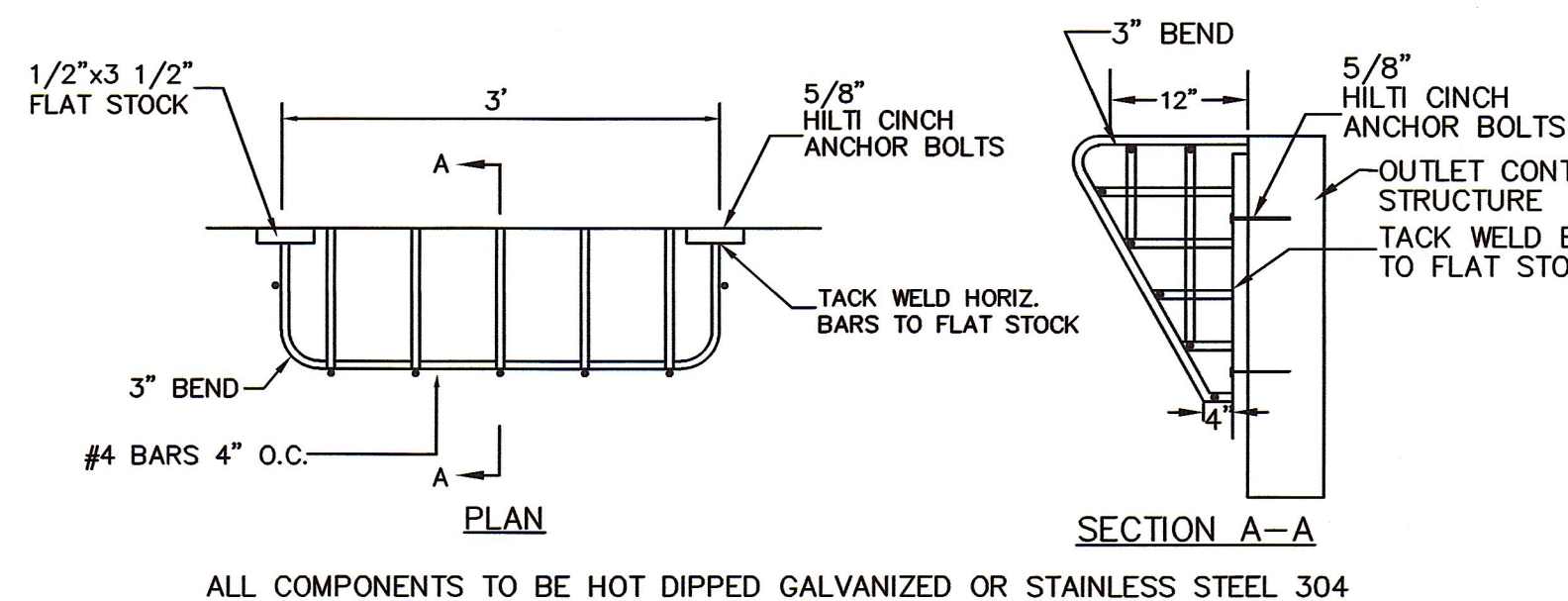
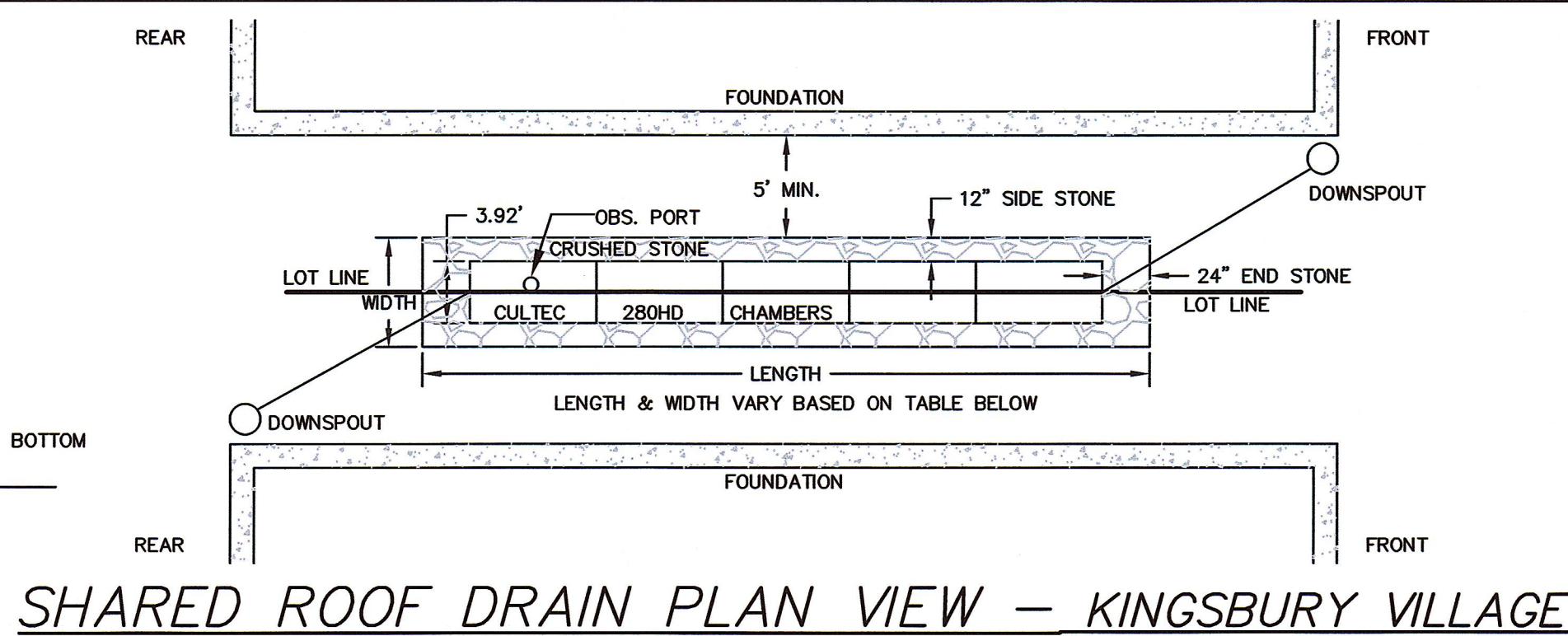
DATE: NOVEMBER 29, 2019

DRAWN BY: CJV CHECKED BY: JAP

NOT TO SCALE SHEET 57 OF 61

OE-2765





ROOF AREA (SF)*	SOIL TYPE	LENGTH (FT)	WIDTH (FT)
1800 (900 PER LOT)	SAND	26	5.92
	LOAMY SAND	40	5.92
	SANDY LOAM	47	5.92
900	SAND	19	5.92
	LOAMY SAND	26	5.92
	SANDY LOAM	26	5.92

\*NOTE: LOTS 135 & 136 ARE ANTICIPATED TO HAVE LARGER HOMES.  
USE 2 BEDS AT 6.75' W X 25.25' L WITH 2 CULTREC 150XLH CHAMBERS  
EACH, PER DRAINAGE REPORT, APPENDIX D-4.

OVERFLOW "Y" W/ SPLASH BLOCK

GUTTERDOWN SPOUT

SLOPE →

FINISH GRADE

FILTER FABRIC

OBS. PORT

6" MIN. COVER

4.21'

12"

12"

VARIABLES

CULTEC 280HD CHAMBER

24" DOUBLE WASHED, ¾"-1½" CRUSHED STONE

VARIES

2' MIN.

ESTIMATED SEASONAL HIGH GROUNDWATER ELEV.

5' (MIN.)

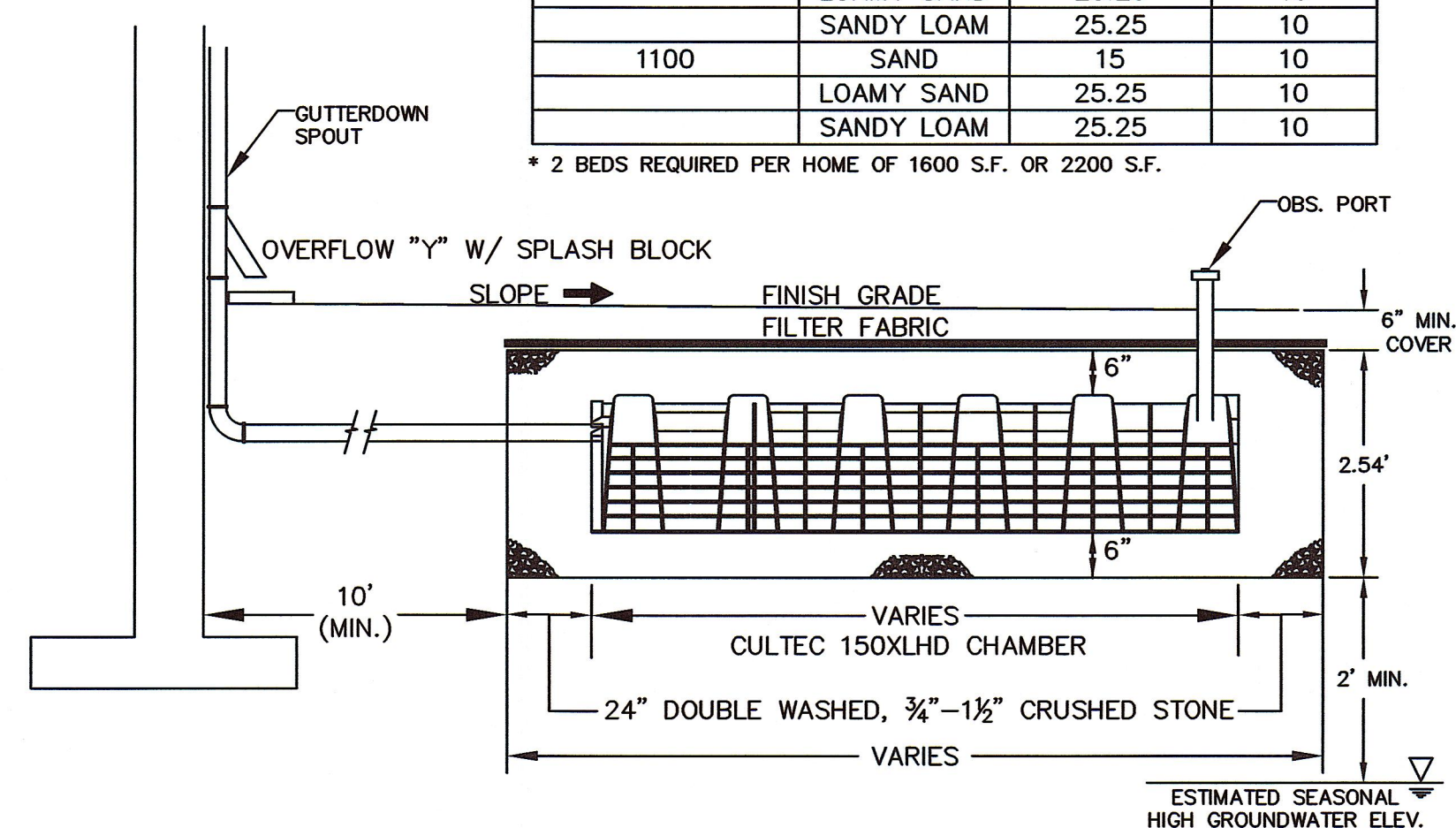
NOTES:

1. CULTREC 280HD CHAMBERS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. ROOF DRAIN SYSTEMS TO BE INSTALLED ALONG THE PROPERTY LINES BETWEEN UNITS, CAPTURING HALF OF EACH UNIT'S ROOF RUNOFF. IN CASES WHERE THERE IS NO ABUTTING UNIT, HALF OF THE DESIGNED BED, SHOWN IN THE TABLE ABOVE, SHALL BE INSTALLED AS SHOWN ON THE GRADING SHEETS OF THE PLAN SET.
3. ROOF DRAINS HAVE BEEN DESIGNED TO ACCOMMODATE THE 100-YR STORM EVENT.
4. REFER TO DRAINAGE REPORT DATED 8/6/19 FOR PRELIMINARY ROOF DRAIN CALCULATIONS BASED ON ASSUMED ROOF AREAS, SOIL TYPES, AND GROUNDWATER ELEVATIONS. DURING THE BUILDING PERMIT PROCESS, ROOF DRAIN CALCULATIONS AND SITE PLANS WITH DETAILS ARE REQUIRED, BASED ON ACTUAL ROOF AREAS, SOIL TYPES, AND GROUNDWATER ELEVATIONS.

## TYPICAL ROOF DRAIN DETAIL — KINGSBURY VILLAGE

NOT TO SCALE

ROOF AREA (SF)*	SOIL TYPE	LENGTH (FT)	WIDTH (FT)
800	SAND	15	6.75
	LOAMY SAND	25.25	10
	SANDY LOAM	25.25	10
1100	SAND	15	10
	LOAMY SAND	25.25	10
	SANDY LOAM	25.25	10



The diagram illustrates a cross-section of a water quality swale. Key features include:
 

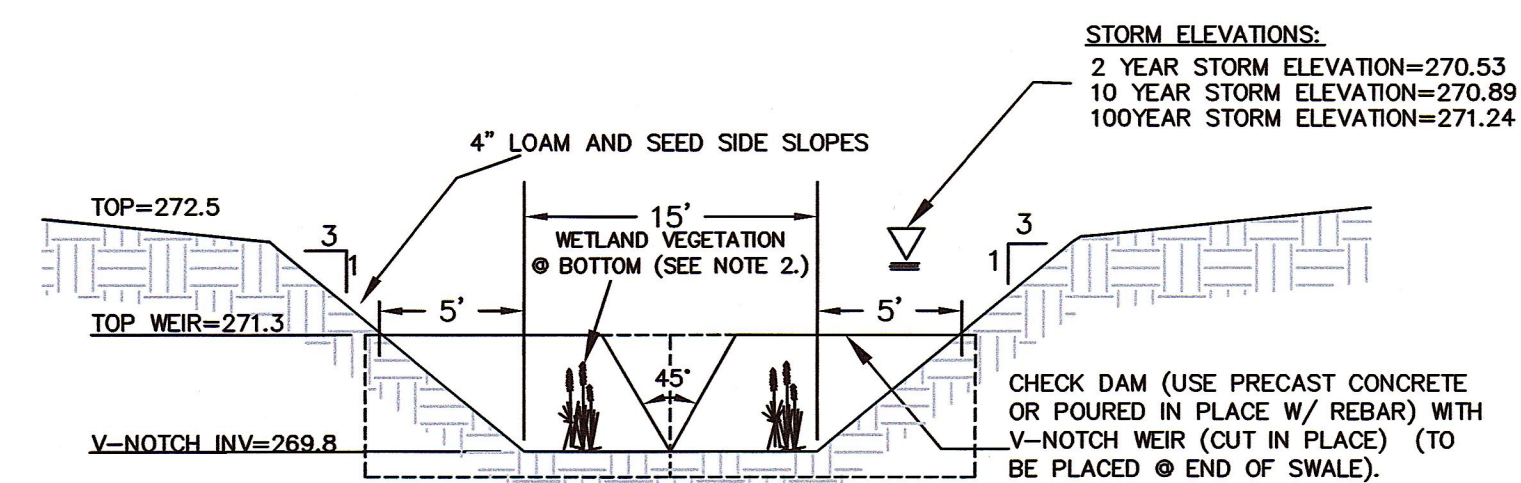
- Elevations:** TOP=264.0, TOP WEIR=263.4, V-NOTCH INV.=261.9.
- Slopes:** 4" LOAM AND SEED SIDE SLOPES on the outer edges.
- Internal Structure:** A central 6' WETLAND VEGETATION area with a 45° bottom slope. This is flanked by 3' sections of 2" material.
- Storm Elevation Data:**
  - 2 YEAR STORM ELEVATION=262.84
  - 10 YEAR STORM ELEVATION=263.18
  - 100 YEAR STORM ELEVATION=263.47
- Check Dam:** A structure at the bottom right, noted as "CHECK DAM (USE PRECAST CONCRETE OR POURED IN PLACE W/ REBAR) WITH V-NOTCH WEIR (CUT IN PLACE) (TO BE PLACED @ END OF SWALE)."

NOTES:

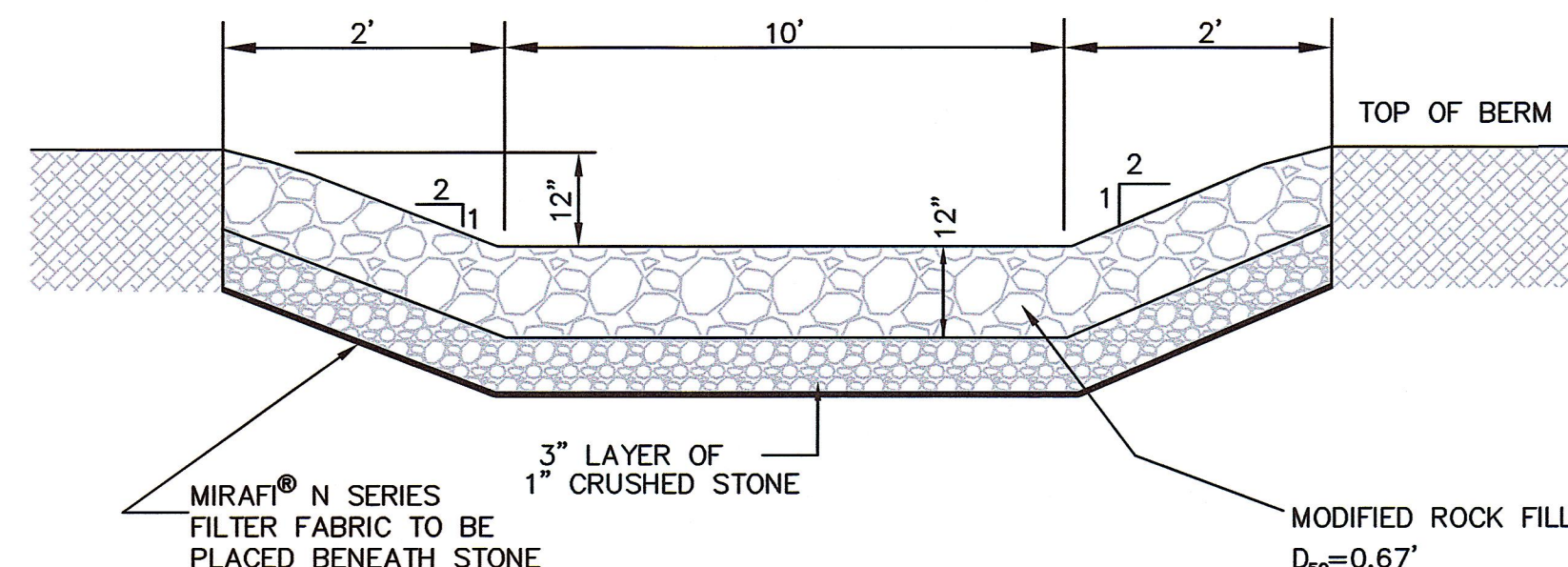
- SWALE TO BE STABILIZED WITH EROSION CONTROL BLANKETS UNTIL STABILIZED, AS NECESSARY. BLANKETS MUST BIODEGRADE WITHIN ONE YEAR OF PLACEMENT.
- BOTTOM OF SWALE TO BE LINED WITH EITHER 6 INCHES OF CLAY, OR SILT LOAM OR FINER MATERIAL TO PREVENT DRAWDOWN AND PROMOTE WETLAND VEGETATION GROWTH. BENTONITE OR POLYVINYL LINERS MAY ALSO BE USED (SEE BELOW)
- USE COMMERCIALY AVAILABLE WETLAND SEED MIX AT THE BOTTOM OF SWALES (NEW ENGLAND WETLAND PLANTS, INC, "WETMIX" OR APPROVED EQUIVALENT) APPLIED AT A RATE OF 1 POUND OF SEED PER 2500 S.F. OF BOTTOM AREA.

**WATER QUALITY SWALE #1 (WET SWALE) CROSS-SECTION**

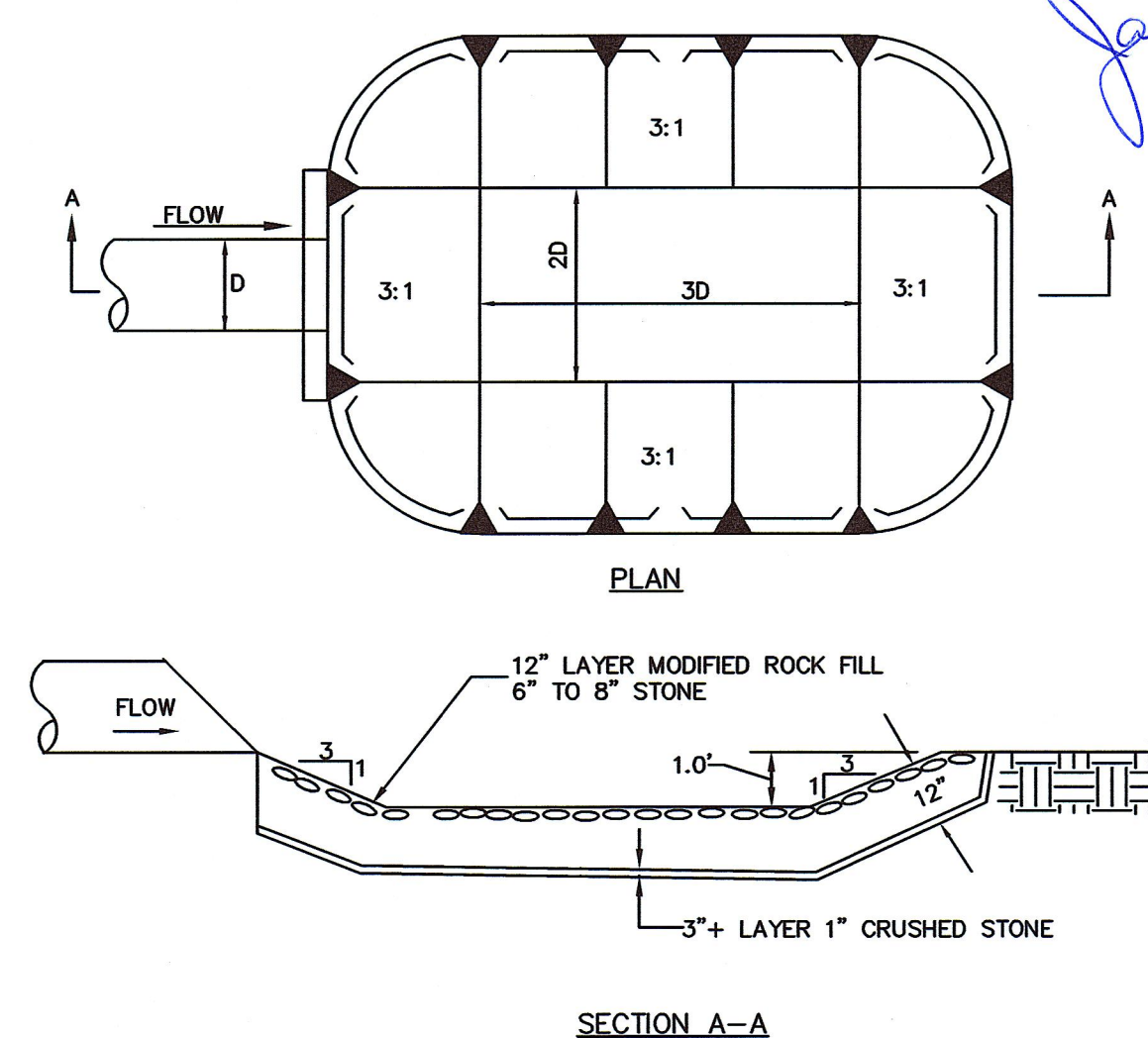
NOT TO SCALE



WATER QUALITY SWALE #2 (WET SWALE) CROSS-SECTION

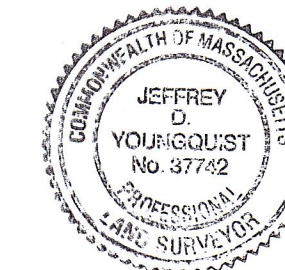


EMERGENCY SPILLWAY  
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FOR REGISTRY USE ONLY

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12-5-19  
DATE PROFESSIONAL LAND SURVEYOR

APPROVED SUBJECT TO TERMS AND  
CONDITIONS OF A COMPREHENSIVE  
PERMIT PER ZONING BOARD OF APPEAL  
DECISION, AS AUTHORIZED BY CHAPTER  
40B OF THE MASSACHUSETTS GENERAL  
LAWS, SECTIONS 20-23.

DATE: \_\_\_\_\_

MEDWAY ZONING BOARD OF APPEALS

THIS PLAN IS SUBJECT TO A  
COVENANT TO BE RECORDED HEREWITH

I CERTIFY THAT 20 DAYS HAVE  
ELAPSED SINCE ZONING BOARD  
APPROVAL, AND THAT NO APPEAL  
HAS BEEN FILED AT THIS OFFICE.

TOWN CLERK—TOWN OF MEDWAY

DETAIL SHEET

TIMBER CREST  
ESTATES  
&  
KINGSBURY VILLAGE  
IN  
MEDWAY  
MASSACHUSETTS

## Outback Engineering Incorporated

165 EAST GROVE STREET  
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TEL: (508)-946-9231  
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[www.outback-eng.com](http://www.outback-eng.com)

DATE: NOVEMBER 29, 2019	
DRAWN BY: CJV	CHECKED BY: JAP
NOT TO SCALE	SHEET 58 OF 61

OE-2765



Z:\Land Projects 2004\OE-2765-Medway\DWG\\_\_\_ZBA Permitting Plans\53 to 61\_OE2765 - Detail Sheets.dwg

THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREAS ARE DETAILED IN TABLE 1.

2. PLANTING SOILS  
THE SOIL SHOULD BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHOULD BE FREE OF NOXIOUS WEEDS.

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THE BIORETENTION SYSTEM SHALL UTILIZE PLANTING SOIL HAVING A COMPOSITION AS SHOWN IN TABLE 1. THE BIORETENTION APPLICATIONS WITH A PLANTING SOIL DEPTH OF 12 INCHES, OR LESS, ADD 20% (BY VOLUME) OF WELL AGED (6-12 MONTHS), WELL AERATED, LEAF COMPOST (OR APPROVED EQUIVALENT) TO THE ABOVE PLANTING SOIL MIXTURE.

THE PLANTING SOIL SHOULD BE TESTED AND SHOULD MEET THE FOLLOWING CRITERIA:

PH RANGE 5.2-7.0  
ORGANIC MATTER 1.5-4%  
MAGNESIUM 35 LB/AC  
PHOSPHORUS P205 75 LB/AC  
POTASSIUM K2O 85 LB/AC  
SOLUBLE SALTS NOT TO EXCEED 500 PPM

ALL BIORETENTION AREAS SHOULD HAVE A MINIMUM OF ONE TEST. EACH TEST SHOULD CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE'S STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHOULD BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL IS EXCAVATED.

SINCE DIFFERENT LABS CALIBRATE THEIR EXISTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHOULD COME FROM THE SAME TESTING FACILITY.

SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.

MULCH AROUND INDIVIDUAL PLANTS ONLY. SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE.

DOUBLE SHREDDED MULCH MUST BE WELL AGED (6-12 MONTHS) FOR ACCEPTANCE.

MIX APPROPRIATELY HALF OF THE SPECIFIED MULCH LAYER INTO THE PLANTING SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES TO HELP FOSTER A HIGHLY ORGANIC SURFACE LAYER.

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL IF BIORETENTION AREA IS EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND STORAGE VOLUMES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACATURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS OF 12 INCHES OR GREATER. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION AREA. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SANDS. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

THE PLANT ROOT BALL SHOULD BE PLANTED SO 7/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. ROOT STOCK OF THE PLANT MATERIAL SHOULD BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE DIAMETER OF THE PLANTING PIT SHOULD BE AT LEAST 6 INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

GRASSES AND LEGUME SEED SHOULD BE TILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHOULD BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE PLANTING SOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM THE NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF COMPOST OR MULCH IS USED TO AMEND THE SOIL. ROTOTILL AREA FERTILIZER AT A RATE OF 2 LB/1,000 S.F..

A. THE BIORETENTION FACILITY SHALL BE PROTECTED WITH SEDIMENT CONTROL DEVICES AS SHOWN IN THE EROSION & SEDIMENT CONTROL PLANS AND SHALL REMAIN OFFLINE AND INOPERATIONAL UNTIL ALL VEGETATION IS ESTABLISHED WITHIN THE BIORETENTION AREA AND THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.

B. THE PURPOSE OF THESE BIORETENTION AREAS IS TO PROVIDE SOME INCREASED RUNOFF WATER QUALITY AND INFILTRATION OF ROOF RUNOFF (FROM UNITS SHOWN) AND LIMITED LAWN AREAS; THESE RAIN GARDENS ARE DESIGNED TO OVERFLOW. THEY ARE NOT DESIGNED TO CONTROL RUNOFF RATES OR VOLUMES, OR FOR TSS REMOVAL CREDIT.

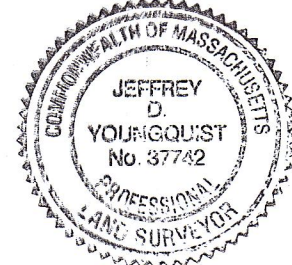
SHRUB SPECIES

HERBACEOUS SPECIES



FOR REGISTRY USE ONLY

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.



12-5-14  
DATE PROFESSIONAL LAND SURVEYOR

APPROVED SUBJECT TO TERMS AND  
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PERMIT PER ZONING BOARD OF APPEALS  
DECISION, AS AUTHORIZED BY CHAPTER  
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LAWS, SECTIONS 20-23.

DATE: \_\_\_\_\_

MEDWAY ZONING BOARD OF APPEALS

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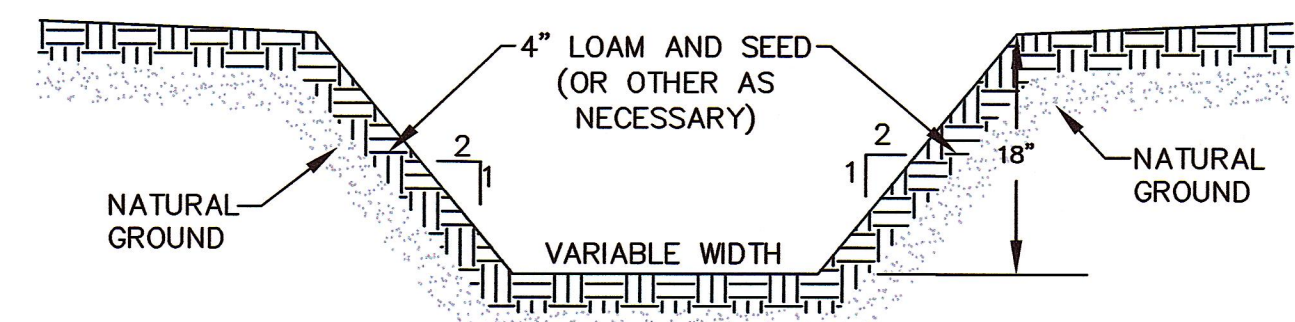
DATE: NOVEMBER 29, 2019

DRAWN BY: CJV	CHECKED BY: JAA
NOT TO SCALE	SHEET 59 OF 61

OE-2765

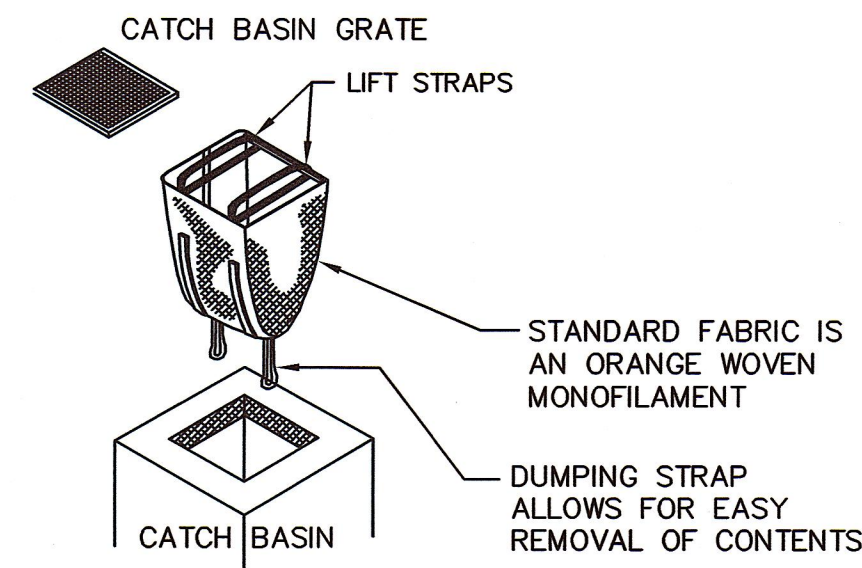


2. View Reports 2004-05-2785-Medway (DW) - MA Permitting Portal 12-5-19 to 12-03-2020 - Detail Sheet



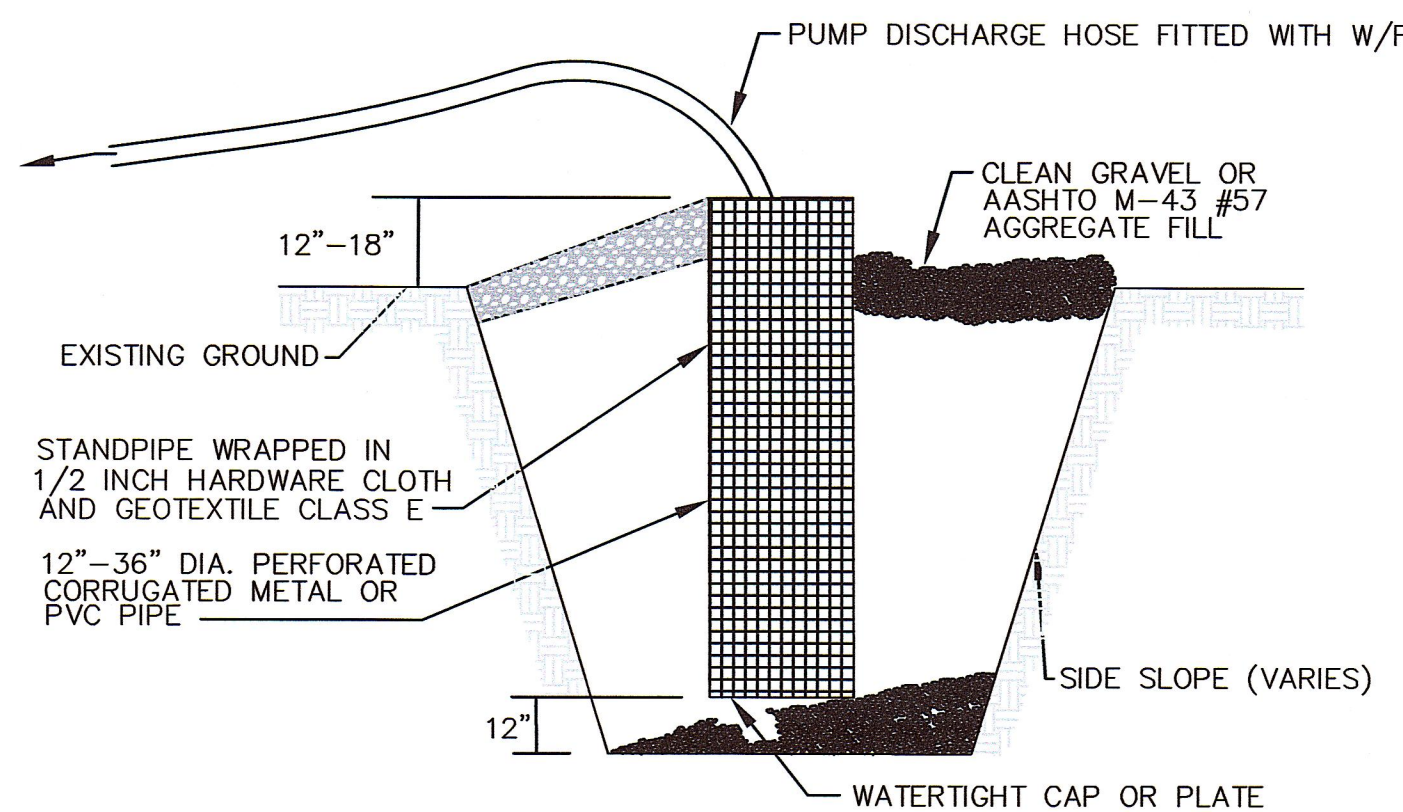
### TEMPORARY DIVERSION BERM/SWALE DETAIL

CONTRACTOR SHALL STABILIZE AS NECESSARY USING RIP RAP, CRUSHED STONE, EROSION CONTROL BLANKETS, AND/OR LOAM & SEED



### DANDY SACK® SILTY SACK BY MIRAFI

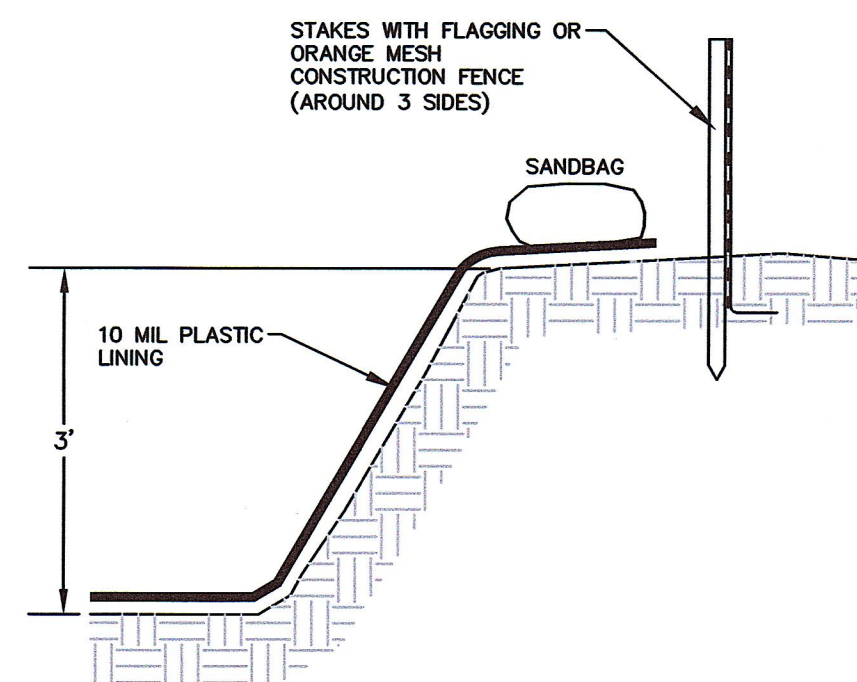
NOTE: SILTY SACKS TO BE INSTALLED AT CATCH BASINS ONLY AFTER PAVED AREA IS CONSTRUCTED TO BASE COURSE PAVEMENT



### CONSTRUCTION DEWATERING SUMP PIT DETAIL

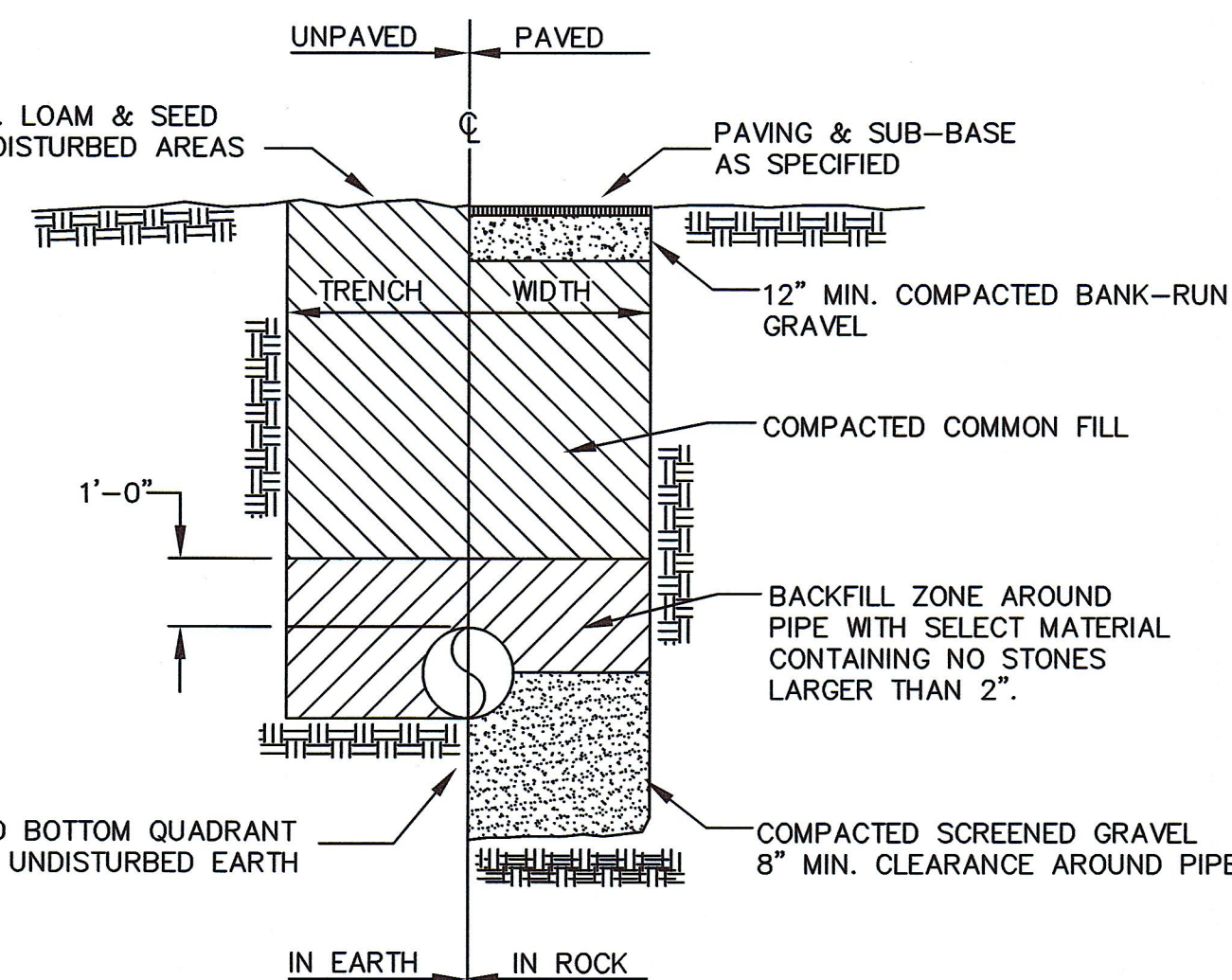
NOTE: IN LOCATIONS WHERE DEWATERING IS REQUIRED, THE CONTRACTOR SHALL CONSTRUCT A DEWATERING SUMP PIT IN ACCORDANCE WITH THE DETAIL PROVIDED. TO PREVENT THE MIGRATION OF SILT AND SEDIMENT, THE CONTRACTOR SHALL FIT THE DISCHARGE END OF THE PUMP HOSE WITH A COMPOSITE SOCK AND ALL FLOW SHALL BE DISCHARGED INTO A SEDIMENT CONTROL TRAP PRIOR TO CONVEYANCE INTO THE STORM DRAIN SYSTEM. THE SEDIMENT CONTROL TRAP SHALL BE CONSTRUCTED UTILIZING AN ENCLOSED AREA OF SILT FENCE AND/OR FILTERMITT IN ACCORDANCE WITH THE DETAIL SHOWN. SEDIMENT TRAPS SHALL BE PLACED IN UPLAND AREAS ONLY AWAY FROM WETLANDS.

DEWATERING PIT TO BE LOCATED OUTSIDE 100' BUFFER AND DISCHARGE, TO A SEDIMENT TRAP OR TEMPORARY DEATERING PIT WHERE FEASIBLE.



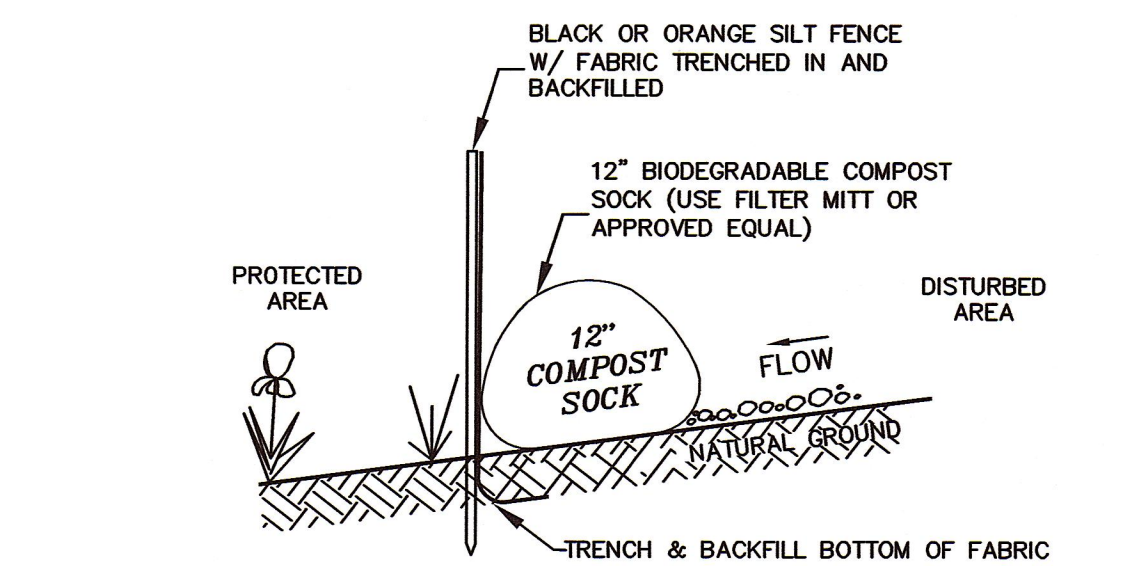
### CROSS-SECTION A-A

- NOTE:
1. TRENCH SHALL BE A MIN. OF 3' IN WIDTH PER TOWN OF MEDWAY STANDARDS.
  2. TRENCH SHALL BE 5' MAX. DEPTH FOR STEEP SIDED SECTION
  3. TRENCH SHALL BE PROVIDED WITH 6" MIN. CRUSHED STONE BEDDING PER TOWN OF MEDWAY.



### WATER TRENCH

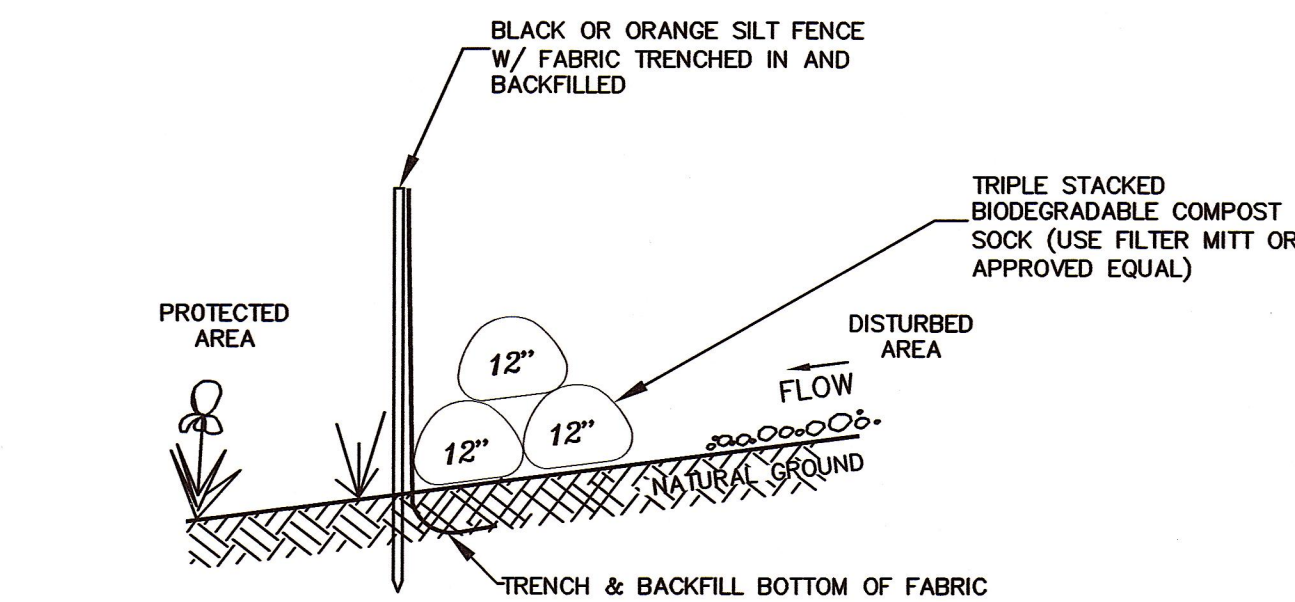
NOT TO SCALE



### EROSION CONTROL BARRIER-TYPE 1 (ECB-1)

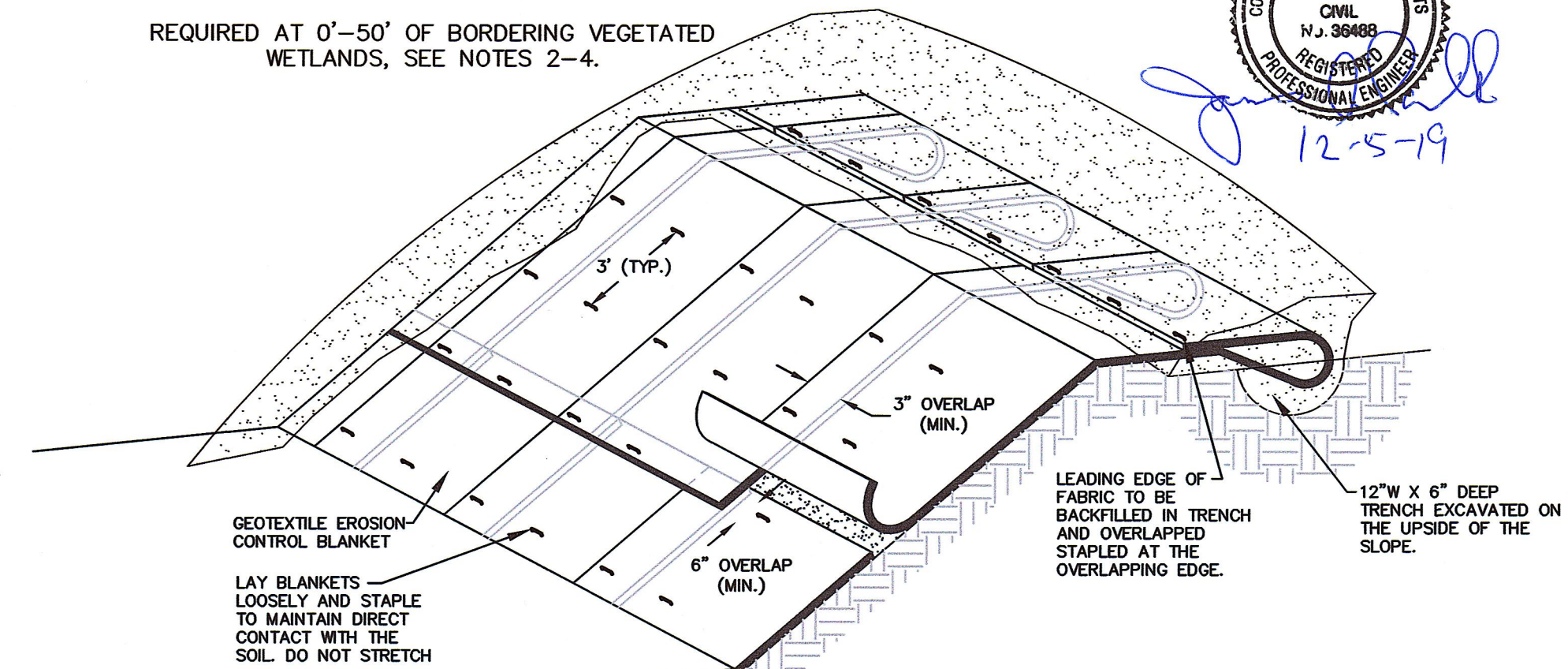
REQUIRED AT 50'-100' OF BORDERING VEGETATED WETLANDS, SEE NOTE 1.

- EROSION CONTROL BARRIER NOTES
1. WHEN WORKING WITHIN 50'-100' OF A BORDERING VEGETATED WETLAND USE ECB-1.
  2. BETWEEN 0'-50' OF A BORDERING VEGETATED WETLAND, USE ECB-2. (USE TRIPLE STACKED 12" BIODEGRADABLE COMPOST SOCK)
  3. WITHIN WETLAND AT WETLAND CROSSINGS #1 AND #3 (EMG. ACCESS ROAD & KINGSBURY DRIVE BRIDGE), AND AT THE BVW WETLAND REPLICATION AREA USE ECB-2, EXCEPT, NO SILT FENCE SHALL BE USED. SET TRIPLE COMPOST SOCKS ONLY.
  4. IF WORKING WITHIN 10 FEET TO BORDERING VEGETATED WETLAND RESOURCE AREA, 7-DAY SITE STABILIZATION IS REQUIRED IN ADDITION TO ECB-2.  
• UPON COMPLETION OF WORK, OR IF SITE IS TO HAVE WORK STOPPAGE FOR MORE THAN 7-DAYS, THE SITE MUST BE STABILIZED TEMPORARILY WITH JUTE MESH, MULCH, HYDROSEED, OR PERMANENT GROUND COVER PER PLANS.



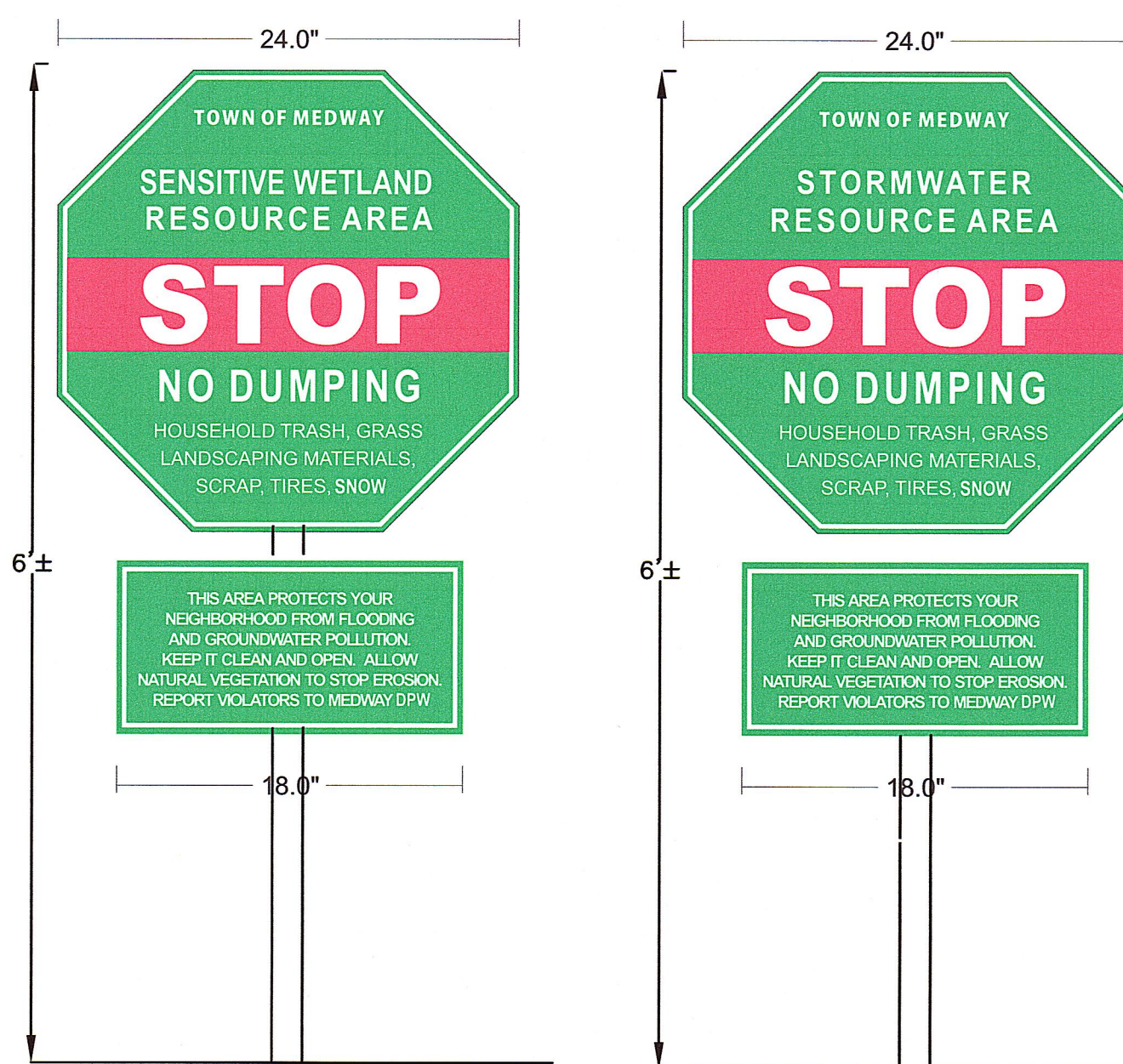
### EROSION CONTROL BARRIER-TYPE 2 (ECB-2)

REQUIRED AT 0'-50' OF BORDERING VEGETATED WETLANDS, SEE NOTES 2-4.



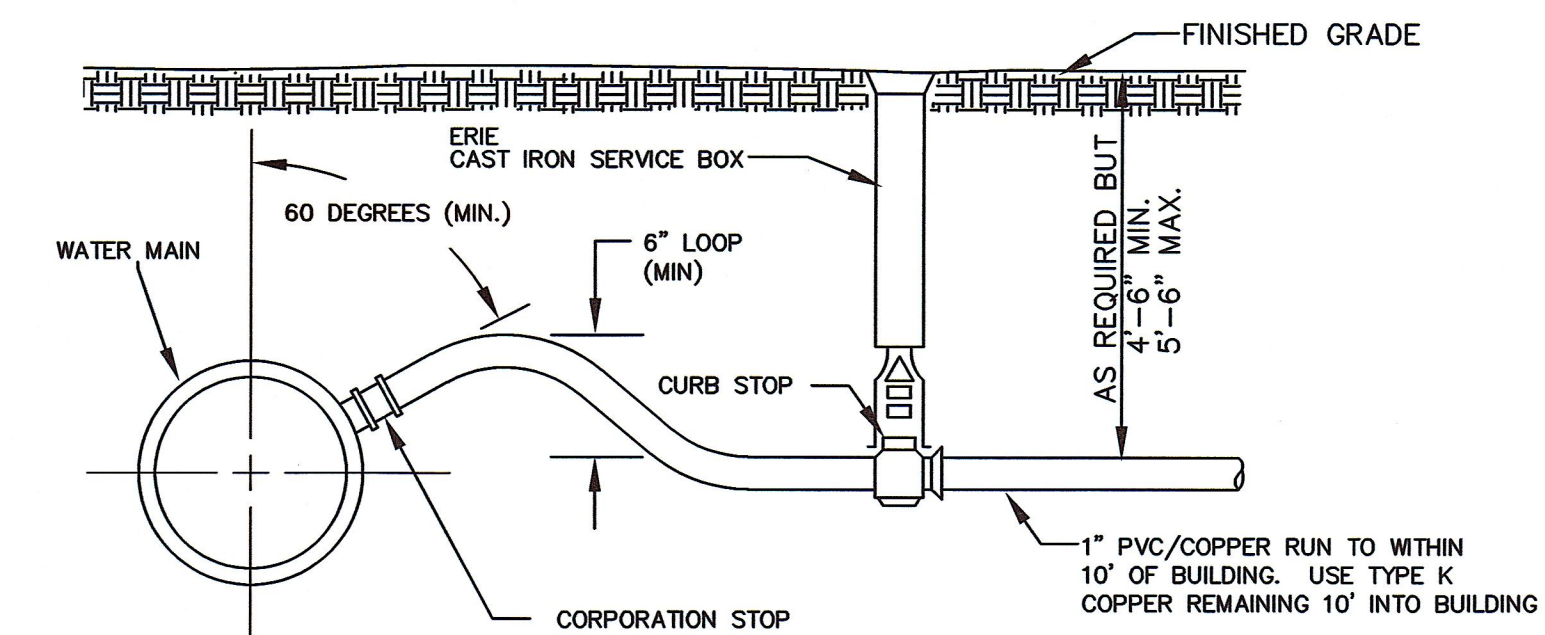
### GEOTEXTILE EROSION CONTROL BLANKET

NOTE  
USE ON 2:1 SLOPES AND WHERE NECESSARY TO PREVENT EROSION.



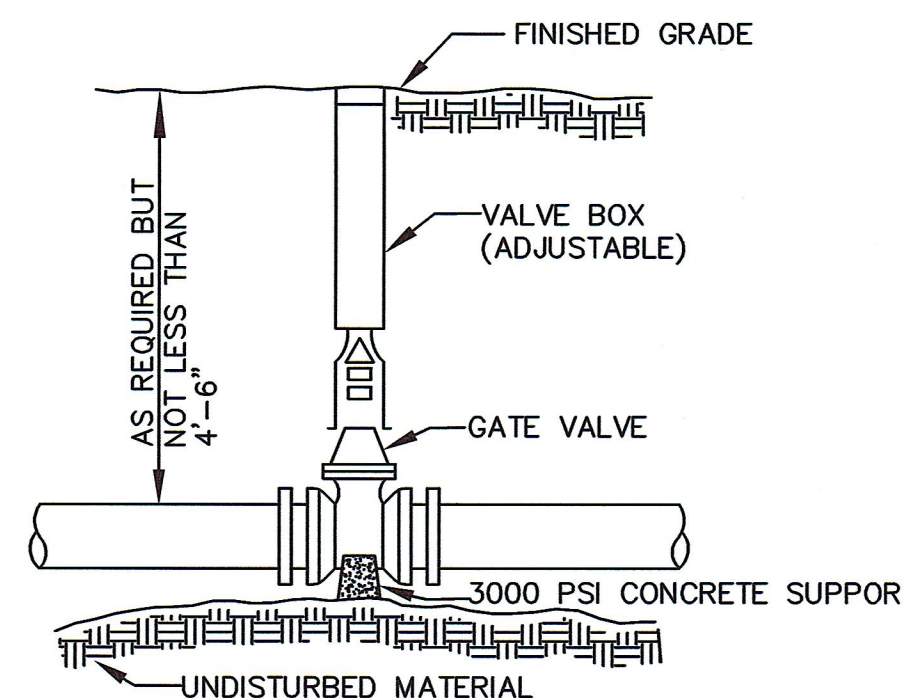
### POLLUTION PREVENTION & STORMWATER SIGN DETAIL

NOT TO SCALE



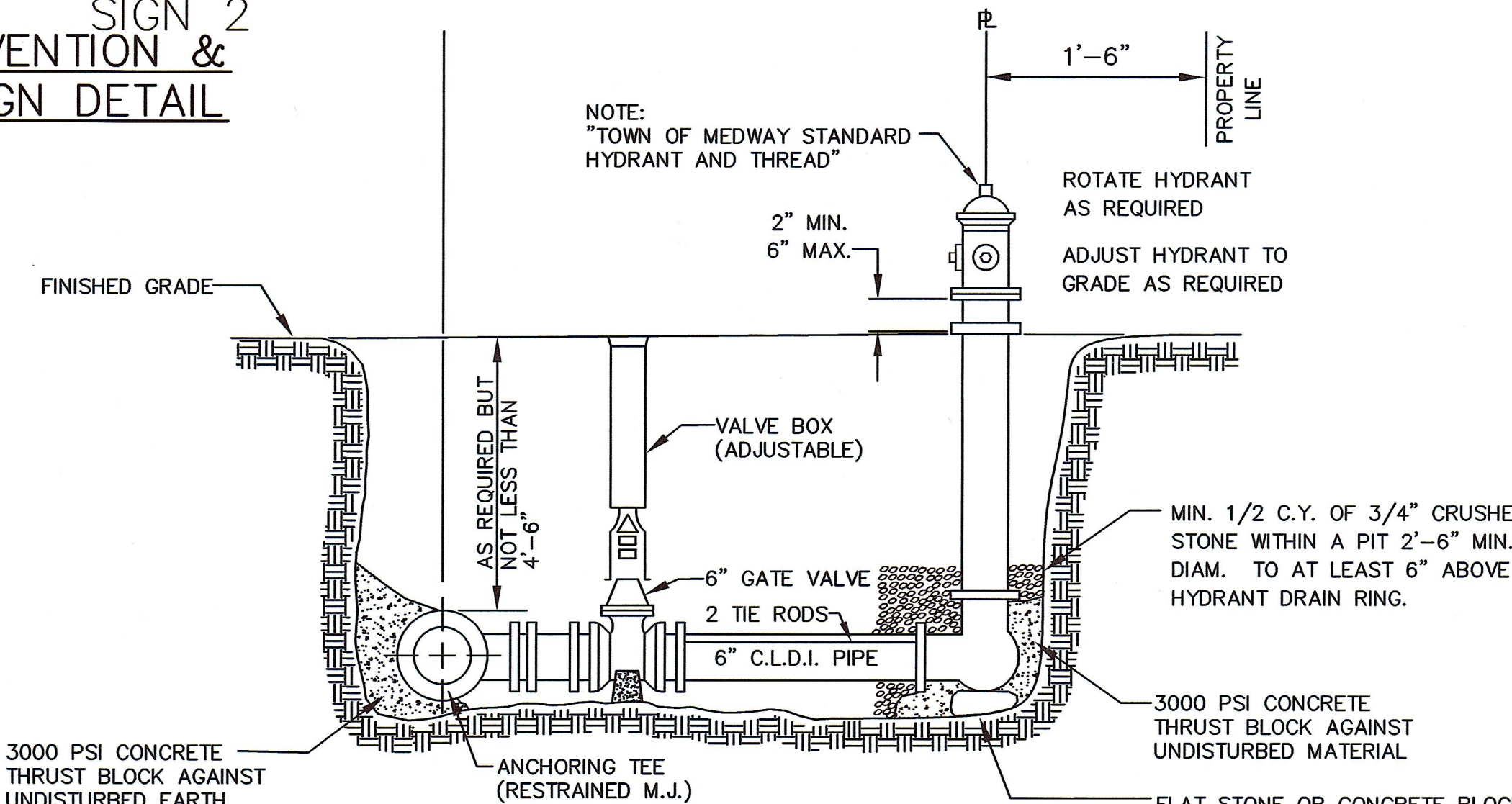
### TYPICAL PERMANENT WATER SERVICE CONNECTION

NOT TO SCALE



### TYPICAL GATE VALVE

NOT TO SCALE

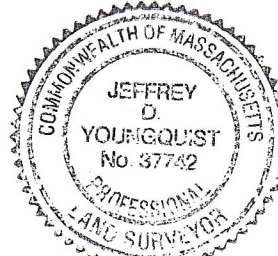


### TYPICAL HYDRANT & VALVE

NOT TO SCALE

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DATE 12-5-19 PROFESSIONAL LAND SURVEYOR

APPROVED SUBJECT TO TERMS AND CONDITIONS OF A COMPREHENSIVE PERMIT PER ZONING BOARD OF APPEALS DECISION, AS AUTHORIZED BY CHAPTER 40B OF THE MASSACHUSETTS GENERAL LAWS, SECTIONS 20-23.

DATE:

MEDWAY ZONING BOARD OF APPEALS

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DATE: NOVEMBER 29, 2019

DRAWN BY: CJV CHECKED BY: JAP

NOT TO SCALE SHEET 60 OF 61

OE-2765



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F.S. =  $(750 \# + 27233 \# + 22706 \#) \div 47923 \# = 1.1$  FACTOR OF SAFETY  
WT. OF CONCRETE BALLAST, COLLAR, TANK + SOIL IS GREATER THAN WT.  
DISPLACED WATER  $\therefore$  OK



1. PUMP CORDS NOT SHOWN FOR CLARITY.

2. CONTRACTOR TO PROVIDE ALL EQUIPMENT, MATERIALS & LABOR NECESSARY FOR COMPLETE INSTALLATION OF LIFT STATIONS (SEE HAYES PUMP, INC. BUDGET QUOTATION LETTERS DATED NOVEMBER 12, 2018 FOR SPECIFICATIONS.), INCLUDING ELECTRIC CONTROL PANELS AND BACKUP GENERATORS. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW BY DESIGN ENGINEER & MEDWAY DPW PRIOR TO ORDERING AND INSTALLATION, AND AS-BUILT DRAWINGS PRIOR TO PLACING STATIONS IN SERVICE.
3. PRIOR TO RELEASE OF ANY BUILDING PERMITS FOR INDIVIDUAL LOTS, CONTRACTOR SHALL PROVIDE THE OWNER & TOWN DPW WITH A CLEAR WELL TEST REPORT AND AS-BUILT DRAWINGS FOR ALL PUMP STATIONS NEEDED TO SERVE PROPOSED BUILDING LOTS. OWNER SHALL PROVIDE A COPY OF A CONTRACT FOR EMERGENCY AND ROUTINE MAINTENANCE SERVICES DESIGNATING WHO IS RESPONSIBLE FOR SUCH SERVICES AND RELATED CONTACT INFORMATION. (REFER TO SEWER LIFT STATIONS SPEC SHEETS & STANDARD OPERATING GUIDELINE TIMBER CREST ESTATES & KINGSBURY VILLAGE DATED NOVEMBER 29, 2019.)

LIFT Station # & Location	# of homes	Avg Flow(GPD) (170 GPD/home)	Peak flow (5X) (GPD)	GPH (peak hour)	GPM (peak hour)	Rim El.	8" Inv. In to Lift station	Inv. Out (of wet well)	FM length	Connecting inv. El.
#1 / Rosewood Dr.	11	1870	9350	390	6	270	263.55	(2") 265	*264'	273.40
#2/ Infil. Bas. 4	71	12070	60350	2515	42	276	257.42	(4") 270.96	*204'	272.04
#3/ Kingsbury Dr.	11	1870	9350	390	6	267	260.39	(2") 260.5	*544'	266.77

\*NOTE: FROM LIFT STATION TO MANHOLE WITH GRAVITY SEWER



NOT TO SCALE

NOT TO SCALE

3. SUM OF FORCES:  
 $F.S. = (12,614.4 \text{ \#}) \div 7294.1 \text{ \#} = 1.73$  FACTOR OF SAFETY  
 WT. OF SMH IS GREATER THAN WT. OF DISPLACED WATER  
 $\therefore$  OK

---



*TIMBER CREST  
ESTATES  
&  
KINGSBURY VILLAGE  
IN  
MEDWAY  
MASSACHUSETTS*

DRAWN BY: CJV	CHECKED BY: JAP
NOT TO SCALE	SHEET 61 OF 61

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