

# LOT 2

OLD TOPHET ROAD  
ROXBURY, CONNECTICUT

ASSESSOR'S MAP 28, LOT 11

#### OWNER/APPLICANT

CHARLES FORMAN  
2 RIVERVIEW TERRACE – APT 3E  
NEW YORK, NY

#### GEOTECHNICAL CONSULTANT

GZA GEOENVIRONMENTAL, INC.  
120 MOUNTAIN AVENUE  
BLOOMFIELD, CT

#### ENVIRONMENTAL CONSULTANT

CT ECOSYSTEMS, LLC  
38 WESTLAND AVENUE  
WEST HARTFORD, CT

#### ENGINEER/SURVEYOR

CIVIL 1  
43 SHERMAN HILL ROAD, SUITE D-101  
WOODBURY, CT

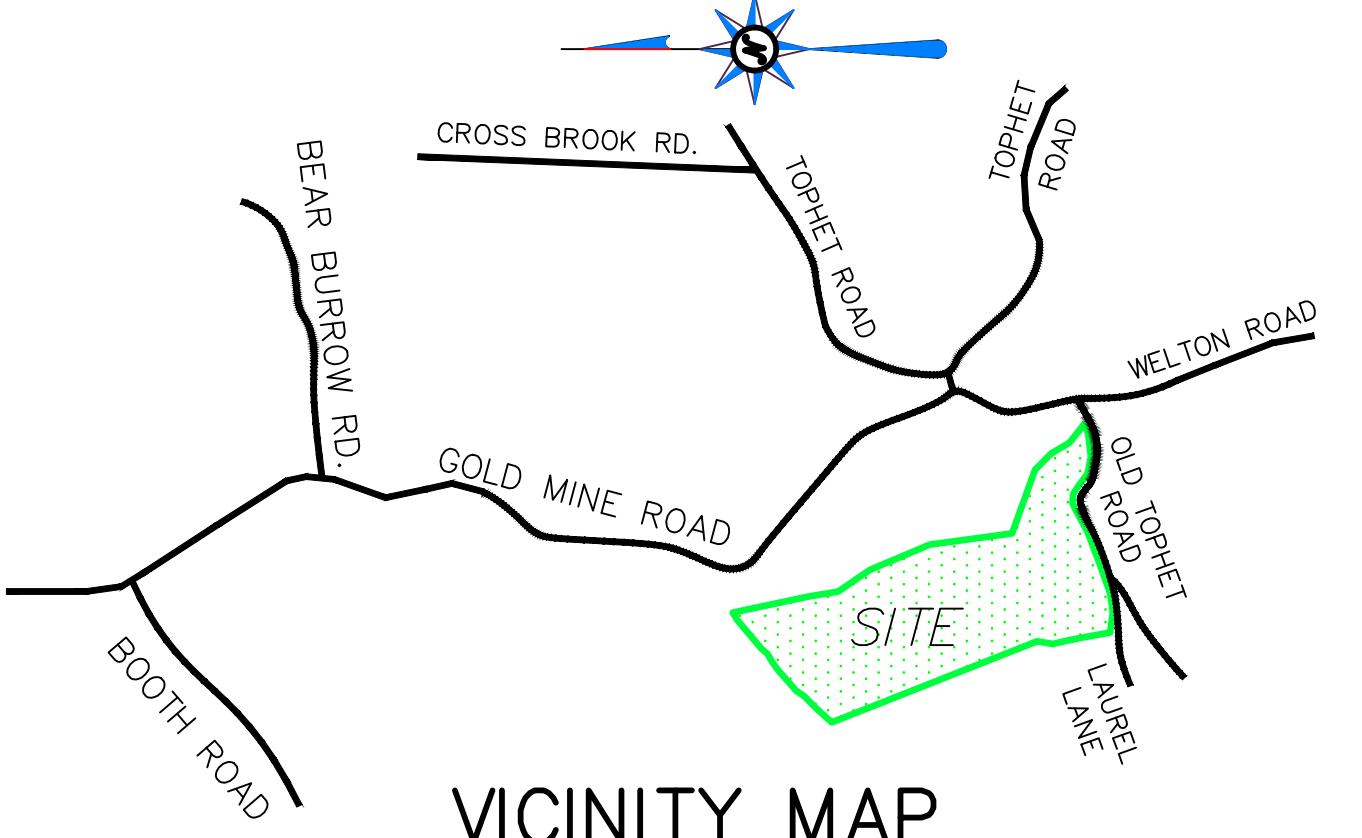


CORNERSTONE PROFESSIONAL PARK, SUITE D-101  
43 SHERMAN HILL ROAD  
(203) 266-0778  
WOODBURY CONNECTICUT

JULY 16, 2012  
REVISED FEBRUARY 10, 2021

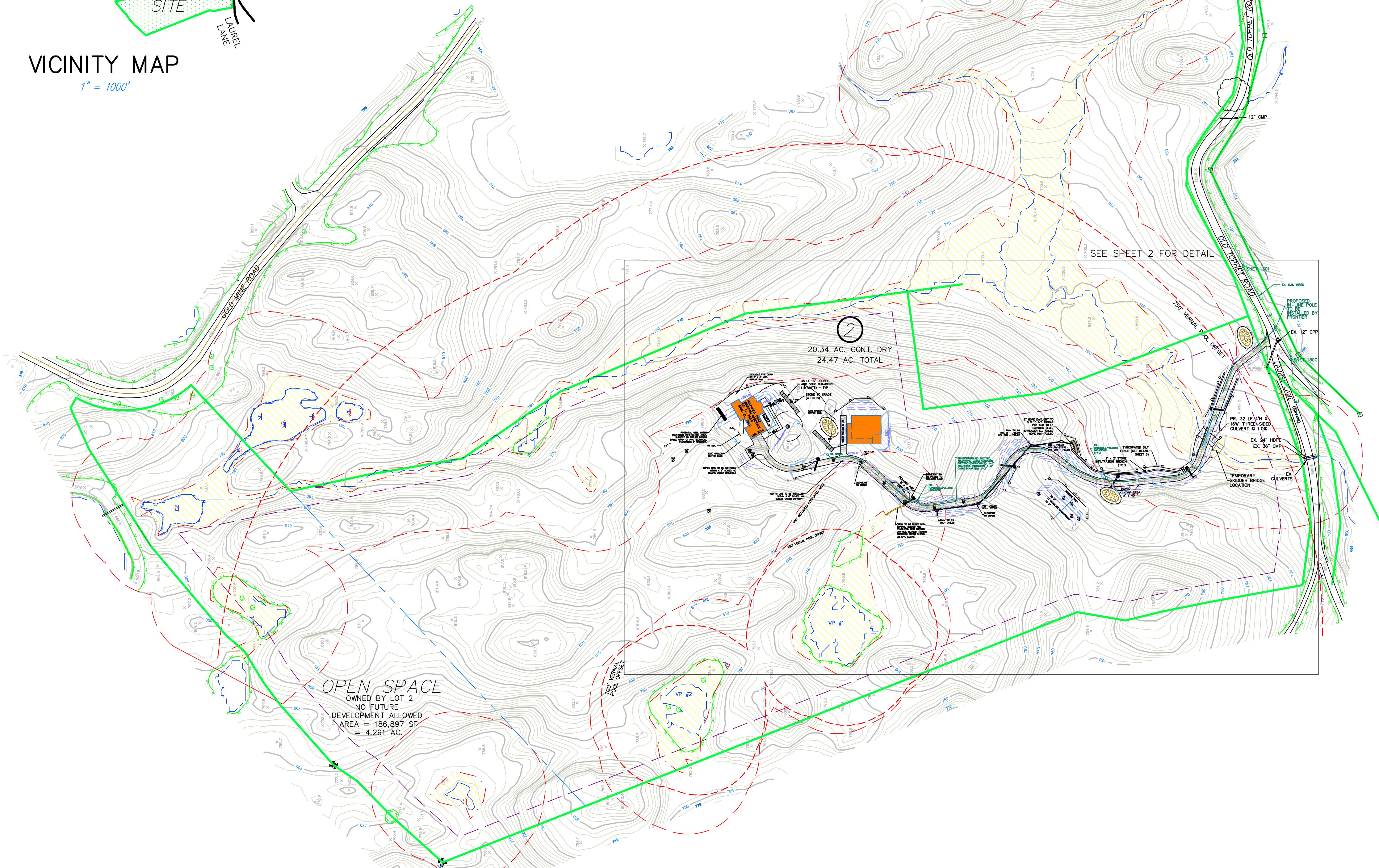
SHEET NUMBER	DESCRIPTION
1	SITE PLAN
2	SITE PLAN, GRADING PLAN, EROSION CONTROL PLAN
3	DRIVEWAY PROFILE
4	PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM
5	DETAILS
6	EROSION CONTROL NARRATIVE & CALCULATIONS

## LEGEND



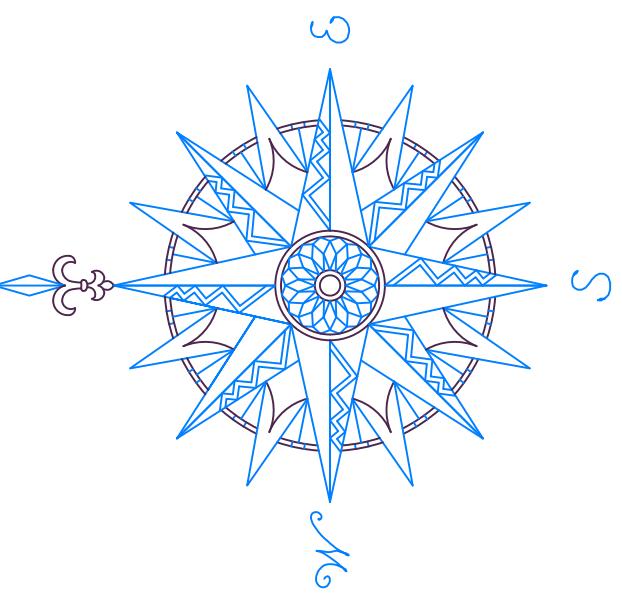
# VICINITY MAP

1" = 1000

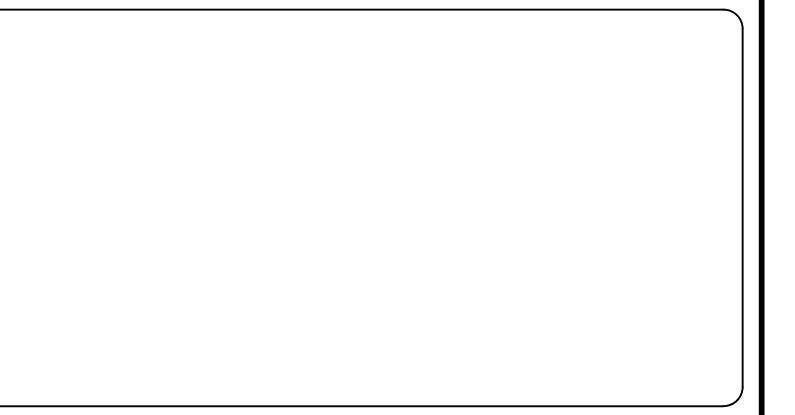


## NOTES:

1. PROPERTY LINES & TOPOGRAPHIC SURVEY ARE PROVIDED BY RIORDAN LAND SURVEYING.
  2. PROPERTY LINE TAKEN FROM MAP ENTITLED "LOT LINE REVISION MAP PREPARED FOR JANE MARGARETA ANDERSON" DATED NOVEMBER 12, 2019 PREPARED BY RIORDAN LAND SURVEYING.
  3. THE WETLAND BOUNDARIES WERE DELINEATED BY DAVID LORD, SOIL SCIENTIST, AND FIELD LOCATED BY RIORDAN LAND SURVEYING. ANY ACTIVITY IN THE WETLANDS OR WITHIN 100 FEET OF THE WETLANDS REQUIRES A PERMIT FROM THE INLAND WETLAND AGENCY OF THE TOWN OF ROXBURY.
  4. UTILITY LOCATIONS ARE SCHEMATIC IN NATURE AND FINAL DESIGN AND LAYOUT MUST BE COORDINATED BY THE SITE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY.



*Previous Editions Obsolete*



A scale bar diagram showing a horizontal line with tick marks at 0, 50, 100, and 200. The first 50 units are divided into 5 equal segments, each labeled "1 inch". The next 50 units are also divided into 5 equal segments, each labeled "1 foot".

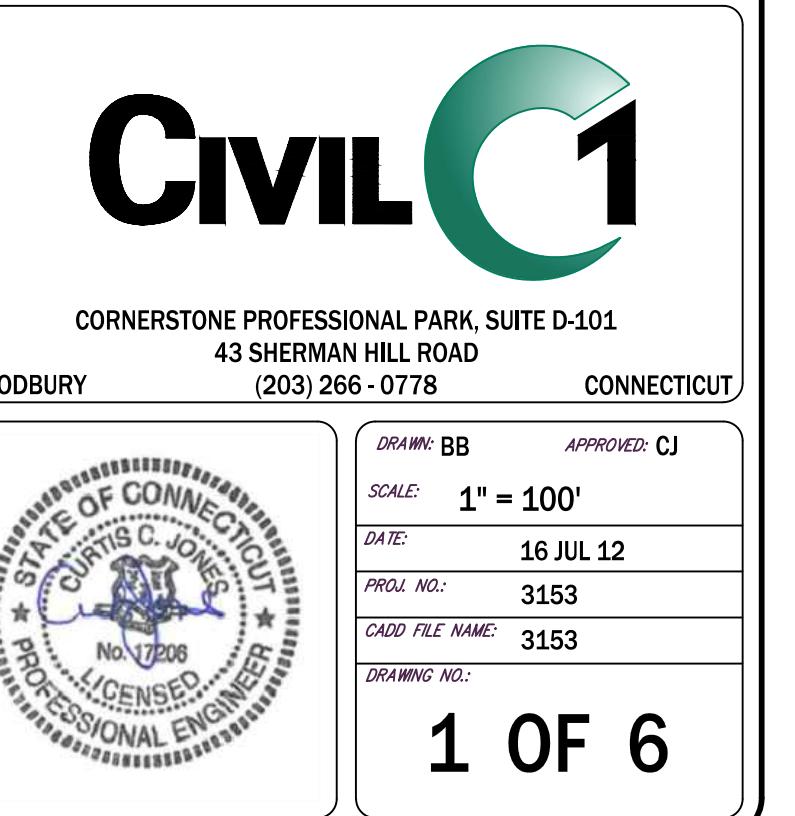
**CHARLES FORMAN  
2 RIVERVIEW TERRACE  
APT 3E  
NEW YORK, NY**

SITE PLAN

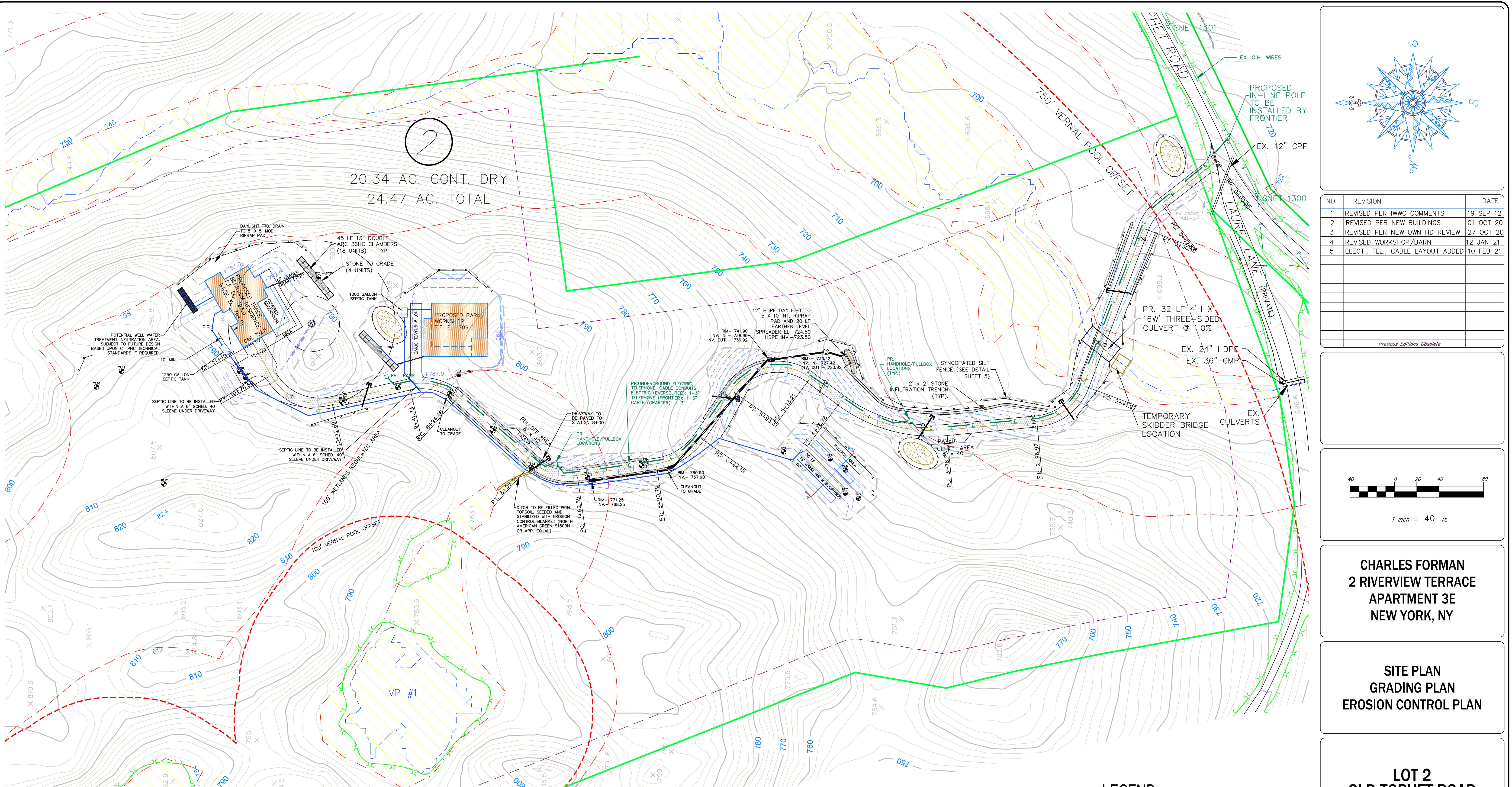
# **LOT 2 OLD TOPHET ROAD**

ROXBURY

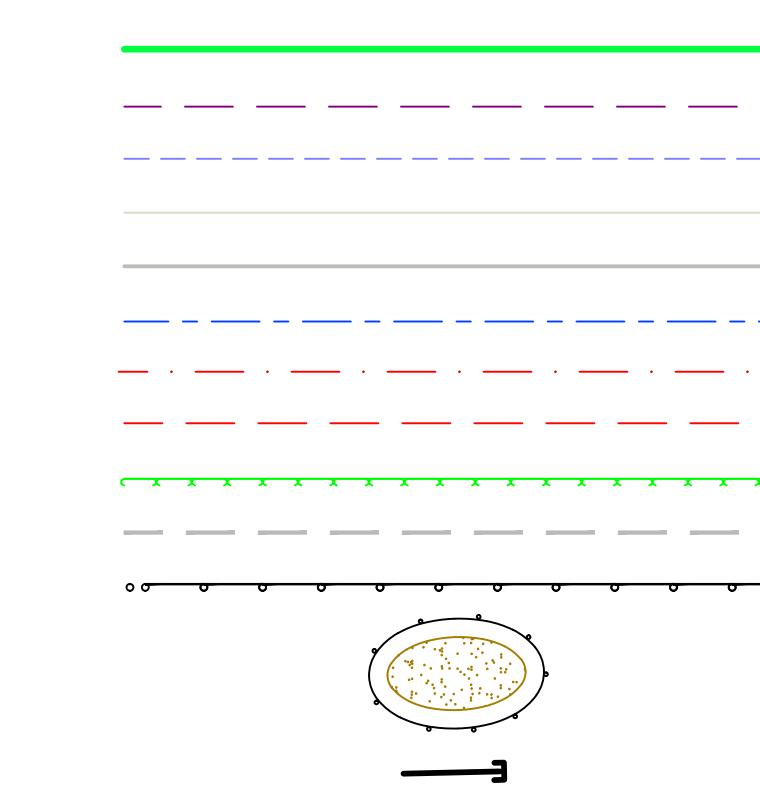
CONNECTICUT



1 OF 6



LEGEND



# ROXBURY CONNEC

CORNERSTONE PROFESSIONAL PARK, SUITE D-101  
43 SHERMAN HILL ROAD  
WOODBURY (203) 266 - 0778 CONNE

DRAWN: PP APPROVED: [Signature]

APPROVED: ✓

SCALL. 1" = 40'

DATE: 16 JUL 12

PROJ. NO.: 3153

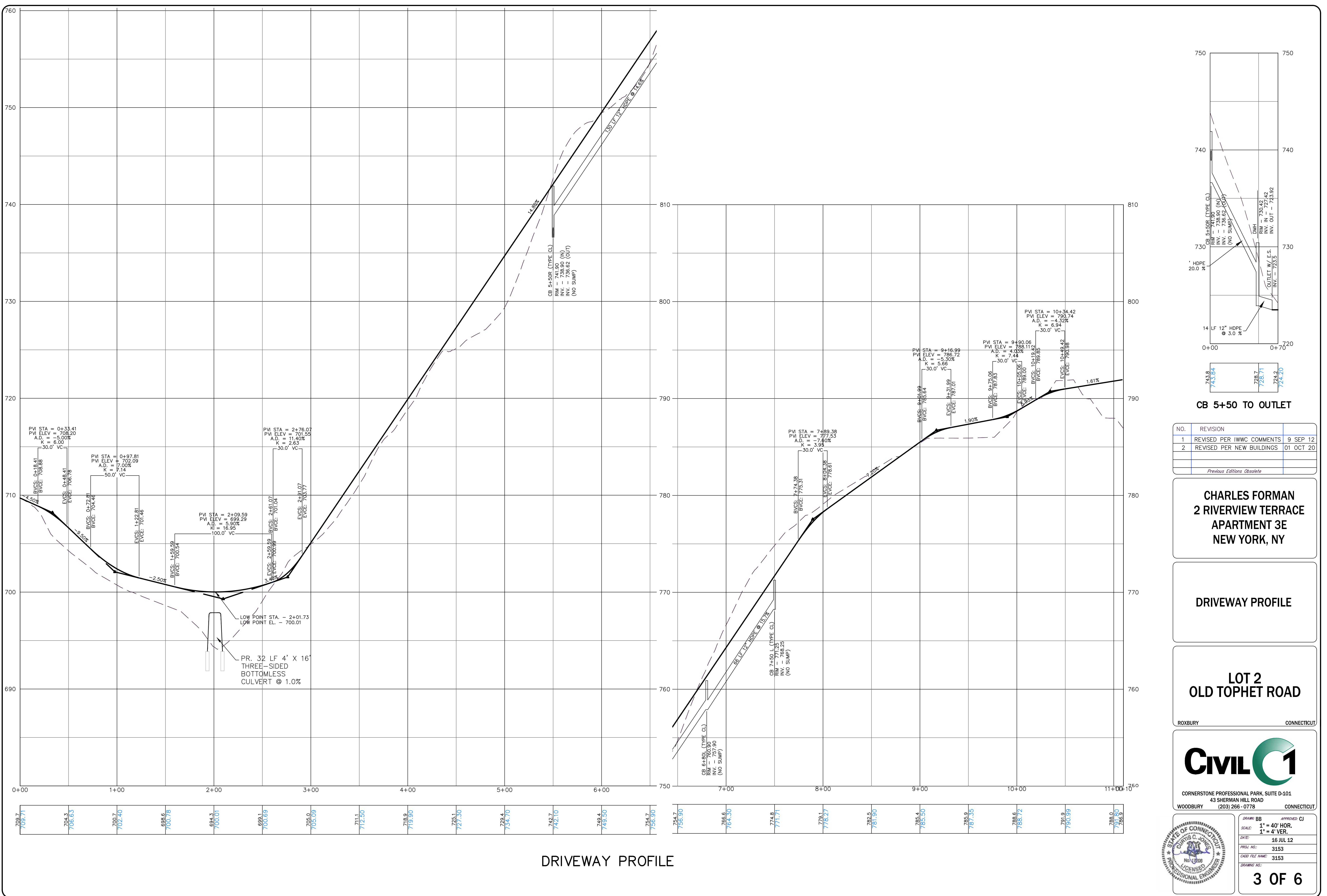
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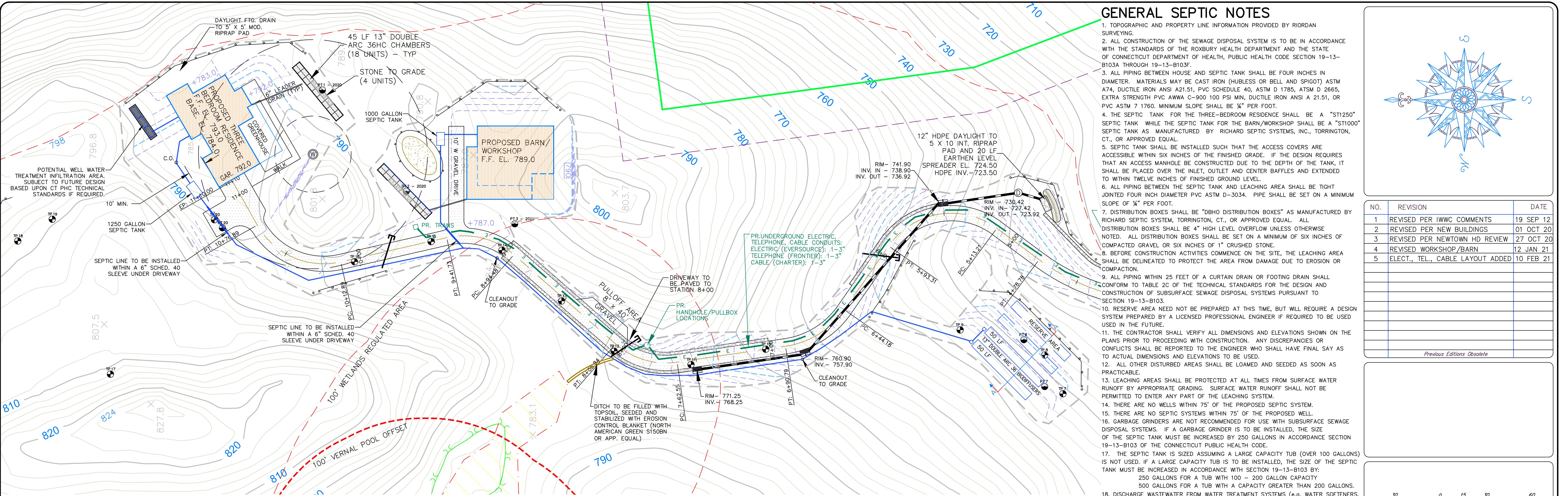
DRAWING NO.: 6

2 of 6

= 31.5

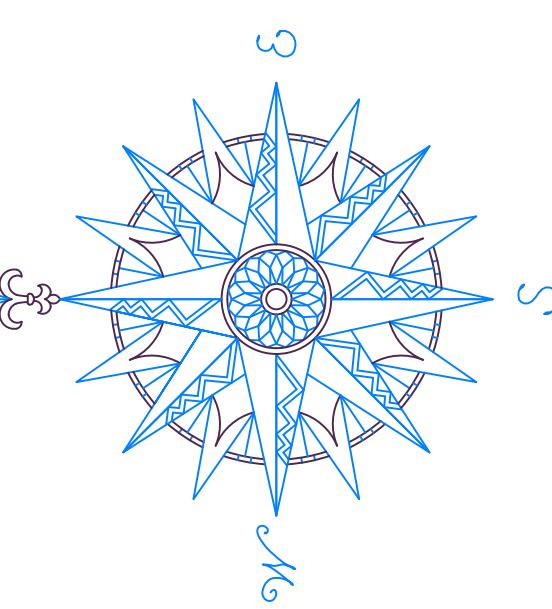
2 OF 6





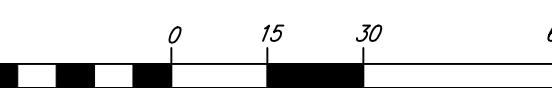
## GENERAL SEPTIC NOTES

- TOPOGRAPHIC AND PROPERTY LINE INFORMATION PROVIDED BY RIORDAN SURVEYING.
- ALL CONSTRUCTION OF THE SEWAGE DISPOSAL SYSTEM IS TO BE IN ACCORDANCE WITH THE STANDARDS OF THE ROXBURY HEALTH DEPARTMENT AND THE STATE OF CONNECTICUT DEPARTMENT OF HEALTH, PUBLIC HEALTH CODE SECTION 19-13-B103A THROUGH 19-13-B103F.
- ALL PIPING BETWEEN HOUSE AND SEPTIC TANK SHALL BE FOUR INCHES IN DIAMETER. MATERIALS MAY BE CAST IRON (HUBLESS OR BELL & SPIGOT) ASTM A74, DUCTILE IRON ANSI A21.51, PVC SCHEDULE 40, ASTM D 1785, ASTM D 2665, EXTRA STRENGTH PVC AWWA C-900 100 PSI MIN, DUCTILE IRON ANSI A 21.51, OR PVC ASTM D 1760. MINIMUM SLOPE SHALL BE  $\frac{1}{4}$ " PER FOOT.
- THE SEPTIC TANK FOR THE THREE-BEDROOM RESIDENCE SHALL BE A "ST1250" SEPTIC TANK WHILE THE SEPTIC TANK FOR THE BARN/WORKSHOP SHALL BE A "ST1000" SEPTIC TANK AS MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC., TORRINGTON, CT., OR APPROVED EQUAL.
- SEPTIC TANK SHALL BE INSTALLED SUCH THAT THE ACCESS COVERS ARE ACCESSIBLE WITHIN SIX INCHES OF THE FINISHED GRADE, IF THE DESIGN REQUIRES THAT AN ACCESS MANHOLE BE CONSTRUCTED DUE TO THE DEPTH OF THE TANK, IT SHALL BE PLACED OVER THE INLET, OUTLET AND CENTER BAFFLES AND EXTENDED TO WITHIN TWELVE INCHES OF FINISHED GROUND LEVEL.
- ALL PIPING BETWEEN THE SEPTIC TANK AND LEACHING AREA SHALL BE TIGHT JOINTED FOUR INCH DIAMETER PVC ASTM D-3034. PIPE SHALL BE SET ON A MINIMUM SLOPE OF  $\frac{1}{4}$ " PER FOOT.
- DISTRIBUTION BOXES SHALL BE "HDPE DISTRIBUTION BOXES" AS MANUFACTURED BY RICHARD SEPTIC SYSTEM, TORRINGTON, CT., OR APPROVED EQUAL. ALL DISTRIBUTION BOXES SHALL BE 4" HIGH LEVEL UNLESS OTHERWISE NOTED. ALL DISTRIBUTION BOXES SHALL BE SET ON A MINIMUM OF SIX INCHES OF COMPACTED GRAVEL OR SIX INCHES OF 1" CRUSHED STONE.
- BEFORE CONSTRUCTION ACTIVITIES COMMENCE ON THE SITE, THE LEACHING AREA SHALL BE DELINEATED TO PROTECT THE AREA FROM DAMAGE DUE TO EROSION OR COMPACTION.
- ALL PIPING WITHIN 25 FEET OF A CURTAIN DRAIN OR FOOTING DRAIN SHALL CONFORM TO TABLE 2C OF THE TECHNICAL STANDARDS FOR THE DESIGN AND CONSTRUCTION OF SUBSURFACE SEWAGE DISPOSAL SYSTEMS PURSUANT TO SECTION 19-13-B103.
- RESERVE AREA NEED NOT BE PREPARED AT THIS TIME, BUT WILL REQUIRE A DESIGN SYSTEM PREPARED BY A LICENSED PROFESSIONAL ENGINEER IF REQUIRED TO BE USED IN THE FUTURE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES OR CONFLICTS SHALL BE REPORTED TO THE ENGINEER WHO SHALL HAVE FINAL SAY AS TO ACTUAL DIMENSIONS AND ELEVATIONS TO BE USED.
- ALL OTHER DISTURBED AREAS SHALL BE LOAMED AND SEDED AS SOON AS PRACTICABLE.
- LEACHING AREAS SHALL BE PROTECTED AT ALL TIMES FROM SURFACE WATER RUNOFF BY APPROPRIATE GRADING. SURFACE WATER RUNOFF SHALL NOT BE PERMITTED TO ENTER ANY PART OF THE LEACHING SYSTEM.
- THERE ARE NO WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEM.
- THERE ARE NO SEPTIC SYSTEMS WITHIN 75' OF THE PROPOSED WELL.
- GARBAGE GRINDERS ARE NOT RECOMMENDED FOR USE WITH SUBSURFACE SEWAGE DISPOSAL SYSTEMS. IF A GARBAGE GRINDER IS TO BE INSTALLED, THE SIZE OF THE SEPTIC TANK MUST BE INCREASED BY 250 GALLONS IN ACCORDANCE SECTION 19-13-B103 OF THE CONNECTICUT PUBLIC HEALTH CODE.
- THE SEPTIC TANK IS SIZED ASSUMING A LARGE CAPACITY TUB (OVER 100 GALLONS) IS NOT USED. IF A LARGE CAPACITY TUB IS TO BE INSTALLED, THE SIZE OF THE SEPTIC TANK MUST BE INCREASED IN ACCORDANCE WITH SECTION 19-13-B103 BY: 250 GALLONS FOR A TUB WITH 100 - 200 GALLON CAPACITY 500 GALLONS FOR A TUB WITH A CAPACITY GREATER THAN 200 GALLONS.
- DISCHARGE WASTEWATER FROM WATER TREATMENT SYSTEMS (e.g. WATER SOFTENERS, IRON OR MANGANESE REMOVAL FILTERS) TO SUBSURFACE SEWAGE DISPOSAL SYSTEM IS PROHIBITED. ON-SITE WATER TREATMENT WASTEWATER DISPOSAL SYSTEMS SHALL MEET A MINIMUM 10 FEET OF SEPARATION DISTANCE FROM SUBSURFACE SEWAGE DISPOSAL SYSTEM AND SHALL BE DESIGNED IN ACCORDANCE WITH DEP GUIDANCE OR GENERAL PERMIT.



NO.	REVISION	DATE
1	REVISED PER IWC COMMENTS	19 SEP 12
2	REVISED PER NEW BUILDINGS	01 OCT 20
3	REVISED PER NEWTON HD REVIEW	27 OCT 20
4	REVISED WORKSHOP/BARN	12 JAN 21
5	ELECT., TEL., CABLE LAYOUT ADDED	10 FEB 21

Previous Editions Obsolete



1 inch = 30 ft.

## DESIGN DATA

- SYSTEM IS DESIGNED FOR A FOUR BEDROOM HOUSE (THREE BEDROOM HOUSE IS BEING CONSTRUCTED).
- MINIMUM SIZE SEPTIC TANK SHALL BE 1250 GALLONS AS REQUIRED BY THE STATE HEALTH CODE.
- SYSTEM IS DESIGNED BASED ON A PERCOLATION RATE OF 1" 1- 10 MINUTES.
- MINIMUM SIZE OF LEACHING AREA REQUIRED BY THE STATE HEALTH CODE IS 577.5 SQUARE FEET.
- THE SIZE OF PRIMARY LEACHING AREA PROVIDED IS 100 LINEAR FEET OF 13" DOUBLE ARC 36 BIODIFFUSER WITH AN EFFECTIVE LEACHING AREA OF 5.9 S.F./LF. FOR A TOTAL EFFECTIVE LEACHING AREA OF 590 SF.
- WELL SHALL BE LOCATED A MINIMUM OF 75 FEET FROM THE LEACHING AREA.

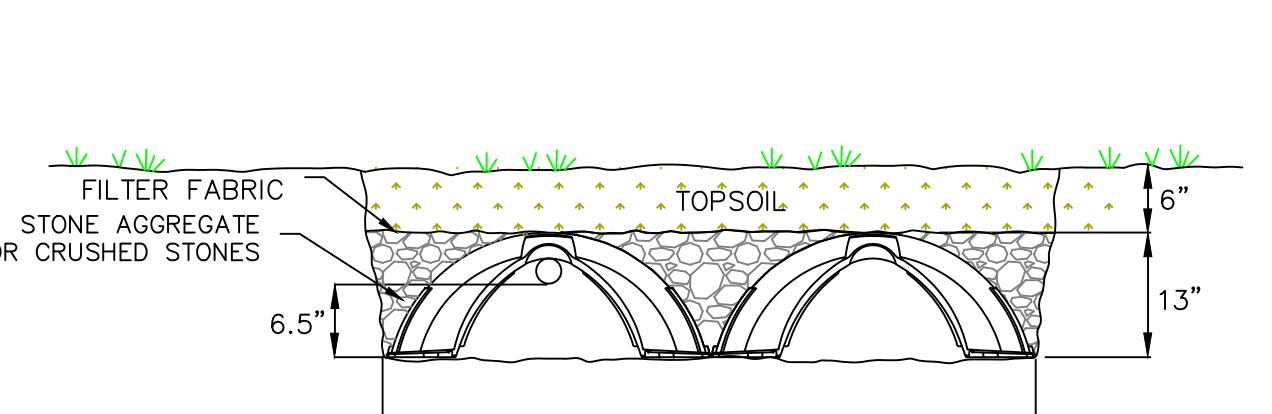
## MLSS CALCULATION

DEPTH TO RESTRICTIVE LAYER = 33"  
HYDRAULIC SLOPE =  $>15\%$   
HYDRAULIC FACTOR, HF = 18  
TIME FACTOR, PF = 1.0  
FLOW FACTOR, FF = 1.75  
MLSS =  $(18)(1.0)(1.75) = 31.5'$   
50' PROVIDED

THE HYDRAULIC GRADIENT WAS DETERMINED BY MEASURING THE SLOPE OF THE LAND FROM A POINT 25' ABOVE TO A POINT 50' BELOW THE PROPOSED LEACHING TRENCHES.

## SOIL TESTING RESULTS

Deep Test Pit #7 March 8, 2012		Percolation Test #7 March 8, 2012	
0 - 5"	Topsoil	0 - 11"	Pre-soak - 11:05
5 - 28"	Orange Brown Fine Sandy Loam	24" Deep	2:37 5-1/2"
28 - 72"	Fine-Medium Sand with trace Silt	Time	2:37 8-1/2"
Roots to 45"	No Ground Water	Reading	2:47 9-7/8"
Ledge at 60"	No Ledge		2:57 11-1/4"
			3:07 12-5/8"
			3:17 14"
			3:27 15-3/8"
		Percolation Rate = 1 - 10 minutes per inch	
Deep Test Pit #8 March 8, 2012		Percolation Test #8 March 8, 2012	
0 - 6"	Topsoil	0 - 11"	Pre-soak - 1 hour
6 - 24"	Orange Brown Fine Sandy Loam	26" Deep	2:38 6-7/8"
24 - 64"	Fine-Medium Sand with trace Silt	Time	2:38 9-7/8"
Roots to 38"	No Ground Water	Reading	3:08 11-3/8"
Ledge at 60"	No Ledge		3:18 12-7/8"
			3:28 14-3/8"
		Percolation Rate = 1 - 10 minutes per inch	
Deep Test Pit #9 March 8, 2012		Percolation Test #9 March 8, 2012	
0 - 6"	Topsoil	0 - 11"	Pre-soak - 1 hour
6 - 33"	Orange Brown Fine Sandy Loam	28" Deep	2:48 8-5/8"
33 - 76"	Fine-Medium Sand with trace Silt	Time	2:48 9-7/8"
Roots to 36"	No Ground Water	Reading	3:08 11-3/8"
Faint Mottling at 33"	No Ledge		3:18 12-7/8"
No Ground Water			3:28 14-3/8"
No Ledge		Percolation Rate = 1 - 10 minutes per inch	
Deep Test Pit #10 September 12, 2012		Percolation Test #10 September 12, 2012	
0 - 6"	Topsoil	0 - 11"	Pre-soak - 1 hour
6 - 43"	Orange Brown Fine Sandy Loam	28" Deep	1:30 5-1/2"
43 - 80"	Fine-Medium Sand with trace Silt	Time	1:30 7-1/2"
Roots to 44"	No Ground Water	Reading	1:50 9-1/2"
Mottling at 44"	No Ledge		2:00 11-3/8"
No Ground Water			2:10 13-1/4"
Ledge at 60"		Percolation Rate = 1 - 10 minutes per inch	
Deep Test Pit #11 September 12, 2012		Percolation Test #11 September 12, 2012	
0 - 6"	Topsoil	0 - 11"	Pre-soak - 1 hour
6 - 38"	Orange Brown Fine Sandy Loam	24" Deep	2:48 13-1/4"
38 - 89"	Fine-Medium Sand with trace Silt	Time	2:48 15-1/8"
Roots to 40"	No Ground Water	Reading	3:08 17-1/8"
Mottling at 40"	No Ledge		3:28 19-1/8"
No Ground Water		Percolation Rate = 1 - 10 minutes per inch	
Ledge at 60"			
Deep Test Pit #12 September 12, 2012		Percolation Test #12 September 12, 2012	
0 - 6"	Topsoil	0 - 11"	Pre-soak - 1 hour
6 - 32"	Orange Brown Fine Sandy Loam	28" Deep	2:48 13-1/4"
32 - 80"	Fine-Medium Sand & Silt	Time	2:48 15-1/8"
Roots to 30"	No Ground Water	Reading	3:08 17-1/8"
Mottling at 30"	No Ledge		3:28 19-1/8"
No Ground Water		Percolation Rate = 1 - 10 minutes per inch	
Ledge at 32"			
Deep Test Pit #13 September 12, 2012		Percolation Test #13 September 12, 2012	
0 - 4"	Topsoil	0 - 11"	Pre-soak - 1 hour
4 - 36"	Orange Brown Fine Sandy Loam	36 - 60"	2:48 13-1/4"
36 - 90"	Fine-Medium Sand & Silt	Time	2:48 15-1/8"
Roots to 38"	No Ground Water	Reading	3:08 17-1/8"
Mottling at 28"	No Ledge		3:28 19-1/8"
No Ground Water		Percolation Rate = 1 - 10 minutes per inch	
Ledge at 32"			



- NOTES:
- EFFECTIVE LEACHING AREA = 5.9 SF/LF
  - INSTALL ARC 36 BIODEFFUSERS ACCORDING TO MANUFACTURER'S CURRENT INSTALLATION INSTRUCTIONS
  - STONE AGGREGATE OR CRUSHED STONE MUST MEET CT DOT FORM 816 SPECIFICATION M.01.01

## 13" DOUBLE ARC 36 BIODEFFUSER DETAIL

### INVERT ELEVATIONS

HOUSE CONNECTION	790.00
HOUSE SEPTIC TANK (IN)	789.10
(OUT)	788.85
BARN/WORKSHOP CONNECTION	786.00
BARN/WORKSHOP SEPTIC TANK (IN)	785.51
(OUT)	785.26
UPPER D-BOX (HIGH LEVEL OVERFLOW)	746.70
UPPER LEACHING TRENCH INV	746.44
BOTTOM OF UPPER TRENCH	745.90
LOWER LEACHING TRENCH INV	742.82
BOTTOM OF LOWER TRENCH	742.28

### LEGEND

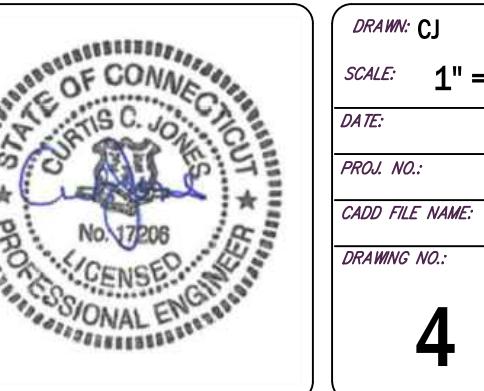
- PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SILT FENCE
- PROPOSED PRIMARY SEPTIC AREA
- PROPOSED RESERVE SEPTIC AREA
- DEEP TEST PIT
- PERC TEST
- PROPOSED FOOTING DRAIN
- SELECT FILL
- WETLANDS
- 100' WETLANDS REGULATED AREA

SECTION A-A  
SCALE: 1'=30' HOR.  
1'=3' VER.

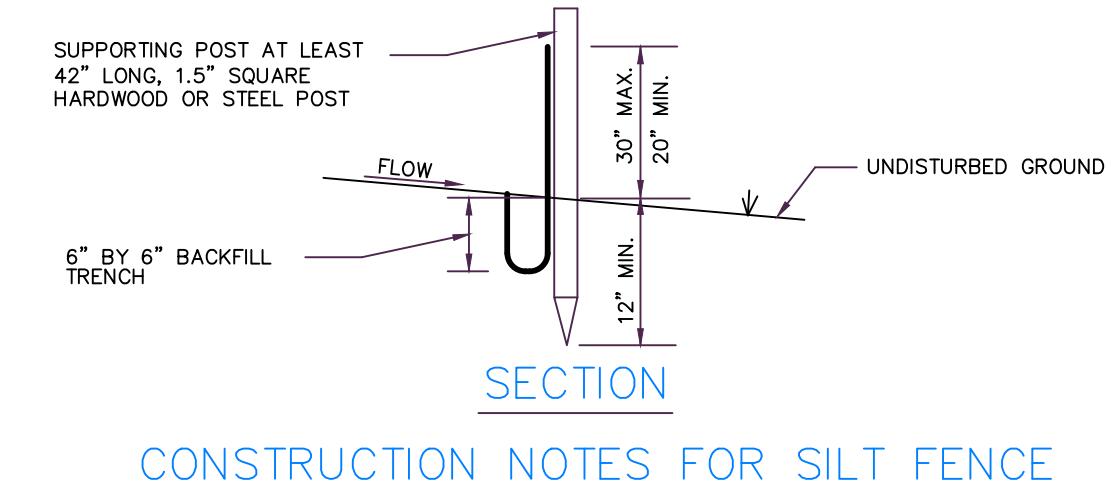
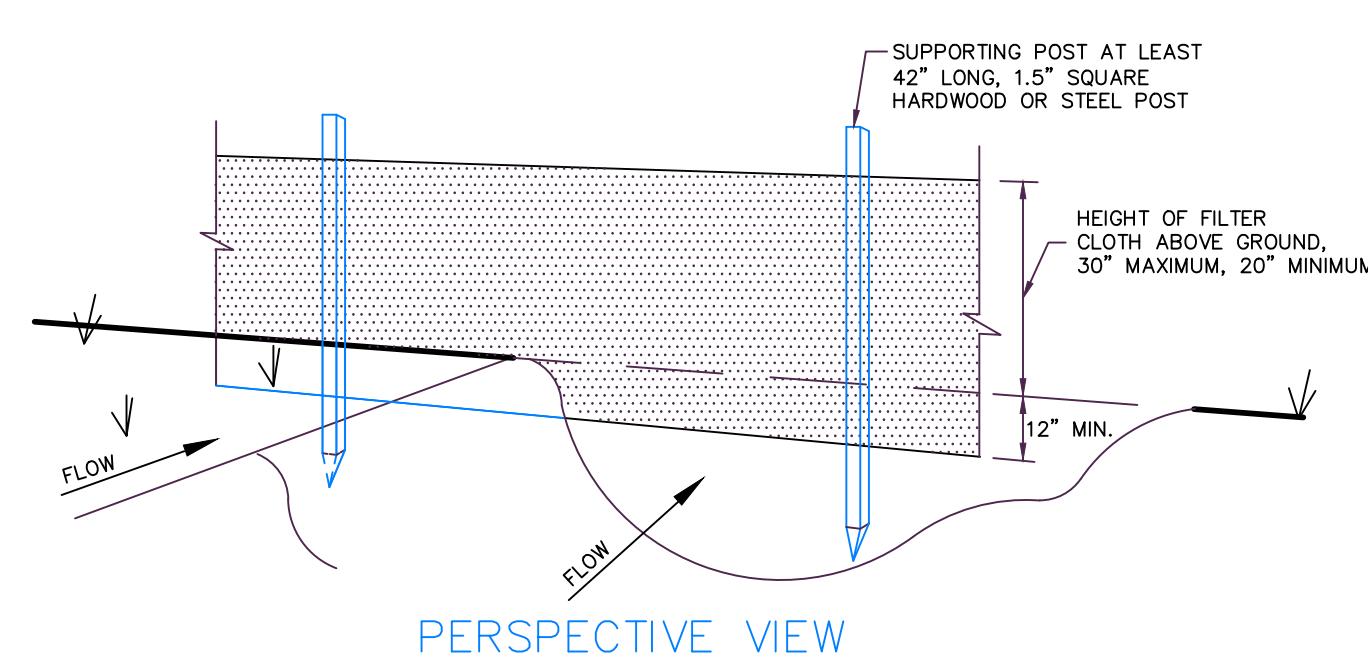
## CHARLES FORMAN 2 RIVERVIEW TERRACE APTAMENT 3E NEW YORK, NY

## PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM

## LOT 2 OLD TOPHET ROAD

DRAWN: CJ	APPROVED: CJ
SCALE: 1" = 30'	
DATE: 12 JUL 12	
PROJ. NO.: 3153	CADD FILE NAME: 3153
DRAWING NO.: 43 SHERMAN HILL ROAD WOODBURY CONNECTICUT	
 CURTIS C. JONES NO. 17208 LICENSED PROFESSIONAL ENGINEER	

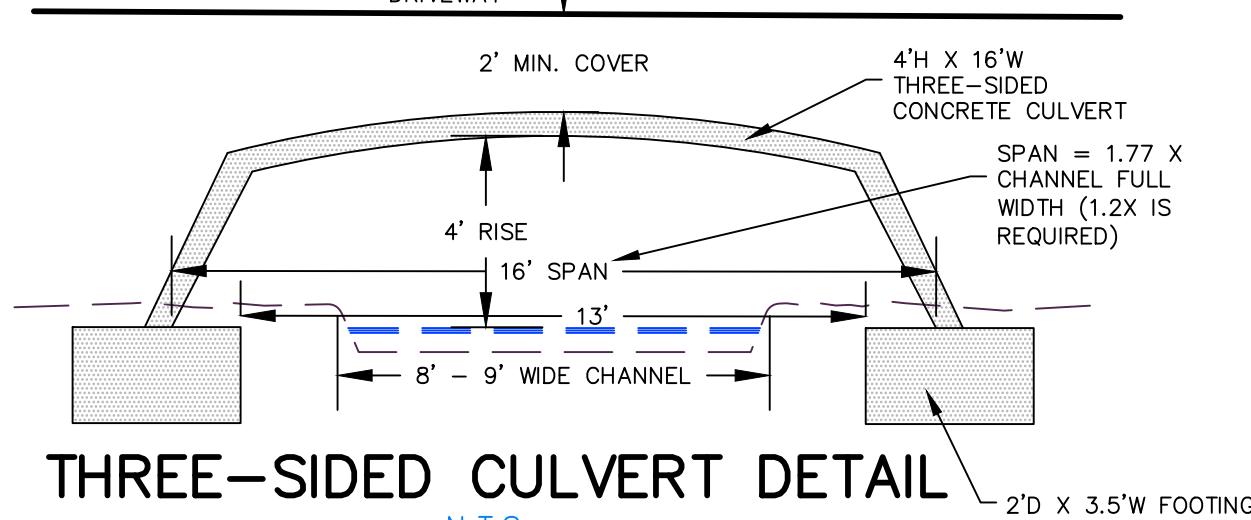
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CONSTRUCTION NOTES FOR SILT FENCE

1. EXCAVATE A TRENCH A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE ON THE UP SIDE OF THE FENCE LOCATION.
  2. DRIVE SUPPORT POSTS ON THE DOWN SLOPE SIDE OF THE TRENCH TO A DEPTH OF AT LEAST 12 INCHES INTO ORIGINAL GROUND.
  3. STAPLE OR SECURE THE GEOTEXTILE TO THE SUPPORT POSTS PER MANUFACTURER'S INSTRUCTIONS SUCH THAT AT LEAST 6 INCHES OF GEOTEXTILE LIES WITHIN THE TRENCH.
  4. BACKFILL THE TRENCH WITH TAMPED SOIL OR AGGREGATE OVER THE GEOTEXTILE.
- POSTS: 1.5" SQUARE HARDWOOD OR STEEL  
FILTER CLOTH: MIRAFI 100X, ENVIROFENCE OR APPROVED EQUAL

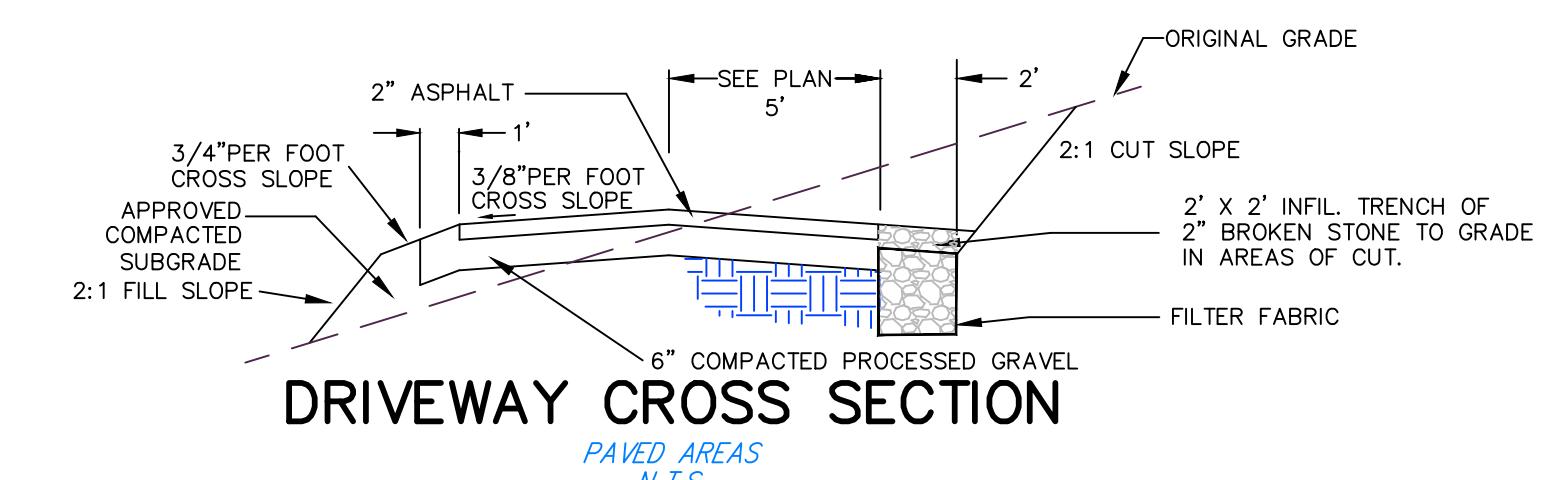
### SILT FENCE DETAIL



THREE-SIDED CULVERT DETAIL N.T.S.

NOTES:

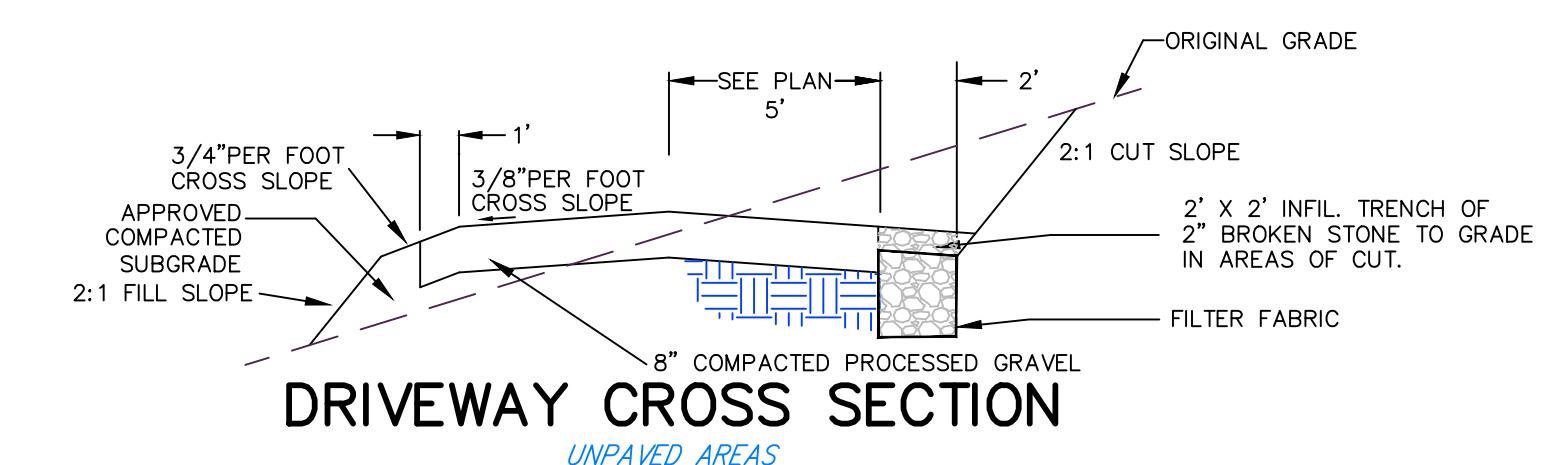
1. THREE-SIDED CULVERT TO BE CON-SPAN MODEL 0-216 OR APPROVED EQUAL.
2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
3. AS-INSTALLED DRAWING OF THE CULVERT INSTALLATION SHALL BE PREPARED BY THE DESIGN ENGINEER AFTER INSTALLATION AND SHALL CERTIFY THAT THE CROSSING WAS INSTALLED IN SUBSTANTIAL CONFORMANCE WITH THE DESIGN.



DRIVEWAY CROSS SECTION

PAVED AREAS  
N.T.S.

IN ACCORDANCE WITH ROXBURY DRIVEWAY ORDINANCE  
DRIVEWAYS IN EXCESS OF 15% MUST BE PAVED



DRIVEWAY CROSS SECTION

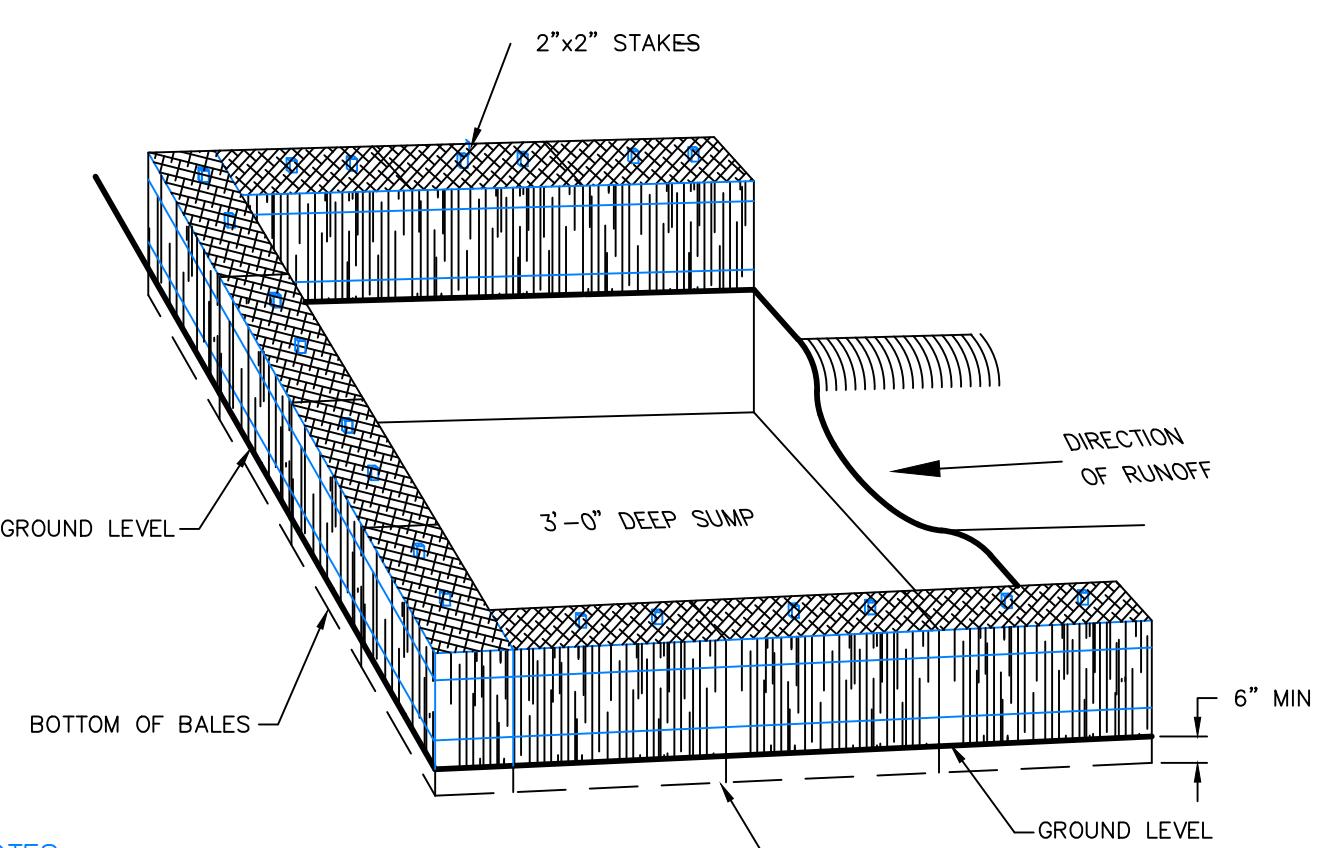
UNPAVED AREAS  
N.T.S.

NO.	REVISION	DATE
1	REVISED PER IWWC COMMENTS	19 SEP 12
2	ADD IWWC CONDITIONS OF APPROVAL	15 OCT 12
3	REVISED PER NEW BUILDINGS	01 OCT 20

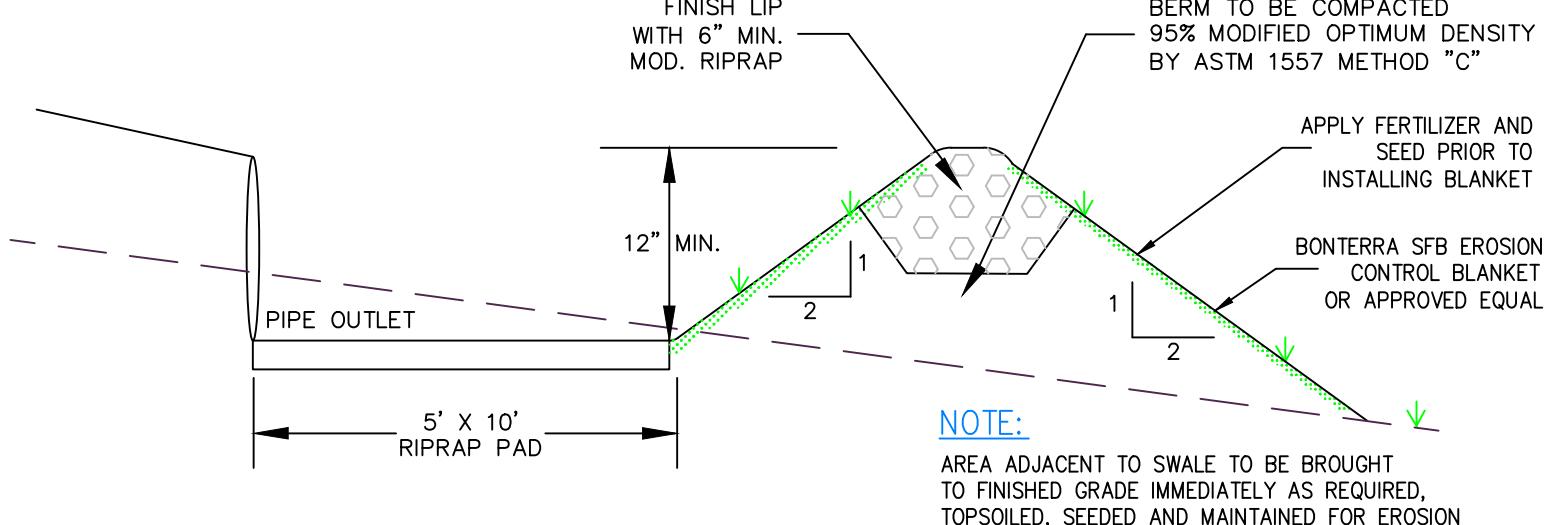
Previous Editions Obsolete

CHARLES FORMAN  
2 RIVERVIEW TERRACE  
APTAMENT 3E  
NEW YORK, NY

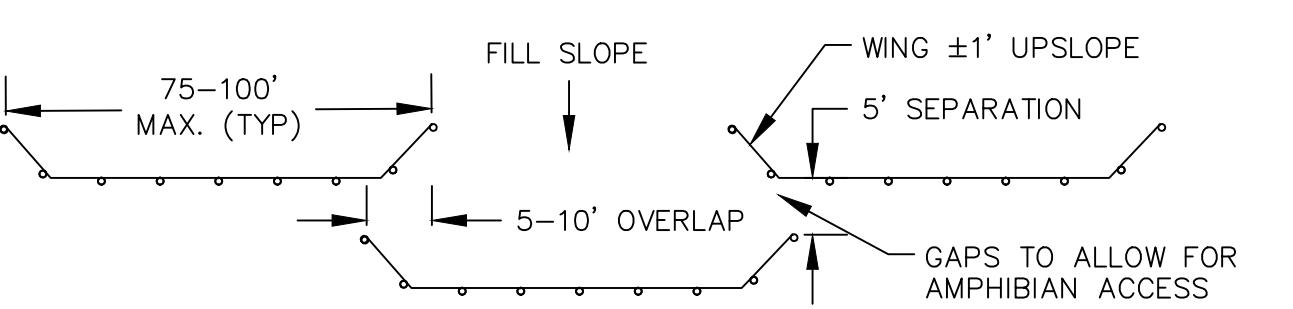
### DETAILS



- NOTES:
1. ALL BALES ARE TO BE TIGHTLY BUTTED TOGETHER.
  2. BALES SHALL BE EITHER STRAW OR HAY.
  3. PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPLACE CLOGGED BALES TO RESTORE EFFECTIVENESS OF INSTALLATION.
- TEMPORARY DIVERSION DITCH  
WITH HAY BALE TRAP  
N.T.S.

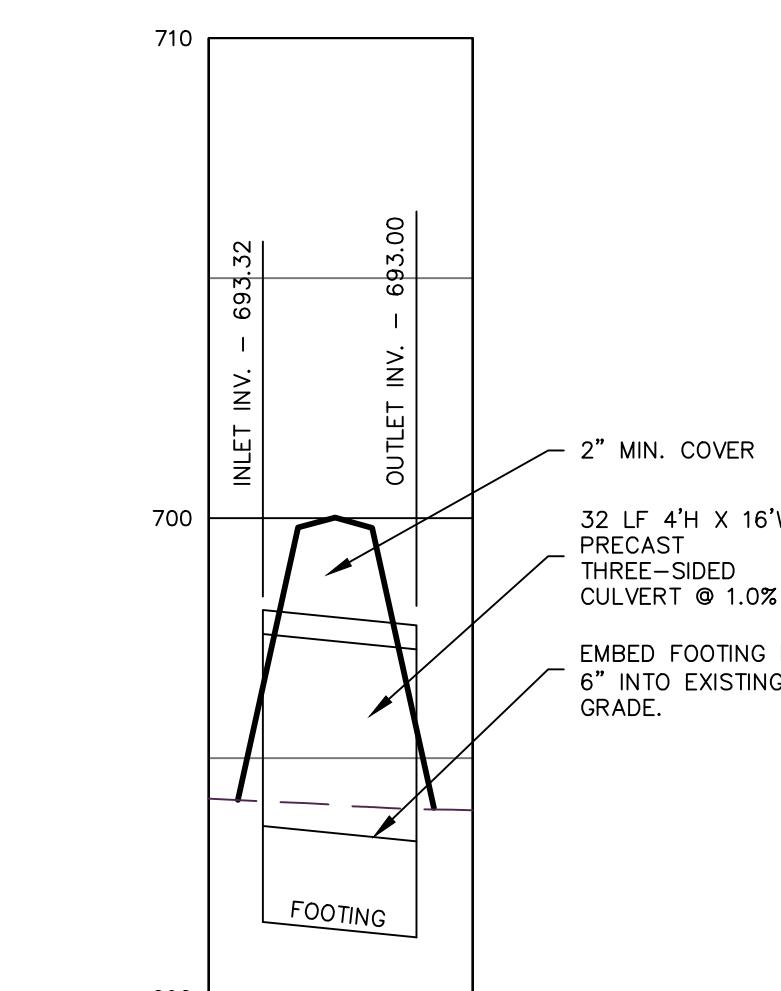


### LEVEL SPREADER DETAIL



SYNCOPEATED SILT FENCE INSTALLATION

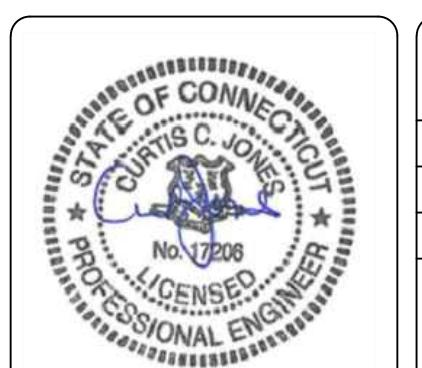
PLAN VIEW  
FOR AREAS WITHIN 750' OF A VERNAL POOL



WETLANDS CROSSING

SCALE: 1" = 40' HOR.  
1" = 4' VER.

CIVIL C1  
CORNERSTONE PROFESSIONAL PARK, SUITE D-101  
43 SHERMAN HILL ROAD  
WOODBURY (203) 266-0778 CONNECTICUT



DRAWN: BB	APPROVED: CJ
SCALE: 1" = 40'	
DATE: 16 JUL 12	
PROJ. NO.: 3153	
CADD FILE NAME: 3153	
DRAWING NO.: 3153	

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## EROSION CONTROL NARRATIVE

### GENERAL PRINCIPLES

The following general principles shall be maintained as effective means of minimizing erosion and sedimentation during the development process.

Stripping away of vegetation, regrading or other development shall be done in such a way as to minimize erosion.

Grading and development plans shall preserve important natural features, keep cut and fill operations to a minimum, and insure conformity with topography so as to create the least erosion potential and adequately handle the volume and velocity of surface water runoff.

Wherever feasible, natural vegetation shall be retained, protected and supplemented wherever indicated on the site development plan.

The undisturbed area and the duration of exposure shall be kept to a practical minimum.

Disturbed soils shall be stabilized as quickly as possible.

Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development when expected to be exposed in excess of 30 days.

The permanent (final) vegetation and mechanical erosion control measures shall be installed as soon as practical during construction.

Sediment in the runoff water shall be trapped until the disturbed areas is stabilized by the use of debris basins, sediment basins, silt traps or similar measures.

Concentration of surface runoff shall be only permitted by piping and/or through drainage swales or natural watercourses.

Excavation and Fills --

Slopes created by cuts or fills shall not be steeper than 2:1, unless specified as such on the site plans and shall be stabilized by temporary or permanent measures, as required during the development process and shown on the site plans.

Adequate provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surfaces of fills.

Cut and fills shall not endanger adjoining property.

All fills shall be compacted to provide stability of material and to prevent undesirable settlement. The fill shall be spread in a series of layers each not exceeding twelve (12) inches in thickness and shall be compacted by a sheet roller or other approved method after each layer is spread.

Fills shall not encroach on natural watercourses, constructed channels or regulated flood plain areas, unless permitted by license or permit from authority having jurisdiction in accordance with approved site plans.

Fills placed adjacent to natural watercourses, constructed channels or flood plains shall have suitable protection against erosion during periods of flooding.

Grading shall not be done in such a way as to divert water onto the property of another landowner without their express written consent.

During grading operations, necessary measures for dust control shall be exercised.

Sedimentation and erosion control shall be implemented in accordance with the Guidelines for Soil Erosion and Sediment Control (2002) - State of Connecticut DEP Bulletin 34.

The following general specifications will also be adhered to:

Land disturbance will be kept to a minimum. Restabilization will be scheduled as soon as practical.

Haylage filters will be installed at all culvert outlets and along the toe of all critical cut and fill slopes.

Culvert discharge areas will be protected with riprap channels. Energy dissipators will be provided as necessary.

Catch basins will be protected with haylage filters throughout the construction period and until all disturbed areas are thoroughly stabilized.

All erosion and sediment control measures will be constructed in accordance with the standards and specifications of the Guidelines for Soil Erosion and Sediment Control (2002) - State of Connecticut DEP Bulletin 34.

Erosion and sediment control measures will be installed prior to construction whenever possible.

All control measures will be maintained in effective condition throughout the construction period.

Additional control measures will be installed during construction if necessary or required.

\*NO EARTHWORK OR EXCAVATION SHALL TAKE PLACE IN MARCH OR APRIL AS THAT IS TIME OF AMPHIBIAN MIGRATION TO AND FROM THE VERNAL POOLS.

## CONSTRUCTION SEQUENCE

This plan covers the construction of single family home with related driveways, wells and septic systems.

The sequence of events for the proposed construction will be as follows:

All erosion control measures shown on the plan will be placed in the field in the locations shown. Syncopated silt fence shall be installed anywhere within 750' of a vernal pool as shown on the site plans.

The driveway will be constructed into the lot including infiltration trenches and the proposed wetlands crossing in accordance with the sequencing included in these plans.

The foundation will be excavated and poured at this time.

The foundation will be backfilled and the area around the house will be final graded.

The driveway will also be completed at this time.

The well and associated piping will be installed and the septic system will be installed. The remainder of the footing drain will be installed.

Construction of the home and barn will be completed.

All disturbed areas will be loamed and seeded.

All silt fences and hayholes shown on the plan shall be maintained until there is sufficient amount of grass cover to prevent erosion.

Erosion control measures shall be installed and maintained in accordance with the CT DEP 2002 Erosion & Sediment Control Guidelines.

The exact starting date of this construction is unknown. However, the completion should be 270 days after construction is started.

The following seed mixture or equivalent shall be used:

Canada Bluegrass 20 lbs/Acre  
Creeping Red Fescue 40 lbs/Acre

\*NO EARTHWORK OR EXCAVATION SHALL TAKE PLACE IN MARCH OR APRIL AS THAT IS TIME OF AMPHIBIAN MIGRATION TO AND FROM THE VERNAL POOLS.

## DRAINAGE CALCULATIONS FOR BUILDING ROOF INFILTRATORS (100 YEAR DESIGN STORM)

### SCS Runoff Curve Number Method:

$$Q = (P - 0.2S) / (P + 0.8S)$$

and

$$S = 1000 / CN - 10$$

Where:

$$Q = \text{runoff (in.)}$$

$$P = \text{rainfall (in.)}$$

$$S = \text{potential maximum retention after runoff begins (in.)}$$

$$CN = \text{runoff curve number}$$

$$V = \text{Volume}$$

Existing Conditions:

Area of Drainage being altered for House (larger of two structures)

Construction = 2,850 sf

100% Type C Soil - Wooded-Fair Condition (CN = 73)

$$S = 1000 / 73 - 10 = 3.70$$

$$Q = (7.0 - 0.2(3.70)) / (7.0 + 0.8(3.70)) = 3.93 \text{ in.} = .33 \text{ ft.}$$

$$\text{Volume} = 2,850 \text{ sq. ft.} \times .33 \text{ ft.} = 940.5 \text{ cu. ft.}$$

Proposed Conditions:

Area of Drainage being altered for House Construction = 2,850 sf

100% Type C Soil - Paved (CN = 98)

$$CN = 98$$

$$S = 1000 / 98 - 10 = 0.20$$

$$Q = (7.0 - 0.2(0.20)) / (7.0 + 0.8(0.20)) = 6.76 \text{ in.} = .56 \text{ ft.}$$

$$\text{Volume} = 2,850 \text{ sq. ft.} \times .56 \text{ ft.} = 1,596 \text{ cu. ft.}$$

Increase in Volume = 1,596 cu. ft. - 940.5 cu. ft. = 655.5 cu. ft.

\*Field measured percolation rate of 10 min/inch. 2x safety factor applied to design using percolation rate of 20 min/in.

Percolation rate of 20 min/in for 24 hour period = 72 in./24 hours = 6'/24 hours

Area of bottom infiltration trenches = 45' x 6' = 270 sf x 6'/24 hours = 1,620 cu. ft. infiltrated

Volume Capacity of Arc36 HC Infiltration Chambers (30% void ratio in stone backfill) = 15.9 cu. ft./unit x 18 units = 286.2 cu. ft.

Total excess Capacity = 1,620 cu. ft. + 286.2 cu. ft. - 655.5 cu. ft. = 1,250.7 cu. ft.

Alternate Volume Calculation (WQV) - Size for first 1" of Rainfall from Impervious Surface:

Area of proposed impervious footprint of house = 2,850 sf x 1" of rainfall = 237.5 cubic feet required.

Volume Capacity of of Arc36 HC Infiltration Chambers (30% void ratio in stone backfill) = 15.9 cu. ft./unit x 18 units = 286.2 cu. ft. provided.

Total excess Capacity = 6,400 cu. ft. + 960 cu. ft. = 5,543 cu. ft. = 1,817 cu. ft.

Alternate Volume Calculation (WQV) - Size for first 1" of Rainfall from Impervious Surface:

Area of proposed impervious footprint of driveway = 11,500 sf x 1" of rainfall = 955 cubic feet.

Volume Capacity of Infiltration Trenches (30% void ratio in stone) = 800 If x 2'w x 2'd x 0.30 = 960 cu. ft.

Total excess Capacity = 6,400 cu. ft. + 960 cu. ft. = 5,543 cu. ft.

1. The Roxbury Wetlands Enforcement Officer shall be notified one week prior to commencement of construction activity.

2. The limits of clearing shall be located in the field by a licensed surveyor and brush shall be removed within these limits.

3. Silt fence shall be installed at the location shown on the site plan. All erosion control measures will be constructed in accordance with the standards and specifications of the Connecticut DEP Soil Erosion and Sediment Control Manual - 2002.

4. All erosion and sediment control measures will be maintained during the construction period.

5. Sediment received from the control structures will be disposed of in a manner which is consistent with the plan.

6. Location of box culvert footings shall be staked in the field with offsets by a licensed surveyor.

7. Excavate to footing sub-base for 6" crushed stone base to be placed under footing locations. Water in the base excavation area shall be controlled by pumping.

All water pumped out of the excavation shall be discharged to a dewatering sump outside of the wetlands area.

Crossing of footings shall be done so as not to excavate or disturb the existing stream channel.

Crossing of the wetlands for excavation and pumping on the western side of the watercourse shall be done with a portable skidder bridge so as to prevent excavation equipment from disturbing the stream channel.

8. If necessary watercourse may be temporarily piped through construction area using sandbags at uphill end to keep construction area dry. Installation of the box culvert and end walls shall occur between June 1 and September 30.

9. Pour footings on eastern and western side of crossing.

10. Install precast box culvert sections & anchor sections together.

11. Install headwalls and backfill culvert using coarse sand & gravel.

12. Backfill around box culvert in 12" lifts using coarse sand & gravel. Fill shall be compacted to a minimum of 92% modified optimum density ASTM 1555 method "C" until the required elevation is obtained.

13. Driveway shall be placed in 12" lifts and compacted to 92% modified optimum density ASTM 1557 method "C" until the required elevation is obtained.

14. Place 6" of topsoil on all disturbed areas. Seed & mulch immediately. Erosion control netting shall be used to stabilize slopes as needed.

15. An as-built drawing of the culvert installation shall be prepared by the design engineer after installation and the engineer shall certify that the crossing was installed in substantial conformance with the design.

Note: Erosion control measures are to be maintained & monitored continuously until vegetative cover has been established.

## DRAINAGE CALCULATIONS FOR DRIVEWAY INFILTRATION TRENCHES (100 YEAR DESIGN STORM)

### SCS Runoff Curve Number Method:

$$Q = (P - 0.2S) / (P + 0.8S)$$

and

$$S = 1000 / CN - 10$$

Where:

$$Q = \text{runoff (in.)}$$

$$P = \text{rainfall (in.)}$$

$$S = \text{potential maximum retention after runoff begins (in.)}$$

$$CN = \text{runoff curve number}$$

$$V = \text{Volume}$$

Existing Conditions:

Area of Drainage being altered for Driveway & Septic

Construction = 61,580 sf

100% Type C Soil - Wooded-Fair Condition (CN = 73)

$$S = 1000 / 73 - 10 = 3.70$$

$$Q = (7.0 - 0.2(3.70)) / (7.0 + 0.8(3.70)) = 3.93 \text{ in.} = .33 \text{ ft.}$$

$$\text{Volume} = 61,580 \text{ sq. ft.} \times .33 \text{ ft.} = 20,321 \text{ cu. ft.}$$

Proposed Conditions:

Area of Drainage being altered for Driveway & Septic

Construction = 61,580 sf

71.3% Type C Soil - Grassy/Meadow (CN = 77)

$$23.1% Type C Soil - Paved (CN = 98)$$

$$\text{Composite CN} = 77 \times 0.719 + 98 \times 0.281 = 83$$

$$S = 1000 / 83 - 10 = 2.05$$

$$Q = (7.0 - 0.2(2.05)) / (7.0 + 0.8(2.05)) = 5.03 \text{ in.} = .42 \text{ ft.}$$

$$\text{Volume} = 61,580 \text{ sq. ft.} \times .$$