

### ZONING TABULATION

ITEM	ZONING REQUIREMENTS*	LOT B
LOT AREA	80,000 S.F. MIN.	322,319 S.F.
LOT NON-WETLAND AREA	60,000 S.F. MIN.	141,350 S.F.
LOT FRONTAGE	175 FT. MIN.	736.87 FEET
LOT WIDTH	175 FT. MIN.	450+ FEET
REAR YARD (HSE)		
SETBACK	30 FT. MIN.	30.5'
FRONT YARD (HSE)		
SETBACK	40 FT. MIN.	232.9'
SIDEYARD (HSE)		
SETBACK	20 FT. MIN.	36.2'
BUILDING COVERAGE	25%	1.45% (4,678 S.F.)
BUILDING HEIGHT	25'-35'	REFER TO ARCHITECTURALS
LOT SHAPE	50 OR LESS	20.43

#### STORMWATER RECHARGE REQUIREMENT

C-SOILS = 0.25" X IMPERVIOUS AREA (MA REQ.)  
 1.0" X IMPERVIOUS AREA (WESTWOOD REQ.)

#### IMPERVIOUS AREA "A"

2,291 S.F. PAVEMENT (TO RAIN GARDEN) + 2,322 S.F. PAVEMENT (TO CATCH BASIN) + 1,892 SF ROOF = 6,505 SF IMPERVIOUS AREA.  
 IMPERVIOUS AREA 6,505 SF X 1.0"/12" = 542.1 C.F. RECHARGE REQUIRED

RECHARGE PROVIDED - 4 LEACHING CHAMBERS X 168.7 C.F. EACH = 674.8 C.F. PROVIDED

#### IMPERVIOUS AREA "B"

3,853 S.F. ROOF + 2,127 S.F. PATIO = 5,980 S.F. OF IMPERVIOUS AREA  
 IMPERVIOUS AREA 5,980 SF X 1.0"/12" = 498.3 C.F. RECHARGE REQUIRED

RECHARGE PROVIDED - 3 LEACHING CHAMBERS X 168.7 C.F. EACH = 506.1 C.F. PROVIDED

#### IMPERVIOUS AREA "C"

400 S.F. OF IMPERVIOUS DRIVEWAY

400 S.F. X 1.0"/12" = 33.3 C.F. RECHARGE REQUIRED

RECHARGE PROVIDED - GRASS INFILTRATION BASIN FROM ELEVATION 212 TO ELEVATION 212.7 = 80 C.F. PROVIDED

#### SEDIMENTATION & EROSION CONTROL SEQUENCE

- \* INSTALL COMPOST SOCK, EARTH BERM AND AND CONSTRUCTION FENCE.
- \* PERFORM SITE CONSTRUCTION.
- \* WATER DISTURBED AREAS AS NEEDED TO PREVENT DUST AND WIND BLOWN EROSION
- \* SWEEP STREET ON A DAILY BASIS, AS NEEDED
- \* PLACE SILT SACK IN CATCH BASIN ONCE INSTALLED
- \* PAVE DISTURBED AREAS AS SOON AS POSSIBLE
- \* LOAM AND SEED ALL DISTURBED AREAS. WATER AS NECESSARY
- \* CLEAN OUT CATCH BASIN AND PIPING AND REMOVE SILTSACK COMPOST SOCKS/CONSTRUCTION FENCE AFTER DISTURBED AREAS ARE FULLY STABILIZED.

#### ASSESSORS:

MAP 29 PARCEL 72

#### OWNER/APPLICANT:

THOMAS M. & TARA M. THEMISTOCLES  
 304 CLAPBOARDTREE STREET - LOT A  
 WESTWOOD, MA 02090  
 508-397-5278  
 DEED BOOK 31618 PAGE 243 (8-31-2013)

#### PLAN REFERENCE:

SEE PLAN ENTITLED "PLAN OF LAND IN WESTWOOD, MASS.", DATED OCTOBER, 1959, BY WHITMAN & HOWARD, CIVIL ENGINEERS, RECORDED IN DEED BOOK 3830, PAGE 214 AT THE NORFOLK COUNTY REGISTRY OF DEEDS ON JULY 15, 1960.

#### PLAN NOTES:

1. PROPERTY LINE SURVEY PERFORMED BY NORWOOD ENGINEERING CO., INC. FEBRUARY OF 2013.
2. TOPOGRAPHIC SURVEY PERFORMED BY NORWOOD ENGINEERING CO., INC. FEBRUARY OF 2013.
3. WETLAND DELINEATION PERFORMED BY ECOTEC INC JANUARY 30, 2013. FIELD LOCATED BY NORWOOD ENGINEERING CO., INC FEBRUARY 2013.
4. SITE IS NOT IN FLOOD PLAIN ZONE A. SEE FIRM MAP No. 25021C 0179 E, EFFECTIVE DATE JULY 17, 2012.
5. ORAD ISSUED 5/8/13, FILE # 338-547 CONFIRMED SUBJECT TO FUTURE DETERMINATION IF POND IS A VERNAL POOL. ECOTEC, INC. LETTER DATED 6/14/15 STATES AREA DOES NOT CURRENTLY QUALIFY FOR CERTIFICATION AS VERNAL POOL HABITAT PURSUANT TO THE 2009 GUIDELINES.
6. ORDER OF CONDITIONS ISSUED ON 10-30-2015 FILE #338-0616

**TREE PLANTINGS REQUIRED**  
 1 TREE/450 S.F. OF DISTURBED 100' BUFFER ZONE AREA  
 36,130 S.F. / 450 S.F. = 81 TREES REQUIRED  
 TREES TO BE 2" CAULIPER MIXED NATIVE TREES

**IMPERVIOUS AREA "B" RECHARGE**  
 FOR PORTION OF MAIN HOUSE ROOF AND PATIO AREA

- 1 LEACHING DRYWELL WITH 2.5' SUMP & 3.0' OF STONE ALL AROUND WITH CATCHBASIN RIM AT LOW POINT  
 RIM = 213.1  
 TOP DRY WELL = 212.1  
 I=211.1 (ROOF DRAINS IN)  
 I=208.6 (DRYWELL CONNECTIONS)  
 BOT. 6" STONE = 208.1
- 2 LEACHING CHAMBERS CONNECTED WITH 6" DRAIN (NO SUMPS)  
 TOP DRY WELL = 212.0  
 BOT. 3" STONE = 208.1  
 PROVIDED RECHARGE = 506.1 C.F.

**IMPERVIOUS AREA "A" RECHARGE**  
 FOR PAVED DRIVEWAY AND PORTION OF MAIN HOUSE ROOF

- 1 LEACHING DRYWELL WITH 2.5' SUMP & 3.0' OF STONE ALL AROUND WITH CATCHBASIN RIM AT LOW POINT  
 RIM = 212.5  
 TOP DRY WELL = 211.5  
 I=210.5 (ROOF DRAINS/RAIN GARDEN-IN)  
 I=208.0 (DRYWELL CONNECTIONS)  
 BOT. 3" STONE = 207.75
- 3 LEACHING CHAMBERS CONNECTED WITH 6" DRAIN (NO SUMPS)  
 TOP DRY WELL = 211.5  
 I=208.0 (DRYWELL CONNECTIONS)  
 BOT. 3" STONE = 207.75  
 GWT=205.7 (POND)  
 PROVIDED RECHARGE = 674.8 C.F.

**LOT B**  
 LOT AREA: 322,319 S.F.± (7.40 ACRES±)  
 UPLAND: 141,350 S.F.± (3.25 ACRES±)  
 SHAPE FACTOR: 20.43

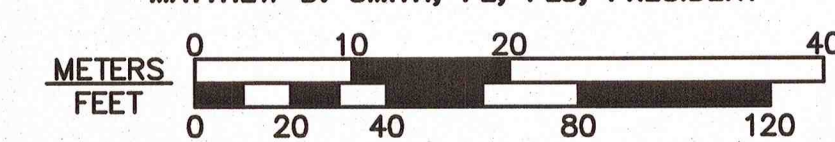
**EARTH MATERIAL MOVEMENT  
 BUILDING PERMIT PLAN  
 294 CLAPBOARDTREE STREET  
 LOT B  
 WESTWOOD, MASS.**

SCALE: 1" = 40' SEPTEMBER 10, 2015

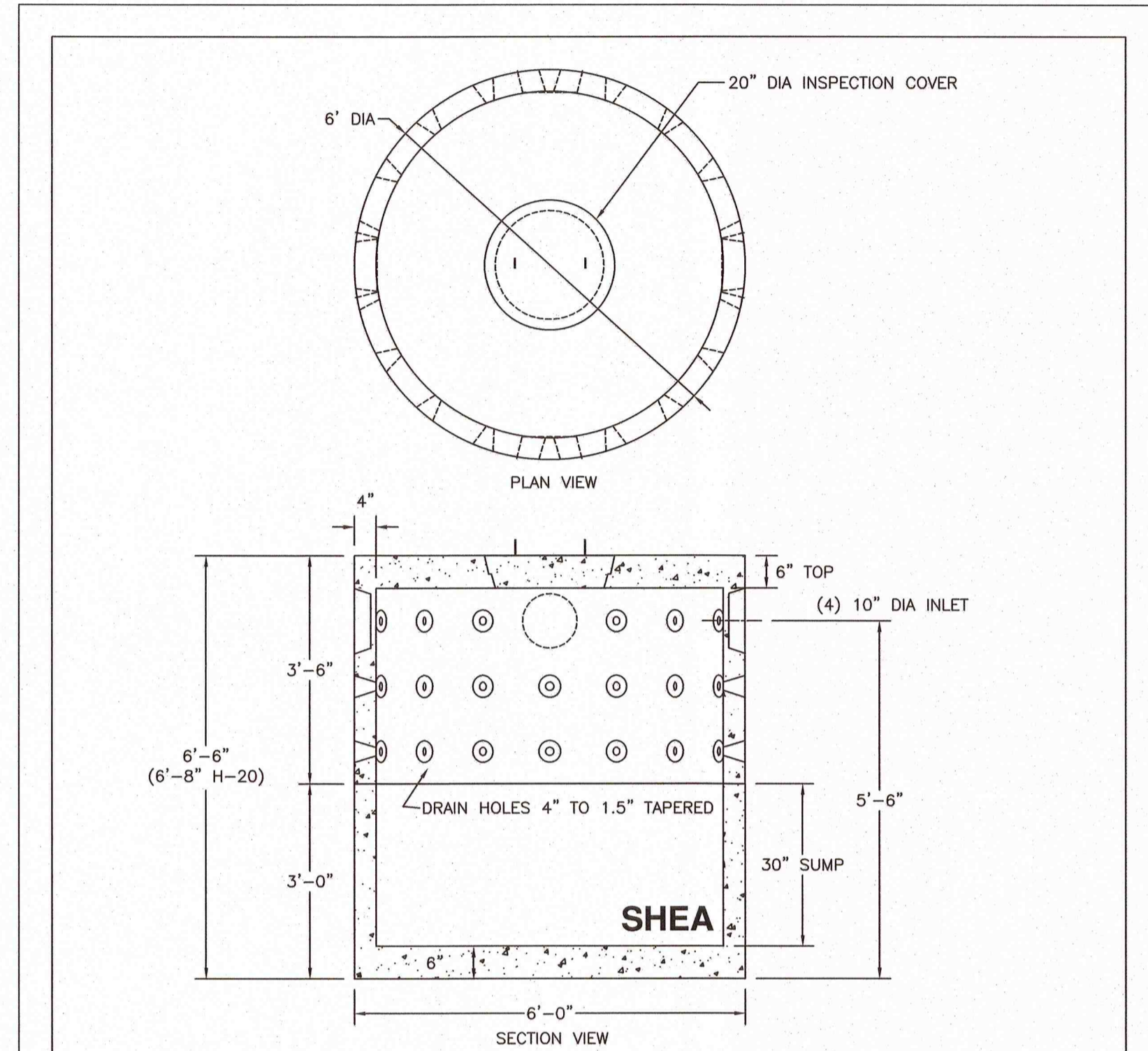
**Norwood  
 Engineering**

Norwood Engineering Company, Inc.  
 Consulting Engineers, Land Surveyors  
 1410 ROUTE ONE, NORWOOD, MA 02062  
 TEL. (781)762-0143 FAX (781)762-8595  
 MATTHEW D. SMITH, PE, PLS, PRESIDENT

DATE	REVISIONS
10/28/15	CONSERVATION COMMISSION COMMENTS
10/30/15	18" BERM & 50' STONE APRON
12/01/16	EARTH MATERIAL MOVEMENT PERMIT







- NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
  2. AVAILABLE IN H-20 LOADING.
  3. CAPACITY INCREASES IN INCREMENTS OF 500 GALLONS FOR EACH 3" SECTION ADDED.

ITEM NO.	DW-SSS	30" SUMP	WEIGHT
	DW-SSS	3" STACKABLE (NO COVER)	2,008#

**SHEA** *New England's Premier Precaster*  
 CONCRETE PRODUCTS 800-696-7432 (SHEA)  
 www.sheaconcrete.com

773 Salem Street P.O. Box 520 Wilmington, MA 01887  
 87 Haverhill Road P.O. Box 807 Amesbury, MA 01913  
 160 Old Turnpike Road Nottingham, NH 03290

Page: E5  
 DWcleach.dwg 11/30/2009

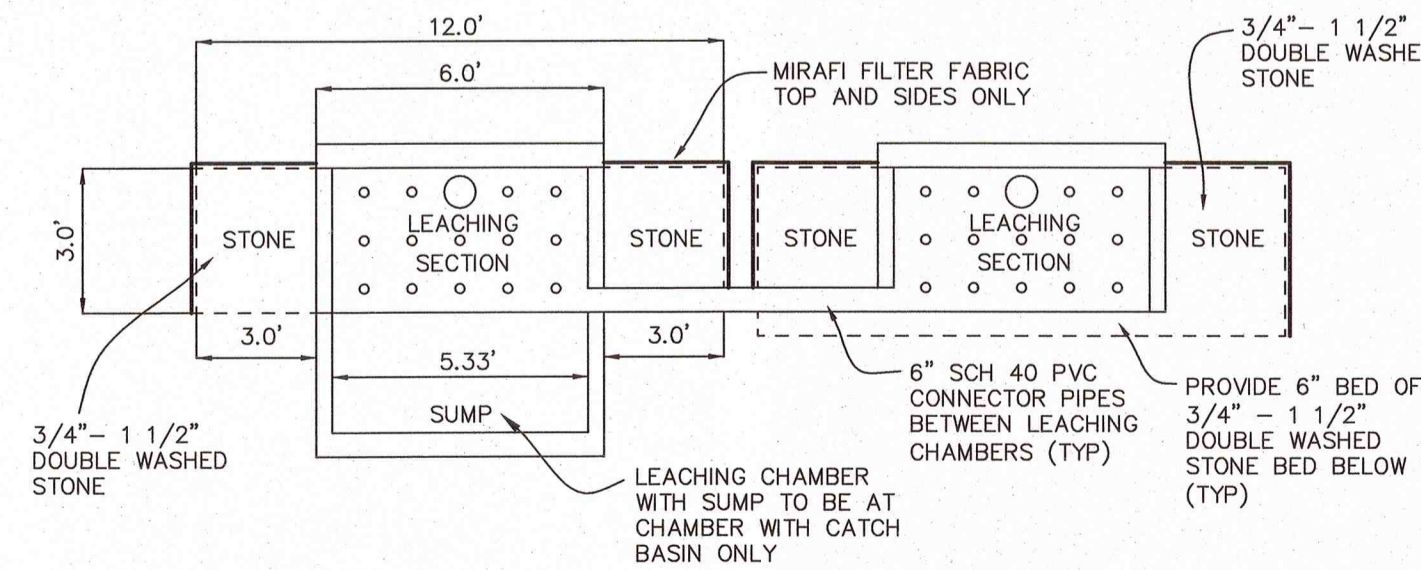
DRY WELL CYLINDRICAL STACKABLE LEACHING CHAMBER

OPCA

LEACHING CHAMBER VOLUME =  $\pi R^2 \times 3'$   
 $= \pi \left(\frac{6.33}{2}\right)^2 \times 3'$   
 $= 66.9 \text{ C.F. (500 GALLONS)}$

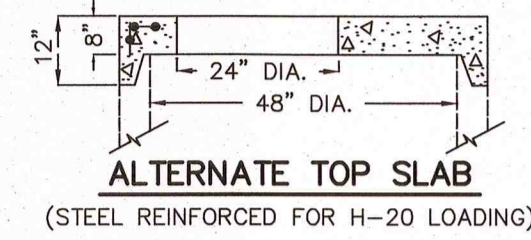
STONE VOLUME = OUTSIDE VOLUME OF STONE - LEACHING CHAMBER VOLUME (40% VOIDS)  
 $\pi R^2 \times 3' - \pi R^2 \times 3'$   
 $= \pi \left(\frac{12}{2}\right)^2 \times 3' - \pi \left(\frac{6.0}{2}\right)^2 \times 3'$   
 $= 339.3 \text{ C.F.} - 84.8 \text{ C.F.}$   
 $= (339.3 \text{ C.F.} - 84.8 \text{ C.F.}) \times 0.4 \text{ VOIDS} = 101.8 \text{ C.F.}$

TOTAL VOLUME = LEACHING CHAMBER VOLUME + STONE VOLUME  
 TOTAL VOLUME = 66.9 C.F. + 101.8 C.F. = 168.7 C.F.

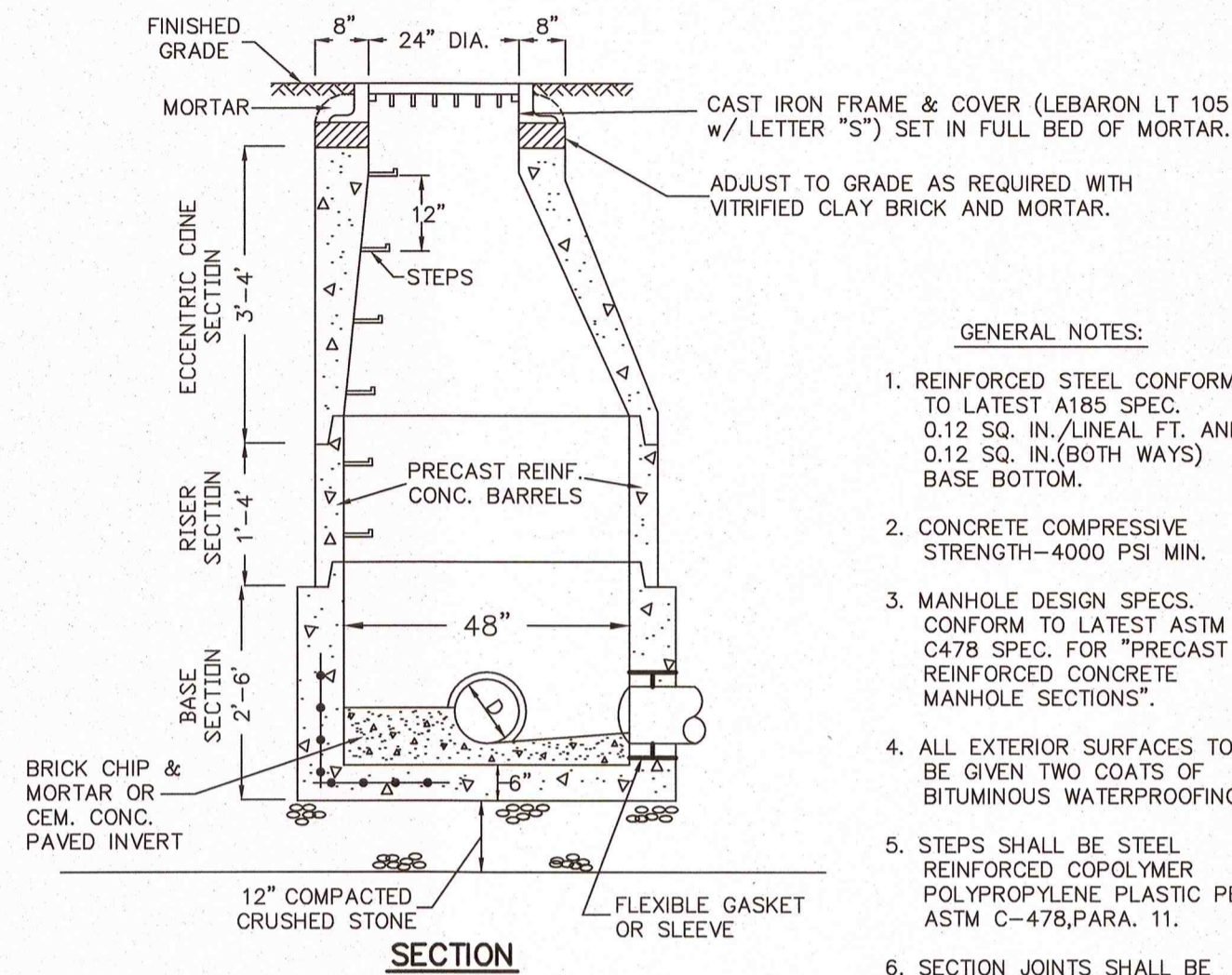


LEACHING CHAMBER VOLUME CALCULATION

NOT TO SCALE



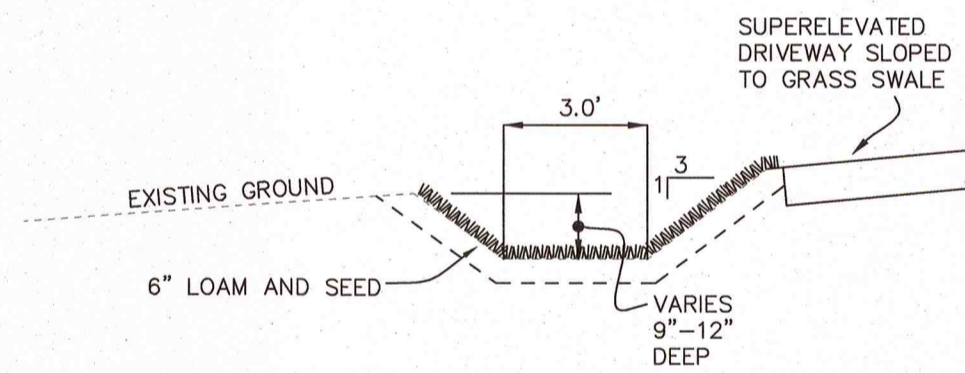
ALTERNATE TOP SLAB  
(STEEL REINFORCED FOR H-20 LOADING)



- GENERAL NOTES:
1. REINFORCED STEEL CONFORMS TO LATEST A188 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN.(BOTH WAYS) BASE BOTTOM.
  2. CONCRETE COMPRESSIVE STRENGTH-4000 PSI MIN.
  3. MANHOLE DESIGN SPECS. CONFORM TO LATEST ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".
  4. ALL EXTERIOR SURFACES TO BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING.
  5. STEPS SHALL BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC PER ASTM C-478, PARA. 11.
  6. SECTION JOINTS SHALL BE BUTYL RUBBER PER ASTM C443 AND FEDERAL SPEC. SS-S210A.
  7. BASE SECTION SHALL BE ONE POUR MONOLITHIC.

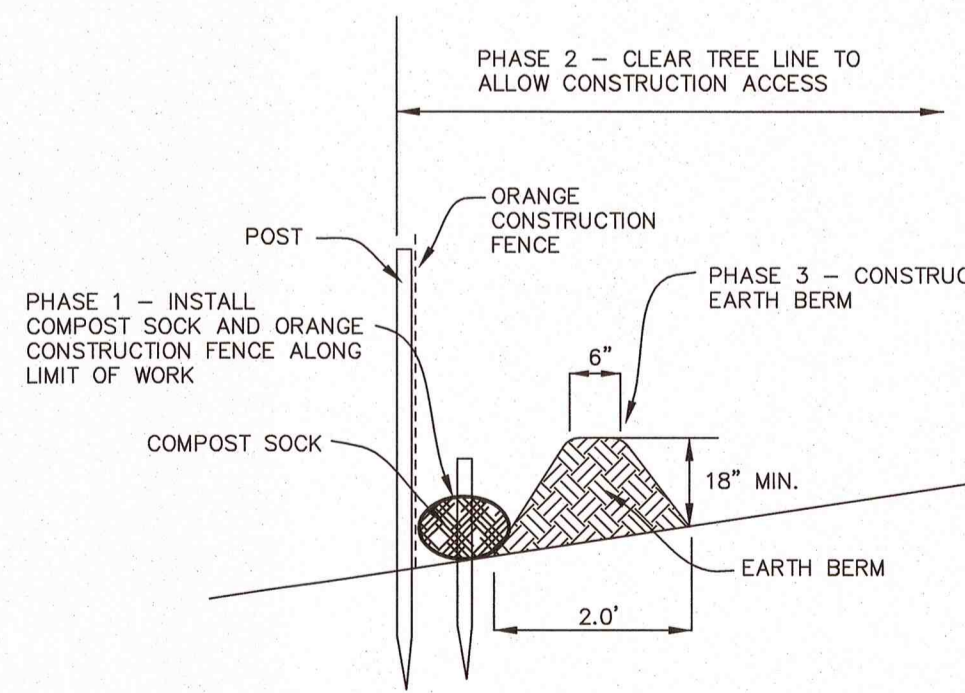
SANITARY SEWER MANHOLE (SMH)

NOT TO SCALE



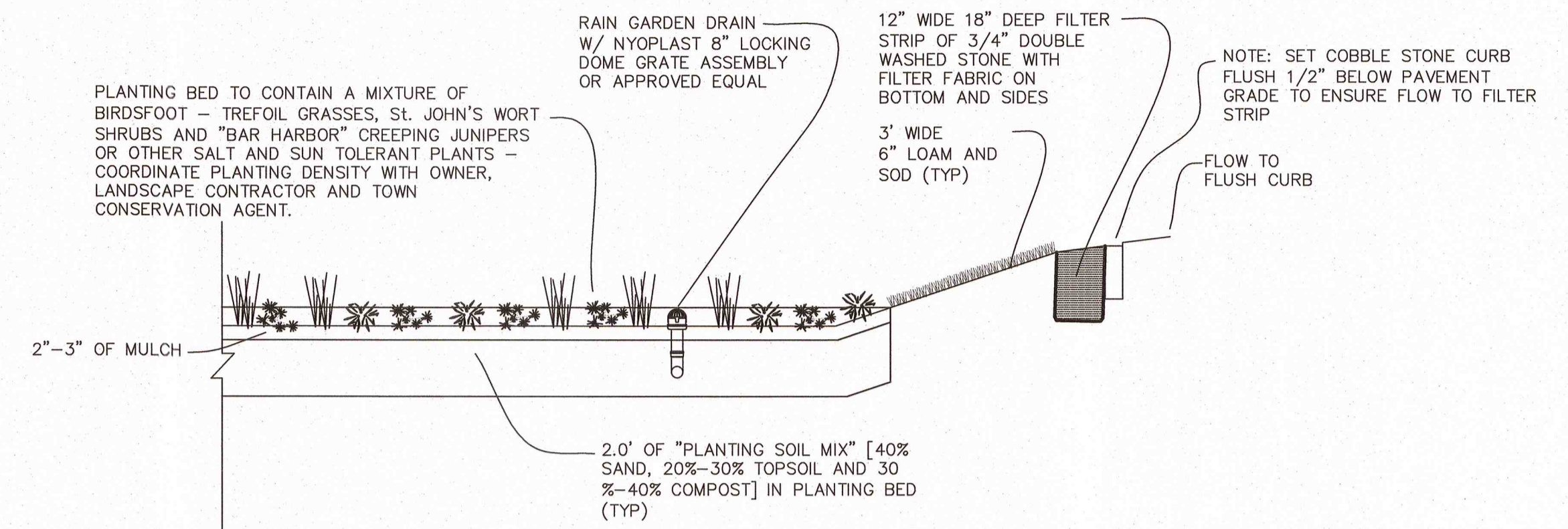
SCHEMATIC GRASS SWALE DETAIL

NOT TO SCALE



COMPOST SOCK WITH EARTH BERM AND CONSTRUCTION FENCE

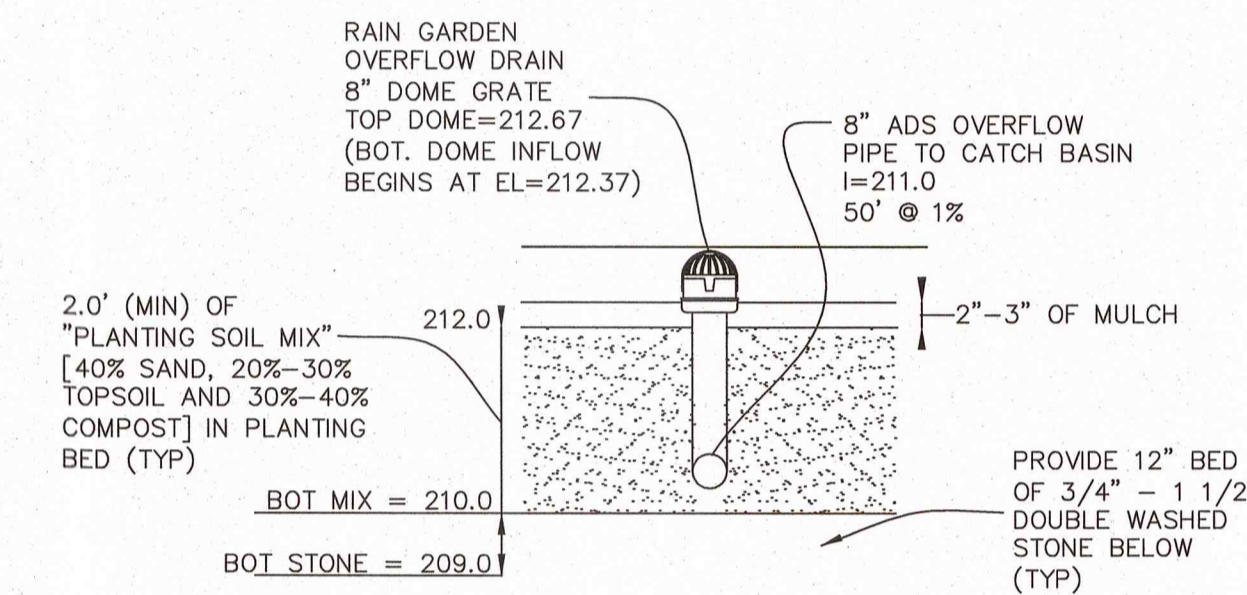
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TYPICAL RAIN GARDEN SCHEMATIC SECTION & PLANTINGS

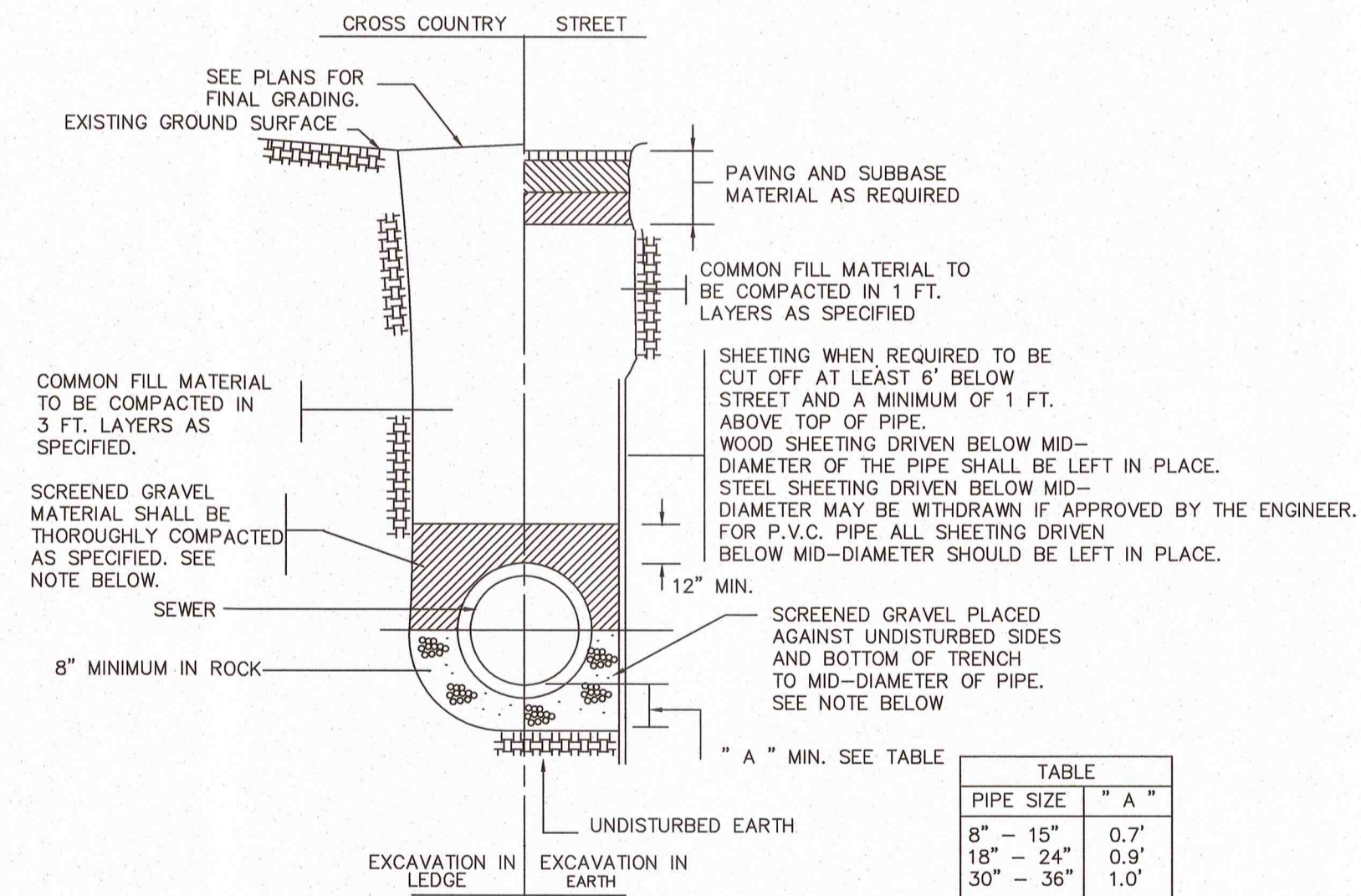
NOT TO SCALE

NOTE: PLANTING BED SOIL MIX AND PLANT SPECIES TO BE AS SPECIFIED IN THE STRUCTURAL BMP MASSACHUSETTS STORMWATER HANDBOOK CHAPTER 2 VOLUME 2 PAGES 23-35.



RAIN GARDEN SECTION DETAIL

NOT TO SCALE



- NOTES:
1. FOR P.V.C. PIPE SCREENED GRAVEL TO EXTEND TO 12" ABOVE TOP OF PIPE.
  2. PROVIDE AT LEAST ONE DAM IN GRAVEL BEDDING BETWEEN EACH MANHOLE WHERE DIRECTED OR EVERY 300 FT. WHICHEVER IS LESS.
  3. TRENCHES LOCATED ON THE ROAD SHOULDER SHALL BE TREATED THE SAME AS STREET EXCEPT FOR PAVING.

TYPICAL TRENCH DETAIL FOR SEWER & WATER

NOT TO SCALE

PIPE SIZE	" A "
8" - 15"	0.7'
18" - 24"	0.9'
30" - 36"	1.0'

DATE	REVISIONS
10/28/15	CONSERVATION COMMISSION COMMENTS
10/30/15	18" BERM & 50' STONE APRON
12/01/16	EARTH MATERIAL MOVEMENT PERMIT

ASSESSORS:  
MAP 29 PARCEL 72

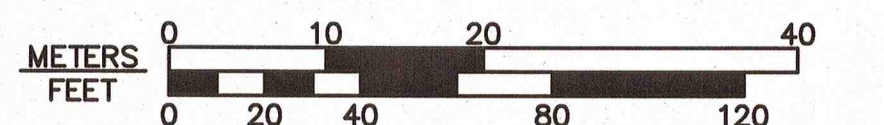
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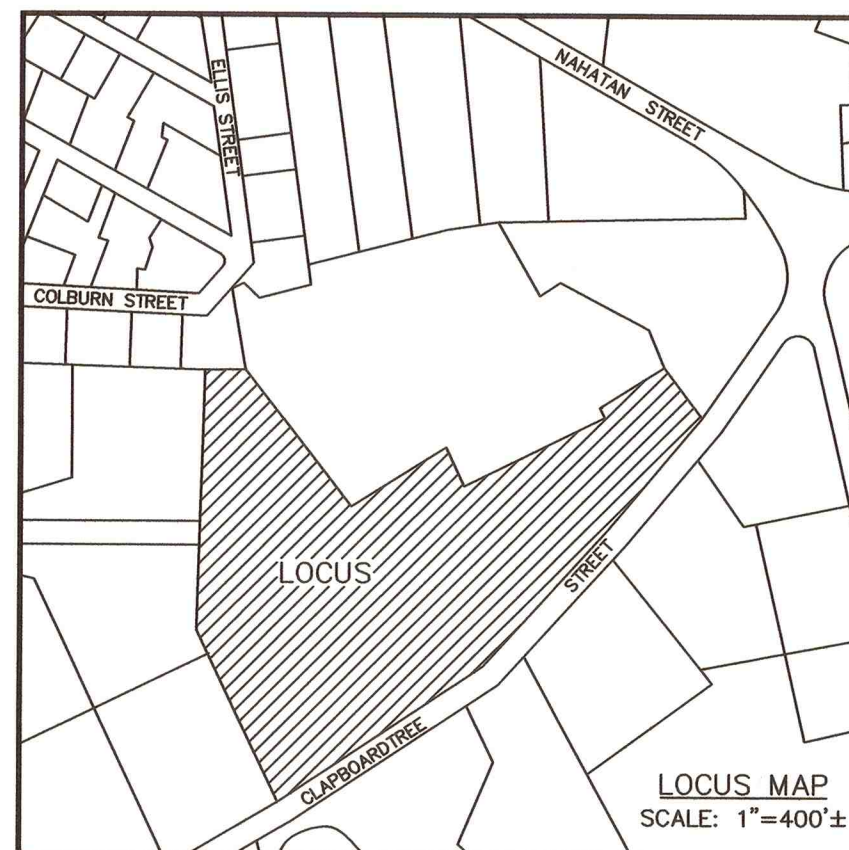
SCALE: AS NOTED SEPTEMBER 10, 2015

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**STORMWATER RECHARGE REQUIREMENT**

C-SOILS = 0.25' X IMPERVIOUS AREA (MA REQ.)  
1.0' X IMPERVIOUS AREA (WESTWOOD REQ.)

**IMPERVIOUS AREA "A"**

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400 S.F. OF IMPERVIOUS DRIVEWAY  
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MAP 29 PARCEL 72

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304 CLAPBOARDTREE STREET - LOT A  
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6. ORDER OF CONDITIONS ISSUED ON 10-30-2015 FILE #338-0616

n/f CHARLES & ELISABETH PERKINS  
#66 OLDE CARRIAGE ROAD  
M. 29, L.66

n/f RICHARD P. SABATINO  
#175 COLBURN STREET  
M. 21, L.332

n/f TOWN OF WESTWOOD

n/f SCOTT D ZALESKI & SYLVIA YEGHIAYAN  
#65 OLDE CARRIAGE ROAD  
M. 29, L.68

n/f NORMA E. SIMONI  
#216 CLAPBOARDTREE STREET  
M. 29, L.71

n/f LAWRENCE  
#255 CLAPBOARDTREE STREET  
M. 29, L.82

n/f HONORIA AYLES  
#328 CLAPBOARDTREE STREET  
M. 21, L.63

n/f FIRST PARISH OF WESTWOOD  
#340 CLAPBOARDTREE STREET  
M. 21, L.64

n/f MATTHEWS  
#341 CLAPBOARDTREE STREET  
M. 29, L.78

n/f CARUSO  
#315 CLAPBOARDTREE STREET  
M. 29, L.79

n/f MCFARLAND  
#299 CLAPBOARDTREE STREET  
M. 29, L.80

n/f MASI-PHELPS  
#295 CLAPBOARDTREE STREET  
M. 29, L.81

**TREE PLANTINGS REQUIRED**  
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TREES TO BE 2" CALIPER MIXED NATIVE TREES

**IMPERVIOUS AREA "B" RECHARGE FOR PORTION OF MAIN HOUSE ROOF AND PATIO AREA**  
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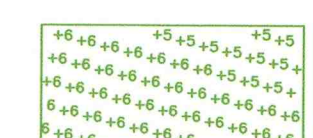
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BOT. 6" STONE = 208.1  
PROVIDED RECHARGE = 506.1 C.F.

**IMPERVIOUS AREA "A" RECHARGE FOR PAVED DRIVEWAY AND PORTION OF MAIN HOUSE ROOF**  
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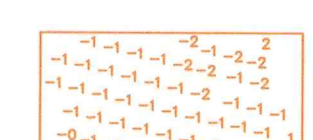
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UPLAND: 141,350 S.F.± (3.25 ACRES±)  
SHAPE FACTOR: 20.43



AREA OF PROPOSED FILL (4,963 CY)



AREA OF PROPOSED CUT (753 CY)

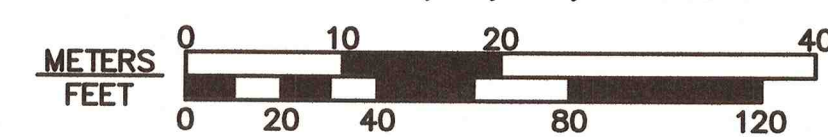
**CLAPBOARDTREE STREET**

**EARTH MATERIAL MOVEMENT BUILDING PERMIT PLAN**  
**294 CLAPBOARDTREE STREET**  
**LOT B**  
**WESTWOOD, MASS.**

SCALE: 1" = 40' SEPTEMBER 10, 2015

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