

**NOTES AND REFERENCES:**

- THIS PLAN WAS PREPARED FOR THE PURPOSES OF A ZONING PERMIT APPLICATION FOR PROPERTY KNOWN AS #10 QUEENS COURT, BLOCK 127, LOT 105.04, IN THE TOWNSHIP OF MENDHAM, MORRIS COUNTY, NEW JERSEY. THE APPLICANT PROPOSES TO CONSTRUCT A PROPOSED DWELLING, BARN & ASSOCIATED IMPROVEMENTS.
- BOUNDARY INFORMATION BASED ON MAP TITLED "MAP OF SURVEY, 10 QUEENS COURT, BLOCK 127, LOT 105.04, TOWNSHIP OF MENDHAM, MORRIS COUNTY, NEW JERSEY" PREPARED BY TEMPLIN ENGINEERING ASSOCIATES, DATED 9/25/17. BEARINGS HEREON WERE ROTATED APPROXIMATELY INTO NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83 USING NJGIN ORTHOGRAPHIC IMAGERY.
- TOPOGRAPHIC INFORMATION BASED ON MAP TITLED "TOPOGRAPHIC SURVEY PLAN, BLOCK 127, LOT 105.04, #10 QUEENS COURT, TOWNSHIP OF MENDHAM, MORRIS COUNTY, NEW JERSEY" PREPARED BY DYKSTRA WALKER DESIGN GROUP, DATED 7/13/21.
- UNDERGROUND UTILITIES SERVING THE SUBJECT PROPERTY ARE SHOWN BASED UPON SURFACE EVIDENCE AND AVAILABLE RECORD DOCUMENTS FURNISHED. THE LACK OF UNDERGROUND UTILITY INFORMATION DOES NOT DENY THE EXISTENCE OR ABSENCE OF SAME. THE APPROPRIATE UTILITY COMPANY SHOULD BE CONTACTED TO CONFIRM THE EXISTENCE OR ABSENCE OF SAME AND FOR A FIELD MARKOUT OF ALL UTILITIES PRIOR TO CONSTRUCTION. A FIELD MARKOUT MAY BE REQUESTED BY CALLING (800) 272-1000.
- TOPOGRAPHIC INFORMATION IS BASED ON USGA LIDAR DATA AND IS APPROXIMATE. VERTICAL DATUM IS NAVD 88.
- A WATER MAIN EASEMENT RUNS THROUGH THE PROPERTY (RANDOLPH TOWNSHIP MUA).
- THERE ARE NO FLOODPLAINS OR FLOODWAYS ON THE SUBJECT PROPERTY PER FIRM MAPPING.
- FRESHWATER WETLANDS SHOWN HEREON DELINEATED AND LOCATED BY DYKSTRA WALKER DESIGN GROUP IN JULY OF 2021 TO BE VERIFIED BY THE NUDEP.
- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE TOWNSHIP OF MENDHAM AND OSHA SAFETY STANDARDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE.
- ALL UTILITY LOCATIONS, GRADES, ELEVATIONS, INVERTS, ETC. SHALL BE CONFIRMED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ANY DESIGN ADJUSTMENTS AS MAY BE REQUIRED DUE TO FIELD CONDITIONS.
- GARBAGE GRINDER UNITS SHALL NOT BE INSTALLED IN THE BUILDING.
- DESIGN CALCULATIONS:  
 VOLUME OF SANITARY SEWAGE: 650 GALLONS PER DAY (PROPOSED 4 BEDROOM DWELLING)  
 SEPTIC TANK CAPACITY: 1,250 GALLONS (1,250 GALLONS REQUIRED)  
 DISPOSAL AREA: 6 PROPOSED DISPOSAL TRENCHES (3' X 44') SET 6' APART (TOTAL AREA 48' X 44')  
 SOIL REPLACEMENT BOTTOM-LINED  
 MINIMUM SIZE = 650 GPD X 0.40 (GRAVITY, 3 FT WIDE, K4) = 260 L.F. (SIZE PROVIDED = 64 L.F.)
- THE ADMINISTRATIVE AUTHORITY AND THE DESIGN ENGINEER (IF REQUIRED) SHALL PERFORM INSPECTIONS DURING CONSTRUCTION OF THE SEWAGE DISPOSAL SYSTEM. IF THE ADMINISTRATIVE AUTHORITY REQUIRES THE DESIGN ENGINEER TO PERFORM INSPECTIONS, TESTING, ETC. OR PREPARE AS-BUILT PLANS AND CERTIFICATIONS, THE FEES FOR THESE SERVICES SHALL BE PAID BY THE APPLICANT.

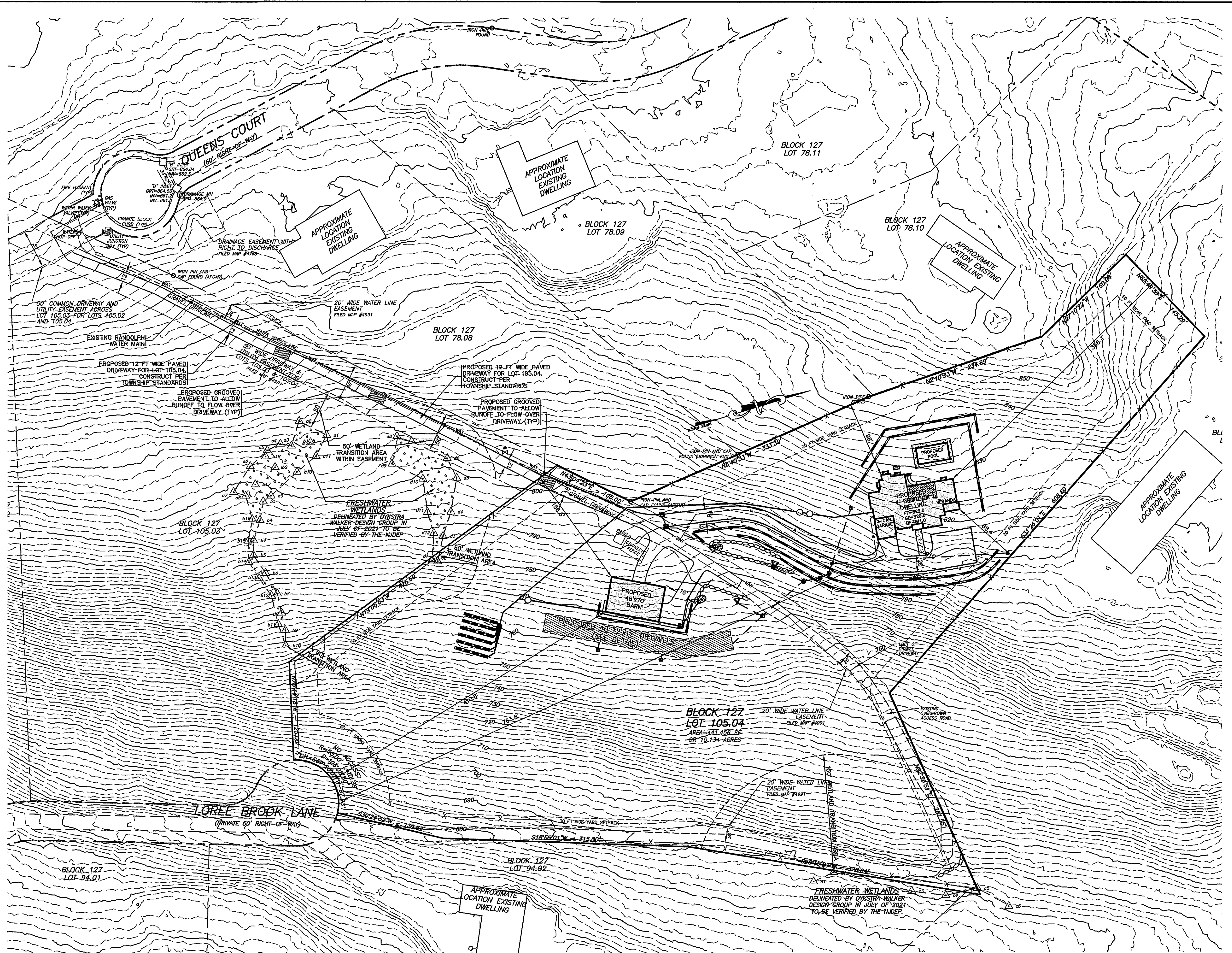
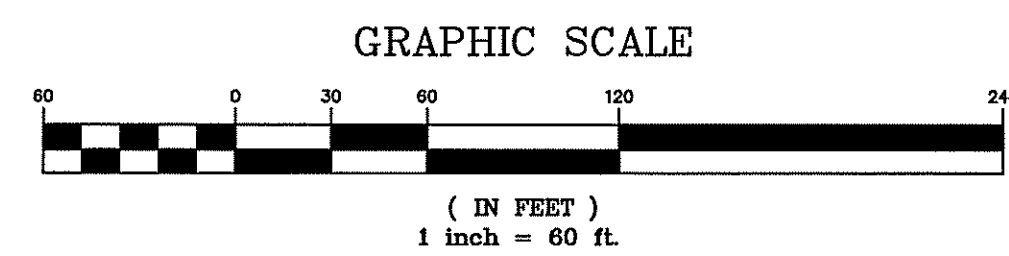
**TOWNSHIP OF MENDHAM ZONING REQUIREMENTS**

R-3 (DETACHED SINGLE FAMILY) ZONE DISTRICT (1)		
ITEM	REQUIRED	PROPOSED
MINIMUM LOT AREA	3 ACRES	10.13 ACRES
MINIMUM NET BUILDING ENVELOPE SIZE (NBEA)	40,000 SF	144,940 SF
MINIMUM LOT FRONTAGE	100 FT	101.9 FT
MINIMUM DIAMETER LOT GEOMETRY CIRCLE (LGC)	250 FT	CONFORMS
MINIMUM DIAMETER BUILDING ENVELOPE CIRCLE (BEC)	150 FT	CONFORMS
MINIMUM FRONT YARD SETBACK	60 FT	763.8 FT
MINIMUM SIDE YARD SETBACK (EACH)	50 FT	88.4 FT
MINIMUM REAR YARD SETBACK	50 FT	358.4 FT
MAXIMUM BUILDING HEIGHT	35 FT (2½ STORIES)	< 35 FT (2)
MAXIMUM ACCESSORY BUILDING AREA	4,380 SF (4)	3,150 SF

- THE SUBJECT LOT WAS APPROVED AS PART OF A PRIOR SUBDIVISION APPLICATION. ACCESS TO THE LOT IS FROM QUEENS COURT OVER THE FIFTY (50) FOOT EASEMENT SHOWN.
- HEIGHT OF STRUCTURE IS MEASURED FROM THE AVERAGE ELEVATION OF THE FINISHED GRADE AT THE FOUNDATION OF A STRUCTURE TO THE HORIZONTAL PROJECTION OF THE HIGHEST POINT OF A STRUCTURE. AVERAGE GRADE ELEVATIONS SHOULD BE TAKEN AT ALL CORNERS OF THE STRUCTURE.  
 AVERAGE GRADE =  $(816.2 + 816.7 + 817.8 + 818.3 + 820 + 820.2 + 820 + 819.5 + 820) / 9 = 818.7$   
 AVERAGE GRADE TO FIRST FLOOR =  $822 - 818.7 = 3.3$  FT  
 FIRST FLOOR TO HIGHEST POINT (PER ARCHITECTURAL PLANS) = 33.3  
 BUILDING HEIGHT =  $3.3 + 33.3 = 36.6$  FT
- ORDINANCE SECTION 21-6.4(d) "NO ACCESSORY STRUCTURE SHALL BE LOCATED CLOSER TO A STREET THAN THE PRINCIPAL BUILDING."
- REGARDING ACCESSORY BUILDINGS, ORDINANCE SECTION 21-6.4(g) "FOR EACH 1,000 SQUARE FEET OF FOOTPRINT IN EXCESS OF 2,000 SQUARE FEET, OR PORTION THEREOF, THE LOT SHALL CONTAIN A MINIMUM ADDITIONAL AREA OF THREE ACRES IN EXCESS OF THE MINIMUM REQUIREMENT."  
 PROPOSED BARN IS 1,150 SF IN EXCESS  
 LOT AREA = 7.13 ACRES IN EXCESS  
 $7.13 \text{ ACRES} / 3 \text{ ACRES} = 2.38$   
 $2.38 \times 1,000 \text{ SF} = 2,380 \text{ SF}$ . AN ACCESSORY BUILDING CAN HAVE AN AREA OF 4,380 SF
- ORDINANCE SECTION 21-4.9(c) "THE MINIMUM SETBACK OF A STRUCTURE WITH A HEIGHT OVER TWENTY (20) FEET SHALL BE INCREASED BY ONE (1) FOOT, FOR EACH ONE (1) FOOT OF THE HEIGHT OF THE STRUCTURE IN EXCESS OF TWENTY (20) FEET"

**SHEET INDEX**

SHEET	DESCRIPTION
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2	TOPOGRAPHIC SURVEY PLAN
3	SEWAGE DISPOSAL SYSTEM DESIGN PLAN
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5	EXISTING DRAINAGE AREA MAP
6	PROPOSED DRAINAGE AREA MAP
7	SOIL EROSION & SEDIMENT CONTROL PLAN
8	STEEP SLOPES ANALYSIS PLAN
9-10	CONSTRUCTION NOTES & DETAILS



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DATE	REVISION

**DYKSTRA WALKER DESIGN GROUP PA**  
 PROFESSIONAL ENGINEERS, PLANNERS & SURVEYORS  
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 WWW.DYKSTRAWALKER.COM

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 PROFESSIONAL ENGINEER, N.J. LIC. NO. 24GE03640900

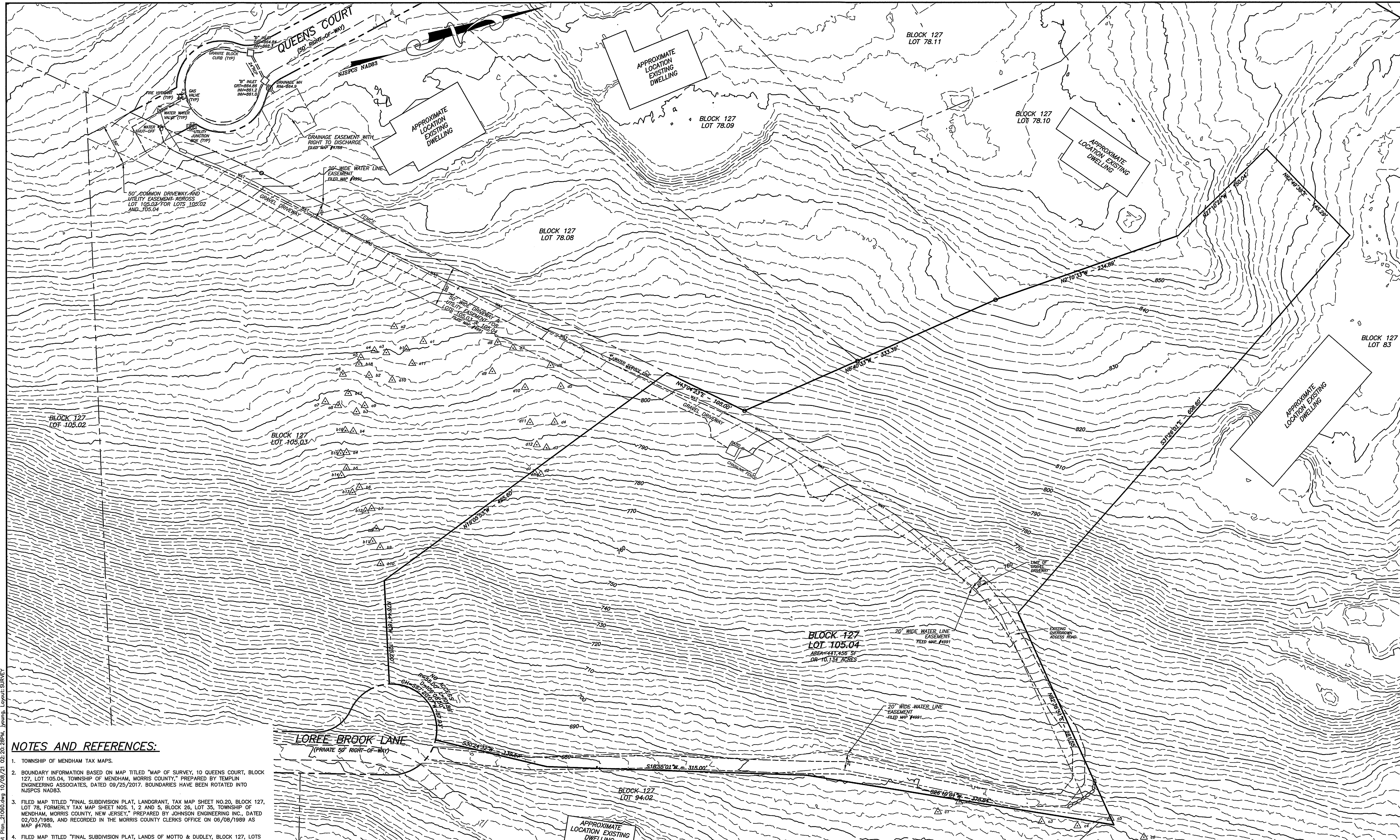
PLOT PLAN

**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY

**DW**

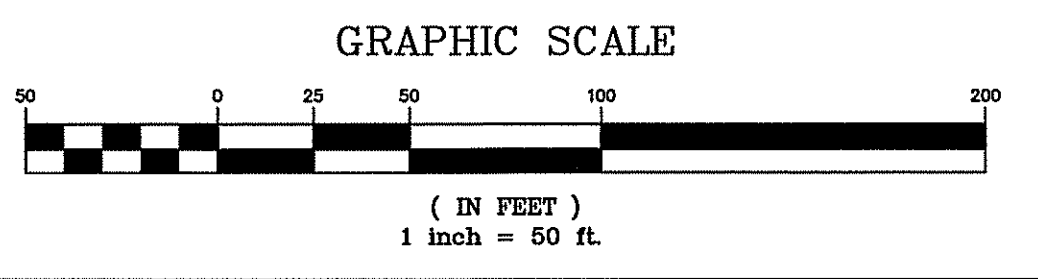
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 CHECKED BY: MGW  
 DATE: 10/8/21  
 SHEET NO. 1 of 10





**NOTES AND REFERENCES:**

1. TOWNSHIP OF MENDHAM TAX MAPS.
2. BOUNDARY INFORMATION BASED ON MAP TITLED "MAP OF SURVEY, 10 QUEENS COURT, BLOCK 127, LOT 105.04, TOWNSHIP OF MENDHAM, MORRIS COUNTY," PREPARED BY TEMPLIN ENGINEERING ASSOCIATES, DATED 09/25/2017. BOUNDARIES HAVE BEEN ROTATED INTO NAD83 NAD83.
3. FILED MAP TITLED "FINAL SUBDIVISION PLAT, LANDGRANT, TAX MAP SHEET NO.20, BLOCK 127, LOT 78, FORMERLY TAX MAP SHEET NOS. 1, 2 AND 5, BLOCK 26, LOT 35, TOWNSHIP OF MENDHAM, MORRIS COUNTY, NEW JERSEY," PREPARED BY JOHNSON ENGINEERING INC., DATED 02/03/1989, AND RECORDED IN THE MORRIS COUNTY CLERKS OFFICE ON 06/08/1989 AS MAP #4768.
4. FILED MAP TITLED "FINAL SUBDIVISION PLAT, LANDS OF MOTTO & DUDLEY, BLOCK 127, LOTS 94.01, 105, 106 & 107, TAX MAP SHEETS 20 & 21, TOWNSHIP OF MENDHAM, MORRIS COUNTY, NEW JERSEY," PREPARED BY APGAR ASSOCIATES, DATED 12/06/1991, AND RECORDED IN THE MORRIS COUNTY CLERKS OFFICE ON 11/20/1992 AS MAP #4991.
5. UNDERGROUND UTILITIES SERVING THE SUBJECT PROPERTY ARE SHOWN BASED UPON SURFACE EVIDENCE AND AVAILABLE RECORD DOCUMENTS FURNISHED. THE LACK OF UNDERGROUND UTILITY INFORMATION DOES NOT DENY THE EXISTENCE OR ABSENCE OF SAME. THE APPROPRIATE UTILITY COMPANY SHOULD BE CONTACTED TO CONFIRM THE EXISTENCE OR ABSENCE OF SAME AND FOR A FIELD MARKOUT OF ALL UTILITIES PRIOR TO CONSTRUCTION. A FIELD MARKOUT MAY BE REQUESTED BY CALLING (800) 272-1000.
6. HORIZONTAL DATUM IS NAD 83 AND VERTICAL DATUM IS NAVD 88 PER GPS/RTK OBSERVATIONS TAKEN BY DYKSTRA WALKER DESIGN GROUP IN JULY/2021 (SPECTRA PRECISION SP60/GEOD 12B).
7. DYKSTRA WALKER DESIGN GROUP PERFORMED FIELD TOPOGRAPHIC SURVEYING OF THE DRIVEWAY EASEMENT AREA FROM QUEENS COURT AND FOR PART OF THE LOT WHERE DEVELOPMENT IS PROPOSED. SUPPLEMENTAL TOPOGRAPHY FOR THE BALANCE OF THE LOT AND SURROUNDING AREA IS BASED ON USGS LIDAR DATA AND IS APPROXIMATE.



DATE	REVISION
10/8/21	UPDATED AND ADDED TO PLAN SET

**DYKSTRA WALKER DESIGN GROUP PA**  
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**KENNETH D. DYKSTRA**  
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TOPOGRAPHIC SURVEY PLAN

**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY

SCALE: 1" = 50'  
 JOB NO.: 21060  
 DRAWN BY: NS  
 CHECKED BY: KDD  
 DATE: 7/13/21  
 SHEET NO. 2 OF 10

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**SOIL TESTING RESULTS**

SOIL TESTING WAS PERFORMED ON 8/31/21 BY DYKSTRA WALKER DESIGN GROUP.

**TEST PIT #12:**  
 0" - 8" 7.5YR4/4 LOAM (TOPSOIL)  
 8" - 48" 10YR5/4 SANDY CLAY LOAM, 5% GRAVEL, 10% COBBLE, 5% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING  
 48" - 98" 10YR5/3 SANDY LOAM, 5% GRAVEL, 10% COBBLE, 10% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING  
 98" - 112" 10YR6/4 SANDY LOAM, 5% GRAVEL, 10% COBBLE, 20% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING

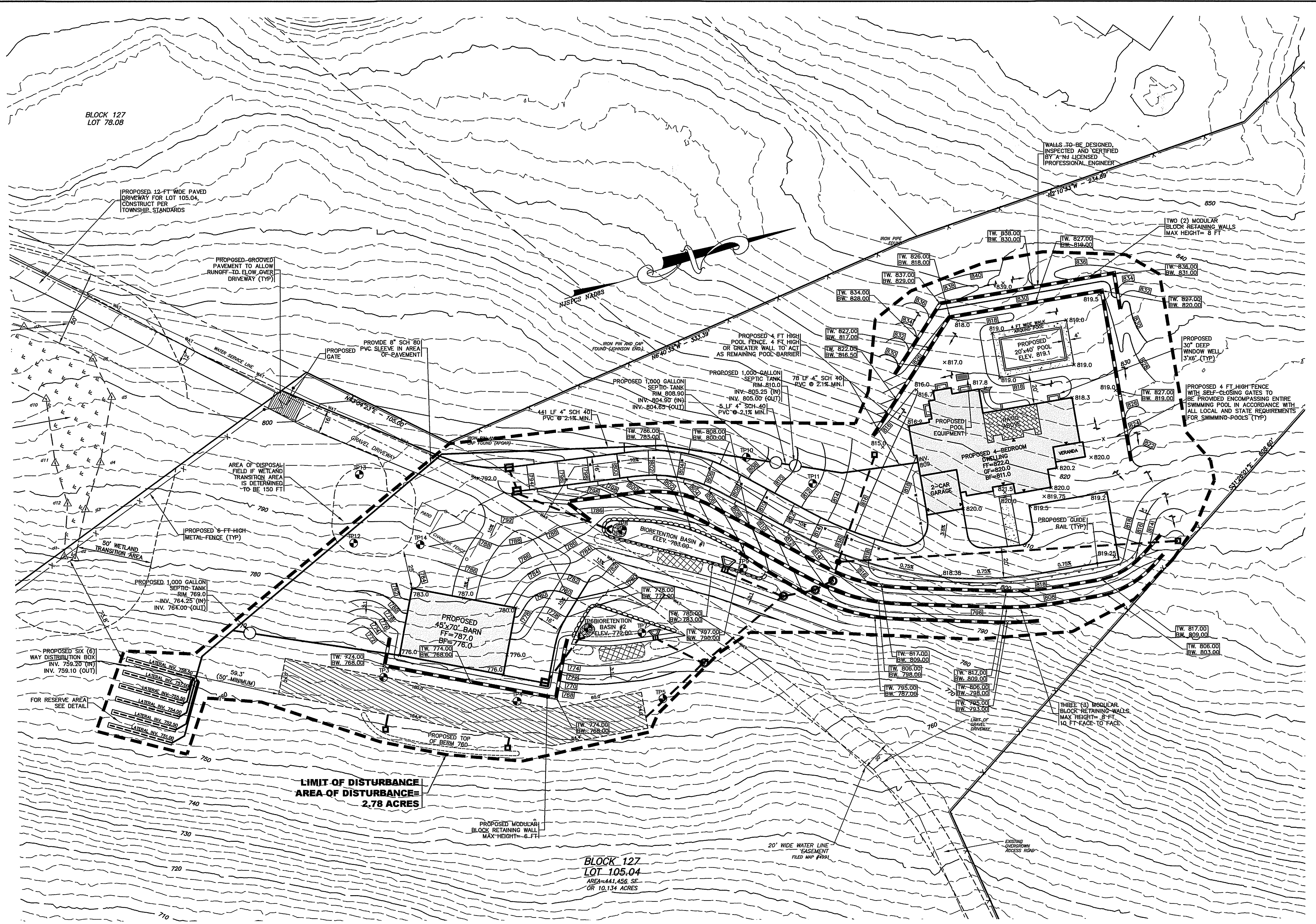
LEDGE @ 112"  
 NO WATER  
 NO SEEPAGE  
 ROOTS TO 42"  
 ESHWT > 112"  
 PERMEABILITY RATING K4 @ 60"

**TEST PIT #13:**  
 0" - 8" 7.5YR4/4 LOAM (TOPSOIL)  
 8" - 52" 10YR5/4 SANDY CLAY LOAM, 5% GRAVEL, 10% COBBLE, 5% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING  
 52" - 106" 10YR5/4 SANDY LOAM, 5% GRAVEL, 10% COBBLE, 10% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING  
 106" - 115" 10YR6/4 SANDY LOAM, 5% GRAVEL, 10% COBBLE, 20% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING

LEDGE @ 115"  
 NO WATER  
 NO SEEPAGE  
 ROOTS TO 50"  
 ESHWT > 130"  
 PERMEABILITY RATING K4 @ 82"

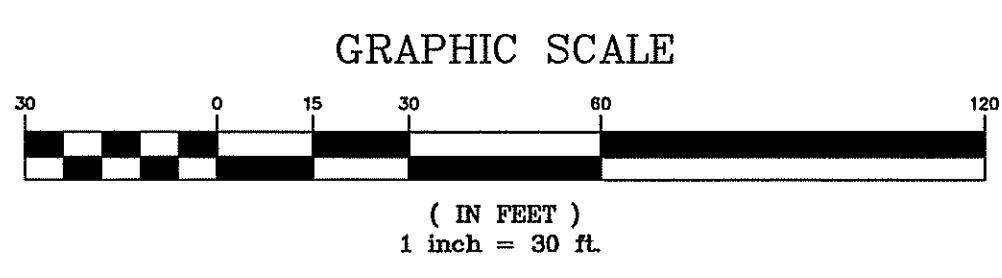
**TEST PIT #14:**  
 0" - 8" 7.5YR4/4 LOAM (TOPSOIL)  
 8" - 54" 10YR5/4 SANDY CLAY LOAM, 5% GRAVEL, 10% COBBLE, 5% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING  
 54" - 102" 10YR5/4 SANDY LOAM, 5% GRAVEL, 10% COBBLE, 10% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING  
 102" - 112" 10YR6/4 SANDY LOAM, 5% GRAVEL, 10% COBBLE, 20% STONE, SUBANGULAR BLOCKY, FRIABLE, NO MOTTLING

LEDGE @ 112"  
 NO WATER  
 NO SEEPAGE  
 ROOTS TO 58"  
 ESHWT > 115"  
 PERMEABILITY RATING K4 @ 65"



**LIMIT OF DISTURBANCE  
 AREA OF DISTURBANCE = 2.78 ACRES**

**BLOCK 127  
 LOT 105.04  
 AREA=441,456 SF  
 OR 10.134 ACRES**



DATE	REVISION

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SEWAGE DISPOSAL SYSTEM DESIGN PLAN

**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY

SCALE: 1" = 30'  
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 CHECKED BY: MGW  
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 SHEET NO. 3 of 10

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**SOIL TESTING RESULTS**

SOIL TESTING WAS PERFORMED ON 8/31/21 BY DYKSTRA WALKER DESIGN GROUP.

**TEST PIT #3:**  
 0" - 8"  
 8" - 52"  
 52" - 94"  
 94" - 168"

NO WATER  
 NO SEEPAGE  
 ROOTS TO 44"  
 ESHWT > 168"

**TEST PIT #4:**  
 0" - 8"  
 8" - 47"  
 47" - 94"  
 94" - 152"

NO WATER  
 NO SEEPAGE  
 ROOTS TO 42"  
 ESHWT > 152"  
 PERMEABILITY RATING K4 @ 100"

**TEST PIT #5:**  
 0" - 8"  
 8" - 42"  
 42" - 90"  
 90" - 166"

NO WATER  
 NO SEEPAGE  
 ROOTS TO 38"  
 ESHWT > 166"  
 PERMEABILITY RATING K4 @ 104"

**TEST PIT #6:**  
 0" - 8"  
 8" - 50"  
 50" - 96"  
 96" - 155"

NO WATER  
 NO SEEPAGE  
 ROOTS TO 35"  
 ESHWT > 155"  
 PERMEABILITY RATING K4 @ 108"

**TEST PIT #7:**  
 0" - 8"  
 8" - 62"  
 62" - 112"  
 112" - 152"

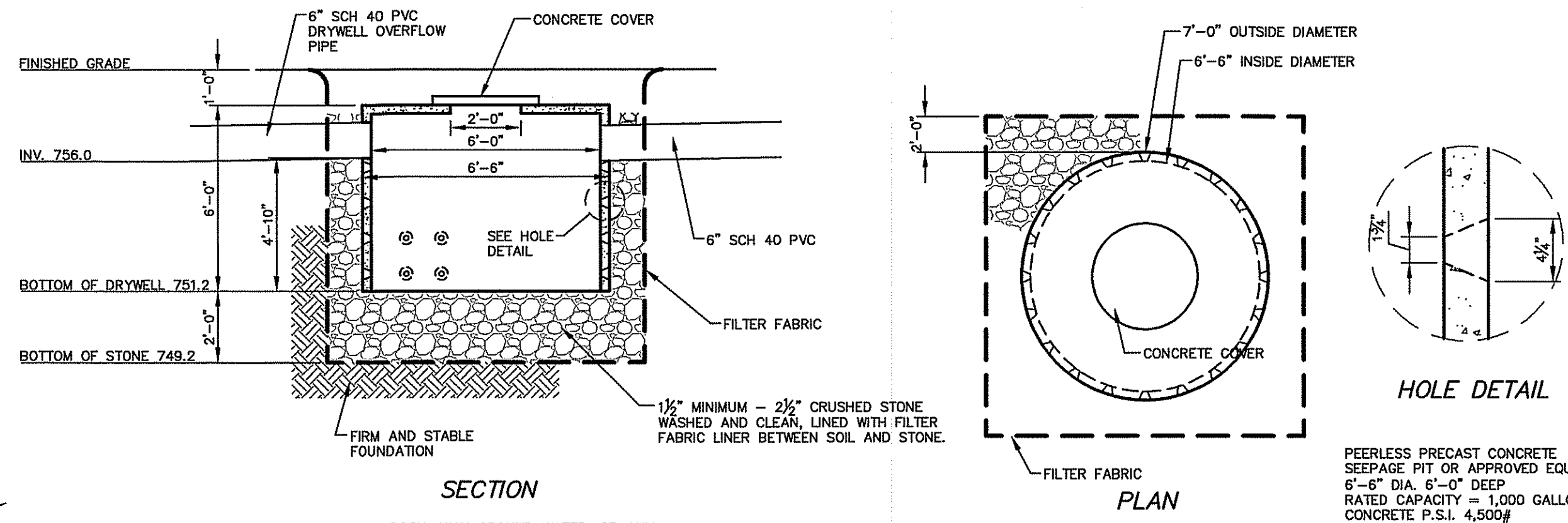
NO WATER  
 NO SEEPAGE  
 ROOTS TO 52"  
 ESHWT > 152"  
 PERMEABILITY RATING K4 @ 118"

**TEST PIT #8:**  
 0" - 8"  
 8" - 62"  
 62" - 94"  
 94" - 132"

LEDGE @ 132 (FRACTURED)  
 NO WATER  
 NO SEEPAGE  
 ROOTS TO 43"  
 ESHWT > 145"  
 PERMEABILITY RATING K3 @ 100"

**TEST PIT #9:**  
 0" - 8"  
 8" - 69"  
 69" - 94"  
 94" - 112"

NO WATER  
 NO SEEPAGE  
 ROOTS TO 37"  
 ESHWT > 112"  
 PERMEABILITY RATING K4 @ 100"

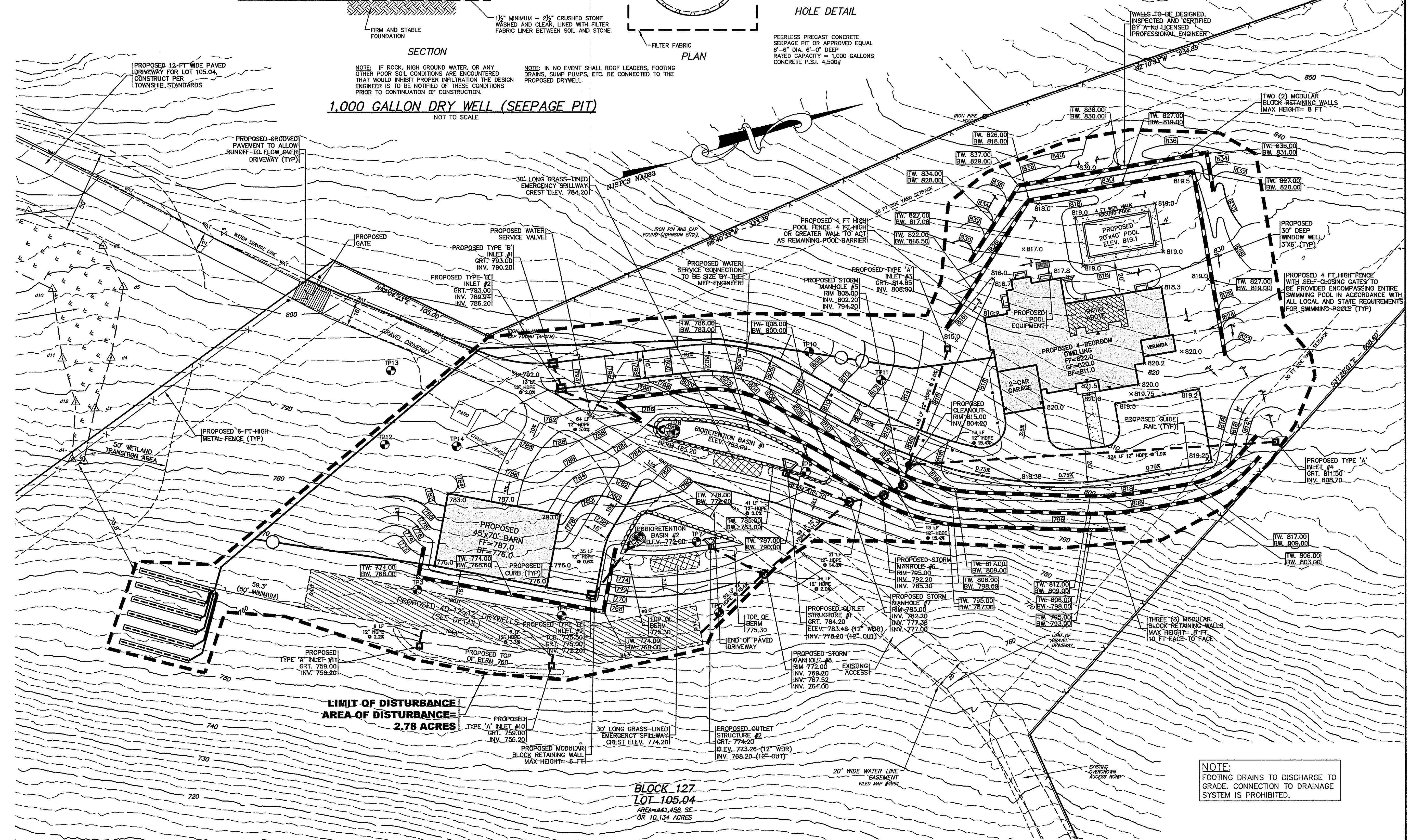


**1,000 GALLON DRY WELL (SEEPAGE PIT)**  
 NOT TO SCALE

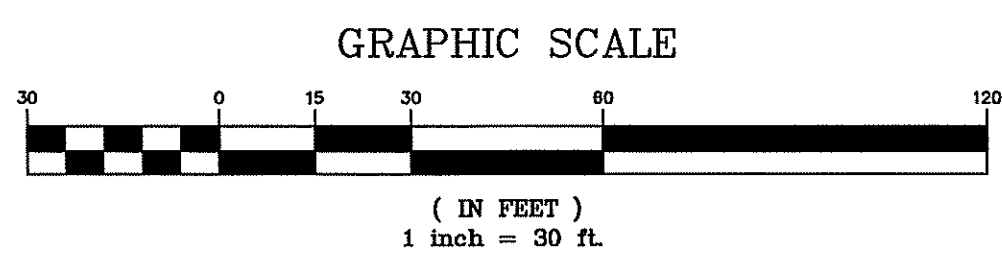
NOTE: IF ROCK, HIGH GROUND WATER, OR ANY OTHER POOR SOIL CONDITIONS ARE ENCOUNTERED THAT WOULD INHIBIT PROPER INFILTRATION THE DESIGN ENGINEER IS TO BE NOTIFIED OF THESE CONDITIONS PRIOR TO CONTINUATION OF CONSTRUCTION.

NOTE: IN NO EVENT SHALL ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS, ETC. BE CONNECTED TO THE PROPOSED DRYWELL.

PEERLESS PRECAST CONCRETE SEEPAGE PIT OR APPROVED EQUAL 6"-8" DIA. 6'-0" DEEP RATED CAPACITY = 1,000 GALLONS CONCRETE P.S.I. 4,500#



NOTE: FOOTING DRAINS TO DISCHARGE TO GRADE, CONNECTION TO DRAINAGE SYSTEM IS PROHIBITED.



**BLOCK 127**  
**LOT 105.04**  
 AREA=441,456 SF  
 OR 10.134 ACRES

**DYKSTRA WALKER DESIGN GROUP**  
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**GRADING & DRAINAGE PLAN**

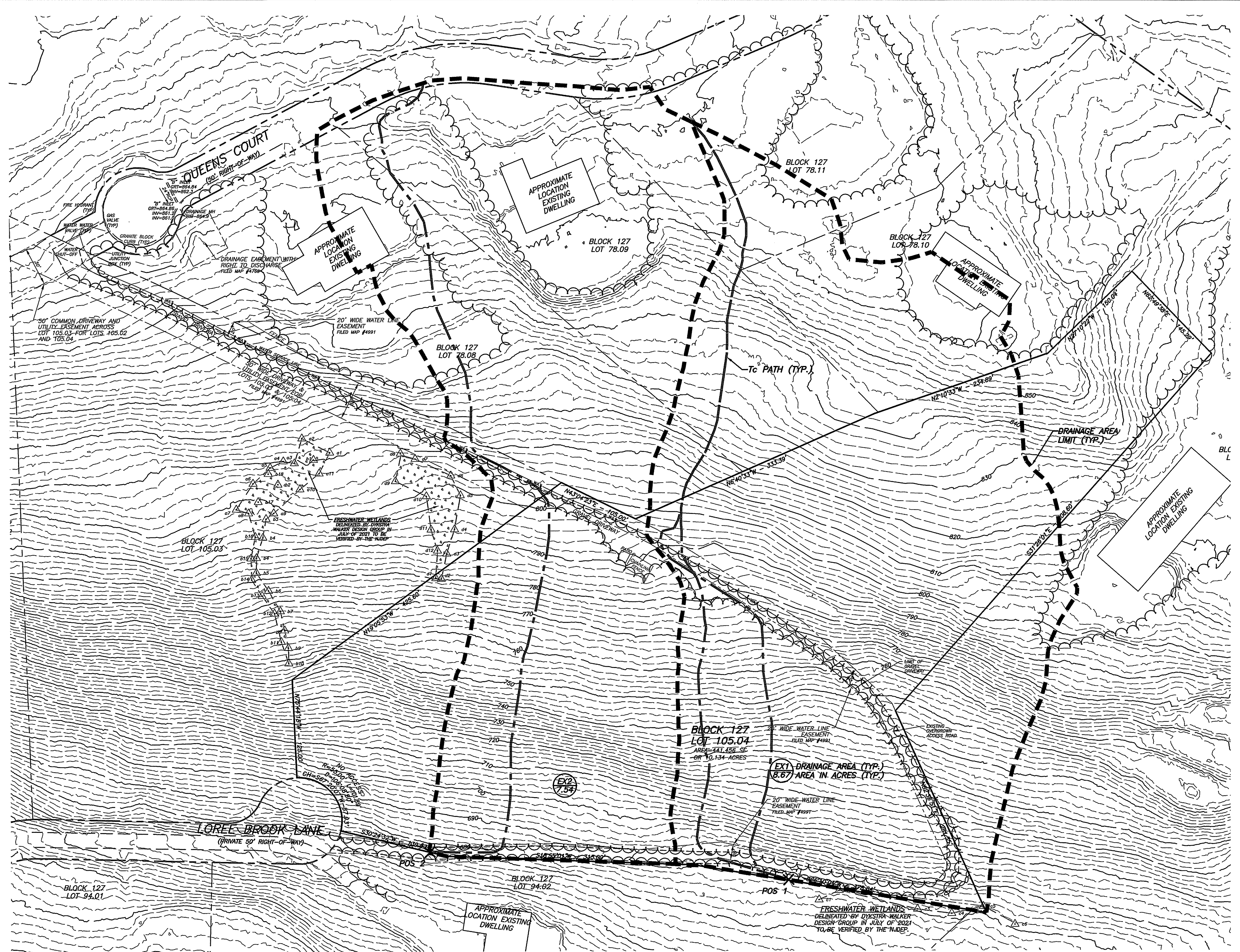
**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY



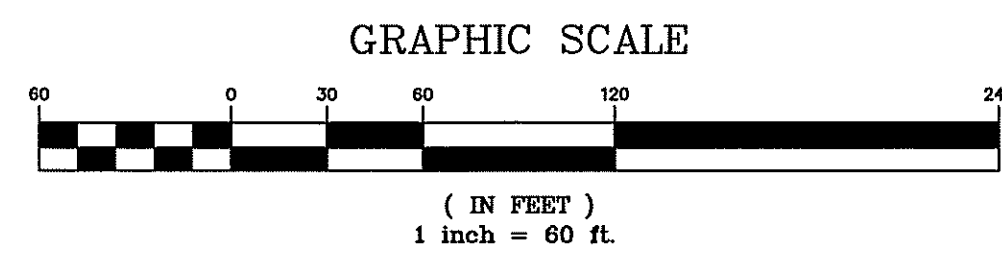
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DATE	REVISION

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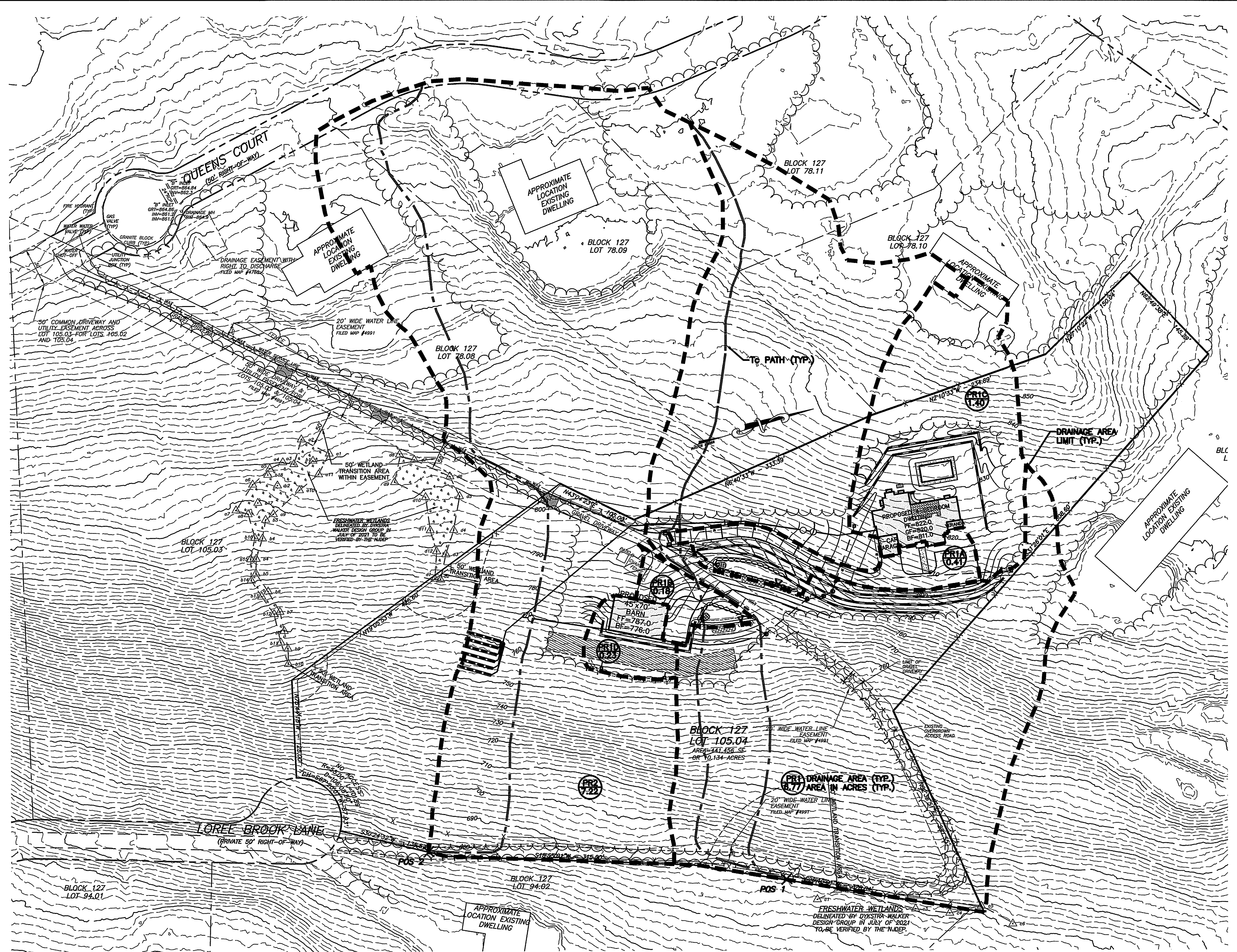
**MARC G. WALKER, P.E.**  
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EXISTING DRAINAGE AREA MAP

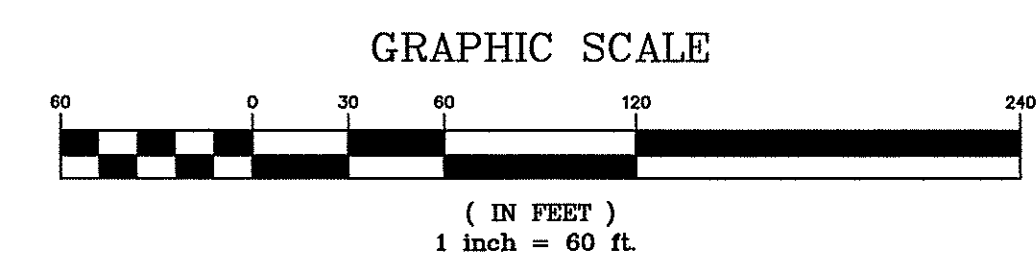
**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY

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DATE: 10/8/21
SHEET NO. 5 OF 10





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DATE	REVISION

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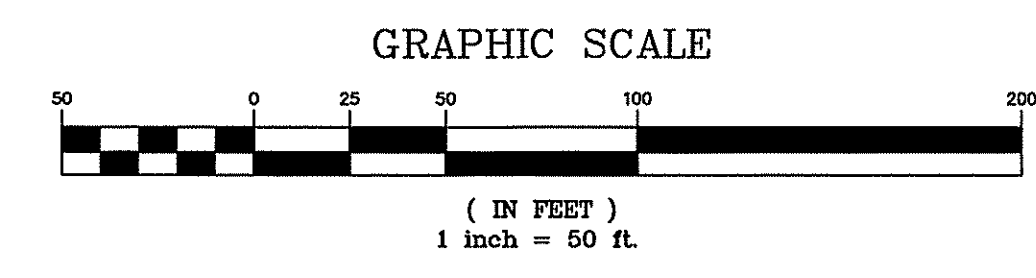
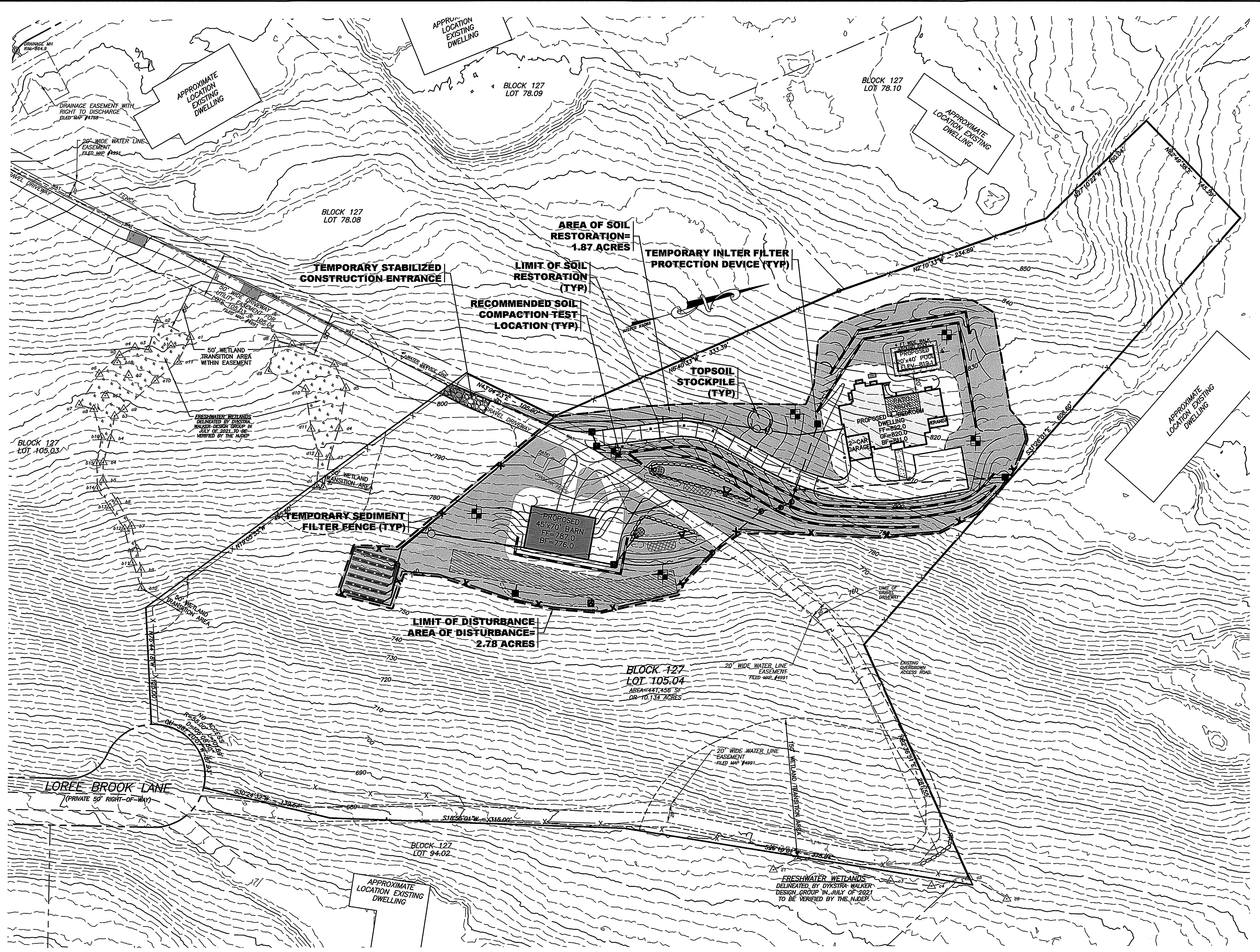
PROPOSED DRAINAGE AREA MAP

**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY

**DW**

SCALE: 1" = 60'  
 JOB NO.: 21080  
 DRAWN BY: JY  
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 DATE: 10/8/21  
 SHEET NO. 6 of 10





DATE	REVISION

**DYKSTRA WALKER**  
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SOIL EROSION & SEDIMENT CONTROL PLAN

**BHATTI RESIDENCE**  
 BLOCK 127, LOT 105.04  
 #10 QUEENS COURT  
 TOWNSHIP OF MENDHAM  
 MORRIS COUNTY NEW JERSEY

**DW**

SCALE: 1" = 50'  
 JOB NO.: 21060  
 DRAWN BY: JY  
 CHECKED BY: MGW  
 DATE: 10/8/21  
 SHEET NO. 7 OF 10

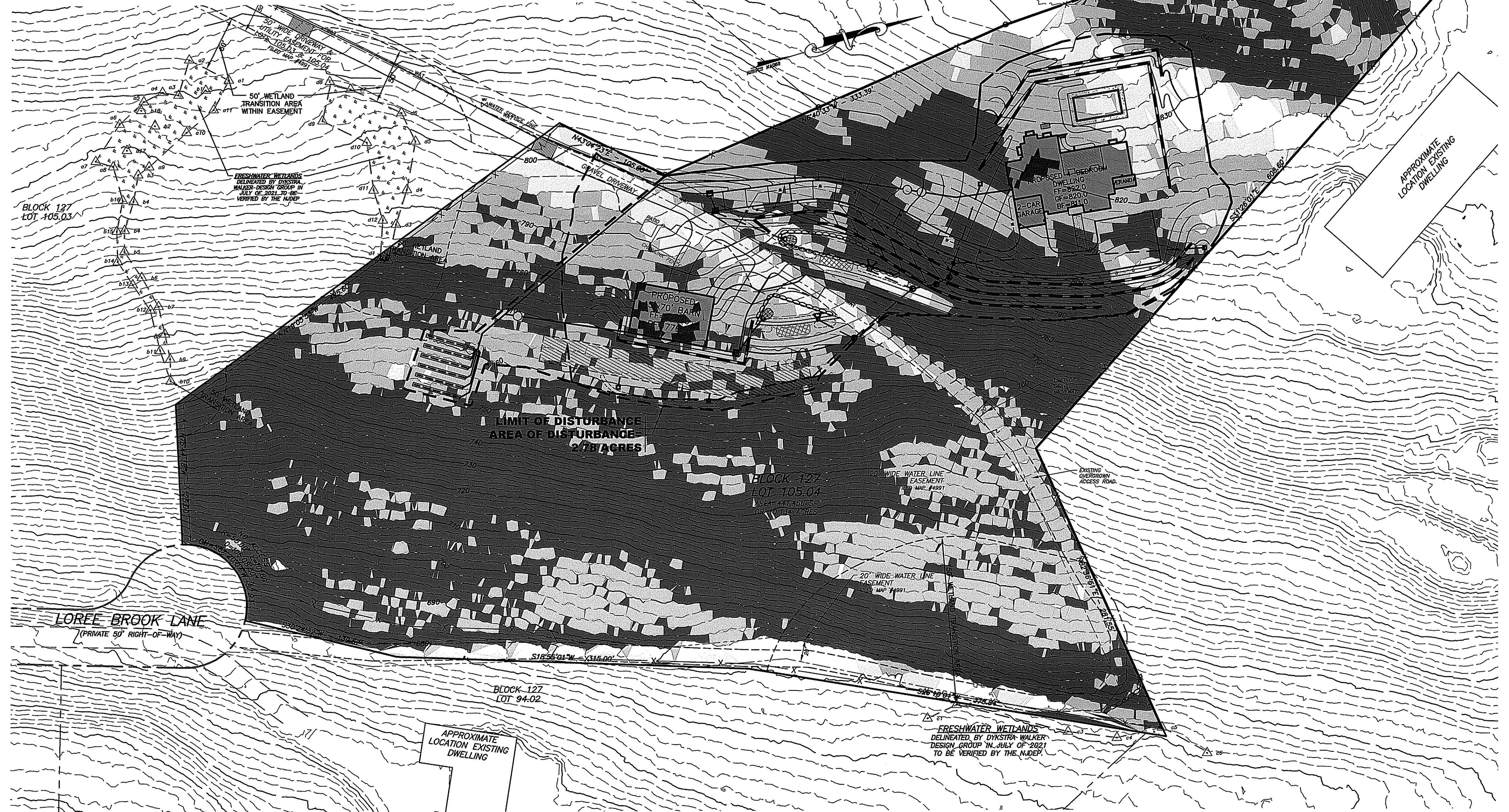
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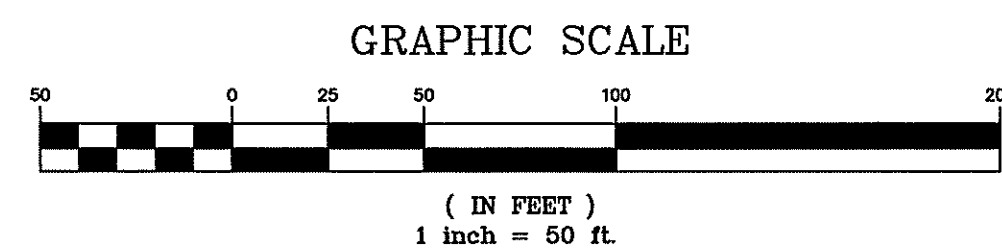
**STEEP SLOPE AREA SUMMARY TABLE**  
(PER SECTION 16-10.13 OF THE MENDHAM TOWNSHIP LAND USE ORDINANCE)

COLOR	RANGE BEGINNING	RANGE ENDING	AREA OF SLOPE RANGE WITHIN LOT	PERCENTAGE OF LOT	PROPOSED AREA OF DISTURBANCE	PROPOSED DISTURBANCE (%)	ALLOWABLE DISTURBANCE (%)
□	0.00	10.00	28,237 SF, 0.648 ACRES	6.4%	5,410 SF, 0.124 ACRES	19.2%	100%
□	10.00	15.00	32,509 SF, 0.746 ACRES	7.4%	16,715 SF, 0.384 ACRES	51.4% (1)	25%
▨	15.00	25.00	152,450 SF, 3.500 ACRES	34.5%	54,916 SF, 1.261 ACRES	36.0% (1)	15%
■	25.00	≥25.00	228,350 SF, 5.242 ACRES	51.7%	38,301 SF, 0.879 ACRES	16.8% (1)	5%
TOTAL			441,546 SF, 10.137 ACRES	100.0%	115,342 SF, 2.648 ACRES		

(1) VARIANCE REQUIRED



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DATE	REVISION

**DYKSTRA WALKER**  
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*Marc G. Walker*  
**MARC G. WALKER, P.E.**  
PROFESSIONAL ENGINEER, N.J. LIC. NO. 24GE03640900

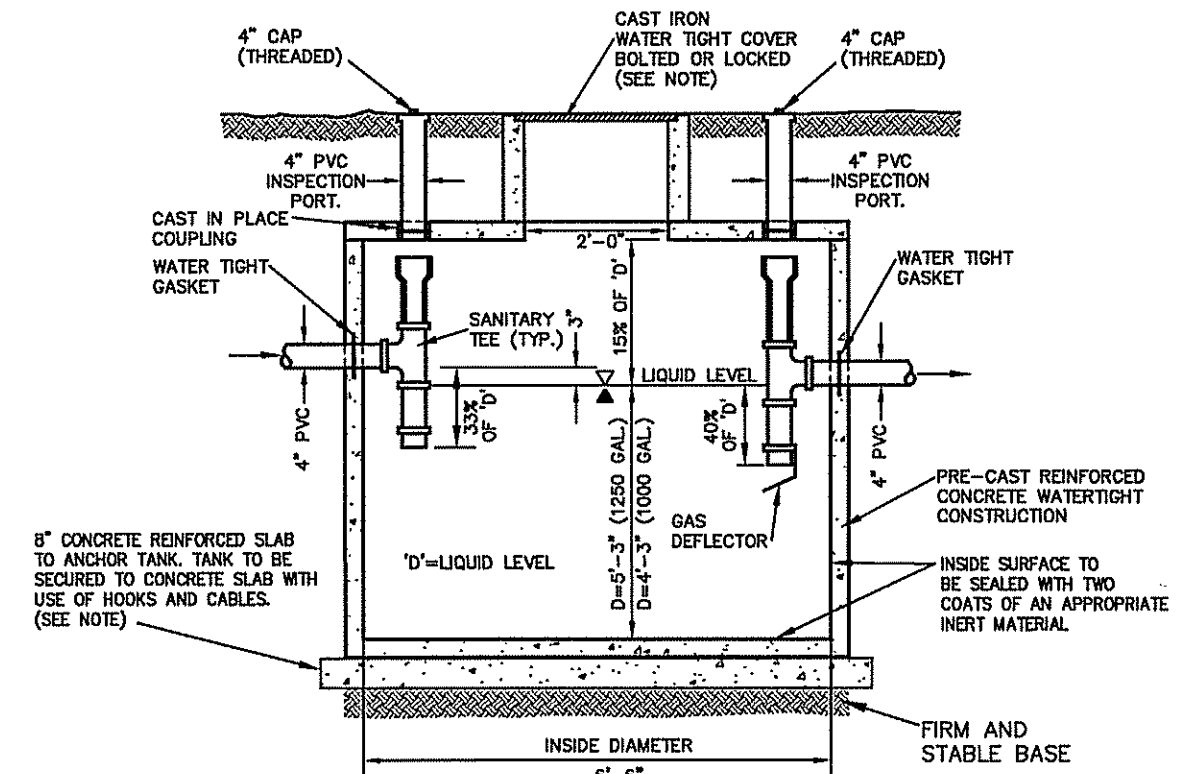
STEEP SLOPES ANALYSIS PLAN

**BHATTI RESIDENCE**  
BLOCK 127, LOT 105.04  
#10 QUEENS COURT  
TOWNSHIP OF MENDHAM  
MORRIS COUNTY NEW JERSEY

**DW**

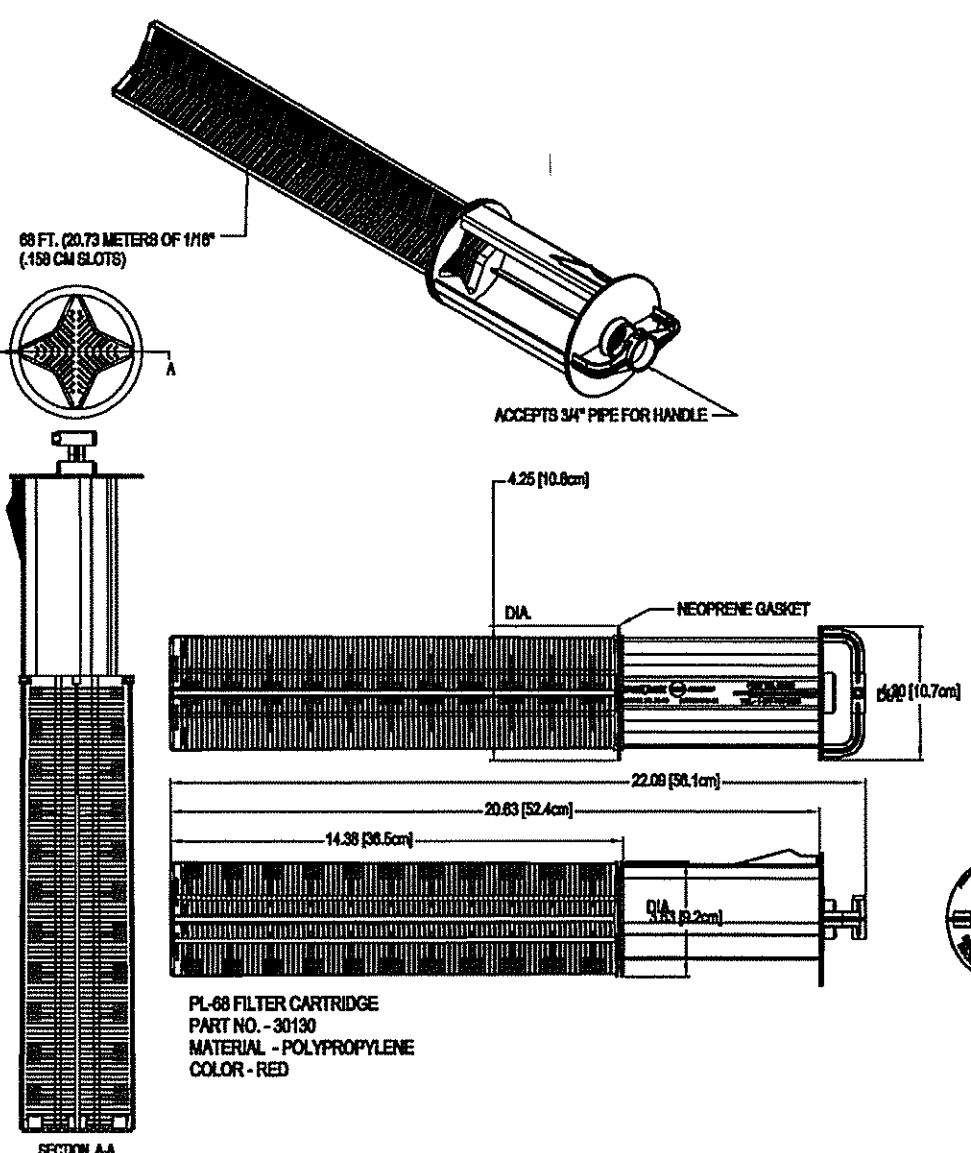
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JOB NO.: 21060  
DRAWN BY: JY  
CHECKED BY: MGW  
DATE: 10/8/21  
SHEET NO. **8** OF 10





**CONCRETE SEPTIC TANK DETAIL**  
NOT TO SCALE

- NOTES:**
1. DIMENSIONS MAY VARY, PROVIDED TANK CONFORMS TO STATE AND LOCAL REGULATIONS.
  2. TANKS INCLUDING RISERS AND INSPECTION PORTS TO THE HIGHEST POINT SHALL BE TESTED FOR WATER TIGHTNESS BEFORE BACKFILLING USING HYDROSTATIC OR VACUUM TESTING PER NJAC 7:9A.
  3. A SEPTIC SOLIDS RETAINER OR SEPTIC EFFLUENT FILTER SHALL BE INSTALLED AND MAINTAINED IN SEPTIC TANK PRIOR TO EFFLUENT DISTRIBUTION NETWORK PER NJAC 7:9A.
  4. IN AREAS OF HIGH WATER TABLE, CONTRACTOR TO PROVIDE ANTI-FLOATATION ANCHORING FOR TANK.
  5. CAST IRON WATER TIGHT RISERS SHALL BE SET AND MAINTAINED AT FINISHED GRADE. A PERMANENT, NON-CORROSIVE MARKER A MINIMUM OF SIX (6) SQUARE INCHES IN SIZE CONTAINING THE FOLLOWING INFORMATION SHALL BE ATTACHED TO THE COVER: ADMINISTRATIVE AUTHORITY NAME, PERMIT NUMBER, DATE OF INSTALLATION, TYPE OF SYSTEM, AND TOTAL DESIGN CRITERIA IN GALLONS PER DAY.

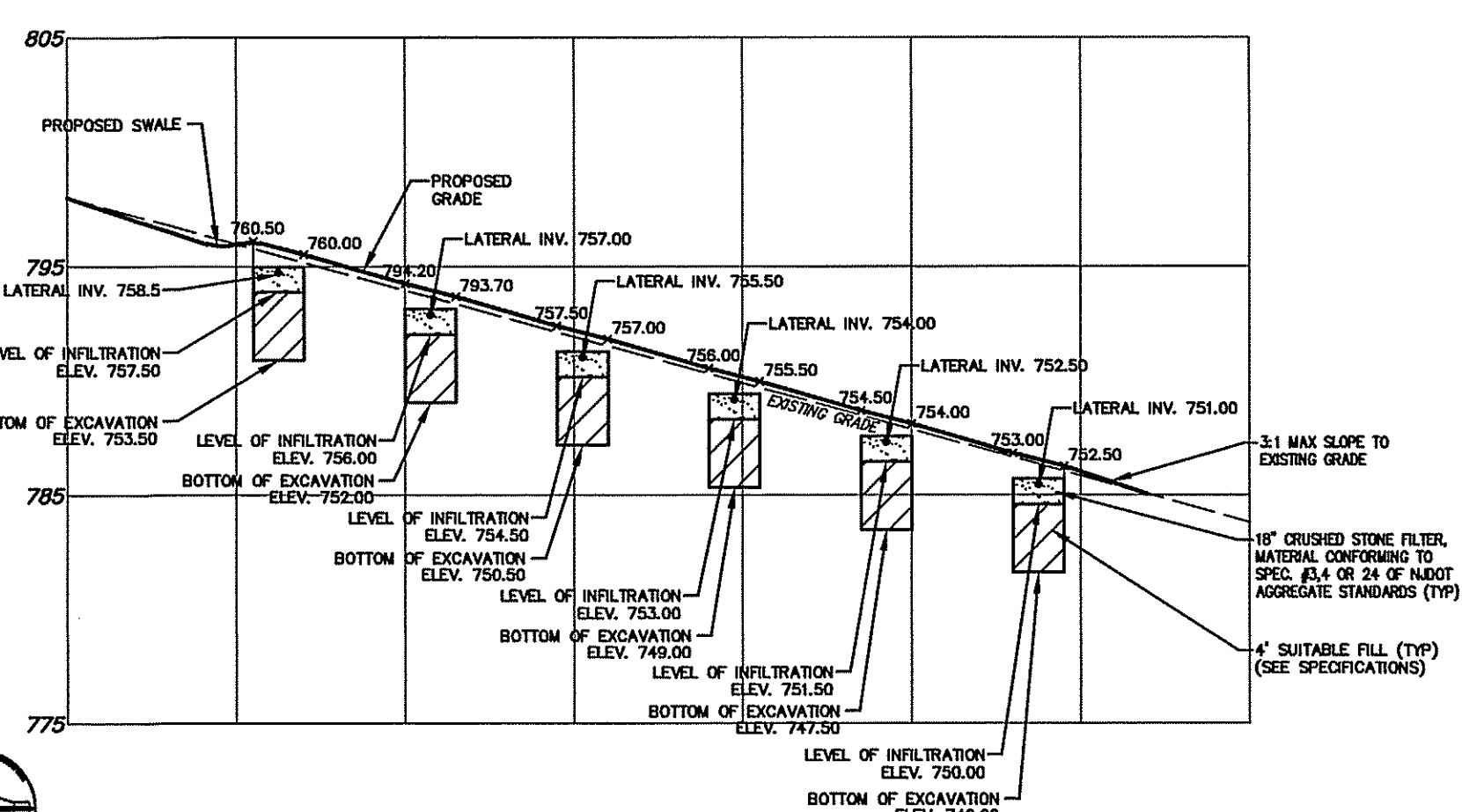


- A. ZONE OF TREATMENT (0'-4\"/>
  1. COARSE FRAGMENT CONTENT LESS THAN 15% BY VOLUME OR LESS THAN 25% BY WEIGHT;
  2. TEXTURAL ANALYSIS (% BY WEIGHT PASSING THE 2mm SIEVE), FROM 85% TO 95% SAND, FROM 5% TO 15% SILT PLUS CLAY, MINIMUM 2% CLAY AND;
  3. PERMEABILITY FROM 6 TO 20 IN./HR., OR PERCOLATION RATE FROM 3 TO 15 MIN./IN.

**B. ZONE OF DISPOSAL (MORE THAN 4\"/>
  1. 85% OR MORE SAND.
  2. PERMEABILITY FASTER THAN 6 INCHES PER HOUR, OR PERCOLATION RATE FASTER THAN 15 MINUTES PER INCH.

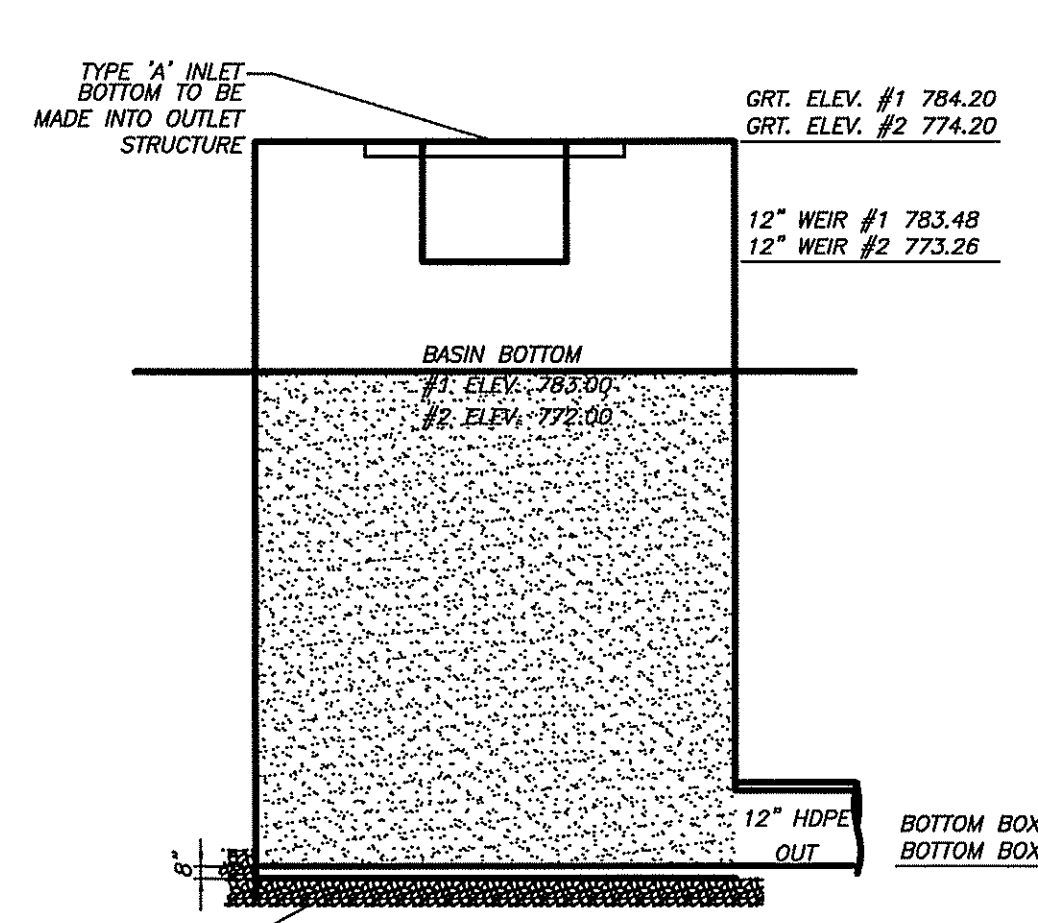
**C. COMPACTION REQUIREMENTS**

  1. FILL MATERIAL SHALL BE SPREAD AND COMPACTED IN LAYERS ONE FOOT OR LESS IN THICKNESS. MATERIAL SHALL NOT BE OVER COMPACTED;
  2. COMPACTION MAY BE ACCOMPLISHED BY TAMPING, ROLLING OR DRIVING OVER THE FILLED AREA IN A CONTROLLED PATTERN USING TRACKED OR RUBBER Tired VEHICLE;
  3. WHEN HEAVY EQUIPMENT IS OPERATED WITHIN THE EXCAVATION, IT SHALL NOT BE DRIVEN DIRECTLY ON THE BOTTOM OF THE EXCAVATION. A MINIMUM OF ONE FOOT OF FILL MATERIAL SHALL BE MAINTAINED BELOW VEHICLE TRACKS OR WHEELS AT ALL TIMES;
  4. A PROFESSIONAL ENGINEER SHALL CERTIFY THAT COMPACTION OF THE FILL HAS BEEN PERFORMED ADEQUATELY TO PREVENT FAILURE OF ANY COMPONENT OF THE SYSTEM DUE TO SETTLEMENT.****



**PROPOSED SUBSURFACE SEWAGE DISPOSAL BED (SECTION A-A VIEW)**  
N.T.S.

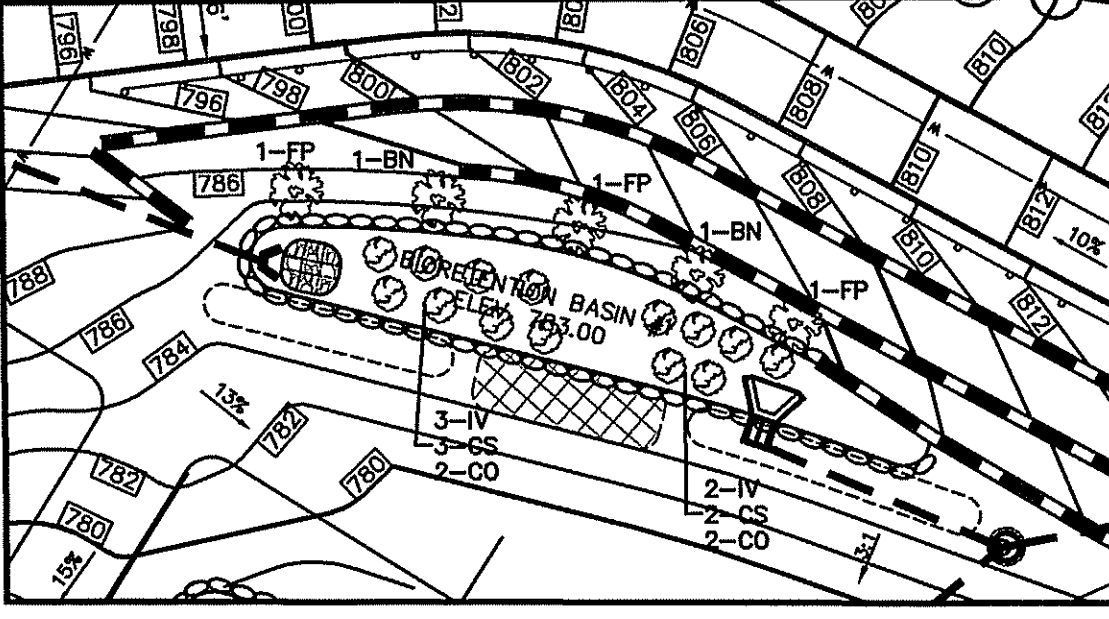
- BIORETENTION BASIN CONSTRUCTION NOTES:**
1. DURING BASIN CONSTRUCTION, PRECAUTIONS MUST BE TAKEN TO PREVENT PLANTING SOIL BED COMPACTION BY CONSTRUCTION EQUIPMENT AND SEDIMENT CONTAMINATION OF RUNOFF. BASIN EXCAVATION AND PLANTING SOIL BED PLACEMENT SHOULD BE PERFORMED WITH EQUIPMENT PLACED OUTSIDE THE BASIN BOTTOM WHENEVER POSSIBLE. LIGHT EARTH MOVING EQUIPMENT WITH OVERSIZED TIRES OR TRACKS SHOULD BE UTILIZED WHEN THE BASIN MUST BE ENTERED.
  2. TO PREVENT COMPACTION OF THE SOIL BELOW THE BASIN THAT WILL REDUCE ITS INFILTRATION CAPACITY, THE BASIN SHOULD BE EXCAVATED WITH LIGHT EARTH MOVING EQUIPMENT, PREFERABLY WITH TRACKS OR OVER-SIZED TIRES LOCATED OUTSIDE THE BASIN BOTTOM. ONCE THE BASIN'S FINAL CONSTRUCTION PHASE IS REACHED, THE FLOOR OF THE BASIN MUST BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND SMOOTHED OVER WITH A LEVELING DRAG OR EQUIVALENT GRADING EQUIPMENT.
  3. UPON STABILIZATION OF THE BIORETENTION BASIN AND ITS DRAINAGE AREA, THE INFILTRATION RATE OF THE PLANTING SOIL BED MUST BE RETESTED TO ENSURE THAT THE RATE ASSUMED IN THE COMPUTATIONS IS PROVIDED AT THE BASIN. THE PERMEABILITY RATE OF THE SUBSOIL BELOW THE BASIN MUST ALSO BE RETESTED AFTER CONSTRUCTION.
  4. IF BACKFILL IS UTILIZED FOR THE BASIN MEDIA, A NEW JERSEY LICENSED GEOTECHNICAL ENGINEER SHALL BE REQUIRED TO CERTIFY THE MATERIAL.
  5. PRIOR TO CONSTRUCTION OF THE BIORETENTION BASIN, A DETAILED PLAN OF HOW THE CONSTRUCTION OF THE BASIN WILL PROCEED IS REQUIRED, AND A SITE MEETING WITH THE ENGINEER MUST BE SCHEDULED BY THE CONTRACTOR TO DISCUSS THE SAME.



**BIORETENTION BASIN OUTLET STRUCTURE**  
N.T.S.

- NOTES:**
1. FOOTING TO BE N.J.D.O.T., CLASS "B"
  2. INVERT TO BE CLASS "B"
  3. IF WALL CONSTRUCTION IS OTHER THAN CONCRETE, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER
  4. GRATE TO BE OF ALUMINUM, PYRAMIDAL HINGED TYPE WITH 1/2" BARS SPACED AT 6" O.C.
  5. PROVIDE ALUMINUM LADDER RUNGS @ 12" CENTER TO CENTER
  6. WHEN ADDITIONAL DEPTH IS SCHEDULED WALLS BELOW THE DEPTH OF 6'-0" MEASURED FROM THE INLET GULLER TO THE INVERT, SHALL BE 12" THICK. THE FOUNDATION DIMENSIONS SHALL BE INCREASED TO 12" WIDTH AND TO 12" IN DEPTH.

BIORETENTION BASIN PLANTINGS						
SYMBOL	BOTANICAL NAME	COMMON NAME	PLANTED SIZE	MATURE SIZE	ROOT	NO.
⊙	Betula nigra	River Birch	2'-2.5' cal.	20' - 30'	#15 can	as shown
⊙	Fraxinus pennsylvanica	Green Ash	2.5'-3' cal.	40' - 50'	8/89	as shown
⊙	Ilex verticillata	Winterberry	24" - 36"	6' - 8'	#2 can	as shown
⊙	Cornus sericea	Red Dogwood	24" - 36"	6' - 8'	#2 can	as shown
⊙	Opuntia	Buttbrush	24" - 36"	6' - 8'	#2 can	as shown



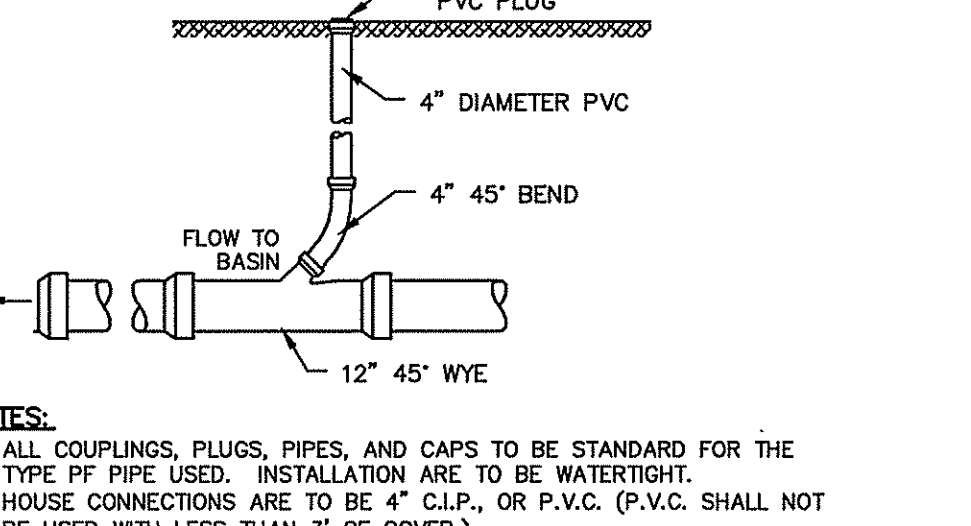
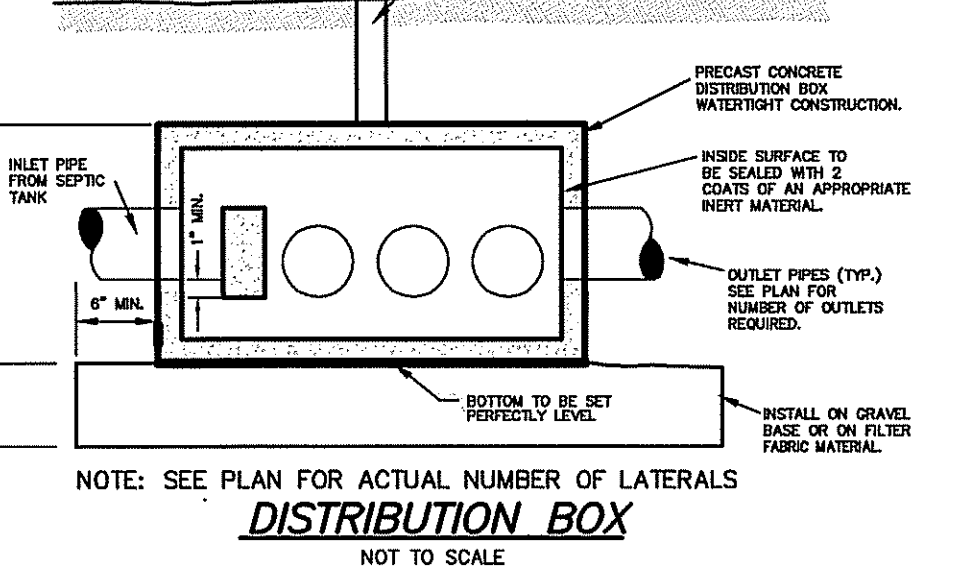
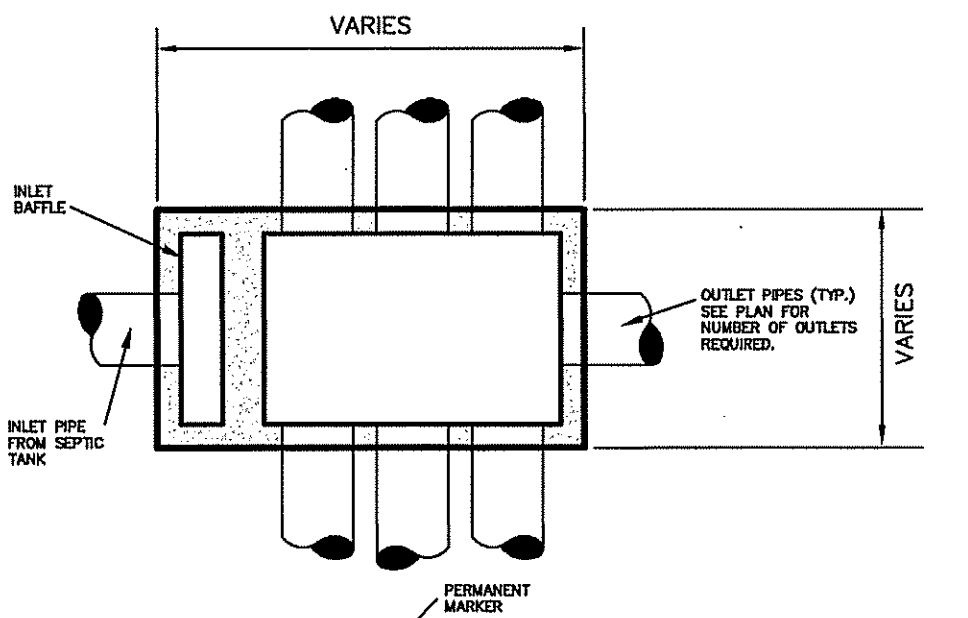
**BIORETENTION BASIN LANDSCAPING PLAN**  
1" = 30'

BIORETENTION SEED MIX		
%	BOTANICAL NAME	COMMON NAME
20%	Elymus virginicus	Virginia Wild Rye
20%	Elymus riparius	Riverbank Wild Rye
15%	Lolium perenne	Perennial Rye Grass
10%	Poa trivialis	Rough Bluegrass
10%	Elymus hystrix	Boatbush Grass
10%	Glyceria striata	Fowl Meadow Grass
5%	Agrostis alba	Red Top
3%	Cirsium arvense	Wood Reedgrass
3%	Carex gracilis	Grass Sedge
2%	Briza media	Wild Brome Grass

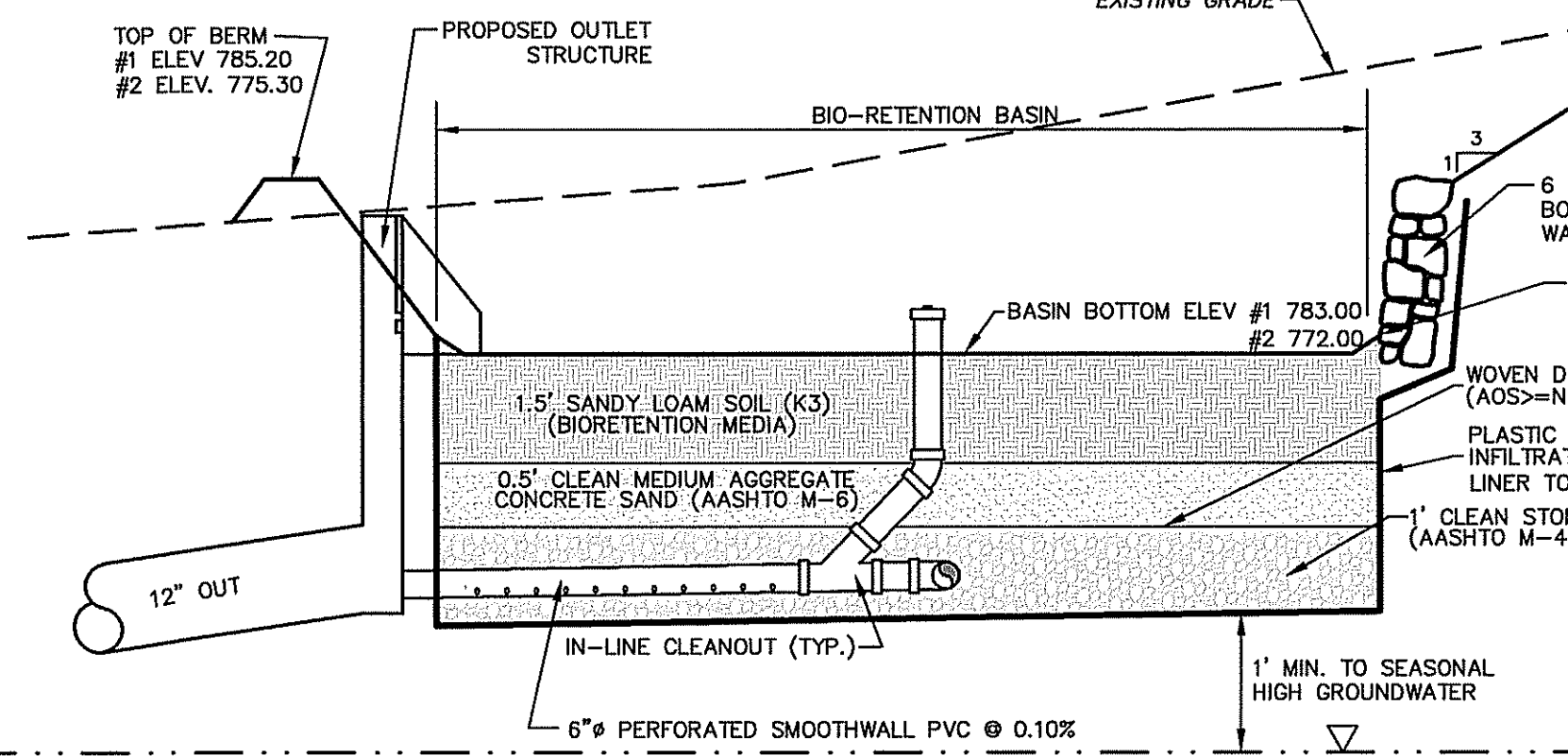
SEED AT 20 LB./ACRE ON BASIN BOTTOM  
**SHADY ZONE SEED MIX**

BIORETENTION BASIN SEED MIX		
%	BOTANICAL NAME	COMMON NAME
50%	Avena sativa	Eastern Oats
8%	Tripsacum dactyloides	Common Oats Grass
6%	Elymus condensus	Canada Wild Rye
5%	Andropogon gerardii	Big Bluestem, Rounree
5%	Andropogon scoparius	Little Bluestem, Comper
5%	Chamaecrista fasciculata	Partridge Pea
5%	Panicum virgatum	Switch Grass, Shelter
4%	Agrostis sp.	Red Top
4%	Sorghastrum nutans	Indian Grass, Holt
4%	Coreopsis tinctoria	Plains Coreopsis
2%	Muhlenbergia setzeri	Nimble-will
2%	Poa polystris	Fowl Bluegrass

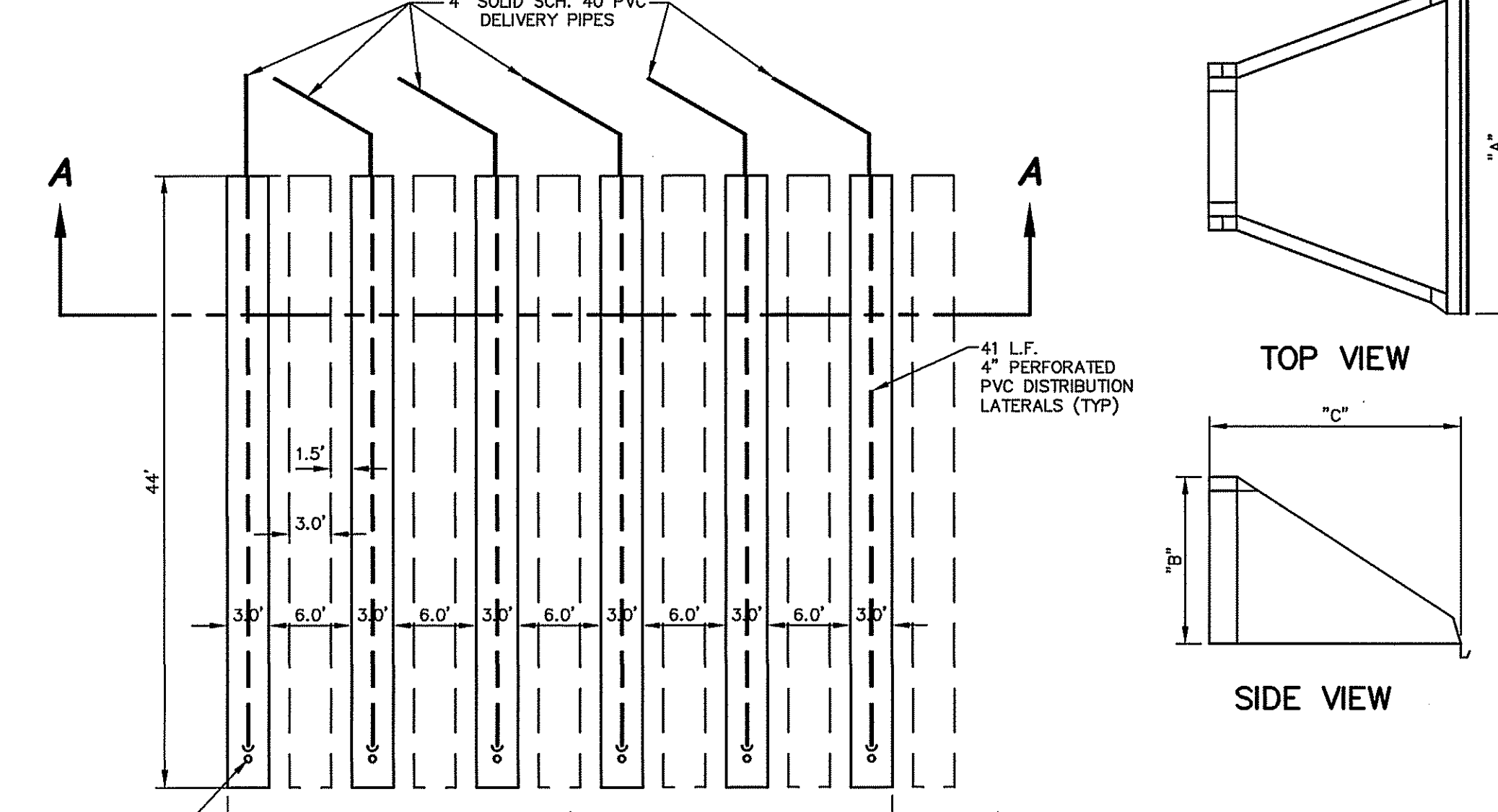
SEED AT 40 LB./ACRE OVER SIDES OF BASIN  
**SUNNY ZONE SEED MIX**



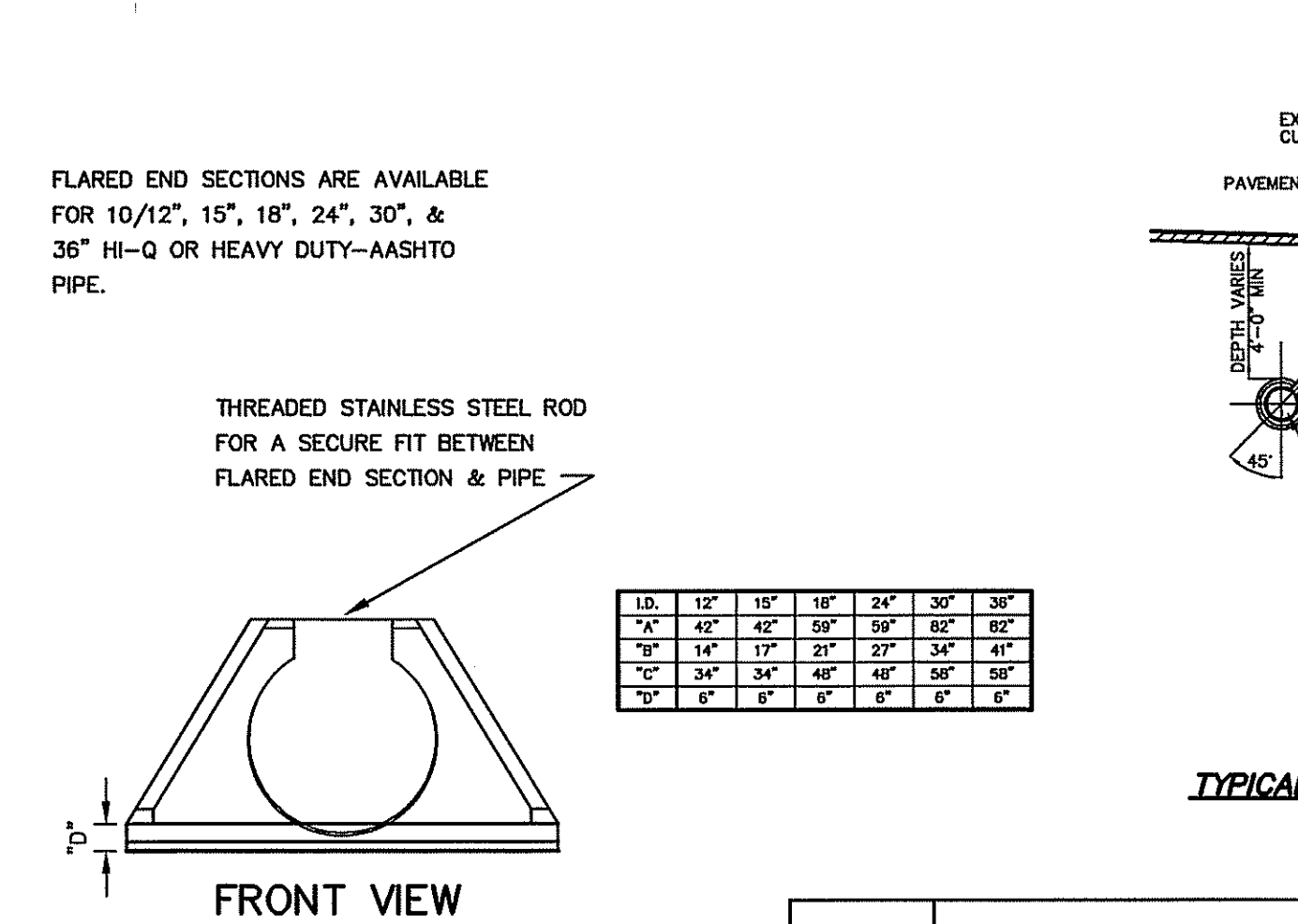
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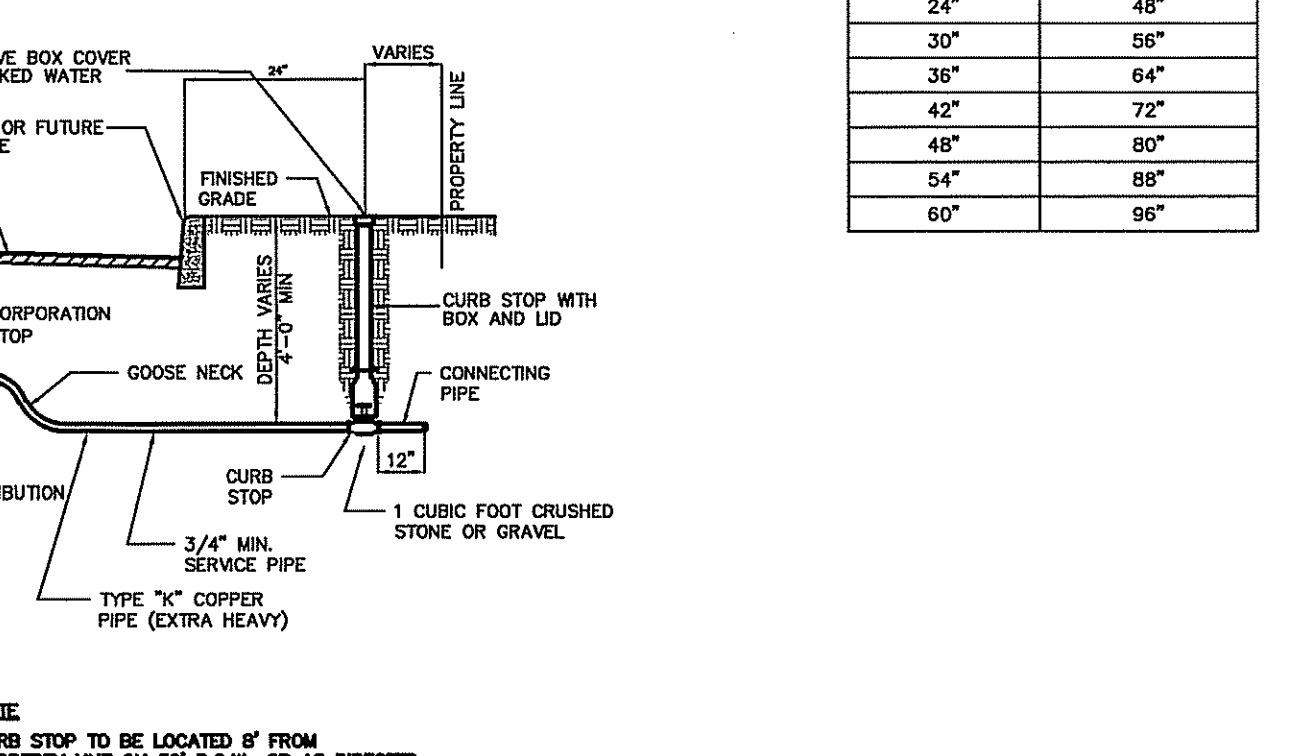
**BIO-RETENTION BASIN SECTION**  
NOT TO SCALE



**PROPOSED SUBSURFACE SEWAGE DISPOSAL TRENCHES (PLAN VIEW)**  
SCALE: 1"=10'



**POLYETHYLENE FLARED END SECTION**  
NOT TO SCALE



**TYPICAL WATER SERVICE CONNECTION DETAIL**

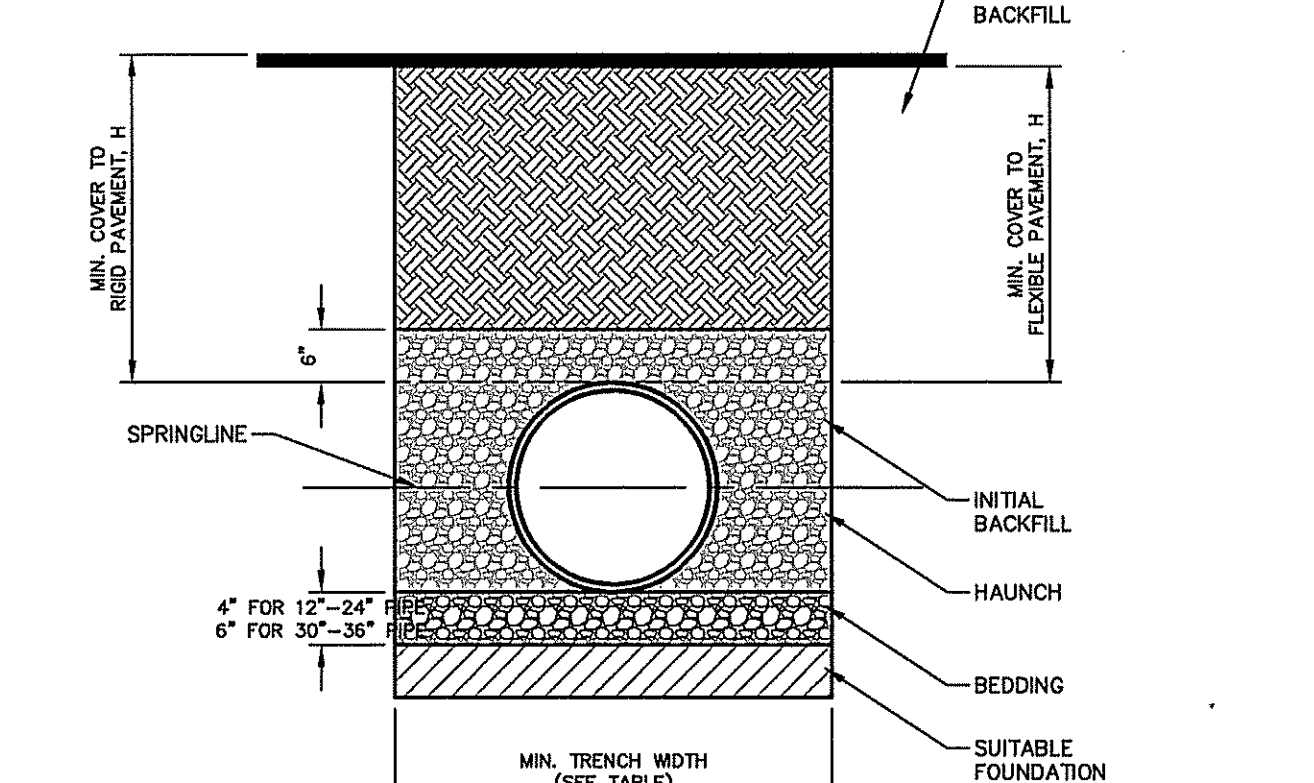
**MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOAD CONDITION	
	H-20	HEAVY CONSTRUCTION (75T AXLE LOAD)*
12"-48"	12"	48"
54"-60"	24"	60"

\*VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

**RECOMMENDED MINIMUM TRENCH WIDTHS**

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"



- NOTES:**
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
  2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
  3. EXCAVATION: WHEN THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
  4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 4"-24", 6" FOR 30"-60".
  5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
  6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION FOR TRAFFIC APPLICATIONS. MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF PAVEMENT OR TO TOP OF RIGID PAVEMENT.

**HDPE PIPE BEDDING DETAIL**  
NOT TO SCALE

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**DYKSTRA WALKER DESIGN GROUP, P.A.**  
PROFESSIONAL ENGINEERS, PLANNERS & SURVEYORS  
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WWW.DYKSTRAWALKER.COM

**MARC G. WALKER, P.E.**  
PROFESSIONAL ENGINEER, N.J. LIC. NO. 24GE03640900

**CONSTRUCTION NOTES & DETAILS**

**BHATTI RESIDENCE**  
BLOCK 127, LOT 105.04  
#10 QUEENS COURT  
TOWNSHIP OF MENDHAM  
MORRIS COUNTY NEW JERSEY

SCALE: AS NOTED  
JOB NO.: 21060  
DRAWN BY: JY  
CHECKED BY: MGW  
DATE: 10/8/21  
SHEET NO. 9 OF 10



MORRIS COUNTY SOIL CONSERVATION DISTRICT

SOIL EROSION AND SEDIMENT CONTROL NOTES:

- 1. ALL SOIL AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL... 21. TEMPORARY STABILIZATION SPECIFICATIONS... 22. PERMANENT STABILIZATION SPECIFICATIONS...

21. TEMPORARY STABILIZATION SPECIFICATIONS
a) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS/1000 S.F.
b) APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS/1000 S.F.
c) APPLY PERENNIAL RYEGRASS SEED AT 1 LB/1000 SF. AND ANNUAL RYEGRASS AT 1 LB/1000 SF.

22. PERMANENT STABILIZATION SPECIFICATIONS
a) APPLY TOPSOIL TO A DEPTH OF 5" (UNUSUAL).
b) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS/1000 S.F. AND WORKFOUR INCHES INTO SOIL.

SEQUENCE OF CONSTRUCTION
1. INSTALL TEMPORARY SOIL EROSION CONTROL MEASURES
2. CLEAR AREAS TO ALLOW FOR CONSTRUCTION ACCESS AND STAGING AREA
3. CONSTRUCT DRAINAGE IMPROVEMENTS, CURBING AND ROADWAY. INSTALL OUTLET BASKETS, SANITARY MANHOLES AND PRE-CONSTRUCTION METEING HEIL.

STANDARD FOR DUST CONTROL

DEFINITION
THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS.
PURPOSE
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM UNGRADED SOIL SURFACES, REDUCED ON-SITE AND OFF-SITE DAMAGE AND HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

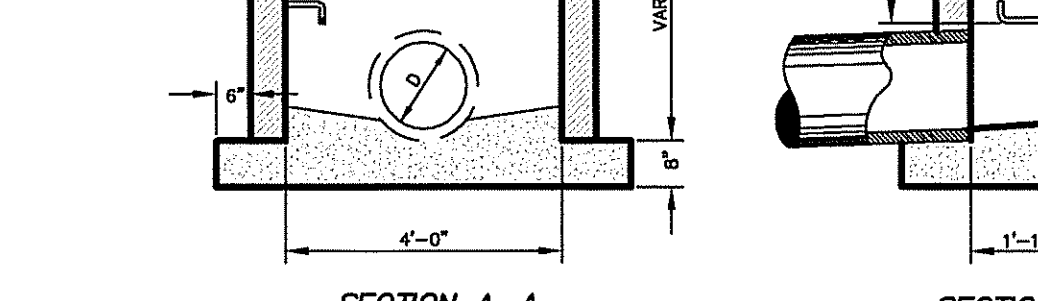
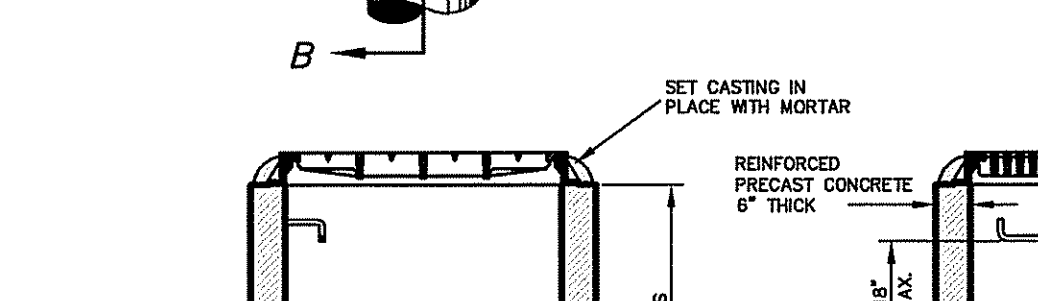
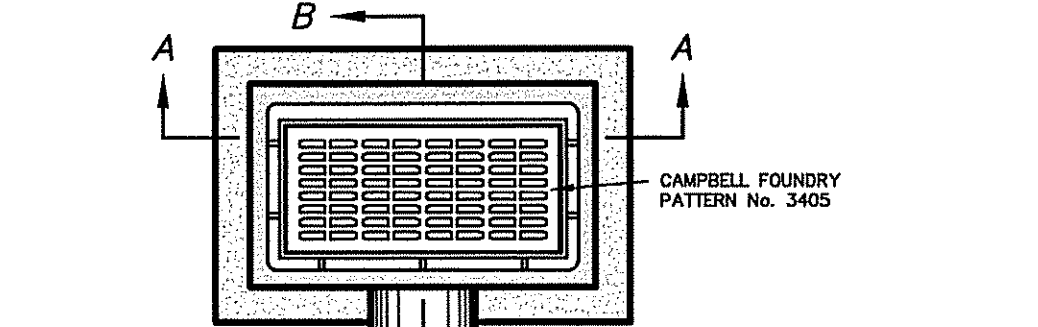
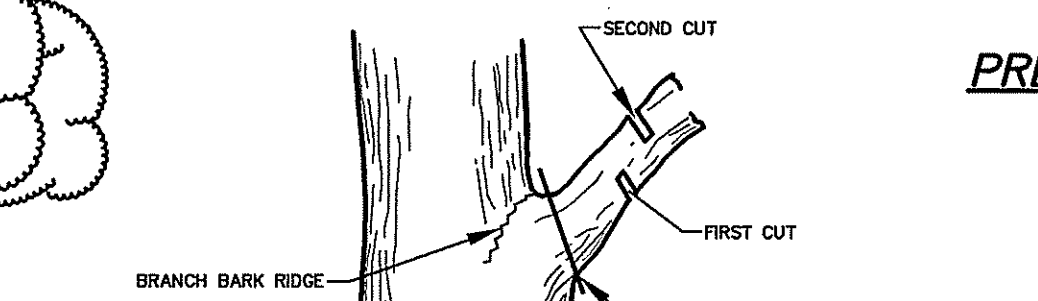
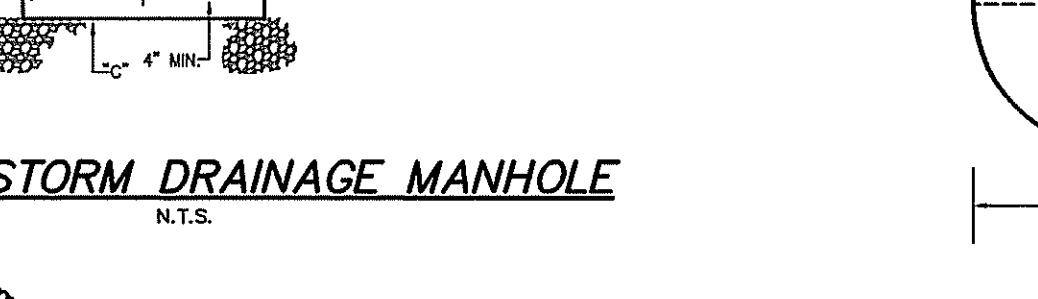
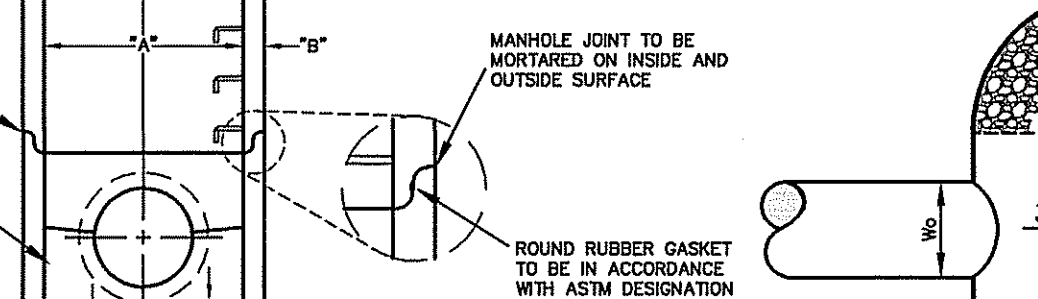
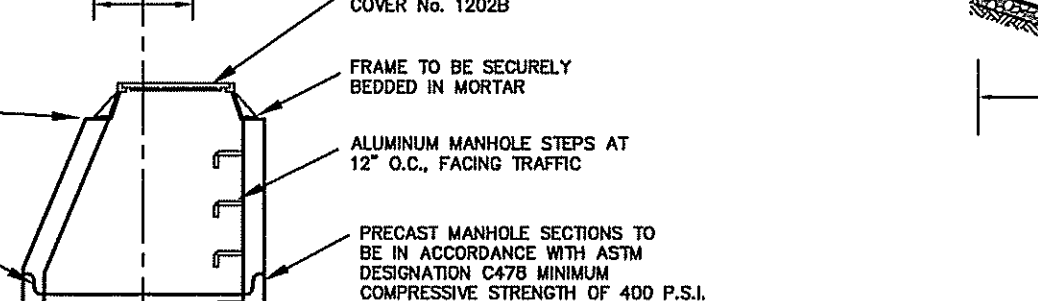
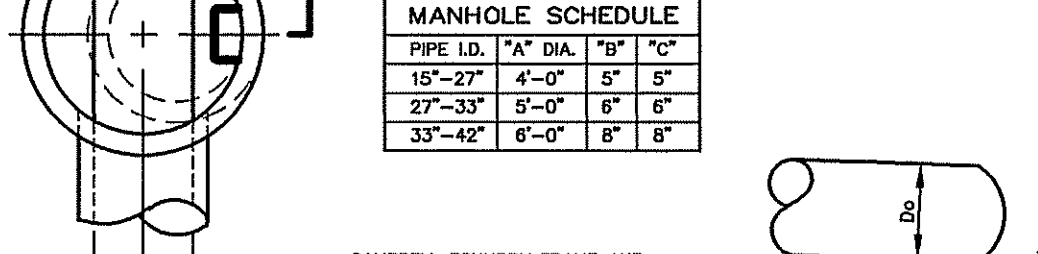
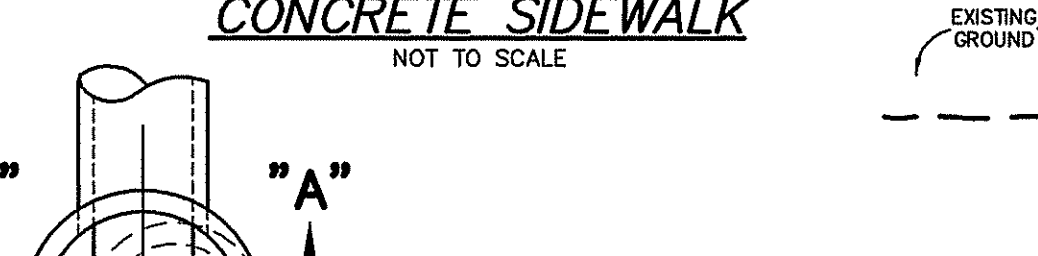
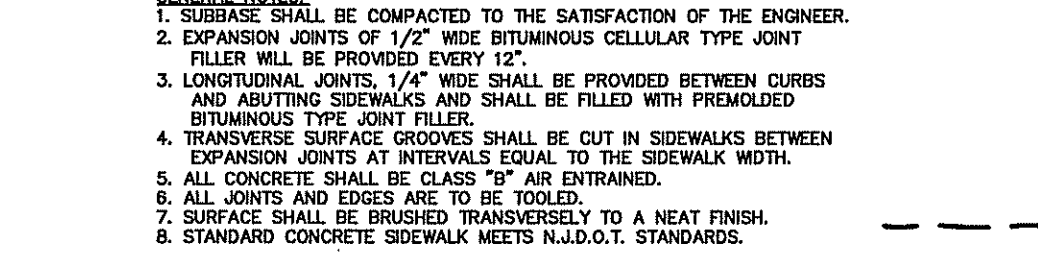
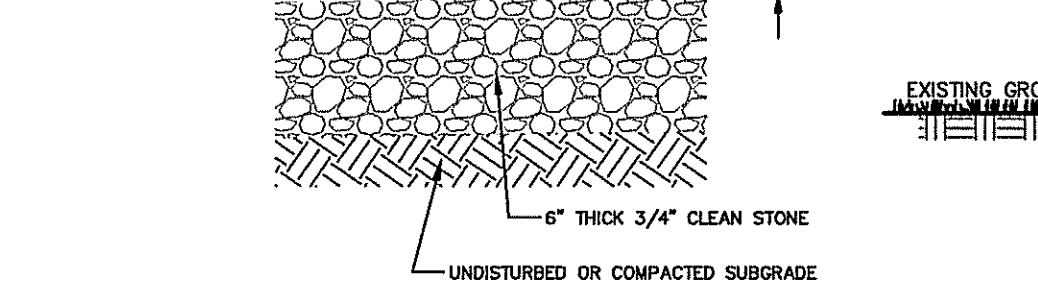
WATER QUALITY ENHANCEMENT
SEDIMENTS DEPOSITED AS "DUST" ARE OFTEN FINE COLLOIDAL MATERIAL WHICH IS EXTREMELY DIFFICULT TO REMOVE FROM WATERWAYS...

PLANNING CRITERIA
THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:
MULCHES - SEE STANDARD OF STABILIZATION WITH MULCHES ONLY, PG. 5-1
VEGETATIVE COVER - SEE STANDARD FOR TEMPORARY VEGETATIVE COVER, PG. 7-1, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION PG. 4-1, AND PERMANENT STABILIZATION WITH SOIL, PG. 6-1.

TABLE 18-1. DUST CONTROL MATERIALS
Table with columns: MATERIAL, WATER DILUTION, TYPE OF NOZZLE, and APPLY GALLONS/ACRE.

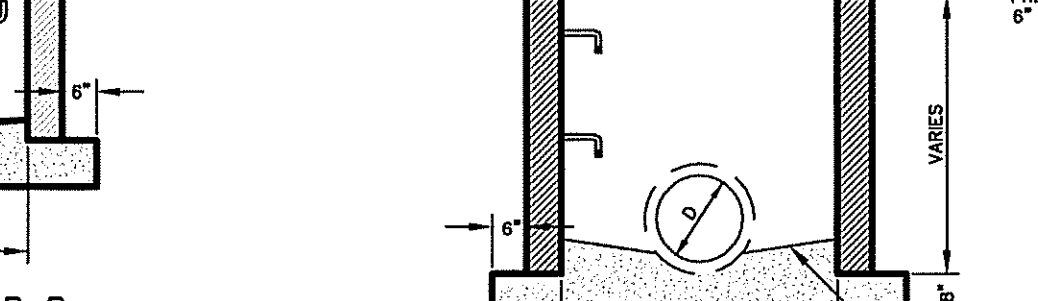
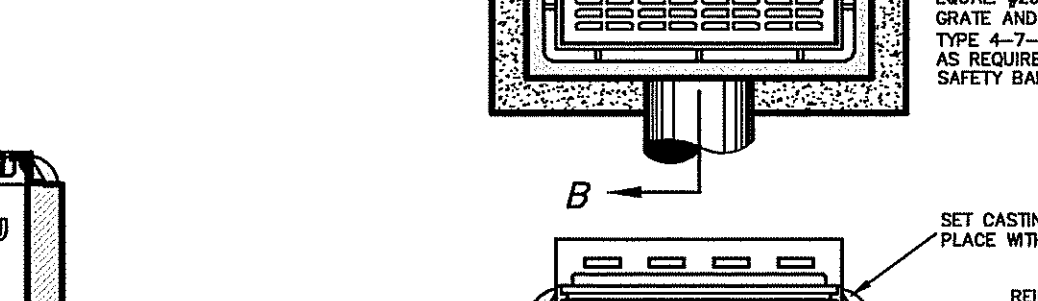
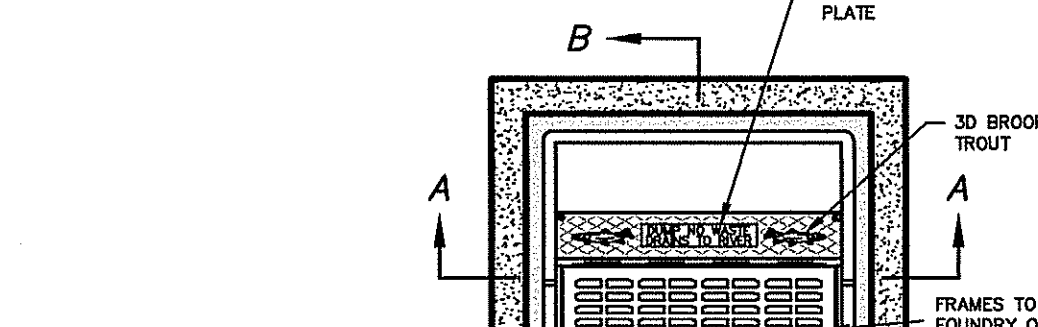
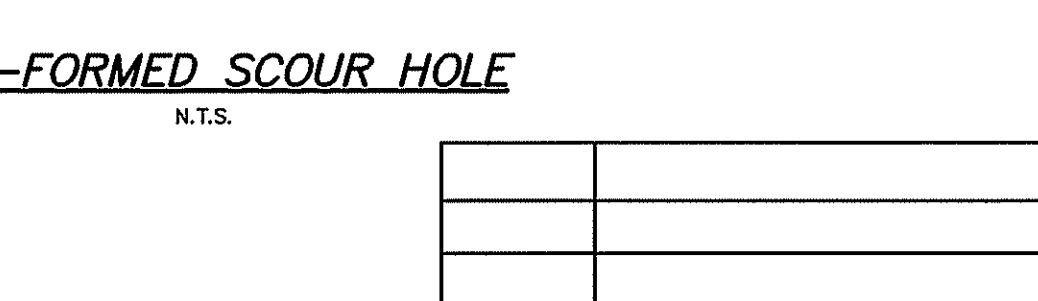
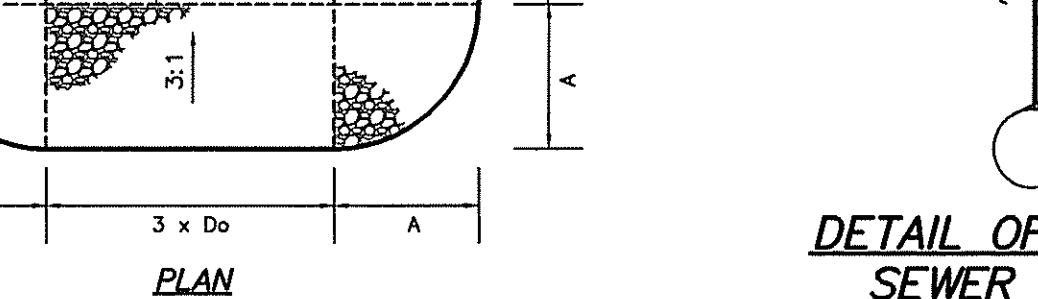
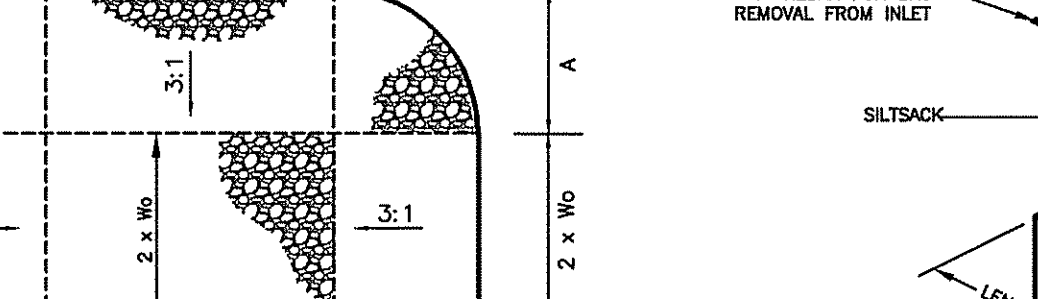
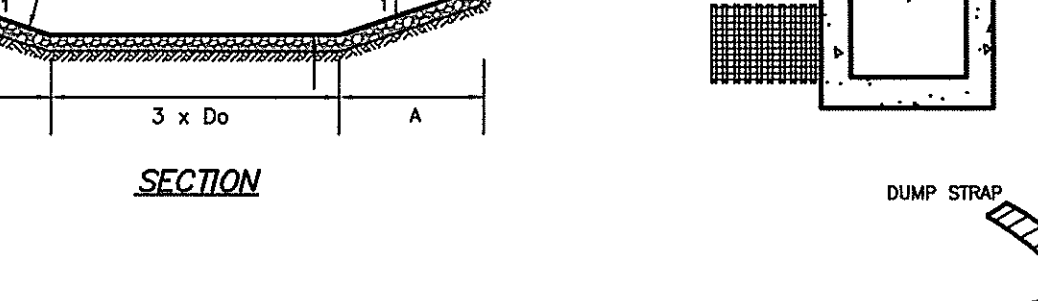
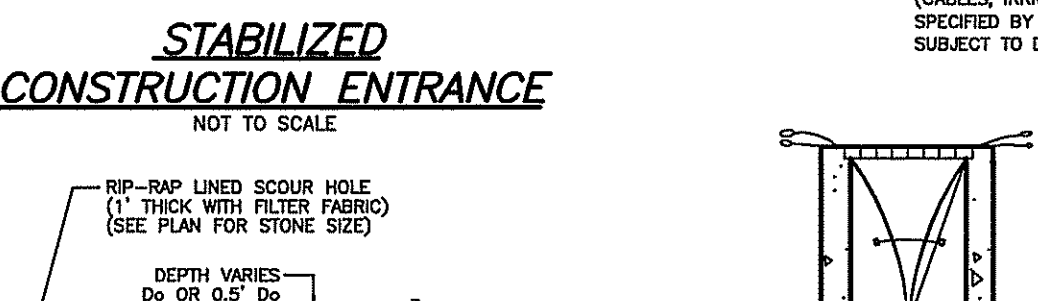
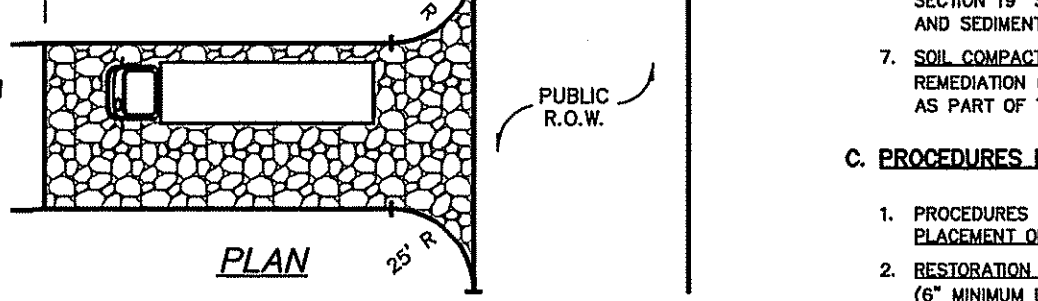
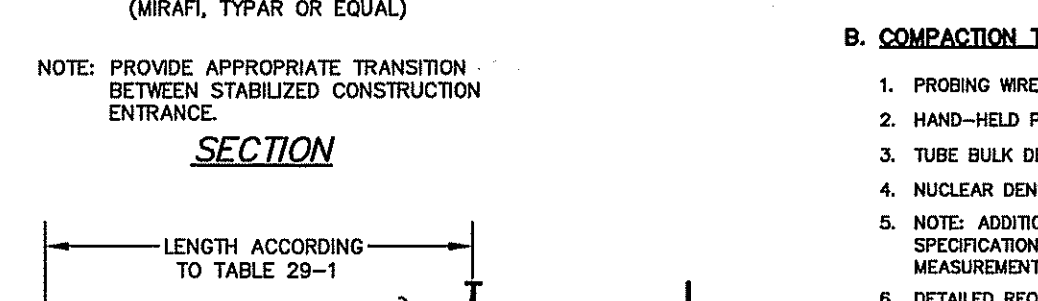
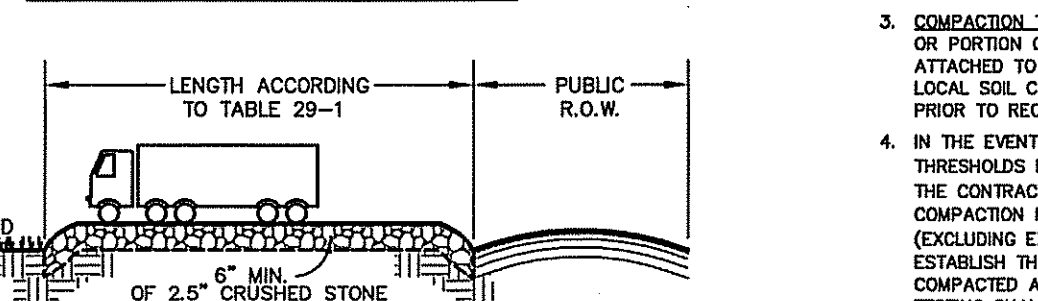
ILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE, THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS...
SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

GENERAL NOTES
1. SUBBASE SHALL BE COMPACTED TO THE SATISFACTION OF THE ENGINEER.
2. EXPANSION JOINTS OF 1/2" WIDE BITUMINOUS CELLULAR JOINT FILLER WILL BE PROVIDED EVERY 20'.



TYPE "A" INLET NOT TO SCALE

TABLE 29-1 PERCENTAGE SLOPE OF ROADWAY
Table with columns: PERCENTAGE SLOPE OF ROADWAY, LENGTH REQUIRED, COARSE GRAINED SOILS, FINE GRAINED SOILS.



TYPE "N" CURB PIECE, TYPE "4-7-9" MOUNTABLE CURB, NOT TO SCALE

SOIL DE-COMPACTION AND TESTING REQUIREMENTS

A. SOIL COMPACTION TESTING REQUIREMENTS

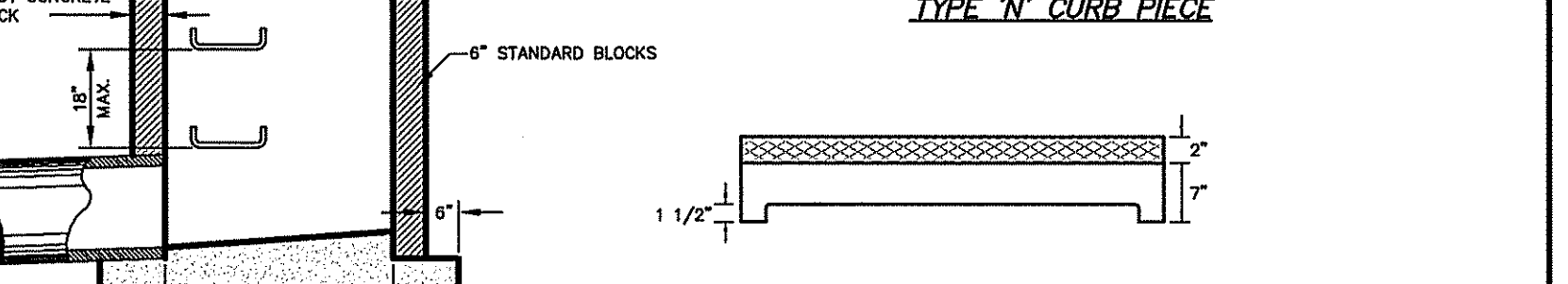
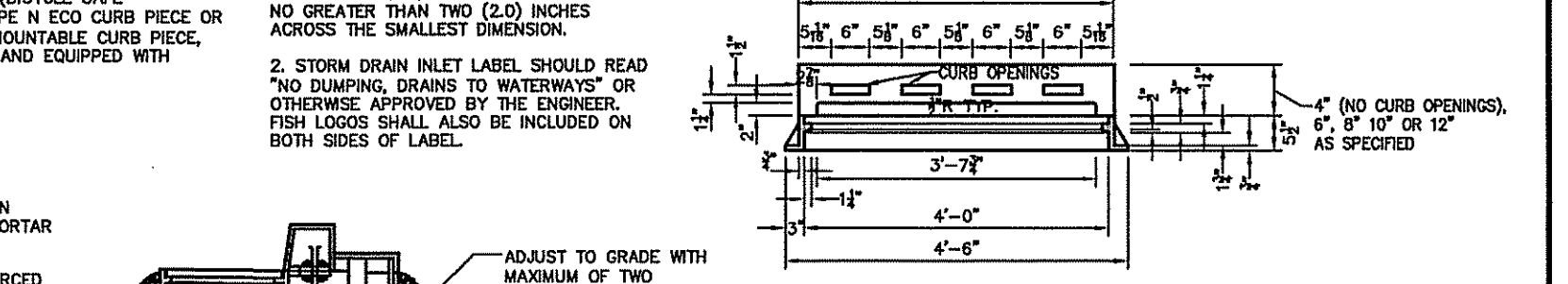
- 1. SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

B. COMPACTION TESTING METHODS

- 1. PROBING WIRE TEST (SEE DETAIL)
2. HAND-HELD PENETROMETER TEST (SEE DETAIL)
3. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
4. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

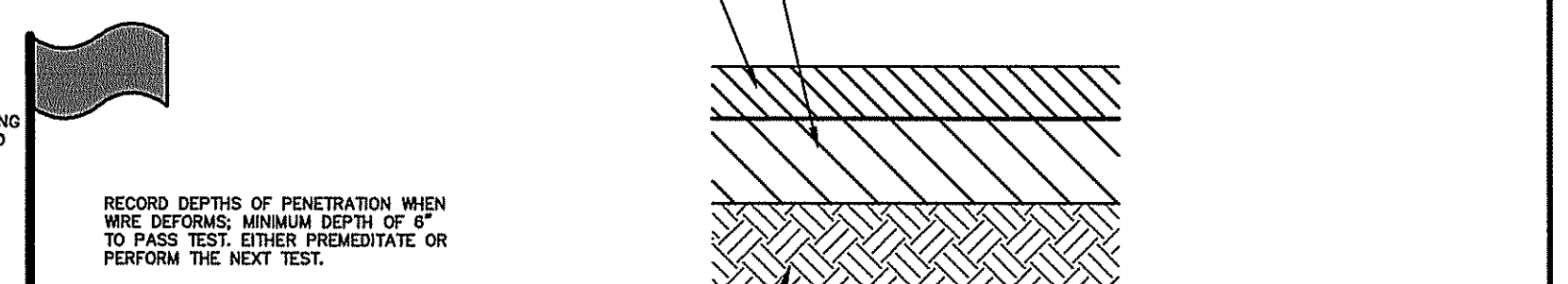
C. PROCEDURES FOR SOIL COMPACTION MITIGATION

- 1. PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

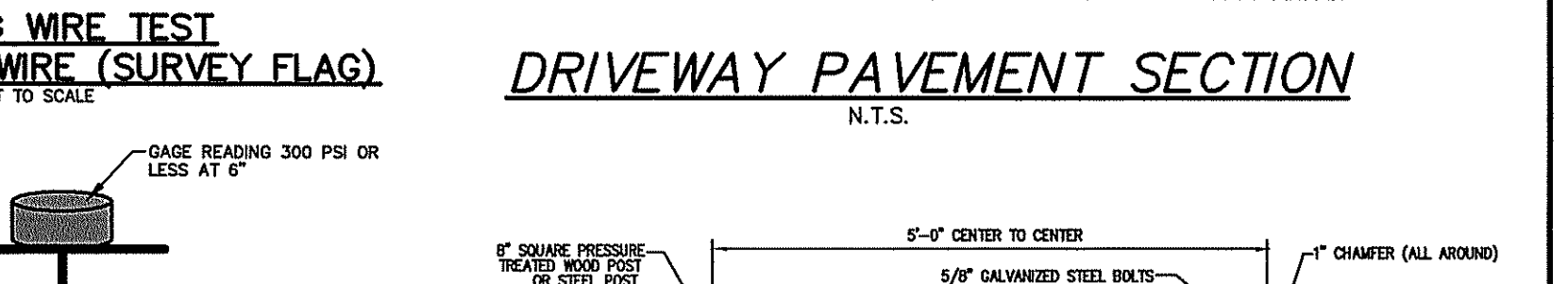


TYPE "N" CURB PIECE, TYPE "4-7-9" MOUNTABLE CURB, NOT TO SCALE

DRIVEWAY PAVEMENT SECTION

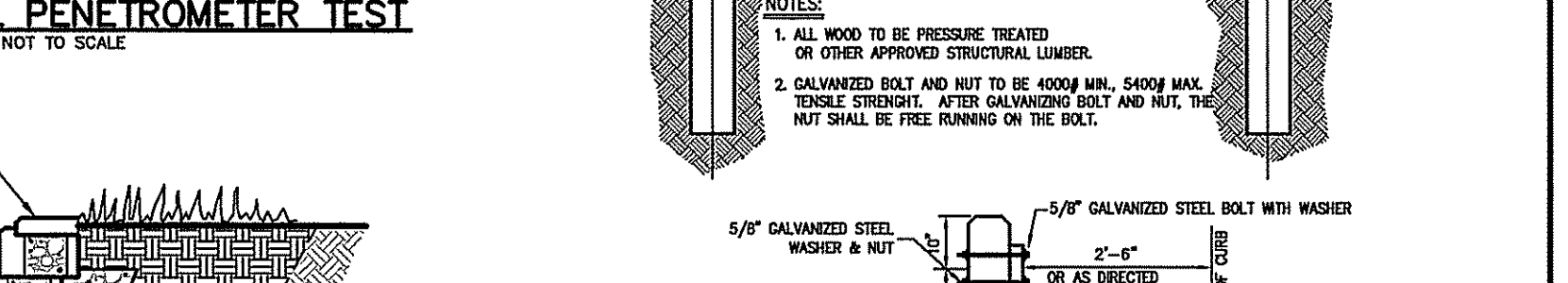


PROBING WIRE TEST 15.5 GA. STEEL WIRE (SURVEY FLAG)



PROBING WIRE TEST 15.5 GA. STEEL WIRE (SURVEY FLAG), NOT TO SCALE

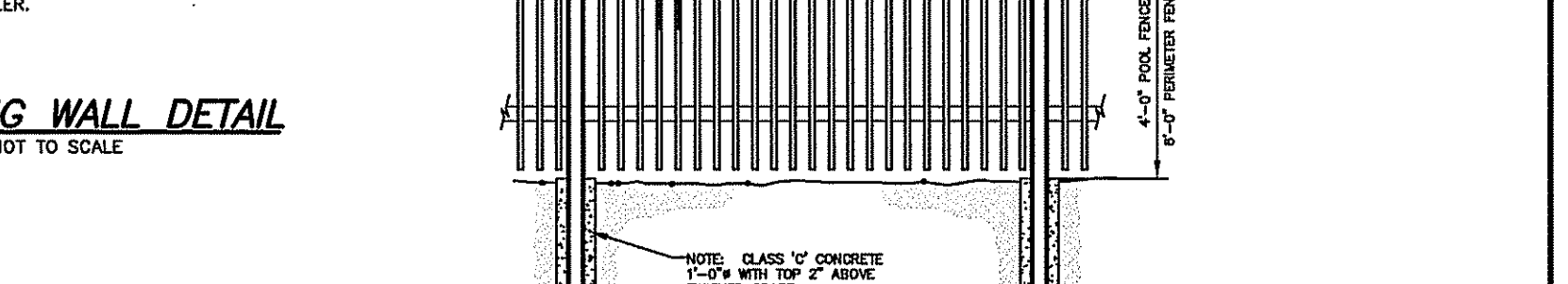
HANDHELD SOIL PENETROMETER TEST



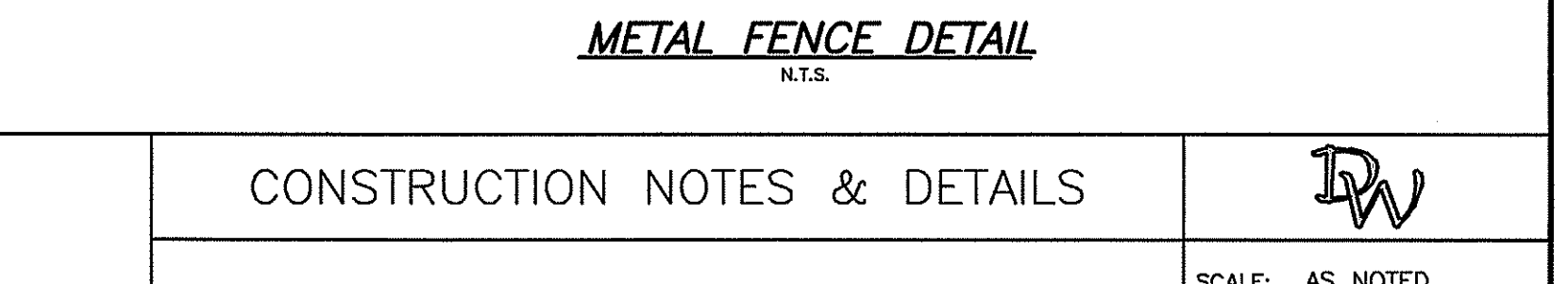
HANDHELD SOIL PENETROMETER TEST, NOT TO SCALE



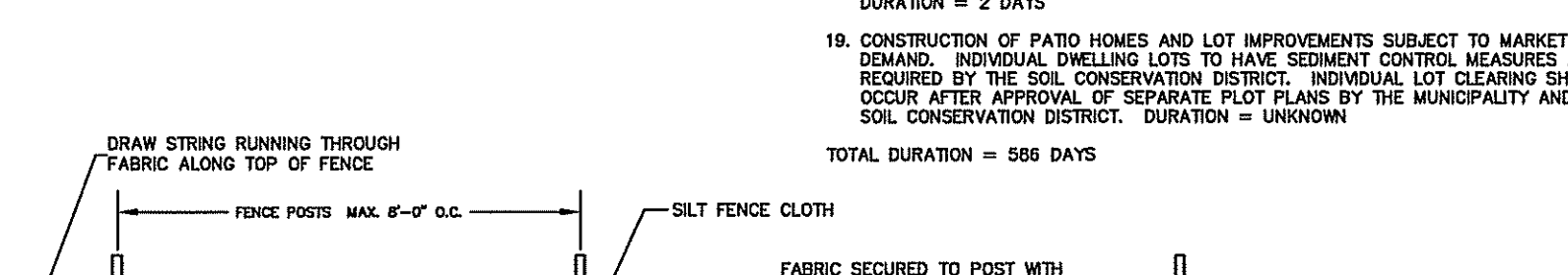
WOOD GUIDE RAIL, NOT TO SCALE



RETAINING WALL DETAIL, NOT TO SCALE



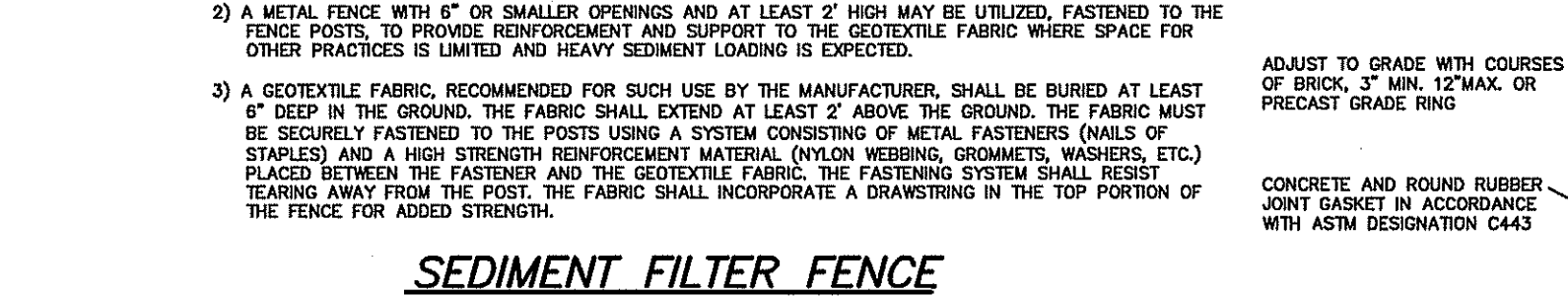
METAL FENCE DETAIL, NOT TO SCALE



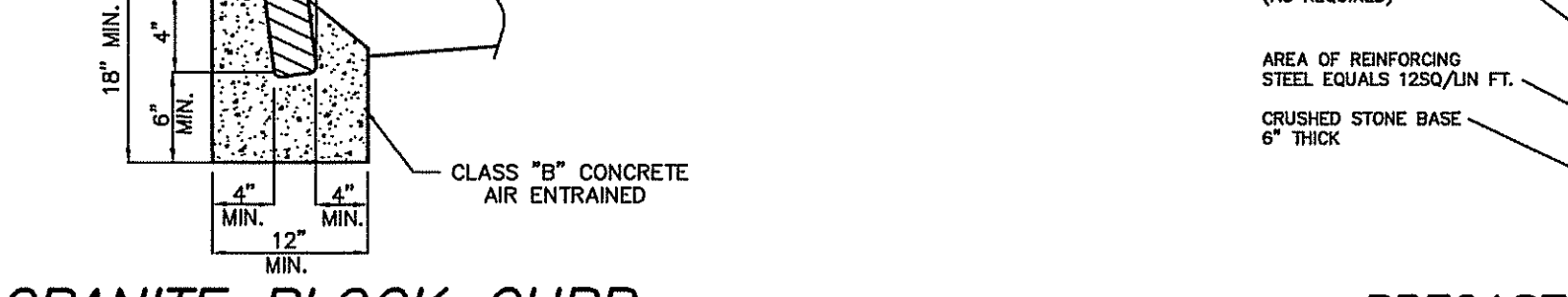
REQUIREMENTS FOR SILT FENCE

- 1) FENCE POSTS SHALL BE SPACED 8 FEET CENTER-TO-CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND AND EXTEND AT LEAST 2 FEET ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1 1/2".

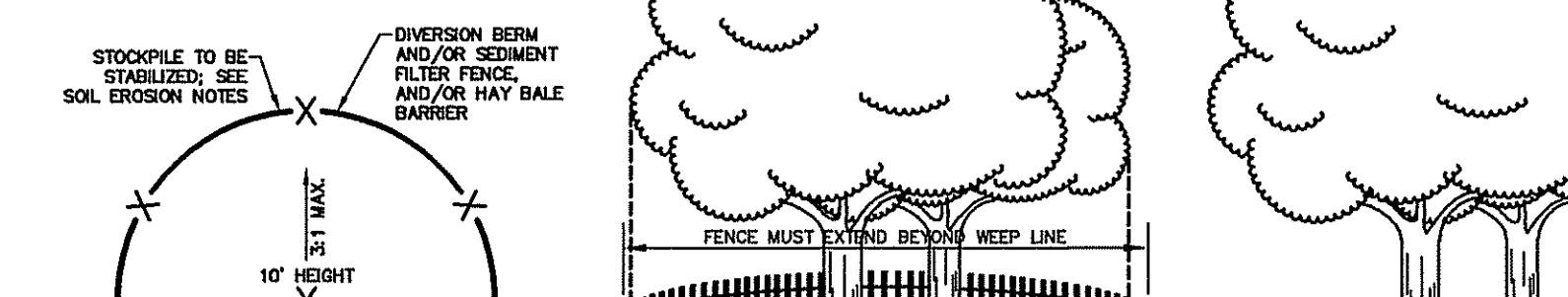
SEDIMENT FILTER FENCE



SEDIMENT FILTER FENCE, NOT TO SCALE



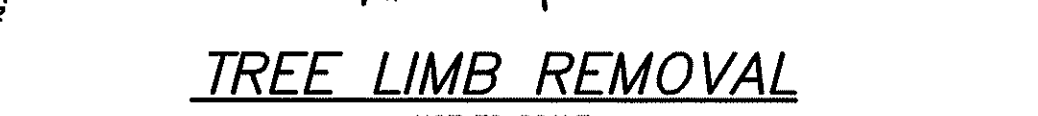
GRANITE BLOCK CURB, NOT TO SCALE



PRECAST STORM DRAINAGE MANHOLE, NOT TO SCALE



TOPSOIL STOCKPILE DETAIL, NOT TO SCALE



TREE PROTECTION, NOT TO SCALE



TREE LIMB REMOVAL, NOT TO SCALE

CONSTRUCTION NOTES & DETAILS
BHATTI RESIDENCE
BLOCK 127, LOT 105.04
#10 QUEENS COURT
TOWNSHIP OF MENDHAM
MORRIS COUNTY NEW JERSEY

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