

**RECORD OWNER:**  
 ASSESSORS MAP 100 BLOCK 0 LOT 65  
 0 ARNOLD ROAD  
 30 ARNOLD RD LLC  
 41 BREWSTER RD  
 HINGHAM, MA 02043  
 DEED BOOK 57925 PAGE 110

- NOTES:**
1. PLAN REFERENCES:  
 1.1. PLAN NO. 871 OF 2003  
 1.2. PLAN RECORDED IN PLAN BOOK 5, PAGE 165.
  2. TOPOGRAPHIC AND DETAIL INFORMATION SHOWN HEREON IS BASED UPON AN ON THE GROUND SURVEY PERFORMED BY CAVANARO CONSULTING DURING JUNE OF 2019.
  3. WETLAND RESOURCE AREAS SHOWN ON THIS PLAN WERE DELINEATED BY INDEPENDENT ENVIRONMENTAL CONSULTANTS, INC. PLYMOUTH MA DURING MAY OF 2023 AND FIELD LOCATED BY MERRILL ENGINEERS AND LAND SURVEYORS.
  4. SUBJECT SITE IS IN THE "RESIDENCE A" DISTRICT AS DEPICTED ON THE TOWN OF HINGHAM ZONING MAP.
  5. EXISTING UTILITIES, WHERE SHOWN, HAVE BEEN COMPILED BASED ON OBSERVED ABOVE GROUND EVIDENCE AND AVAILABLE RECORD PLANS AND ARE TO BE CONSIDERED APPROXIMATE. MERRILL ENGINEERS AND LAND SURVEYORS DOES NOT GUARANTEE THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN OR THAT ALL EXISTING UTILITIES AND/OR SUBSURFACE STRUCTURES ARE SHOWN.
  6. EXISTING SEPTIC SYSTEM COMPONENTS SHOWN HEREON TAKEN FROM RECORD AS-BUILT PLAN ON FILE WITH THE TOWN OF HINGHAM BOARD OF HEALTH AND ARE SHOWN AS APPROXIMATE ONLY.

**DATUM NOTE:**  
 ELEVATIONS SHOWN ON THE PLAN ARE ON AN ASSUMED DATUM. TO CONVERT THE EXISTING ELEVATIONS TO NAVD88, SUBTRACT 64.06 FROM ASSUMED ELEVATION.

**FLOOD NOTE:**  
 BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE X OF THE FLOOD INSURANCE RATE MAP AS SHOWN ON COMMUNITY MAP No. 2502300082, WHICH BEARS AN EFFECTIVE DATE OF JULY 17, 2012, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

ZONING REQUIREMENTS RESIDENCE DISTRICT "A"			
AREA	REQUIRED	EXISTING	PROPOSED
FRONTAGE	20,000 SF	261,360 SF	138,661 SF
BUILDING HEIGHT	125 FEET	456.39 FEET	126.00 FEET
	35 FEET	0 FEET	33.9± FEET
<b>MINIMUM YARDS:</b>			
FRONT	25 FEET*	0 FEET	272.8 FEET
SIDE	15 FEET	0 FEET	36.0 FEET
REAR	15 FEET	0 FEET	17.5 FEET
PARKING SPACES	2/UNIT	0 SPACES	3 SPACES

\* IN ALL RESIDENCE DISTRICTS, THE FRONT SETBACK MAY BE AS NEAR THE STREET AS THE AVERAGE OF THE BUILDINGS OR STRUCTURES IN THE ADJOINING LOTS.  
 BUILDING INSPECTOR TO CONFIRM ALL SETBACKS.

**LEGEND**

DMH	○	DRAIN MANHOLE
AC	□	HVAC UNIT
LAMP	⊗	LAMP POST (PRIVATE)
MH	○	MANHOLE (UNKNOWN)
RHT	◇	ROOF HEIGHT
ROCK	⬢	LARGE ROCK (BOULDER)
SIGN	+	SIGN
SLAB	×	SLAB ELEVATION
SMH	○	SEWER MANHOLE
TH	+	THRESHOLD
TOP	+	TOP OF FOUNDATION
DT	○	DECIDUOUS TREE
CT	○	CONIFEROUS TREE
UP	○	UTILITY POLE
WELL	○	WATER WELL
○	○	POST AND RAIL FENCE
○	○	CHAIN LINK FENCE
---	---	CONTOUR LINE
---	---	LANDSCAPE AREA
---	---	BUILDING OVERHANG
---	---	EDGE OF POND
---	---	GUARD RAIL
---	---	OVERHEAD WIRES
GTD	---	GRADE TO DRAIN
TW	---	TOP OF WALL
BW	---	BOTTOM OF WALL



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**REVISIONS:**

COMMON DRIVEWAY REVISION	6/26/24
COMMON DRIVEWAY UPDATE	6/17/24
BLDG FOOTPRINT UPDATE	5/14/24
MITIGATION UPDATE	5/8/24
MITIGATION	3/15/24
BLDG. LAYOUT	3/15/24
REVIEW COMMENTS	2/16/23
SP & SITE PLAN REVIEW	12/8/23
BOH REVIEW COMMENTS	8/31/23
SAS CHAMBER LAYOUT	8/3/23

**DRAWN BY:**  
PAL

**DESIGNED BY:**  
DK/PAL/DA

**CHECKED BY:**  
DK/DA

**SCALE:**  
AS NOTED



**Merrill**  
Engineers and Land Surveyors

427 Columbia Road  
Hanover, MA 02339  
781-826-9200

40 Court Street, Ste 2A  
Plymouth, MA 02360  
508-746-6060

Marine Division:  
26 Union Street  
Plymouth, MA 02360  
508-746-6060

448 N. Falmouth Hwy, Unit A  
North Falmouth, MA 02556  
508-563-2183

**PROJECT #:**  
22-083.1

**PROJECT:**  
**SITE PLAN**  
 0 ARNOLD ROAD  
 ASSESSOR'S LOT  
 MAP 100 BLOCK 0 LOT 65  
 HINGHAM MASSACHUSETTS

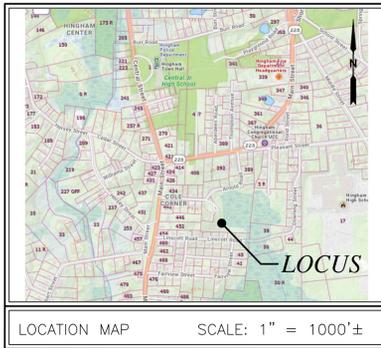
**CLIENT:**  
 GERRY RANKIN  
 30 ARNOLD ROAD, LLC  
 41 BREWSTER ROAD  
 HINGHAM, MA 02043  
 (617)-799-0588

**DRAWING PATH:**  
 H:\22-083.1\DESIGN\22-083.1 SP  
 6/27/24.rvt

**DATE:**  
 JULY 31, 2023

**EXISTING CONDITIONS PLAN**

SHEET 1 of 6  
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 ASSESSORS MAP 100 BLOCK 0 LOT 65  
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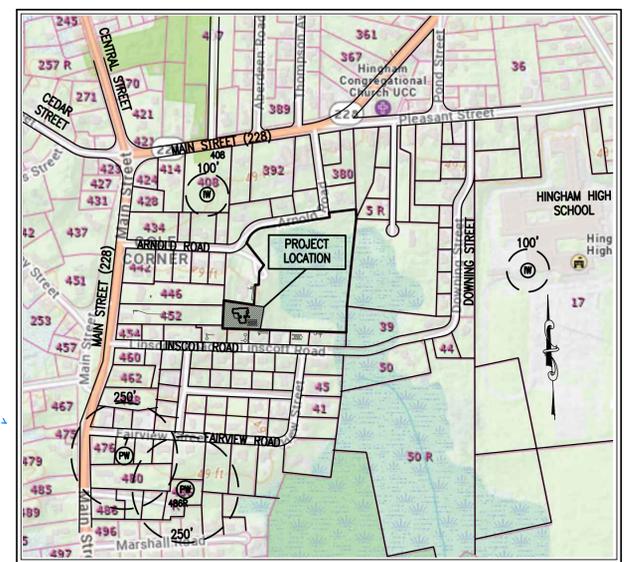
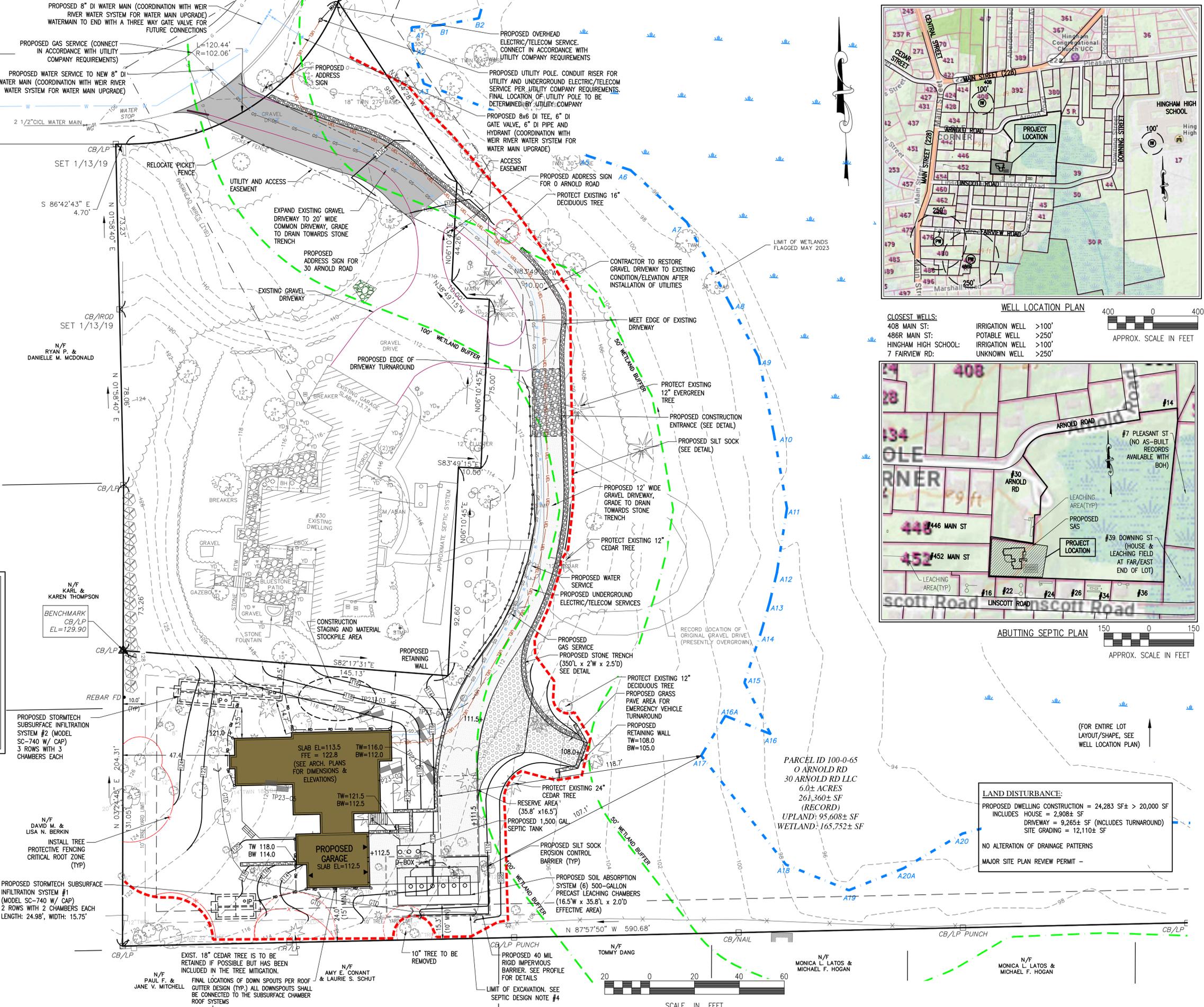
**FLOOD NOTE:**  
 BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE X OF THE FLOOD INSURANCE RATE MAP, AS SHOWN ON COMMUNITY MAP NO. 25023000821, WHICH BEARS AN EFFECTIVE DATE OF JULY 17, 2012, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

ZONING REQUIREMENTS RESIDENCE DISTRICT "A"		
	REQUIRED	EXISTING
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FRONTAGE	125 FEET	456.39 FEET
BUILDING HEIGHT	35 FEET	0 FEET
<b>MINIMUM YARDS:</b>		
FRONT	25 FEET*	0 FEET
SIDE	15 FEET	0 FEET
REAR	15 FEET	0 FEET
<b>PARKING SPACES:</b>		
	2/UNIT	0 SPACES
		3 SPACES

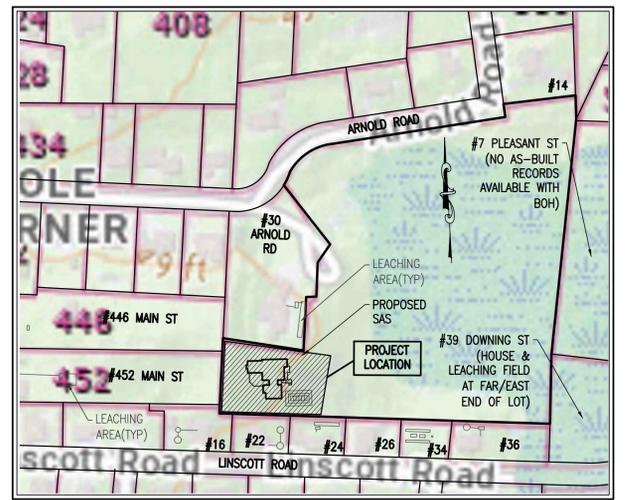
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MH	○	MANHOLE (UNKNOWN)
RHT	◇	ROOF HEIGHT
ROCK	⬢	LARGE ROCK (BOULDER)
SIGN	+	SIGN
SLAB	×	SLAB ELEVATION
SMH	○	SEWER MANHOLE
TH	+	THRESHOLD
TOP	+	TOP OF FOUNDATION
DT	○	DECIDUOUS TREE
CT	○	CONIFEROUS TREE
UP	○	UTILITY POLE
WELL	○	WATER WELL
○	○	POST AND RAIL FENCE
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---	---	CONTOUR LINE
---	---	LANDSCAPE AREA
---	---	BUILDING OVERHANG
---	---	EDGE OF POND
---	---	GUARD RAIL
---	---	OVERHEAD WIRES
---	---	GRADE TO DRAIN
---	---	TOP OF WALL
---	---	BOTTOM OF WALL



**WELL LOCATION PLAN**  
 400 0 400  
 APPROX. SCALE IN FEET



**ABUTTING SEPTIC PLAN**  
 150 0 150  
 APPROX. SCALE IN FEET

PARCEL ID 100-0-65  
 0 ARNOLD RD  
 30 ARNOLD RD LLC  
 6.0± ACRES  
 261,360± SF  
 UPLAND: 95,608± SF  
 WETLAND: 165,752± SF

**LAND DISTURBANCE:**  
 PROPOSED DWELLING CONSTRUCTION = 24,283 SF ± > 20,000 SF  
 INCLUDES HOUSE = 2,908± SF  
 DRIVEWAY = 9,265± SF (INCLUDES TURNAROUND)  
 SITE GRADING = 12,110± SF  
 NO ALTERATION OF DRAINAGE PATTERNS  
 MAJOR SITE PLAN REVIEW PERMIT -

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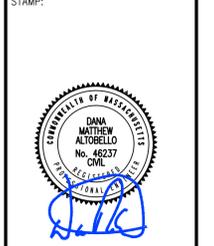
**DRAWN BY:**  
 PAL

**DESIGNED BY:**  
 DK/PAL/DA

**CHECKED BY:**  
 DK/DA

**SCALE:**  
 AS NOTED

**STAMP:**



**Merrill**  
 Engineers and Land Surveyors

427 Columbia Road  
 Hanover, MA 02339  
 781-826-9200

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 Plymouth, MA 02360  
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 22-083.1

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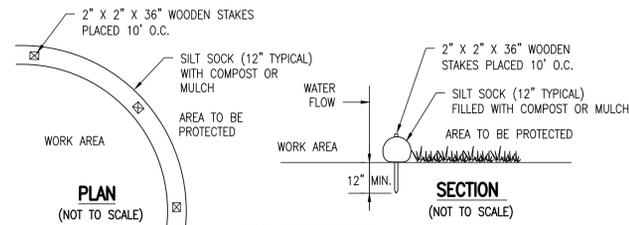
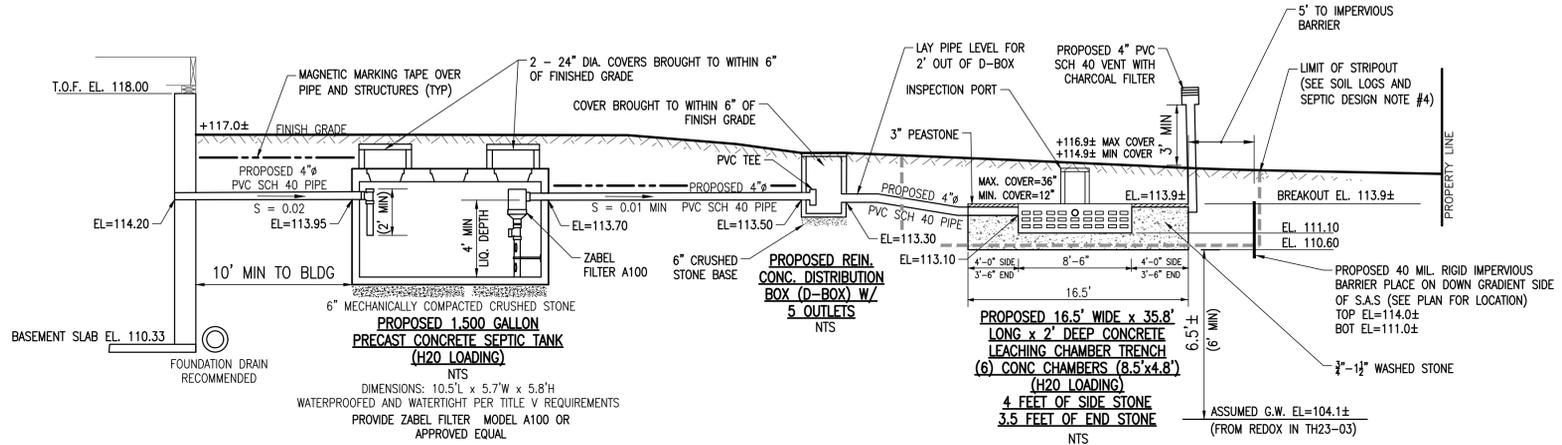
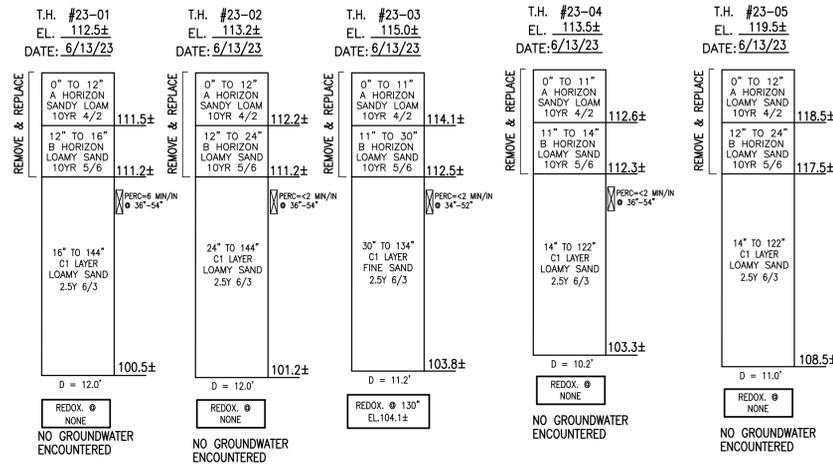
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 6/27/24/196

**DATE:**  
 JULY 31, 2023

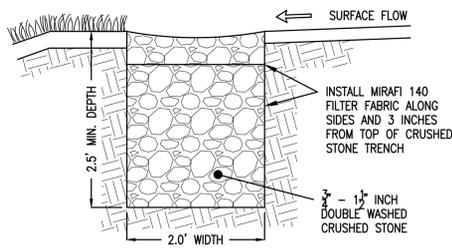
**SITE/SEPTIC  
 DESIGN PLAN**

**SOIL LOGS**

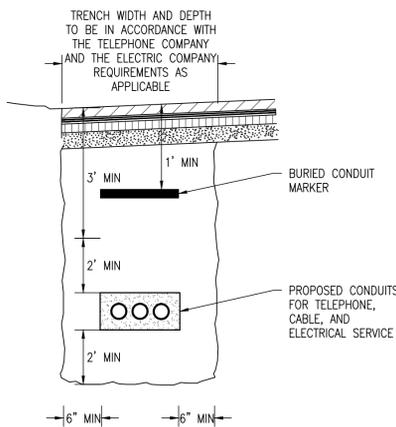
PERFORMED BY: PAUL LOUDERBACK, SE#14618 (MERRILL ENGINEERS)  
 WITNESSED BY: PAT BRENNON (HINGHAM B.O.H. CONSULTANT)  
 DATE: JUNE 13, 2023



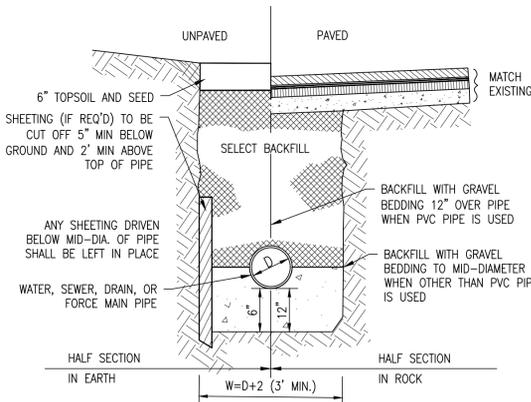
**SILT SOCK DETAIL**  
(NOT TO SCALE)  
NOTE: REFER TO THE PLAN FOR PROPOSED LOCATION.



**STONE TRENCH DETAIL**  
(NOT TO SCALE)



**TYPICAL ELECTRIC/TELEPHONE/CABLE CONDUIT (US-UTILITY SERVICE) DETAIL**  
(NOT TO SCALE)



**TYPICAL UTILITY TRENCH**  
(NOT TO SCALE)

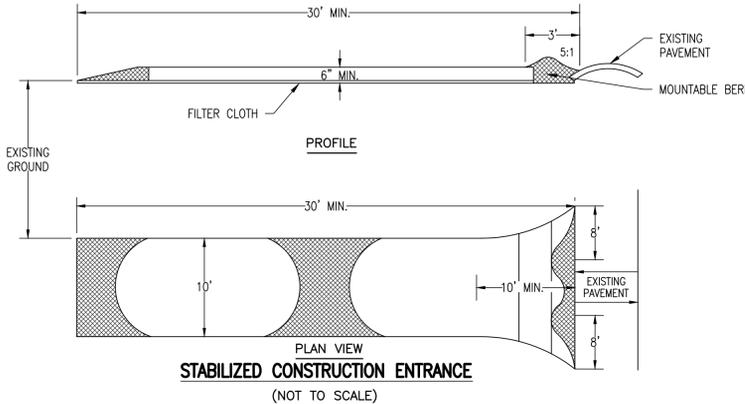
**TREE MITIGATION CALCULATIONS**  
(REQUIRED MITIGATION PER HINGHAM ZONING BY-LAW SECTION 1-6.6.d.(ii))

- A TOTAL OF 2 TREES WITHIN PROPERTIES TREE YARD WILL BE AFFECTED BY PROPOSED WORK. THE TREES HAVE RESPECTIVE DIAMETER BREAST HEIGHT (DBH) CALIPER MEASUREMENTS OF: 18" AND 20". (18"=20=38")
- REQUIRED MITIGATION: FOR EVERY ONE (1) INCH OF PROTECTED TREE CALIPER DISRUPTED, 0.5 INCH OF NEW TREE PLANTING MITIGATION MUST BE DONE. (38"/2=19" DBH CALIPER MITIGATION)
- PROPOSED TREES MUST HAVE A 3" MINIMUM CALIPER. (19"/(3"/TREE)=7 TOTAL TREES)

**SEPTIC DESIGN** (NOT DESIGNED FOR GARBAGE GRINDER)

- DESIGN DAILY FLOW:** 310 CMR 15.203 (1); SYSTEM SEWAGE FLOW DESIGN CRITERIA  

USE	PARAMETER	DAILY FLOW FOR PARAMETER	DESIGN DAILY FLOW
SINGLE FAMILY	5 BEDROOMS	110 G.P.D. PER BED	550 G.P.D.
- DESIGN SEPTIC TANK** (310 CMR 15.223 TO 15.228)  
 SEPTIC TANK: 550 GPD x 2 = 1100 GAL. USE: 1,500 GAL. (MIN)
- DESIGN SOIL ABSORPTION SYSTEM**  
 LEACHING CHAMBERS: P.R. = 6 MIN/IN, CLASS I, E.L.R. = 0.70 GPD/SF  
 TITLE V : (NOT DESIGNED FOR GARBAGE GRINDER)  
 CHAMBER TRENCH: (1) 35.8' LONG x 16.5' WIDE x 2' DEEP CHAMBER TRENCH  
 REQUIRED AREA: 550 GPD/0.70 GPD/SF = 785 SF (MIN.)  
 USE: SIX (6) 500-GALLON LEACHING CHAMBERS WITH 4' OF SIDE STONE/3.5' OF END STONE AROUND (16.5'W x 35.8' L x 2.0' D)  
 BOTTOM AREA: 16.5 LF x 35.8 LF = 590 SF  
 SIDEWALL AREA: 2(35.8LF x 2FT) + 2(16.5LF x 2FT) = 209 SF  
 TOTAL AREA: 590 SF + 209 SF = 799 SF  
 CAPACITY: 799 SF x 0.70 GPD/SF = 559 GPD > 550 GPD
- EXCAVATION NOTE**  
 EXCAVATE ALL MATERIAL 5' AROUND SYSTEM TO C LAYER (SEE SOIL LOGS). REPLACE WITH CLEAN COARSE MATERIAL IN ACCORDANCE WITH 310 CMR 15.255 TO TOP OF S.A.S. (SEE PROFILE). EXCAVATION MUST BE INSPECTED BY THE TOWN AND MERRILL CORPORATION BEFORE SOIL PLACEMENT.



**STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS**

- STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - AS REQUIRED, BUT NOT LESS THAN 30 FT.
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAYS MUST BE REMOVED IMMEDIATELY.
- WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

**SEPTIC CONSTRUCTION NOTES**

- CALL DIG SAFE 1-888-344-7233 AT LEAST 3 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK. THE BOARD OF HEALTH & MERRILL TO BE NOTIFIED OF ANY INCONSISTENCIES NOTED IN THE FIELD.
- THE INSTALLATION OF THE SEPTIC SYSTEM MUST BE PERFORMED BY A LICENSED CONTRACTOR THAT HAS A WORKING KNOWLEDGE OF THE STATE ENVIRONMENTAL CODE TITLE V AND THE LOCAL BOARD OF HEALTH REGULATIONS. THE CONTRACTOR IS REFERRED TO TITLE V AND THE LOCAL REGULATIONS FOR ANY REQUIREMENTS THAT IS NOT SPECIFICALLY MENTIONED ON THE PLANS.
- NO CHANGES ARE TO BE MADE IN THE FIELD WITHOUT THE APPROVAL OF THE BOARD OF HEALTH AND MERRILL.
- CONTRACTOR TO CONFIRM GROUNDWATER ELEVATION AT FOUNDATION PRIOR TO CONSTRUCTION.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SECURE ALL NECESSARY STATE, MUNICIPAL AND UTILITY PERMITS AND VERIFY THE PROPOSED LOCATION OF UTILITIES WITH UTILITY COMPANIES.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.
- ALL FILL USED ON THIS SITE WILL BE CLEAN GRANULAR FILL.
- ALL TREE STUMPS & DEBRIS SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY. ALL TREES WITHIN 5' OVERDIG AREA AND SIDE SLOPES SHALL BE REMOVED.
- MERRILL RECOMMENDS PROPERLY DESIGNED FOUNDATION DRAINS, BY OTHERS, FOR EVERY STRUCTURE WITH A BASEMENT.
- THE TOP OF ALL SYSTEM COMPONENTS, INCLUDING THE SEPTIC TANK, DISTRIBUTION BOX OR DOSING CHAMBER AND SOIL ABSORPTION SYSTEM, SHALL BE INSTALLED NO MORE THAN 36" BELOW FINISH GRADE. THE ENTIRE STRUCTURE MAY REQUIRE A RISER OVER THE INVERTS TO REDUCE THE DEPTH OF COVER OVER THE TOP OF THE CHAMBER.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
- ALL AREAS DISTURBED BY CONSTRUCTION AND NOT TO BE PAVED OR OTHERWISE TREATED AS NOTED ON PLAN, SHALL BE GRADED WITH 4" OF SCREENED LOAM AND SEEDED.
- SET SANITARY COVERS SO FINISHED ADJACENT GRADE ARE LOWER TO ENSURE SURFACE RUNOFF IS NOT SHEDDING OVER COVERS, SLOPE GROUND TO 2% MIN.
- THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE GRADING AROUND THE FOUNDATION MEETS THE REQUIREMENTS OF THE MASS. STATE BUILDING CODE AND THE INTERNATIONAL RESIDENTIAL CODE (IRC 2009) SECTION R401.3. THE GRADE SHALL DROP A MINIMUM OF 6" WITHIN 10 FEET OF THE FOUNDATION AS REQUIRED TO ENSURE WATER DRAINS AWAY FROM THE FOUNDATION. ADDITIONALLY, THE MINIMUM DISTANCE FROM FINISH GRADE TO ANY WOOD FRAMING/CONSTRUCTION SHALL MEET THE MINIMUM REQUIREMENTS OF THE MASS. STATE BUILDING CODE AND THE IRC 2009.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT AN ACCURATE BENCHMARK IS SET ON THE SITE PRIOR TO CONSTRUCTION.
- A FINAL GRADING INSPECTION IS NEEDED BY THE ENGINEER AND SHALL BE SHOWN ON THE AS-BUILT PLAN.
- THERE ARE NO KNOWN WELLS WITHIN 250 FEET OF THE SAS.
- THERE ARE NO KNOWN PUBLIC WATER SUPPLY WELLS WITHIN 400 FEET OF THE SAS.
- THERE ARE NO EXISTING FOUNDATIONS WITHIN 25 FEET OF THE SAS UNLESS OTHERWISE NOTED.
- THERE ARE NO KNOWN PERENNIAL STREAMS OR SURFACE WATER SUPPLY WITHIN 200 FEET OF THE SAS.
- THERE ARE NO KNOWN PROTECTED WATER BODIES WITHIN 150 FEET OF THE SAS.
- THERE ARE NO KNOWN WETLANDS WITHIN 100 FEET OF THE SAS.
- THERE ARE NO KNOWN SURFACE OR SUBSURFACE DRAINS WITHIN 50 FEET OF THE SAS.
- THERE ARE NO KNOWN SURFACE OR SUBSURFACE DRAINS WITH ELEVATION HIGHER THAN THE SAS WITHIN 25 FEET OF THE SAS.
- THERE ARE NO KNOWN SURFACE OR SUBSURFACE DRAINS WHICH DISCHARGE INTO A SURFACE WATER SUPPLY WITH 175 FEET OF THE SAS.
- THERE ARE NO KNOWN SURFACE OR SUBSURFACE DRAINS WHICH DISCHARGE INTO A PROTECTED WATER BODY WITH 125 FEET OF THE SAS.
- THE SITE DOES NOT FALL WITHIN AN APPROVED ZONE II.
- THE PROPOSED DESIGN DOES NOT REQUIRE A VARIANCE OR LOCAL UPGRADE APPROVAL FROM TITLE 5 OR LOCAL REGULATIONS.

**SEPTIC SYSTEM INSPECTIONS**

- THE CONTRACTOR WILL PROVIDE A 48 HOUR ADVANCED NOTICE TO THE BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS PRIOR TO NEEDING INSPECTIONS.
- AN EXCAVATION INSPECTION FOR BOTH FIELD AND SEPTIC TANKS IS REQUIRED BY THE BOARD OF HEALTH AND ENGINEER PRIOR TO PROCEEDING WITH THE INSTALLATION.
- NOTIFY BOARD OF HEALTH AND MERRILL CORPORATION PRIOR TO BACKFILLING OF SYSTEM. THE CONTRACTOR SHALL NOT BACKFILL ANY COMPONENT OF THE SYSTEM UNTIL MERRILL CORPORATION HAS VERIFIED THE SYSTEM LOCATION & ELEVATION.
- NOTIFY THE BOARD OF HEALTH AND MERRILL CORPORATION AFTER THE SEPTIC SYSTEM HAS BEEN BACKFILLED FOR FINAL GRADING INSPECTION.

**SEPTIC MAINTENANCE NOTES**

- EVERY SEPTIC TANK OR TIGHT TANK SHALL BE PUMPED WHENEVER NECESSARY TO ENSURE PROPER FUNCTIONING OF THE SYSTEM. PUMPING IS REQUIRED WHENEVER THE TOP OF THE SLUDGE OR SOLIDS LAYER IS WITHIN 12 INCHES OR LESS OF THE BOTTOM OF THE OUTLET TEE OR THE TOP OF THE SCUM LAYER IS WITHIN TWO INCHES OF THE BOTTOM OF THE OUTLET TEE. PUMPING FREQUENCY IS A FUNCTION OF USE AND IS RECOMMENDED ON AN ANNUAL BASIS.

REVISIONS:

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 40 Court Street, Ste 2A  
 Plymouth, MA 02360  
 508-746-6060  
 Marine Division:  
 26 Union Street  
 Plymouth, MA 02360  
 508-746-6060  
 448 N. Falmouth Hwy, Unit A  
 North Falmouth, MA 02556  
 508-563-2183

PROJECT #: 22-083.1

**SITE PLAN**  
 0 ARNOLD ROAD  
 ASSESSOR'S  
 MAP 100 BLOCK 0 LOT 65  
 HINGHAM MASSACHUSETTS

CLIENT:  
 GERRY RANKIN  
 30 ARNOLD ROAD, LLC  
 41 BREWSTER ROAD  
 HINGHAM, MA 02043  
 (617)-799-0588

DRAWING PATH:  
 H:\22-083.1\DESIGN\22-083.1 SP  
 6.21.23.rvt  
 DATE:  
 JULY 31, 2023

**SITE/SEPTIC DESIGN PLAN**

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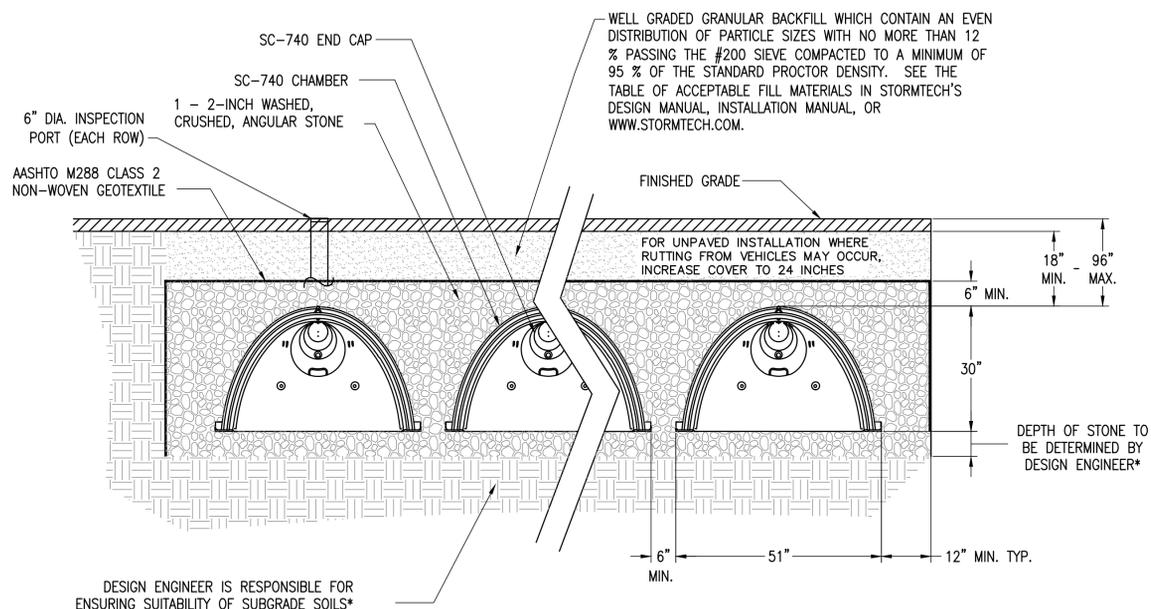
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6/27/24/190

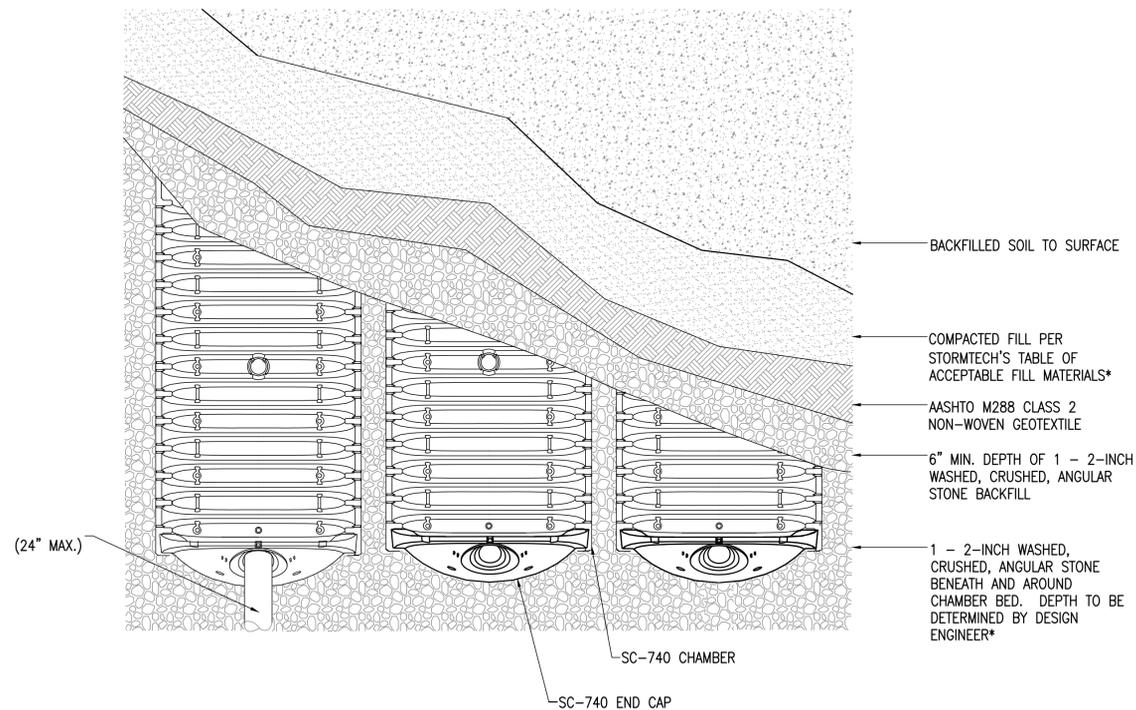
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SITE/SEPTIC  
DESIGN PLAN

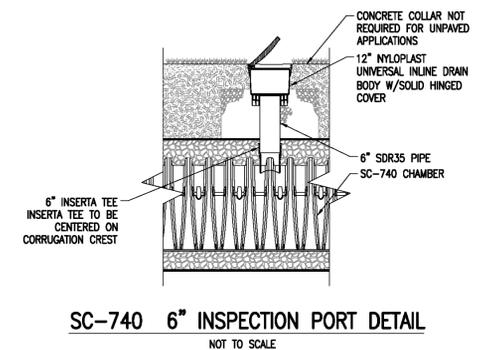
SHEET 4 of 6  
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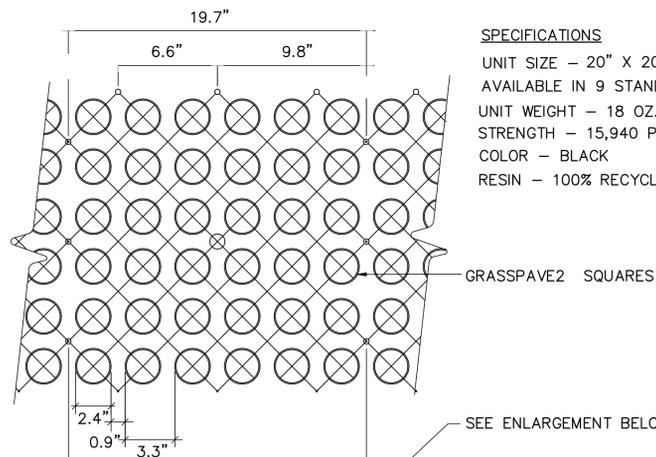
**STORMTECH SC-740 CHAMBER SYSTEM**  
**TYPICAL CROSS SECTION DETAIL**  
NOT TO SCALE



**STORMTECH SC-740 CHAMBER SYSTEM**  
**PLAN VIEW DETAIL**  
NOT TO SCALE



**SC-740 6" INSPECTION PORT DETAIL**  
NOT TO SCALE



**SPECIFICATIONS**

UNIT SIZE - 20" X 20" X 1" OR 40" X 40" X 1"

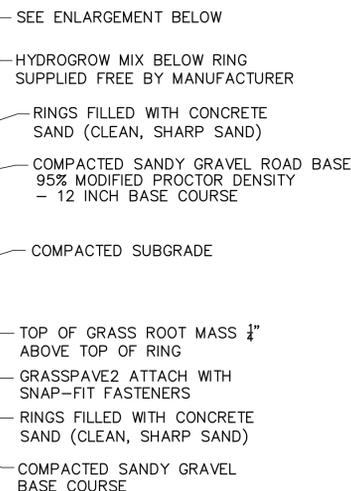
AVAILABLE IN 9 STANDARD ROLL SIZES

UNIT WEIGHT - 18 OZ. OR 4.5 POUNDS

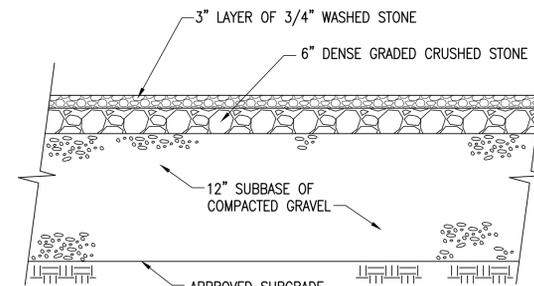
STRENGTH - 15,940 PSI

COLOR - BLACK

RESIN - 100% RECYCLED HDPE



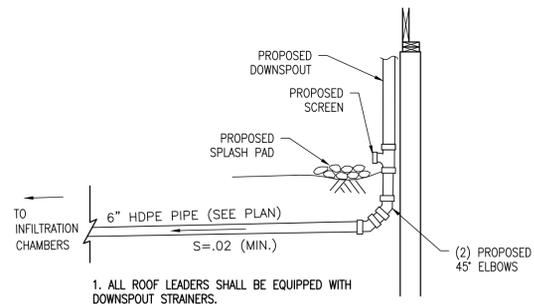
GRASSPAVE2 BY Invisible Structures, Inc. OR EQUIVALENT  
**TYPICAL GRASSPAVE2 DETAIL**  
NOT TO SCALE



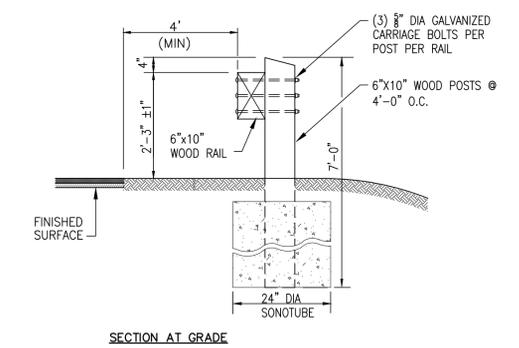
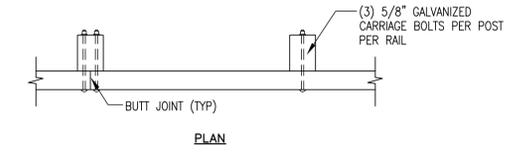
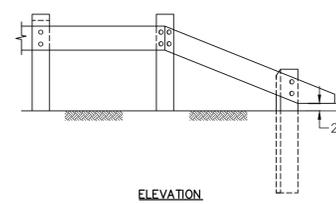
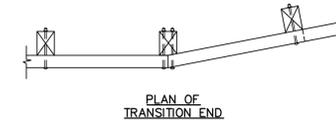
**NOTE:**

1. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH CLEAN GRAVEL BASE (95% COMPACTION)

**GRAVEL DRIVEWAY SECTION DETAIL**  
(NOT TO SCALE)



**TYPICAL DOWNSPOUT DETAIL**  
(NOT TO SCALE)



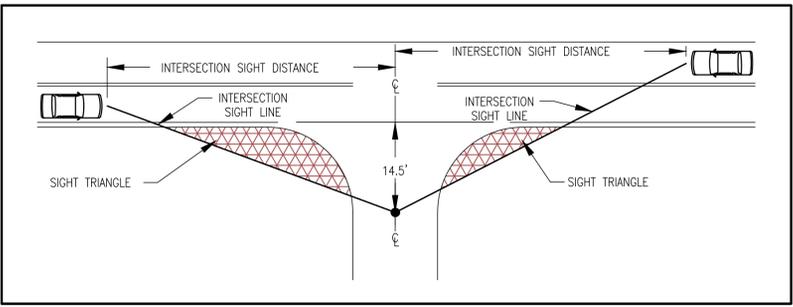
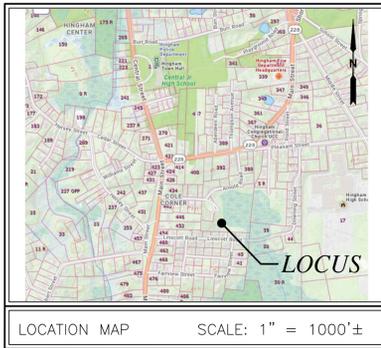
**NOTES:**

1. ALL RAIL AND POST SECTIONS TO BE PRESSURE TREATED #1 SOUTHERN YELLOW PINE OR EQUAL.

2. BOLT CONNECTIONS TO BE DESIGNED BY A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.

**WOOD GUARDRAIL DETAIL**  
(NOT TO SCALE)

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INTERSECTION SIGHT DISTANCE LEGEND  
SCALE: NOT TO SCALE

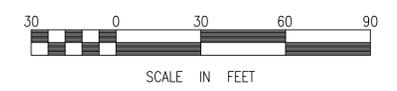


INTERSECTION SIGHT DISTANCE SUMMARY

LOCATION/DIRECTION	INTERSECTION SIGHT DISTANCE (FEET)		
	REQUIRED MINIMUM STOPPING SIGHT DISTANCE (SSD)	DESIRABLE INTERSECTION SIGHT DISTANCE ISD(b)	MEASURED SIGHT DISTANCE
<b>DRIVEWAY SIGHT DISTANCE:</b>	25 MPH		
LOOKING TO THE WEST (LEFT):		280 FT.	165 FT. (b)
LOOKING TO THE EAST (RIGHT):		280 FT.	>300 FT.
<b>STOPPING SIGHT DISTANCE:</b>	25 MPH		
ARNOLD ROAD APPROACHING FROM THE EAST:	155 FT.		165 FT.
ARNOLD ROAD APPROACHING FROM THE WEST:	155 FT.		>300 FT.

(a) RECOMMENDED MINIMUM VALUES OBTAINED FROM A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 7TH EDITION; AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 2018.  
 (b) VALUES SHOWN ARE THE INTERSECTION SIGHT DISTANCE FOR A VEHICLE TURNING RIGHT OR LEFT EXITING A ROADWAY UNDER STOP CONTROL SUCH THAT MOTORISTS APPROACHING THE INTERSECTION ON THE MAJOR STREET SHOULD NOT NEED TO ADJUST THEIR TRAVEL SPEED TO LESS THAN 70 PERCENT OF THEIR INITIAL APPROACH SPEED.  
 BASED ON AASHTO STANDARDS IF THE MEASURED ISD VALUE (165') IS HIGHER THAN THE REQUIRED SSD VALUE (155'), THE INTERSECTION CAN OPERATE IN A SAFE MANNER, THEREFORE THIS DRIVEWAY WILL FUNCTION IN A SAFE MANNER.  
 (c) TRAVEL SPEED BASED ON SPEED OF 25 MPH.

INTERSECTION SIGHT DISTANCE - SITE DRIVEWAY



- LEGEND**
- DMH ○ DRAIN MANHOLE
  - AC □ HVAC UNIT
  - LAMP ⊗ LAMP POST (PRIVATE)
  - MH ○ MANHOLE (UNKNOWN)
  - RHT ◇ ROOF HEIGHT
  - ROCK ⊕ LARGE ROCK (BOULDER)
  - SIGN → SIGN
  - SLAB × SLAB ELEVATION
  - SMH ⊕ SEWER MANHOLE
  - TH + THRESHOLD
  - TOP + TOP OF FOUNDATION
  - DT ○ DECIDUOUS TREE
  - CT ○ CONIFEROUS TREE
  - UP ⚡ UTILITY POLE
  - WELL ● WATER WELL
  - POST AND RAIL FENCE
  - x—x—x—x— CHAIN LINK FENCE
  - 100--- CONTOUR LINE
  - LS--- LANDSCAPE AREA
  - --- BUILDING OVERHANG
  - --- EDGE OF POND
  - --- GUARD RAIL
  - --- OVERHEAD WIRES
  - GTD --- GRADE TO DRAIN
  - TW --- TOP OF WALL
  - BW --- BOTTOM OF WALL

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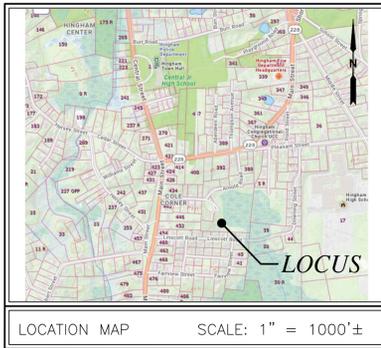
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6-27-24.rvt

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**SIGHT DISTANCE PLAN**



**ALTERATION AND MITIGATION CALCULATIONS:**  
**BVW BUFFER ZONE ALTERATION CALCULATIONS:**  
 0'-50' (PERVIOUS) = 380± SF (NO TREE REMOVAL)  
 50'-100' (PERVIOUS) = 2,570± SF (5 TREE REMOVAL)

**HINGHAM BUFFER ZONE MITIGATION NOTES:**  
 FOR WORK WITHIN 50'-100' BUFFER ZONE:  
 1. 1:1 MITIGATION REQUIRED FOR PROPOSED IMPERVIOUS SURFACES  
 2. NO MITIGATION REQUIRED FOR PROPOSED PERVIOUS SURFACES

FOR WORK WITHIN 0'-50' BUFFER ZONE:  
 1. 2:1 MITIGATION REQUIRED FOR PROPOSED IMPERVIOUS SURFACES  
 2. 1:1 MITIGATION REQUIRED FOR PROPOSED PERVIOUS SURFACES

**PROPOSED MITIGATION:**  
 TOTAL AREA = 400 SF (W/ 5 PROPOSED TREES)  
 NOTE: ALTERATIONS WITHIN THE 0'-50' BUFFER ZONE ARE MINIMIZED TO THE EXTENT POSSIBLE. NECESSARY EXPANSION OF THE GRAVEL DRIVEWAY WITH STONE DAPHRAGM ARE REQUIRED PER PLANNING BOARD COMMENTS AND STORMWATER MANAGEMENT STANDARDS.

**WETLAND MITIGATION PLANT SCHEDULE\***

SHRUBS:			
BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
Clethra Alnifolia (CA)	Sweet Pepperbush	3 GAL	2
Rhododendron (RH)	Azalea	3 GAL	2
Vaccinium Angustifolium (VA)	Lowbush Blueberry	1 GAL	2
TREES:			
BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
Acer Rubrum (AR)	Red Maple Saplings	2" CAL. MIN.	2
Pinus Strobus (PS)	Eastern White Pine	2" CAL. MIN.	3

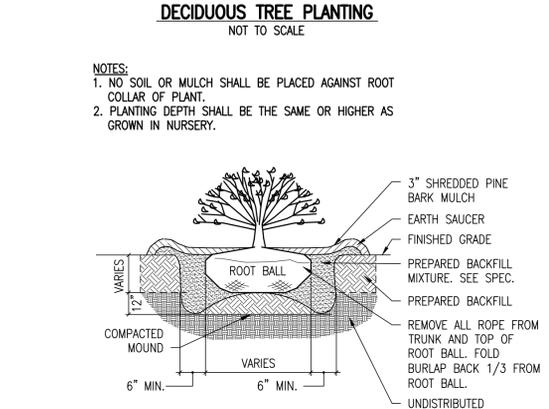
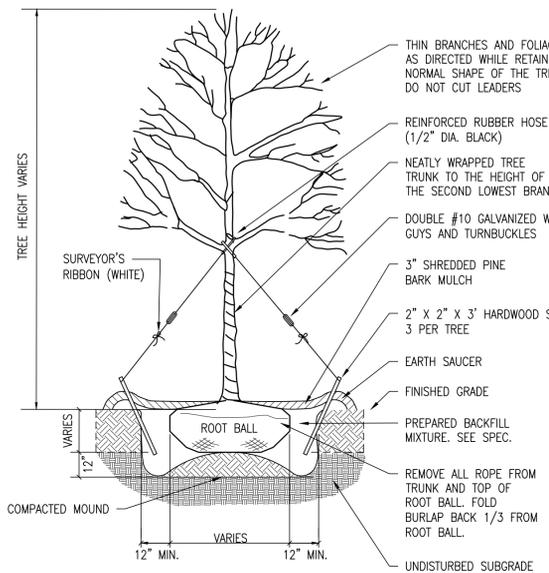
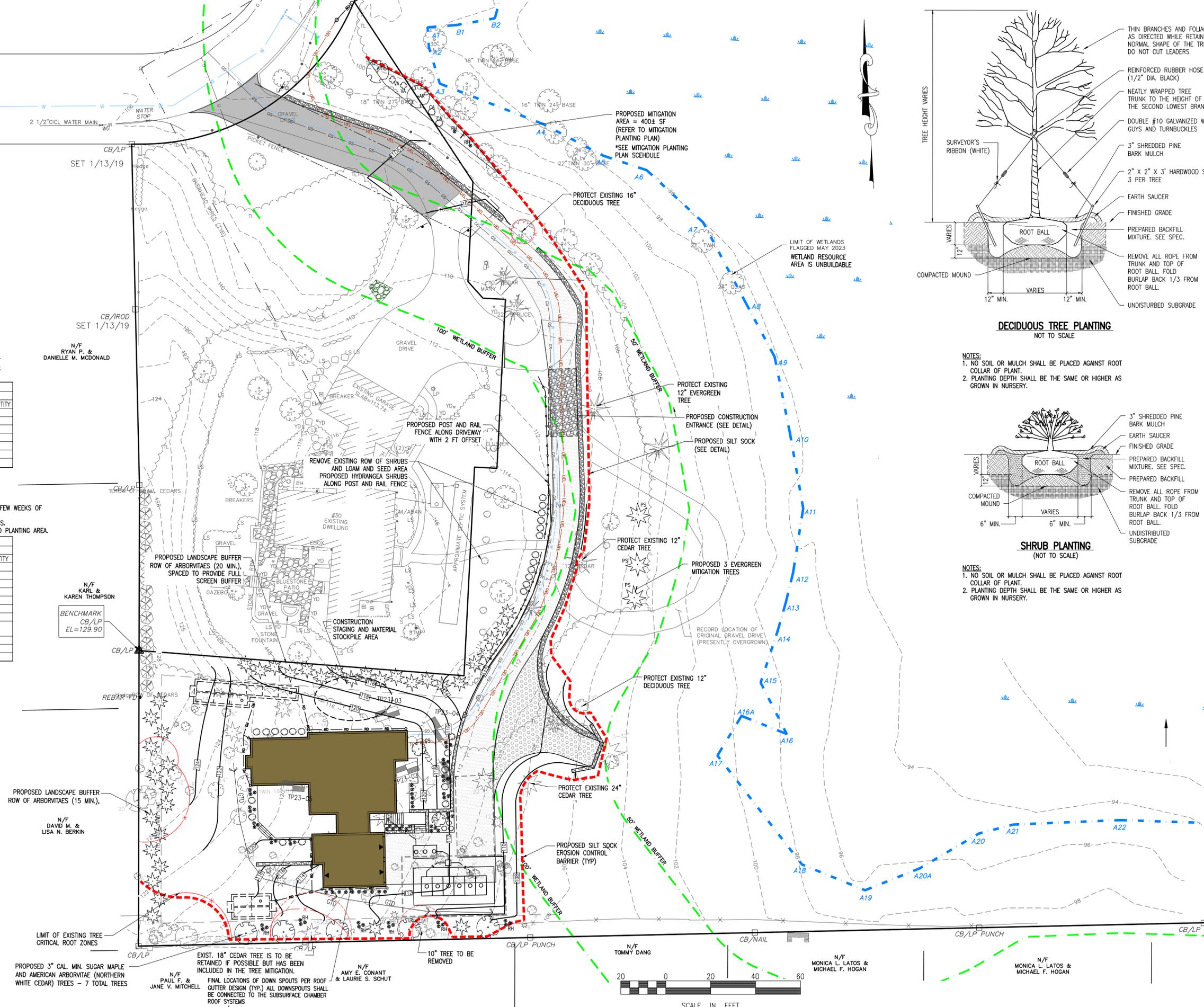
\* MITIGATION PLANTING SCHEDULE DONE BY INDEPENDENT ENVIRONMENTAL CONSULTANTS, INC.  
**MITIGATION PLANTING NOTES:**  
 • PLANTING SHALL OCCUR DURING THE FALL GROWING SEASON.  
 • PROPER WATERING OF NEW SHRUBS IS REQUIRED FOR THE FIRST FEW WEEKS OF AFTER PLANTING IN LATE SEPTEMBER.  
 • NATIVE PLANTS WILL BE MONITORED FOR 3 FULL GROWING SEASONS.  
 • CONSERVATION GRASS MIXTURE WILL BE SPREAD IN THE PROPOSED PLANTING AREA.

**LANDSCAPE PLANT SCHEDULE**

SHRUBS:			
BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
Rhododendron (RH)	Azalea	3 GAL	18
Hydrangea Macrophylla (HM)	Bigleaf Hydrangea	3 GAL	3
Cornus Sanguinea (CS)	Blood Twig Dogwood	2 GAL	10
Buxus Sempervirens (BS)	American Boxwood	2 GAL	7
Ilex Crenata Compacta (IC)	Japanese Holly	3 GAL	10
Rosa Daydream (RD)	Daydream Rose	2 GAL	10
Rosa European (RE)	Floribunda Rose	3 GAL	5
TREES:			
BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
Acer Saccharum	Sugar Maple	3" CAL. MIN.	5
Thuja Occidentalis	American Arborvitae	6-8 ft	37

**LEGEND**

- DMH ○ DRAIN MANHOLE
- AC □ HVAC UNIT
- LAMP ○ LAMP POST (PRIVATE)
- MH ○ MANHOLE (UNKNOWN)
- RHT ○ ROOF HEIGHT
- ROCK ○ LARGE ROCK (BOULDER)
- SIGN ○ SIGN
- SLAB × SLAB ELEVATION
- SMH ○ SEWER MANHOLE
- TH + THRESHOLD
- TF + TOP OF FOUNDATION
- DECIDUOUS TREE
- CONIFEROUS TREE
- UP ○ UTILITY POLE
- WELL ○ WATER WELL
- POST AND RAIL FENCE
- CHAIN LINK FENCE
- 100- CONTOUR LINE
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- GUARD RAIL
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**MITIGATION PLANTING PLAN**