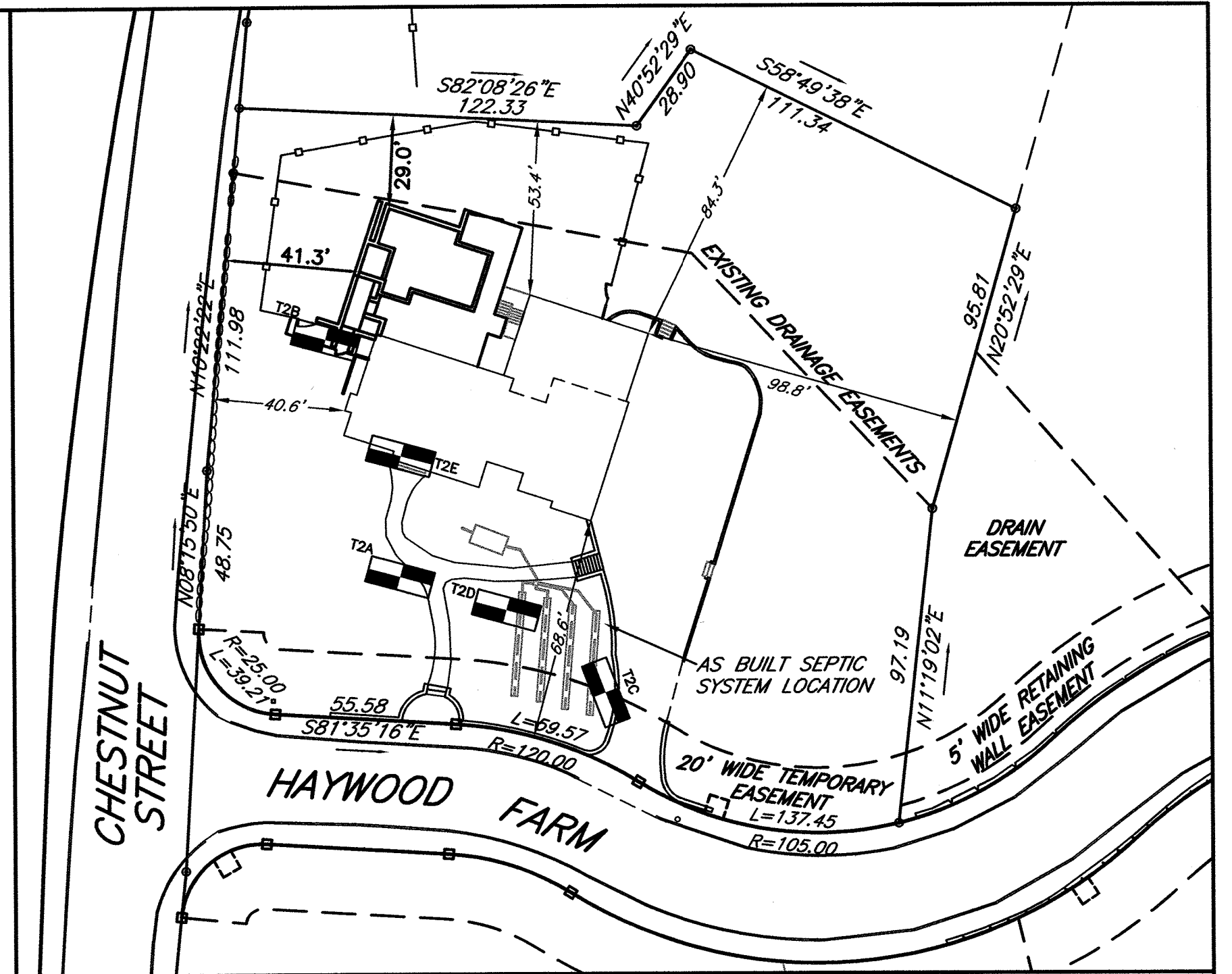
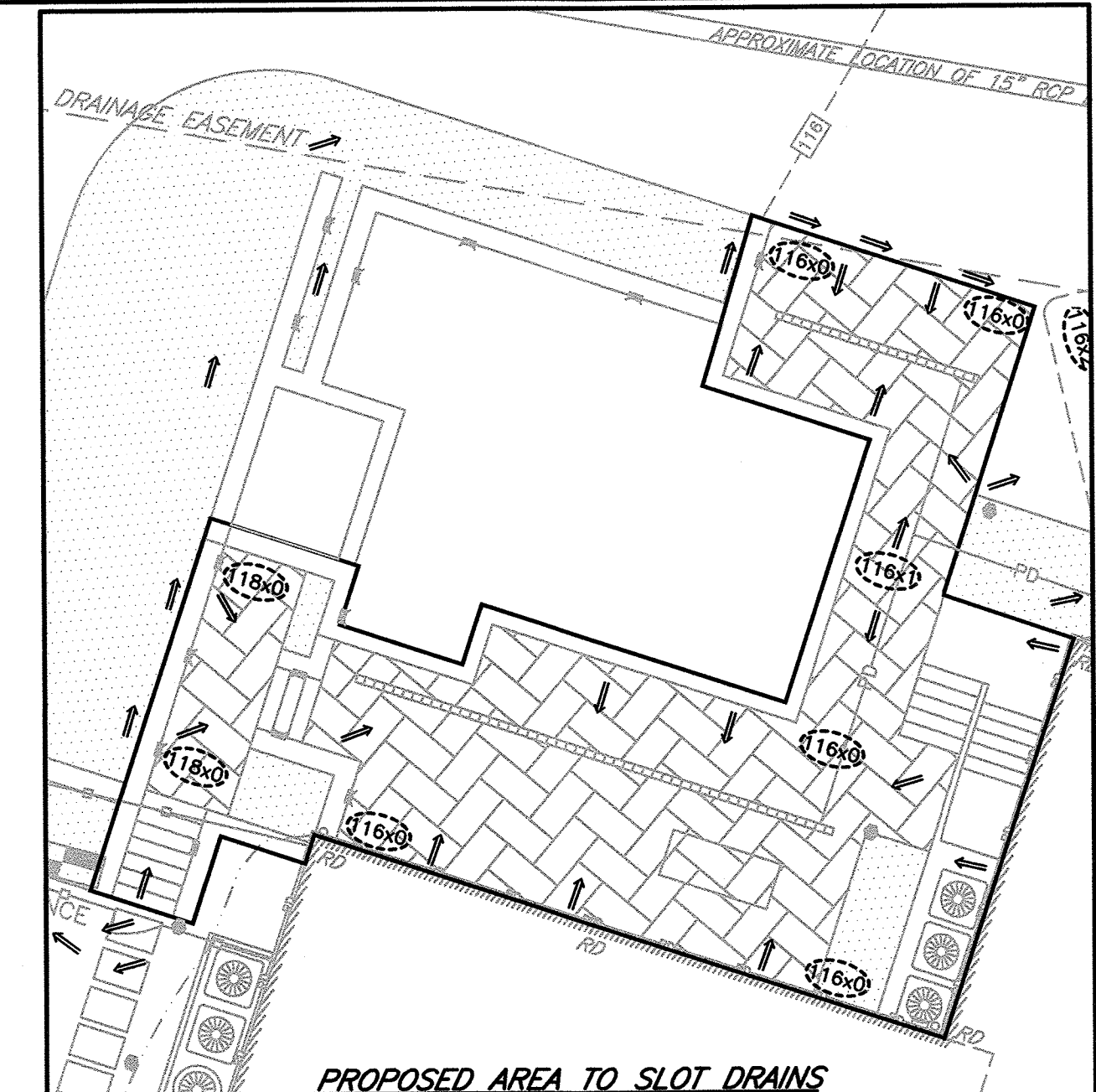


IMPERVIOUS AREAS				
	EXISTING	EXISTING NOT RECHARGED	PROPOSED	PROPOSED NOT RECHARGED
BUILDING	3,652± s.f.	3,652± s.f.	3,652± s.f.	3,652 s.f.
PAVEMENT	3,904± s.f.	3,904± s.f.	3,904± s.f.	3,904± s.f.
CONCRETE	155± s.f.	155± s.f.	155± s.f.	0± s.f.
WALL AND STEPS	455± s.f.	455± s.f.	762± s.f.	565± s.f.
PAVERS PATIOS & WALKS	1,378± s.f.	1,378± s.f.	1,641± s.f.	717± s.f.
POOL	0 s.f.	0 s.f.	702± s.f.	702± s.f.
TOTAL	9,544± s.f.	9,544± s.f.	10,816± s.f.	9,540± s.f.

EXISTING NON-CONFORMANCE:  
\*GROUNDWATER RECHARGE REQUIRED IF GREATER OF 15% LOT AREA OR 2,500 s.f. RENDERED IMPERVIOUS = 6,789± s.f.

ZONING TABLE			
ZONE	SINGLE RESIDENCE C		
DIMENSIONAL CONTROLS	REQUIRED/ALLOWED	EXISTING	PROPOSED
FRONT YARD SETBACK	40 ft.	40.6 ft.	40.6 ft.
SIDE YARD SETBACK	25 ft.	53.4 ft.	29.0 ft.
REAR YARD SETBACK	20 ft.	84.3 ft.	84.3 ft.
MIN. FRONTAGE	180 ft.	185.6 ft.	185.6 ft.
MIN. LOT AREA	40,000 s.f.	45,264 s.f.	45,264 s.f.
LOT COVERAGE	35%	8.1%	8.1%



**LOT OVERVIEW/SETBACKS**  
SCALE: 1"=40'

SOIL LOGS						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	STRUCTURE	CONSIST.
<b>TESTHOLE: T2A</b> ELEVATION=118.7						
0'-10"	A	sf	10YR 3/3		gr	fr
10'-24"	Bw	sf	10YR 6/6		gr	fr
24'-120"	C	grfs	2.5Y 3/4		gr	fr
NO REFUSAL; STATIC WATER DOWN 60"; WEeping DOWN 60" ESTIMATED SEASONAL HIGH WATER TABLE DOWN 48" AT ELEVATION=114.7"						
<b>TESTHOLE: T2B</b> ELEVATION=120.2'						
0'-4"	A	sf	10YR 3/3		gr	fr
4'-24"	Bw	sf	10YR 6/6		gr	fr
24'-120"	C	grfs	2.5Y 3/4		gr	fr
NO REFUSAL; STATIC WATER DOWN 75"; WEeping DOWN 75" ESTIMATED SEASONAL HIGH WATER TABLE DOWN 68" AT ELEVATION=114.5'						
<b>TESTHOLE: T2C</b> ELEVATION=117.5'						
0'-10"	Ap	sf	10YR 3/3		gr	fr
10'-27"	Bw	sf	10YR 6/6		gr	fr
27'-120"	C	grfs	2.5Y 3/3	7.5YR 6/8	7.5YR 5/1	abk
NO REFUSAL; STATIC WATER DOWN 100"; WEeping DOWN 100" ESTIMATED SEASONAL HIGH WATER TABLE DOWN 48" AT ELEVATION=113.5'						
<b>TESTHOLE: T2D</b> ELEVATION=116.8'						
0'-10"	Ap	sf	10YR 3/3		gr	fr
10'-27"	Bw	sf	10YR 6/6		gr	fr
27'-120"	C	grfs	2.5Y 3/3	2.5YR 3/6	2.5Y 6/3	abk
NO REFUSAL; STATIC WATER DOWN 105"; WEeping DOWN 96" ESTIMATED SEASONAL HIGH WATER TABLE DOWN 40" AT ELEVATION=113.5'						
<b>TESTHOLE: T2E</b> ELEVATION=118.8'						
0'-10"	Ap	sf	10YR 3/3		gr	fr
10'-27"	Bw	sf	2.5YR 4/8		gr	fr
27'-38"	C1	sf	10YR 5/4		abk	fr
38'-120"	C2	sf	10YR 4/4	2.5YR 4/8	2.5Y 6/4	fr
C1 LAYER IS A VERY FINE MATERIAL W/PERCHED WATER TABLE NO REFUSAL; STATIC WATER DOWN 92"; WEeping DOWN 92" ESTIMATED SEASONAL HIGH WATER TABLE DOWN 56" AT ELEVATION=114.1'						

NOTES:  
PROPERTY LINE INFORMATION TAKEN FROM A PLAN ENTITLED "DEFINITIVE PLAN HAYWARD FARM LYNNFIELD, MASS." DATED MAY 29, 2003 REVISED THROUGH NOVEMBER 11, 2003 BY HAYES ENGINEERING, INC.  
TOPOGRAPHIC INFORMATION TAKEN FROM A PLAN ENTITLED "AS BUILT PLAN IN LYNNFIELD, MASS." DATED JUNE 11, 2010 REVISED NOVEMBER 1, 2010 BY HAYES ENGINEERING, INC.  
WETLAND FLAGS A8B AND A9B ARE THE RESULT OF A FIELD INSPECTION BY BETTY ADELSON AND HAYES ENGINEERING, INC. ON MAY 8, 2013  
AS BUILT INFORMATION FROM AN ACTUAL ON THE GROUND SURVEY BY HAYES ENGINEERING, INC. PERFORMED ON OCTOBER 14, 2014 AND SEPTEMBER 26, 2022.

Plan to Accompany a  
**Notice of Intent**  
**LYNNFIELD, MASS.**

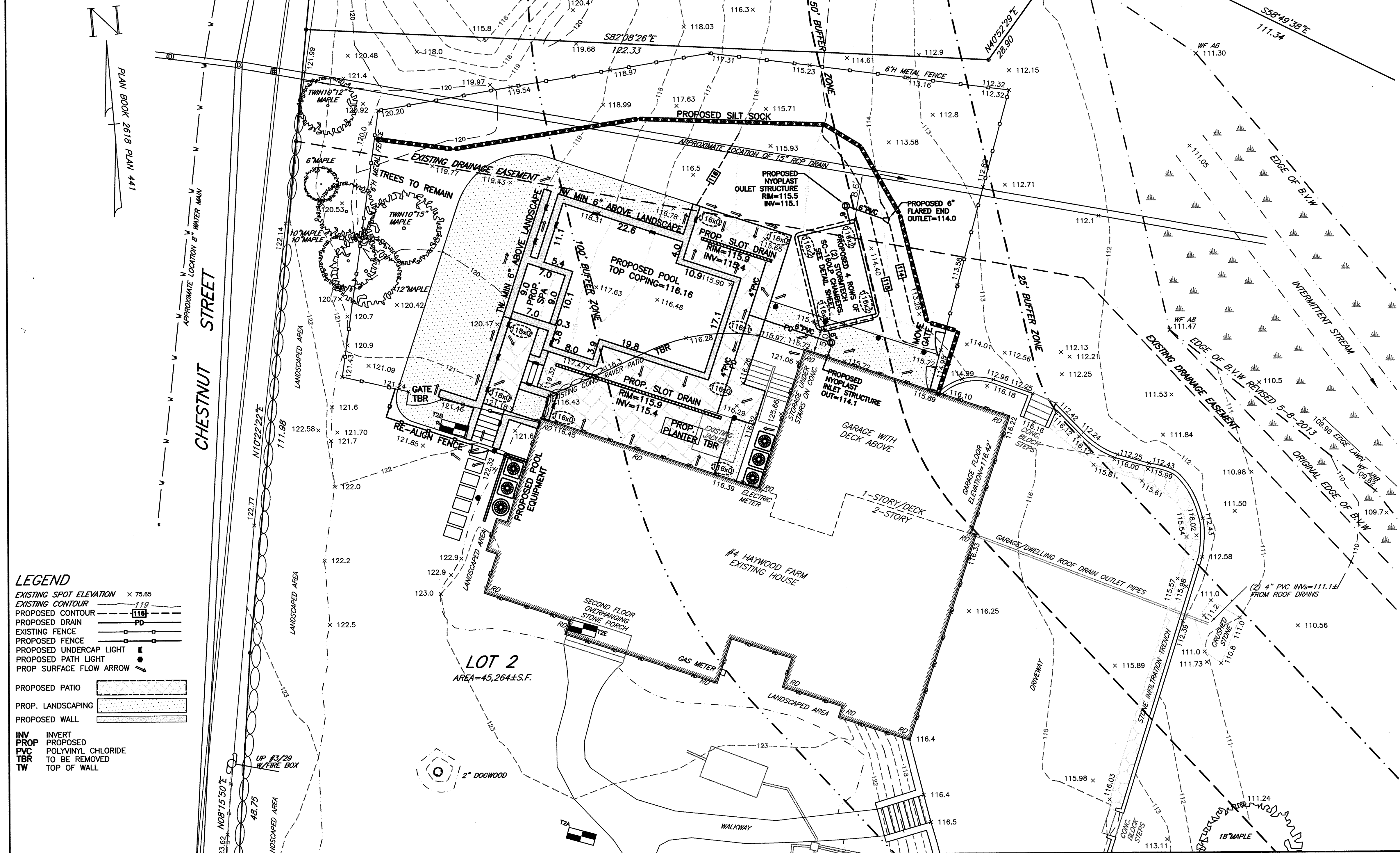
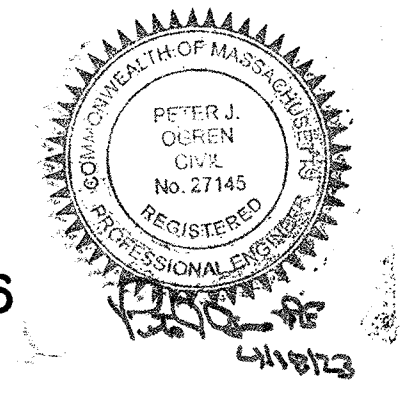
Hayes Engineering, Inc.  
Civil Engineers & Land Surveyors  
603 Salem Street  
Wakefield, MA 01880

Telephone: 781.246.2800  
Facsimile: 781.246.7596  
www.hayeseng.com

Scale: 1" = 10'

April 18, 2023

CURRENT OWNERSHIP:  
ERIC J. & FIONA DEVROE  
4 HAYWOOD FARM  
DEED BOOK 40442 PAGE 287  
ASSESSORS MAP 23 PARCEL 186  
SHEET 1 OF 2



**LEGEND**

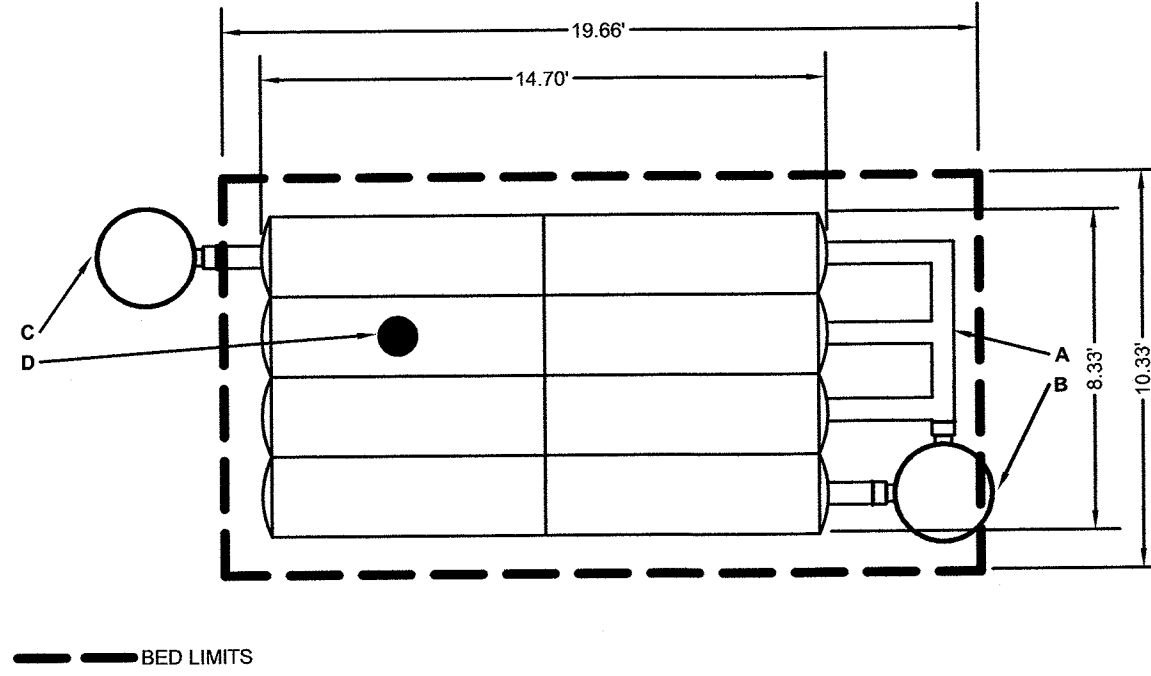
- EXISTING SPOT ELEVATION x 75.65
- EXISTING CONTOUR -11.0
- PROPOSED CONTOUR -11.8
- PROPOSED DRAIN PD
- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED UNDERCAP LIGHT
- PROPOSED PATH LIGHT
- PROP SURFACE FLOW ARROW
- PROPOSED PATIO
- PROP. LANDSCAPING
- PROPOSED WALL
- INVERT
- PROP. PROPOSED
- PVC POLYVINYL CHLORIDE
- TBR TO BE REMOVED
- TW TOP OF WALL



PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT	MAX FLOW
MANIFOLD	A	8" x 6" BOTTOM MANIFOLD, MOLDED FITTINGS	0.66'	
NYLOPLAST (INLET W/ISO PLUS ROW)	B	30" DIAMETER (24.00" SUMP MIN)		0.7 CFS IN
NYLOPLAST (OUTLET)	C	30" DIAMETER (DESIGN BY ENGINEER)		0.4 CFS OUT
INSPECTION PORT	D	4" SEE DETAIL		

PROPOSED LAYOUT		PROPOSED ELEVATIONS	
8	STORMTECH SC-160LP CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT UNPAVED)	125.00
8	STORMTECH SC-160LP END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)	116.89
6	STONE ABOVE (B)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	116.17
6	STONE BELOW (B)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT)	116.17
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)	116.17
195	INSTALLED SYSTEM VOLUME (CF)	TOP OF STONE	115.50
	(PERMETER STONE INCLUDED)	TOP OF SC-160LP CHAMBERS	115.00
	(COVER STONE INCLUDED)	8" x 6" BOTTOM MANIFOLD INVERT	114.06
203	SYSTEM AREA (SF)	8" BOTTOM CONNECTION INVERT	114.06
60.0	SYSTEM PERIMETER (ft)	6" BOTTOM CONNECTION INVERT	114.00
		BOTTOM OF SC-160LP CHAMBERS	113.50
		BOTTOM OF STONE	113.50

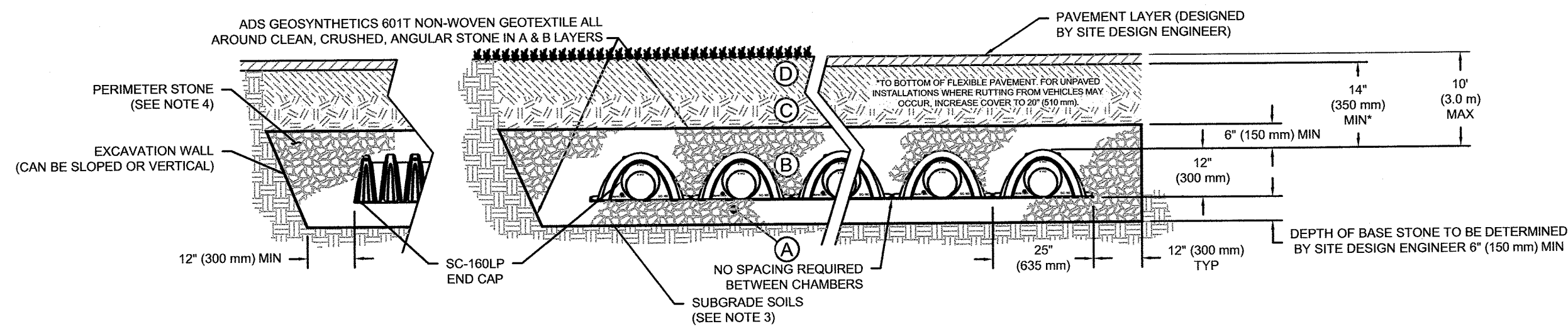


- NOTES**
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
  - DOE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
  - THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
  - THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE IN-SITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED UPON THIS INFORMATION IS PROVIDED.
  - NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

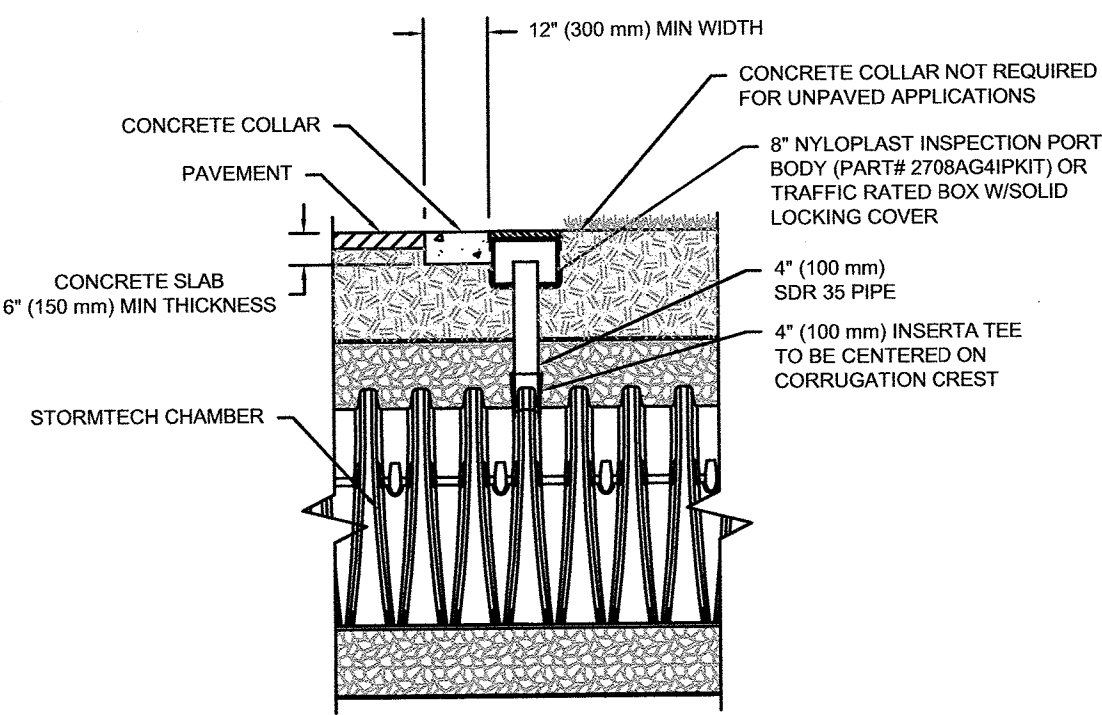
**ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS**

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 14" (355 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145' A-1, A-2-4, A-3 OR AASHTO M43' 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43' 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43' 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE <sup>2,3</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
  - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

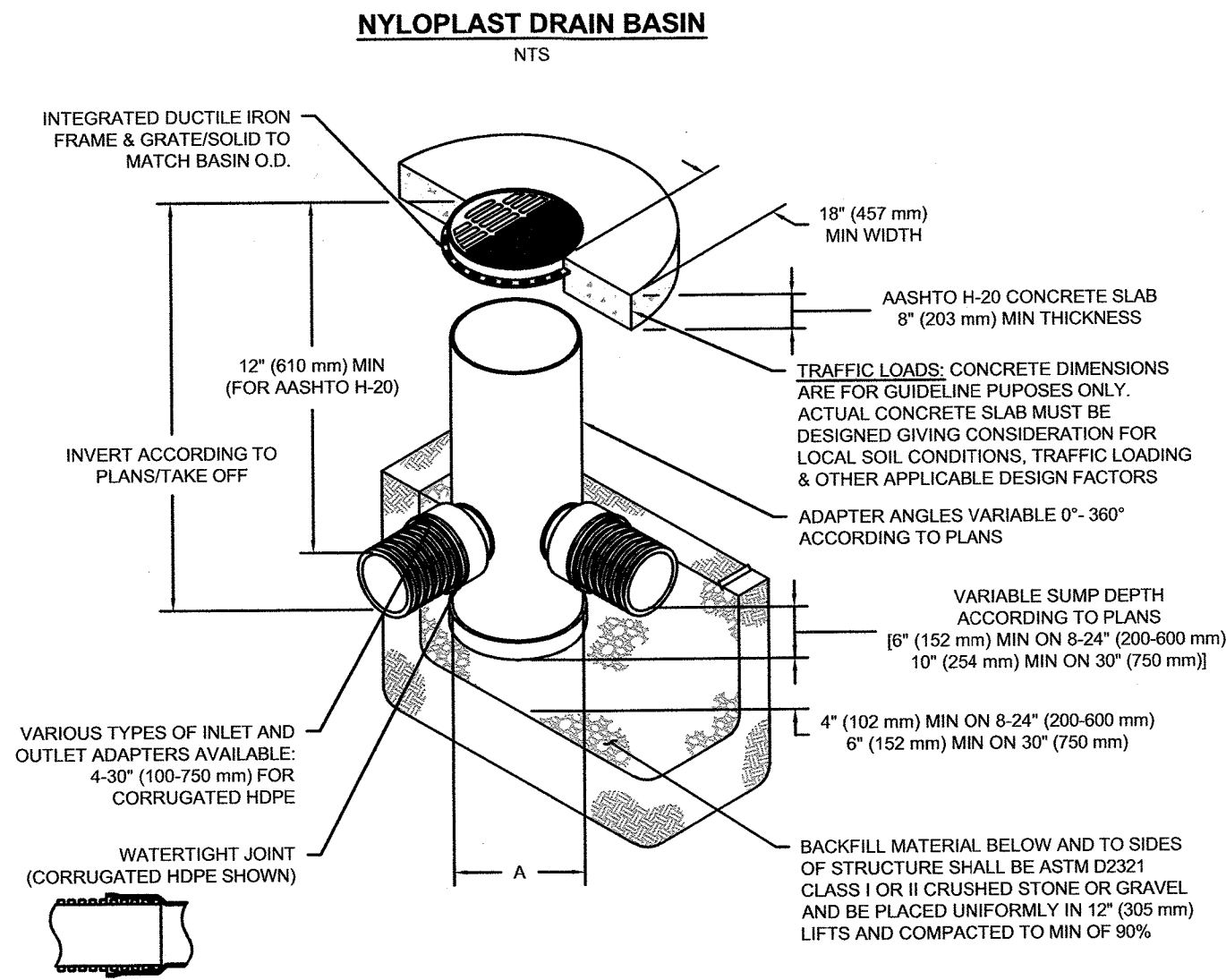


- NOTES:**
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  - CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (4-WEEK) AASHTO DESIGN TRUCK.
  - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
  - PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
  - REQUIREMENTS FOR HANDLING AND INSTALLATION:
    - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS
    - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5"
    - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT<sup>2</sup>, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

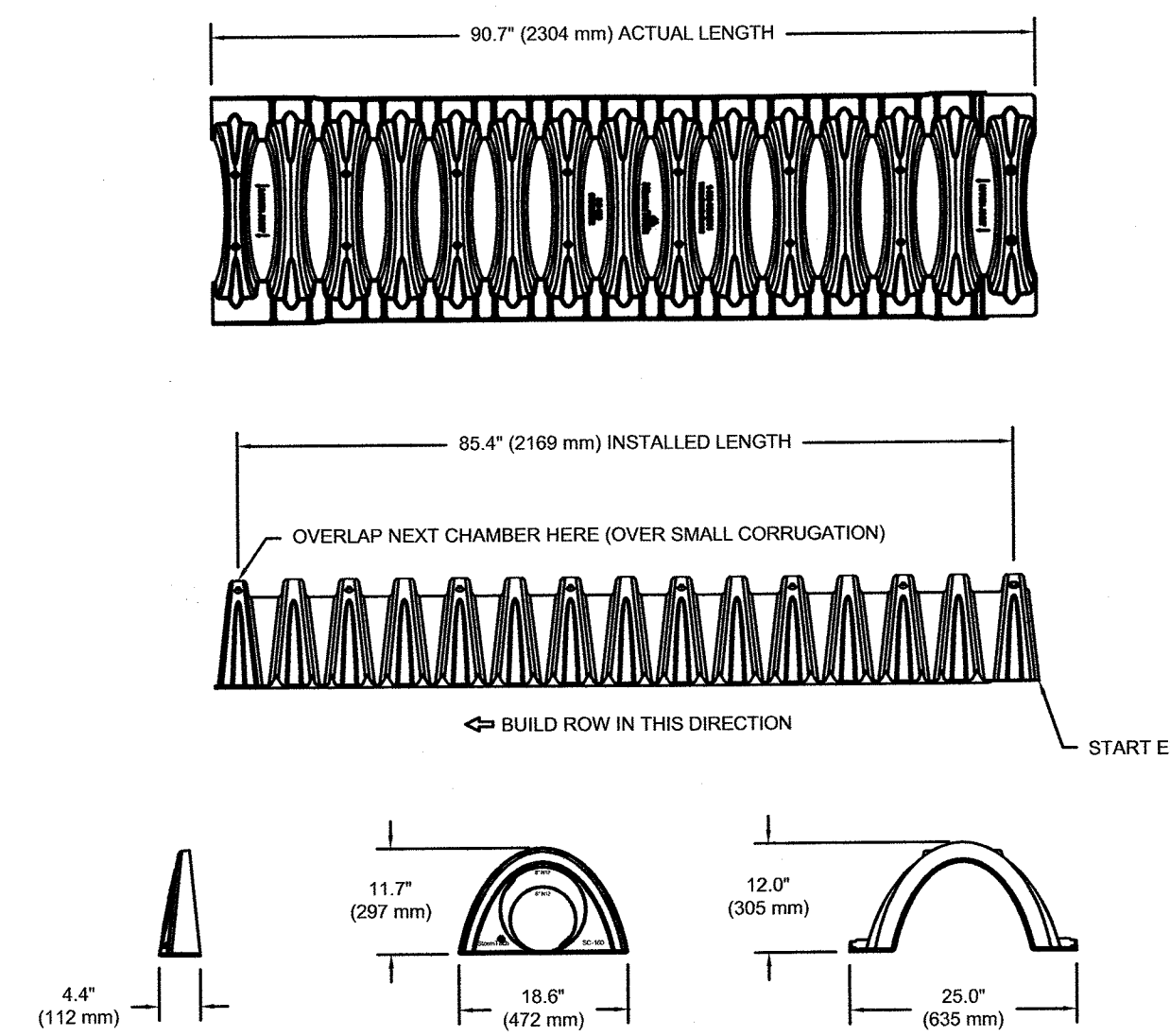
**4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)**  
NTS



- NOTES**
- 6-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
  - 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
  - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
  - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
  - FOR COMPLETE DESIGN AND PRODUCT INFORMATION: [WWW.NYLOPLAST-US.COM](http://WWW.NYLOPLAST-US.COM)
  - TO ORDER CALL: 800-821-6710

A	PART #	GRATE/SOLID COVER OPTIONS		
6"	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10"	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12"	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15"	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18"	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24"	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30"	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

**SC-160LP TECHNICAL SPECIFICATION**  
NTS



**NOMINAL CHAMBER SPECIFICATIONS**

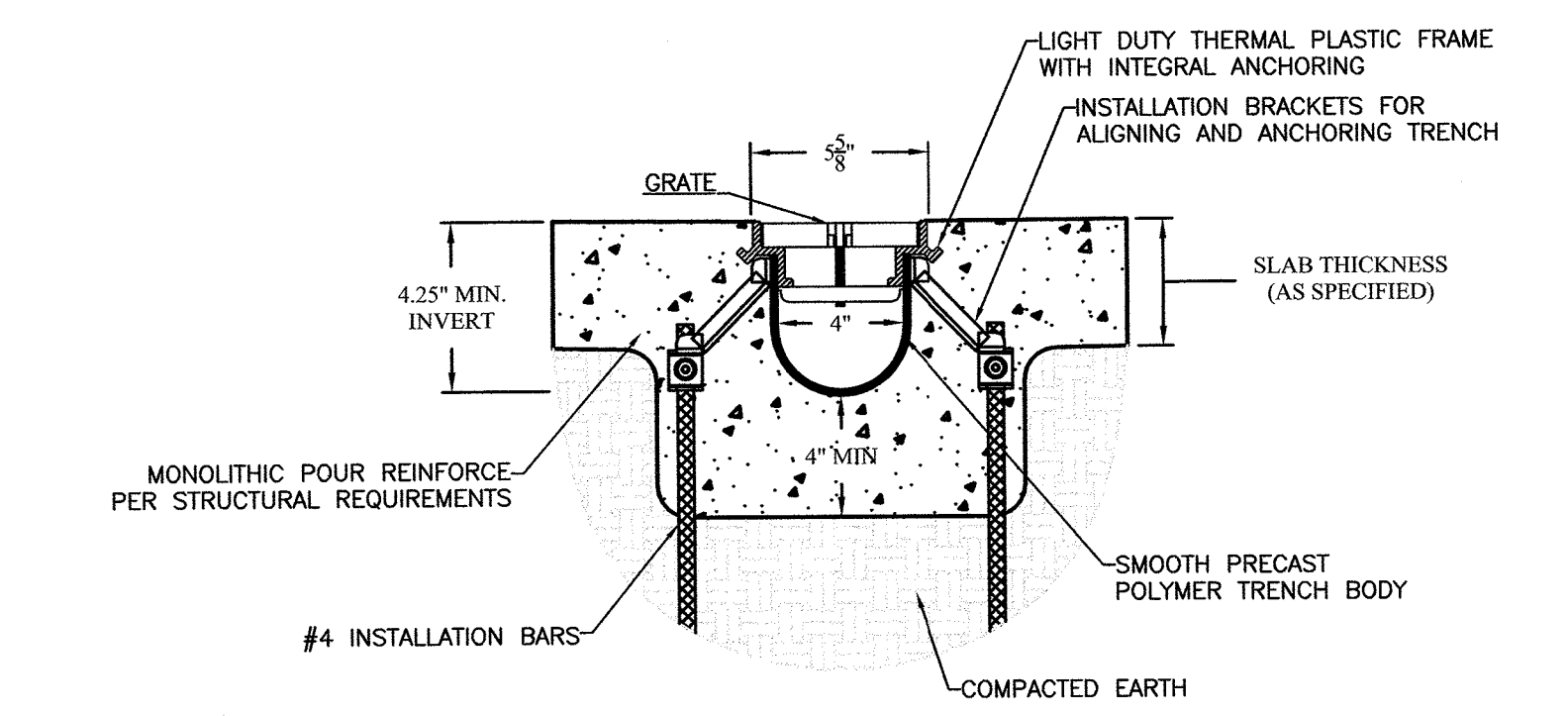
SIZE (W X H X INSTALLED LENGTH)	25.0" X 12.0" X 85.4"	(635 mm X 305 mm X 2169 mm)
CHAMBER STORAGE	6.80 CUBIC FEET	(0.19 m <sup>3</sup> )
MINIMUM INSTALLED STORAGE*	16.0 CUBIC FEET	(0.45 m <sup>3</sup> )
WEIGHT	24.0 lbs.	(10.9 kg)

\*ASSUMES 6" (152 mm) ABOVE, 6" (152 mm) BELOW, AND STONE BETWEEN CHAMBERS WITH 40% STONE POROSITY.

PART #	STUB	A
SC160EPP	6" (150 mm)	0.66" (16 mm)
SC160EPP08	8" (200 mm)	0.80" (20 mm)
SC160EPP08	8" (200 mm)	0.96" (24 mm)

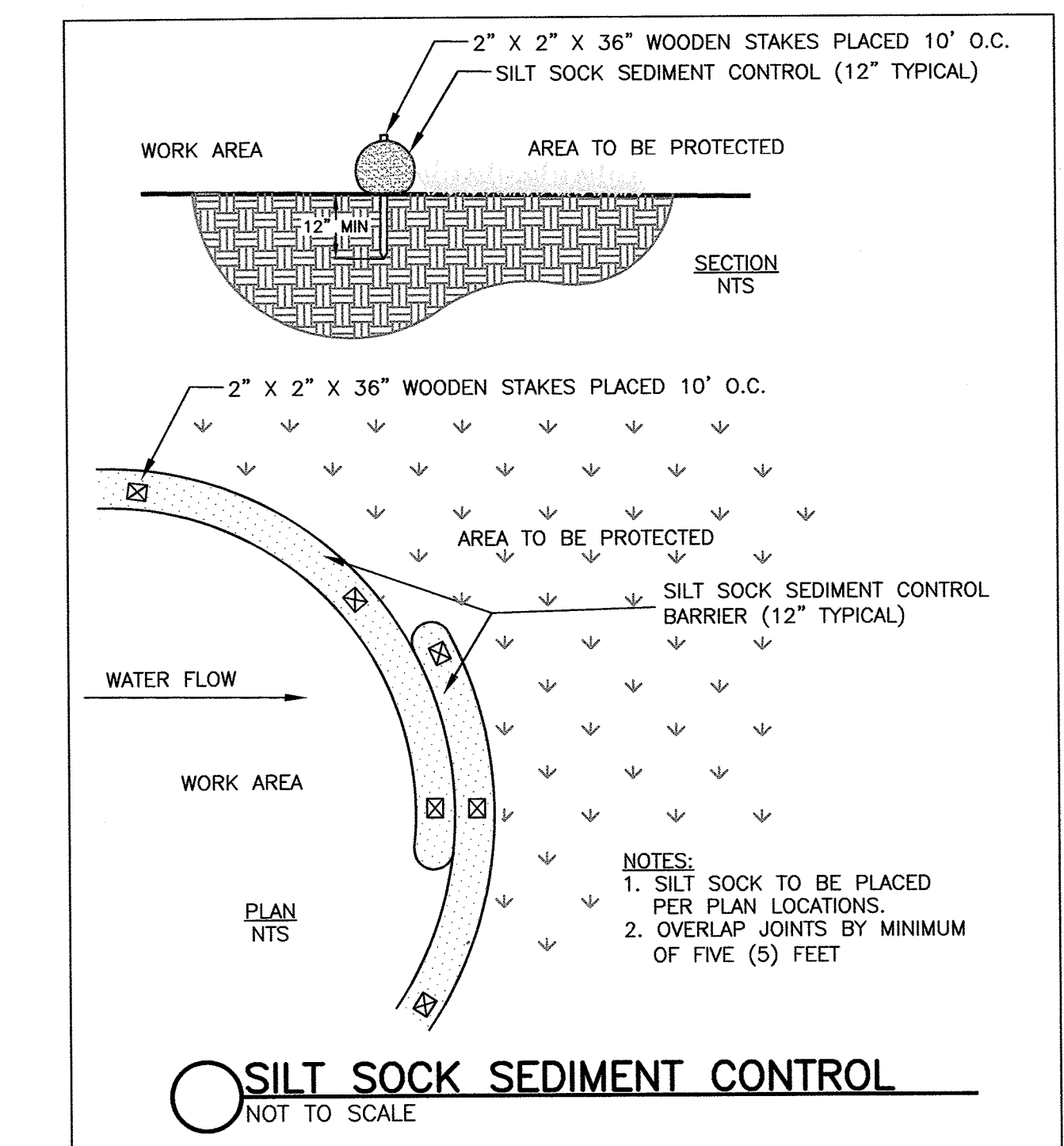
ALL STUBS ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2894.

NOTE: ALL DIMENSIONS ARE NOMINAL.



- NOTES:**
- STANDARD SLOPE IS 0.5% UNLESS OTHERWISE SPECIFIED
  - REINFORCE ACCORDING TO STRUCTURAL REQUIREMENTS
  - TRENCH DRAIN MUST BE 1/8" BELOW FINISHED PATIO GRADE

**DURA-TECH DT9F4-LDTP08Z1A SLOT DRAIN:**  
(OR APPROVED EQUAL)



**SILT SOCK SEDIMENT CONTROL**  
NOT TO SCALE

Plan to Accompany a  
Notice of Intent  
**LYNNFIELD, MASS.**

Hayes Engineering, Inc.  
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603 Salem Street  
Wakefield, MA 01880  
Telephone: 781.246.2800  
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www.hayeseng.com

Scale: 1" = 10'

April 18, 2023

**CURRENT OWNERSHIP:**  
ERIC J. & FIONA DEVROE  
4 HAYWOOD FARM  
DEED BOOK 40442 PAGE 287  
ASSESSORS MAP 23 PARCEL 186  
SHEET 2 OF 2

