

OSRD SITE PLAN & DEFINITIVE SUBDIVISION PLAN for THAXTON HEIGHTS ROAD

THAXTON ROAD & GROVER STREET

MAP 95 LOT 8 Beverly, MA MARCH 2019

REVISIONS		
NO.	DATE	DESCRIPTION
1	8/12/19	REVISE PER CITY ENGINEER & PLANNING COMMENTS

APPLICANT: HICKORY STREET REALTY TRUST
JEFFREY KRUGMAN, TRUSTEE
900 CUMMINGS CENTER, SUITE 412S
BEVERLY, MA 01915

OWNER: SPRING HILL VENTURES, LLC
410 BOSTON POST ROAD, SUITE 28
SUDBURY, MA 01776

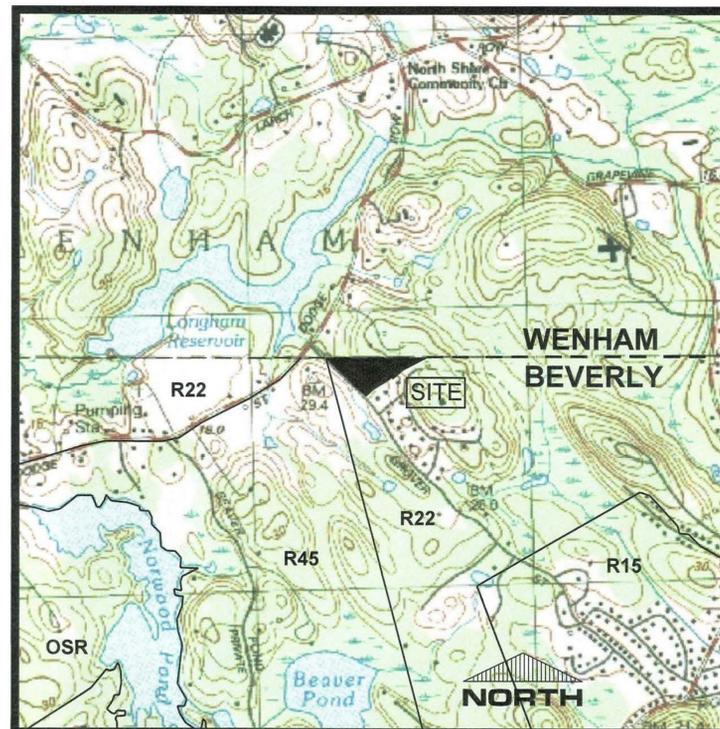
ENGINEER: GRIFFIN ENGINEERING GROUP, LLC
ROBERT H. GRIFFIN, PE
495 CABOT STREET, 2ND FLOOR
BEVERLY, MA 01915

SURVEYOR: LEBLANC SURVEY ASSOCIATES
VERNON LEBLANC, PLS
161 HOLTEN STREET
DANVERS, MA 01923

LANDSCAPE ARCHITECT: LAURA RUTLEDGE
38 WOODBURY STREET
BEVERLY, MA 01923

List of Drawings:

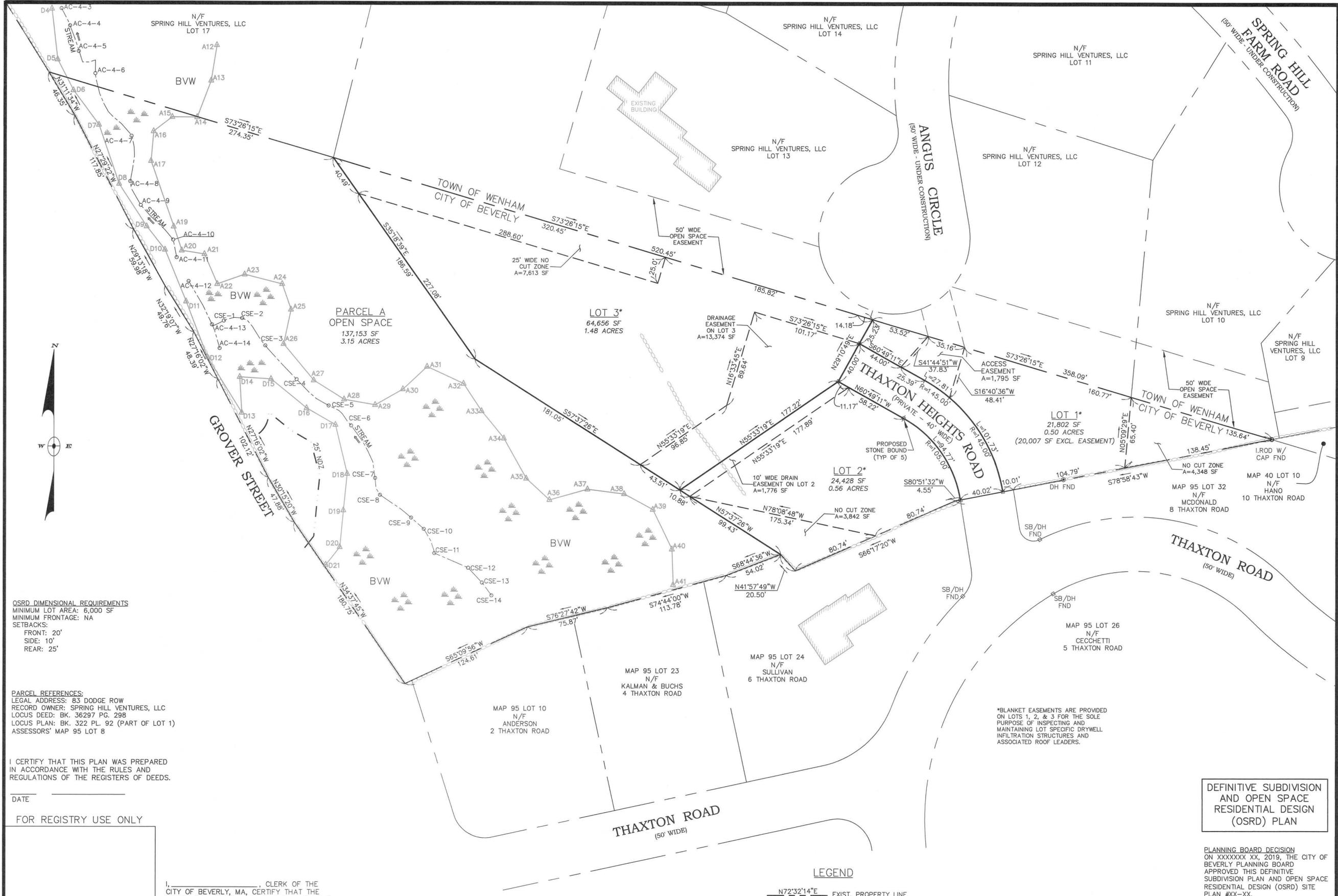
- C-1: EXISTING CONDITIONS
- C-2: PLAN OF LAND
- C-3: OSRD SITE PLAN
- C-4: UTILITIES PLAN
- C-5: PROFILE & SECTION
- C-6: DETAILS I
- C-7: DETAILS II
- C-8: DETAILS III



LOCUS PLAN SCALE: 1" = 1,000'

I, _____, CLERK OF THE CITY OF BEVERLY, MA, CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE BEVERLY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED IN THIS OFFICE AND THAT NO APPEAL WAS RECEIVED DURING THE TWENTY (20) DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SUCH NOTICE.

BEVERLY CITY CLERK _____ DATE _____



OSRD DIMENSIONAL REQUIREMENTS
 MINIMUM LOT AREA: 6,000 SF
 MINIMUM FRONTAGE: NA
 SETBACKS:
 FRONT: 20'
 SIDE: 10'
 REAR: 25'

PARCEL REFERENCES:
 LEGAL ADDRESS: 83 DODGE ROW
 RECORD OWNER: SPRING HILL VENTURES, LLC
 LOCUS DEED: BK. 36297 PG. 298
 LOCUS PLAN: BK. 322 PL. 92 (PART OF LOT 1)
 ASSESSORS' MAP 95 LOT 8

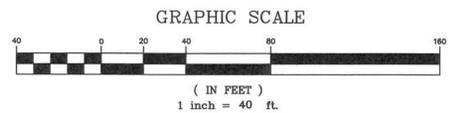
I CERTIFY THAT THIS PLAN WAS PREPARED
 IN ACCORDANCE WITH THE RULES AND
 REGULATIONS OF THE REGISTERS OF DEEDS.

DATE _____
 FOR REGISTRY USE ONLY

I, _____, CLERK OF THE
 CITY OF BEVERLY, MA, CERTIFY THAT THE
 NOTICE OF APPROVAL OF THIS PLAN BY THE
 BEVERLY PLANNING BOARD HAS BEEN
 RECEIVED AND RECORDED IN THIS OFFICE AND
 THAT NO APPEAL WAS RECEIVED DURING THE
 TWENTY (20) DAYS NEXT AFTER SUCH
 RECEIPT AND RECORDING OF SUCH NOTICE.

BEVERLY CITY CLERK _____ DATE _____

LEGEND
 N72°32'14"E 177.24' EXIST. PROPERTY LINE
 N23°43'25"W 127.48' PROP. PROPERTY LINE
 □ PROP. STONE BOUND TO BE SET



**DEFINITIVE SUBDIVISION
 AND OPEN SPACE
 RESIDENTIAL DESIGN
 (OSRD) PLAN**

PLANNING BOARD DECISION
 ON XXXXXX XX, 2019, THE CITY OF
 BEVERLY PLANNING BOARD
 APPROVED THIS DEFINITIVE
 SUBDIVISION PLAN AND OPEN SPACE
 RESIDENTIAL DESIGN (OSRD) SITE
 PLAN #XX-XX.

CITY OF BEVERLY
 PLANNING BOARD

DATE: _____

No.	Date	Description
1	8/12/19	ADD NO CUT ZONES ON LOTS 1 & 2. REVISE DRAIN EASEMENT. ADD BLANKET EASEMENT NOTE.

Revisions

LEBLANC SURVEY
 ASSOCIATES
 161 HOLTEN STREET
 DANVERS, MA 01923
 978-774-6012



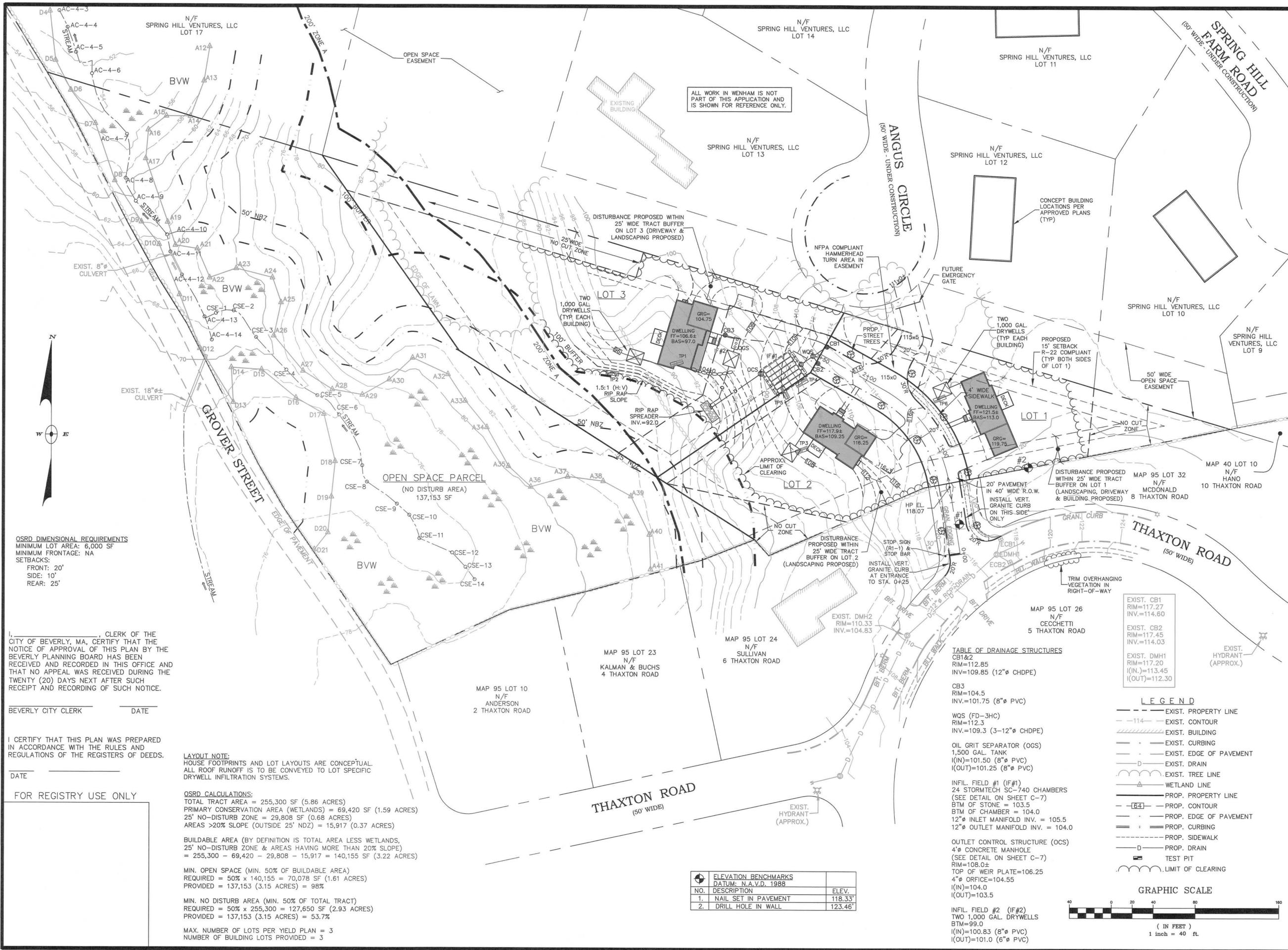
495 Cabot Street, 2nd Floor
 Beverly, MA 01915
 Tel: 978-927-5111
 Fax: 978-927-5103

HICKORY STREET
 REALTY TRUST
 THAXTON ROAD
 BEVERLY, MA

THAXTON HEIGHTS RD.
 PLAN OF LAND

Scale: 1"=40'
 Job No.: 1729
 File Name: p/p/mc/th
 Date: 3/6/19

C-2



ALL WORK IN WENHAM IS NOT PART OF THIS APPLICATION AND IS SHOWN FOR REFERENCE ONLY.

OSRD DIMENSIONAL REQUIREMENTS
 MINIMUM LOT AREA: 6,000 SF
 MINIMUM FRONTAGE: NA
 SETBACKS:
 FRONT: 20'
 SIDE: 10'
 REAR: 25'

I, _____, CLERK OF THE CITY OF BEVERLY, MA, CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE BEVERLY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED IN THIS OFFICE AND THAT NO APPEAL WAS RECEIVED DURING THE TWENTY (20) DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SUCH NOTICE.

BEVERLY CITY CLERK _____ DATE _____

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DATE _____
 FOR REGISTRY USE ONLY

LAYOUT NOTE:
 HOUSE FOOTPRINTS AND LOT LAYOUTS ARE CONCEPTUAL. ALL ROOF RUNOFF IS TO BE CONVEYED TO LOT SPECIFIC DRYWELL INFILTRATION SYSTEMS.

OSRD CALCULATIONS:
 TOTAL TRACT AREA = 255,300 SF (5.86 ACRES)
 PRIMARY CONSERVATION AREA (WETLANDS) = 69,420 SF (1.59 ACRES)
 25' NO-DISTURB ZONE = 29,808 SF (0.68 ACRES)
 AREAS >20% SLOPE (OUTSIDE 25' NDZ) = 15,917 (0.37 ACRES)

BUILDABLE AREA (BY DEFINITION IS TOTAL AREA LESS WETLANDS, 25' NO-DISTURB ZONE & AREAS HAVING MORE THAN 20% SLOPE)
 = 255,300 - 69,420 - 29,808 - 15,917 = 140,155 SF (3.22 ACRES)

MIN. OPEN SPACE (MIN. 50% OF BUILDABLE AREA)
 REQUIRED = 50% x 140,155 = 70,078 SF (1.61 ACRES)
 PROVIDED = 137,153 (3.15 ACRES) = 98%

MIN. NO DISTURB AREA (MIN. 50% OF TOTAL TRACT)
 REQUIRED = 50% x 255,300 = 127,650 SF (2.93 ACRES)
 PROVIDED = 137,153 (3.15 ACRES) = 53.7%

MAX. NUMBER OF LOTS PER YIELD PLAN = 3
 NUMBER OF BUILDING LOTS PROVIDED = 3

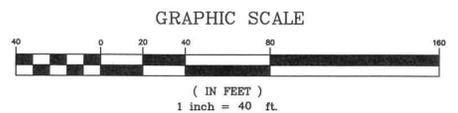
ELEVATION BENCHMARKS		
DATUM: N.A.V.D. 1988		
NO.	DESCRIPTION	ELEV.
1.	NAIL SET IN PAVEMENT	118.33'
2.	DRILL HOLE IN WALL	123.46'

TABLE OF DRAINAGE STRUCTURES

CB1&2	RIM=112.85	INV.=109.85 (12" Ø CHDPE)
CB3	RIM=104.5	INV.=101.75 (8" Ø PVC)
WQS (FD-3HC)	RIM=112.3	INV.=109.3 (3-12" Ø CHDPE)
OIL GRIT SEPARATOR (OGS)	1,500 GAL. TANK	I(IN)=101.50 (8" Ø PVC)
		I(OUT)=101.25 (8" Ø PVC)
INFIL. FIELD #1 (IF#1)	24 STORMTECH SC-740 CHAMBERS	(SEE DETAIL ON SHEET C-7)
	BTM OF STONE = 103.5	BTM OF CHAMBER = 104.0
	12" Ø INLET MANIFOLD INV. = 105.5	12" Ø OUTLET MANIFOLD INV. = 104.0
OUTLET CONTROL STRUCTURE (OCS)	4" CONCRETE MANHOLE	(SEE DETAIL ON SHEET C-7)
	RIM=108.0±	TOP OF WEIR PLATE=106.25
	4" Ø ORFICE=104.55	I(IN)=104.0
		I(OUT)=103.5
INFIL. FIELD #2 (IF#2)	TWO 1,000 GAL. DRYWELLS	BTM=99.0
		I(IN)=100.83 (8" Ø PVC)
		I(OUT)=101.0 (6" Ø PVC)

EXIST. CB1	RIM=117.27	INV.=114.60
EXIST. CB2	RIM=117.45	INV.=114.03
EXIST. DMH1	RIM=117.20	I(IN)=113.45
		I(OUT)=112.30

- LEGEND**
- EXIST. PROPERTY LINE
 - 114- EXIST. CONTOUR
 - ▭ EXIST. BUILDING
 - - - EXIST. CURBING
 - - - EXIST. EDGE OF PAVEMENT
 - - - EXIST. DRAIN
 - ~ ~ ~ EXIST. TREE LINE
 - ▭ EXIST. WETLAND LINE
 - PROP. PROPERTY LINE
 - - - PROP. CONTOUR
 - - - PROP. EDGE OF PAVEMENT
 - - - PROP. CURBING
 - - - PROP. SIDEWALK
 - - - PROP. DRAIN
 - ⊠ TEST PIT
 - - - LIMIT OF CLEARING



CITY OF BEVERLY PLANNING BOARD

DATE: _____

No.	Date	Description
1	8/12/19	ADD NO CUT ZONES ON LOTS 1 & 2. ADD ACCESS MANHOLE TO INFIL. FIELD #1. LABEL NO DISTURB. ZONE.

Revisions

8.12.19

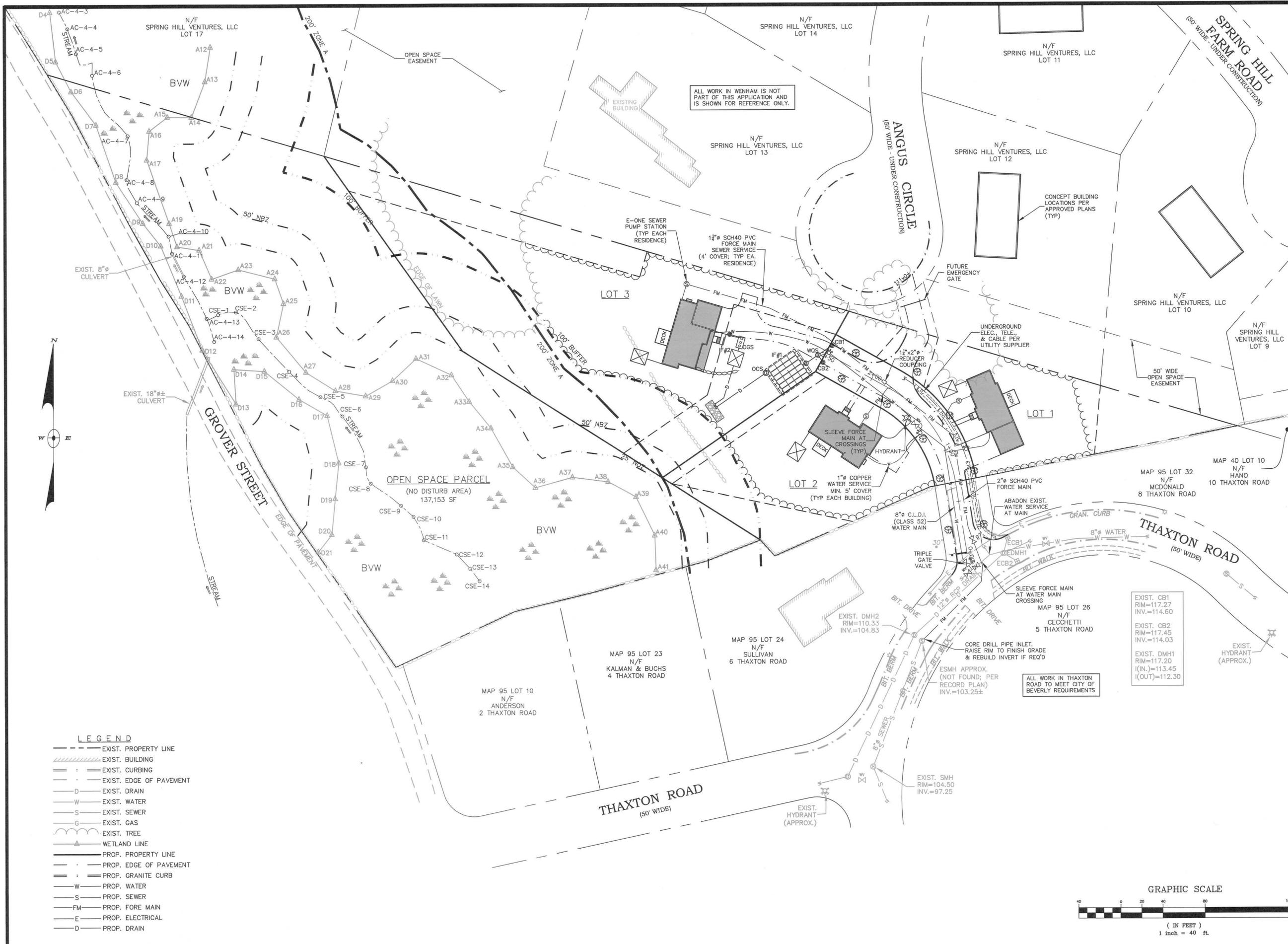
Griffin Engineering Group, LLC
 495 Cabot Street, 2nd Floor
 Beverly, MA 01915
 Tel: 978-927-5111
 Fax: 978-927-5103

HICKORY STREET REALTY TRUST
 THAXTON ROAD
 BEVERLY, MA

THAXTON HEIGHTS RD.
 OSRD SITE PLAN

Scale: 1"=40'
 Job No.: 1729
 File Name: p/p/mc/th
 Date: 3/6/19

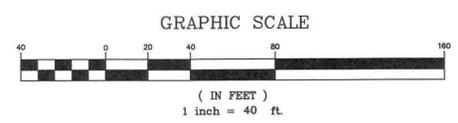
C-3



ALL WORK IN WENHAM IS NOT PART OF THIS APPLICATION AND IS SHOWN FOR REFERENCE ONLY.

ALL WORK IN THAXTON ROAD TO MEET CITY OF BEVERLY REQUIREMENTS

- LEGEND**
- EXIST. PROPERTY LINE
 - EXIST. BUILDING
 - EXIST. CURBING
 - EXIST. EDGE OF PAVEMENT
 - D --- EXIST. DRAIN
 - W --- EXIST. WATER
 - S --- EXIST. SEWER
 - G --- EXIST. GAS
 - EXIST. TREE
 - WETLAND LINE
 - PROP. PROPERTY LINE
 - PROP. EDGE OF PAVEMENT
 - PROP. GRANITE CURB
 - W --- PROP. WATER
 - S --- PROP. SEWER
 - FM --- PROP. FORE MAIN
 - E --- PROP. ELECTRICAL
 - D --- PROP. DRAIN



No.	Date	Description
1	8/12/19	ADD NO CUT ZONES ON LOTS 1 & 2. ADD ACCESS MANHOLE TO INFIL. FIELD #1. LABEL NO. DISTURB. ZONE.

Revisions



8.12.19



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HICKORY STREET
REALTY TRUST
THAXTON ROAD
BEVERLY, MA

THAXTON HEIGHTS RD.

UTILITIES PLAN

Scale: 1"=40'

Job No.: 1729

File Name: p/p/mc/th

Date: 3/6/19

C-4

GENERAL NOTES

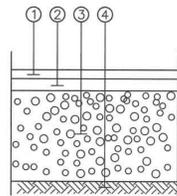
- THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES IN THE LOCATION OF ANY UTILITIES SHOWN OR ENCOUNTERED DURING CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER.
- THE CONTRACTOR SHALL CALL DIG-SAFE 72 HOURS PRIOR TO CONSTRUCTION TO INFORM UTILITY COMPANIES OF ANY EXCAVATION ADJACENT TO EXISTING UTILITIES.
- THE CONTRACTOR SHALL NOTIFY THE OWNER, UTILITY COMPANIES, POLICE, FIRE AND DPW PRIOR TO ANY BLASTING.
- WHENEVER EXISTING STRUCTURES ARE ENCOUNTERED, THE CONTRACTOR SHALL REPAIR ANY DAMAGED STRUCTURES OR REPLACE ANY REMOVED STRUCTURES, AND MAKE ANY IMPROVEMENTS ABOVE OR BELOW GRADE TO A CONDITION BETTER THAN OR EQUAL TO EXISTING CONDITIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIAL AT AN APPROVED SITE. BURIAL OF WASTE MATERIAL ON-SITE IS NOT PERMITTED.
- THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTIES FROM ON-SITE CONSTRUCTION ACTIVITIES AND REMOVE ANY SEDIMENT OR DEBRIS DEPOSITED THEREON IMMEDIATELY.
- DRAINAGE GENERATED AS A RESULT OF DEWATERING SHALL BE DISCHARGED TO EXISTING DRAINAGE COURSES WITH PROPER FILTRATION AND EROSION CONTROL MEASURES. DISCHARGE ONTO PAVEMENT OR PRIVATE PROPERTY SHALL NOT BE ALLOWED.
- IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE ENGINEER AS WELL AS THE APPROVING AUTHORITIES SHALL BE NOTIFIED IN WRITING BEFORE CONSTRUCTION.
- ONLY THOSE PLANS APPROVED BY THE CITY OF BEVERLY ARE TO BE USED FOR CONSTRUCTION.
- GRANULAR FILL SHALL BE NON-PLASTIC, WITH LESS THAN 10% PASSING #200 SIEVE.
- UNLESS OTHERWISE NOTED, COMPACT ALL LAYERS TO 95% MODIFIED PROCTOR.
- ALL WATER, SEWER, AND DRAINAGE WORK SHALL COMPLY WITH THE CITY OF BEVERLY REQUIREMENTS. ALL WORK WITHIN 10' OF THE PROPOSED RESIDENCE TO CONFORM TO MASSACHUSETTS BUILDING CODE, AND ANY LOCAL BOARD OF HEALTH SUPPLEMENTARY REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HORIZONTAL AND VERTICAL CONTROL OF ALL SYSTEM COMPONENTS.
- SAFETY MEASURES, DAY-TO-DAY CONTROL OF WORK AND CONSTRUCTION METHODS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- PLACE 4" LOAM AND SUNNY LAWN SEED MIXTURE (200 LB/ACRE), STARTER FERTILIZER, LIME AS REQUIRED OVER ALL DISTURBED AREAS. PROVIDE EROSION CONTROL SEED MIX AND BLANKETS ON 2:1 (H:V) INFILTRATION BASIN EMBANKMENTS SLOPES. SEED MIX TO BE NEW ENGLAND EROSION CONTROL/RESTORATION FOR DETENTION BASINS AND MOIST SITES BY NEW ENGLAND WETLANDS PLANT, INC. OR APPROVED EQUAL.
- IN CASES WHERE LEDGE OR BOULDERS ARE PRESENT, THE ENGINEER WILL NOT BE RESPONSIBLE FOR ASSURING THE AMOUNT OF ROCK TO BE ENCOUNTERED.
- CONTRACTOR TO PROVIDE INDIVIDUAL WATER, SEWER, GAS, ELECTRICAL, TELEPHONE, AND CABLE BUILDING SERVICES TO LOT LINE DURING THE CONSTRUCTION OF THE ROADWAY.
- PROPOSED RESIDENCE FOOTPRINT, ON-LOT UTILITIES AND GRADING ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY.
- SHOULD THE RODENT POPULATION BE DISPLACED (LEAVE ITS NATURAL HABITAT) BECAUSE OF LAND DEVELOPMENT, THEN THE DEVELOPER MUST BEAR THE RESPONSIBILITY OF RETAINING THE SERVICES OF A PROFESSIONAL EXTERMINATING COMPANY TO ABATE THE RODENT MIGRATION PROBLEM. THIS SERVICE MUST ADEQUATELY SOLVE THE PROBLEM AND MUST BE COMPLETED AT THE EXPENSE OF THE DEVELOPER.

LIST OF WAIVERS

- SUBDIVISION RULES & REGULATIONS:**
- §375-13.B.(4): MAPPING TREES >6" DBH
 - §375-14.B.(2): MINIMUM CENTERLINE RADIUS
 - §375-14.C: RIGHT-OF-WAY & PAVEMENT WIDTH
 - §375-14.D.(3): LEVELING AREA
 - §375-14.E.(2): TURN-AROUND
 - §375-27.B: SIDEWALKS
 - §375-28.A: CURBS AND BERMS
 - §375-33: STREET LIGHTS
 - §375-34: FIRE ALARM PULL BOX

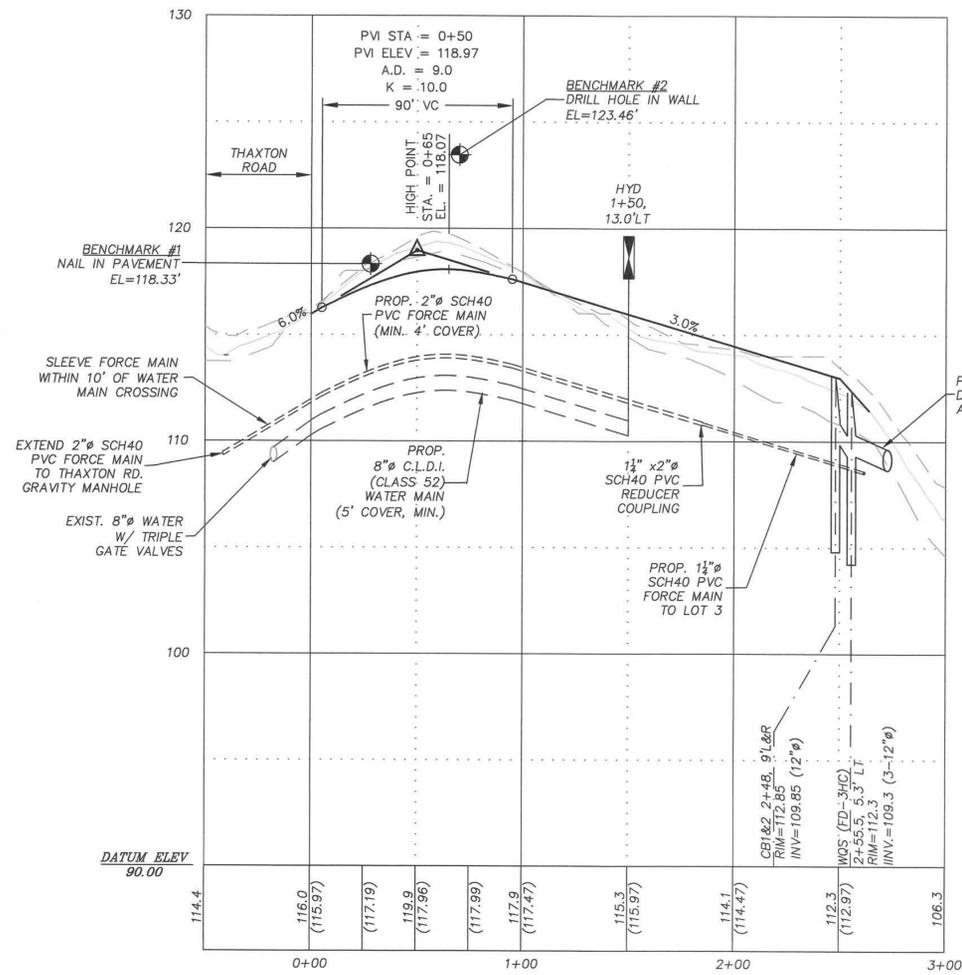
- OSRD SITE PLAN ORDINANCE:**
- §300.54.F(3)(b)[2]: 25' TRACT BUFFER
 - §300.54.F(3)(b)[8]: MAPPING TREES >10" DBH
 - §300.54.G(5): MINIMUM ROADWAY WIDTH

- KEY:**
- 1 1/2" CLASS 1 BIT. CONCRETE TOP COURSE TYPE I-1 (M3.11.0 - TABLE A).
 - 3" CLASS 1 BIT. CONCRETE BINDER COURSE (M3.11.0 - TABLE A).
 - 12" DENSE GRADED CRUSHED STONE FOR SUB-BASE (M2.01.7)
 - PREPARED SUBGRADE.



FULL DEPTH PAVEMENT
N.T.S.

- NOTES:**
- REMOVE ALL LOAM, ROOTS, SUBSOIL AND DELETERIOUS MATERIALS.
 - COMPACT ALL LAYERS, AND SUBGRADE, TO 95% MOD. PROCTOR.
 - MATERIAL REFERENCES ARE TO 1995 EDITION OF MASS. HIGHWAY STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
 - 4" LOAM, SEED AND MULCH ALL DISTURBED AREAS.
LOAM = M 1.05.0
SEED = M 6.03.0 SLOPE MIX
MULCH = M 6.04.0 ANY TYPE
 - IN LEDGE, REMOVE LEDGE TO MIN. DEPTH OF 24" BELOW FINISH GRADE; BACKFILL WITH COMPACTED GRAVEL.



ROADWAY PROFILE

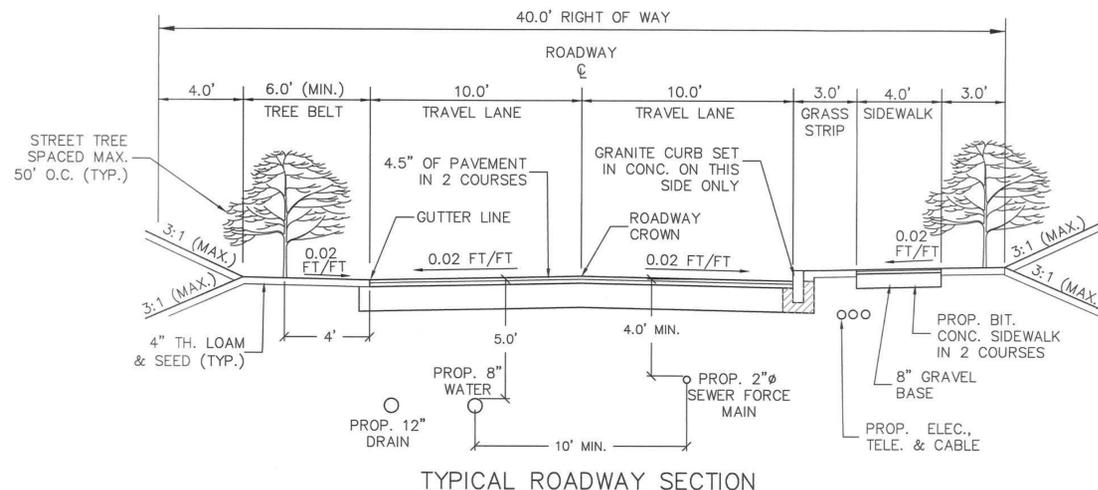
VERTICAL SCALE : 1"=4'
HORIZONTAL SCALE : 1"=40'

DRAIN PIPE SCHEDULE

PIPE	LENGTH	PIPE	SLOPE
CB1 TO WQS	12.0'	12"Ø CHDPE	6.6%
CB2 TO WQS	4.5'	12"Ø CHDPE	12.2%
WQS TO INF. FIELD #1	10'±	12"Ø CHDPE	28%
OCS TO OUTFALL	54'±	12"Ø CHDPE	23%
CB3 TO OGS	8'	8"Ø PVC	3.1%
OGS TO INF. FIELD #2	4'	8"Ø PVC	6.3%
INF. FIELD #2 TO OUTFALL	40'	6"Ø PVC	22.5%

LEGEND

- EXISTING CENTERLINE GRADE
- EXISTING GRADE 12' RIGHT
- EXISTING GRADE 12' LEFT
- PROPOSED CENTERLINE GRADE
- SEWER LINE
- WATER LINE
- DRAINAGE LINE



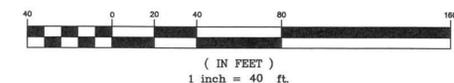
TYPICAL ROADWAY SECTION

SCALE: 1"=4'
(LOOKING UPSTATION)

ROADWAY SECTION NOTES:

- REMOVE ALL LOAM, ROOTS, SUBSOIL AND DELETERIOUS MATERIALS.
- COMPACT ALL LAYERS, AND SUBGRADE, TO 95% MOD. PROCTOR.
- MATERIAL REFERENCES ARE TO 1995 EDITION OF MASS. HIGHWAY STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- 4" LOAM, SEED AND MULCH ALL DISTURBED AREAS.
LOAM = M 1.05.0
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MULCH = M 6.04.0 ANY TYPE
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GRAPHIC SCALE



No. Date Description

Revisions



8.12.19



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PROFILE & SECTION

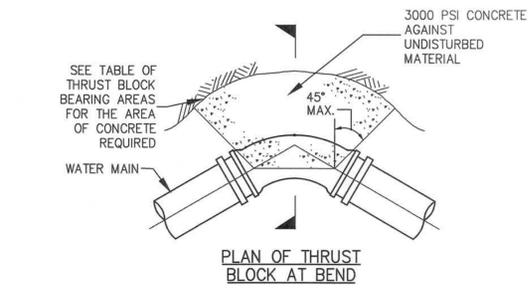
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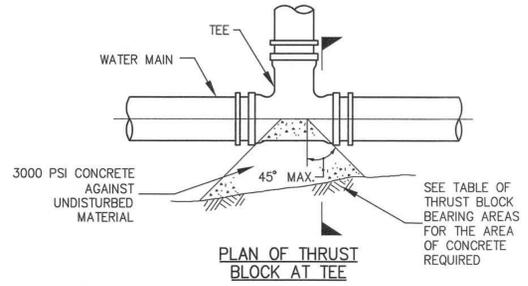
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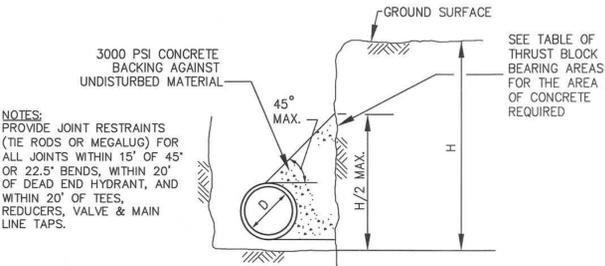
C-5



PLAN OF THRUST BLOCK AT BEND



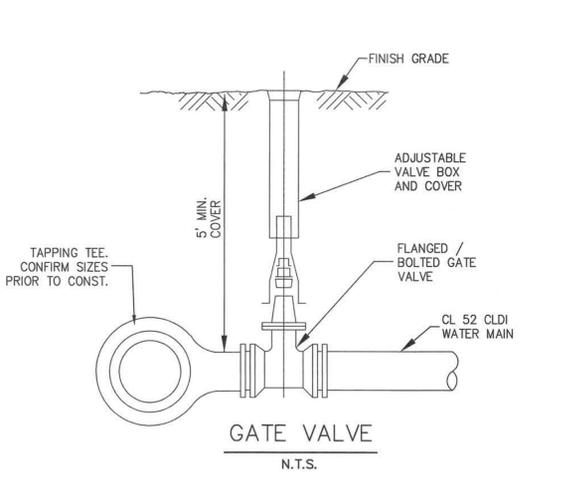
PLAN OF THRUST BLOCK AT TEE



THRUST BLOCK SECTION

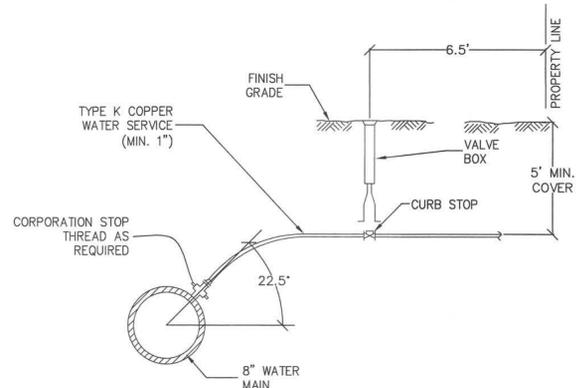
CONCRETE THRUST BLOCK

N.T.S.



GATE VALVE

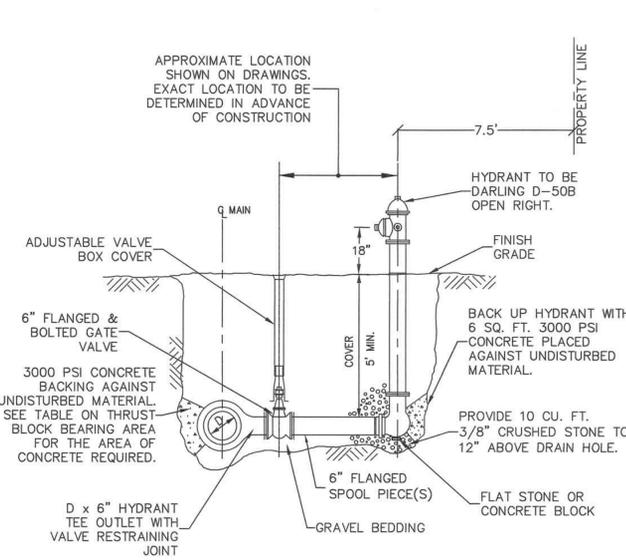
N.T.S.



WATER SERVICE CONNECTION

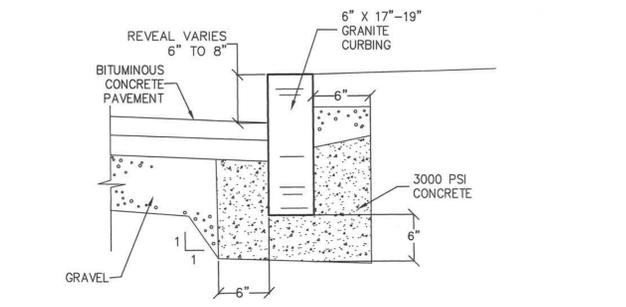
N.T.S.

NOTES:
ALL CONNECTIONS PER CITY OF BEVERLY REQUIREMENTS.



TYPICAL HYDRANT ASSEMBLY

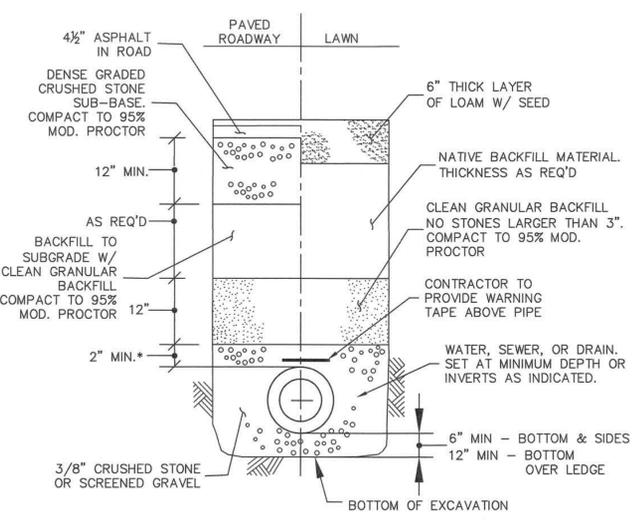
N.T.S.



TYPICAL SECTION GRANITE CURBING

N.T.S.

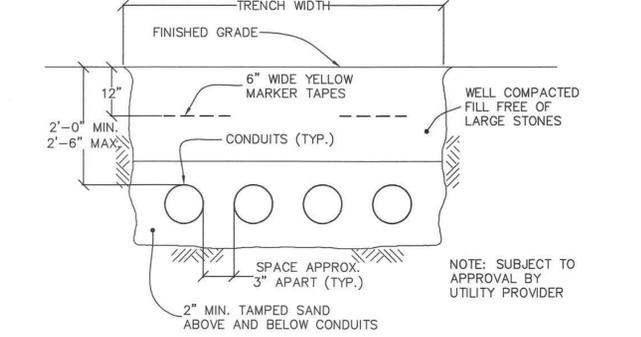
NOTES:
1. ALL WORK TO MEET REQUIREMENTS OF CITY OF BEVERLY.



TYPICAL PIPE BEDDING SECTION

N.T.S.

* FOR DUCTILE IRON OR RCP PIPE: TOP OF STONE IS MID-DEPTH (SPRING LINE) OF CONDUIT.



UNDERGROUND CONDUIT TRENCH FOR MULTIPLE CONDUITS

N.T.S.

NOTE: SUBJECT TO APPROVAL BY UTILITY PROVIDER

TABLE OF MINIMUM BEARING AREAS IN SQ. FT. AGAINST UNDISTURBED MATERIAL

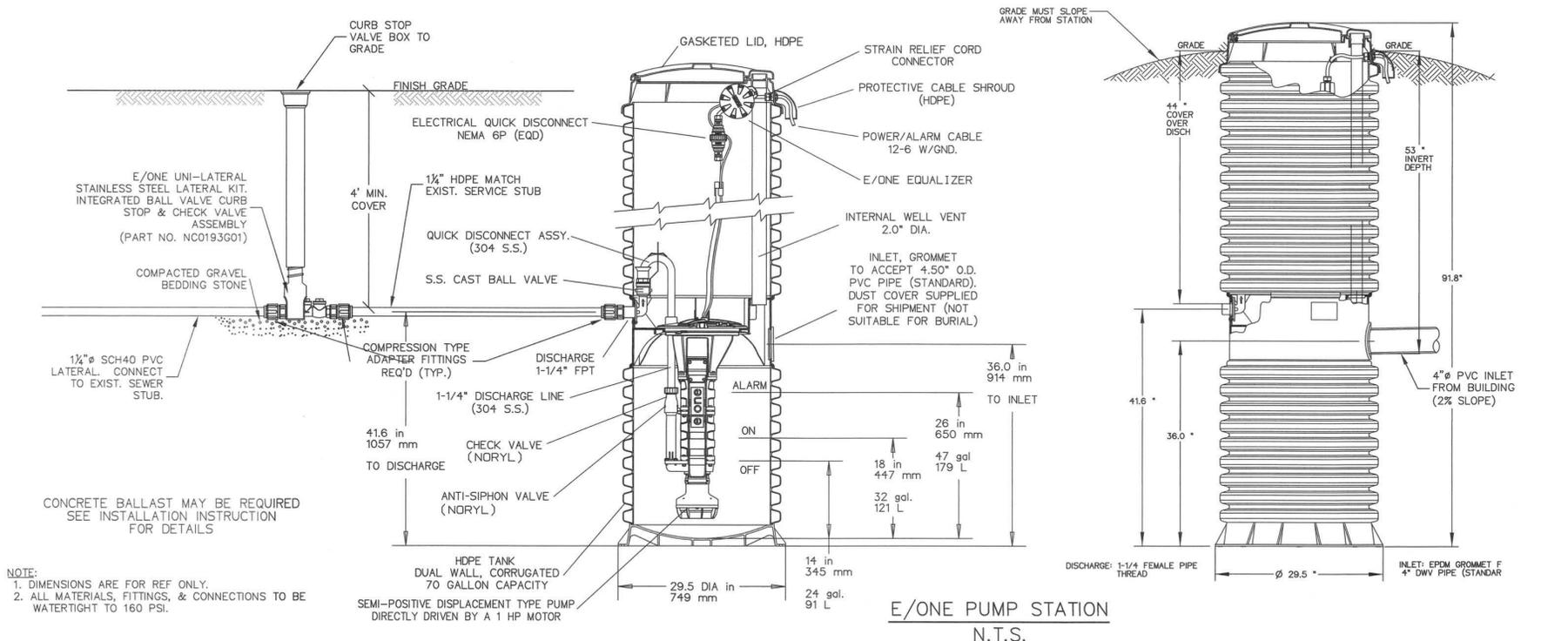
PIPE SIZE	BEND	PRESSURE 150 PSI						
		TYPE OF SOIL CONDITION						
		A	B	C	D	E	F	G
6" and smaller	TEES & PLUGS	8.5	4.5	3	2.5	1.5	1.5	1
	90	12	6	4	3	2	1.5	1.5
	45	6.5	3.5	2.5	2	1.5	1	1
	22 1/2	3.5	2	1.5	1	1	0.5	0.5
8"	TEES & PLUGS	15.5	8	5.5	4	3	2	1.5
	90	21.5	11	7.5	5.5	4	3	2.5
	45	12	6	4	3	2	1.5	1.5
	22 1/2	6	3	2	1.5	1	1	1

TYPE OF SOIL CONDITION
 A - SOFT CLAY; FINE LOOSE SAND
 B - SAND & CLAY; MIXED OR IN LAYERS; FINE CONFINED SAND
 C - HARD DRY CLAY
 D - COARSE SAND
 E - GRAVEL
 F - SOFT ROCK
 G - HARD PAN

NOTES:
 1. FOR FITTINGS WITH LESS THAN 22 1/2 DEFLECTION USE BEARING AREAS FOR 22 1/2 BEND.
 2. JOINTS SHALL NOT BE ENCASED IN CONCRETE. BEARING AREAS MAY BE DISREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND ROCK FACE.

CONCRETE THRUST BLOCK BEARING AREA

N.T.S.



E/ONE PUMP STATION

N.T.S.

NOTE:
 1. DIMENSIONS ARE FOR REF ONLY.
 2. ALL MATERIALS, FITTINGS, & CONNECTIONS TO BE WATERTIGHT TO 160 PSI.

No.	Date	Description
Revisions		



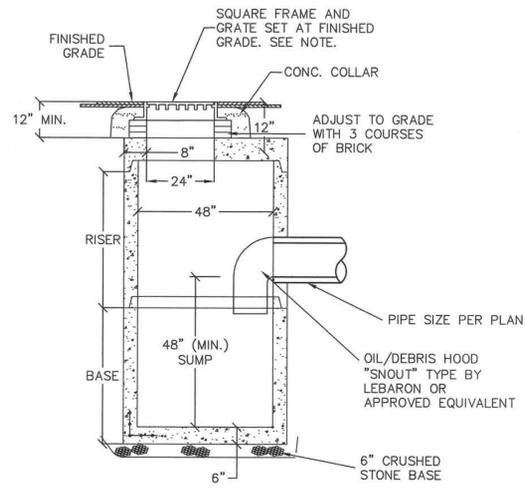
495 Cabot Street, 2nd Floor
 Beverly, MA 01915
 Tel: 978-927-5111
 Fax: 978-927-5103

HICKORY STREET
 REALTY TRUST
 THAXTON ROAD
 BEVERLY, MA

THAXTON HEIGHTS RD.
 DETAILS I

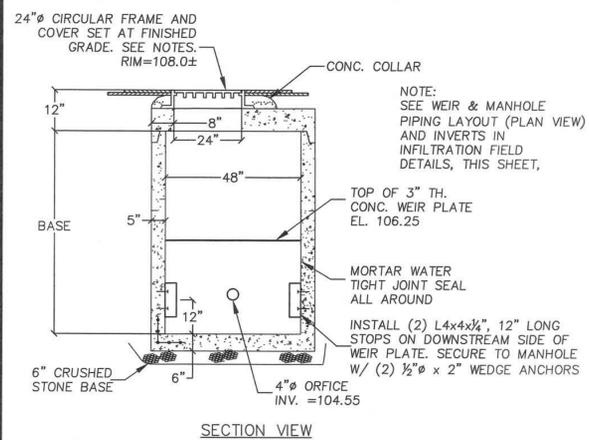
Scale: AS SHOWN
 Job No.: 1729
 File Name: p/p/mc/th
 Date: 3/6/19

C-6



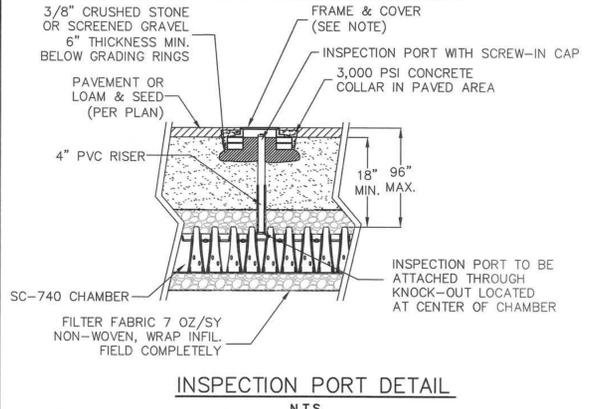
4' Ø PRECAST CATCH BASIN
N.T.S.

NOTES:
1. CONCRETE 4,000 PSI MINIMUM AFTER 28 DAYS.
2. REINFORCED STEEL SHALL CONFORM TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
3. H-20 DESIGN LOADING.
4. LEBARON LF-248-2 THREE FLANGE OR APPROVED EQUIVALENT.
5. SHEA PRECAST OR APPROVED EQUIVALENT.
6. TONGUE & GROOVE JOINTS SEALED WITH BUTYL RESIN. BUTYL RESIN.
7. GRANITE CURB INLET REQ'D ALONG BACK OF BASIN GRATE.



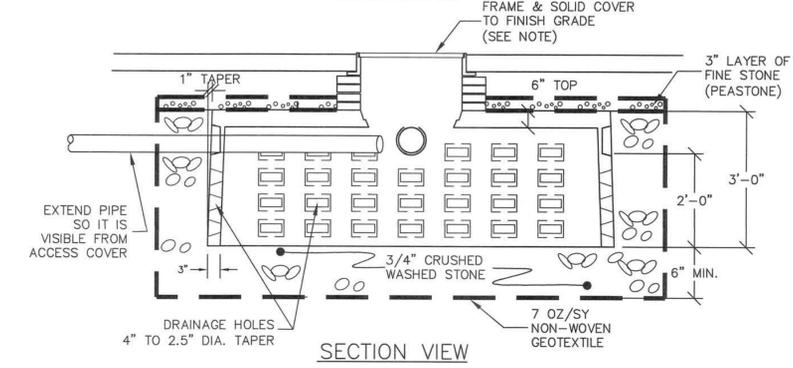
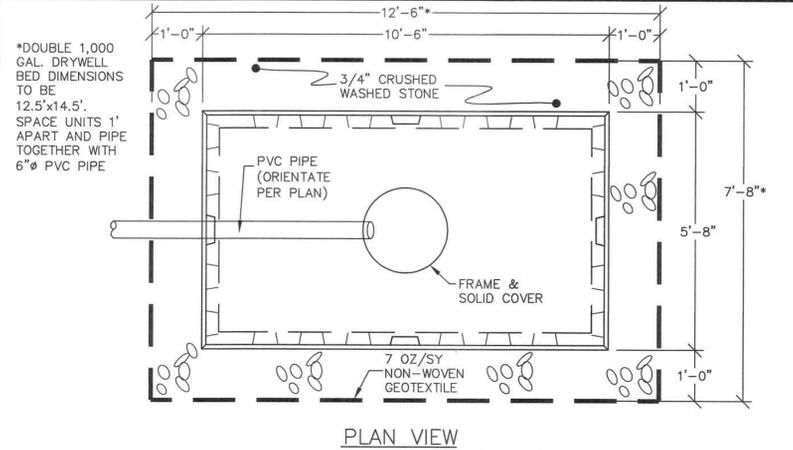
OUTLET CONTROL STRUCTURE (OCS)
N.T.S.

NOTES:
1. CONCRETE 4,000 PSI MINIMUM AFTER 28 DAYS.
2. REINFORCED STEEL SHALL CONFORM TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
3. H-20 DESIGN LOADING.
4. SOLID COVER (MARKED DRAIN) OR APPROVED EQUIVALENT.
5. SHEA PRECAST OR APPROVED EQUIVALENT.
6. TONGUE & GROOVE JOINTS SEALED WITH BUTYL RESIN. BUTYL RESIN.



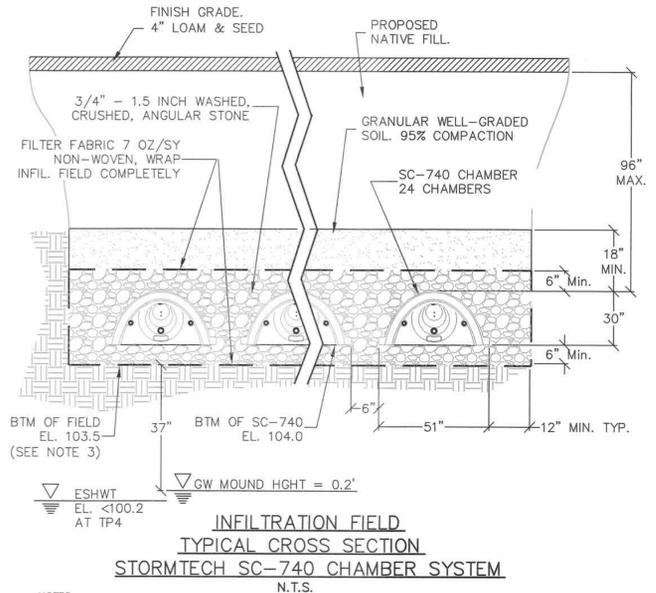
INSPECTION PORT DETAIL
N.T.S.

FRAME & COVER NOTE
IN LAWN AREA, PROVIDE 8" Ø LANDSCAPE IRRIGATION BOX AT GRADE ON COMPACTED GRAVEL BED. IN PAVED AREA PROVIDE 8" Ø CAST IRON FRAME & COVER (H20 RATED). SET ON 2 GRADING RINGS & MORTAR BED OR 2 COURSES BRICK AND MORTAR. PLACE CONCRETE COLLAR AROUND STRUCTURE.



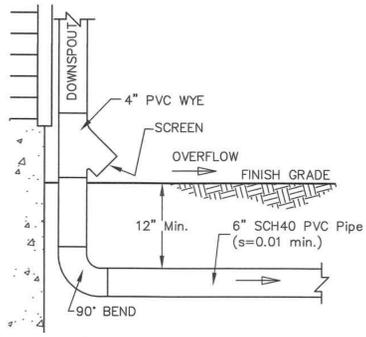
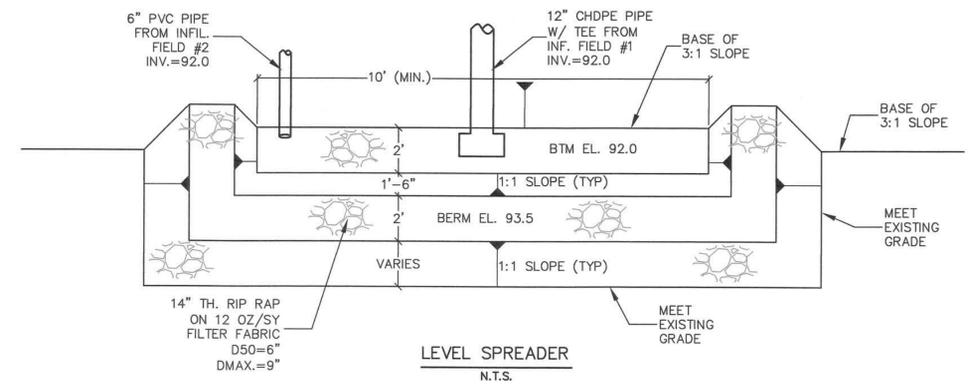
SHALLOW DRYWELL/INFILTRATION CHAMBER DETAIL
N.T.S.

NOTES:
1) 1,000 GALLON DRYWELL SHALLOW: SHEA DW-JDWH OR APPROVED ALTERNATE.
2) DRYWELLS TO BE H-20 RATED.
3) PROVIDE SOLID COVERS TO GRADE AND MAINTAIN ACCESSIBLE FOR INSPECTION PURPOSES.



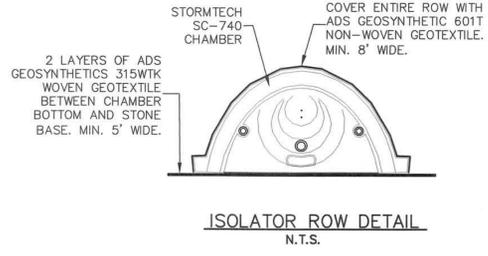
INFILTRATION FIELD #1
N.T.S.

NOTES:
1) PROPOSED FIELD DIMENSIONS 33' x 34'.
2) MANUFACTURED BY STORMTECH OF 20 BEAVER ROAD, SUITE 104, WETHERSFIELD, CT 06109 USA 888-892-2694
3) CONTRACTOR TO REMOVE ANY TOPSOIL & SUBSOIL FROM BELOW THE INFILTRATION FIELD AND ESTABLISH BOTTOM OF FIELD GRADE. IF FILL MATERIAL IS REQUIRED, IMPORT CLEAN SAND MEETING THE SPECIFICATIONS OF "TITLE 5" SAND OR APPROVED EQUAL.

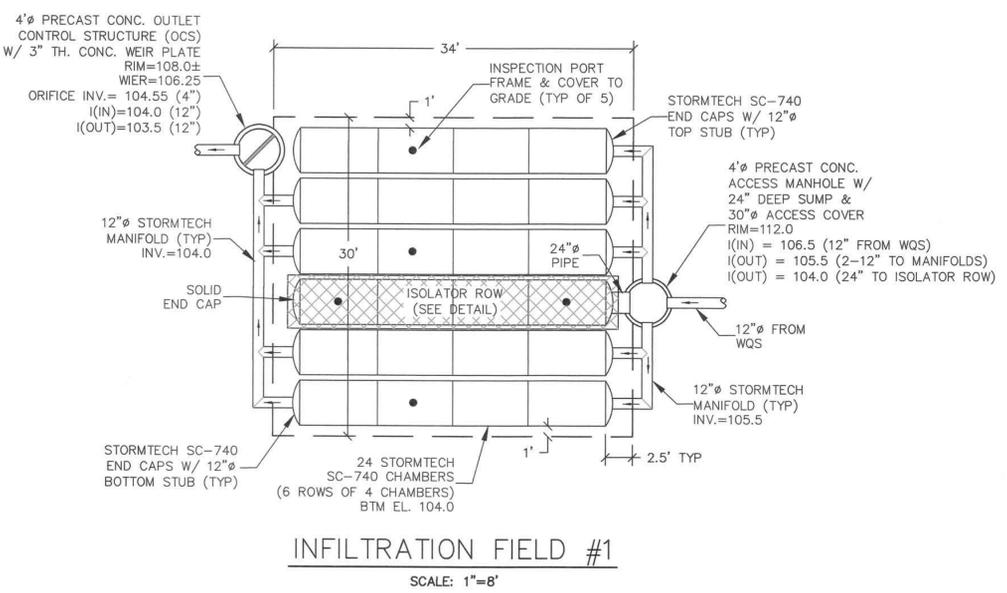


ROOF LEADER CONNECTION
N.T.S.

NOTE: MIN. (2) OVERFLOW DEVICES TO BE PROVIDED ON ALL ROOF COLLECTION SYSTEMS.



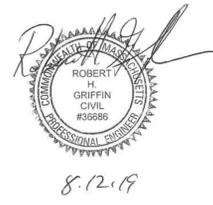
ISOLATOR ROW DETAIL
N.T.S.



INFILTRATION FIELD #1
SCALE: 1"=8'

No.	Date	Description
1	8/12/19	MOVE WQS DETAIL TO SH. C-8. ADD ISOLATOR ROW TO INFIL. FIELD #1 & DETAIL REVISION DRYWELLS TO SOLID COVERS AND ADD ROOF LEADER OVERFLOW.

Revisions



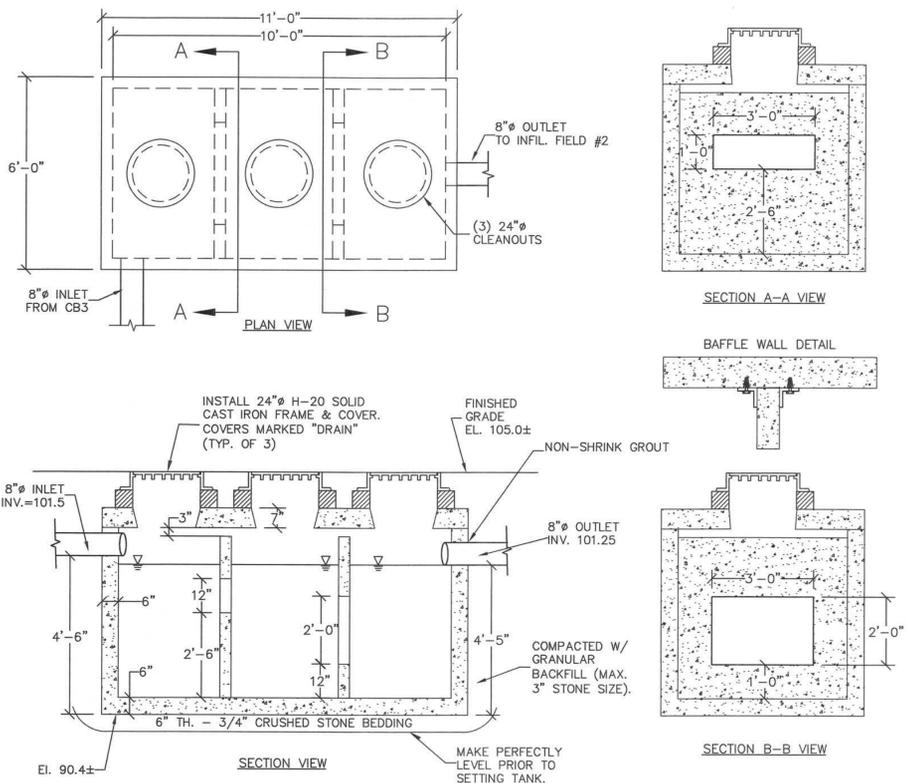
Griffin Engineering Group, LLC
495 Cabot Street, 2nd Floor
Beverly, MA 01915
Tel: 978-927-5111
Fax: 978-927-5103

HICKORY STREET REALTY TRUST
THAXTON ROAD
BEVERLY, MA

THAXTON HEIGHTS RD.

DETAILS II

Scale: AS SHOWN	C-7
Job No.: 1729	
File Name: p/p/mc/th	
Date: 3/6/19	

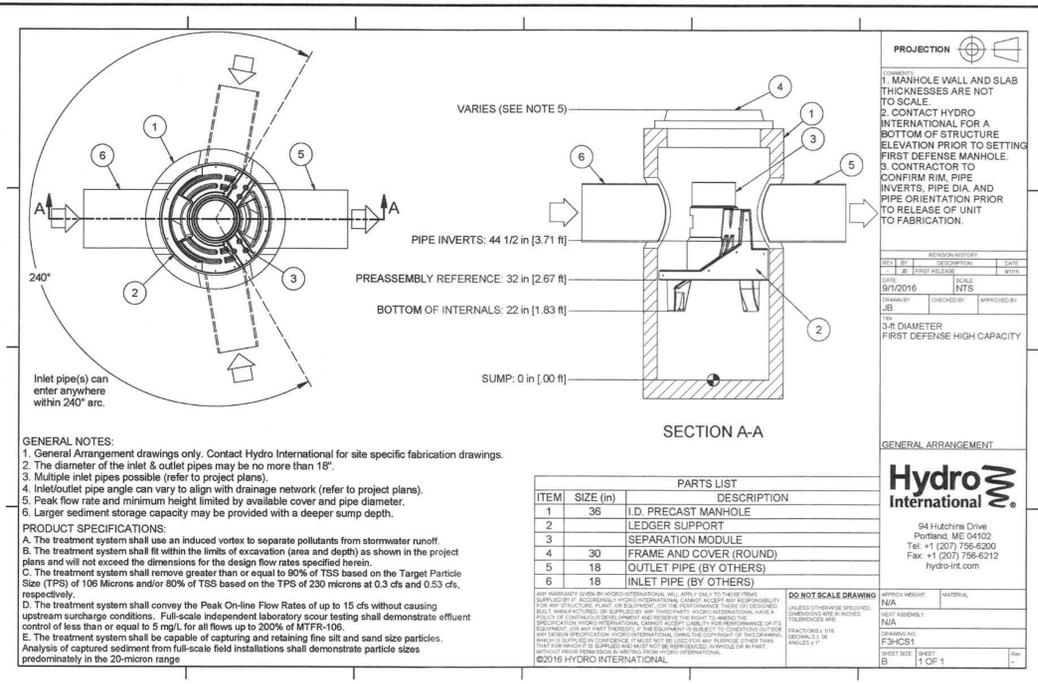


- NOTES:**
1. CONCRETE: 5,000 PSI MIN. AFTER 28 DAYS.
 2. DESIGNED FOR H-20 LOADING.
 3. TONGUE & GROOVE JOINT SEALED W/ BUTLY RESIN.
 4. SHEA CONCRETE SEDIMENT & OIL SEPARATOR, 1500 GALLON TANK OR APPROVED EQUIVALENT. (PRODUCT ID. M1500CSEP)

OIL GRIT SEPARATOR
NOT TO SCALE

SOIL TEST PIT DATA (1/16/19)

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLES	OTHER
TP1 (EL. 90.5)					
0-12	Ap	FSL	10YR 2/2		GRANULAR, FRIABLE
12-20	Bw	FSL	10YR 4/6		MASSIVE, FRIABLE, TRACE GRAVEL
20-32	C1	FSL	10YR 5/8		MASSIVE, FRIABLE, SOME GRAVEL
32-60	C2	SL	10YR 5/8		MASSIVE FRIABLE, GRAVELLY, LARGE BOULDER
NO REFUSAL, NO MOTTLES, ROOTS TO 56" ESHW EL. <85.5 (>80")					
TP2 (EL. 87.8)					
0-5	Ap	FSL	10YR 2/2		GRANULAR, FRIABLE
5-24	B/C	SL	10YR 4/6		MASSIVE, FRIABLE, TRACE GRAVEL
24-62	C	SL	10YR 5/8	7.5YR 4/6	MASSIVE, FRIABLE, GRAVELLY, POCKETS OF COARSE SAND
NO REFUSAL ESHW EL. 84.3 (42")					
TP3 (EL. 106.9)					
0-6	Ap	FSL	10YR 3/2		GRANULAR, FRIABLE
6-24	Bw	SL	10YR 4/4		MASSIVE, FRIABLE, TRACE GRAVEL
24-88	C	LS	10YR 5/4		MASSIVE, FRIABLE, VERY GRAVELLY
NO REFUSAL, NO MOTTLES, ROOTS TO 48" ESHW EL. <99.6 (>88")					
TP4 (EL. 108.5)					
0-10	Ap	FSL	10YR 3/2		GRANULAR, FRIABLE
10-24	Bw	SL	10YR 4/6		MASSIVE, FRIABLE, TRACE GRAVEL
24-100	C	LS	10YR 5/4		MASSIVE, FRIABLE, VERY GRAVELLY POCKET OF COARSE SAND
NO REFUSAL, NO MOTTLES, ROOTS TO 52" ESHW EL. <100.2 (>100")					
TP5 (EL. 105.3)					
0-6	Ap	FSL	10YR 3/2		GRANULAR, FRIABLE
6-24	Bw	SL	10YR 4/6		MASSIVE, FRIABLE, TRACE GRAVEL
24-72	C	LS/SL	10YR 5/4		MASSIVE, FRIABLE, VERY GRAVELLY
NO REFUSAL, NO MOTTLES ESHW EL. <99.3 (>72")					
TP6 (EL. 116.4)					
0-6	Ap	FSL	10YR 3/2		GRANULAR, FRIABLE
6-20	Bw	SL	10YR 4/6		MASSIVE, FRIABLE, TRACE GRAVEL
20-96	C	SL	10YR 5/6		MASSIVE, FRIABLE, SOME GRAVELLY
NO REFUSAL, NO MOTTLES ESHW EL. <108.4 (>96")					



3' WATER QUALITY STRUCTURE
N.T.S.

No.	Date	Description
1	8/12/19	MOVE WQS DETAIL FROM SH. C-8.

Revisions

ROBERT H. GRIFFIN
CIVIL ENGINEER
#39586
8-12-19

Griffin Engineering Group, LLC
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HICKORY STREET
REALTY TRUST
THAXTON ROAD
BEVERLY, MA

THAXTON HEIGHTS RD.
DETAILS III

Scale: 1"=40'
Job No.: 1729
File Name: p/p/mc/th
Date: 3/6/19
C-8