

40B COMPREHENSIVE PERMIT
THE VILLAGES AT CRICKET LANE

BYFIELD, MA

DATE: AUGUST 17, 2020

REV: JANUARY 28, 2021

PREPARED FOR:

OWNER/DEVELOPER

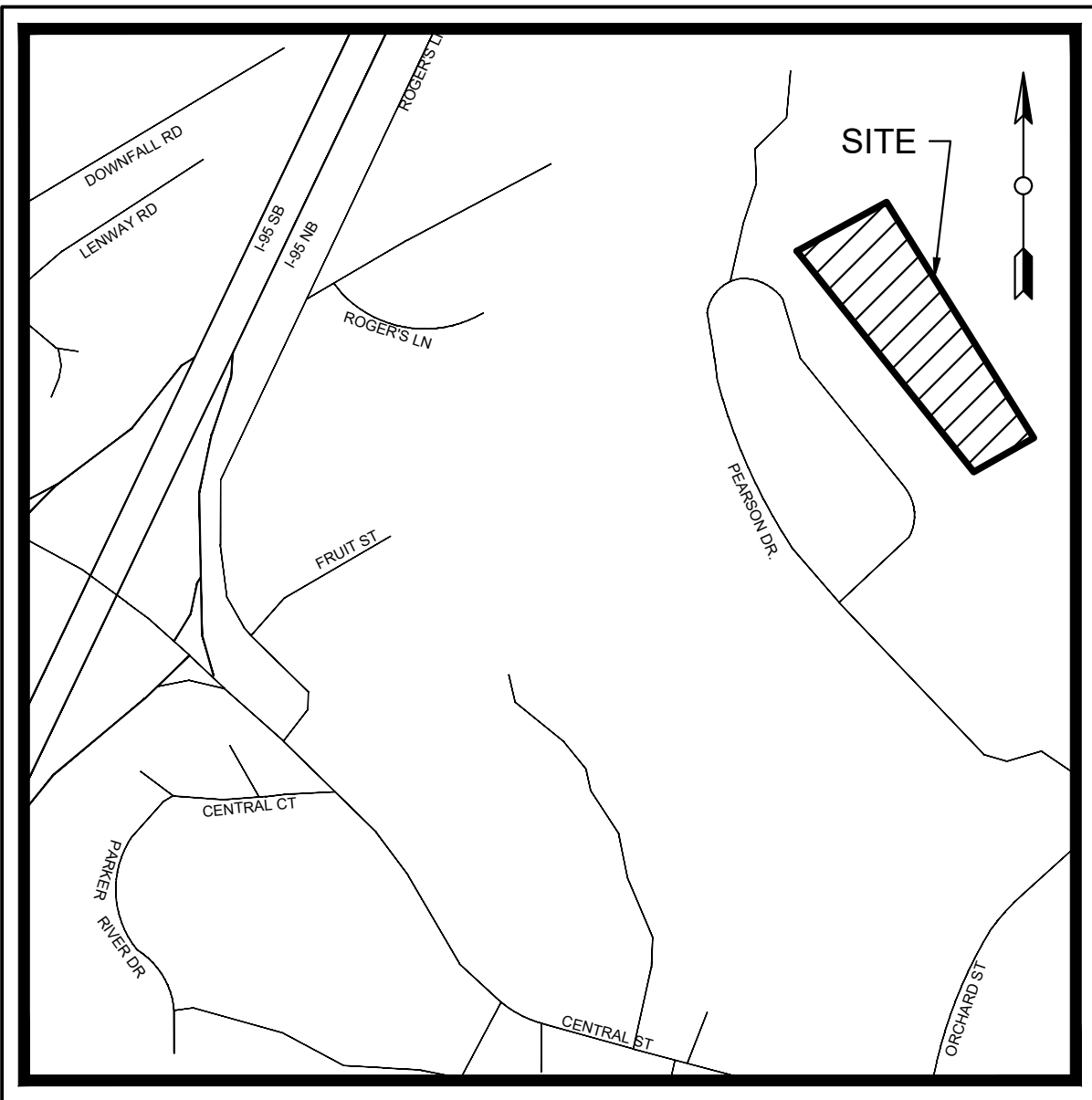
CRICKET LANE, LLC

92 MIDDLESEX ROAD

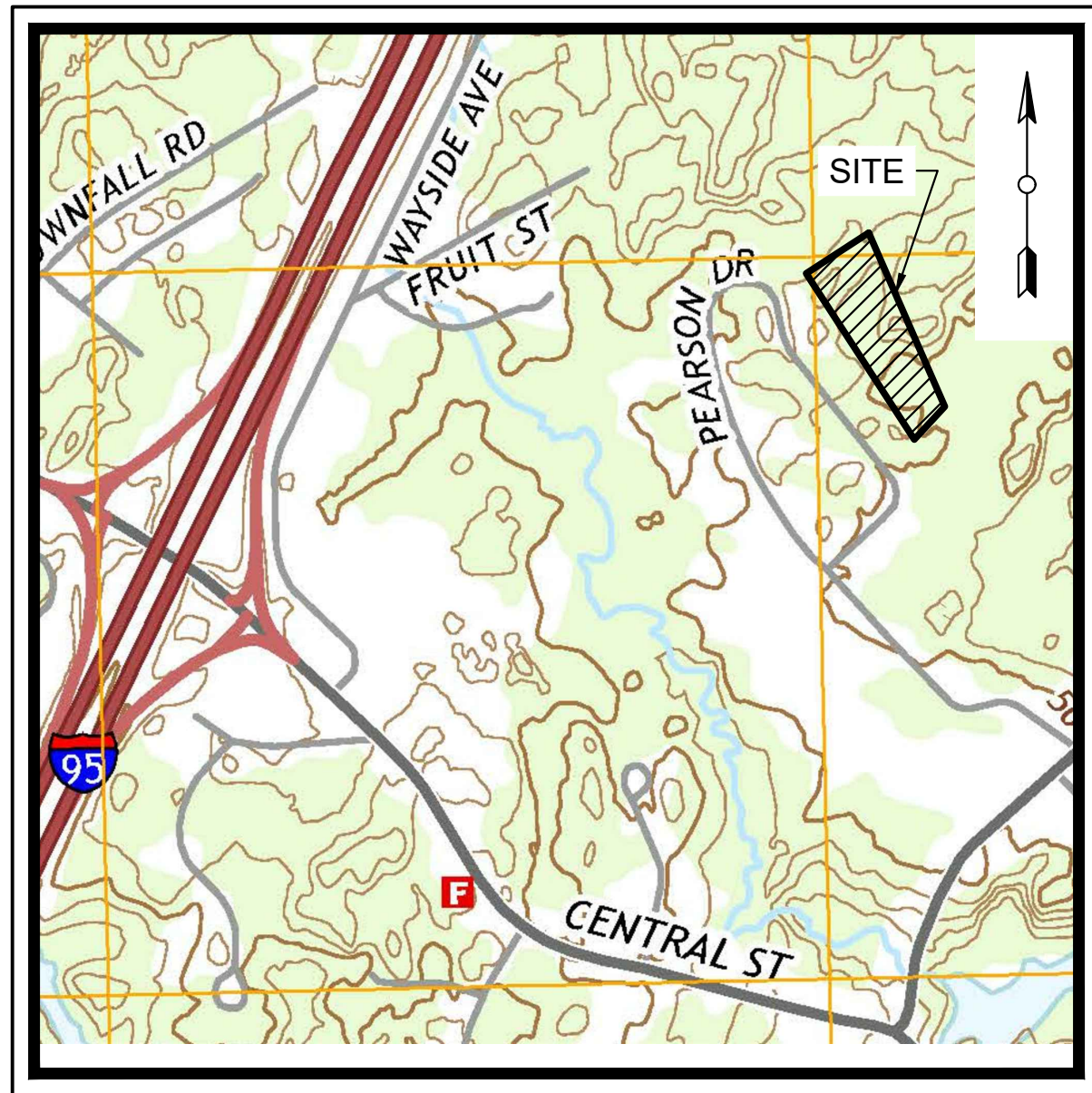
TYNGSBOROUGH MA, 01879

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LOCATION MAP
Scale: N.T.S.

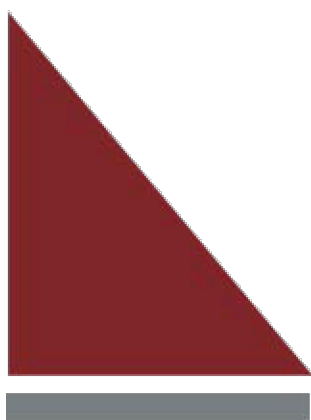


USGS MAP
Scale: N.T.S.



THE LAW REQUIRES NOTIFICATION
BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO
DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE AT
LEAST 72 HOURS BEFORE BEGINNING CONSTRUCTION.
1-888-DIG-SAFE (1-888-344-7233)
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PREPARED BY:
RANGER ENGINEERING GROUP, INC



Ranger Engineering Group, Inc.

13 Branch Street, Suite 101

Methuen, MA 01844

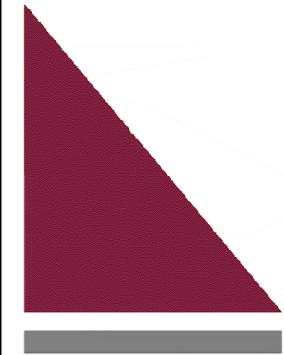
Tel: 978-208-1762

rangereng.com



By *BCO*
3/8/21

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Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

THE VILLAGE AT CRICKET LANE

BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

COVER SHEET

CRICKET LANE, LLC

92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

NO.	DATE	REVISIONS	BY
4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO
3	12/09/2020	REVIEW COMMENT REVISIONS	BCO
2	08/17/2020	REVIEW COMMENT REVISIONS	BCO
1	08/26/2020	REVIEW COMMENT REVISIONS	BCO

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

CS0001
SHEET 1 OF 30

ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BOS	BOTTOM OF SLOPE
CB	CATCH BASIN
CCB	CAPE COD BERM
CLDI	CEMENT LINED DUCTILE IRON
C.L.F.	CHAIN LINK FENCE
CONC	CONCRETE
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DH	DRILL HOLE
DMH	DRAIN MANHOLE
DS	DOWN SPOUT
ELEV	ELEVATION
EOG	EDGE OF GRASS
EQ	EQUAL
ESHWG	ESTIMATED SEASONAL HIGH GROUND WATER
EXIST	EXISTING
FDN	FOUNDATION
FES	FLARED END SECTION
FND	FOUND
FP	FIRE PROTECTION SERVICE
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GF	GARAGE FLOOR
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HAND PIT
HYD	HYDRANT
INV	INVERT ELEVATION
IP	IRON PIPE
IR	IRON ROD
L/A	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OCS	OUTLET CONTROL STRUCTURE
OE	OVERHEAD ELECTRIC
OWS	OIL WATER SEPARATOR
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PERF	PERFORATED
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
SGC	SLOPE GRANITE CURB
SMH	SEWER MANHOLE
STR	STRUCTURE
SW	SIDEWALK
TOS	TOP OF SLOPE
TSV&B	TAPPING SLEEVE, VALVE AND BOX
TYP	TYPICAL
UGD	UNDERGROUND DETENTION SYSTEM
UGU	UNDERGROUND UTILITY
VCP	VITRIFIED CLAY PIPE
WCR	WHEEL CHAIR RAMP
WTF	WATER TANK FEED
WQU	WATER QUALITY UNIT

VERNAL POOL AREA SUMMARY	
'A' SERIES WETLAND	
ELEVATION	AREA
53.5	4,355 SF ±
54.0	14,810 SF ±
54.3	19,115 SF ±
ADDITIONAL AREA EXTENDING OFF-SITE	
1,495 SF ± AT A DEPTH OF 12 INCHES ±	
TOTAL VOLUME = 0.26 ACRE FT	

VOLUME CALCULATIONS:

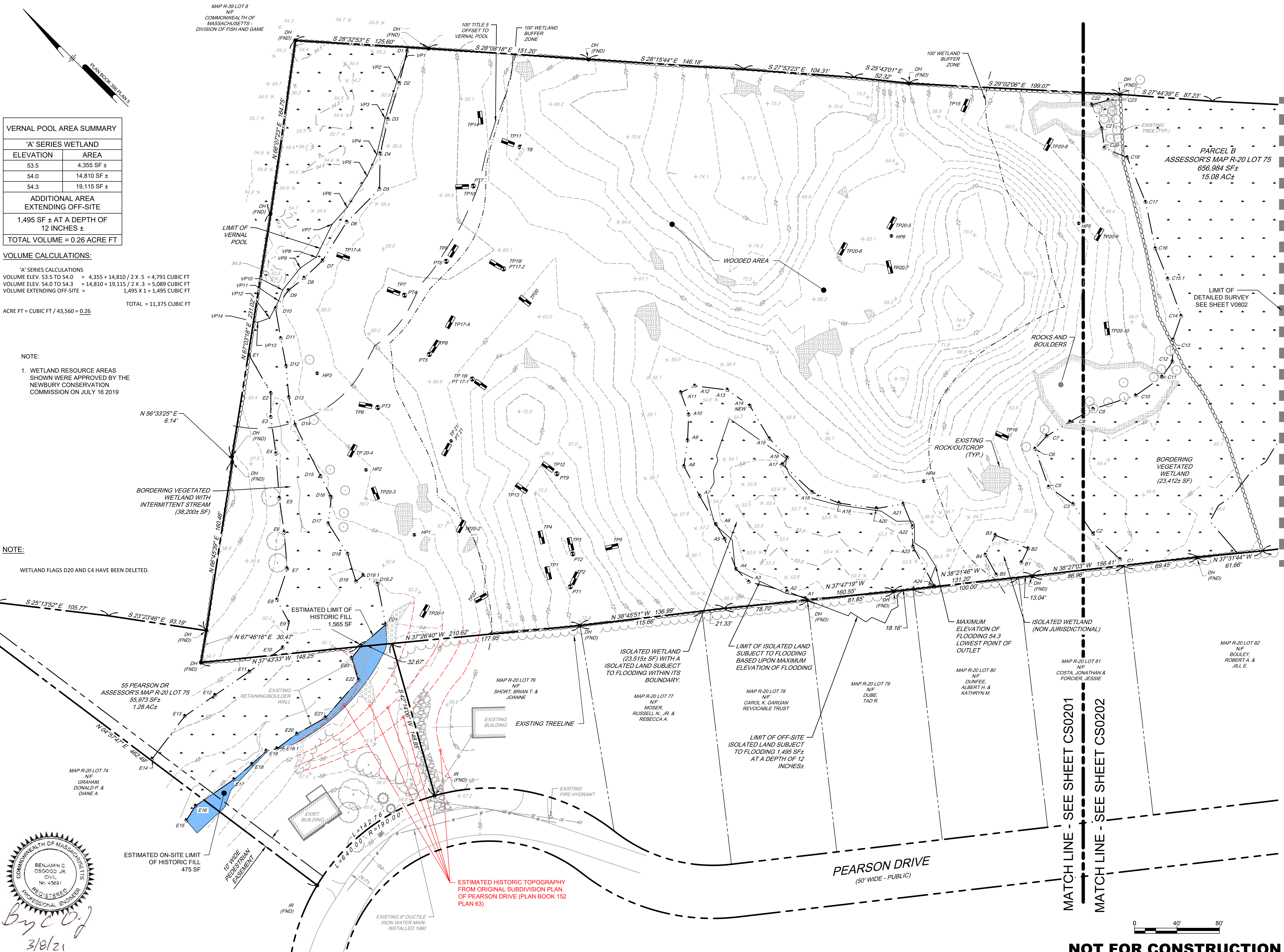
'A' SERIES CALCULATIONS
VOLUME ELEV. 53.5 TO 54.0 = 4,355 + 14,810 / 2 X .5 = 4,791 CUBIC FT
VOLUME ELEV. 54.0 TO 54.3 = 14,810 + 19,115 / 2 X .3 = 5,089 CUBIC FT
VOLUME EXTENDING OFF-SITE = 1,495 X 1 = 1,495 CUBIC FT
TOTAL = 11,375 CUBIC FT
ACRE FT = CUBIC FT / 43,560 = 0.26

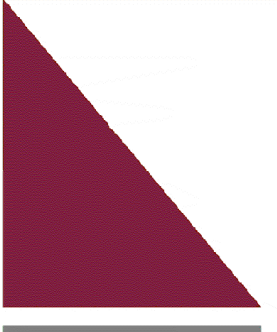
NOTE:

1. WETLAND RESOURCE AREAS SHOWN WERE APPROVED BY THE NEWBURY CONSERVATION COMMISSION ON JULY 16 2019

NOTE:

WETLAND FLAGS D20 AND C4 HAVE BEEN DELETED.





Ranger Engineering Group, Inc.
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THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75

EXISTING CONDITIONS PLAN

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGBOROUGH, MA 01879

NO.	DATE	REVISIONS	BY
1	08/26/2020	REVIEW COMMENT REVISIONS	BCO
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4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO

PROJECT: 15-1516

DATE: 2020-08-10

DRAWING SCALE: AS NOTED

DRAWN BY: OMR

APPROVED BY: BCO

CS0201

SHEET 3 OF 30

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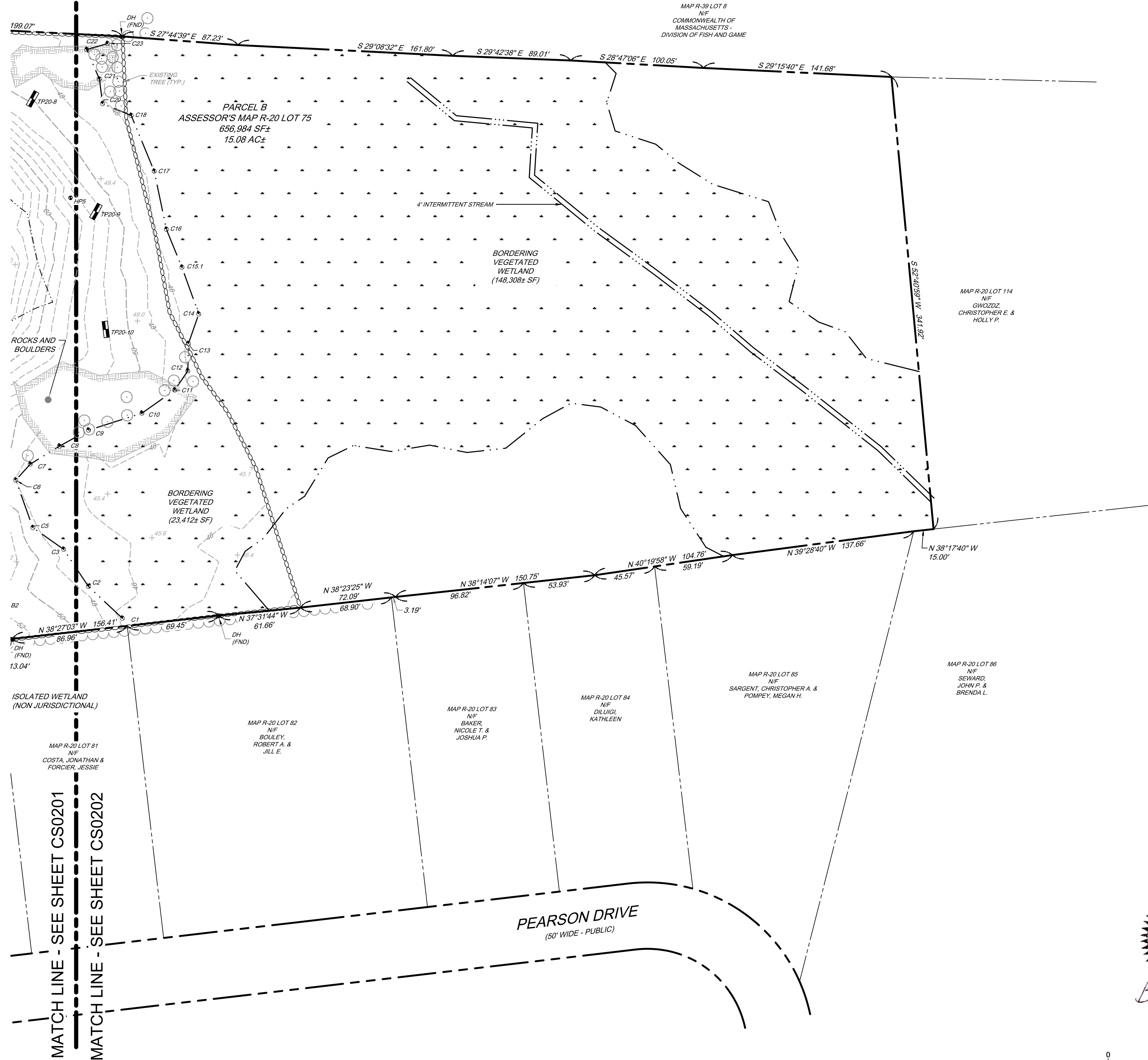
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VOLUME EXTENDING OFF-SITE = $1,495 \times 1 = 1,495$ CUBIC FT

TOTAL = 11,375 CUBIC FT

ACRE FT = CUBIC FT / 43,560 = 0.26



NOT FOR CONSTRUCTION

THE VILLAGE AT CRICKET LANE

BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75

EXISTING CONDITIONS PLAN

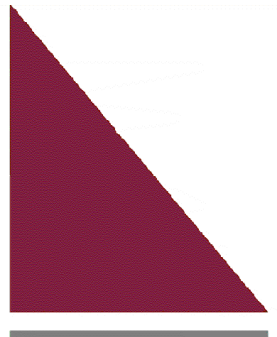
CRICKET LANE, LLC

92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

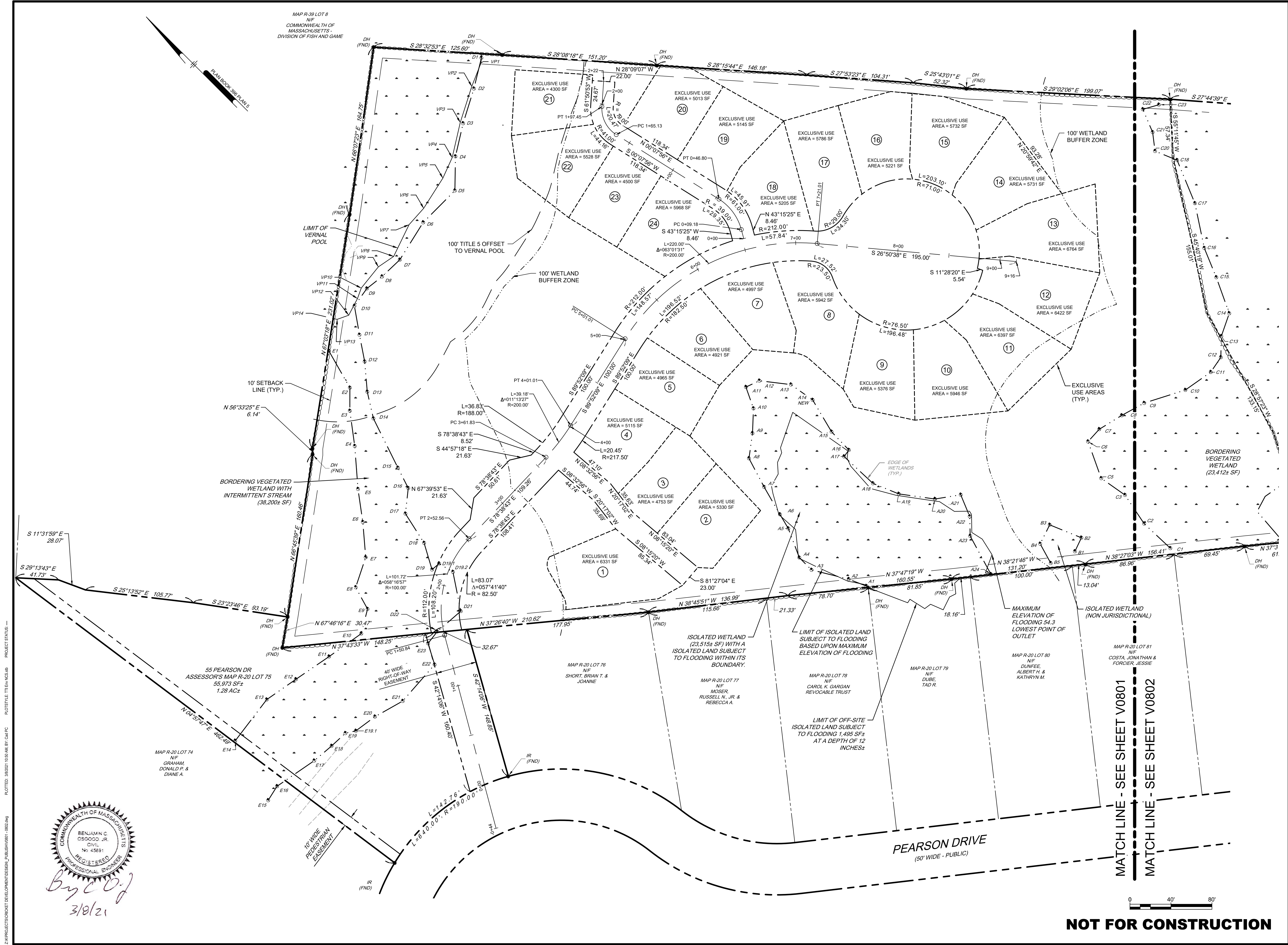
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1	06/26/2020	REVIEW COMMENT REVISIONS	BCO

PROJECT	15-1516
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DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

CS0202
SHEET 4 OF 30



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By *COJ*
3/9/21

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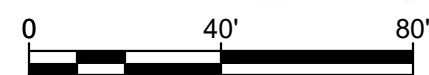
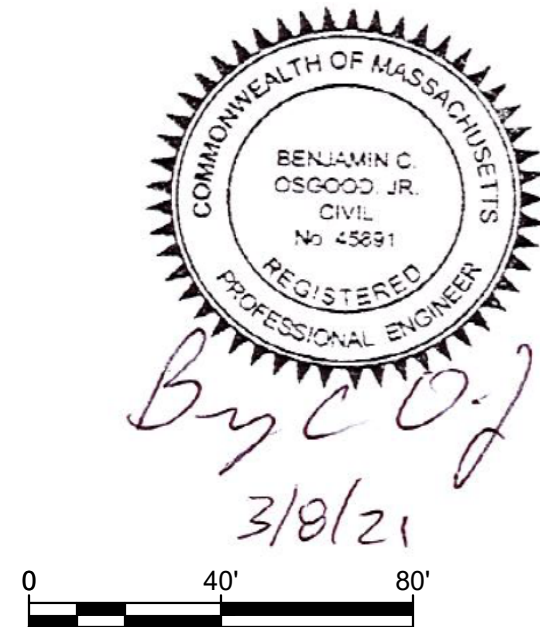
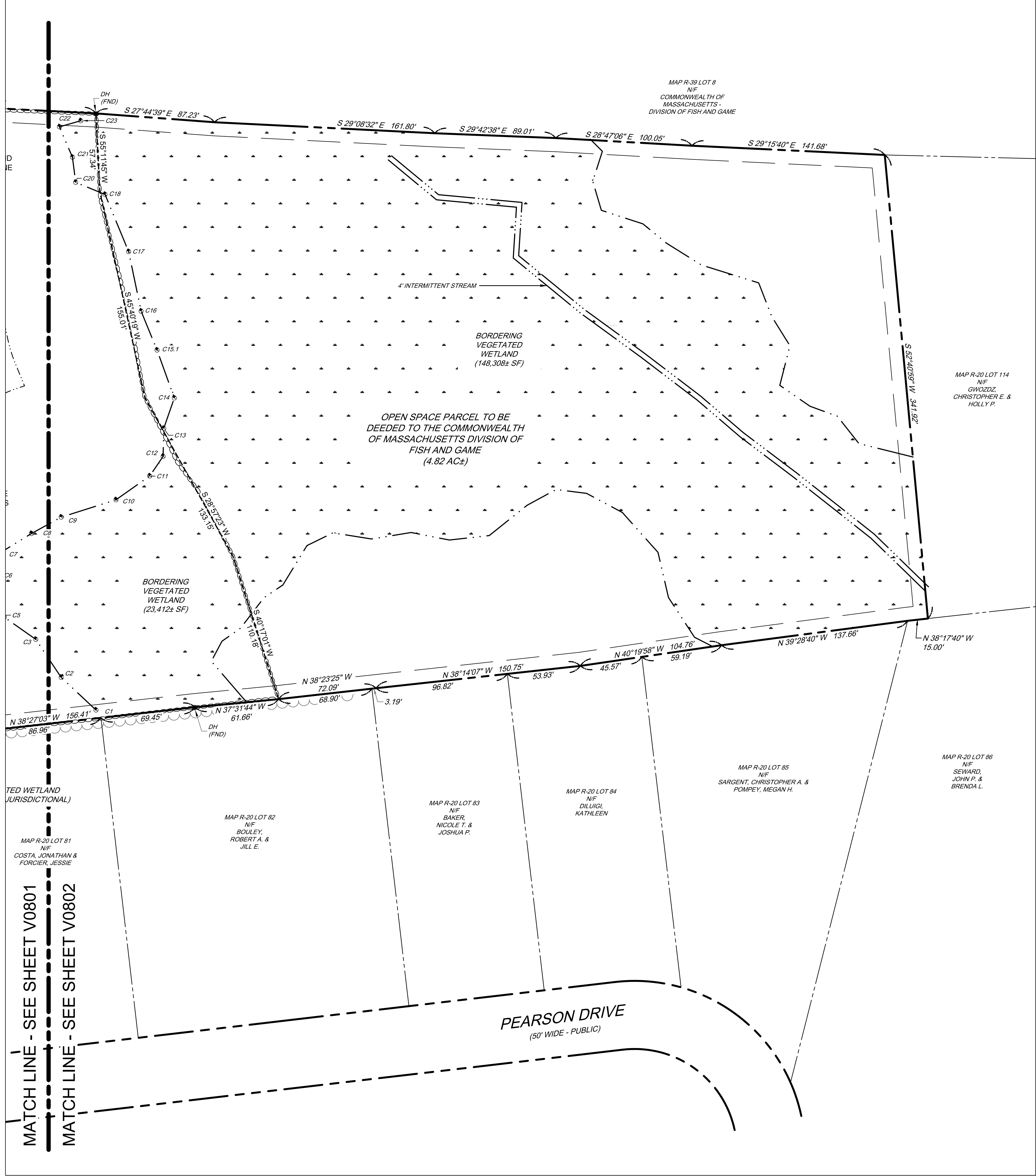
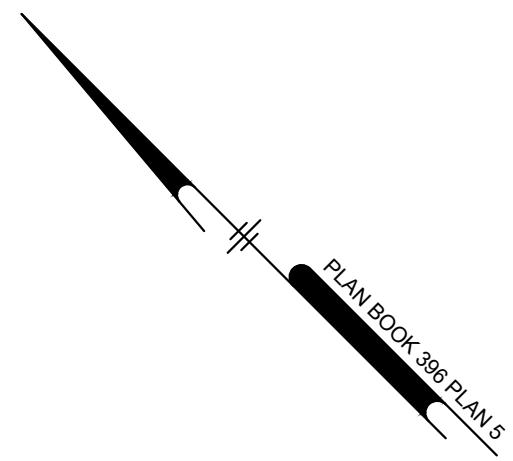
THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75

ROADWAY LAYOUT AND PROPERTY LINE PLAN

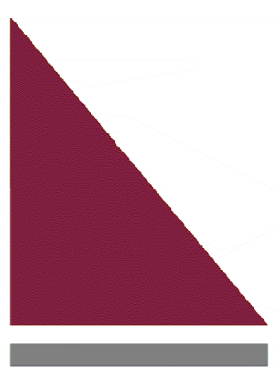
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

			BCO	BY
		FINAL REVIEW COMMENT REVISIONS	BCO	
		REVIEW COMMENT REVISIONS	BCO	
		REVIEW COMMENT REVISIONS	BCO	
		REVIEW COMMENT REVISIONS	BCO	
		REVISIONS		

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO
V0801	
SHEET	5 OF 30



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THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

ROADWAY LAYOUT AND PROPERTY LINE PLAN

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

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PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

IMPERVIOUS AREAS	AREA (SF)
BUILDING AREA	42,240±
ROADWAY AREA	27,300±
SIDEWALK AREA	3,650±
DRIVEWAY AREA	28,188±
TOTAL	101,378±

WETLAND DISTURBANCE:

WETLAND FILL AREA: 1,730 SF
HISTORIC FILL AREA: 2,039 SF
TEMPORARY DISTURBANCE: 855 SF
TOTAL WETLANDS ALTERED: 4624 SF

WETLAND REPLACEMENT: (REPLACED IN PLACE)
TEMPORARY DISTURBANCE AREA = 785 SF

WETLAND FILL & HISTORIC FILL = 3,769 SF
REQUIRED REPLACEMENT = 3,769 x 1.5 = 5653 SF
PROPOSED REPLACEMENT = 5,660 SF

PROP. TREES 30' O.C AND SHRUBS 5' O.C ALONG BOTTOM OF SLOPE (TYP. OF 6 TREES AND 20 SHRUBS)
TREES AND SHRUBS SHALL BE A MIX OF THOSE IN TABLE 1.2 SHEET 8 BASED ON AVAILABILITY

INSTALL TREE WELL AROUND EXISTING TREES TO BE SAVED WHEN FILL COVER IS GREATER THAN 8" (TYP. OF 4)

10' SETBACK LINE (TYP.)

PROP. WETLAND REPLICATION PLANTINGS

360 SF TEMPORARY WETLAND DISTURBANCE AT WETLAND CROSSING (SEE SHT 23 FOR SPECIFICATIONS)

PROP NO PARKING FIRE LANE SIGN

SOLAR POWER STREET LIGHT

PROP. MUTT MITT DOG WASTE STATION

PROP GUARD RAIL WITH 4' CHAIN LINK FENCE

PROP RETAINING WALL

PROPOSED WETLAND REPLACEMENT 5660 SF (SEE SHT 23 FOR SPECS)

495 SF TEMPORARY WETLAND DISTURBANCE (SEE SHT 23 FOR SPECS)

1730 SF WETLAND FILLING INCLUDE 5X5' AREA FOR 1 LEVEL SPREADER

55 PEARSON DR
ASSESSOR'S MAP R-20 LOT 75
55,973 SF±
1.28 AC±

HISTORIC WETLAND FILL AREA = 1564 SF

NO PARKING SIGN BOTH SIDES OF POST (TYP. OF 4)

SOLAR POWERED STREET LAMP

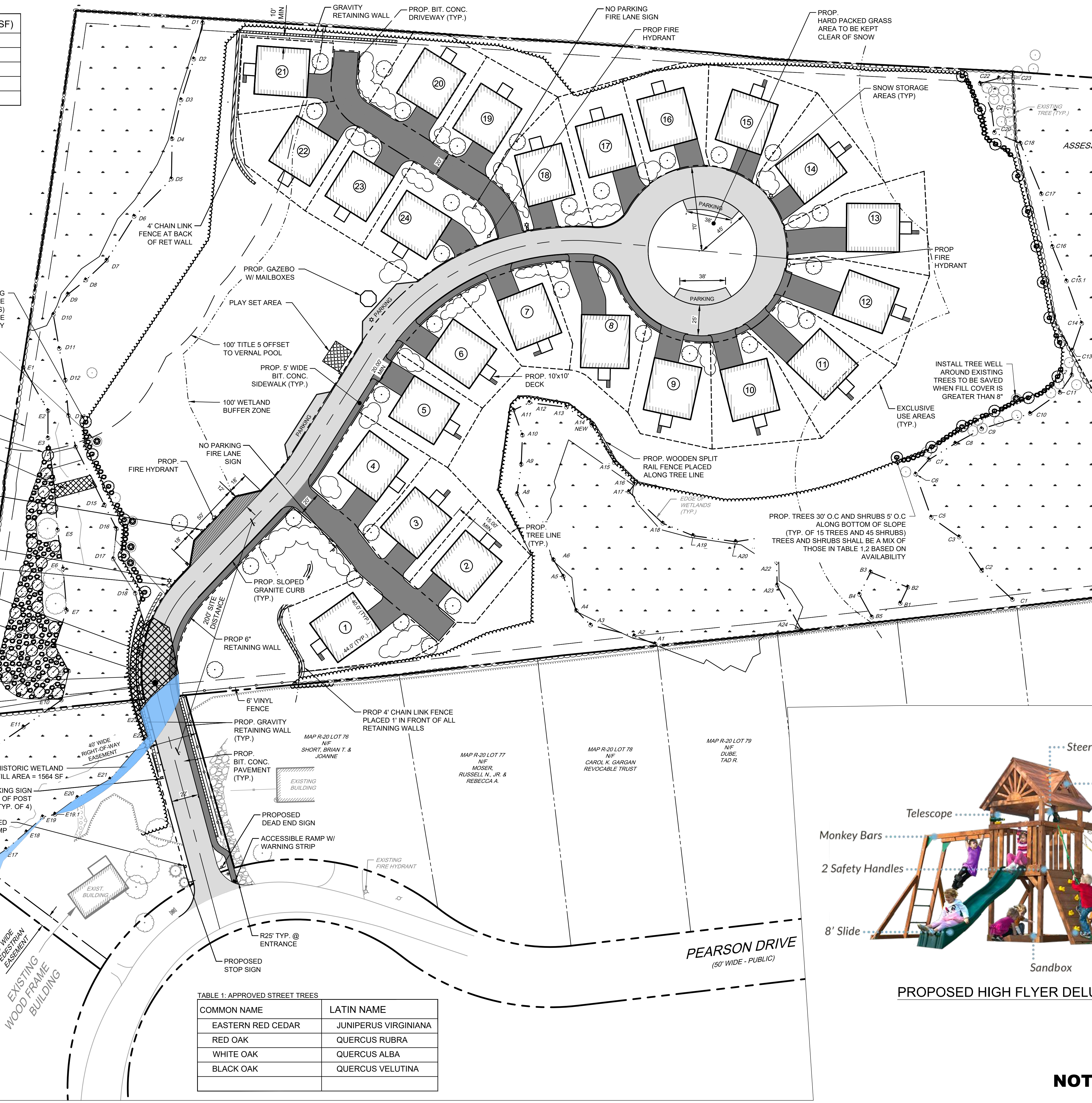
MAP R-20 LOT 74
N/F
GRAHAM, DONALD P. & DIANE A.

HISTORIC FILL AREA = 475 SF

EXISTING WOOD FRAME BUILDING

TABLE 1: APPROVED STREET TREES

COMMON NAME	LATIN NAME
EASTERN RED CEDAR	JUNIPERUS VIRGINIANA
RED OAK	QUERCUS RUBRA
WHITE OAK	QUERCUS ALBA
BLACK OAK	QUERCUS VELUTINA



MUTT MITT STATION



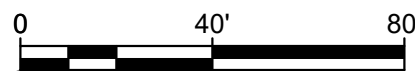
PROPOSED GAZEBO WITH MAILBOXES



By *BCO*
3/8/21



PROPOSED HIGH FLYER DELUXE PLAYGROUND SET



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			BCO	BCO	BCO	BCO	BY
			FINAL REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVISIONS
01/28/2021	4			3	2	1	NO.
12/09/2020							DATE
08/17/2020							
08/26/2020							

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

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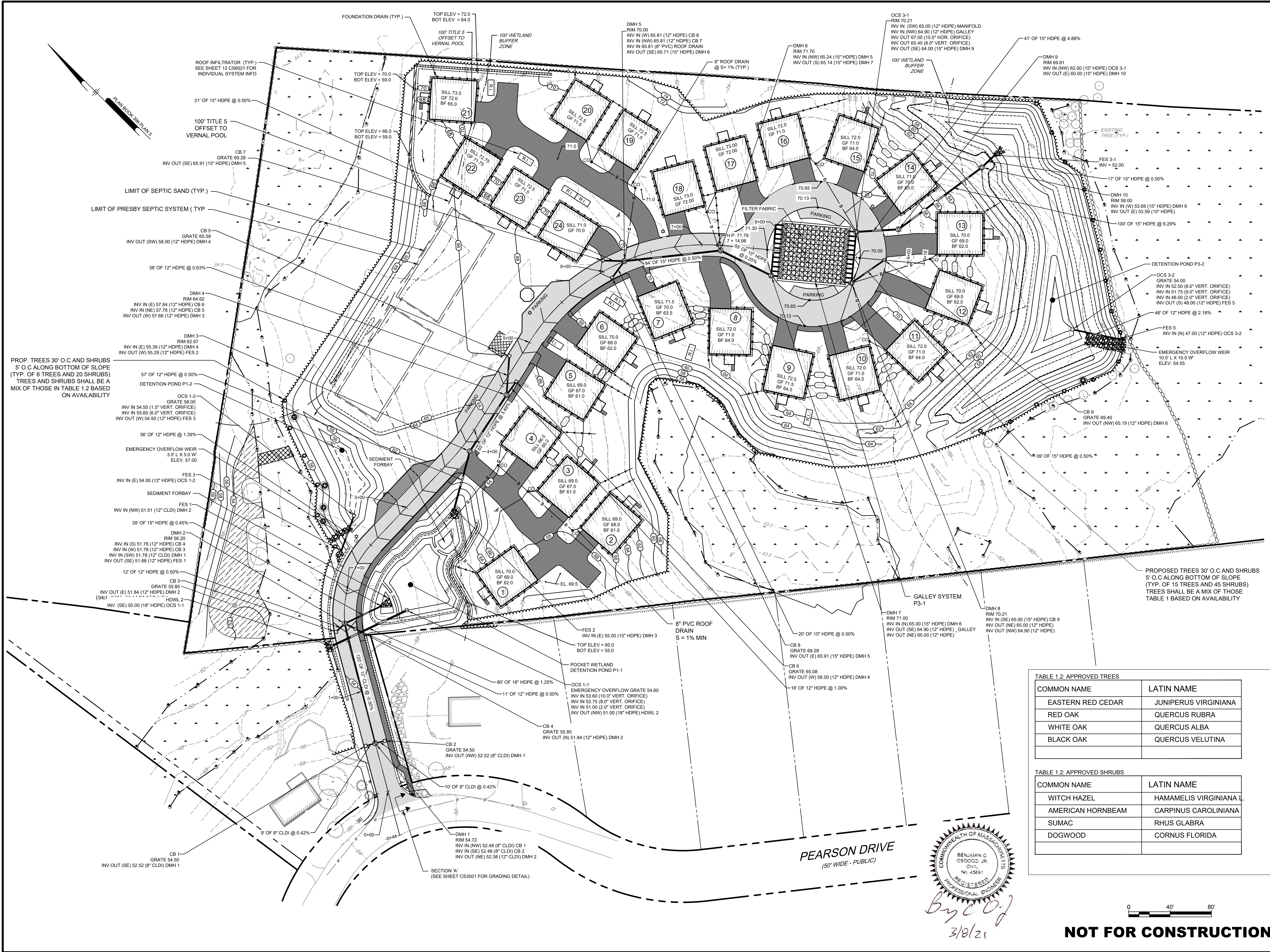


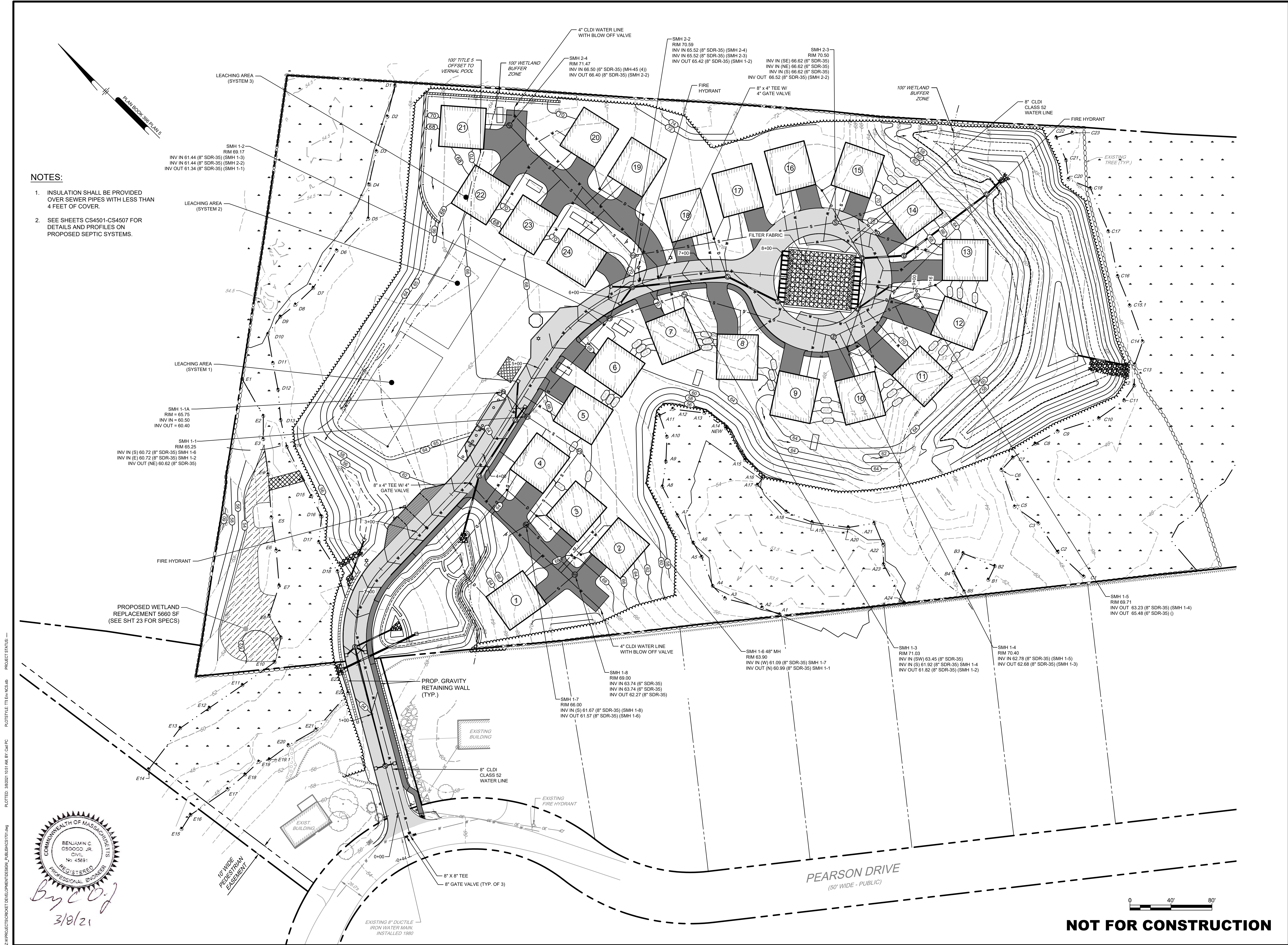
TABLE 1.2: APPROVED TREES	
COMMON NAME	LATIN NAME
EASTERN RED CEDAR	JUNIPERUS VIRGINIANA
RED OAK	QUERCUS RUBRA
WHITE OAK	QUERCUS ALBA
BLACK OAK	QUERCUS VELUTINA

TABLE 1.2: APPROVED SHRUBS	
COMMON NAME	LATIN NAME
WITCH HAZEL	HAMAMELIS VIRGINIANA L.
AMERICAN HORNBEAM	CARPINUS CAROLINIANA
SUMAC	RHUS GLABRA
DOGWOOD	CORNUS FLORIDA

THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP P-20 LOT 175
GRADING AND DRAINAGE
PRESENTATION PLAN
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

						REVISIONS	
						NO.	DATE
			BCO	FINAL REVIEW COMMENT REVISIONS	4		01/28/2021
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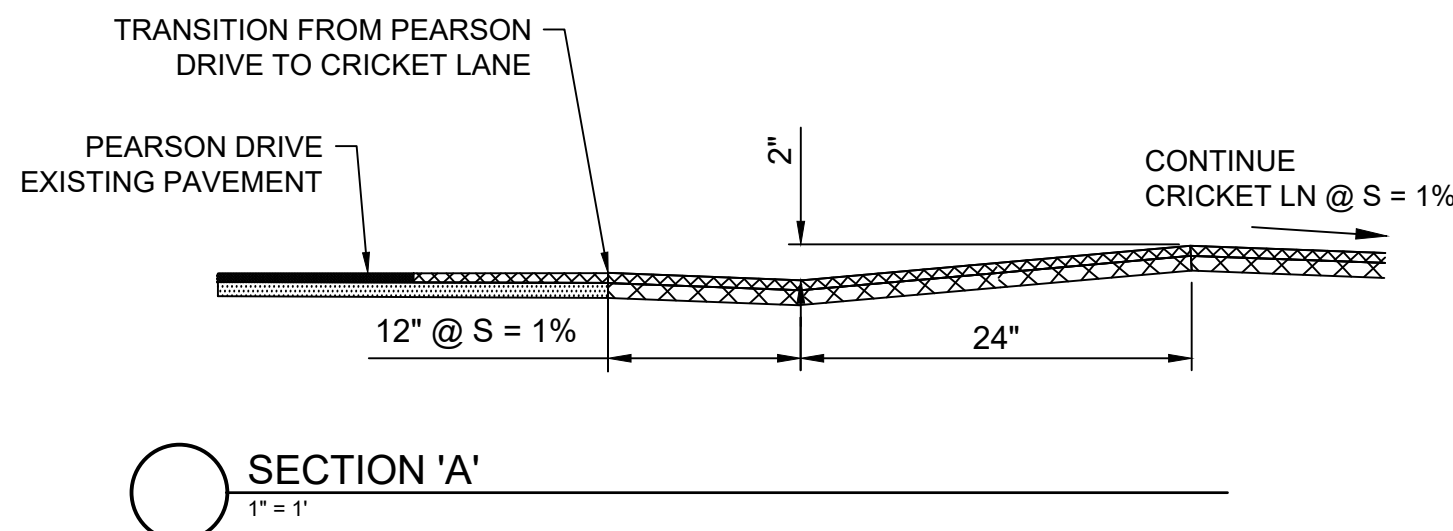
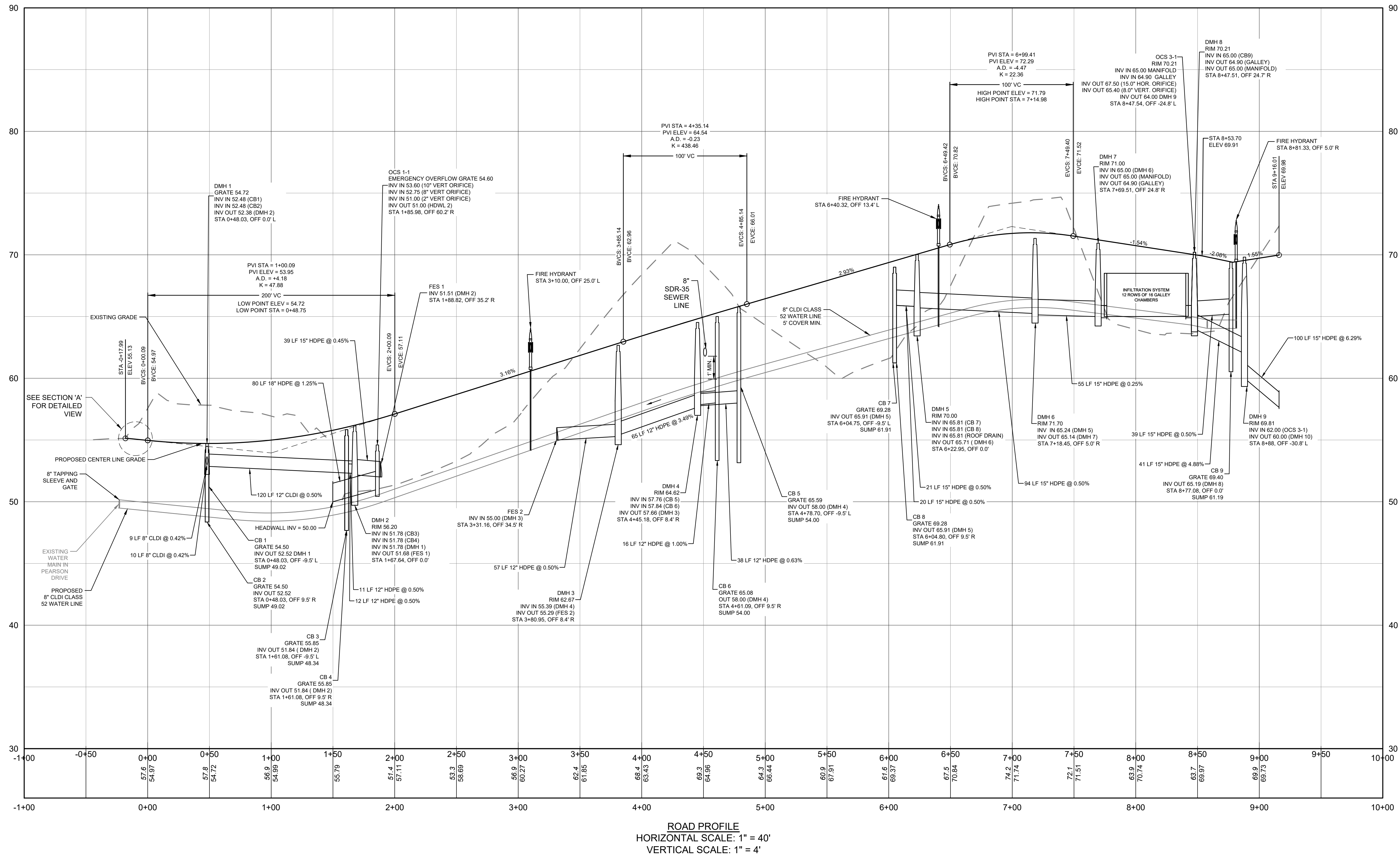


THE VILLAGE AT CRICKET LANE
 BYFIELD (NEWBURY), MA 01922
 ASSESSORS MAP R-20 LOT 75
UTILITY PLAN
PRESENTATION PLAN
 CRICKET LANE, LLC
 92 MIDDLESEX ROAD
 TYNGSBOROUGH, MA 01879

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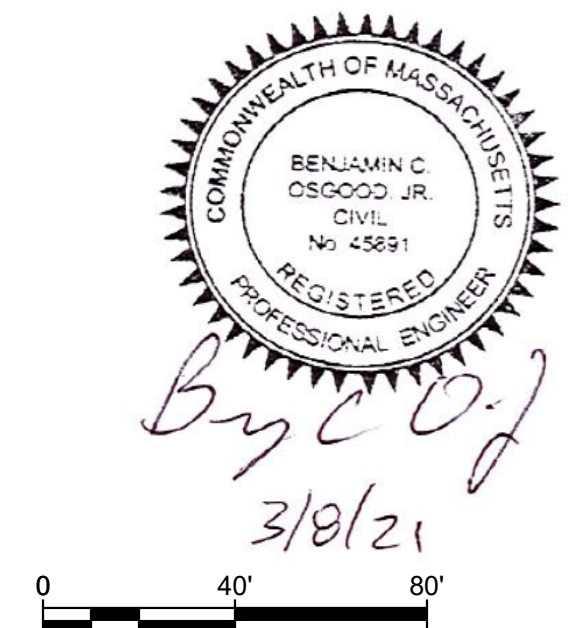
PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

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NOTES:

SEE SEPTIC SYSTEM DESIGN PLANS SHEETS CS4501-CS4507.
PLANS TO BE SUBMITTED TO THE BOARD OF HEALTH FOR DETAILS
AND PROFILES FOR PROPOSED SEPTIC SYSTEMS.



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THE VILLAGE AT CRICKET LANE

BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

ROAD PROFILE

CRICKET LANE, LLC

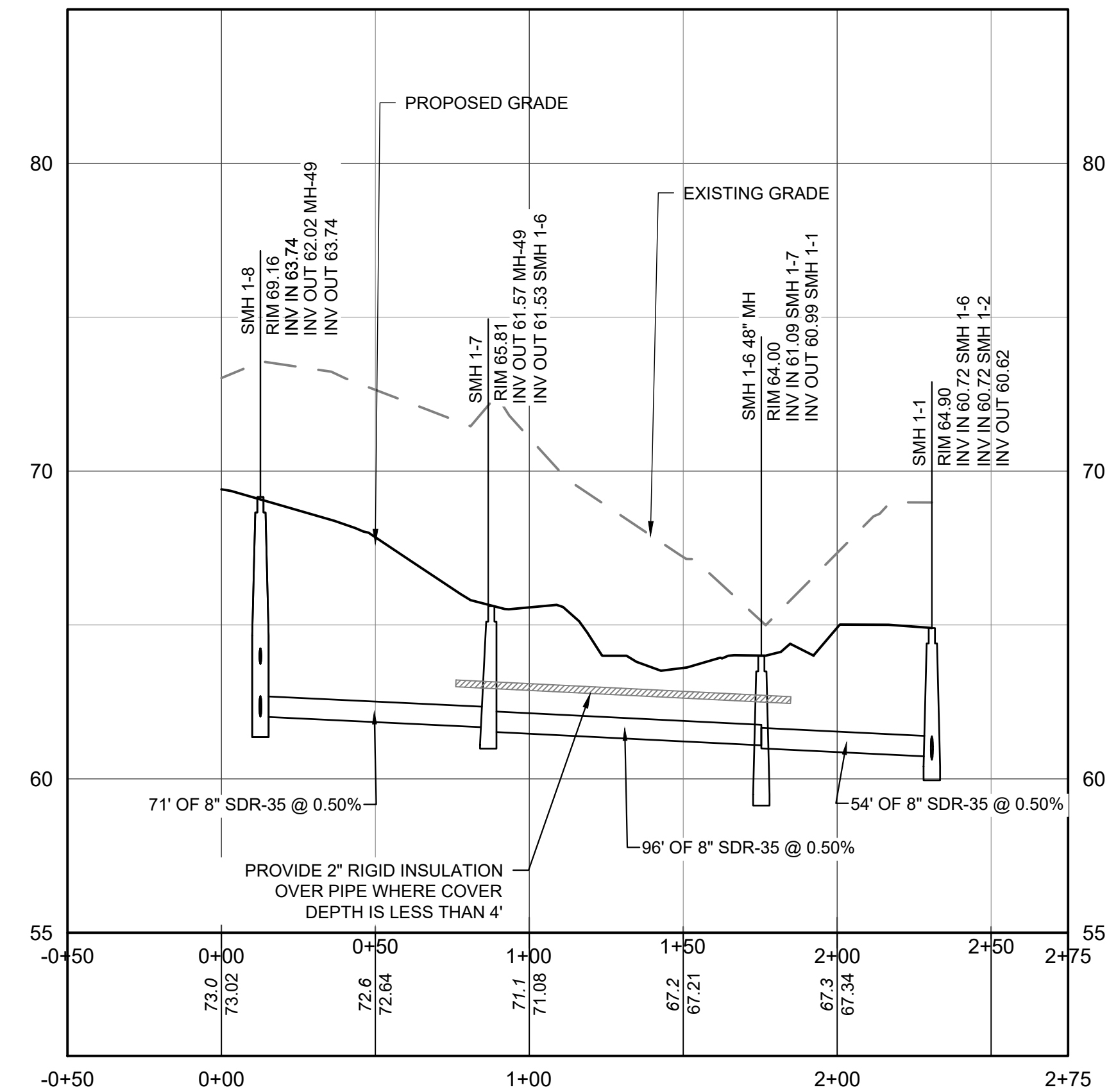
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TYNGBOROUGH, MA 01879

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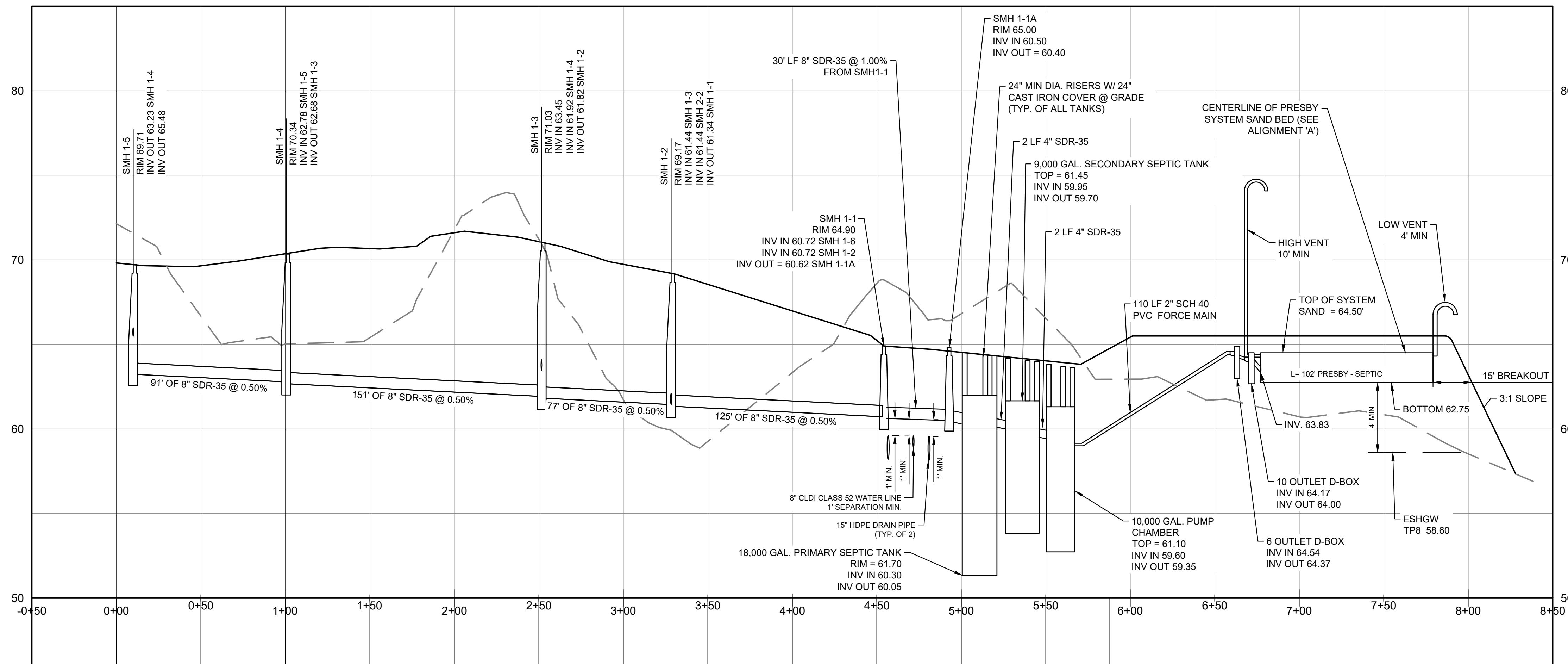
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APPROVED BY	BCO

CS3501

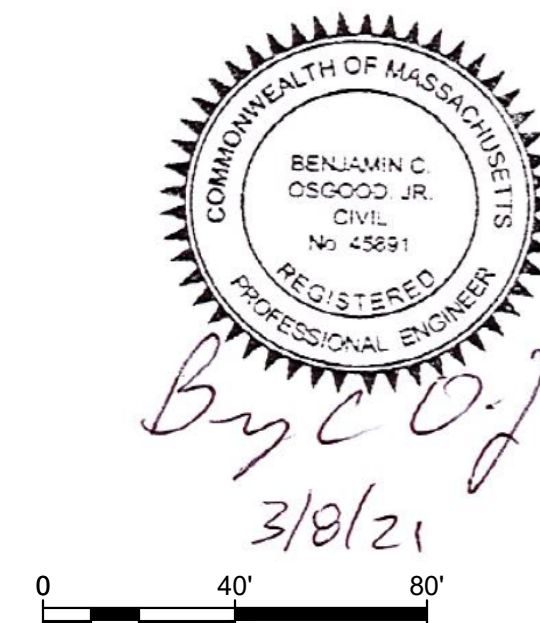
SHEET 10 OF 30



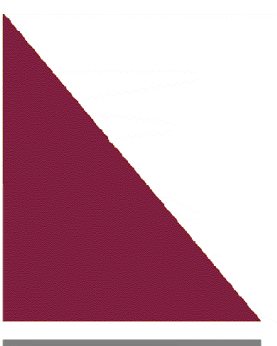
SMH 1-8 TO SMH 1-1 5+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



SMH 1-5 TO SMH 1-1 10+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



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THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

SEWER PROFILE

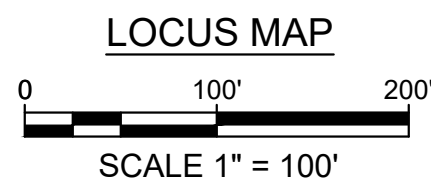
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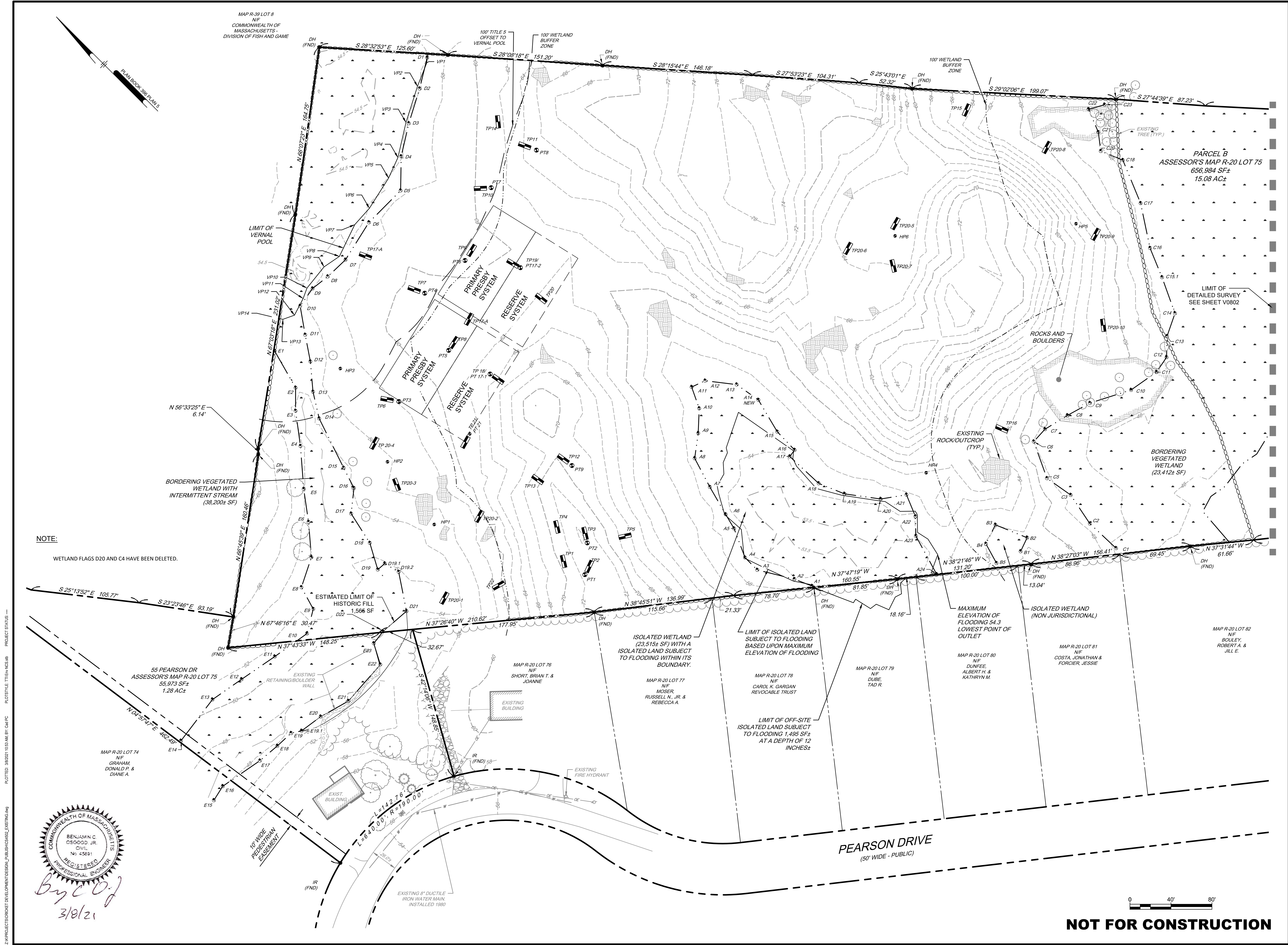
NO.	DATE	REVISIONS	BY
4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO
3	12/09/2020	REVIEW COMMENT REVISIONS	BCO
2	08/17/2020	REVIEW COMMENT REVISIONS	BCO
1	06/26/2020	REVIEW COMMENT REVISIONS	BCO

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

CS3502

SHEET 11 OF 30





NOTE:
WETLAND FLAGS D20 AND C4 HAVE BEEN DELETED.



By C.O.J.
3/8/21



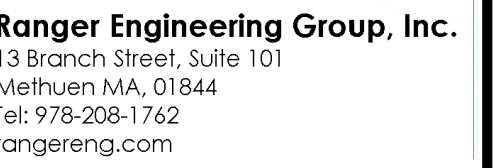
NOT FOR CONSTRUCTION

Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75
SUBSURFACE SEWAGE DISPOSAL SYSTEM
EXISTING CONDITIONS PLAN

NO.	DATE	REVISIONS	BY
1	08/26/2020	REVIEW COMMENT REVISIONS	BCO
2	08/17/2020	REVIEW COMMENT REVISIONS	BCO
3	12/09/2020	REVIEW COMMENT REVISIONS	BCO
4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO

PROJECT 15-1516
DATE 2020-08-10
DRAWING SCALE AS NOTED
DRAWN BY OMR
APPROVED BY BCO
CS4502
SHEET 13 OF 30



THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75

SUB-SURFACE SEWAGE DISPOSAL SYSTEM
UTILITY PLAN

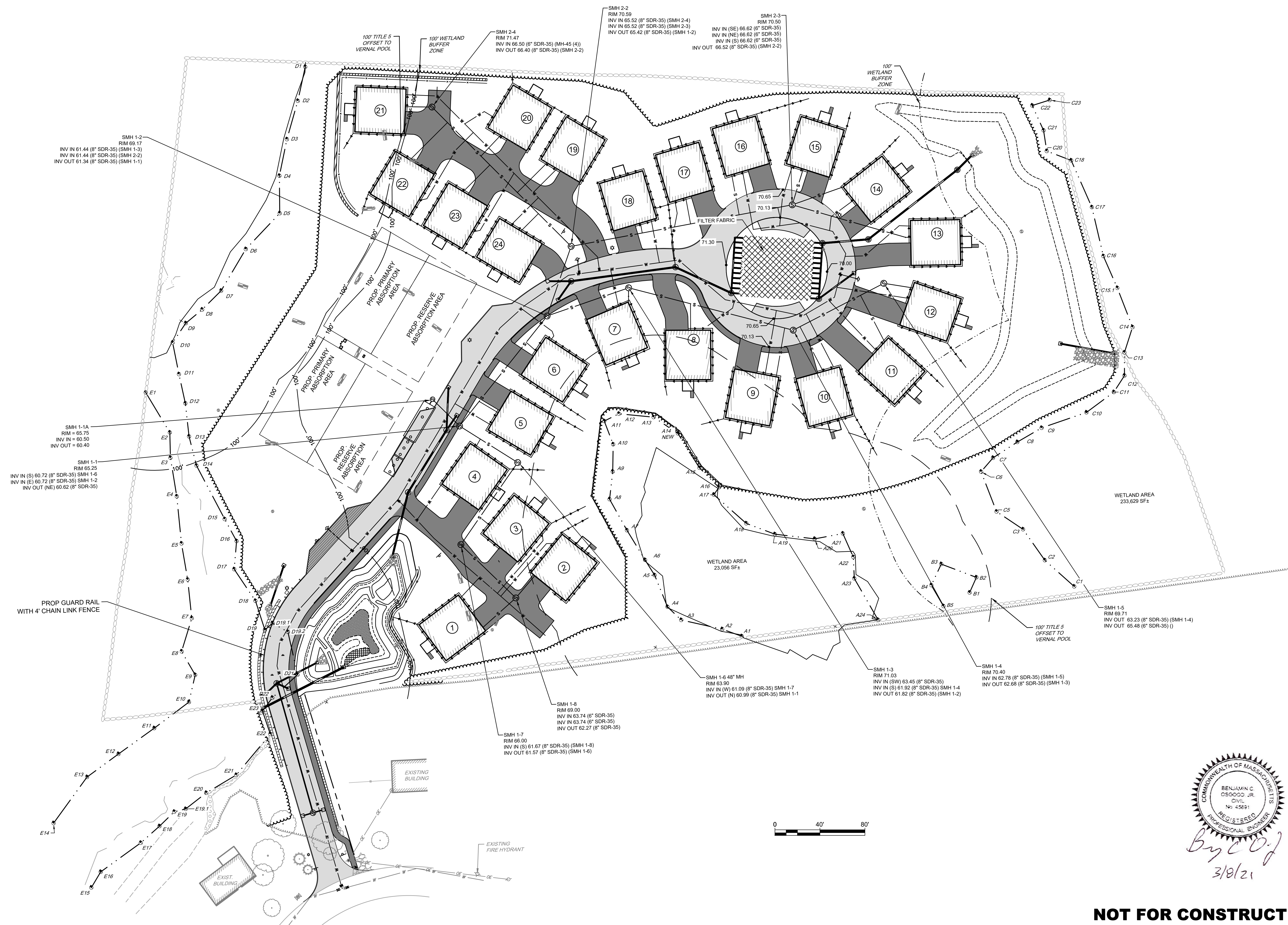
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGBOROUGH, MA 01879

[illegible]

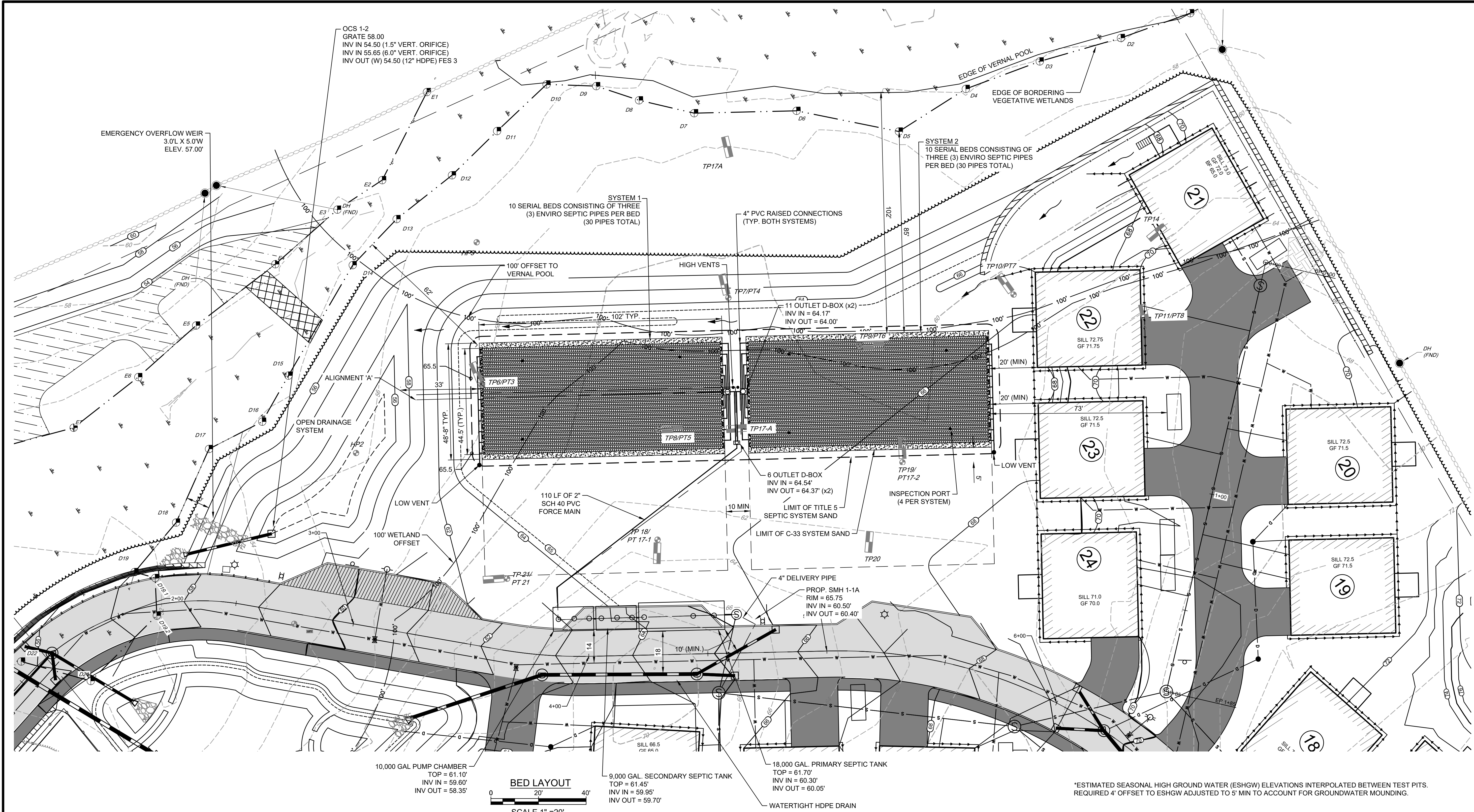
PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

CS4503

SHEET 14 OF 30



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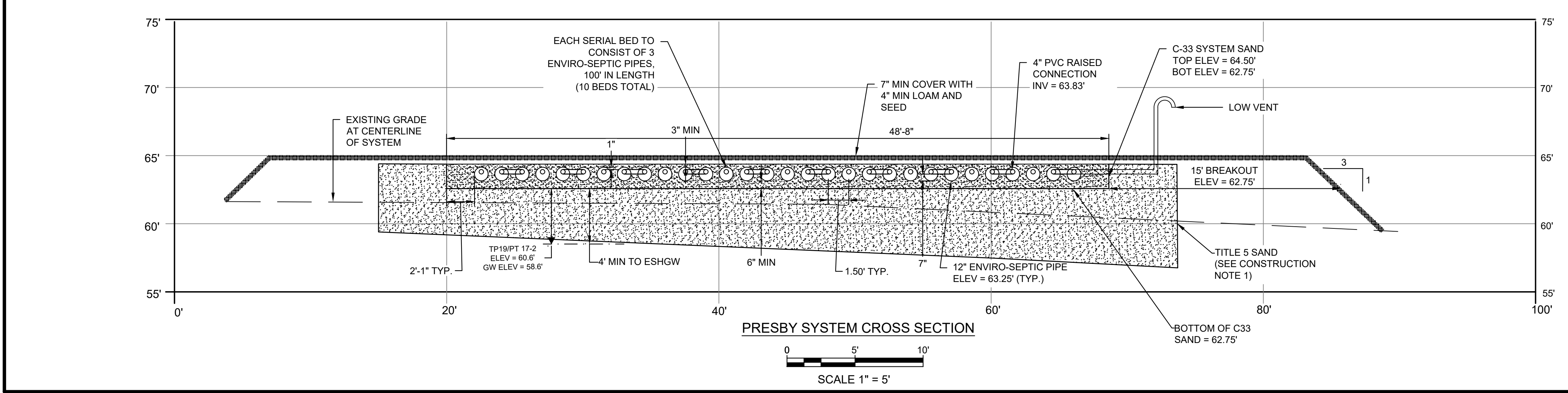
THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

**SUB-SURFACE SEWAGE DISPOSAL SYSTEM
LAYOUT AND SYSTEM PROFILE**

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

NO.	DATE	REVISIONS
4	01/28/2021	FINAL REVIEW COMMENT REVISIONS
3	12/09/2020	REVIEW COMMENT REVISIONS
2	08/17/2020	REVIEW COMMENT REVISIONS
1	08/26/2020	REVIEW COMMENT REVISIONS

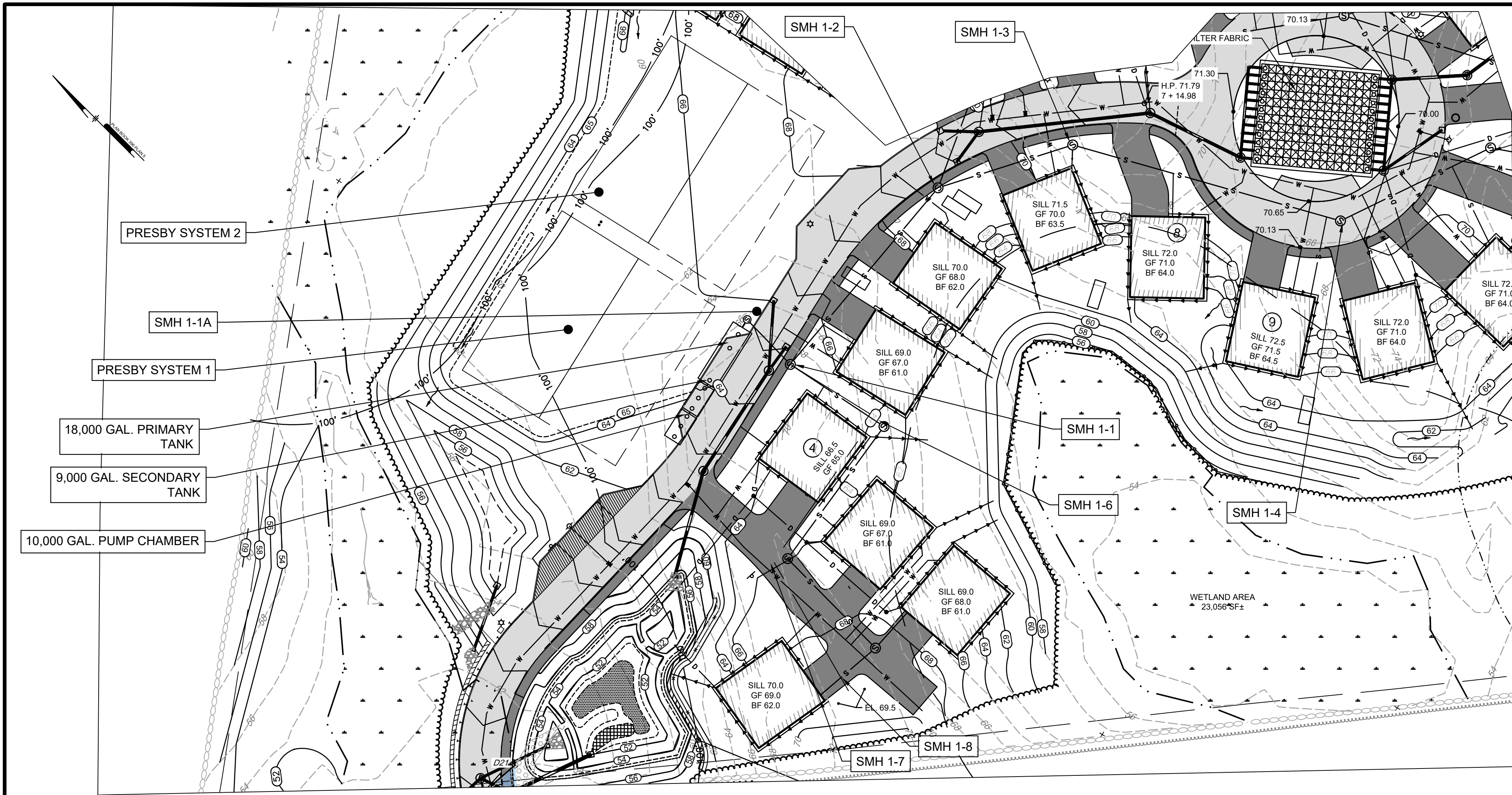
PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO



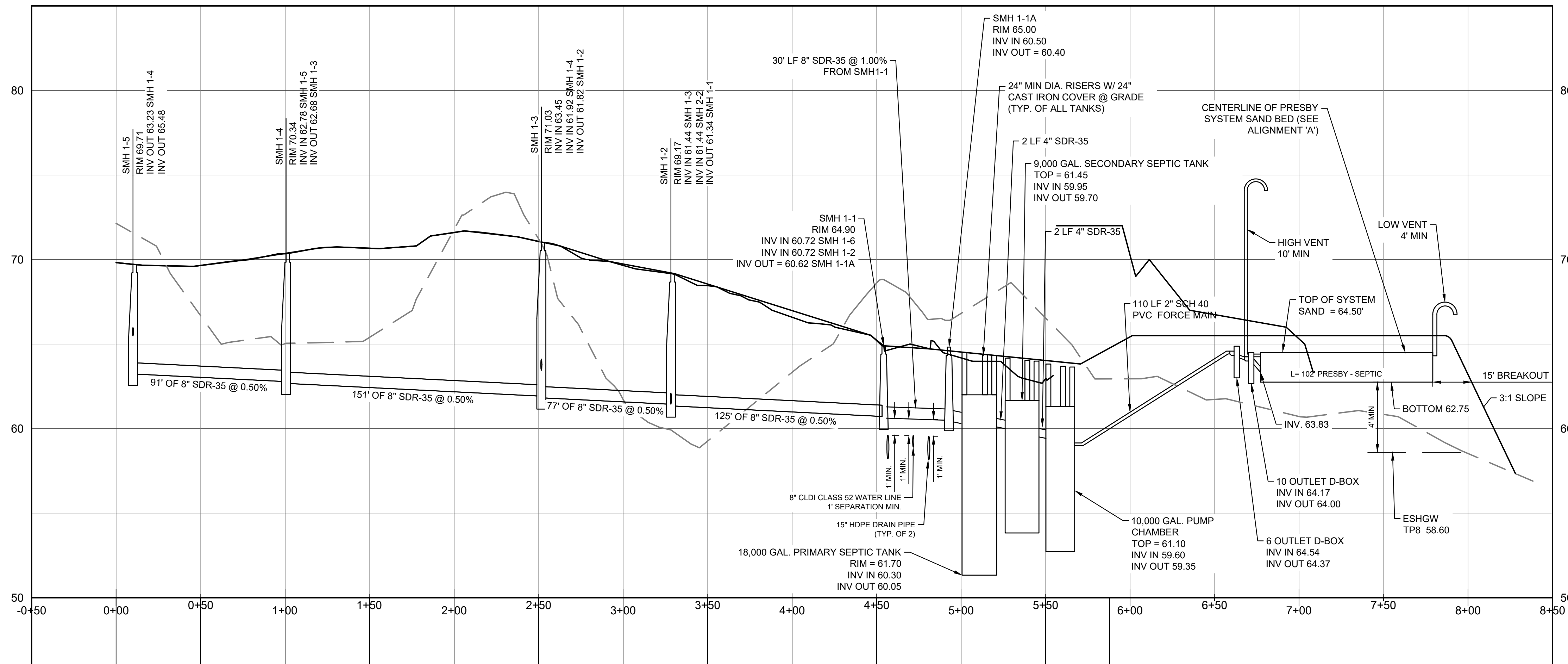
*ESTIMATED SEASONAL HIGH GROUND WATER (ESHW) ELEVATIONS INTERPOLATED BETWEEN TEST PITS.
REQUIRED 4' OFFSET TO ESHGW ADJUSTED TO 5' MIN TO ACCOUNT FOR GROUNDWATER MOUNDING.

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN C. OSGOOD JR.
CIVIL
No. 45891
REGISTERED PROFESSIONAL ENGINEER
By *BCO*
3/8/21

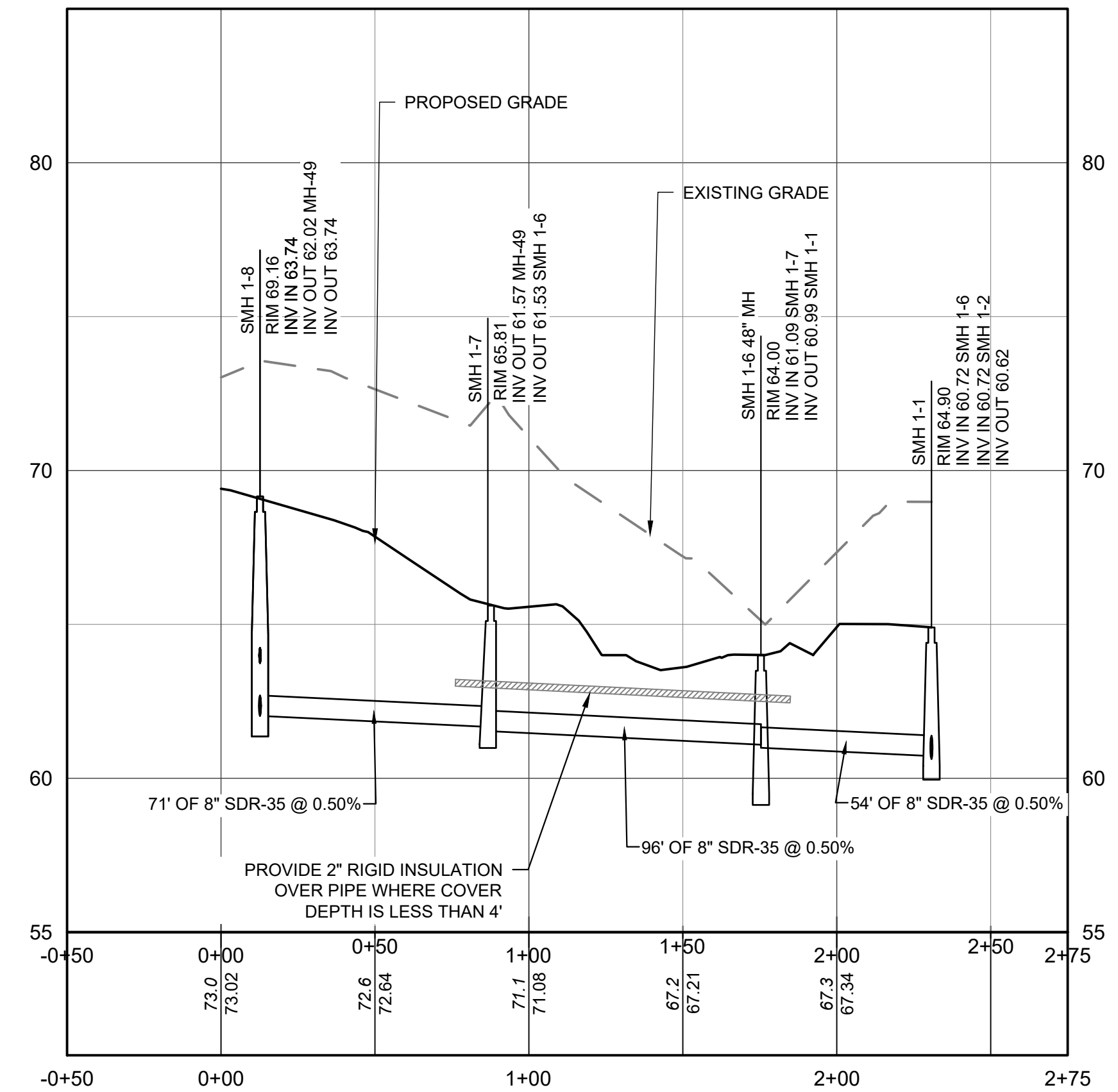
NOT FOR CONSTRUCTION



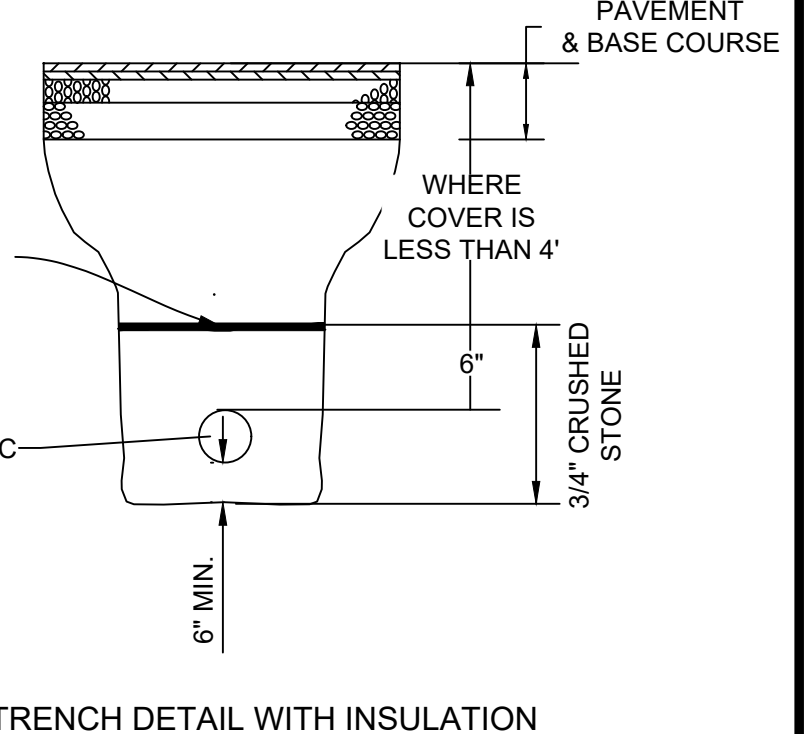
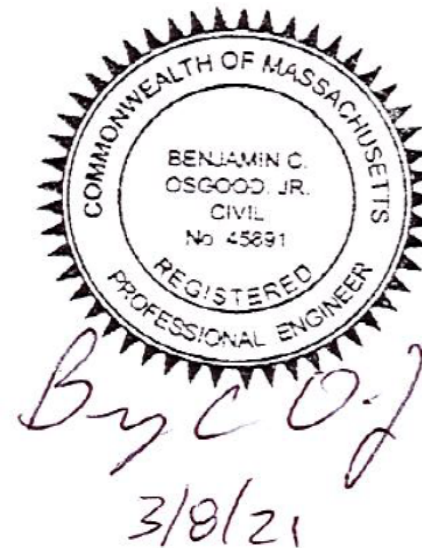
LOCUS MAP
0 40' 80'
SCALE 1" = 40'



SMH 1-5 TO SMH 1-1 10+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



SMH 1-8 TO SMH 1-1 5+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

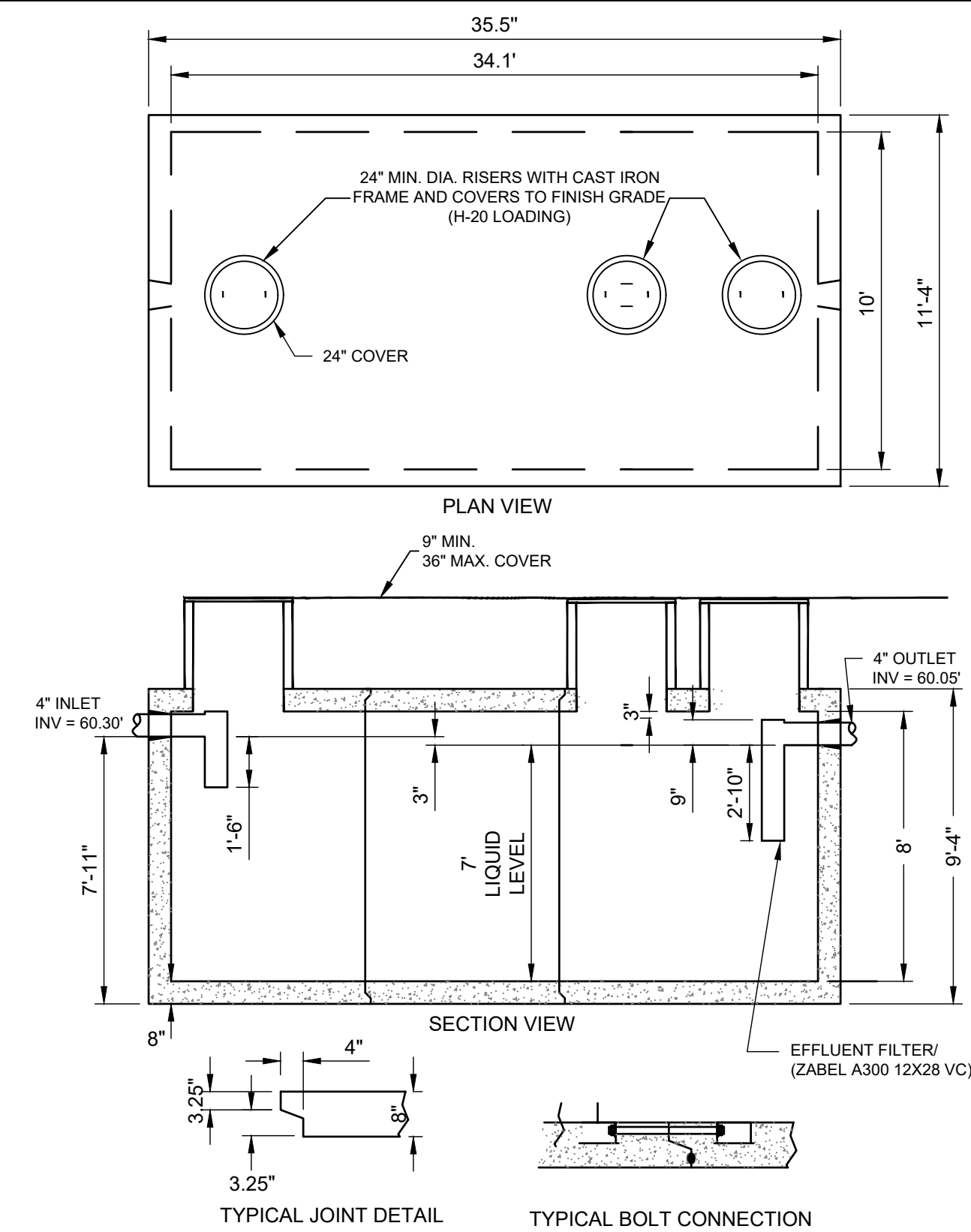


NOT FOR CONSTRUCTION

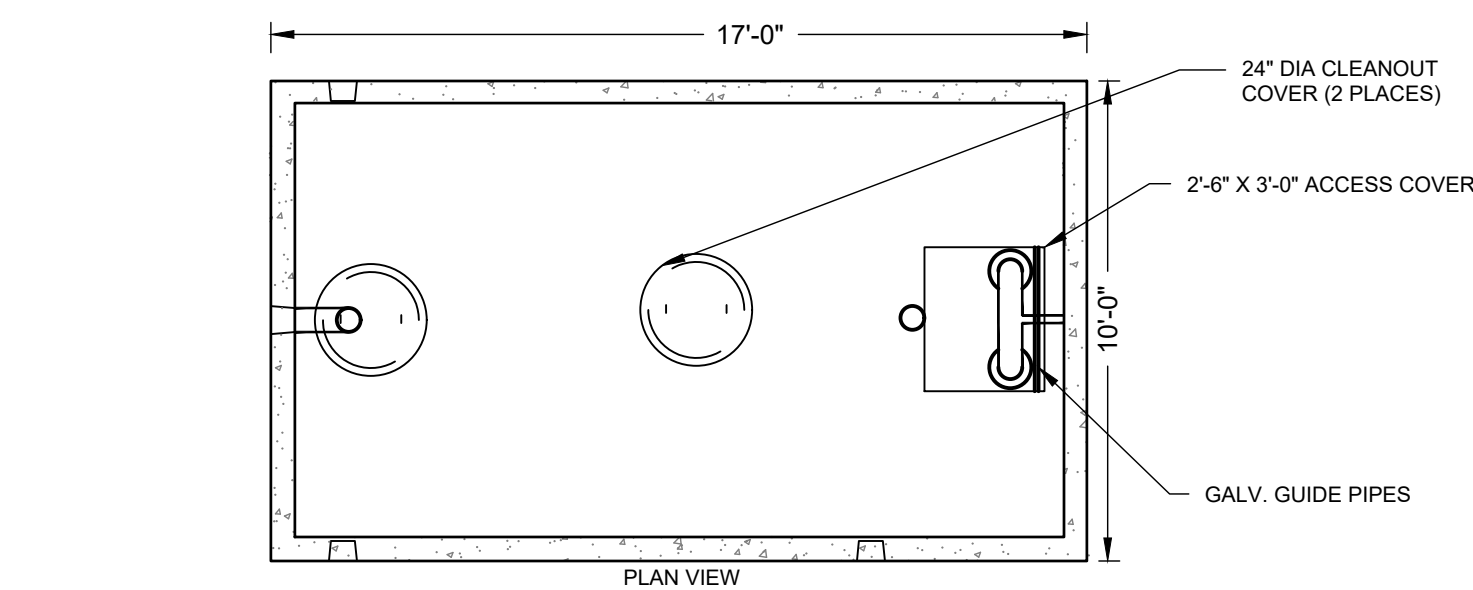
THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 175
SUB-SURFACE SEWAGE DISPOSAL SYSTEM PROFILES
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

NO.	DATE	REVISIONS
4	01/26/2021	FINAL REVIEW COMMENT REVISIONS
3	12/09/2020	REVIEW COMMENT REVISIONS
2	08/17/2020	REVIEW COMMENT REVISIONS
1	06/26/2020	REVIEW COMMENT REVISIONS

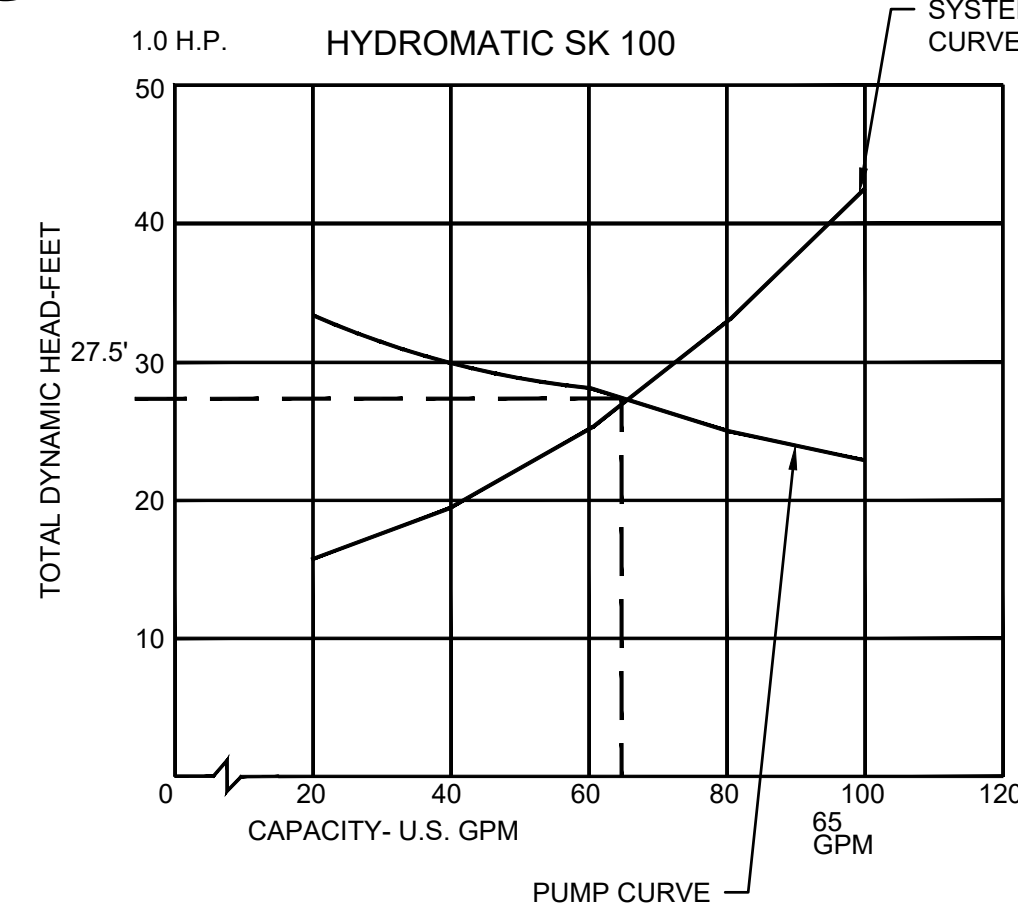
PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO



1 18000 GALLON PRIMARY TUNNEL TANK SEPTIC H-20
SHEA MODEL OR APPROVED EQUAL



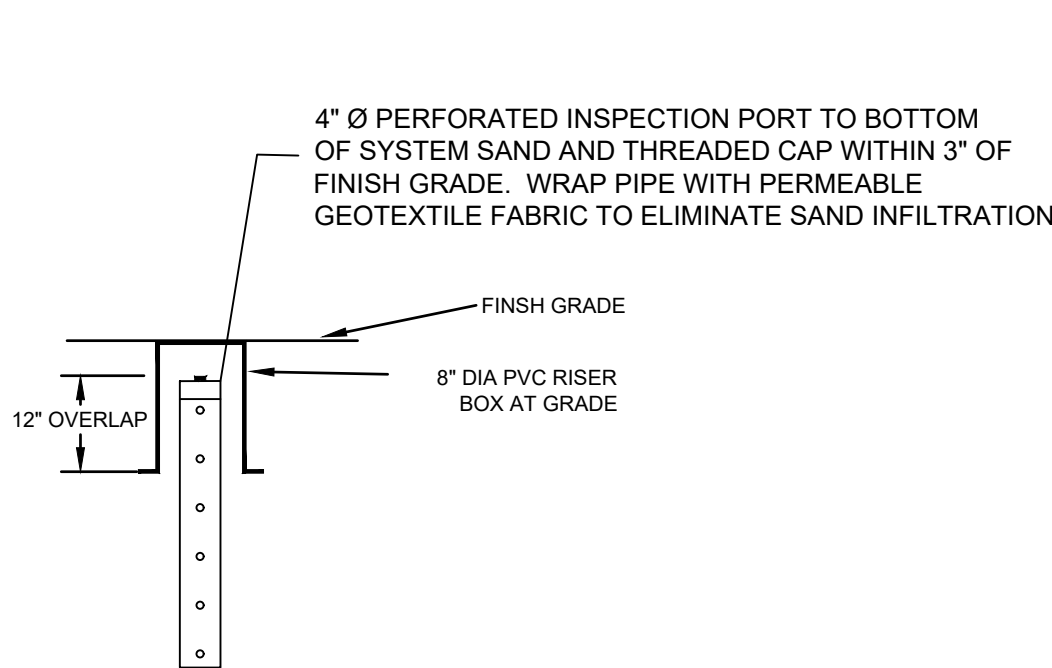
2 9,000 GALLON SECONDARY COMMERCIAL LINE TANK



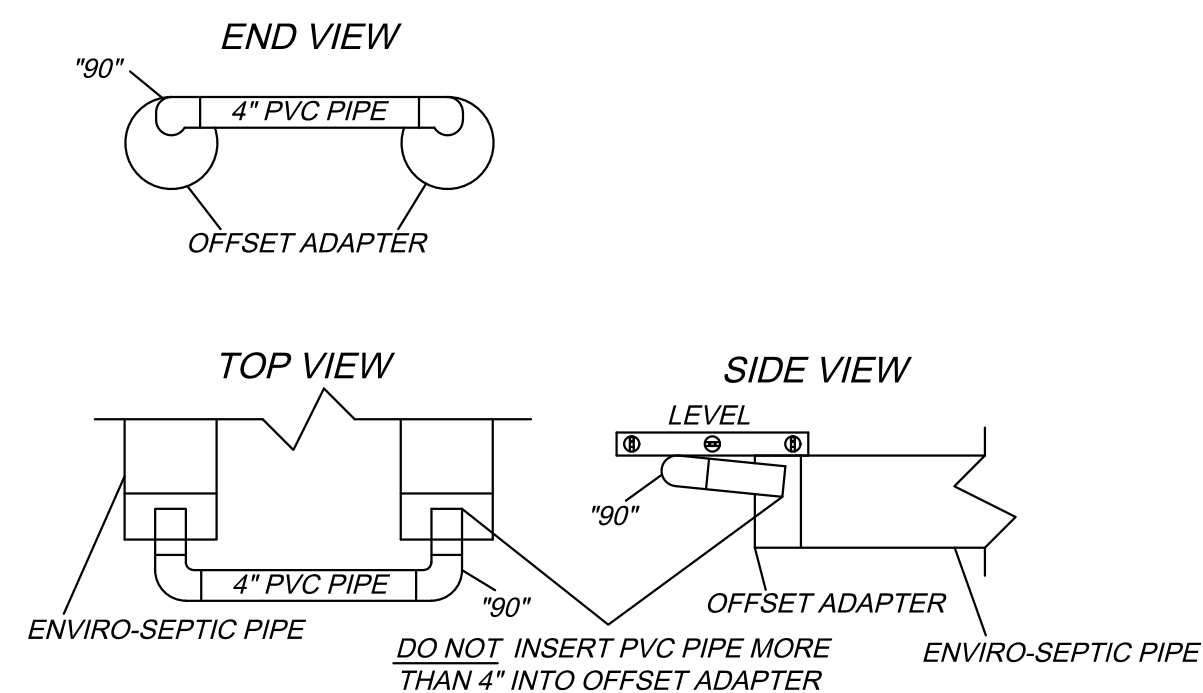
DOSING CALCULATIONS
DRAIN BACK VOLUME
 TOTAL DRAINBACK = 21 GALLONS - FROM PRESSURE DOSING CALCULATIONS
DOSE SIZE GALLONS
 (WIDTH OF TANK) x (LENGTH OF TANK) x (DEPTH OF PUMP)
 16' x 9' x 0.66 x 7.5 GAL. PER CU. FT. = 713 GALLONS
 713 - 21 GALLONS DRAIN BACK = 692 GALLONS PER DOSE
DOSES PER DAY
 8800 GALLONS PER DAY FLOW / 692 GALLONS
 12.7 DOSES PER DAY
EMERGENCY STORAGE
 (WIDTH OF TANK) x (LENGTH OF TANK) x (DEPTH FROM ALARM ON TO INVERT IN)
 16' x 9' x 8.15' x 7.5 GAL. PER CU. FT. = 8800 GALLONS

4 PUMP PERFORMANCE DATA

3 10,000 GALLON PUMP CHAMBER COMMERCIAL LINE TANK



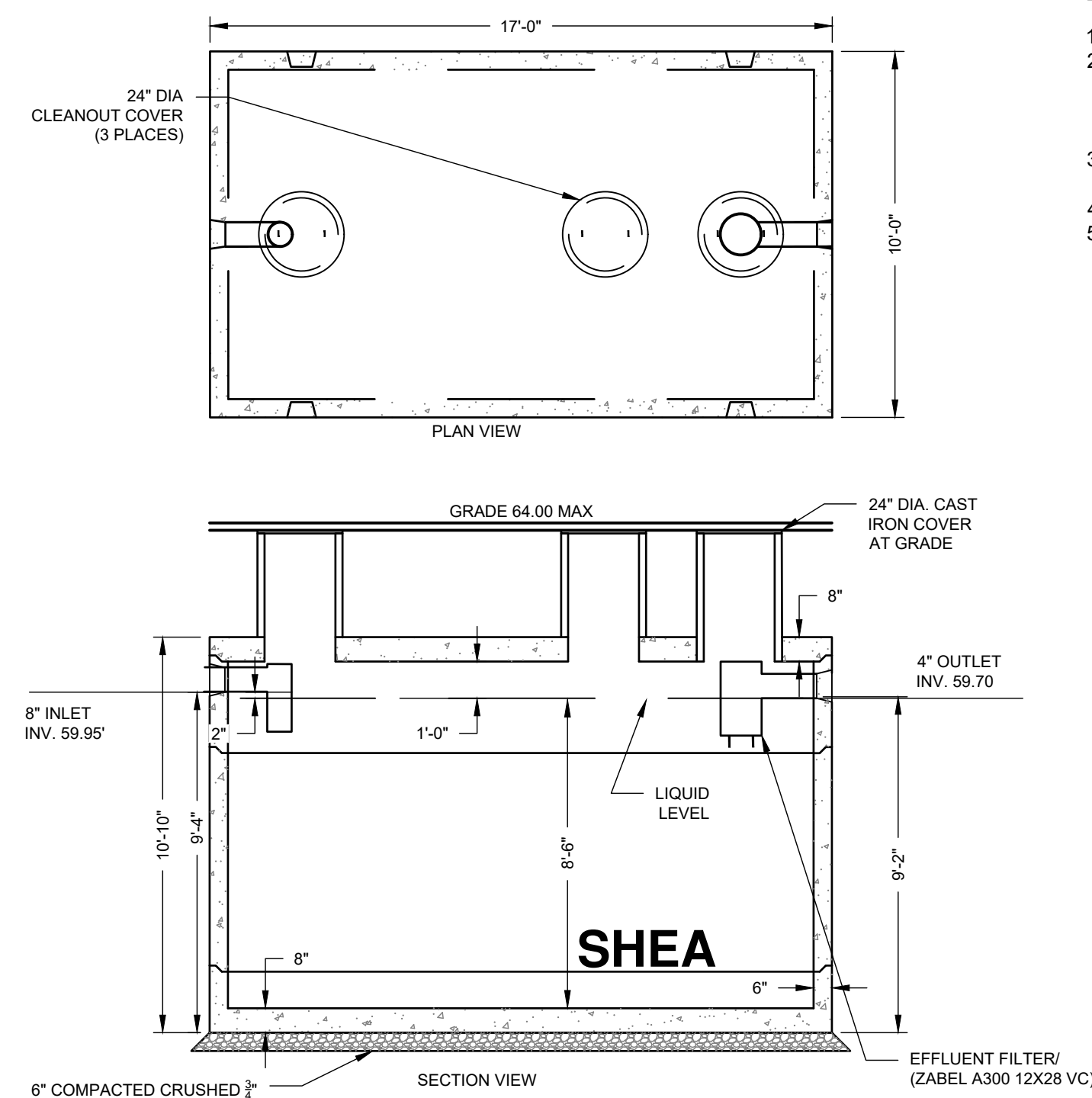
6 PRESBY INSPECTION PORT DETAIL
NOT TO SCALE



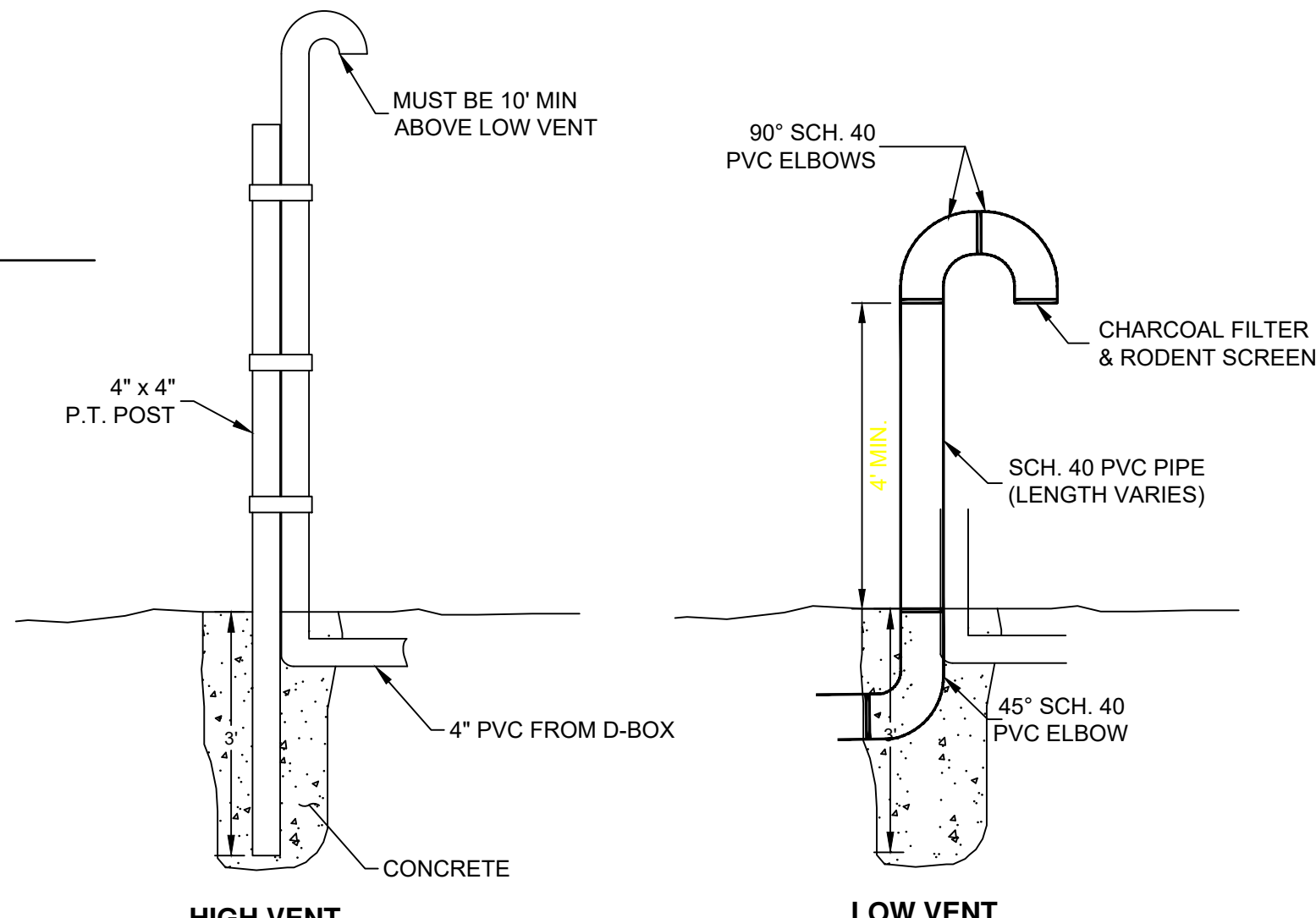
7 PRESBY SYSTEM-RAISED CONNECTION DETAIL
NOT TO SCALE

TANK AND PUMP CHAMBER NOTES

1. UNUSED OPENINGS SHALL BE SEALED WITH HYDRAULIC CEMENT.
2. PRECAST CONCRETE SHALL BE MADE WATER TIGHT BY SEALING HORIZONTAL JOINTS WITH BUTYL RESIN, FILLING REMAINING GAPS AND UNUSED OPENINGS WITH HYDRAULIC CEMENT, AND APPLYING A BITUMINOUS COATING TO BE EXTERIOR SURFACES.
3. TANKS SHALL BE VACUUM TESTED FOR WATER TIGHTNESS PRIOR TO BACKFILLING.
4. TANKS SHALL HAVE MINIMUM 9" AND MAXIMUM 36" EARTH COVER.
5. WORK PERFORMED WITHIN TANKS SHALL BE PERFORMED IN ACCORDANCE WITH CONFINED SPACE ENTRY REQUIREMENTS BY PERSONS CERTIFIED FOR CONFINED SPACE ENTRY.



5 10 AND 6 OUTLET DISTRIBUTION BOX DETAILS
SHEA MODEL OR APPROVED EQUAL



8 PRESBY SYSTEM- VENT DETAILS
NOT TO SCALE

1. **PUMP CHAMBER**
PUMP CHAMBER SHALL BE PRECAST CONCRETE. 10,000 GALLON PUMP CHAMBER, MODEL NUMBER TK-10,000, SHEA CONCRETE PRODUCTS OR APPROVED EQUAL. OUTSIDE OF CHAMBER SHALL BE WATER PROOFED. CONSTRUCTION JOINTS AND OPENINGS SHALL BE SEALED WITH HYDRAULIC CEMENT.
2. **PUMPS**
PUMPS SHALL BE 1.0 H.P HYDROMATIC SK100 OR APPROVED EQUAL. PUMP DESIGNED TO PUMP 65 GALLONS PER MINUTE AT A 27.5 FOOT HEAD. ELECTRICAL EQUIPMENT LOCATED IN PUMP CHAMBER SHALL CONFORM TO EXPLOSION PROOF DESIGN REQUIREMENTS OF THE NATIONAL ELECTRIC CODE.
3. **LEVEL CONTROLS**
FLOAT SWITCHES SHALL BE MECHANICAL SWITCHES. FLOAT LEVEL ELEVATIONS ARE SHOWN IN PUMP CHAMBER DETAIL AND INCLUDE PUMP OFF, PUMP ON, ALARM ON, AND LAG PUMP ON FLOATS. FLOATS SHALL BE ATTACHED TO FLOAT SUPPORT BRACKET AT PROPER LEVELS WITH GROMMETS SUPPLIED WITH BRACKET. JUNCTION BOX FOR SWITCHES SHALL BE INSTALLED IN A NEMA 4 ENCLOSURE ABOVE HIGH GROUND WATER LEVEL.
4. **CONTROL PANEL**
PUMPS SHALL BE EQUIPPED WITH DUPLEX CONTROL PANEL. CONTROLS SHALL CONTAIN A MANUAL ON/OFF SWITCH, RUN LIGHT, AND AN AUTO RESET HIGH WATER ALARM CIRCUIT. CONTROL PANEL SHALL BE WATERPROOF AND LOCATED ADJACENT TO THE PUMP ACCESS COVER.
5. **MAINTENANCE**
TO INSURE PROPER OPERATION OF PUMP AND FLOATS, ACCUMULATED BUILDUP OF FATS, GREASE, AND SLUDGE AROUND MOTOR AND FLOATS SHALL BE REMOVED WITH A PRESSURE HOSE AT 6 MONTH INTERVALS.
6. **INSTALLATION**
TWO 3/16" DRILL HOLES SHALL BE DRILLED, ONE IN DISCHARGE PIPE TWO INCHES ABOVE THE PUMP FLANGE AND ONE ON DISCHARGE SIDE OF GATE VALVE. LIFT CHAIN AND SLIDE RAILS SHALL BE PROVIDED AT TIME OF INSTALLATION. PIPING IN PUMP CHAMBER SHALL BE SCH. 80 PVC.
7. **MANHOLE RISER**
MANHOLE RISER WITH 20" MINIMUM INSIDE DIAMETER SHALL BE PROVIDED WITH CAST IRON CHILD PROOF FRAME AND COVER AT FINISH GRADE OVER PUMP ACCESS OPENING.
8. **ALARM**
ALARM SHALL BE SUPPLIED WITH AUDIBLE AND VISUAL ALARMS WITH SEPARATE POWER SUPPLY FROM PUMP. ALARM SHALL BE LOCATED ADJACENT TO PUMP ACCESS COVER.

18,000 GALLON SEPTIC TANK BUOYANCY CALCULATIONS

WEIGHT OF TANK = 152,075 LBS.
 WEIGHT OF SOIL OVER TANK = (35.5' x 11.25' x 2.8') x 100 PCF = 111,825 LBS.
 TOTAL WEIGHT OF TANK & SOIL = 152,075 LBS+ 111,825 = 263,900 LBS.

ASSUME TANK IS TOTALLY SUBMERGED
 WEIGHT OF WATER DISPLACED = (35.5' x 11.25' x 9.33') x 62.4 PCF. = 232,513 LBS.
 WEIGHT OF TANK & SOIL IS GREATER THAN WEIGHT OF WATER DISPLACED.

9,000 GALLON SEPTIC TANK BUOYANCY CALCULATIONS

WEIGHT OF TANK = 72,932 LBS.
 WEIGHT OF SOIL OVER TANK = (17' x 10' x 2.55') x 100 PCF. = 43,350 LBS.
 TOTAL WEIGHT OF TANK & SOIL = 72,932 43,350 = 116,282 LBS.

ASSUME TANK IS TOTALLY SUBMERGED
 WEIGHT OF WATER DISPLACED = (17' x 10' x 10'-10") x 62.4 PCF = 114,920 LBS.
 WEIGHT OF TANK & SOIL IS GREATER THAN WEIGHT OF WATER DISPLACED.

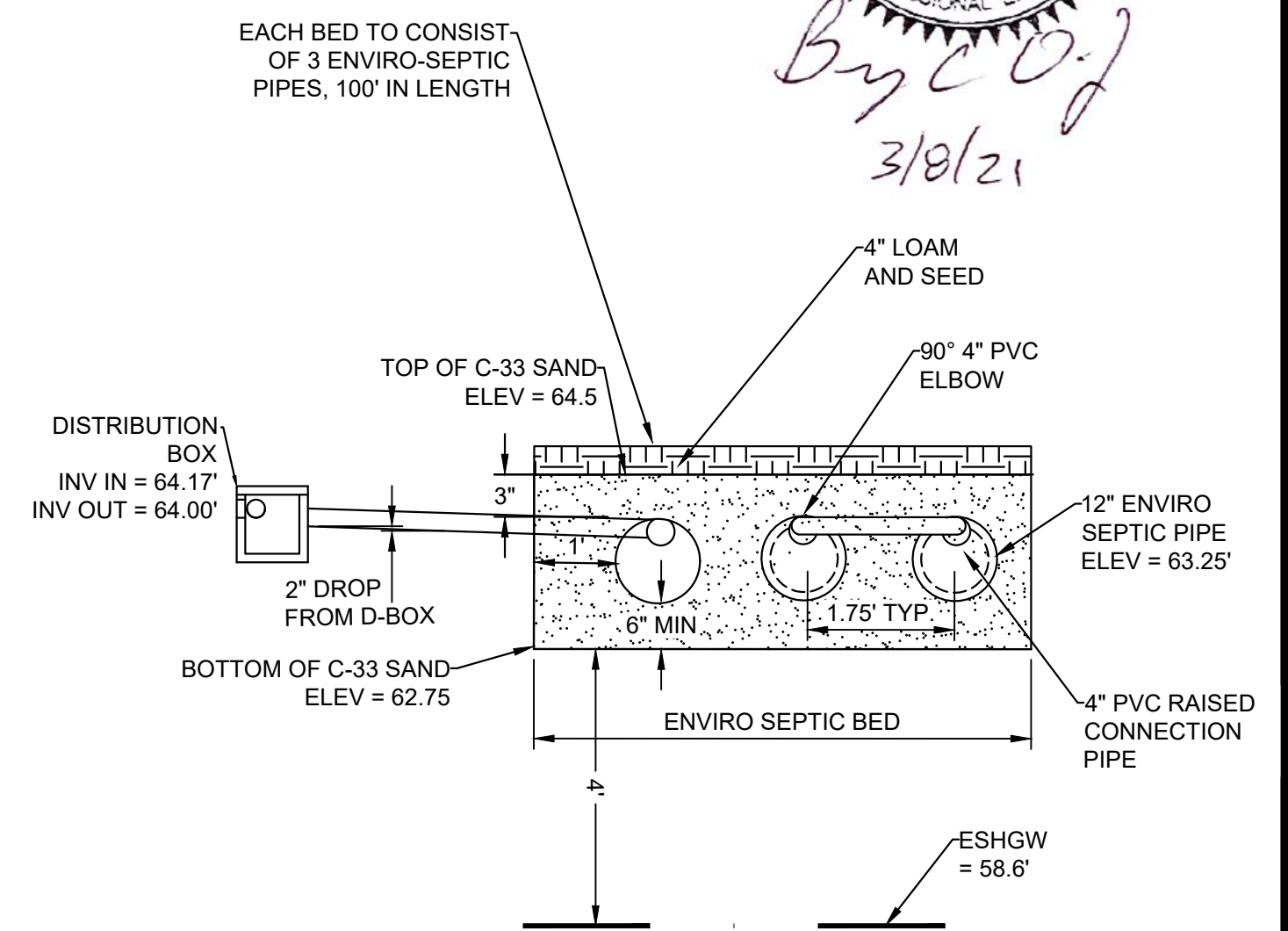
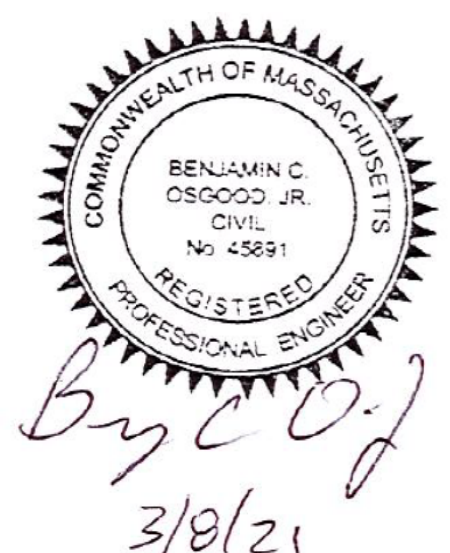
10,000 GALLON PUMP CHAMBER BUOYANCY CALCULATIONS

WEIGHT OF TANK = 76,640 LBS.
 WEIGHT OF SOIL OVER TANK = (17' x 10' x 1.6') x 100 PCF = 27,200 LBS.
 WEIGHT OF CONCRETE BALLAST OVER TANK = (17' x 10' x 0.8') x 150 PCF. = 20,400 LBS.

TOTAL WEIGHT OF TANK, CONCRETE BALLAST, & SOIL = 76,640 + 27,200 + 20,400 = 124,240 LBS.

ASSUME TANK IS TOTALLY SUBMERGED
 WEIGHT OF WATER DISPLACED = (17' x 10' x 11.67') x 62.4 PCF. = 123,795 LBS.

WEIGHT OF TANK, CONCRETE BALLAST, & SOIL IS GREATER THAN WEIGHT OF WATER DISPLACED.



9 ENVIRO SEPTIC BED- END DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION

THE VILLAGE AT CRICKET LANE
 BYFIELD (NEWBURY), MA 01922
 ASSESSORS MAP R-20 LOT 75
**SUB-SURFACE SEWAGE DISPOSAL SYSTEM
 SYSTEM 1 PROFILES**
CRICKET LANE, LLC
 92 MIDDLESEX ROAD
 TYNGSBOROUGH, MA 01879

			BOO	BY
		FINAL REVIEW COMMENT REVISIONS	BOO	
		REVIEW COMMENT REVISIONS	BOO	
		REVIEW COMMENT REVISIONS	BOO	
		REVIEW COMMENT REVISIONS	BOO	

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

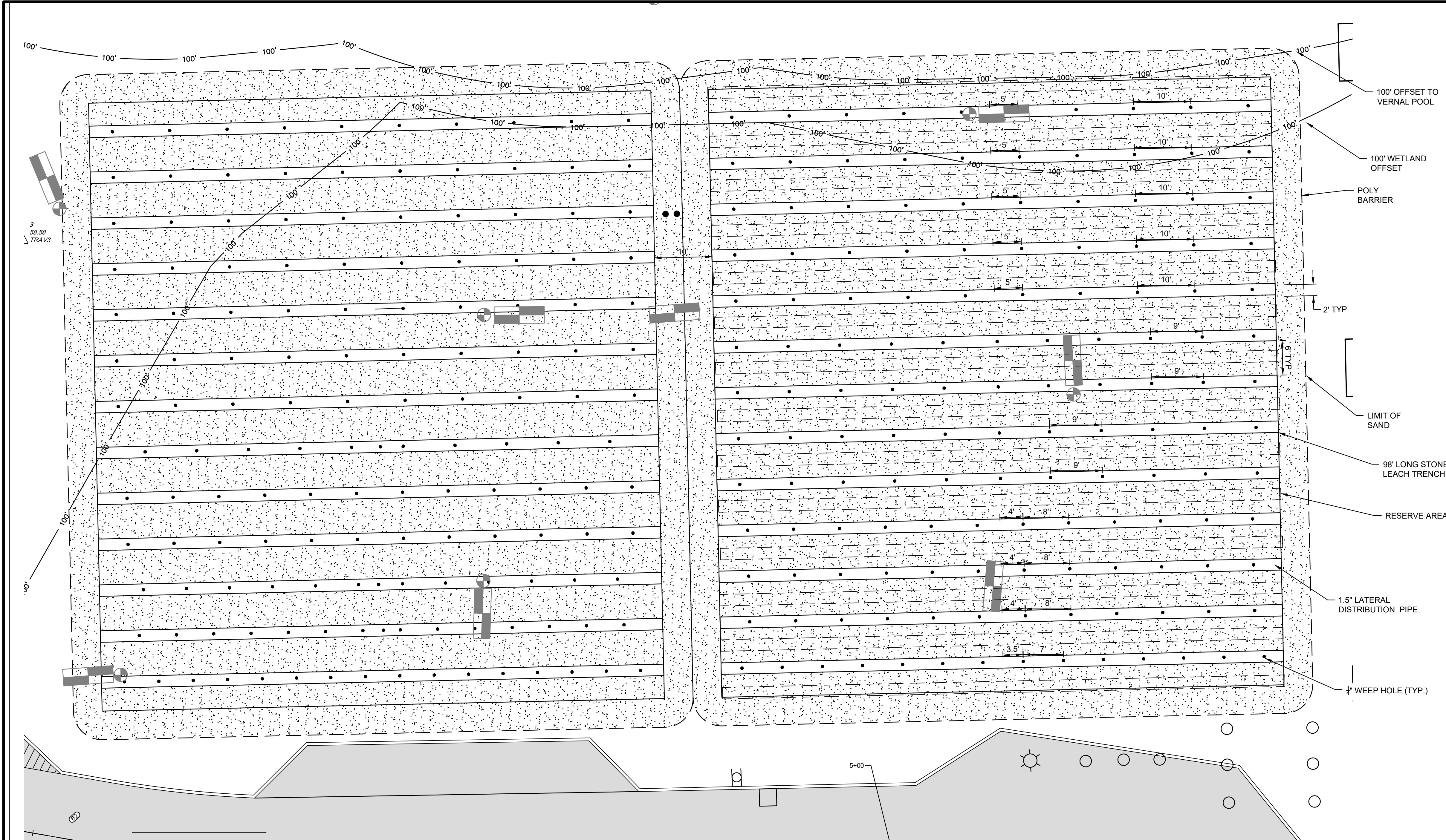
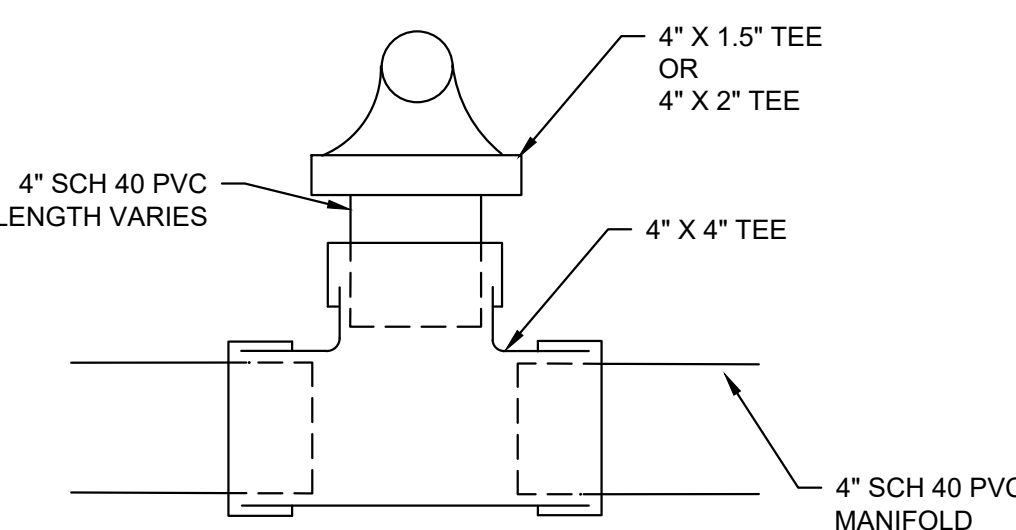
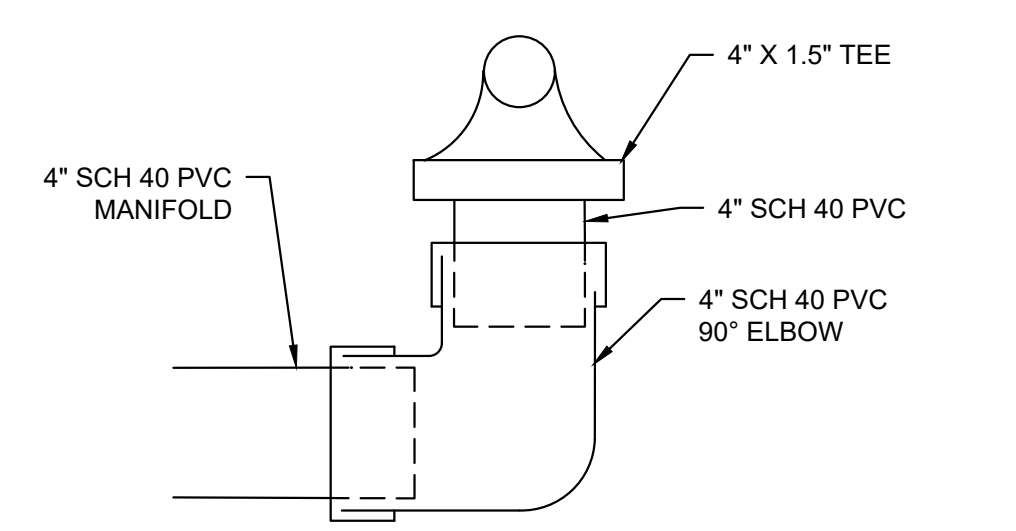


TABLE OF TRENCH ELEVATIONS					
TRENCH #	BOT TRENCH	TRENCH LENGTH	GROUND ELEV	*ESHGW	BREAKOUT
#1	66'	98'	63.5'	61.0'	68.3'
#2	65.5'	98'	63.0'	60.5'	67.8'
#3	65'	98'	62.5'	60.0'	67.3'
#4	64.5'	98'	62.0'	59.5'	67.3'
#5	64.5'	98'	61.5'	59.5'	66.3'
#6	64'	98'	60.8'	58.7'	66.3'
#7	64'	98'	60.6'	58.6'	66.3'
#8	63.5'	98'	60.5'	58.5'	66.3'
#9	63'	98'	60.0'	58.0'	65.3'
#10	63'	98'	60.0'	58.0'	65.3'
#11	63'	98'	60.0'	58.0'	65.3'
#12	63'	98'	60.0'	58.0'	65.3'
#13	63'	98'	60.0'	58.0'	65.3'

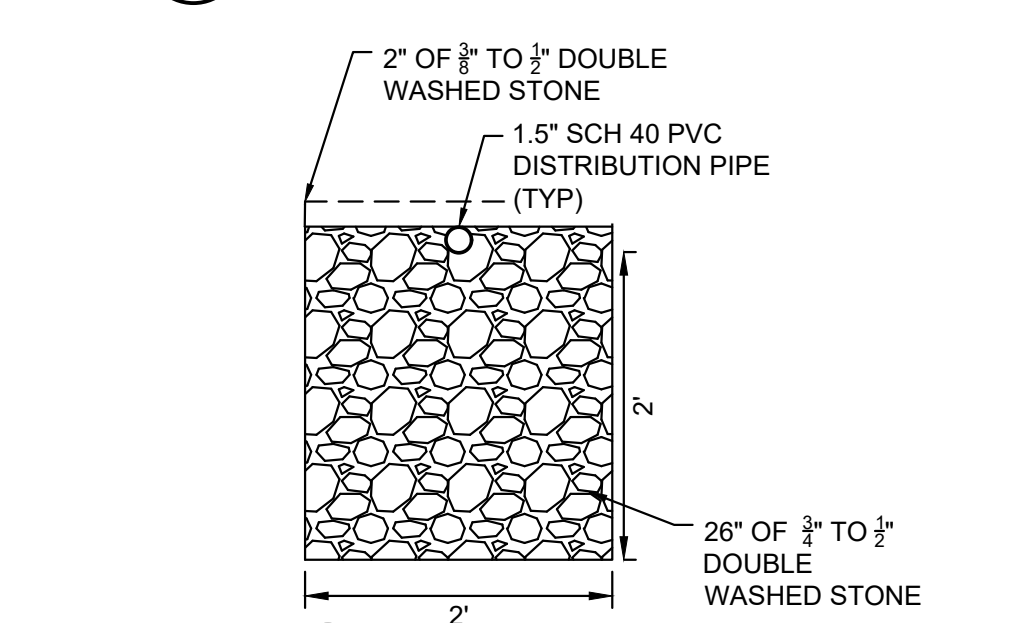
*ESTIMATED SEASONAL HIGH GROUND WATER (ESHGW) ELEVATIONS INTERPOLATED BETWEEN TEST PITS. REQUIRED 4' OFFSET TO ESHGW ADJUSTED TO 5' MIN TO ACCOUNT FOR GROUNDWATER MOUNDING.



1 RISER DETAIL
NOT TO SCALE

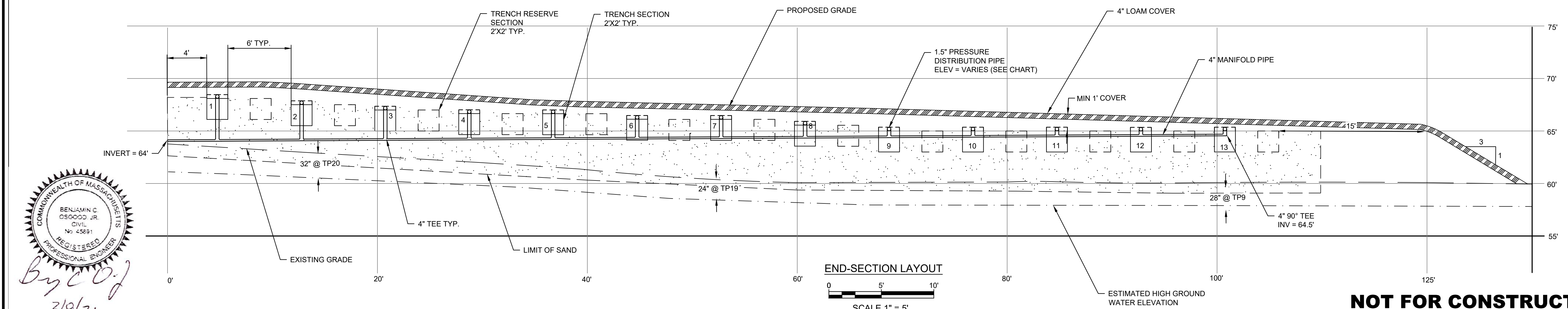


2 RISER END DETAIL
NOT TO SCALE



3 TRENCH SECTION DETAIL
NOT TO SCALE

BED LAYOUT
SCALE 1" = 10'



END-SECTION LAYOUT
SCALE 1" = 5'

NOT FOR CONSTRUCTION



By *COJ*
3/8/21

Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

**SUB-SURFACE SEWAGE DISPOSAL SYSTEM
CONVENTIONAL SYSTEM**

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGBOROUGH, MA 01879

			BCO	BY
		FINAL REVIEW COMMENT REVISIONS	BCO	
		REVIEW COMMENT REVISIONS	BCO	
		REVIEW COMMENT REVISIONS	BCO	
		REVIEW COMMENT REVISIONS	BCO	
		DATE	NO.	REVISIONS

PROJECT: 15-1516

DATE: 2020-08-10

DRAWING SCALE: AS NOTED

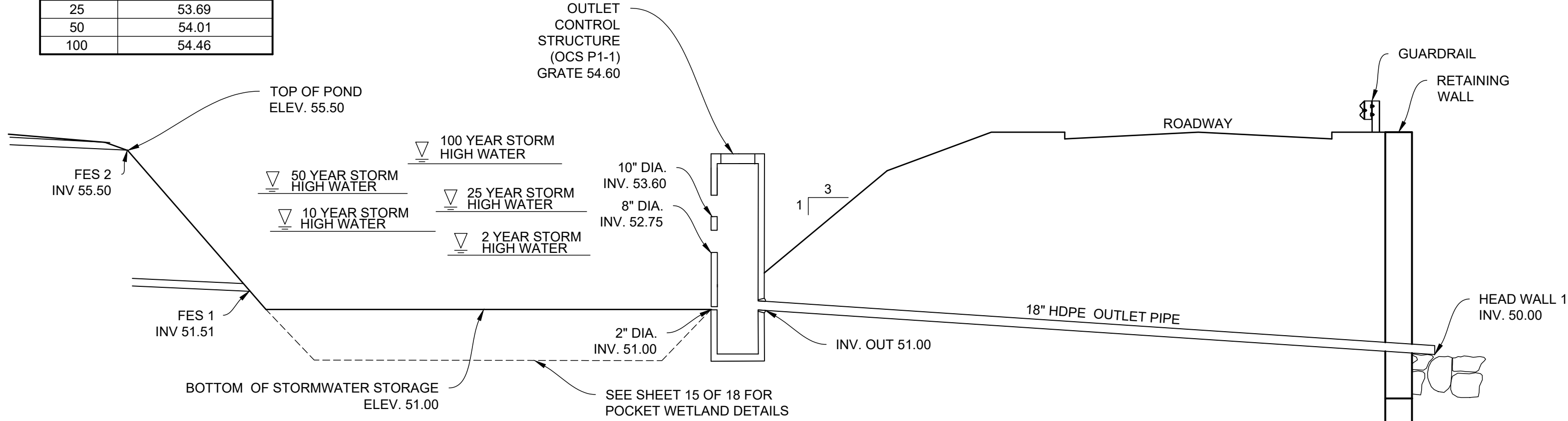
DRAWN BY: OMR

APPROVED BY: BCO

CS4507

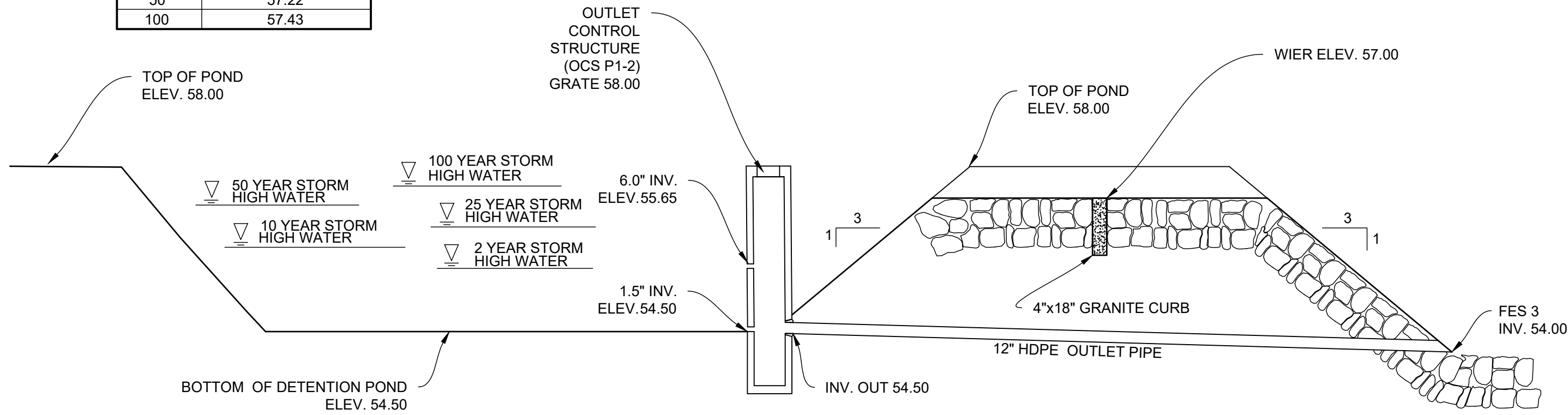
SHEET 18 OF 30

STORM	HIGH WATER ELEV.
2	52.72
10	53.30
25	53.69
50	54.01
100	54.46

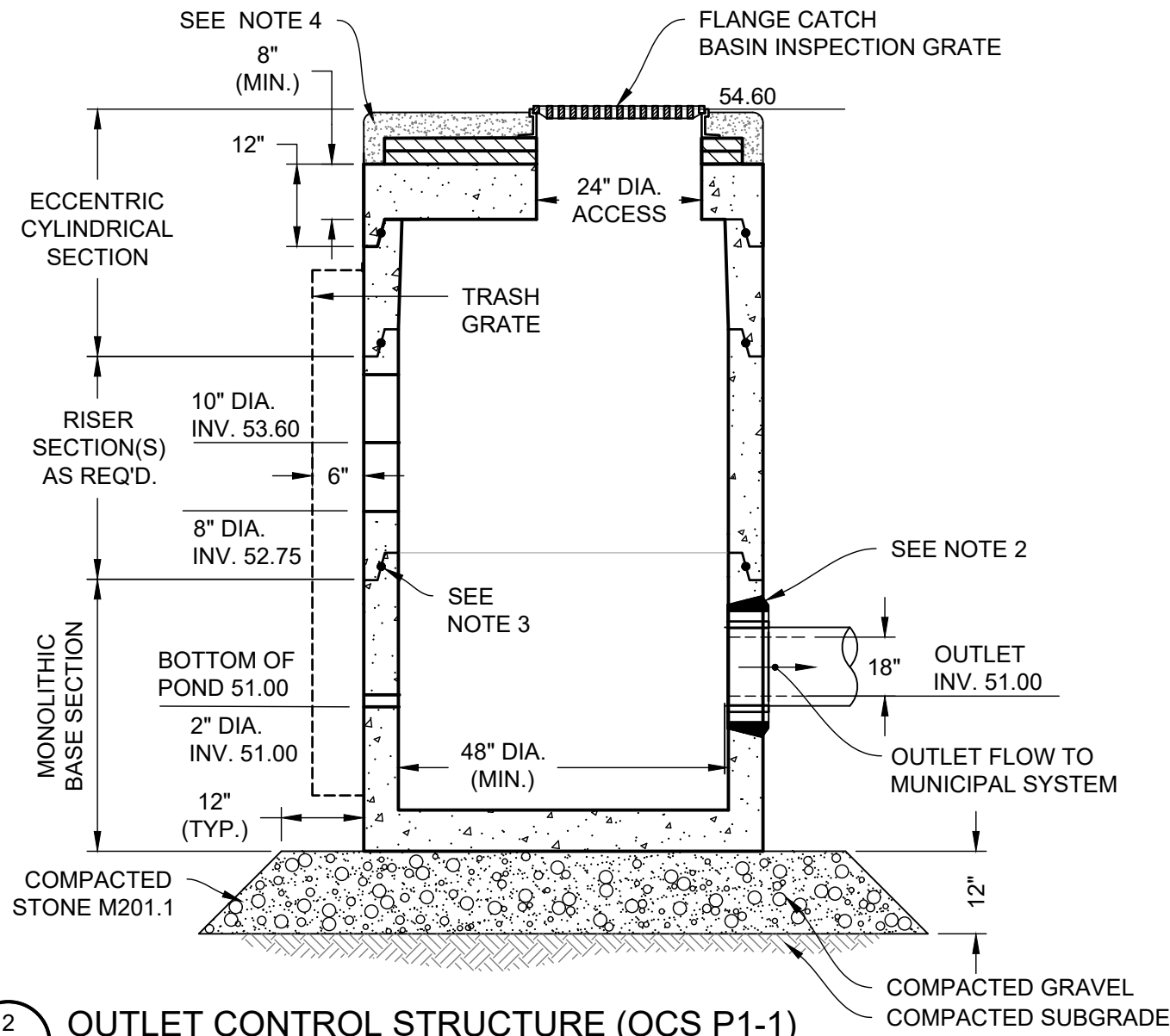


1 CROSS SECTION DETENTION POND (P1-1) - POCKET WETLAND

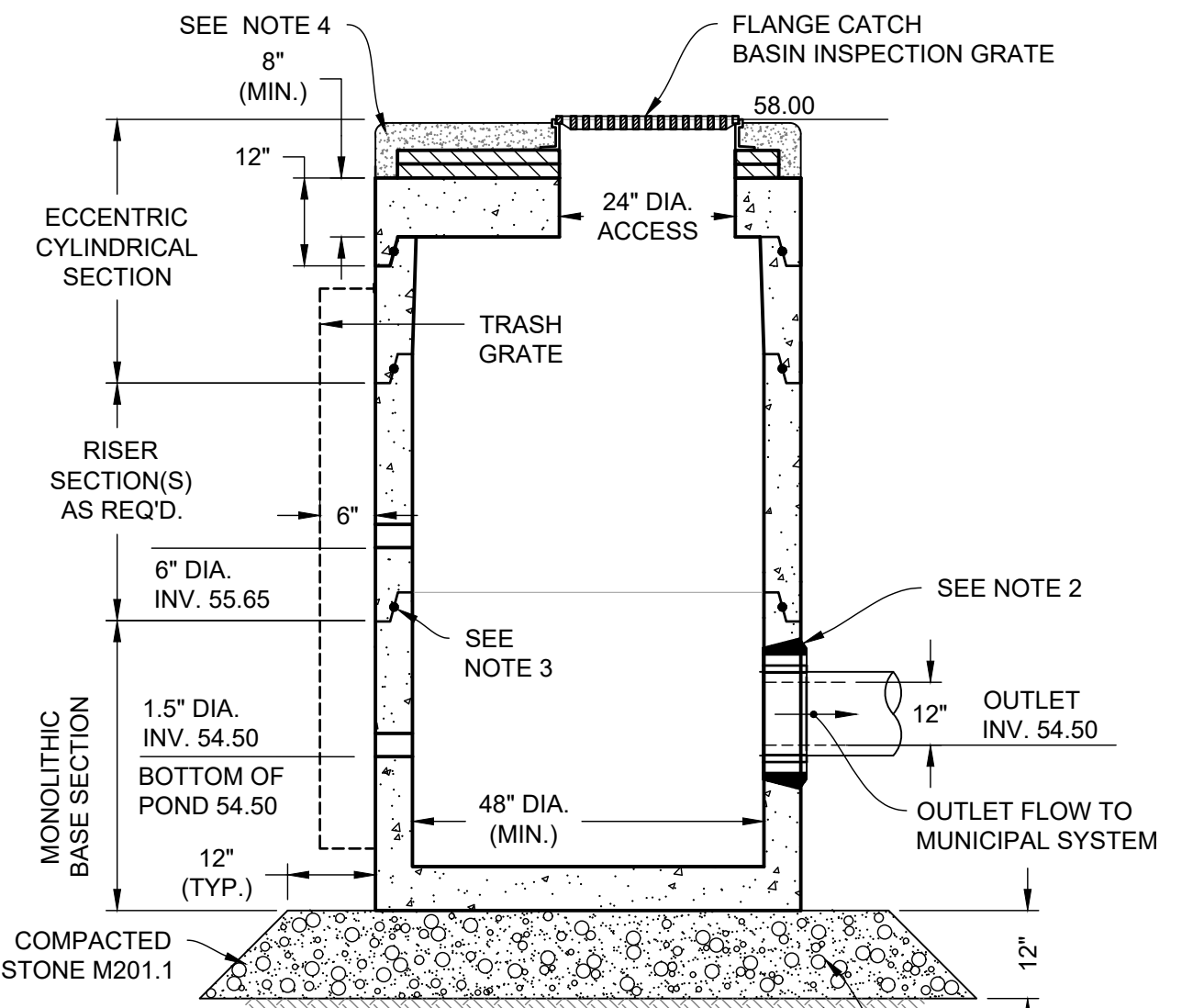
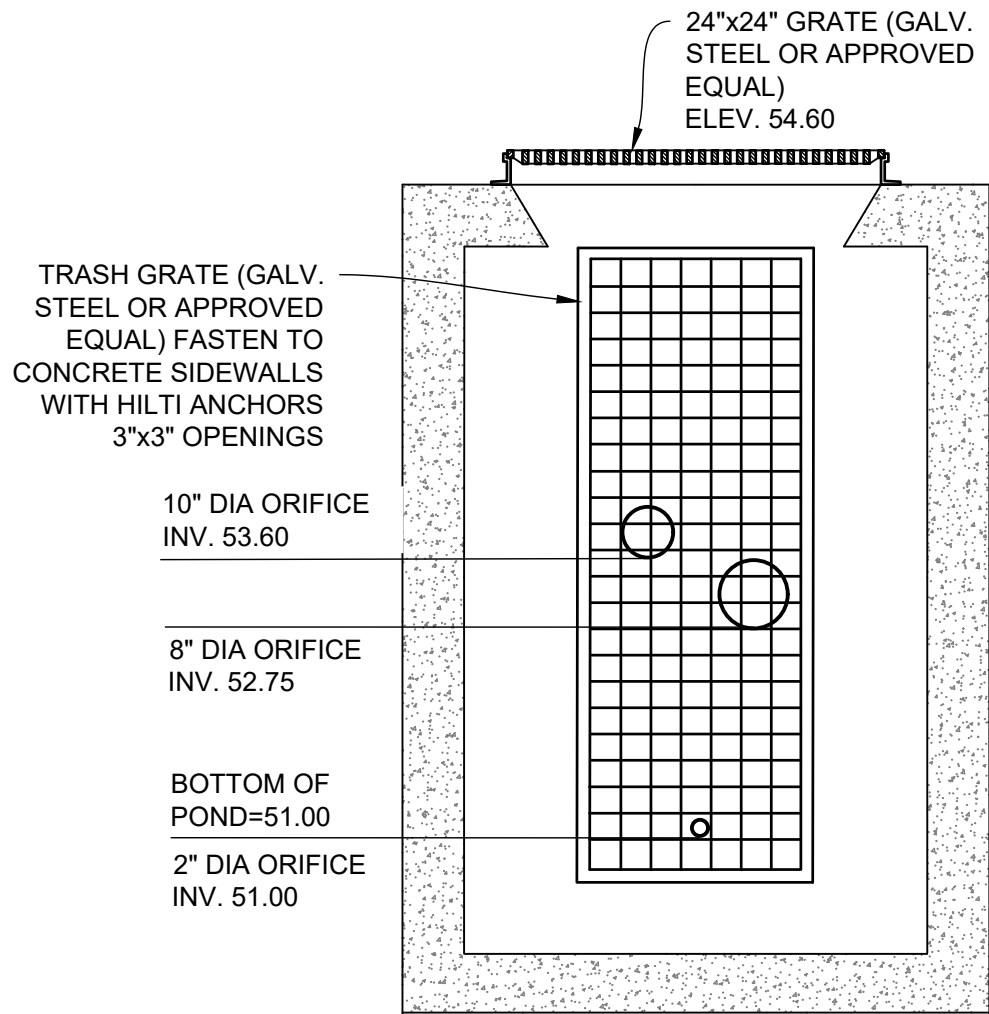
STORM	HIGH WATER ELEV.
2	55.57
10	56.30
25	56.94
50	57.22
100	57.43



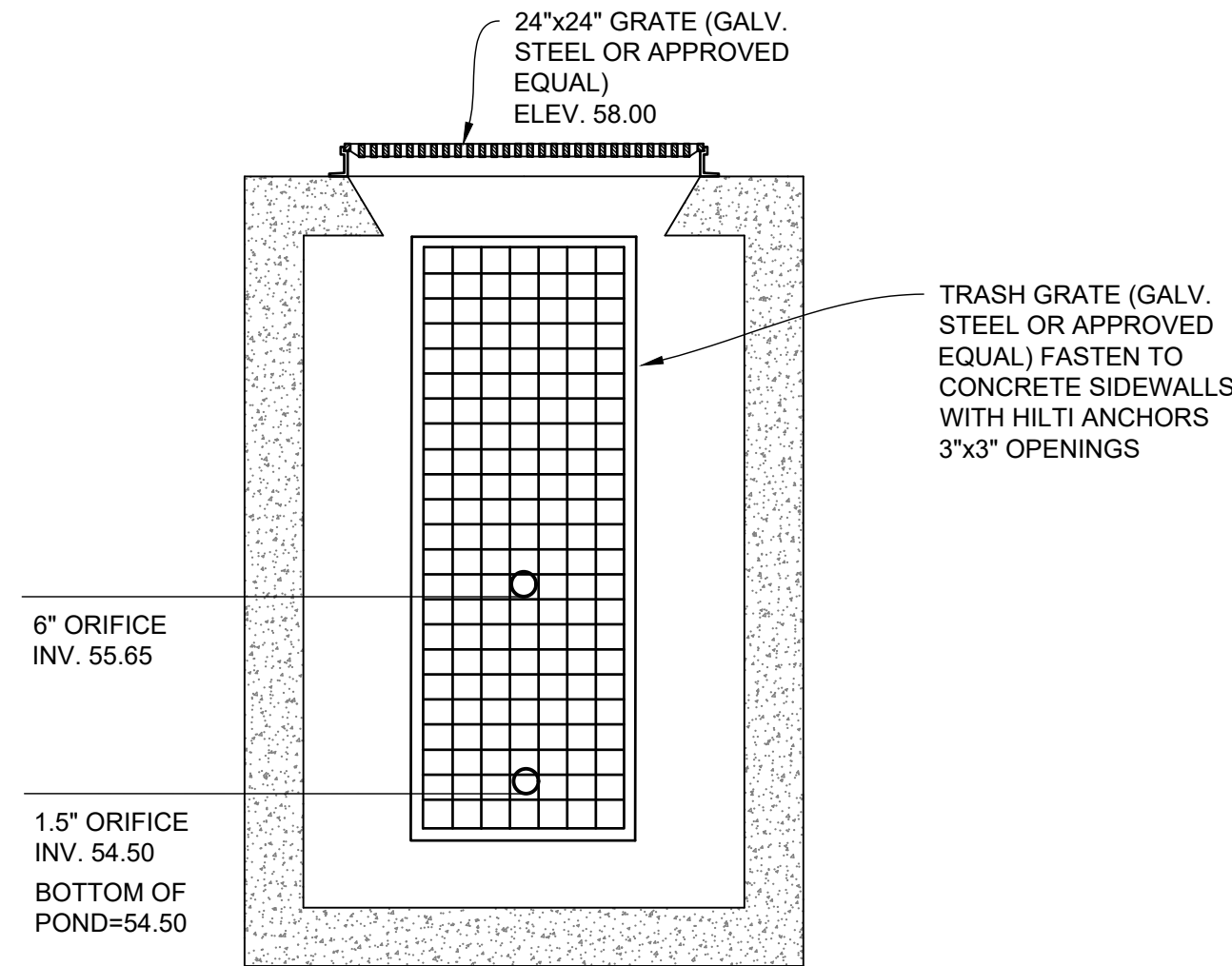
3 CROSS SECTION DETENTION POND (P1-2)



2 OUTLET CONTROL STRUCTURE (OCS P1-1)



4 OUTLET CONTROL STRUCTURE (OCS P1-2)



THE VILLAGE AT CRICKET LANE

BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP P-20 LOT 75

DRAINAGE DETAILS

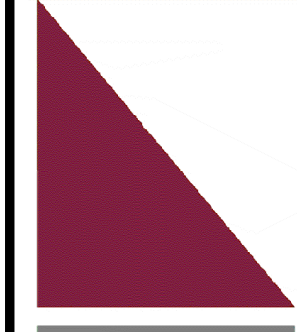
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGBOROUGH, MA 01879

NO.	DATE	REVISIONS	BY
1	08/17/2020	REVIEW COMMENT REVISIONS	BCO
2	08/17/2020	REVIEW COMMENT REVISIONS	BCO
3	12/09/2020	REVIEW COMMENT REVISIONS	BCO
4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

CS6022

SHEET 21 OF 30

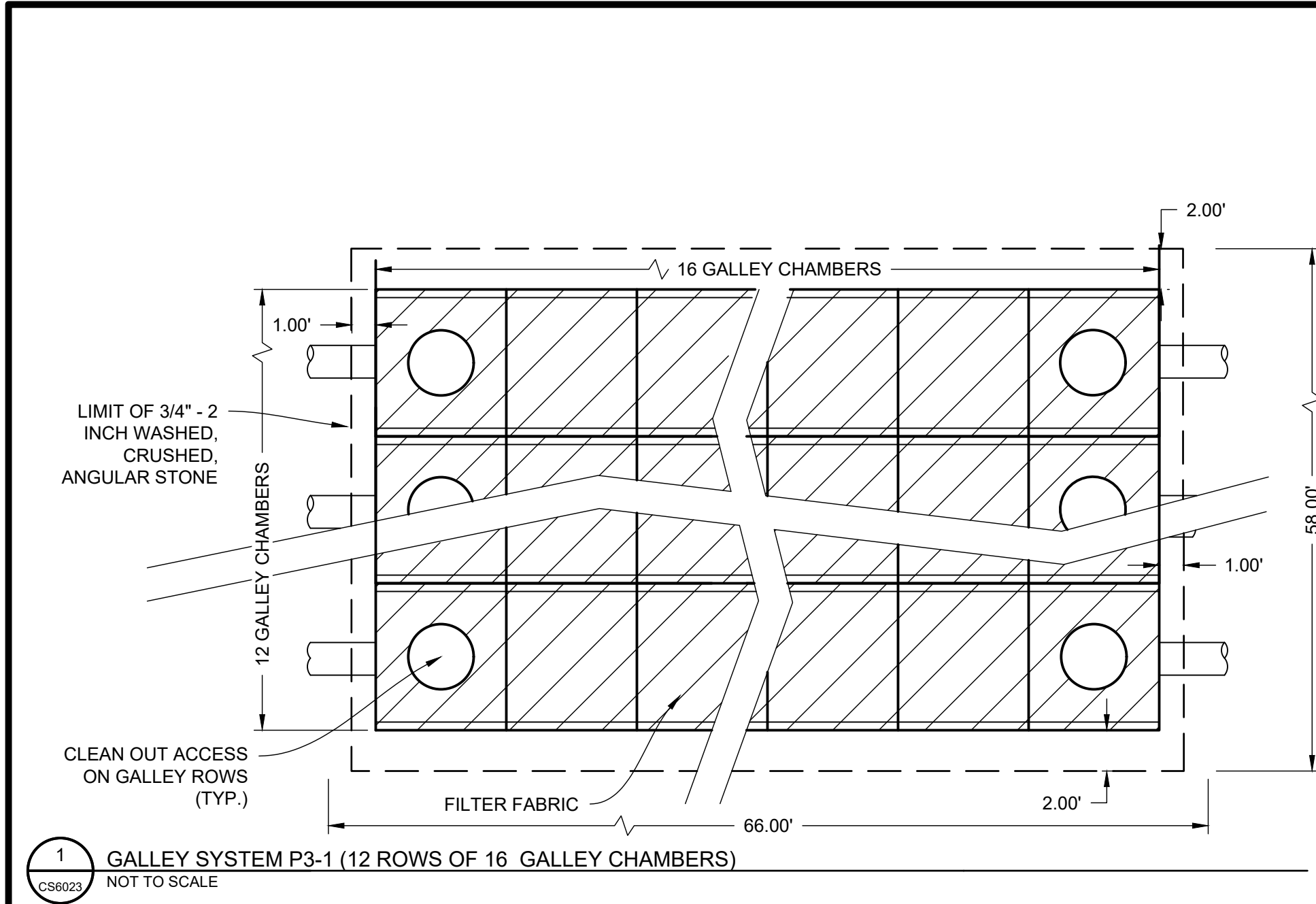


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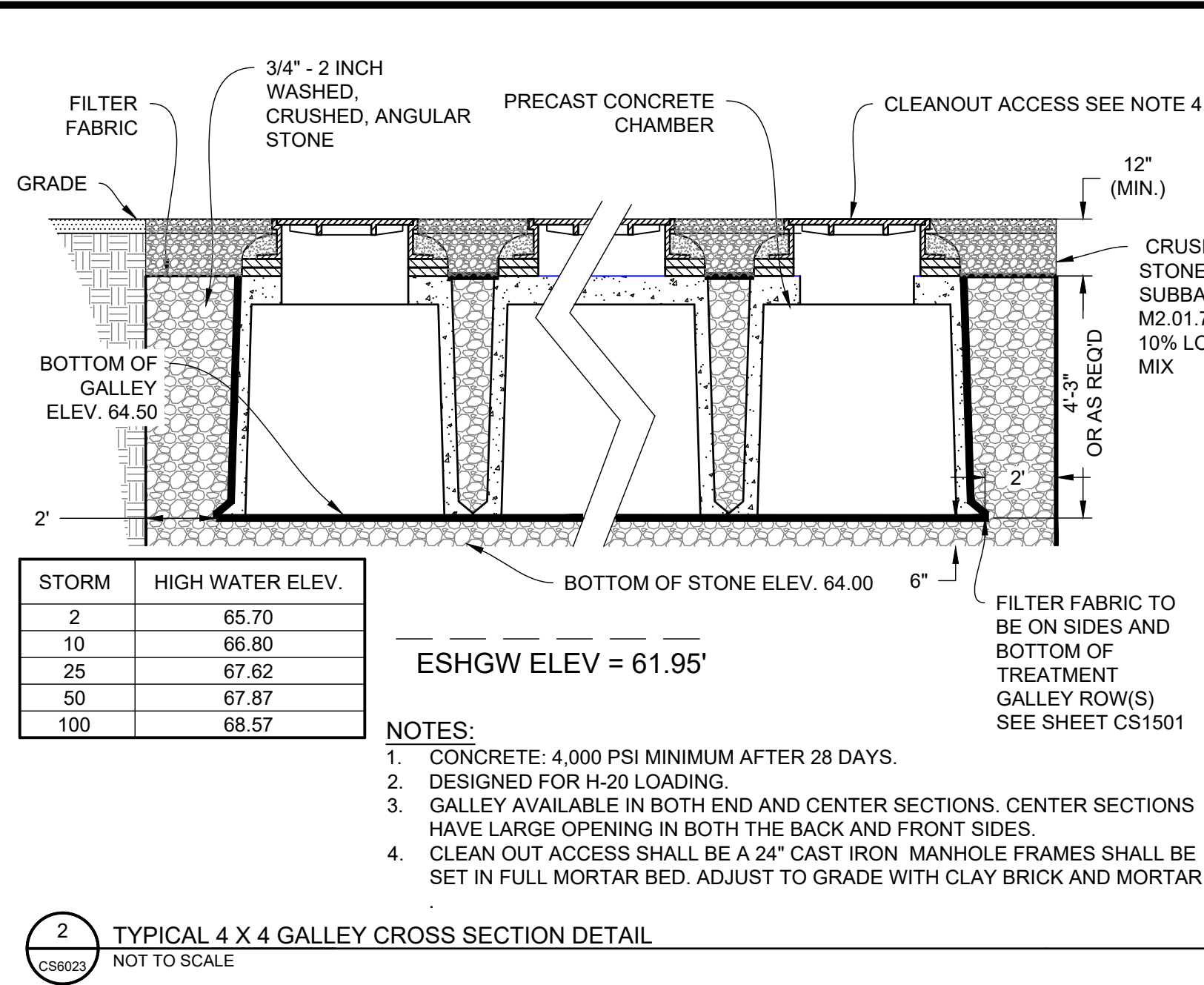


By *BCO*
3/8/21

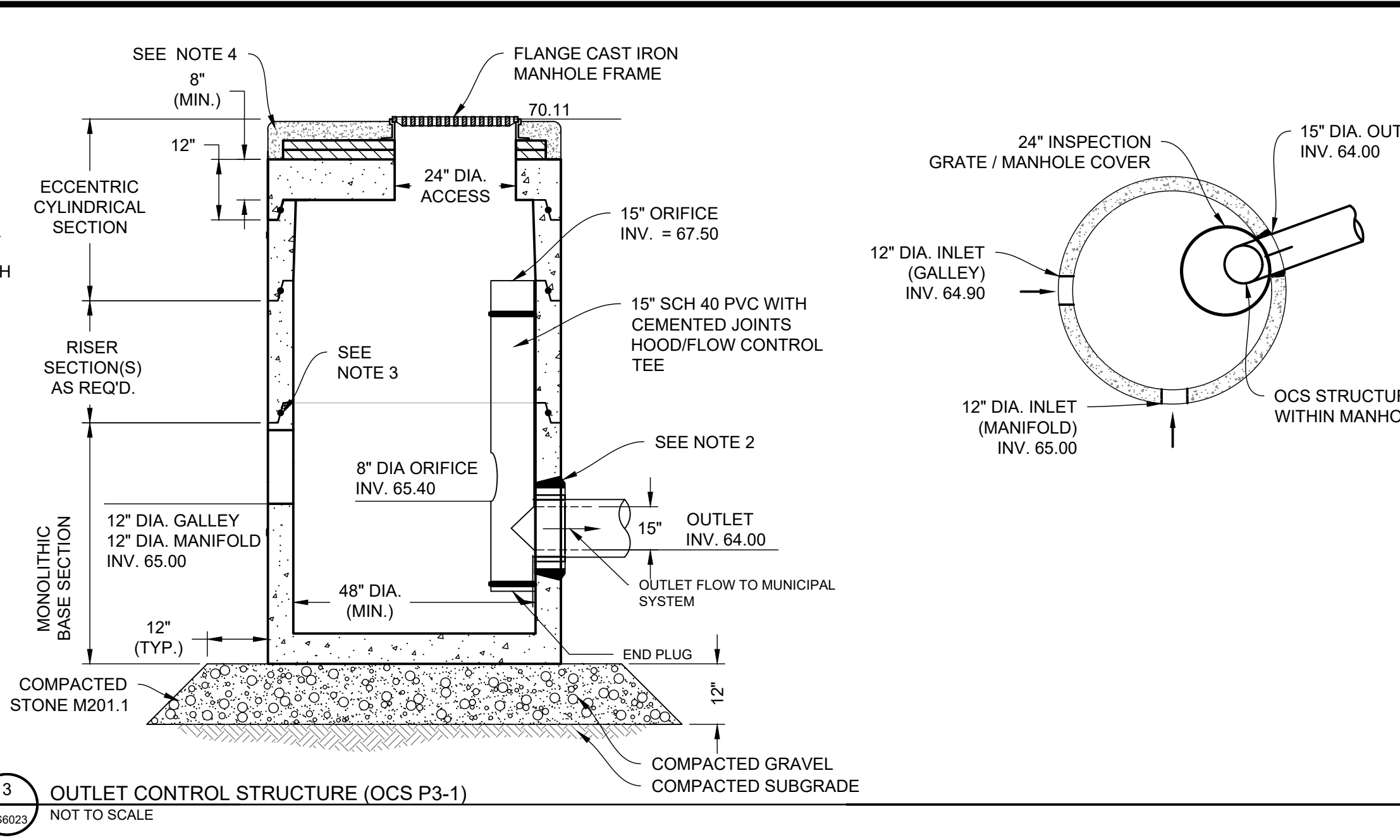
NOT FOR CONSTRUCTION



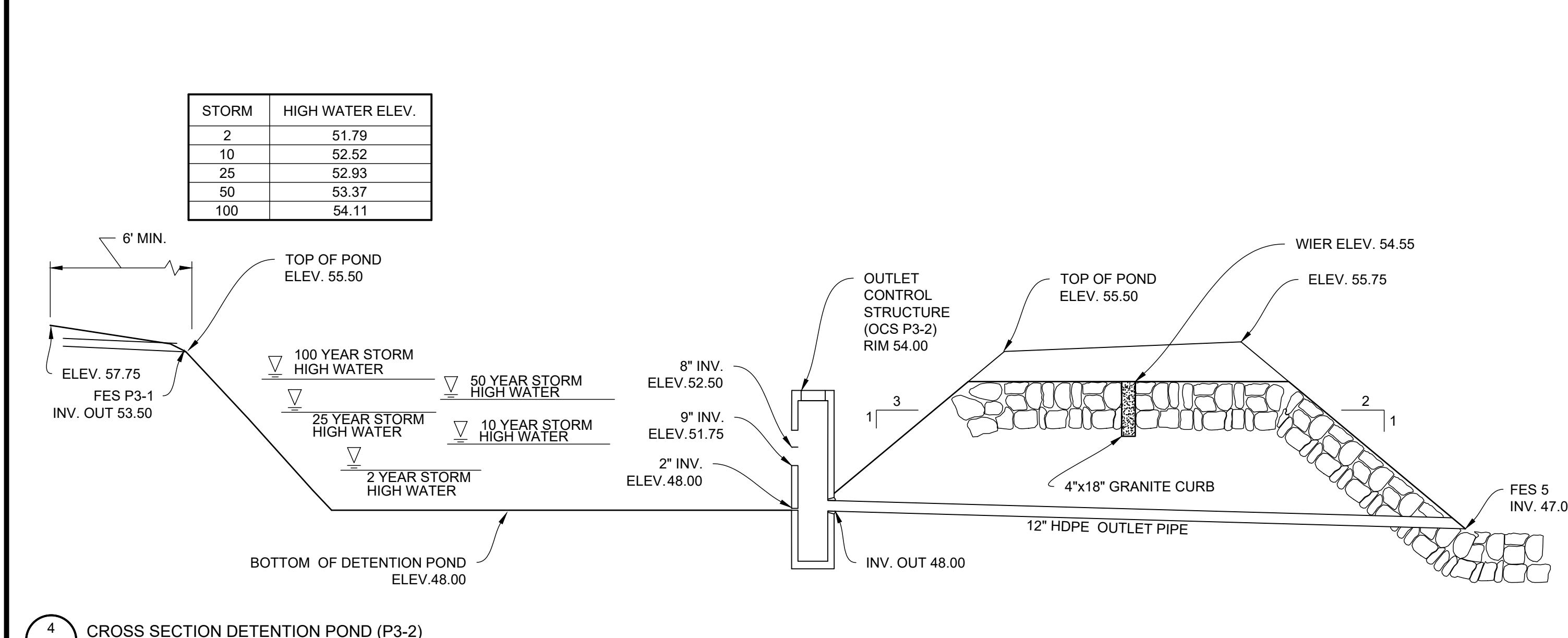
1 GALLEY SYSTEM P3-1 (12 ROWS OF 16 GALLEY CHAMBERS)
NOT TO SCALE



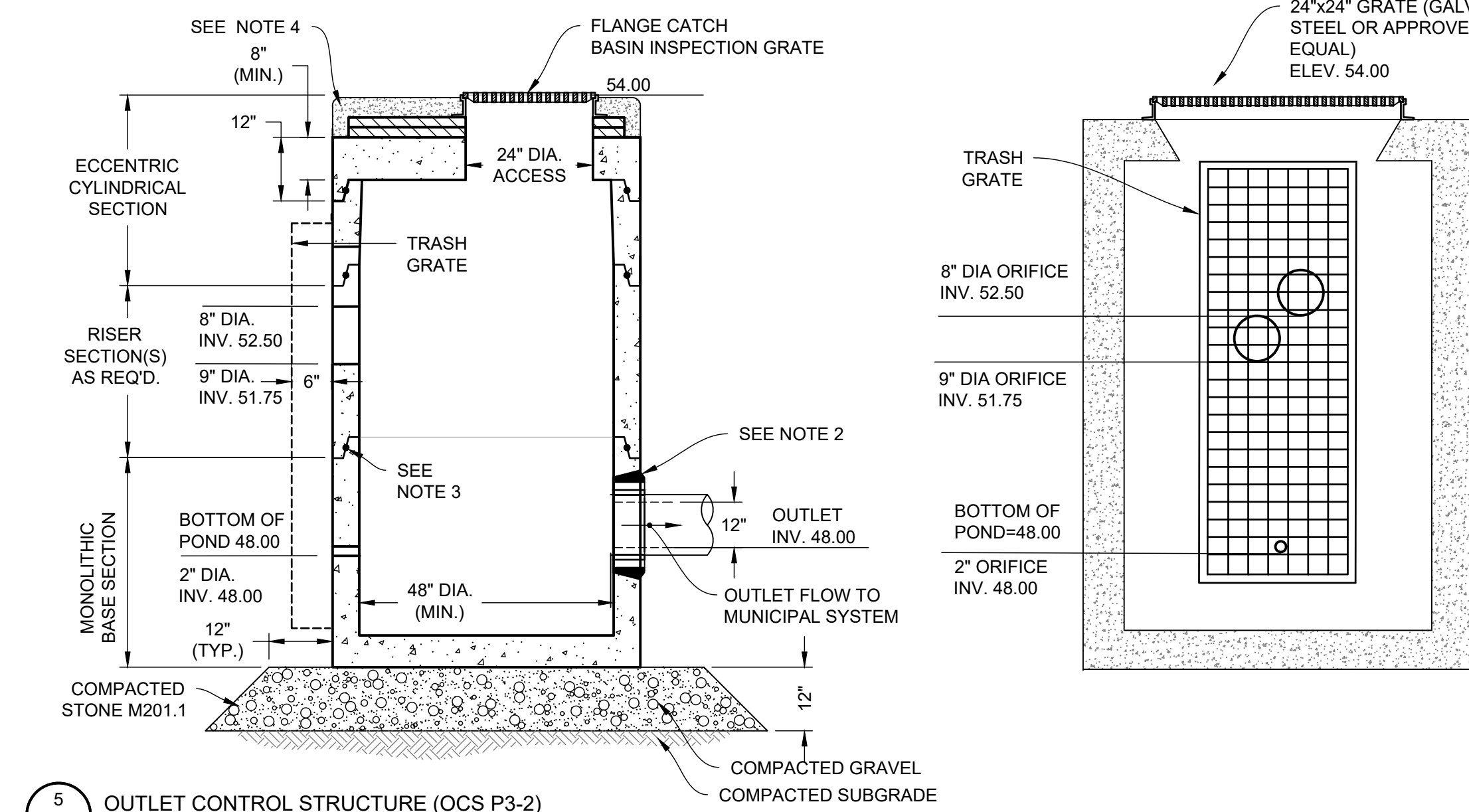
2 TYPICAL 4 X 4 GALLEY CROSS SECTION DETAIL
NOT TO SCALE



3 OUTLET CONTROL STRUCTURE (OCS P3-1)
NOT TO SCALE



4 CROSS SECTION DETENTION POND (P3-2)
NOT TO SCALE



5 OUTLET CONTROL STRUCTURE (OCS P3-2)
NOT TO SCALE

- OUTLET CONTROL NOTES:**
- ALL SECTIONS SHALL BE DESIGNED FOR H-20 LOADING.
 - PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
 - JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
 - DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).
 - INSTALL ANTI-SEEPAGE COLLARS AT ALL DISCHARGE PIPE LOCATIONS (E.G. DRAINAGE SOLUTIONS, INC. OR APPROVED EQUAL) AT 2' FROM OUTSIDE OF STRUCTURE (MAX.)
- DETENTION POND NOTES:**
- DETENTION / INFILTRATION BERMS SHALL BE CONSTRUCTED USING ORDINARY BORROW (MASSACHUSETTS HIGHWAY DEPT. STANDARDS SPECIFICATION M1.01.0), CONTAINING BETWEEN 20% AND 30% OF MATERIAL WHICH PASSES A #200 SIEVE. MATERIAL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO A DRY DENSITY OF 95% OF MODIFIED PROCTOR TEST.



NOT FOR CONSTRUCTION

Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP P-20 LOT 75

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

DRAINAGE DETAILS

NO.	DATE	REVISIONS	BY
1	08/26/2020	REVIEW COMMENT REVISIONS	BCO
2	08/17/2020	REVIEW COMMENT REVISIONS	BCO
3	12/09/2020	REVIEW COMMENT REVISIONS	BCO
4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO

PROJECT 15-1516

DATE 2020-08-10

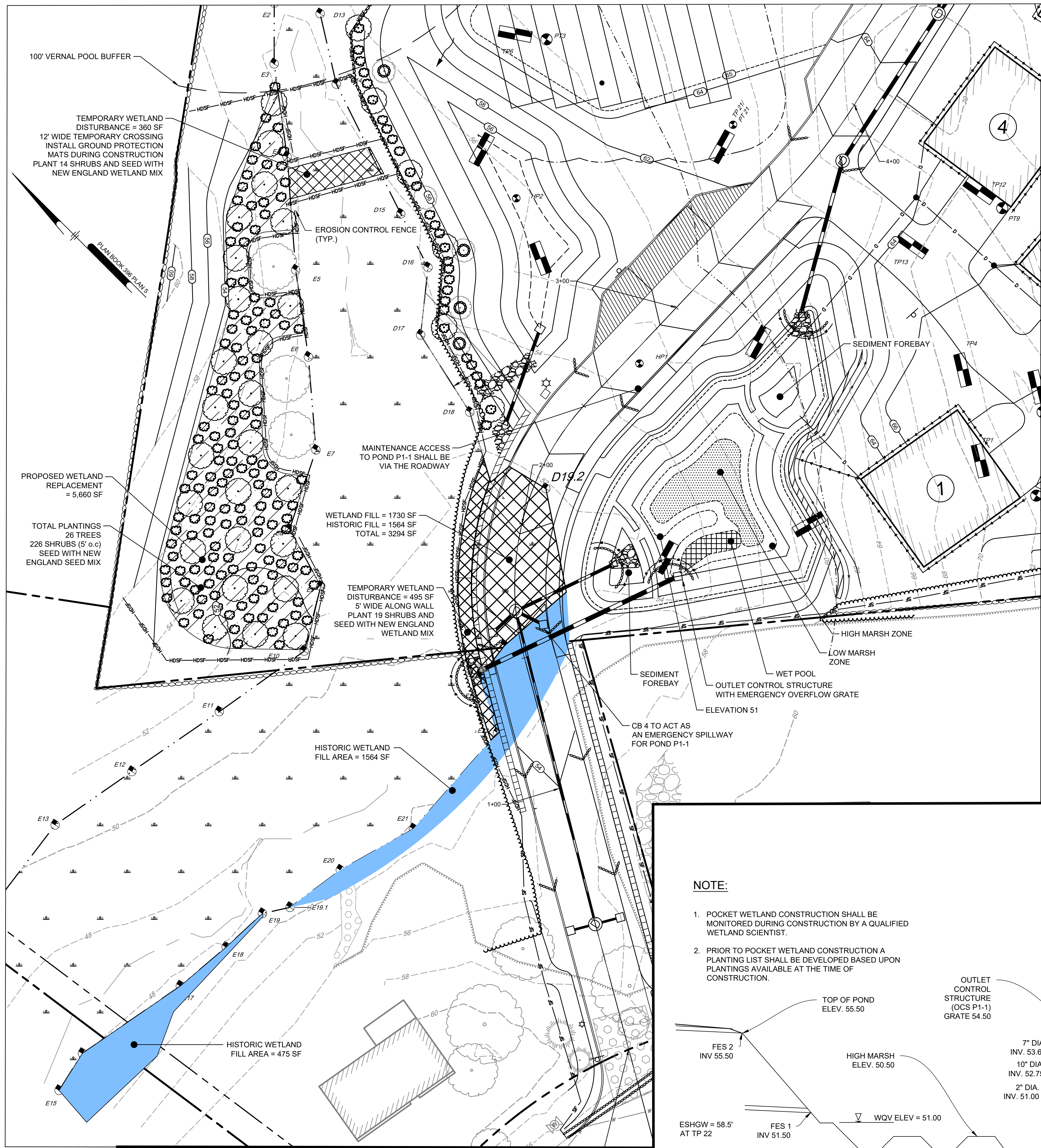
DRAWING SCALE AS NOTED

DRAWN BY OMR

APPROVED BY BCO

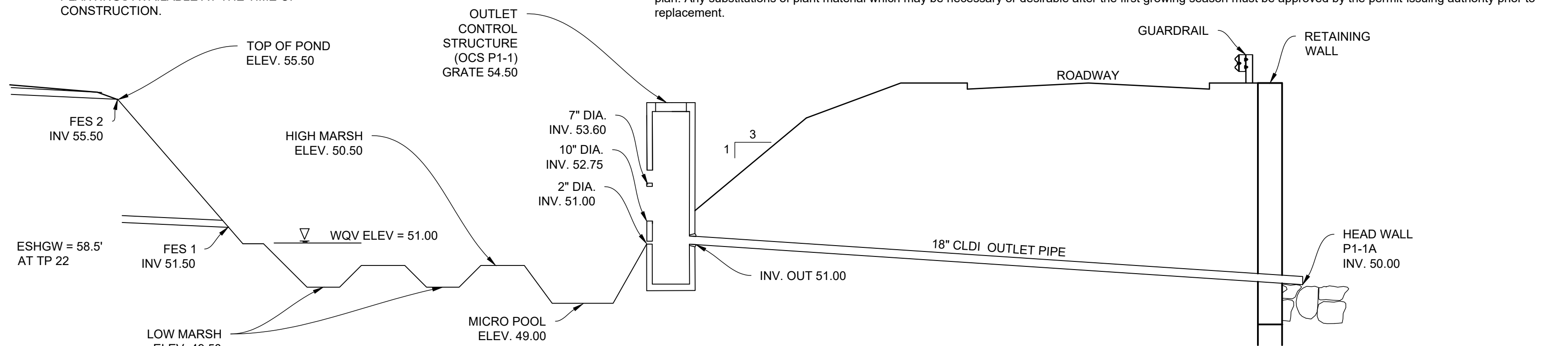
CS6023

SHEET 22 OF 30



NOTE:

- POCKET WETLAND CONSTRUCTION SHALL BE MONITORED DURING CONSTRUCTION BY A QUALIFIED WETLAND SCIENTIST.
- PRIOR TO POCKET WETLAND CONSTRUCTION A PLANTING LIST SHALL BE DEVELOPED BASED UPON PLANTINGS AVAILABLE AT THE TIME OF CONSTRUCTION.



POCKET WETLAND DESIGN	
DRAINAGE AREA	62,234 SF
WETLAND AREA	1,570 SF
SURFACE TO WATERSHED RATIO	.03
LENGTH	90'
WIDTH	10'
L TO W RATIO	9:1
SURFACE AREA ALLOCATION	
WET POOL	165 SF (10.5%)
LOW MARSH	710 SF (45.2%)
HIGH MARSH	695 SF (44.3%)
WATER QUALITY VOLUME ALLOCATION	
WET POOL	330 CF (18.9%)
LOW MARSH	347.5 CF (19.9%)
HIGH MARSH	1065 CF (61.1%)
ESHW	53.0'

WETLAND REPLACEMENT NOTES:

WETLAND FILL AREA AT CROSSING: 1,730 SF
HISTORIC FILL AREA: 2,039 SF
TEMPORARY DISTURBANCE: 855 SF
TOTAL WETLANDS ALTERED: 4624 SF

WETLAND REPLACEMENT AT TEMPORARY DISTURBANCE AREAS = 855 SF
WETLAND REPLACEMENT FOR HISTORIC FILL AND WETLAND CROSSING AREA = (1730 +2039) x1.5 = 5660 SF

PERFORMANCE SPECIFICATIONS

- Erosion Control Location and Delineation of Work Areas

A silt fence shall remain as the lower limit of work until the wetland replication/restoration areas are stabilized. The upper limit of wetland replication area shall be marked with stakes 20 feet apart prior to performing wetland replication activities.

- Excavation and Stockpiling of Topsoil and Mineral Soil from Wetland Replication Area

From the Wetland Replication Area as marked, all existing vegetation, with particular focus on invasive species, shall be cleared except for the individual species which are noted on sheet 16. Existing vegetation to remain shall be protected by encircling with silt fence. Topsoil shall be removed and shall be stockpiled outside the wetland replication area and on-site. All mineral soil shall be excavated to subgrade elevation, or as otherwise directed in the field. Excavated mineral soil shall be stockpiled outside the wetland replication area and on-site. No heavy equipment shall pass the line of erosion control during this work.

- Temporary Wetland Crossing Area

Install temporary crossing mats or panels over existing wetland soil. Do not excavate or grub area. Inspect crossing for rutting and damage when replacement area is complete and mats are removed, repair accordingly. Use slash, brush or other materials to help stabilize approaches. No heavy equipment shall pass the line of staked erosion control during this work.

- Excavation of Topsoil from Wetland Fill Area

From the Wetland Fill Area, all topsoil shall be excavated down to the elevation of the topsoil-subsoil boundary as determined in the field. All remaining vegetation shall be excavated with the topsoil. No heavy equipment shall pass the line of staked erosion control during this work. Topsoil removed from the wetland fill area shall be reused in the wetland replication area.

- Excavation and Stockpiling of Topsoil and Mineral Soil from Temporary Wetland Disturbance Area

From the Temporary Wetland disturbance Area as marked, all existing vegetation, with particular focus on invasive species, shall be cleared. Topsoil shall be removed and may be stockpiled outside the temporary wetland disturbance area and on-site. All mineral soil shall be excavated to subgrade elevation, or as otherwise directed in the field. Excavated mineral soil may be stockpiled outside the wetland replication area and on-site. After completion of the retaining wall, the disturbed area shall be backfilled with the stockpiled mineral and top soil. The area shall then be planted as specified on these plans and seeded with New England Wetmix.

- Placement and Grading of Topsoil in Wetland Replication Area.

Topsoil in the wetland replication area and in the temporarily disturbed area along the roadway shall be graded roughly to the elevation of the adjacent wetland. Topsoil shall be finish graded by hand to elevations as shown on sheet 16, or as otherwise directed in the field. If extra soil is needed to complete finished grading, soils with at least 10% organic material shall be used.

- Revegetation with Indigenous Wetland Plant Species

The excavated topsoil placed in the wetland replication area contains dormant seeds, roots and rhizomes of indigenous vegetation. When this soil is relocated and finish graded, germination and growth of the plant material within will result. In order expedite this natural process, container-grown wetland plant stock will be planted in the wetland replication area according to the plant list provided. Following planting of container grown stock, the wetland replication area will be seeded with a mixture of herbaceous wetland plant species to augment development of wetland vegetation and provide initial vegetative stabilization for erosion control. A light mulch of clean, weed free straw shall be spread on the surface of the seeded area to allow erosion control during the establishment period.

- Relocation of erosion control

Following planting and seeding of the wetland replication area, a second line of silt fencing with compost filter tubes shall be installed along the new limit of work. This work is intended to reduce or prevent erosion of the newly-planted replacement wetland. Upon installation of a second erosion control line, remove initial erosion control along wetland replication area perimeter.

- Onsite Supervision

During construction of the wetland replication area and the fill area, the work will be under the direct supervision of a wetland scientist.

- Replacement of Unsatisfactory Plantings

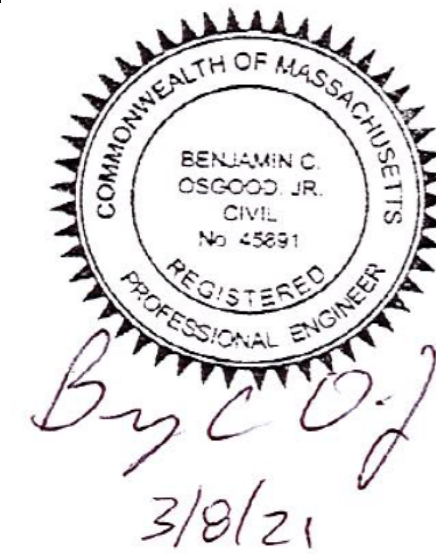
75% survival of planted woody vegetation and 75% herbaceous cover with healthy foliage shall be assumed satisfactory evidence of growth after two growing seasons. All dead or unsatisfactory plants shall be removed and replaced in kind and size by the contractor with plants as originally established under this specification and planting plan. Any substitutions of plant material which may be necessary or desirable after the first growing season must be approved by the permit-issuing authority prior to replacement.

WETLAND SEED MIX		
COMMON NAME	AMOUNT	SUPPLIER
NEW ENGLAND WETMIX	1.0 LB./2500 S.F.	NEW ENGLAND WETLAND PLANTS, INC
NEW ENGLAND LOGGING ROAD MIX	1.0 LB./2200 S.F.	NEW ENGLAND WETLAND PLANTS, INC

ACCEPTABLE WETLAND REPLACEMENT PLANTINGS		
	SCIENTIFIC NAME	COMMON NAME
SHRUBS	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY
	ILEX VERTICILLATA	WINTERBERRY
	RHODODENDRON VISCOSUM	SWAMP AZALEA
	VIBURNUM DENTATUM	ARROW WOOD
	LINDERA BENZOIN	SPICEBUSH
TREES	CORNUS AMOMUM	SILKY DOGWOOD
	ACER RUBRUM	RED MAPLE
	TSUGA CANADENSIS	EASTERN HEMLOCK
	ULMUS AMERICANA	AMERICAN ELM

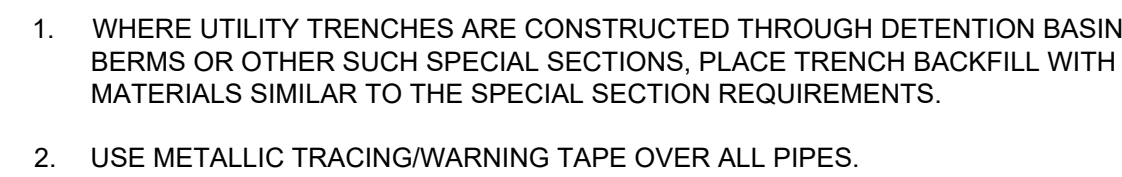
PLANTING NOTE:

- NEW ENGLAND WETMIX TO BE USED WITHIN WETLAND REPLACEMENT / RESTORATION AREA.
- NEW ENGLAND LOGGING ROAD MIX TO BE USED FOR UPLAND AREAS.
- MULCH WITH STRAW IF SEEDING PERFORMED AFTER JUNE 15TH.
- SHRUBS TO BE MINIMUM 2'-3" TALL, TREES TO BE MINIMUM 1.5" CALIPER CONTAINER GROWN (MIN. 5 GAL.).
- MIN OF 3 DIFFERENT TYPES OF SHRUBS TO BE PLANTED IN EACH TEMPORARY WETLAND DISTURBANCE AREA. MINIMUM OF 5 DIFFERENT SHRUBS TO BE PLANTED IN THE WETLAND REPLACEMENT AREA.
- GROUND PROTECTION MATS TO BE REMOVED UPON COMPLETION OF WETLAND REPLACEMENT AREA CONSTRUCTION.

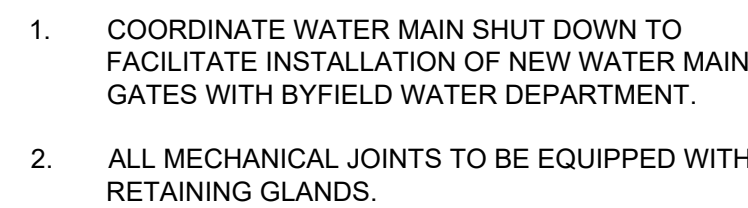
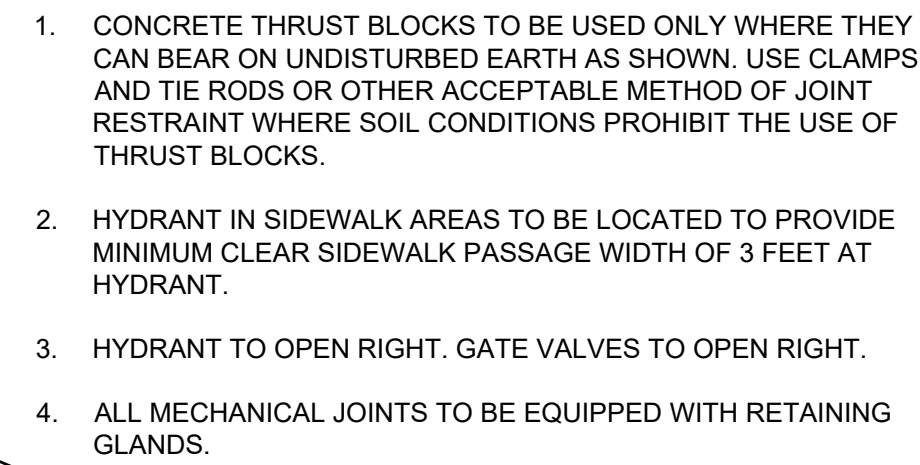


			BOO	BOO	BOO	BOO	BY
			FINAL REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	
			01/28/2021	12/09/2020	08/17/2020	08/26/2020	
			4	3	2	1	
							NO.
							DATE

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO



1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES, AND VERTICAL BENDS (SAME SIZE AS REQUIRED FOR TEES), PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES.
2. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.
3. CONCRETE SHALL BE 3000 PSI-TYPE I.



DURING ROADWAY CONSTRUCTION, STOCKPILE SOILS WHERE HOMES WILL BE CONSTRUCTED. SURROUND ANY STOCKPILES WITH A SILT FENCE AND ROW OF HAY BALES. STOCKPILES WHICH REMAIN FOR MORE THAN 30 DAYS SHALL BE HYDROSEEDING.

[illegible]

PEARSON DRIVE
(50' WIDE - PUBLIC)

Benjamin C. Osgood, Jr.
Civil
No. 45891
Registered Professional Engineer

By C.O.J.
3/8/21

[illegible]

CS8001

SHEET 25 OF 30

EROSION CONTROL NOTES (DURING CONSTRUCTION)

1. THE CONTRACTOR MUST INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND IN THE DETAILS PRIOR TO STARTING ANY OTHER WORK ON THE SITE. EROSION CONTROL MUST BE INSTALLED AT EVERY INLET STRUCTURE (EXISTING AND PROPOSED) AND MAINTAINED FOR THE DURATION OF THE PROJECT.
2. THE CONTRACTOR SHALL CHECK THE CONDITION OF EROSION CONTROLS DAILY TO KEEP THEM IN GOOD OPERATING CONDITION. EROSION CONTROLS SHALL ALSO BE INSPECTED, REPAIRED AND MAINTAINED BY THE CONTRACTOR WITHIN 12 HOURS OF ANY STORM EVENT PRODUCING 1/2 INCH OF RAINFALL OR MORE. EROSION CONTROLS SHALL BE REPLACED WHEN DETERIORATED, OR WHEN ORDERED BY THE ENGINEER. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH A DEPTH OF 6 INCHES.
3. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH A DEPTH OF 6 INCHES.
4. SEDIMENT SHALL BE CONTAINED WITHIN THE CONSTRUCTION SITE, AWAY FROM DRAINAGE STRUCTURES.
5. STABILIZE SLOPES STEEPER THAN 3:1 (HORIZONTAL TO VERTICAL) WITH SEED, SECURED GEOTEXTILE FABRIC, OR ROCK RIP-RAP AS REQUIRED TO PREVENT EROSION DURING CONSTRUCTION.
6. CLEAN OUT ALL CATCH BASINS, DRAIN MANHOLES, AND STORM DRAIN PIPES AFTER COMPLETION OF CONSTRUCTION.
7. LOAM AND SEED ALL DISTURBED AREAS.
8. UPON ESTABLISHMENT OF PERMANENT VEGETATION OVER DISTURBED AREAS, REMOVE AND DISPOSE OF HAYBALES, STAKES, AND SILT FENCE.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND SUPPLEMENT THE SPECIFIED SEDIMENTATION CONTROLS AS NECESSARY TO PREVENT SEDIMENTATION OF OFF-SITE AREAS AND/OR ANY REGULATED RESOURCE AREAS. FAILURE BY THE CONTRACTOR TO CONTROL EROSION, POLLUTION, AND/OR SILTATION SHALL BE CAUSE FOR THE OWNER TO EMPLOY OUTSIDE ASSISTANCE OR TO USE HIS OWN MEANS TO PROVIDE THE NECESSARY CORRECTIVE MEASURE. THE COST OF SUCH ASSISTANCE PLUS PROJECT ENGINEERING COSTS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
10. IN ADDITION TO THOSE LOCATIONS SHOWN ON THIS PLAN AND ON THE GRADING AND DRAINAGE PLANS, EROSION CONTROLS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS: TOE OF SLOPE OF EMBANKMENT CONSTRUCTION, TOE OF TEMPORARY EARTHWORK STOCKPILES.
11. EROSION AND SEDIMENTATION CONTROL SHALL BE IN COMPLIANCE WITH MASSACHUSETTS STORMWATER POLICY.

CONSTRUCTION SEQUENCE NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROLS AS SHOWN ON PLAN.
2. COMMENCE CLEARING, GRUBBING, AND EARTHWORK.
3. PERFORM EARTHWORK OPERATIONS. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS AFTER BEING CONSTRUCTED. TEMPORARY GRADED AREAS SHOULD BE STABILIZED WITH MULCH BY OCTOBER 1ST, SO AS NOT TO BE LEFT EXPOSED DURING WINTER CONDITIONS.
4. INSTALL SITE DRAINAGE AND UTILITIES.
5. STABILIZE SIDE SLOPES. SIDE SLOPES MUST BE FULLY STABILIZED BEFORE ANY STORMWATER DISCHARGE.
6. INSTALLATION OF UNDERGROUND UTILITIES AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT IN ACCORDANCE WITH THE PLANS. THE CONTROLS SHALL REMAIN UNTIL THE SITE IS SUFFICIENTLY STABILIZED. ALL PERMANENT STORMWATER MANAGEMENT MEASURES SHALL HAVE A HEALTHY STAND OF VEGETATION ESTABLISHED PRIOR TO DIRECTING RUNOFF INTO THEM.
7. AS THE BUILDING(S) ARE COMPLETED, ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 72 HOURS.
8. FINAL PAVING OF ROADWAY AND DRIVEWAYS.
9. INSPECT ALL SEDIMENT AND EROSION CONTROL MEASURES.
10. AFTER ALL SEEDED AREAS HAVE ESTABLISHED STABLE GROWTH, ALL TEMPORARY EROSION CONTROL CAN BE REMOVED.
11. CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL AUTHORITIES RESPONSIBLE FOR INSPECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL REQUIRED INSPECTION SIGN-OFFS.

FOR A MORE COMPLETE DESCRIPTION OF CONSTRUCTION PHASING AND EROSION CONTROL SEE PROJECT STORMWATER REPORT AND SWPPP.

OPERATION AND MAINTENANCE:
CONSTRUCTION PHASE

THE BMPs ASSOCIATED WITH THIS PROJECT WILL BE OWNED BY THE PROJECT DEVELOPER, WHO WILL BE RESPONSIBLE FOR INSPECTION, OPERATION AND MAINTENANCE DURING THE CONSTRUCTION PHASE.

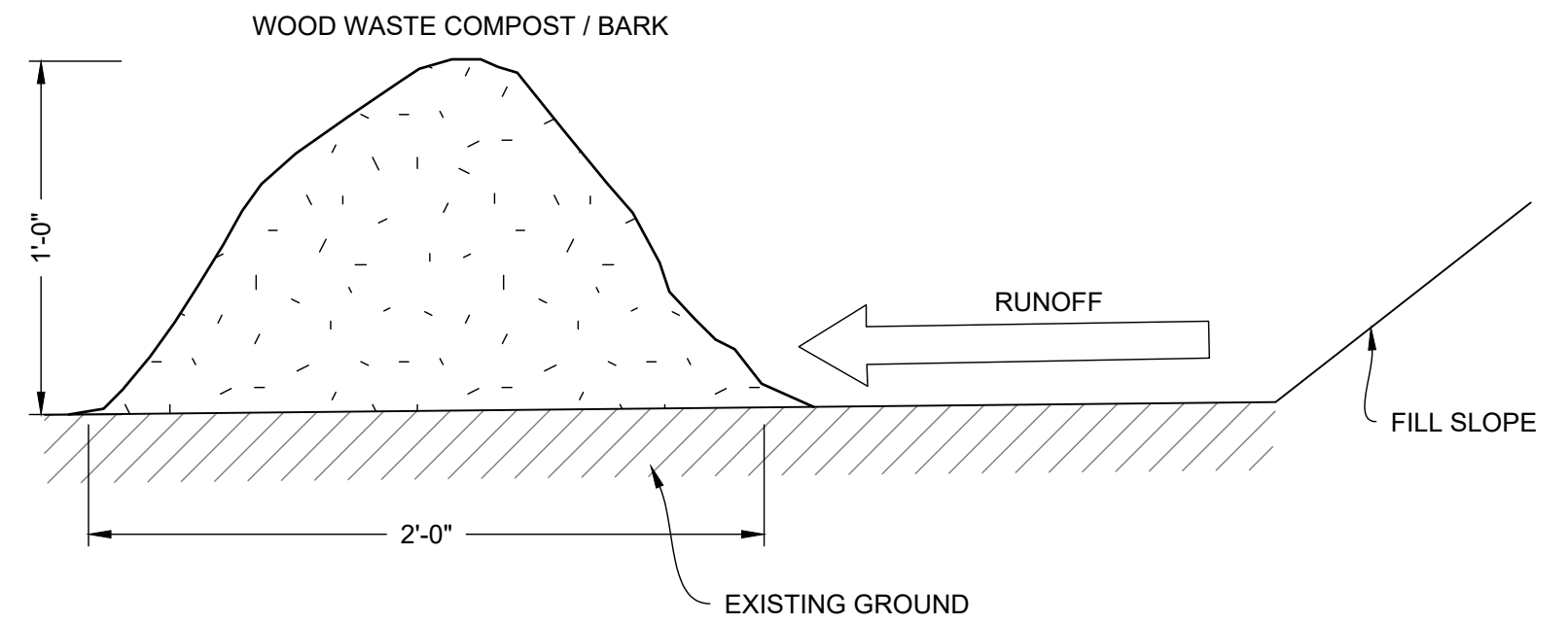
1. THE CONTRACTOR IS TO INSTALL AND MAINTAIN DRAINAGE FACILITIES AS SHOWN ON PLAN (BY RANGER ENGINEERING GROUP, INC).
2. PRIOR TO CONSTRUCTION, ALL EROSION/SILTATION CONTROL DEVICES SHOWN ON ABOVE PLAN ARE TO BE INSTALLED. TO PREVENT SILT INTRUSION INTO THE DRAINAGE SYSTEM DURING CONSTRUCTION, THE CONTRACTOR IS TO INSTALL AND MAINTAIN INLET PROTECTION AT ALL CATCH BASINS, AND SET A SILT FENCE AND HAY BALES AT ALL SLOPES WHICH MAY ERODE IN THE DIRECTION OF ANY OPEN DRAINAGE FACILITIES. SUCH PREVENTIVE MEASURES ARE TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.
3. ALL CONSTRUCTION OF DRAINAGE FACILITIES IS TO BE INSPECTED BY RANGER ENGINEERING GROUP, INC. TO VERIFY CONFORMANCE TO THE DESIGN PLAN.
4. THE SEQUENCE OF DRAINAGE CONSTRUCTION SHALL BE AS FOLLOWS:
 - A. CLEAR, GRUB, EXCAVATE AREAS FOR DRAINAGE SYSTEMS.
 - B. TRENCH AND INSTALL PIPES, CATCH BASINS MANHOLES
 - C. INSTALL INLET PROTECTION.
5. EROSION CONTROLS ARE TO BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS. UPON DISCOVERY OF SILT BUILD-UP IN ANY CATCH BASIN SUMPS, OR ANY OTHER STRUCTURES, THEY ARE TO BE CLEANED.
6. ALL EXPOSED SOILS SHALL BE IMMEDIATELY STABILIZED WITH A LAYER OF MULCH HAY OR JUTE BLANKETS-AS NEEDED FOR SLOPES STEEPER THAN 3:1.
7. UPON INSTALLATION OF CATCH BASINS, INLET PROTECTION-AS DESCRIBED ON SITE PLANS- SHALL BE INSTALLED AND MAINTAINED UNTIL READY FOR PAVING.
8. PRIOR TO CONSTRUCTION OF IMPERVIOUS AREAS, ALL DRAINAGE STRUCTURES AND PIPES SHALL BE INSTALLED AND INSPECTED FOR PROPER FUNCTION. DURING CONSTRUCTION OF OTHER SITE FEATURES, ALL DRAINAGE FACILITIES SHALL BE INSPECTED ON A WEEKLY BASIS AND CLEANED/REPAIRED IMMEDIATELY UPON DISCOVERY OF SEDIMENT BUILD-UP OR DAMAGE.
9. AFTER PAVING IS INSTALLED, IT SHALL BE SWEEPED CLEAN ON A REGULAR BASIS.
10. THE ENTIRE DRAINAGE SYSTEM MUST BE VACUUMED OUT BEFORE THE ISSUANCE OF THE LAST CERTIFICATE OF OCCUPANCY.

POST-DEVELOPMENT PHASE

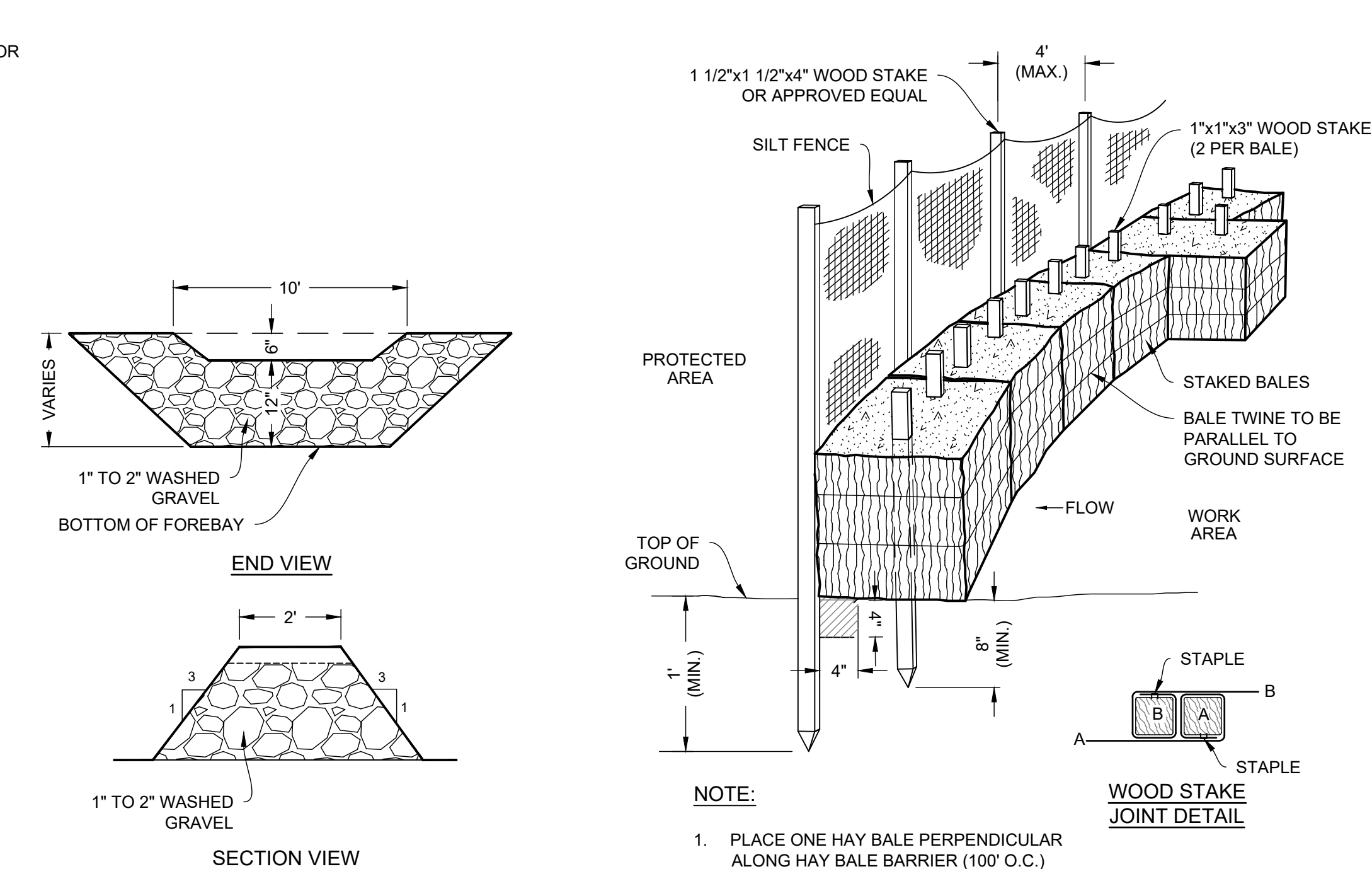
THE OWNER/OCCUPANT IS TO BE RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE STRUCTURES IN THE PROJECT - INCLUDING ROOF DRAINS, AND DRAIN PIPES. THE FUTURE OWNER IS EXPECTED TO BE THE PROJECT ASSOCIATION, WHO WILL ULTIMATELY BE RESPONSIBLE FOR COMPLIANCE WITH THE PLAN. IN THE EVENT OF CHANGE OF OWNERSHIP, THE O & M PLAN SHALL BE TRANSFERRED TO THE NEW OWNER.

REGULAR MAINTENANCE IS TO INCLUDE THE FOLLOWING:

1. INSPECTION OF ALL DRAINAGE FACILITIES (CATCH BASINS, PIPES AND DETENTION BASINS. EVERY THREE MONTHS. DURING THESE INSPECTIONS, THE INSPECTOR (A REGISTERED PROFESSIONAL CIVIL ENGINEER QUALIFIED IN DRAINAGE SYSTEMS AS DESIGNATED BY THE PROJECT ASSOCIATION) SHALL LOOK FOR EVIDENCE OF THE FOLLOWING: STRUCTURAL DAMAGE, SILT ACCUMULATION (NEAR INLET INVERTS ON CATCH BASINS, INFILTRATORS), AND IMPROPER FUNCTION. A REPORT ON THE SYSTEM SHALL BE DELIVERED TO THE PROJECT ASSOCIATION, WITH A COPY DELIVERED TO THE TOWN ENGINEER.
2. AFTER INSPECTION, IF ANY OF THE ABOVE CONDITIONS EXIST, THE INSPECTOR SHALL NOTIFY THE PROJECT ASSOCIATION. WHO SHALL IMMEDIATELY ARRANGE FOR ALL NECESSARY REPAIRS AND/OR SEDIMENT REMOVAL.
3. THE ROAD WAY IS TO BE SWEEPED CLEAN, AS REQUIRED (I.E., VISUALLY NOTICEABLE DEBRIS BUILD-UP). A MINIMUM OF ONCE PER YEAR.
4. ALL GRADED SLOPES SHALL BE INSPECTED EVERY SPRING FOR EROSION. UPON DISCOVERY OF ANY FAILURE (IE. EROSION), LOAM AND SEED SHALL BE PUT IN PLACE AND NURTURED.
5. ALL SNOW IS TO BE STORED IN THE DESIGNATED SNOW STORAGE AREAS AS DEPICTED ON SHEET 7 CS1001.

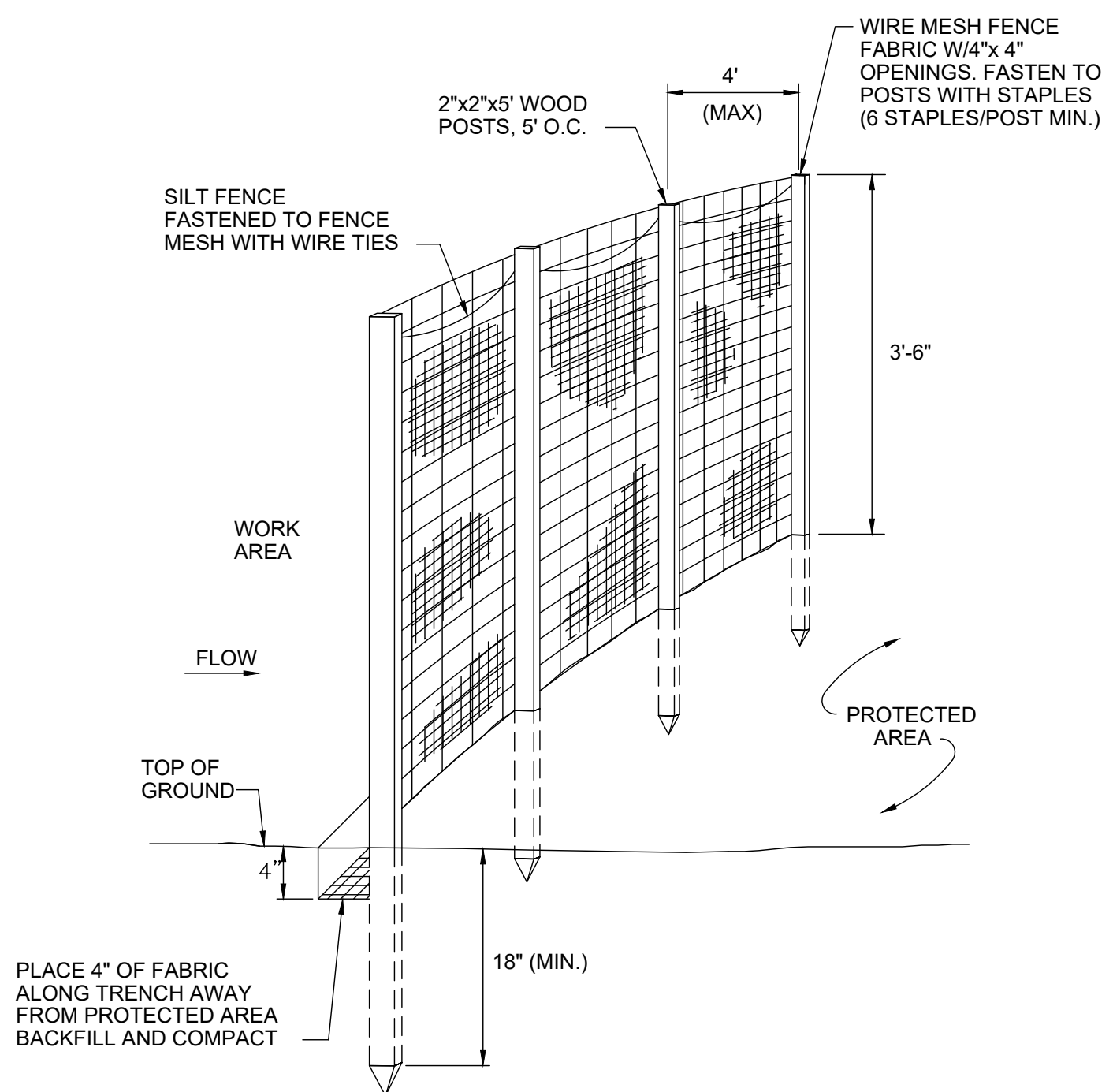


1 WOODCHIP BERM
NOT TO SCALE

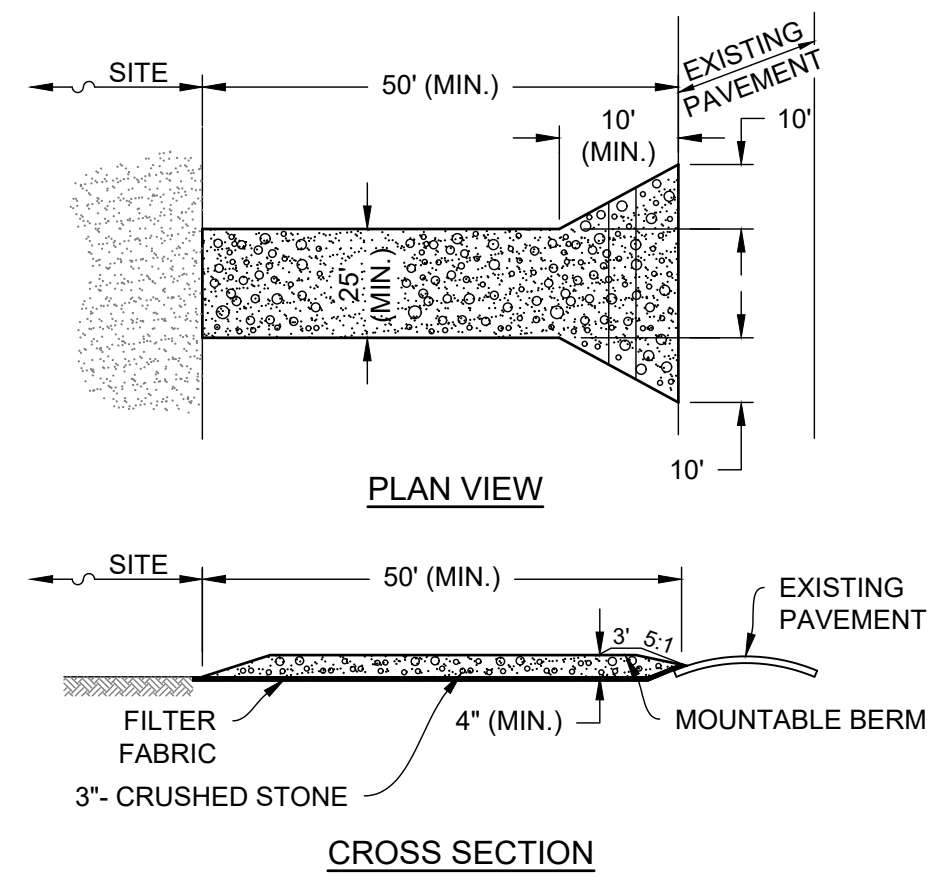


2 TEMPORARY CHECK DAM DETAIL
NOT TO SCALE

3 SILT FENCE / HAY BALE BARRIER
NOT TO SCALE



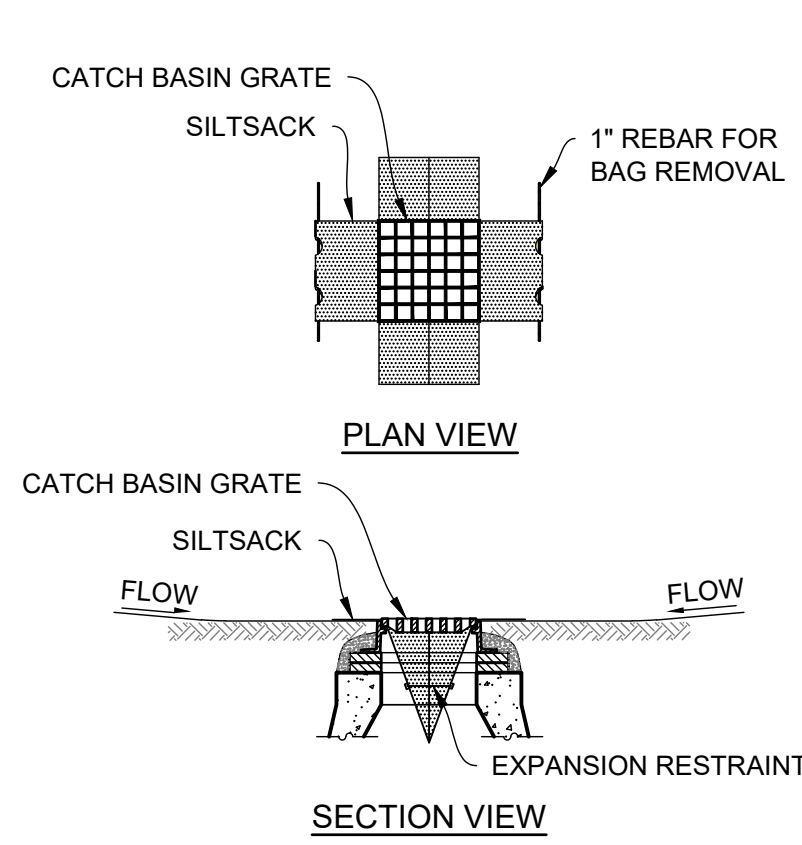
4 HEAVY DUTY SILT FENCE BARRIER
NOT TO SCALE



NOTES:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL 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 OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.

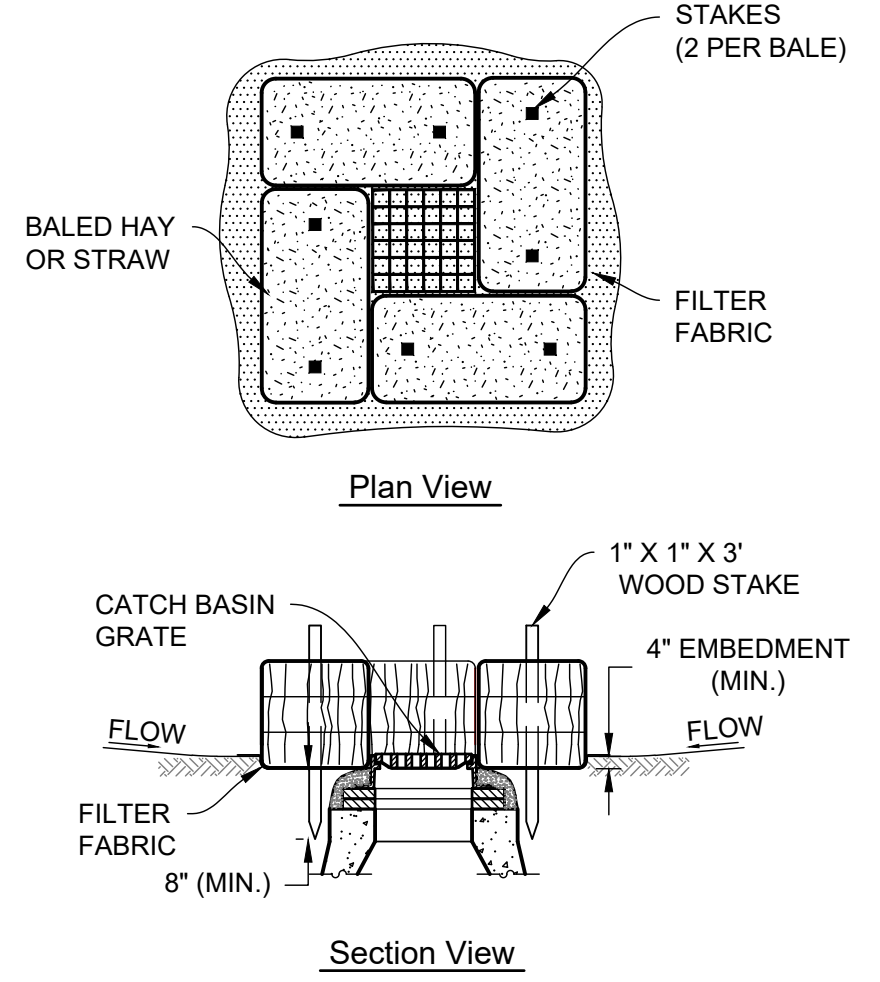
5 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTES:

1. INSTALL SILTSACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLANE BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED WEEKLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. SILTSACKS SHALL NOT BE INSTALLED WITHIN PARK ST. DURING THE WINTER MONTHS.

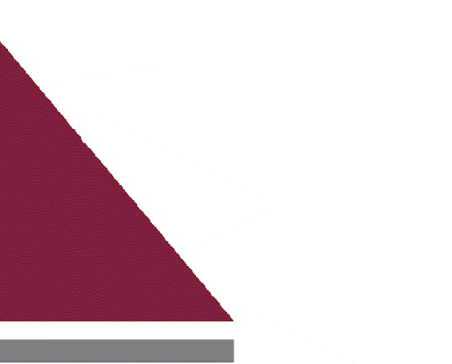
6 SILTSACK SEDIMENT TRAP
NOT TO SCALE



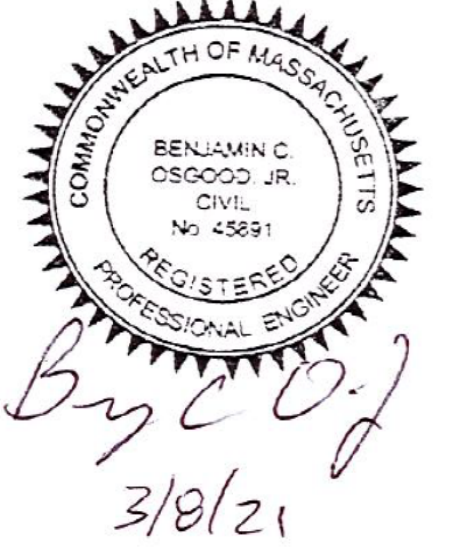
NOTES:

1. ENCLOSE STRUCTURE WITH HAYBALES IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION. MAINTAIN UNTIL PAVING BINDER COURSE IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. IF GRATE IS AGAINST EXISTING CURB THEN HAY BALES ARE TO BE PLACED AROUND THREE SIDES OF GRATE ONLY.
3. GRATE TO BE PLACED OVER FILTER FABRIC.
4. BALES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS. REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

7 CATCH BASIN SEDIMENT TRAP
NOT TO SCALE



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13 Branch Street, Suite 101
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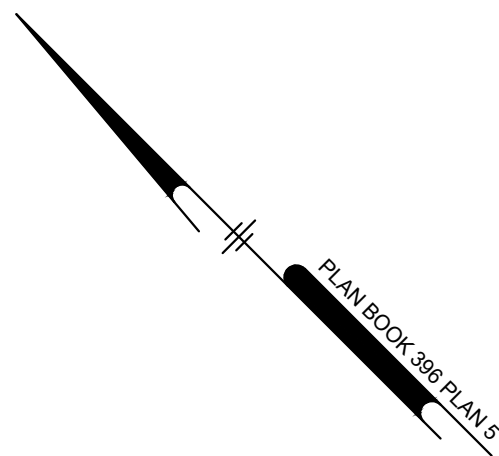
THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP P-20 LOT 175
EROSION AND SEDIMENTATION
CONTROL NOTES
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGBOROUGH, MA 01879

			BOC	BOC	BOC	BOC	BY
			FINAL REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVIEW COMMENT REVISIONS	REVISIONS
			01/28/2021	12/09/2020	08/17/2020	06/26/2020	NO.
							DATE

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BOC

CS8501
SHEET 26 OF 30

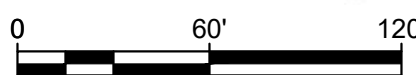
NOT FOR CONSTRUCTION



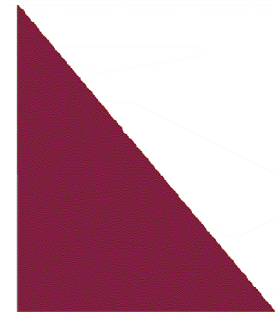
- ROADWAY AND EXCLUSIVE USE AREAS
- UPLAND OPEN SPACE AREA
- WETLAND OPEN SPACE AREA



By *COJ*
3/8/21



NOT FOR CONSTRUCTION



Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

THE VILLAGE AT CRICKET LANE

BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75

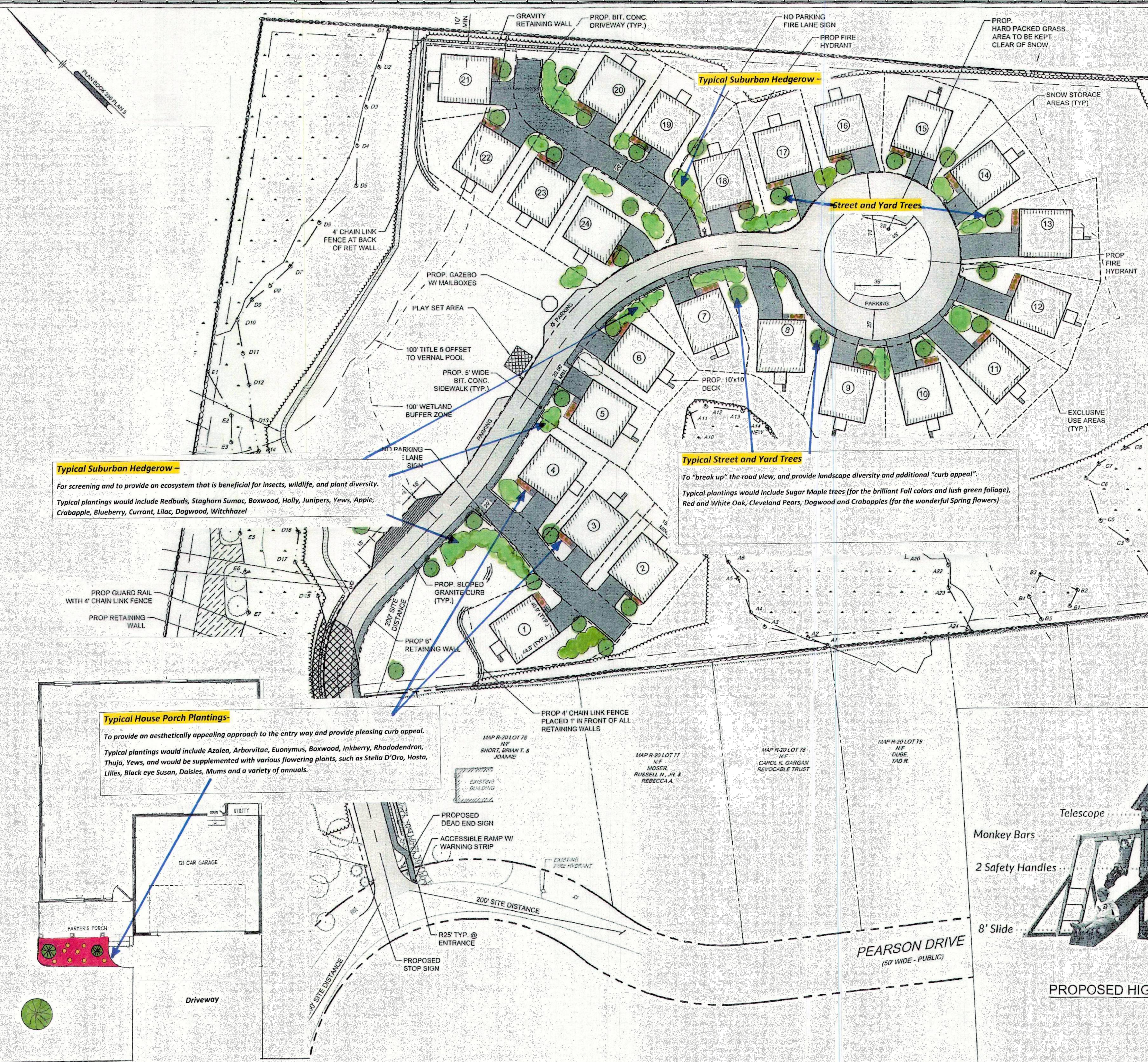
OPEN SPACE PLAN

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

NO.	DATE	REVISIONS	BY
1	08/28/2020	REVIEW COMMENT REVISIONS	BCO
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4	01/28/2021	FINAL REVIEW COMMENT REVISIONS	BCO

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

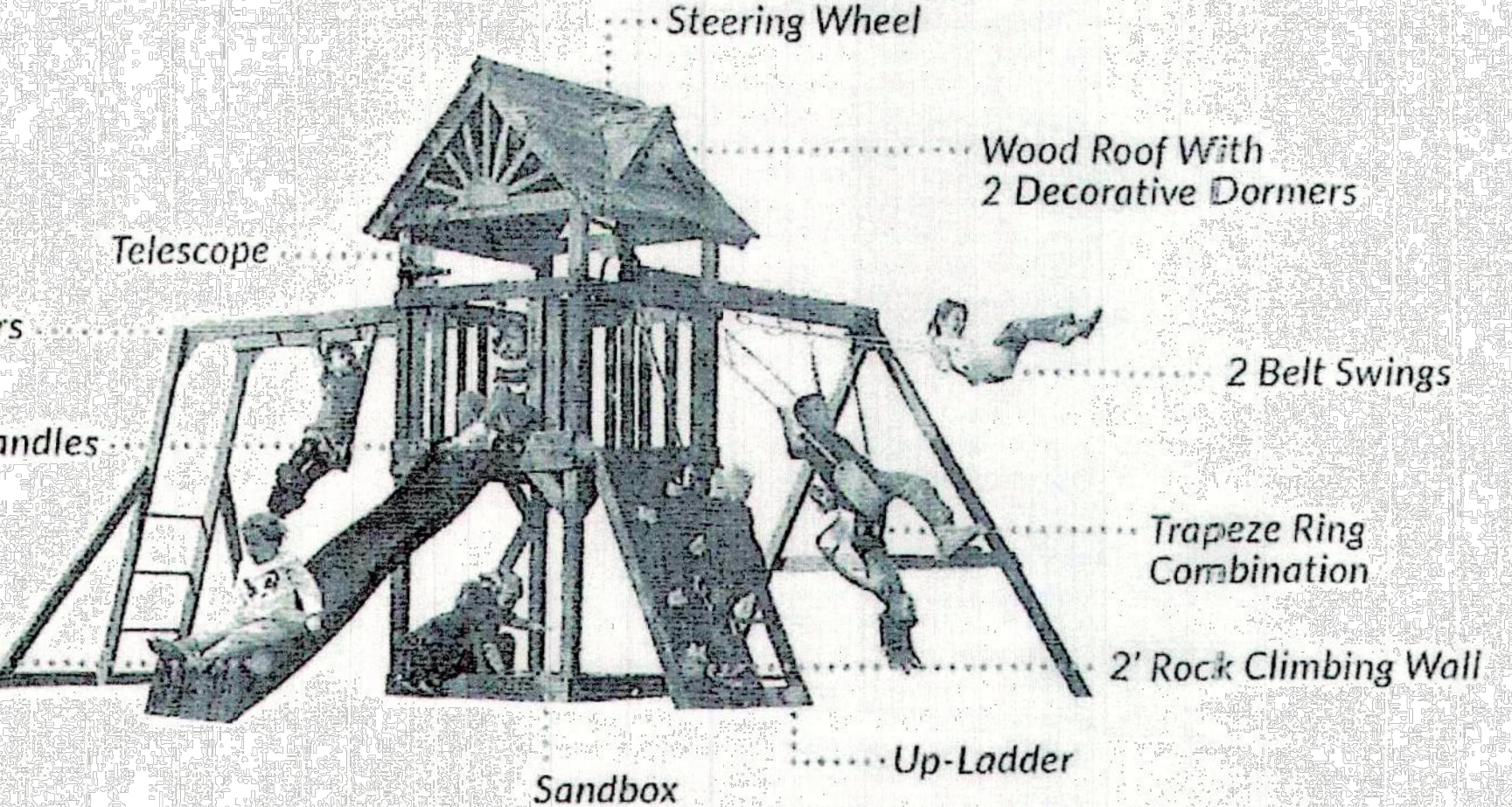
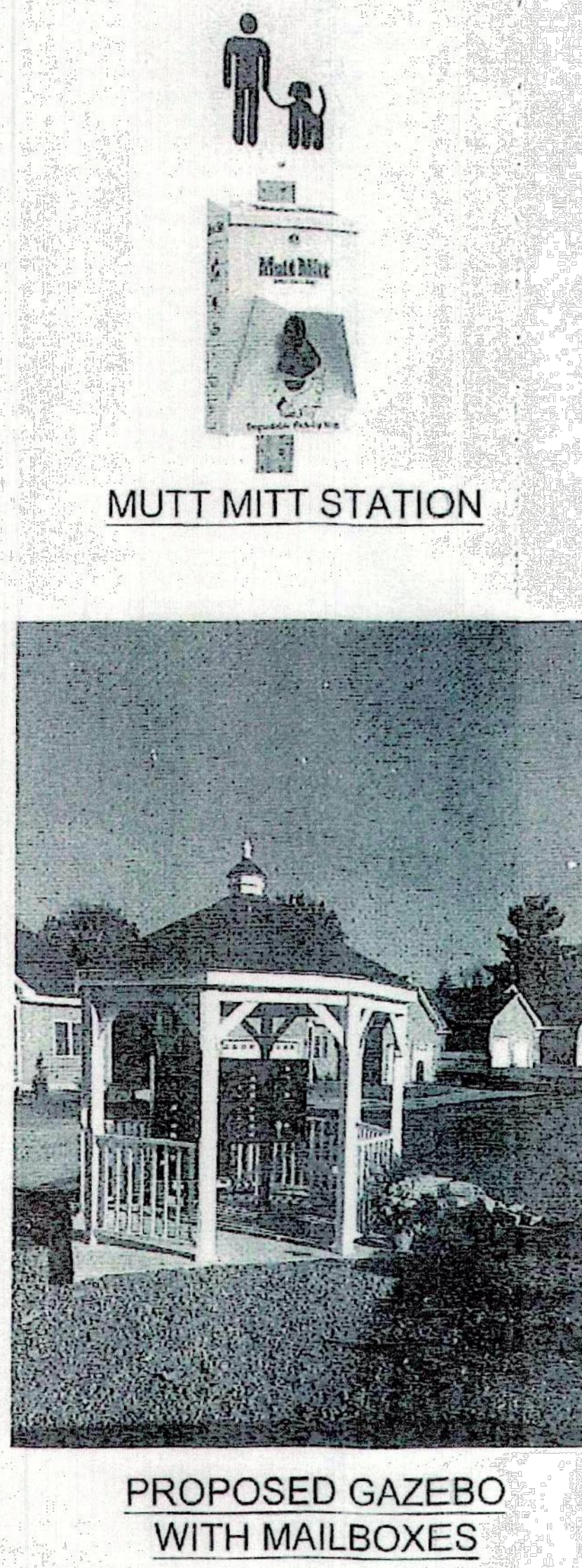
CS9001



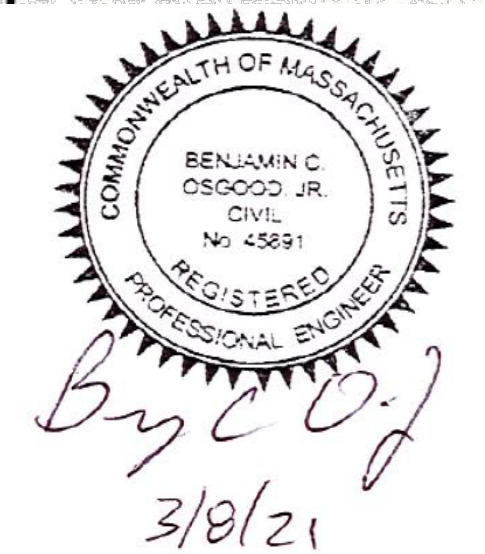
Typical Suburban Hedgerow -
For screening and to provide an ecosystem that is beneficial for insects, wildlife, and plant diversity.
Typical plantings would include Redbuds, Staghorn Sumac, Boxwood, Holly, Junipers, Yews, Apple, Crabapple, Blueberry, Currant, Lilac, Dogwood, Witchhazel

Typical Street and Yard Trees
To "break up" the road view, and provide landscape diversity and additional "curb appeal".
Typical plantings would include Sugar Maple trees (for the brilliant Fall colors and lush green foliage), Red and White Oak, Cleveland Pears, Dogwood and Crabapples (for the wonderful Spring flowers)

Typical House Porch Plantings-
To provide an aesthetically appealing approach to the entry way and provide pleasing curb appeal.
Typical plantings would include Azalea, Arborvitae, Euonymus, Boxwood, Inkberry, Rhododendron, Thuja, Yews, and would be supplemented with various flowering plants, such as Stella D'Oro, Hosta, Lilies, Black eye Susan, Daisies, Mums and a variety of annuals.



NOT FOR CONSTRUCTION

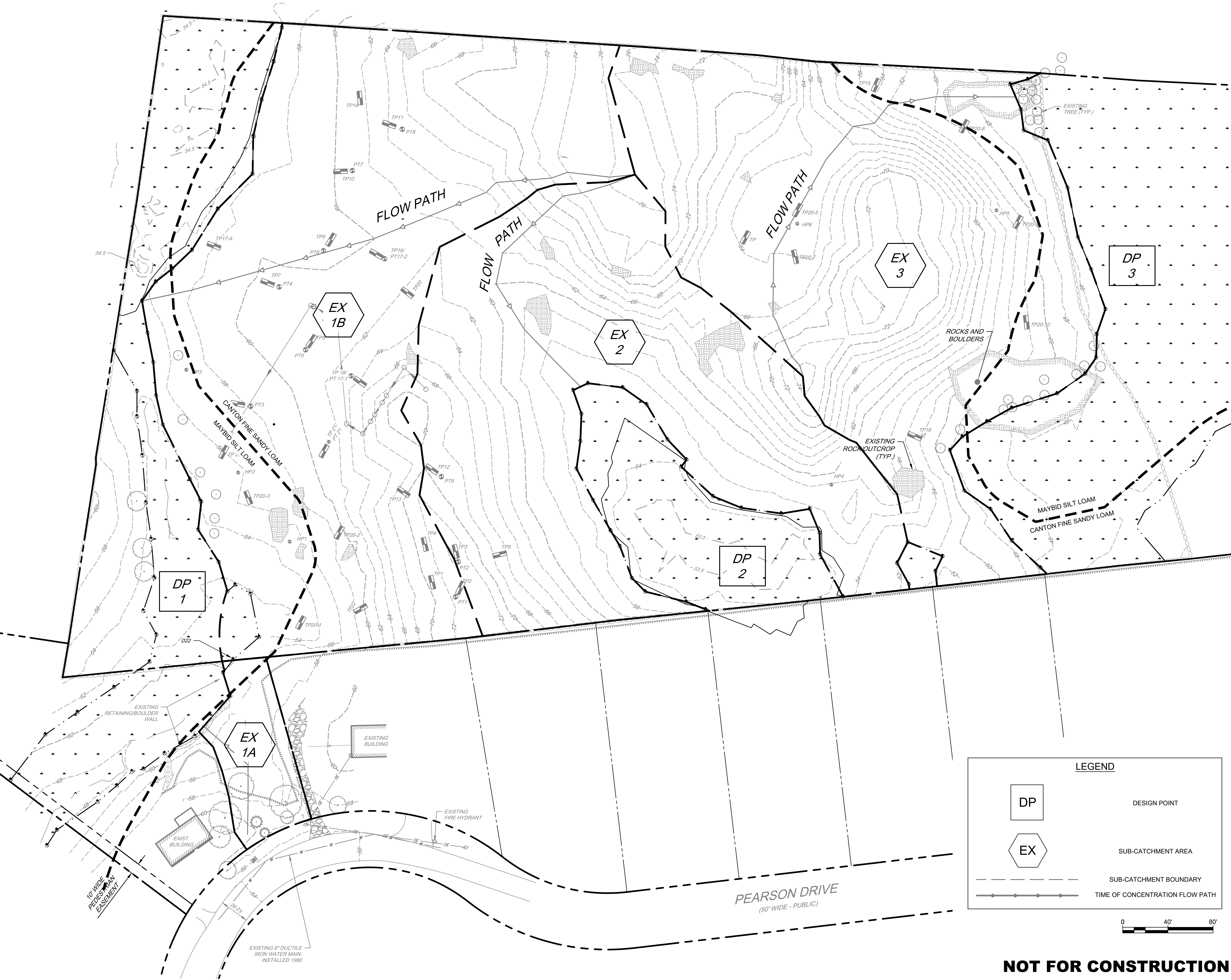
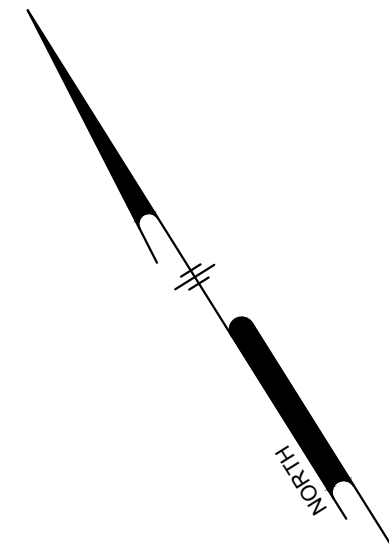


THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75
LANDSCAPE PLAN
CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

NO.	DATE	REVISIONS	BY
1	08/17/2020	REVIEW COMMENT REVISIONS	ECO
2	08/26/2020	REVIEW COMMENT REVISIONS	BCO

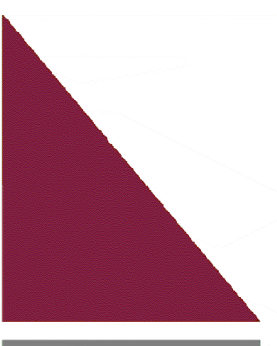
PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO

CS9002
SHEET 28 OF 30



By *BCO*
3/8/21

NOT FOR CONSTRUCTION



Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

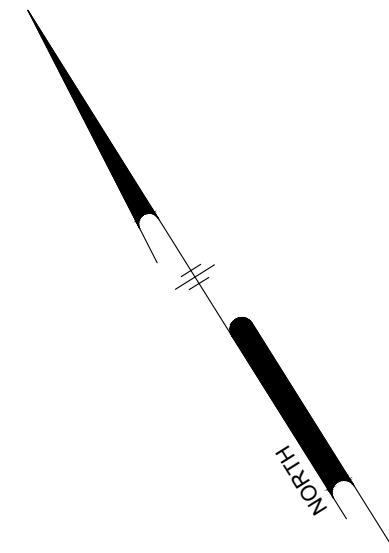
THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSOR'S MAP R-20 LOT 75

**PRE DEVELOPMENT WATERSHED
PLAN**

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

				BCO	BY	
			FINAL REVIEW COMMENT REVISIONS	BCO		
			REVIEW COMMENT REVISIONS	BCO		
			REVIEW COMMENT REVISIONS	BCO		
			REVIEW COMMENT REVISIONS	BCO		
			REVISIONS			
			DATE			

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO



By C.O.J.
3/8/21

DP

DESIGN POINT

P#

SUB-CATCHMENT AREA

SUB-CATCHMENT BOUNDARY

TIME OF CONCENTRATION FLOW PATH

LEGEND

0 40' 80'

NOT FOR CONSTRUCTION

Ranger Engineering Group, Inc.
13 Branch Street, Suite 101
Methuen, MA, 01844
Tel: 978-208-1762
rangereng.com

THE VILLAGE AT CRICKET LANE
BYFIELD (NEWBURY), MA 01922
ASSESSORS MAP R-20 LOT 75

POST DEVELOPMENT WATERSHED
PLAN

CRICKET LANE, LLC
92 MIDDLESEX ROAD
TYNGSBOROUGH, MA 01879

				BCO	BCO	BCO	BCO	BY
			01/28/2021	4	FINAL REVIEW COMMENT REVISIONS			
			12/09/2020	3	REVIEW COMMENT REVISIONS			
			08/17/2020	2	REVIEW COMMENT REVISIONS			
			06/26/2020	1	REVIEW COMMENT REVISIONS			
			DATE	NO.	REVISIONS			

PROJECT	15-1516
DATE	2020-08-10
DRAWING SCALE	AS NOTED
DRAWN BY	OMR
APPROVED BY	BCO