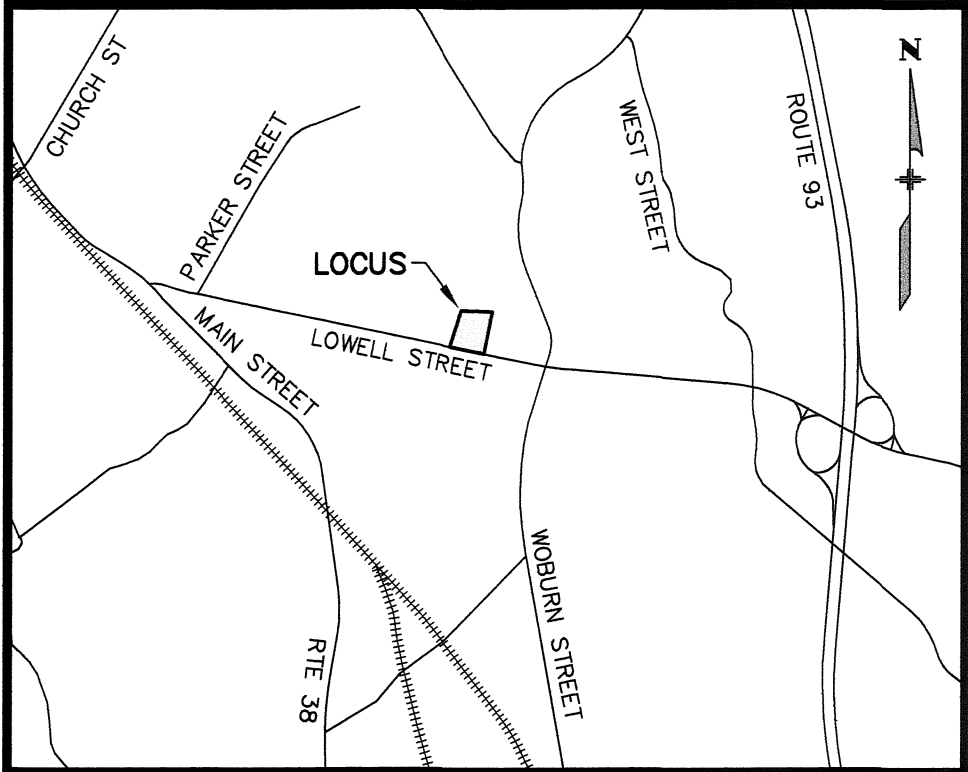




LOCUS MAP
(NTS)

SITE DEVELOPMENT PLAN

168 LOWELL STREET

WILMINGTON, MASSACHUSETTS

NOTES:

- THE PERIMETER BOUNDARY SHOWN ON THIS PLAN WAS DETERMINED FROM A FIELD SURVEY BY THIS OFFICE, AND PLANS OF RECORD (SEE PLAN REFERENCES).
- THE LOCATION OF UNDERGROUND UTILITIES WAS TAKEN FROM AVAILABLE RECORDS AND AS-BUILT PLANS. PRIOR TO ANY CONSTRUCTION "DIG SAFE" SHOULD BE CONTACTED AT 1-888-344-7233.
- THIS SITE IS OUTSIDE THE FLOOD HAZARD AREA AS SHOWN OF THE FEMA FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 250227 0292 E, DATED JUNE 4, 2010.
- OWNER OF RECORD:
MAP 58 PARCEL 1
168 LOWELL STREET, LLC
20 MIDDLESEX AVENUE
WILMINGTON, MA 01887

MAP 49 PARCEL 52
MIDDLESEX REALTY TRUST
20 MIDDLESEX AVENUE
WILMINGTON, MA 01887
- DEED REFERENCE:
MIDDLESEX NORTH DISTRICT REGISTRY OF DEEDS
BOOK 31967, PAGE 183
LAND COURT BOOK 159, PAGE 287
- PLAN REFERENCES:
 - MIDDLESEX NORTH DISTRICT REGISTRY OF DEEDS
M.N.D.R.D. LAND COURT PLAN 26844A
PLAN BK. 86, PLAN 172
PLAN BK. 149, PLAN 40
PLAN BK. 161, PLAN 140
 - 1989 - TOWN ALTERATION LOWELL STREET (NO. 6119)
 - "CONSOLIDATION PLAN OF LAND IN WILMINGTON, MASSACHUSETTS,
168 LOWELL STREET", PREPARED BY THIS OFFICE,
DATED SEPTEMBER 5, 2019.

LAND USE TABLE

ASSESSOR'S ID: MAP 58 PARCEL 1
& MAP 49 PARCEL 52
PROPERTY LOCATION: 168 LOWELL STREET
WILMINGTON, MA

LOT AREA: 156,026± SF
BUILDING AREA: 27,675± SF
BUILDING COVERAGE: 17.7%

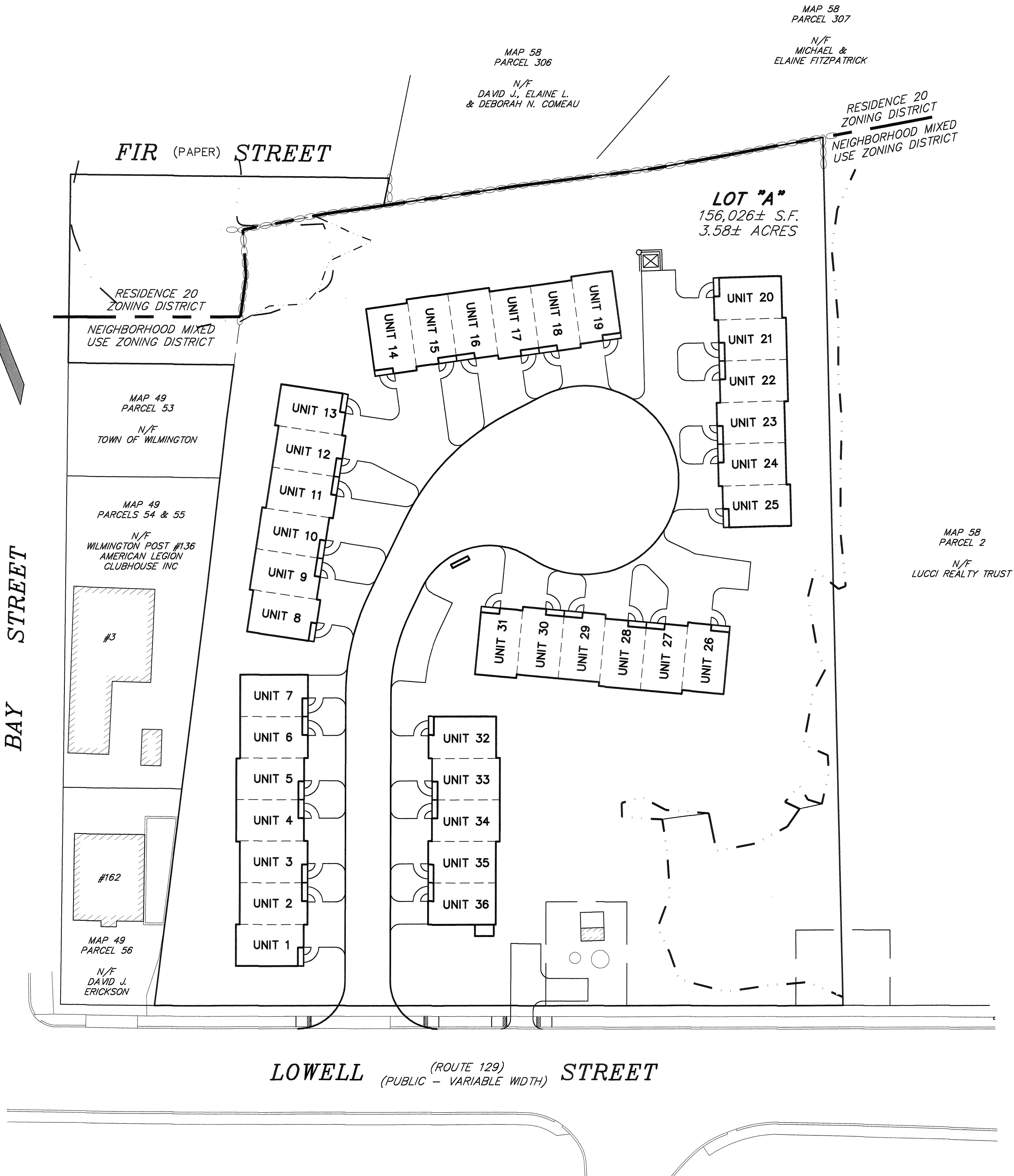
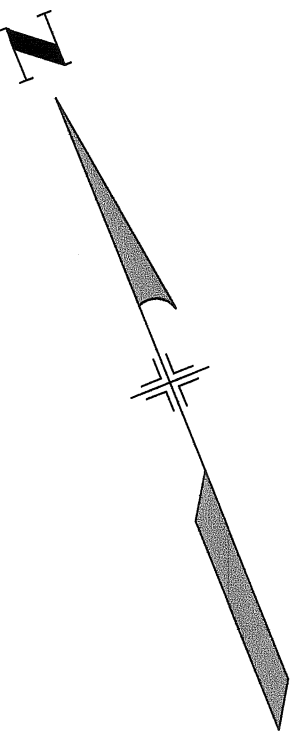
ZONING

ZONE DISTRICT: NEIGHBORHOOD MIXED USE (NM)
LOT USE: MULTI-FAMILY HOUSING

	REQUIRED (NM)	REQUIRED (MULTI-FAM.)	PROVIDED
LOT AREA	20,000 SF	25,000 S.F.	156,026 SF
LOT FRONTAGE	125 FT		365.6± FT
FRONT YARD	20 FT	20 FT	21.0 FT
SIDE YARD	20 FT	20 FT	21.5 FT
ABUTTING RES. DISTRICT	50 FT		N/A
REAR YARD	20 FT	20 FT	51.0 FT
ABUTTING RES. DISTRICT	50 FT		51.0 FT
BUILDING HEIGHT	35 FT	40 FT	<40 FT
BUILDING COVERAGE	35%	30%	17.7%
MIN. OPEN SPACE	20%	40%	57.9%

MULTI-FAMILY DENSITY CALCULATION

MAX DENSITY = 156,026± S.F. X 1 UNIT/4,000 S.F. = 39 UNITS ALLOWED
36 UNITS PROVIDED

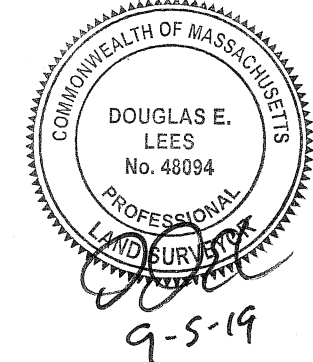


LEGEND

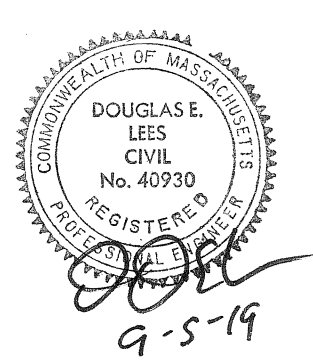
---	PROPERTY LINE
---	EXISTING EASEMENT
---	EXISTING EDGE OF PAVEMENT
---	WETLAND LINE

SHEET INDEX

COVER SHEET	1
EXISTING CONDITIONS PLAN	2
LAYOUT PLAN	3
GRADING PLAN	4
UTILITY PLAN	5
PLAN & PROFILE	6
EROSION CONTROL PLAN	7
DETAIL SHEETS	8, 9 & 10



WILMINGTON
PLANNING BOARD



NOT RELEASED FOR CONSTRUCTION

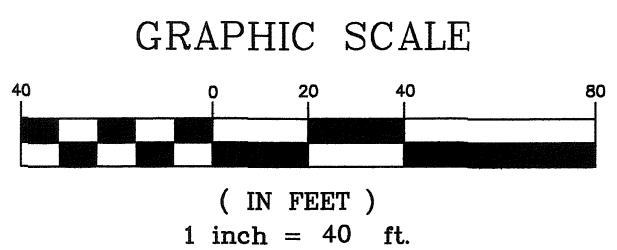
COVER SHEET
IN
WILMINGTON, MASSACHUSETTS

168 LOWELL STREET

SCALE: 1"=40'	DATE: SEPTEMBER 5, 2019	SHEET 1 OF 10	REV.
JOB NO. 48403			

PREPARED FOR
168 LOWELL STREET, LLC
WILMINGTON, MASSACHUSETTS

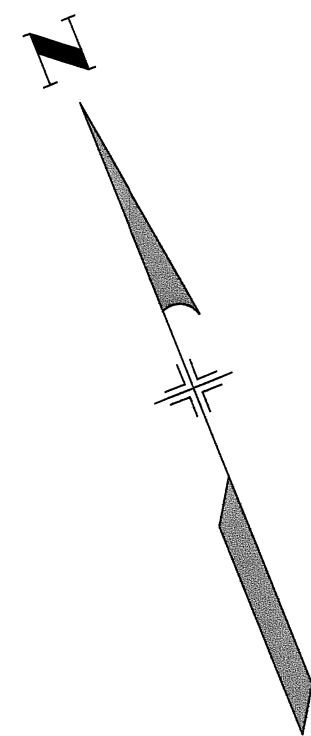
PREPARED BY
Land Engineering & Environmental Services, Inc.
130 Middlesex Road, Tyngsboro, Massachusetts 01879
Telephone (978) 649-4642



NO NOTICE OF APPEAL WAS RECEIVED DURING THE 20 DAYS NEXT AFTER RECEIPT AND RECORDING OF NOTICE FROM THE PLANNING BOARD OF APPROVAL OF THE PLAN.

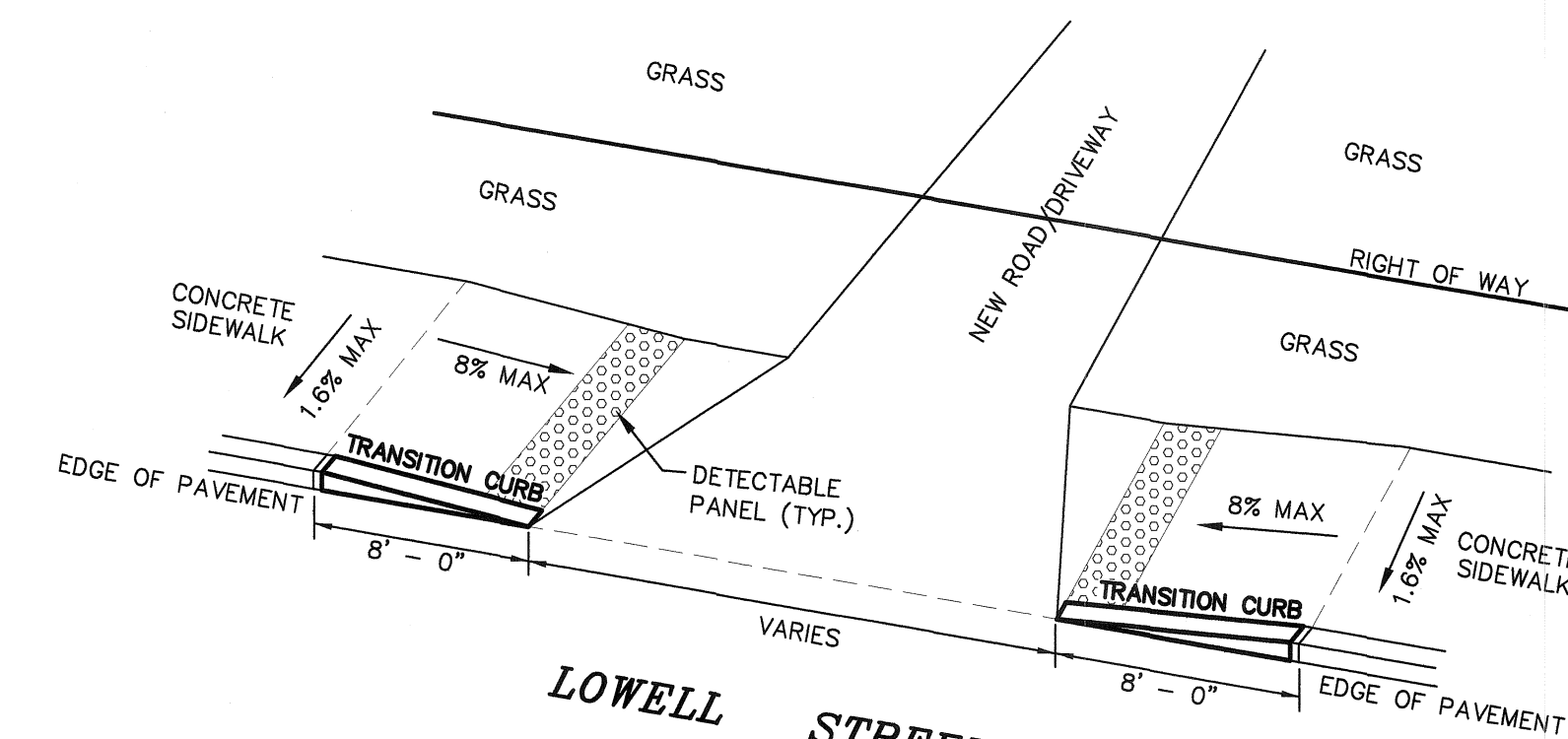
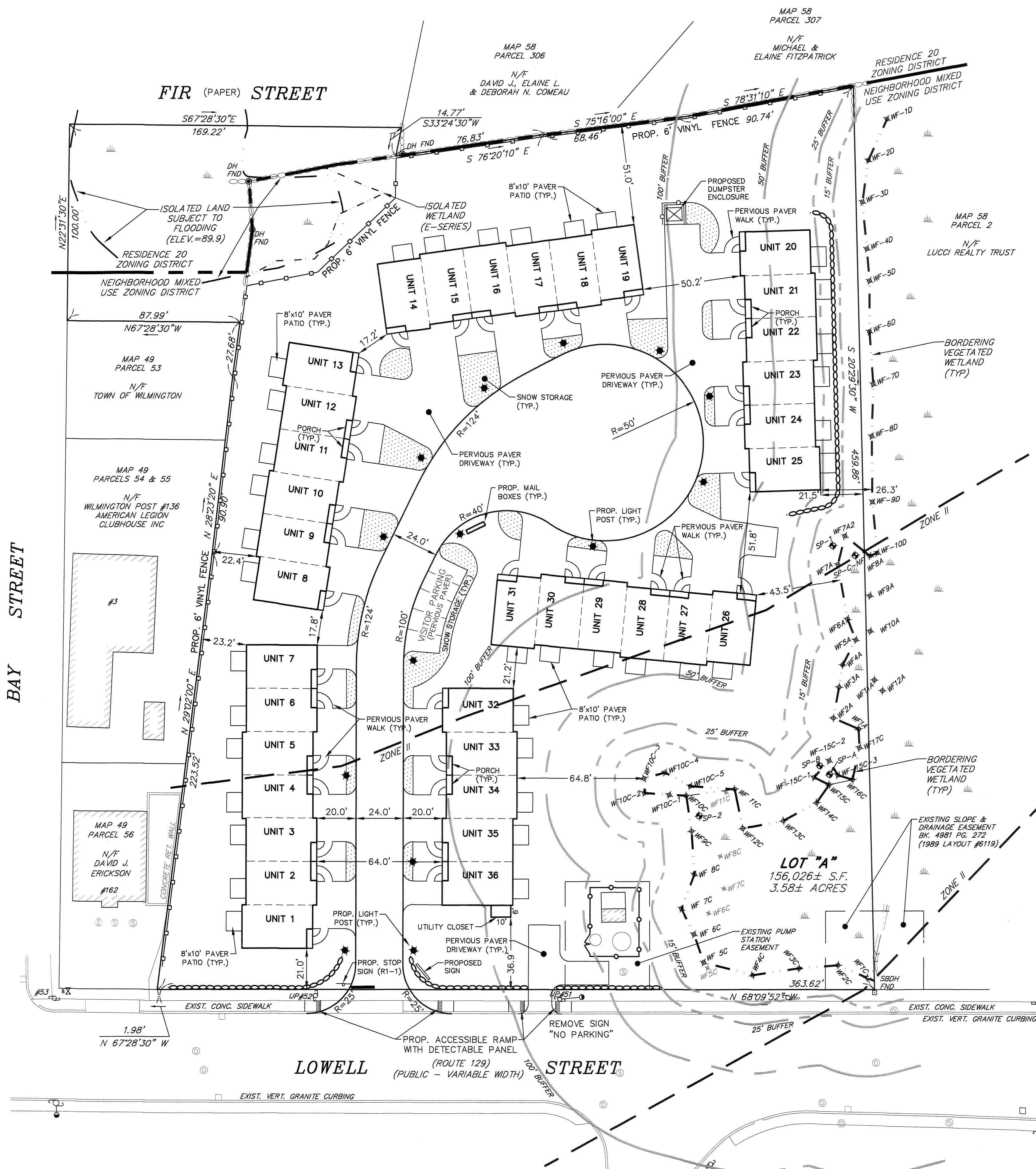
TOWN CLERK

DATE



BAY STREET

FIR (PAPER) STREET



LOWELL STREET

TRANSITION CURB AT LOWELL STREET
NOT TO SCALE

PARKING CALCULATIONS

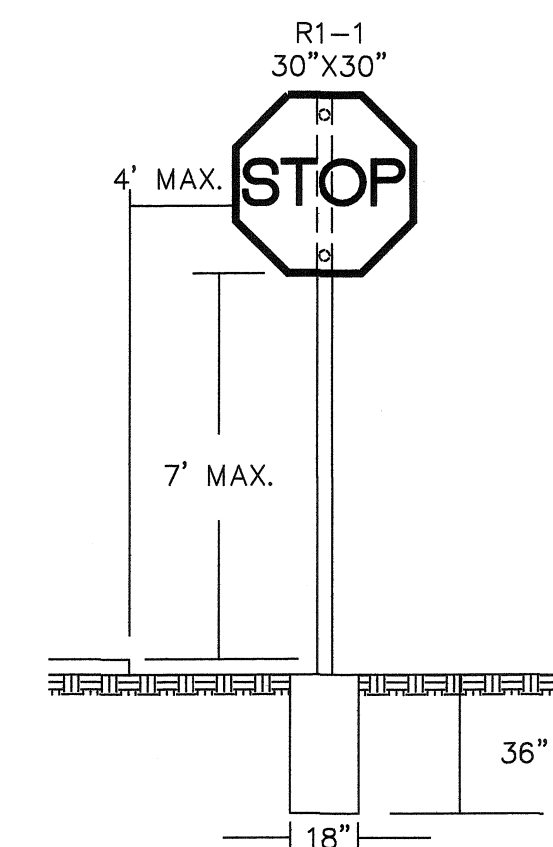
RESIDENTIAL UNITS

RESIDENTIAL - 2 SPACES/UNIT
36 UNITS X 2 SPACES/UNIT

REQUIRED PROVIDED
72 SPACES

TOTAL 72 SPACES 77 SPACES*

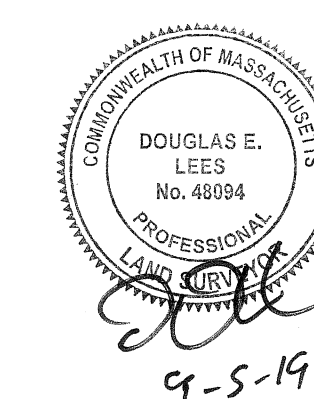
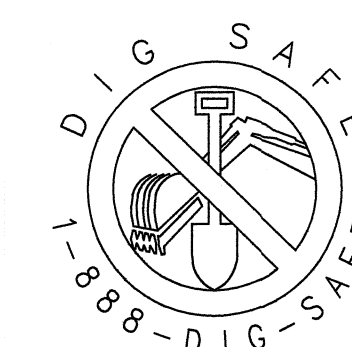
*INCLUDING 36 GARAGE SPACES



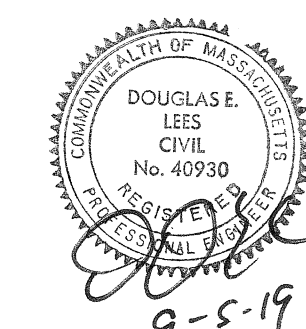
STOP SIGN DETAIL
NOT TO SCALE

LEGEND

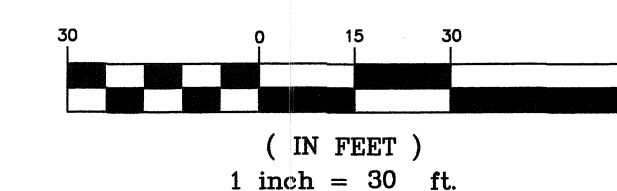
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING WATER GATE
- DRILL HOLE FOUND
- STONE BOUND DRILL HOLE FOUND
- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING EDGE OF PAVEMENT
- WETLAND LINE
- ZONING DISTRICT LINE
- ZONE II WATERSHED DISTRICT
- PROPOSED SNOW STORAGE



WILMINGTON
PLANNING BOARD



GRAPHIC SCALE



NOT RELEASED FOR CONSTRUCTION

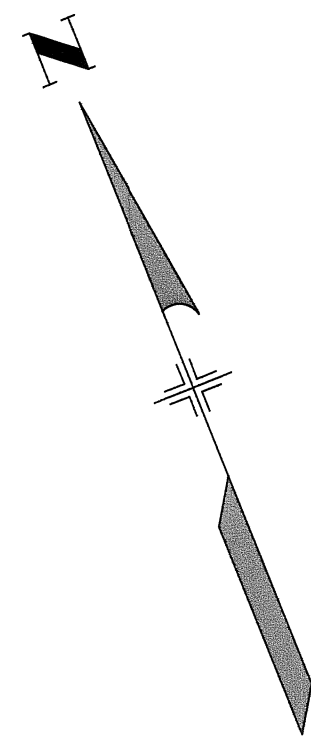
LAYOUT PLAN
IN
WILMINGTON, MASSACHUSETTS
168 LOWELL STREET

SCALE: 1"=30'	DATE: SEPTEMBER 5, 2019	SHEET 3 OF 10	REV.
JOB NO. 48403			
PREPARED FOR 168 LOWELL STREET, LLC WILMINGTON, MASSACHUSETTS			
PREPARED BY Land Engineering & Environmental Services, Inc. 130 Middlesex Road, Tyngsboro, Massachusetts 01879 Telephone (978) 649-4642			

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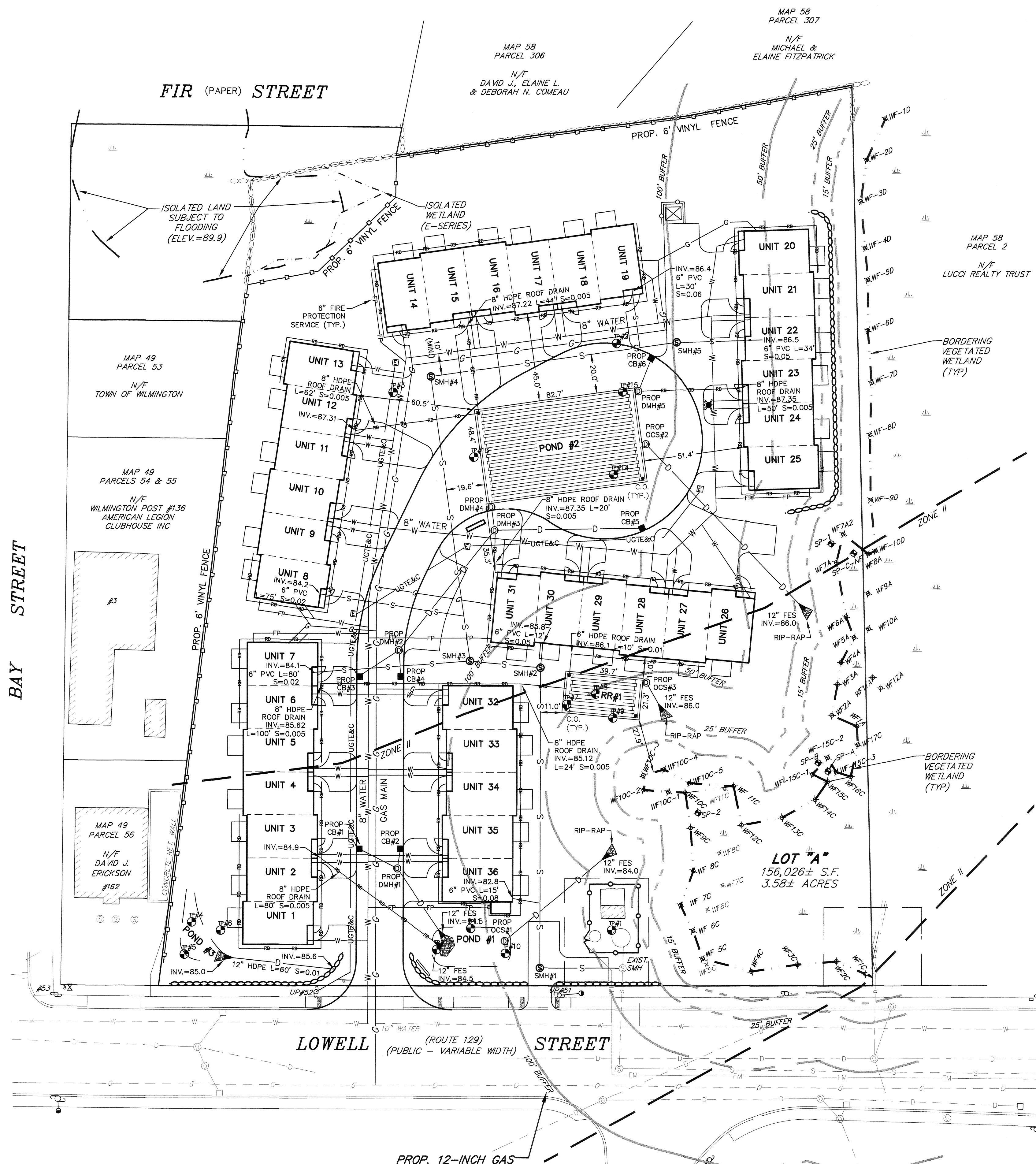
TOWN CLERK

DATE



BAY STREET

FIR (PAPER) STREET



DRAINAGE STRUCTURE DATA

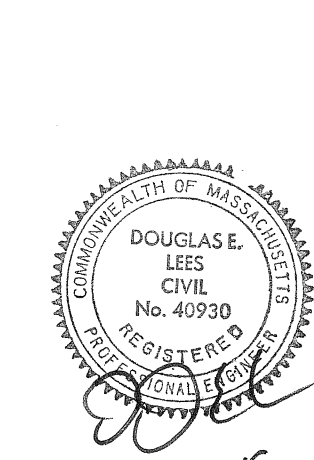
STRUCTURE	RIM	INV. IN	INV. OUT
CB#1	87.65		85.15
CB#2	87.80		85.15
DMH#1	87.65	84.95	84.70
(OSR 065)	12" HDPE L=40' S=0.005		
FES	84.50		
OCS#1	86.50		84.35
FES	84.00		
CB#3	90.25		87.83
CB#4	90.25		87.83
DMH#2	90.70	87.73	87.63
CB#5	90.10		87.61
DMH#3	91.50	87.25	87.15
DMH#4	91.50	87.10	86.85
(OSR 065)	12" HDPE L=2' S=0.01		
CB#6	90.10		87.25
DMH#5	90.55	87.10	86.85
(OSR 065)	12" HDPE L=2' S=0.01		
OCS#2	91.00	86.83	86.60
FES		86.00	
OCS#3	90.00	85.00	86.15
FES		86.00	

SEWAGE STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT
SMH#5	90.25	84.80	84.50
SMH#4	91.70	83.88	83.78
SMH#3	90.8	82.33	82.23
	8" PVC L=145' S=0.01		
	82.50 (6" SERVICE)		
SMH#2	90.2	82.06	81.96
	8" PVC L=34' S=0.005		
SMH#1	87.20	81.20	78.24
EXIST. SMH	87.52	74.24	74.14

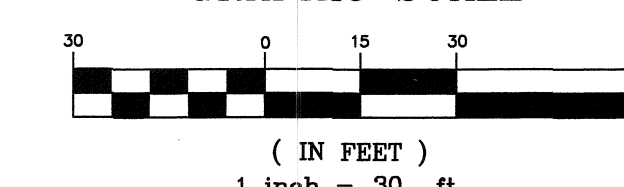
LEGEND

EXIST.	PROP.	
□	■	CATCH BASIN
○	○	DRAIN MANHOLE
⊙	⊙	SEWER MANHOLE
⊕	⊕	HYDRANT
⊗	⊗	WATER GATE
⊘	⊘	UTILITY POLE
—	—	PROPERTY LINE
—	—	EXISTING EASEMENT
—	—	EXISTING EDGE OF PAVEMENT
—	—	EXISTING DRAIN PIPE
—	—	EXISTING GAS LINE
—	—	EXISTING SEWER PIPE
—	—	EXISTING WATER LINE
D	D	PROPOSED DRAIN PIPE
RD	RD	PROPOSED ROOF DRAIN
G	G	PROPOSED GAS LINE
S	S	PROPOSED SEWER PIPE
W	W	PROPOSED WATER LINE
FP	FP	PROPOSED FIRE SERVICE
---	---	WETLAND LINE
---	---	ZONE II WATERSHED DISTRICT



9-5-19

GRAPHIC SCALE



NOT RELEASED FOR CONSTRUCTION

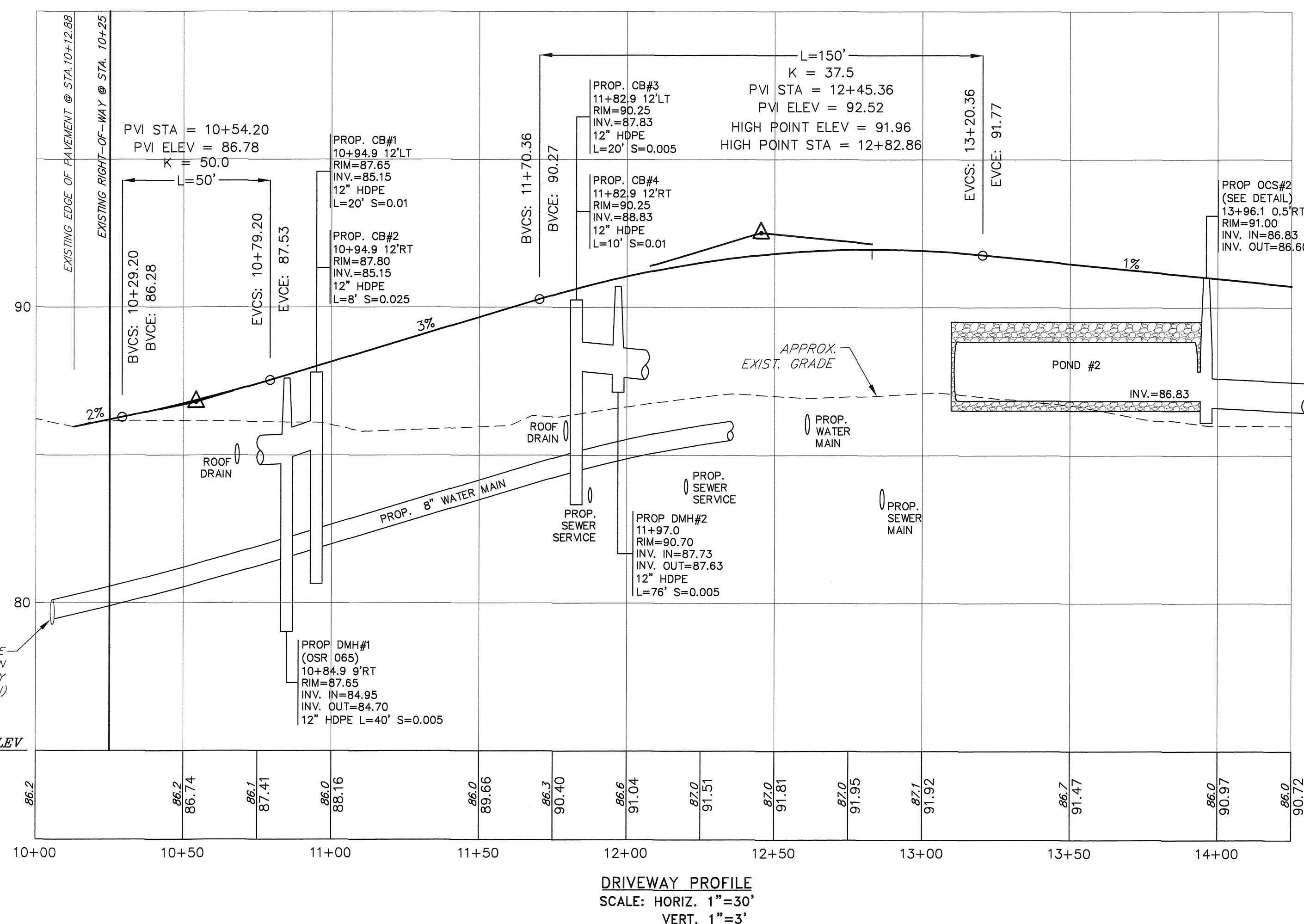
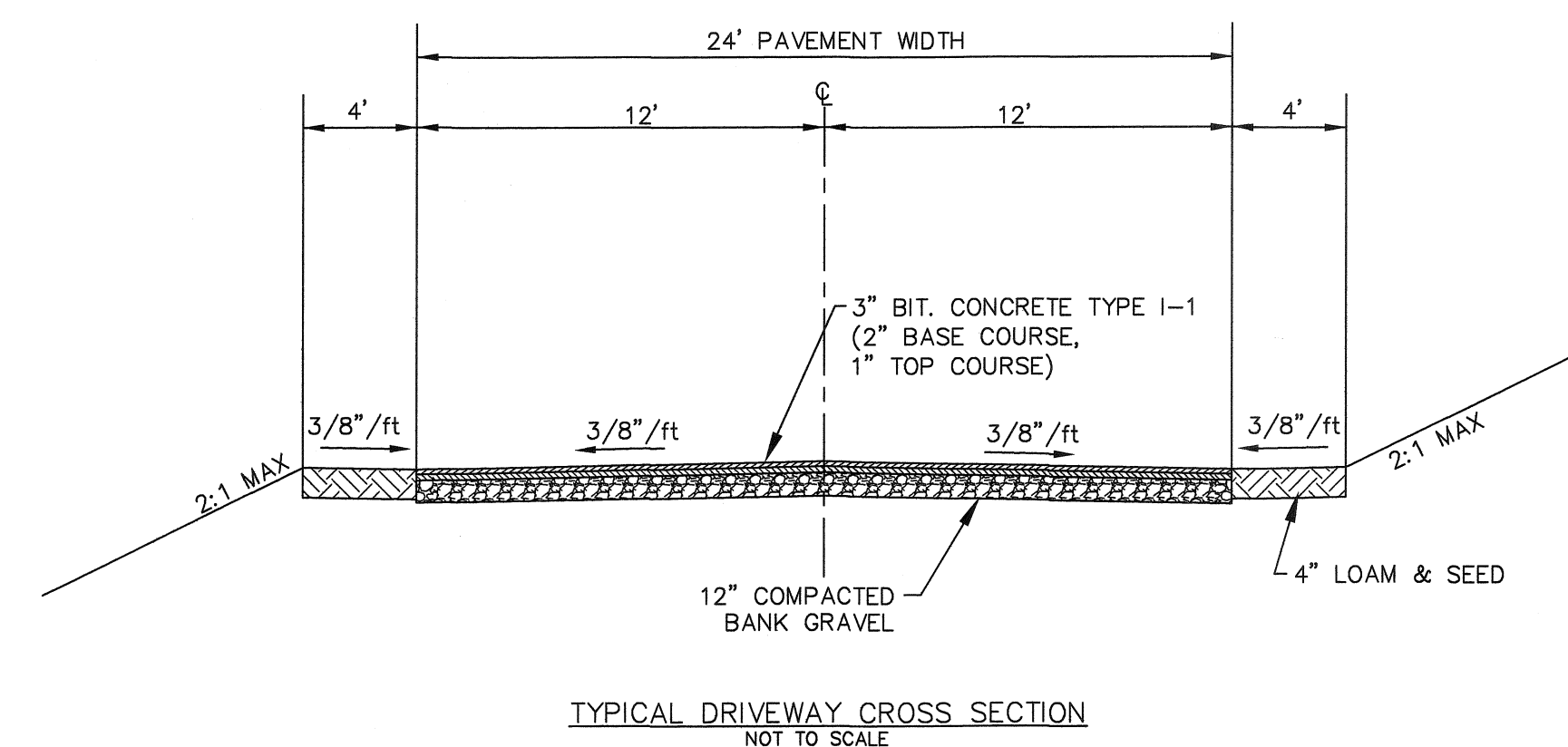
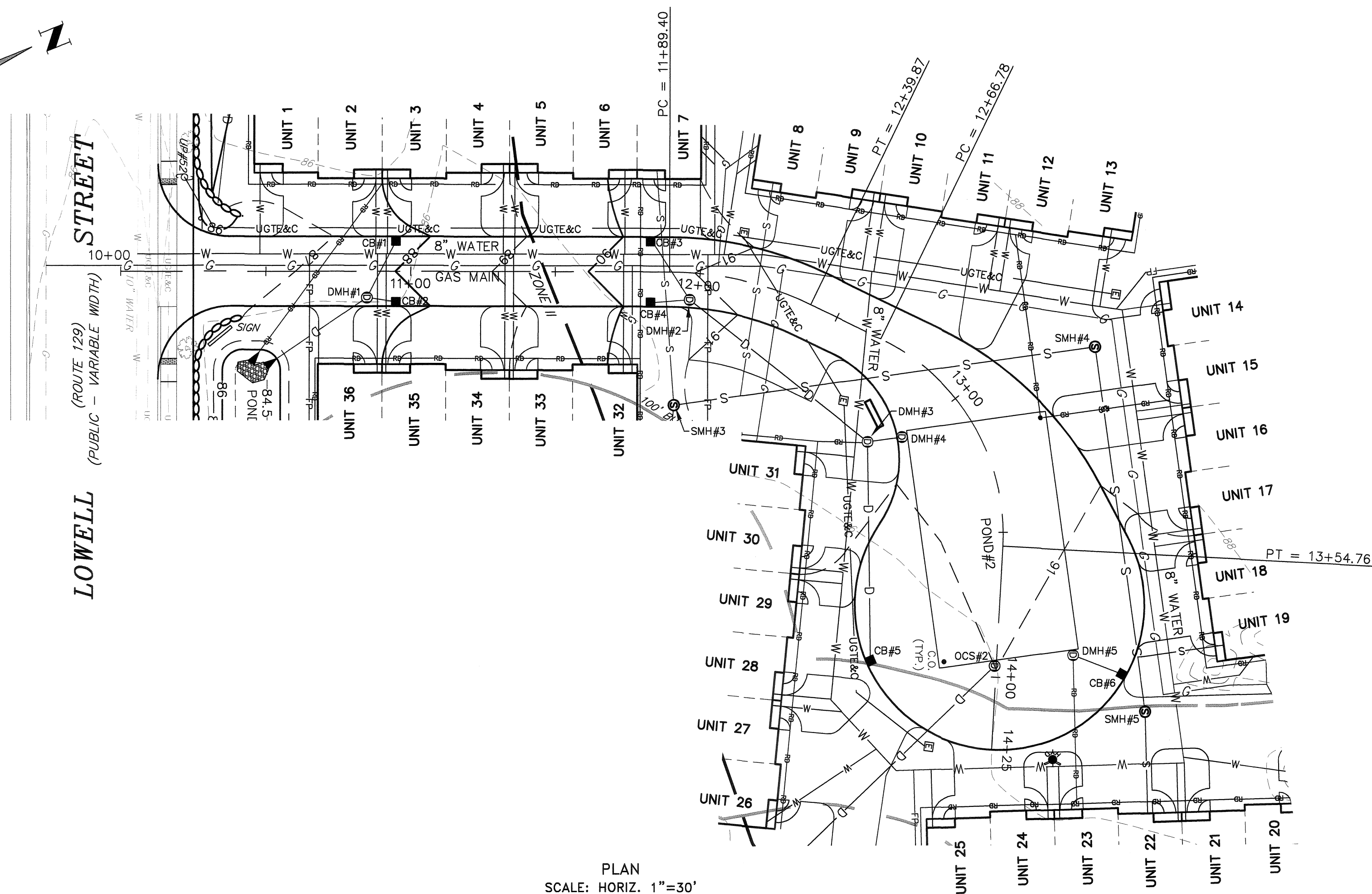
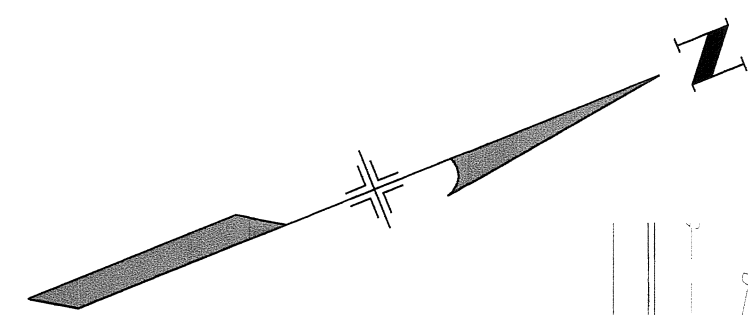
UTILITY PLAN
IN
WILMINGTON, MASSACHUSETTS
168 LOWELL STREET

SCALE: 1"=30'	DATE: SEPTEMBER 5, 2019	SHEET 5 OF 10	REV.
JOB NO. 48403			
PREPARED FOR 168 LOWELL STREET, LLC WILMINGTON, MASSACHUSETTS			
PREPARED BY Land Engineering & Environmental Services, Inc. 130 Middlesex Road, Tyngsboro, Massachusetts 01879 Telephone (978) 649-4642			

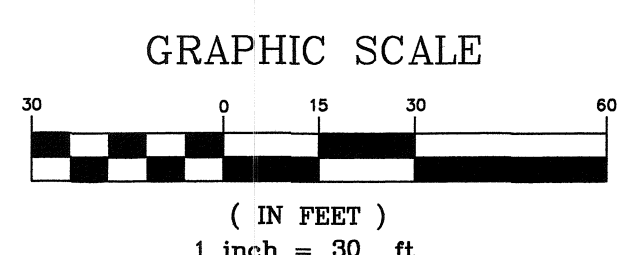
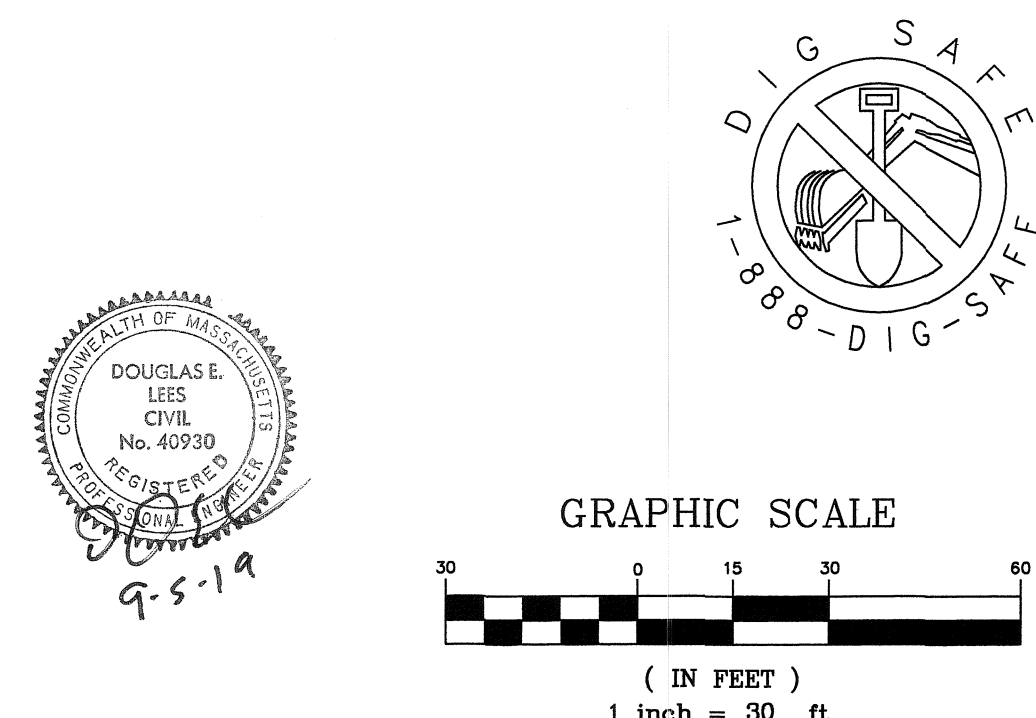
NO NOTICE OF APPEAL WAS RECEIVED DURING THE 20 DAYS NEXT AFTER RECEIPT AND RECORDING OF NOTICE FROM THE PLANNING BOARD OF APPROVAL OF THE PLAN.

TOWN CLERK

DATE



- LEGEND**
- | | | |
|--------|-------|----------------------------|
| EXIST. | PROP. | |
| □ | ■ | CATCH BASIN |
| ○ | ● | DRAIN MANHOLE |
| ⊙ | ⊙ | SEWER MANHOLE |
| ⊕ | ⊕ | HYDRANT |
| ⊗ | ⊗ | WATER GATE |
| ⊘ | ⊘ | UTILITY POLE |
| — | — | PROPERTY LINE |
| — | — | EXISTING EASEMENT |
| — | — | EXISTING EDGE OF PAVEMENT |
| — | — | EXISTING DRAIN PIPE |
| — | — | EXISTING GAS LINE |
| — | — | EXISTING SEWER PIPE |
| — | — | EXISTING WATER LINE |
| — | — | PROPOSED DRAIN PIPE |
| — | — | PROPOSED ROOF DRAIN |
| — | — | PROPOSED GAS LINE |
| — | — | PROPOSED SEWER PIPE |
| — | — | PROPOSED WATER LINE |
| — | — | PROPOSED FIRE SERVICE |
| — | — | WETLAND LINE |
| — | — | ZONE II WATERSHED DISTRICT |



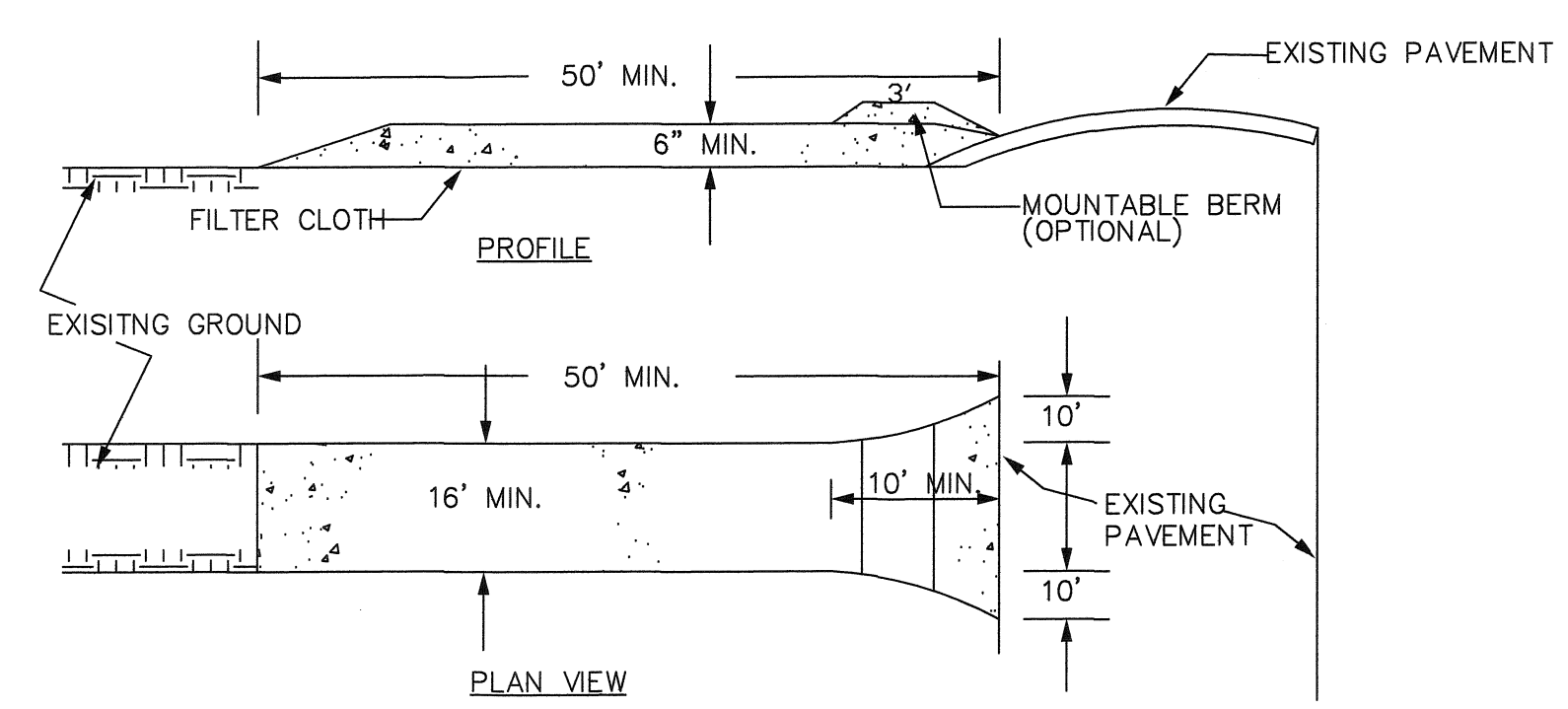
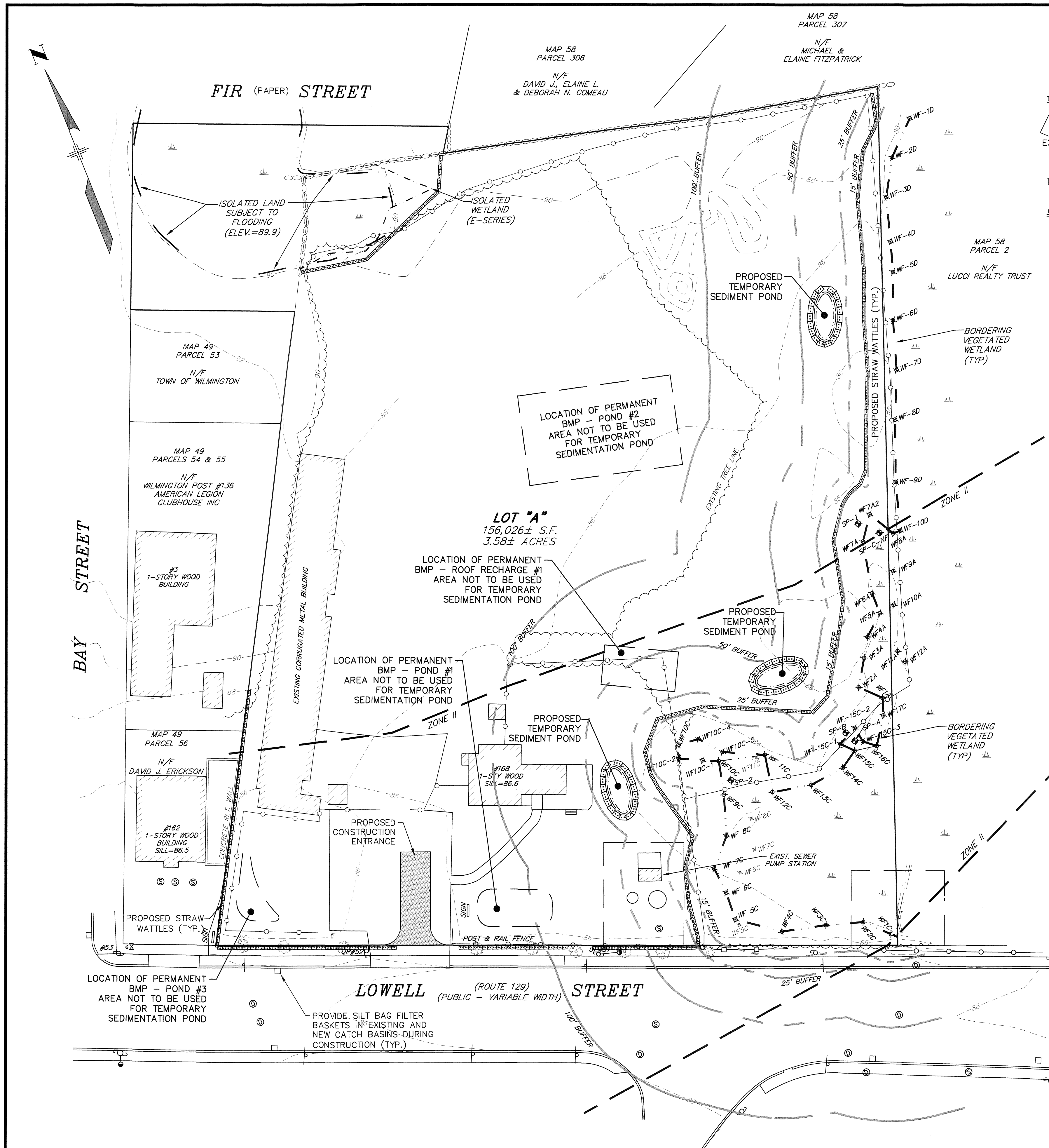
WILMINGTON
PLANNING BOARD

DATE

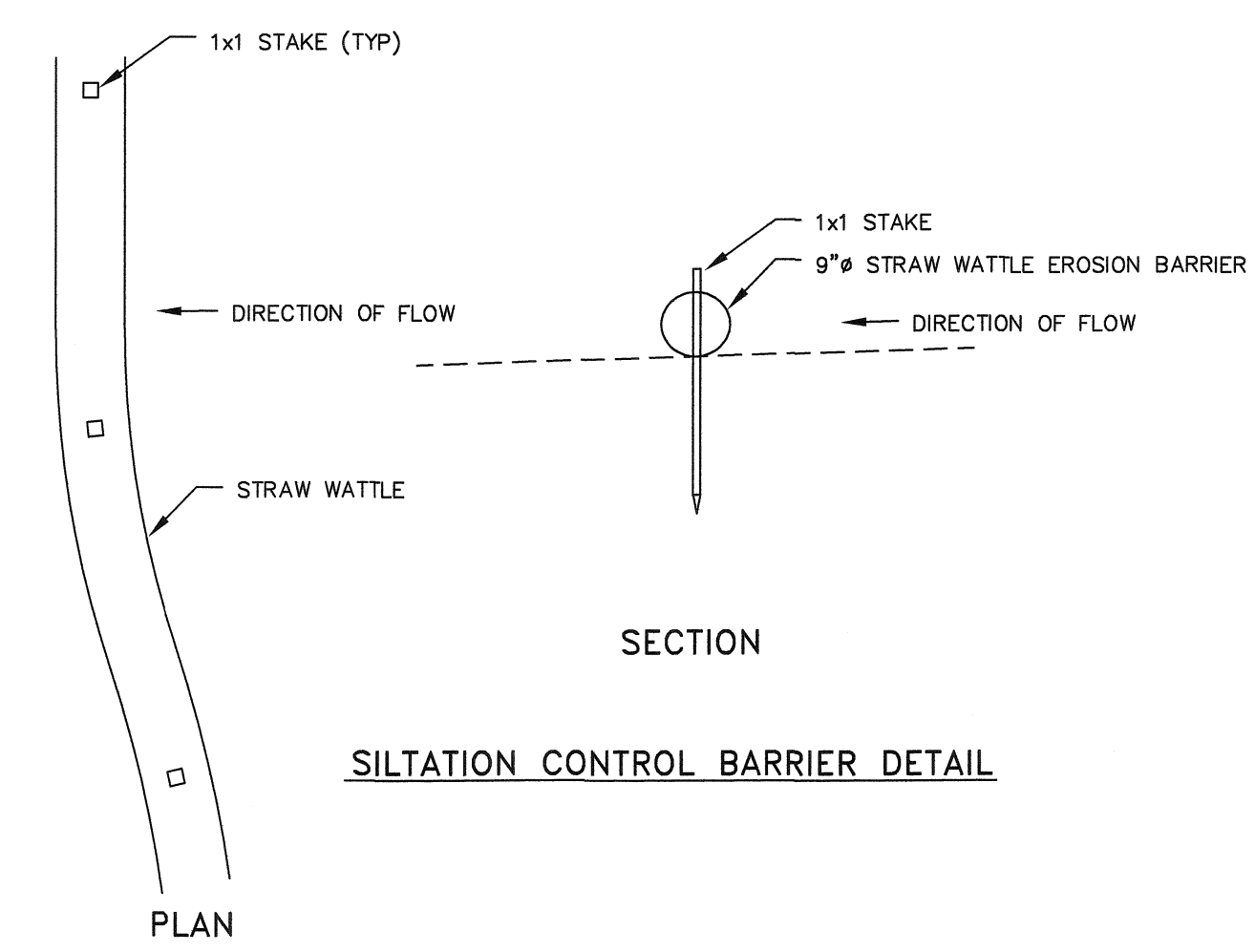
NOT RELEASED FOR CONSTRUCTION			
PLAN AND PROFILE IN WILMINGTON, MASSACHUSETTS			
168 LOWELL STREET			
SCALE: 1"=30'	DATE: SEPTEMBER 5, 2019	SHEET 6 OF 10	REV.
PREPARED FOR 168 LOWELL STREET, LLC WILMINGTON, MASSACHUSETTS			
PREPARED BY Land Engineering & Environmental Services, Inc. 130 Middlesex Road, Tyngsboro, Massachusetts 01879 Telephone (978) 649-4642			

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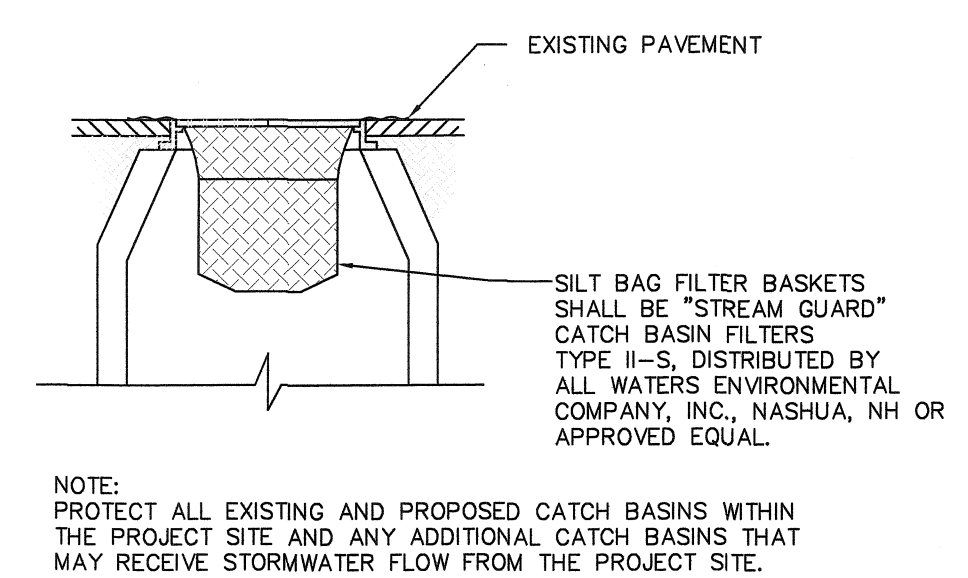
_____ TOWN CLERK _____ DATE



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

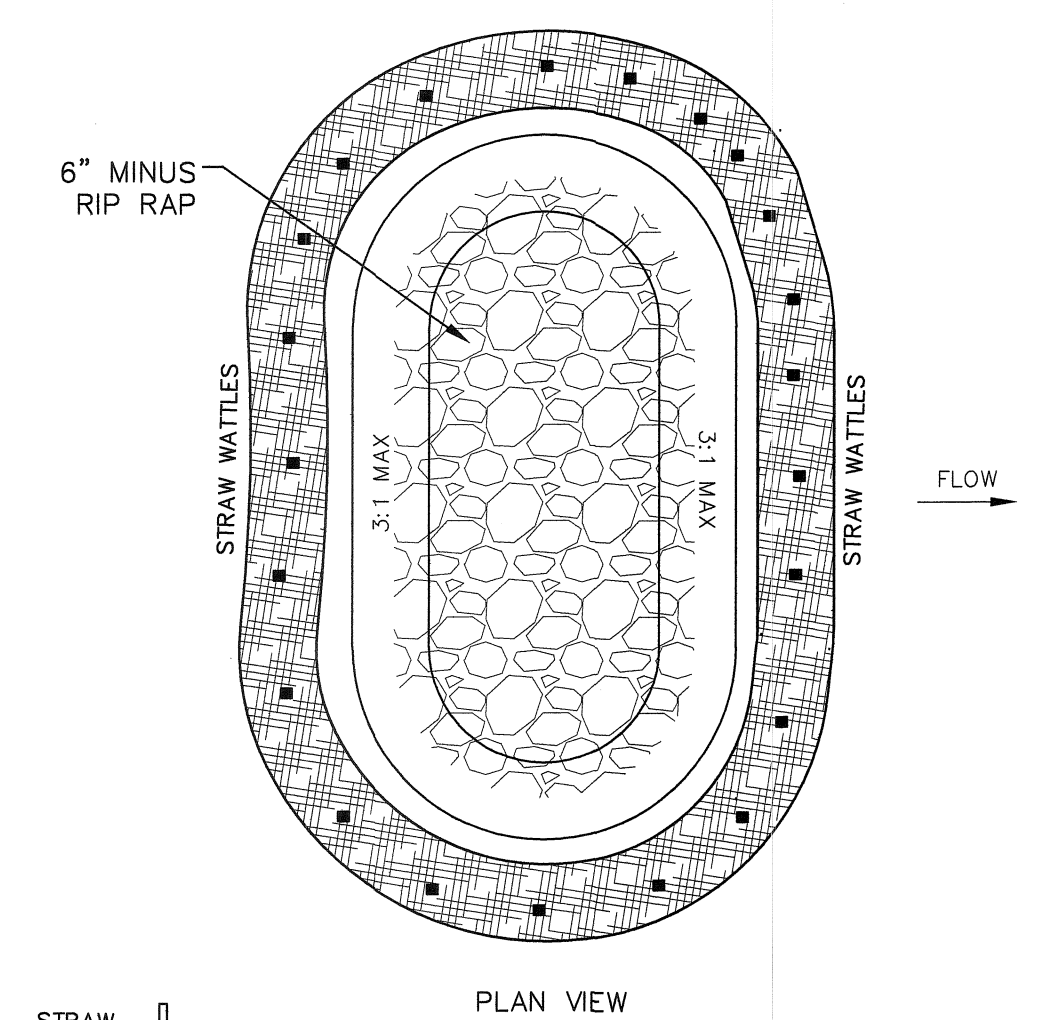


SILTATION CONTROL BARRIER DETAIL

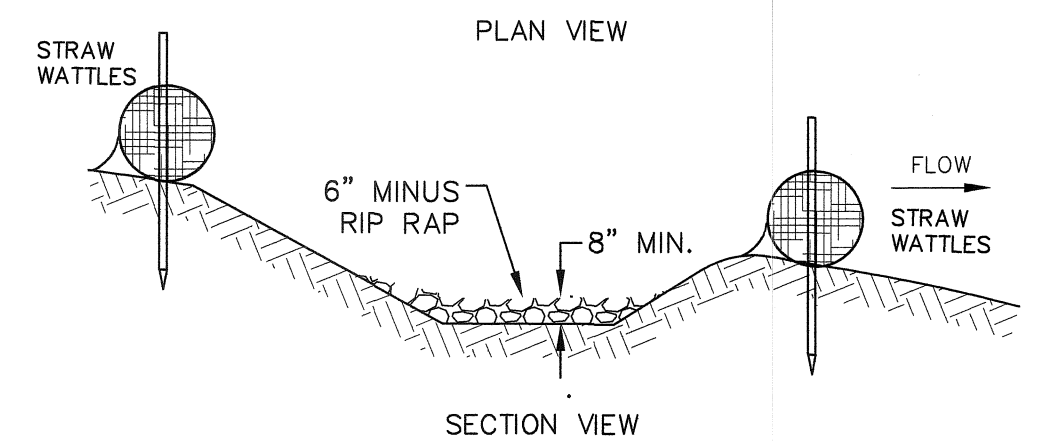


INLET PROTECTION
NOT TO SCALE

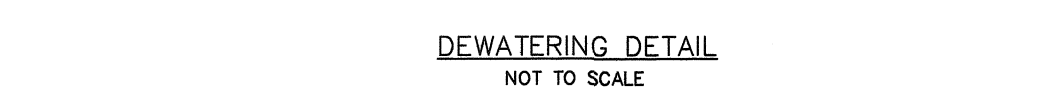
- CONSTRUCTION SPECIFICATIONS:
1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
 2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
 3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
 4. THE WIDTH OF THE ENTRANCE SHALL NOT BE PLACED LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
 5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE, FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
 6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPE THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
 7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
 8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.



PLAN VIEW



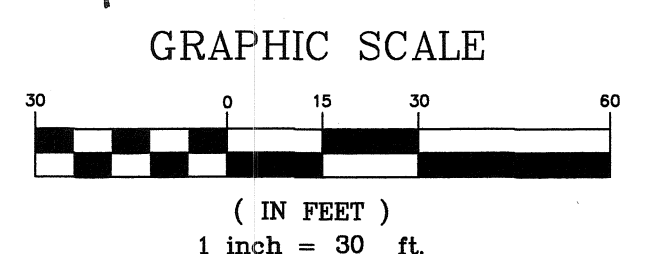
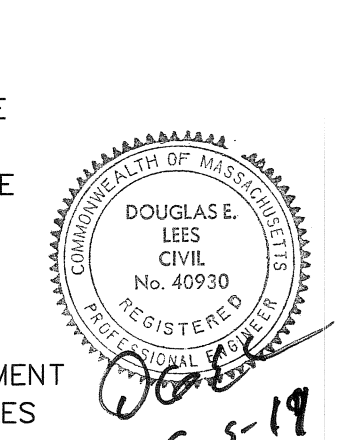
SECTION VIEW



DEWATERING DETAIL
NOT TO SCALE

LEGEND

- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING WATER GATE
- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING EDGE OF PAVEMENT
- PROPOSED STRAW WATTLES



NOT RELEASED FOR CONSTRUCTION

EROSION CONTROL PLAN
IN
WILMINGTON, MASSACHUSETTS

168 LOWELL STREET

SCALE: 1"=30'	DATE: SEPTEMBER 5, 2019	SHEET 7 OF 10	REV.
JOB NO. 48403			
PREPARED FOR 168 LOWELL STREET, LLC WILMINGTON, MASSACHUSETTS			
PREPARED BY Land Engineering & Environmental Services, Inc. 130 Middlesex Road, Tyngsboro, Massachusetts 01879 Telephone (978) 649-4642			

NO NOTICE OF APPEAL WAS RECEIVED DURING THE 20 DAYS NEXT AFTER RECEIPT AND RECORDING OF NOTICE FROM THE PLANNING BOARD OF APPROVAL OF THE PLAN.

TOWN CLERK DATE

1. THESE PLANS AND SPECIFICATIONS ARE INTENDED TO BE EXPLANATORY OF THE WORK TO BE DONE AND OF EACH OTHER, BUT SHOULD ANY OMISSIONS, OR DISCREPANCIES APPEAR, THEY SHALL BE SUBJECT TO CORRECTION AND INTERPRETATION BY THE DESIGN ENGINEER.
2. CONSTRUCTION DETAILS, MATERIALS, WORKMANSHIP AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF WILMINGTON REGULATIONS AND THE APPROPRIATE SECTIONS OF THE COMMONWEALTH OF MASSACHUSETTS STANDARD SPECIFICATIONS.

4. IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE DESIGN ENGINEER, AS WELL AS THE APPROVING AUTHORITIES, SHALL BE NOTIFIED IN WRITING BEFORE CONSTRUCTION.

6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SEE THAT ALL PERMITS AND APPROVALS ARE OBTAINED. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY CODES.

8. ALL UTILITIES AND PARKING SUBBASE MATERIALS TO BE TESTED BY CERTIFIED INDEPENDENT TESTING COMPANIES.

10. THE DISTURBED AREA SHALL BE KEPT TO A MINIMUM, AND THE DURATION OF EXPOSURE SHALL BE LESS THAN A MAXIMUM OF SIX WEEKS.

A cross-sectional diagram showing the installation of a water pipe under a pavement surface. The diagram is divided into two main sections by a vertical line: "CROSS COUNTY" on the left and "PAVEMENT" on the right. On the left, a "C.L.D.I. WATER PIPE" is shown at the bottom, surrounded by "GRAVEL BEDDING 8" MIN.". Above the bedding is a layer of "SUTABLE EXCAVATED MATERIAL HAND PLACED & COMPACTED." with a "1' MIN." thickness. Above this is another layer of "SUTABLE EXCAVATED MATERIAL THOROUGHLY COMPACTED." with a "1' MIN." thickness. The top of the left side is labeled "RESTORE SURFACE TO ORIGINAL GRADE" with a "MIN. COVER 5'" dimension. On the right, the "PAVEMENT" section shows an "EXISTING PAVEMENT" layer on top of a "12" GRAVEL" layer. The bottom of the right side is labeled "O.D. OF PIPE PLUS 12" MIN. TO 18" MAX." with a dimension line. The bottom of the left side is labeled "LEDGE" and "EARTH".

CROSS COUNTY

PAVEMENT

RESTORE SURFACE TO ORIGINAL GRADE

MIN. COVER 5"

95% MINIMUM COMPACTION REQUIREMENT PER AASHTO T-99

EXISTING PAVEMENT

12" GRAVEL

SUTABLE EXCAVATED MATERIAL THOROUGHLY COMPACTED.

1' MIN.

GRAVEL BEDDING 8" MIN.

C.L.D.I. WATER PIPE

SUTABLE EXCAVATED MATERIAL HAND PLACED & COMPACTED. NO STONES LARGER THAN 2"

1' MIN.

LEDGE

EARTH

O.D. OF PIPE PLUS 12" MIN. TO 18" MAX.

TABLE OF BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR		WATER MAIN FITTINGS	
SIZE OF MAIN (IN.)	45° BEND	TEES & PLUGS	22 1/2° BEND
8" & LESS	8	10	8
10" & 12"	22	16	13

CONCRETE BACKING AGAINST UNDISTURBED MATERIAL

TYPICAL BEND
NOT TO SCALE

CONCRETE BACKING AGAINST UNDISTURBED MATERIAL

TYPICAL TEE
NOT TO SCALE

Diagram illustrating the connection of a Service Branch or Lateral to a Sewer Main, showing both Plan and Elevation views.

PLAN View:

- SEWER MAIN
- 5' SHORT RADIUS CURVE
- SERVICE BRANCH OR LATERAL
- PLAN

ELEVATION View:

- WYE FITTING ON NEW INSTALLATIONS; SADDLE OR WYE ON EXISTING CONNECTIONS TO EXISTING MAIN
- MIN. SLOPE $\frac{1}{4}$ " PER FOOT
- 45°
- SERVICE BRANCH OR LATERAL
- ELEVATION

The drawing consists of three parts: an elevation view and two detail views.

- ELEVATION VIEW:** A cross-section of a manhole. At the top, a "CAST IRON FRAME & COVER (SEWER)" is shown above the "FINISH GRADE". The manhole walls are made of "MH STEPS" with a "JOINT" indicated by a circle and the text "See Joint Detail". The interior is labeled "INVERT TO BE INVERTED ARCH W/RED SEWER BRICK". The bottom of the manhole is an "OUTLET" with a "FLEXIBLE PIPE SLEEVE". The base consists of "12\" MIN. COMPACTED SELECT GRAVEL" on a "COMPACTED SUBBASE". The riser section is labeled "11 1/2' ± (6'-0\" Max.)" and "3'-0\"". The total height is labeled "VARIES". The diameter is labeled "4'-0\"".
- FLAT ROOF SLAB (OPTIONAL):** A detail view showing a cross-section of a flat roof slab with a width of "4'-10\"" and a thickness of "8\"".
- JOINT DETAIL:** A detail view of the manhole joint showing a "1 1/2\" gap, a "3/4\" thick layer, and a "2 3/4\" wide section, with a total height of "4 1/2\"".

NOT RELEASED FOR CONSTRUCTION

168 LOWELL STREET

PREPARED FOR
168 LOWELL STREET, LLC
WILMINGTON, MASSACHUSETTS

PREPARED BY
Land Engineering & Environmental Services, Inc.
130 Middlesex Road, Tyngsboro, Massachusetts 01879
Telephone (978) 649-4642

NO NOTICE OF APPEAL WAS RECEIVED DURING THE 20 DAYS NEXT AFTER RECEIPT AND RECORDING OF NOTICE FROM THE PLANNING BOARD OF APPROVAL OF THE PLAN.

TOWN CLERK

DATE _____



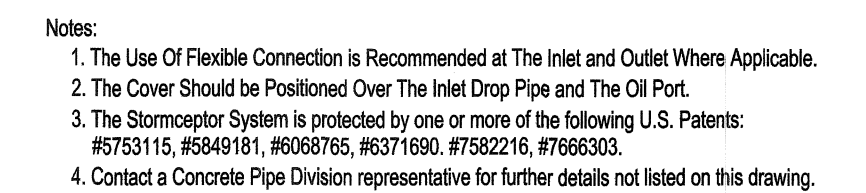
PIPING PRODUCTS SHALL BE PERFRATED, DUAL WALL CORRUGATED POLYETHYLENE PIPE AS MANUFACTURED BY HANCOR, INC. OR APPROVED ALTERNATE

DATE _____

NO NOTICE OF APPEAL WAS RECEIVED DURING THE 20 DAYS NEXT AFTER RECEIPT AND RECORDING OF NOTICE FROM THE PLANNING BOARD OF APPROVAL OF THE PLAN.

TOWN CLERK

DATE _____

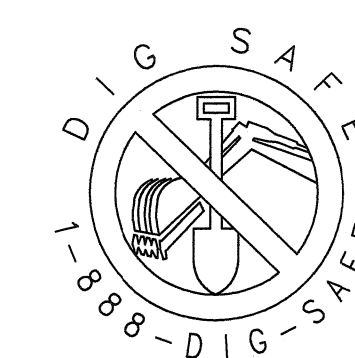
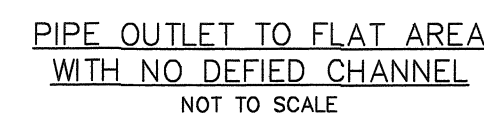
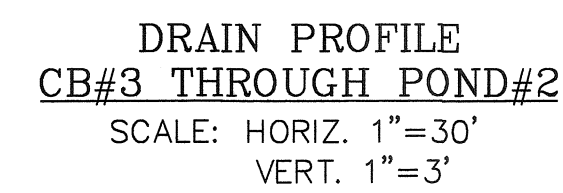
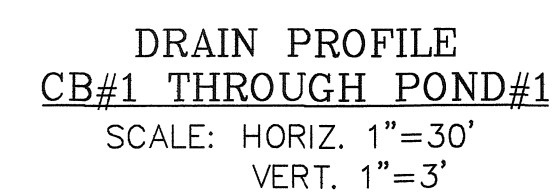


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