

ZONING:

ZONING DISTRICT: S-20
MIN. LOT AREA: 20,000 S.F.
MIN. LOT FRONTAGE: 120 FEET
MIN. LOT WIDTH: 80 FEET
MIN. FRONT YARD: 20 FEET
MIN. SIDE YARD: 15 FEET
MIN REAR YARD: 20 FEET
MAX. LOT COVERAGE: 25%

**LIST OF WAIVERS REQUESTED FROM
THE TOWN OF READING SUBDIVISION REGULATIONS**

- 1. SECTION 6.1.1.b.10 - REQUIRING TOPOGRAPHY BE SHOWN WITHIN 100 FEET OF LOCUS
- 2. SECTION 6.1.1.b.23 - REQUIRING DELINEATED BOUNDS OF ANY WETLAND RESOURCE AREAS ON THE PROPERTY OR WITHIN 200 FEET OF ANY PORTION OF THE PROPERTY.
- 3. SECTION 6.1.1.d.3 - REQUIRING A FULL TRAFFIC REPORT/STUDY
- 4. SECTION 6.1.1.d.4 - REQUIRING AN ENVIRONMENTAL IMPACT REPORT
- 5. SECTION 6.1.1.d.7(c) - REQUIRING ELECTRICAL SERVICE AND STREET LIGHTING
- 6. SECTION 7.1(d) - REQUIRING ALL ROADWAYS TO BE DESIGNED IN ACCORDANCE WITH AASHTO RECOMMENDATIONS
- 7. SECTION 7.1.1(a) - REQUIRING THE WIDTH OF STREET RIGHT OF WAYS TO BE SIXTY FEET AND CUL-DE-SAC TERMINATIONS OF STREET RIGHT-OF-WAY CIRCLE WITH A RADIUS OF 60 FEET.
- 8. SECTION 7.1.2(c) - REQUIRING THAT CHANGES IN GRADE OR VERTICAL CURVES OF STREETS BE DESIGNED IN ACCORDANCE WITH AASHTO BASED ON A DESIGN SPEED OF 30 MPH FOR SECONDARY STREETS.
- 9. SECTION 7.1.3 - REQUIRING A 30 FOOT MINIMUM PAVED WAY (24 FEET PROPOSED)
- 10. SECTION 7.1.5(a) - REQUIRING MAXIMUM DEAD END ROADWAY LENGTH OF 500 FEET (624.21 FEET PROPOSED...SIDELINE TO CENTER OF CUL-DE-SAC)
- 11. SECTION 7.2 - REQUIRING SIDEWALKS ALONG BOTH SIDES OF ROADWAY.
- 12. SECTION 7.1.7 - REQUIRING GRANITE CURBING TO BE INSTALLED (ASPHALT BERM PROPOSED).

**"SMALL LANE EXTENSION"
DEFINITIVE SUBDIVISION PLAN
PLAN OF LAND**

LOCATED IN
READING, MASSACHUSETTS
(MIDDLESEX COUNTY)

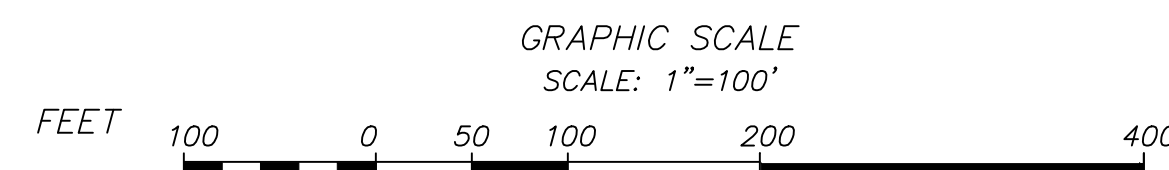
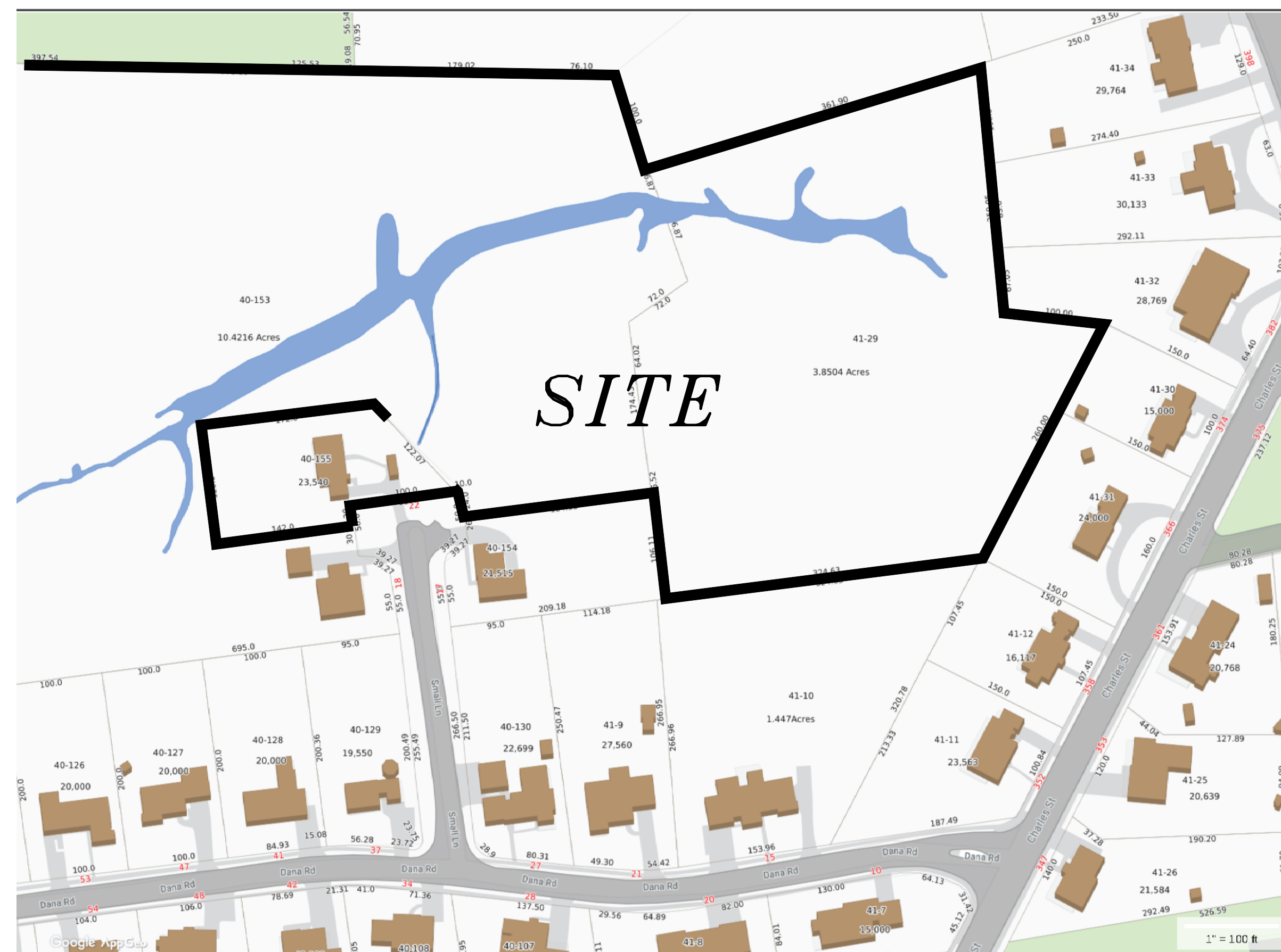
PREPARED BY
**SULLIVAN ENGINEERING
GROUP, LLC**

P.O. BOX 2004
WOBURN, MA 01888
(781) 854-8644

DATE: JULY 27, 2020
REVISED: DEC. 1, 2020
REVISED: APRIL 19, 2022
REVISED: OCT. 26, 2022
REVISED: FEB. 22, 2023

READING COMMUNITY PLANNING
& DEVELOPMENT COMMISSION

APPROVED _____, 20__



I, _____, TOWN CLERK OF THE TOWN OF READING, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE READING COMMUNITY PLANNING & DEVELOPMENT HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING THE TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

PREPARED FOR
DEL REY REALTY TRUST
C/O MEAGAN JOHNSON

I DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.



JOHN D. SULLIVAN III, P.E.

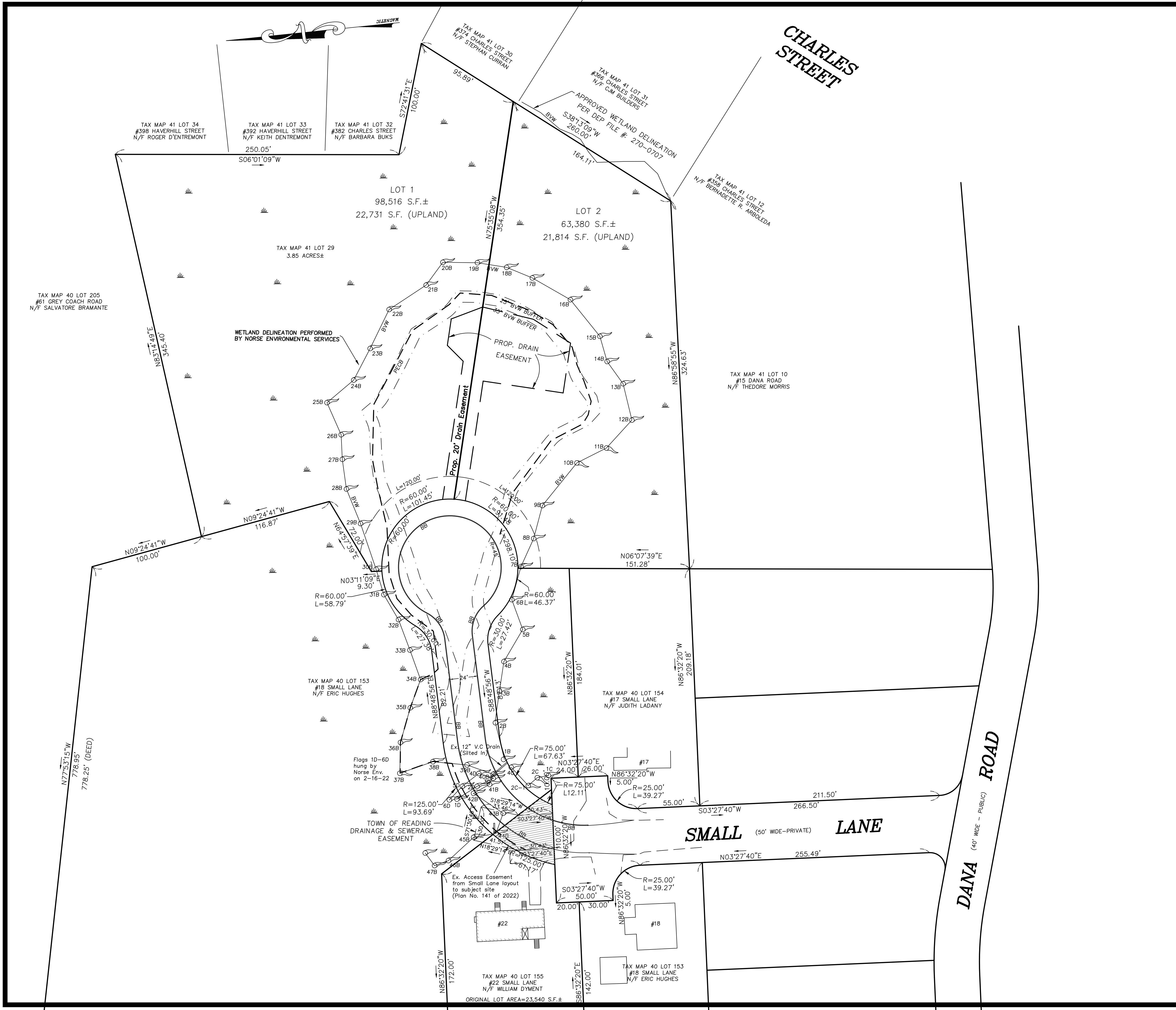
2-22-2023
DATE

SHEET INDEX:

- 1 COVER SHEET
- 2 LOT PLAN
- 3 EXISTING CONDITIONS PLAN
- 4 SITE, GRADING, & UTILITY PLAN
- 5 ROADWAY PLAN & PROFILE
- 6 CONSTRUCTION DETAILS
- 7 CONSTRUCTION DETAILS
- 8 WETLAND REPLICATION & CROSSING PLAN

TOWN CLERK

DATE



FOR REGISTRY OF DEEDS USE ONLY
 I DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

PAUL FINOCCHIO, PLS DATE

READING COMMUNITY PLANNING & DEVELOPMENT COMMISSION

APPROVED _____, 20__

ZONING INFORMATION:
 ZONING DISTRICT: S-20

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
4	2/22/23	NO CHANGES TO THIS SHEET	JDS	JDS
3	10/26/22	DRAINAGE	JDS	JDS
2	4/19/22	D-SERIES FLAGS ADDED	JDS	JDS
1	12/1/20	PAVEMENT WIDTH = 24 FEET	JDS	JDS

SMALL LANE EXTENSION

LOT PLAN OF LAND
 LOCATED IN
 READING, MASSACHUSETTS
 (MIDDLESEX COUNTY)

PREPARED FOR
 DEL REY R.T.
 SCALE: 1" = 40' DATE: JULY 27, 2020

PREPARED BY
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TEMPORARY BENCHMARK CHART:

TBM #	DESCRIPTION	ELEV.
1	SEWER MANHOLE RIM	83.38'

TREE REMOVAL INFORMATION:

A TOTAL OF 57 TREES (6" OR GREATER) TO BE REMOVED WITHIN ROADWAY AND GRADING AREAS.

LEGEND:

- 248— TWO FOOT CONTOUR
- DECIDUOUS TREE (> 6" DIA.)
- EVERGREEN TREE (> 6" DIA.)
- UTILITY POLE
- ⊙ SEWER MANHOLE
- S— SEWER MAIN
- W— COMPILED WATER MAIN
- CB □ CATCHBASIN
- D— DRAIN LINE
- BIT. BITUMINOUS
- CONC. CONCRETE
- EOP EDGE OF PAVEMENT
- TH ● TEST PIT
- 248x0 SPOT GRADE
- ⊗ PROP. TREE REMOVAL

FOR REGISTRY OF DEEDS USE ONLY
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PAUL FINOCCHIO, PLS DATE

READING COMMUNITY PLANNING & DEVELOPMENT COMMISSION

APPROVED _____, 20__

NOTES:

- THE TOPOGRAPHY, SITE DETAIL & SURFACE IMPROVEMENTS DEPICTED HEREON WERE OBTAINED FROM A PARTIAL FIELD SURVEY CONDUCTED ON OCT. 1-3, 2019 BY SULLIVAN ENGINEERING GROUP, LLC.
- THE LOCUS PROPERTY DEPICTED IS LOCATED IN ZONING DISTRICT S-20.
- THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED UPON A PARTIAL FIELD SURVEY AND COMPILATION OF PLANS OF RECORD. THE DESIGN ENGINEER DOES NOT WARRANT NOR GUARANTEE THE LOCATION OF ALL UTILITIES DEPICTED OR NOT DEPICTED. THE CONTRACTOR, PRIOR TO COMMENCEMENT OF CONSTRUCTION, SHALL VERIFY THE LOCATION OF ALL UTILITIES AND CONTACT DIG SAFE AT 1-888-344-7233.
- THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT, VISIBLE USES OF THE LAND; HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.
- THE ELEVATIONS DEPICTED HEREON WERE BASED UPON THE 1929 NGVD DATUM.
- THE LOCUS PROPERTY IS NOT LOCATED WITHIN A FLOOD ZONE AS DEPICTED ON THE LATEST FLOOD INSURANCE RATE MAP.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
4	2/22/23	NO CHANGES THIS SHEET	JDS	JDS
3	10/26/22	ADD DRAINAGE	JDS	JDS
2	4/19/22	D SERIES FLAGS ADDED	JDS	JDS
1	12/1/20	TREE REMOVAL	JDS	JDS

SMALL LANE EXTENSION

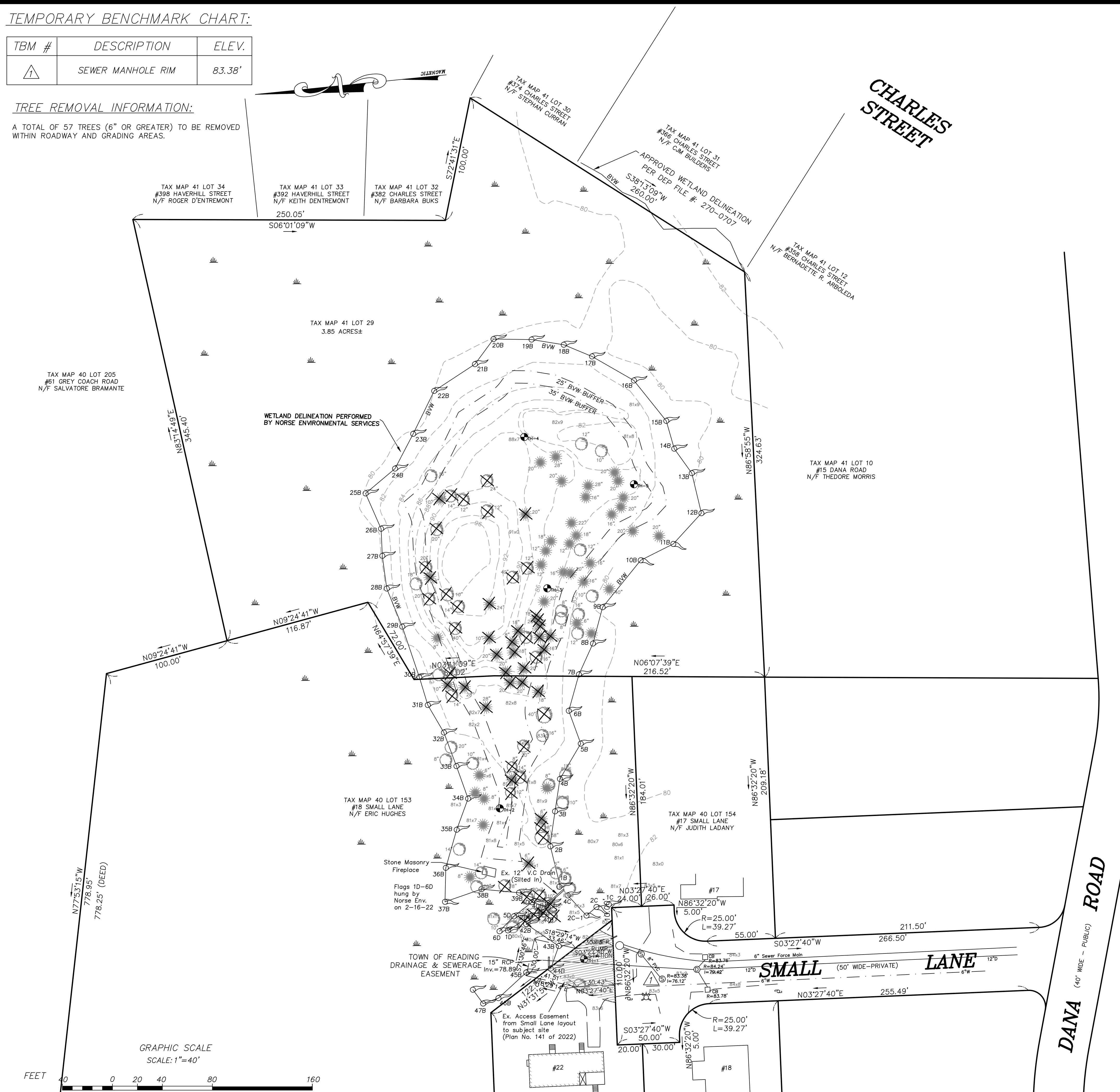
EXISTING CONDITIONS PLAN
LOCATED IN
READING, MASSACHUSETTS
(MIDDLESEX COUNTY)

PREPARED FOR
DEL REY R.T.

SCALE: 1" = 40' DATE: JULY 27, 2020

PREPARED BY
SULLIVAN ENGINEERING GROUP, LLC
P.O. BOX 2004
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SHEET No. 3 OF 8



SOILS INFORMATION:

TEST PIT WAS PERFORMED BY JOHN D. SULLIVAN III, P.E., C.S.E. ON 11/5/19

TEST PIT: TH-1
ELEV.=82.9'
MOTTLING @ 28" (ELEV.=80.5')
0'-4" HORIZON A: SANDY LOAM 10 YR 3/3
4'-13" HORIZON Bw: LOAMY SAND 10 YR 6/8
13'-50" C-LAYER: LOAMY SAND 2.5 Y 5/4
WATER STANDING @ 43"

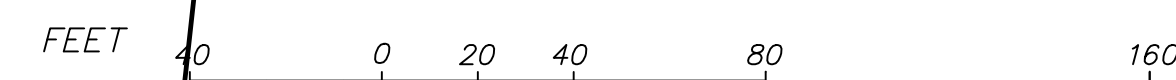
TEST PIT: TH-2
ELEV.=81.5'
MOTTLING @ 24" (ELEV.=79.5')
0'-6" HORIZON A: SANDY LOAM 10 YR 3/3
6'-15" HORIZON Bw: LOAMY SAND 10 YR 6/8
15'-55" C-LAYER: M-C SAND 2.5 Y 5/4
WATER STANDING @ 28"

TEST PIT: TH-3
ELEV.=85.2'
MOTTLING @ 38" (ELEV.=82.0')
0'-5" HORIZON A: SANDY LOAM 10 YR 3/3
5'-14" HORIZON Bw: LOAMY SAND 10 YR 6/8
14'-67" C-LAYER: M-C SAND 2.5 Y 5/4
WATER STANDING @ 48"

TEST PIT: TH-4
ELEV.=86.1'
MOTTLING @ NONE
0'-4" HORIZON A0: SANDY LOAM 10 YR 3/3
4'-15" HORIZON Bw: LOAMY SAND 10 YR 6/8
15'-80" C-LAYER: M-C SAND 2.5 Y 5/4
WATER STANDING @ 72" (ELEV.=80.1')

TEST PIT: TH-5
ELEV.=84.3'
MOTTLING @ NONE
0'-4" HORIZON A0: SANDY LOAM 10 YR 3/3
4'-13" HORIZON Bw: LOAMY SAND 10 YR 6/8
13'-68" C-LAYER: M-C SAND 2.5 Y 5/4
WATER STANDING @ 55" (ELEV.=79.7')

GRAPHIC SCALE
SCALE: 1" = 40'



PREVIOUS VARIANCES AND/OR SPECIAL PERMITS:

THERE ARE NO KNOWN VARIANCES OR SPECIAL PERMITS ISSUED FROM ANY REGULATORY BOARD OR COMMISSION WITHIN THE TOWN OF READING FOR THE SUBJECT SITE.

TEMPORARY BENCHMARK CHART:

TBM #	DESCRIPTION	ELEV.
△	SMH RIM	83.38'

NOTES:

- 1) THE SEWER CONNECTION 1/1 FEE IS REQUIRED FOR THE NEW HOUSES PRIOR TO OCCUPANCY.
- 2) ENGINEERING DIVISION SHALL BE NOTIFIED 72 HOURS IN ADVANCE TO MARK OUT TOWN UTILITIES.
- 3) ALL WATER, SEWER, CURB/CUT, STREET OPENING, & JACKIE'S LAW EXCAVATION PERMITS SHALL BE OBTAINED AT THE ENGINEERING DIVISION PRIOR TO ANY EXCAVATION.
- 4) ALL UTILITY WORK, INCLUDING DRAINAGE INSTALLATION SHALL BE INSPECTED BY THE ENGINEERING DIVISION.
- 5) THE DEVELOPER OR OWNER SHALL SUBMIT A CONSTRUCTION SCHEDULE OF PROPOSED WORK.
- 6) ALL INSPECTIONS SHALL BE SCHEDULED 24 HOURS IN ADVANCE.
- 7) AN APPROVED SITE AS-BUILT PLAN SHALL BE SUBMITTED TO THE ENGINEERING DIVISION WITHIN 60 DAYS OF CERTIFICATE OF OCCUPANCY. THE AS-BUILT SHALL BE PROVIDED ON PAPER COPY AND ELECTRONIC ACAD FORMAT.

FOR REGISTRY OF DEEDS USE ONLY
I DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

PAUL FINOCCHIO, PLS DATE

READING COMMUNITY PLANNING & DEVELOPMENT COMMISSION

STREAM CROSSING "OPENNESS" CALCULATIONS:

BANKFULL WIDTH = 10' (WIDEST WIDTH)
MINIMUM SPAN = 1.2 x BANKFULL WIDTH = 12'
PROPOSED SPAN = 17'

OPENNESS > 0.82 = CULVERT AREA/PIPE LENGTH
= 2' x 17'/41.0'
= 0.83 > 0.82 (MEETS STANDARD)

MIN. OPENNESS HEIGHT = 2 FEET
PROPOSED OPENNESS HEIGHT = 2' (MEETS STANDARD)

WETLAND REPLICATION & CROSSING

SEE SHEET 8 OF 8

APPROVED _____, 20__

GRAPHIC SCALE
SCALE: 1"=40'



REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
4	2/22/23	PEER REVIEW COMMENTS	JDS	JDS
3	10/26/22	ADD DRAINAGE	JDS	JDS
2	4/19/22	MODIFY ROADWAY LAYOUT	JDS	JDS
1	12/1/20	24 FOOT PAVED ROAD	JDS	JDS

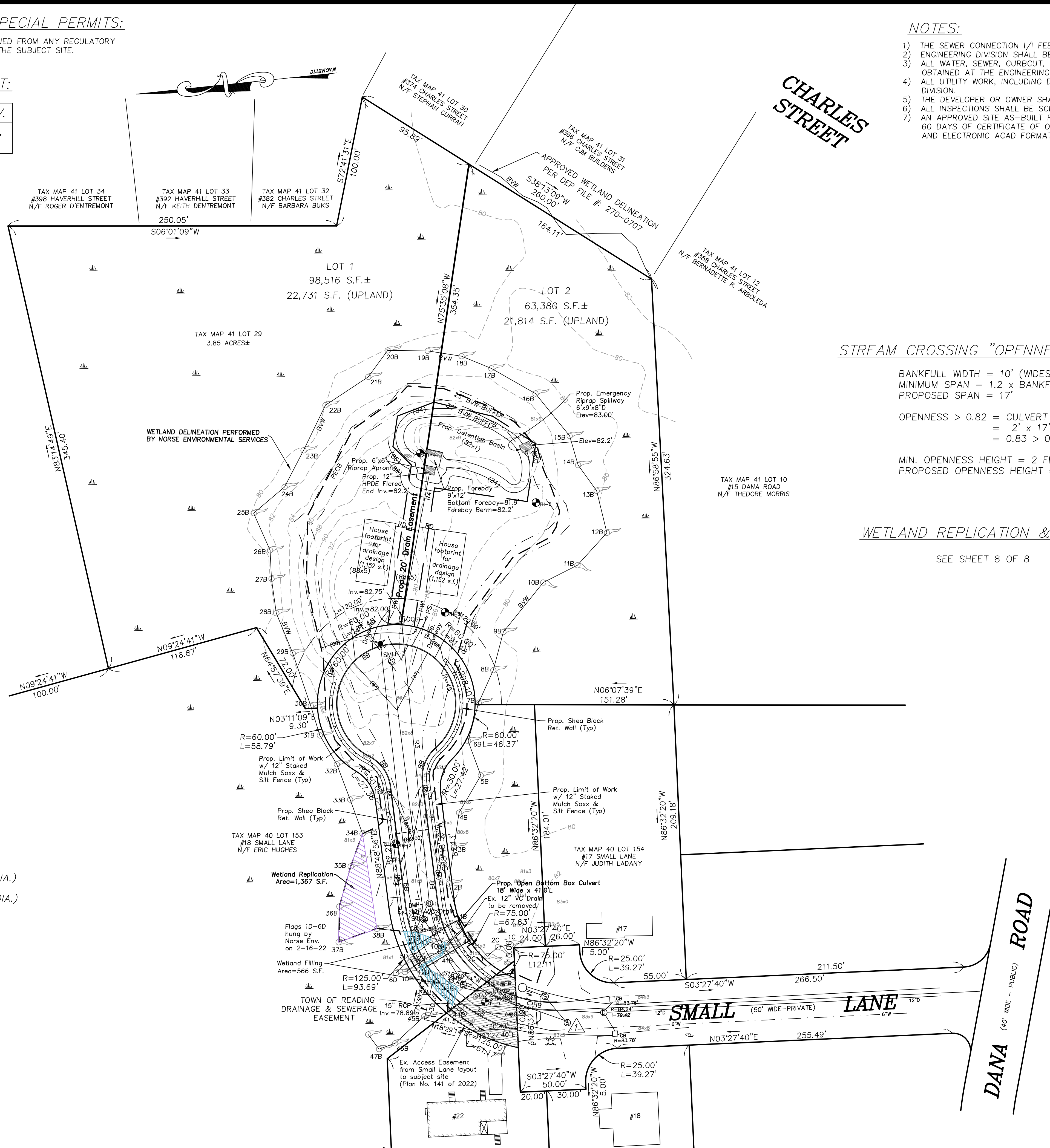
SMALL LANE EXTENSION

SITE, GRADING, & UTILITY PLAN
LOCATED IN
READING, MASSACHUSETTS
(MIDDLESEX COUNTY)

PREPARED FOR
DEL REY R.T.
SCALE: 1"= 40' DATE: JULY 27, 2020

PREPARED BY
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SHEET No. 4 OF 8

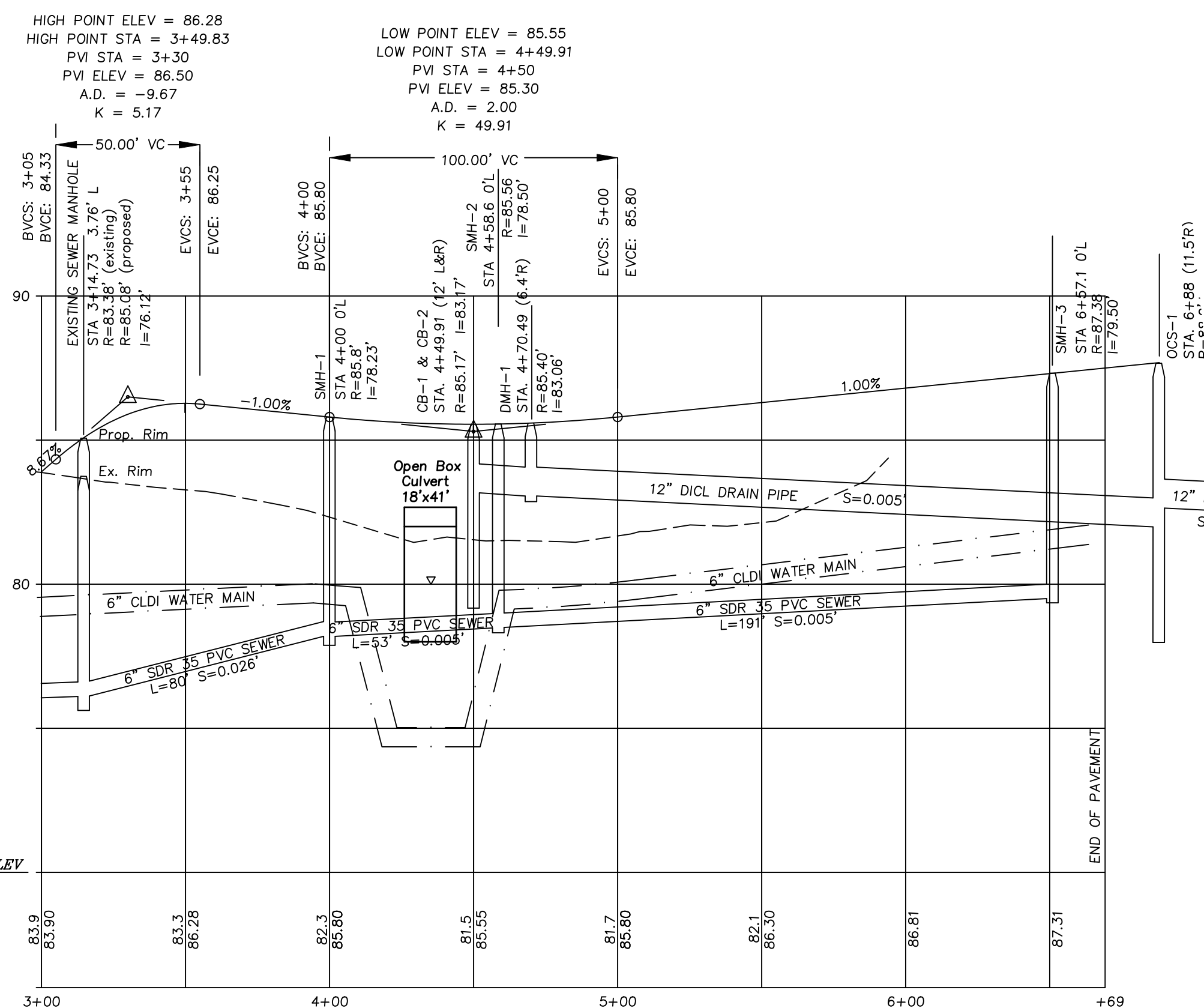


LEGEND:

- 248--- TWO FOOT CONTOUR
- DECIDUOUS TREE (> 6" DIA.)
- ⊗ EVERGREEN TREE (> 6" DIA.)
- ⊕ UTILITY POLE
- ⊙ SEWER MANHOLE
- S SEWER MAIN
- W COMPILED WATER MAIN
- CB CATCHBASIN
- D DRAIN LINE
- BIT. BITUMINOUS
- CONC. CONCRETE
- EOP EDGE OF PAVEMENT
- TH TEST PIT
- (100) PROP. CONTOUR

TEMPORARY BENCHMARK CHART:

TBM #	DESCRIPTION	ELEV.
△	SEWER MANHOLE RIM	83.38



FOR REGISTRY OF DEEDS USE ONLY
 I DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

PAUL FINOCCHIO, PLS DATE

READING COMMUNITY PLANNING & DEVELOPMENT COMMISSION

APPROVED _____, 20__

DRAINAGE STRUCTURE CHART:

STRUCTURE	RIM	INV. IN (SIZE/TYPE)	INV. OUT (SIZE/TYPE)
CB-1	85.17'	N/A	83.17' 12" DICL
CB-2	85.17'	N/A	83.17' 12" DICL
DMH-1	85.40'	83.06' 12" DICL	83.06' 12" DICL

REACH CHART:

REACH	LENGTH	SIZE	MATERIAL	SLOPE	BEG INV.	END INV.
R1	22'	12"	DICL	0.005	83.17'	83.06'
R2	16'	12"	DICL	0.007	83.17'	83.06'
R3	213'	12"	DICL	0.005	83.06'	82.00'
R4	111'	12"	HDPE	0.005	82.75'	82.20'

LEGEND:

- 248— TWO FOOT CONTOUR
- DECIDUOUS TREE (> 6" DIA.)
- EVERGREEN TREE (> 6" DIA.)
- UTILITY POLE
- ⊙ SEWER MANHOLE
- S— SEWER MAIN
- W— COMPILED WATER MAIN
- CB □ CATCHBASIN
- D— DRAIN LINE
- BIT. BITUMINOUS
- CONC. CONCRETE
- EOP EDGE OF PAVEMENT
- TH ● TEST PIT
- (100)— PROP. CONTOUR

SMALL LANE EXTENSION

ROADWAY PLAN & PROFILE
 LOCATED IN
 READING, MASSACHUSETTS
 (MIDDLESEX COUNTY)

PREPARED FOR
 DEL REY R.T.
 SCALE: 1" = 40' DATE: JULY 27, 2020

PREPARED BY
SULLIVAN ENGINEERING GROUP, LLC
 P.O. BOX 2004
 WOBURN, MA 01888
 (781) 854-8644

SHEET No. 5 OF 8



REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
4	2/22/23	PEER REVIEW COMMENTS	JDS	JDS
3	10/26/22	REVISED DRAINAGE	JDS	JDS
2	4/19/22	NO CHANGES THIS SHEET	JDS	JDS
1	12/1/20	NO CHANGES THIS SHEET	JDS	JDS

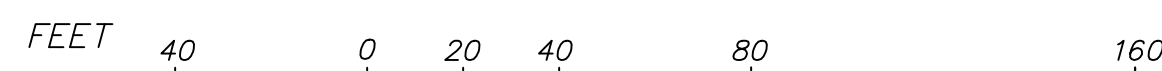
TAX MAP 41 LOT 29
 3.85 ACRES±

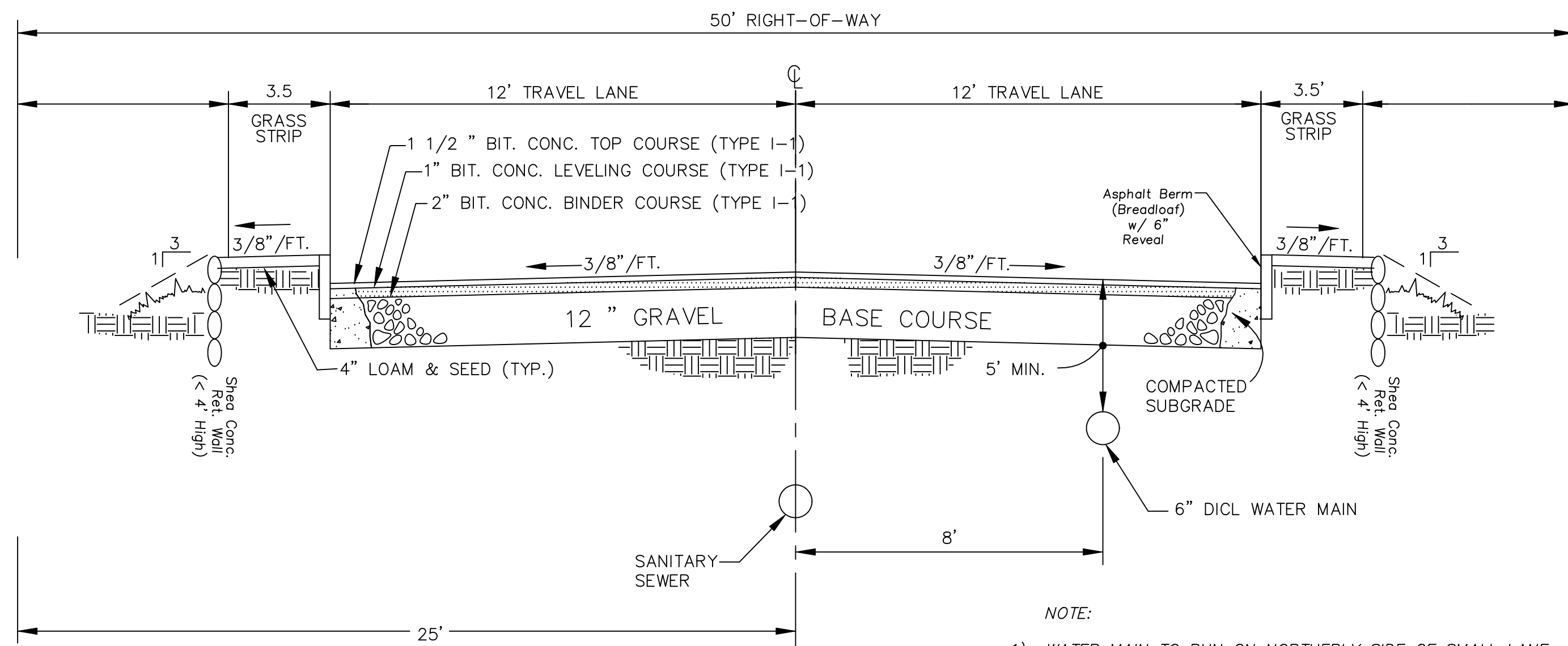
WETLAND DELINEATION PERFORMED
 BY NORSE ENVIRONMENTAL SERVICES

TAX MAP 40 LOT 153
 #18 SMALL LANE
 N/F ERIC HUGHES

TOWN OF READING
 DRAINAGE & SEWERAGE
 EASEMENT

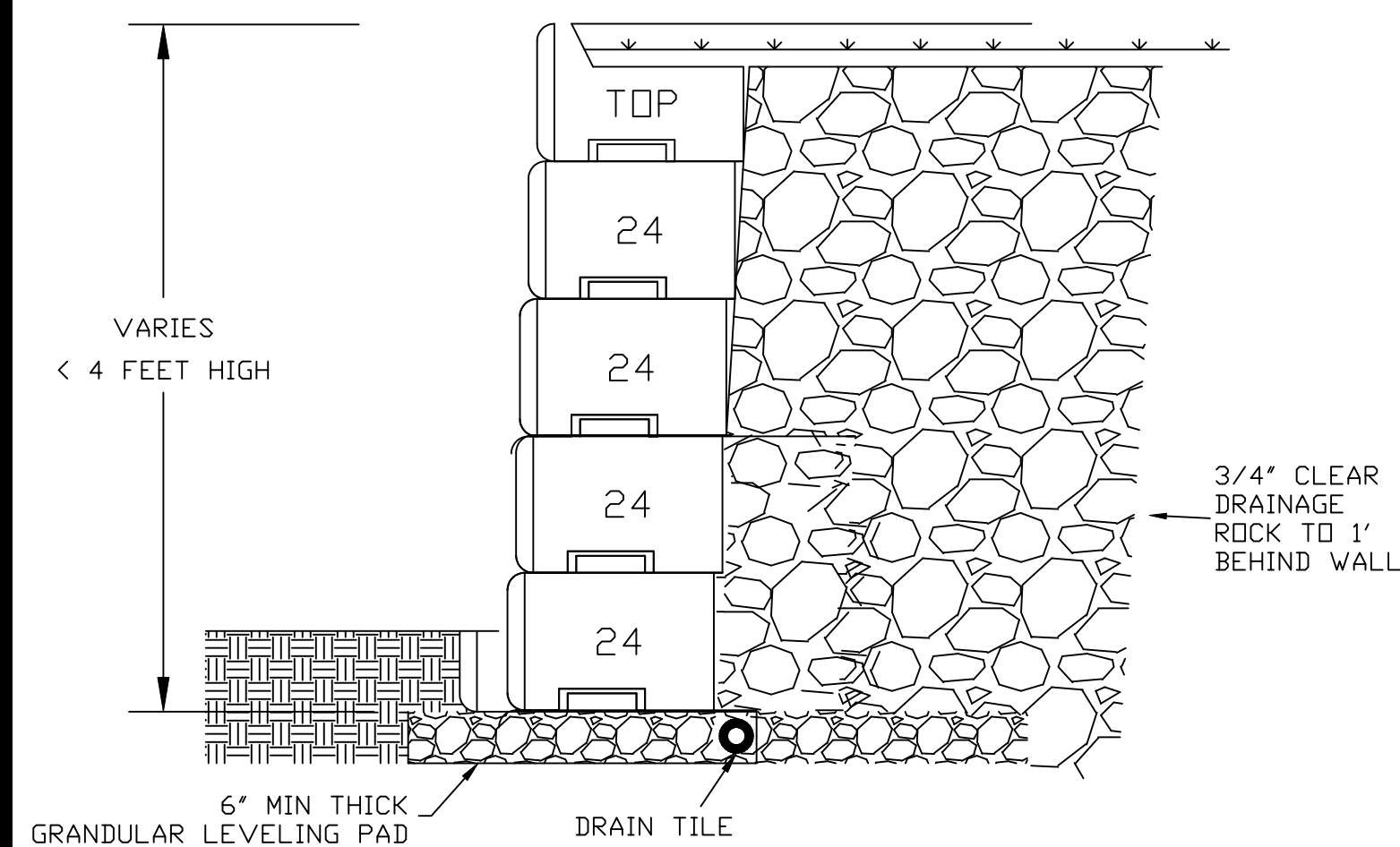
GRAPHIC SCALE
 SCALE: 1" = 40'





STANDARD CROSS-SECTION FOR STREET CONSTRUCTION (NOT TO SCALE)

- NOTE:
- 1) WATER MAIN TO RUN ON NORTHERLY SIDE OF SMALL LANE
 - 2) UNDERGROUND E.C. & T LOCATION TO BE COORDINATED WITH UTILITY COMPANIES.

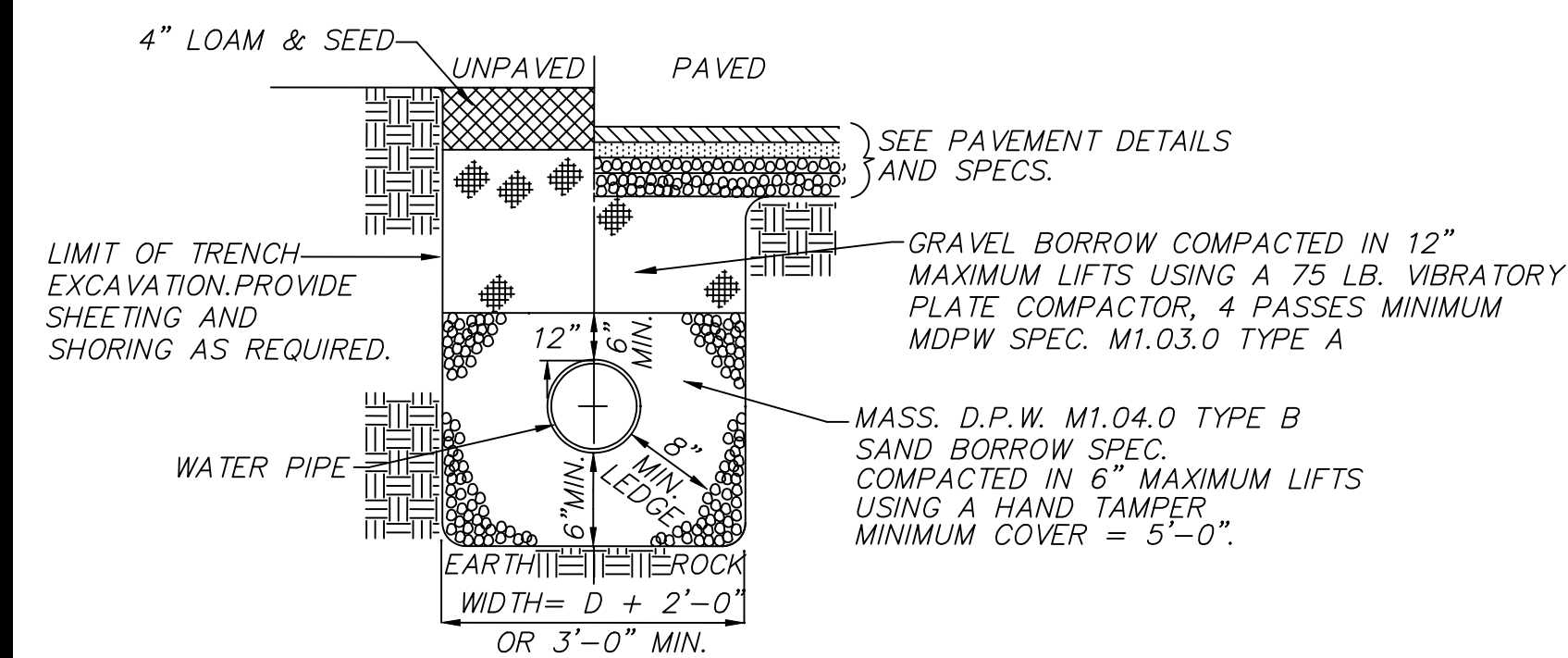


KEY ASSUMPTIONS AND NOTES:

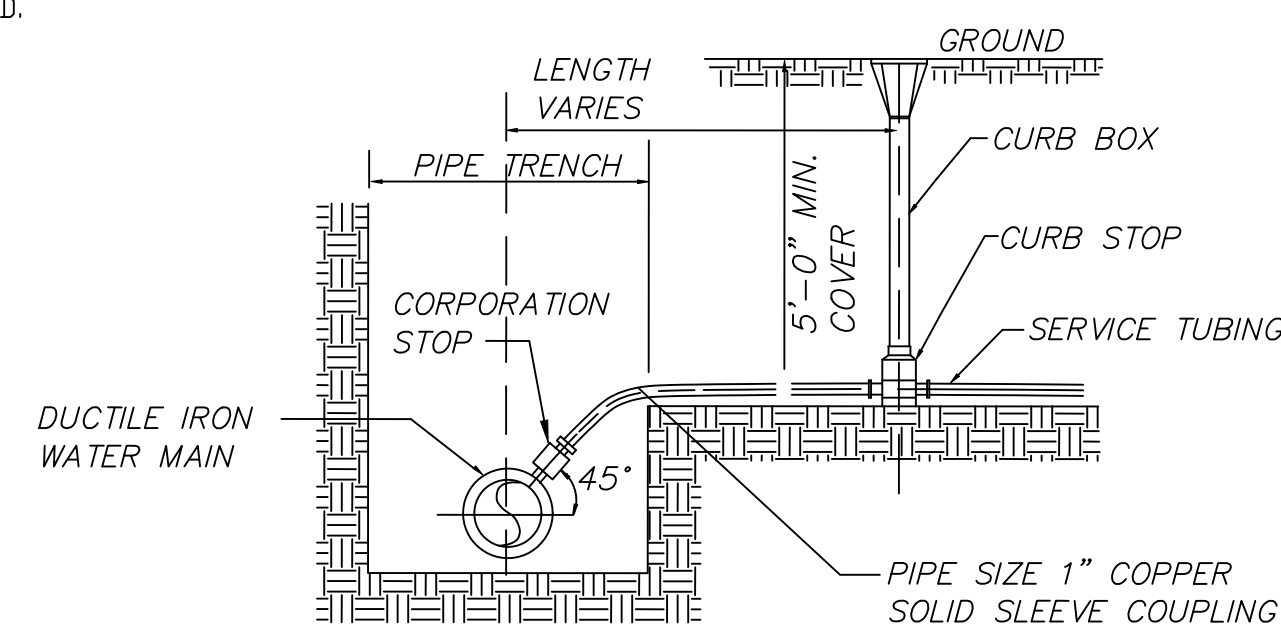
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. STANDARD FACE TEXTURE: NORTH SHORE GRANITE OR AVAILABLE BY SPECIAL ORDER: RUSTIC, LIMESTONE, OLD WORLD.
3. MINIMUM TURNING RADIUS 15 FEET.
4. 1' SETBACK PER ROW ON A STRAIGHT WALL (ANGLE OF BATTER 3.6°) CURVED WALL 1-2.7° PER ROW.

SHEA WALL SYSTEM TYPICAL WALL CROSS SECTION (NOT TO SCALE)

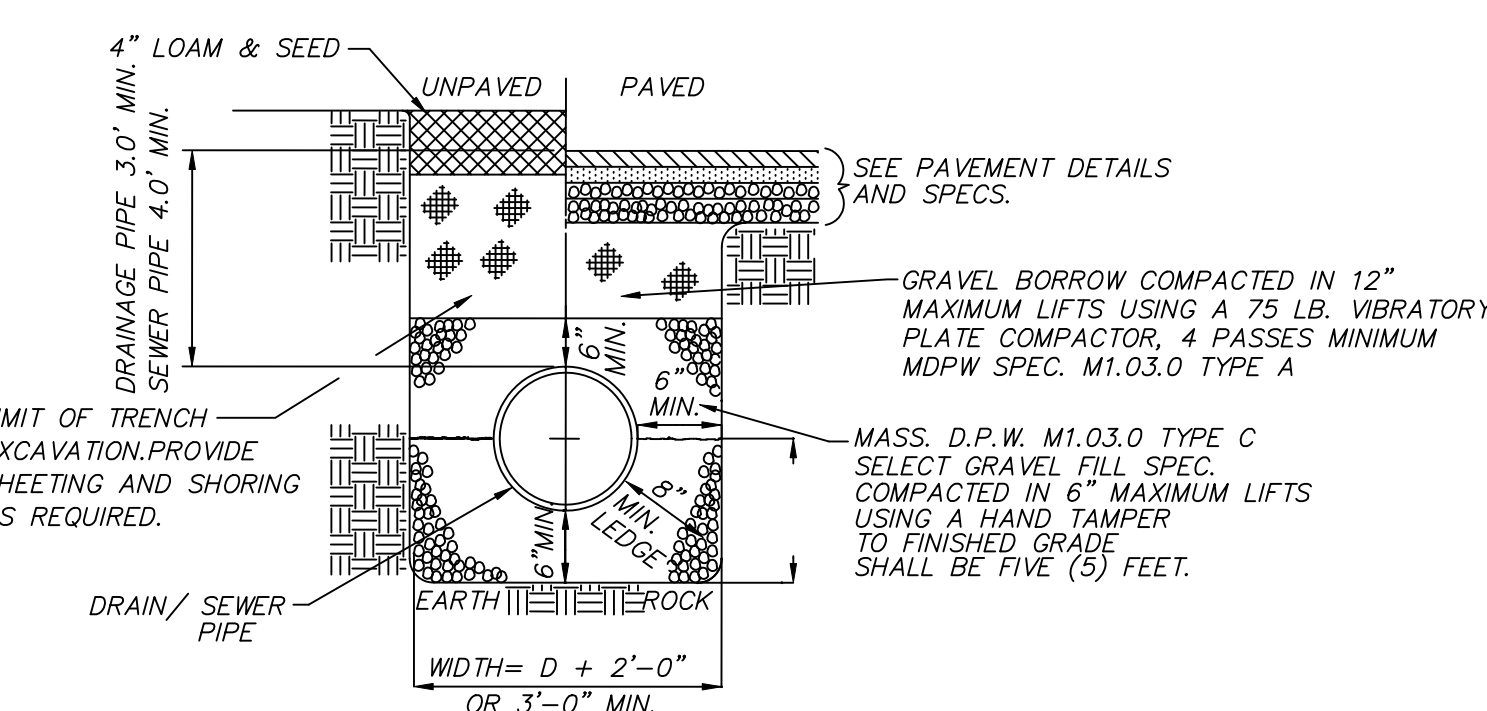
UNDERGROUND TELEPHONE, ELECTRIC, AND CABLE TO MEET DETAILS AND SPECIFICATIONS OF THE RESPECTIVE UTILITY COMPANY.



WATER TRENCH (NOT TO SCALE)



TYPICAL WATER SERVICE (NOT TO SCALE)



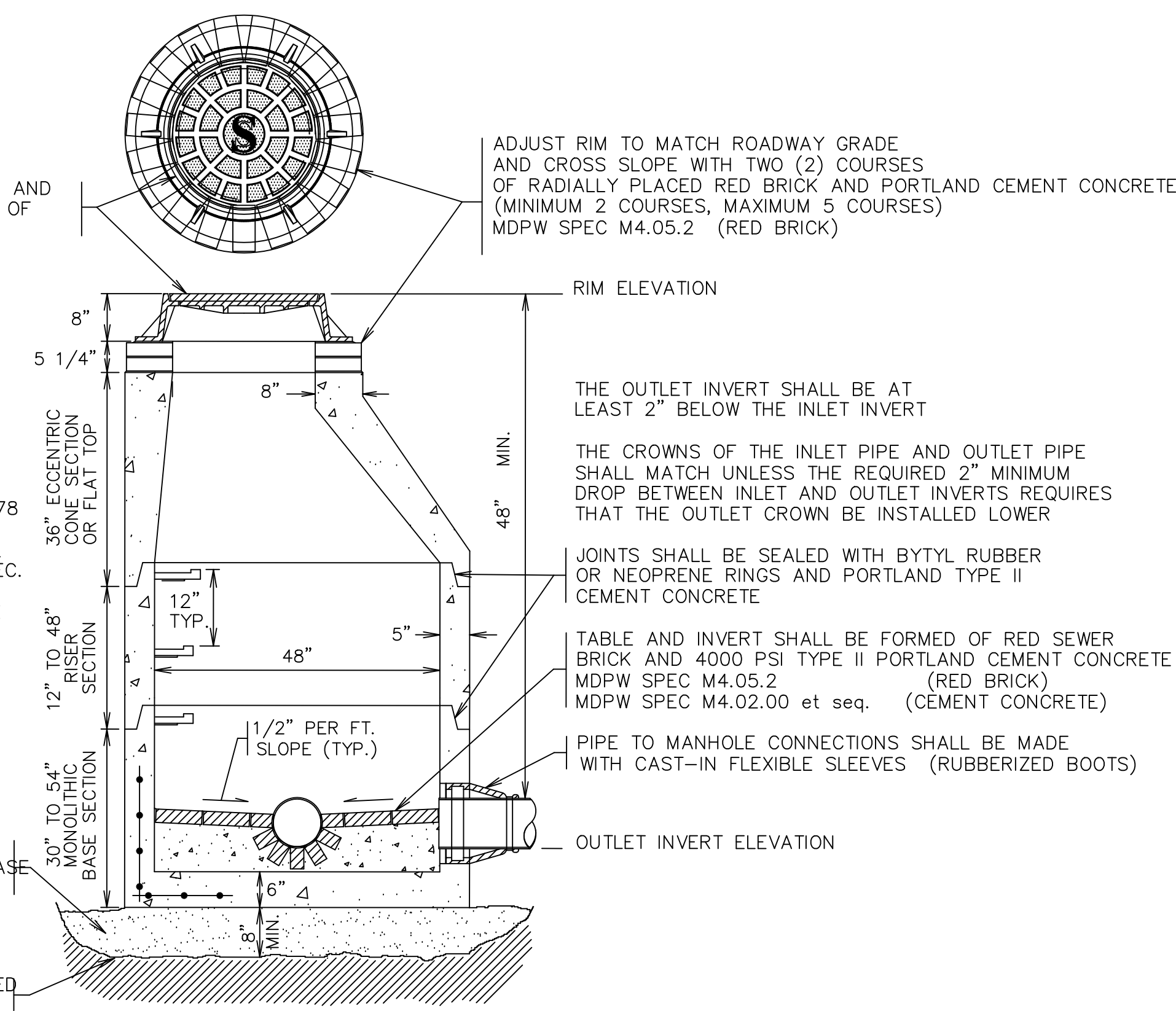
STORM DRAIN/SEWER TRENCH DETAIL (NOT TO SCALE)

SEWER MANHOLE FRAME AND COVER SHALL BE TOWN OF READING STANDARD

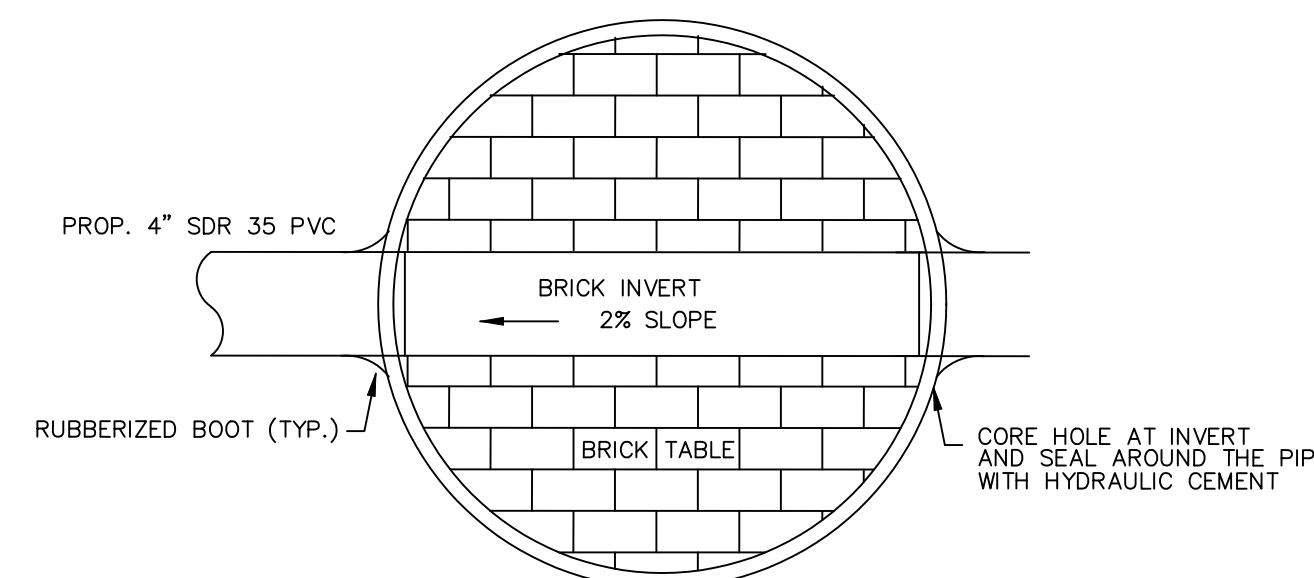
MANHOLE SECTIONS SHALL CONFORM TO ASTM SPEC C478

STEEL REINFORCEMENT SHALL CONFORM TO ASTM A185 SPEC.

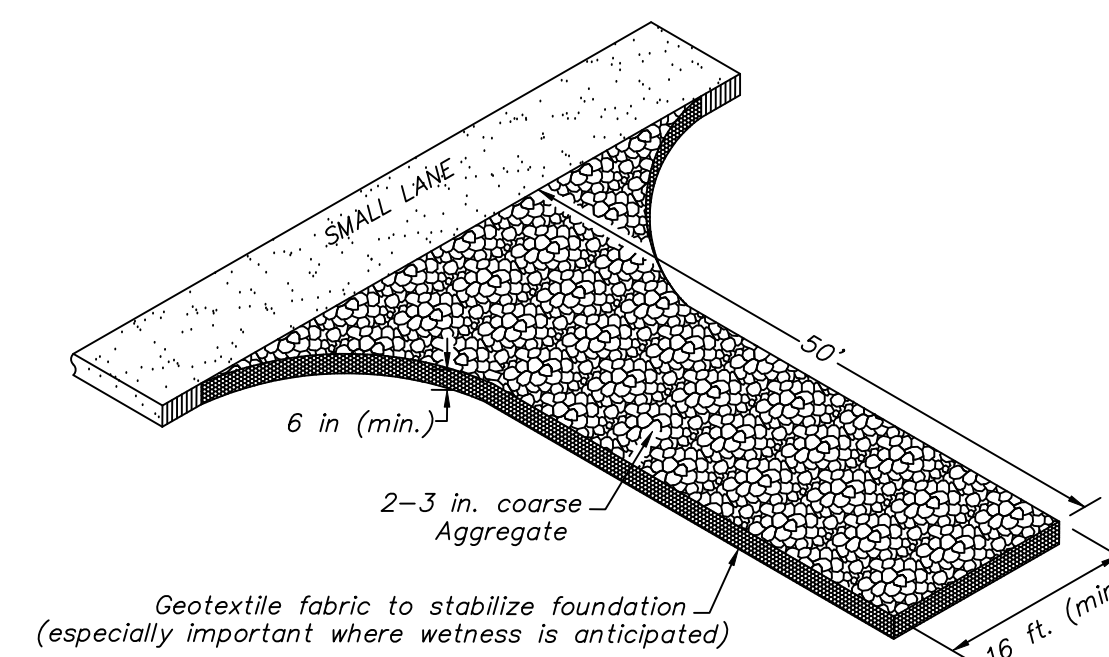
4000 PSI MINIMUM CONCRETE COMPRESSIVE STRENGTH



TYPICAL SEWER MANHOLE DETAIL (NOT TO SCALE)

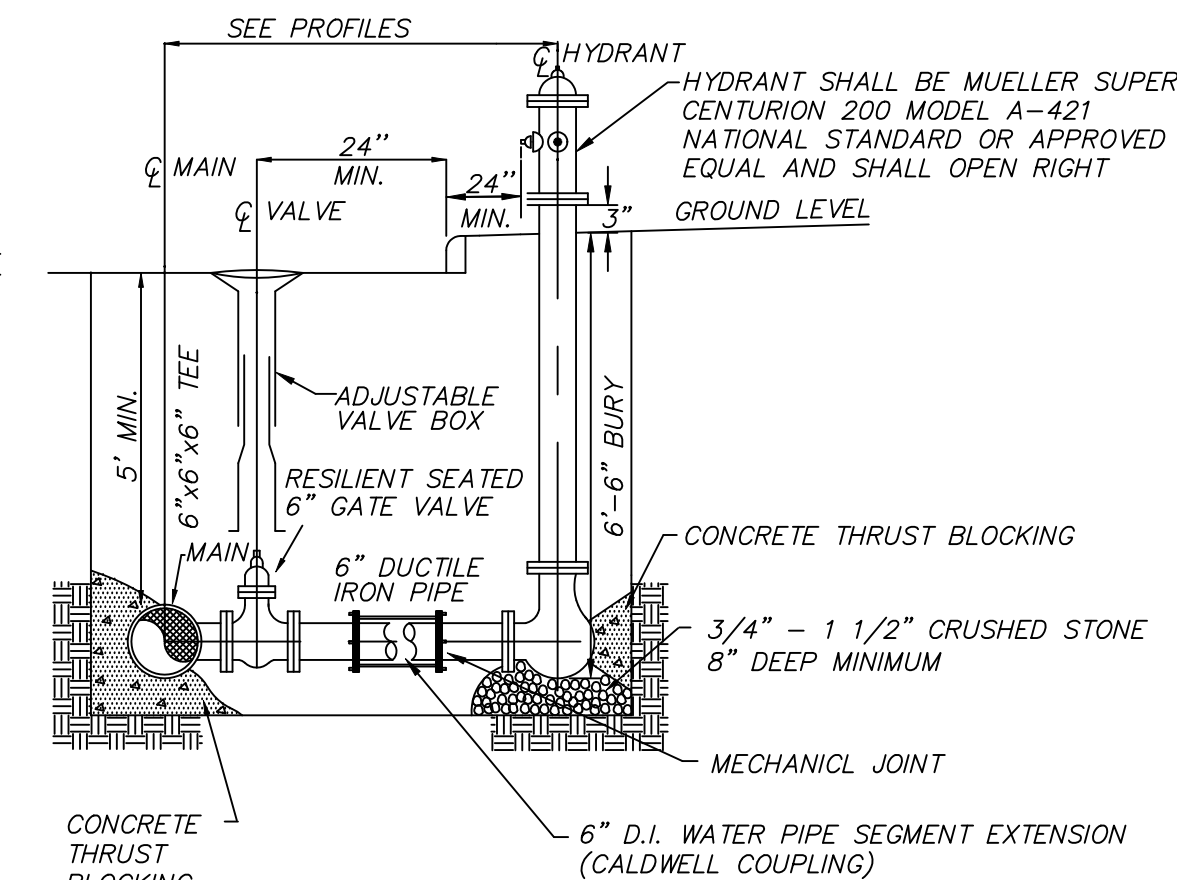


BRICK TABLE SEWER MANHOLE DETAIL (NOT TO SCALE)



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD (NOT TO SCALE)

NOTE: CONSTRUCT "TEMPORARY CONSTRUCTION ENTRANCE" AS SHOWN ON DETAIL PLAN PRIOR TO THE BEGINNING OF ANY CONSTRUCTION ACTIVITIES. ALL CONSTRUCTION VEHICLES SHALL EXIT THE SITE OVER THIS "TEMPORARY CONSTRUCTION ENTRANCE". THE CONTRACTOR SHALL USE THIS AREA TO REMOVE SOIL FROM THE TIRES OF CONSTRUCTION VEHICLES. "TEMPORARY CONSTRUCTION ENTRANCE" TO CONSIST OF SIX TO TWELVE INCHES OF TWO TO THREE INCH STONE.



HYDRANT AND GATE VALVE DETAIL W/ MECHANICAL JOINT COUPLING (NOT TO SCALE)

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
4	2/22/23	PEER REVIEW COMMENTS	JDS	JDS
3	10/26/22	NEW DETAILS	JDS	JDS
2	4/19/22	ROADWAY CROSS-SECTION; RET WALL	JDS	JDS
1	12/1/20	24 PAVED ROADWAY	JDS	JDS

SMALL LANE EXTENSION

CONSTRUCTION DETAILS
LOCATED IN
READING, MASSACHUSETTS
(MIDDLESEX COUNTY)

PREPARED FOR
DEL REY R.T.

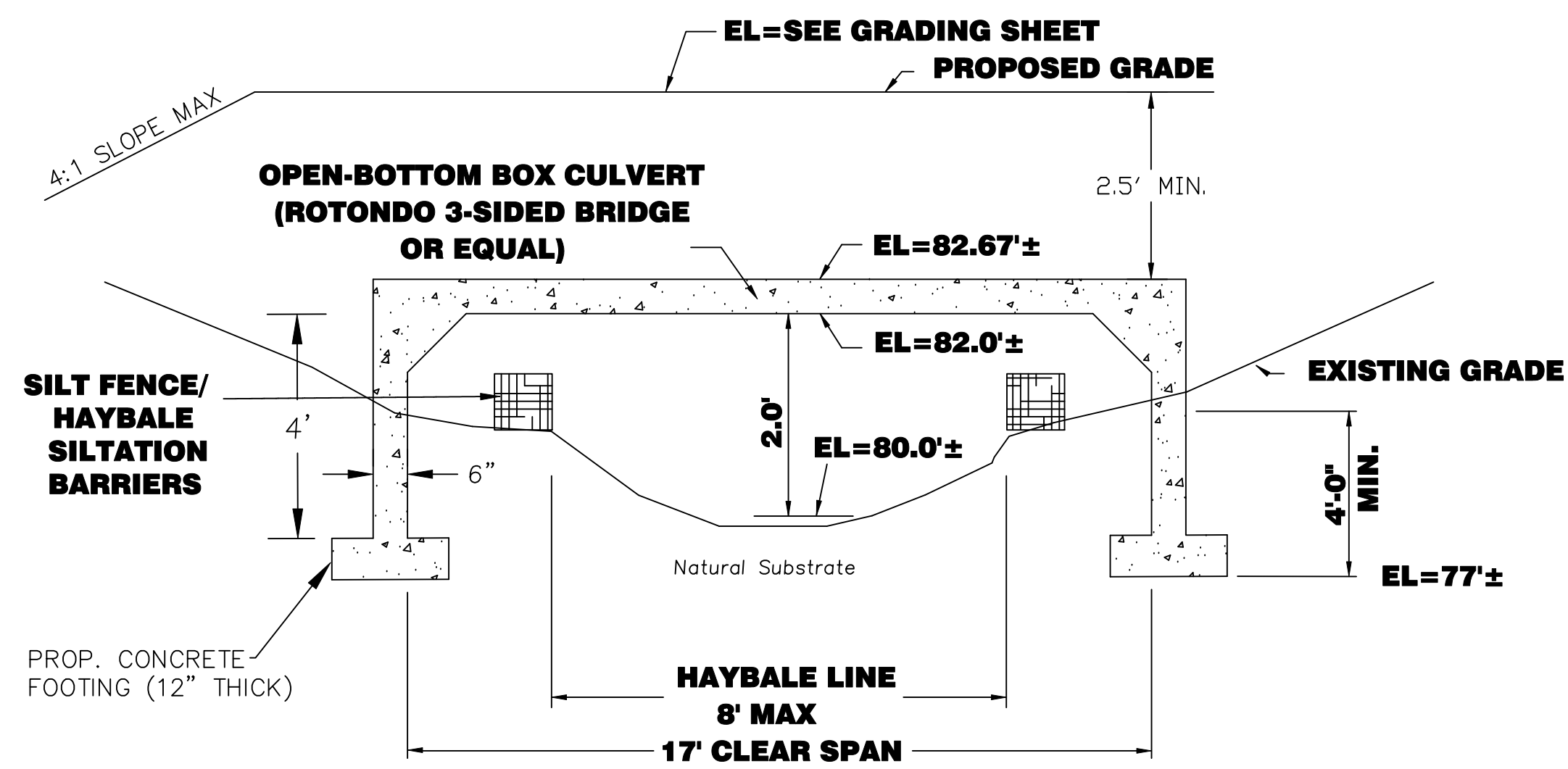
SCALE: N.T.S. DATE: JULY 27, 2020

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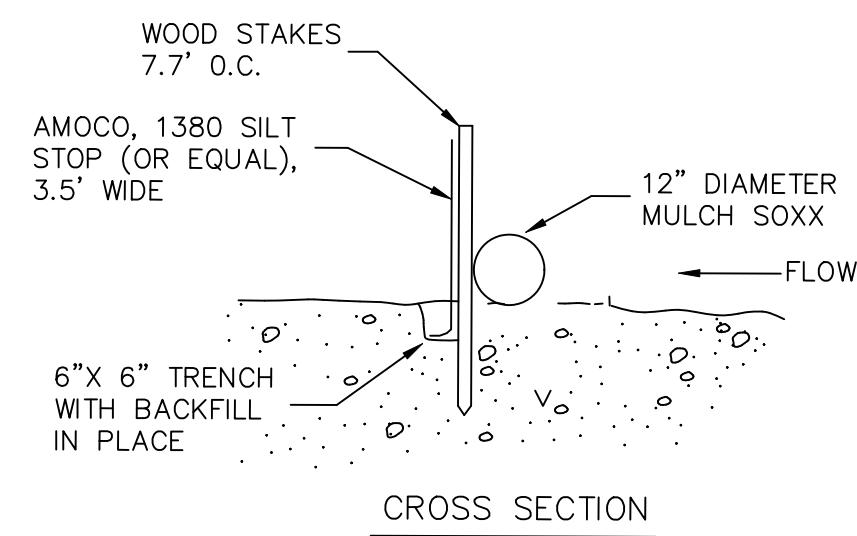
SHEET No. 6 OF 8



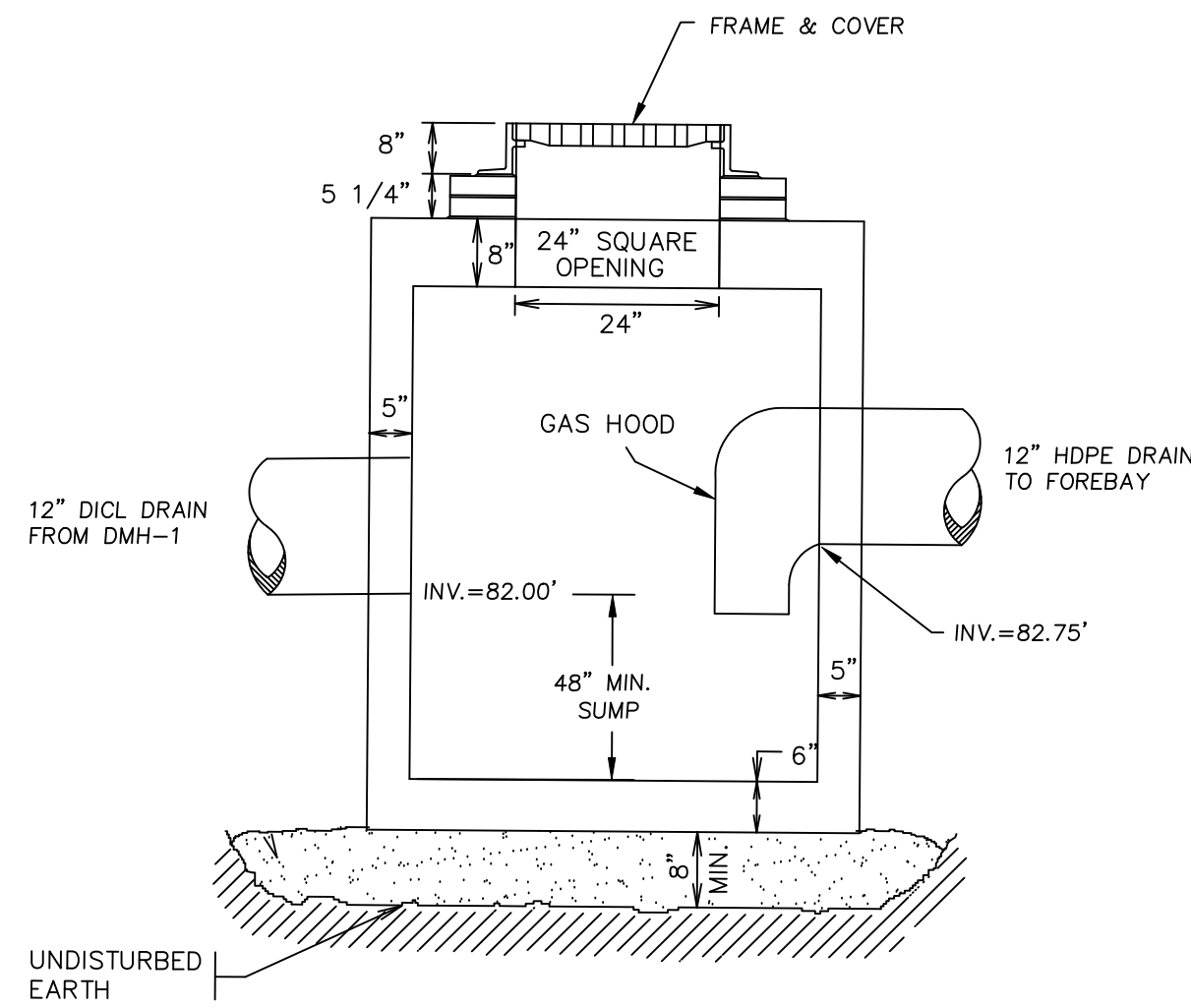


NOTE: EXCAVATION FOR FOOTINGS SHALL BE OUTSIDE OF THE BANK AREAS AND SILTATION BARRIERS. NO BANK AREA SHALL BE DISTURBED FOR THIS PROJECT.

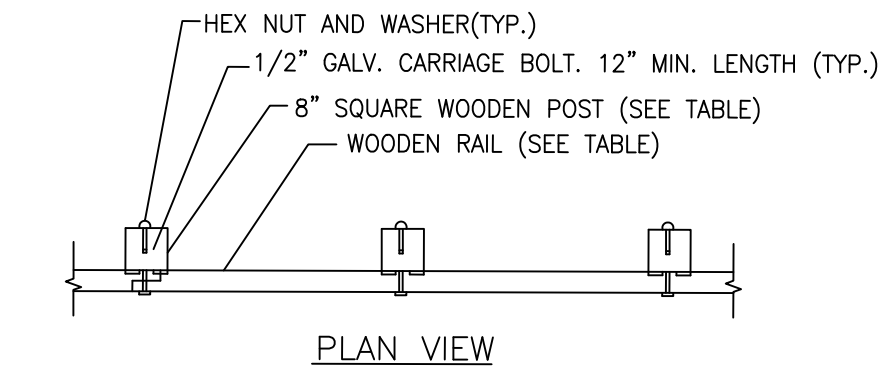
OPEN BOTTOM BOX CULVERT
NOT TO SCALE



EROSION CONTROL BARRIER
(NOT TO SCALE)

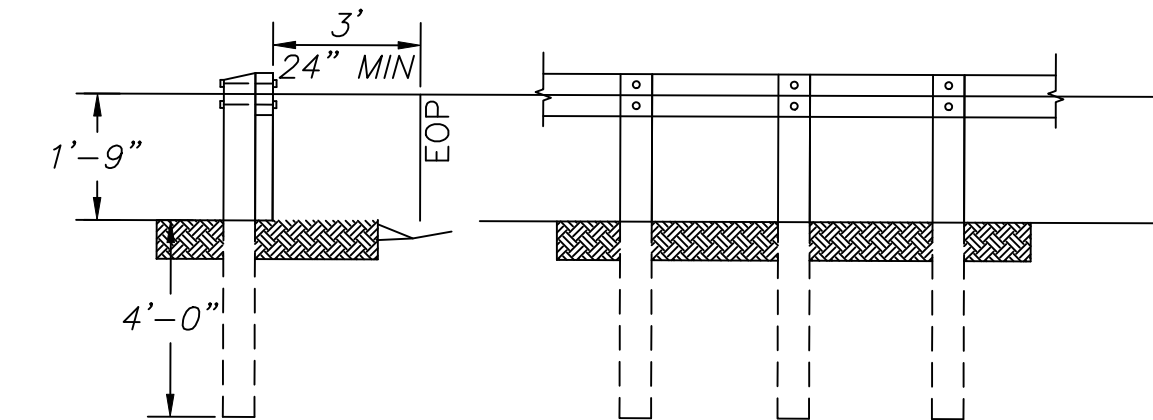


STRUCTURE TO BE 4' X 4' PRECAST CONCRETE.
CONCRETE OUTLET CONTROL STRUCTURE (OCS-1)
NOT TO SCALE



PLAN VIEW

RAIL SIZE/POST SPACING REQUIREMENTS	
RAIL MATERIAL	MAXIMUM POST SPACING (FT)
4"x10" GRADE DENSE NO. 1	2.7'
6"x10" GRADE NO. 1	5.3'
6"x10" GRADE DENSE NO. 1	6.1'
6"x8" GRADE NO. 1	8.4'
6"x8" GRADE DENSE NO. 1	9.7'

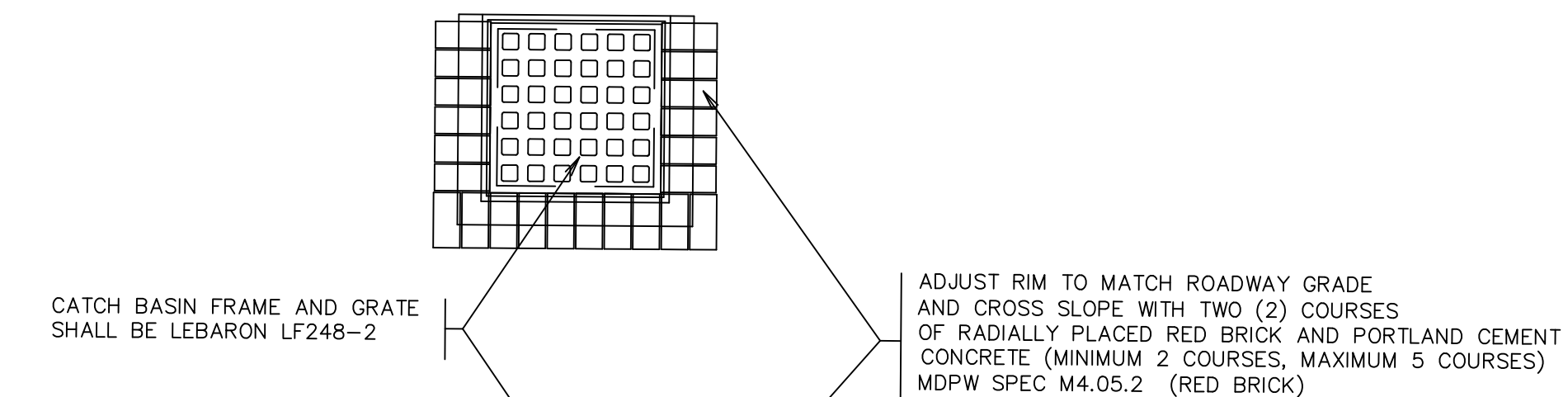


SIDE ELEVATION

FRONT ELEVATION

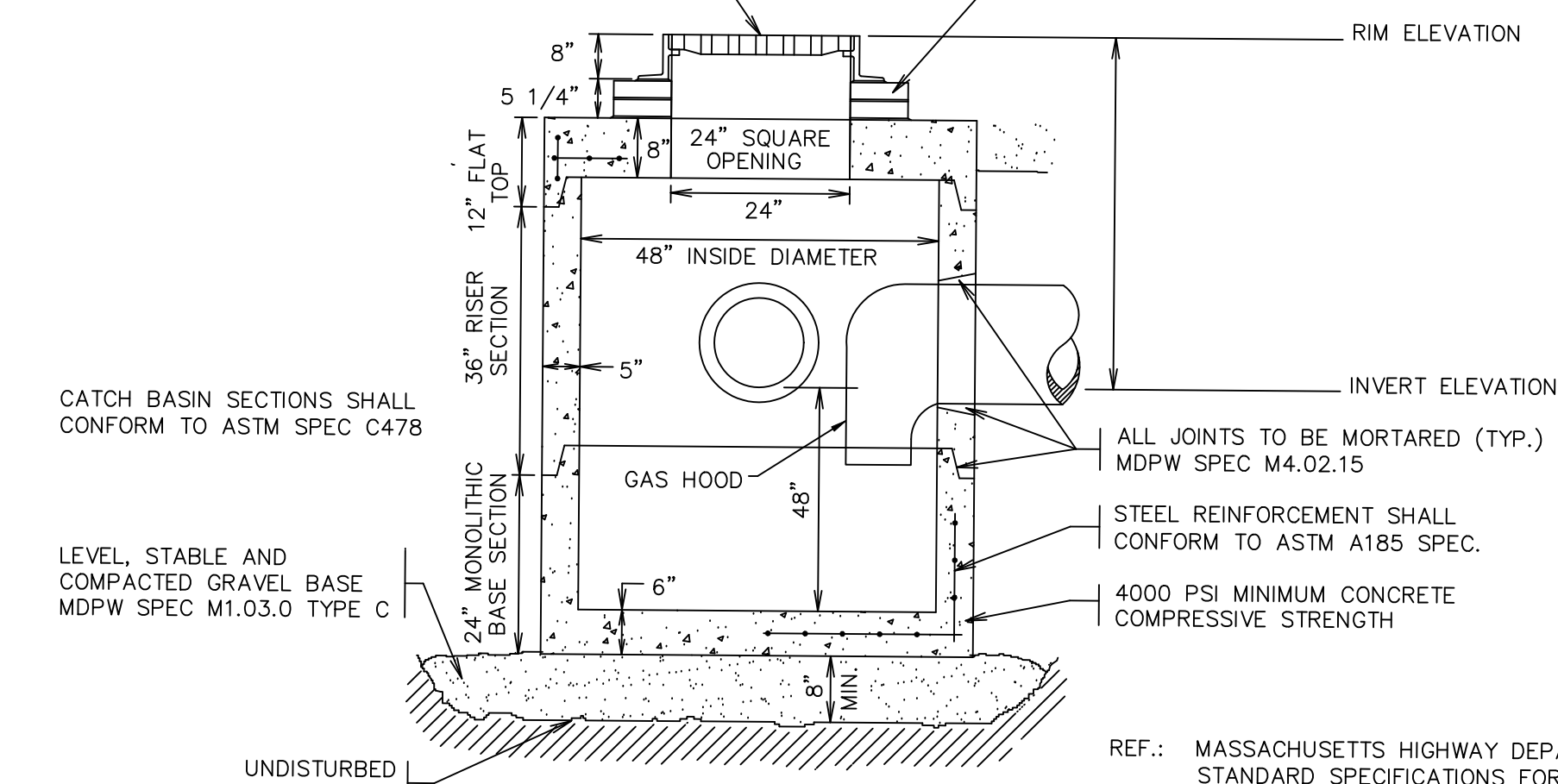
- NOTES:
 1. POSTS SHALL BE 8" SQUARE PRESSURE TREATED DOUGLAS FIR, OR APPROVED EQUAL.
 2. RAILS SHALL BE PRESSURE DOUGLAS FIR OR APPROVED EQUAL, JOINTED AT POSTS.

WOODEN GUARD RAIL DETAIL
N.T.S.



CATCH BASIN FRAME AND GRATE SHALL BE LEBARON LF248-2

ADJUST RIM TO MATCH ROADWAY GRADE AND CROSS SLOPE WITH TWO (2) COURSES OF RADIALLY PLACED RED BRICK AND PORTLAND CEMENT CONCRETE (MINIMUM 2 COURSES, MAXIMUM 5 COURSES) MDPW SPEC M4.05.2 (RED BRICK)



CATCH BASIN SECTIONS SHALL CONFORM TO ASTM SPEC C478

LEVEL, STABLE AND COMPACTED GRAVEL BASE MDPW SPEC M1.03.0 TYPE C

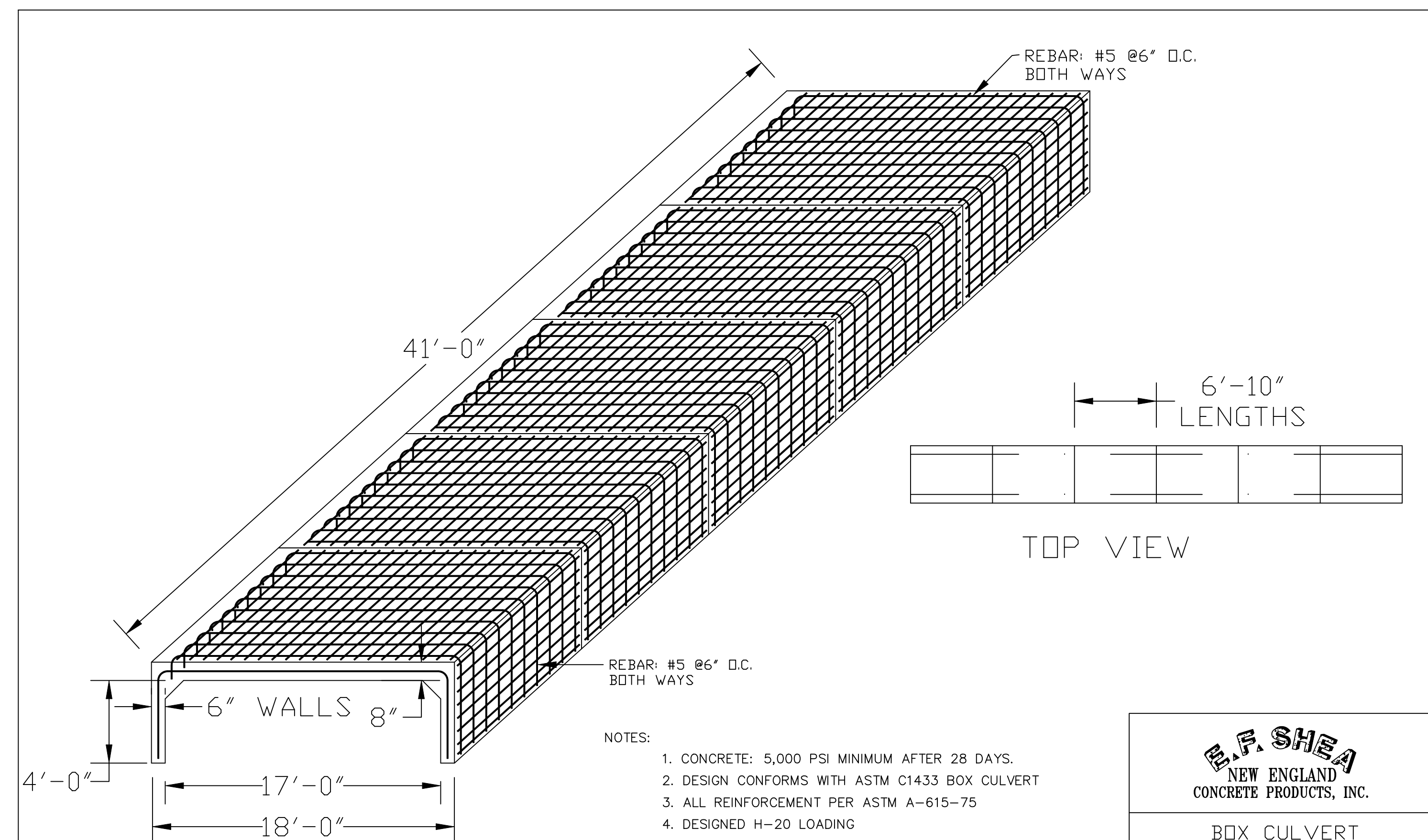
ALL JOINTS TO BE MORTARED (TYP.) MDPW SPEC M4.02.15

STEEL REINFORCEMENT SHALL CONFORM TO ASTM A185 SPEC.

4000 PSI MINIMUM CONCRETE COMPRESSIVE STRENGTH

REF.: MASSACHUSETTS HIGHWAY DEPARTMENT (MDPW) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 1988 EDITION

TYPICAL CATCH BASIN DETAIL
(NOT TO SCALE)



NOTES:

1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN CONFORMS WITH ASTM C1433 BOX CULVERT
3. ALL REINFORCEMENT PER ASTM A-615-75
4. DESIGNED H-20 LOADING
5. TONGUE AND GROOVE JOINT SEALED WITH NEOPRENE GASKETS.

E.F. SHEA
NEW ENGLAND
CONCRETE PRODUCTS, INC.

BOX CULVERT
4' X 18' X 41'-0"

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
4	2/22/23	PEER REVIEW COMMENTS	JDS	JDS
3	10/26/22	NEW DETAILS	JDS	JDS
2	4/19/22	ROADWAY CROSS-SECTION; RET WALL	JDS	JDS
1	12/1/20	24 PAVED ROADWAY	JDS	JDS

SMALL LANE EXTENSION

CONSTRUCTION DETAILS
LOCATED IN
READING, MASSACHUSETTS
(MIDDLESEX COUNTY)

PREPARED FOR
DEL REY R.T.

SCALE: N.T.S. DATE: JULY 27, 2020

PREPARED BY

SULLIVAN ENGINEERING GROUP, LLC

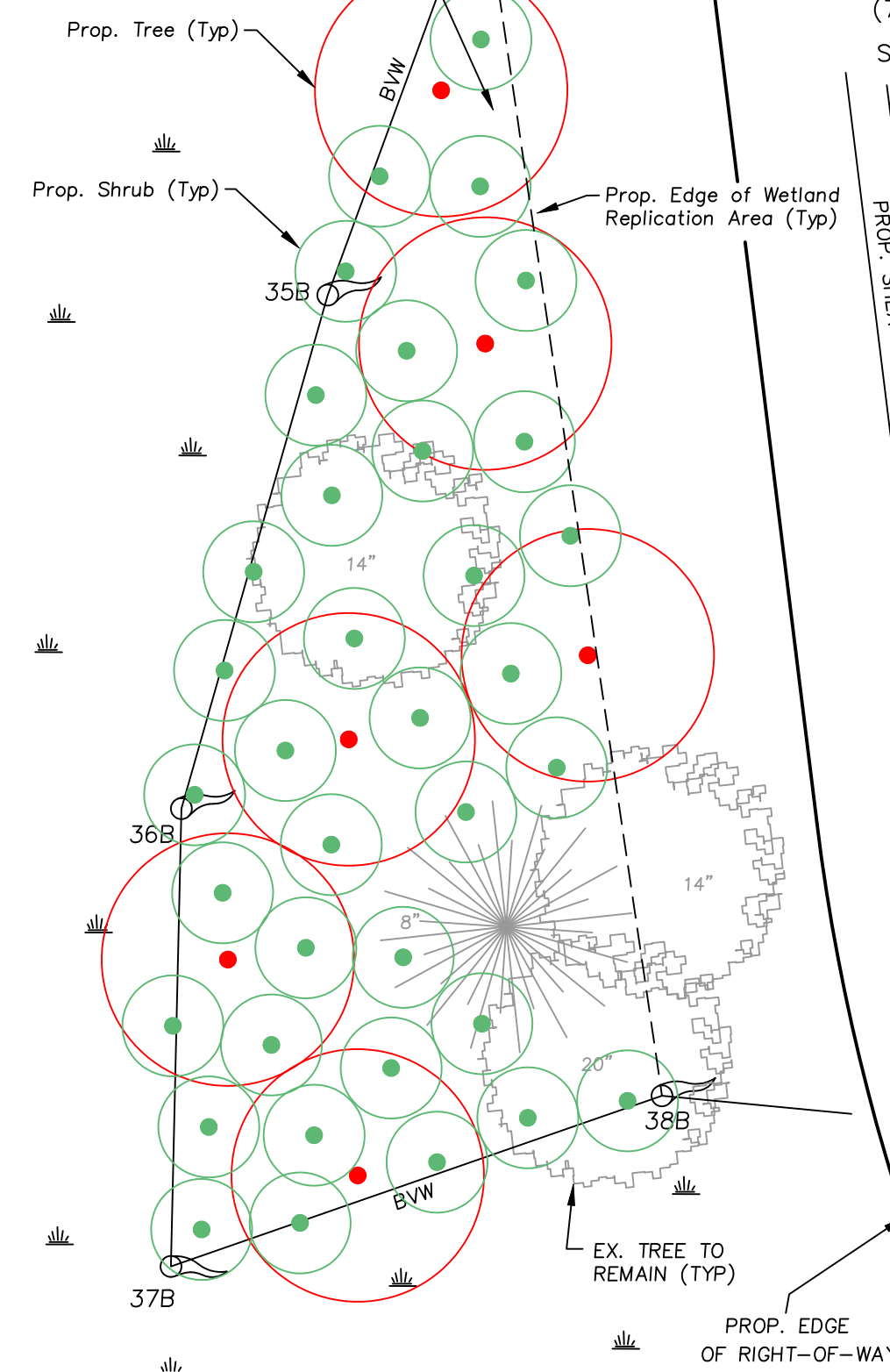
P.O. BOX 2004
WOBURN, MA 01888
(781) 854-8644

SHEET No. 7 OF 8



TOTAL # OF TREES: 6
TOTAL # OF SHRUBS: 37

Wetland Replication
Area=1,367 S.F.



WETLAND REPLICATION PLANTING PLAN
PREPARED BY:
JOHN D. SULLIVAN III, P.E.
P.O. BOX 2004
WOBURN, MA 01888
(781) 854-8644
SCALE: 1"=10'

TEMPORARY BENCHMARK CHART:

TBM #	DESCRIPTION	ELEV.
1	SMH RIM	83.38'

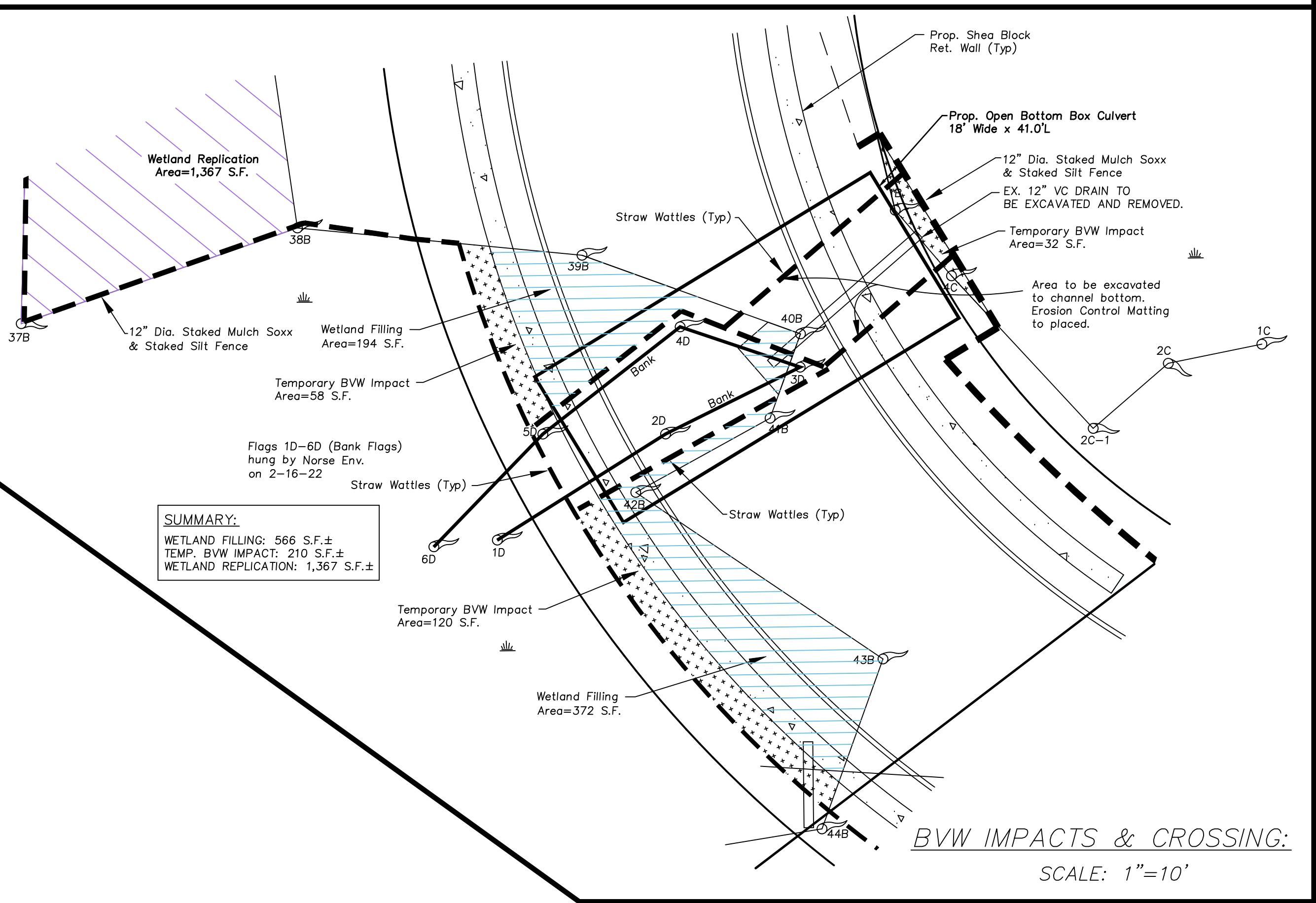
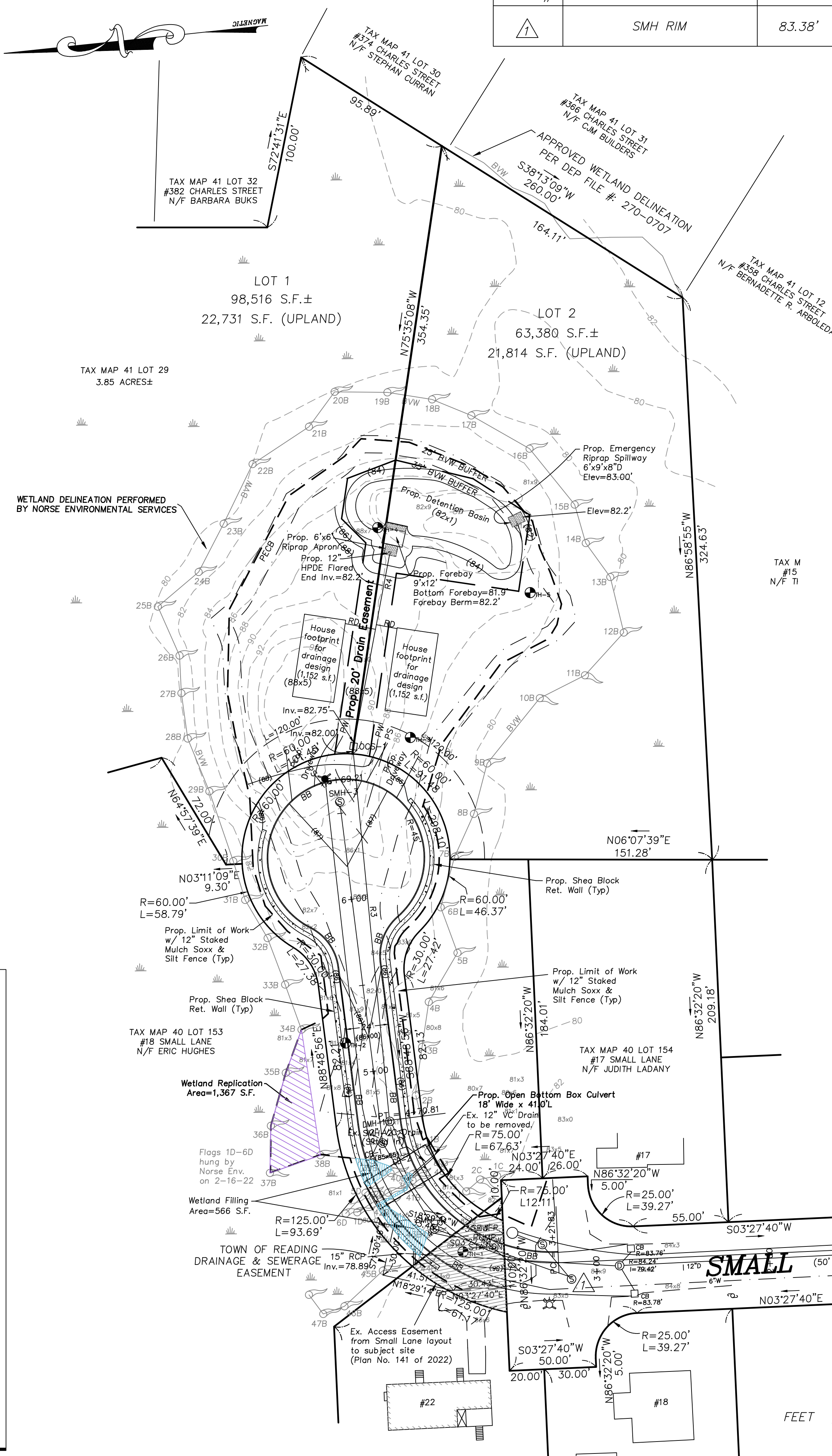
READING COMMUNITY PLANNING & DEVELOPMENT COMMISSION

LEGEND:

- 248— TWO FOOT CONTOUR
- DECIDUOUS TREE (> 6" DIA.)
- EVERGREEN TREE (> 6" DIA.)
- ⊙ UTILITY POLE
- ⊙ SEWER MANHOLE
- S— SEWER MAIN
- W— COMPILED WATER MAIN
- CB □ CATCHBASIN
- D— DRAIN LINE
- BIT. BITUMINOUS
- CONC. CONCRETE
- EOP EDGE OF PAVEMENT
- TH ⊙ TEST PIT
- (100)— PROP. CONTOUR

FOR REGISTRY OF DEEDS USE ONLY
I DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

PAUL FINOCCHIO, PLS DATE



WETLAND REPLICATION PLANTINGS/SEED MIX

THE APPLICANT SHALL PLANT THE FOLLOWING TREE & SHRUB SPECIES IN THE 1,367 S.F. WETLAND REPLICATION AREA BETWEEN WETLAND FLAGS 34B-38B. THE TREES SHALL BE PLANTED 15 FEET ON CENTER AND SHRUBS NO GREATER THAN 6 FEET ON CENTER.

A mixture of all the trees and a minimum of (4) different shrubs shall be planted. Species selection shall be based on cost and availability.

Common Name	Latin Name	Wildlife Benefits Food, Cover & Nesting
Trees:		
Red Maple	Acer rubrum	American robin, prairie warbler, American goldfinch, cardinal, grosbeaks, squirrels, chipmunk.
American Elm	Ulmus americana	Wild turkey, ruffed grouse, pheasant, sparrow, cardinal, American goldfinch, woodpeckers, American robin.
Gray Birch	Betula populifolia	Wild turkey, ruffed grouse, pheasant, chickadee, squirrels, titmouse.

Common Name	Latin Name	Wildlife Benefits Food, Cover & Nesting
Shrubs:		
Arrow-wood	Viburnum dentatum	Ruffed grouse, brown thrasher, American robin, eastern bluebird & gray catbird
Sweet Pepperbush	Clethra alnifolia	Songbirds, waterfowl, upland gamebirds, small mammals.
Silky Dogwood	Cornus amomum	Wild turkey, white tailed deer, & gray catbird.
Spacebush	Lindera benzoin	Veery, ruffed grouse, American robin, gray catbird, wild turkey, thrushes, white tailed deer
High bush blueberry	Vaccinium corymbosum	Blue jay, chickadee, titmouse, thrasher, eastern bluebird, ruffed grouse, American robin, mourning dove.
Common Winterberry	Ilex verticillata	Red-winged blackbird, American crow, American robin, rabbit, squirrel.

In addition, the applicant shall apply a New England Wetmix to the replication area. The New England Wetmix can be purchased at New England Wetland Plants, Inc. www.newwp.com.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D

SMALL LANE EXTENSION

WETLAND REPLICATION & CROSSING
LOCATED IN
READING, MASSACHUSETTS
(MIDDLESEX COUNTY)

PREPARED FOR
DEL REY R.T.
SCALE: 1"= 40' DATE: FEB. 22, 2023

PREPARED BY
SULLIVAN ENGINEERING GROUP, LLC
P.O. BOX 2004
WOBURN, MA 01888
(781) 854-8644

SHEET No. 8 OF 8

