

# CATE STREET

## CATE STREET · PORTSMOUTH · NEW HAMPSHIRE ROADWAY PLANS

JULY, 2019

**PREPARED FOR**  
**CATE STREET DEVELOPMENT, LLC**  
11 ELKINS STREET, SUITE 420  
BOSTON, MA 02127  
987.490.5278



**PREPARED BY**  
**FUSS & O'NEILL**  
UPPER SQUARE BUSINESS CENTER  
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### PROJECT TEAM

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3715 NORTHSIDE PARKWAY  
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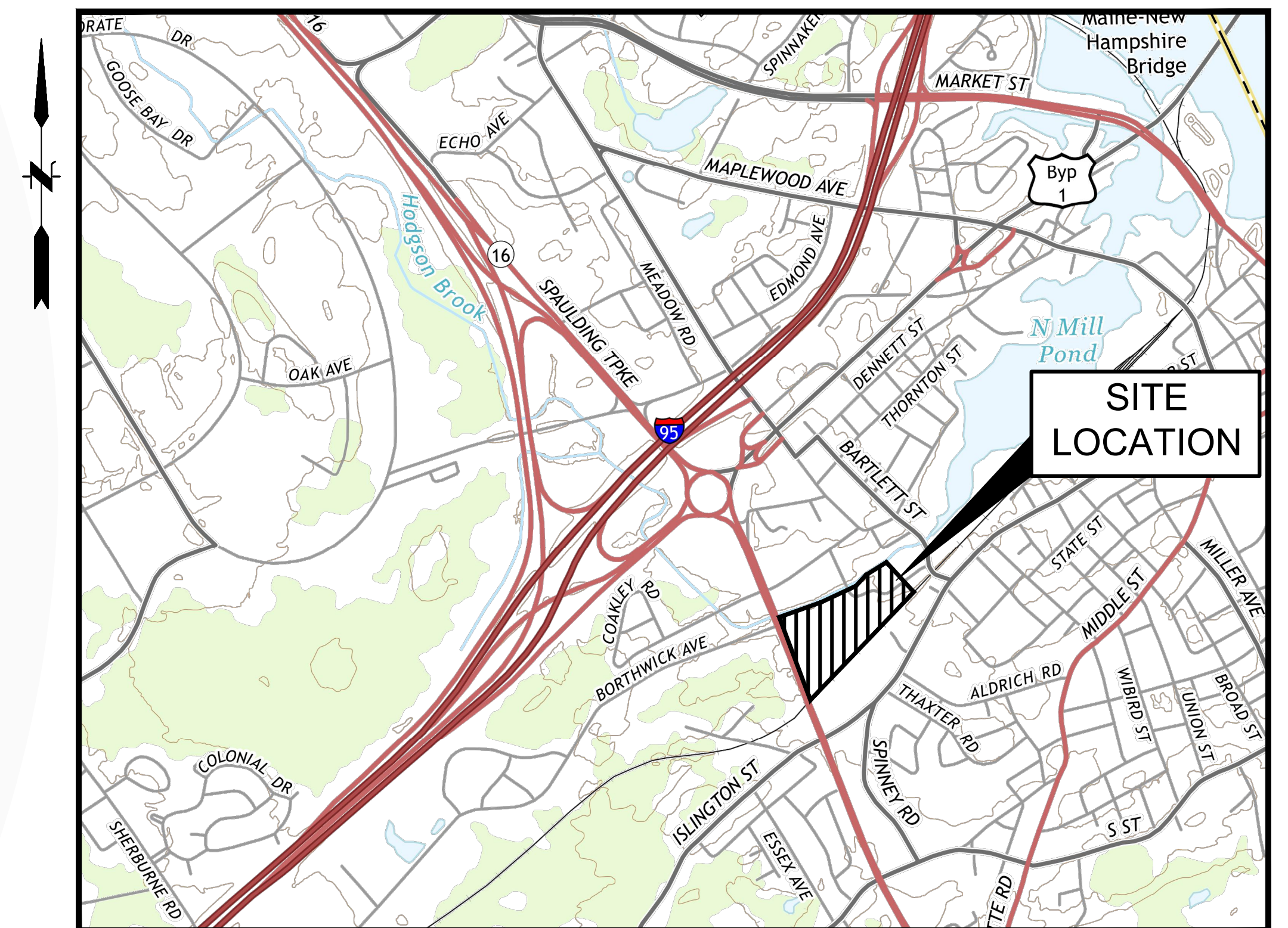
**NATURAL RESOURCES  
CONSULTANT**  
GOVE ENVIRONMENTAL SERVICES, INC  
8 CONTINENTAL DRIVE  
BUILDING 2, SUITE H  
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**GEOTECHNICAL ENGINEERS**  
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2269 MASSACHUSETTS AVENUE  
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617.868.1420

**LAND SURVEYOR**  
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102 KENT PLACE  
NEWMARKET, NH. 03857  
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**LOCATION MAP**  
SCALE: 1" = 1200'



CONTACT DIG SAFE 72 HOURS  
PRIOR TO CONSTRUCTION  
THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON  
THIS PLAN IS APPROXIMATE. GLD CONSULTING ENG.  
INC. MAKES NO CLAIM TO THE ACCURACY OR  
COMPLETENESS OF UTILITIES SHOWN. 72 HOURS PRIOR  
TO ANY EXCAVATION ON SITE, THE CONTRACTOR SHALL  
CONTACT DIG-SAFE AT 1-888-DIG-SAFE.



STATE AND FEDERAL PERMITS REQUIRED:		
PERMIT	REQUIRED / NOT REQUIRED	STATUS / PERMIT NO.
NHDES WETLANDS BUREAU STANDARD DREDGE AND FILL	REQUIRED	2019-00523
NHDES ALTERATION OF TERRAIN	REQUIRED	PENDING
NHDES WATER MAIN EXTENSION	REQUIRED	PENDING
NHDES SEWER MAIN EXTENSION	REQUIRED	PENDING
NHDOT EXCAVATION PERMIT	REQUIRED	PENDING
NHDOT ENTRANCE PERMIT	REQUIRED	PENDING
EPA, NPDES CONSTRUCTION GENERAL PERMIT (CGP)	REQUIRED	PENDING

PROJ. No.: 20180317.A10  
DATE: JUNE 2019

GI-001



**STREAM BUFFER RESTORATION SEQUENCE NOTES:**

1. EROSION CONTROL WILL BE PLACED AROUND ALL JURISDICTIONAL WETLANDS PRIOR TO THE START OF WORK.
2. INITIAL WORK FOR INVASIVE SPECIES REMOVAL WILL BE PERFORMED WITH GUIDANCE BY STAFF FROM GES INC.
3. INVASIVE SPECIES REMOVAL WILL IDEALLY BE DONE ONCE THE VEGETATION IS MATURE DURING THE LATE SPRING OR EARLY SUMMER TO AID IN IDENTIFICATION. INVASIVE SPECIES VEGETATION WILL INITIALLY BE CUT AS NEEDED TO AVOID THE POTENTIAL SPREAD OF SEEDS. ANY MATERIAL IN "SEED" WILL BE BAGGED AND DISPOSED OF PROPERLY.
4. ALL WORK WILL BE PERFORMED FROM THE UPPER AREA OF THE SITE BY LONG REACH EXCAVATORS. ANY SMALL-SCALE WORK WILL BE DONE BY HAND TO REDUCE BANK IMPACTS AND ELIMINATE ANY UNNEEDED WEEKENING OF THE STABILITY OF THE BANK. NO WORK WILL BE PERFORMED FROM WITHIN THE STREAM.
5. EXCAVATION WORK WILL BEGIN BY REMOVING REMAINING ROOT MATERIAL AND "SEED BANK" FROM THE SLOPE AND ANY DEBRIS.
6. ALL FILL MATERIAL, INCLUDING PAVEMENT, CINDER BLOCKS, CEMENT, TRASH, I.E. BUCKETS, COUCHES, APPLIANCES, EXERCISE EQUIPMENT, ETC., WILL BE REMOVED AND DISPOSED OF PROPERLY.
7. ANY CULVERTS EXISTING IN THE BANK TO BE REMOVED WILL BE SAW CUT OR CRUSHED AND REMOVED. THE REMAINING PORTIONS OF CULVERTS WILL BE LEFT IN PLACE AND WILL BE FILLED WITH CEMENT TO CLOSE THEM OFF. THIS WILL REDUCE THE ADDITIONAL BANK IMPACT RESULTING FROM THEIR REMOVAL ENTIRELY.
8. ANY DEBRIS REMOVAL NEAR MATURE TREE ROOTS WILL BE PERFORMED BY HAND SHOVEL OR SMALL MACHINE TO REDUCE DAMAGE TO ROOT STRUCTURE.
9. CLEAN TOP SOIL WILL BE ADDED TO AREAS OF REMOVED MATERIALS, INCLUDING CULVERT ENDS. THIS MATERIAL WILL BE LEVELED TO CREATE A SMOOTH BANK TO BE PLANTED.
10. THE FOLLOWING SPECIES WILL BE PLANTED IN RANDOM SPACING AT THE SPECIFIED NUMBERS AND SPACING IN EACH RESTORATION AREA BELOW:

HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM),  
WINTERBERRY (ILEX VERTICILLATA),  
SWEET PEPPER BUSH (CLETHERA ALNIFOLIA).

ANY EXPOSED AREAS WILL BE SEEDDED WITH AN EROSION CONTROL SEED MIX @ 35lbs/ACRE. THIS WORK WILL BE PERFORMED BY HAND TOOLS. ALL PLANTS ARE TO BE IN 1-2 GALLON POTS AS AVAILABLE AT THE TIME OF THE PLANTING. PLANTS WILL BE LAID OUT PER THE RESTORATION PLAN IN RANDOM ORDER. HOLES WILL BE DUG BY HAND FOR PLANTING. ONCE PLANTED THE HOLES WILL BE BROUGHT LEVEL WITH ADDITIONAL SOIL. THE ENTIRE EXPOSED SLOPES WILL BE SEEDDED AS SPECIFIED AND WILL BE COVERED WITH JUTE MATTING AFTER TO ELIMINATE EROSION. SUPPLEMENTAL WATERING WILL OCCUR SHOULD THERE NOT BE SIGNIFICANT RAINFALL.

**IMPACT AREA 1** WILL HAVE 761 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH A TOTAL OF 117 PLANTS AT A SPACING OF 4' 0"

- 39- Highbush Blueberry (Vaccinium corymbosum),
- 39- Winterberry (Ilex verticillata)
- 39- Sweet Pepper Bush (Clethra alnifolia),

**IMPACT AREA 2** WILL HAVE 148 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH A TOTAL OF 9 PLANTS AT A SPACING OF 4' 0"

- 3- Highbush Blueberry (Vaccinium corymbosum),
- 3- Winterberry (Ilex verticillata)
- 3- Sweet Pepper Bush (Clethra alnifolia),

**IMPACT AREA 3** WILL HAVE 344 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH 21 TOTAL PLANTS AT 4' 0" SPACING

- 7- Highbush Blueberry (Vaccinium corymbosum),
- 7- Winterberry (Ilex verticillata)
- 7- Sweet Pepper Bush (Clethra alnifolia),

**IMPACT AREA 4** WILL HAVE 3,412 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH A TOTAL OF 96 PLANTS AT A SPACING OF 6' 0"

- 32- Highbush Blueberry (Vaccinium corymbosum),
- 32- Winterberry (Ilex verticillata)
- 32- Sweet Pepper Bush (Clethra alnifolia),

11. MONITORING OF THE RESTORATION AREAS WILL BE DONE UNDER THE DIRECTION OF THE NHDES WETLANDS BUREAU, AS THESE AREAS FALL UNDER THEIR JURISDICTION.

**INVASIVE PLANT DISPOSAL**

TO PREVENT SEED FROM SPREADING REMOVE INVASIVE PLANTS BEFORE SEEDS ARE SET (PRODUCED). SOME PLANTS CONTINUE TO GROW, FLOWER AND SET SEED EVEN AFTER PULLING OF CUTTING. SEEDS CAN REMAIN VIABLE IN THE GROUND FOR MANY YEARS. IF THE PLANT HAS FLOWERS OR SEEDS, PLACE THE FLOWERS AND SEEDS IN A HEAVY PLASTIC BAG "HEAD FIRST" AT THE WEEDING SITE AND TRANSPORT TO THE DISPOSAL SITE. THE FOLLOWING ARE GENERAL DESCRIPTIONS OF DISPOSAL METHODS. SEE THE CHART FOR RECOMMENDATIONS BY SPECIES.

**BURNING:** LARGE WOODY BRANCHES AND TRUNKS CAN BE USED AS FIREWOOD OR BURNED IN PILES. FOR OUTSIDE BURNING, A WRITTEN FIRE PERMIT FROM THE LOCAL FOREST FIRE WARDEN IS REQUIRED UNLESS THE GROUND IS COVERED IN SNOW. BRUSH LARGER THAN 5 INCHES IN DIAMETER CAN'T BE BURNED. INVASIVE PLANTS WITH EASILY AIRBORNE SEEDS LIKE BLACK SWALLOW-WORT WITH MATURE SEED PODS (INDICATED BY THEIR BROWN COLOR) SHOULDN'T BE BURNED AS THE SEEDS MAY DISPERSE BY THE HOT AIR CREATED BY THE FIRE.

**BAGGING (SOLARIZATION):** USE THIS TECHNIQUE WITH SOFTER-TISSUE PLANTS. USE HEAVY BLACK OR CLEAR PLASTIC BAGS (CONTRACTOR GRADE), MAKING SURE THAT NO PARTS OF THE PLANTS POKE THROUGH. ALLOW THE BAGS TO SIT IN THE SUN FOR SEVERAL WEEKS AND ON DARK PAVEMENT FOR THE BEST EFFECT.

**TARPING AND DRYING:** PILE MATERIAL ON A SHEET OF PLASTIC AND COVER WITH A TARP, FASTENING THE TARP TO THE GROUND AND MONITORING IT FOR ESCAPES. LET THE MATERIAL DRY FOR SEVERAL WEEKS, OR UNTIL IT IS CLEARLY NONVIABLE.

**CHIPPING:** USE THIS METHOD FOR WOODY PLANTS THAT DON'T REPRODUCE VEGETATIVELY.

**BURYING:** THIS IS RISKY, BUT CAN BE DONE WITH WATCHFUL DILIGENCE. LAY THICK PLASTIC IN A DEEP PIT BEFORE PLACING THE CUT UP PLANT MATERIAL IN THE HOLE. PLACE THE MATERIAL AWAY FROM THE EDGE OF THE PLASTIC BEFORE COVERING IT WITH MORE HEAVY PLASTIC. ELIMINATE AS MUCH AIR AS POSSIBLE AND TOSS IN SOIL TO WEIGHT DOWN THE MATERIAL IN THE PIT. NOTE THAT THE TOP OF THE BURIED MATERIAL SHOULD BE AT LEAST THREE FEET UNDERGROUND. JAPANESE KNOTWEED SHOULD BE AT LEAST 5 FEET UNDERGROUND!

**DROWNING:** FILL A LARGE BARREL WITH WATER AND PLACE SOFT-TISSUE PLANTS IN THE WATER. CHECK AFTER A FEW WEEKS AND LOOK FOR ROTTED PLANT MATERIAL (ROOTS, STEMS, LEAVES, FLOWERS). WELL-ROTTED PLANT MATERIAL MAY BE COMPOSTED. A WORD OF CAUTION- SEEDS MAY STILL BE VIABLE AFTER USING THIS METHOD. DO THIS BEFORE SEEDS ARE SET. THIS METHOD ISN'T USED OFTEN. BE PREPARED FOR AN AWFUL STINK!

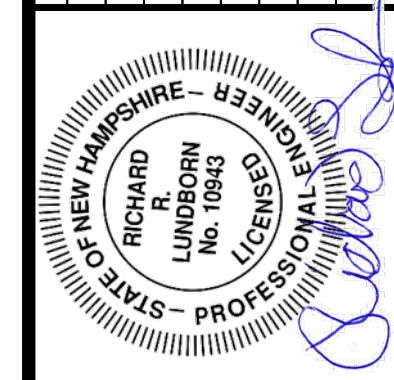
**COMPOSTING:** INVASIVE PLANTS CAN TAKE ROOT IN COMPOST. DON'T COMPOST ANY INVASIVES UNLESS YOU KNOW THERE IS NO VIABLE (LIVING) PLANT MATERIAL LEFT. USE ONE OF THE ABOVE TECHNIQUES (BAGGING, TARPING, DRYING, CHIPPING OR DROWNING) TO RENDER THE PLANTS NON-VIABLE BEFORE COMPOSTING. CLOSELY EXAMINEE THE PLANT BEFORE COMPOSTING AND AVOID COMPOSTING SEEDS.

BE DILIGENT LOOKING FOR SEEDLINGS FOR YEARS IN AREAS WHERE REMOVAL AND DISPOSAL TOOK PLACE.

SUGGESTED DISPOSAL METHODS FOR NON-NATIVE INVASIVE PLANTS		
WOODY PLANTS	METHOD OF REPRODUCING	METHOD OF DISPOSAL
NORWAY MAPLE (ACER PALTANOIDES) EUROPEAN BARBERRY (BERBERIS VULGARIS) JAPANESE BAYBERRY (BERBERIS THUNBERGII) AUTUMN OLIVE (ELAAGNUS EMBELLATA) BURNING BUSH (EUONYMUS ALATUS) MORROW'S HONEYSUCKLE (LONICERA MORROWII) TATARIAN HONEYSUCKLE (LONICERA TRATICA) SHOWY BUSH HONEYSUCKLE (LONICERA X BELLA) COMMON BUCKTHORN (RHAMNUS CATHARICA) GLOSSY BUCKTHORN (FRANGULA ALNUS)	FRUITS AND SEEDS	PRIOR TO FRUIT/SEED RIPENING SEEDLINGS AND SMALL PLANTS PULL OR CUT AND LEAVE ON SITE WITH ROOTS EXPOSED. NO SPECIAL CARE NEEDED.  LARGER PLANTS USE AS FIREWOOD. MAKE A BRUSH PILE. CHIP. BURN.  AFTER FRUIT/SEED IS RIPE DON'T REMOVE FROM SITE. BURN. MAKE A COVERED BRUSH PILE. CHIP ONCE ALL FRUIT HAS DROPPED FROM BRANCHES. LEAVE RESULTING CHIPS ON SITE AND MONITOR.
ORIENTAL BITTERSWEET (CELASTRUS ORBICULATUS) MULTIFLORA ROSE (ROSA MULTIFLORA)	FRUITS, SEEDS, PLANT FRAGMENTS	PRIOR TO FRUIT/SEED RIPENING SEEDLINGS AND SMALL PLANTS PULL OR CUT AND LEAVE ON SITE WITH ROOTS EXPOSED. NO SPECIAL CARE NEEDED.  LARGER PLANTS MAKE A BRUSH PILE BURN  AFTER FRUIT/SEED IS RIPE DON'T REMOVE FROM SITE. BURN. MAKE A COVERED BRUSH PILE. CHIP - ONLY AFTER MATERIAL HAS FULLY DRIED (1-YEAR) AND ALL FRUIT HAS DROPPED FROM BRANCHES. LEAVE RESULTING CHIPS ON SITE AND MONITOR.

NON-WOODY PLANTS		
NON-WOODY PLANTS	METHOD OF REPRODUCING	METHOD OF DISPOSAL
GARLIC MUSTARD (ALLIARIA PETIOLATA) SPOTTED KNAWEED (CENTAUREA MACULOSA) SAP OF RELATED KNAWEED CAN CAUSE SKIN IRRITATION AND TUMORS. WEAR GLOVES WHEN HANDLING. BLACK SWALLOW-WORT (CYNANCHUM NIGRUM) MAY CAUSE SKIN RASH. WEAR GLOVES AND LONG SLEEVES WHEN HANDLING. PALE SWALLOW-WORT (CYNANCHUM ROSSICUM) GIANT HOGWEED (HERACLEUM ROSSICUM) CAN CAUSE MAJOR SKIN RASH. WEAR GLOVES AND LONG SLEEVES WHEN HANDLING. DAME'S ROCKET (HESPERIS MATRONALIS) PERENNIAL PEPPERWEED (LEPIDIUM LATIFOLIUM) PURPLE LOOSESTRIFE (LYTHRUM SALICARIA) JAPANESE STILT GRASS (MICROSTEGIUM VINIUM) MILE-A-MINUTE WEED (POLYGONUM PERFORIATUM)	FRUITS AND SEEDS	PRIOR TO FLOWERING DEPENDS ON SCALE OF INFESTATION SMALL INFESTATION PULL OR CUT PLANT AND LEAVE ON SITE WITH ROOTS EXPOSED.  LARGE INFESTATION PULL OR CUT PLANT AND PILE. (YOU CAN PILE ONTO OR COVER WITH PLASTIC SHEETING). MONITOR. REMOVE ANY RE-SPROUTING MATERIAL.  DURING AND FOLLOWING FLOWERING DO NOTHING UNTIL THE FOLLOWING YEAR OR REMOVE FLOWERING HEADS AND BAG AND LET ROT.  SMALL INFESTATION PULL OR CUT PLANT AND LEAVE ON SITE WITH ROOTS EXPOSED.  LARGE INFESTATION PULL OR CUT PLANT AND PILE REMAINING MATERIAL. (YOU CAN PILE ONTO PLASTIC SHEETING). MONITOR. REMOVE ANY RE-SPROUTING MATERIAL.
COMMON REED (PHRAGMITES AUSTRALIS) JAPANESE KNOTWEED (POLYGONUM X BOHEMICUM)	FRUITS, SEEDS, PLANT FRAGMENTS  PRIMARY MEANS OF SPREAD IN THESE SPECIES IS BY PLANT PARTS. ALTHOUGH ALL CARE SHOULD BE GIVEN TO PREVENTING THE DISPERSAL OF SEED DURING CONTROL ACTIVI	SMALL INFESTATION BAG ALL PLANT MATERIAL AND LET ROT. NEVER PILE AND USE RESULTING MATERIAL AS COMPOST. BURN  LARGE INFESTATION REMOVE MATERIAL TO UNSUITABLE HABITAT (DRY, HOT AND SUNNY OR DRY AND SHADED LOCATION) AND SCATTER OR PILE. MONITOR AND REMOVE ANY SPROUTING MATERIAL. PILE, LET DRY, AND BURN.

NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD

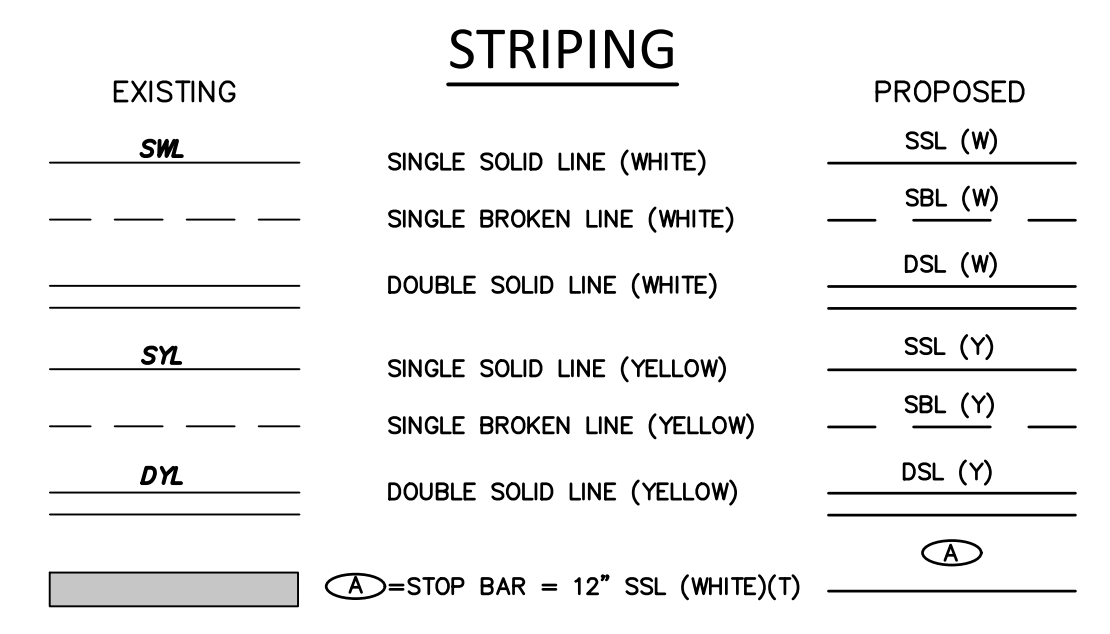
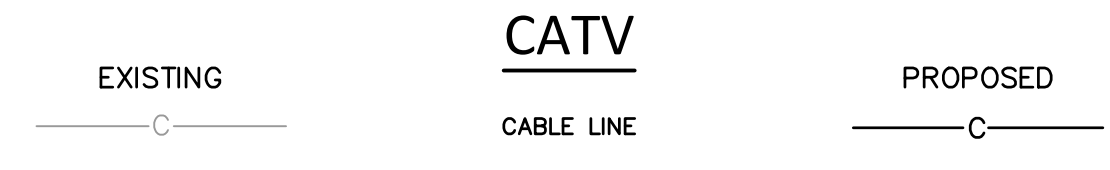
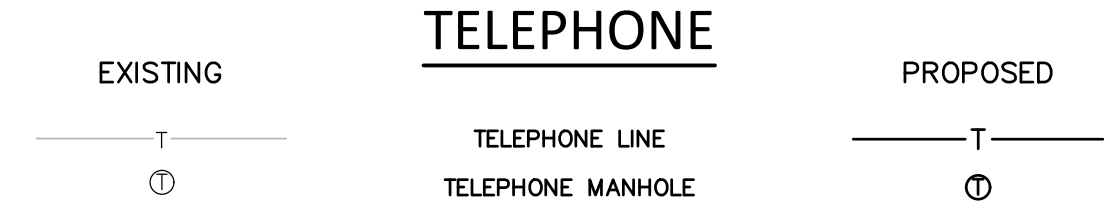
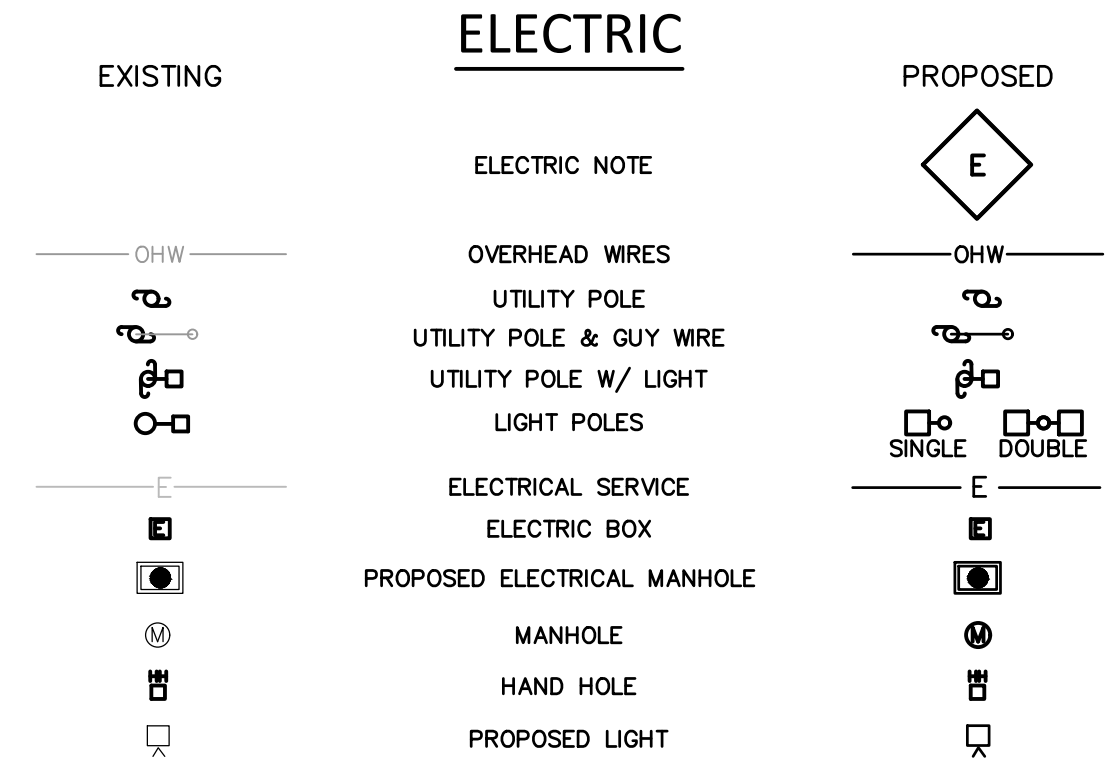
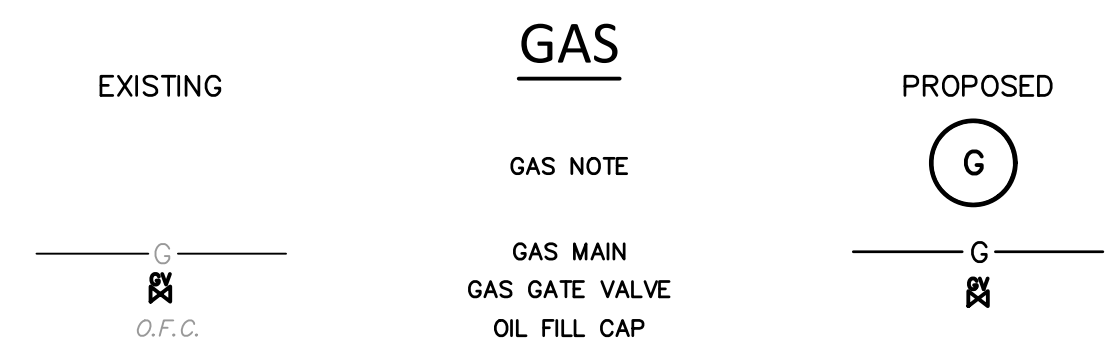
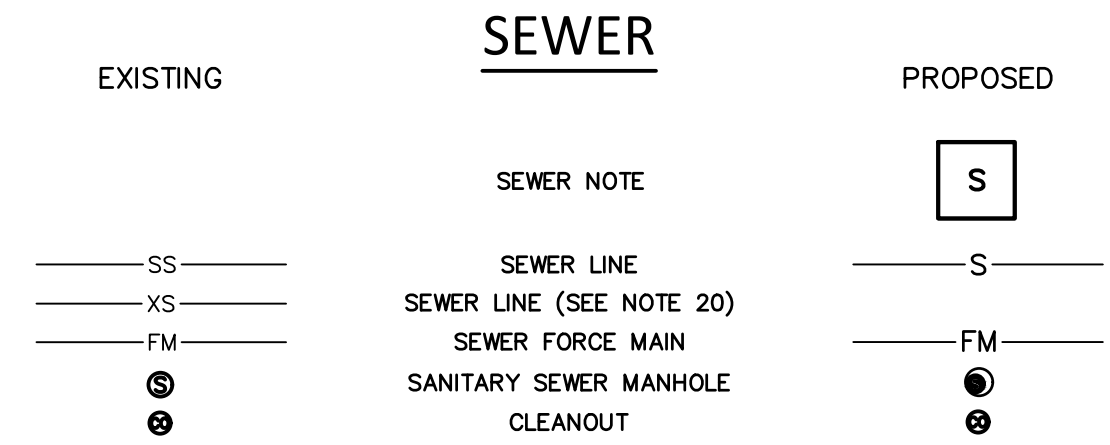
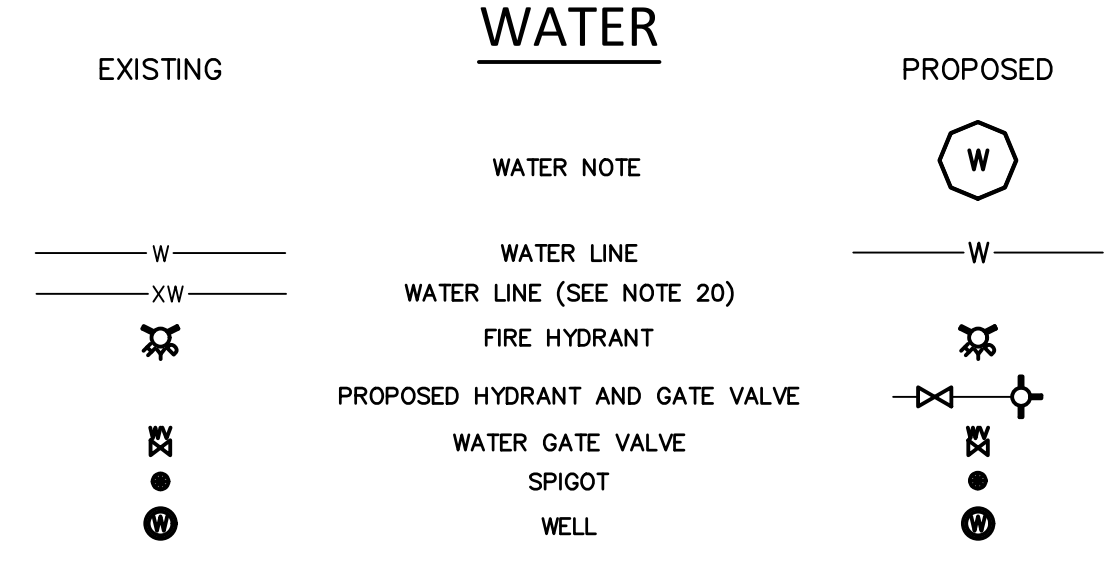
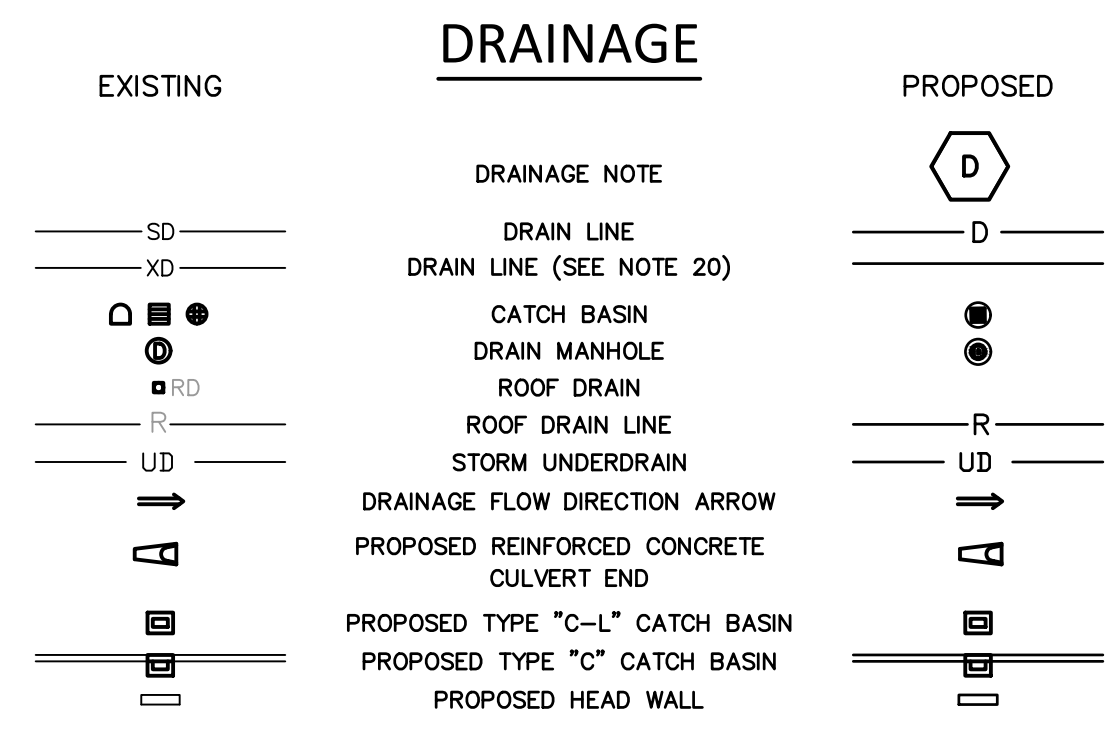
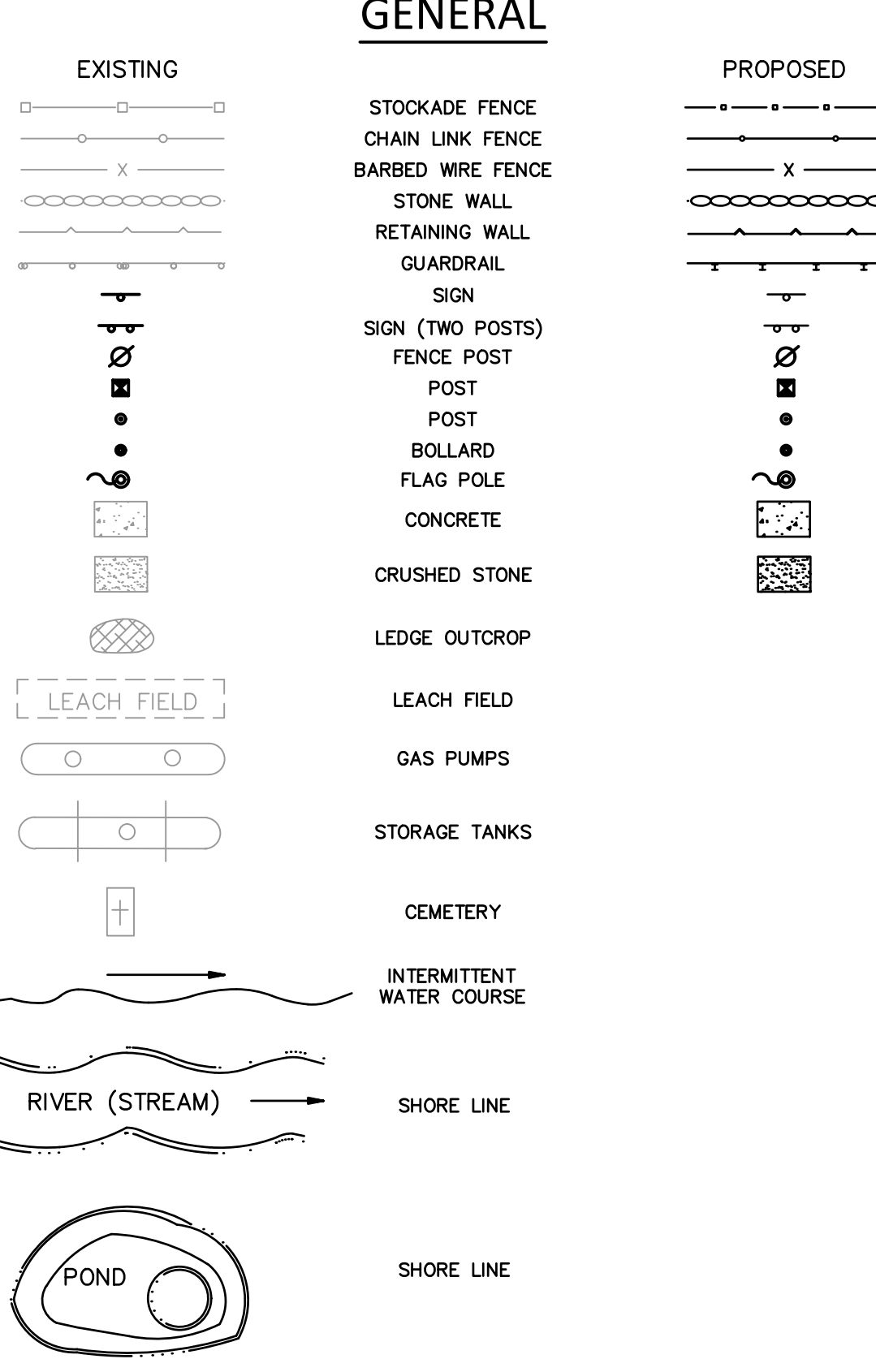
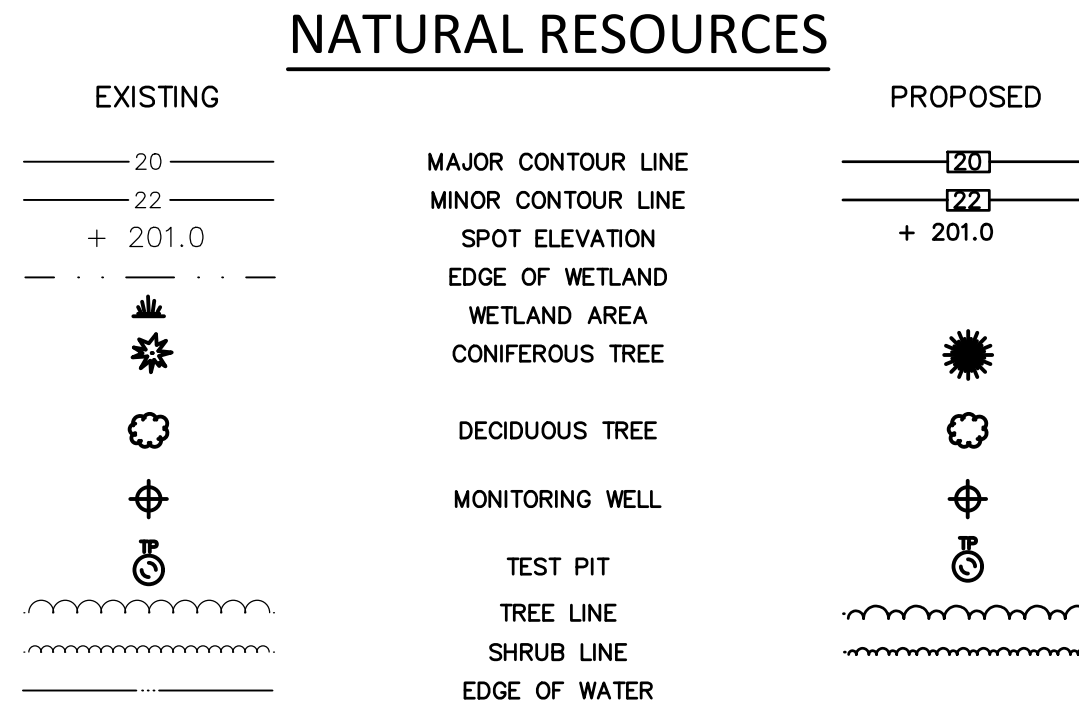
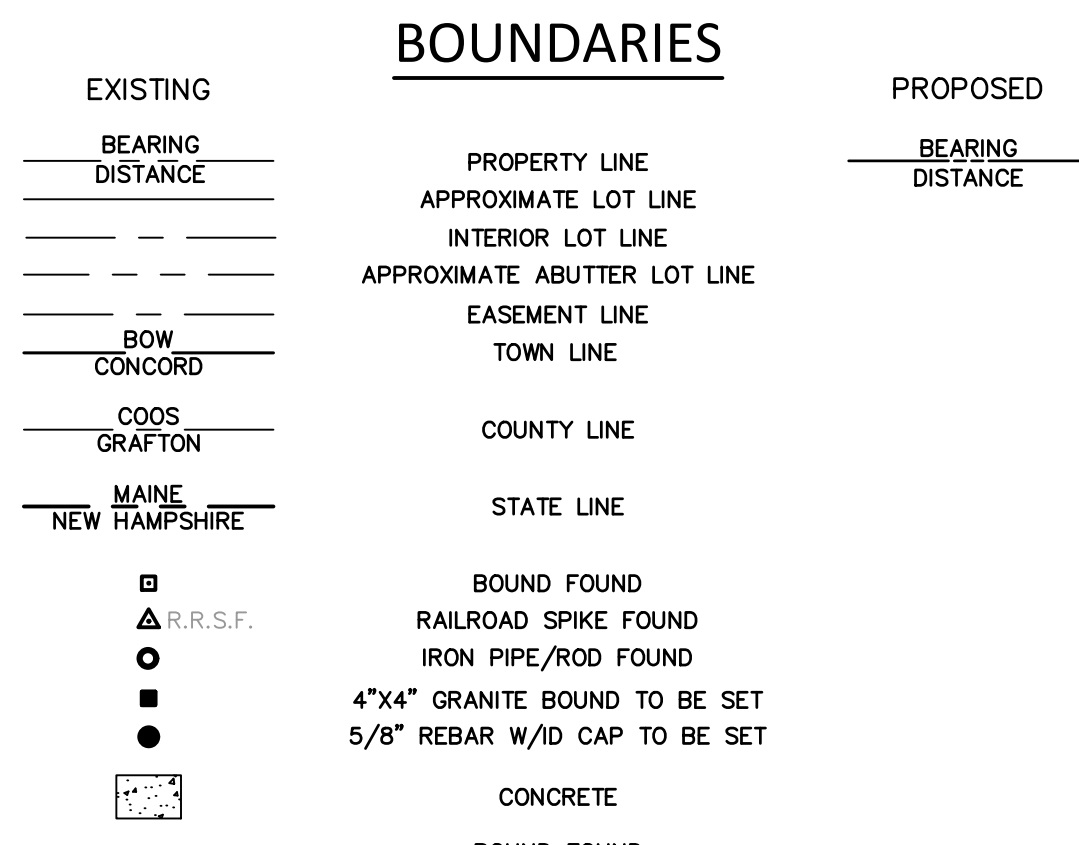


SCALE:  
HORZ.:  
VERT.:  
DATUM:  
HORZ.: NAD83  
VERT.: NGVD29  
GRAPHIC SCALE

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CATE STREET DEVELOPMENT, LLC  
GENERAL NOTES  
CATE STREET  
PORTSMOUTH NEW HAMPSHIRE

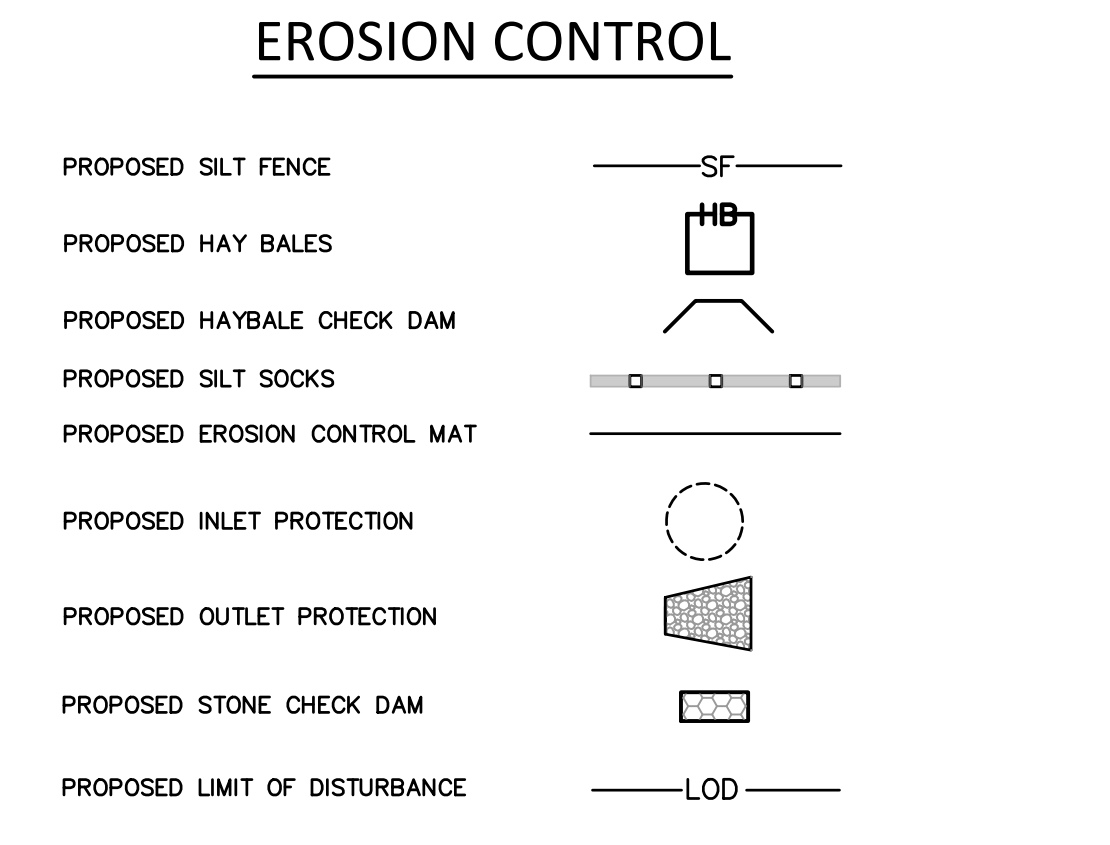
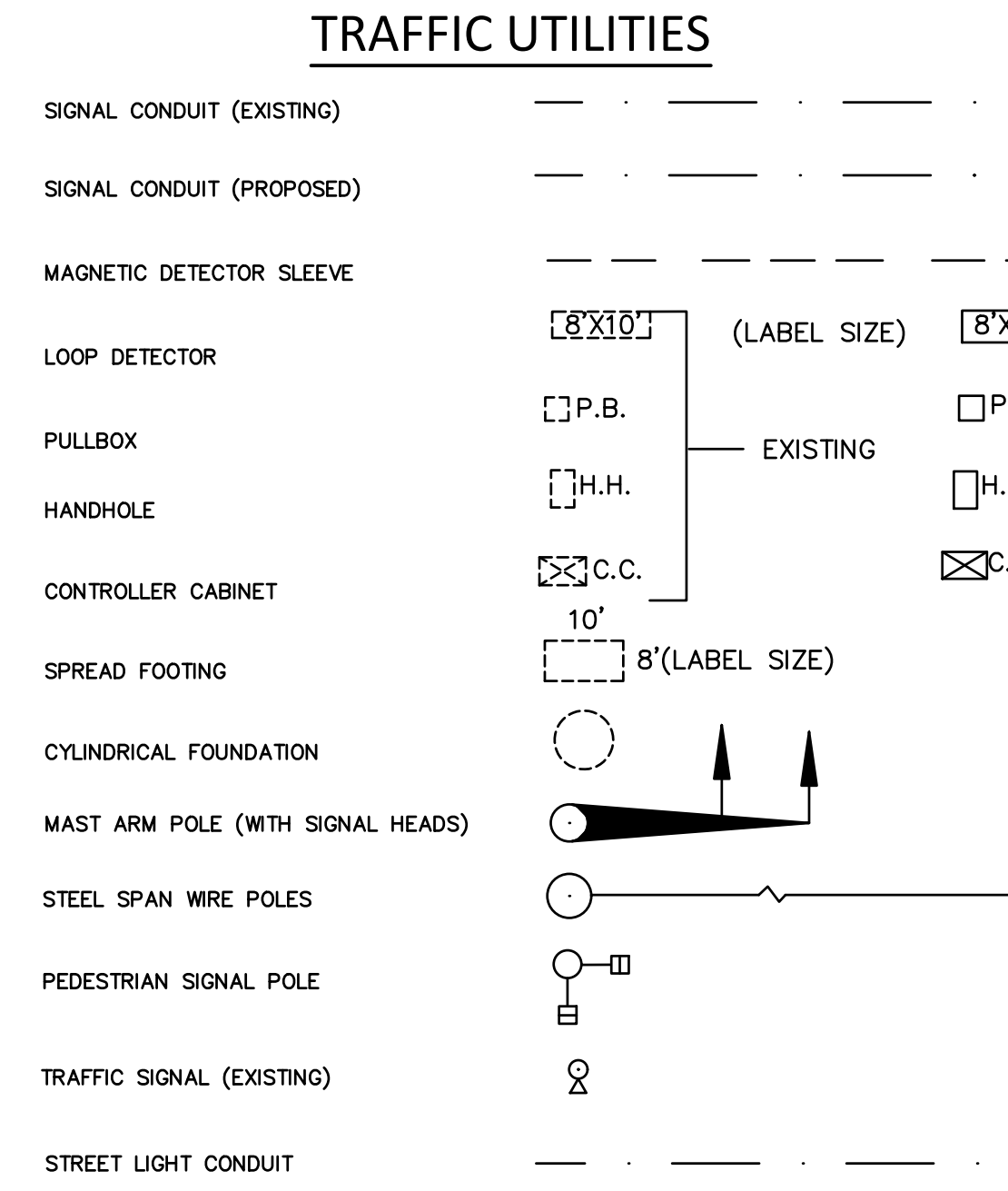
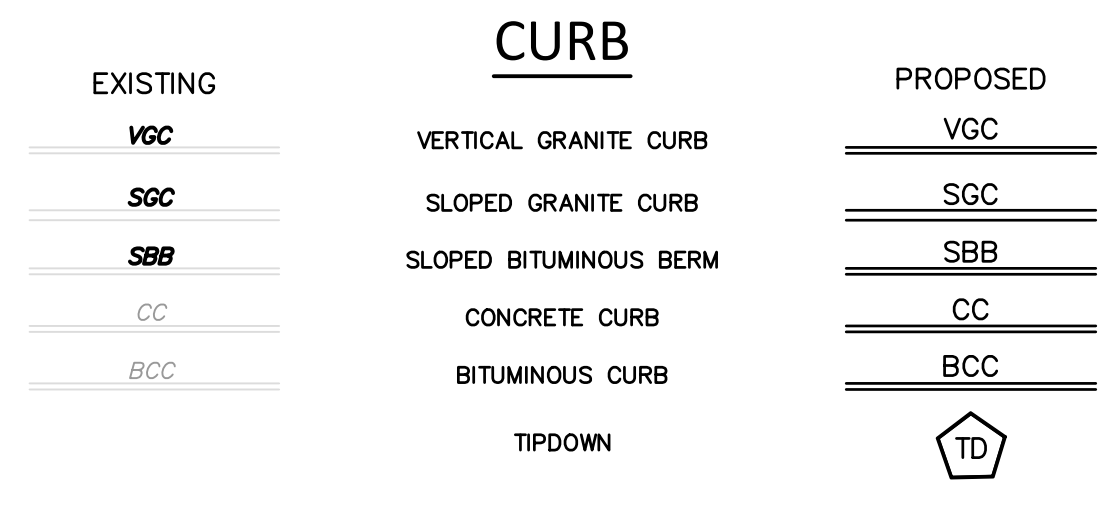
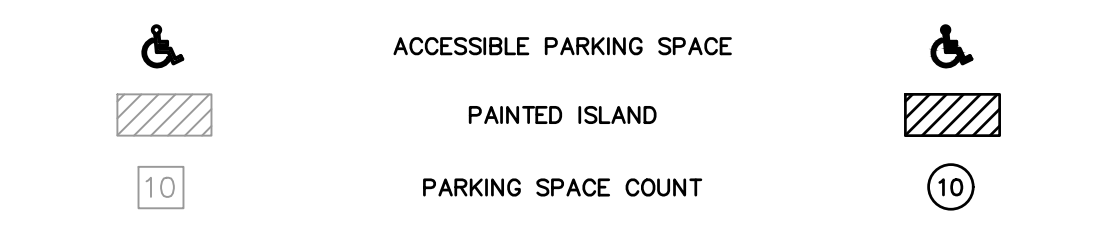
PROJ. No.: 20180317.A10  
DATE: 07/17/2019  
**CN-002**



GENERAL PAVEMENT MARKING NOTE:  
 PLACEMENT AND COLOR OF PAVEMENT MARKING LINES, SYMBOLS AND WORDS SHALL CONFORM TO THE (MUTCD) SECTION 632 OF NHDOT STANDARD SPECIFICATION BOOK, CONTRACT SUPPLEMENTAL SPECIFICATIONS, THE STATE OF NEW HAMPSHIRE PAVEMENT MARKING STANDARD DETAIL SHEETS, AND STANDARD PLAN SHEETS.

RETROREFLECTIVE PAINT PAVEMENT MARKING KEY:  
 THE FOLLOWING PAVEMENT MARKINGS SHALL BE RETROREFLECTIVE THERMOPLASTIC UNLESS OTHERWISE NOTIFIED BY THE STATE STANDARD SYMBOLS AND WORDS

f - WORDS ONLY - WORDS  
 (A) = STOP BARS = 12" SSL (WHITE)(T)



NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
1.	3/18/2019	TAC SUBMITTAL	RRL
2.	5/20/2019	TAC SUBMITTAL	RRL
3.	6/20/2019	TAC SUBMITTAL	RRL
4.	7/17/2019	TAC SUBMITTAL	RRL

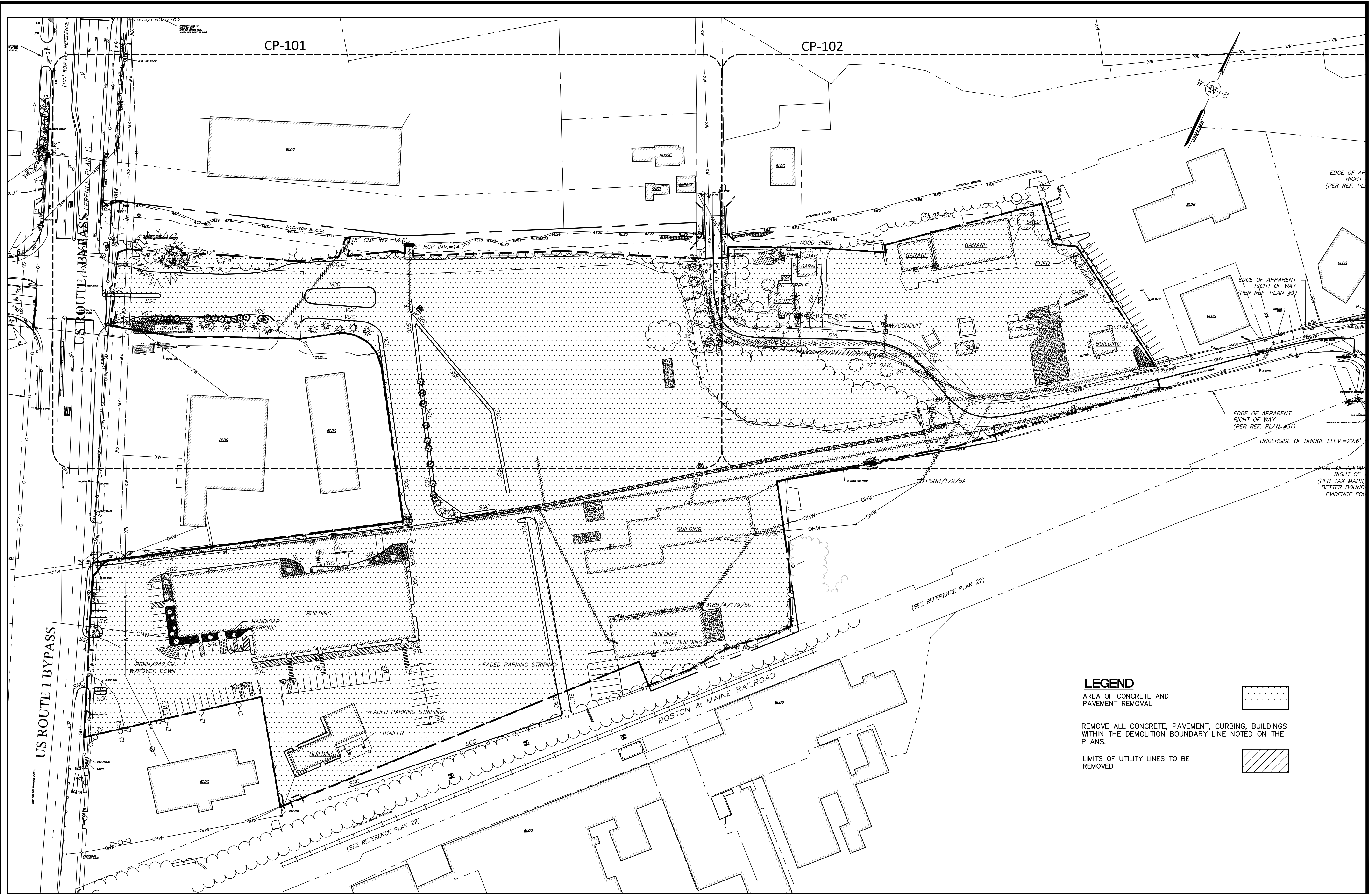
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 DATUM: HORIZ.: VERT.:  
 GRAPHIC SCALE

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CATE STREET DEVELOPMENT, LLC  
 LEGEND  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

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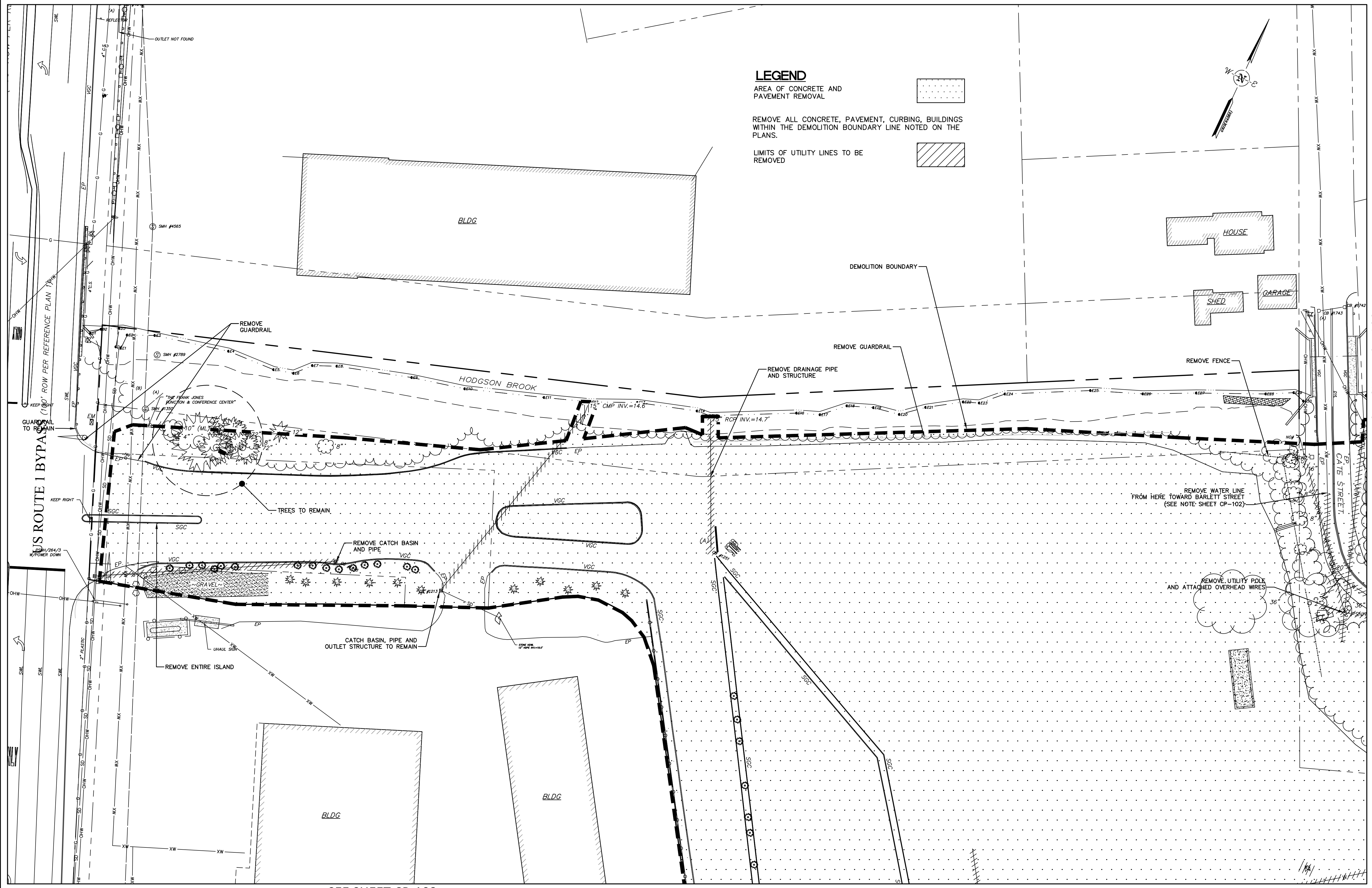
**CN-003**



**LEGEND**

- AREA OF CONCRETE AND PAVEMENT REMOVAL
- REMOVE ALL CONCRETE, PAVEMENT, CURBING, BUILDINGS WITHIN THE DEMOLITION BOUNDARY LINE NOTED ON THE PLANS.
- LIMITS OF UTILITY LINES TO BE REMOVED

<p>SCALE: HORIZ.: 1"=60'          VERT.: 1"=60'</p> <p>DATUM: HORIZ.: NAD83          VERT.: NGVD29</p> <p>GRAPHIC SCALE</p>	
<p>PROJ. No.: 20180317.A10          DATE: 07/17/2019</p>	
<p><b>FUSS &amp; O'NEILL</b>          UPPER SQUARE BUSINESS CENTER          5 FLETCHER STREET, SUITE 1          KENNEBUNK, MAINE 04043          207.563.6609          www.fussdo.com</p>	
<p>CATE STREET DEVELOPMENT, LLC          OVERALL ROADWAY PREPARATION PLAN          CATE STREET          PORTSMOUTH NEW HAMPSHIRE</p>	
<p>CP-100</p>	
<p>DESIGNER REVIEWER</p>	<p>DATE</p>
<p>DESCRIPTION</p>	<p>No.</p>
<p>1. JVA/DAD</p>	<p>1. JVA/DAD</p>
<p>2. JVA/DAD</p>	<p>2. JVA/DAD</p>
<p>3. JVA/DAD</p>	<p>3. JVA/DAD</p>
<p>4. JVA/DAD</p>	<p>4. JVA/DAD</p>



CATE STREET DEVELOPMENT, LLC  
 SITE PREPARATION PLAN  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

CP-101

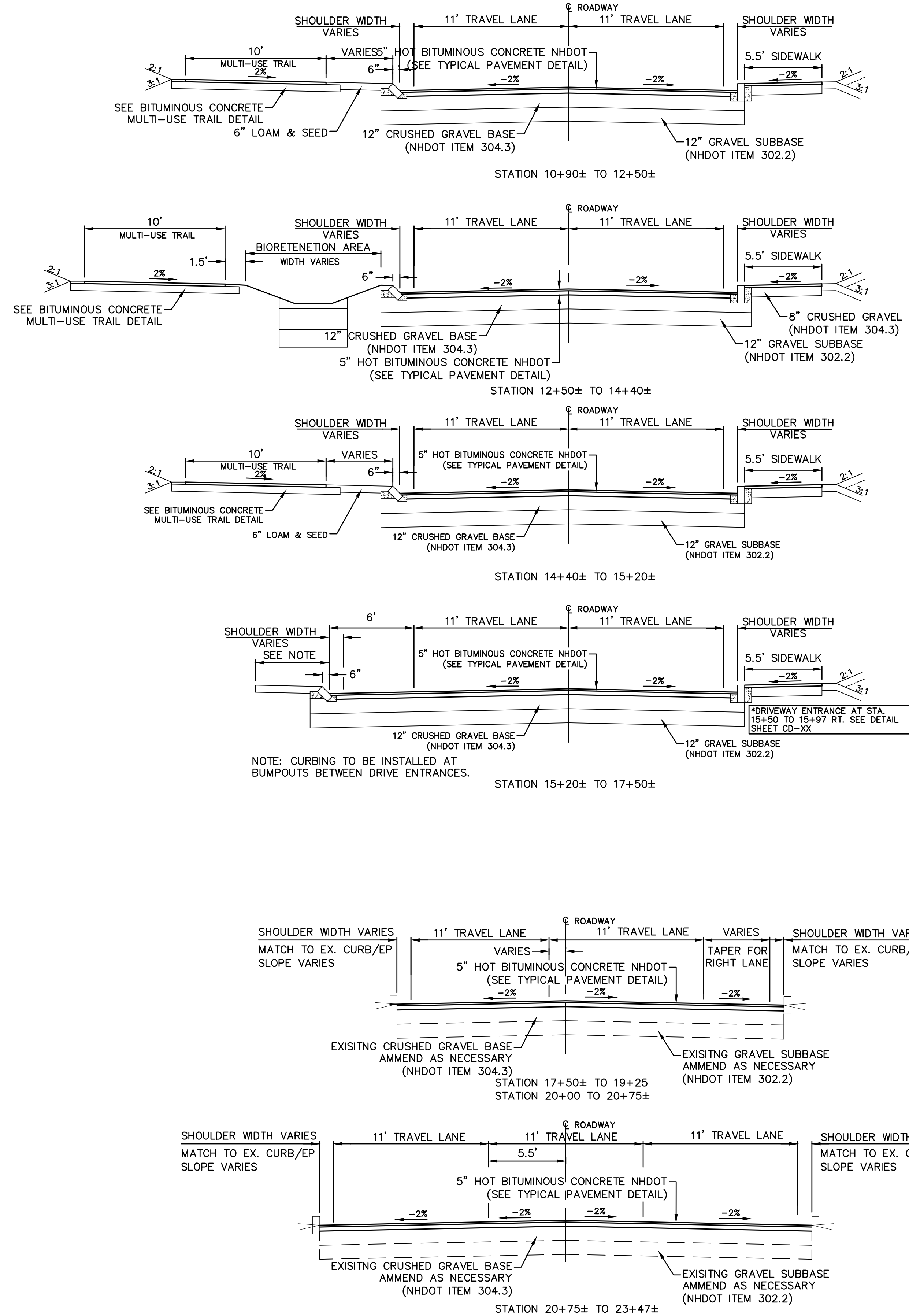
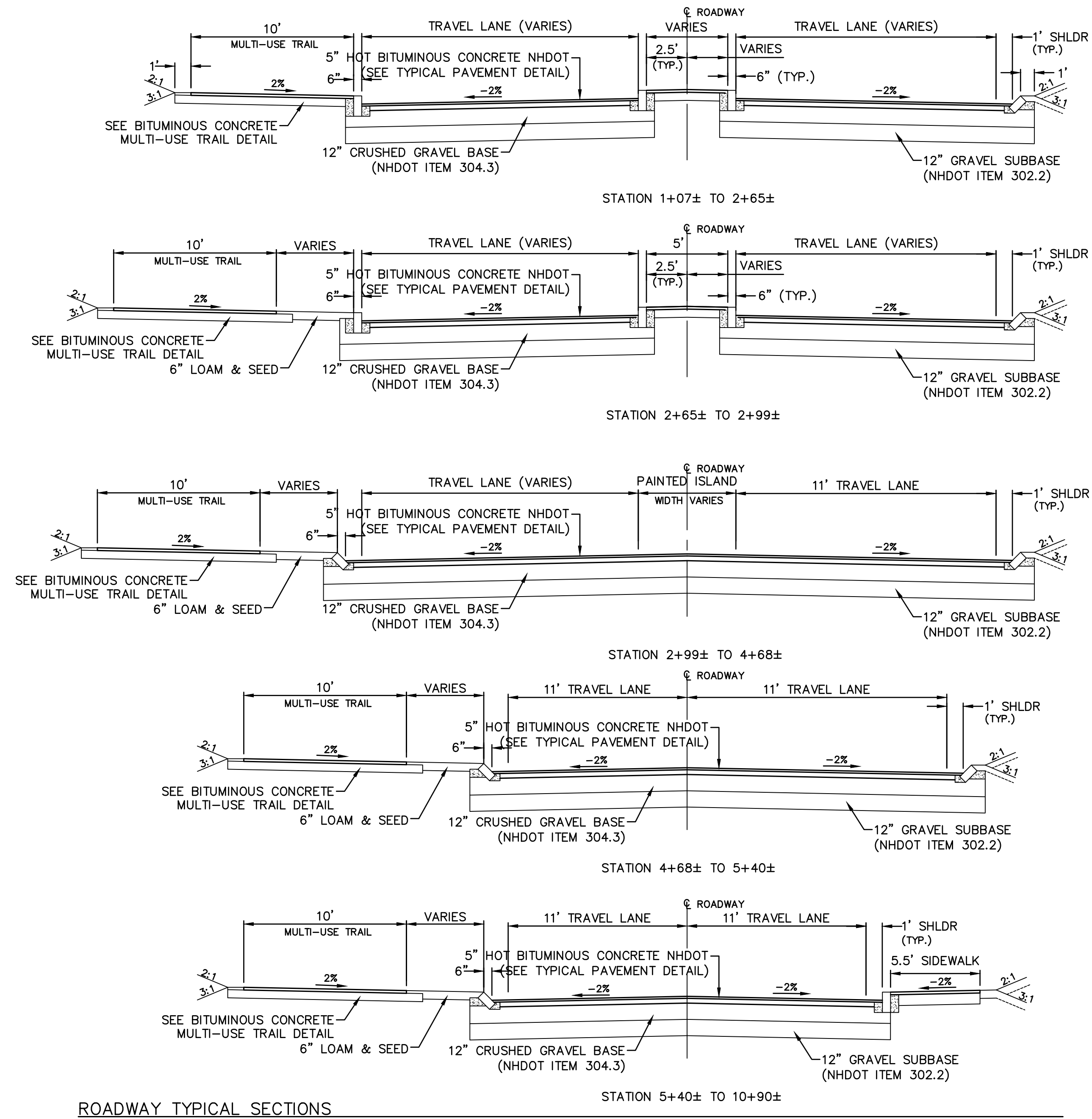
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 VERT.: 1"=30'  
 DATUM: NAD83  
 HORIZ.: NAD83  
 VERT.: NGVD29  
 GRAPHIC SCALE

RICHARD LUNDBORN  
 No. 10843  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF NEW HAMPSHIRE

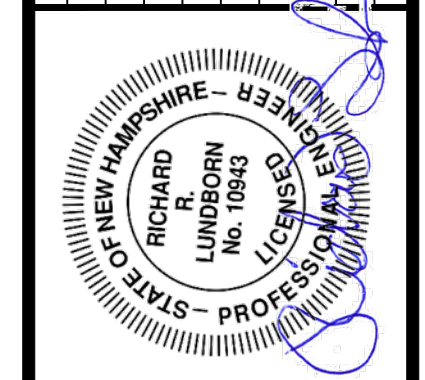
No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
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2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



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No.	DATE	DESCRIPTION	DESIGNER REVIEWER
1	3/18/2019	TAC SUBMITTAL	RRL
2	5/20/2019	TAC SUBMITTAL	RRL
3	6/20/2019	TAC SUBMITTAL	RRL
4	7/17/2019	TAC SUBMITTAL	RRL



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DATUM:	HORIZ.: NAD83	VERT.: NAVD88

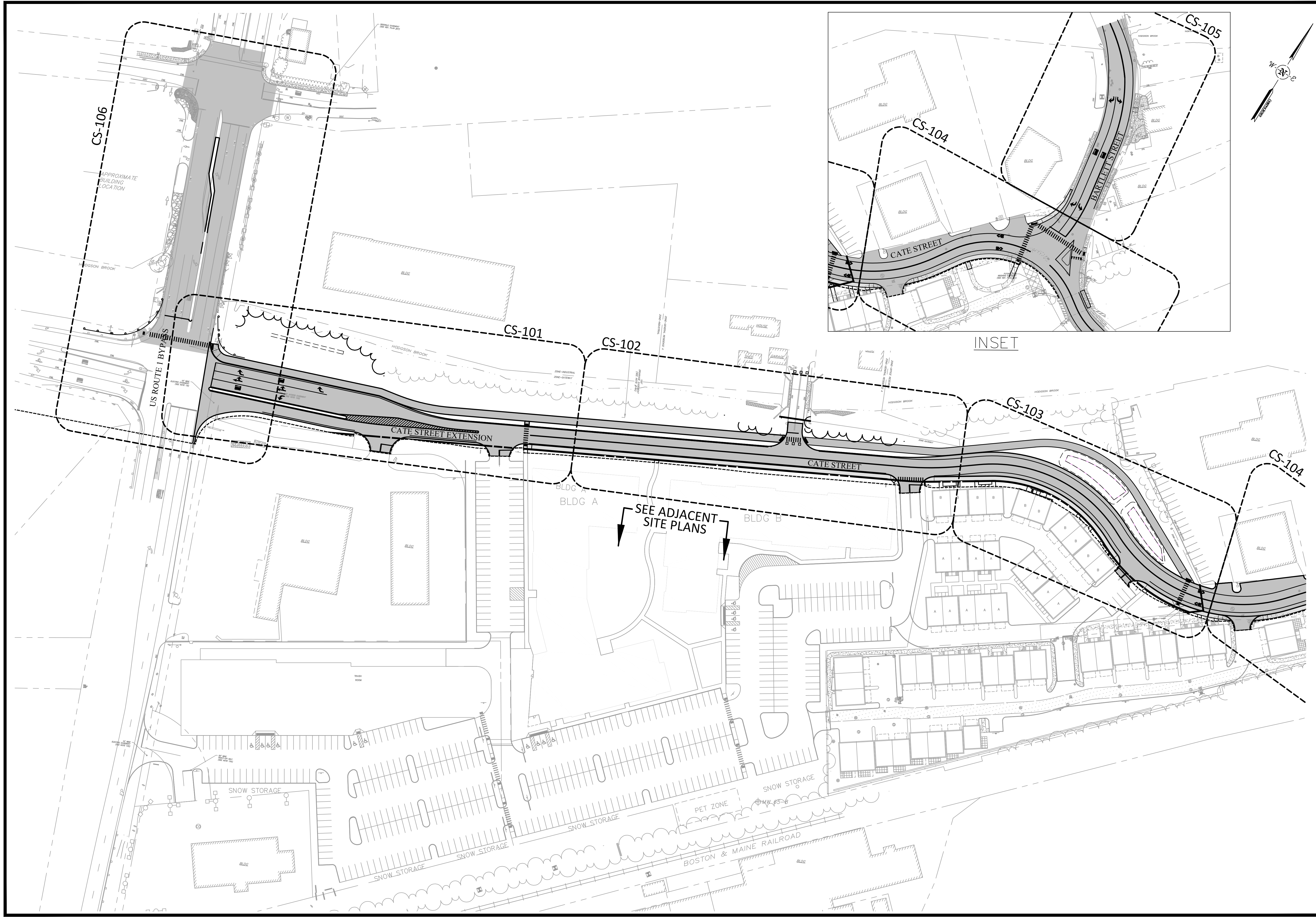
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CATE STREET DEVELOPMENT, LLC  
 TYPICAL ROADWAY SECTIONS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

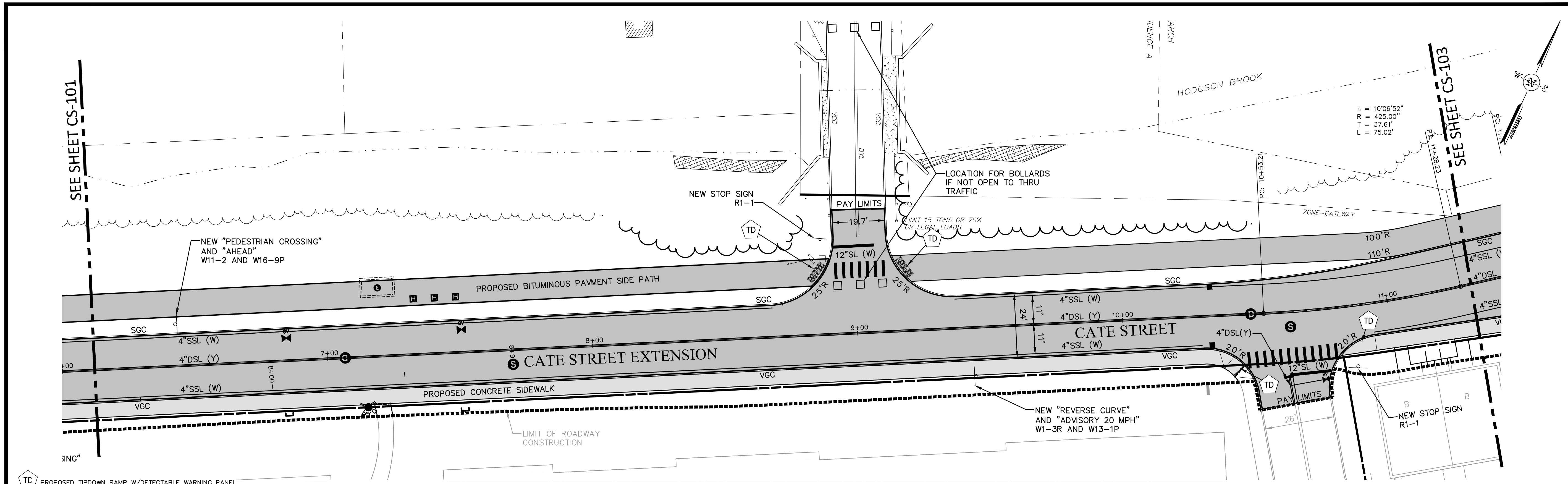
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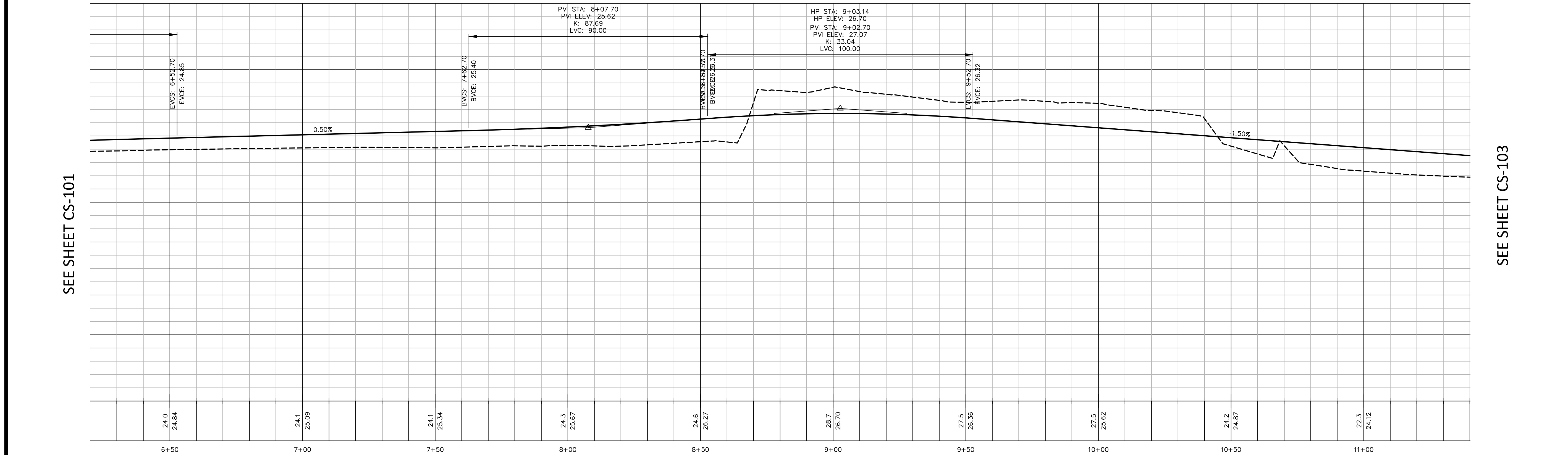
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<p>PROJ. No.: 20180317.A10          DATE: 07/17/2019</p>																						
<p><b>FUSS &amp; O'NEILL</b>          UPPER SQUARE BUSINESS CENTER          5 FLETCHER STREET, SUITE 1          KENNEBUNK, MAINE 04043          www.fandoo.com</p>																						
<p>CATE STREET DEVELOPMENT, LLC          OVERALL ROADWAY PLAN          CATE STREET          PORTSMOUTH NEW HAMPSHIRE</p>		<table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>DESIGNER REVIEWER</th> </tr> </thead> <tbody> <tr> <td>4.</td> <td>7/17/2019</td> <td>TAC SUBMITTAL</td> <td>JVA/DAD RRL</td> </tr> <tr> <td>3.</td> <td>6/20/2019</td> <td>TAC SUBMITTAL</td> <td>JVA/DAD RRL</td> </tr> <tr> <td>2.</td> <td>5/20/2019</td> <td>TAC SUBMITTAL</td> <td>JVA/DAD RRL</td> </tr> <tr> <td>1.</td> <td>3/18/2019</td> <td>TAC SUBMITTAL</td> <td>JVA/DAD RRL</td> </tr> </tbody> </table>	No.	DATE	DESCRIPTION	DESIGNER REVIEWER	4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL	3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL	2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL	1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL
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1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL																			
<p><b>CS-100</b></p>																						





**PLAN**  
 SCALE: 1 INCH = 20 FT.

- TD PROPOSED TIPDOWN RAMP W/DETECTABLE WARNING PANEL
- VGC PROPOSED VERTICAL GRANITE CURB
- SGC PROPOSED SLOPED GRANITE CURB
- CC PROPOSED CONCRETE CURB
- MGC MOUNTABLE GRANITE CURB
- SSL SINGLE SOLID LINE (WHITE)
- DSL DOUBLE SOLID LINE (YELLOW)
- ROADWAY LIMIT

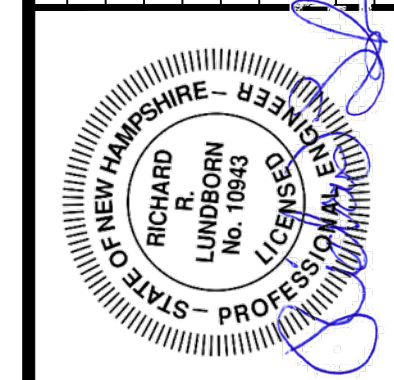


**PROFILE**  
 HORIZ: 1 INCH = 20 FT.  
 VERT: 1 INCH = 4 FT.

SEE SHEET CS-101

SEE SHEET CS-103

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD

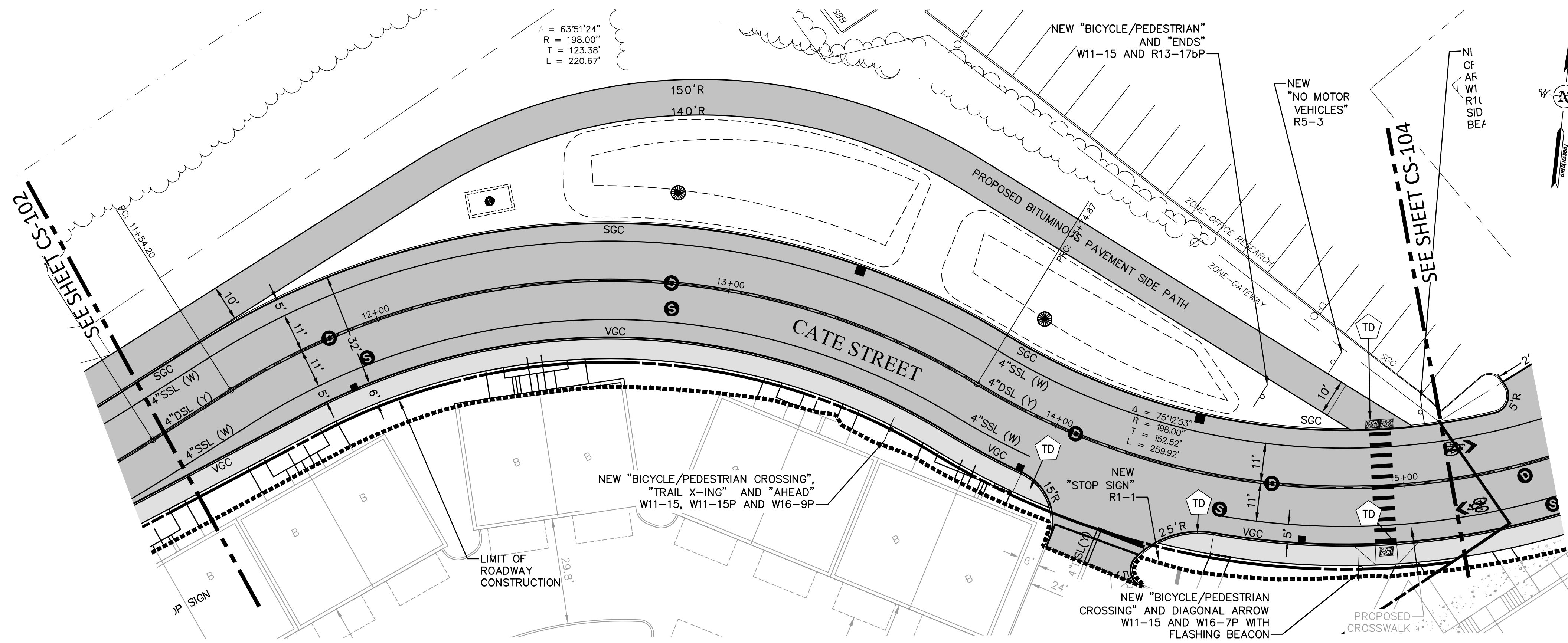


SCALE:	HORIZ: 1"=20'	VERT: 1"=20'
DATUM:	HORIZ: NAD83 VERT: NGVD29	

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**ROADWAY PLAN & PROFILE**  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

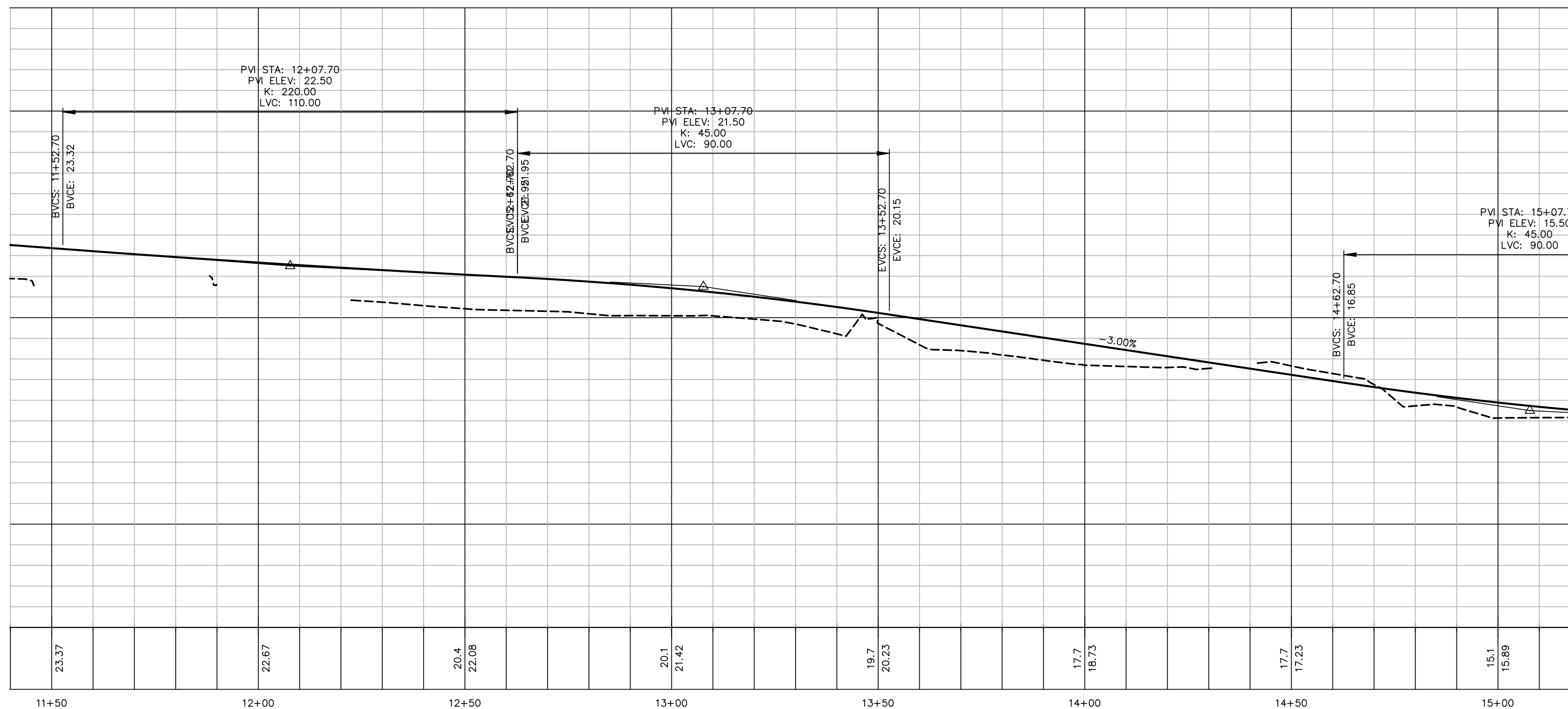
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 DATE: 07/17/2019  
**CS-102**



PLAN  
 SCALE: 1 INCH = 20 FT.

- TD PROPOSED TIPDOWN RAMP W/DETECTABLE WARNING PANEL
- VGC PROPOSED VERTICAL GRANITE CURB
- SGC PROPOSED SLOPED GRANITE CURB
- CC PROPOSED CONCRETE CURB
- MGC MOUNTABLE GRANITE CURB
- SSL SINGLE SOLID LINE (WHITE)
- DSL DOUBLE SOLID LINE (YELLOW)
- ROADWAY LIMIT

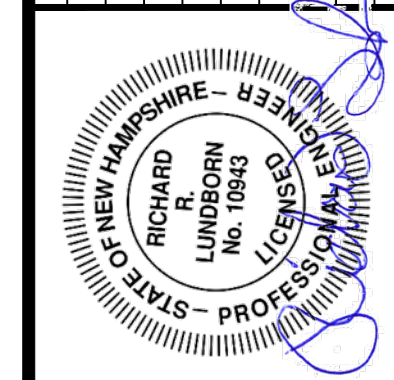
SHEET CS-102



PROFILE  
 HORIZ: 1 INCH = 20 FT.  
 VERT: 1 INCH = 4 FT.

SHEET CS-104

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



SCALE: HORIZ: 1"=20'  
 VERT: 1"=20'

DATUM: HORIZ: NAD83  
 VERT: NGVD29

GRAPHIC SCALE

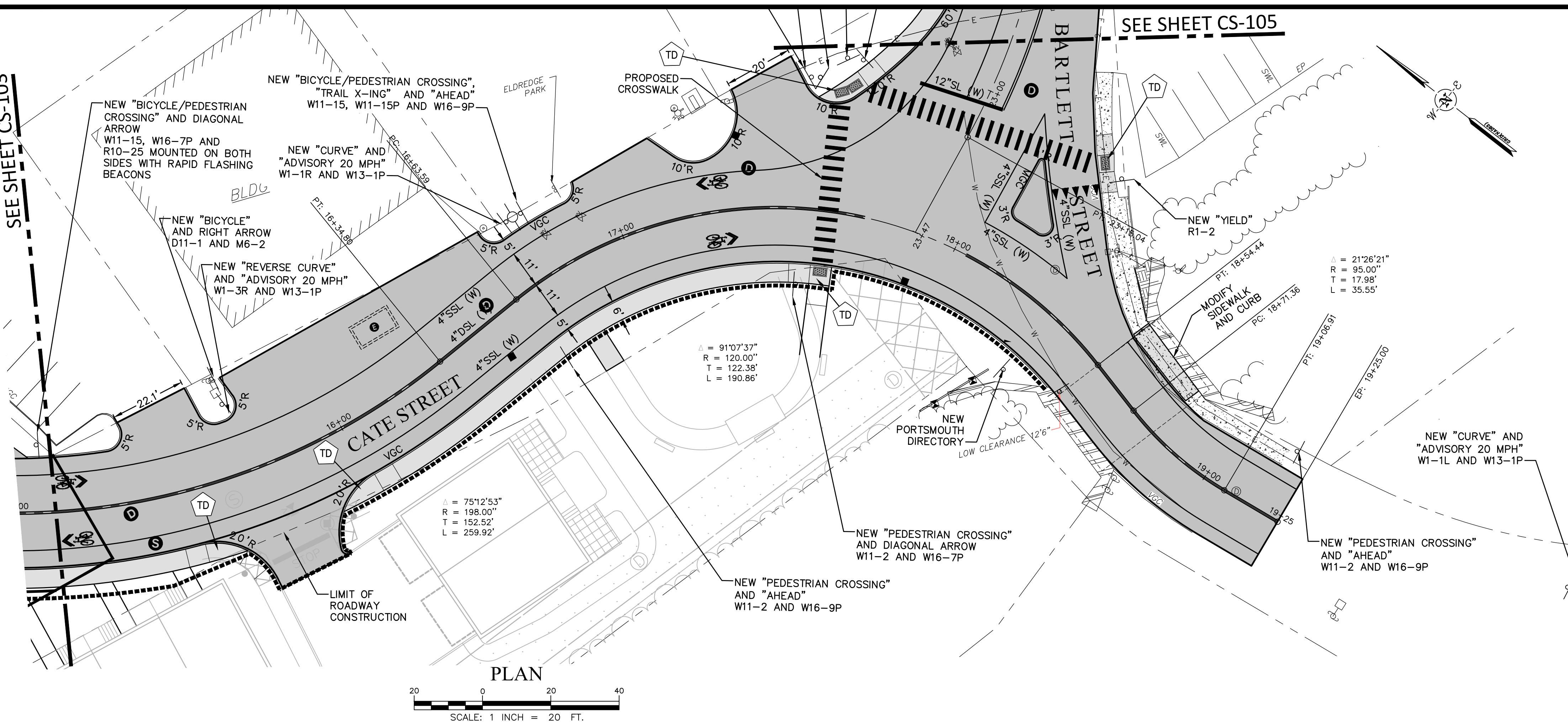
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 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

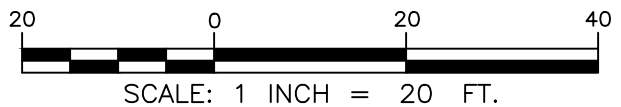
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 DATE: 07/17/2019

**CS-103**

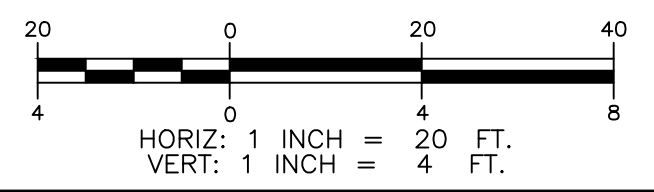
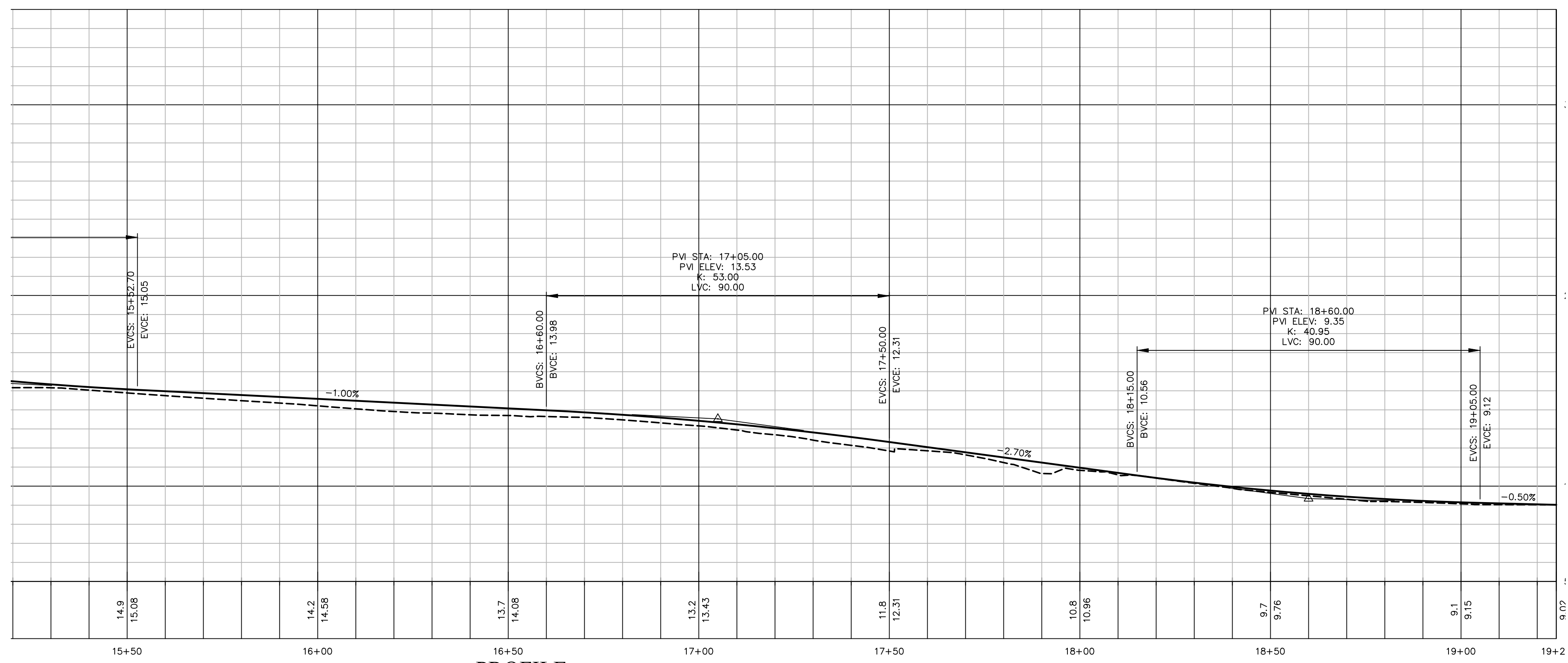
SEE SHEET CS-103



PLAN

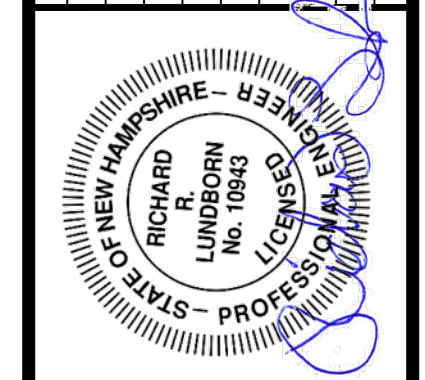


SEE SHEET CS-103



- TD PROPOSED TIPDOWN RAMP W/DETECTABLE WARNING PANEL
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- ROADWAY LIMIT

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4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
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1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



SCALE:	HORIZ.: 1"=20'	VERT.: 1"=20'
DATUM:	HORIZ.: NAD83	VERT.: NGVD29
GRAPHIC SCALE		

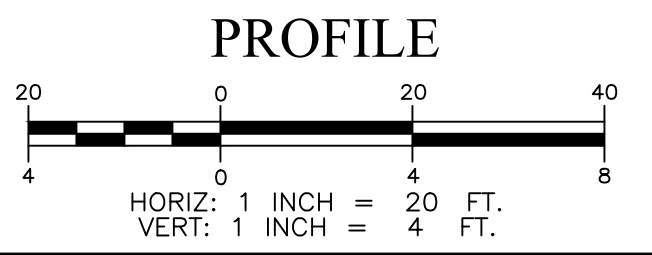
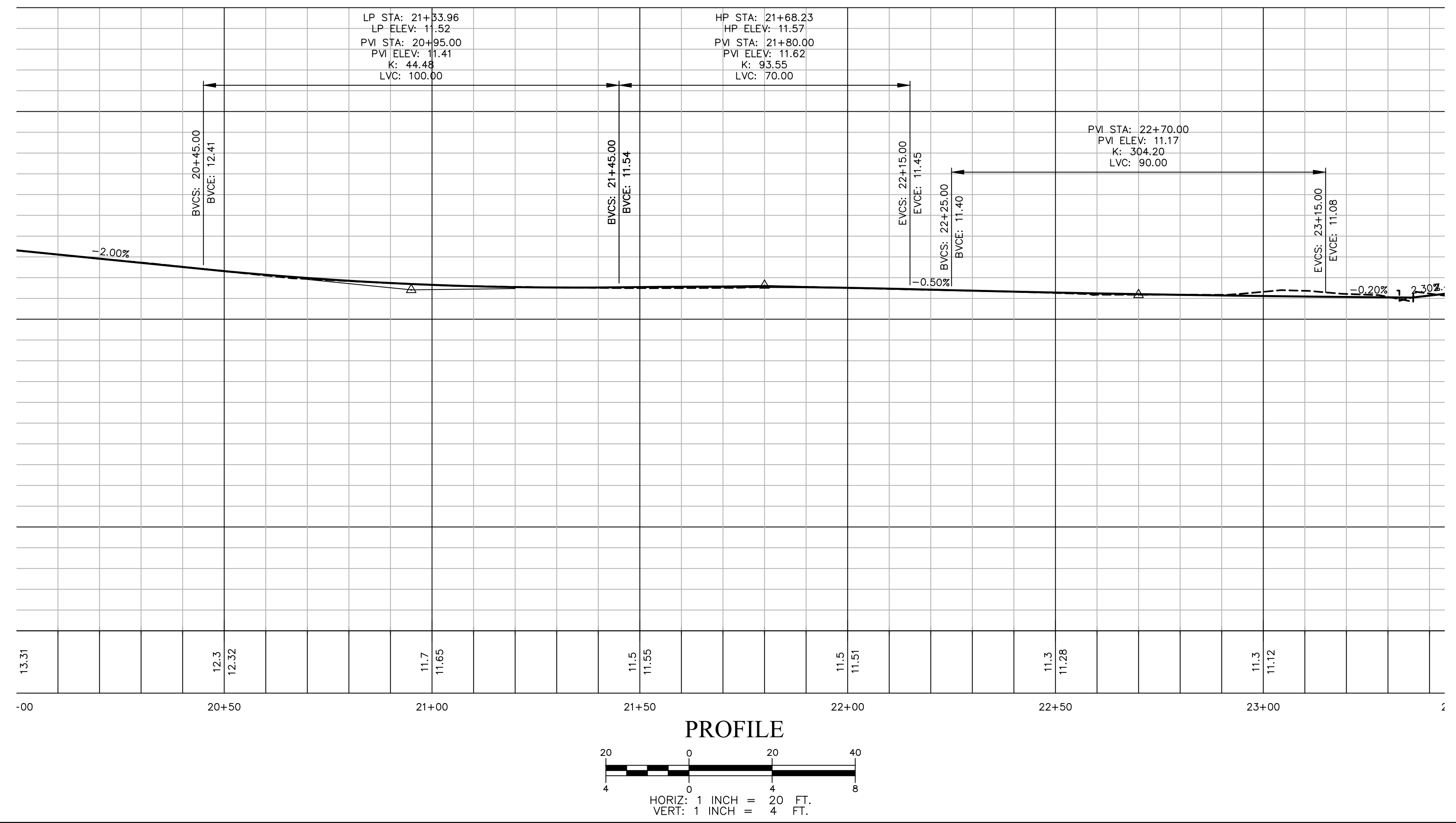
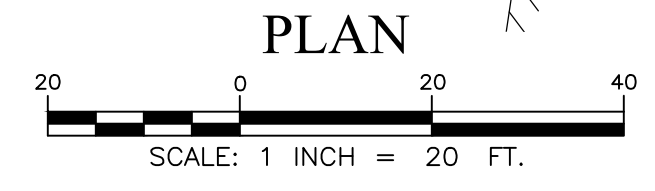
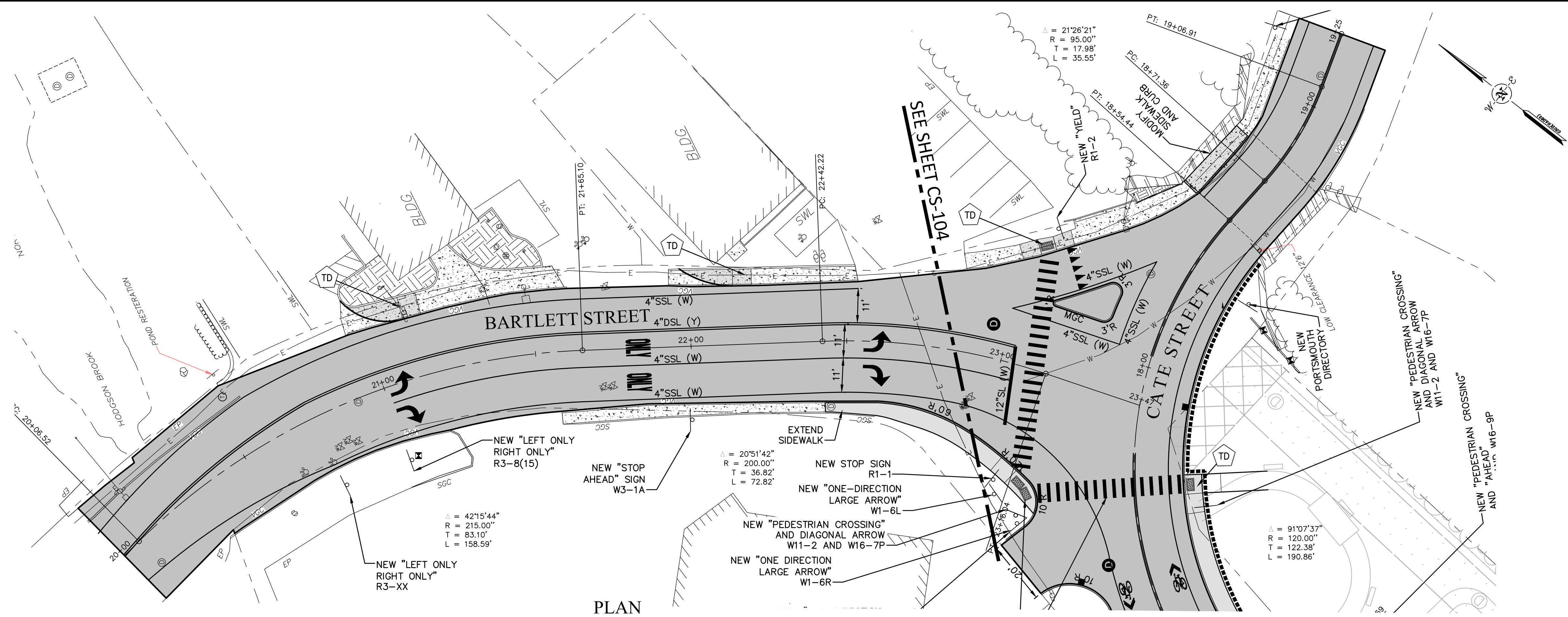
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 PORTSMOUTH NEW HAMPSHIRE

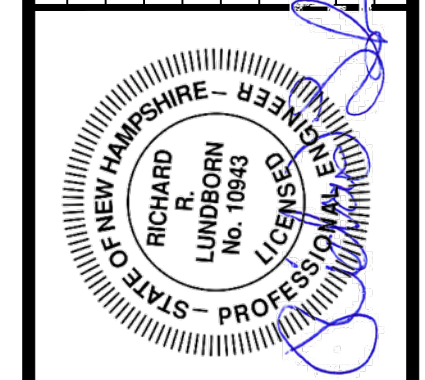
PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CS-104**

- TD PROPOSED TIPDOWN RAMP W/DETECTABLE WARNING PANEL
- VGC PROPOSED VERTICAL GRANITE CURB
- SGC PROPOSED SLOPED GRANITE CURB
- CC PROPOSED CONCRETE CURB
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1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



SCALE: HORIZ.: 1"=20'  
 VERT.: 1"=4'

DATUM:  
 HORIZ.: NAD83  
 VERT.: NGVD29

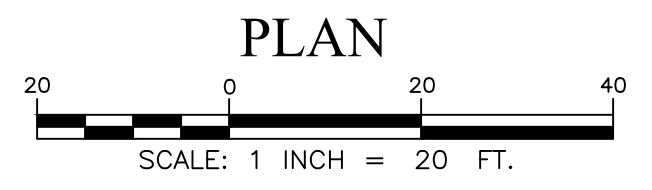
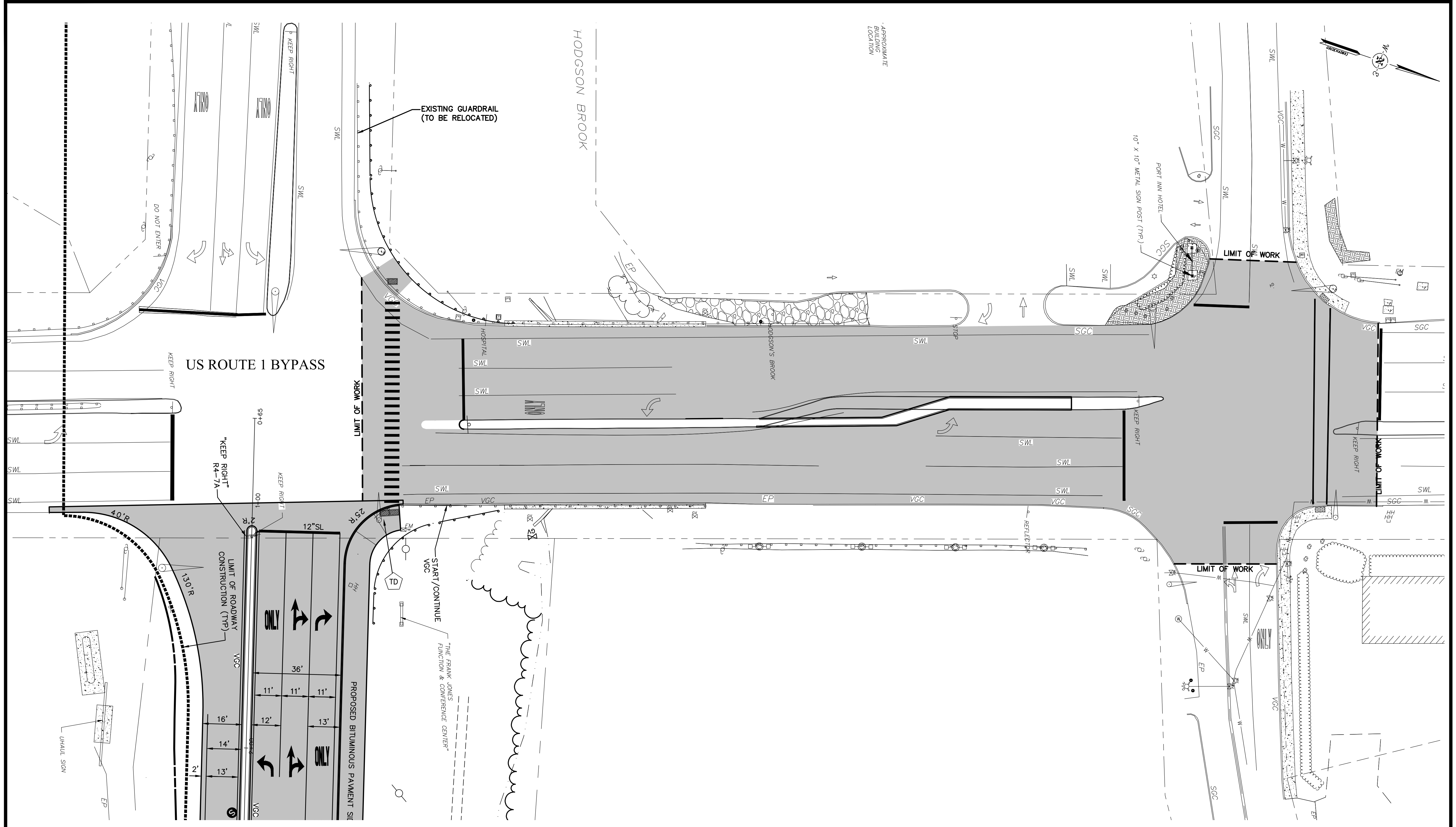
GRAPHIC SCALE

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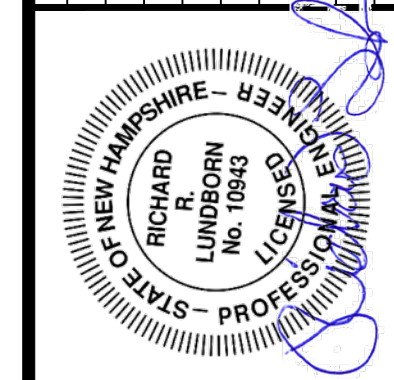
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 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CS-105**



No.	DATE	DESCRIPTION	DESIGNER REVIEWER
1.	3/18/2019	TAC SUBMITTAL	RRL
2.	5/20/2019	TAC SUBMITTAL	RRL
3.	6/20/2019	TAC SUBMITTAL	RRL
4.	7/17/2019	TAC SUBMITTAL	RRL



SCALE: HORIZ.: 1"=20'  
 VERT.: 1"=10'

DATUM: NAD83  
 VERT.: NGVD29

GRAPHIC SCALE

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 RTE 1 BYPASS OFFSITE  
 IMPROVEMENT PLAN  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CS-106**

DRAINAGE STRUCTURES 1-15	
STRUCTURE	STRUCTURE DETAILS
1	WATER QUALITY STRUCTURE CATE STREET STA. 3+10.63, L 83.37' RIM = 22.85 (2) 24" HDPE INV IN = 16.22 (SWALE) 24" HDPE INV OUT = 16.12 CONSTRUCT 25 LF x 24" HDPE S = 0.50%
2	PROPOSED 4' DIA. DMH CATE STREET STA. 3+29.12, L 81.89' RIM = 22.66 (3) 24" HDPE INV IN = 16.36 (1) 24" HDPE INV OUT = 16.26 CONSTRUCT 9 LF x 24" HDPE S = 0.50%
3	PROPOSED 4' DIA. DMH CATE STREET STA. 3+37.68, L 7.88' RIM = 22.94 (6) 24" HDPE INV IN = 16.81 (5) 12" HDPE INV IN = 17.71 (2) 24" HDPE INV OUT = 16.71 CONSTRUCT 71 LF x 24" HDPE S = 0.50%
5	PROPOSED 4' DIA. CB CATE STREET STA. 3+36.99, R 36.88' RIM = 22.31 (3) 12" HDPE INV OUT = 17.92 CONSTRUCT 41 LF x 12" HDPE S = 0.50%
6	PROPOSED 4' DIA. DMH CATE STREET STA. 3+77.68, L 4.48' RIM = 23.00 (7) 12" HDPE INV IN = 17.99 (8) 12" HDPE INV IN = 17.99 (9) 24" HDPE INV IN = 17.09 (3) 24" HDPE INV OUT = 16.99 CONSTRUCT 36 LF x 24" HDPE S = 0.50%
7	PROPOSED 4' DIA. CB CATE STREET STA. 3+60.15, L 28.58' RIM = 22.64 (6) 12" HDPE INV OUT = 18.25 CONSTRUCT 26 LF x 12" HDPE S = 1.00%
8	PROPOSED 4' DIA. CB CATE STREET STA. 3+76.45, R 16.88' RIM = 22.58 (6) 12" HDPE INV OUT = 18.16 CONSTRUCT 18 LF x 12" HDPE S = 1.00%
9	PROPOSED 4' DIA. DMH CATE STREET STA. 4+38.03, L 1.03' RIM = 23.42 (11) 18" HDPE INV IN = 17.87 (10) 12" HDPE INV IN = 18.37 (6) 24" HDPE INV OUT = 17.37 CONSTRUCT 57 LF x 24" HDPE S = 0.50%
10	PROPOSED 4' DIA. CB CATE STREET STA. 4+78.51, R 42.62' RIM = 23.37 (9) 12" HDPE INV OUT = 18.87 CONSTRUCT 56 LF x 12" HDPE S = 0.90%
11	PROPOSED 4' DIA. DMH CATE STREET STA. 5+42.81, 0.00' RIM = 24.17 (13) 12" HDPE INV IN = 18.87 (12) 12" HDPE INV IN = 18.87 (14) 18" HDPE INV IN = 18.47 (9) 18" HDPE INV OUT = 18.37 CONSTRUCT 101 LF x 18" HDPE S = 0.50%
12	PROPOSED 4' DIA. CB CATE STREET STA. 5+42.81, L 11.00' RIM = 23.95 (11) 12" HDPE INV OUT = 19.30 CONSTRUCT 8 LF x 12" HDPE S = 5.86%
13	PROPOSED 4' DIA. CB CATE STREET STA. 5+42.81, R 11.00' RIM = 23.95 (11) 12" HDPE INV OUT = 19.30 CONSTRUCT 8 LF x 12" HDPE S = 5.93%
14	PROPOSED 4' DIA. DMH CATE STREET STA. 7+06.64, 0.00' RIM = 25.12 (15) 18" HDPE INV IN = 19.77 (11) 18" HDPE INV OUT = 19.27 CONSTRUCT 160 LF x 18" HDPE S = 0.50%
15	PROPOSED 4' DIA. DMH CATE STREET STA. 7+19.11, R 153.40' RIM = 27.20 (17) 12" HDPE INV IN = 20.64 (16) 12" HDPE INV IN = 20.64 (14) 18" HDPE INV OUT = 20.54 CONSTRUCT 150 LF x 18" HDPE S = 0.51%

DRAINAGE STRUCTURES 21-63	
STRUCTURE	STRUCTURE DETAILS
E4082	EXISTING CB CATE STREET STA. 19+09.82, L 12.70' RIM = 8.79 (E4081) 12" HDPE INV IN = 5.70 (E4083) 12" HDPE INV OUT = 5.90 CONSTRUCT 8 LF x 12" HDPE S = 1.79%
E4081	EXISTING CB CATE STREET STA. 18+95.20, L 12.56' RIM = 8.88 (E4082) 12" HDPE INV OUT = 5.80 CONSTRUCT 10 LF x 12" HDPE S = 0.77%
E4093	EXISTING CB CATE STREET STA. 19+09.46, R 12.16' RIM = 9.00 (E4083) 12" HDPE INV OUT = 5.90 CONSTRUCT 10 LF x 12" HDPE S = 2.19%
E4083	EXISTING DMH CATE STREET STA. 19+10.08, L 1.51' RIM = 9.06 (E3866A) 24" RCP INV IN = 5.00 (E4093) 12" HDPE INV IN = 5.60 (E4082) 12" HDPE INV IN = 5.70 (E4083 OUTLET) 24" RCP INV OUT = 5.00 CONSTRUCT 24 LF x 24" RCP S = 0.98%
E3866	EXISTING DMH CATE STREET STA. 18+26.90, L 10.71' RIM = 10.04 (RE-CORE E3579) 24" HDPE INV OUT = 5.40 CONSTRUCT 50 LF x 24" HDPE S = 4.90% (E4083) 24" RCP INV OUT = 5.30 CONSTRUCT 80 LF x 24" RCP S = 0.36%
E4604	EXISTING DMH BARTLETT STREET STA. 20+61.81, L 133.59' RIM = 10.30 (E4604A) 36" RCP INV IN = 1.00 (E4035) 42" RCP INV IN = 1.00
E3579	EXISTING DMH CORED FOR 2' PIPE CATE STREET STA. 17+99.84, L 51.57' RIM = 10.77 (61) 12" HDPE INV IN = 6.38 (RE-CORE E3772) 24" HDPE INV IN = 3.00 (RE-CORE E3866) 24" HDPE INV IN = 3.00 (E4035) 36" RCP INV OUT = 2.00 CONSTRUCT 202 LF x 36" RCP S = 0.10%
E4035	EXISTING DMH BARTLETT STREET STA. 20+90.71, R 1.14' RIM = 11.71 (E3579) 36" RCP INV IN = 1.80 (E4604) 42" RCP INV OUT = 1.80 CONSTRUCT 136 LF x 42" RCP S = 0.57%
E3772	EXISTING DMH CORED FOR 2' PIPE CATE STREET STA. 17+38.49, L 11.79' RIM = 12.38 (RE-CORE E2349) 24" HDPE INV IN = 3.51 (62) 12" HDPE INV IN = 4.41 (RE-CORE E3579) 24" HDPE INV OUT = 3.41 CONSTRUCT 82 LF x 24" HDPE S = 0.50%
E2348	EXISTING CB CATE STREET STA. 16+56.77, L 20.32' RIM = 13.60 (E2347) 15" HDPE INV IN = 9.70 (E2349) 15" HDPE INV OUT = 9.80 CONSTRUCT 13 LF x 15" HDPE S = 4.34%
E2347	EXISTING CB CATE STREET STA. 16+11.37, L 25.97' RIM = 13.80 (E2348) 15" HDPE INV OUT = 9.80 CONSTRUCT 39 LF x 15" HDPE S = 0.26%
E2349	EXISTING DMH CORED FOR 2' PIPE CATE STREET STA. 16+55.67, L 4.23' RIM = 13.94 (21) 24" HDPE INV IN = 4.02 (63) 12" HDPE INV IN = 4.92 (E2348) 15" HDPE INV IN = 9.10 (RE-CORE E3772) 24" HDPE INV OUT = 3.92 CONSTRUCT 83 LF x 24" HDPE S = 0.50%

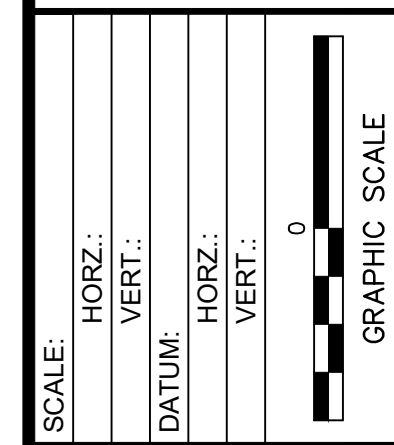
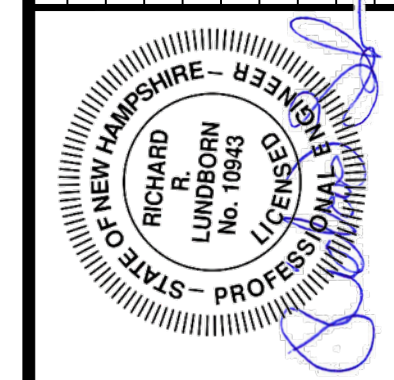
DRAINAGE STRUCTURES 21-63	
STRUCTURE	STRUCTURE DETAILS
21	PROPOSED 4' DIA. DMH CATE STREET STA. 15+33.70, R 3.16' RIM = 8.22 (22) 24" HDPE INV IN = 9.89 (E2349) 24" HDPE INV OUT = 9.79 CONSTRUCT 117 LF x 24" HDPE S = 4.94%
22	PROPOSED 4' DIA. DMH CATE STREET STA. 14+62.85, 0.00' RIM = 16.85 (23) 12" HDPE INV IN = 12.22 (25) 24" HDPE INV IN = 10.83 (24) 12" HDPE INV IN = 12.22 (21) 24" HDPE INV OUT = 10.73 CONSTRUCT 68 LF x 24" HDPE S = 1.25%
23	PROPOSED 4' DIA. CB CATE STREET STA. 14+72.18, R 15.00' RIM = 16.75 (22) 12" HDPE INV OUT = 12.36 CONSTRUCT 14 LF x 12" HDPE S = 1.00%
24	PROPOSED 4' DIA. CB CATE STREET STA. 14+45.15, R 38.08' RIM = 18.42 (22) 12" HDPE INV OUT = 13.00 CONSTRUCT 39 LF x 12" HDPE S = 2.00%
25	PROPOSED 4' DIA. DMH CATE STREET STA. 14+05.84, 0.00' RIM = 18.56 (26) 12" HDPE INV IN = 13.29 (40) 24" HDPE INV IN = 11.19 (27) 12" HDPE INV IN = 12.09 (28) 18" HDPE INV IN = 12.33 (22) 24" HDPE INV OUT = 11.09 CONSTRUCT 53 LF x 24" HDPE S = 0.50%
26	PROPOSED 4' DIA. CB CATE STREET STA. 13+95.87, R 15.00' RIM = 18.43 (25) 12" HDPE INV OUT = 14.00 CONSTRUCT 15 LF x 12" HDPE S = 5.00%
27	RG #1 OVERFLOW CATE STREET STA. 13+82.53, L 25.26' RIM = 0.00 (25) 12" HDPE INV OUT = 12.43 CONSTRUCT 30 LF x 12" HDPE S = 1.16%
28	PROPOSED 4' DIA. DMH CATE STREET STA. 14+20.46, R 49.41' RIM = 18.58 (29) 12" HDPE INV IN = 12.67 (35) 12" HDPE INV IN = 15.94 (25) 18" HDPE INV OUT = 12.57 CONSTRUCT 49 LF x 18" HDPE S = 0.50%
29	PROPOSED 4' DIA. DMH CATE STREET STA. 14+25.44, R 56.84' RIM = 18.58 (30) 12" HDPE INV IN = 14.30 (28) 12" HDPE INV OUT = 12.70 CONSTRUCT 6 LF x 12" HDPE S = 0.50%
30	DETENSION BASIN #1 CATE STREET STA. 14+25.15, R 60.82' RIM = 18.66 (29) 12" HDPE INV OUT = 14.34 CONSTRUCT 3 LF x 12" HDPE S = 2.00%
31	PROPOSED 4' DIA. DMH CATE STREET STA. 14+16.17, R 108.40' RIM = 19.02 (32) 12" HDPE INV IN = 14.50 (30) 12" HDPE INV OUT = 14.40 CONSTRUCT 3 LF x 12" HDPE S = 3.00%
32	PROPOSED 4' DIA. DMH CATE STREET STA. 14+10.35, R 108.11' RIM = 19.44 (34) 12" HDPE INV IN = 15.15 (33) 12" HDPE INV IN = 14.65 (31) 12" HDPE INV OUT = 14.55 CONSTRUCT 6 LF x 12" HDPE S = 1.00%

DRAINAGE STRUCTURES 21-63	
STRUCTURE	STRUCTURE DETAILS
33	PROPOSED 4' DIA. CB CATE STREET STA. 14+09.74, R 175.18' RIM = 18.56 (32) 12" HDPE INV OUT = 15.00 CONSTRUCT 64 LF x 12" HDPE S = 0.55%
34	PROPOSED 4' DIA. CB CATE STREET STA. 14+06.65, R 80.71' RIM = 20.03 (32) 12" HDPE INV OUT = 15.50 CONSTRUCT 24 LF x 12" HDPE S = 1.46%
35	PROPOSED 4' DIA. DMH CATE STREET STA. 13+98.74, R 85.71' RIM = 20.50 (36) 12" HDPE INV IN = 17.75 (28) 12" HDPE INV OUT = 16.15 CONSTRUCT 43 LF x 12" HDPE S = 0.50%
36	DETENTION BASIN #2 CATE STREET STA. 13+95.96, R 85.90' RIM = 20.55 (35) 12" HDPE INV OUT = 17.79 CONSTRUCT 3 LF x 12" HDPE S = 2.00%
37	PROPOSED 4' DIA. DMH CATE STREET STA. 12+91.07, R 86.88' RIM = 21.91 (39) 12" HDPE INV IN = 18.74 (38) 12" HDPE INV IN = 17.95 (36) 12" HDPE INV OUT = 17.85 CONSTRUCT 3 LF x 12" HDPE S = 3.00%
38	PROPOSED 4' DIA. CB CATE STREET STA. 12+76.81, R 83.04' RIM = 22.06 (37) 12" HDPE INV OUT = 18.00 CONSTRUCT 6 LF x 12" HDPE S = 1.00%
39	PROPOSED 4' DIA. CB CATE STREET STA. 11+90.18, R 84.80' RIM = 23.06 (37) 12" HDPE INV OUT = 19.00 CONSTRUCT 53 LF x 12" HDPE S = 0.50%
40	PROPOSED 4' DIA. DMH CATE STREET STA. 12+83.70, 0.00' RIM = 21.69 (41) 12" HDPE INV IN = 13.35 (42) 24" HDPE INV IN = 11.88 (25) 24" HDPE INV OUT = 11.78 CONSTRUCT 118 LF x 24" HDPE S = 0.50%
41	RG #2 OVERFLOW CATE STREET STA. 12+83.42, L 25.41' RIM = 17.89 (40) 12" HDPE INV OUT = 14.43 CONSTRUCT 22 LF x 12" HDPE S = 5.00%
42	PROPOSED 4' DIA. DMH CATE STREET STA. 11+85.44, 0.00' RIM = 22.86 (44) 24" HDPE INV IN = 12.45 (43) 12" HDPE INV IN = -2.50 (41) 24" HDPE INV OUT = 12.35 CONSTRUCT 94 LF x 24" HDPE S = 0.50%
43	PROPOSED 4' DIA. CB CATE STREET STA. 11+86.55, R 15.48' RIM = 22.40 (42) 12" HDPE INV OUT = -2.39 CONSTRUCT 12 LF x 12" HDPE S = 1.00%
44	PROPOSED 4' DIA. DMH CATE STREET STA. 10+48.39, 0.00' RIM = 24.89 (45) 12" HDPE INV IN = 18.50 (46) 12" HDPE INV IN = 18.50 (47) 18" HDPE INV IN = 13.61 (42) 24" HDPE INV OUT = 13.11 CONSTRUCT 133 LF x 24" HDPE S = 0.50%
45	PROPOSED 4' DIA. CB CATE STREET STA. 10+33.32, R 11.00' RIM = 24.90 (44) 12" HDPE INV OUT = 19.50 CONSTRUCT 15 LF x 12" HDPE S = 6.82%
46	PROPOSED 4' DIA. CB CATE STREET STA. 10+33.32, L 11.00' RIM = 24.90 (44) 12" HDPE INV OUT = 19.50 CONSTRUCT 15 LF x 12" HDPE S = 6.82%
47	PROPOSED 4' DIA. DMH CATE STREET STA. 10+61.58, R 122.45' RIM = 25.93 (48) 18" HDPE INV IN = 14.31 (44) 18" HDPE INV OUT = 14.21 CONSTRUCT 120 LF x 18" HDPE S = 0.50%
48	PROPOSED 4' DIA. DMH CATE STREET STA. 10+25.80, R 127.22' RIM = 27.00 (57) 12" HDPE INV IN = 15.00 (49) 12" HDPE INV IN = 15.00 (47) 18" HDPE INV OUT = 14.48 CONSTRUCT 35 LF x 18" HDPE S = 0.50%

DRAINAGE STRUCTURES 21-63	
STRUCTURE	STRUCTURE DETAILS
49	PROPOSED 4' DIA. DMH CATE STREET STA. 10+27.11, R 137.45' RIM = 26.25 (50) 12" HDPE INV IN = 18.55 (48) 12" HDPE INV OUT = 15.10 CONSTRUCT 7 LF x 12" HDPE S = 1.58%
50	INFILTRATION BASIN #2 CATE STREET STA. 10+27.61, R 141.41' RIM = 26.15 (49) 12" HDPE INV OUT = 18.60 CONSTRUCT 3 LF x 12" HDPE S = 2.50%
51	PROPOSED 4' DIA. DMH CATE STREET STA. 9+62.84, R 234.29' RIM = 25.42 (52) 18" HDPE INV IN = 18.92 (50) 18" HDPE INV OUT = 18.92 CONSTRUCT 3 LF x 18" HDPE S = 0.00%
52	PROPOSED 4' DIA. DMH CATE STREET STA. 9+63.98, R 243.22' RIM = 25.49 (54) 18" HDPE INV IN = 19.07 (53) 12" HDPE INV IN = 19.95 (51) 18" HDPE INV OUT = 18.97 CONSTRUCT 6 LF x 18" HDPE S = 1.00%
53	PROPOSED 4' DIA. CB CATE STREET STA. 10+53.01, R 233.88' RIM = 23.88 (52) 12" HDPE INV OUT = 20.38 CONSTRUCT 86 LF x 12" HDPE S = 0.50%
54	PROPOSED 4' DIA. DMH CATE STREET STA. 9+36.44, R 333.81' RIM = 24.55 (55) 12" HDPE INV IN = 20.02 (56) 12" HDPE INV IN = 20.02 (52) 18" HDPE INV OUT = 19.52 CONSTRUCT 91 LF x 18" HDPE S = 0.50%
55	PROPOSED 4' DIA. CB CATE STREET STA. 9+38.27, R 381.51' RIM = 23.74 (54) 12" HDPE INV OUT = 20.24 CONSTRUCT 44 LF x 12" HDPE S = 0.50%
56	PROPOSED 4' DIA. CB CATE STREET STA. 8+64.09, R 340.65' RIM = 25.36 (54) 12" HDPE INV OUT = 20.86 CONSTRUCT 69 LF x 12" HDPE S = 1.22%
57	PROPOSED 4' DIA. DMH CATE STREET STA. 8+63.04, R 147.97' RIM = 26.47 (58) 12" HDPE INV IN = 18.55 (48) 12" HDPE INV OUT = 15.80 CONSTRUCT 161 LF x 12" HDPE S = 0.50%
58	INFILTRATION BASIN #3 CATE STREET STA. 8+63.54, R 151.94' RIM = 26.46 (57) 12" HDPE INV OUT = 18.60 CONSTRUCT 3 LF x 12" HDPE S = 2.50%
59	PROPOSED 4' DIA. DMH CATE STREET STA. 8+63.63, R 265.26' RIM = 25.90 (60) 6" HDPE INV IN = 20.20 (58) 6" HDPE INV OUT = 20.10 CONSTRUCT 3 LF x 6" HDPE S = 3.00%
60	BUILDING B ROOF DRAIN CATE STREET STA. 7+56.79, R 220.50' RIM = 27.25 (59) 6" HDPE INV OUT = 20.78 CONSTRUCT 112 LF x 6" HDPE S = 0.51%
61	PROPOSED 4' DIA. CB CATE STREET STA. 17+89.73, R 14.52' RIM = 10.85 (E3772) 12" HDPE INV OUT = 7.00 CONSTRUCT 64 LF x 12" HDPE S = 0.95%
62	PROPOSED 4' DIA. CB CATE STREET STA. 17+35.79, L 21.55' RIM = 8.86 (E3772) 12" HDPE INV OUT = 4.48 CONSTRUCT 7 LF x 12" HDPE S = 1.00%
63	PROPOSED 4' DIA. CB CATE STREET STA. 16+52.02, R 12.18' RIM = 13.78 (E2349) 12" HDPE INV OUT = 5.05 CONSTRUCT 13 LF x 12" HDPE S = 1.00%

LIGHT TABLE ENTRIES FROM SITE PLAN PROVIDED FOR REFERENCE ONLY

NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
1			
2			
3			
4	7/17/2019	TAC SUBMITTAL	JVA/DAD
5	6/20/2019	TAC SUBMITTAL	JVA/DAD
6	5/20/2019	TAC SUBMITTAL	JVA/DAD
7	3/18/2019	TAC SUBMITTAL	JVA/DAD

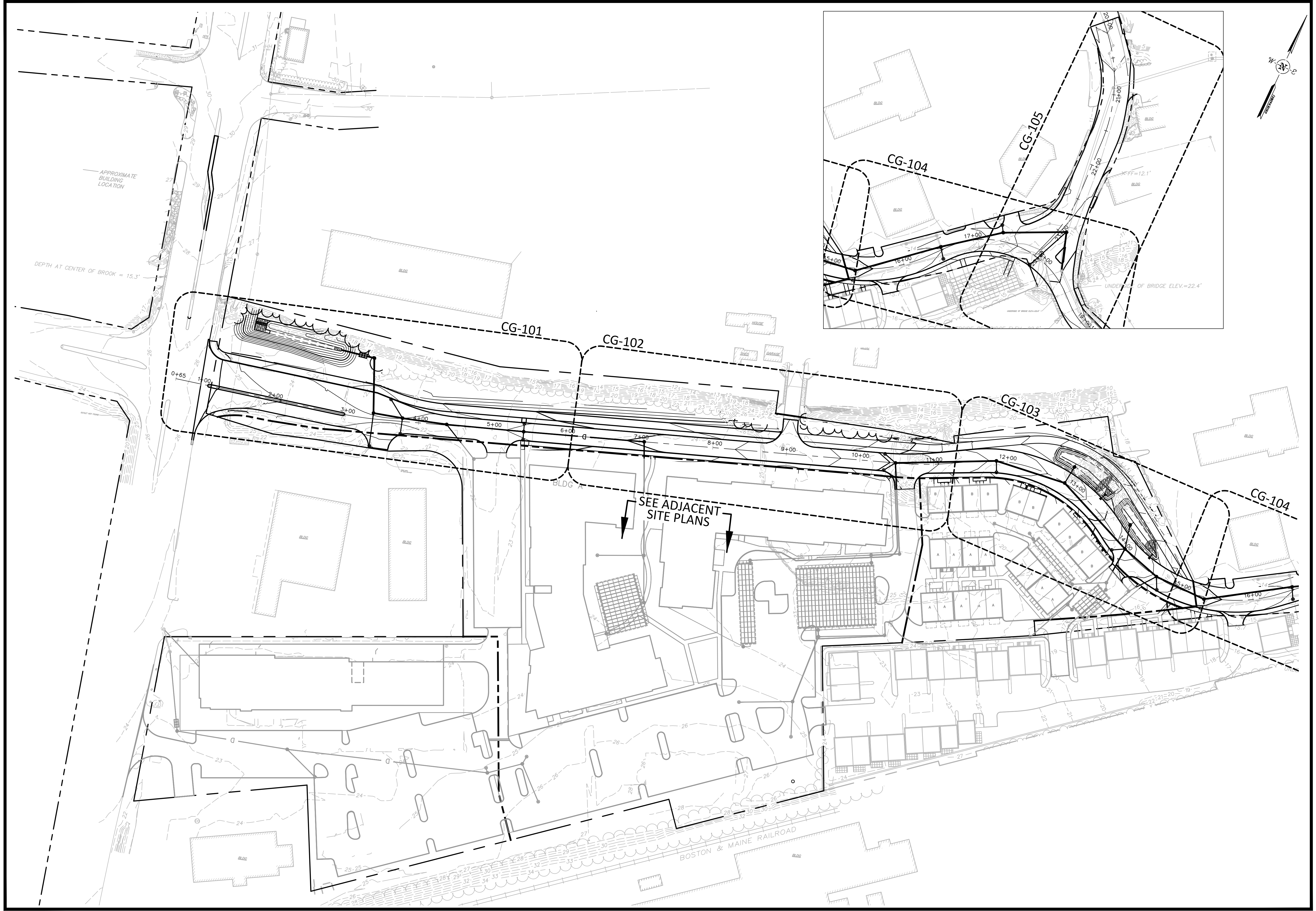


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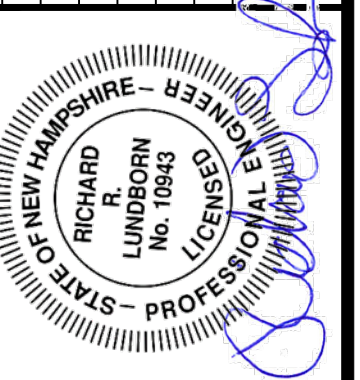
CATE STREET DEVELOPMENT, LLC  
 ROADWAY DRAINAGE  
 STRUCTURE TABLE  
 CATE STREET  
 PORTSMOUTH  
 NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CG-001**





NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL

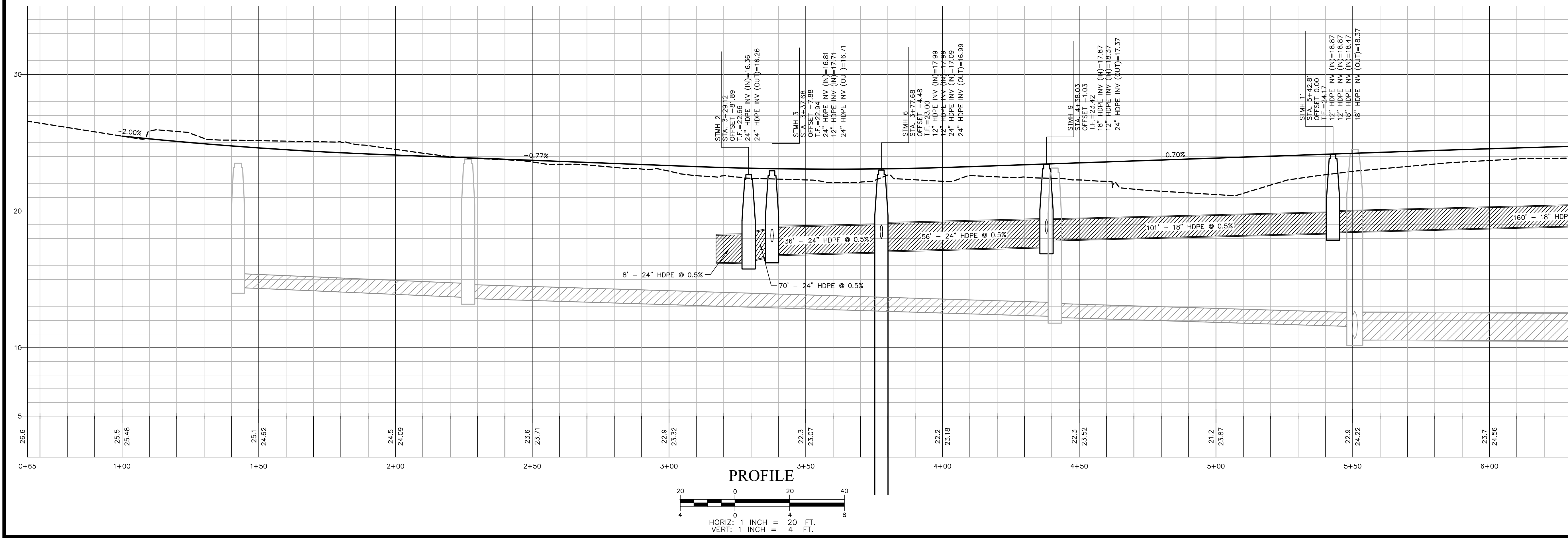
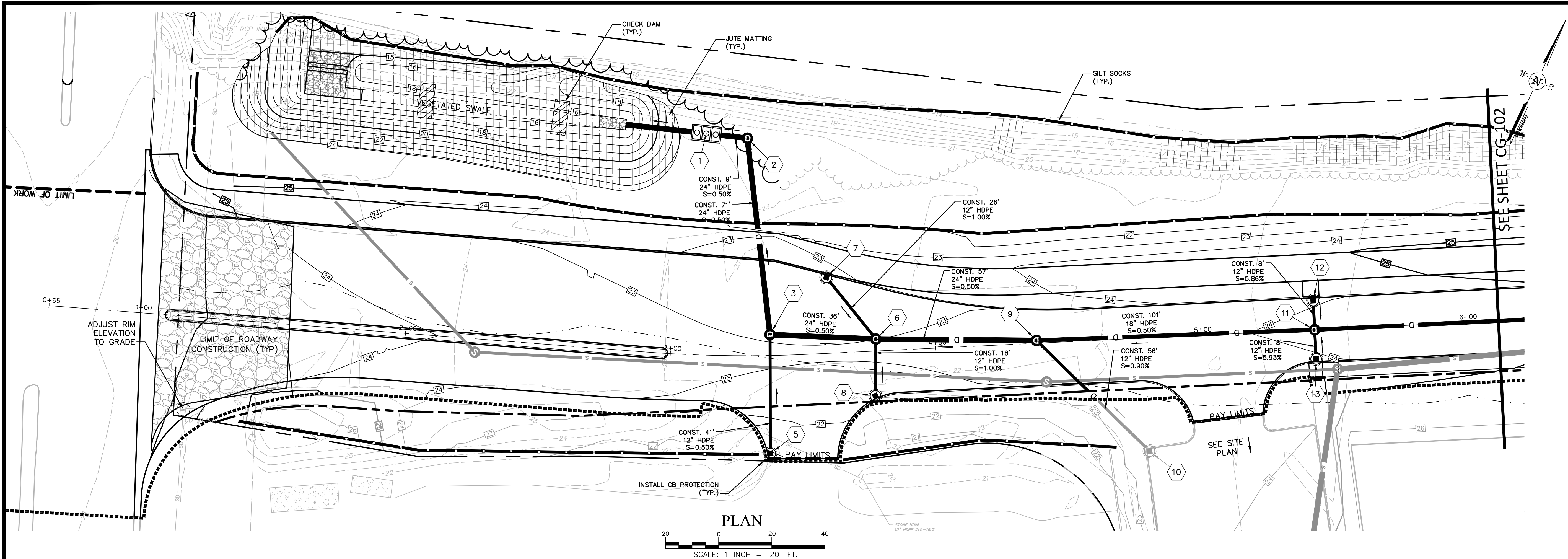


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	VERT.: NGVD29
GRAPHIC SCALE	

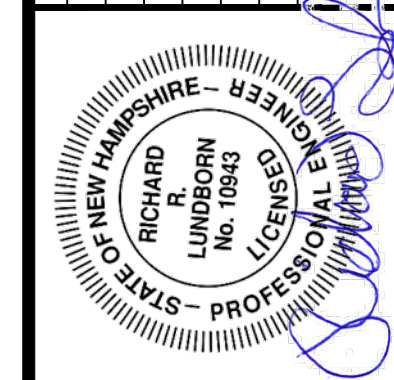
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 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CG-100**



NO.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



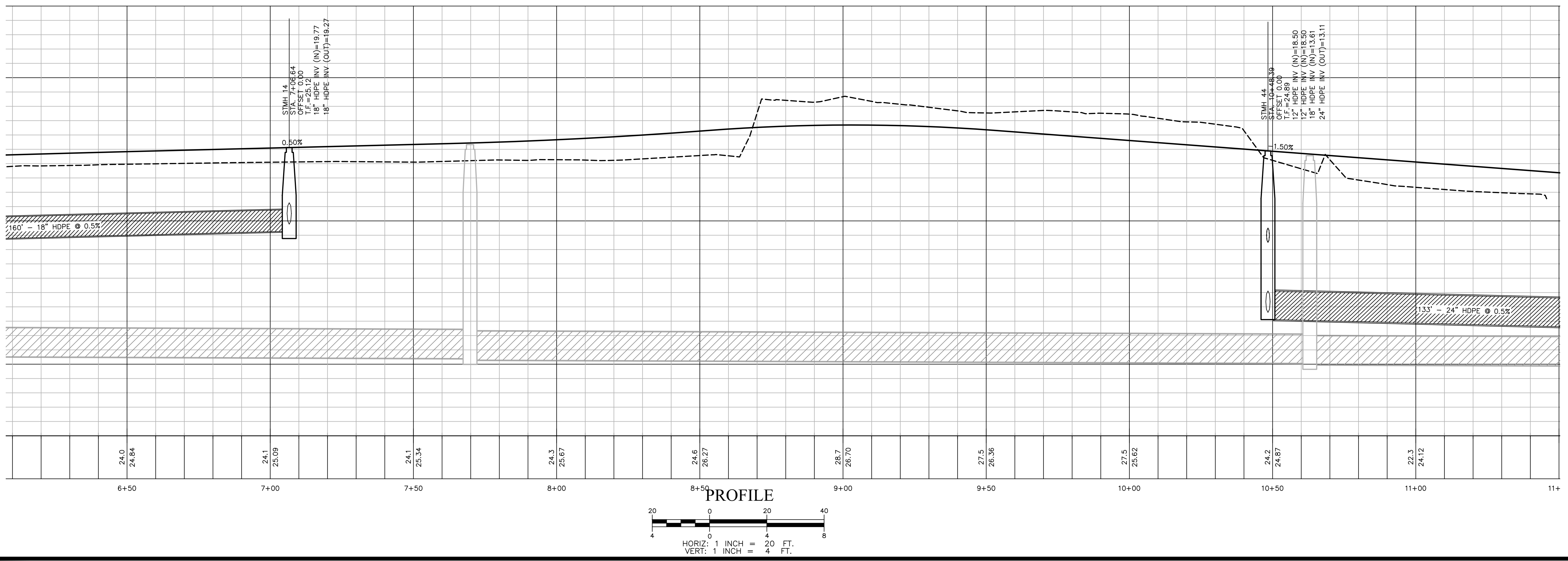
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GRAPHIC SCALE	

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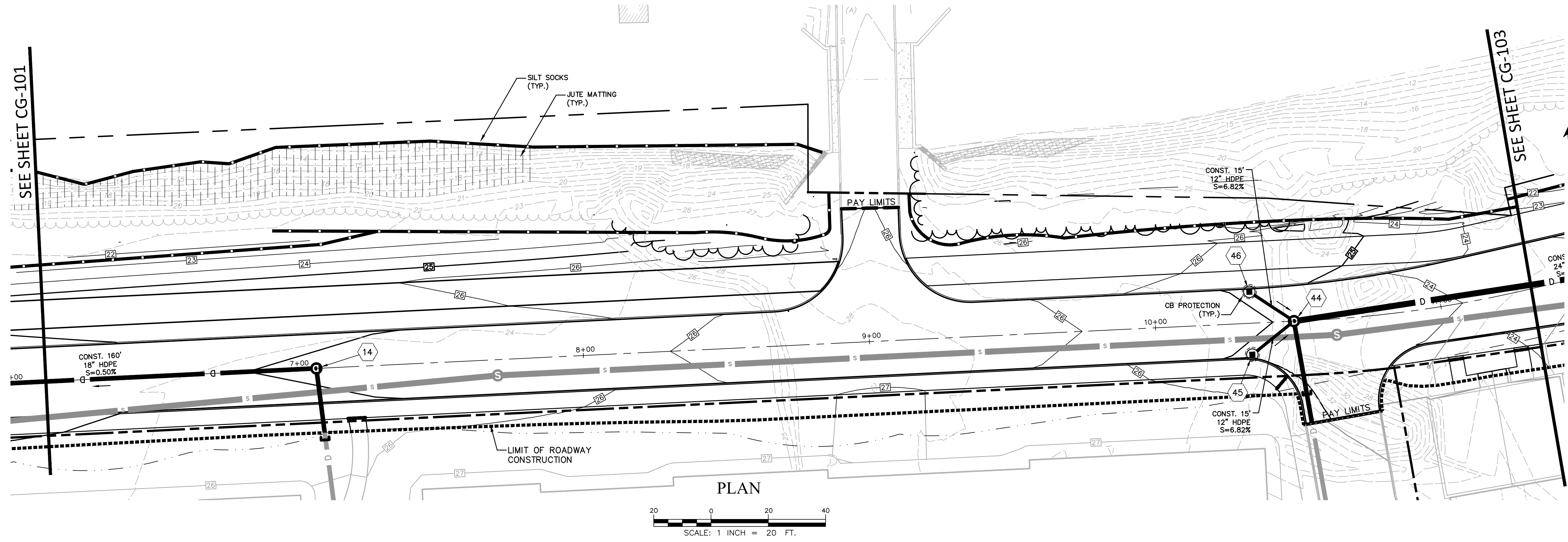
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 EROSION CONTROL PLAN  
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PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CG-101**

SEE SHEET CG-101



**PROFILE**  
 HORIZ: 1 INCH = 20 FT.  
 VERT: 1 INCH = 4 FT.



**PLAN**  
 SCALE: 1 INCH = 20 FT.

SEE SHEET CG-101

SEE SHEET CG-103

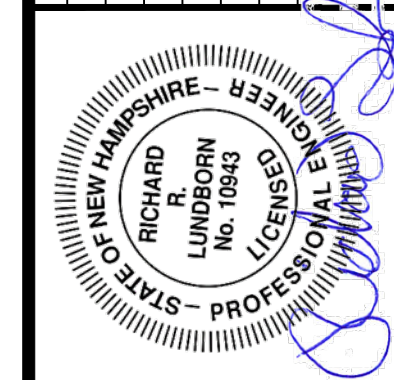
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 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

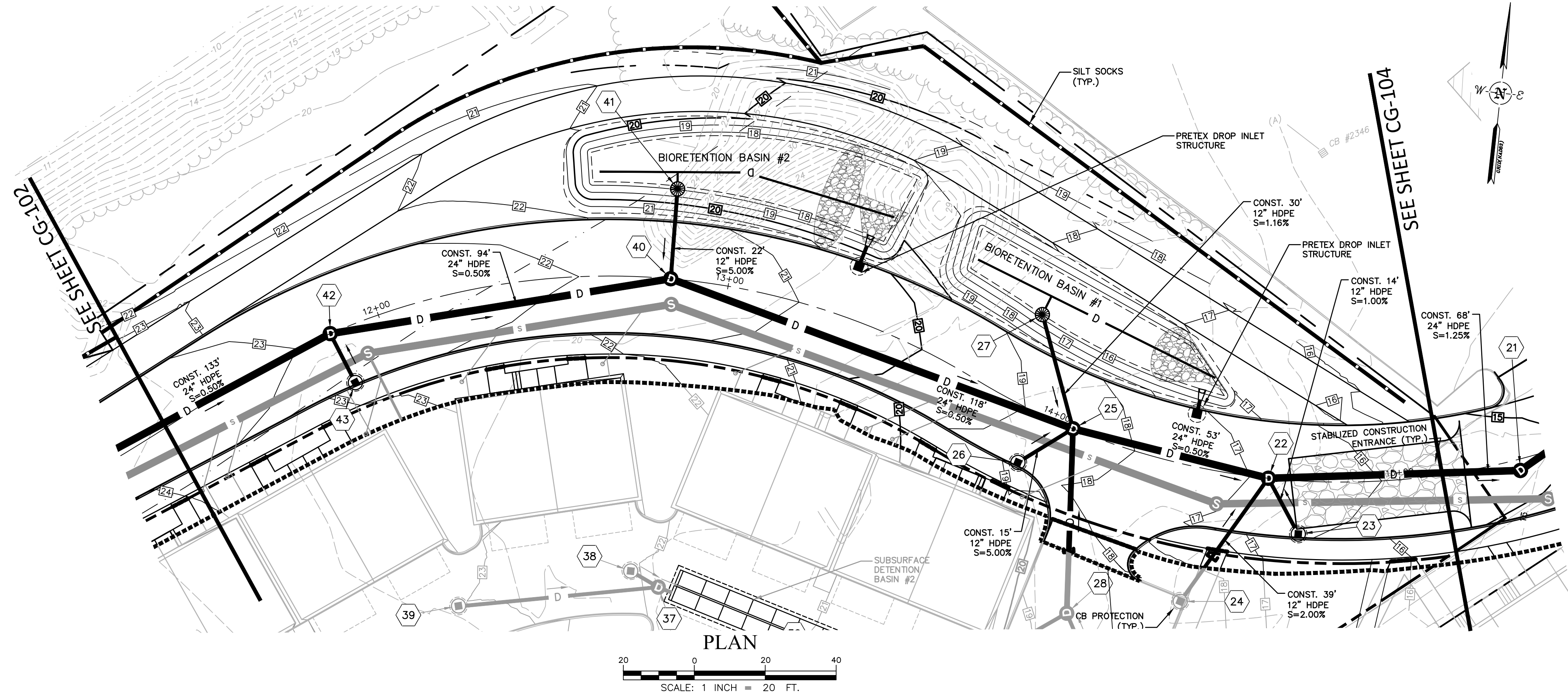
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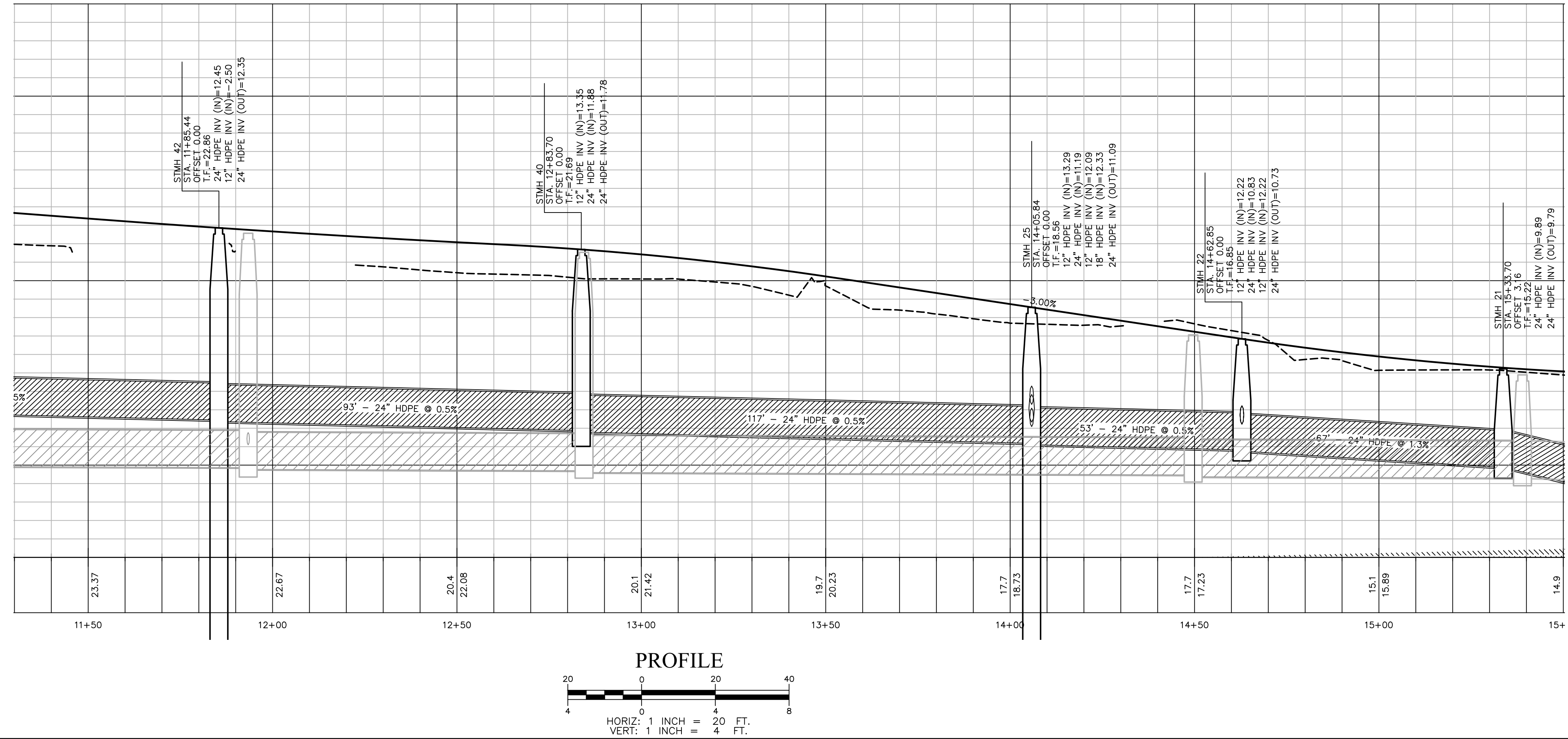
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 HORIZ: NAD83  
 VERT: NGVD29  
 GRAPHIC SCALE



NO.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	RRL
3.	6/20/2019	TAC SUBMITTAL	RRL
2.	5/20/2019	TAC SUBMITTAL	RRL
1.	3/18/2019	TAC SUBMITTAL	RRL



SEE SHEET CG-102



SEE SHEET CG-104

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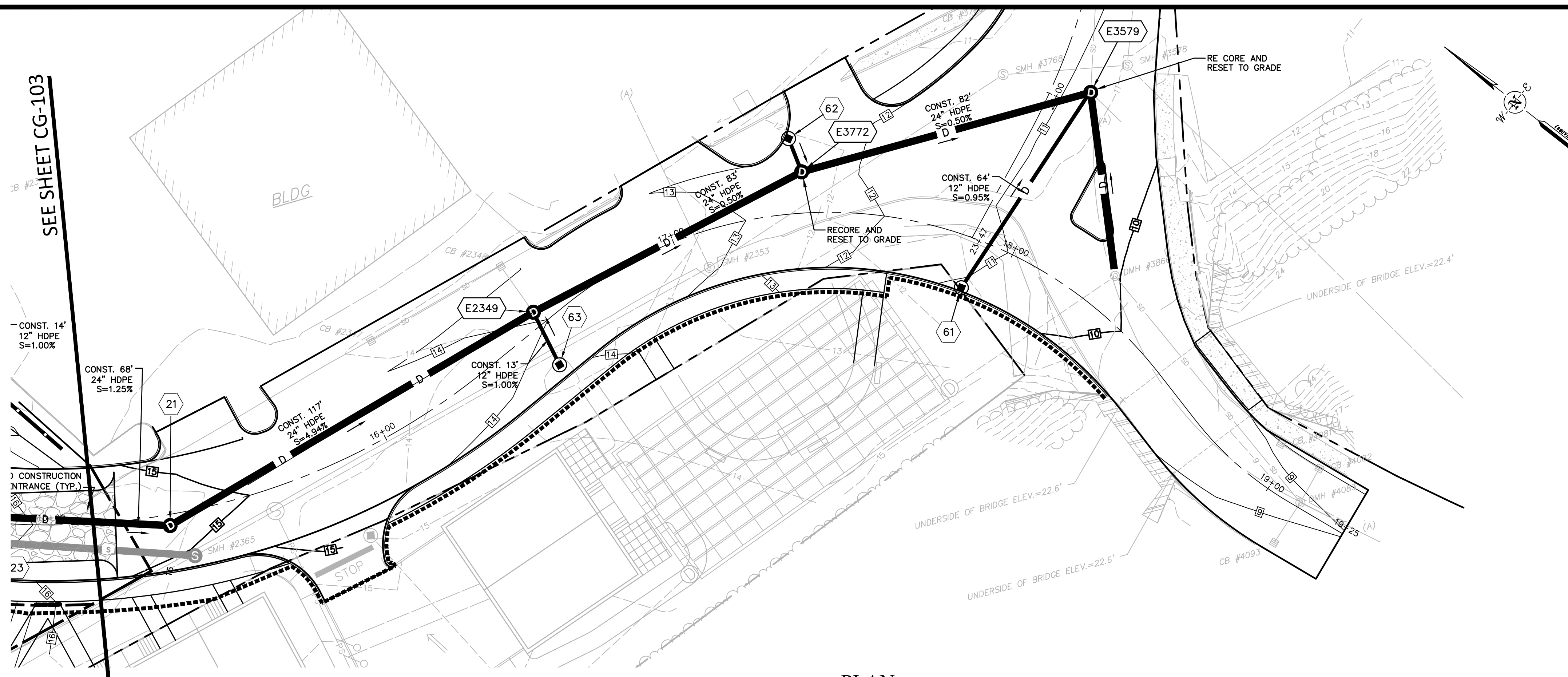
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 DATE: 07/17/2019

**CG-103**

NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
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3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL

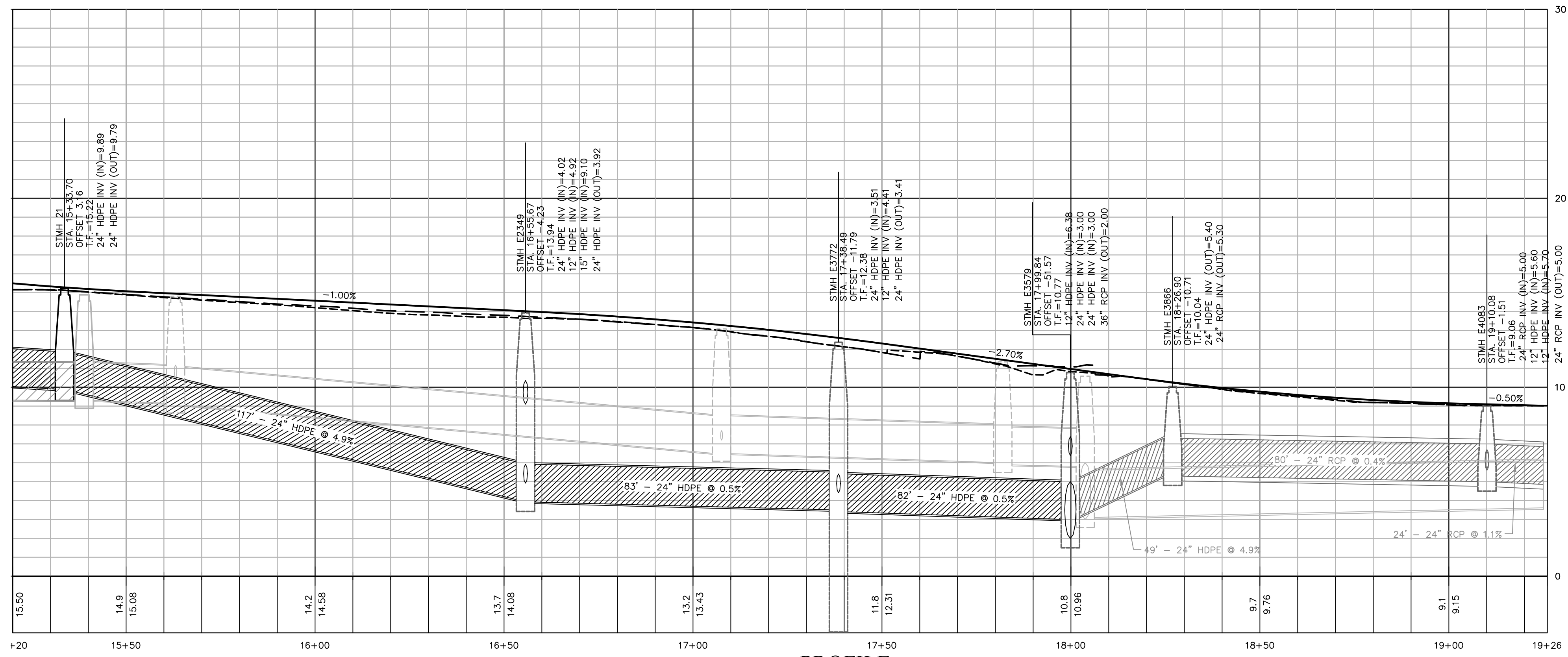
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 VERT.: 1"=20'  
 DATUM: NAD83  
 HORIZ.: NAD83  
 VERT.: NGVD29  
 GRAPHIC SCALE

STATE OF NEW HAMPSHIRE  
 RICHARD R. LUNDBORN  
 No. 10843  
 LICENSED PROFESSIONAL ENGINEER

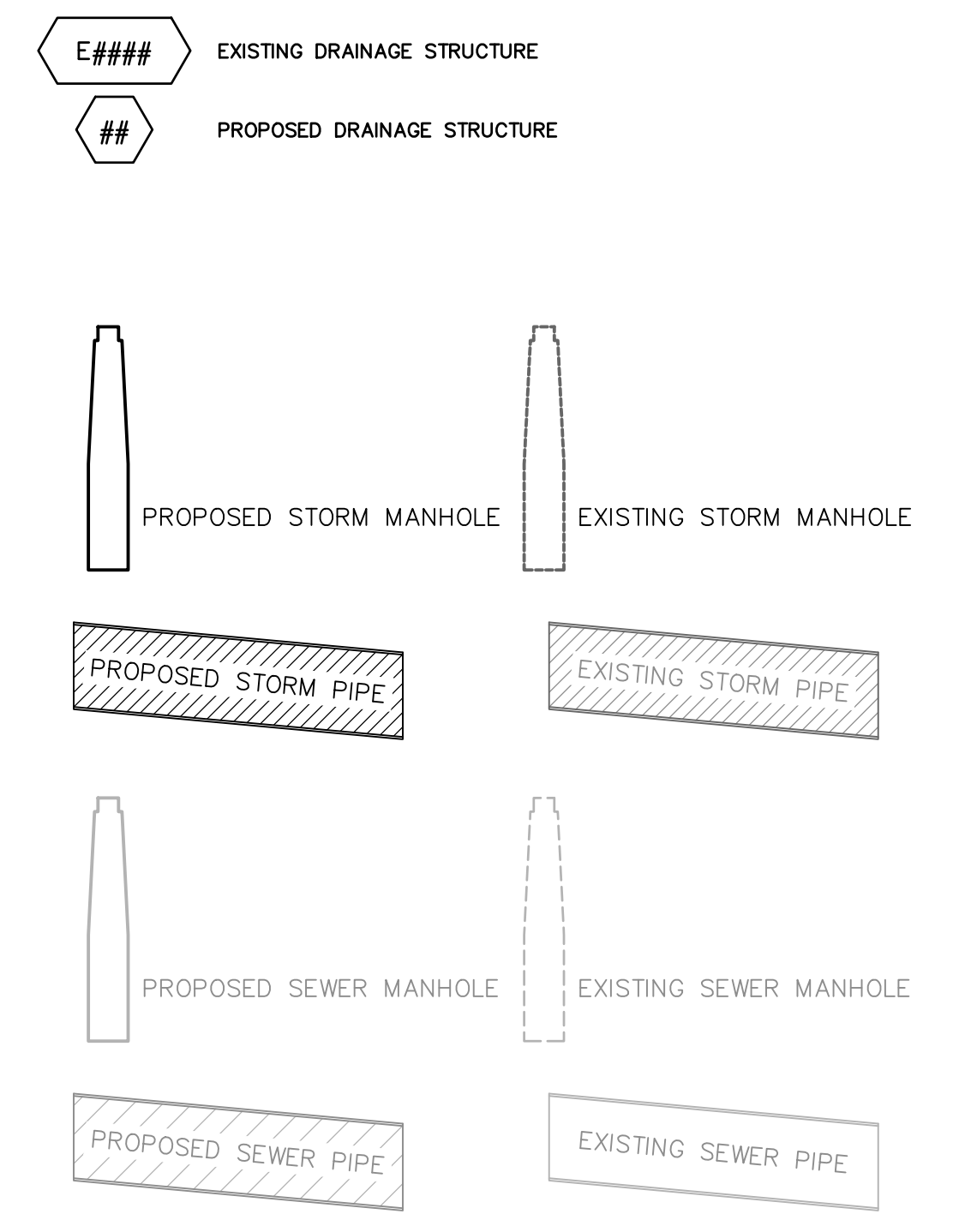


PLAN  
 SCALE: 1 INCH = 20 FT.

SEE SHEET CG-103



PROFILE  
 HORIZ: 1 INCH = 20 FT.  
 VERT: 1 INCH = 4 FT.



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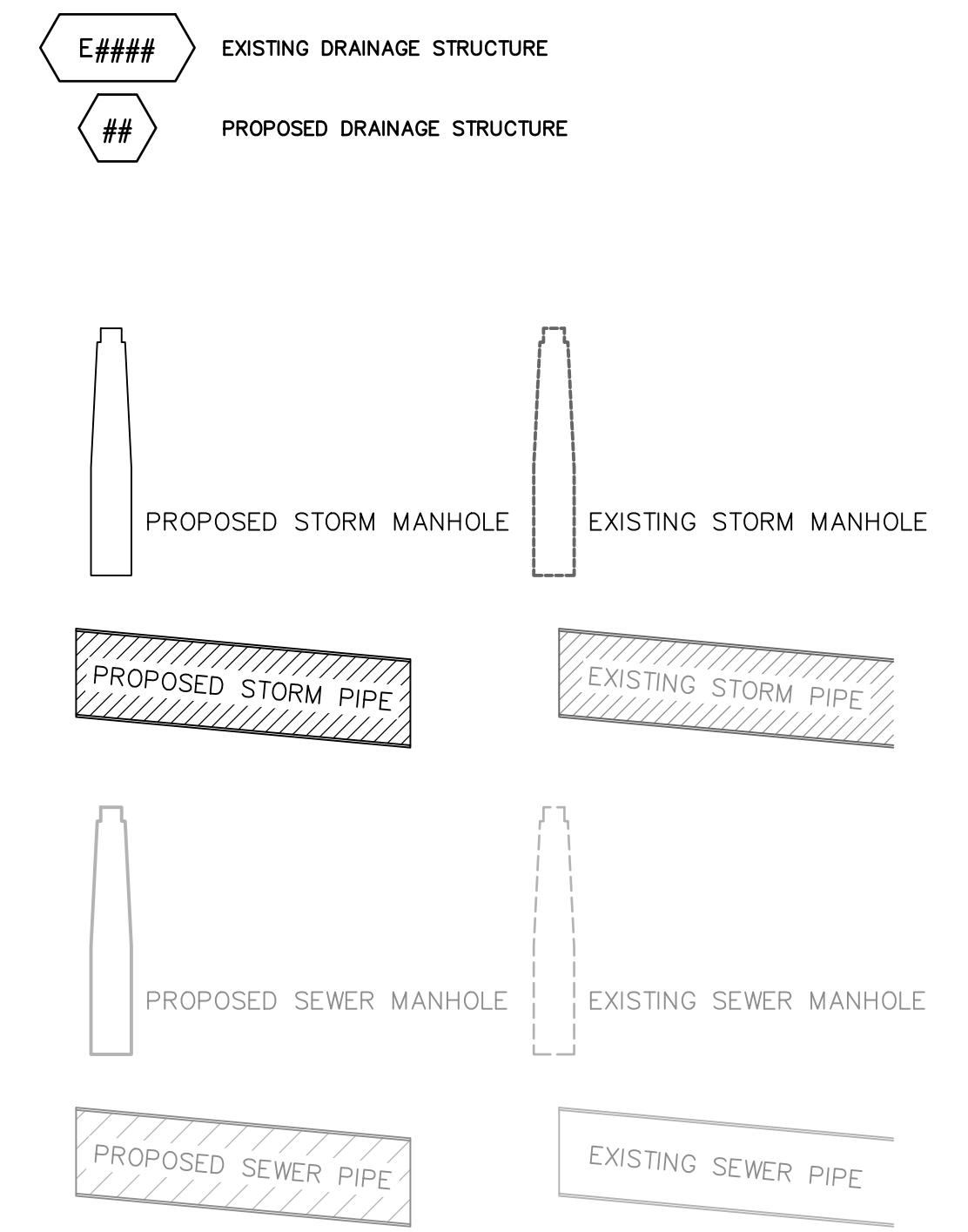
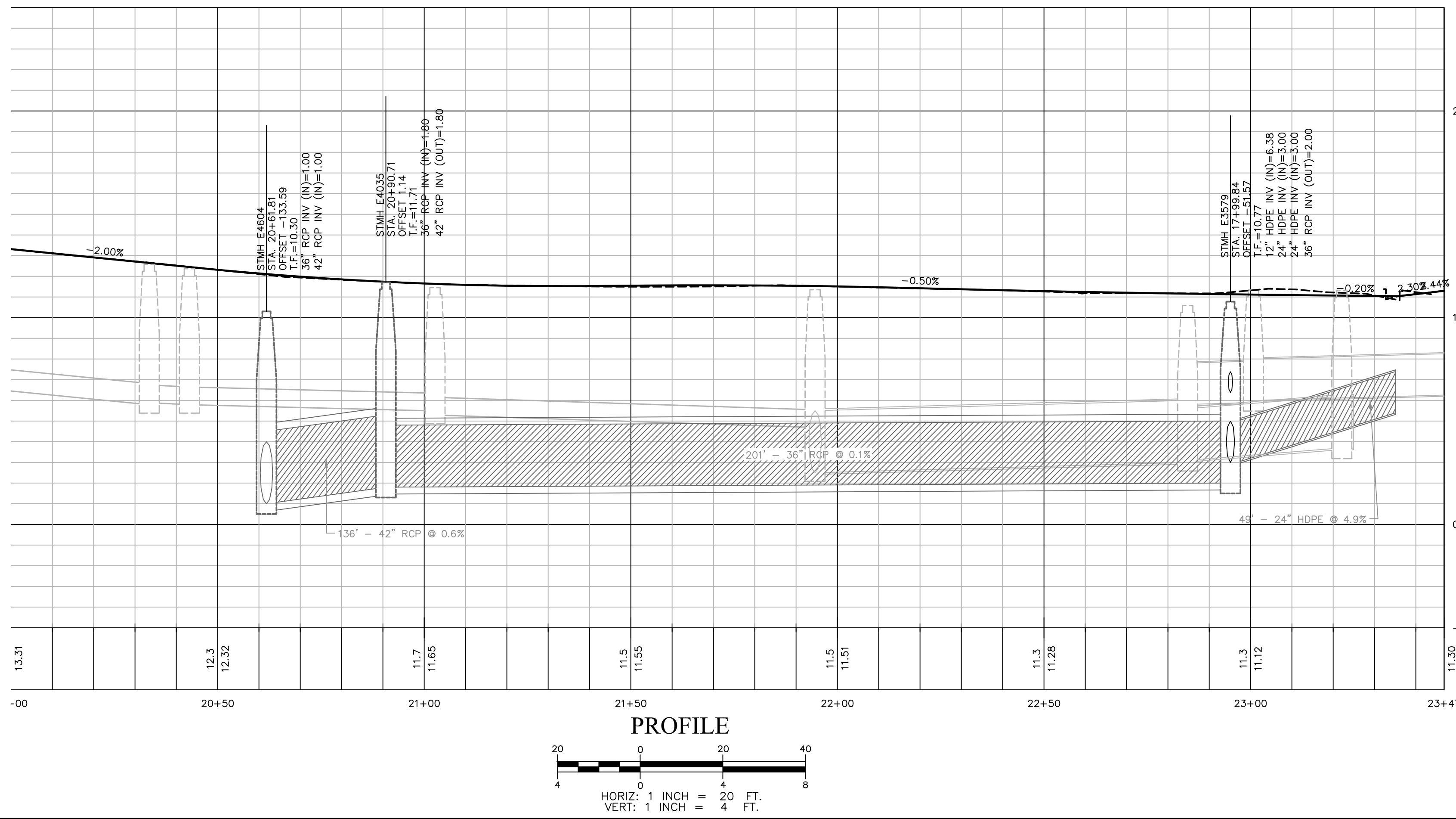
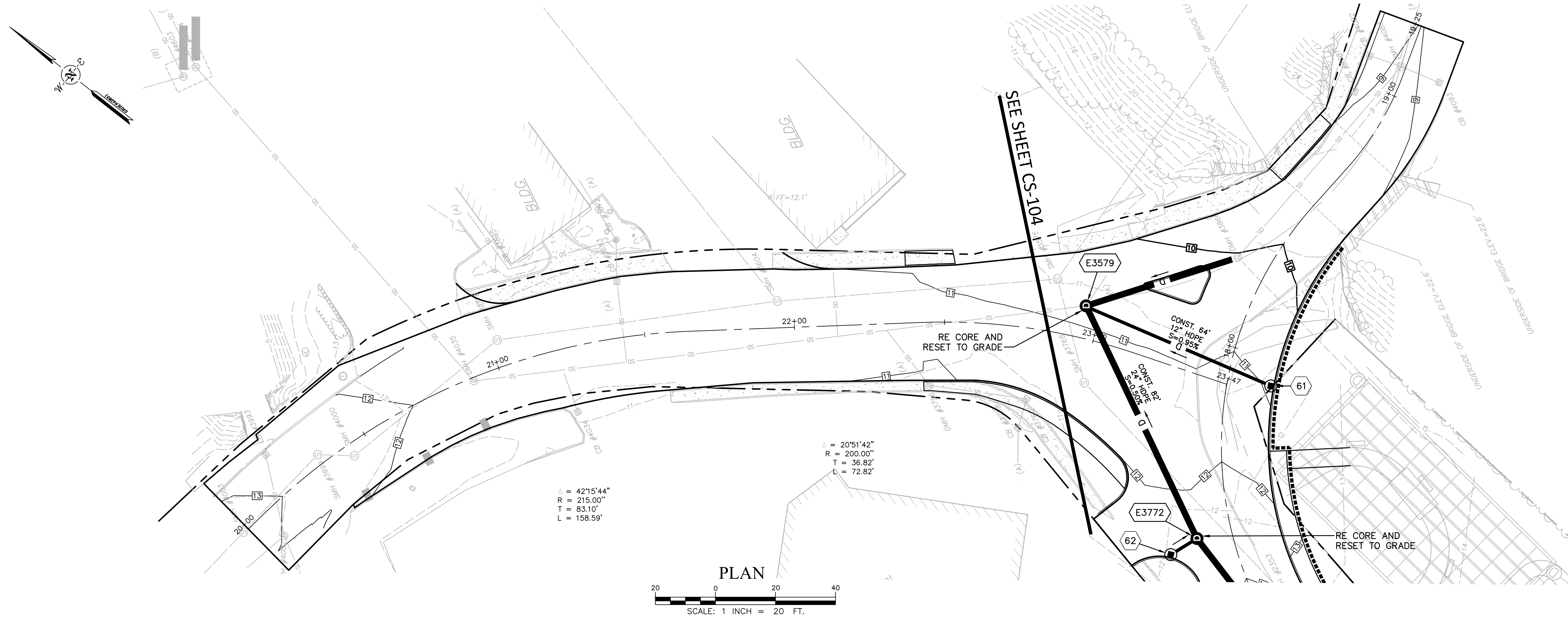
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NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL

SCALE: HORIZ: 1"=20'  
 VERT: 1"=20'  
 DATUM: NAD83  
 HORIZ: NGVD29  
 VERT: NGVD29  
 GRAPHIC SCALE

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**CG-104**



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NO.	DATE	DESCRIPTION	DESIGNER REVIEWER
1.	3/18/2019	TAC SUBMITTAL	RRL
2.	5/20/2019	TAC SUBMITTAL	RRL
3.	6/20/2019	TAC SUBMITTAL	RRL
4.	7/17/2019	TAC SUBMITTAL	RRL

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 DATUM: NAD83  
 VERT.: NGVD29

GRAPHIC SCALE

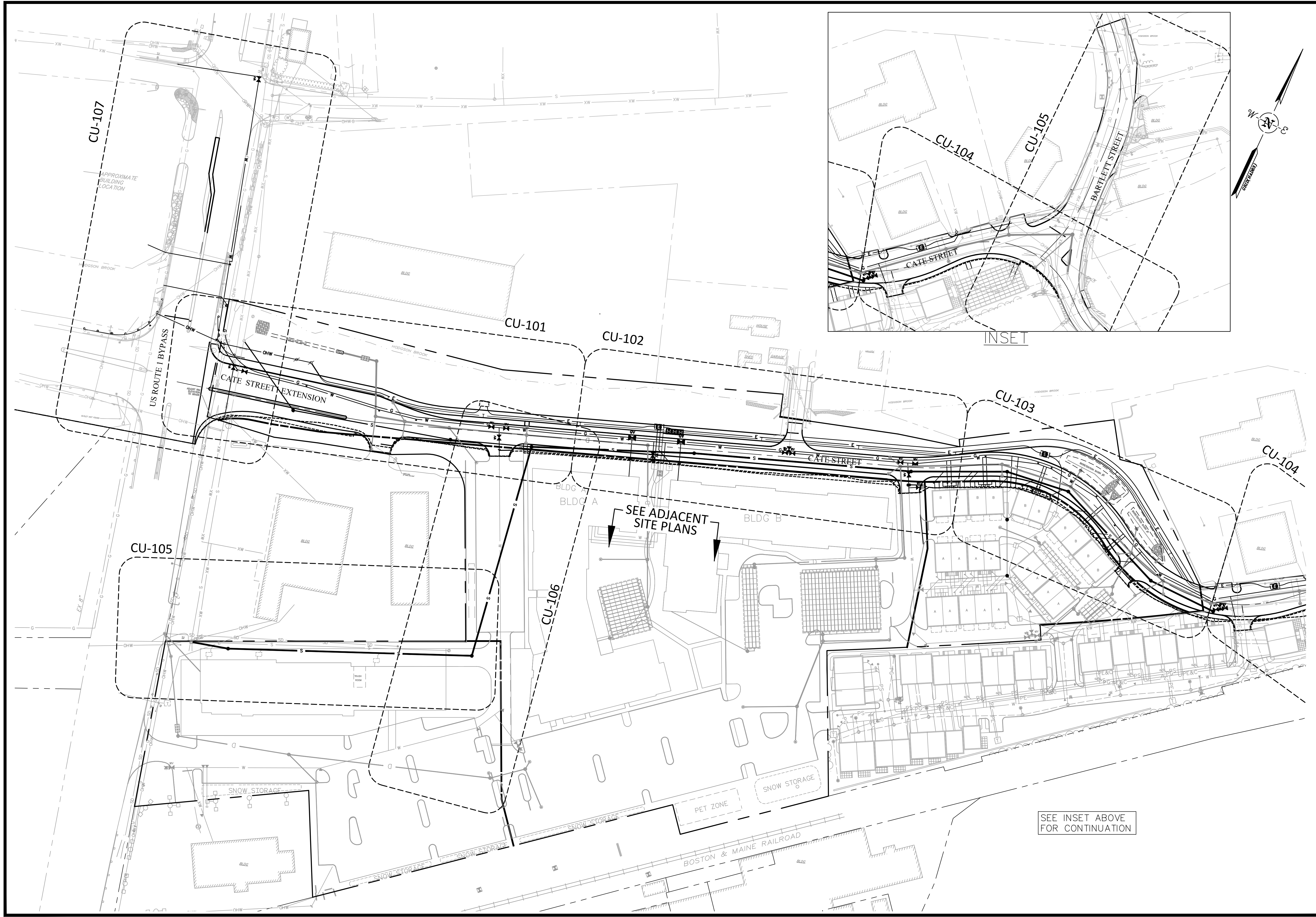
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 DATE: 07/17/2019

# CG-105

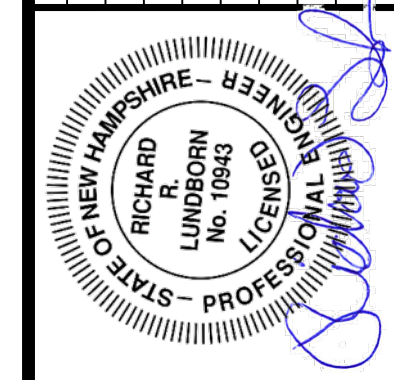
SEWER SYSTEM	
STRUCTURE	STRUCTURE DETAILS
1	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 15+38.93, R 12.95' RIM = 14.89 (2) 24" PVC INV IN = 9.30 (TBP) 24" PVC INV OUT = 9.30 CONSTRUCT 23 LF x 24" PVC S=0.0068
2	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 14+49.64, R 9.17' RIM = 17.06 (3) 24" PVC INV IN = 9.47 (1) 24" PVC INV OUT = 9.37 CONSTRUCT 90 LF x 24" PVC S=0.0008
3	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 12+84.47, R 7.20' RIM = 21.54 (4) 24" PVC INV IN = 9.70 (2) 24" PVC INV OUT = 9.60 CONSTRUCT 160 LF x 24" PVC S=0.0008
4	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 11+93.37, R 9.16' RIM = 22.57 (5) 24" PVC INV IN = 9.87 (12) 8" PVC INV IN = 11.10 (3) 24" PVC INV OUT = 9.77 CONSTRUCT 83 LF x 24" PVC S=0.0008
5	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 10+63.00, R 5.61' RIM = 24.56 (6) 24" PVC INV IN = 10.07 (4) 24" PVC INV OUT = 9.97 CONSTRUCT 126 LF x 24" PVC S=0.0008
6	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 7+69.78, R 5.51' RIM = 25.33 (7) 24" PVC INV IN = 10.40 (5) 24" PVC INV OUT = 10.30 CONSTRUCT 290 LF x 24" PVC S=0.0008
7	PROPOSED 5' DIA. SEWER MANHOLE CATE STREET STA. 5+50.75, R 15.25' RIM = 24.51 (10) 12" PVC INV IN = 11.57 (8) 24" PVC INV IN = 10.67 (6) 24" PVC INV OUT = 10.57 CONSTRUCT 215 LF x 24" PVC S=0.0008
8	PROPOSED 4' DIA. SEWER MANHOLE PROPOSED SEWER STA. 3+78.94, 0.00' RIM = 25.57 (9) 24" PVC INV IN = 11.00 (7) 24" PVC INV OUT = 10.90 CONSTRUCT 289 LF x 24" PVC S=0.0008
9	PROPOSED 4' DIA. SEWER MANHOLE PROPOSED SEWER STA. 0+50.41, 0.00' RIM = 25.61 (E1066) 24" PVC INV IN = 11.36 (8) 24" PVC INV OUT = 11.26 CONSTRUCT 325 LF x 24" PVC S=0.0008
10	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 4+41.06, R 14.75' RIM = 23.14 (11) 12" PVC INV IN = 12.31 (7) 12" PVC INV OUT = 12.21 CONSTRUCT 106 LF x 12" PVC S=0.0061
11	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 2+26.55, R 5.04' RIM = 23.79 (E1350) 12" PVC INV IN = 13.70 (10) 12" PVC INV OUT = 13.60 CONSTRUCT 212 LF x 12" PVC S=0.0061
12	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 12+03.73, R 73.29' RIM = 23.20 (13) 8" PVC INV IN = 11.50 (4) 8" PVC INV OUT = 11.40 CONSTRUCT 61 LF x 8" PVC S=0.0050
13	PROPOSED 4' DIA. SEWER MANHOLE CATE STREET STA. 12+50.11, R 146.52' RIM = 20.94 (12) 8" PVC INV OUT = 11.86 CONSTRUCT 72 LF x 8" PVC S=0.0050
E1066	EXISTING SEWER MANHOLE PROPOSED SEWER STA. 0+00.00, 0.00' RIM = 23.34 (9) 24" PVC INV OUT = 11.50 CONSTRUCT 47 LF x 24" PVC S=0.0030
E1350	EXISTING SEWER MANHOLE CATE STREET STA. 1+42.43, L 72.72' RIM = 23.50 (11) 12" PVC INV OUT = 14.40 CONSTRUCT 111 LF x 12" PVC S=0.0063

LIGHT TABLE ENTRIES FROM SITE PLAN  
 PROVIDED FOR REFERENCE ONLY

SCALE: HORZ.: VERT.: DATUM: HORZ.: VERT.: GRAPHIC SCALE	No. 4. 7/17/2019 TAC SUBMITTAL 3. 6/20/2019 TAC SUBMITTAL 2. 5/20/2019 TAC SUBMITTAL 1. 3/18/2019 TAC SUBMITTAL No. DATE DESCRIPTION
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CATE STREET DEVELOPMENT, LLC ROADWAY SEWER STRUCTURE TABLE CATE STREET PORTSMOUTH NEW HAMPSHIRE	
PROJ. No.: 20180317.A10 DATE: 07/17/2019	
CU-001	



No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
1.		TAC SUBMITTAL	JVA/DAD
2.		TAC SUBMITTAL	JVA/DAD
3.	5/20/2019	TAC SUBMITTAL	JVA/DAD
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD



SCALE:	HORIZ.: 1"=60'
	VERT.: 1"=60'
DATUM:	HORIZ.: NAD83
	VERT.: NGVD29

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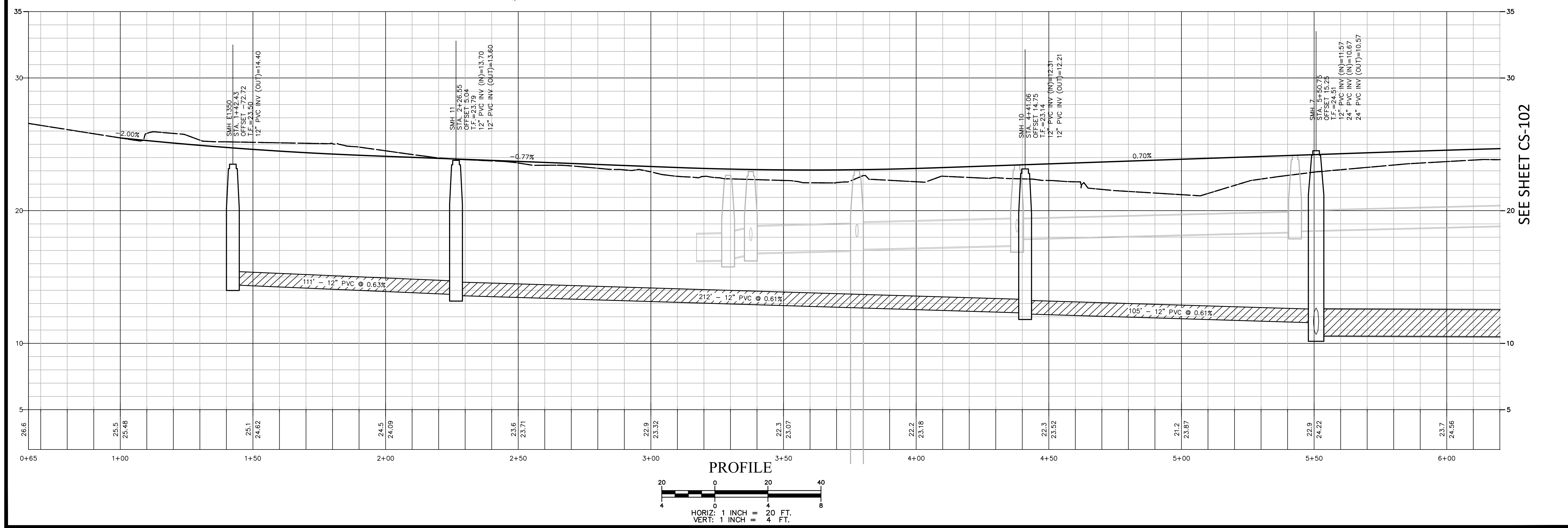
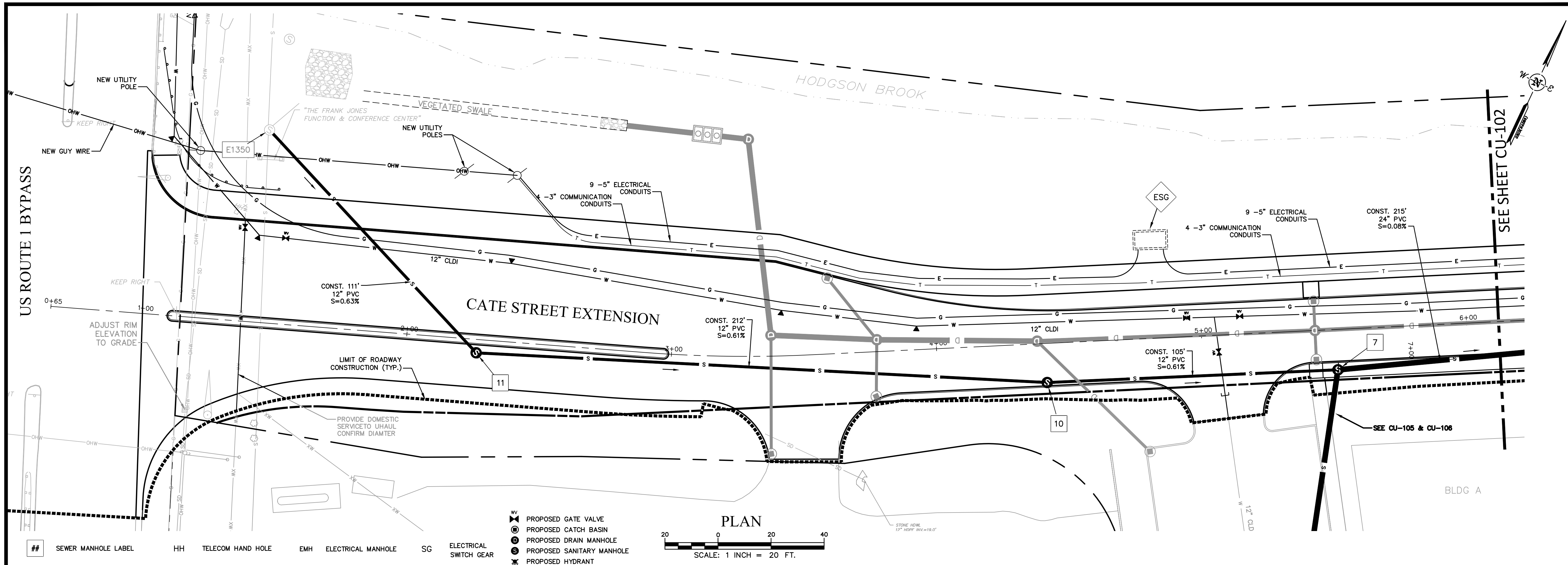
CATE STREET DEVELOPMENT, LLC  
**OVERALL UTILITY PLAN**  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CU-100**

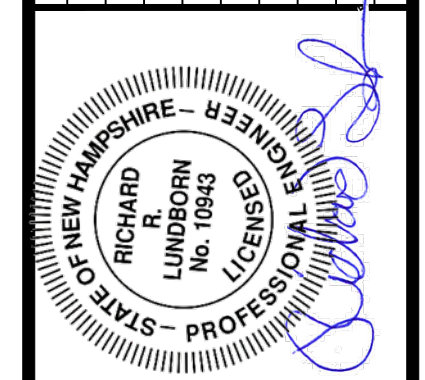
SEE INSET ABOVE FOR CONTINUATION

SEE ADJACENT SITE PLANS





No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



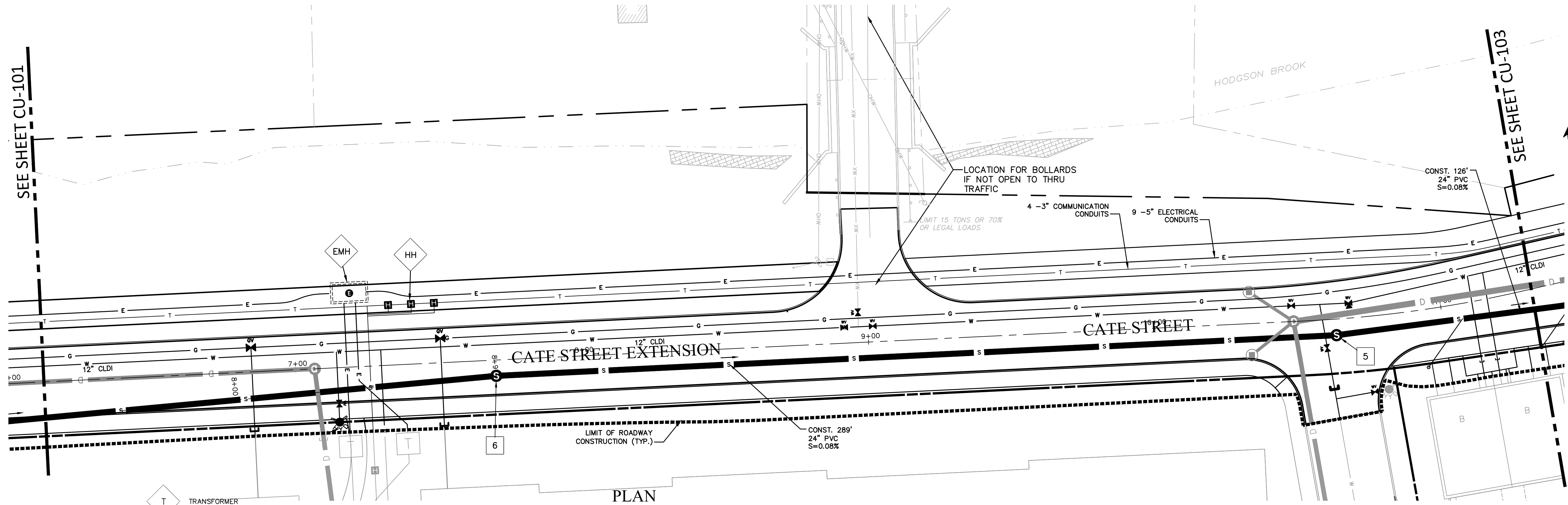
SCALE:	HORIZ: 1" = 20'
	VERT: 1" = 4'
DATUM:	HORIZ: NAD83
	VERT: NGVD29

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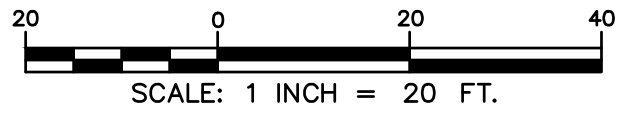
CATE STREET DEVELOPMENT, LLC  
 UTILITY PLAN & PROFILE  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CU-101**

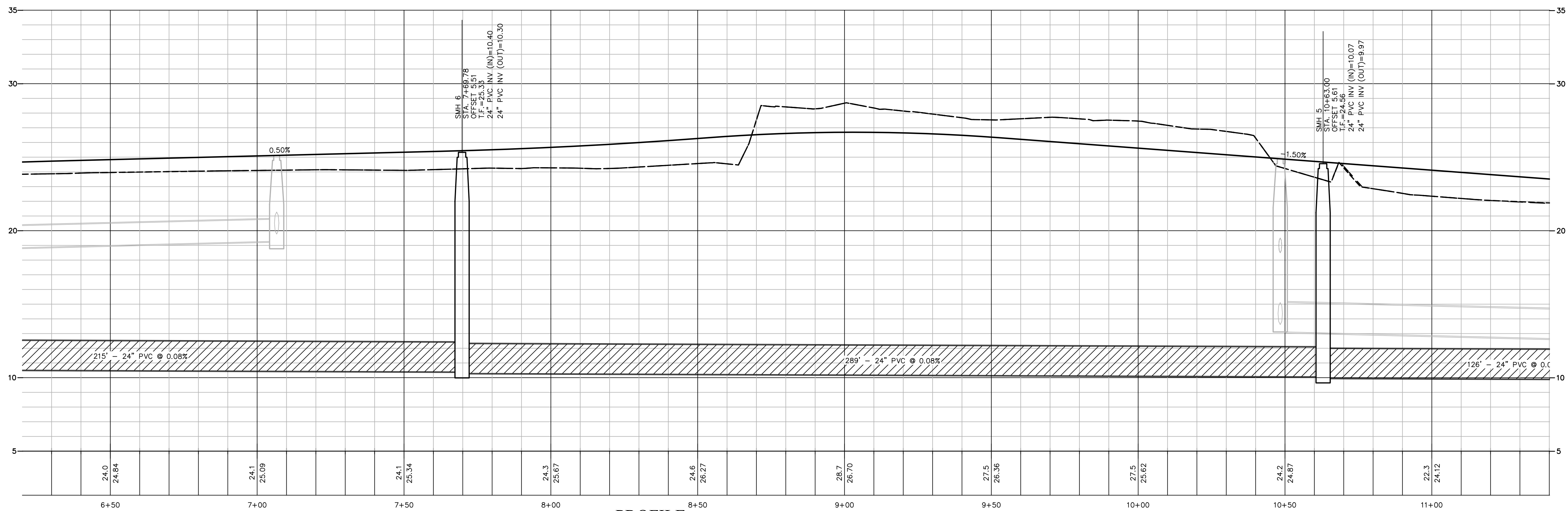
SEE SHEET CU-101



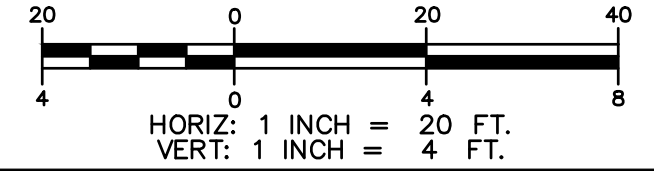
PLAN



- # SEWER MANHOLE LABEL
- PROPOSED GATE VALVE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED HYDRANT
- T TRANSFORMER
- HH TELECOM HAND HOLE
- EMH SWITCH GEAR & ELECTRICAL MANHOLE

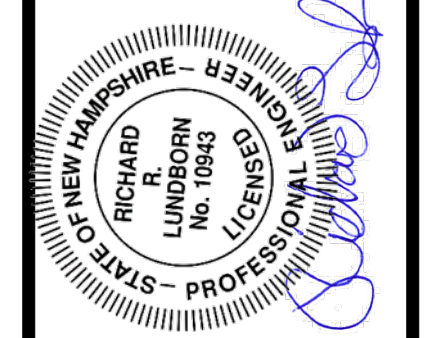


PROFILE



SEE SHEET CU-103

No.	DATE	DESCRIPTION	DESIGNER REVIEWER
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3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



SCALE: HORIZ.: VERT.:  
 DATUM: HORIZ.: NAD83 VERT.: NGVD29  
 GRAPHIC SCALE

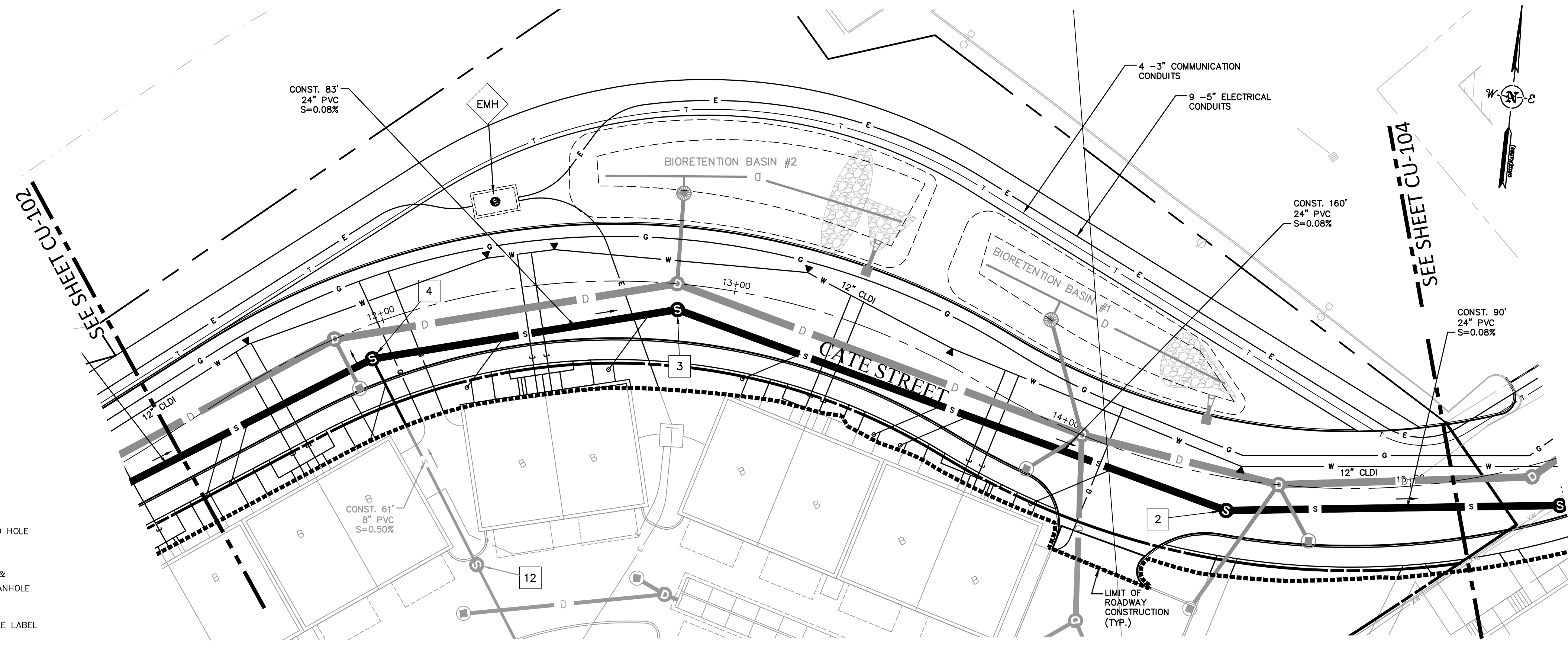
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 UTILITY PLAN & PROFILE  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

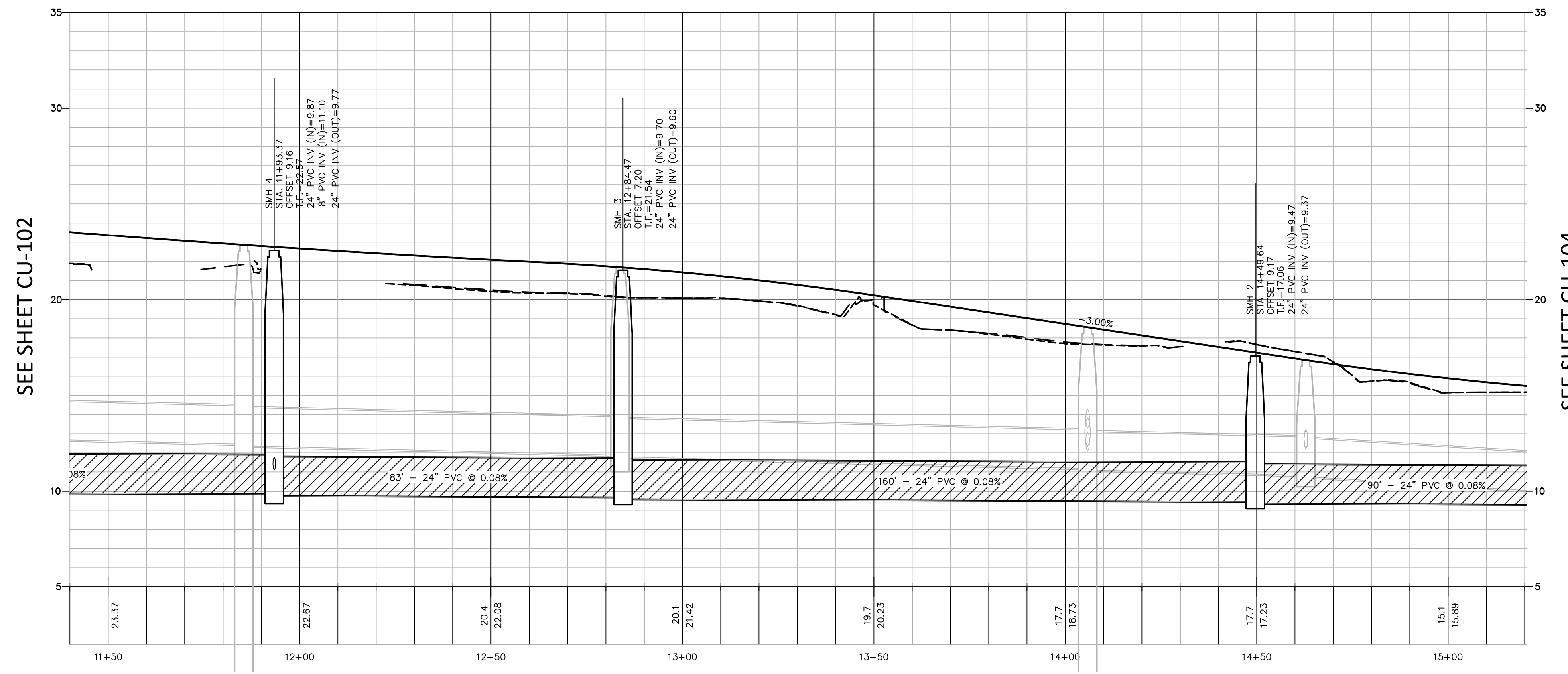
PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

CU-102

- TRANSFORMER
- TELECOM HAND HOLE
- SWITCH GEAR & ELECTRICAL MANHOLE
- SEWER MANHOLE LABEL
- PROPOSED GATE VALVE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED HYDRANT

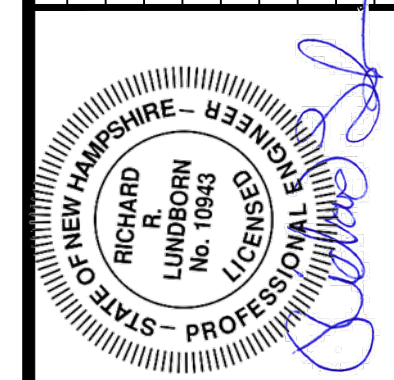


PLAN  
 SCALE: 1 INCH = 20 FT.



PROFILE  
 HORIZ: 1 INCH = 20 FT.  
 VERT: 1 INCH = 4 FT.

No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



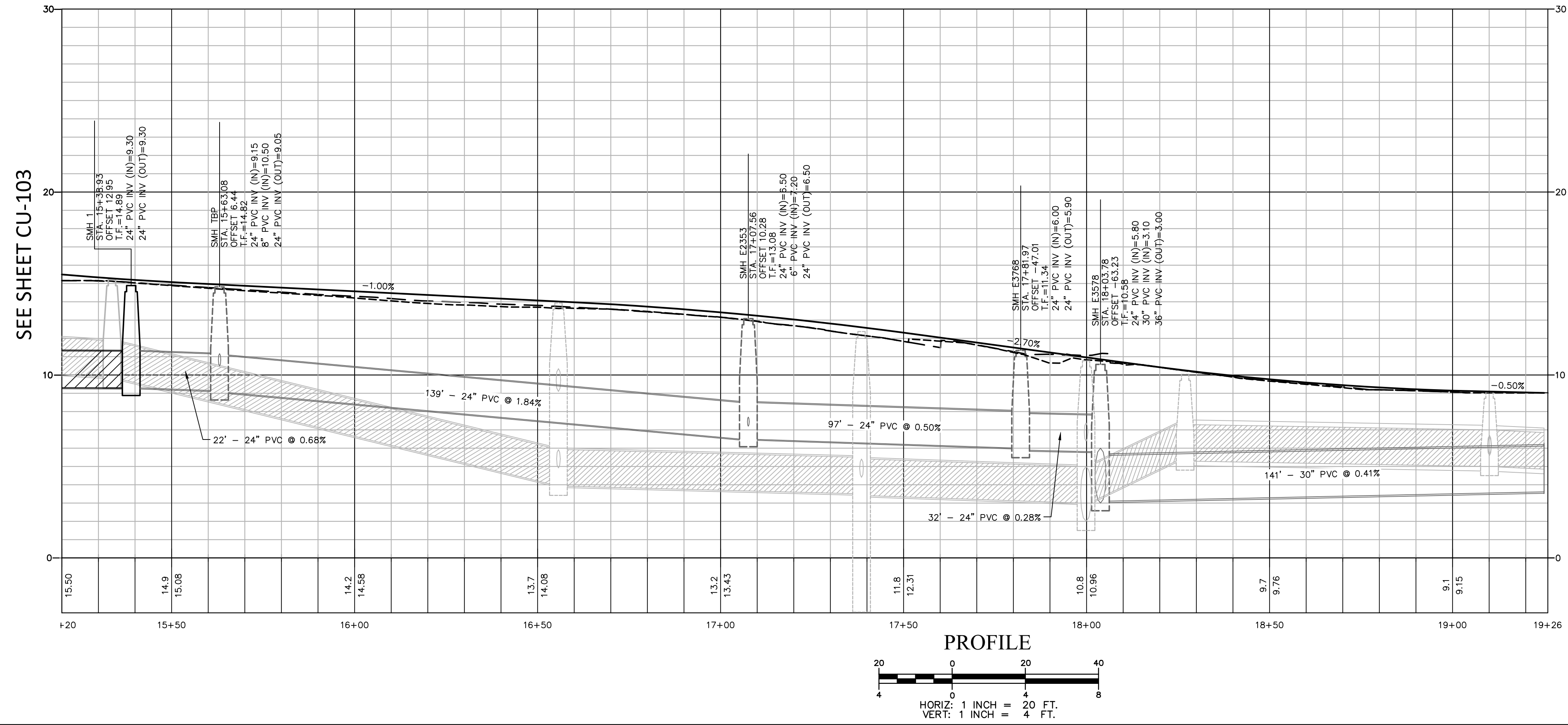
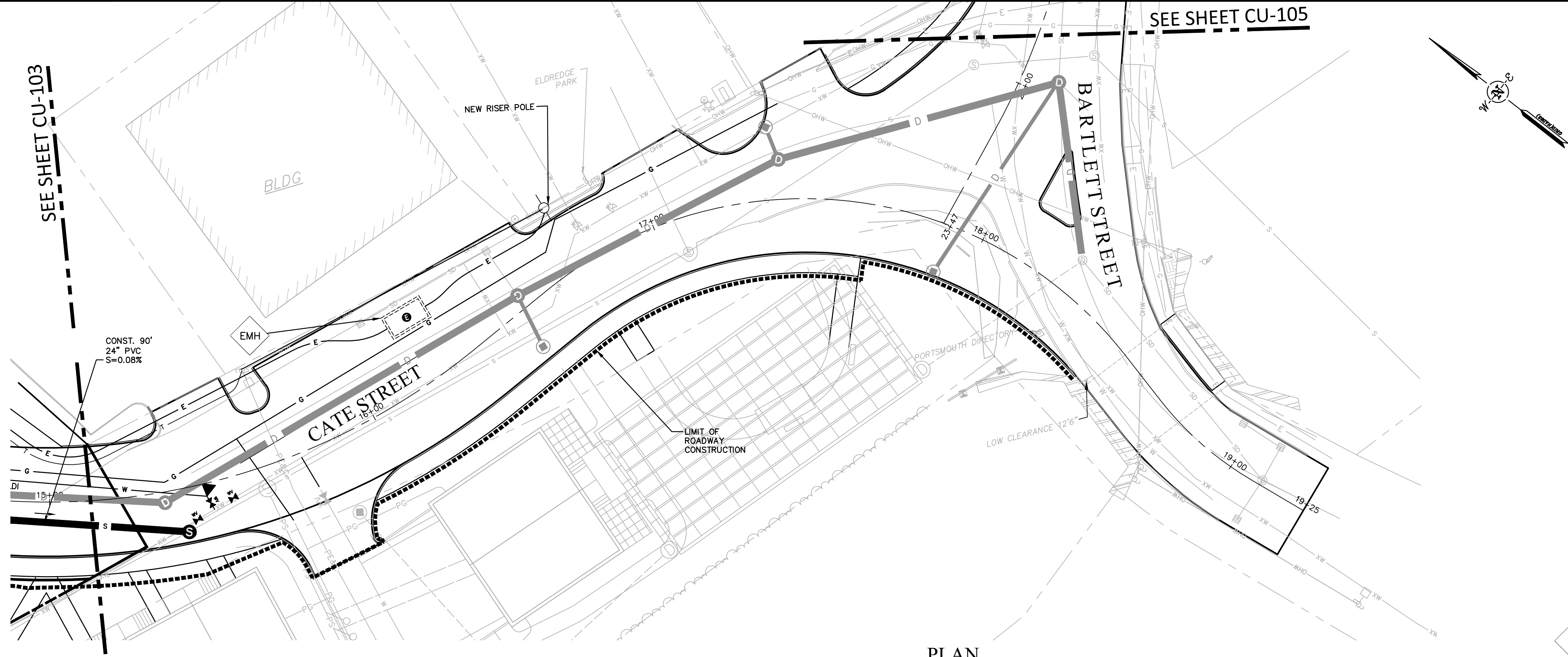
SCALE:	HORIZ.:	VERT.:
	DATUM:	
	HORIZ.:	VERT.:

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 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CU-103**



- TRANSFORMER
- TELECOM HAND HOLE
- SWITCH GEAR & ELECTRICAL MANHOLE
- SEWER MANHOLE LABEL
- PROPOSED GATE VALVE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED HYDRANT

CATE STREET DEVELOPMENT, LLC  
 UTILITY PLAN & PROFILE  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

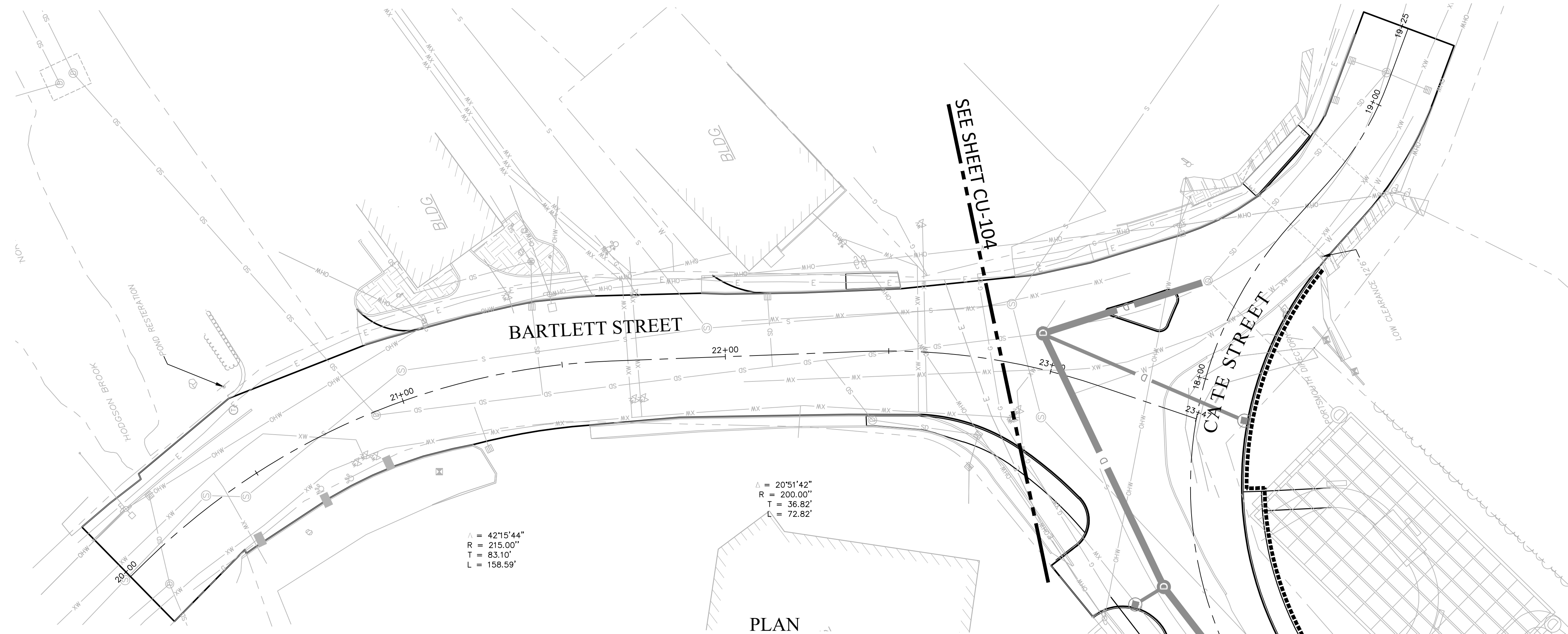
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PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

CU-104

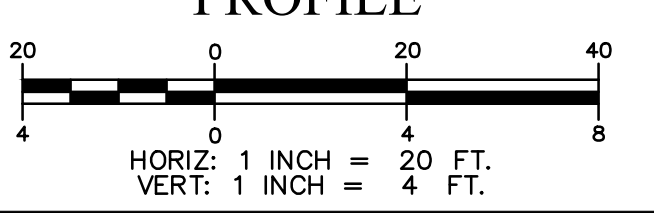
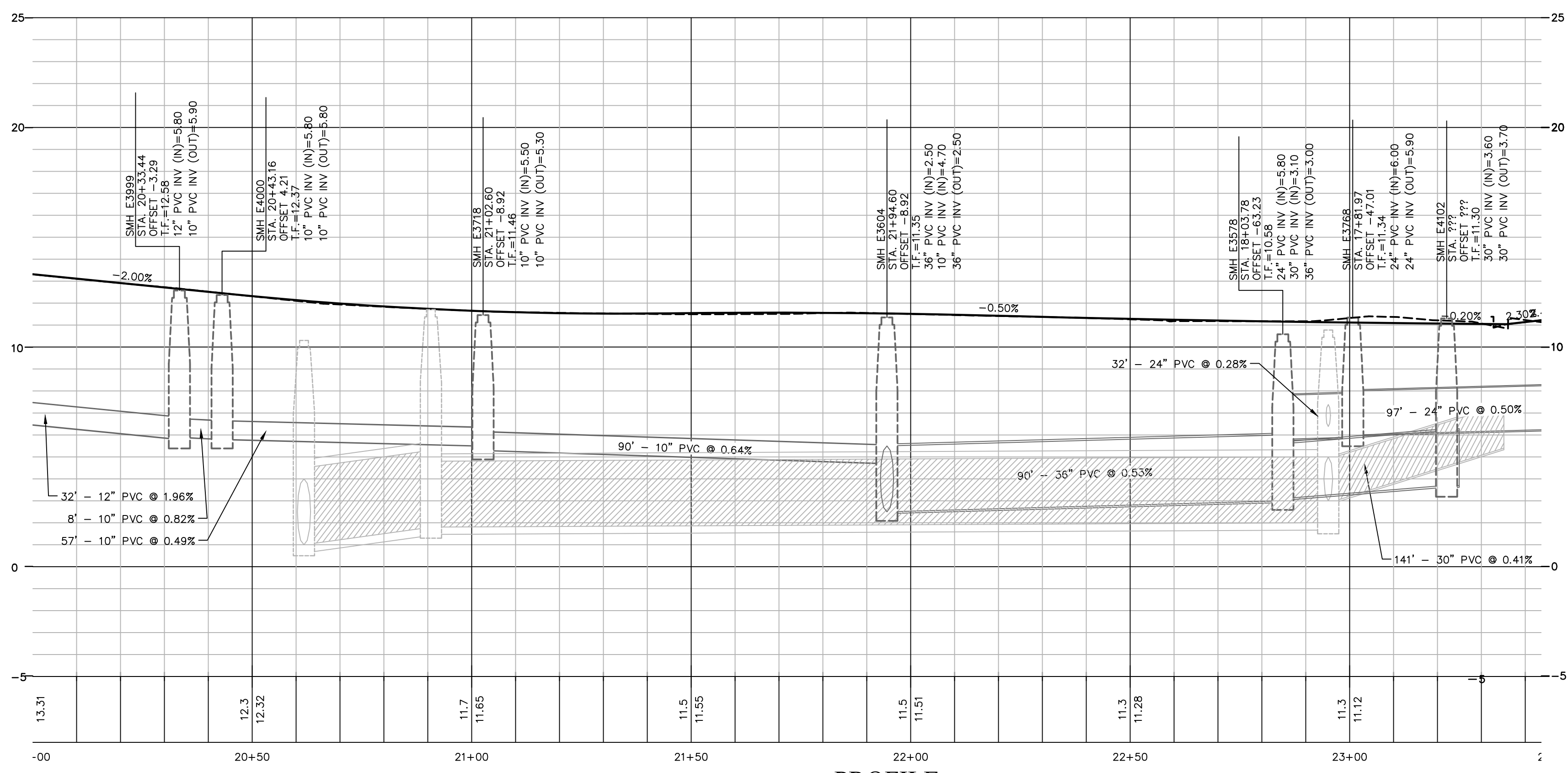
No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
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2	5/20/2019	TAC SUBMITTAL	JVA/DAD
3	6/20/2019	TAC SUBMITTAL	JVA/DAD
4	7/17/2019	TAC SUBMITTAL	JVA/DAD

SCALE: HORIZ: 1" = 20'  
 VERT: 1" = 4'  
 DATUM: NAD83  
 HORIZ: NAD83  
 VERT: NGVD29  
 GRAPHIC SCALE



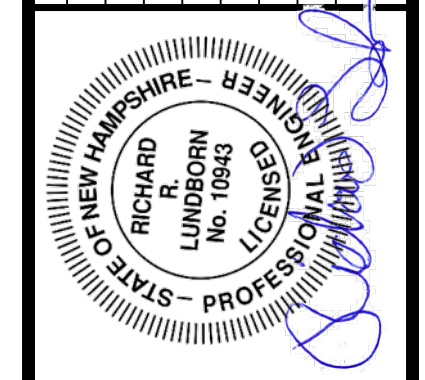
$\Delta = 20^\circ 51' 42''$   
 $R = 200.00'$   
 $T = 36.82'$   
 $L = 72.82'$

$\Delta = 42^\circ 15' 44''$   
 $R = 215.00'$   
 $T = 83.10'$   
 $L = 158.59'$



- T TRANSFORMER
- HH TELECOM HAND HOLE
- EMH SWITCH GEAR & ELECTRICAL MANHOLE
- ## SEWER MANHOLE LABEL
- X PROPOSED GATE VALVE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED SANITARY MANHOLE
- \* PROPOSED HYDRANT

No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



SCALE: HORIZ: 1" = 20'  
 VERT: 1" = 20'

DATUM: NAD83  
 VERT: NGVD29


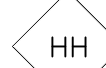







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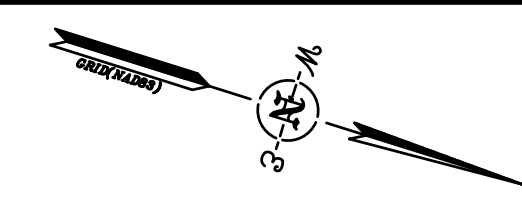
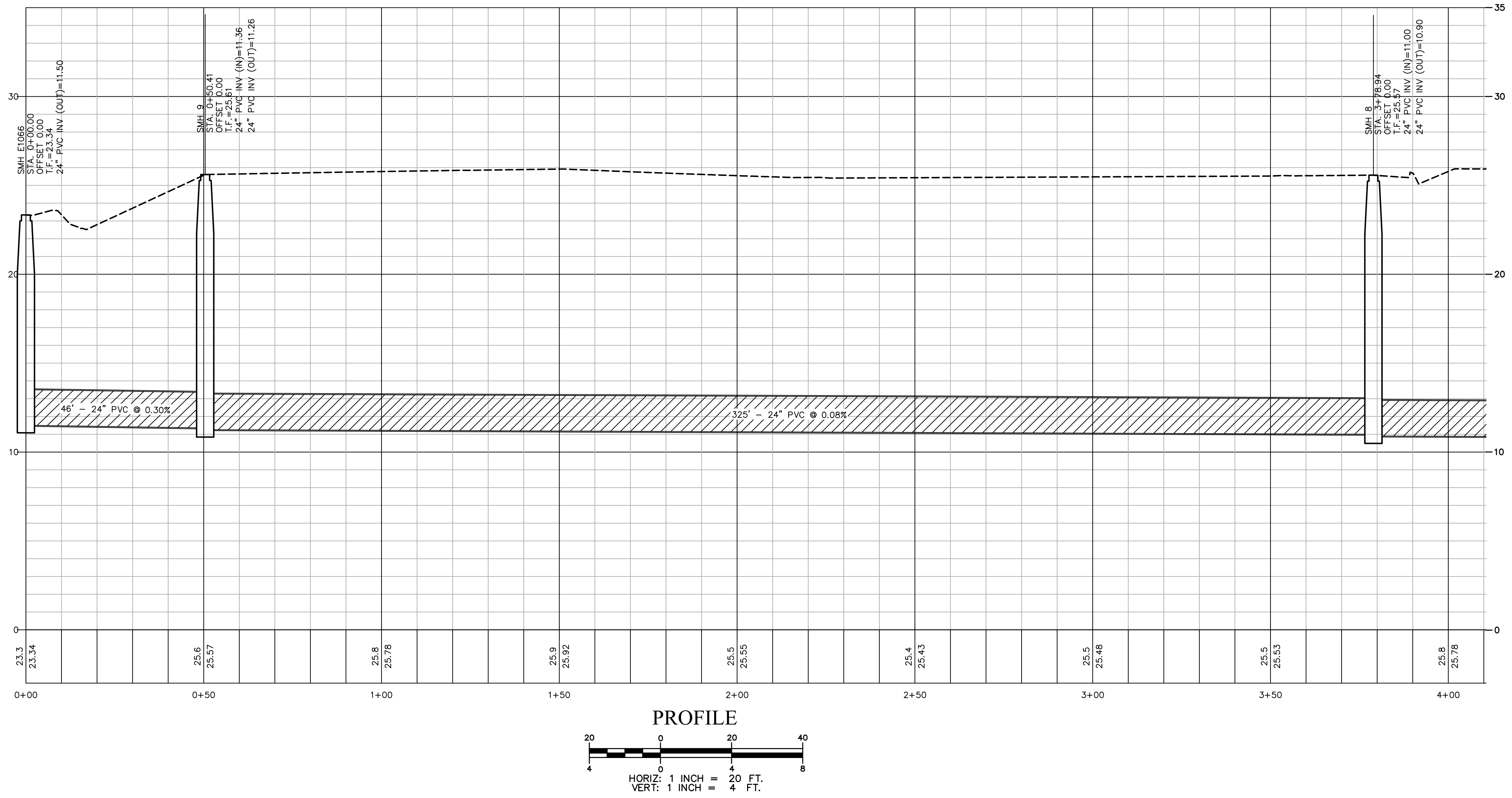
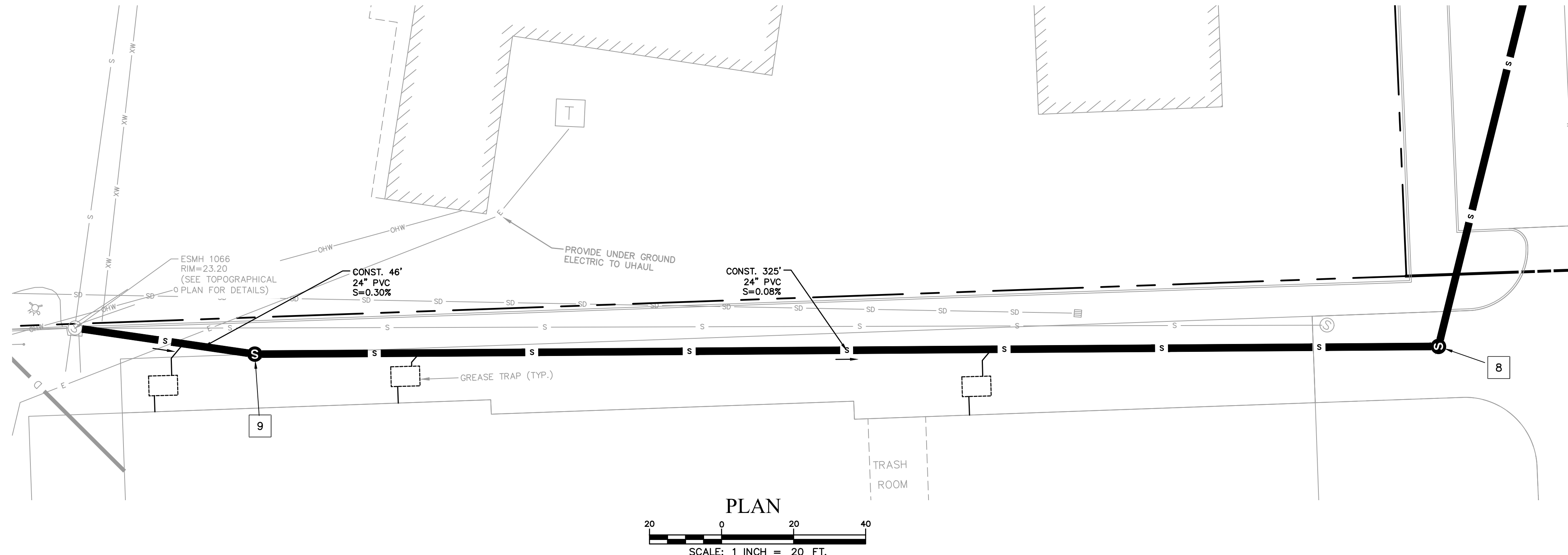
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 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

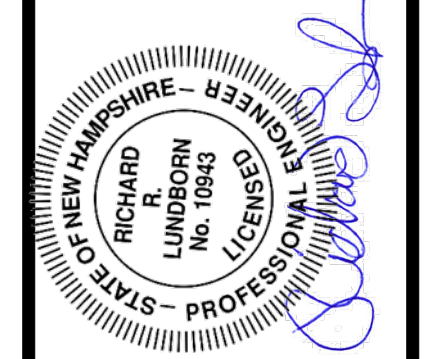
PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CU-105**

-  TRANSFORMER
-  TELECOM HAND HOLE
-  SWITCH GEAR & ELECTRICAL MANHOLE
-  SEWER MANHOLE LABEL
-  PROPOSED GATE VALVE
-  PROPOSED CATCH BASIN
-  PROPOSED DRAIN MANHOLE
-  PROPOSED SANITARY MANHOLE
-  PROPOSED HYDRANT



No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



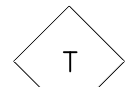
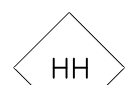

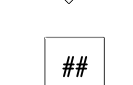

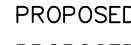
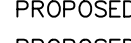
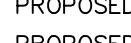

SCALE: HORIZ: 1" = 20'	VERT: 1" = 20'
DATUM: HORIZ: NAD83	
VERT: NGVD29	
GRAPHIC SCALE	

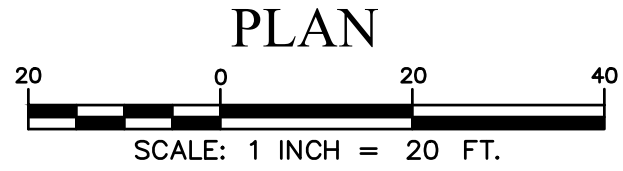
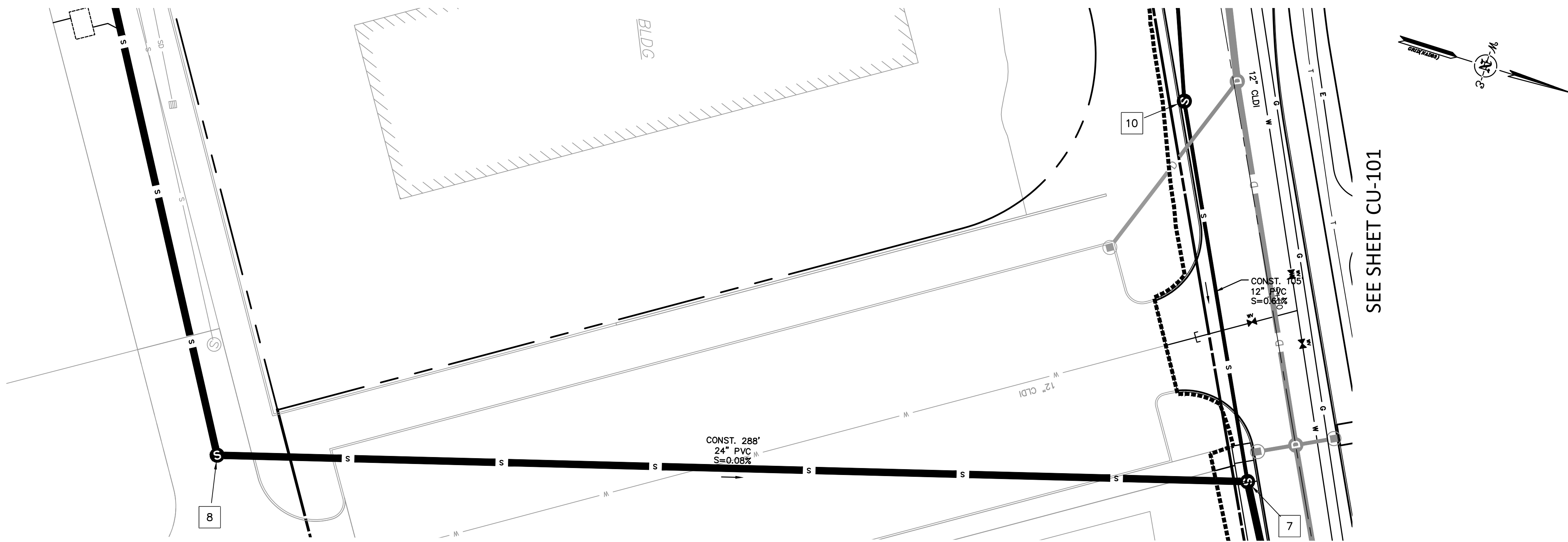
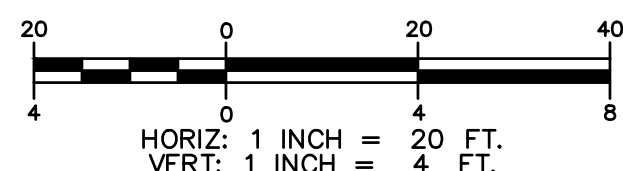
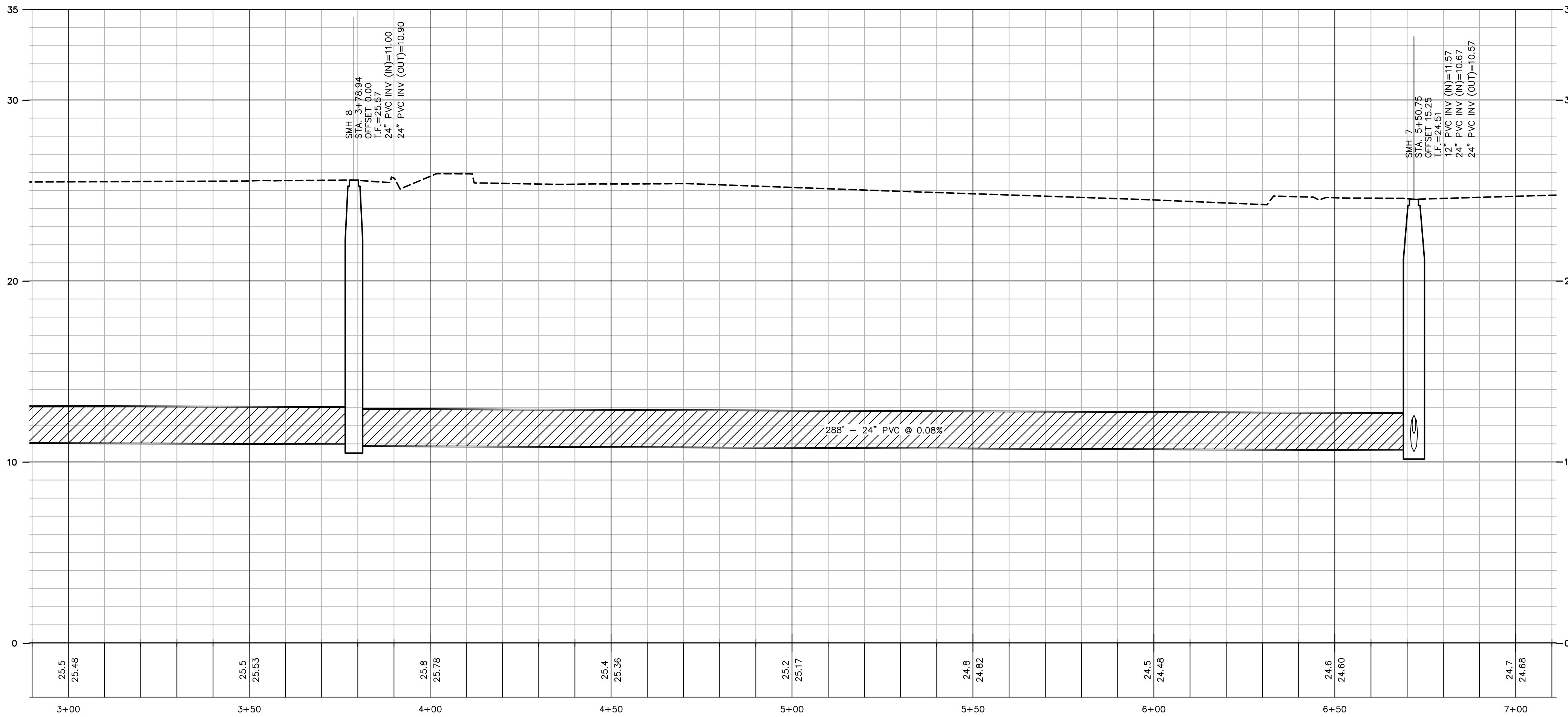
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 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

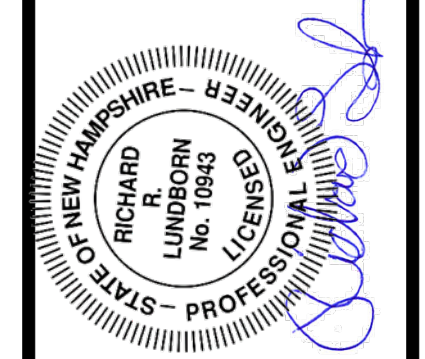
PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CU-106**

-  TRANSFORMER
-  TELECOM HAND HOLE
-  SWITCH GEAR & ELECTRICAL MANHOLE
-  SEWER MANHOLE LABEL
-  PROPOSED GATE VALVE
-  PROPOSED CATCH BASIN
-  PROPOSED DRAIN MANHOLE
-  PROPOSED SANITARY MANHOLE
-  PROPOSED HYDRANT



No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



SCALE: HORIZ: 1" = 20'  
 VERT: 1" = 20'

DATUM: HORIZ: NAD83  
 VERT: NGVD29

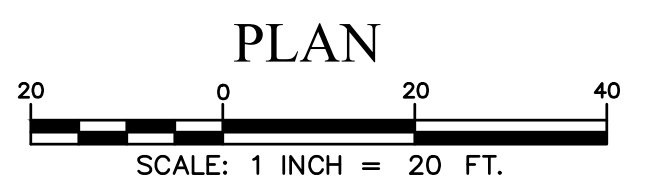
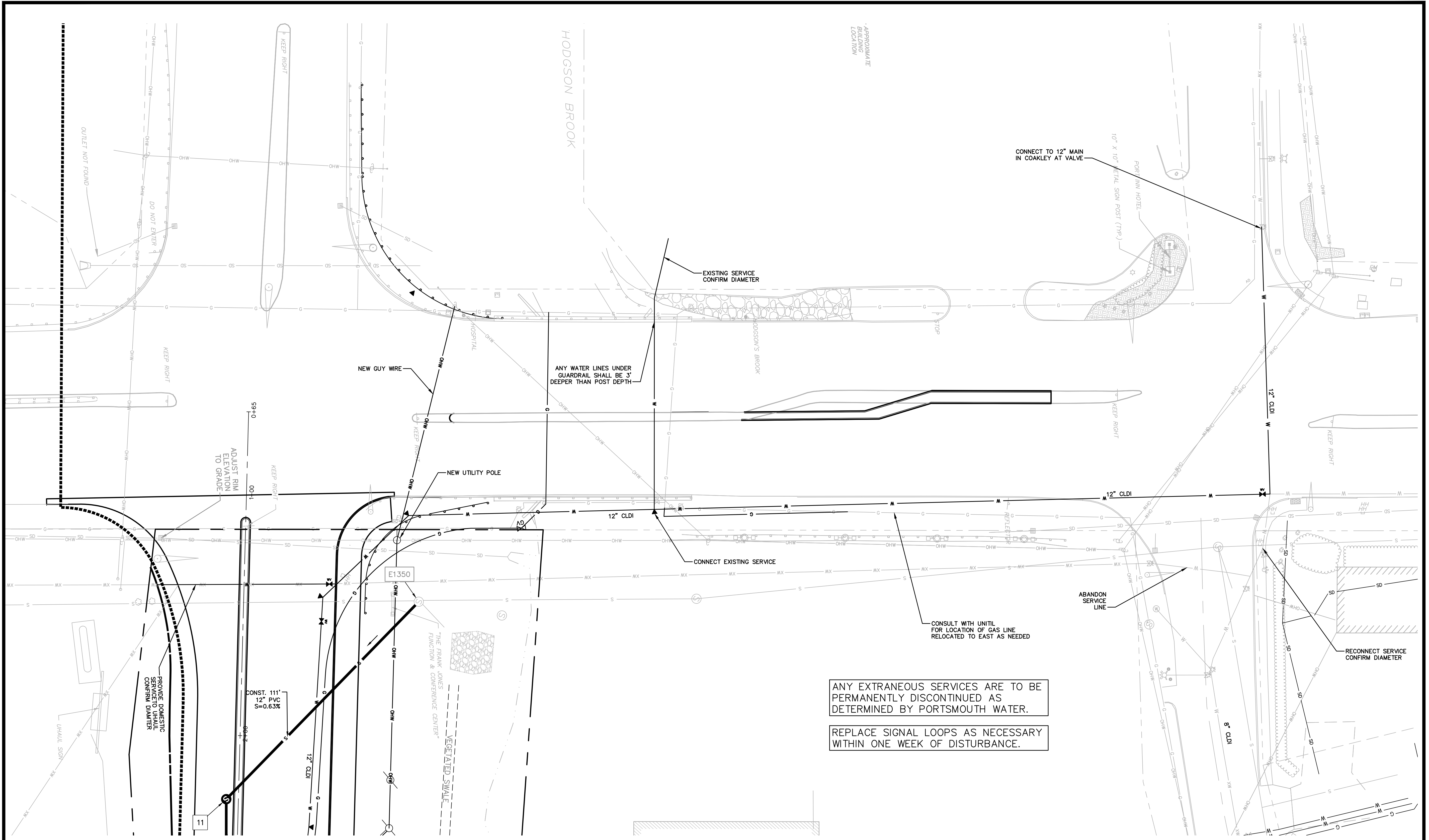
GRAPHIC SCALE

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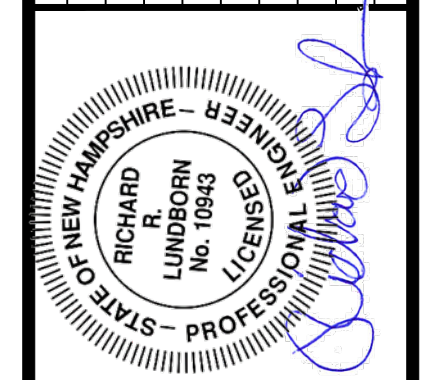
CATE STREET DEVELOPMENT, LLC  
 UTILITY PLAN & PROFILE  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CU-107**



No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



SCALE: HORZ.: 1"=20'  
 VERT.: 1"=20'

DATUM: HORZ.: NAD83  
 VERT.: NGVD29

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CATE STREET DEVELOPMENT, LLC  
 RTE 1 BYPASS OFFSITE  
 IMPROVEMENT PLANS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

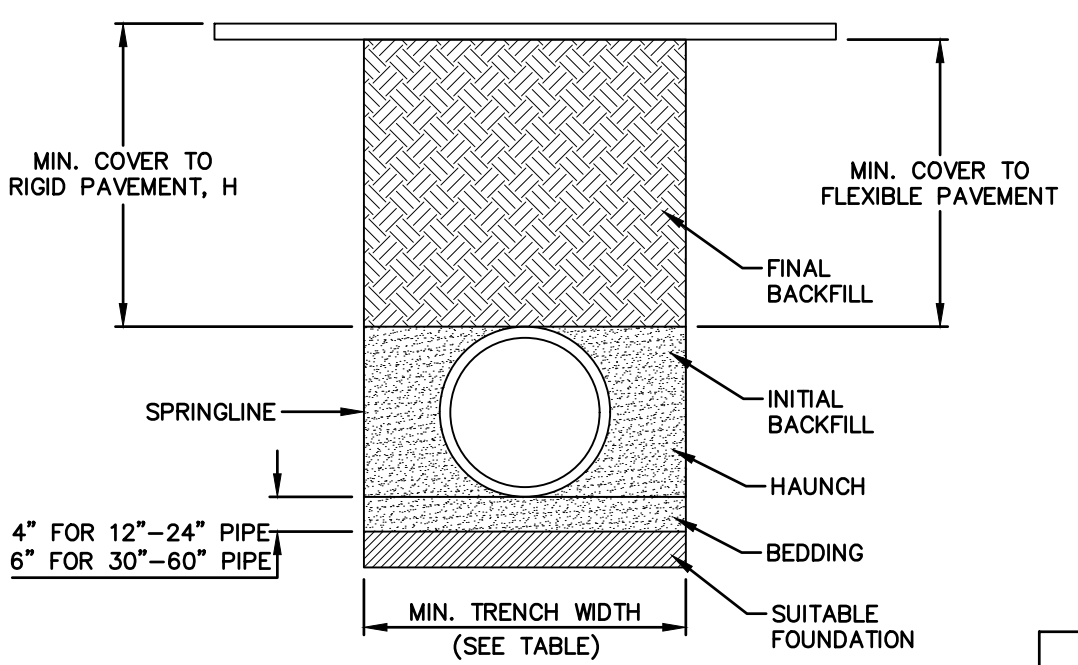
CU-108



- ALL SECTIONS SHALL BE CONCRETE, CLASS AA (4,000 PSI)
- CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL
- THE TONGUE AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
- RISERS OF 1", 2", 3", & 4" MAY BE USED TO REACH DESIRED DEPTH.
- THE STRUCTURES SHALL BE DESIGNED FOR H-20 LOADING.
- FITTING FRAME TO GRADE MAY BE DONE WITH CLAY BRICKS (2 COURSES MAX.), FRAME TO BE SET IN A FULL BED OF MORTAR.
- SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
- PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
- OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND THE INSIDE WALL OF THE STRUCTURE.
- PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING ONE STRIP OF BUTYL RUBBER SEALANT OR APPROVED FLEXIBLE SEALANT.
- STEPS ARE NOT ALLOWED.

- CATCH BASIN SPECIFIC NOTES:**
- CONCRETE SECTIONS MAY BE CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
  - "ELIMINATOR" OIL/WATER SEPARATORS SHALL BE INSTALLED TIGHT TO INSIDE OF CATCH BASIN.
- DRAIN MANHOLE SPECIFIC NOTES:**
- ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN THE HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINT.
  - MANHOLE FRAME & COVER SHALL BE JORDAN IRONWORKS HINGE COVER PER CITY OF PORTSMOUTH STANDARD.

**PRECAST DRAINAGE STRUCTURE NOTES**  
NOT TO SCALE



**HP STORM TRENCH INSTALLATION DETAIL**  
NOT TO SCALE

TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
12"	30"
(300mm)	(762mm)
15"	34"
(375mm)	(864mm)
18"	39"
(450mm)	(991mm)
24"	48"
(600mm)	(1219mm)
30"	56"
(750mm)	(1422mm)
36"	64"
(900mm)	(1626mm)
42"	72"
(1050mm)	(1829mm)
48"	80"
(1200mm)	(2032mm)
60"	96"
(1500mm)	(2438mm)

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOAD CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD)*
12"-48" (300mm-1200mm)	12" (305mm)	12" (305mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

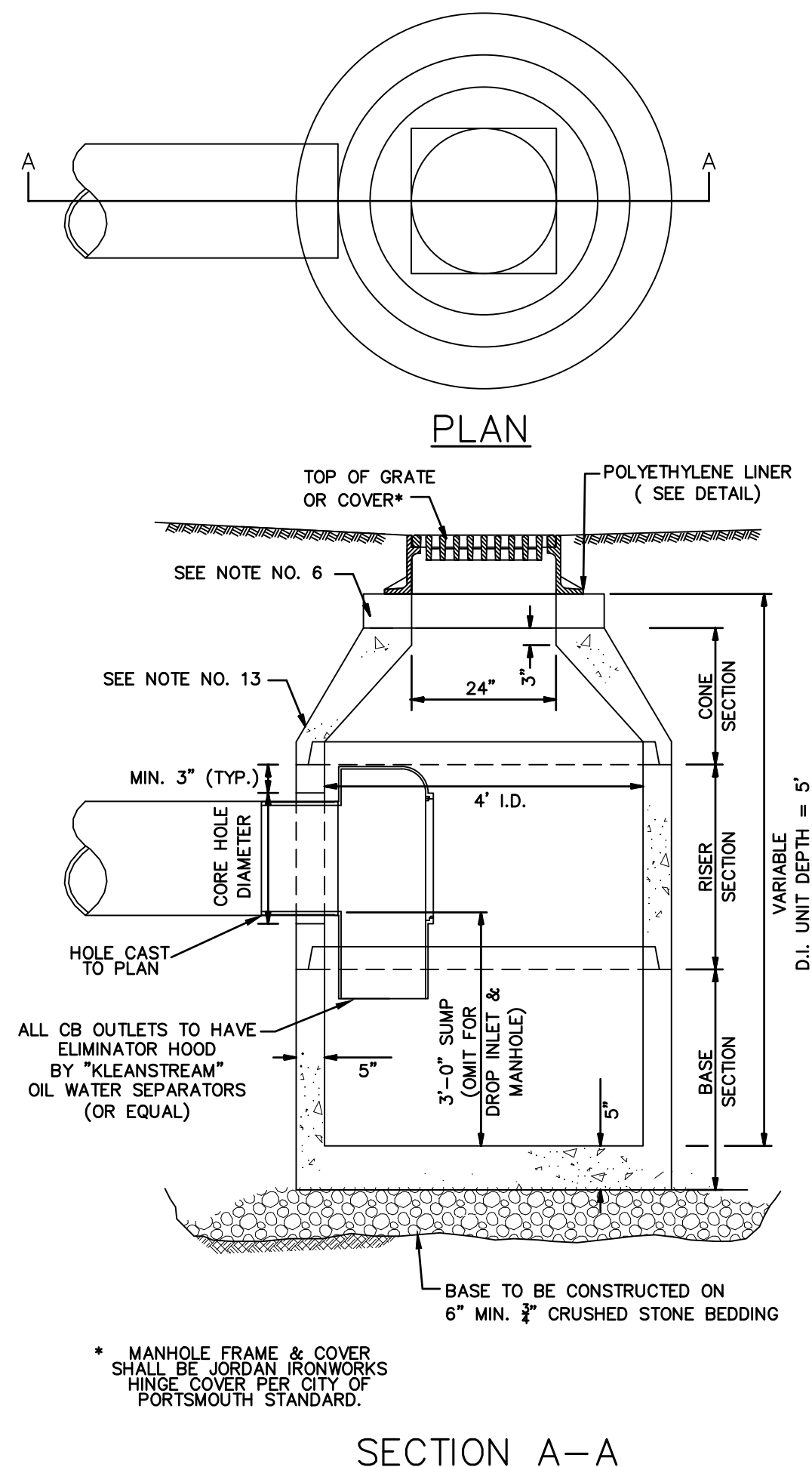
\*VEHICLE IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

TABLE 3, MAXIMUM COVER FOR ADS HP STORM PIPE, FT.

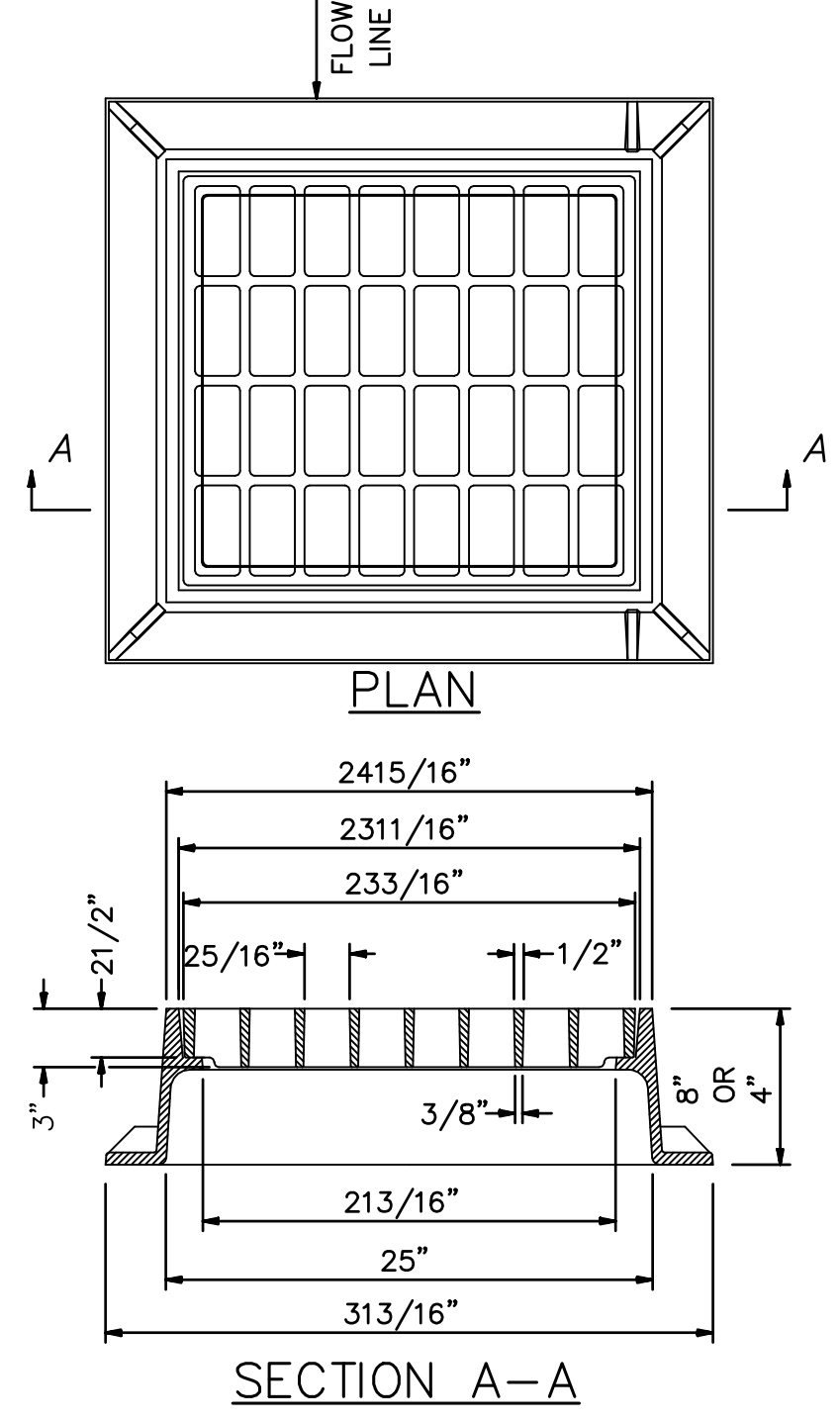
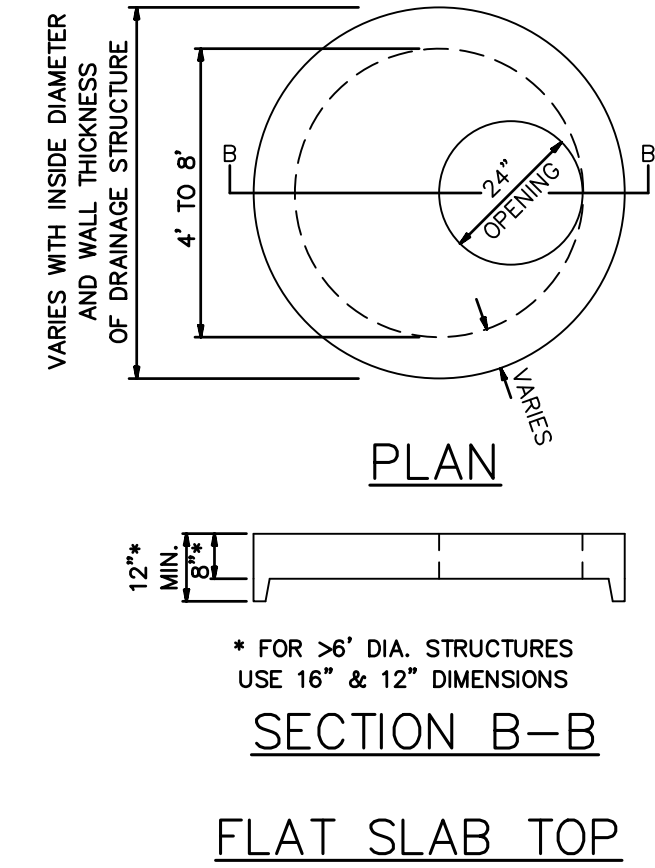
PIPE DIA.	CLASS I		CLASS II		CLASS III		CLASS IV
	COMPACTED	95%	90%	85%	95%	90%	95%
12" (305mm)	41" (12.5m)	28" (8.5m)	21" (6.4m)	16" (4.9m)	20" (6.4m)	16" (4.9m)	16" (4.9m)
15" (375mm)	42" (12.8m)	29" (8.8m)	24" (7.3m)	16" (4.9m)	21" (6.4m)	16" (4.9m)	16" (4.9m)
18" (450mm)	44" (13.4m)	30" (9.1m)	24" (7.3m)	16" (4.9m)	22" (6.7m)	17" (5.2m)	16" (4.9m)
24" (600mm)	48" (14.6m)	33" (10.1m)	26" (7.9m)	14" (4.3m)	19" (5.8m)	14" (4.3m)	14" (4.3m)
30" (750mm)	52" (15.8m)	36" (10.7m)	27" (8.2m)	14" (4.3m)	19" (5.8m)	15" (4.6m)	14" (4.3m)
36" (900mm)	56" (17.0m)	39" (11.9m)	28" (8.5m)	14" (4.3m)	20" (6.1m)	15" (4.6m)	14" (4.3m)
42" (1050mm)	60" (18.3m)	42" (12.8m)	30" (9.1m)	14" (4.3m)	21" (6.4m)	15" (4.6m)	14" (4.3m)
48" (1200mm)	64" (19.5m)	45" (13.7m)	33" (10.1m)	14" (4.3m)	22" (6.7m)	15" (4.6m)	14" (4.3m)
60" (1500mm)	72" (21.9m)	51" (15.5m)	39" (11.9m)	14" (4.3m)	24" (7.3m)	15" (4.6m)	14" (4.3m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:  
NO HYDROSTATIC PRESSURE  
UNIT WEIGHT OF SOIL (γ) = PCF

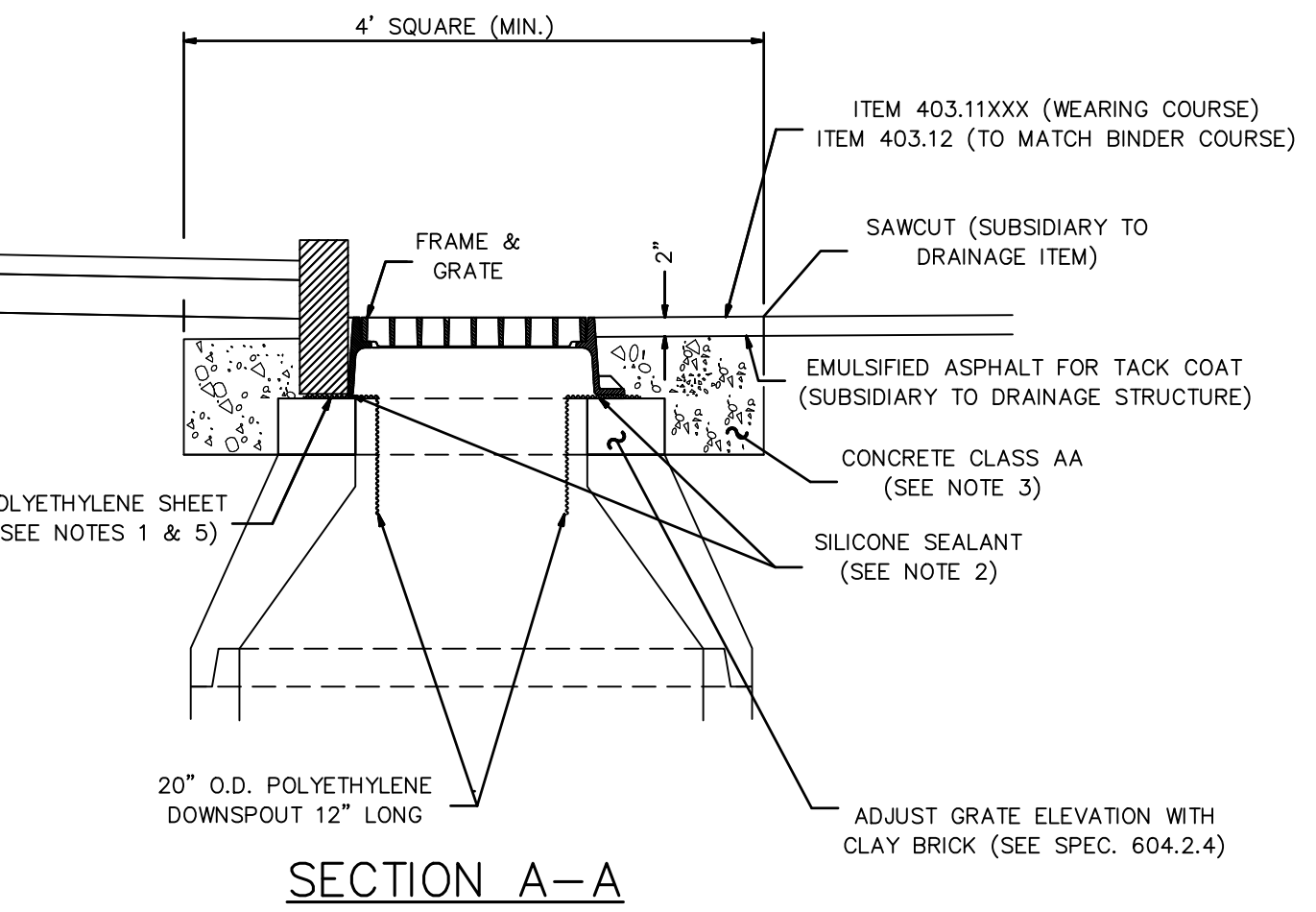
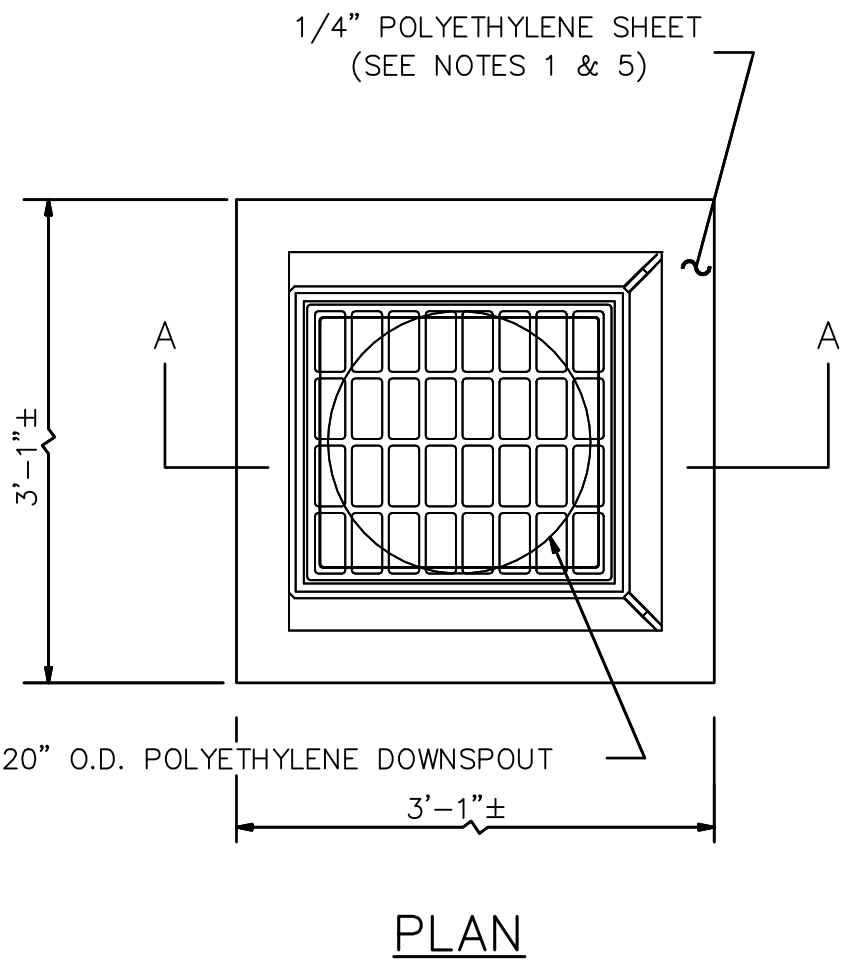
- NOTES:**
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D3221, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS I/IV MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.
  - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
  - FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND PLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
  - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE; 6" (150mm) FOR 30"-60" (750mm-1500mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.
  - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICATION FILL HEIGHTS LISTED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.
  - MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS: CLASS I OR II MATERIAL COMPACTED TO 90% SPD AND CLASS III COMPACTED TO 95% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
  - FOR ADDITIONAL INFORMATION SEE TECHNICAL NOTE 2.04.



**PRECAST CATCH BASIN/DRAINAGE MANHOLE**  
SCALE: N.T.S.



**CATCH BASIN FRAME & GRATE (TYPE B)**  
SCALE: N.T.S.

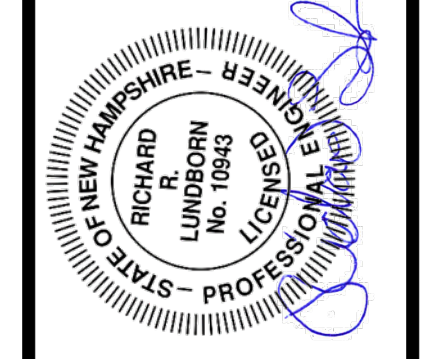


**POLYETHYLENE LINER**  
SCALE: N.T.S.

- POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
- PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET.
- PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF THE GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURES)
- USE ON DRAINAGE STRUCTURES 4" MIN. DIAMETER ONLY.
- TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3-FLANGE FRAME AND CURB).
- THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
- PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT.
- SEE NHDOT DR-04, "DI-DB, UNDERDRAIN FLUSHING BASIN AND POLYETHYLENE LINER DETAILS", FOR ADDITIONAL INFORMATION.

**POLYETHYLENE LINER NOTES**  
NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



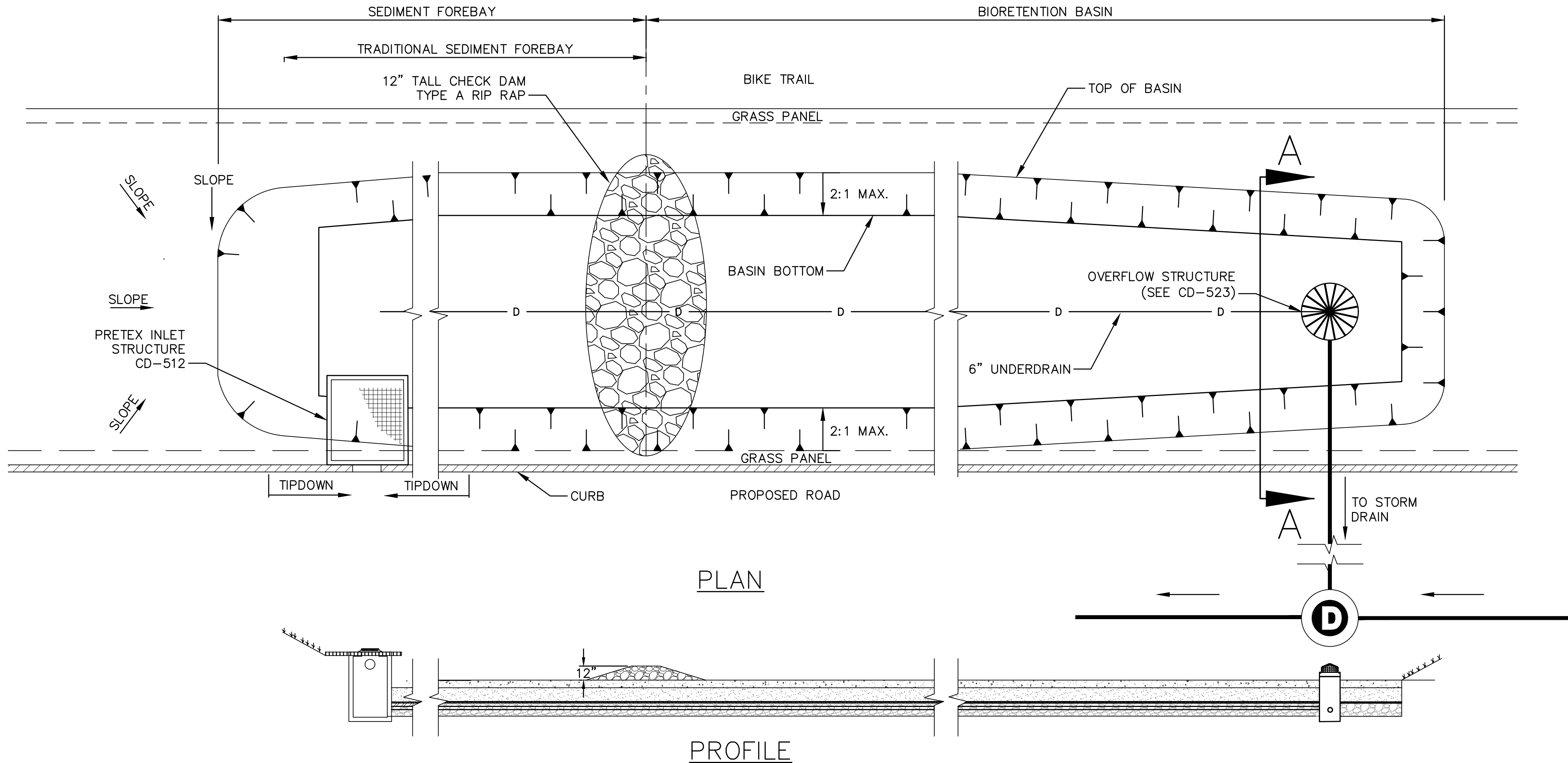
SCALE:	HORIZ.: NTS
	VERT.: NTS
DATUM:	HORIZ.: NTS
	VERT.: NTS

**FUSS & O'NEILL**  
UPPER SQUARE BUSINESS CENTER  
5 FLETCHER STREET, SUITE 1  
KENNEBUNK, MAINE 04043  
207.563.6609  
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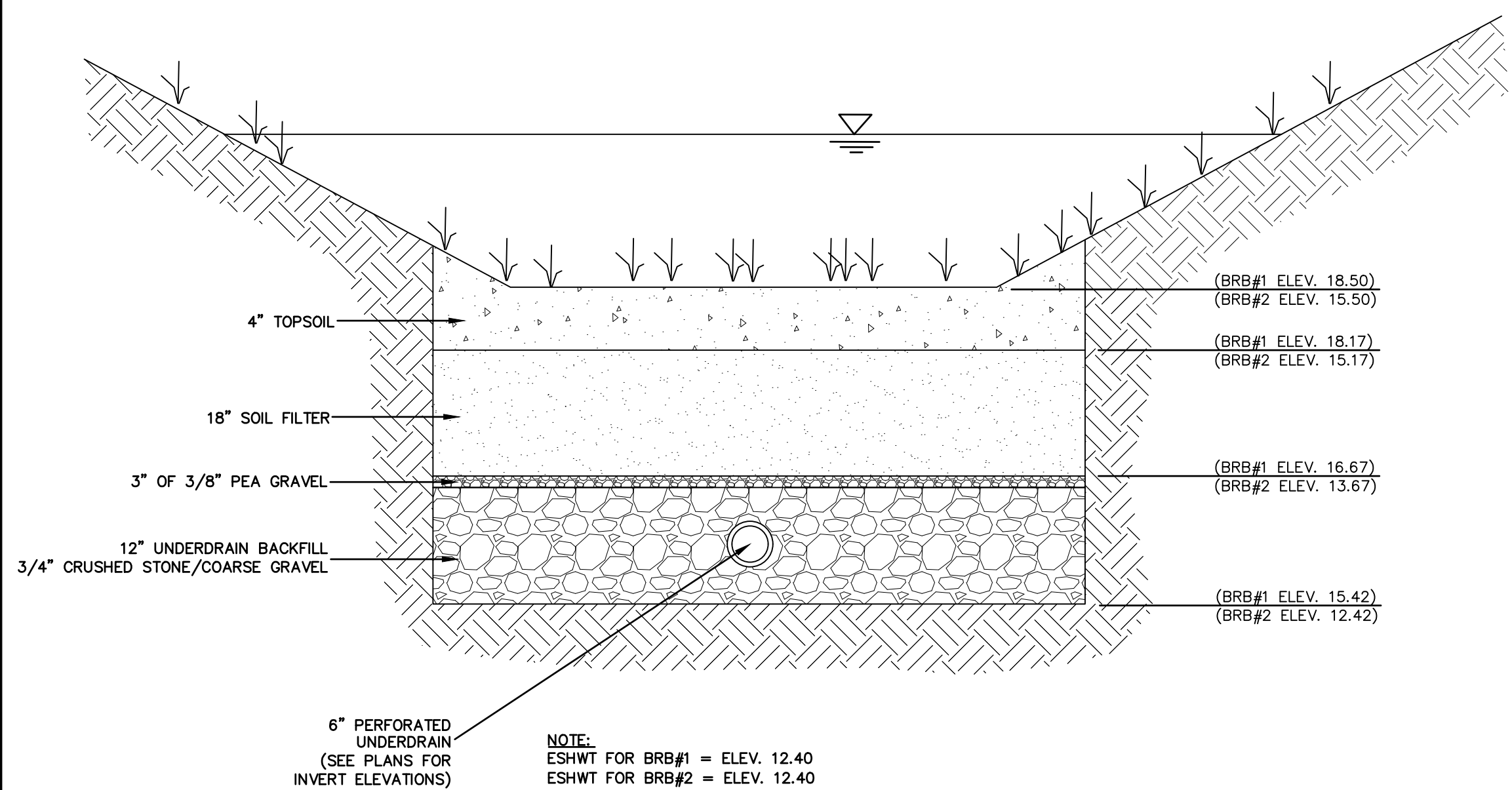
CATE STREET DEVELOPMENT, LLC  
**DRAINAGE DETAILS**  
CATE STREET  
PORTSMOUTH  
NEW HAMPSHIRE

PROJ. No.: 20180317A10  
DATE: 07/17/2019

**CD-511**



**BIORETENTION SYSTEM TYPICAL SECTION**  
NOT TO SCALE



**SECTION A-A**  
SCALE: N.T.S.

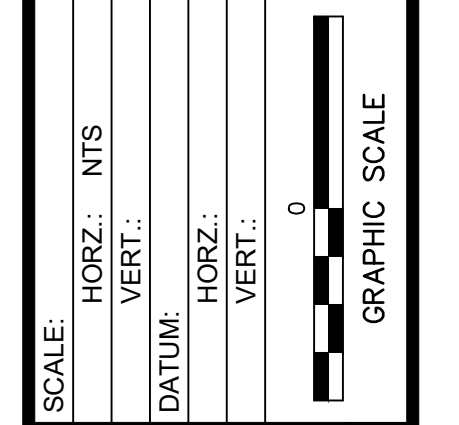
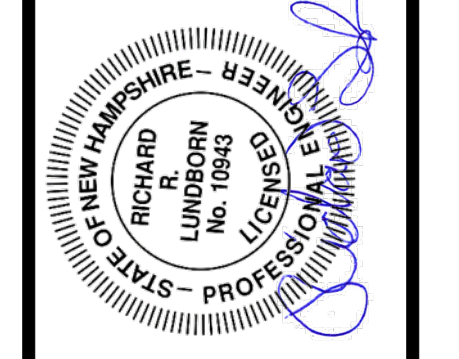
- CONSTRUCTION NOTES:**
- DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
  - DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF AND WATER FROM EXCAVATIONS) TO THE BIORETENTION SYSTEM DURING ANY STAGE OF CONSTRUCTION.
  - DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
- MAINTENANCE NOTES:**
- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 INCHES IN A 24 HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.
  - PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
  - TRASH AND DEBRIS SHOULD BE REMOVED AT EACH INSPECTION.
  - AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
  - VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING PRUNING, REMOVAL AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

**BIORETENTION SYSTEM NOTES**  
NOT TO SCALE

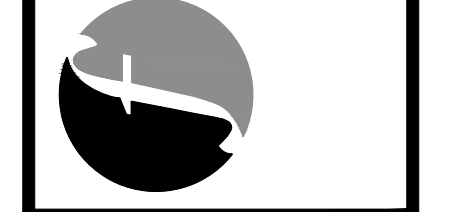
COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL	
		PERCENT BY WEIGHT STANDARD SIEVE	
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	<5
FILTER MEDIA OPTION B			
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	<5
	70 TO 80	10	85 TO 100
		20	70 TO 100
		50	15 TO 40
LOAMY COARSE SAND		200	8 TO 15

**SOIL FILTER MIXTURES**  
NOT TO SCALE

NO.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



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CATE STREET DEVELOPMENT, LLC  
**DRAINAGE DETAILS**  
CATE STREET  
PORTSMOUTH NEW HAMPSHIRE

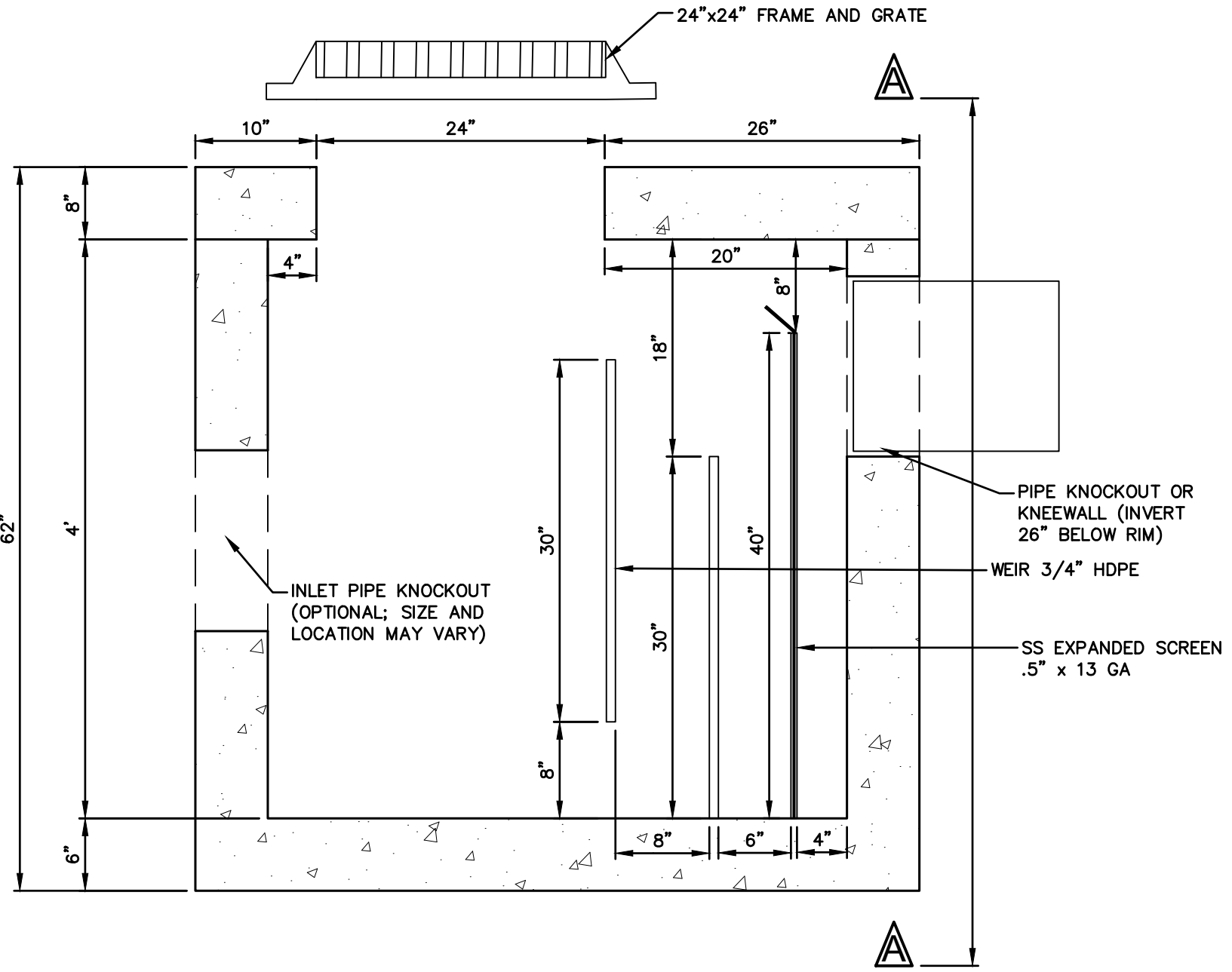
PROJ. No.: 20180317.A10  
DATE: 07/17/2019

**CD-512**

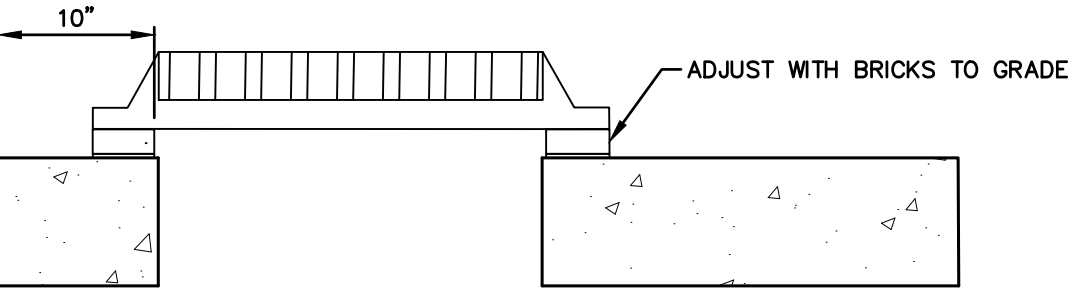
- PRETX SPECIFICATIONS**
- A. GENERAL**
- PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.
- B. PRODUCTS**
- PRETX IS AVAILABLE IN 3 MODELS THAT MANAGE MOST BIORETENTION INLET CONFIGURATIONS: CURB, DROP, AND INLINE.
  - PRETX-CURB IS FOR EDGE OF PAVEMENT RUNOFF AT A CURB CUT IN LIEU OF A STONE SPREADER.
  - PRETX-DROP IS FOR USE AS A DROP INLET CONFIGURATION ALONG A CURB LINE AND WOULD BE INSTALLED WITH A STANDARD DROP INLET GRATE.
  - PRETX-INLINE IS FOR USE WITH SUBSURFACE INLET AND OUTLET PIPE.
  - PRETX IS SIZED TO PRETREAT WATER QUALITY FLOWS AND BYPASS LARGER FLOWS THAT HAVE MINIMAL TRASH AND DEBRIS. PRETX CAN BE USED BOTH IN RETROFIT OR NEW INSTALLATIONS.
  - ACCEPTABLE SYSTEM SUPPLIER:  
 CONVERGENT WATER TECHNOLOGIES, INC. OR ITS AUTHORIZED VALUE-ADDED RESELLER  
 (800) 711-5428  
 WWW.CONVERGENTWATER.COM
- C. SUBMITTALS**
- SUBMIT PROPOSED LAYOUT DRAWINGS. DRAWINGS SHALL INCLUDE TYPICAL SECTION DETAILS ANNOTED WITH SYSTEM ELEVATIONS (E.G., RIM, PIPE INVERTS, OUTSIDE BOTTOM OF STRUCTURE, ETC.).
  - SUBMIT MATERIAL CERTIFICATES FOR FRAMES AND COVERS
  - ANY PROPOSED EQUAL ALTERNATE PRODUCT SUBSTITUTION TO THIS SPECIFICATION MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING.
- D. EXECUTION**
- ALL PUBLIC STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS AND ACCORDING TO LOCAL MUNICIPAL REGULATIONS.
  - ALL STORM DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE PROJECT ENGINEER.
  - THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND OBTAINING APPROVAL FROM DIG-SAFE AND DETERMINING THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION/EXCAVATION AND SHALL NOTIFY THE PROJECT ENGINEER OF ANY POTENTIAL CONFLICTS.
  - TO PROTECT STORMWATER FLOW CONTROL AND QUALITY TREATMENT FACILITIES FROM SEDIMENTATION, THEY SHALL BE CONNECTED TO THE STORM CONVEYANCE SYSTEM ONLY AFTER ALL SITE WORK, ROAD CONSTRUCTION, UTILITY WORK AND LANDSCAPING ARE IN PLACE IN ALL AREAS ABOVE AND UPSTREAM OF THE FACILITY.
  - THE EXISTING STORM SEWER SYSTEM SHALL STAY ISOLATED FROM THE NEW SYSTEM UNTIL THE NEW SYSTEM IS CLEANED, AND APPROVED FOR USE. THERE SHALL BE NO DEBRIS IN THE LINES OR FURTHER CLEANING WILL BE REQUIRED PRIOR TO ACCEPTANCE.
  - PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR.
  - THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
  - ALL PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.
  - STANDARD CURB INLETS AND TIPDOWNS SHALL BE PRECAST CONCRETE OR ASPHALT.
  - PIPE ENDS SHALL BE FLUSH WITH THE INNER WALL OR 1" MAXIMUM INTRUSION. MASONRY, CINDER BLOCKS, OR SIMILAR MATERIALS MAY BE USED TO ADJUST THE RISERS TO GRADE PRIOR TO GROUTING.
  - GROUTING SHALL BE SUFFICIENT TO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF ALL RISERS, JOINTS & PIPE PENETRATIONS.
  - MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
  - ALL REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
  - RECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
  - MATING SURFACES OF MANHOLE RINGS AND COVERS SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITIONS.

- E. CONSTRUCTION AND SEQUENCING**
- EXAMINATION
    - VERIFY LAYOUT AND ORIENTATION OF PRE-TX SYSTEM AREA INCLUDING EDGE OF PAVEMENT, TIP DOWN, CURBS AND SIDEWALK, BIOFILTRATION SYSTEM, AND CONNECTIONS.
    - VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
  - PREPARATION
    - CALL DIG SAFE AND RECEIVE APPROVAL BEFORE PERFORMING WORK.
    - REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
    - IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
    - CLEAR AND GRUB THE PROPOSED PRE-TX SYSTEM AREA.
  - EXCAVATION AND INSTALLATION
    - THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, AND ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
    - INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORM WATER AWAY FROM THE PRE-TX SYSTEM AREA.
    - EXCAVATE TO THE BOTTOM INVERT OF THE SYSTEM.
    - TO MINIMIZE COMPACTION OF ADJACENT BIOFILTRATION SYSTEMS, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE PRE-TX SYSTEM AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS.
    - ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM.
    - PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
    - ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
  - INSTALLATION
    - PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
    - VERIFY ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT, PAVEMENT GRADING FOR INLET GRATE FOR PRETX-DROP, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS, OUTLET INVERT FOR KNEE WALL.
  - FOR PRETX-SURFACE:
    - VERIFY ELEVATIONS FOR ADJACENT CURBS.
    - VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
    - VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
    - VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
  - FOR PRETX-DROP:
    - VERIFY ALL INLET PIPES ENTER THE STRUCTURE UPSTREAM OF BAFFLE.
    - VERIFY FRAME AND GRATE OFFSET ON INLET SIDE AND UPSTREAM OF BAFFLE.
    - VERIFY CURB LOCATION WITH RESPECT TO FRAME AND GRATE ORIENTATION.
  - INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
  - VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
  - INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
- BACKFILLING
    - BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
    - BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
    - BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
    - DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
    - DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
    - STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
  - CLEAN UP
    - AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

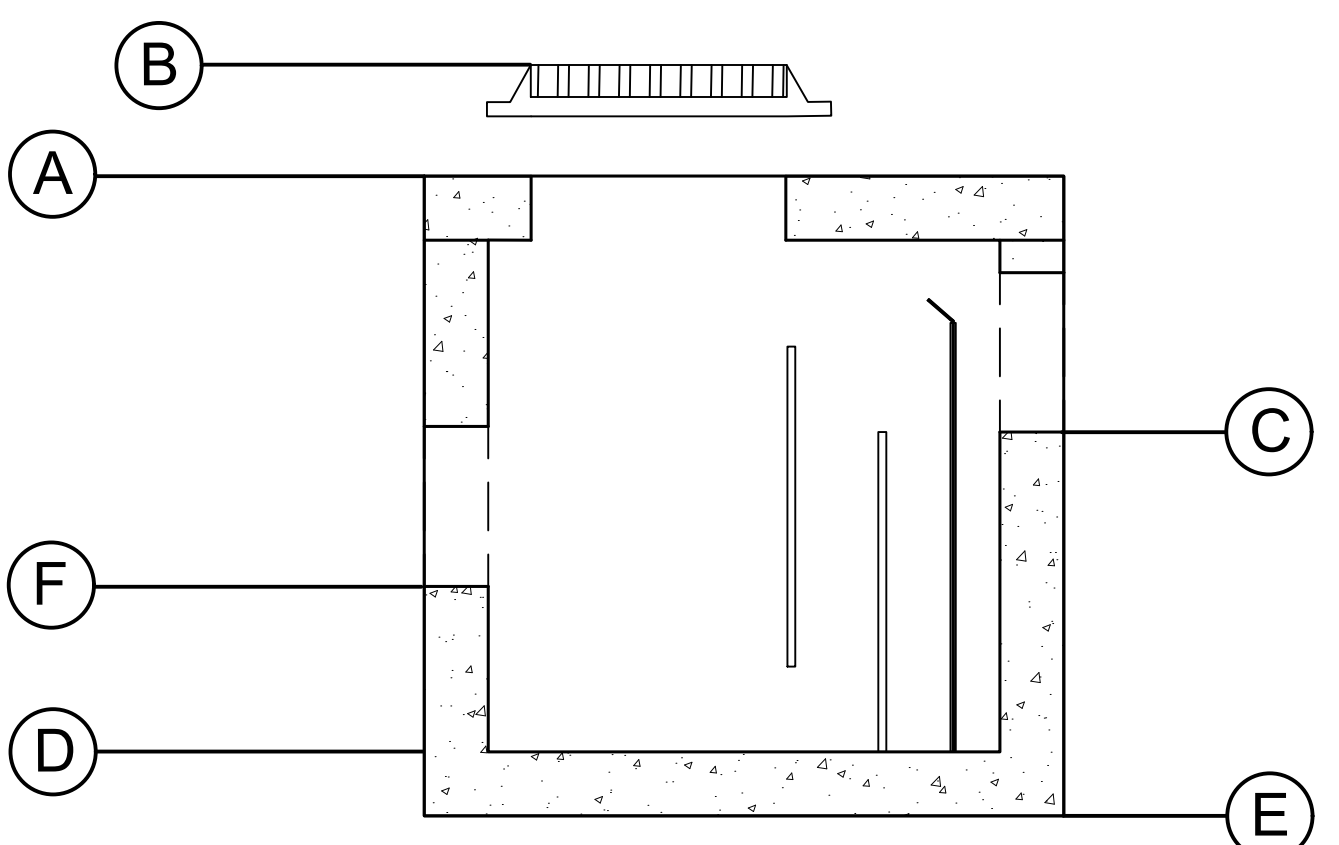
PRETX-DROP ELEVATION GUIDE		
POINT	DESCRIPTION	HEIGHT IN REFERENCE TO PT. A
A	OUTSIDE OF TOP SLAB	0"
B	EDGE OF PAVEMENT	5", MIN.
C	PIPE INVERT	25.5" FOR 12" PIPE, 21" FOR 8" PIPE, 19" FOR 6" PIPE
D	SUMP INVERT	56"
E	OUTSIDE BOTTOM	62"
F	OPTIONAL INLET PIPE KNOCKOUT	VARIABLE



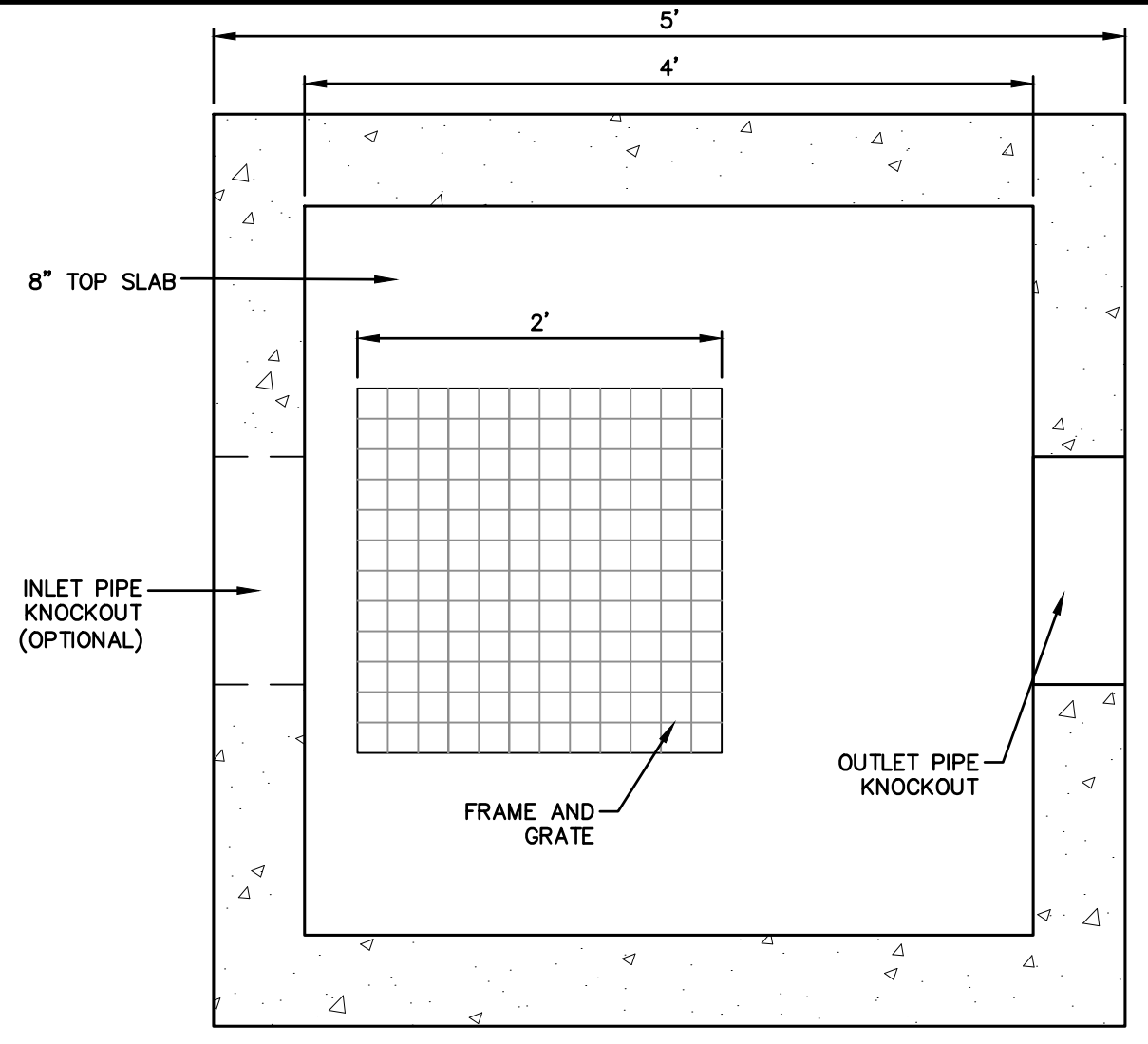
1 PRETREATMENT CATCH BASIN CROSS SECTION VIEW NOT TO SCALE



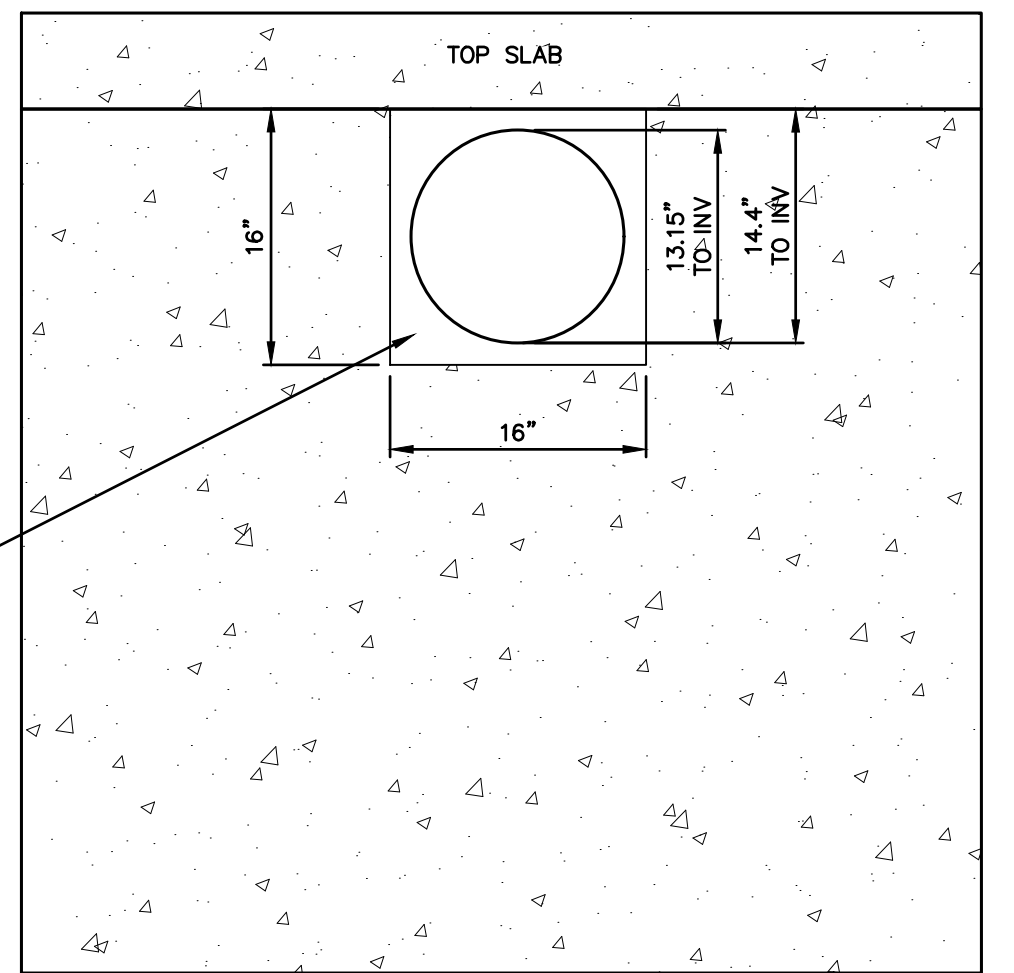
3 PRETX DROP SIDE DETAIL NOT TO SCALE



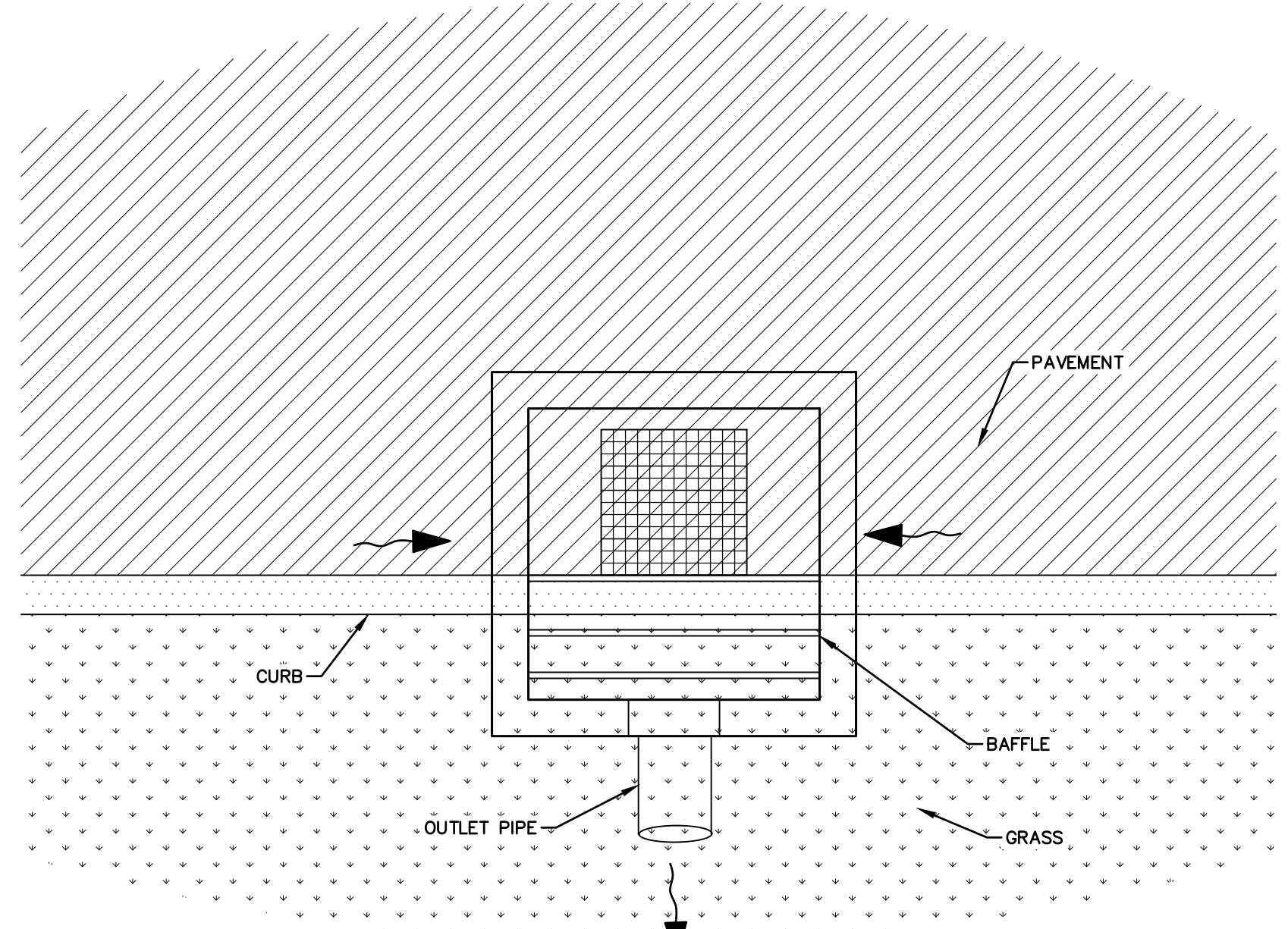
5 KEY TO ELEVATION GUIDE NOT TO SCALE



2 PLAN VIEW DETAIL NOT TO SCALE

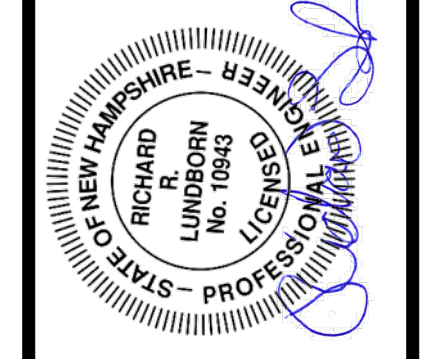


4 SECTION A-A - PIPE BLOCKOUT DETAILS NOT TO SCALE



7 PRETX CURB OUTLET TO BIORETENTION CONFIGURATION NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	RRL
3.	6/20/2019	TAC SUBMITTAL	RRL
2.	5/20/2019	TAC SUBMITTAL	RRL
1.	3/18/2019	TAC SUBMITTAL	RRL

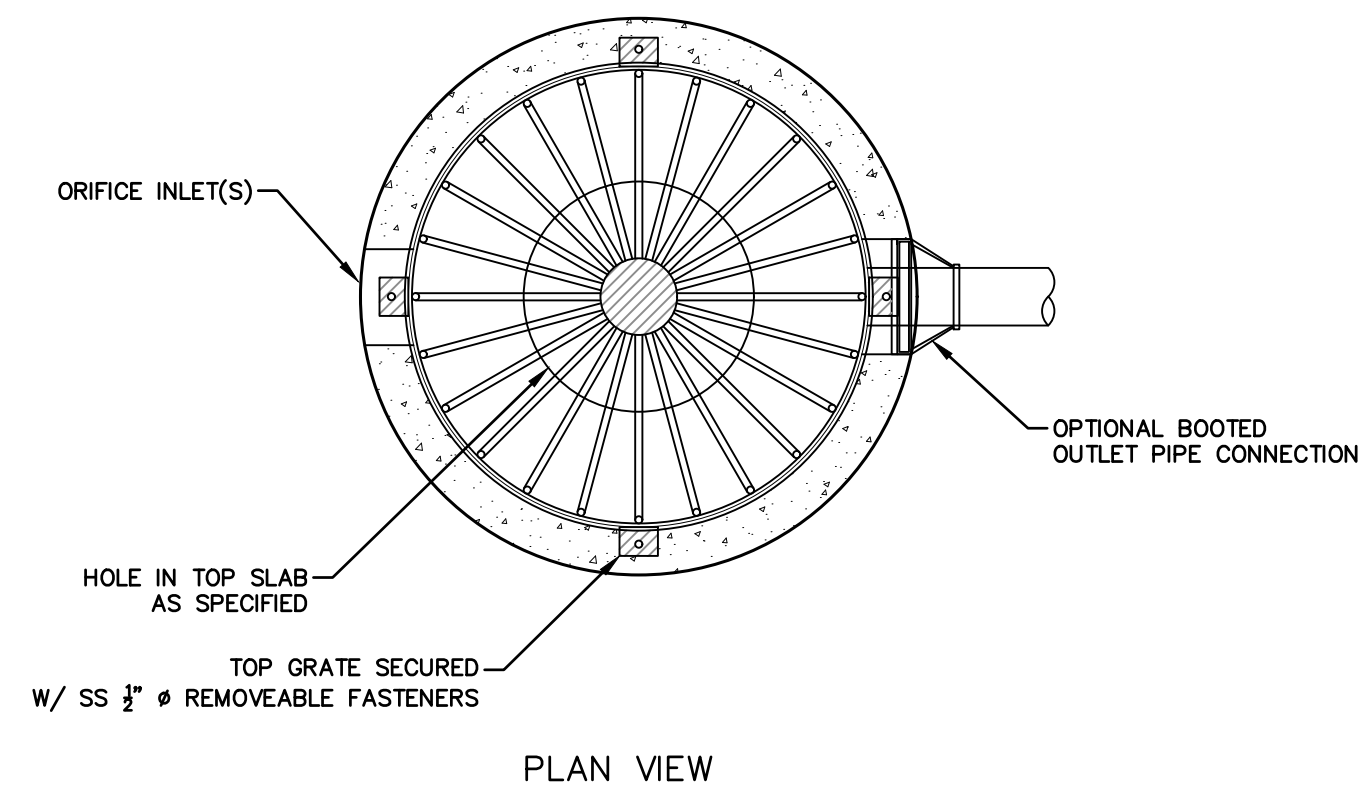


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DATUM:	HORIZ.:	VERT.:

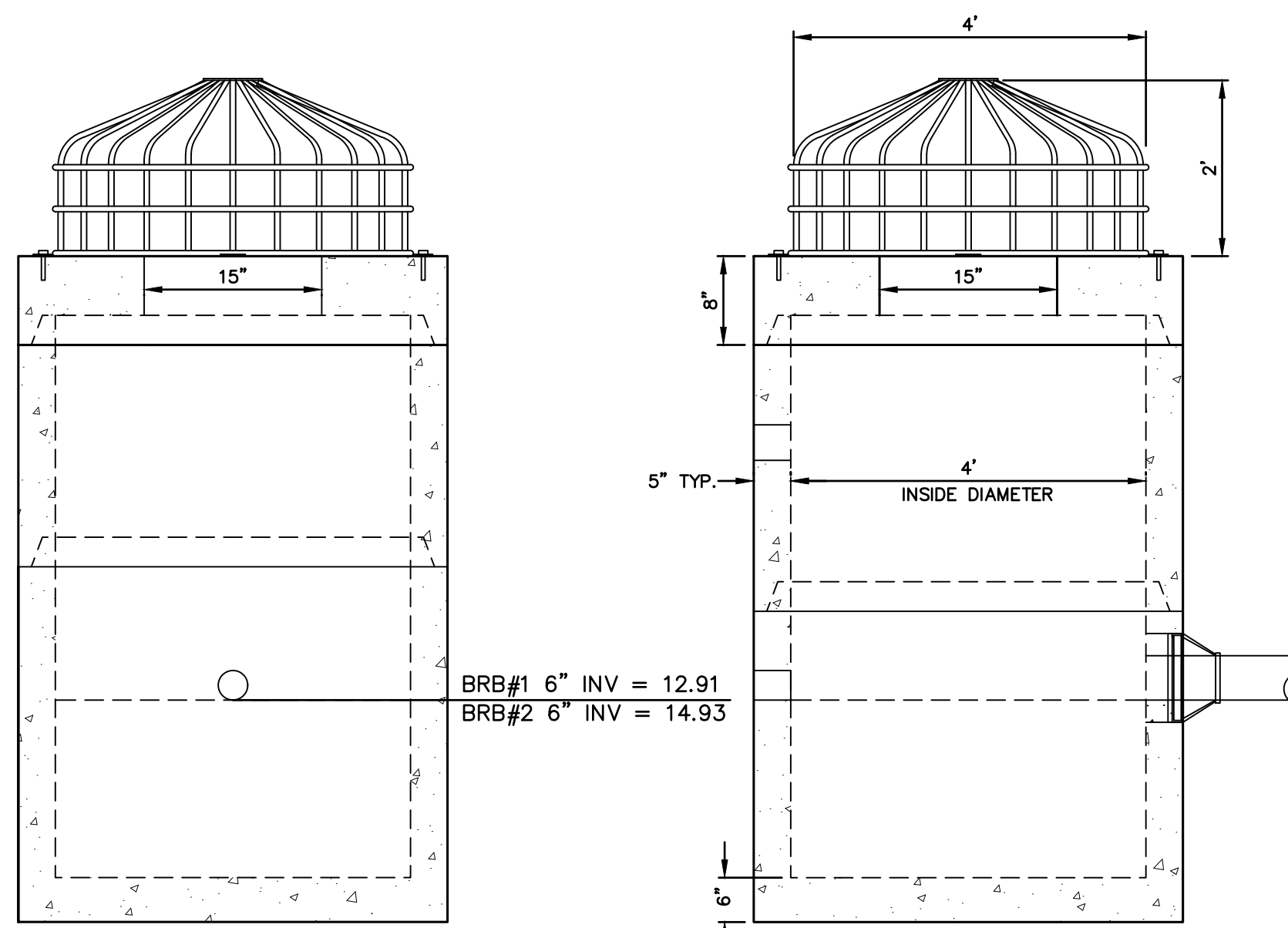
**FUSS & O'NEILL**  
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 KENNEBUNK, MAINE 04043  
 www.fandoc.com

CATE STREET DEVELOPMENT, LLC  
**DRAINAGE DETAILS**  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CD-513**



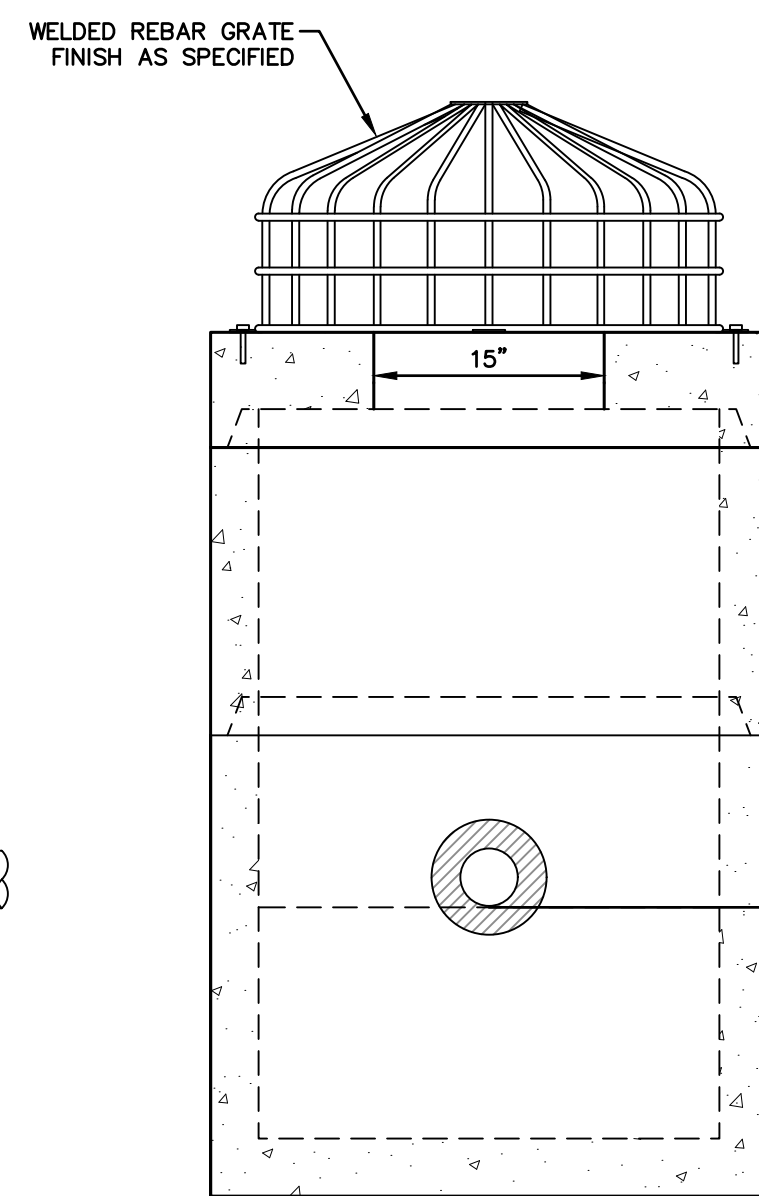
PLAN VIEW



INLET VIEW

BRB#1 6\"/>

SIDE VIEW



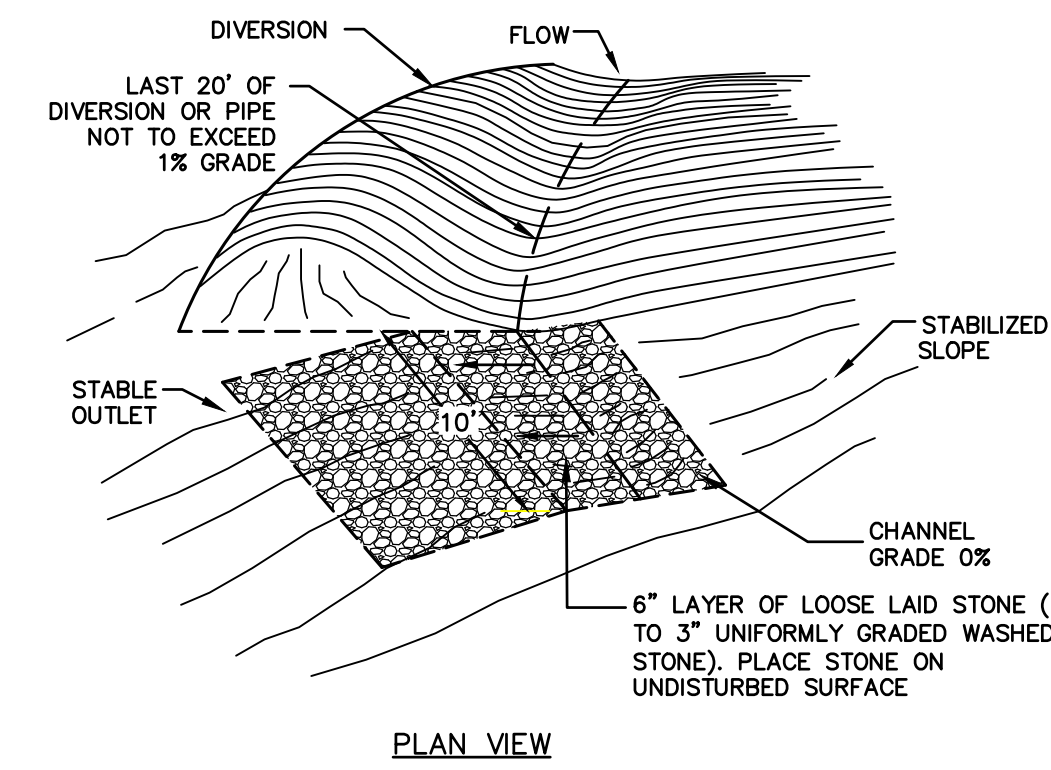
OUTLET VIEW

BRB#1 12\"/>

- General Notes**
- Steel Reinforcement Conforms to Latest ASTM Specification:
    - ASTM A-615, Grade 60 Black Deformed Bars
    - ASTM A-185 Welded Wire Fabric
    - 0.12 Sq. In./Lineal Ft. And 0.12 Sq. In.(Both Ways) Base Bottom
  - Concrete:  $f_c = 4,000$  psi @ 28 Days Minimum, Type III Cement
  - Butyl Rubber Joint Sealant Provided Conforms to ASTM C-990 And Federal Spec SS-S-210A
  - HS-20 Design Loading Conforms to Latest Specifications
    - ASTM C478, AASHTO M199 Precast Reinforced Concrete Manhole Sections
  - One Pour Monolithic Base Section

**OVERFLOW OUTLET CONTROL STRUCTURE (4'Ø) W/PEAKED TOP GRATE**

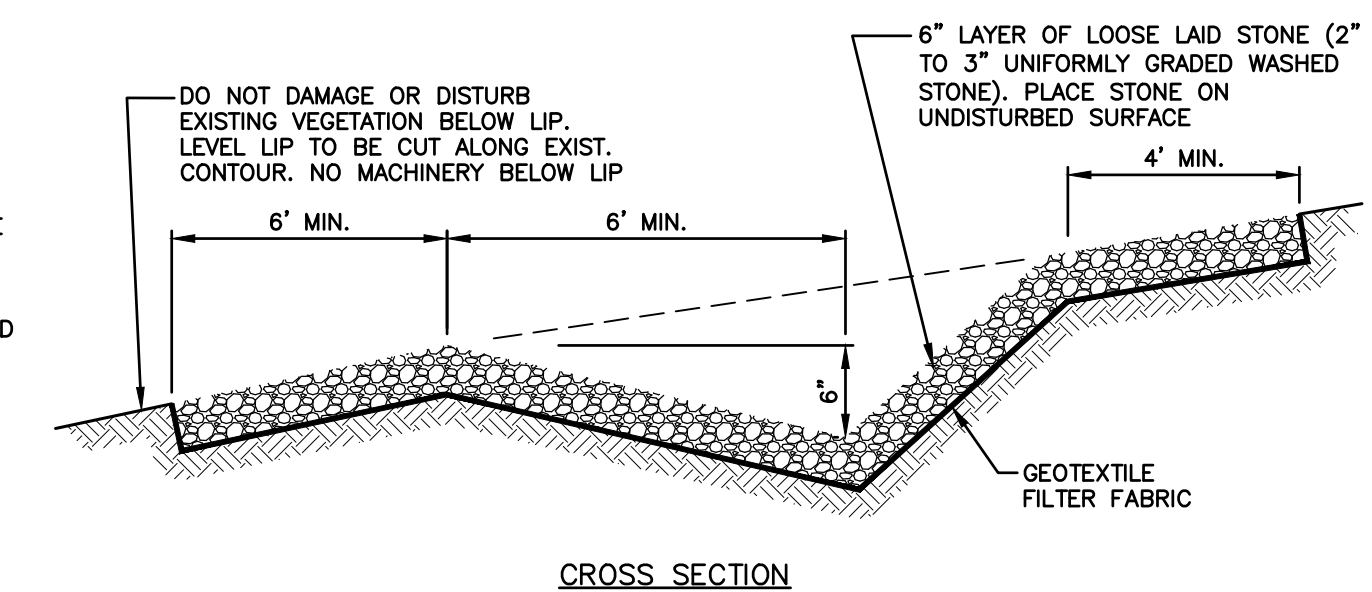
NOT TO SCALE



PLAN VIEW

- CONSTRUCTION SPECIFICATIONS**
- SPREADERS SHALL BE INSTALLED WITH LEVEL INSTRUMENT, CONSTRUCT LEVEL UP TO 0% GRADE TO ENSURE UNIFORM SHEET FLOW. LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL (NOT FILL).
  - SELECT GEOTEXTILE FABRIC BASED ON UNDISTURBED SOILS (SAND, SILTS, CLAY, ETC.)
  - PLACE 6" LAYER OF UNIFORMLY GRADED STONE 2" TO 3" IN DIAMETER. TAKE TO FORM SMOOTH UNIFORM SURFACE. DO NOT FILL VOIDS IN STONE.
  - THE INLET DITCH SHALL NOT EXCEED A 1% GRADE FOR AT LEAST 20 FEET BEFORE ENTERING THE SPREADER.
  - STORM RUN-OFF CONVERTED TO SHEET FLOW ACROSS OUTLET APRON SHALL FLOW ONTO STABILIZED AREA. RUN-OFF SHALL NOT BE RECONCENTRATED IMMEDIATELY BELOW THE POINT OF DISCHARGE.
  - CONSTRUCTION OF LEVEL LIP SPREADER SHALL BE UPHILL SIDE ONLY. LEVEL LIP AND AREA BELOW SPREADER SHALL BE AT EXISTING GRADE AND UNDISTURBED BY EARTHWORK OR EQUIPMENT. CONSTRUCT SPREADER WITH LIP AT EXISTING ELEVATION AS SPECIFIED.
  - DOWN GRADIENT RECEIVING AREA MUST BE NATURALLY WELL VEGETATED.

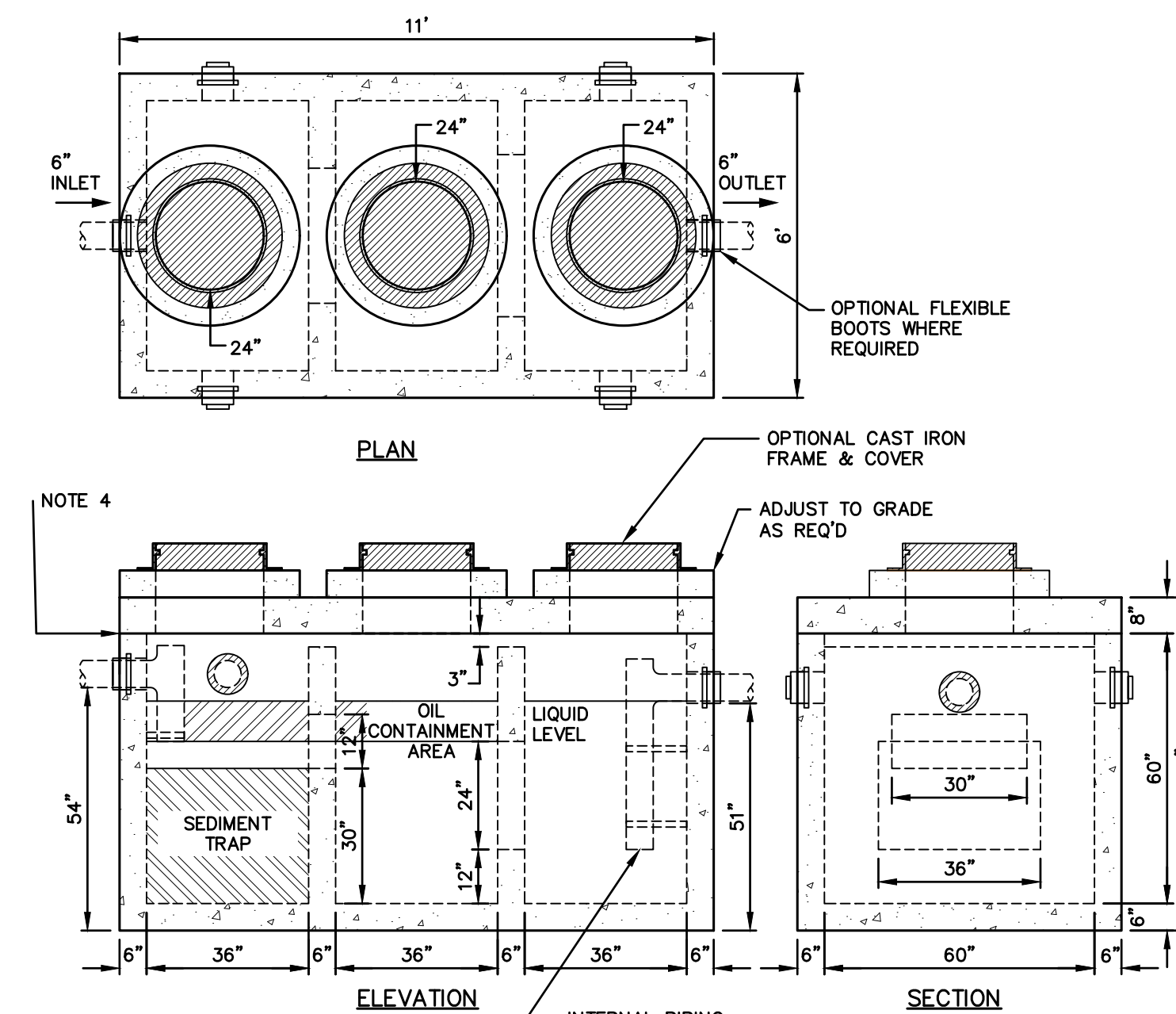
- MAINTENANCE NOTES:**
- THE LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND TO DETERMINE THAT THE DESIGN CONDITIONS HAVE NOT CHANGED.
  - ANY DETRIMENTAL ACCUMULATION OF SEDIMENTS SHOULD BE REMOVED.
  - IF RILLING HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED AND RE-VEGETATED.
  - THE VEGETATION SHOULD BE MOWED OCCASIONALLY TO CONTROL WEEDS AND THE ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE THE SPREADER AND AWAY FROM THE OUTLET AREA.



CROSS SECTION

**STONE LINED LEVEL SPREADER**

NOT TO SCALE



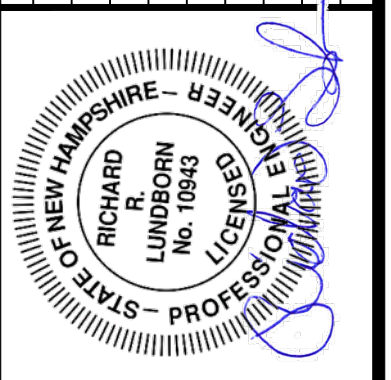
**EST WEIGHTS:**  
 TOP SLAB - 6,500 LBS  
 BASE - 20,500 LBS  
 TOTAL - 27,000 LBS

- GENERAL NOTES**
- CONCRETE:  $f_c = 5,000$  PSI @ 28 DAYS MINIMUM TYPE III CEMENT
  - STEEL REINFORCEMENT CONFORMS TO LATEST ASTM SPECIFICATIONS: ASTM-A615 GRADE 60 BLACK DEFORMED BARS
  - DESIGN LOADING: AASHTO-HS20-44 DESIGN SPECIFIED AS ACI 318-08, AASHTO-1992
  - BUTYL RUBBER JOINT SEALANT PROVIDED
  - FLEXIBLE SLEEVES PROVIDED ALL PIPE CONNECTIONS
  - PIPE SIZES AND COMPARTMENT CONFIGURATIONS PER JOB SPECIFICATIONS

**1,500 GALLON 3-COMPARTMENT HS-20 OIL & SEDIMENT SEPARATOR (PHOENIX PRECAST PRODUCTS)**

NOT TO SCALE

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4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
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1.	3/18/2019	TAC SUBMITTAL	JVA/DAD

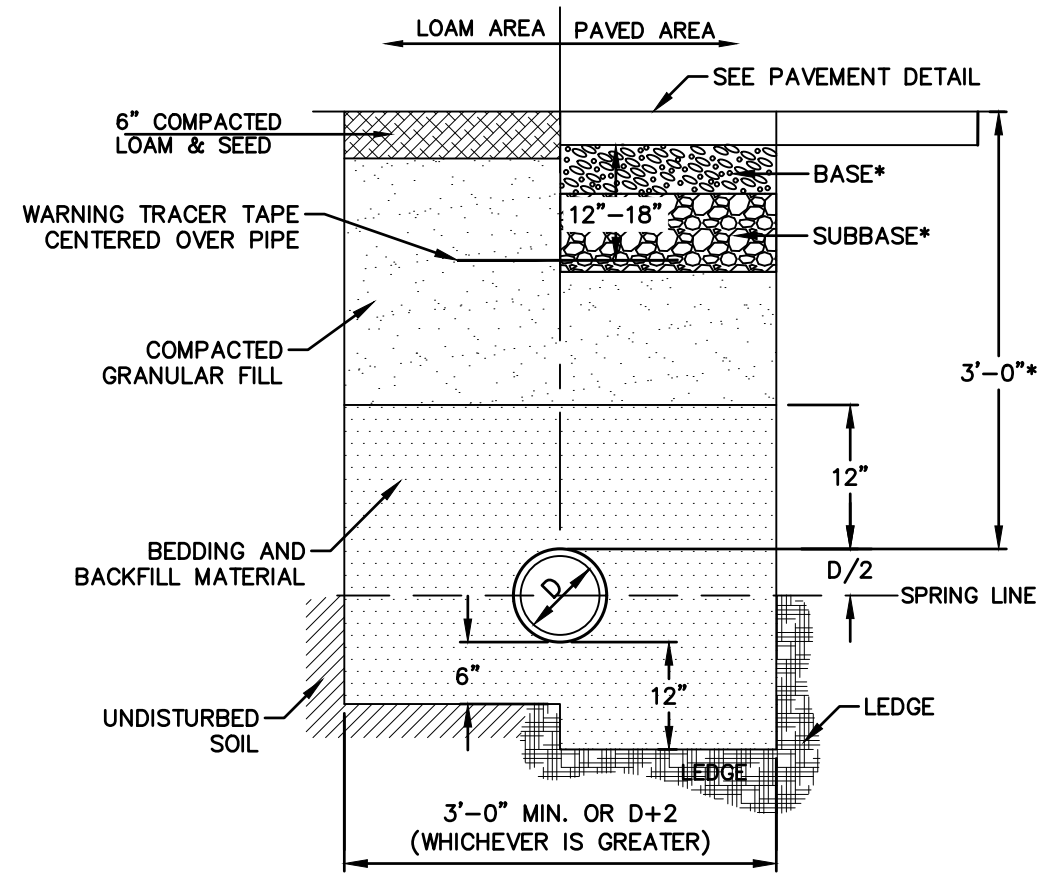


SCALE:	HORIZ.: NTS	VERT.: NTS	DATUM:	GRAPHIC SCALE
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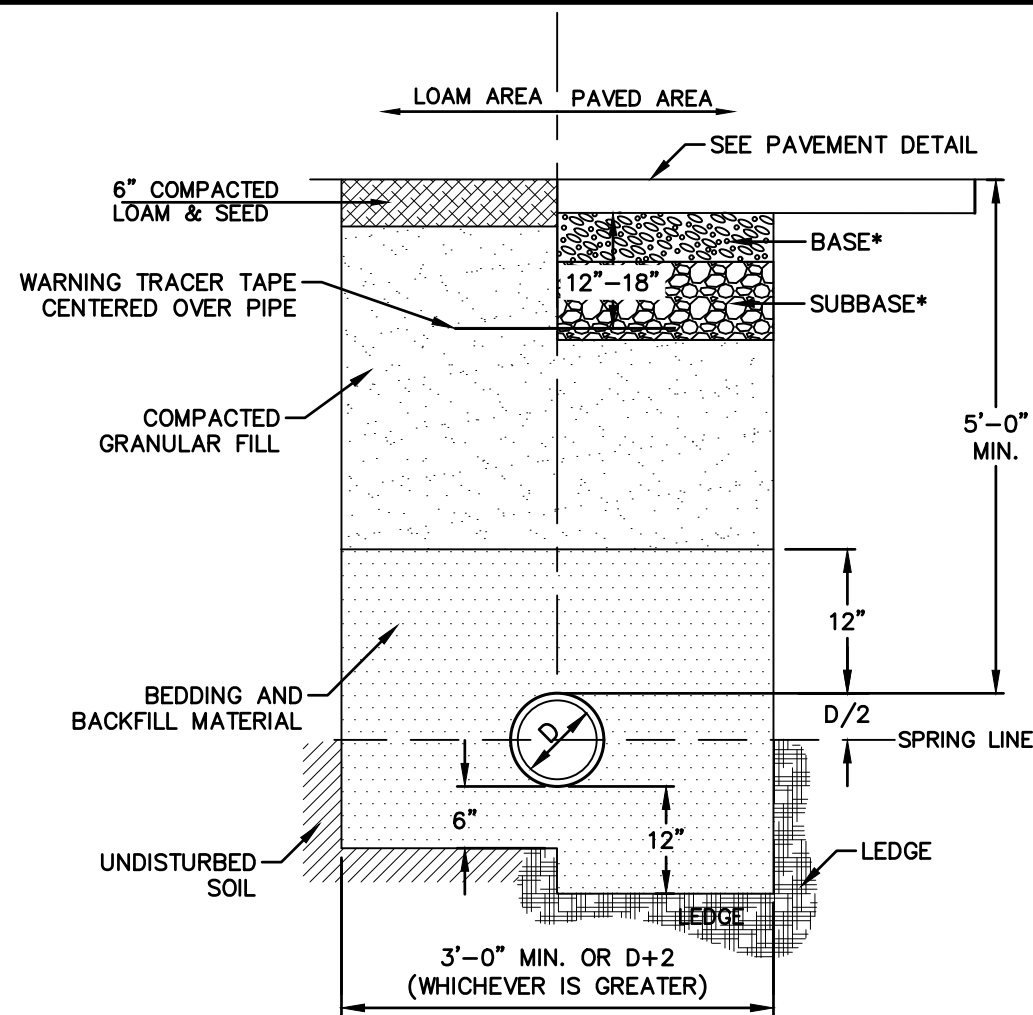
CATE STREET DEVELOPMENT, LLC  
**DRAINAGE DETAILS**  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CD-514**



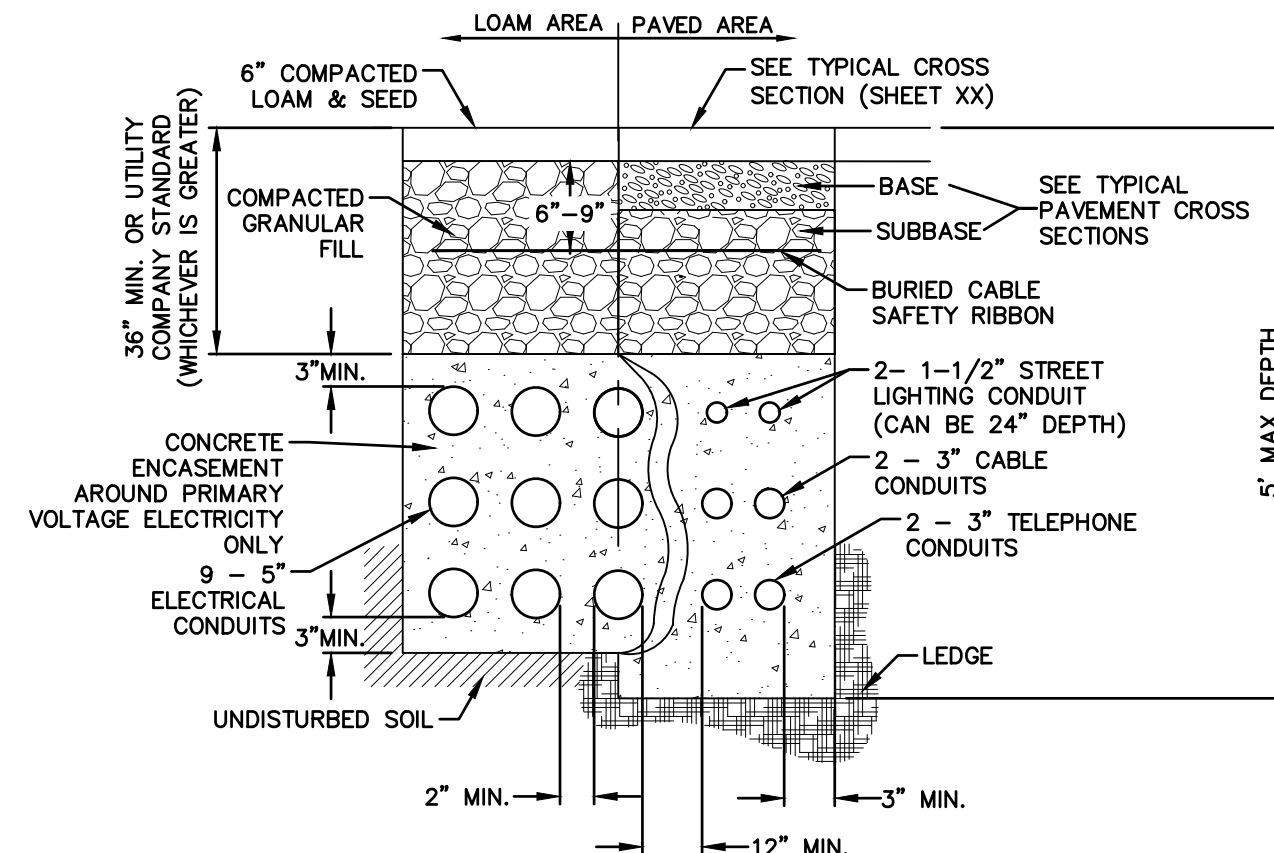
\*NOTE: GAS MAIN NO DEEPER THAN 3' UNLESS IN A SPECIAL SITUATION.

**GAS TRENCH**  
NOT TO SCALE



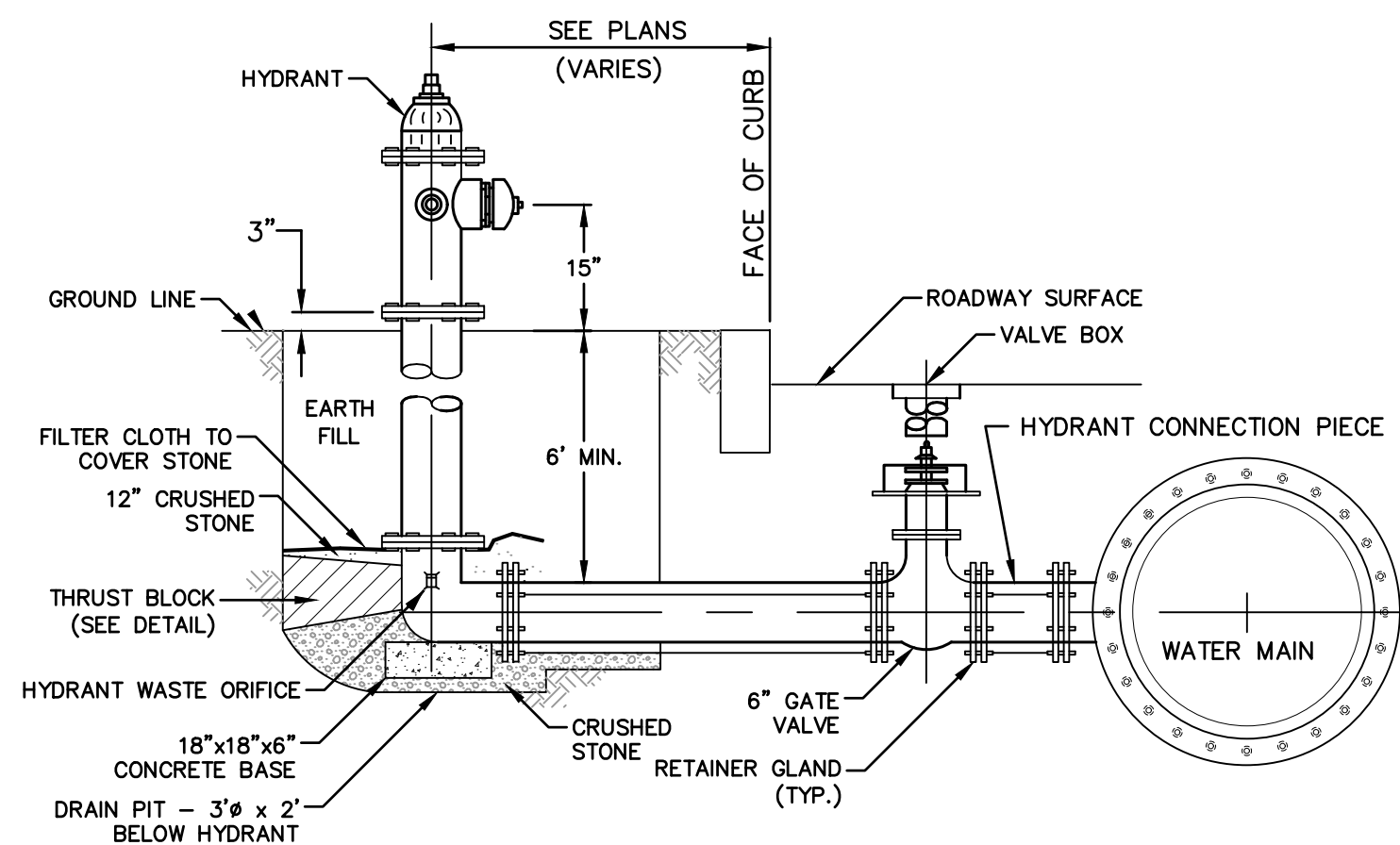
**WATER TRENCH SECTION**  
NOT TO SCALE

NOTE: WATER MAINS SHALL BE CONSTRUCTED USING CITY OF PORTSMOUTH STANDARDS



**ELECTRICAL AND COMMUNICATION CONDUIT**  
NOT TO SCALE

1. NUMBER, MATERIAL, AND SIZE OF UTILITY CONDUITS TO BE DETERMINED BY LOCAL OR AS SHOWN ON CONDUIT PLAN.
2. DIMENSIONS SHOWN REPRESENTS OWNER'S MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT MAY NOT BE LESS THAN SHOWN.
3. NO CONDUIT SHALL EXCEED 360 DEGREES IN TOTAL BENDS.
4. A SUITABLE PULLING STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE UTILITY COMPANY IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
5. UTILITY COMPANY MUST BE GIVEN THE OPPORTUNITY TO INSPECT THE CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD THE UTILITY COMPANY BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
6. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND, WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE.
7. ALL 90° SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL. SWEEPS WITH A 35° TO 48° RADIUS.?????



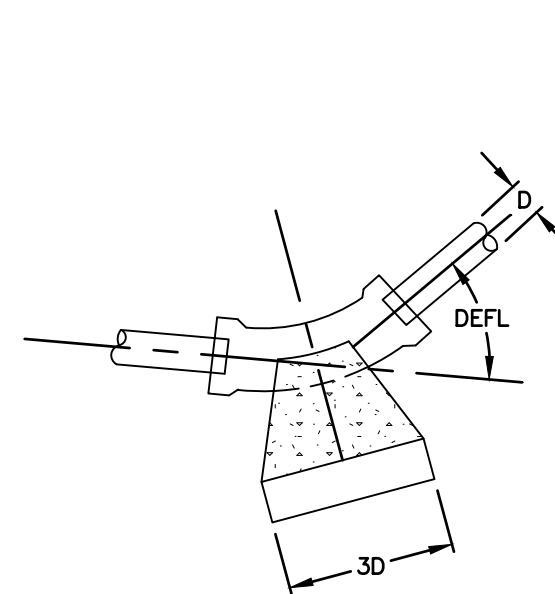
NOTE: HYDRANT AND VALVES TO BE 'OPEN RIGHT (CLOCKWISE)'

**FIRE HYDRANT**  
NOT TO SCALE

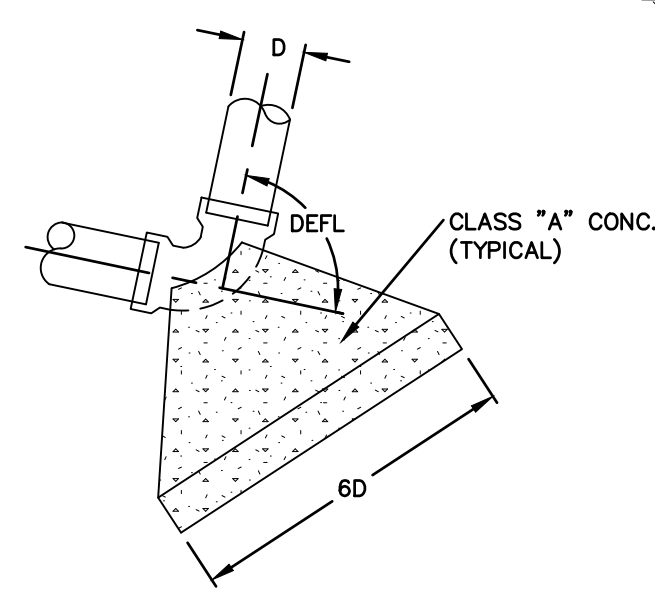
NOTE: HYDRANT INSTALLATION AND OPERATION, MANUFACTURE AND MODEL, AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF PORTSMOUTH WATER DEPARTMENT AND FIRE DEPARTMENT.

PPE DIA. (INCHES)	MINIMUM THRUST BLOCK VOLUME (CUBIC YARDS)
4	0.2
6	0.25
8	0.3
10	0.35
12	0.4
16	0.7

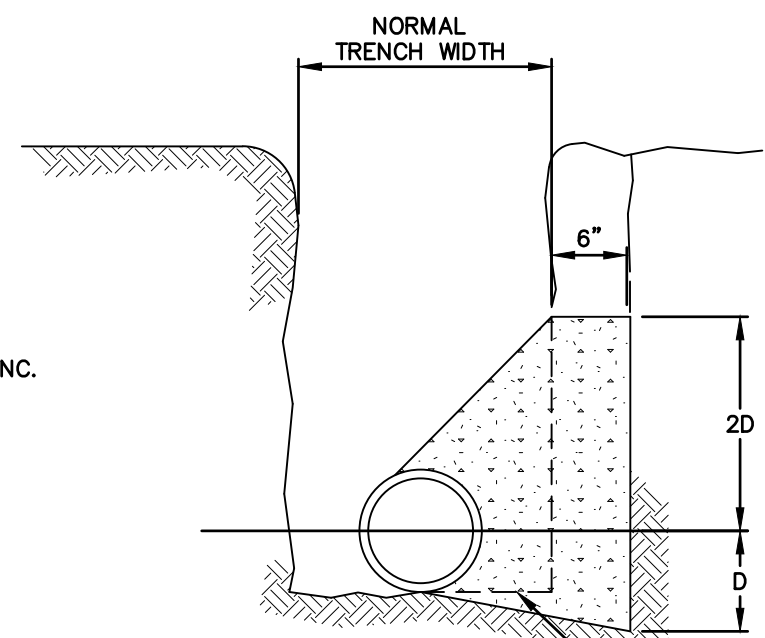
PPE DIA. (INCHES)	MINIMUM THRUST BLOCK VOLUME (CUBIC YARDS)
4	0.25
6	0.3
8	0.5
10	0.7
12	1.0
16	1.6



PLAN ELBOW - DEFL. LESS THAN 50



PLAN ELBOW - DEFL. MORE THAN 50

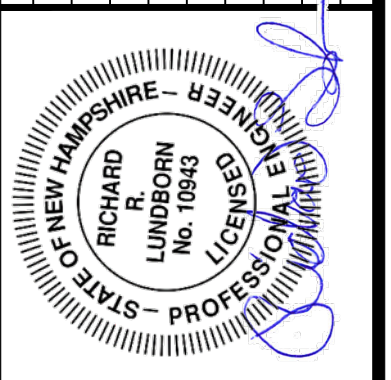


SECTION

TRENCH SHALL BE EXCAVATED TO FIRM MATERIAL IMMEDIATELY PRIOR TO POURING CONCRETE

**CONCRETE THRUST BLOCKS**  
NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD	RRL
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1.	3/18/2019	TAC SUBMITTAL	JVA/DAD	RRL



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DATUM:	HORIZ.: 0	VERT.: 0
GRAPHIC SCALE		

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CATE STREET DEVELOPMENT, LLC  
**WATER & UTILITY DETAILS**  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CD-520**

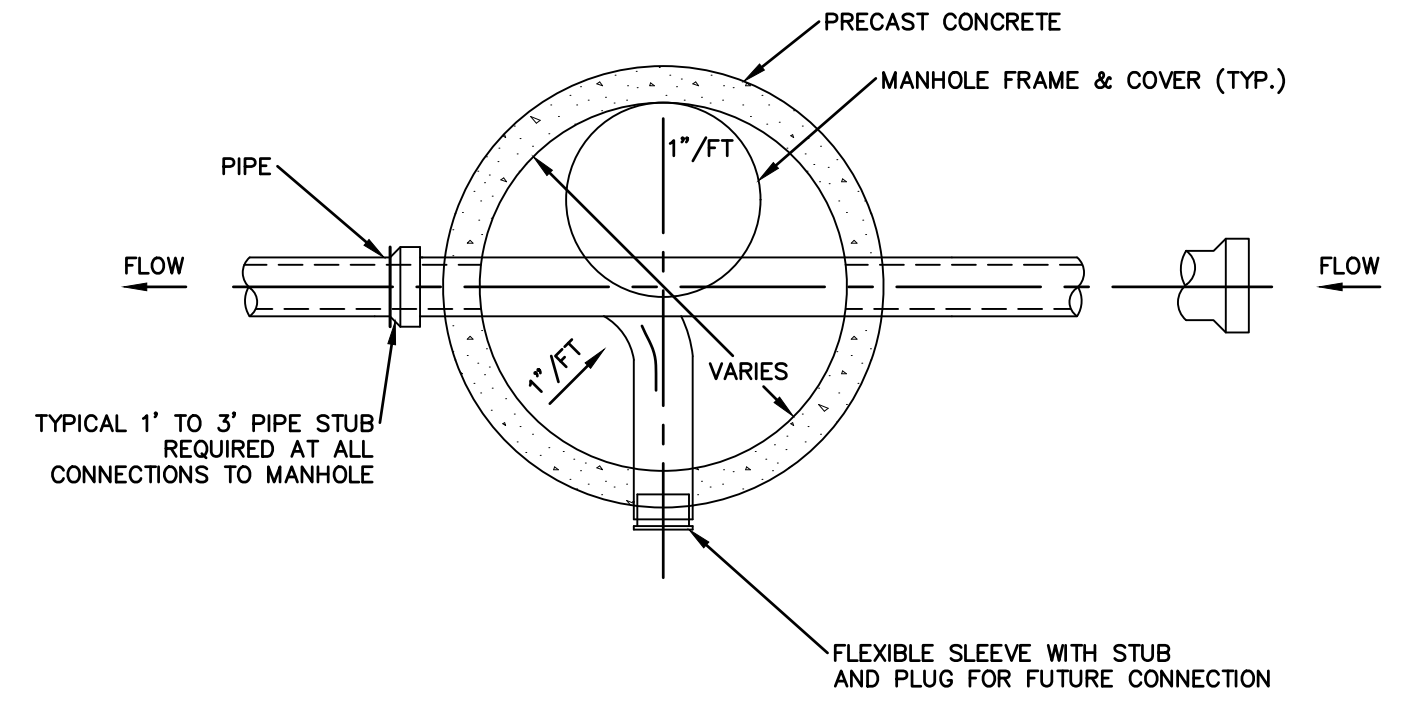
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File Path: F:\P20180317A10\CH3180317A10\_DET01-RDWY.dwg Layout: CD-530-SEWER Plotted: Wed, July 17, 2019 - 3:46 PM User: mtravares  
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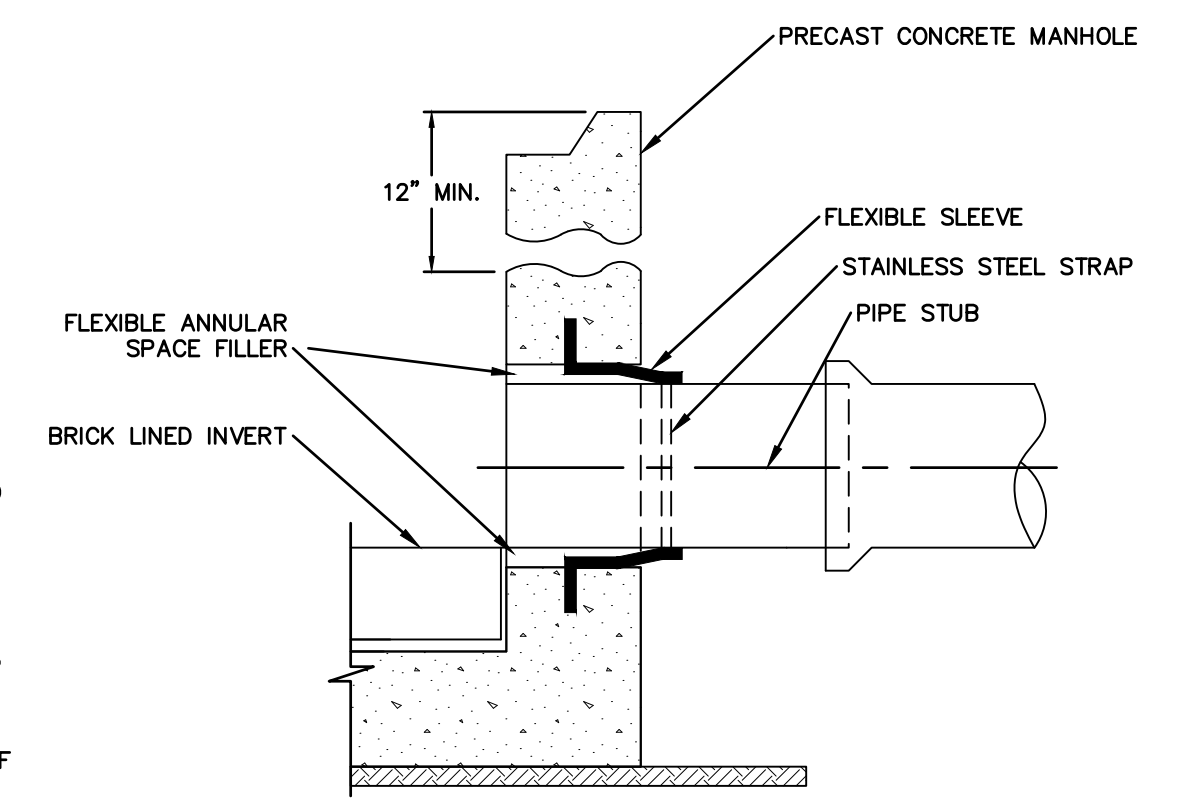
**MANHOLE NOTES**

1. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
3. INVERT BRICK SHALL BE LAID ON EDGE.
4. BITUMINOUS WATERPROOF COATING TO BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
5. MANHOLE FRAME AND COVER SHALL BE JORDAN IRONWORKS HINGE COVER PER CITY OF PORTSMOUTH STANDARD.
6. HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC PR MASTIC-LIKE SEALANT.
7. BARREL AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE DESIGNED FOR H20 LOADING, AND CONFORMING TO ASTM C478-06.
8. INTERIOR OF SEWER MANHOLES SHALL BE LINED IN ACCORDANCE WITH SECTION 33 01 30.63.

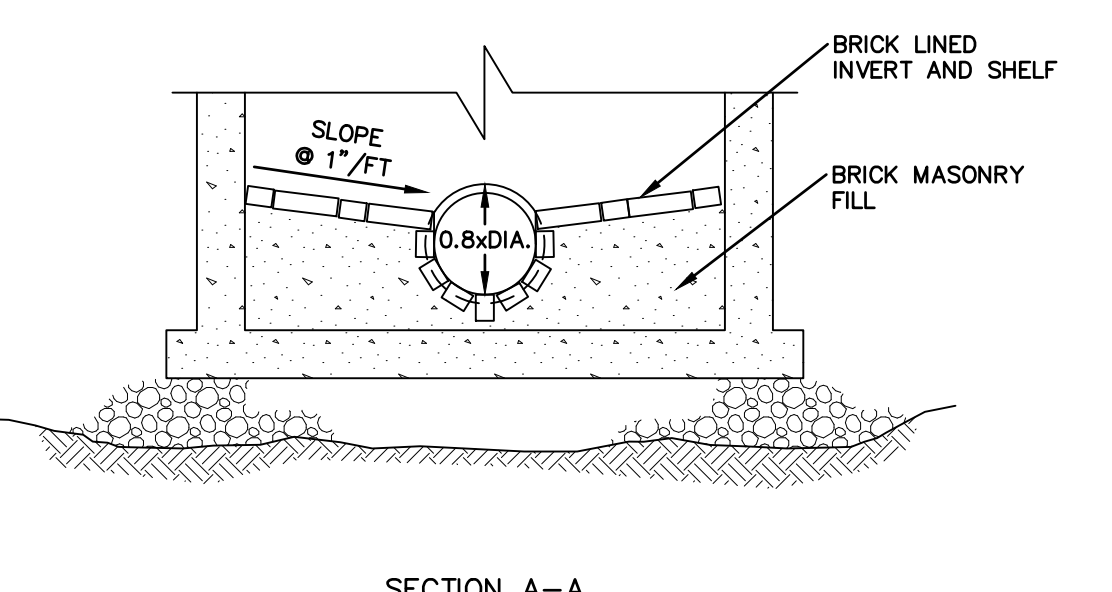
**MANHOLE NOTES**  
 SCALE: N.T.S.



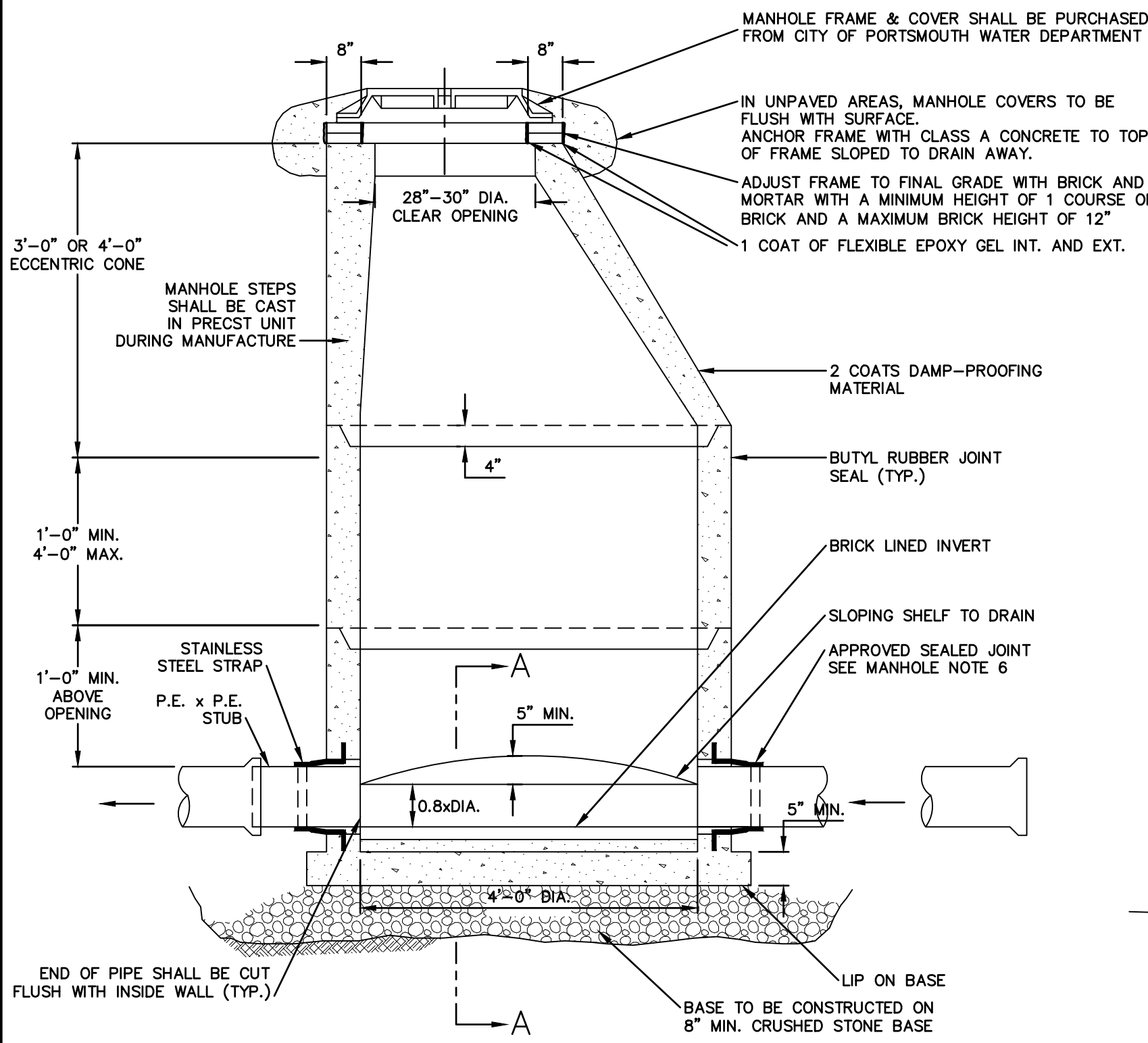
**MANHOLE PLAN VIEW**  
 SCALE: N.T.S.



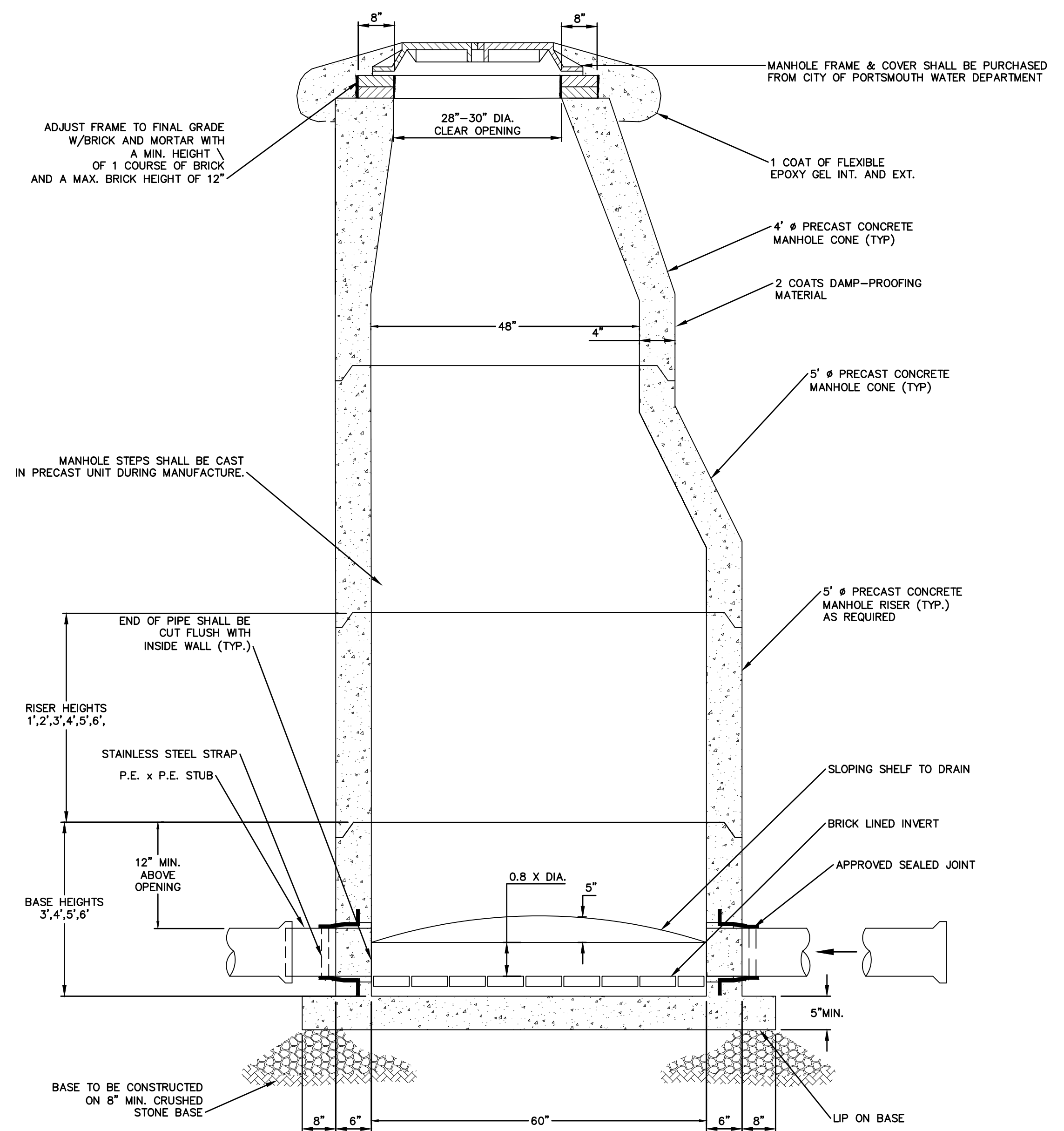
**FLEXIBLE SLEEVE**  
 SCALE: N.T.S.



SECTION A-A

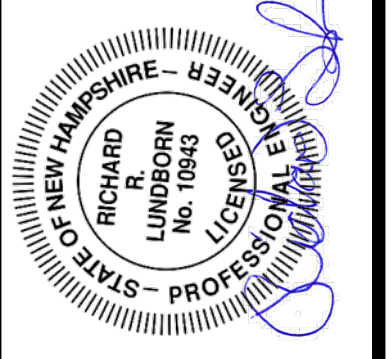


**4' PRECAST MANHOLE**  
 SCALE: N.T.S.



**5' PRECAST MANHOLE**  
 SCALE: N.T.S.

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1.	3/18/2019	TAC SUBMITTAL	JVA/DAD	RRL



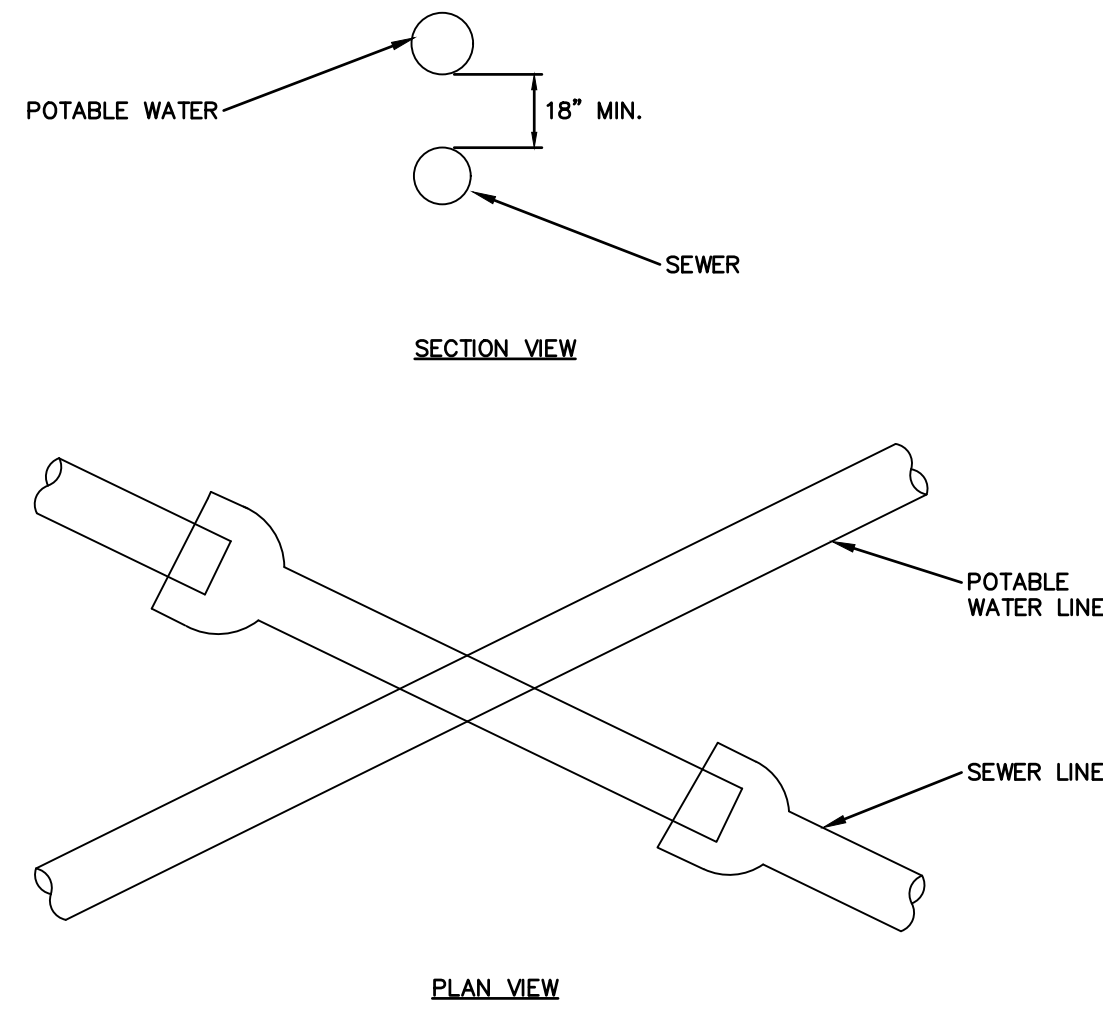
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	VERT.: N.T.S.
DATUM:	HORIZ.: N.T.S.
	VERT.: N.T.S.
	GRAPHIC SCALE

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 SEWER DETAILS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

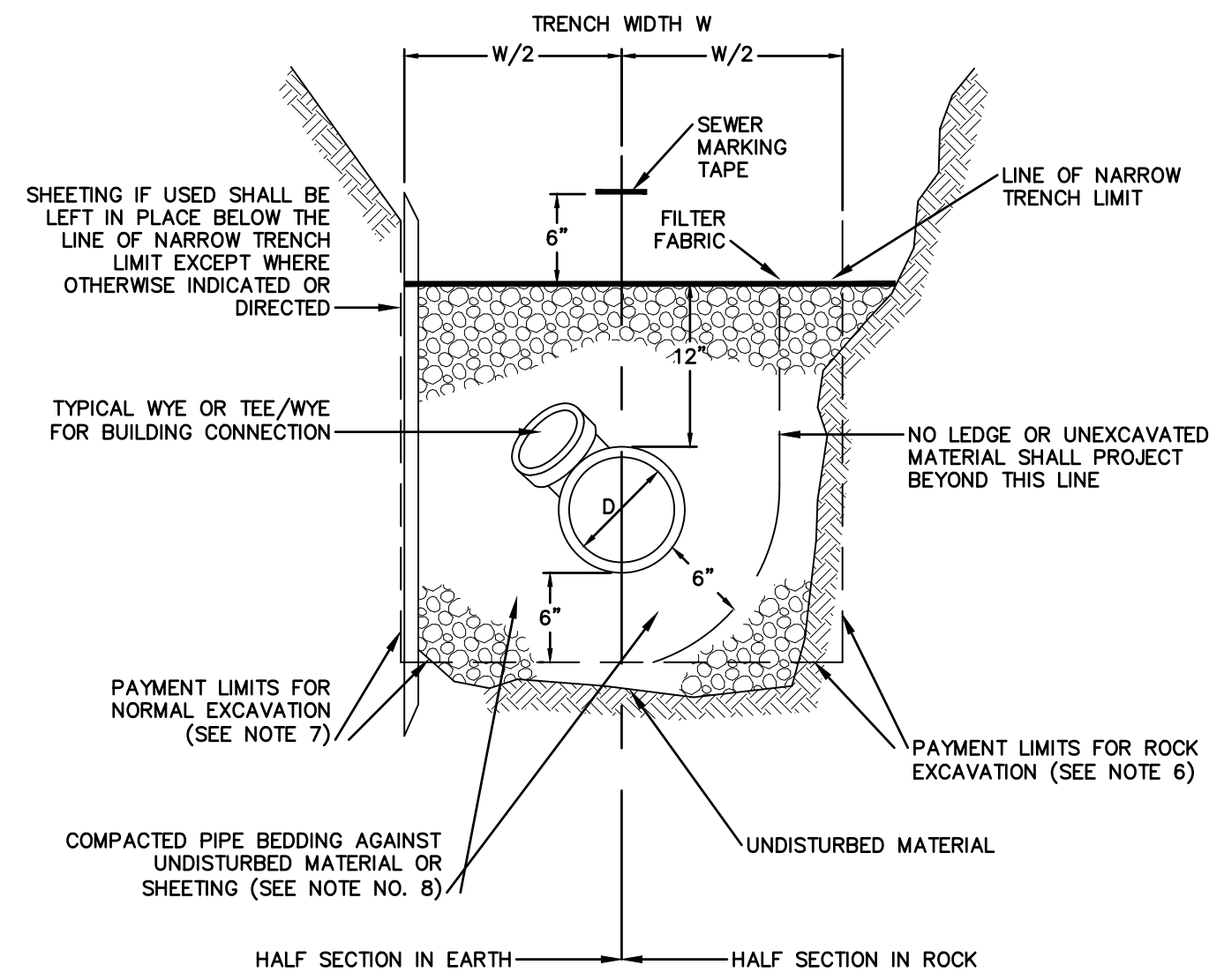
**CD-530**



**SEWER AND WATER CROSSING NOTES**

- SEWER JOINTS SHALL BE EQUIDISTANT FROM AND LOCATED AS FAR AS POSSIBLE AWAY FROM THE WATER LINE
- IF THE VERTICAL SEPARATION BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER IS LESS THAN 18 INCHES (WATER MAIN IS ABOVE SEWER), USE ONE OF THE FOLLOWING PROCEDURES: A) THE WATER MAIN SHALL BE RECONSTRUCTED FOR A DISTANCE OF 10 FEET ON EACH SIDE OF SEWER WITH RUBBER-GASKETED MECHANICAL JOINT PIPE ONE FULL LENGTH WATER MAIN SHOULD BE CENTERED OVER SEWER, B) CONSTRUCT BOTH THE WATER & SEWER PIPE OF RUBBER-GASKETED, CEMENT-LINED DUCTILE IRON PIPE OR EQUIVALENT AND PRESSURE TEST BOTH PIPES, OR C) ENCASE BOTH PIPES IN CONCRETE.

**CROSSING OF SEWER & POTABLE WATER LINES**  
NOT TO SCALE

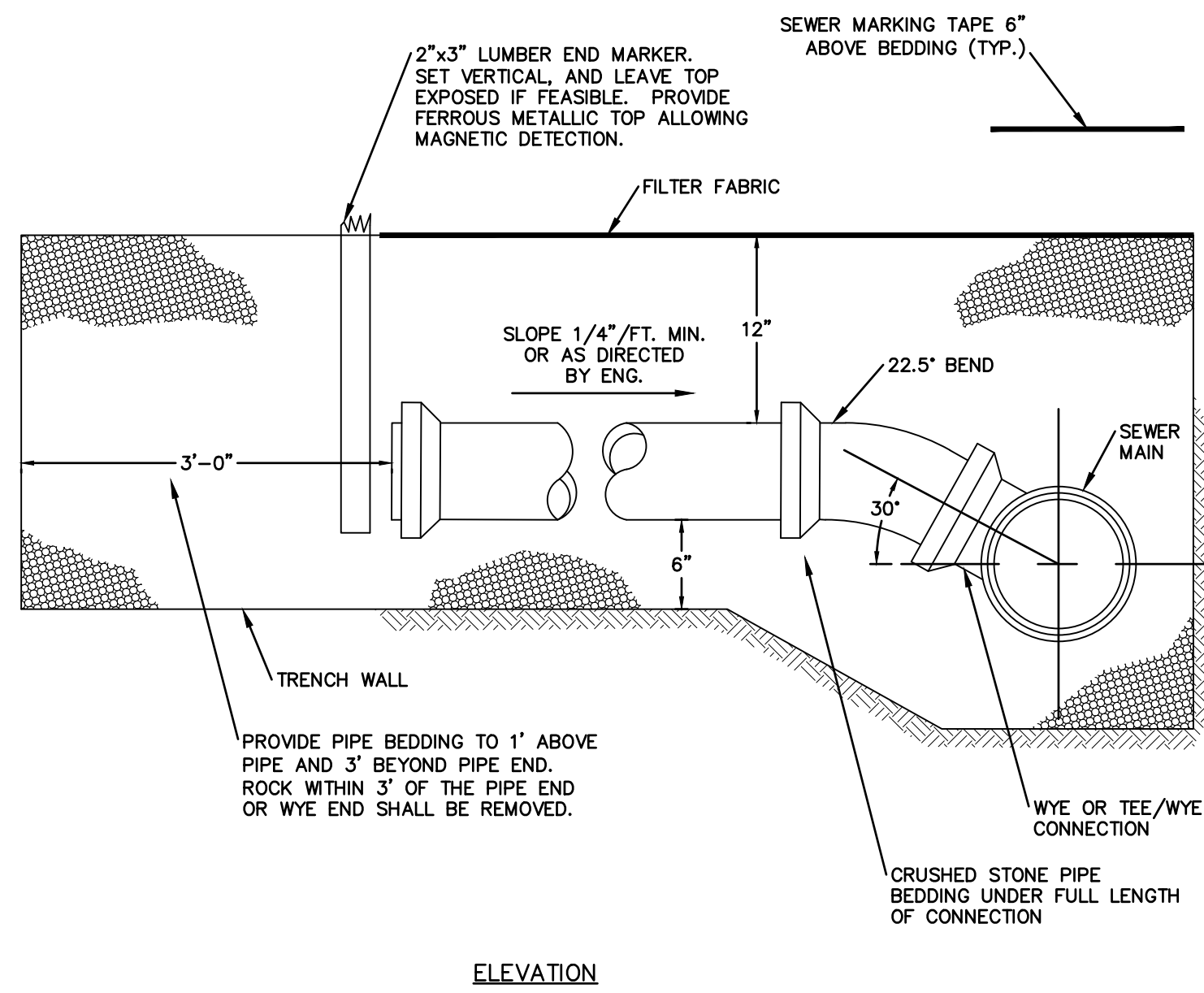


**TYPICAL SEWER TRENCH**  
NOT TO SCALE

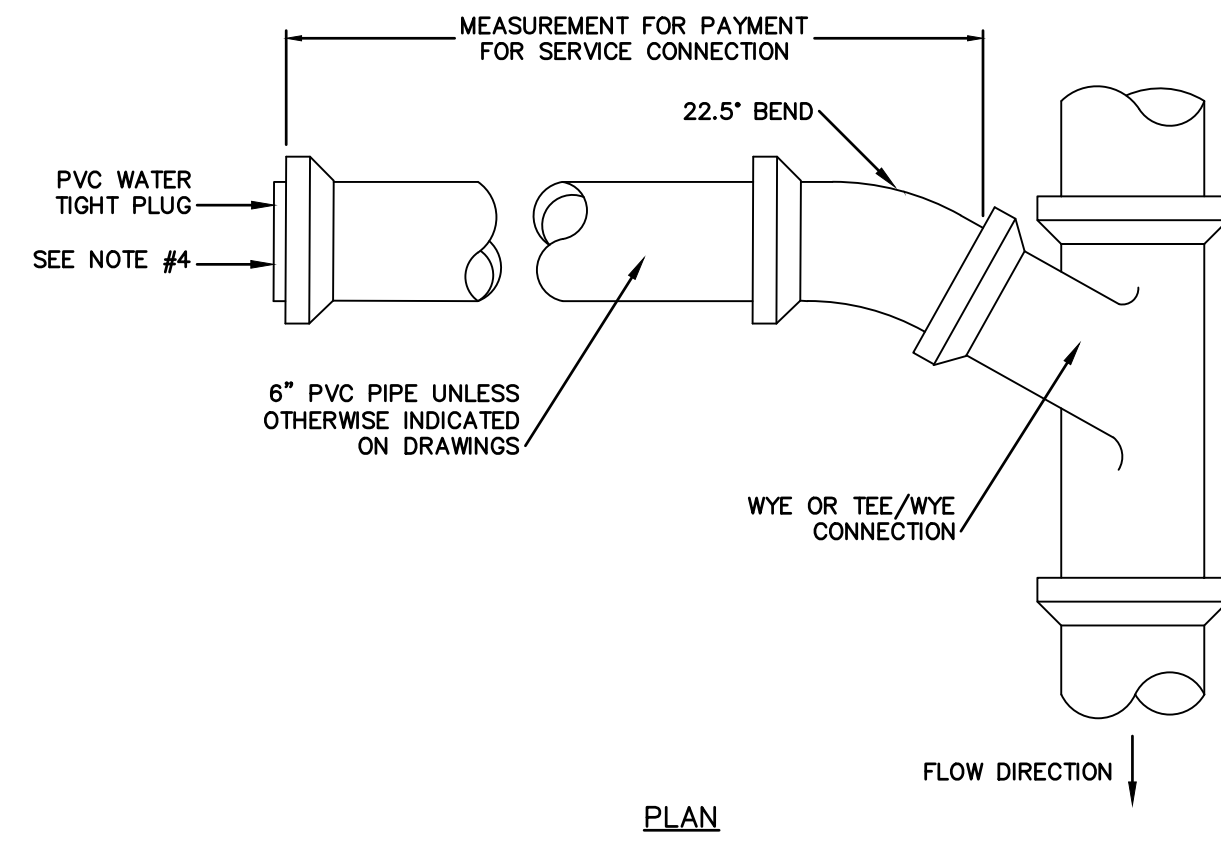
**SANITARY SEWER PIPE TRENCH NOTES**

- DEPTH OF SEWER SHALL BE AS SHOWN ON DRAWINGS.
  - SEWER TRENCHES MAY BE EXCAVATED WIDER THAN TRENCH WIDTH W ABOVE THE "LINE OF NARROW TRENCH LIMIT." AT THE CONTRACTORS EXPENSE.
  - BELOW THE "LINE OF NARROW TRENCH LIMIT" THE TRENCH SHALL NOT BE EXCAVATED BEYOND THE TRENCH WIDTH W.
  - IF EXCAVATION AND BACKFILL BELOW NORMAL DEPTH IS REQUIRED, SHEETING MAY BE ORDERED.
  - SHEETING, IF USED, IN ALL CASES SHALL BE LEFT IN PLACE BELOW A LINE 1'-0" ABOVE THE TOP OF THE SEWER PIPE, UNLESS OTHERWISE INDICATED OR DIRECTED BY THE ENGINEER.
  - ALL ROCK WITHIN 3'-0" HORIZONTALLY OF THE ENDS OF BUILDING CONNECTIONS, BRANCHES AND STUBS, AND DOWN TO A HORIZONTAL PLANE 6" BELOW THE BOTTOMS OF SUCH ITEMS SHALL BE REMOVED.
  - TRENCH WIDTHS AND PAYMENT LIMIT SHALL BE AS FOLLOWS:
- | NUMBER OF PIPE IN TRENCH | DIAMETER PIPE "D" | TRENCH WIDTH "W" | PAYMENT LIMIT |
|--------------------------|-------------------|------------------|---------------|
| ONE                      | 12" AND SMALLER   | 4'-0"            | 4'-0"         |
| TWO                      | 12" AND SMALLER   | 7'-0"            | 7'-0"         |
- WHERE CONCRETE ENCASEMENT IS CALLED FOR BY THE PLANS, OR WHEN DIRECTED BY THE ENGINEER, REPLACE BEDDING AND BACKFILL BELOW THE "LINE OF NARROW TRENCH LIMIT" WITH CLASS "A" CONCRETE.
  - SEWER MARKING TAPE SHALL BE INSTALLED A MINIMUM OF 18" ABOVE THE SANITARY SEWER, FORCE MAIN AND SERVICE CONNECTION PIPE.
  - SANITARY SEWER PIPE AND SERVICE CONNECTION PIPE SHALL HAVE FILTER FABRIC INSTALLED ON TOP OF THE PIPE BEDDING AS SHOWN ON THE DETAILS.

**SANITARY SEWER PIPE TRENCH NOTES**  
SCALE: N.T.S.

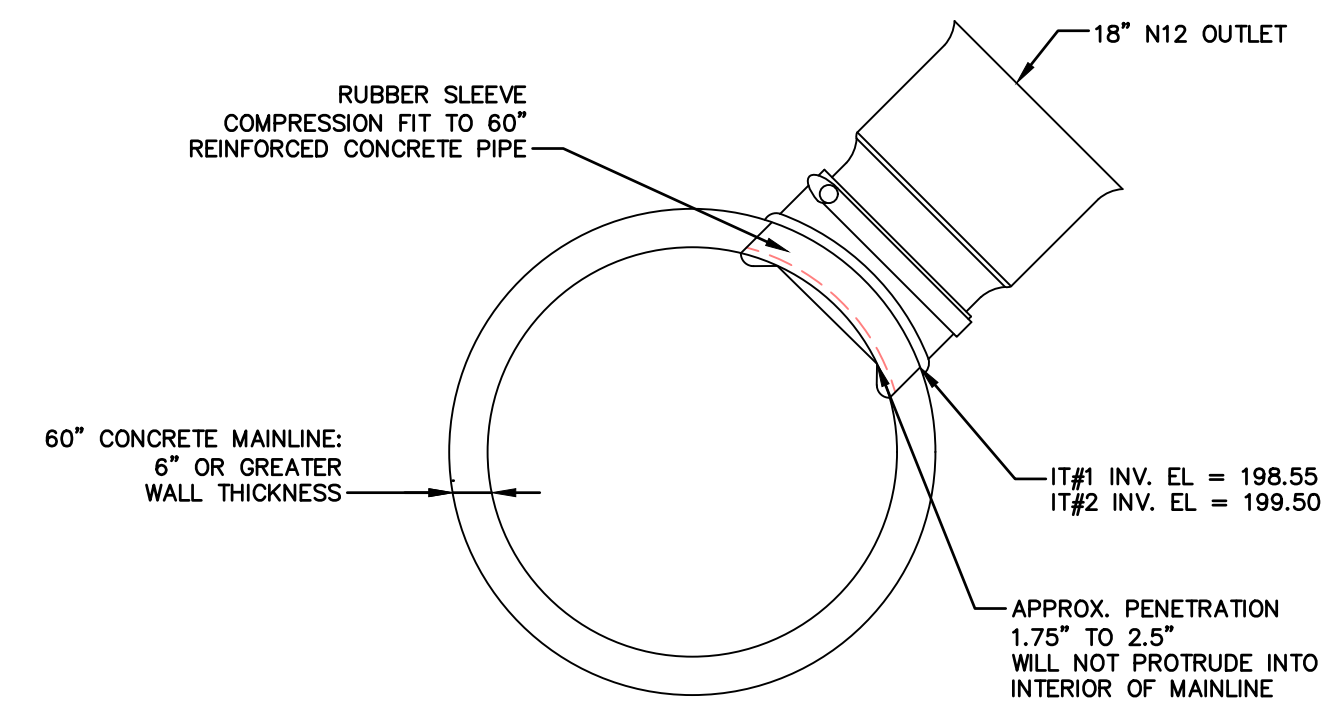


**SERVICE CONNECTIONS**  
NOT TO SCALE



**SERVICE CONNECTION NOTES**

- NO LEDGE OR UNEXCAVATED MATERIAL SHALL PROJECT WITHIN 6" OF THE PIPE IN ANY DIRECTION
- EXACT LOCATION AND ELEVATION OF SERVICE CONNECTIONS TO BE DETERMINED AND SET IN THE FIELD DURING CONSTRUCTION
- EXACT LOCATION OF WYES/TEES, WHERE DIRECTED TO BE INSTALLED, SHALL BE SET IN THE FIELD DURING CONSTRUCTION
- PROVIDE DI TO PVC TRANSITION COUPLING AT END OF DI SERVICE CONNECTION



**INSERTA TEE - SERVICE CONNECTION 24" MAIN & LARGER**  
N.T.S.

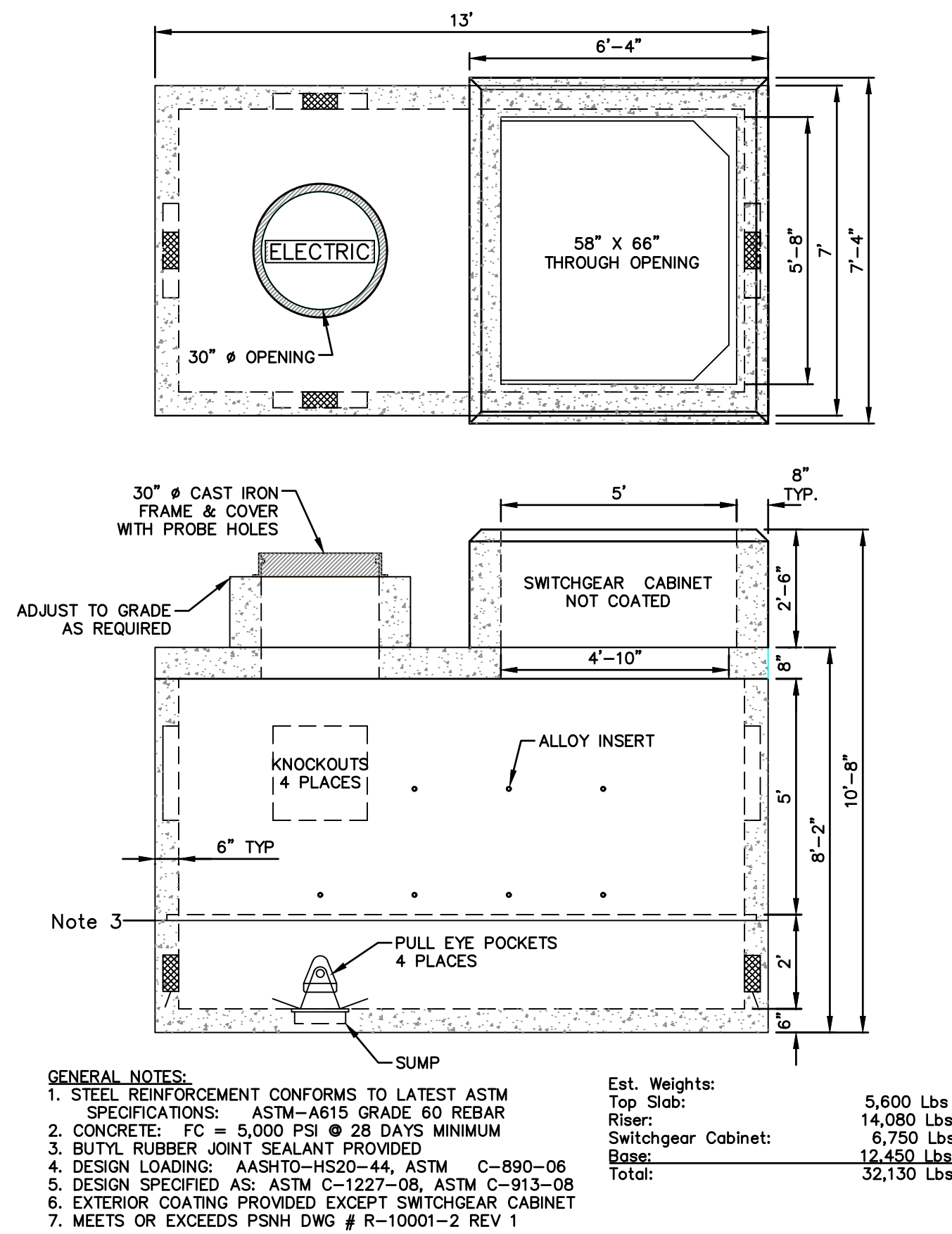
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No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
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4.	3/18/2019	TAC SUBMITTAL	JVA/DAD

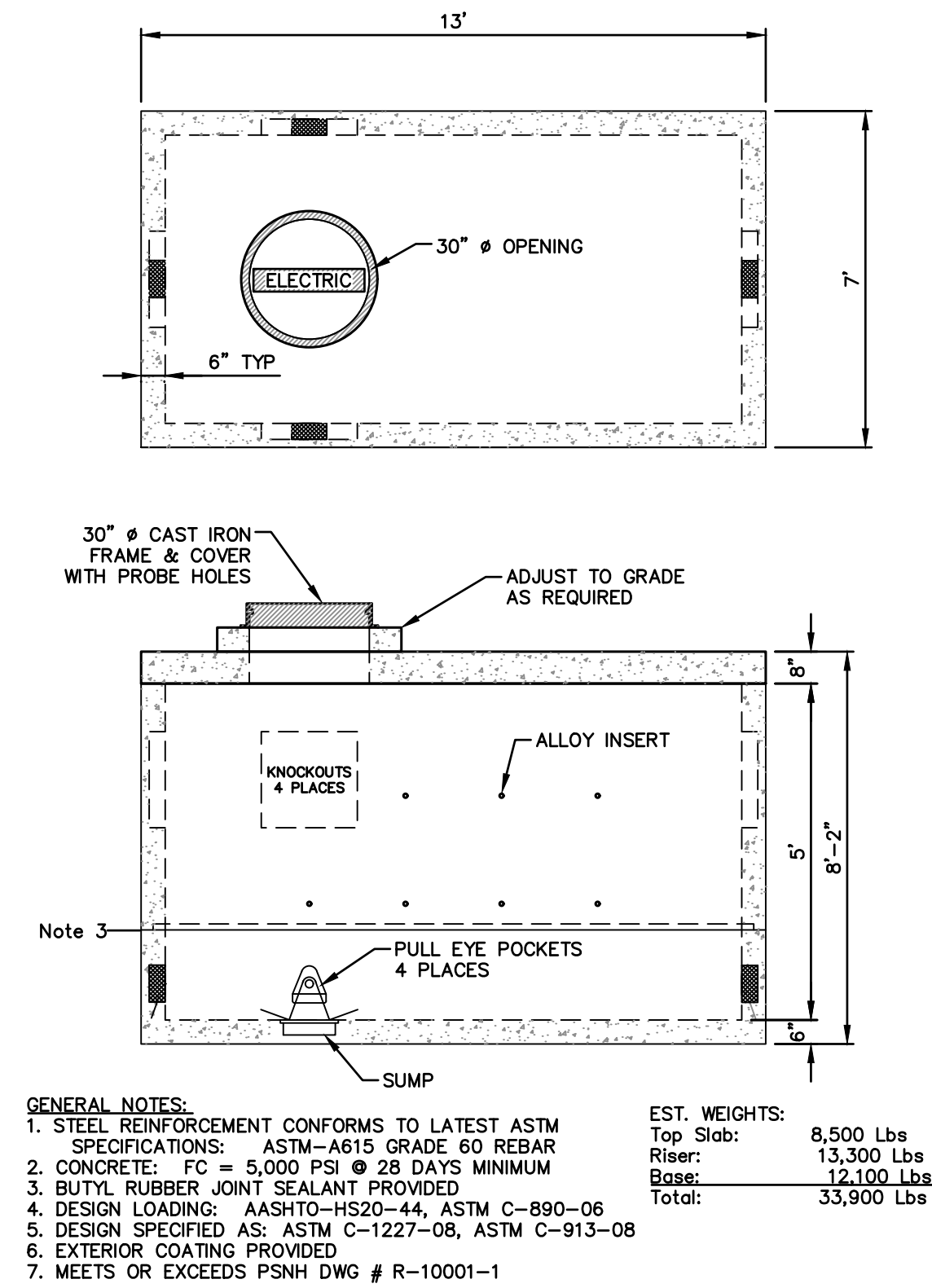
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SEWER DETAILS  
CATE STREET  
PORTSMOUTH NEW HAMPSHIRE

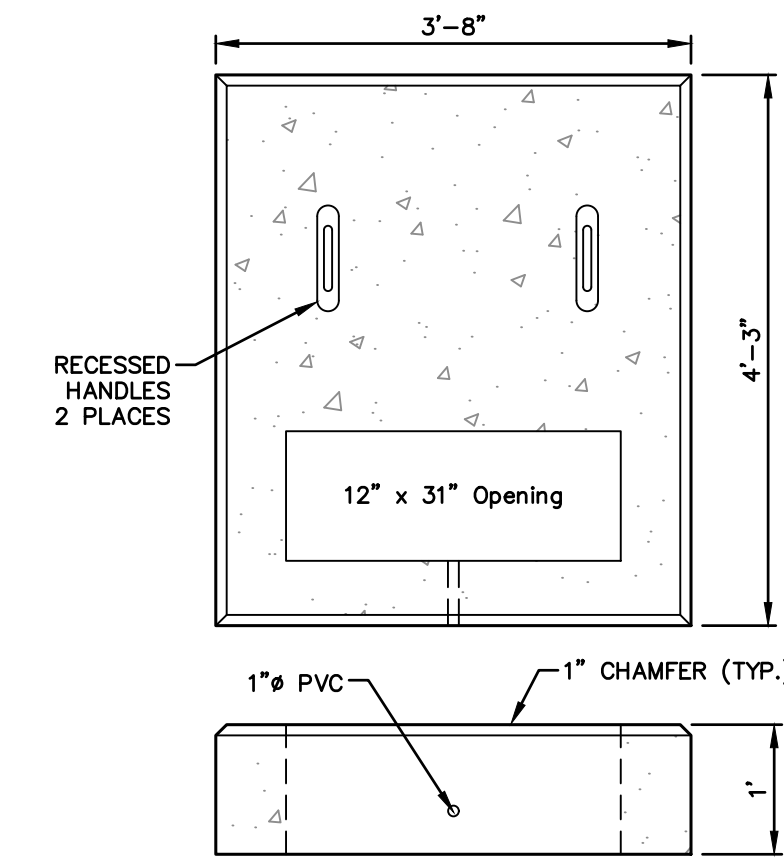
PROJ. No.: 20180317.A10  
DATE: 07/17/2019  
**CD-531**



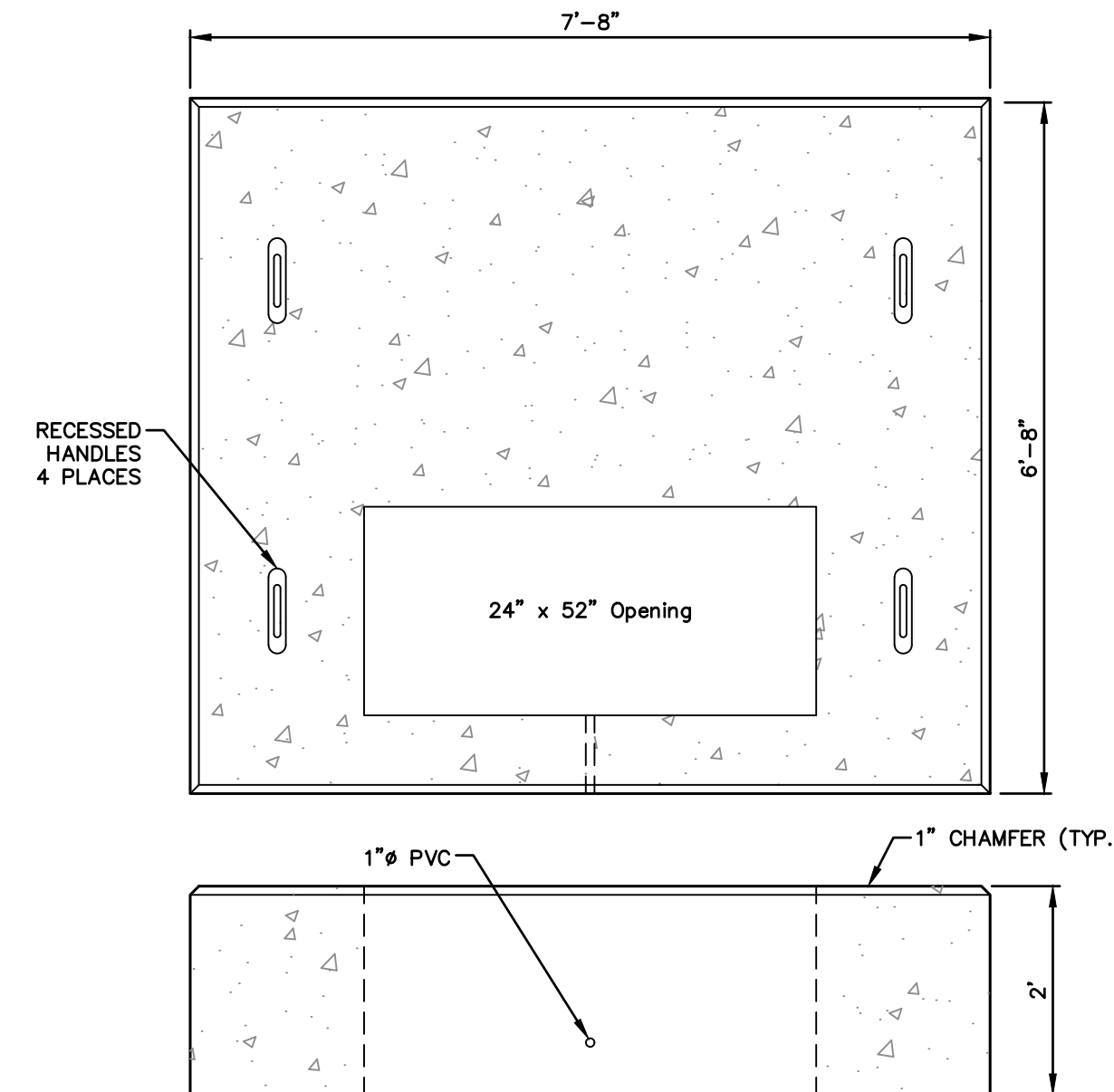
**EVERSOURCE SWITCHGEAR CABINET ASSEMBLY**  
 NOT TO SCALE



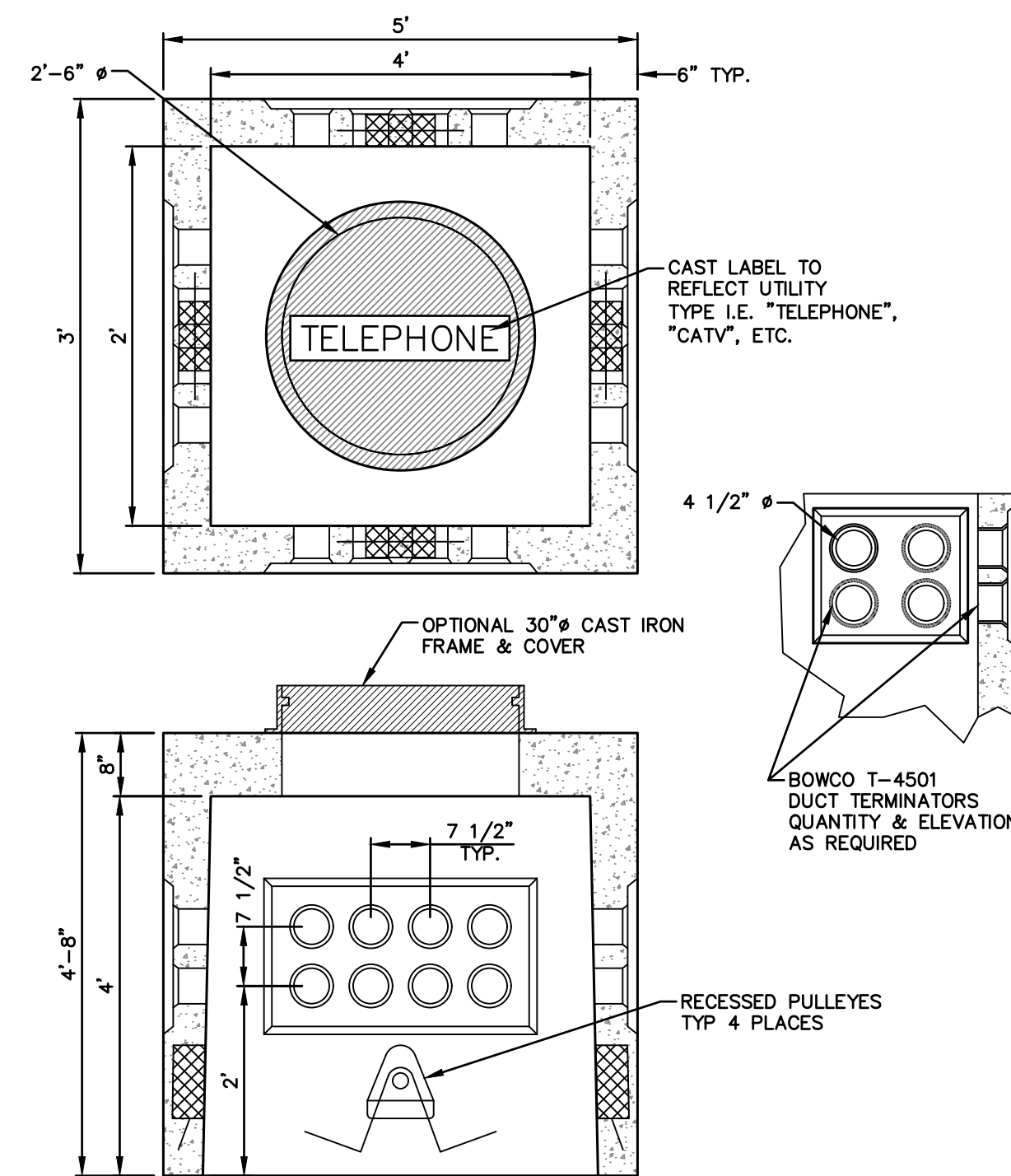
**EVERSOURCE MANHOLE ASSEMBLY**  
 NOT TO SCALE



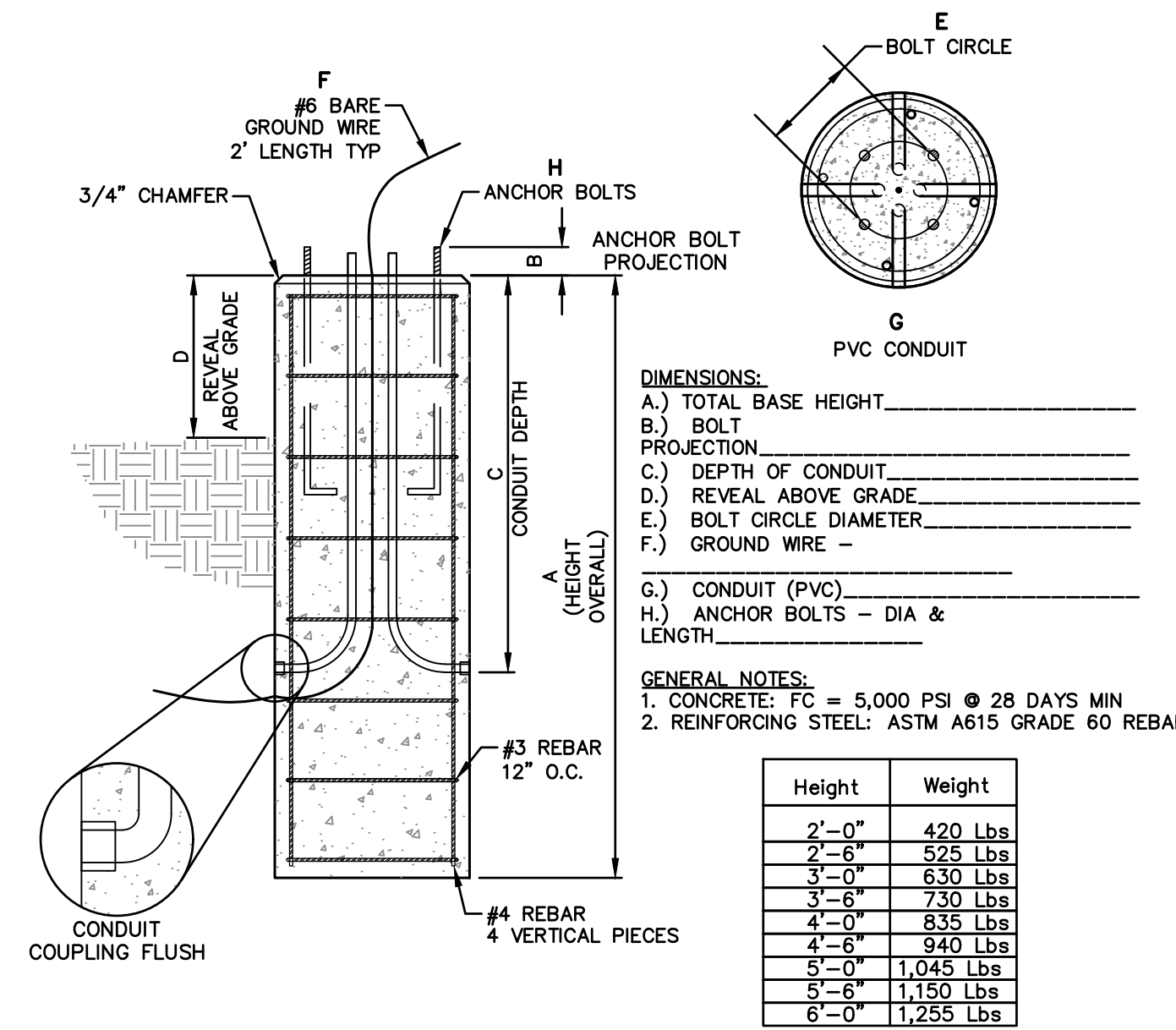
**SINGLE-PHASE TRANSFORMER PAD**  
 NOT TO SCALE 25-75 KVA



**3 PHASE TRANSFORMER PAD**  
 NOT TO SCALE 75-500 KVA



**4'x4'x4' HANDHOLE**  
 NOT TO SCALE

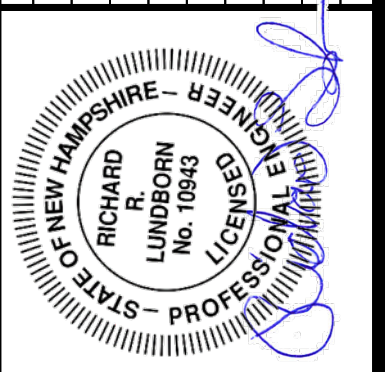


**16" Ø LIGHT POLE BASE**  
 NOT TO SCALE

**NOTES:**  
 1. ALL PRECAST CONCRETE STRUCTURES TO BE PHOENIX PRECAST PRODUCTS OR EQUAL.

PHOENIX PRECAST PRODUCTS  
 77 REGIONAL DRIVE  
 CONCORD, NH 03301  
 1.800.639.2199  
 info@phoenixprecast.com

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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3.	6/20/2019	TAC SUBMITTAL	JVA/DAD	RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD	RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD	RRL



SCALE:	HORIZ: NTS	VERT: NTS
DATUM:	HORIZ: NTS	VERT: NTS
GRAPHIC SCALE	0	

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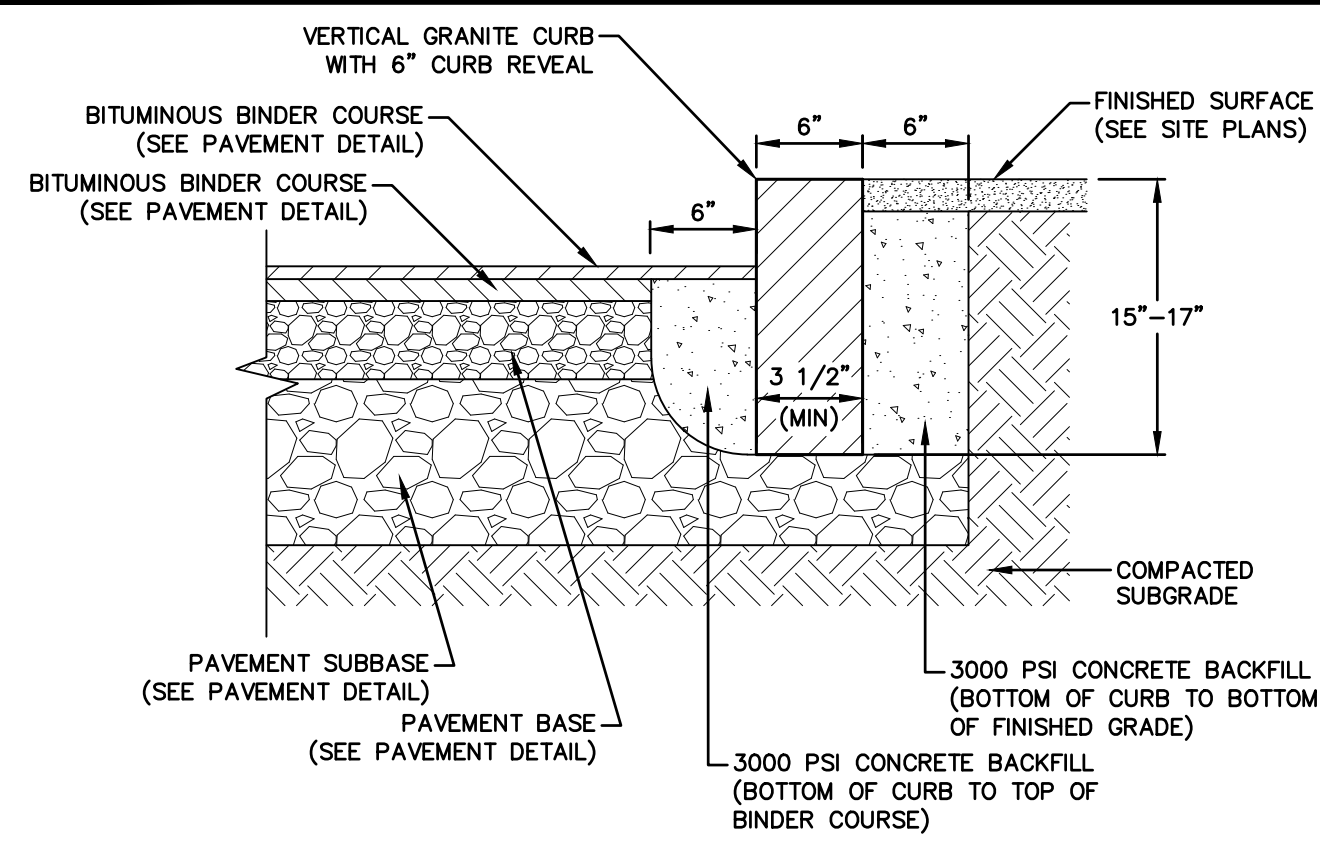
CATE STREET DEVELOPMENT, LLC  
 ELECTRICAL DETAILS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

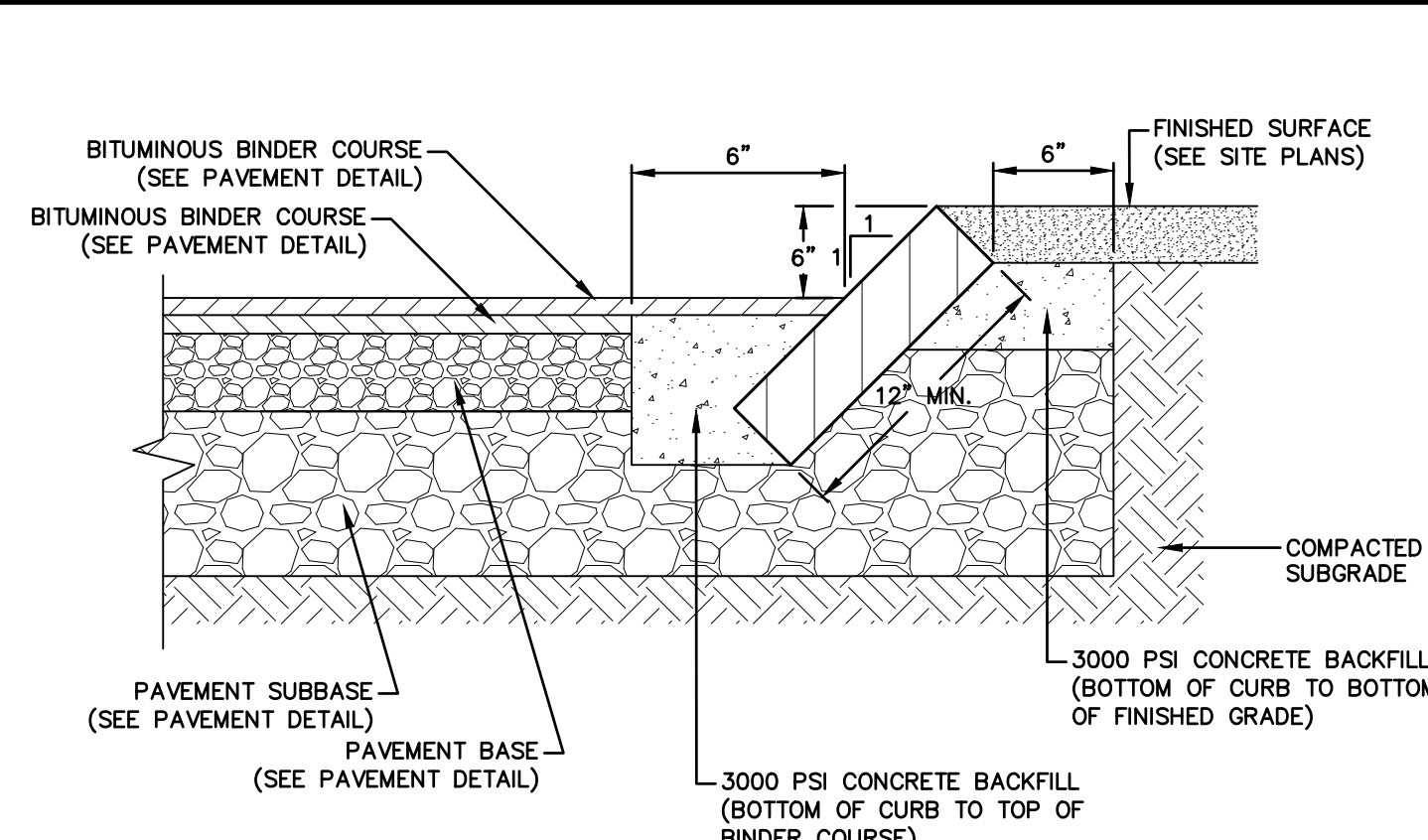
**CD-540**



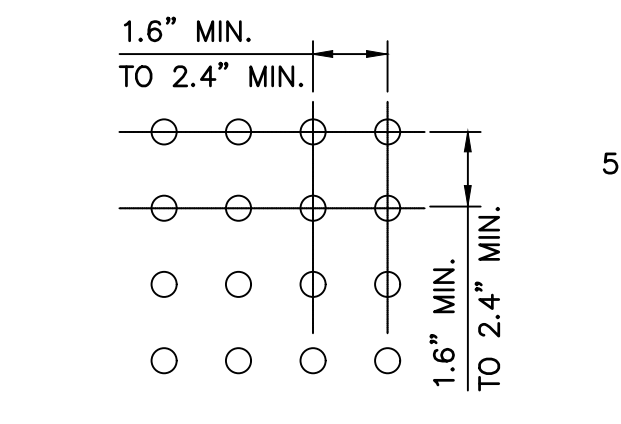
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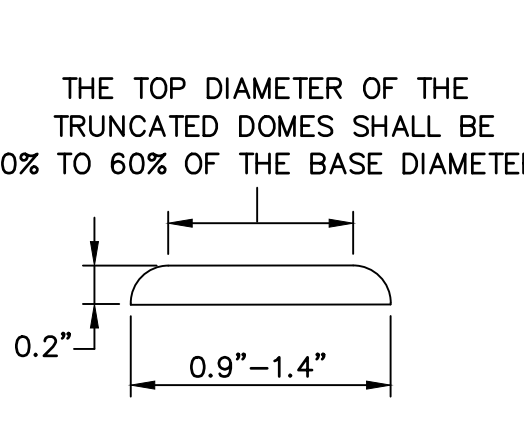
**VERTICAL GRANITE CURB INSTALLED**  
SCALE: NOT TO SCALE



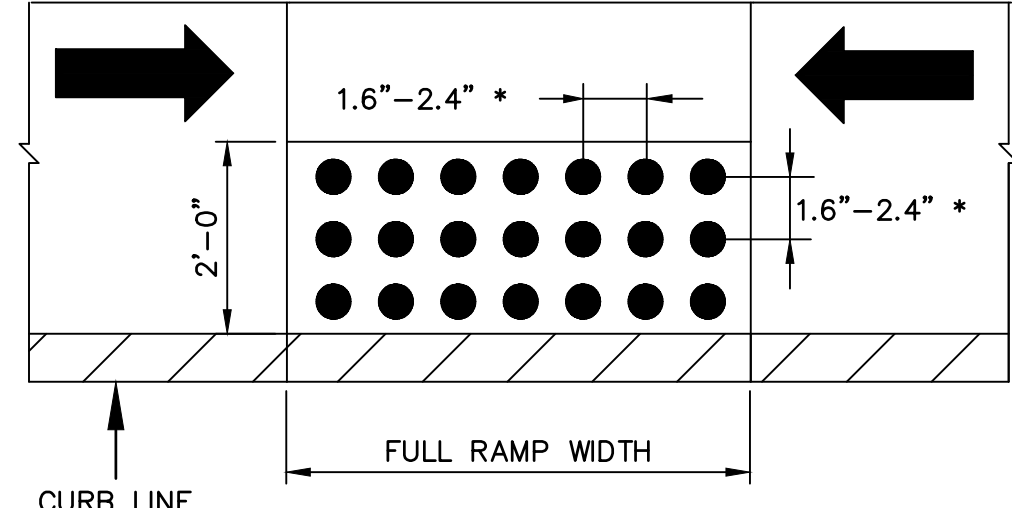
**SLOPED GRANITE CURB INSTALLED**  
SCALE: NOT TO SCALE



**DOME SPACING**  
NOT TO SCALE

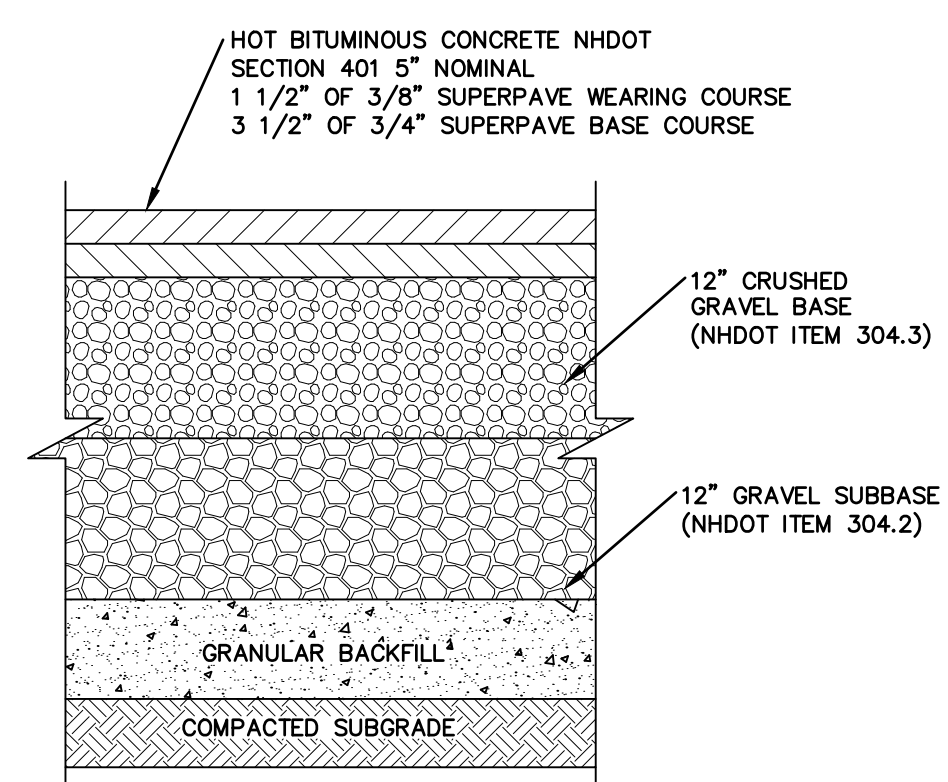


**DOME SECTION**  
NOT TO SCALE



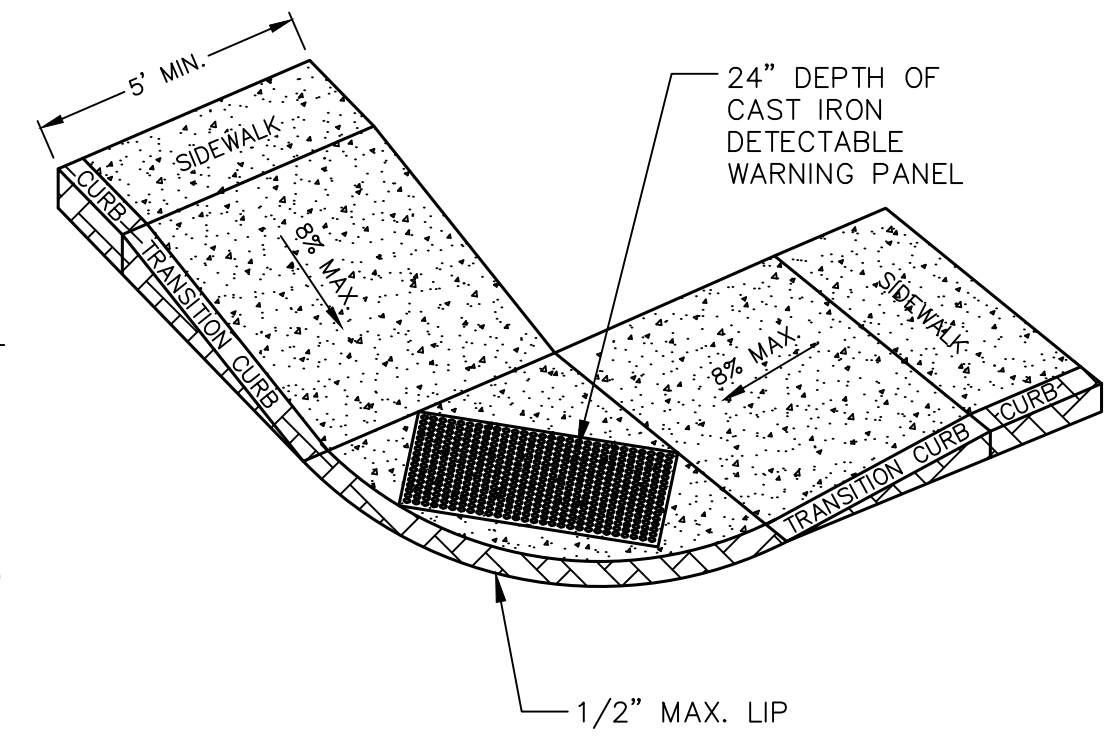
**DOME AND DETECTABLE WARNING DETAILS**  
NOT TO SCALE

NOTE: TRUNCATED DOMES SHALL BE CAST IRON. CONFIGURATION SHALL BE APPROVED BY DEPARTMENT OF PUBLIC WORKS.



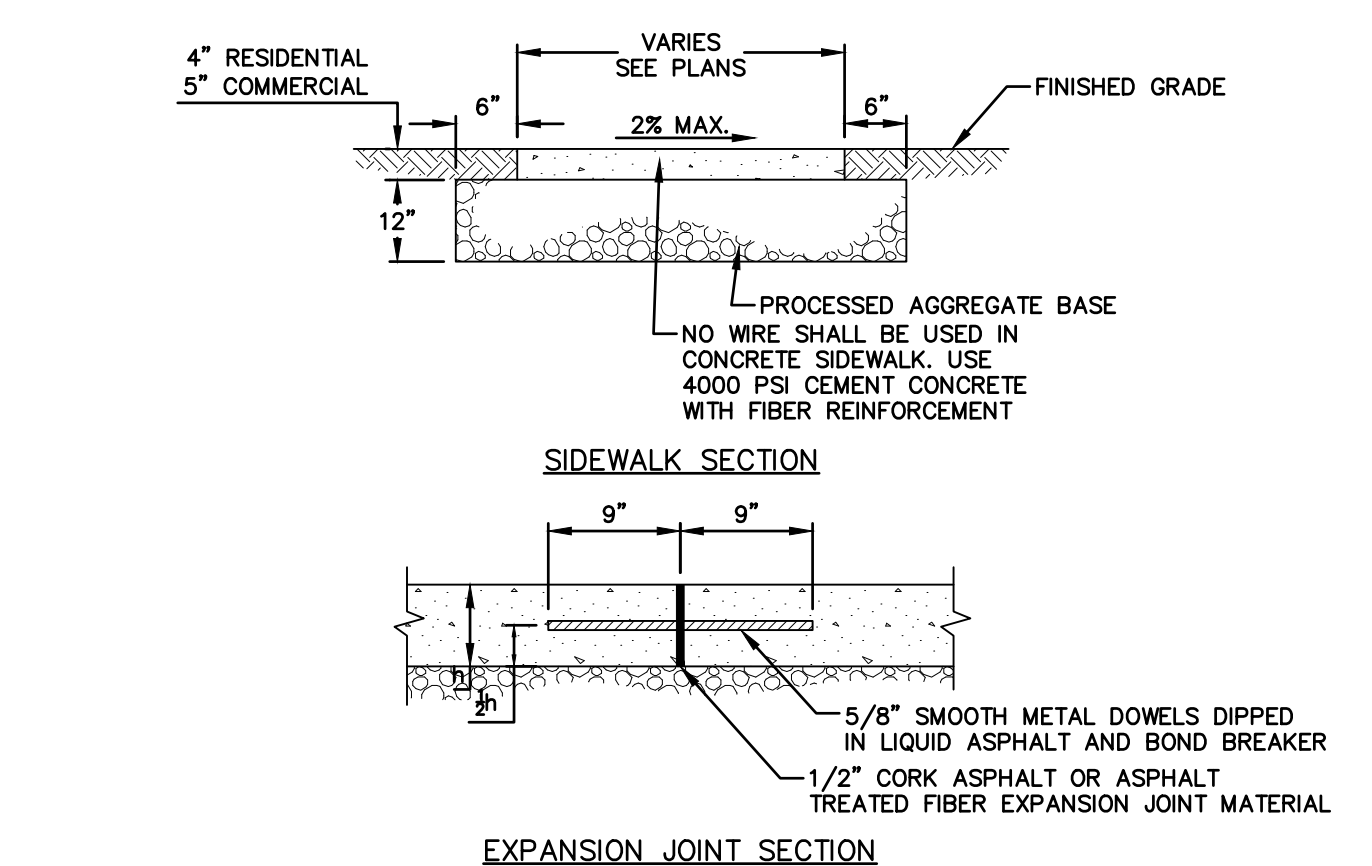
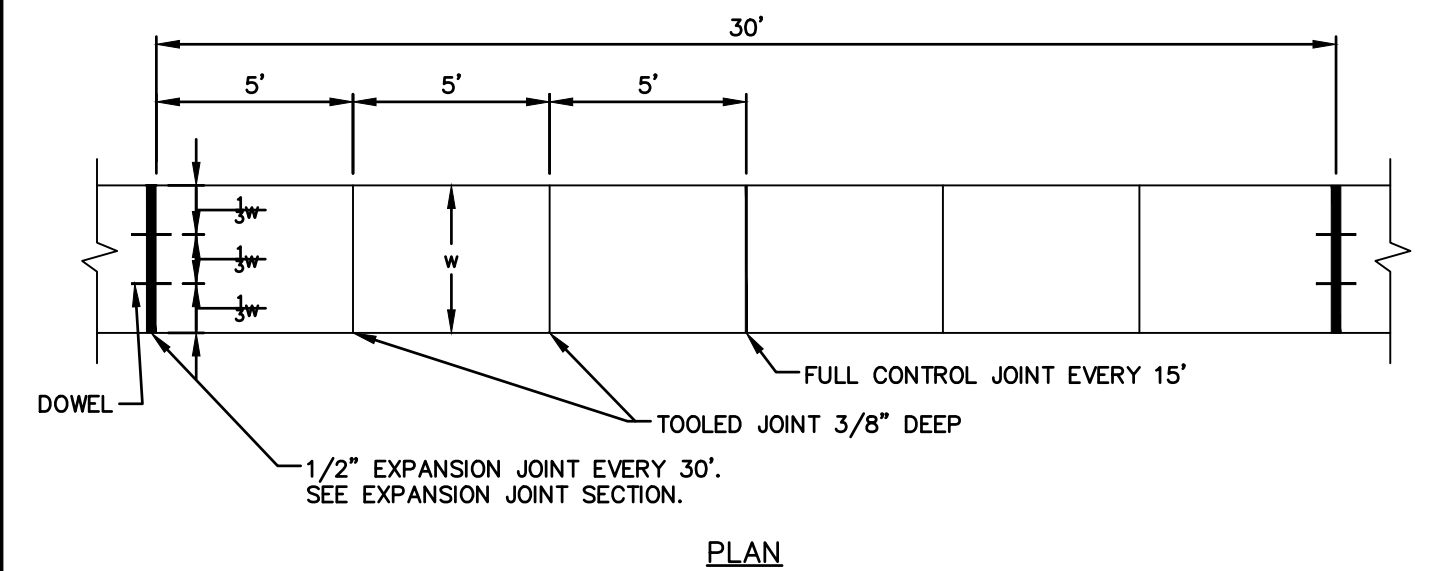
**TYPICAL ROAD PAVEMENT SECTION**  
NOT TO SCALE  
PAVEMENT MIX DESIGNS IN THE R.O.W. TO BE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.

- NOTES:
1. MAXIMUM ALLOWABLE ROUTE (SIDEWALK) AND CURB RAMP CROSS SLOPE SHALL BE 1.5%.
  2. MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMP SHALL BE 5%.
  3. MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMP SHALL BE 8%.
  4. MINIMUM OF 4' CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE WELL, SIGNS, ETC.)
  5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
  6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
  7. SEE CONCRETE SIDEWALK DETAIL FOR RAMP CONSTRUCTION.

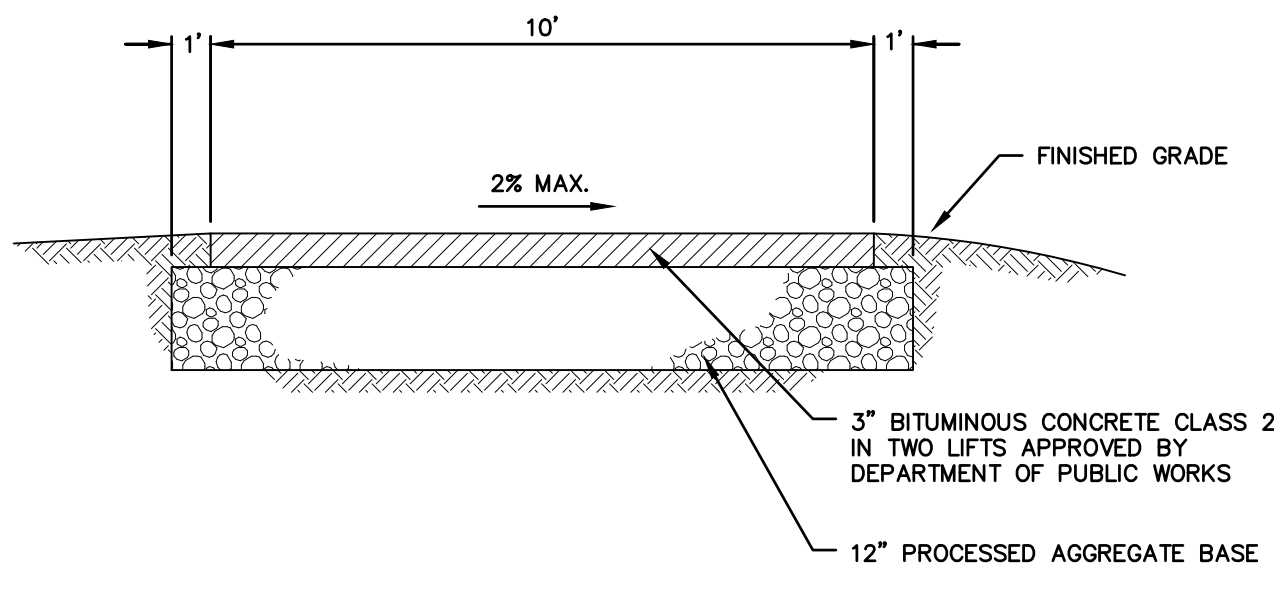


**ACCESSIBLE CURB RAMP - TYPE C**  
NOT TO SCALE

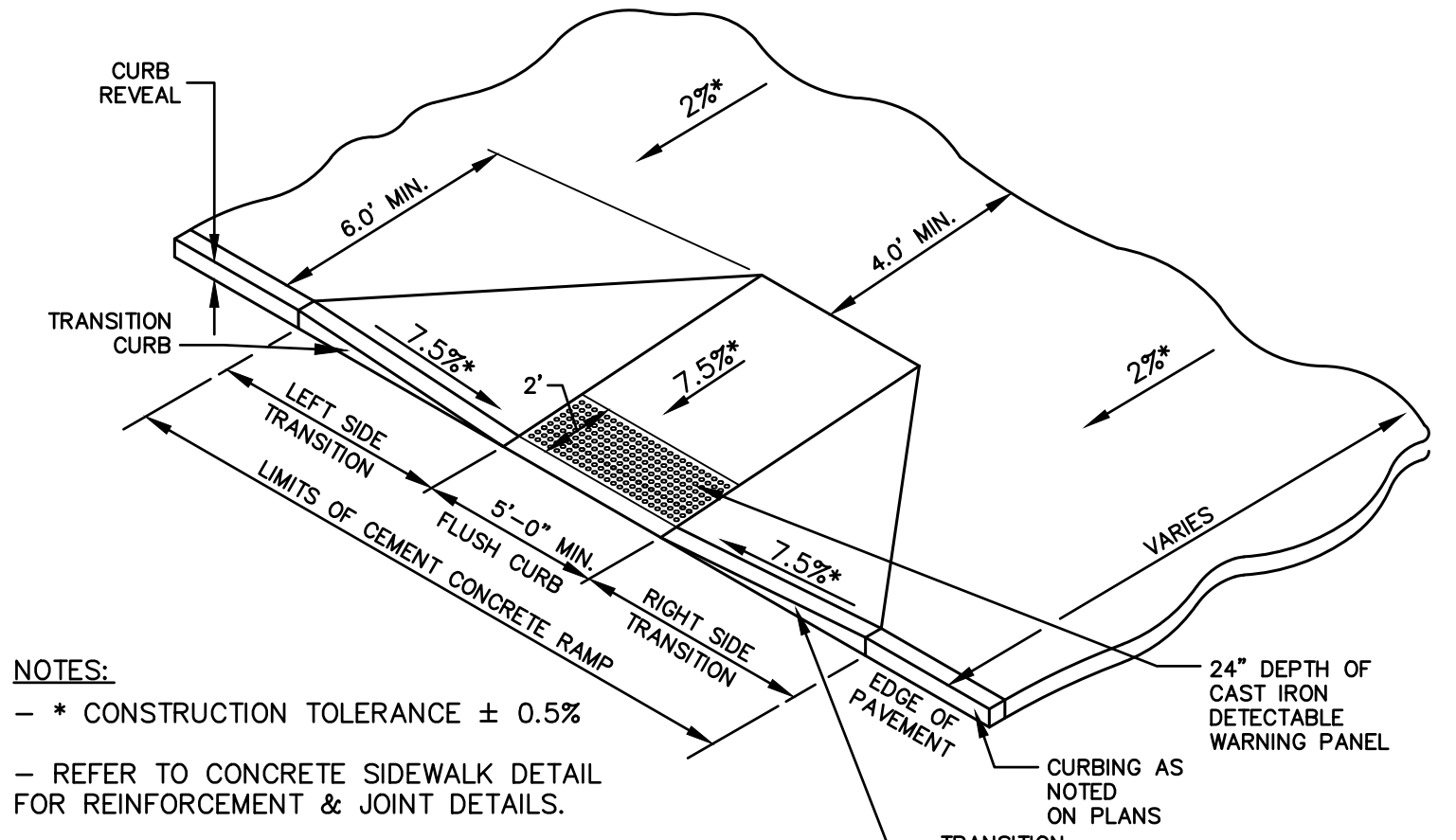
NOTE: INSTALL DETECTABLE WARNING PANEL ON ALL ACCESSIBLE CURB RAMP.



**CONCRETE SIDEWALK**  
SCALE: NOT TO SCALE

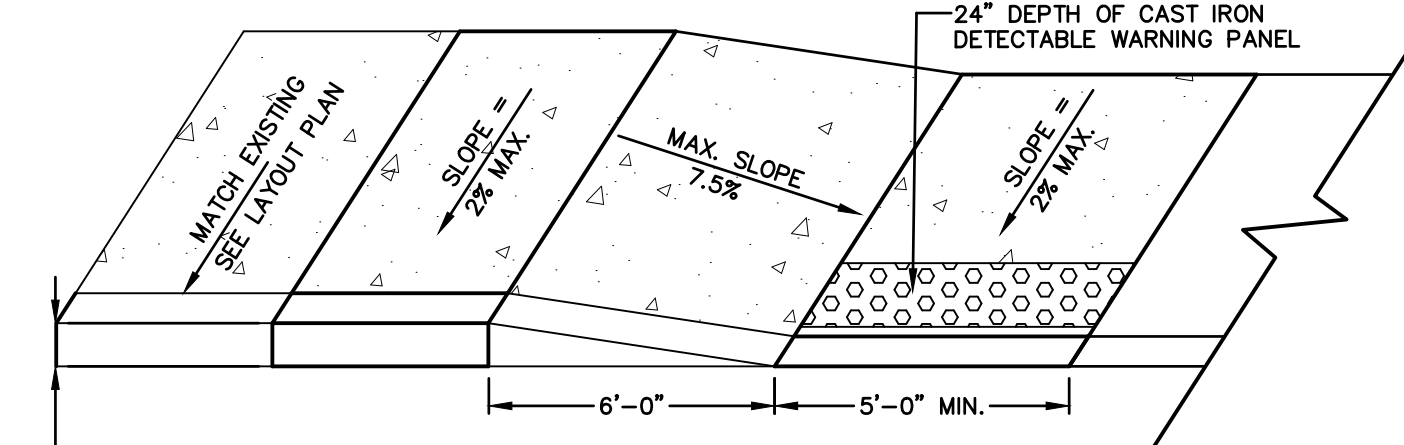


**BITUMINOUS CONCRETE MULTI-USE TRAIL**  
NOT TO SCALE



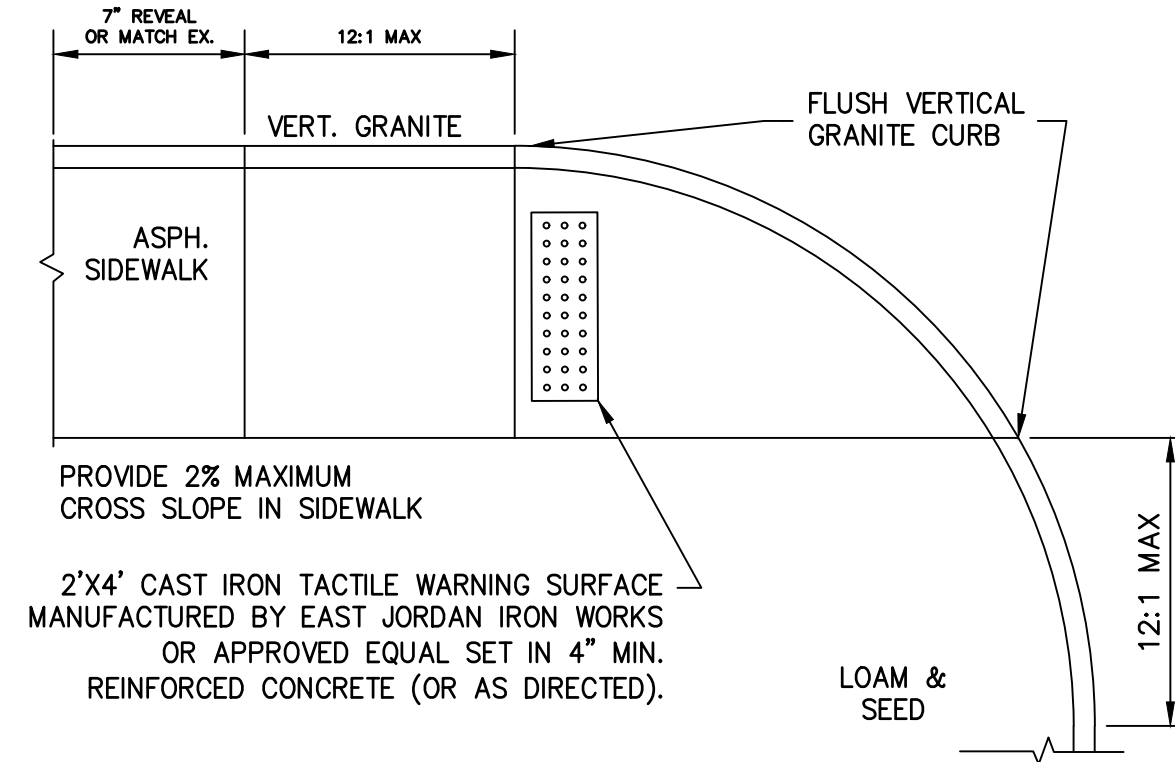
NOTES:  
 - \* CONSTRUCTION TOLERANCE ± 0.5%  
 - REFER TO CONCRETE SIDEWALK DETAIL FOR REINFORCEMENT & JOINT DETAILS.

**SIDEWALK RAMP D**  
NOT TO SCALE



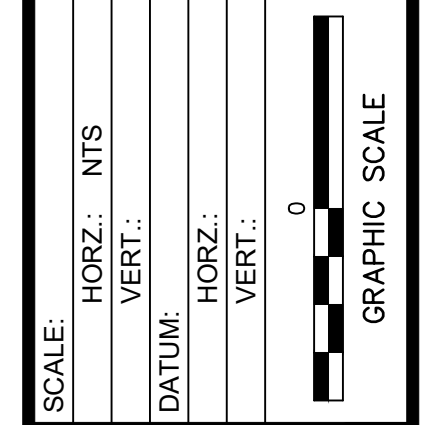
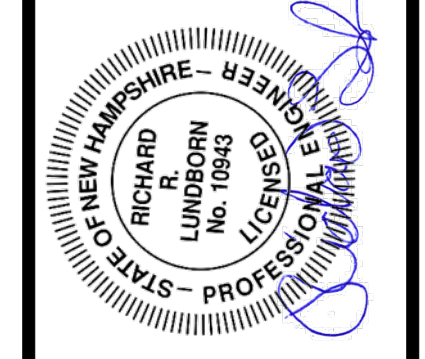
NOTES:  
 - \* CONSTRUCTION TOLERANCE ± 0.5%  
 - REFER TO CONCRETE SIDEWALK DETAIL FOR REINFORCEMENT & JOINT DETAILS.

**SIDEWALK RAMP A**  
NOT TO SCALE



**END OF SIDEWALK PEDESTRIAN RAMP**  
NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



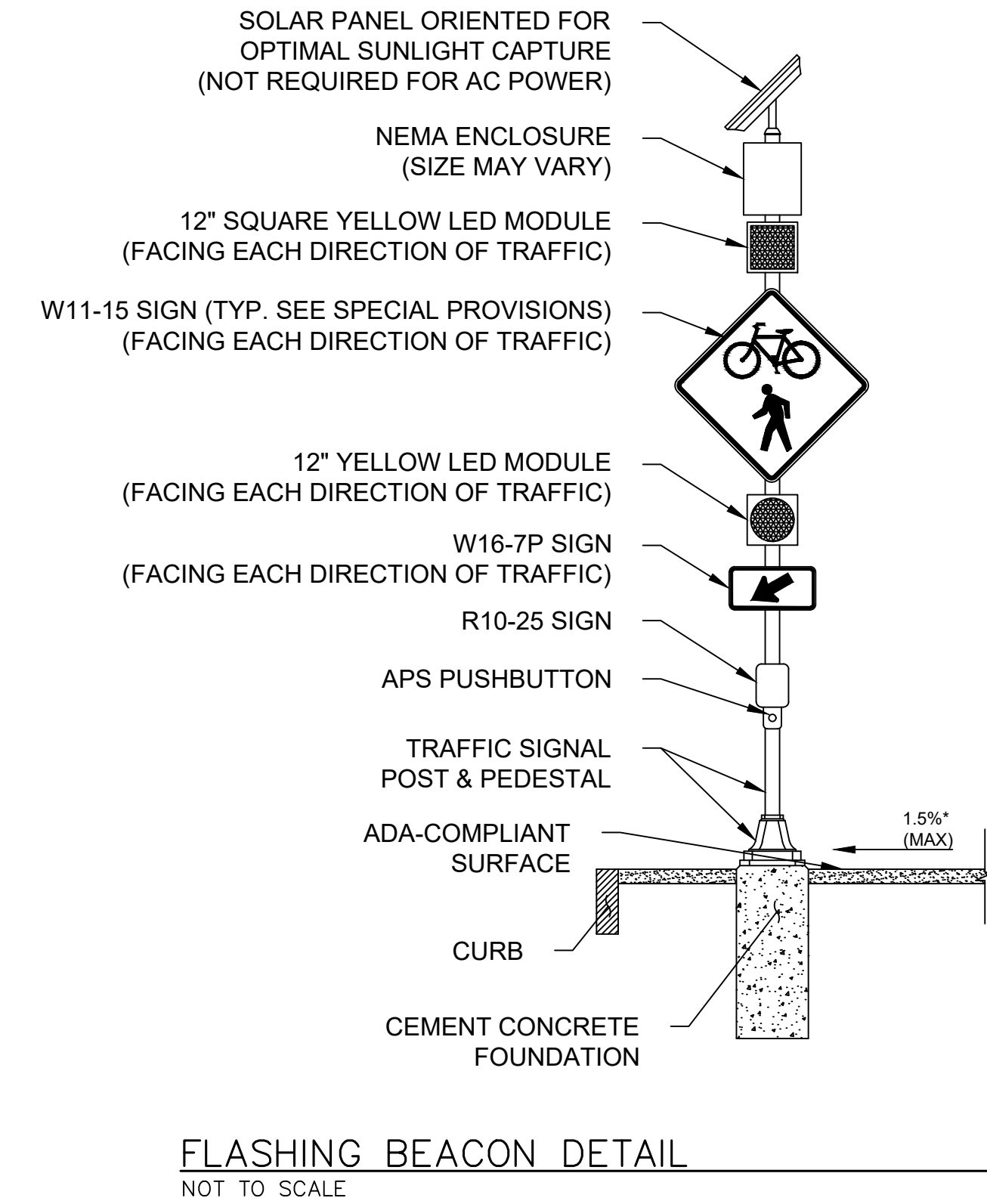
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CATE STREET DEVELOPMENT, LLC  
 SITE DETAILS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

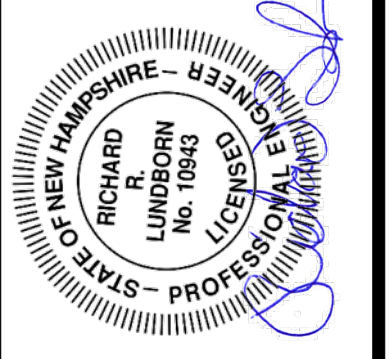
PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CD-550**

ITEM #	IDENT #	SIZE OF SIGN		TEXT	TEXT DIMENSIONS			SHIELD SIZE (INCH)	ARROW (INCH)	NUMERAL (INCH)	# SIGNS REQ'D	SIGN AREA (SQ. FT.)		POSTS PER SIGN					REMARKS	
		WIDTH (INCH)	HEIGHT (INCH)		LETTER HEIGHT (INCH)							NOM AREA	TOTAL AREA	BREAKAWAY	STEEL I-BEAM	CONCRETE BASE	4" OD ALUMINUM	U-CHANNEL-GALV		
					UC	LC	CAPS													
	W1-6L	48	24						6.5		3	8.00	24.00				2			BLACK/YELLOW
	W3-1A	30	30				4D		2.5		1	6.25	6.25					1		BLACK/YELLOW
	W11-2	30	30								8	6.25	50.00					1		BLACK/ FLUORESCENT YELLOW-GREEN
	W11-15	30	30								6	6.25	37.50					1		BLACK/ FLUORESCENT YELLOW-GREEN
	W11-15P	24	18				4D 4D				2	3.00	6.00							BLACK/ FLUORESCENT YELLOW-GREEN
	W13-1P	18	18							8E	2	2.25	4.50							BLACK/YELLOW MOUNT UNDER W1-5
	W16-7P	24	12						3		8	2.00	16.00							BLACK/YELLOW MOUNT UNDER W11-2
	W16-9P	24	12				5C				6	2.00	12.00							BLACK/YELLOW MOUNT UNDER W11-2
	R3-17bP	24	8								1	1.33	1.33							WHITE/BLACK MOUNT ON W11-15
	D11-1	24	18				4D		2.5		1	3.00	3.00					1		WHITE/GREEN
	M6-2	12	9								1	0.75	0.75					1		WHITE/GREEN



No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
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2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



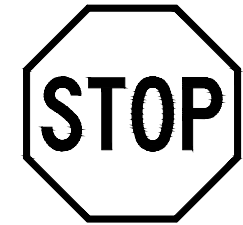
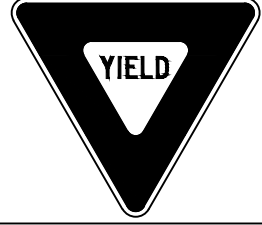

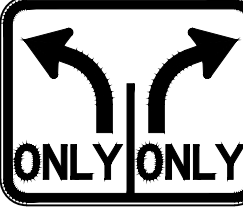
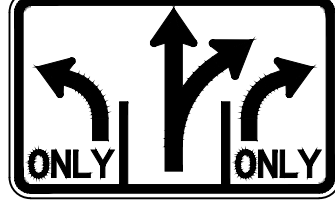



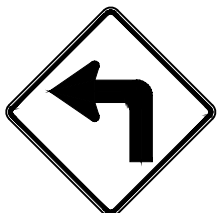
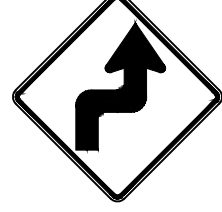
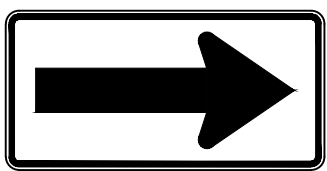
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 VERT.:  
 DATUM:  
 HORZ.:  
 VERT.:  
 GRAPHIC SCALE

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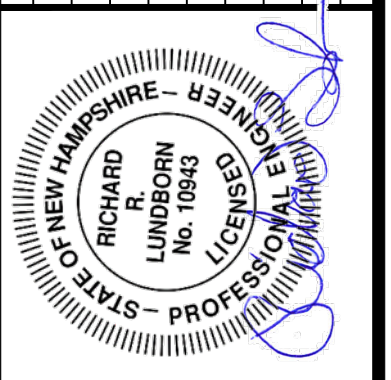
CATE STREET DEVELOPMENT, LLC  
 SIGN DETAILS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CD-551**

ITEM #	IDENT #	SIZE OF SIGN		TEXT	TEXT DIMENSIONS			SHIELD SIZE (INCH)	ARROW (INCH)	NUMERAL (INCH)	# SIGNS REQ'D	SIGN AREA (SQ. FT.)		POSTS PER SIGN					REMARKS
		WIDTH (INCH)	HEIGHT (INCH)		LETTER HEIGHT (INCH)							NOM AREA	TOTAL AREA	BREAKAWAY	STEEL I-BEAM	CONCRETE BASE	4" OD ALUMINUM	U-CHANNEL-GALV	
					UC	LC	CAPS												
	R1-1	30	30				10C				2	6.25	12.50				1		RED/WHITE
	R1-2	36	36								1	9.00	9.00				1		RED/WHITE
	R2-1	24	30				4E 4E			10E	1	5.00	5.00				1		BLACK/WHITE
	R3-8(15)	36	30				4D		2.5		1	7.50	7.50				1		WHITE/BLACK
	R3-8(145)	48	30				4D		2.5		1	10.00	10.00				2		BLACK/WHITE
	R4-7A	24	30				5D 5D		4.5		2	5.00	10.00				1		WHITE/BLACK
	R5-3	24	24				4C 4C 4B				1	4.00	4.00				1		WHITE/BLACK
	R10-25	9	12				1C 1C 1C 1C 1C				2	0.75	1.50						WHITE/BLACK MOUNT ON W11-15
	W1-1R/L	30	30								2	6.25	12.50				1		BLACK/YELLOW
	W1-3R	30	30								2	6.25	12.50				1		BLACK/YELLOW
	W1-6R	48	24						6.5		2	8.00	16.00				2		BLACK/YELLOW

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD

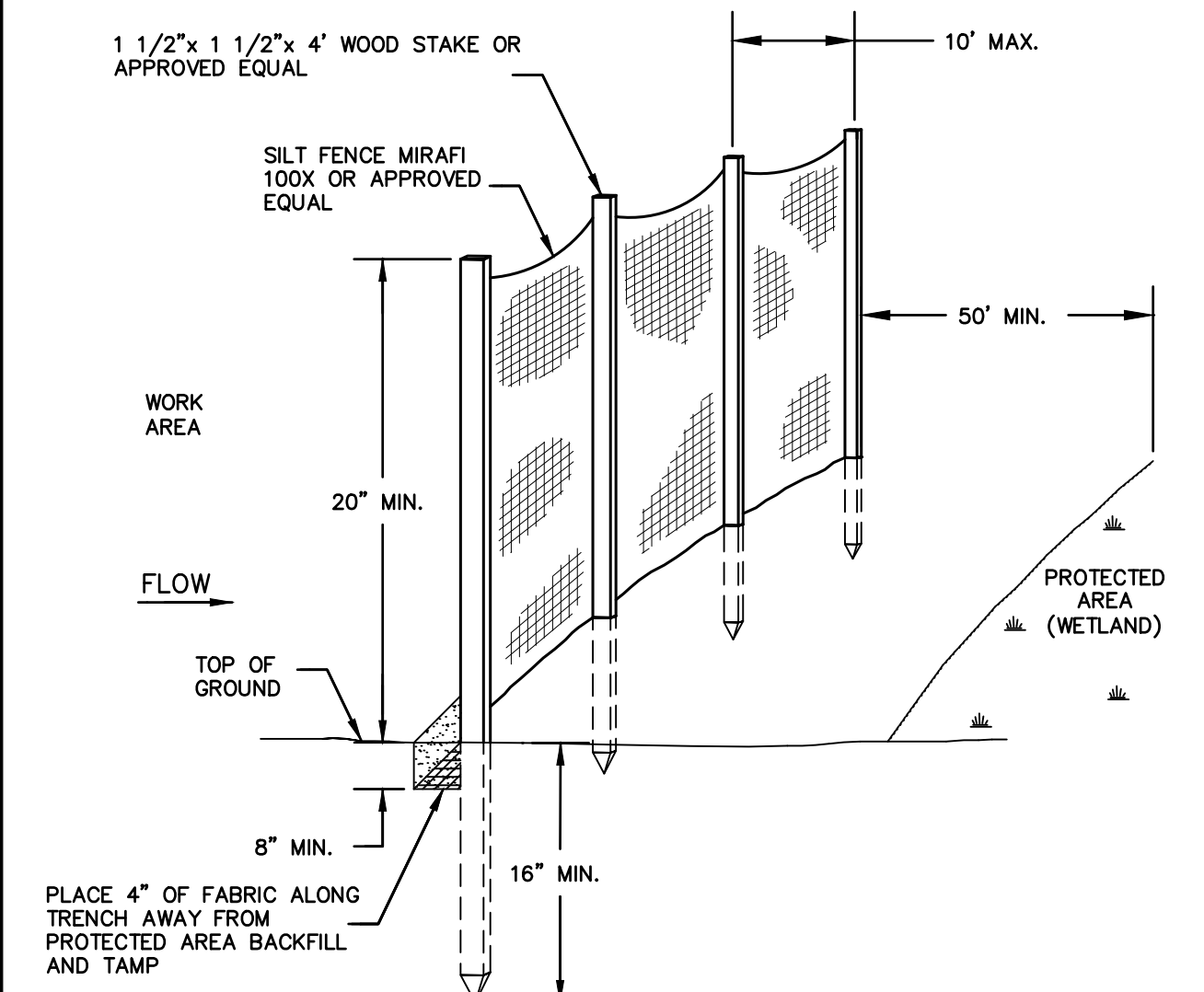


SCALE:	HORZ.: NTS
	VERT.:
DATUM:	HORZ.:
	VERT.:
	0
	GRAPHIC SCALE

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CATE STREET DEVELOPMENT, LLC  
 SIGN DETAILS  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

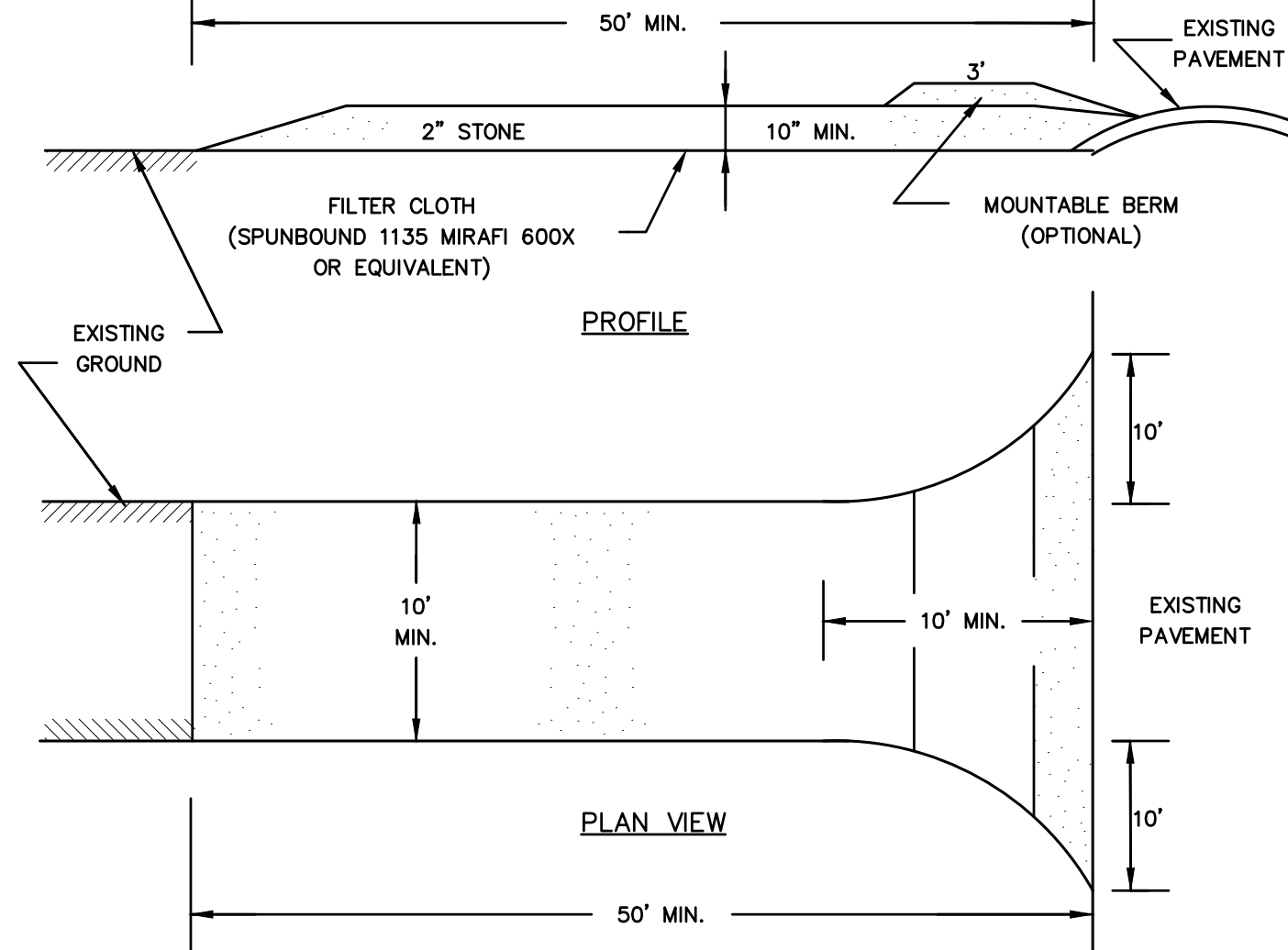
PROJ. No.: 20180317.A10  
 DATE: 07/17/2019  
**CD-552**



**MAINTENANCE REQUIREMENTS:**  
1. FENCES SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALLS;  
2. SEDIMENT DEPOSITION SHOULD BE REMOVED, AT A MINIMUM, WHEN DEPOSITION ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FENCE, AND MOVED TO AN APPROPRIATE LOCATION SO THE SEDIMENT IS NOT READILY TRANSPORTED BACK TOWARD THE SILT FENCE.  
3. SILT FENCES SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM.  
4. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY; THE FABRIC SHOULD BE REPLACED PROMPTLY.  
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE PREPARED AND SEEDED.  
6. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.  
7. SILT FENCES HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT FENCE SHOULD BE REPAIRED PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS.

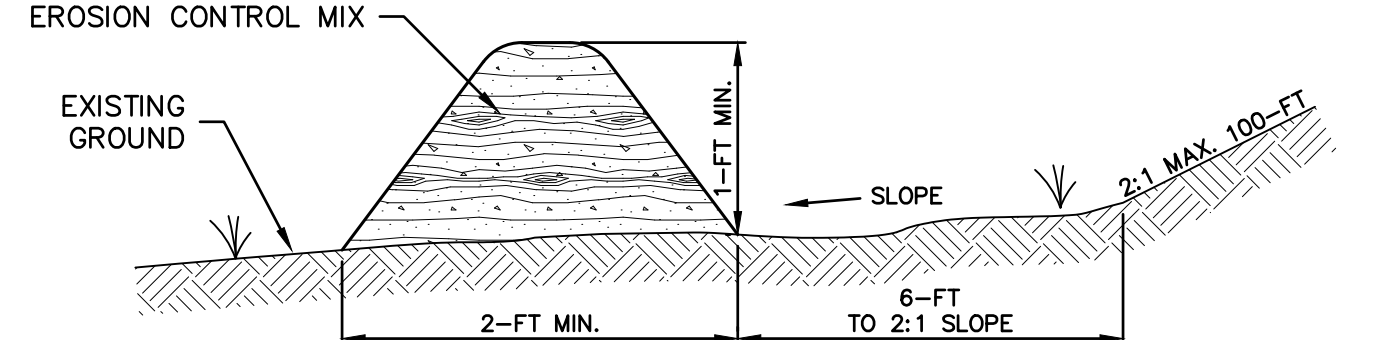
**CONSTRUCTION SPECIFICATIONS:**  
1. FENCES SHOULD BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE IS NO CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY ABOVE THE FENCE. SEDIMENT BARRIERS SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.  
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA ABOVE THE FENCE SHOULD BE LESS THAN 1A ACRE PER 100 LINEAR FEET OF FENCE;  
3. THE MAXIMUM LENGTH OF SLOPE ABOVE THE FENCE SHOULD BE 100 FEET;  
4. THE MAXIMUM SLOPE ABOVE THE FENCE SHOULD BE 2:1;  
5. FENCES SHOULD BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE, AND A. THE ENDS OF THE FENCE SHOULD BE FLARED UPSLOPE.  
B. THE FABRIC SHOULD BE EMBEDDED A MINIMUM OF 8 INCHES IN DEPTH AND 4 INCHES IN WIDTH IN A TRENCH EXCAVATED INTO THE GROUND, OR IF SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE, OR THE PRESENCE OF HEAVY ROOTS, THE BASE OF THE FABRIC SHOULD BE EMBEDDED WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE;  
C. THE SOIL SHOULD BE COMPACTED OVER THE EMBEDDED FABRIC;  
D. SUPPORT POSTS SHOULD BE SIZED AND ANCHORED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS WITH MAXIMUM POST SPACING OF 6 FEET.  
E. ADJOINING SECTIONS OF THE FENCE SHOULD BE OVERLAPPED BY A MINIMUM OF 6 INCHES (24 INCHES IS PREFERRED), FOLDED AND STAPLED TO A SUPPORT POST. IF METAL POSTS ARE USED, FABRIC SHOULD BE WIRE-TIED DIRECTLY TO THE POSTS WITH THREE DIAGONAL TIES.  
6. SILT FENCING SHOULD NOT BE STAPLED OR NAILED TO TREES.  
7. THE FILTER FABRIC SHOULD BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHOULD BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER.  
8. THE FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES FAHRENHEIT TO 120 DEGREES FAHRENHEIT.  
9. POSTS FOR SILT FENCES SHOULD BE EITHER 4-INCH DIAMETER WOOD OR 1.33 POUNDS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET. STEEL POSTS SHOULD HAVE PROJECTIONS FOR FASTENING WIRE TO THEM. POSTS SHOULD BE PLACED ON THE DOWN SLOPE SIDE OF THE FABRIC.  
10. THE HEIGHT OF A SILT FENCE SHOULD NOT EXCEED 36 INCHES AS HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.  
11. THE FILTER FABRIC SHOULD BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHOULD BE SPLICED TOGETHER ONLY AT SUPPORT POSTS, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED.  
12. A MANUFACTURED SILT FENCE SYSTEM WITH INTEGRAL POSTS MAY BE USED.  
13. POST SPACING SHOULD NOT EXCEED 6 FEET.  
14. A TRENCH SHOULD BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UP GRADIENT FROM THE BARRIER.  
15. THE STANDARD STRENGTH OF FILTER FABRIC SHOULD BE STAPLED OR WIRED TO THE POST, AND 8 INCHES OF THE FABRIC SHOULD BE EXTENDED INTO THE TRENCH. THE FABRIC SHOULD NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.  
16. THE TRENCH SHOULD BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.  
17. SILT FENCE MAY BE INSTALLED BY "SLICING" USING MECHANICAL EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PROCEDURE. THE SLICING METHOD USES AN IMPELMENT TOWED BEHIND A TRACTOR TO "PLOW" OR SLICE THE SILT FENCE MATERIAL INTO THE SOIL. THE SLICING METHOD MINIMALLY DISRUPTS THE SOIL UPWARD AND SLIGHTLY DISPLACES THE SOIL, MAINTAINING THE SOIL'S PROFILE AND CREATING AN OPTIMAL CONDITION FOR SUBSEQUENT MECHANICAL COMPACTION.  
18. SILT FENCES SHOULD BE INSTALLED WITH "SMILES" OR "J-HOOKS" TO REDUCE THE DRAINAGE AREA THAT ANY SEGMENT WILL IMPOUND.  
19. THE ENDS OF THE FENCE SHOULD BE TURNED UPHILL.  
20. SILT FENCES PLACED AT THE TOE OF A SLOPE SHOULD BE SET AT LEAST 6 FEET FROM THE TOE TO ALLOW SPACE FOR SHALLOW PONDING AND TO ALLOW FOR MAINTENANCE ACCESS WITHOUT DISTURBING THE SLOPE.  
21. SILT FENCES SHOULD BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

**SILT FENCE BARRIER**  
NOT TO SCALE



**MAINTENANCE REQUIREMENTS:**  
1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED.  
2. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.  
3. WHEN WHEEL WASHING IS REQUIRED, IT SHOULD BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT-TRAPPING DEVICE. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.  
**CONSTRUCTION SPECIFICATIONS:**  
1. THE MINIMUM STONE USED SHOULD BE 3-INCH CRUSHED STONE.  
2. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.  
3. THE PAD SHOULD BE THE FULL WIDTH OF CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER.  
4. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.  
5. THE PAD SHOULD BE AT LEAST 6 INCHES THICK.  
6. THE GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.  
7. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.  
8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

**USDA-SCS STABILIZED CONSTRUCTION ENTRANCE**  
NOT TO SCALE



**EROSION CONTROL MIX BERM**  
**CROSS SECTION**  
NOT TO SCALE

**MAINTENANCE REQUIREMENTS:**  
1. EROSION CONTROL MIX BERMS SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.  
2. EROSION CONTROL MIX BERMS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM.  
3. IF THERE ARE SIGNS OF BREACHING OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, THE EROSION CONTROL MIX BERMS SHOULD BE REPLACED WITH OTHER MEASURES TO INTERCEPT AND TRAP SEDIMENT (SUCH AS A DIVERSION BERM DIRECTING RUNOFF TO A SEDIMENT TRAP OR BASIN).  
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT.  
5. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) OF THE HEIGHT OF THE BARRIER.  
6. EROSION CONTROL MIX BERMS SHOULD BE RESHAPED OR REAPPLIED AS NEEDED.  
7. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

**CONSTRUCTION SPECIFICATIONS:**  
1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF OF THE PROJECT SITE.  
2. EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS.  
3. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.  
4. **COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:**  
A. EROSION CONTROL MIX SHALL BE A WELL GRADED MIXTURE OF PARTICLE SIZES FREE OF REFUSE, PHYSICAL CONTAMINANTS, MATERIAL TOXIC TO PLANT GROWTH AND MAY NOT CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER.  
B. ORGANIC MATTER = 25-65% DRY WEIGHT BASIS  
C. PARTICLES PASSING BY WEIGHT:  
SCREEN: PASSING BY WEIGHT:  
3-INCH 100%  
1-INCH 90-100%  
3/4-INCH 70-100%  
1/4-INCH 30-75%  
D. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.  
E. THE MIX SHOULD CONTAIN NO SILTS, CLAYS OR FINE SANDS.  
F. SOLUBLE SALTS CONTENT < 4.0 mmhos/cm  
G. pH OF THE MIX SHOULD BE BETWEEN 5.0 AND 8.0  
5. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR.  
6. IT MAY BE NECESSARY TO CUT TALL GRASSES AND WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES IN THE BARRIER THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.  
7. THE BARRIER MUST BE A MINIMUM OF 12-INCHES TALL AS MEASURED ON THE UPHILL SIDE OF THE BARRIER.  
8. THE BARRIER MUST BE A MINIMUM OF 2-FT WIDE.

**CONTINUOUS CONTAINED BERM (ALTERNATIVE):**  
1. AN ALTERNATIVE PRODUCT, THE CONTINUOUS CONTAINED BERM (OR "FILTER SOCK") CAN BE AN EFFECTIVE SEDIMENT BARRIER AS IT ADDS CONTAINMENT AND STABILITY TO A BERM OF EROSION CONTROL MIX.  
2. IN THE EVENT THAT USE OF CONTINUOUS CONTAINED BERM IS DESIRED, THE PRODUCT SELECTED SHOULD BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER.  
3. INSTALLATION OF CONTINUOUS CONTAINED BERMS SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE MANUFACTURER.

**EROSION CONTROL MIX BERM DETAIL**

**WINTER STABILIZATION & CONSTRUCTION PRACTICES:**

**MAINTENANCE REQUIREMENTS:**  
1. MAINTENANCE MEASURES SHOULD BE PERFORMED THROUGHOUT CONSTRUCTION, INCLUDING OVER THE WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHOULD CONDUCT INSPECTION OF ALL INSTALLED EROSION CONTROL PRACTICES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUED FUNCTION.  
2. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHOULD CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF THE VEGETATION AND REPAIR ANY DAMAGED AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH.)

**SPECIFICATIONS:**  
THE FOLLOWING STABILIZATION TECHNIQUES SHOULD BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 15.

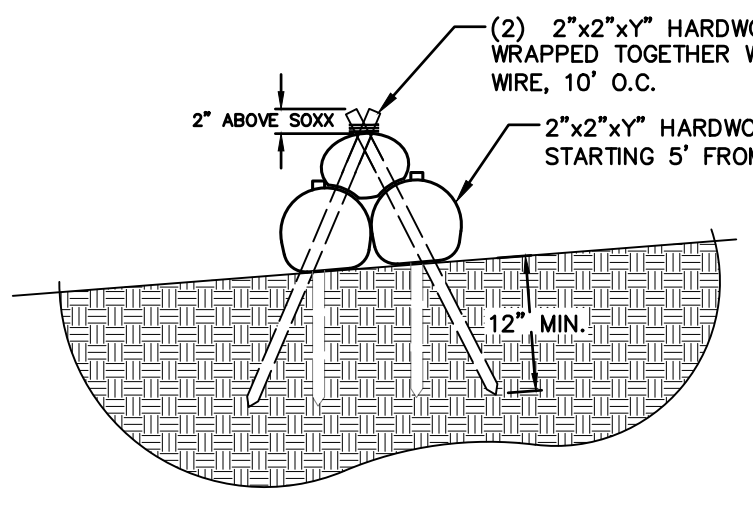
1. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHOULD BE LIMITED TO 1-ACRE AND SHOULD BE PROTECTED AGAINST EROSION BY THE METHODS DISCUSSED IN NHSM, VOL. 3 AND ELSEWHERE IN THIS PLAN SET, PRIOR TO ANY THAW OR SPRING MELT EVENT. STABILIZATION AS FOLLOWS SHOULD BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
2. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHOULD BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (REFER TO NHSM, VOL. 3 FOR SPECIFICATION).
3. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15 SHOULD BE SEEDED AND COVERED WITH A PROPERLY INSTALLED EROSION CONTROL BLANKET OR WITH A MINIMUM OF 4 INCHES OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS SHOULD NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.
4. ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
5. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHOULD NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
6. ALL MULCH APPLIED DURING WINTER SHOULD BE ANCHORED (I.E. BY NETTING, TRACKING, WOOD CELLULOSE FIBER).
7. WITHIN 24 HOURS OF STOCKPILING SOIL MATERIALS SHOULD BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A 4 INCH LAYER OF EROSION CONTROL MIX. MULCH SHOULD BE RE-ESTABLISHED PRIOR TO ANY RAIN OR SNOWFALL. NO SOIL STOCKPILE SHOULD BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100-FT OF ANY WETLAND OR OTHER WATER RESOURCE AREA.
8. FROZEN MATERIAL (I.E. FROST LAYER REMOVED DURING WINTER CONSTRUCTION) SHOULD BE STOCKPILED SEPARATELY AND IN A LOCATION AWAY FROM ANY AREA NEEDING PROTECTION. FROZEN MATERIAL STOCKPILES CAN MELT IN SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO HIGH SOIL MOISTURE CONTENT.
9. INSTALLATION OF EROSION CONTROL BLANKETS SHOULD NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH OR ON FROZEN GROUND.
10. ALL GRASS-LINED DITCHES AND CHANNELS SHOULD BE CONSTRUCTED BY SEPTEMBER 1. ALL DITCHES AND SWALES WHICH DO NOT EXHIBIT 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHOULD BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS AS DETERMINED BY A PROFESSIONAL ENGINEER. IF STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION AFTER ALLOWING FOR PLACEMENT OF THE STONE.
11. ALL STONE LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
12. AFTER NOVEMBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER SHOULD BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF SAND AND GRAVEL WITH A GRADATION THAT IS LESS THAN 12% OF THE SAND PORTION, OR MATERIAL PASSING THE NUMBER 4 SIEVE, BY WEIGHT, PASSES THE NUMBER 200 SIEVE.
13. SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHOULD CONSIST OF EROSION CONTROL MIX BERMS, OR CONTINUOUS CONTAINED BERMS. SILT FENCES AND HAY BALES SHOULD NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBODMENT OF THESE BARRIERS.

**DUST CONTROL PRACTICES:**

1. APPLY DUST CONTROL MEASURES AS NECESSARY TO MAINTAIN CONTROL OF DUST ON SITE.  
**WATER APPLICATION:**  
A) MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.  
B) AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES.  
**STONE APPLICATION:**  
A) COVER SURFACE WITH CRUSHED OR COARSE GRAVEL.  
B) IN AREAS NEAR WATERWAYS USE ONLY CHEMICALLY STABILIZED OR WASHED AGGREGATE.  
2. REFER TO "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" FOR OTHER ALLOWABLE DUST CONTROL PRACTICES (I.E. COMMERCIAL TACKIFIERS OR CHEMICAL TREATMENTS SUCH AS CALCIUM CHLORIDE, ETC.)

**INVASIVE SPECIES NOTE:**

THE CONTRACTOR SHALL TAKE STEPS TO PREVENT THE SPREAD OF INVASIVE PLANT, INSECT, AND FUNGAL SPECIES BY MEETING THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES. [http://encourt.state.nh.us/rules/state\\_agencies/agr3800.html](http://encourt.state.nh.us/rules/state_agencies/agr3800.html)

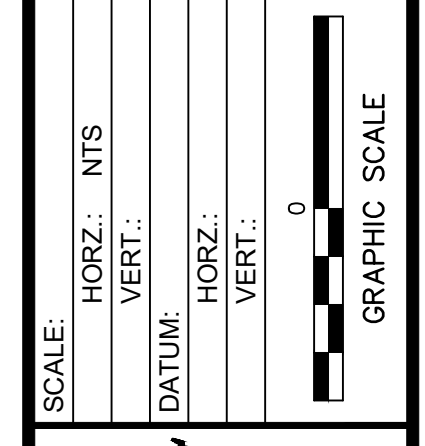
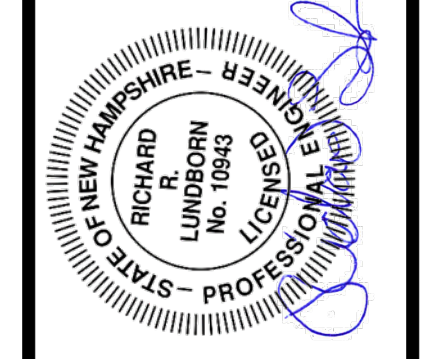


**SILT SOCK PYRAMIND STACK DETAIL**  
NOT TO SCALE

**GENERAL CONSTRUCTION PHASING:**

1. **STABILIZATION:**  
SITE IS DEEMED STABILIZED WHEN IT IS IN A CONDITION IN WHICH THE SOIL ON SITE WILL NOT EXPERIENCE ACCELERATED OR UNNATURAL EROSION UNDER THE CONDITIONS OF A 10-YEAR STORM EVENT, SUCH AS BUT NOT LIMITED TO:  
A) **IN AREAS THAT WILL NOT BE PAVED:**  
i) A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;  
ii) A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR A CERTIFIED COMPOST BLANKET HAS BEEN INSTALLED, OR;  
iii) EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.  
B) **IN AREAS TO BE PAVED:**  
i) BASE COURSE GRAVELS HAVE BEEN INSTALLED.  
2. **TEMPORARY STABILIZATION:**  
ALL AREAS OF EXPOSED OR DISTURBED SOIL SHOULD BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR.  
3. **PERMANENT STABILIZATION:**  
ALL AREAS OF EXPOSED OR DISTURBED SOIL SHOULD BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS FOLLOWING FINAL GRADING.  
4. **MAXIMUM AREA OF DISTURBANCE:**  
THE AREA OF UNSTABILIZED SOIL SHOULD NOT EXCEED 5 ACRES AT ANY TIME.  
5. ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION.  
A) FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED.  
B) EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.  
6. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHOULD BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON GRADING PLANS.  
7. ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES SHOULD BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON GRADING PLANS.  
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHOULD BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND BE PROTECTED FROM EROSION.  
9. STOCKPILES, BORROW AREAS AND SPOILS SHALL BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES".  
10. SLOPES SHOULD NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGE.  
11. AREAS TO BE FILLED SHOULD BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND/OR OTHER OBJECTIONABLE MATERIALS.  
12. AREAS SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 3-INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHOULD BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.  
13. ALL FILLS SHOULD BE COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, SITE UTILITIES, CONDUITS AND OTHER FACILITIES, SHOULD BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.  
14. IN GENERAL, FILLS SHOULD BE COMPACTED IN LAYERS RANGING FROM 6 TO 24 INCHES IN THICKNESS. THE CONTRACTOR SHOULD REVIEW THE PROJECT GEOTECHNICAL REPORT AND/OR THE "PROJECT SPECIFIC PHASING NOTES" FOR SPECIFIC GUIDANCE.  
15. ANY AND ALL FILL MATERIAL SHOULD BE FREE OF BRUSH, RUBBISH, ROCKS (LARGER THAN 3/4 THE DEPTH OF THE LIFT BEING INSTALLED), LOGS, STUMPS, BUILDING DEBRIS, FROZEN MATERIAL AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.  
16. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE (I.E. CLAY, SILT) MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTENTIAL ACCELERATED EROSION. WORK IN AREAS OF THESE MATERIALS SHOULD BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.  
17. THE OUTER FACE OF THE FILL SLOPE SHOULD BE ALLOWED TO STAY LOOSE, NOT ROLLED OR COMPACTED, OR BLADE SMOOTHED. A BULLDOZER MAY RUN UP AND DOWN THE FILL SLOPE SO THE DOZER TREADS (CLEAT TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE ROUGHENING" IN THE NHSM, VOL.3.  
18. ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.  
19. USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE TO REDUCE THE LENGTH OF CUT-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHOULD BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.  
20. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHOULD BE EVALUATED BY A PROFESSIONAL ENGINEER (PREFERABLY THE DESIGN ENGINEER) TO DETERMINE IF THE PROPOSED DESIGN SHOULD BE REVISED TO PROPERLY MANAGE THE CONDITION.  
21. STABILIZE ALL GRADED AREAS (AS ABOVE) WITH VEGETATION, CRUSHED STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETE OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED.  
22. ALL GRADED AREAS SHOULD BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.  
ABOVE NOTES EXCEPTED, ADAPTED AND REFERENCED FROM "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" (NHSM, VOL. 3)  
**SOIL STOCKPILE PRACTICES:**  
1. LOCATE STOCKPILES A MINIMUM OF 50-FT. AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES OR INLETS.  
2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.  
3. STOCKPILES SHOULD BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN NHSM VOL. 3. TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILE.  
4. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.  
5. PLACE BAGGED MATERIALS ON PALLETS OR UNDERCOVER.  
**PROTECTION OF INACTIVE STOCKPILES:**  
6. INACTIVE SOIL STOCKPILES SHOULD BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES.  
7. INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS, AND SIMILAR MATERIALS SHOULD BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHOULD ALSO BE COVERED.  
**PROTECTION OF ACTIVE STOCKPILES:**  
8. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIAL FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.  
9. WHEN A STORM IS PREDICTED, STOCKPILES SHOULD BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	RRL
2.	5/20/2019	TAC SUBMITTAL	RRL
1.	3/18/2019	TAC SUBMITTAL	RRL



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**EROSION CONTROL DETAILS**  
CATE STREET  
PORTSMOUTH  
NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
DATE: 07/17/2019  
**CD-560**

**D10=10" RIP-RAP GRADATION**

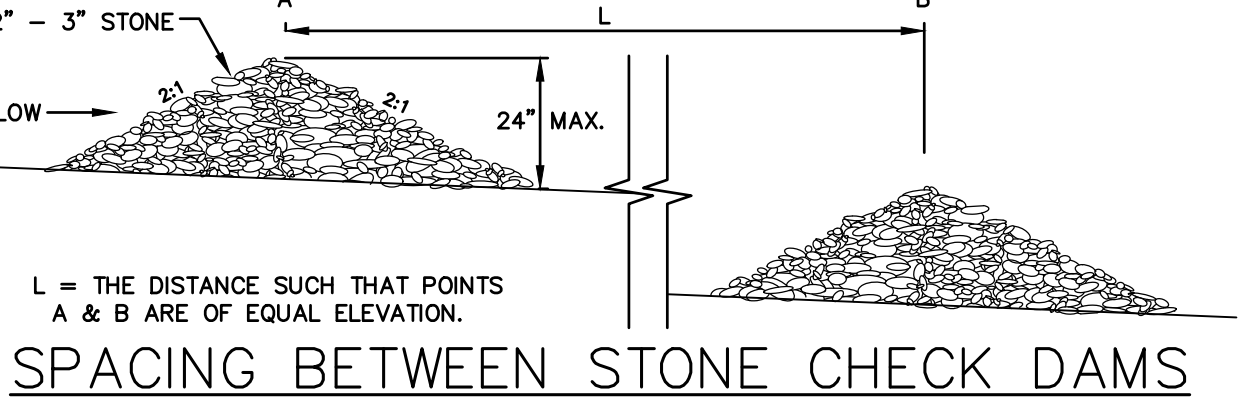
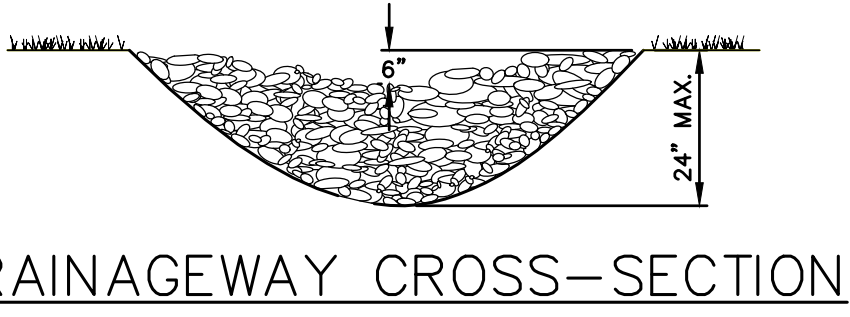
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	15 TO 20
85	13 TO 18
50	10 TO 15
15	3 TO 5

**APRON DIMENSION TABLE**

PIPE OUTLET	W <sub>o</sub>	W	L <sub>a</sub>	T	d50
24" HDPE OUTLET	6.0'	11'	8'	12"	3"

**SPACING BETWEEN CHECK DAMS**

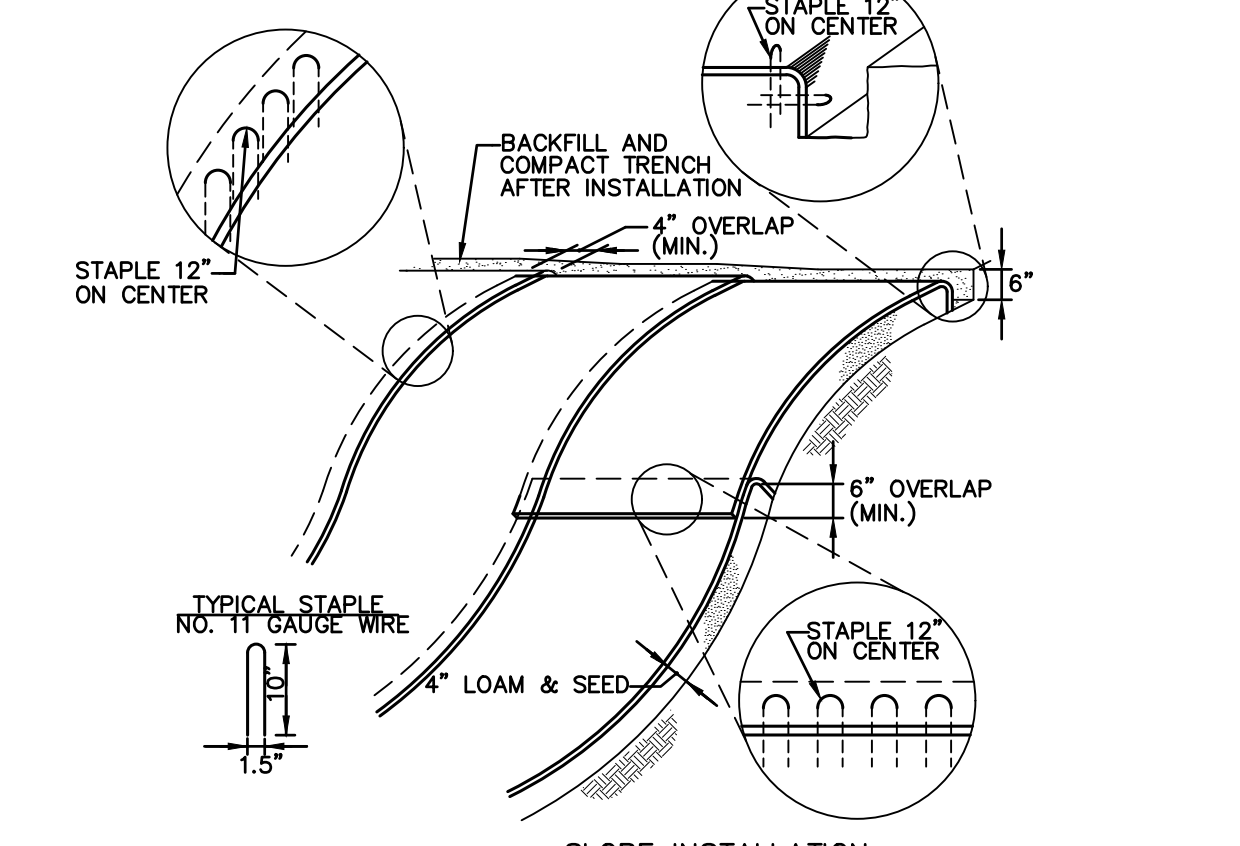
SLOPE (FT/FT)	LENGTH (FT)
0.020	75
0.030	50
0.040	37
0.050	30
0.060	25
0.080	19
0.100	15
0.120	13
0.150	10



- CONSTRUCTION SPECIFICATIONS:**
- STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
  - CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION, AIR AND WATER POLLUTION WILL BE MINIMIZED.
  - STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.

- MAINTENANCE NOTES:**
- TEMPORARY GRADE STABILIZATION STRUCTURES SHOULD BE INSPECTED AFTER EACH STORM AND DAILY DURING PROLONGED STORM EVENTS. ANY DAMAGE TO THE STRUCTURES SHALL BE REPAIRED IMMEDIATELY.
  - PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE.
  - WHEN REMOVING THE STRUCTURES, THE DISTURBED AREAS SHALL BE BROUGHT UP TO EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED.
  - SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT REACHES 1/2 THE ORIGINAL HEIGHT OF THE STRUCTURE.

**STONE CHECK DAM INSTALLATION DETAIL**



- MAINTENANCE REQUIREMENTS:**
- ALL BLANKET AND MATS SHOULD BE INSPECTED WEEKLY DURING THE CONSTRUCTION PERIOD, AND AFTER ANY RAINFALL EVENT EXCEEDING 1/2 INCH IN A 24-HOUR PERIOD.
  - ANY FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUT OF THE SLOPE, DISPLACEMENT OF THE MAT, OR DAMAGE TO THE MAT OCCURS, THE AFFECTED SLOPE SHALL BE REPAIRED AND RESEEDED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED.

- CONSTRUCTION SPECIFICATIONS:**
- MANUFACTURER'S INSTALLATION INSTRUCTIONS:
    - PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
    - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
    - ROLL THE RECP'S (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
    - THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
    - CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
  - SITE PREPARATION:
    - PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
    - GRADE AND SHAPE AREA IF INSTALLATION.
    - REMOVE ALL ROCKS, CLOUDS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL.
    - PREPARE SEEDBED BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
    - INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN.
  - SEEDING:
    - SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND REVEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATIONS. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEEDED.
    - WHEN SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.

**PERMANENT VEGETATION:**

- SPECIFICATIONS:**
- SITE PREPARATION:**
- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
  - GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
  - RUNOFF SHOULD BE DIVERTED FROM THE SEEDBED AREA.
  - ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHOULD INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

- SEEDBED PREPARATION:**
- WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY AND SILT SOILS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
  - REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLOUDS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
  - INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
  - WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
  - IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
  - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:
    - LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)\*
    - \*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE
    - FERTILIZER APPLICATION RATE = 600 LB./ACRE (13.8 LB./1,000-SF)\*
    - \*LOW PHOSPHATE FERTILIZER (N-P205-K20) OR EQUIVALENT
  - FERTILIZER SHOULD BE RESTRICTED TO LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 AND 250-FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25-FEET OF A SURFACE WATER BODY. THESE ARE THE REQUIREMENTS FOR ANY WATER BODY PROTECTED BY THE COMPREHENSIVE SHORELAND PROTECTION ACT.

- SEEDING:**
- INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
  - APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE.
  - WHERE FEASIBLE EXCEPT WHERE EITHER CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
  - SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDING IN LATE SUMMER AT LEAST 35% OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL. 3. AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
  - AREAS SEEDED BETWEEN MAY 15 AND AUGUST 15 SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL. 3.
  - VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.

- HYDROSEEDING:**
- WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
  - SLOPES MUST BE NO STEEPER THAN 2:1 (2 FEET HORIZONTALLY BY 1 FOOT VERTICALLY).
  - LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
  - SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

- MAINTENANCE REQUIREMENTS:**
- PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTION, MAINTENANCE AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
  - SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. MOWING HEIGHT AND FREQUENCY DEPEND OF TYPE OF GRASS COVER.
  - BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
  - AT A MINIMUM 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.
  - IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

**PERMANENT VEGETATION SEEDING RECOMMENDATIONS**

USE	MIXTURE	SPECIES	LBS./ACRE	LBS./1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP	2	0.05
TOTAL		42	0.95	
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP	2	0.05
TOTAL		42	0.95	
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY RECREATION SITES	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP	2	0.05
TOTAL		42	0.95	
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL ESSENTIAL FOR GOOD TURF)	F	CREeping RED FESCUE	50	1.15
		KENTUCKY BLUEGRASS	50	1.15
		TOTAL	100	2.30

- SOURCES:**
- NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLES 4-2 AND 4-3
  - MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)

**TEMPORARY VEGETATION:**

- SPECIFICATIONS:**
- SITE PREPARATION:**
- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
  - GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
  - RUNOFF SHOULD BE DIVERTED FROM THE SEEDBED AREA.
  - ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHOULD INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

- SEEDBED PREPARATION:**
- STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
  - WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
  - IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
  - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:
    - LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)\*
    - \*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE
    - FERTILIZER APPLICATION RATE = 600 LB./ACRE (13.8 LB./1,000-SF)\*
    - \*LOW PHOSPHATE FERTILIZER (N-P205-K20) OR EQUIVALENT
  - FERTILIZER SHOULD BE RESTRICTED TO LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 AND 250-FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25-FEET OF A SURFACE WATER BODY. THESE ARE THE REQUIREMENTS FOR ANY WATER BODY PROTECTED BY THE COMPREHENSIVE SHORELAND PROTECTION ACT.

- SEEDING:**
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER TYPE SEEDER OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
  - TEMPORARY SEED SHOULD TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.
  - AREAS SEEDED BETWEEN MAY 15 AND AUGUST 15 SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL. 3.
  - VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.

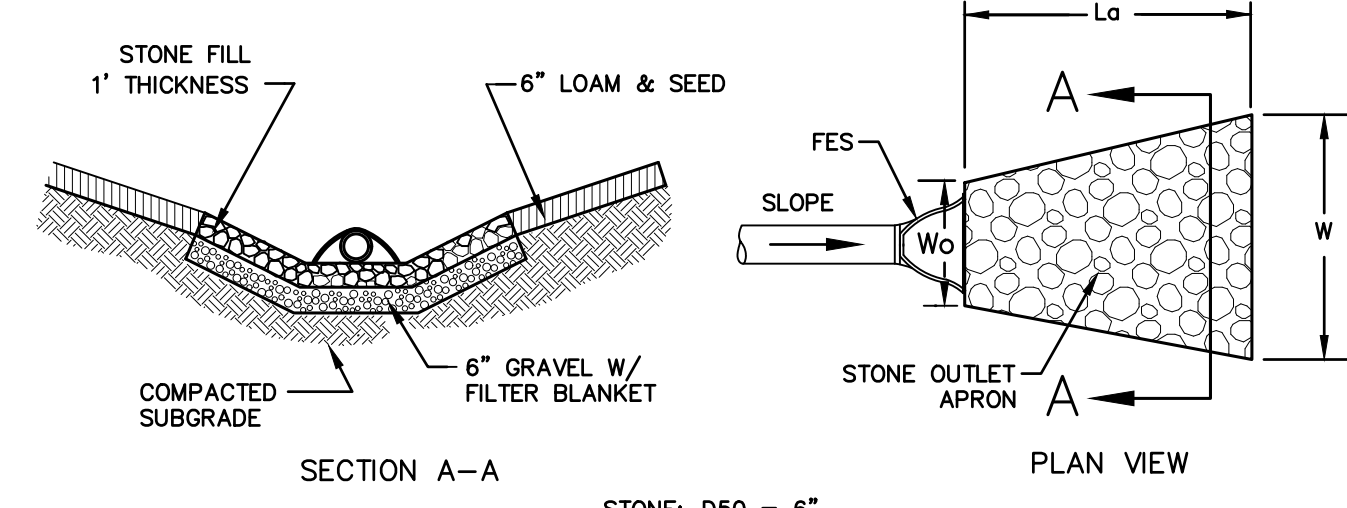
- MAINTENANCE REQUIREMENTS:**
- TEMPORARY SEEDED SHOULD BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHOULD BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
  - BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHOULD BE IMPLEMENTED.
  - IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

**TEMPORARY VEGETATION SEEDING RECOMMENDATIONS**

SPECIES	PER ACRE BUSHELS (BU) OR POUNDS (LBS.)	PER 1,000-SF	REMARKS
WINTER RYE	2.5 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU OR 80 LBS.	2.0 LBS.	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40 LBS.	1.0 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30 LBS.	0.7 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.

**SOURCES:**

- NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1
- MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)



STONE: D50 = 6" WELL GRADED WITH SUFFICIENT SAND AND GRAVEL TO FILL THE VOIDS

THE HEIGHT OF THE STRUCTURAL LINING ALONG THE CHANNEL SIDES SHALL BEGIN AT THE ELEVATION EQUAL TO THE TOP OF THE CONDUIT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.

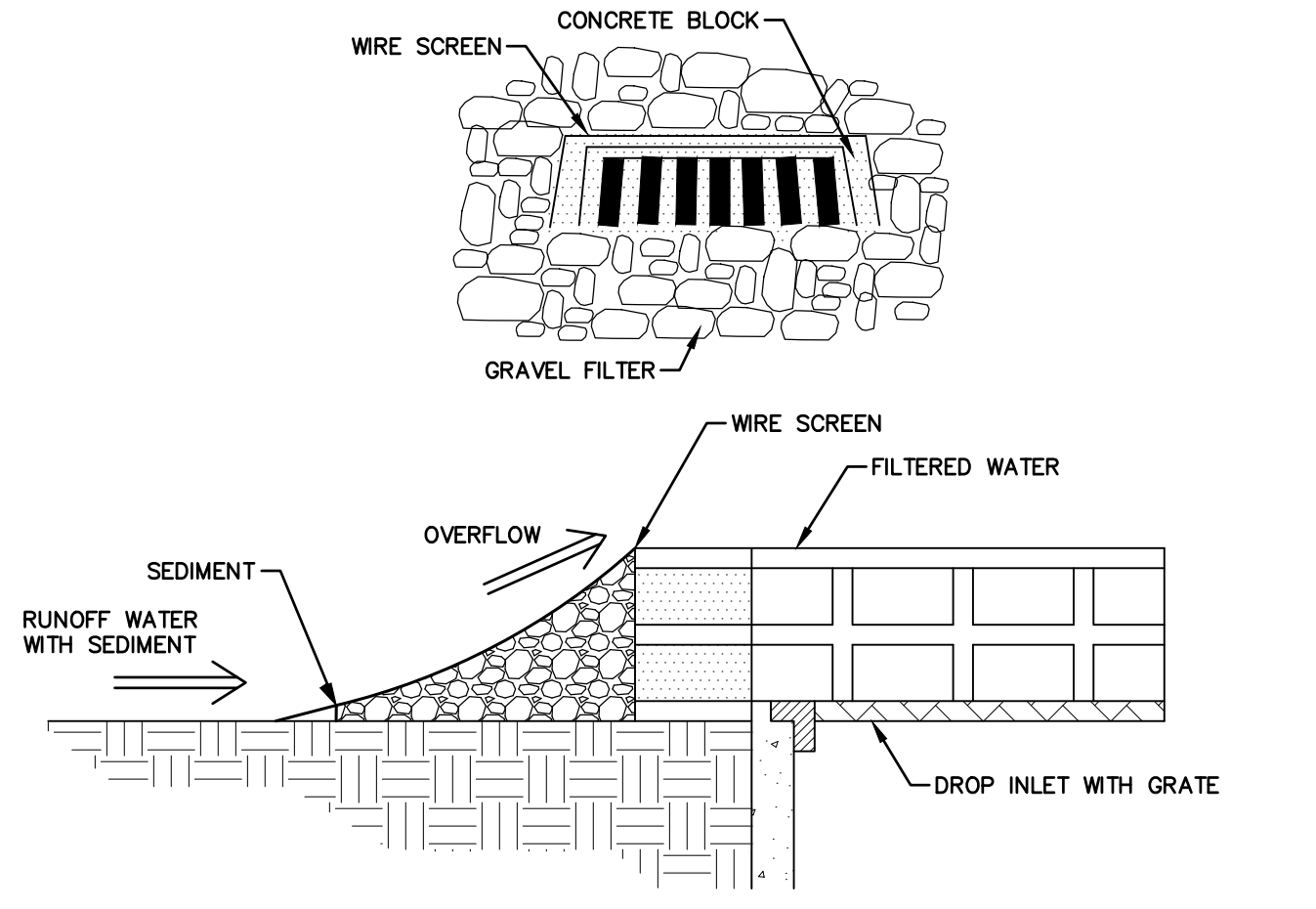
- NOTES:**
- ALL PIPE CULVERTS SHALL HAVE END SECTIONS OR HEADWALLS. END SECTION MATERIAL AND MANUFACTURER SHALL MATCH THAT OF THE PIPE CULVERT.
  - THE LARGEST RIP-RAP SIZE DETERMINED DURING HYDROLOGIC ANALYSIS HAS BEEN USED FOR ALL OUTLETS FOR ECONOMY AND SIMPLICITY.
  - APRON LENGTHS, WIDTHS AND THICKNESSES HAVE BEEN ROUNDED UP TO WHOLE NUMBERS FOR EASE OF CONSTRUCTION.

- CONSTRUCTION SPECIFICATIONS:**
- PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES SHOWN ON THE PLANS.
  - MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC REQUIRED UNDER ALL ROCK RIP-RAP.
  - THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
  - GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
  - STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
  - RIP-RAP SIZE CHOSEN FOR THE WORST CASE OF ALL OUTLETS. ALL RIP-RAP USED FOR PIPE OUTLET PROTECTION WILL HAVE THE SAME GRADATION AND THICKNESS.

- MAINTENANCE NOTES:**
- OUTLETS SHALL BE INSPECTED AND CLEANED ANNUALLY AND AFTER ANY MAJOR STORM EVENT. ANY EROSION OR DAMAGE TO THE RIP-RAP SHALL BE REPAIRED IMMEDIATELY.
  - THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.
  - THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

**RIP RAP APRON OUTLET PROTECTION**

NOT TO SCALE



**BLOCK AND GRAVEL INLET SEDIMENT FILTER**

NOT TO SCALE

- CONSTRUCTION SPECIFICATIONS:**
- PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDE IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4-INCH, 8-INCH AND 12-INCH WIDE BLOCKS. THE BARRIER OF BLOCKS SHALL BE AT LEAST 12 INCHES HIGH AND NO GREATER THAN 24 INCHES HIGH.
  - WIRE MESH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED.
  - STONE SHALL BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER, AS SHOWN ABOVE. STONE GRADATION SHALL BE WELL GRADED WITH THE MAXIMUM STONE SIZE OF 6 INCHES AND MINIMUM STONE SIZE OF 1 INCH.
  - IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND REPLACED.

- MAINTENANCE NOTES:**
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
  - SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
  - STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

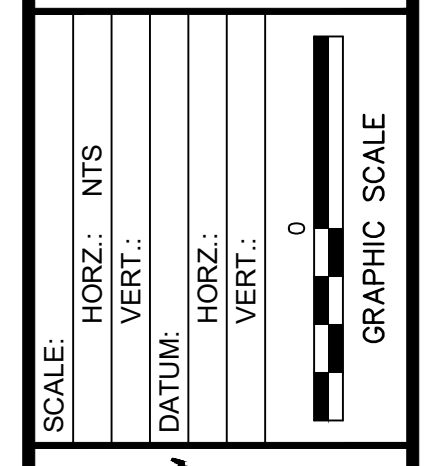
**SEDIMENTATION CONTROL AT CATCH BASINS**

NOT TO SCALE

**EROSION CONTROL - BLANKET SLOPE PROTECTION**

NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



**FUSS & O'NEILL**

REGISTERED PROFESSIONAL ENGINEER

UPPER SQUARE BUSINESS CENTER  
5 FLETCHER STREET, SUITE 1  
KENNEBUNK, MAINE 04043  
207.563.0669  
www.fandoo.com

CATE STREET DEVELOPMENT, LLC

DETAILS

CATE STREET

PORTSMOUTH

NEW HAMPSHIRE

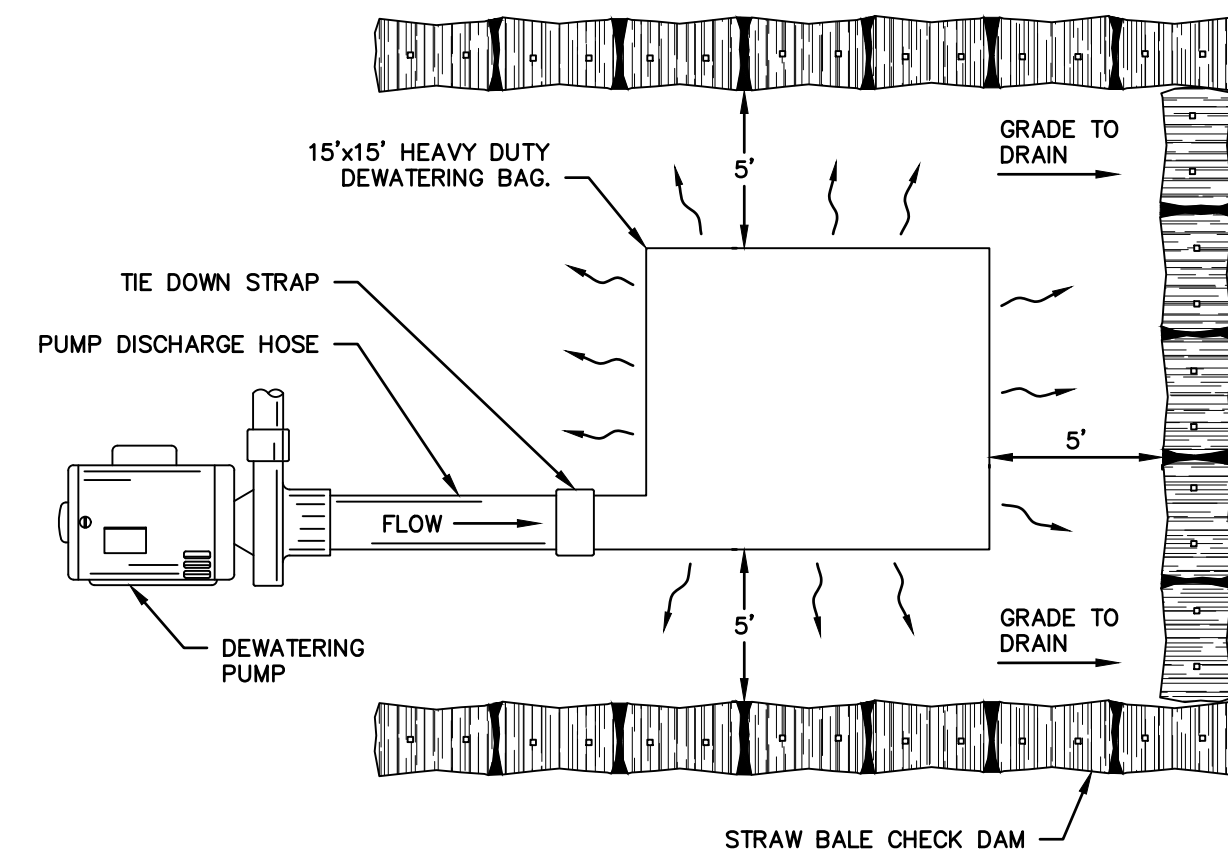
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DATE: 07/17/2019

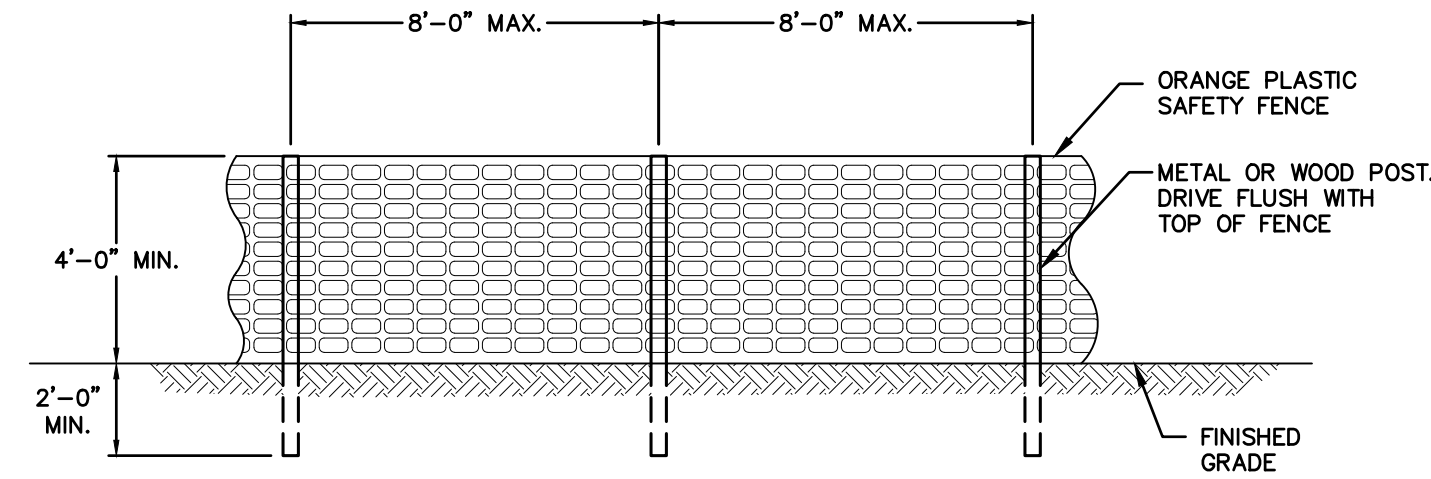
CD-561

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MIS VIEW:

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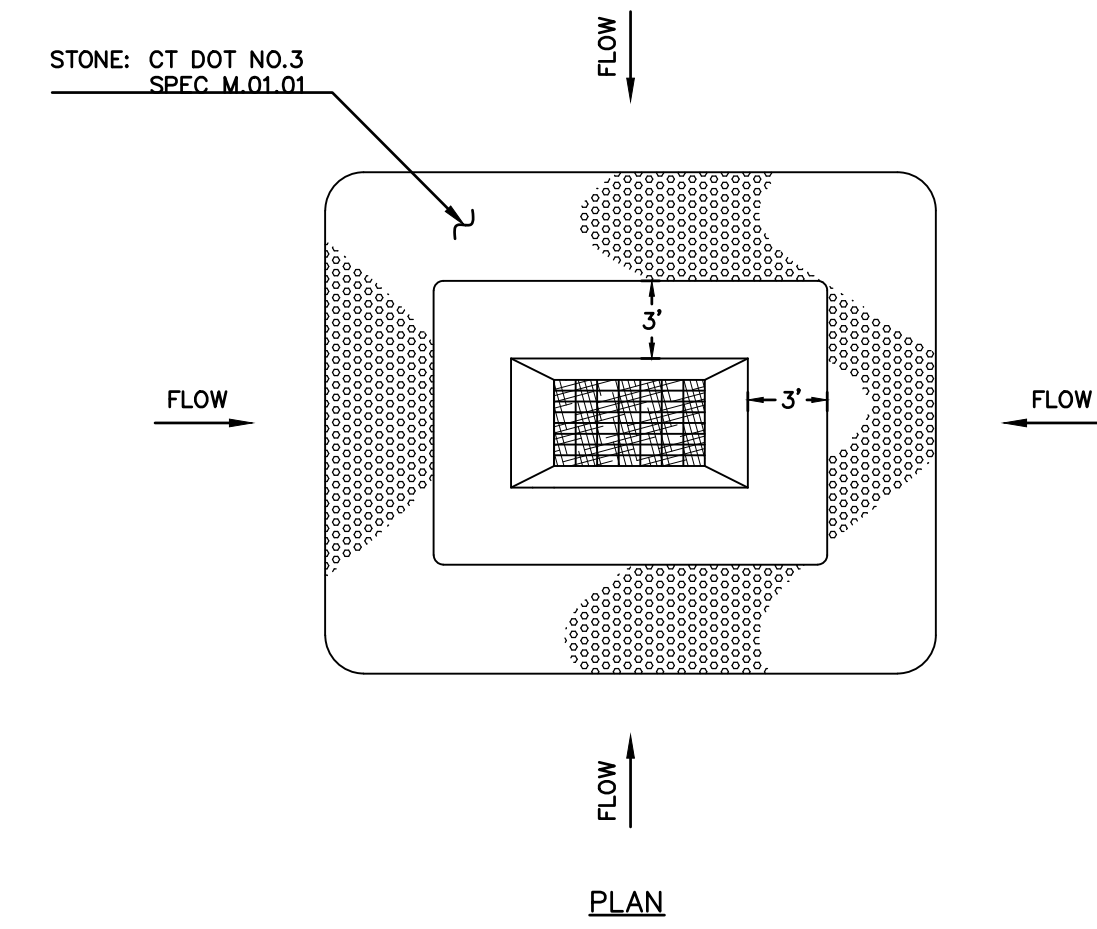


**DEWATERING BAG**  
 NOT TO SCALE

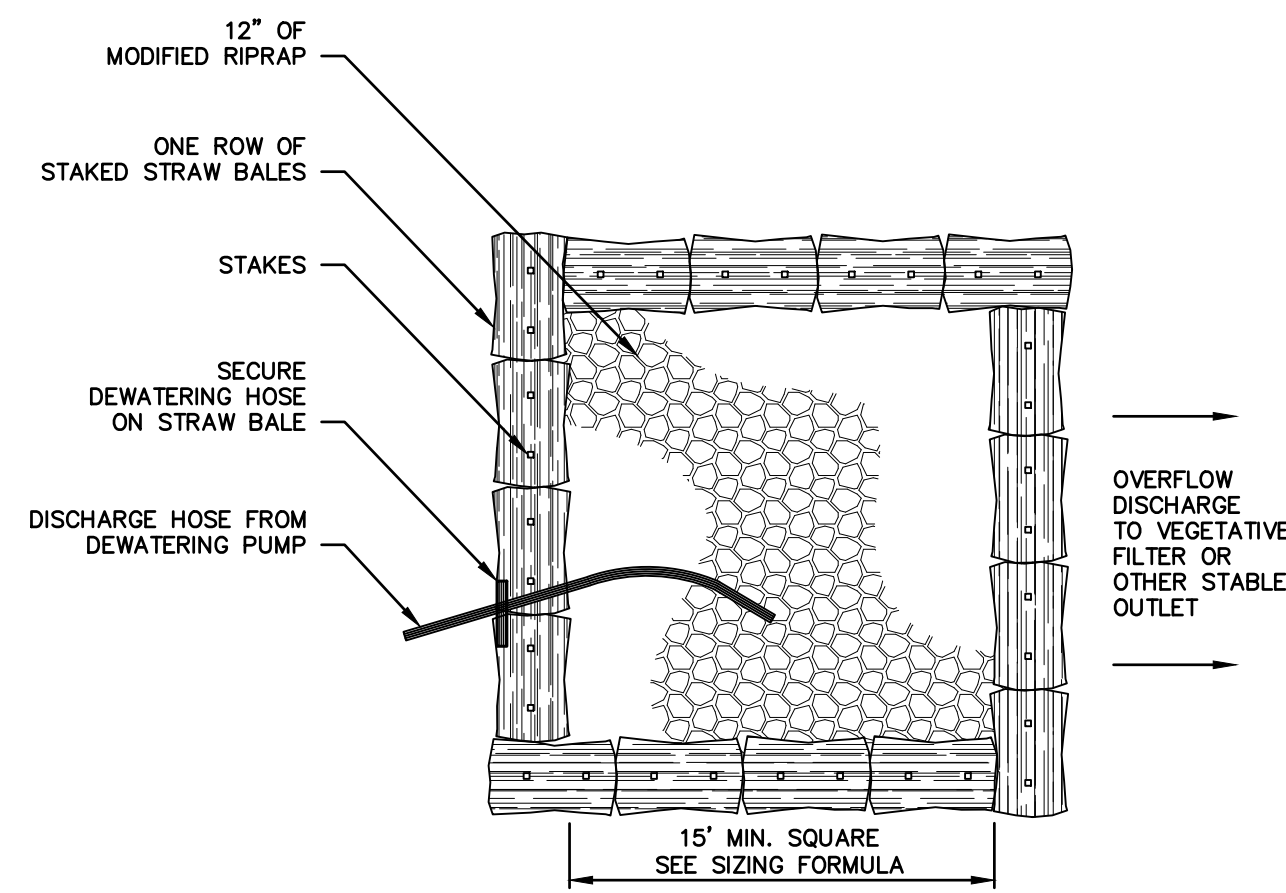


FOR TREE PROTECTION FENCE SHALL BE PLACED AT DRIPLINE OF TREES.

**PROTECTIVE SAFETY FENCE**  
 SCALE: N.T.S.



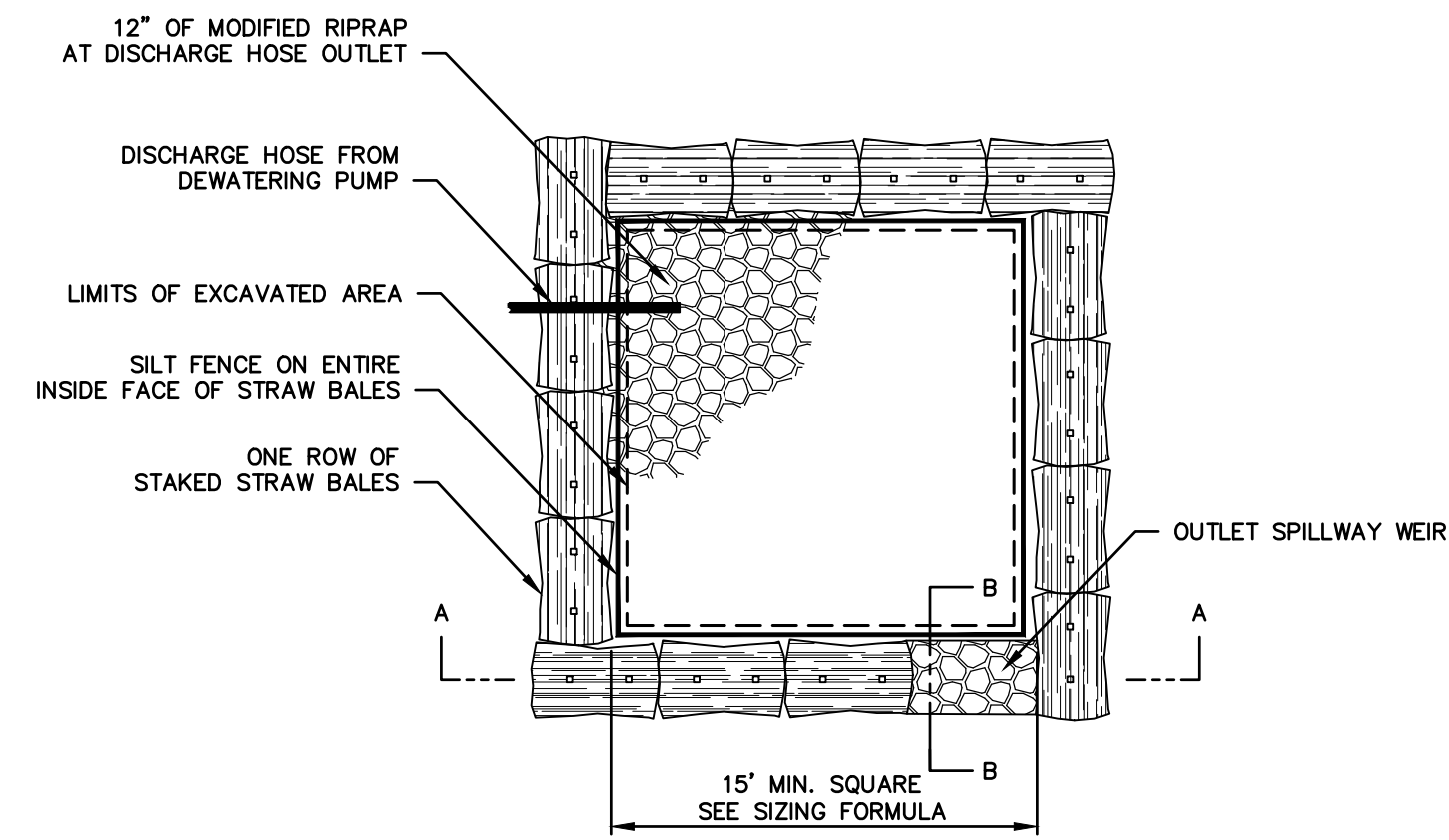
**LOW POINT STONE CHECK DAM**  
 NOT TO SCALE



**SIZING FORMULA:**  
 CUBIC FT. OF REQUIRED STORAGE = PUMP DISCHARGE RATE (GPM) x 16

PLAN

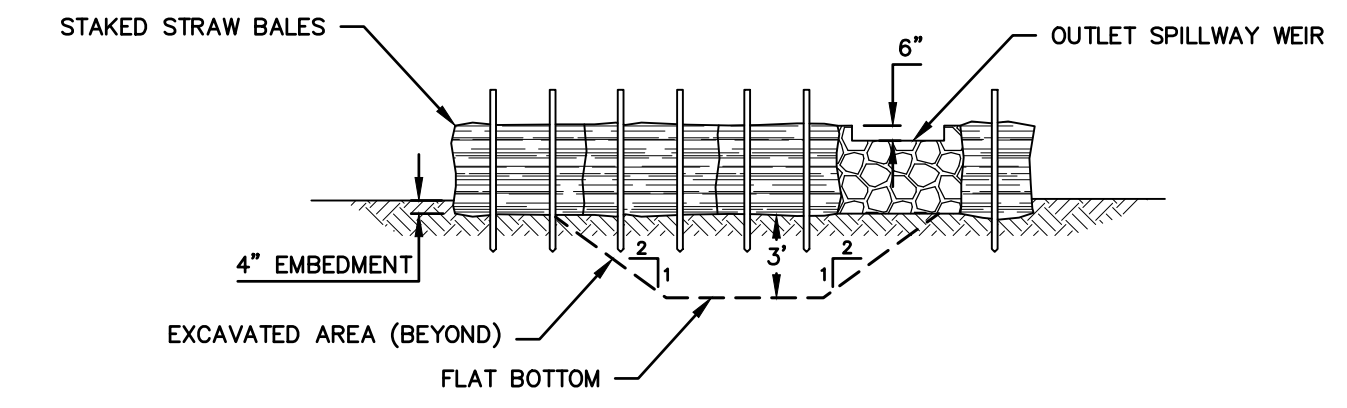
**PUMP SETTLING BASIN TYPE I**  
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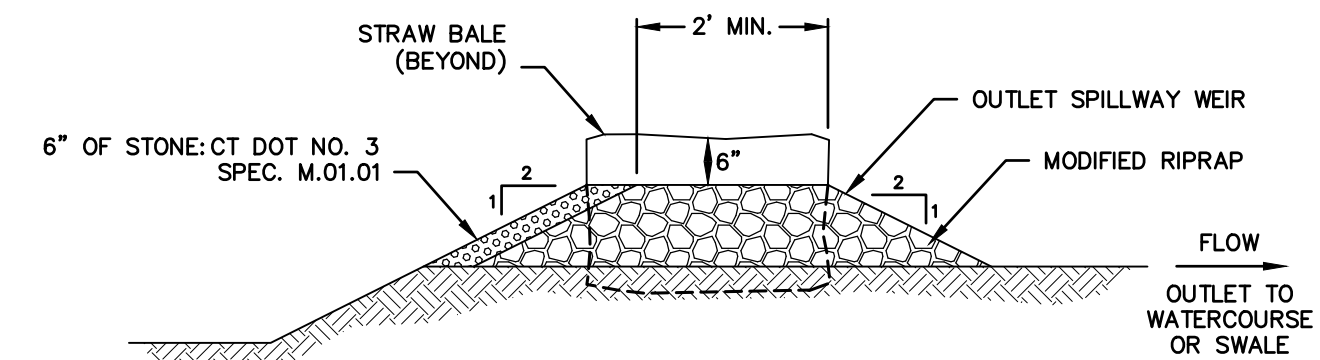
**SIZING FORMULA:**  
 CUBIC FT. OF REQUIRED STORAGE = PUMP DISCHARGE RATE (GPM) x 16

PLAN

**PUMP SETTLING BASIN TYPE II**  
 NOT TO SCALE

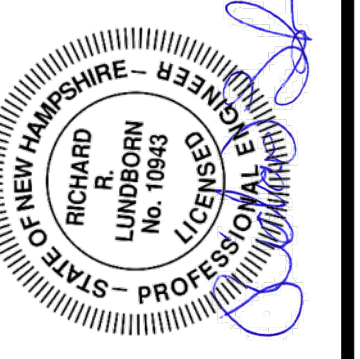


SECTION A-A



SECTION B-B

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
4.	7/17/2019	TAC SUBMITTAL	JVA/DAD RRL
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL



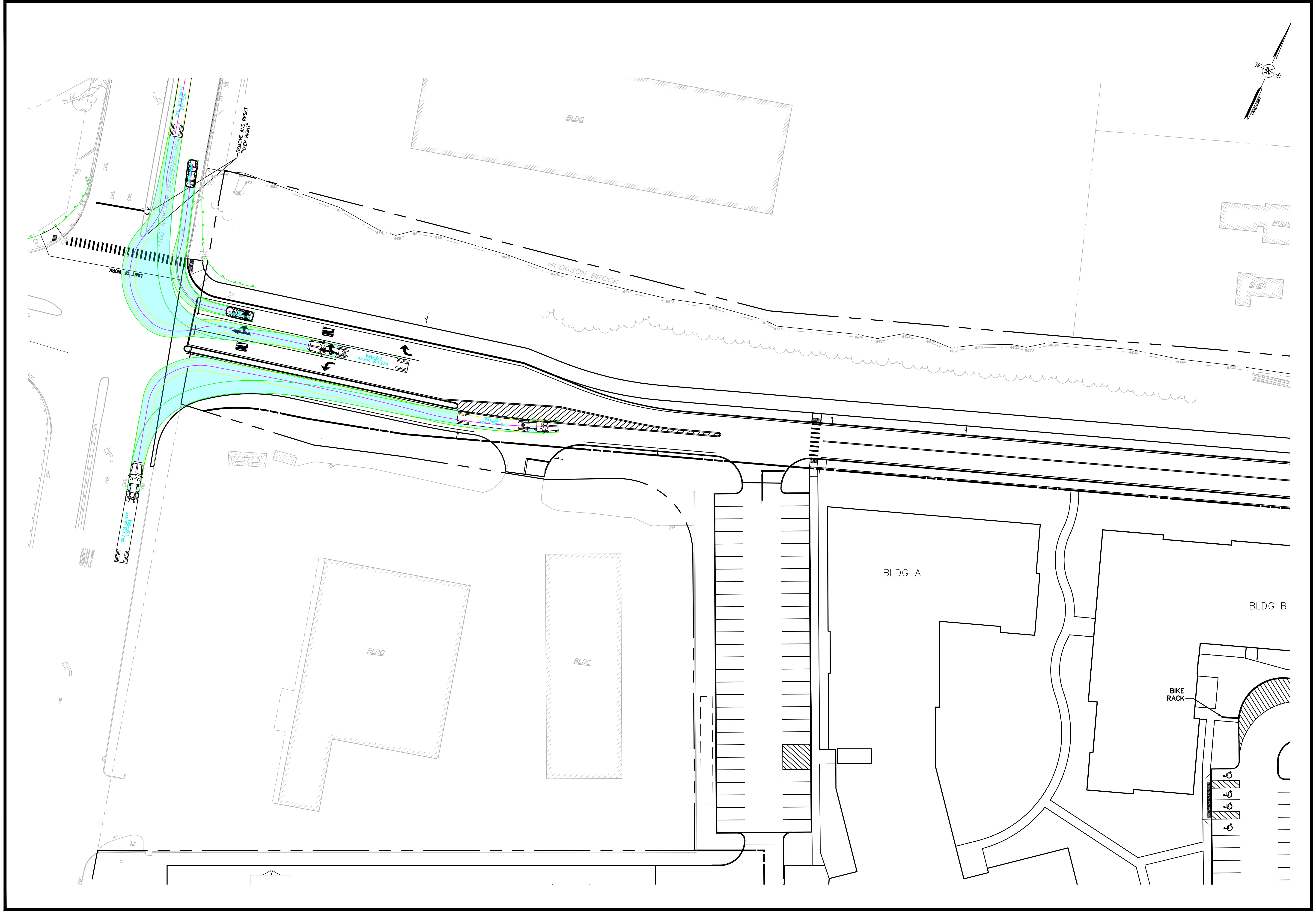
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	VERT.: NTS
DATUM:	
	HORIZ.: NTS
	VERT.: NTS

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CATE STREET DEVELOPMENT, LLC  
**EROSION CONTROL DETAILS**  
 CATE STREET  
 PORTSMOUTH NEW HAMPSHIRE

PROJ. No.: 20180317.A10  
 DATE: 07/17/2019

**CD-562**



<p><b>FUSS &amp; O'NEILL</b>          UPPER SQUARE BUSINESS CENTER          5 FLETCHER STREET, SUITE 1          KENNEBUNK, MAINE 04043          207.563.6609          www.fandoo.com</p>		<p>SCALE: HORZ.: 1"=30'          VERT.: 1"=30'          DATUM: NAD83          HORZ.: NAD83          VERT.: NGVD29</p> <p>GRAPHIC SCALE</p>	<p>PROJ. No.: 20180317.A10          DATE: 06/20/2019</p>
<p>CATE STREET DEVELOPMENT, LLC          WB-62 TRUCK          TURNING MOVEMENTS          CATE STREET/WEST END YARDS          PORTSMOUTH NEW HAMPSHIRE</p>			
<p>REGISTERED PROFESSIONAL ENGINEER          RICHARD R. LUNDORF          No. 10843          LICENSED IN THE STATE OF NEW HAMPSHIRE</p>		<p>1. DATE DESCRIPTION DESIGNER REVIEWER</p> <p>2. 5/20/2019 TAC SUBMITTAL JVA/DAD RRL</p> <p>3. 6/20/2019 TAC SUBMITTAL JVA/DAD RRL</p>	<p>CT-101</p>

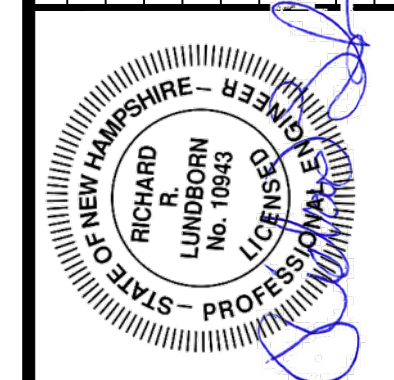


**CT-102**

CATE STREET DEVELOPMENT, LLC  
**WB-62 TRUCK  
 TURNING MOVEMENTS**  
 CATE STREET/WEST END YARDS  
 PORTSMOUTH NEW HAMPSHIRE

**FUSS & O'NEILL**  
 UPPER SQUARE BUSINESS CENTER  
 5 FLETCHER STREET, SUITE 1  
 KENNEBUNK, MAINE 04043  
 207.563.6609  
 www.fandoo.com

SCALE: HORIZ.: 1"=20'  
 VERT.: 1"=20'  
 DATUM: NAD83  
 VERT.: NGVD29  
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 GRAPHIC SCALE



No.	DATE	DESCRIPTION	DESIGNER REVIEWER
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD RRL
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD RRL
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD RRL

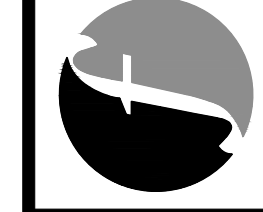




**CT-103**

PROJ. No.: 20180317.A10  
 DATE: 06/20/2019

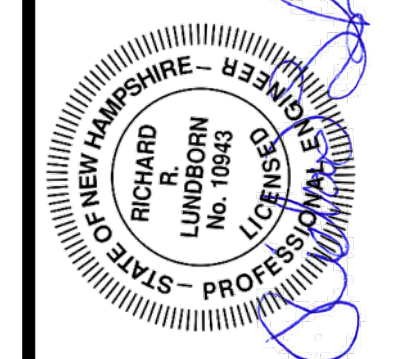
CATE STREET DEVELOPMENT, LLC  
**WB-62 TRUCK  
 TURNING MOVEMENTS**  
 CATE STREET/WEST END YARDS  
 PORTSMOUTH NEW HAMPSHIRE



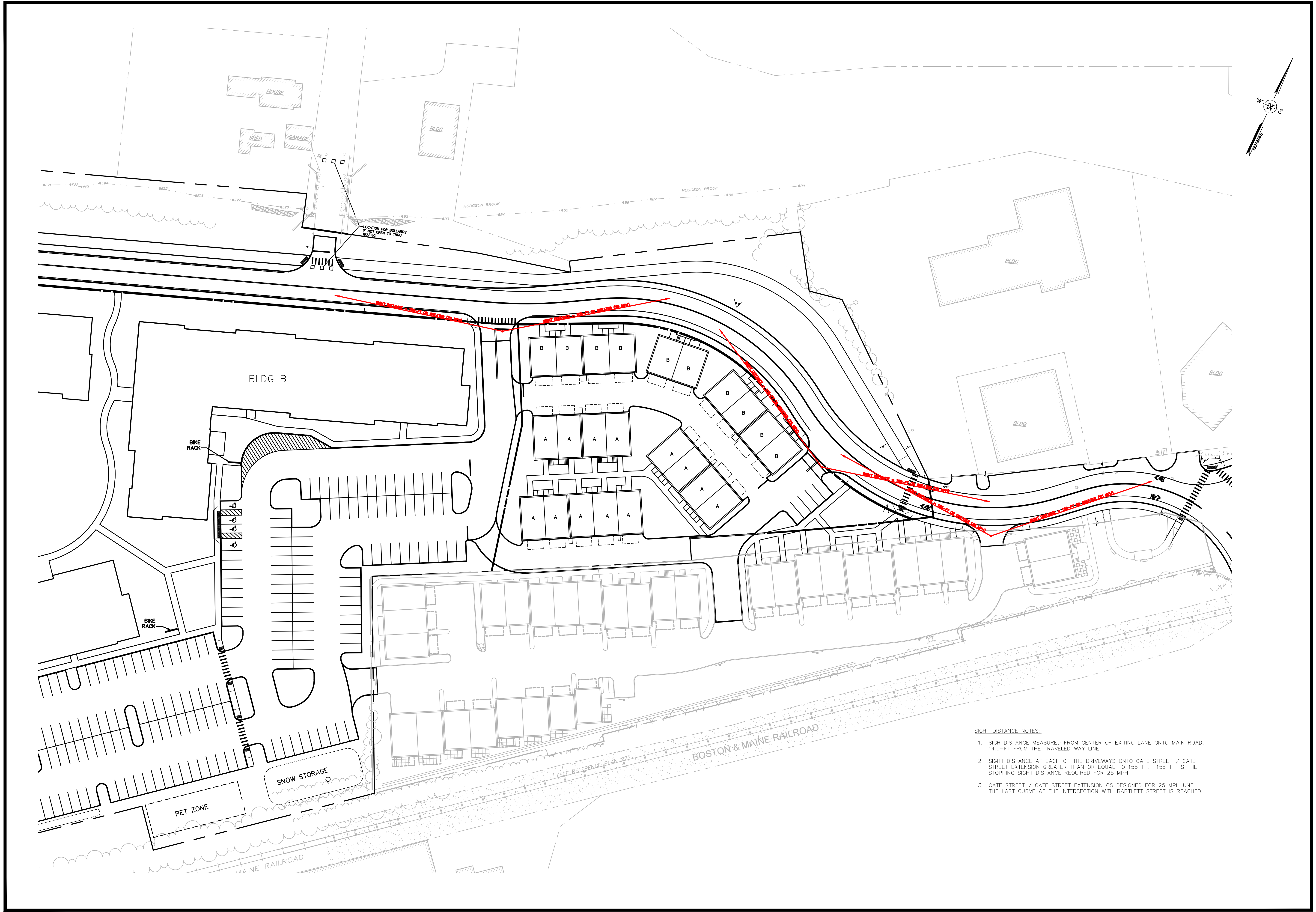
**FUSS & O'NEILL**  
 UPPER SQUARE BUSINESS CENTER  
 5 FLETCHER STREET, SUITE 1  
 KENNEBUNK, MAINE 04043  
 207.563.0609  
 www.fandoo.com

SCALE: HORZ.: 1"=20'  
 VERT.: 1"=20'  
 DATUM: HORZ.: NAD83  
 VERT.: NGVD29

GRAPHIC SCALE



No.	DATE	DESCRIPTION	DESIGNER REVIEWER
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



- SIGHT DISTANCE NOTES:**
1. SIGHT DISTANCE MEASURED FROM CENTER OF EXITING LANE ONTO MAIN ROAD, 14.5-FT FROM THE TRAVELED WAY LINE.
  2. SIGHT DISTANCE AT EACH OF THE DRIVEWAYS ONTO CATE STREET / CATE STREET EXTENSION GREATER THAN OR EQUAL TO 155-FT. 155-FT IS THE STOPPING SIGHT DISTANCE REQUIRED FOR 25 MPH.
  3. CATE STREET / CATE STREET EXTENSION OS DESIGNED FOR 25 MPH UNTIL THE LAST CURVE AT THE INTERSECTION WITH BARTLETT STREET IS REACHED.

CATE STREET DEVELOPMENT, LLC  
**SIGHT DISTANCE**  
 CATE STREET/ WEST END YARDS  
 PORTSMOUTH NEW HAMPSHIRE

**FUSS & O'NEILL**  
 UPPER SQUARE BUSINESS CENTER  
 5 FLETCHER STREET, SUITE 1  
 KENNEBUNK, MAINE 04043  
 207.563.6609  
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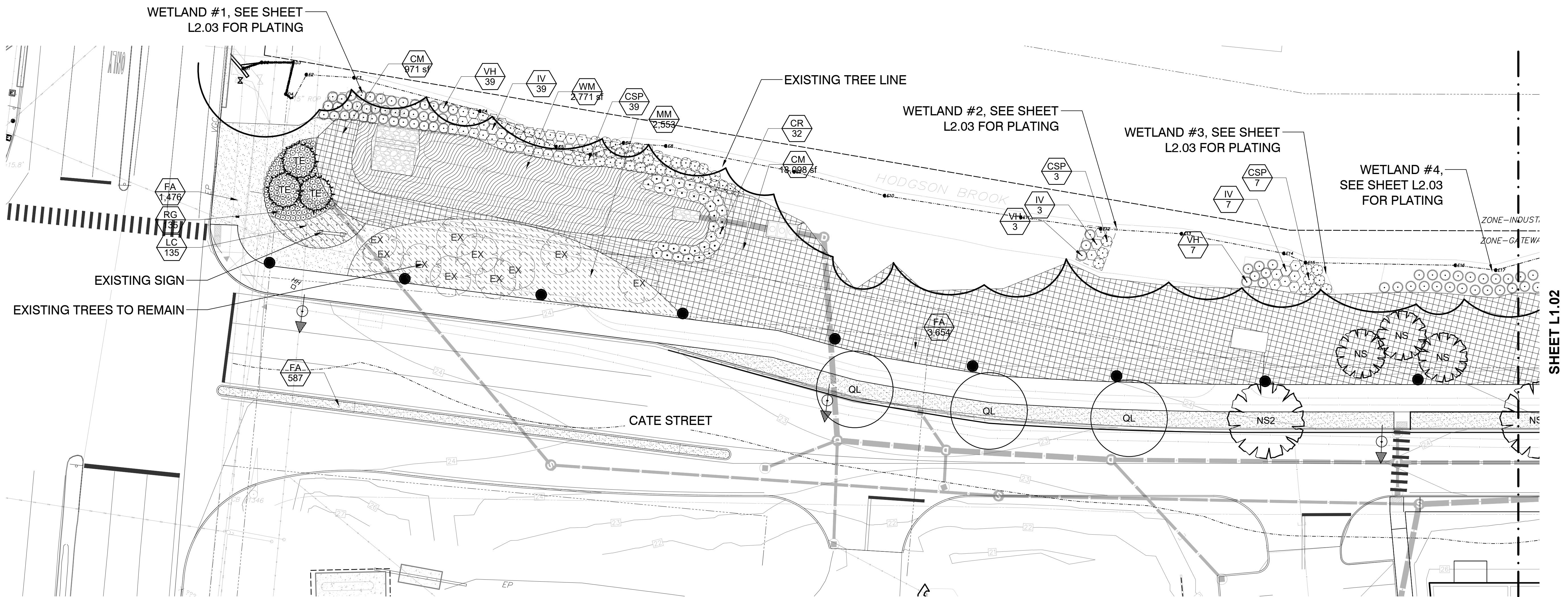
PROJ. No.: 20180317.A10  
 DATE: 06/20/2019

**CT-104**

SCALE: HORZ.: 1"=20'  
 VERT.: 1"=20'  
 DATUM: HORZ.: NAD83  
 VERT.: NGVD29  
 GRAPHIC SCALE

REGISTERED PROFESSIONAL ENGINEER  
 RICHARD R. LUNDORF  
 No. 10843  
 LICENSED IN ME  
 STATE OF NEW HAMPSHIRE

No.	DATE	DESCRIPTION	DESIGNER REVIEWER
3.	6/20/2019	TAC SUBMITTAL	JVA/DAD
2.	5/20/2019	TAC SUBMITTAL	JVA/DAD
1.	3/18/2019	TAC SUBMITTAL	JVA/DAD



SHEET L1.02

**CATE STREET**  
PREPARED FOR  
**CATE STREET DEVELOPMENT LLC**

PLANT SCHEDULE CATE STREET						
TREES	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	SPACING	REMARKS
AR	12	Acer rubrum / Red Maple	8 - 10' HT, #10		As Shown	
BN	3	Betula nigra / River Birch Multi-Trunk	2.5" cal.			
NS	6	Nyssa sylvatica / Sour Gum	1.5" cal.	B & B		
NSZ	9	Nyssa sylvatica / Sour Gum	3" cal.	B & B		
QL	12	Quercus robur x bicolor "Long" / Regal Prince Oak	3" cal.	B & B		
TE	5	Thuja occidentalis "Emerald" / Emerald Arborvitae	6' min.	B & B	6' hgt.	
SHRUBS	QTY	BOTANICAL / COMMON NAME	CONTAINER	MIN. SIZE	SPACING	REMARKS
CA	38	Clethra alnifolia / Summersweet Clethra	1 gal		36" o.c.	
CR	73	Cornus sericea / Red Twig Dogwood	1 gal		48" o.c.	
CS	83	Clethra alnifolia "Ruby Spice" / Ruby Spice Clethra	3 gal		3' o.c.	
CSP	81	Clethra alnifolia / Sweet Pepper Clethra	3 gal		4' o.c.	
HA	86	Hydrangea arborescens / Wild Hydrangea	3 gal		4' o.c.	
IG	68	Ilex glabra / Inkberry Holly	3 gal		3' o.c.	
IV	81	Ilex verticillata / Winterberry	2 gal.		4' o.c.	
IW	87	Ilex verticillata / Winterberry	1 gal		42" o.c.	
MP	34	Myrica pensylvanica / Northern Bayberry	3 gal		36" o.c.	
RG	135	Rhus aromatica "Gro-Low" / Gro-Low Fragrant Sumac	3 gal.		24" o.c.	
VH	135	Vaccinium corymbosum / Highbush Blueberry	2 gal.		4' o.c.	
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONTAINER	MIN. SIZE	SPACING	REMARKS
CM	30,225 sf	Conservation Seed Mix / Conservation Seed	SF			Hydroseed
FA	9,912	Festuca arundinacea / Tall Fescue Seed Mix	SF			
LC	135	Liriope spicata / Creeping Lily Turf	1 gal.		18" o.c.	
MM	2,553	Mulch / Hardwood Mulch	SF		12" o.c.	
WM	4,712 sf	Wetland Seed Mix / Wetland Seed	SF			Hydroseed

NOTE: REFER TO SHEET L2.03 FOR INFORMATION REGARDING THE INVASIVE SPECIES REMOVAL.

SHEET STATUS

MARK	DATE	BY	RELEASE
A	03/18/2019	SS	TAC SUBMITTAL
B	05/20/2019	SS	TAC RE-SUBMITTAL
C	06/20/2019	SS	TAC RE-SUBMITTAL

SHEET TITLE:

**LANDSCAPE PLAN**

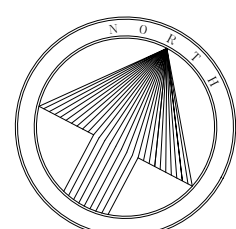
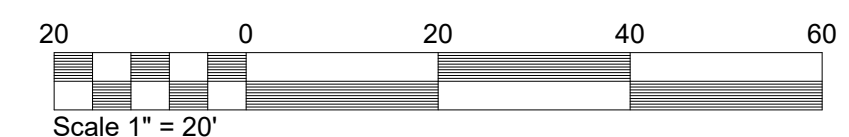
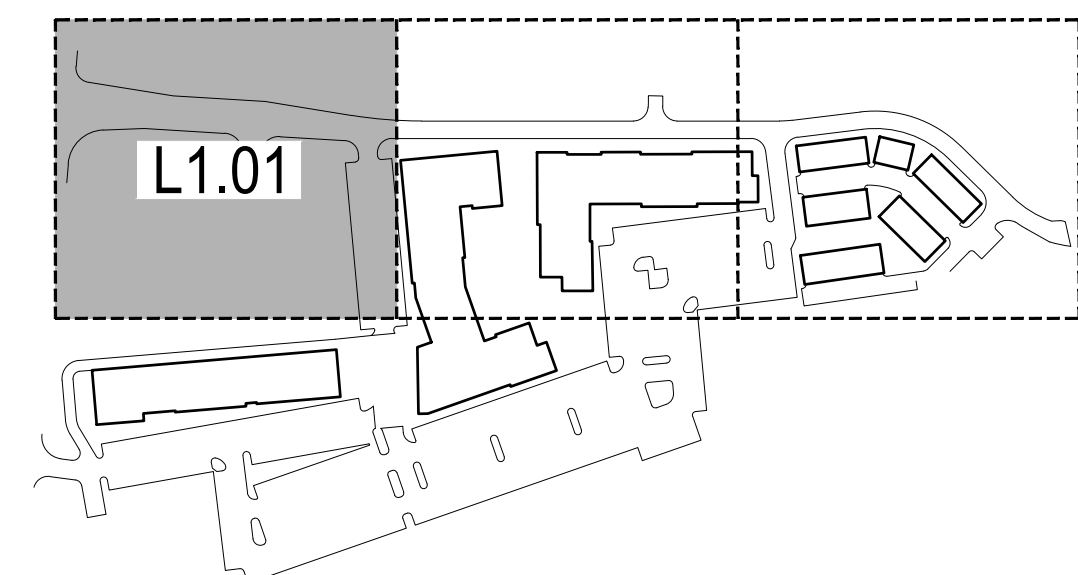
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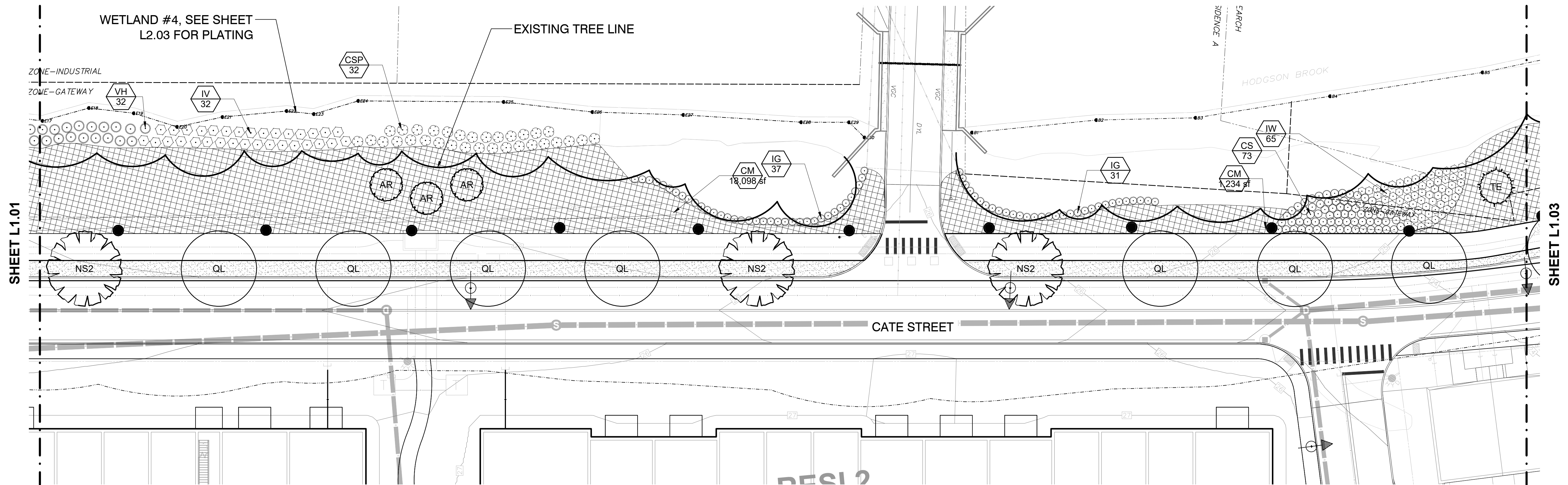
18041.00

**L1.01**

DATE: 03.18.2019

PERMIT ISSUE





NOTE: FOR AREA OF INVASIVE SPECIES REMOVAL,  
SEE DETAIL SHEET L2.03 FOR PLANT LIST

PLANT SCHEDULE CATE STREET						
TREES	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	SPACING	REMARKS
AR	12	Acer rubrum / Red Maple	8 - 10' HT, #10		As Shown	
BN	3	Betula nigra / River Birch Multi-Trunk	2.5" cal.			
NS	6	Nyssa sylvatica / Sour Gum	1.5" cal.	B & B		
NS2	9	Nyssa sylvatica / Sour Gum	3" cal.	B & B		
QL	12	Quercus robur x bicolor "Long" / Regal Prince Oak	3" cal.	B & B		
TE	5	Thuja occidentalis "Emerald" / Emerald Arborvitae	6' min.	B & B	6' hgt.	
SHRUBS	QTY	BOTANICAL / COMMON NAME	CONTAINER	MIN. SIZE	SPACING	REMARKS
CA	38	Clethra alnifolia / Summersweet Clethra	1 gal		36" o.c.	
CR	73	Cornus sericea / Red Twig Dogwood	1 gal		48" o.c.	
CS	83	Clethra alnifolia "Ruby Spice" / Ruby Spice Clethra	3 gal		3' o.c.	
CSP	81	Clethra alnifolia / Sweet Pepper Clethra	3 gal		4' o.c.	
HA	86	Hydrangea arborescens / Wild Hydrangea	3 gal		4' o.c.	
IG	68	Ilex glabra / Inkberry Holly	3 gal		3' o.c.	
IV	81	Ilex verticillata / Winterberry	2 gal.		4' o.c.	
IW	87	Ilex verticillata / Winterberry	1 gal		42" o.c.	
MP	34	Myrica pensylvanica / Northern Bayberry	3 gal		36" o.c.	
RG	135	Rhus aromatica "Gro-Low" / Gro-Low Fragrant Sumac	3 gal.		24" o.c.	
VH	135	Vaccinium corymbosum / Highbush Blueberry	2 gal.		4' o.c.	
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONTAINER	MIN. SIZE	SPACING	REMARKS
CM	30,225 sf	Conservation Seed Mix / Conservation Seed	SF			Hydroseed
FA	9,912	Festuca arundinacea / Tall Fescue Seed Mix	SF			
LC	135	Liriope spicata / Creeping Lily Turf	1 gal.		18" o.c.	
MM	2,553	Mulch / Hardwood Mulch	SF		12" o.c.	
IWM	4,712 sf	Wetland Seed Mix / Wetland Seed	SF			Hydroseed

**CATE STREET**  
PREPARED FOR  
**CATE STREET DEVELOPMENT LLC**

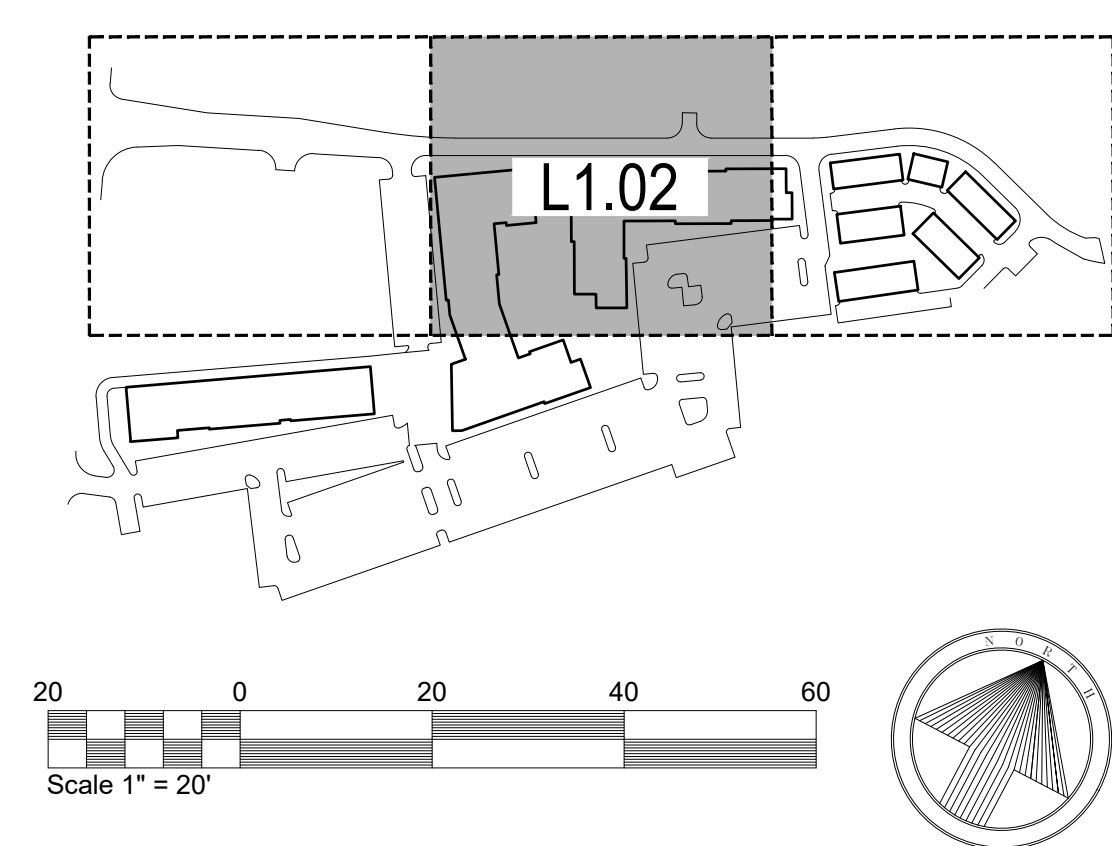
SHEET STATUS			
MARK	DATE	BY	RELEASE
A	03/18/2019	SS	TAC SUBMITTAL
B	05/20/2019	SS	TAC RE-SUBMITTAL
C	06/20/2019	SS	TAC RE-SUBMITTAL

SHEET TITLE:  
**LANDSCAPE PLAN**

PROJECT NUMBER:  
**18041.00**

**L1.02**

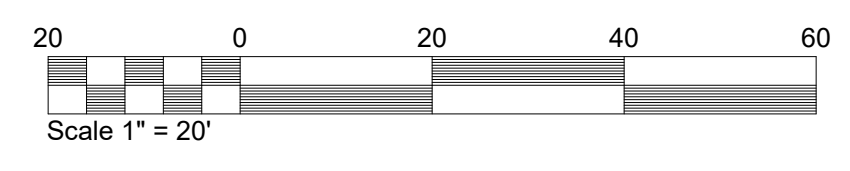
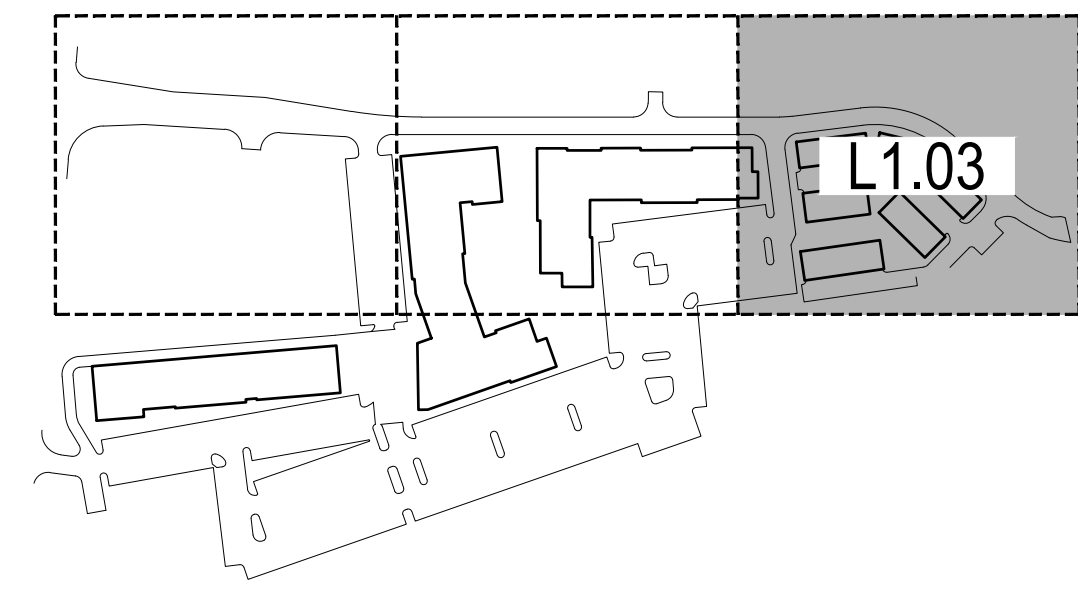
DATE: 03.18.2019  
PERMIT ISSUE



SHEET L1.02



PLANT SCHEDULE CATE STREET						
TREES	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	SPACING	REMARKS
AR	12	Acer rubrum / Red Maple	8 - 10' HT, #10		As Shown	
BN	3	Betula nigra / River Birch Multi-Trunk	2.5" cal.			
NS	6	Nyssa sylvatica / Sour Gum	1.5" cal.	B & B		
NS2	9	Nyssa sylvatica / Sour Gum	3" cal.	B & B		
QL	12	Quercus robur x bicolor "Long" / Regal Prince Oak	3" cal.	B & B		
TE	5	Thuja occidentalis "Emerald" / Emerald Arborvitae	6' min.	B & B	6' hgt.	
SHRUBS	QTY	BOTANICAL / COMMON NAME	CONTAINER	MIN. SIZE	SPACING	REMARKS
CA	38	Clethra alnifolia / Summersweet Clethra	1 gal		36" o.c.	
CR	73	Cornus sericea / Red Twig Dogwood	1 gal		48" o.c.	
CS	83	Clethra alnifolia "Ruby Spice" / Ruby Spice Clethra	3 gal		3' o.c.	
CSP	81	Clethra alnifolia / Sweet Pepper Clethra	3 gal		4' o.c.	
HA	86	Hydrangea arborescens / Wild Hydrangea	3 gal		4' o.c.	
IG	68	Ilex glabra / Inkberry Holly	3 gal		3' o.c.	
IV	81	Ilex verticillata / Winterberry	2 gal.		4' o.c.	
IW	87	Ilex verticillata / Winterberry	1 gal		42" o.c.	
MP	34	Myrica pensylvanica / Northern Bayberry	3 gal		36" o.c.	
RG	135	Rhus aromatica "Gro-Low" / Gro-Low Fragrant Sumac	3 gal.		24" o.c.	
VH	135	Vaccinium corymbosum / Highbush Blueberry	2 gal.		4' o.c.	
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONTAINER	MIN. SIZE	SPACING	REMARKS
CM	30,225 sf	Conservation Seed Mix / Conservation Seed	SF			Hydroseed
FA	9,912	Festuca arundinacea / Tall Fescue Seed Mix	SF			
LC	135	Liriope spicata / Creeping Lily Turf	1 gal.		18" o.c.	
MM	2,553	Mulch / Hardwood Mulch	SF		12" o.c.	
WM	4,712 sf	Wetland Seed Mix / Wetland Seed	SF			Hydroseed



**SITE**  
solutions

LANDSCAPE ARCHITECTURE • LAND PLANNING  
3715 Northside Parkway T: 404.705.9411  
300 Northcreek, Bldg. 300 F: 404.705.9491  
Atlanta, Georgia 30327 www.sitesolutionsla.com

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PROFESSIONAL STAMP:

**CATE STREET**  
PREPARED FOR  
**CATE STREET DEVELOPMENT LLC**

SHEET STATUS

MARK	DATE	BY	RELEASE
A	03/18/2019	SS	TAC SUBMITTAL
B	05/20/2019	SS	TAC RE-SUBMITTAL
C	06/20/2019	SS	TAC RE-SUBMITTAL

SHEET TITLE:  
**STREAM BUFFER PLAN**

PROJECT NUMBER:  
**18041.00**

**L1.03**

DATE: 03.18.2019  
PERMIT ISSUE



**NEW ENGLAND WETLAND PLANTS, INC**

820 WEST STREET, AMHERST, MA 01002  
 PHONE: 413-548-8000 FAX 413-549-4000  
 EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

**New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites**

Botanical Name	Common Name	Indicator
<i>Elymus riparius</i>	Riverbank Wild Rye	FACW
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Andropogon gerardii</i>	Big Bluestem	FAC
<i>Panicum virgatum</i>	Switch Grass	FAC
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Agrostis perennans</i>	Upland Bentgrass	FACU
<i>Bidens cernua</i>	Nodding Bur Marigold	OBL
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL
<i>Eupatorium perfoliatum</i>	Boneset	FACW
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster	FACW-
<i>Scirpus cyperinus</i>	Wool Grass	FACW
<i>Juncus effusus</i>	Soft Rush	FACW+

PRICE PER LB. \$34.00 MIN. QUANTITY 3 LBS. TOTAL: \$102.00 APPLY: 35 LBS/ACRE :1250 sq ft/lb

The New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites contains a selection of native grasses and wildflowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. It is an appropriate seed mix for ecologically sensitive restorations that require stabilization as well as long-term establishment of native vegetation. This mix is particularly appropriate for detention basins that do not hold standing water. Many of the plants in this mix can tolerate infrequent inundation, but not constant flooding. The mix may be applied by hand, by mechanical spreader, or by hydro-seeder. After sowing, lightly rake, roll or cultipack to insure good seed-to-soil contact. Best results are obtained with a Spring or late Summer seeding. Late Fall and Winter dormant seeding requires an increase in the application rate. A light mulching of clean, weed-free straw is recommended.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.

**NEW ENGLAND WETLAND PLANTS, INC**

820 WEST STREET, AMHERST, MA 01002  
 PHONE: 413-548-8000 FAX 413-549-4000  
 EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

**New England Conservation/Wildlife Mix**

Botanical Name	Common Name	Indicator
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Andropogon gerardii</i>	Big Bluestem	FAC
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Panicum virgatum</i>	Switch Grass	FAC
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Desmodium paniculatum</i>	Panicledleaf Tick Trefoil	
<i>Verbena hastata</i>	Blue Vervain	FACW
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Helianthus autumnale</i>	Common Sneezeweed	FACW+
<i>Aster pilosus (Symphyotrichum pilosum)</i>	Heath Aster	UPL
<i>Solidago juncea</i>	Early Goldenrod	
<i>Agrostis perennans</i>	Upland Bentgrass	FACU

PRICE PER LB \$36.50 MIN. QUANTITY 2 LBS. TOTAL: \$73.00 APPLY: 25 LBS/ACRE :1750 sq ft/lb

The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes for both good erosion control and wildlife habitat value. The mix is designed to be a no maintenance seeding, and is appropriate for cut and fill slopes, detention basin side slopes, and disturbed areas adjacent to commercial and residential projects.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.

**RESTORATION SEQUENCE NOTES:**

- EROSION CONTROL WILL BE PLACED AROUND ALL JURISDICTIONAL WETLANDS PRIOR TO THE START OF WORK.
- INITIAL WORK FOR INVASIVE SPECIES REMOVAL WILL BE PERFORMED WITH GUIDANCE BY STAFF FROM GES INC.
- INVASIVE SPECIES REMOVAL WILL IDEALLY BE DONE ONCE THE VEGETATION IS MATURE DURING THE LATE SPRING OR EARLY SUMMER TO AID IN IDENTIFICATION. INVASIVE SPECIES VEGETATION WILL INITIALLY BE CUT AS NEEDED TO AVOID THE POTENTIAL SPREAD OF SEEDS. ANY MATERIAL IN "SEED" WILL BE BAGGED AND DISPOSED OF PROPERLY.
- ALL WORK WILL BE PERFORMED FROM THE UPPER AREA OF THE SITE BY LONG REACH EXCAVATORS. ANY SMALL-SCALE WORK WILL BE DONE BY HAND TO REDUCE BANK IMPACTS AND ELIMINATE ANY UNNEEDED WEEKENING OF THE STABILITY OF THE BANK. NO WORK WILL BE PERFORMED FROM WITHIN THE STREAM.
- EXCAVATION WORK WILL BEGIN BY REMOVING REMAINING ROOT MATERIAL AND "SEED BANK" FROM THE SLOPE AND ANY DEBRIS.
- ALL FILL MATERIAL, INCLUDING PAVEMENT, CINDER BLOCKS, CEMENT, TRASH, I.E. BUCKETS, COUCHES, APPLIANCES, EXERCISE EQUIPMENT, ETC., WILL BE REMOVED AND DISPOSED OF PROPERLY.
- ANY CULVERTS EXISTING IN THE BANK TO BE REMOVED WILL BE SAW CUT OR CRUSHED AND REMOVED. THE REMANING PORTIONS OF CULVERTS WILL BE LEFT IN PLACE AND WILL BE FILLED WITH CEMENT TO CLOSE THEM OFF. THIS WILL REDUCE THE ADDITIONAL BANK IMPACT RESULTING FROM THEIR REMOVAL ENTIRELY.
- ANY DEBRIS REMOVAL NEAR MATURE TREE ROOTS WILL BE PERFORMED BY HAND SHOVEL OR SMALL MACHINE TO REDUCE DAMAGE TO ROOT STRUCTURE.
- CLEAN TOP SOIL WILL BE ADDED TO AREAS OF REMOVED MATERIALS, INCLUDING CULVERT ENDS. THIS MATERIAL WILL BE LEVELED TO CREATE A SMOOTH BANK TO BE PLANTED.
- THE FOLLOWING SPECIES WILL BE PLANTED IN RANDOM SPACING AT THE SPECIFIED NUMBERS AND SPACING IN EACH RESTORATION AREA BELOW: HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM), WINTERBERRY (ILEX VERTICILATTA), SWEET PEPPER BUSH (CLETHERA ALNIFOLIA). ANY EXPOSED AREAS WILL BE SEEDED WITH AN EROSION CONTROL SEED MIX @ 35LBS/ACRE. THIS WORK WILL BE PERFORMED BY HAND TOOLS. ALL PLANTS ARE TO BE IN 1-2 GALLON POTS AS AVAILABLE AT THE TIME OF THE PLANTING. PLANTS WILL BE LAID OUT PER THE RESTORATION PLAN IN RANDOM ORDER. HOLES WILL BE DUG BY HAND FOR PLANTING. ONCE PLANTED THE HOLES WILL BE BROUGHT LEVEL WITH ADDITIONAL SOIL. THE ENTIRE EXPOSED SLOPES WILL BE SEEDED AS SPECIFIED AND WILL BE COVERED WITH JUTE MATTING AFTER TO ELIMINATE EROSION. SUPPLEMENTAL WATERING WILL OCCUR SHOULD THERE NOT BE SIGNIFICANT RAINFALL.

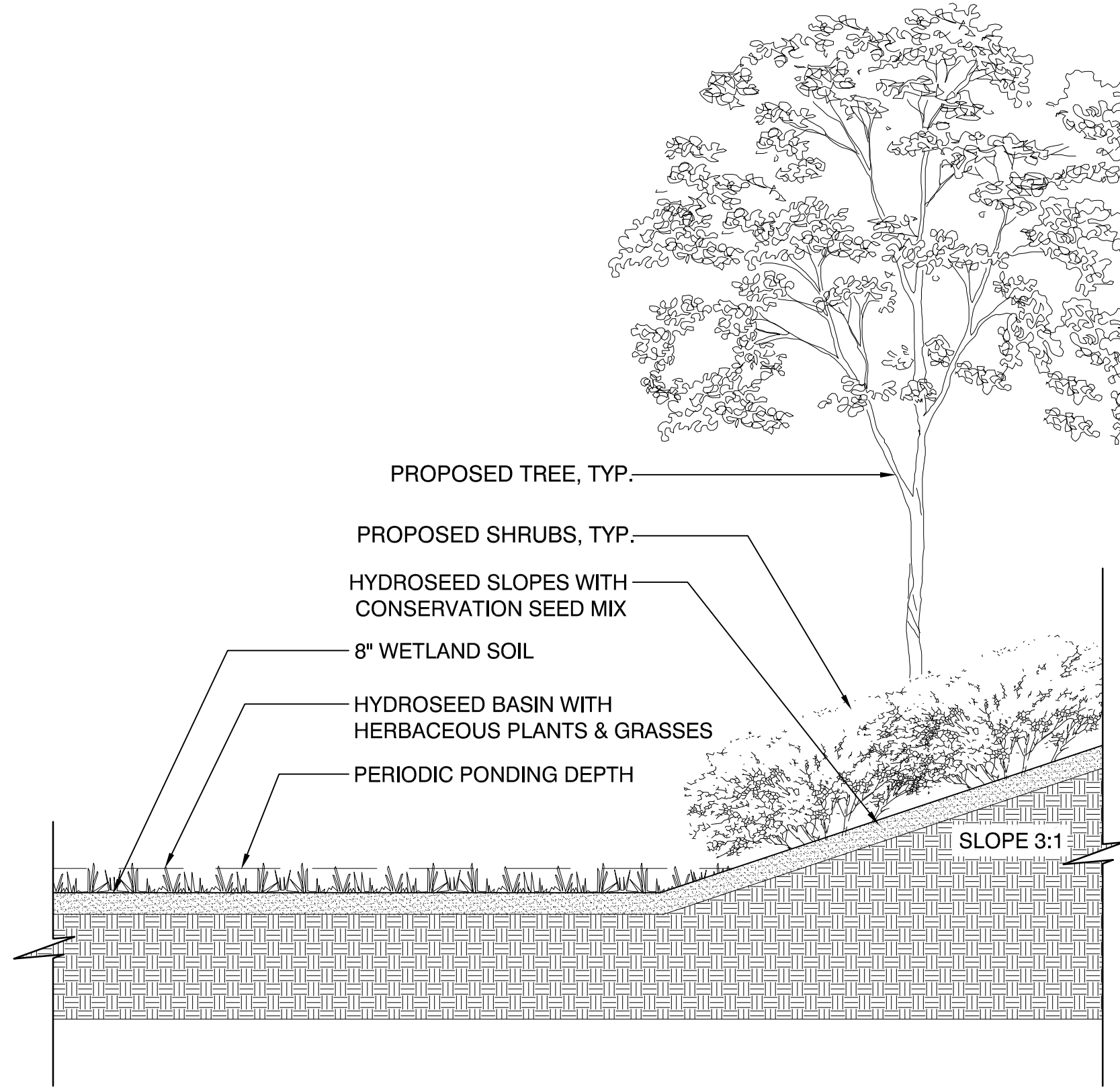
- IMPACT AREA 1 WILL HAVE 1,875 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH A TOTAL OF 117 PLANTS AT A SPACING OF 4' OC
  - 39- HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM),
  - 39- WINTERBERRY (ILEX VERTICILATTA)
  - 39- SWEET PEPPER BUSH (CLETHERA ALNIFOLIA),
- IMPACT AREA 2 WILL HAVE 148 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH A TOTAL OF 9 PLANTS AT A SPACING OF 4' OC
  - 3- HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM),
  - 3- WINTERBERRY (ILEX VERTICILATTA)
  - 3- SWEET PEPPER BUSH (CLETHERA ALNIFOLIA),
- IMPACT AREA 3 WILL HAVE 344 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH 21 TOTAL PLANTS AT 4' OC SPACING
  - 7- HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM),
  - 7- WINTERBERRY (ILEX VERTICILATTA)
  - 7- SWEET PEPPER BUSH (CLETHERA ALNIFOLIA),
- IMPACT AREA 4 WILL HAVE 3,412 SF OF DISTURBANCE. THIS WILL BE PLANTED WITH A TOTAL OF 96 PLANTS AT A SPACING OF 6' OC.
  - 32- HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM),
  - 32- WINTERBERRY (ILEX VERTICILATTA)
  - 32- SWEET PEPPER BUSH (CLETHERA ALNIFOLIA),
- MONITORING OF THE RESTORATION AREAS WILL BE DONE UNDER THE DIRECTION OF THE NHDES WETLANDS BUREAU, AS THESE AREAS FALL UNDER THEIR JURISDICTION.

**1 SPEC: WETLAND SEED MIX**

N.T.S.

**2 SPEC: CONSERVATION SEED MIX**

N.T.S.



**3 DETAIL: WATER CONSERVATION POND**

1/4" = 1'-0"

**City of Portsmouth Tree Planting Requirements**

The base of the City of Portsmouth Tree Planting Requirements is the *ANSI A300 Part 6 Standard Practices for Planting and Transplanting*. ANSI A300 Part 6 lays out terms and basic standards as set forth by industry but it is NOT the "end all" for the City of Portsmouth. The following are the City of Portsmouth, NH Tree Planting Requirements that are in addition to or that go beyond the ANSI A300 Part 6.

- All planting holes shall be dug by hand- **NO MACHINES**. The only exceptions are new construction where new planting pits, planting beds with granite curbing, and planting sites with Silva Cells are being created. If a machine is used to dig in any of these situations and planting depth needs to be raised the material in the bottom of the planting hole **MUST** be firmed with machine to prevent sinking of the root ball.
- ALL** Wire and Burlap shall be removed from the root ball **AND** planting hole.
- The root ball of the tree shall be worked so that the root collar of the tree is visible and no girdling roots are present.
- The root collar of the tree shall be 2"-3" above grade of planting hole for finished depth.
- All plantings shall be backfilled with soil from the site and amended no more than 20% with Organic Compost. The only exceptions are new construction where engineered soil is being used in conjunction with Silva Cells and where new planting beds are being created.
- All plantings shall be backfilled in three lifts and **ALL** lifts shall be watered so the planting will be set and free of air pockets- **NO EXCEPTIONS**.
- An earth berm shall be placed around the perimeter of the planting hole except where curbed planting beds or pits are being used.
- 2"-3" of mulch shall be placed over the planting area.
- At the time the planting is complete the planting shall receive additional water to ensure complete hydration of the roots, backfill material and mulch layer.
- Stakes and guys shall be used where appropriate and/or necessary. Guy material shall be non-damaging to the tree.
- All planting stock shall be specimen quality, free of defects, and disease or injury. The City of Portsmouth, NH reserves the right to refuse/reject any plant material or planting action that fails to meet the standards set forth in the *ANSI A300 Part 6 Standard Practices for Planting and Transplanting* and/or The City of Portsmouth, NH Planting Requirements.

**4 DETAIL: CITY OF PORTSMOUTH TREE PLANTING REQUIREMENTS**

**5 DETAIL: RESTORATION SEQUENCE NOTES**



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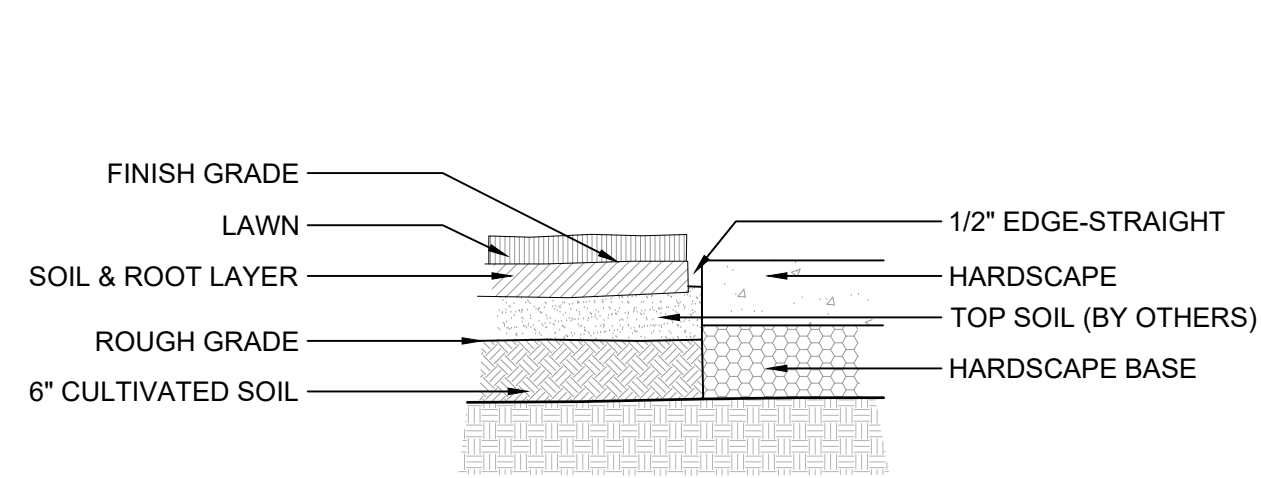
SHEET STATUS			
MARK	DATE	BY	RELEASE
A	03/18/2019	SS	TAC SUBMITTAL
B	05/20/2019	SS	TAC RE-SUBMITTAL
C	08/29/2019	SS	TAC RE-SUBMITTAL

SHEET TITLE:  
**LANDSCAPE DETAILS**

PROJECT NUMBER:  
 18041.00

**L2.01**

DATE: 03.18.2019  
 PERMIT ISSUE

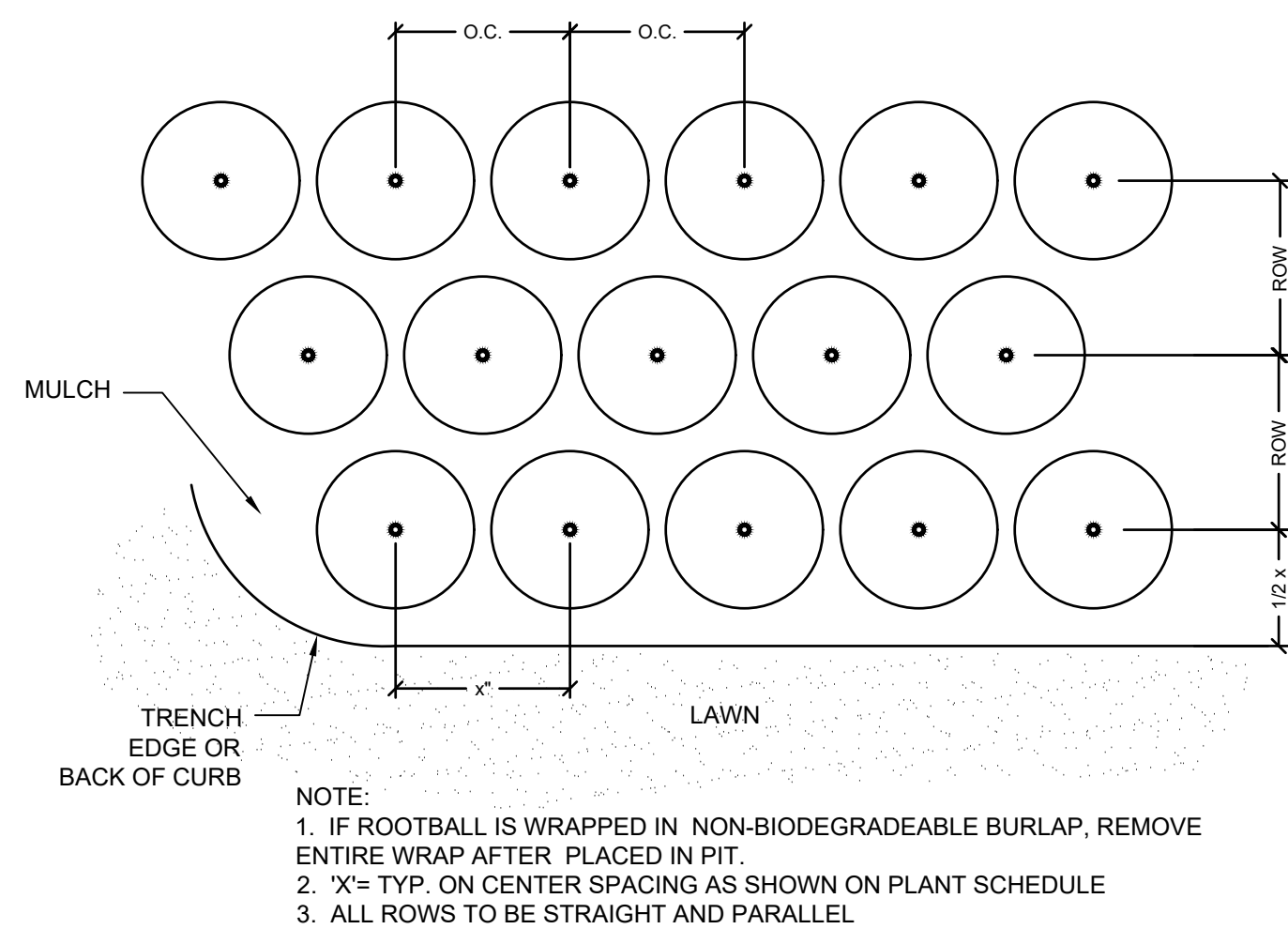


**INSTALLATION NOTES:**

1. GENERAL CONTRACTOR TO PROVIDE GRADES TO WITHIN TWO TENTH OF A FOOT FOR PROPOSED GRADES.
2. CULTIVATE TO A DEPTH OF 6".
3. FINE GRADE AS REQUIRED TO REACH FINISH GRADE PER CIVIL DRAWINGS.
4. APPLY LIME AND FERTILIZER, AS SPECIFIED.
5. APPLY PRE-EMERGENT HERBICIDE PER MANUFACTURE'S RECOMMENDATION.
6. LAY SOD & ROLL LEVEL.
7. WATER ENTIRE AREA THOROUGHLY.
8. 1. INSTALL SOD SO THAT THE TOP OF SOIL & ROOT LAYER IS LEVEL WITH TOP OF PAVEMENT

**1 SECTION: TYP. SOD INSTALLATION**

SCALE: N.T.S.

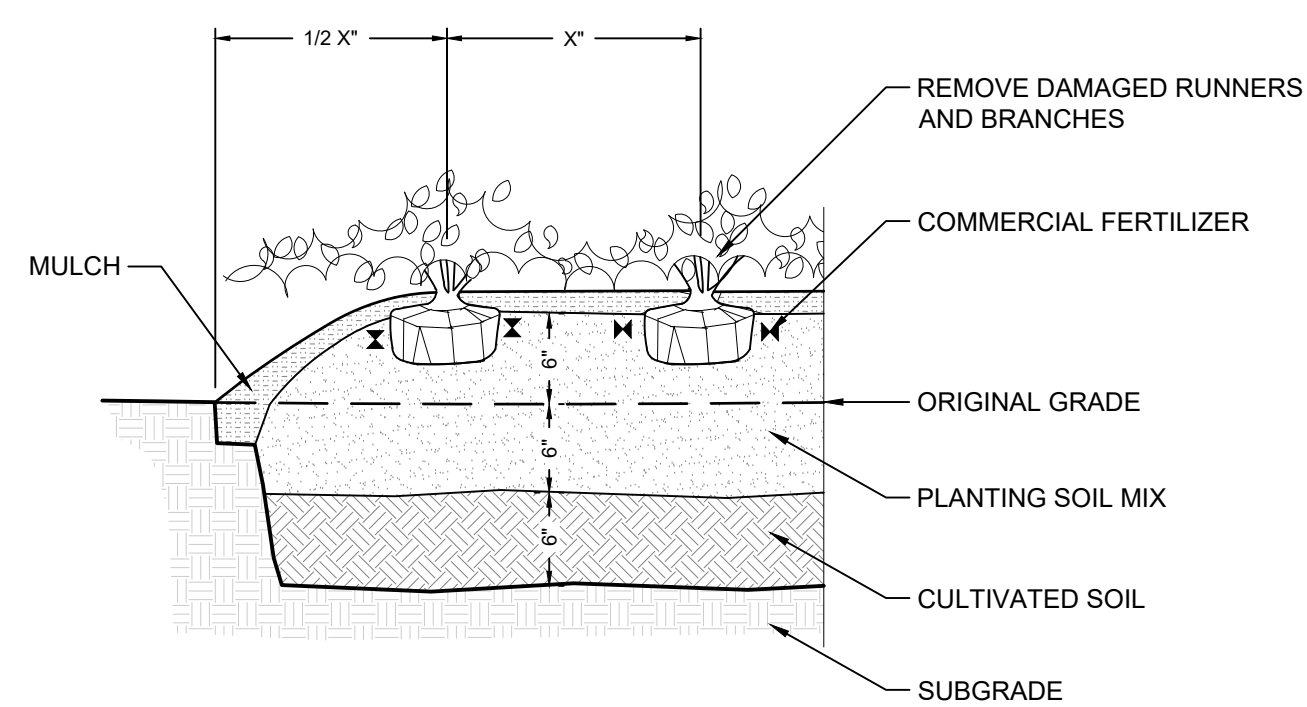


**NOTE:**

1. IF ROOTBALL IS WRAPPED IN NON-BIODEGRADEABLE BURLAP, REMOVE ENTIRE WRAP AFTER PLACED IN PIT.
2. 'X'= TYP. ON CENTER SPACING AS SHOWN ON PLANT SCHEDULE
3. ALL ROWS TO BE STRAIGHT AND PARALLEL

**4 PLAN: TYP. PLAN MASS SPACING**

SCALE: NTS

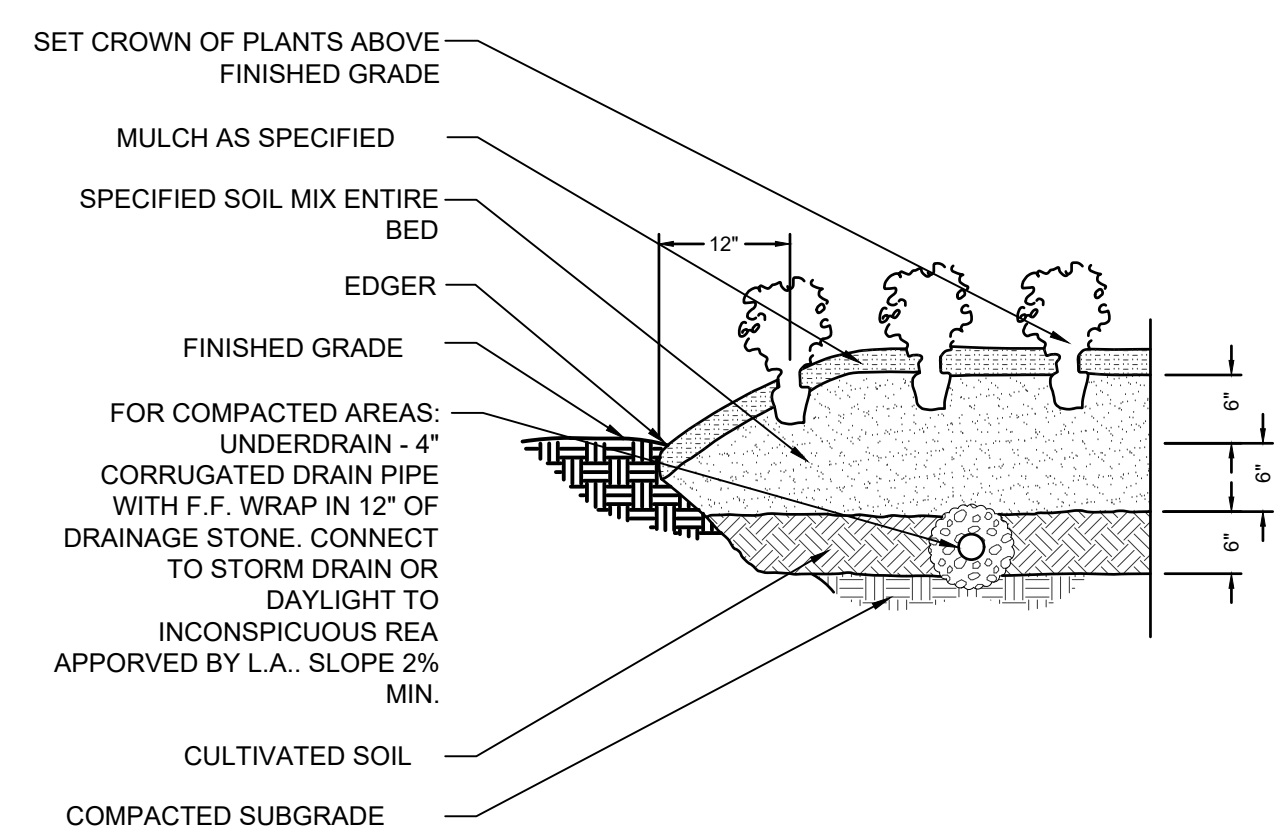


**NOTES:**

1. IF ROOTBALL IS WRAPPED IN NON-BIODEGRADEABLE BURLAP, REMOVE ENTIRE WRAP AFTER PLACED IN PIT.
2. 'X'= TYP. ON CENTER SPACING AS SHOWN ON PLANT SCHEDULE
3. ALL ROWS TO BE STRAIGHT AND PARALLEL
4. TYP. BED INSTALLATION DETAIL FOR ERICACEOUS PLANT MATERIAL (RHODODENDRON, AZALEAS, PIERIS, ECT.)

**6 SECTION: TYP. ERICACEOUS PLANT MATERIAL INSTALL.**

SCALE: NTS

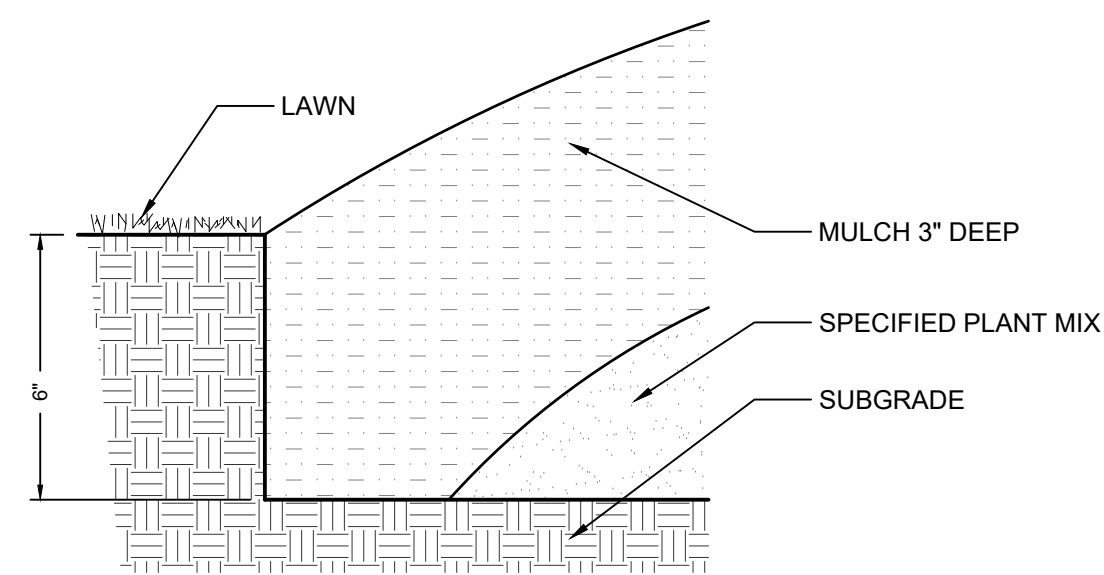


**NOTES:**

1. REFER TO SPECIFICATIONS FOR FERTILIZATION REQUIREMENTS.

**7 SECTION: SEASONAL COLOR & PERENNIAL BED PREP.**

SCALE: NTS

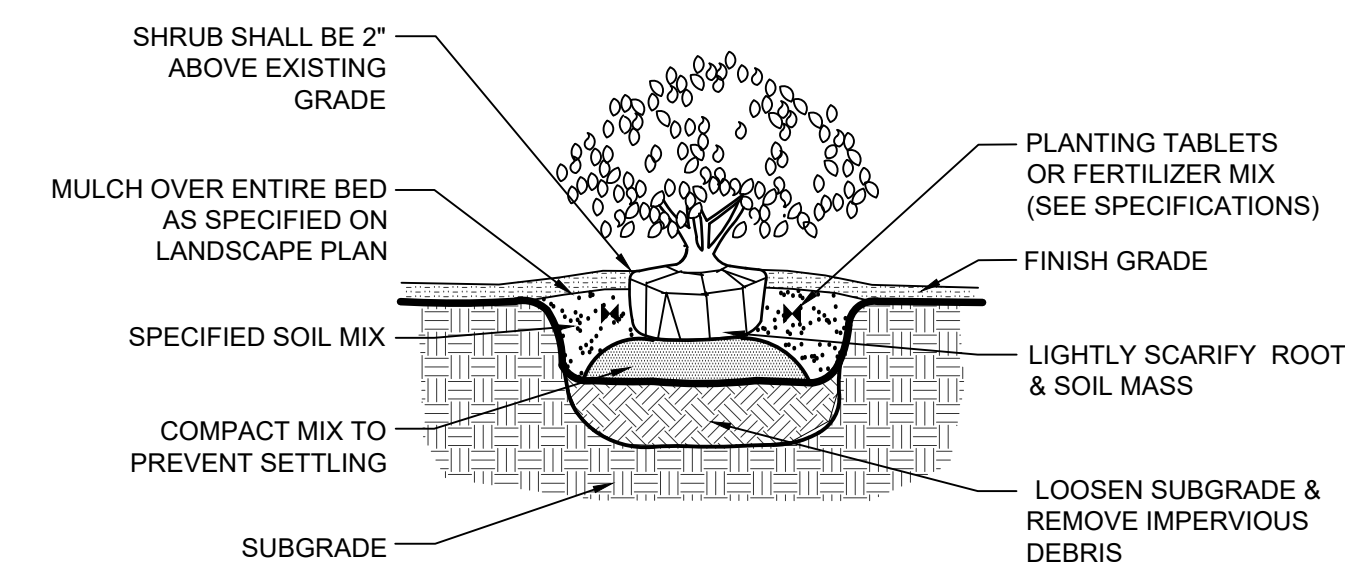


**NOTES:**

1. TRENCH EDGE IS TO BE LOCATED BETWEEN ALL PLANTING BEDS & LAWN AREAS.

**2 SECTION: TRENCH EDGE**

SCALE: NTS

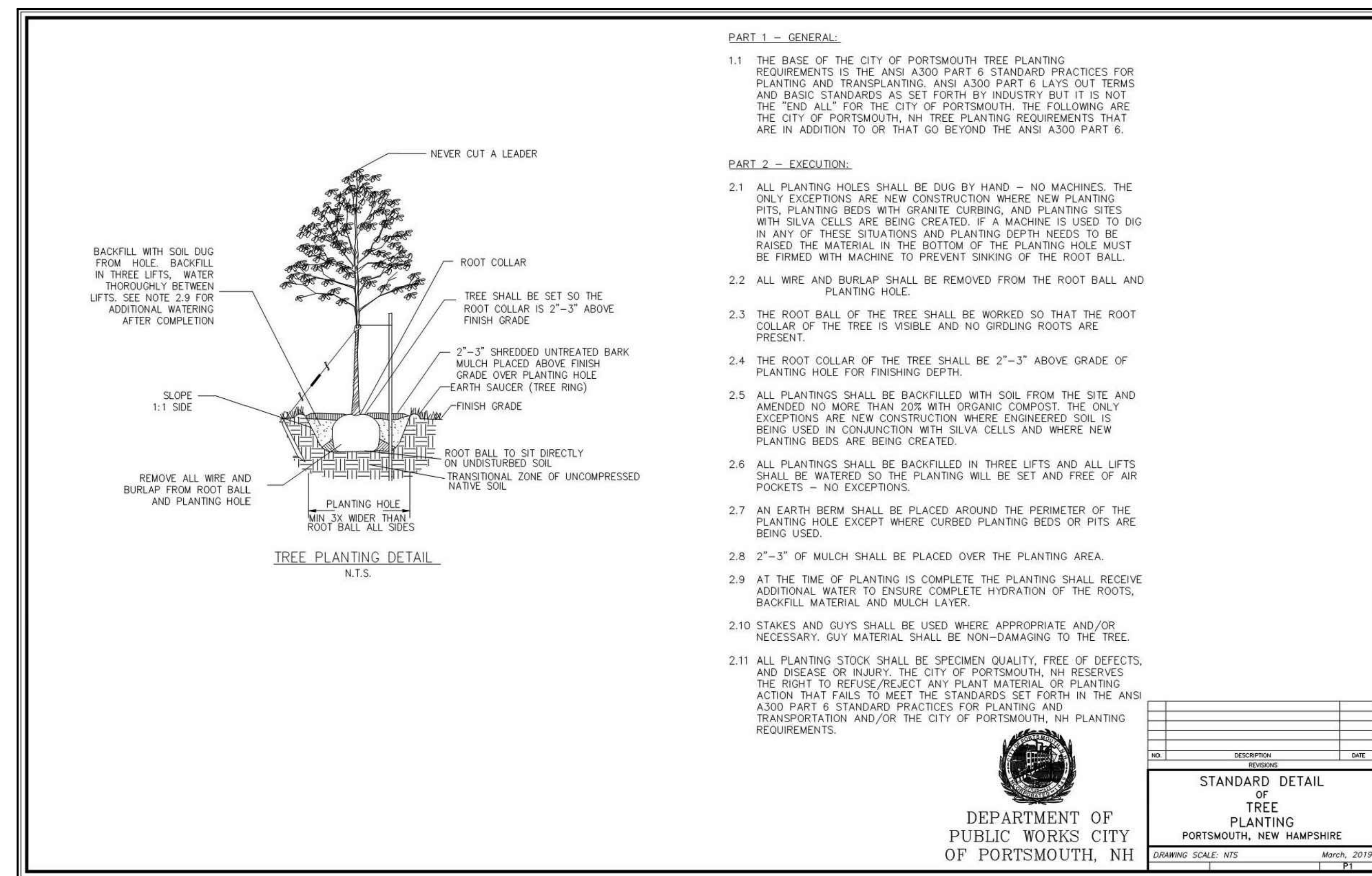


**NOTES:**

1. IF ROOTBALL IS WRAPPED IN NON-BIODEGRADEABLE BURLAP, REMOVE ENTIRE WRAP AFTER PLACED IN PIT.

**3 SECTION: TYP. CONTAINERIZED SHRUB PLANTING**

SCALE: NTS



**PART 1 - GENERAL:**

1.1 THE BASE OF THE CITY OF PORTSMOUTH TREE PLANTING REQUIREMENTS IS THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPLANTING. ANSI A300 PART 6 LAYS OUT TERMS AND BASIC STANDARDS AS SET FORTH BY INDUSTRY BUT IT IS NOT THE "END ALL" FOR THE CITY OF PORTSMOUTH. THE FOLLOWING ARE THE CITY OF PORTSMOUTH, NH TREE PLANTING REQUIREMENTS THAT ARE IN ADDITION TO OR THAT GO BEYOND THE ANSI A300 PART 6.

**PART 2 - EXECUTION:**

- 2.1 ALL PLANTING HOLES SHALL BE DUG BY HAND - NO MACHINES. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE NEW PLANTING PITS, PLANTING BEDS WITH GRANITE CURBING, AND PLANTING SITES WITH SILVA CELLS ARE BEING CREATED. IF A MACHINE IS USED TO DIG IN ANY OF THESE SITUATIONS AND PLANTING DEPTH NEEDS TO BE RAISED THE MATERIAL IN THE BOTTOM OF THE PLANTING HOLE MUST BE FIRMED WITH MACHINE TO PREVENT SINKING OF THE ROOT BALL.
- 2.2 ALL WIRE AND BURLAP SHALL BE REMOVED FROM THE ROOT BALL AND PLANTING HOLE.
- 2.3 THE ROOT BALL OF THE TREE SHALL BE WORKED SO THAT THE ROOT COLLAR OF THE TREE IS VISIBLE AND NO GIRDLING ROOTS ARE PRESENT.
- 2.4 THE ROOT COLLAR OF THE TREE SHALL BE 2"-3" ABOVE GRADE OF PLANTING HOLE FOR FINISHING DEPTH.
- 2.5 ALL PLANTINGS SHALL BE BACKFILLED WITH SOIL FROM THE SITE AND AMENDED NO MORE THAN 20% WITH ORGANIC COMPOST. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE ENGINEERED SOIL IS BEING USED IN CONJUNCTION WITH SILVA CELLS AND WHERE NEW PLANTING BEDS ARE BEING CREATED.
- 2.6 ALL PLANTINGS SHALL BE BACKFILLED IN THREE LIFTS AND ALL LIFTS SHALL BE WATERED SO THE PLANTING WILL BE SET AND FREE OF AIR POCKETS - NO EXCEPTIONS.
- 2.7 AN EARTH BERM SHALL BE PLACED AROUND THE PERIMETER OF THE PLANTING HOLE EXCEPT WHERE CURBED PLANTING BEDS OR PITS ARE BEING USED.
- 2.8 2"-3" OF MULCH SHALL BE PLACED OVER THE PLANTING AREA.
- 2.9 AT THE TIME OF PLANTING IS COMPLETE THE PLANTING SHALL RECEIVE ADDITIONAL WATER TO ENSURE COMPLETE HYDRATION OF THE ROOTS, BACKFILL MATERIAL AND MULCH LAYER.
- 2.10 STAKES AND GUYS SHALL BE USED WHERE APPROPRIATE AND/OR NECESSARY. GUY MATERIAL SHALL BE NON-DAMAGING TO THE TREE.
- 2.11 ALL PLANTING STOCK SHALL BE SPECIMEN QUALITY, FREE OF DEFECTS, AND DISEASE OR INJURY. THE CITY OF PORTSMOUTH, NH RESERVES THE RIGHT TO REFUSE/REJECT ANY PLANT MATERIAL OR PLANTING ACTION THAT FAILS TO MEET THE STANDARDS SET FORTH IN THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPORTATION AND/OR THE CITY OF PORTSMOUTH, NH PLANTING REQUIREMENTS.

NO.	DESCRIPTION	DATE

**STANDARD DETAIL OF TREE PLANTING**  
PORTSMOUTH, NEW HAMPSHIRE  
DRAWING SCALE: NTS      March, 2019

**5 DETAIL: TREE PLANTING**

SCALE: NTS

1. Contractor to carefully examine the contract documents and existing conditions before submitting bid proposal or commencing work.
2. Damage to existing utilities or site improvements caused by the contractor are the full responsibility of contractor.
3. Contractor's base bid to include all materials, labor, permits, equipment, tools, insurance, ETC. to perform the work as described in the contract documents.
4. Contractor to complete work within schedule established by owner.
5. Contractor to provide one year warranty for all material from date of substantial completion.
6. Provide unit price for all materials (installed cost) listed on the plant schedule.
7. Contractor to provide interim maintenance (watering, pruning, fertilizing, guying, mowing, trimming, adequate drainage of ponding areas, edging, weeding, mulching, application of insecticides/herbicides, and general landscape clean-up) until substantial completion notice is provided by the owner or landscape architect.
8. Perform work in compliance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work and provide for permits required by local authorities.
9. Topsoil shall be natural, fertile, friable, sandy clay loam capable of sustaining plant growth, free of stones, stumps, ETC.
10. For all turf lawn areas spread 2-3" of topsoil into existing soil to a depth of 6" below finish grade. Hand rake finished grades to provide even contours.
11. All planted material shall be equivalent in quality to specimen grade or better, as noted by the American Association of Nurserymen, latest edition. All trees of lesser quality shall be rejected by the city arborist.
12. Plant material to be free of disease, insect pests, eggs, or larvae. Damaged plant material shall be rejected.
13. Mulch to be clean, fresh, new, double shredded bark, 3 inches deep.
14. Test plant beds and plant pits for adequate drainage. Work shall be made by the contractor at no additional cost to owner. Hardpan or moisture barriers shall be broken, or drain pipes to be installed to provide proper drainage of plant areas. Plant pits shall be excavated to the bottom of the pit. Fill each plant pit with water and observe the pit for 2 hours. If the water has not dissipated by 50% within 2 hours, notify the landscape architect of such in writing before installing plants in the questionable area(s), otherwise contractor shall be held liable for the livability of the plant. In hardpan conditions where water does not drain within 2 hours, install drain pipes as per tree planting in compacted soil area detail.
15. Trees shall be installed 2-3" above finish grade in hardpan areas unless otherwise directed to provide drainage.
16. Plant beds shall be neatly edged using a 3" wide by 6" wide deep trench. Provide 2/1 side slope behind trench edge.
17. Ground cover, shrub mass beds shall be cultivated to a depth of 12 inches below grade to break through compacted or hardpan soil. Remove all stones, roots, and inferior material. Add specified soil amendments and fertilizer. Elevate entire bed 6 inches above original grade. Rake to a consistent smooth surface. Install plants, edge bed area, mulch and water thoroughly.
18. Set all plants plumb and turned so that the most attractive side is viewed.
19. Plants shall be measured to their main structure, not tip to tip of branches.
20. Remove top one-third burlap of B & B wrapping. Remove all binding. If rootball is wrapped in non-biodegradable burlap, remove entire wrap after placed in pit.
21. Tree pit and shrub pit to be twice the size of the root mass. Fill with plant mix. See details.
22. Broken root balls for trees shall be rejected.
23. Any plant materials shipped to site in uncovered vehicles/ trailer shall be rejected regardless of season.
24. Space shrubs, ground cover, and seasonal color evenly and in straight rows.
25. All tree scars over 1 -1/2" shall be rejected and tree to be replaced.
26. All shrubs to be dense and full. All trees to have a symmetrical growth habit (360 degrees) unless uncharacteristic to plant type.
27. Scarify root mass of shrubs and ground cover before installing.
28. Remove all excess growth of trees and shrubs as directed by landscape architect. Do not cut central leader.
29. Layout all plant material according to landscape drawings. Receive approval of all layouts before installation. Adjustments to the layout shall be made by the landscape architect. Landscape contractor to make adjustments to layout at no additional cost to the owner. Landscape contractor responsible for adjustment of layout in order to avoid utilities. Notify landscape architect of contemplated adjustments to the layout and receive approval before commencing.
30. General contractor to provide grades to two-tenths (.20+) of a foot of proposed finish grades.
31. All shrubs shall be dense and well-branched from bottom to top and all sides. "Leggy" shrubs will be rejected by L.A.
32. Owner or landscape architecture shall review project at completion of installation for substantial completion. Final completion shall be given at the end of the warranty period if all items are completed to the owner's satisfaction. Contractor shall be notified in writing of substantial and final completion dates.
33. See civil drawings for further information regarding: erosion sediment control information, locations of existing and proposed structures, paving, driveways, cut and fill areas, and retention areas, limits of construction, locations of existing and proposed utilities or easements.
34. Contractor shall collect three (3) soil samples of existing soil from areas on site to receive planting for testing. Each soil sample shall be approximately 1 kg. (1 gal. zip lock bag) in volume and will receive the following tests by A&L Agricultural Labs:  
- s1-a  
- s3  
- texture analysis  
- infiltration
34. Sight lines may not be obstructed between a height of 30-inches and 84-inches above the crown of the roadway surface. The property owner must maintain all landscaping according to this requirement at all times.

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**SHEET STATUS**

MARK	DATE	BY	RELEASE
A	03/18/2019	SS	TAC SUBMITTAL
B	05/20/2019	SS	TAC RE-SUBMITTAL
C	06/20/2019	SS	TAC RE-SUBMITTAL

SHEET TITLE:

**LANDSCAPE DETAILS**

PROJECT NUMBER:

18041.00

**L2.02**

DATE: 03.18.2019

PERMIT ISSUE



**New Hampshire Invasive Species Committee**  
 NH Invasive Plant Species Watch List  
 Approved by the ISC April 11, 2018

The NH Invasive Plant Species Watch List is a non-regulatory reference tool that serves to:

- identify potentially invasive non-native plant species based on degree of invasive qualities (e.g., aggressive growth, rapid reproduction, and/or lack of natural herbivores) and presence (but not necessarily abundance) in NH and/or nearby elsewhere in New England;
- inform prevention (e.g., early detection/rapid response), monitoring, and management decision-making for species that may impact NH's ecosystems or economy; and
- increase awareness of invasive plant species.

Scientific Name	Synonyms	Common Name
<i>Abutilon theophrasti</i> Medik.		Velvetleaf Indian-mallow
<i>Acer ginnala</i> Maxim.		Amur maple
<i>Agrastemma githago</i> L. var. <i>githago</i>	<i>Lychnis githago</i> (L.) Scop.	Common corncockle
<i>Aira caryophylla</i> L.	<i>Aspris caryophylla</i> (L.) Nash	Common silver-hairgrass
<i>Allium vineale</i> L.		Crow garlic
<i>Amorpha fruticosa</i> L.	<i>Amorpha fruticosa</i> L. var. <i>angustifolia</i> Pursh; <i>A. fruticosa</i> L. var. <i>oblongifolia</i> Palmer; <i>A. fruticosa</i> L. var. <i>tennesseensis</i> (Shuttlw. ex Kunze) Palmer	False indigo-bush
<i>Aralia elata</i> (Miq.) Seem.	<i>Dimorphanthus elatus</i> Miq.	Japanese angelica-tree
<i>Barbarea vulgaris</i> Ait. f.	<i>Barbarea arcuata</i> (Opiz ex J. & K. Presl) Reichenb.; <i>B. stricta</i> , of authors not Andr.; <i>B. vulgaris</i> var. <i>arcuata</i> (Opiz ex J. & K. Presl) Fries; <i>Campe barbarea</i> (L.) W. Wight ex Piper; <i>C. stricta</i> , of authors not (Andr.) W. Wight ex Piper; <i>Erysimum barbarea</i> L.	Garden yellow-rocket
<i>Brassica juncea</i> (L.) Czern.	<i>Brassica juncea</i> (L.) Czern. var. <i>crispifolia</i> Bailey; <i>Sinapis juncea</i> L.	Chinese mustard
<i>Brassica nigra</i> (L.) W.D.J. Koch	<i>Sinapis nigra</i> L.	Black mustard
<i>Bromus tectorum</i> L.	<i>Anisantha tectorum</i> (L.) Nevski	Cheat brome
<i>Cardamine impatiens</i> L.		Narrow-leaved bitter-cress
<i>Centaurea jacea</i> L.	<i>Centaurea debeauxii</i> Gren. & Godr. ssp. <i>thuilieri</i> Dostál; <i>C. jacea</i> L. ssp. <i>decipiens</i> (Thunb.) Celak.; <i>C. jacea</i> L. ssp. <i>pratensis</i> Celak.; <i>C. pratensis</i> Thunb.; <i>C. thuilieri</i> (Dostál) J. Duvign. & Lambinon; <i>Cyanus jacea</i> (L.) P. Gaertn.; <i>Jacea pratensis</i> Lam.	Brown knapweed
<i>Centaurea nigra</i> L.	<i>Jacea nigra</i> (L.) Hill	Black knapweed

Scientific Name	Synonyms	Common Name
<i>Chelidonium majus</i> L.	<i>Chelidonium majus</i> L. var. <i>laciniatum</i> (P. Mill.) Syme; <i>C. majus</i> L. var. <i>plenum</i> Wehrhahn	Greater celandine
<i>Cirsium palustre</i> (L.) Scop.	<i>Carduus palustris</i> L.	Marsh thistle
<i>Cirsium vulgare</i> (Savi) Ten.	<i>Carduus lanceolatus</i> L.; <i>C. vulgaris</i> Savi; <i>Cirsium lanceolatum</i> (L.) Scop.	Common thistle
<i>Convolvulus arvensis</i> L.	<i>Strophocalus arvensis</i> (L.) Small	Field bindweed
<i>Cytisus scoparius</i> (L.) Link	<i>Spartium scoparium</i> L.	Scotch broom
<i>Digitaria sanguinalis</i> (L.) Scop.	<i>Panicum sanguinale</i> L.	Hairy crabgrass
<i>Eichhornia crassipes</i> (Mart.) Solms-Laubach	<i>Eichhornia speciosa</i> Kunth; <i>Piaropus crassipes</i> (Mart.) Raf.	Common water-hyacinth
<i>Elymus repens</i> (L.) Gould	<i>Agropyron repens</i> (L.) Gould; <i>Elytrigia repens</i> (L.) Desv. ex B.D. Jackson; <i>Triticum repens</i> L.	Creeping wild-rye
<i>Epilobium hirsutum</i> L.		Hairy willow-herb
<i>Epipactis helleborine</i> (L.) Crantz	<i>Epipactis latifolia</i> (L.) All.; <i>Serapias helleborine</i> L.	Broad-leaved helleborine
<i>Euonymus europaeus</i> L.		European spindle-tree
<i>Euonymus fortunei</i> (Turcz.) Hand.-Mazz	<i>Euonymus fortunei</i> (Turcz.) Hand.-Mazz var. <i>radicans</i> (Sieb. ex Miq.) Rehd.; <i>E. fortunei</i> (Turcz.) Hand.-Mazz var. <i>vegetus</i> (Rehd.) Rehd.; <i>E. radicans</i> Sieb. ex Miq.; <i>E. radicans</i> Sieb. ex Miq. var. <i>vegetus</i> Rehd.	Climbing spindle-tree
<i>Festuca filiformis</i> Pourret	<i>Festuca capillata</i> Lam.; <i>F. ovina</i> L. var. <i>capillata</i> (Lam.) Alef.; <i>F. tenuifolia</i> Sibthorp	Fine-leaved sheep fescue
<i>Ficaria verna</i> Huds. ssp. <i>fertilis</i> (Lawralree ex Laegaard) Stace	<i>Ficaria verna</i> Huds. ssp. <i>bubifera</i> A. & D. Löve; <i>Ranunculus ficaria</i> L. ssp. <i>bubifera</i> Lambinon; <i>R. ficaria</i> L. ssp. <i>bubifera</i> (Marsden-Jones) Lawalree, an illegitimate name; <i>R. ficaria</i> var. <i>bubifera</i> Marsden-Jones	Fig-crowfoot
<i>Fraeclia gracilis</i> (Hook.) Moq.	<i>Oplotecha gracilis</i> Moq.	Slender cotton-weed
<i>Galium mollugo</i> L.		Whorled bedstraw
<i>Glechoma hederacea</i> L.	<i>Glechoma hederacea</i> L. var. <i>micrantha</i> Moric.; <i>G. hederacea</i> L. var. <i>parviflora</i> (Benth.) House; <i>Nepeta hederacea</i> (L.) Trevisan	Gill-over-the-ground
<i>Hylotelephium telephium</i> (L.) H. Ohba	<i>Sedum purpureum</i> (L.) J.A. Schultes; <i>S. purpurascens</i> W.D.J. Koch; <i>S. telephium</i> L.	Purple orpine
<i>Kochia scoparia</i> (L.) Schrad.	<i>Bassia scoparia</i> (L.) A.J. Scott; <i>Chenopodium scoparium</i> L.; <i>Kochia scoparia</i> (L.) Schrad. var. <i>pubescens</i> Fenzl; <i>K. scoparia</i> (L.) Schrad. var. <i>subvillosa</i> Moq.	Summer-cypress
<i>Lamium amplexicaule</i> L. var. <i>amplexicaule</i>		Common henbit

Scientific Name	Synonyms	Common Name
<i>Lamium purpureum</i> L.	<i>Lamium dissectum</i> With.; <i>L. hybridum</i> , of authors not Vill.	Red henbit
<i>Lonicera xylosteum</i> L.		Fly honeysuckle
<i>Lupinus polyphyllus</i> Lindl. var. <i>polyphyllus</i>	<i>Lupinus pallidipes</i> Heller; <i>L. polyphyllus</i> Lindl. var. <i>albiflorus</i> L.H. Bailey; <i>L. polyphyllus</i> Lindl. var. <i>pallidipes</i> (Heller) C.P. Sm.	Blue lupine
<i>Lychnis flos-cuculi</i> L. ssp. <i>flos-cuculi</i>	<i>Coronaria flos-cuculi</i> (L.) A. Braun; <i>Silene flos-cuculi</i> (L.) Clairville	Ragged robin lychnis
<i>Lysimachia arvensis</i> (L.) U. Manns & A. Anderb.	<i>Anagallis arvensis</i> L.; <i>A. arvensis</i> L. var. <i>caerulea</i> (Schreb.) Gren. & Godr.; <i>A. caerulea</i> Schreb.	Scarlet pimpernel
<i>Lysimachia vulgaris</i> L.		Garden yellow-loosestrife
<i>Miscanthus sinensis</i> Anders.	<i>Miscanthus sinensis</i> Anders. var. <i>gracillimus</i> A.S. Hitchc.	Chinese silvergrass
<i>Mycelis muralis</i> (L.) Dumort.	<i>Lactuca muralis</i> (L.) Fresen.	Wall-lettuce
<i>Myosotis scorpioides</i> L.	<i>Myosotis palustris</i> (L.) Hill	Water forget-me-not
<i>Nasturtium microphyllum</i> Boenn. ex Reichenb.	<i>Nasturtium officinale</i> Ait. f. var. <i>microphyllum</i> (Boenn. ex Reichenb.) Thellung; <i>Rorippa microphylla</i> (Boenn. ex Reichenb.) Hyl. ex A. & D. Löve	One-rowed water-cress
<i>Nasturtium officinale</i> Ait. f.	<i>Baemerta nasturtium-aquaticum</i> (L.) Hayek; <i>Rorippa nasturtium-aquaticum</i> (L.) Hayek; <i>Sisymbrium nasturtium-aquaticum</i> L.	Two-rowed water-cress
<i>Oenanthe javanica</i> (Blume) DC		Java water dropwort
<i>Persicaria longisetata</i> (Brujin) Kitagawa	<i>Persicaria caespitosa</i> (Blume) Nakai var. <i>longisetata</i> (Brujin) Reed; <i>Polygonum caespitosum</i> Blume var. <i>longisetum</i> (Brujin) Steward; <i>P. longisetum</i> Brujin	Oriental lady's-thumb smartweed
<i>Phellodendron amurense</i> Rupr.	<i>Phellodendron amurense</i> Rupr. var. <i>sachalinense</i> F. Schmidt; <i>P. japonicum</i> Maxim.; <i>P. sachalinense</i> (F. Schmidt) Sarg.	Amur corktree
<i>Poa compressa</i> L.		Flat-stemmed blue grass
<i>Poa nemoralis</i> L.		Wood blue grass
<i>Populus alba</i> L.	<i>Populus alba</i> L. var. <i>baleana</i> Lauche	White poplar
<i>Ranunculus repens</i> L.	<i>Ranunculus repens</i> L. var. <i>degenerates</i> Schur; <i>R. repens</i> L. var. <i>erectus</i> DC.; <i>R. repens</i> L. var. <i>glabratus</i> DC.; <i>R. repens</i> L. var. <i>pleniflorus</i> Fern.; <i>R. repens</i> L. var. <i>villosus</i> Lamotte	Spot-leaved crowfoot
<i>Raphanus raphanistrum</i> L. ssp. <i>raphanistrum</i>		Wild radish

Scientific Name	Synonyms	Common Name
<i>Rhinanthus minor</i> L. ssp. <i>minor</i>	<i>Rhinanthus crista-galli</i> L., in part; <i>R. crista-galli</i> L. var. <i>fallax</i> (Wimmer & Grab.) Druce; <i>R. stenophyllus</i> (Schur) Schinz & Thellung	Little yellow-rattle
<i>Rumex acetosella</i> L. ssp. <i>pyrenaicus</i> (Pourret ex Lapeyr.) Akeroyd	<i>Acetosella vulgaris</i> (Koch) Fourr. ssp. <i>pyrenaica</i> (Pourret ex Lapeyr.) Á. Lève; <i>Rumex acetosella</i> L. var. <i>pyrenaicus</i> (Pourret ex Lapeyr.) Timbal-Lagrave; <i>R. pyrenaicus</i> Pourret ex Lapeyr.	Sheep dock
<i>Securigera varia</i> (L.) Lassen	<i>Coronilla varia</i> L.	Purple crown-vetch
<i>Silphium perfoliatum</i> L.		Cup-plant rosinweed
<i>Sinapis arvensis</i> L.	<i>Brassica arvensis</i> Rabenh.; <i>B. kaber</i> (DC.) L.C. Wheeler; <i>B. kaber</i> (DC.) L.C. Wheeler var. <i>pinnatifida</i> (Stokes) L.C. Wheeler	Corn charlock
<i>Solanum carolinense</i> L. var. <i>carolinense</i>		Carolina nightshade
<i>Solanum dulcamara</i> L.		Climbing nightshade
<i>Sanchus arvensis</i> L.	<i>Sanchus arvensis</i> L. ssp. <i>uliginosus</i> (Bieb.) Nyman; <i>S. uliginosus</i> Bieb.	Field sow-thistle
<i>Sarbaria sorbifolia</i> (L.) A. Braun	<i>Schizonotus sorbifolius</i> (L.) Lindl.; <i>Spiraea sorbifolia</i> L.	False spiraea
<i>Tanacetum vulgare</i> L.	<i>Chrysanthemum uliginosum</i> Pers.; <i>C. vulgare</i> (L.) Bernh.	Common tansy
<i>Tussilago farfara</i> L.		Coltsfoot
<i>Typha xglauca</i> Godr.		Hybrid cattail
<i>Valeriana officinalis</i> L.		Common valerian
<i>Vinca minor</i> L.		Lesser periwinkle

Taxonomy: Haines, A. 2015 (November 17). Tracheophyte Checklist of New England. Website: <http://www.artburhaines.com/tracheophyte-checklist>.

**Fact Sheet:**  
**Prohibited Invasive Plant Species Rules, Agr 3800**



Updated 01/31/2017

This fact sheet is a synopsis of the adopted rules on invasive plant species and is intended for general use by the nursery and landscape industry, plant growers, plant dealers, general public, State Agencies, and Municipalities. A complete copy of the rules can be accessed on the internet at [http://agriculture.nh.gov/topics/plants\\_insects.htm](http://agriculture.nh.gov/topics/plants_insects.htm).

In accordance with the Invasive Species Act, HB 1258-FN, the NH Department of Agriculture, Markets & Food, Division of Plant Industry is the lead state agency responsible for the evaluation, publication and development of rules on invasive plant species for the purpose of protecting the health of native species, the environment, commercial agriculture, forest crop production, or human health. The rule, Agr 3800, states "No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1, New Hampshire prohibited invasive species list".

*New Hampshire Prohibited Invasive Plant Species List*

Scientific name	Synonyms	Common name
<i>Acer platanoides</i> L.	<i>Acer platanoides</i> var. <i>schwedleri</i> Nichols.	Norway maple
<i>Ailanthus altissima</i> (P. Mill.) Swingle	<i>Ailanthus glandulosa</i> Desv.	Tree of heaven
<i>Alliaria petiolata</i> (Bieb.) Cavara & Grande	<i>Alliaria alliaria</i> (L.) Britt.; <i>Alliaria officinalis</i> Andr. ex Bieb.; <i>Erysimum alliaria</i> L.; <i>Sisymbrium alliaria</i> (L.) Scop.	Garlic mustard
<i>Alnus glutinosa</i> (L.) Gaertn.	<i>Alnus alnus</i> (L.) Britt.; <i>Betula alnus</i> L. var. <i>glutinosa</i> L.	European black alder
<i>Berberis thunbergii</i> DC.		Japanese barberry
<i>Berberis vulgaris</i> L.		European barberry
<i>Celastrus orbiculatus</i> Thunb.		Oriental bittersweet
<i>Centaurea stoebe</i> L. ssp. <i>micranthos</i> (Gugler) Hayek	<i>Centaurea biebersteinii</i> DC.; <i>Centaurea maculosa</i> Lam., misapplied; <i>Centaurea maculosa</i> Lam. ssp. <i>micranthos</i> Gugler	Spotted knapweed
<i>Cynanchum louiseae</i> Kartsch & Gandhi	<i>Cynanchum nigrum</i> (L.) Pers.; <i>Vincetoxicum nigrum</i> (L.) Pers.	Black swallow-wort
<i>Cynanchum rossicum</i> (Kleopow) Borhidi	<i>Cynanchum medium</i> , of authors not R. Br.; <i>Vincetoxicum medium</i> , of authors not (R. Br.) Dene.; <i>Vincetoxicum rossicum</i> (Kleopow) Barbarich	Pale swallow-wort
<i>Elaeagnus umbellata</i> Thunb. var. <i>parvifolia</i> (Royle) Schneid.	<i>Elaeagnus parvifolia</i> Royle	Autumn olive
<i>Euonymus alatus</i> (Thunb.) Sieb.	<i>Celastrus alatus</i> Thunb.	Burning bush
<i>Frangula alnus</i> P. Mill.	<i>Rhamnus frangula</i> L.	Glossy buckthorn
<i>Glyceria maxima</i> (Hartman) Holmb.	<i>Glyceria spectabilis</i> Mert. & Koch; <i>Molinia maxima</i> Hartman	Reed sweet grass
<i>Heracleum mantegazzianum</i> Sommier & Levier		Giant hogweed
<i>Hesperis matronalis</i>		Dames rocket

<i>Impatiens glandulifera</i> Royle	<i>Impatiens roylei</i> Walp.	Ornamental jewelweed
<i>Iris pseudacorus</i> L.		Water-flag
<i>Lepidium latifolium</i> L.	<i>Cardaria latifolia</i> (L.) Spach	Perennial pepperweed
<i>Ligustrum obtusifolium</i> Sieb. & Zucc. var. <i>obtusifolium</i>	<i>Ligustrum obtusifolium</i> var. <i>leiocalyx</i> (Nakai) H. Hara	Blunt-leaved privet
<i>Ligustrum vulgare</i> L.		Common privet
<i>Lonicera japonica</i> Thunb.	<i>Nintooa japonica</i> (Thunb.) Sweet	Japanese honeysuckle
<i>Lonicera maackii</i> (Rupr.) Herder*		Amur honeysuckle*
<i>Lonicera morrowii</i> Gray*		Morrow's honeysuckle*
<i>Lonicera tatarica</i> L.*		Tartarian honeysuckle*
<i>Lonicera x bella</i> Zabel*	<i>Lonicera morrowii</i> x <i>L. tatarica</i>	Bella honeysuckle*
<i>Lysimachia nummularia</i> L.		Moneywort
<i>Microstegium vimineum</i> (Trin.) A. Camus	<i>Andropogon vimineum</i> Trin.; <i>Eulalia viminea</i> (Trin.) Kuntze	Japanese stilt grass
<i>Persicaria perfoliata</i> (L.) H. Gross	<i>Ampelgogon perfoliatum</i> (L.) Roberty & Vautier; <i>Polygonum perfoliatum</i> L.	Mile-a-minute weed
<i>Pueraria montana</i> (Lour.) Merr. var. <i>lobata</i> (Willd.) Maesen & S. Almeida	<i>Dolichos lobatus</i> Willd.; <i>Pueraria lobata</i> (Willd.) Ohwi; <i>Pueraria thunbergiana</i> (Sieb. & Zucc.) Benth.	Kudzu
<i>Reynoutria japonica</i> Houtt. var. <i>Japonica</i>	<i>Fallopia japonica</i> (Houtt.) R. Decr.; <i>Pleuropterus cuspidatus</i> (Sieb. & Zucc.) Moldenke; <i>Polygonum cuspidatum</i> Sieb. & Zucc.	Japanese knotweed
<i>Reynoutria sachalinensis</i> (F. Schmidt ex Maxim.) Nakai	<i>Fallopia sachalinensis</i> (F.S. Petrop. ex Maxim.) R. Decr.; <i>Polygonum sachalinense</i> F. Schmidt ex Maxim.	Giant knotweed
<i>Reynoutria x bohemia</i> Chrtek & Chrtková	<i>Fallopia japonica</i> x <i>F. sachalinensis</i> ; <i>Fallopia x bohemia</i> (Chrtek & Chrtková) J.P. Bailey; <i>Polygonum x bohemicum</i> (Chrtek & Chrtková) P.F. Zika & A.L. Jacobson	Bohemia knotweed
<i>Rhamnus cathartica</i> L.		Common buckthorn
<i>Rosa multiflora</i> Thunb. ex Murr.		Multiflora rose

**Variance:** Persons conducting temporary scientific studies, which may include hybridization of seedless species may apply for a variance to do so by contacting the NH Department of Agriculture, Markets & Food, Division of Plant Industry.



**For additional information**  
 Douglas Cygan, Invasive Species Coordinator  
 New Hampshire Department of Agriculture  
 Division of Plant Industry  
 State Lab Building, Lab D  
 29 Hazen Drive  
 Concord, NH 03301  
 (603) 271-3488  
[douglas.cygan@agr.nh.gov](mailto:douglas.cygan@agr.nh.gov)  
<http://www.agriculture.nh.gov/divisions/plant-industry/invasive-plants.htm>

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PROFESSIONAL STAMP:

**CATE STREET**  
 PREPARED FOR  
**CATE STREET DEVELOPMENT LLC**

SHEET STATUS

MARK	DATE	BY	RELEASE
A	03/18/2019	SS	TAC SUBMITTAL
B	05/20/2019	SS	TAC RE-SUBMITTAL
C	06/20/2019	SS	TAC RE-SUBMITTAL

SHEET TITLE:

**LANDSCAPE DETAILS**

PROJECT NUMBER:  
 18041.00

**L2.03**

DATE: 03.18.2019

PERMIT ISSUE

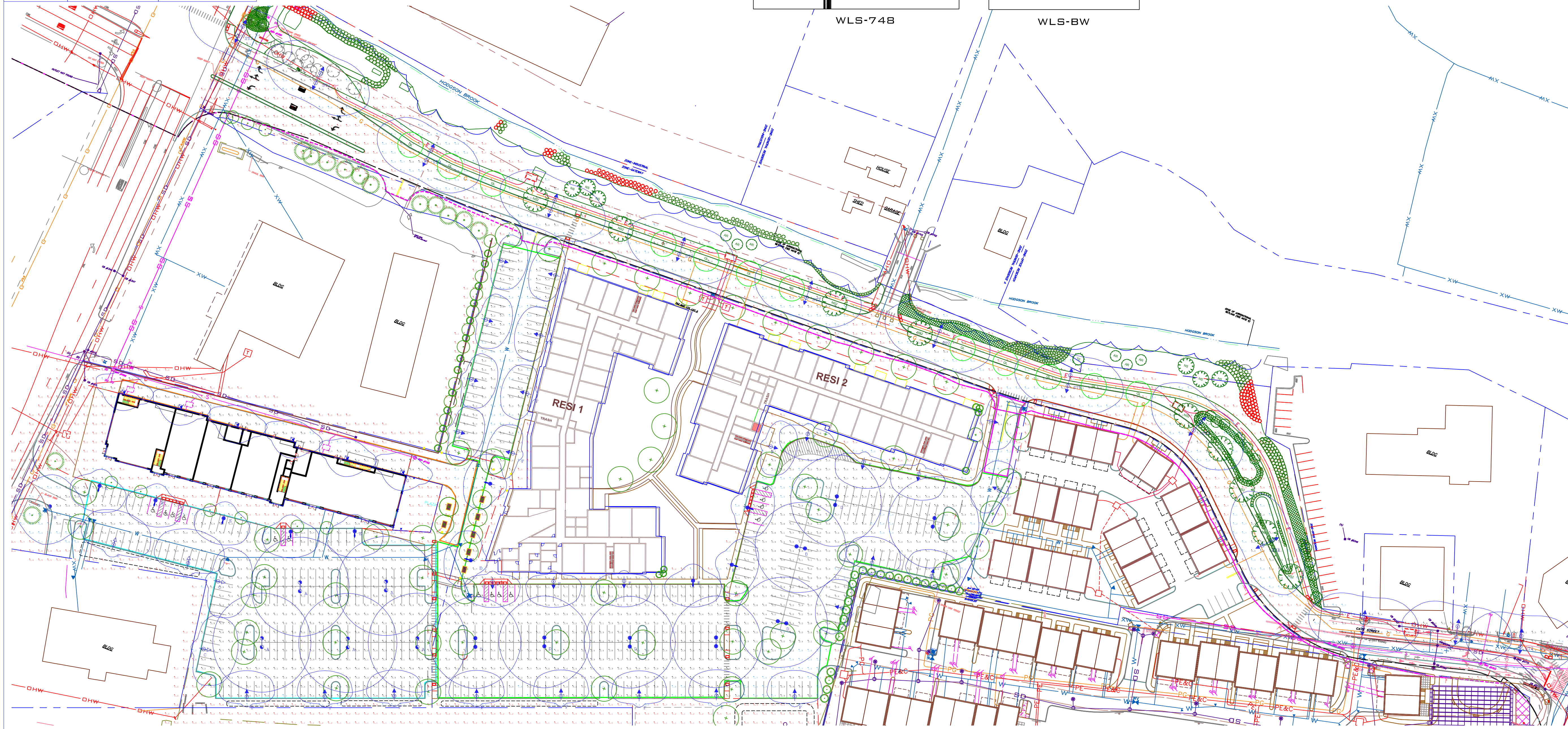
REVISIONS			5	6/20/19	TO
REV #	DATE	BY:	6	6/23/19	TO
1	12/10/18	TO	7	7/10/19	TO
2	3/17/19	TO			
3	5/16/19	TO			
4	5/19/19	TO			



WLS-748



WLS-BW



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BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.  
 THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD CONDITIONS.

Label	Avg	Max	Min	Avg/Min	Max/Min	PtSpClr	PtSpTb
CATE ST ENTRANCE	1.8	4.4	0.9	2.0	4.9	10	10
RESIDENTIAL PARKING	2.8	6.4	0.8	3.5	8.0	10	10
RETAIL PARKING	3.6	7.1	1.1	3.3	6.5	10	10
RETAIL REAR AND SIDE	2.3	4.7	0.3	7.8	15.7	10	10

Symbol	Qty	Label	Lumens	LLF	Description	Lum. Watts
	5	A	N.A.	0.950	WLS-748-135W-5P-4K 20' MOUNTING HEIGHT	135
	1	B	N.A.	0.950	WLS-748-135W-5P-4K 20' MOUNTING HEIGHT	135
	4	C	N.A.	0.950	WLS-748-135W-4F-4K-HS 20' MOUNTING HEIGHT	135
	8	D	N.A.	0.950	WLS-748-110W-5P-4K 20' MOUNTING HEIGHT	110
	10	E	N.A.	0.950	WLS-748-80W-4F-4K 16' MOUNTING HEIGHT	80
	28	F	N.A.	0.950	WLS-748-80W-4F-4K-HS 16' MOUNTING HEIGHT	80
	6	G	N.A.	0.980	WLS-BW-70-2M-4K ASST MOUNTING HEIGHT	70
	13	ST2	9316	0.900	AFFIN-S801-80W-30K-T2-10-M 25' MOUNTING HEIGHT	80

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**ABUTTERS**

TAX MAP 158, LOT 13  
SLATTERY & DUMONT, LLC  
66 OLD CONCORD TURNPIKE #10  
BARRINGTON, NH 03825  
R.C.R.D. BOOK 3471, PAGE 196

TAX MAP 163, LOT 1  
M & B PROPERTIES, LLC  
54 BARTLETT STREET  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5794, PAGE 996

TAX MAP 163, LOT 2  
INDUSTRIAL RENTS-NH, LLC  
6 WAYNE ROAD  
WESTFORD, MA 01886  
R.C.R.D. BOOK 5606, PAGE 2334

TAX MAP 164, LOT 4  
SHARAN R. GROSS REV. TRUST  
180 BIRCH HILL RD  
YORK, ME 03909  
R.C.R.D. BOOK 5261 PAGE 2208  
R.C.R.D. BOOK 3406 PAGE 1383

TAX MAP 163, LOT 35  
ELDRIDGE BREWERY REALTY PARTNERSHIP  
1 CATE ST  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 2572 PAGE 2635

TAX MAP 163, LOT 36  
CST HOLDINGS, LLC  
3 CATE ST  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 3923 PAGE 202

TAX MAP 163, LOT 37  
CITY OF PORTSMOUTH  
PO BOX 628  
PORTSMOUTH, NH 03802  
R.C.R.D. BOOK 2284 PAGE 812

TAX MAP 164, LOT 1  
PORTSMOUTH LUMBER & HARDWARE, LLC  
105 BARTLETT STREET  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5372, PAGE 2606

TAX MAP 164, LOT 2  
PORTSMOUTH LUMBER & HARDWARE, LLC  
105 BARTLETT STREET  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5808, PAGE 1379

TAX MAP 164, LOT 3  
BOSTON & MAINE CORP.  
IRON HORSE PARK, HIGH STREET  
NO. BILLERICA, MA 01862

TAX MAP 164, LOT 5  
HOUSTON HOLDINGS, LLC  
653 ISINGTON STREET  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 3558, PAGE 464

TAX MAP 164, LOT 12  
JOSEPH GOBBI SUPPLY CORP.  
PO BOX 125  
PORTSMOUTH, NH 03802  
R.C.R.D. BOOK 3233, PAGE 1949

TAX MAP 165, LOT 1  
CATE STREET LLC  
105 BARTLETT STREET  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5903 PAGE 1436

TAX MAP 165, LOT 14  
BOSTON AND MAINE CORP  
IRON HORSE PK HIGH ST  
NO BILLERICA, MA 01862  
R.C.R.D. BOOK PAGE

TAX MAP 172, LOT 2  
406 HIGHWAY 1 PYPASS, LLC  
549 US HIGHWAY 1 BYPASS  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5671 PAGE 2150

TAX MAP 173, LOT 3  
EDGAR W. & JANICE E. ANDERSON  
224 CATE ST  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 2956 PAGE 1071

TAX MAP 173, LOT 9  
PAUL A. HOLLOWAY  
C/O COAST PONTIAC  
500 US HWY 1 BYPASS  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 2821 PAGE 2396

TAX MAP 173, LOT 10  
AREC 13, LLC C/O U-HAUL INTERNATIONAL  
PO BOX 29046  
PHOENIX, AZ 85038  
R.C.R.D. BOOK 4575 PAGE 950

TAX MAP 174, LOT 14  
AER RE LLC  
185 COTTAGE STREET  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5965, PAGE 2216

TAX MAP 233, LOT 145  
CITY OF PORTSMOUTH  
1 JUNKINS AVENUE  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 5127, PAGE 2074

TAX MAP 234, LOT 2A  
CITY OF PORTSMOUTH  
PO BOX 270  
HARTFORD, CT 06141  
R.C.R.D. BOOK 1257, PAGE 324

TAX MAP 234, LOT 3  
PUBLIC SERVICE CO. OF NH  
PO BOX 270  
HARTFORD, CT 06141  
R.C.R.D. BOOK 5548, PAGE 738

TAX MAP 234, LOT 5  
SEACOAST DEVELOPMENT GROUP, LLC  
505 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 3107, PAGE 950

TAX MAP 234, LOT 7-6  
CREFHIII WARAMAUG PORTSMOUTH, LLC  
C/O CTMI, LLC  
PO BOX 741328  
DALLAS, TX 75374  
R.C.R.D. BOOK 5620, PAGE 1675

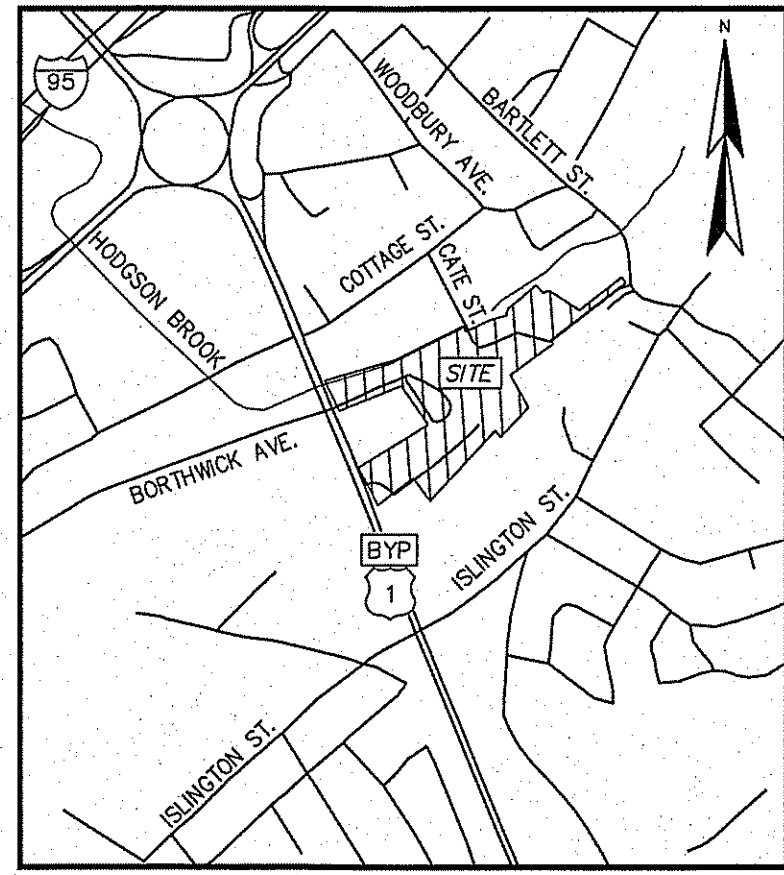
TAX MAP 234, LOT 51  
MEADOWBROOK INN CORP.  
C/O PORTSMOUTH CHEVROLET  
549 ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
R.C.R.D. BOOK 2382, PAGE 1968

**NOTES:**

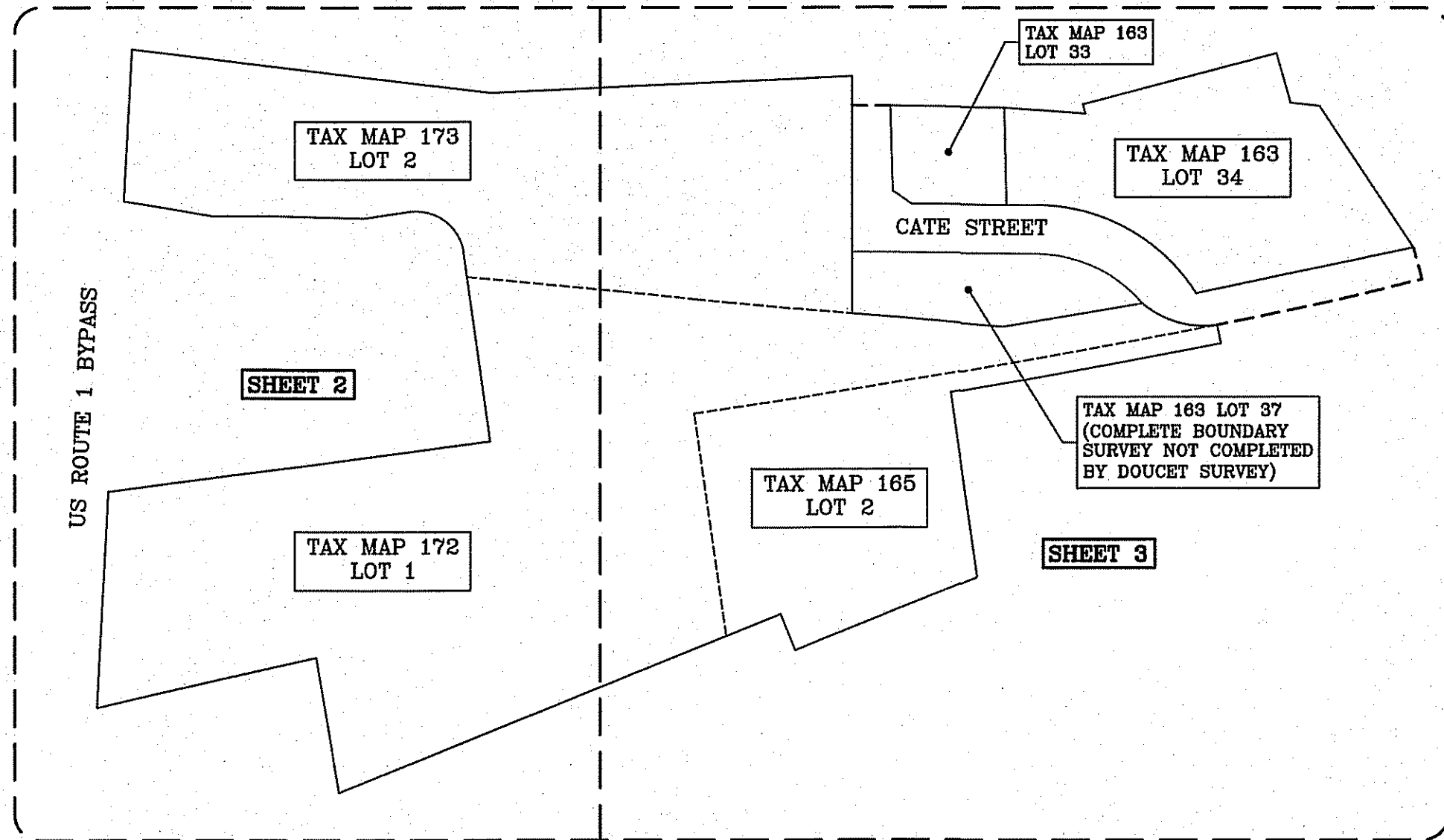
1. REFERENCE: TAX MAP 163, LOT 33 - 12,230 SF OR 0.28 AC. TAX MAP 163, LOT 34 - 64,109 SF OR 1.47 AC.  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
COMBINED AREA - 451,572 SF OR 10.37 AC.
2. OWNER OF RECORD: CATE STREET DEVELOPMENT LLC  
11 ELKINS STREET, SUITE 420  
BOSTON, MA 02127  
R.C.R.D. BOOK 5959, PAGE 109
3. ZONES: GW1-GATEWAY NEIGHBORHOOD MIXED USE CORRIDOR (SEE CITY OF PORTSMOUTH ZONING ORDINANCE FOR DIMENSIONAL REQUIREMENTS. SUBJECT LOTS WERE REZONED TO GW1 ON DECEMBER 4, 2017 PER SAID ORDINANCE.)  
-SEE SITE PLANS FOR DIMENSIONAL REQUIREMENTS AND DEVELOPMENT SITE STANDARDS.
4. FIELD SURVEY PERFORMED BY P.J.S. & J.C.M. DURING NOVEMBER 2016 USING A TRIMBLE S6 TOTAL STATION, A TRIMBLE RS SURVEY GRADE GPS UNIT, A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL, BY L.P.S. & S.N.F. DURING JULY 2018 AND T.M.M. & J.C.M. IN SEPTEMBER & OCTOBER 2018 USING A TRIMBLE S6 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS. ADDITIONAL FIELD SURVEY PERFORMED BY M.C. DURING NOVEMBER 2016 AND OCTOBER 2018 USING A LEICA RDS SCANNER.
5. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY MARC JACOBS IN NOVEMBER 2016 AND REVIEWED BY GOVE ENVIRONMENTAL SERVICES, INC. DURING APRIL 2018 IN ACCORDANCE WITH THE US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-87-1, JANUARY 1987 AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2102 AND FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, MAY 2017, NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE.
6. FLOOD HAZARD ZONE: "X", PER FIRM MAP #33015C0259E, DATED 5/17/05.
7. VERTICAL DATUM IS BASED ON NGVD29 PER DISK V 28 1942 ELEV. 25.59.
8. HORIZONTAL DATUM BASED ON NEW HAMPSHIRE STATE PLANE(2800) NAD83(2011) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
9. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.
10. DUE TO THE COMPLEXITY OF RESEARCHING ROAD RECORDS AS A RESULT OF INCOMPLETE, UNORGANIZED, INCONCLUSIVE, OBLITERATED, OR LOST DOCUMENTS, THERE IS AN INHERENT UNCERTAINTY INVOLVED WHEN ATTEMPTING TO DETERMINE THE LOCATION AND WIDTH OF A ROADWAY RIGHT OF WAY. THE EXTENT OF THE ROAD(S) AS DEPICTED HEREON IS/ARE BASED ON RESEARCH CONDUCTED AT THE PORTSMOUTH CITY HALL, PORTSMOUTH DEPARTMENT OF ENGINEERING, THE ROCKINGHAM COUNTY REGISTRY OF DEEDS, AND THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
11. FINAL MONUMENTATION MAY BE DIFFERENT THAN THE PROPOSED MONUMENTATION SHOWN HEREON, DUE TO THE FACT THAT SITE CONDITIONS WILL DICTATE THE ACTUAL LOCATION AND TYPE OF MONUMENTS INSTALLED IN THE FIELD. PLEASE REFER TO EITHER THE "MONUMENTATION LOCATION PLAN" TO BE RECORDED OR CONTACT DOUCET SURVEY, INC. FOR CLARIFICATION OF MONUMENTS SET. (A RECORDED PLAN WILL BE PRODUCED AT THE DISCRETION OF DOUCET SURVEY, INC.)  
-SEE SHEET 4 FOR NOTES 12 & 13 SPECIFIC TO EXISTING AND PROPOSED EASEMENT.  
-SEE SHEET 6 FOR NOTES SPECIFIC TO EXISTING CONDITIONS.

**REFERENCE PLANS**

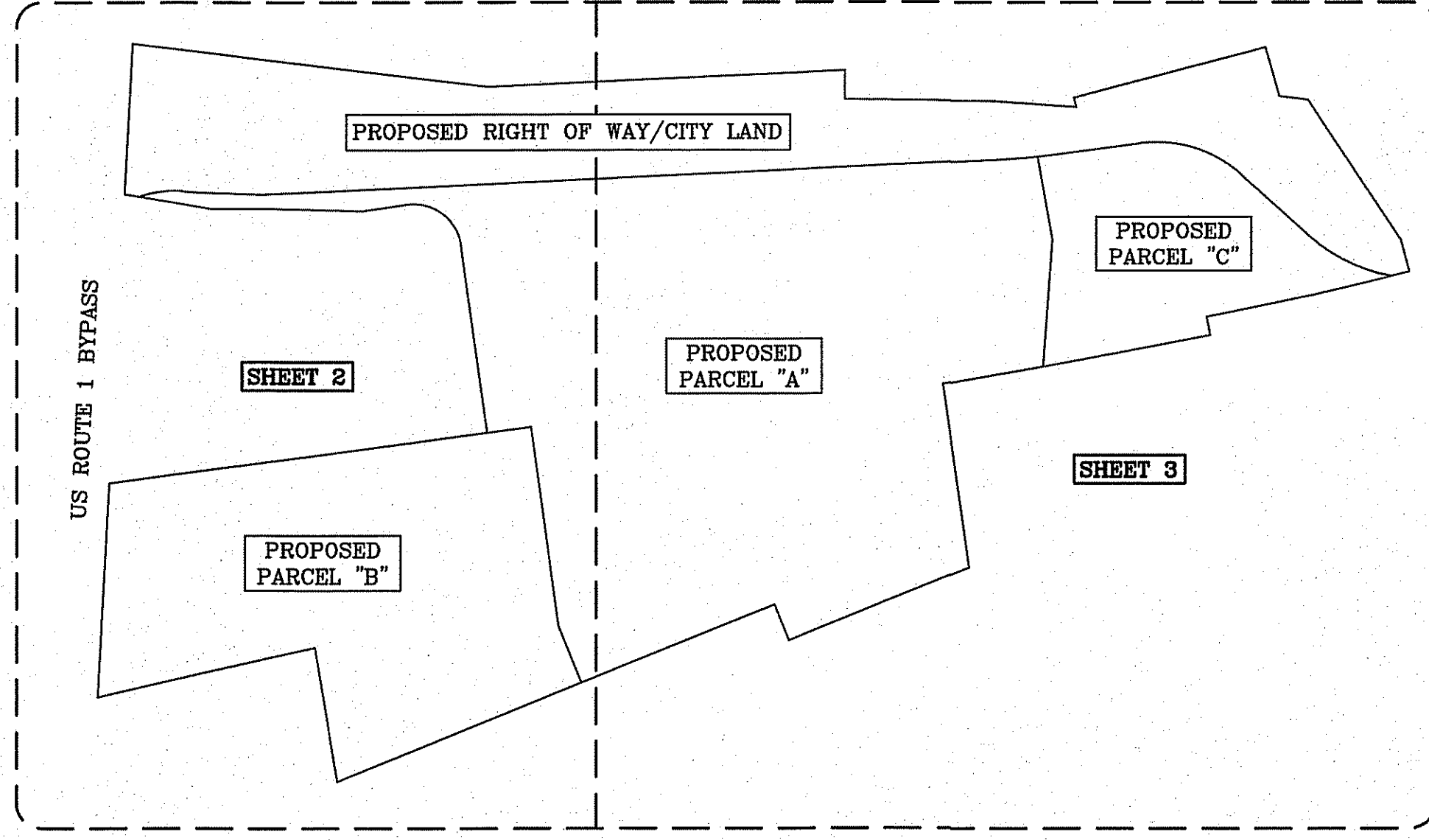
1. "MAINE-NEW HAMPSHIRE INTERSTATE BRIDGE AUTHORITY, PISCATAQUIA RIVER BRIDGE, KITTERY, MAINE-PORTSMOUTH, NEW HAMPSHIRE, RIGHT OF WAY MAPS, N.H. APPROACH, BY ALBERT MOULTON, CE, DATED 1954, ON FILE A THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
2. "PLAN OF LAND U.S. ROUTE 1 BY-PASS PORTSMOUTH, NEW HAMPSHIRE FOR GRIFFIN FAMILY CORP.", BY DURGIN, VERRA AND ASSOCIATES, INC., DATED JANUARY 20, 1992, RECEIVED FROM THE OFFICE OF JAMES VERRA.
3. "LOT LINE REVISION U.S. ROUTE ONE BY-PASS, PORTSMOUTH, N.H. FOR WIGGIN, PARSONS, & O'BRIEN, BY JOHN W. DURGIN ASSOCIATES, INC., DATED JANUARY 22, 1982, R.C.R.D. PLAN D-10722.
4. "PLAN OF LAND FOR JOSEPH J. O'BRIEN JR. & SR., CATE STREET/ROUTE 1 BY-PASS, PORTSMOUTH, N.H., BY RICHARD P. MILLETTE AND ASSOCIATES, DATED NOVEMBER 17, 1988, R.C.R.D. PLAN D-19110.
5. "LAND IN PORTSMOUTH, N.H., BOSTON AND MAINE RAILROAD TO ALL STATE REALTY CORPORATION", BY BRENTON V. SCHOFIELD, DATED FEBRUARY 1964, R.C.R.D. PLAN 160.
6. "LOT LINE RELOCATION PLAN FOR U-HAUL REAL ESTATE COMPANY AND FRANCIS J. COSTELLO CATE STREET/ROUTE 1 BY-PASS, PORTSMOUTH, N.H.", BY RICHARD P. MILLETTE AND ASSOCIATES, DATED MAY 25, 1995, R.C.R.D. PLAN D-24912.
7. "SUBDIVISION OF LAND HEIRS OF CORNELIUS COAKLEY", BY MCKENNA ASSOCIATES, DATED JULY 26, 1972, R.C.R.D. PLAN D-3790.
8. "LOT LINE REVISION PORTSMOUTH, N.H. FOR MICHAEL A. PAGANO", BY JOHN W. DURGIN ASSOCIATES, DATED JUNE 26, 1991, R.C.R.D. PLAN D-10278.
9. "SITE PLAN OF ELDRIDGE PARK WEST PREPARED FOR ELDRIDGE BREWERY REALTY PARTNERSHIP", BY KIMBALL CHASE COMPANY, INC., DATED JULY 23, 1987, R.C.R.D. PLAN D-16884.
10. "PLAN OF LAND OF FRANK JONES BREWING CORP. & PAUL C. BADGER & NORMAN E. RAND PORTSMOUTH, N.H.", BY JOHN W. DURGIN, CIVIL ENGINEERS, DATED SEPTEMBER 1950, R.C.R.D. PLAN 01635.
11. "LOT LINE ADJUSTMENT PLAN FOR LAND OWNED BY SHARON R. GROSS REVOCABLE TRUST, KNOWN AS TAX MAP 163, LOT 31 & 32 LOCATED ALONG #201 & 235 CATE STREET", BY KNIGHT HILL LAND SURVEYING SERVICES, INC., DATED JULY 28, 2011, R.C.R.D. PLAN D-37021.
12. "SITE REVIEW PLAN FOR LAND OWNED BY SHARON R. GROSS REVOCABLE TRUST, KNOWN AS TAX MAP 163, LOT 32 LOCATED ALONG #201 & CATE STREET", BY KNIGHT HILL LAND SURVEYING SERVICES, INC., DATED DECEMBER 2002, R.C.R.D. PLAN D-30850.
13. "PLAN SHOWING DIVISION OF ELDRIDGE BREWING CO. LOT IN PORTSMOUTH, N.H. OWNED BY ALBERT HISLOP", BY WM A. GROVER, DATED DECEMBER 11, 1918, R.C.R.D. PLAN 18.
14. "PLAN OF LAND PORTSMOUTH, N.H. ATLANTIC REALTY CORP. TO KITTERY LAUNDRY, INC.", BY JOHN W. DURGIN, DATED AUGUST 1964, R.C.R.D. PLAN 300.
15. "CITY OF PORTSMOUTH, N.H. DEFENSE HOMES SEWER LOCATION PLAN", BY JOHN W. DURGIN DATED MAY 1961, R.C.R.D. PLAN 1106.
16. "LAND IN PORTSMOUTH, N.H. BOSTON AND MAINE RAILROAD TO M.H. PARSONS & SONS LUMBER COMPANY, INC.", R.C.R.D. BOOK 1267, PAGE 16.
17. "PLAN OF LAND PORTSMOUTH, N.H. FOR M.H. PARSONS REALTY CORP.", BY JOHN W. DURGIN, DATED DECEMBER 1956, R.C.R.D. BOOK 1431, PAGE 275.
18. "SITE PLAN PORTSMOUTH, N.H. PREPARED FOR U-HAUL OF N.H. AND VT., INC.", BY JOHN W. DURGIN, DATED JUNE 4, 1980, R.C.R.D. PLAN D-9642.
19. "STANDARD PROPERTY SURVEY & PROPOSED SIDEWALK EASEMENT FOR THE CITY OF PORTSMOUTH FOR PROPERTY AT 185 COTTAGE STREET OWNED BY COLMAN C. GARLAND", BY EASTERLY SURVEYING, INC., SATED NOVEMBER 30, 2012, R.C.R.D. PLAN D-38047.
20. "PLOT PLAN FOR MARIAN M. BADGER, PORTSMOUTH, N.H.", BY JOHN W. DURGIN, DATED JULY 1973, RECEIVED FROM THE OFFICE OF JAMES VERRA.
21. "LAND ON CATE STREET, PORTSMOUTH, N.H., BADGER & RAND TO PORTSMOUTH POWER CO.", BY JOHN W. DURGIN, DATED JANUARY 8, 1926, RECEIVED FROM THE OFFICE OF JAMES VERRA.
22. "RIGHT-OF-WAY AND TRACK MAP BOSTON AND MAINE R.R. OPERATED BY THE BOSTON & MAINE R.R., STATION 2928+05 TO 2966+20", DATED JUNE 30, 1914, ON FILE AT THE NH DEPARTMENT OF TRANSPORTATION.
23. "ALTA/ACSM LAND TITLE SURVEY, TAX MAP 234, LOT 51 PROPERTY OF THE MEADOWBROOK INN CORPORATION", BY MSC CIVIL ENGINEERS & LAND SURVEYORS, DATED DECEMBER 2, 2018, R.C.R.D. PLAN D-36980.
24. "LOT LINE REVISION PLAN TAX MAP R-34 LOTS 6 & 7-6, LOCATED ON BORTHWICK AVE., COAKLEY ROAD AND U.S. ROUTE 1 BYPASS IN PORTSMOUTH, NH", BY KIMBALL CHASE, DATED OCTOBER 20, 1993, R.C.R.D. PLAN #D-22686.
25. "PLAN OF LAND FOR SEACOAST DEVELOPMENT GROUP, LLC, US ROUTE 1 BYPASS & COAKLEY ROAD, PORTSMOUTH, NH", BY MILLETTE, SPRAGUE & COLWELL, INC., DATED JUNE 7, 2002, R.C.R.D. PLAN #D-30041.
26. "LOT LINE REVISION PLAN LAND OF SEARAY REALTY, LLC", BY DOUCET SURVEY, INC., DATED MARCH 12, 2014, R.C.R.D. PLAN D-38435.
27. "STANDARD PROPERTY SURVEY & PROPOSED SIDEWALK EASEMENT FOR THE CITY OF PORTSMOUTH FOR PROPERTY AT 185 COTTAGE STREET PORTSMOUTH, NH OWNED BY COLMAN C. GARLAND", BY NORTH EASTERLY SURVEYING, INC., DATED NOVEMBER 30, 2012, R.C.R.D. PLAN #D-38017.
28. "PLAN OF A LOT OF LAND BELONGING TO FRANK JONES", DATED JULY 1901, R.C.R.D. PLAN #223.
29. "MEADOWBROOK INN CONDOMINIUM SITE PLAN, MAP 234, LOT 51 IN PORTSMOUTH, NH, PREPARED FOR THE MEADOWBROOK INN CORPORATION", BY VANASSE HANGEN BRUSTLIN, INC., DATED SEPTEMBER 25, 2009, R.C.R.D. PLAN #D-36162.
30. "PROPOSED EASEMENTS - BARTLETT STREET, BARTLETT SEWER SEPARATION PROJECT OVER LAND OF PAN AM RAILWAYS, PORTSMOUTH, NH FOR CITY OF PORTSMOUTH", BY JAMES VERRA AND ASSOCIATES, INC., DATED OCTOBER 1, 2007, R.C.R.D. PLAN #D-35477.
31. "EASEMENT PLAN - 653 ISINGTON STREET, BARTLETT SEWER SEPARATION PROJECT OVER LAND OF HOUSTON HOLDINGS, LLC", BY JAMES VERRA AND ASSOCIATES, INC., DATED JUNE 22, 2009, R.C.R.D. PLAN #D-35957.
32. "LAND TRANSFER AND EASEMENT PLAN, 30 CATE STREET PORTSMOUTH, NH OWNED BY MERTON ALAN INVESTMENTS, LLC", BY TF MORAN/MSC, DATED OCTOBER 31, 2017, R.C.R.D. PLAN #D-40742.
33. "LAND IN PORTSMOUTH, N.H. BARTLETT & CATE STREET", BY JOHN W. DURGIN CIVIL ENGINEER, DATED JULY 1924, R.C.R.D. PLAN #0133.



LOCATION MAP (n.t.s.)

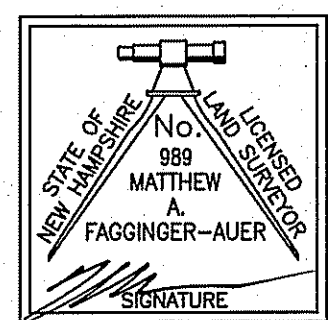


EXISTING PARCEL LAYOUT



PROPOSED PARCEL LAYOUT

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.



*Matthew A. Fagginger-Auer*  
L.L.S. #989  
DATE: 2/15/19

THE CERTIFICATIONS SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND ARE NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.

APPROVED FOR THE RECORD

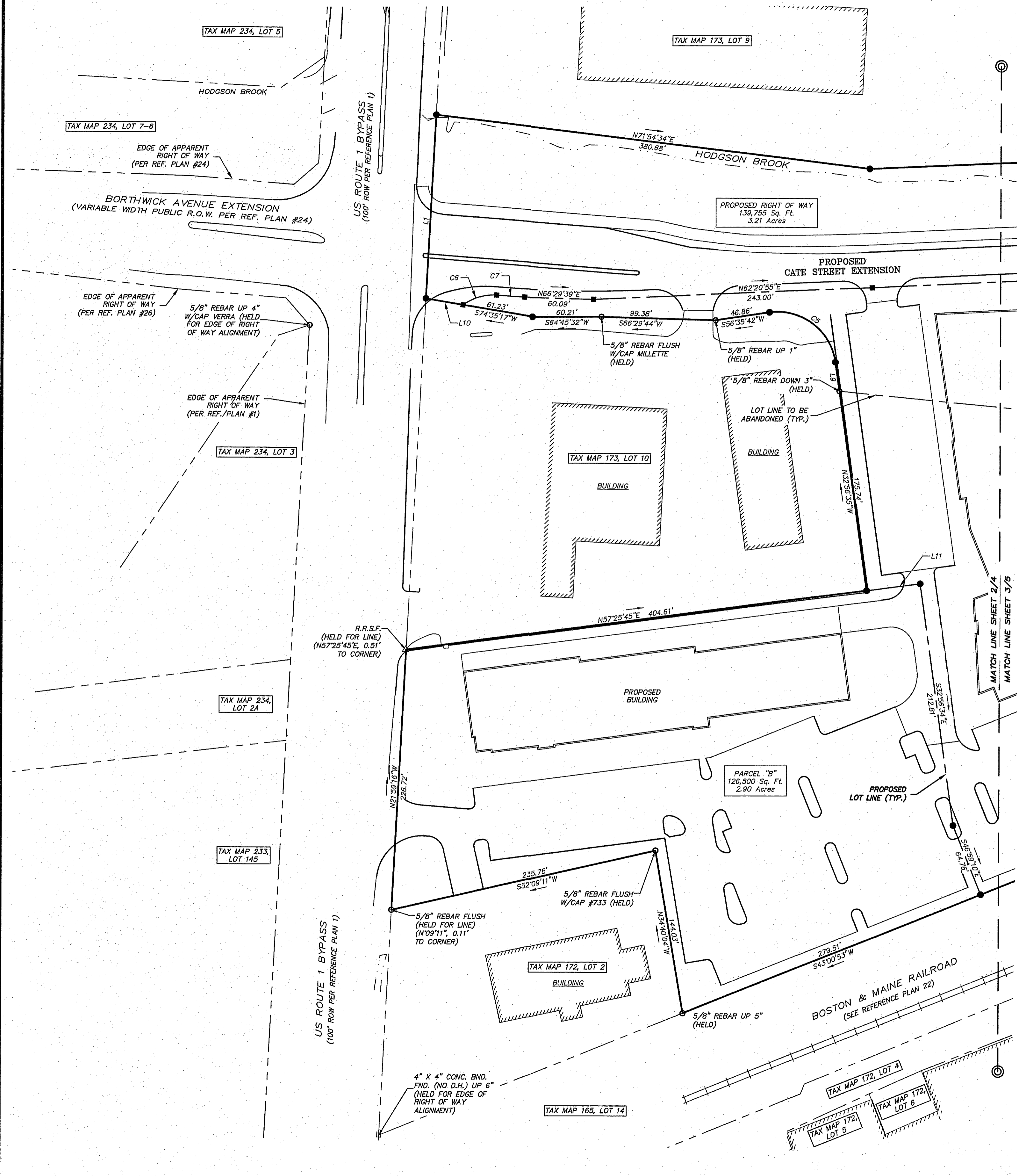
CHAIRMAN PORTSMOUTH PLANNING BOARD DATE

**SUBDIVISION PLAN**  
FOR  
CATE STREET DEVELOPMENT LLC  
OF  
TAX MAP 163, LOTS 33 & 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
CATE STREET & US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY

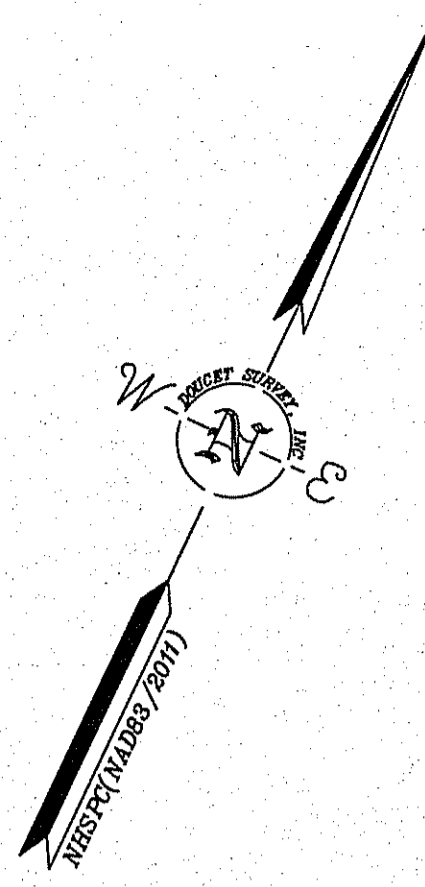
DRAWN BY: M.W.F. DATE: JULY 3, 2019  
CHECKED BY: W.J.D. DRAWING NO.: 5517D  
JOB NO.: 5517 SHEET 1 OF 10

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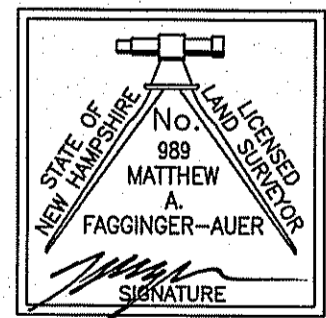
CURVE TABLE					
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	19.41'	2836.93'	0°23'31"	S50°31'13"W	19.41'
C2	134.92'	2836.93'	2°43'29"	N52°04'44"E	134.90'
C3	180.71'	11451.20'	0°54'15"	N54°18'39"E	180.71'
C4	108.14'	11451.20'	0°32'28"	N55°02'01"E	108.14'
C5	80.85'	51.00'	90°49'33"	S78°21'38"E	72.64'
C6	30.94'	45.00'	39°23'52"	N48°30'09"E	30.34'
C7	24.56'	1008.50'	1°23'42"	N68°53'56"E	24.56'
C8	38.52'	635.87'	3°28'15"	N60°29'39"E	38.51'
C9	15.14'	635.87'	1°21'52"	N58°04'35"E	15.14'
C10	115.78'	133.00'	49°52'37"	N82°19'58"E	112.16'
C11	99.86'	178.00'	32°08'32"	N88°47'59"W	98.55'
C12	181.57'	200.00'	52°00'57"	S83°14'19"E	175.40'
C13	84.14'	100.00'	48°12'27"	N81°13'11"E	81.68'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N21°59'16"W	161.10'
L2	S25°06'26"E	30.74'
L3	N65°44'42"E	40.75'
L4	N38°11'17"W	10.00'
L5	N71°55'42"E	30.64'
L6	S40°12'57"E	34.79'
L7	S36°26'29"E	20.00'
L8	N46°59'07"W	41.00'
L9	N32°56'35"W	25.61'
L10	S74°35'17"W	32.88'
L11	N57°25'45"E	47.00'
L12	S26°33'24"E	20.39'
L13	S79°44'51"E	24.00'
L14	N65°28'25"E	31.49'
L15	S55°22'43"W	92.06'
L16	S55°22'43"W	56.61'
L17	N20°49'54"W	60.72'
L18	N20°49'54"W	74.81'
L19	N35°02'16"W	44.30'
L20	N35°02'16"W	46.03'



**SUBDIVISION PLAN**  
 FOR  
**CATE STREET DEVELOPMENT LLC**  
 OF  
 TAX MAP 163, LOTS 33 & 34  
 TAX MAP 165, LOT 2  
 TAX MAP 172, LOT 1  
 TAX MAP 173, LOT 2  
**CATE STREET & US ROUTE 1 BYPASS**  
 PORTSMOUTH, NEW HAMPSHIRE

- LEGEND**
- LOT LINE
  - - - PROPOSED LOT LINE
  - - - APPARENT RIGHT OF WAY LINE
  - - - LOT LINE TO BE ABANDONED
  - - - APPROXIMATE BUTTER LOT LINE
  - - - EDGE OF WETLAND
  - BOUND FOUND
  - △ R.R.S.F. RAILROAD SPIKE FOUND
  - IRON PIPE/ROD FOUND
  - 4" X 4" GRANITE BOUND TO BE SET
  - 5/8" REBAR W/ID CAP TO BE SET
  - BND. FND. BOUND FOUND
  - I.P.F. IRON PIPE FOUND
  - CONC. CONCRETE
  - D.H. DRILL HOLE



I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.

[Signature] L.L.S. #989  
 DATE 4/13/19

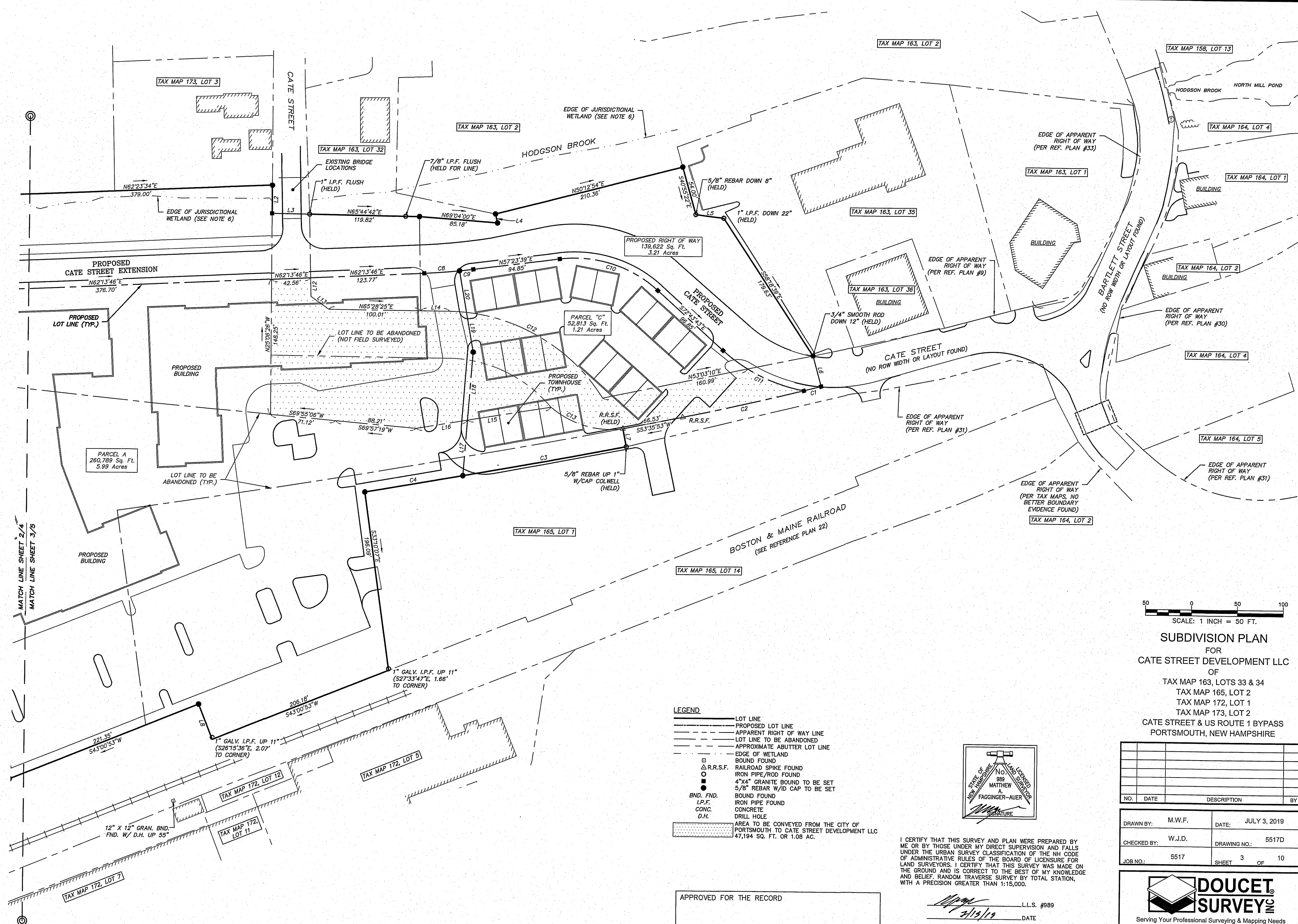
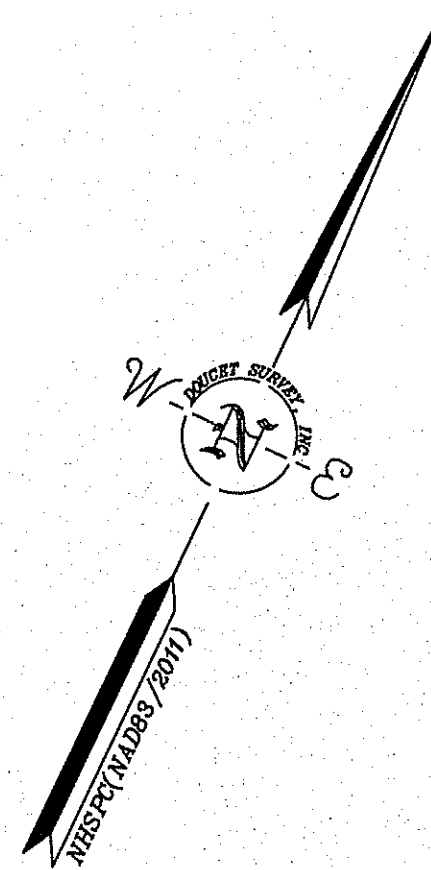
APPROVED FOR THE RECORD  
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 CHAIRMAN PORTSMOUTH PLANNING BOARD DATE

NO.	DATE	DESCRIPTION	BY

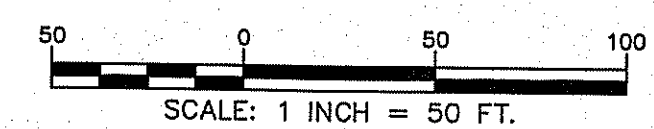
DRAWN BY: M.W.F.	DATE: JULY 3, 2019
CHECKED BY: W.J.D.	DRAWING NO.: 5517D
JOB NO.: 5517	SHEET 2 OF 10

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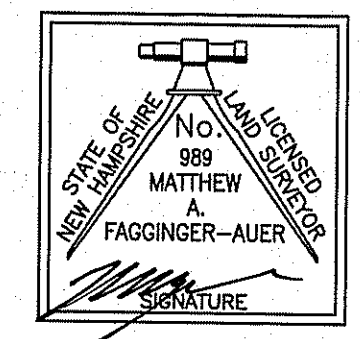


MATCH LINE SHEET 2/4  
MATCH LINE SHEET 3/5



**SUBDIVISION PLAN**  
FOR  
CATE STREET DEVELOPMENT LLC  
OF  
TAX MAP 163, LOTS 33 & 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
CATE STREET & US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE

- LEGEND**
- LOT LINE
  - - - PROPOSED LOT LINE
  - · - - APPARENT RIGHT OF WAY LINE
  - · - - LOT LINE TO BE ABANDONED
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  - BOUND FOUND
  - △ R.R.S.F.
  - RAILROAD SPIKE FOUND
  - IRON PIPE/ROD FOUND
  - 4"x4" GRANITE BOUND TO BE SET
  - 5/8" REBAR W/D CAP TO BE SET
  - BOUND FOUND
  - IRON PIPE FOUND
  - CONC.
  - D.H.
  - AREA TO BE CONVEYED FROM THE CITY OF PORTSMOUTH TO CATE STREET DEVELOPMENT LLC 47,194 SQ. FT. OR 1.08 AC.



I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.

APPROVED FOR THE RECORD  
CHAIRMAN PORTSMOUTH PLANNING BOARD DATE

*[Signature]* L.L.S. #989  
DATE 2/15/19

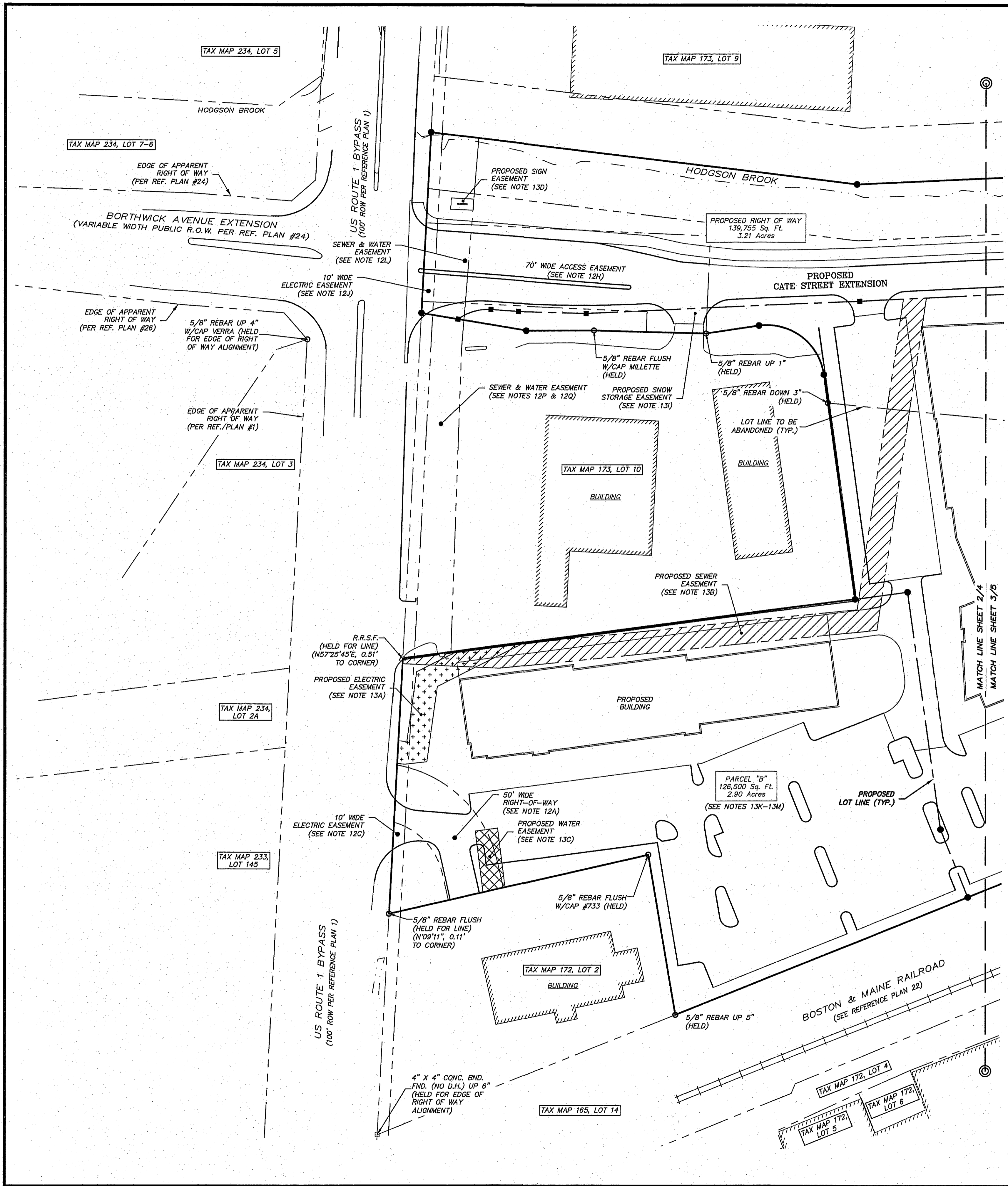
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NO.	DATE	DESCRIPTION	BY

DRAWN BY:	M.W.F.	DATE:	JULY 3, 2019
CHECKED BY:	W.J.D.	DRAWING NO.:	5517D
JOB NO.:	5517	SHEET	3 OF 10

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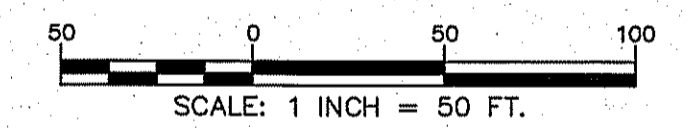
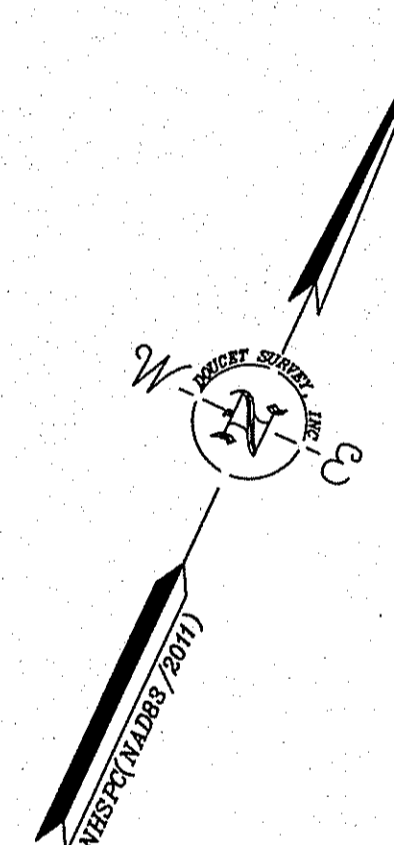
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- SEE SHEET 1 FOR NOTES 1-11.
12. THE FOLLOWING LOTS ARE EITHER SUBJECT TO OR IN BENEFIT OF, BUT NOT LIMITED TO, THE FOLLOWING EASEMENTS/RIGHTS OF RECORD:
- TAX MAP 172, LOT 1
    - A. SUBJECT TO A 50' WIDE RIGHT OF WAY FOR THE BENEFIT OF TAX MAP 172, LOT 2 SEE R.C.R.D. BOOK 2411, PAGE 1484 AND R.C.R.D. PLAN D-10722 (TO BE ABANDONED).
    - B. EXCEPTING AN 8" WATER PIPE LOCATED UNDER SUBJECT PARCEL, SEE R.C.R.D. BOOK 2783, PAGE 560, LOCATION OF SUBJECT WATER PIPE UNKNOWN.
    - C. SUBJECT TO A 10' WIDE ELECTRIC EASEMENT, SEE R.C.R.D. BOOK 1257, PAGE 324 AND R.C.R.D. PLAN D-19110.
    - D. SUBJECT TO A WATER LINE EASEMENT, SEE R.C.R.D. BOOK 950, PAGE 174, LOCATION OF SUBJECT WATERLINE UNKNOWN.
    - E. SUBJECT TO AN ELECTRIC EASEMENT, SEE R.C.R.D. BOOK 1374, PAGE 97, LOCATION OF SUBJECT EASEMENT UNKNOWN.
    - F. SUBJECT TO AN ELECTRIC EASEMENT, SEE R.C.R.D. BOOK 2364, PAGE 397, LOCATION OF SUBJECT EASEMENT UNKNOWN.
    - G. SUBJECT TO A 15' DRIVEWAY EASEMENT, SEE R.C.R.D. BOOK 2216, PAGE 18, LOCATION OF SUBJECT EASEMENT UNKNOWN.
  - TAX MAP 173, LOT 2
    - H. SUBJECT TO A 70' WIDE ACCESS EASEMENT IN FAVOR OF TAX MAP 173, LOT 10, SEE R.C.R.D. BOOK 3224, PAGE 87 AND R.C.R.D. PLAN D-24912 (TO BE ABANDONED).
    - I. SUBJECT TO A DRAINAGE EASEMENT TO THE UNITED STATES OF AMERICA, SEE R.C.R.D. BOOK 1423, PAGE 240 AND PLAN D-19110.
    - J. SUBJECT TO A 10' WIDE ELECTRIC EASEMENT, SEE R.C.R.D. BOOK 1257, PAGE 324. SEE ALSO R.C.R.D. PLAN D-19110.
    - K. SUBJECT TO EASEMENTS FOR PASSAGE AND PIPE LINES, SEE R.C.R.D. BOOK 2205, PAGE 646 AND PLAN D-24912. LOCATION OF SUBJECT EASEMENTS UNKNOWN.
    - L. SUBJECT TO A SEWER AND WATER EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH, SEE R.C.R.D. BOOK 1476, PAGE 252 (TO BE ABANDONED).
  - TAX MAP 165, LOT 2
    - M. SUBJECT TO A SEWER EASEMENT, SEE R.C.R.D. BOOK 1659, PAGE 273 (TO BE ABANDONED).
    - N. DRIVEWAY RIGHTS, SEE R.C.R.D. BOOK 1659, PAGE 273, LOCATION AND STATUS UNKNOWN.
    - O. ADDITIONAL COVENANTS AND EXCEPTIONS, SEE R.C.R.D. BOOK 1659, PAGE 273.
  - TAX MAP 173, LOT 10 (NOT SUBJECT PARCEL)
    - P. SUBJECT TO A SEWER EASEMENT, SEE R.C.R.D. BOOK 1270, PAGE 418.
    - Q. SUBJECT TO A WATER EASEMENT, SEE R.C.R.D. BOOK 1448, PAGE 465.

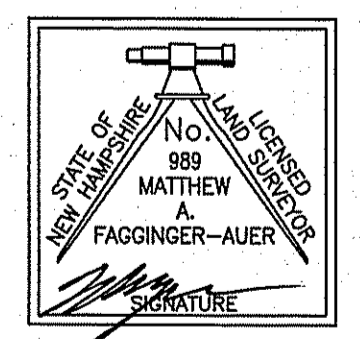
13. PROPOSED EASEMENTS (LOCATION SHOWN ON PLAN, METES AND BOUNDS DESCRIPTION TO BE ADDED ONCE EASEMENT LOCATIONS ARE APPROVED):
- A. PROPOSED 20' WIDE ELECTRIC EASEMENT IN FAVOR OF EVERSOURCE AND TAX MAP 173, LOT 10.
  - B. PROPOSED 20' WIDE SEWER EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH.
  - C. PROPOSED 20' WIDE WATER SERVICE EASEMENT IN FAVOR OF TAX MAP 172, LOT 2.
  - D. PROPOSED SIGN EASEMENT IN FAVOR OF CATE STREET DEVELOPMENT LLC.

- ADDITIONAL PROPOSED EASEMENTS:
- PARCEL "A" (RESIDENTIAL LOT)
- E. BLANKET UTILITY EASEMENT IN FAVOR OF EVERSOURCE.
  - F. BLANKET WATER SERVICE EASEMENT IN FAVOR OF TAX MAP 172, LOT 2.
  - G. BLANKET ACCESS EASEMENT IN FAVOR OF TAX MAP 172, LOT 2 AND PROPOSED PARCELS "B" & "C".
  - H. BLANKET WATER EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH TO MAINTAIN VALVES AND HYDRANTS.
  - I. 5' WIDE SNOW STORAGE EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH ALONG THE SOUTHERN LINE OF THE PROPOSED RIGHT OF WAY.
  - J. BLANKET ACCESS EASEMENT FOR EMERGENCY SERVICES.
- PARCEL "B" (COMMERCIAL LOT)
- K. BLANKET ACCESS EASEMENT IN FAVOR OF TAX MAP 172, LOT 2 AND PROPOSED PARCELS "A" & "C".
  - L. BLANKET WATER EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH TO MAINTAIN VALVES AND HYDRANTS.
  - M. BLANKET ACCESS EASEMENT FOR EMERGENCY SERVICES.
- PARCEL "C" (TOWN HOUSE LOT)
- N. BLANKET UTILITY EASEMENT IN FAVOR OF EVERSOURCE.
  - O. BLANKET ACCESS EASEMENT IN FAVOR OF TAX MAP 172, LOT 2 AND PROPOSED PARCELS "A" & "B".
  - P. BLANKET WATER EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH TO MAINTAIN VALVES AND HYDRANTS.
  - Q. 5' WIDE SNOW STORAGE EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH ALONG THE SOUTHERN LINE OF THE PROPOSED RIGHT OF WAY.
  - R. BLANKET ACCESS EASEMENT FOR EMERGENCY SERVICES.
  - S. SIGHT TRIANGLE EASEMENT IN FAVOR OF THE CITY OF PORTSMOUTH AT DRIVEWAY LOCATIONS AND ALONG FRONTAGE OF LOT, INTENDING TO LIMIT LANDSCAPING AND STRUCTURAL FEATURES TO LOW HEIGHT SHRUBS AND GROUND COVER. (EASEMENT AREA LINE WORK TO BE ADDED AS ALIGNMENT OF ROAD IS FINALIZED).



**EASEMENT PLAN**  
FOR  
**CATE STREET DEVELOPMENT LLC**  
OF  
TAX MAP 163, LOTS 33 & 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
CATE STREET & US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE

- LEGEND**
- LOT LINE
  - - - PROPOSED LOT LINE
  - - - APPARENT RIGHT OF WAY LINE
  - - - LOT LINE TO BE ABANDONED
  - - - APPROXIMATE ADJUTTER LOT LINE
  - - - EXISTING EASEMENT LINE (SEE NOTE #12)
  - - - PROPOSED EASEMENT LINE (SEE NOTE #13)
  - BOUND FOUND
  - R.R.S.F.
  - RAILROAD SPIKE FOUND
  - IRON PIPE/ROD FOUND
  - 4"x4" GRANITE BOUND TO BE SET
  - 5/8" REBAR W/D CAP TO BE SET
  - BND. FND.
  - I.P.F.
  - CONC.
  - D.H.



I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.

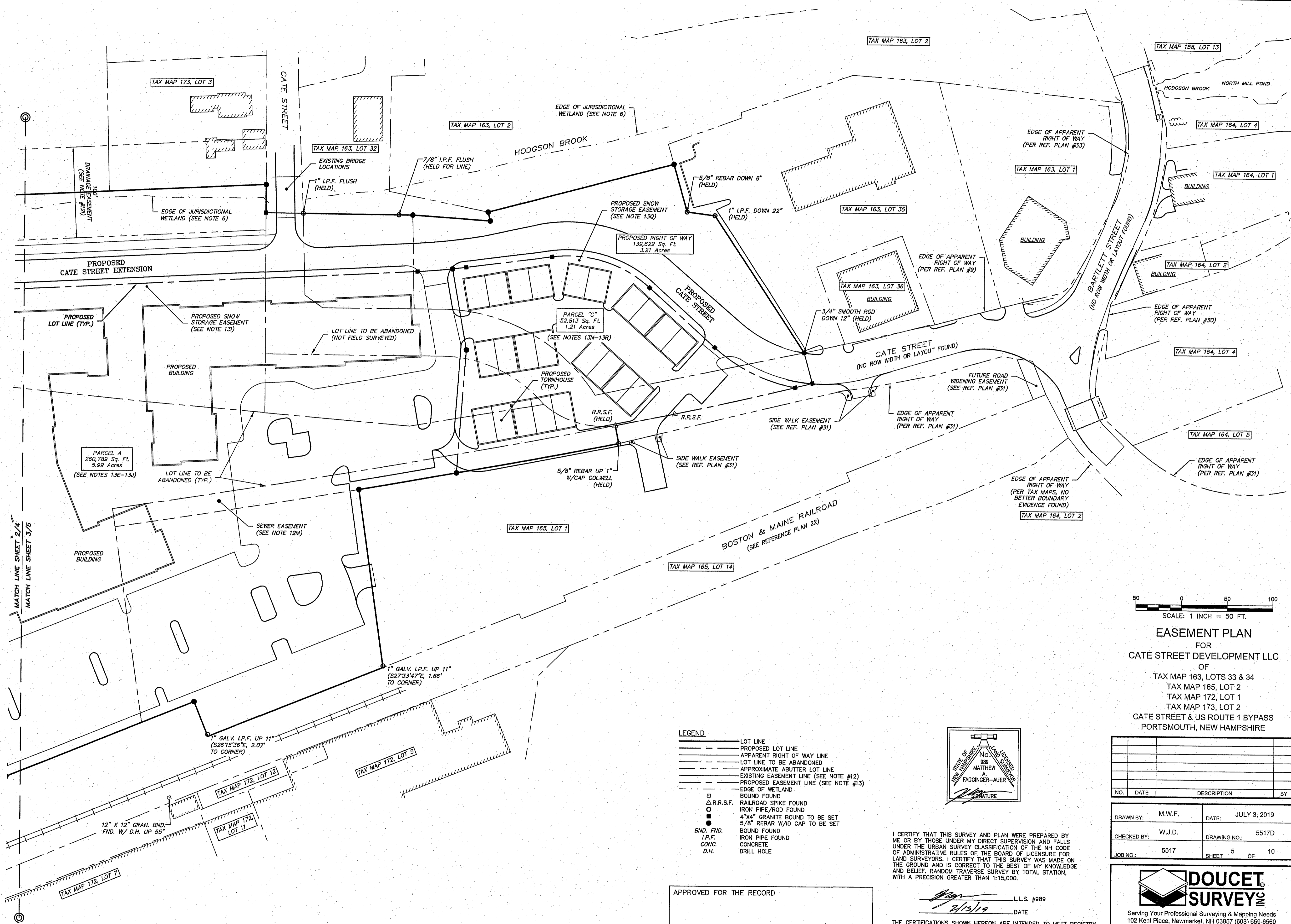
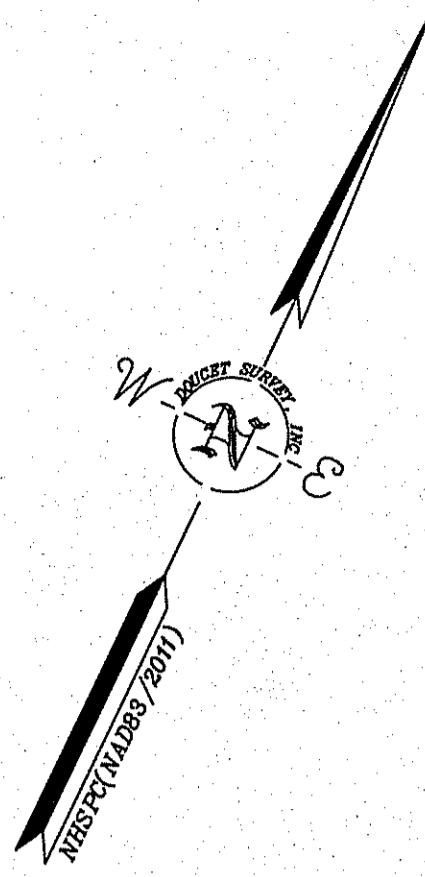
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CHAIRMAN PORTSMOUTH PLANNING BOARD DATE

*[Signature]* L.L.S. #989  
DATE 7/19/19

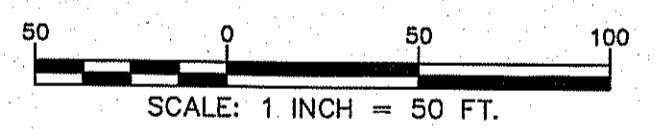
NO.	DATE	DESCRIPTION	BY

DRAWN BY: M.W.F.	DATE: JULY 3, 2019
CHECKED BY: W.J.D.	DRAWING NO.: 5517D
JOB NO.: 5517	SHEET 4 OF 10

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MATCH LINE SHEET 2/4  
MATCH LINE SHEET 3/5



**EASEMENT PLAN**  
FOR  
**CATE STREET DEVELOPMENT LLC**  
OF  
TAX MAP 163, LOTS 33 & 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
**CATE STREET & US ROUTE 1 BYPASS**  
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY

DRAWN BY:	M.W.F.	DATE:	JULY 3, 2019
CHECKED BY:	W.J.D.	DRAWING NO.:	5517D
JOB NO.:	5517	SHEET	5 OF 10

- LEGEND**
- LOT LINE
  - PROPOSED LOT LINE
  - - - APPARENT RIGHT OF WAY LINE
  - - - LOT LINE TO BE ABANDONED
  - - - APPROXIMATE ABUTTER LOT LINE
  - - - EXISTING EASEMENT LINE (SEE NOTE #12)
  - - - PROPOSED EASEMENT LINE (SEE NOTE #13)
  - - - EDGE OF WETLAND
  - BOUND FOUND
  - △ R.R.S.F. RAILROAD SPIKE FOUND
  - IRON PIPE/ROD FOUND
  - 4"x4" GRANITE BOUND TO BE SET
  - 5/8" REBAR W/D CAP TO BE SET
  - BOUND FOUND
  - IRON PIPE FOUND
  - CONC. CONCRETE
  - D.H. DRILL HOLE

STATE OF NEW HAMPSHIRE  
No. 989  
MATTHEW A. FAGGINGER-AUER  
LAND SURVEYOR  
SIGNATURE

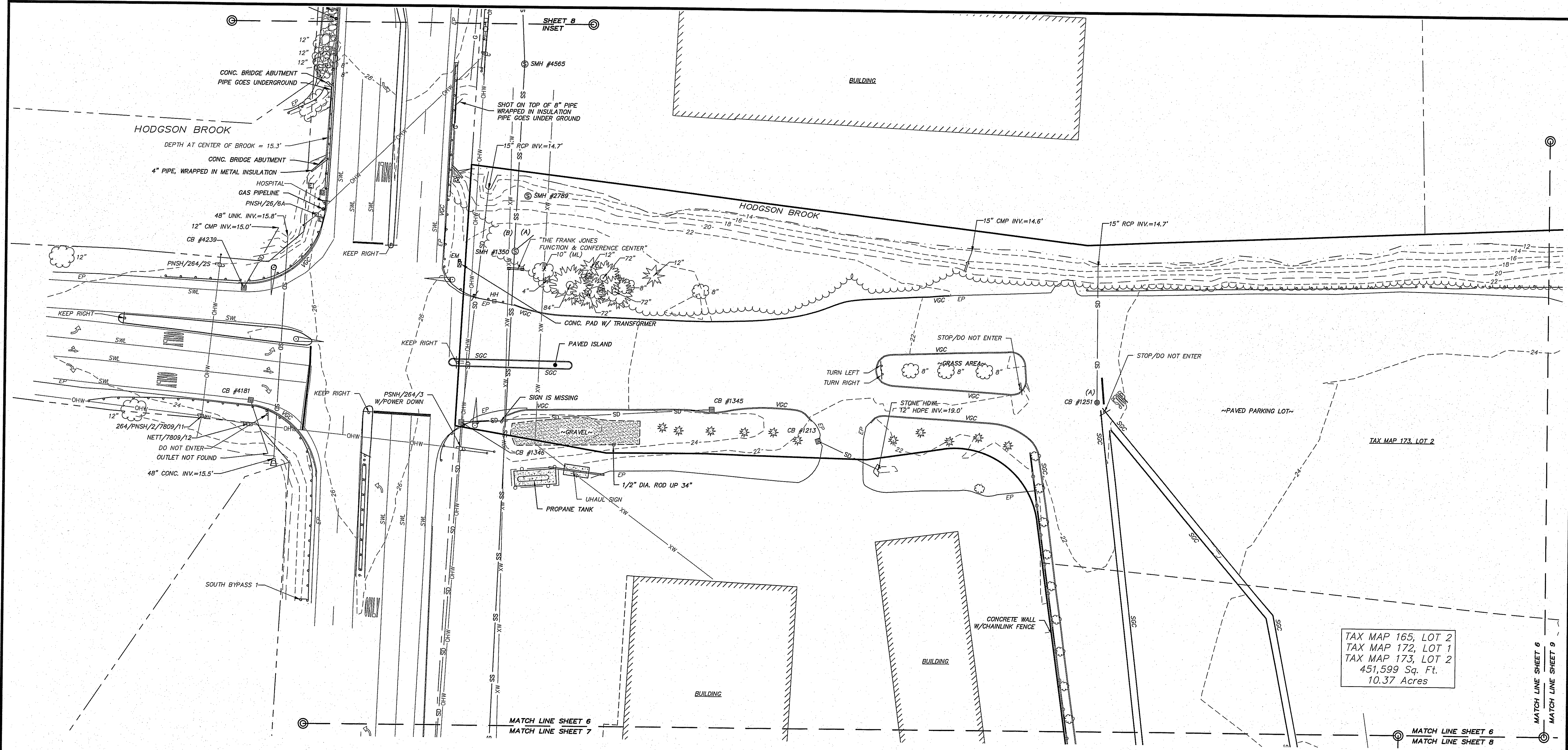
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APPROVED FOR THE RECORD  
CHAIRMAN PORTSMOUTH PLANNING BOARD DATE

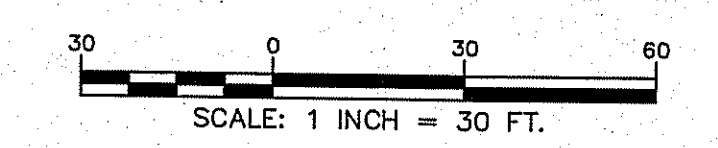
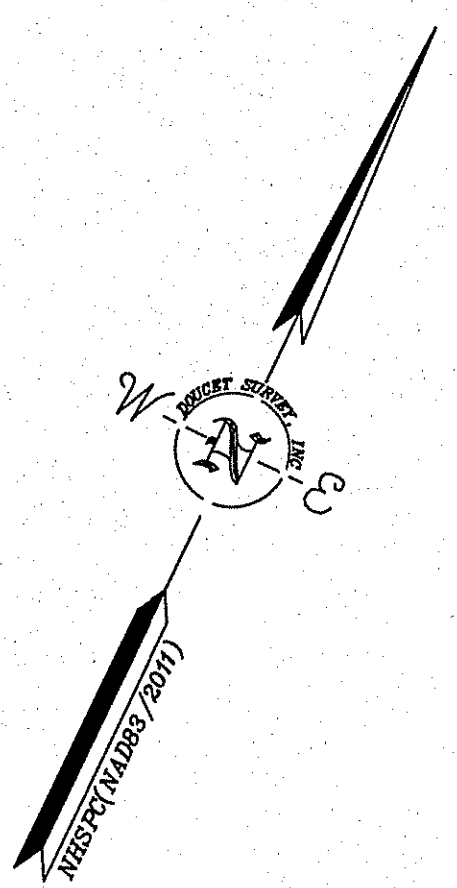
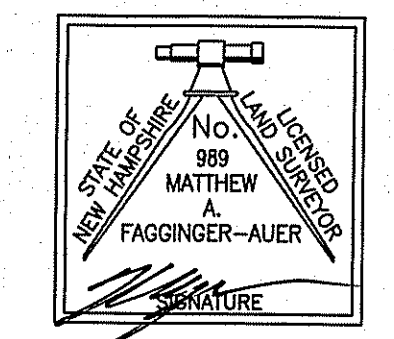
*Matthew A. Fagginger-Auer*  
L.L.S. #989  
DATE

THE CERTIFICATIONS SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND ARE NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.

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- NOTES:**
- REFERENCE: TAX MAP 163, LOT 33  
TAX MAP 163, LOT 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
  
OWNER OF RECORD  
CATE STREET DEVELOPMENT, LLC  
11 ELKINS STREET, SUITE 420  
BOSTON, MA 02127  
R.C.R.D. BOOK 5959, PAGE 109
  - FIELD SURVEY PERFORMED BY P.J.S. & J.C.M. DURING NOVEMBER 2016 USING A TRIMBLE S6 TOTAL STATION, A TRIMBLE R8 SURVEY GRADE GPS UNIT, A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL, BY L.P.S. & S.N.F. DURING JULY 2018 AND T.M.M. & J.C.M. IN SEPTEMBER & OCTOBER 2018 USING A TRIMBLE S6 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS. ADDITIONAL FIELD SURVEY PERFORMED BY M.C. DURING NOVEMBER 2016 AND OCTOBER 2018 USING A LEICA HDS SCANNER.
  - THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY MARC JACOBS IN NOVEMBER 2016 AND REVIEWED BY GOVE ENVIRONMENTAL SERVICES, INC. DURING APRIL 2018 IN ACCORDING TO THE US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-87-1, JANUARY 1987 AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2102 AND FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, MAY 2017, NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE.
  - HORIZONTAL DATUM IS BASED ON NGVD29 PER DISK V 28 1942 ELEV. 25.59.
  - HORIZONTAL DATUM BASED ON NEW HAMPSHIRE STATE PLANE(2800) NADB3(2011) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
  - PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 1' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY, INC. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
  - UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVABLE PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
  - THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING: THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
  - ALL ELECTRIC, GAS, TEL, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.
  - UNDERGROUND UTILITY DATA WAS PROVIDED TO DOUCET SURVEY, INC. BY THE CITY OF PORTSMOUTH GIS DEPARTMENT ON NOVEMBER 15, 2016. THIS DATA IS FOR PLANNING PURPOSES ONLY AND DOUCET SURVEY DOES NOT GUARANTEE THE ACCURACY OR EXISTENCE OF THE DATA PROVIDED. ON-SITE INSPECTION SHOULD BE CONDUCTED PRIOR FINAL DESIGN AND/OR CONSTRUCTION.



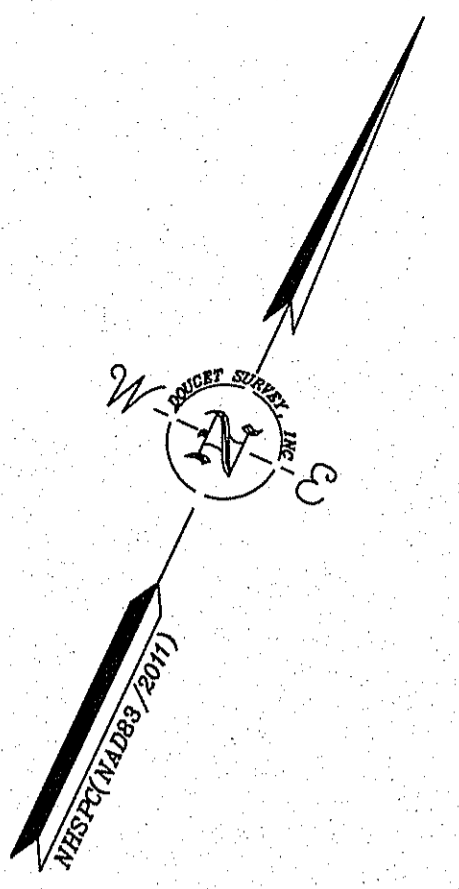
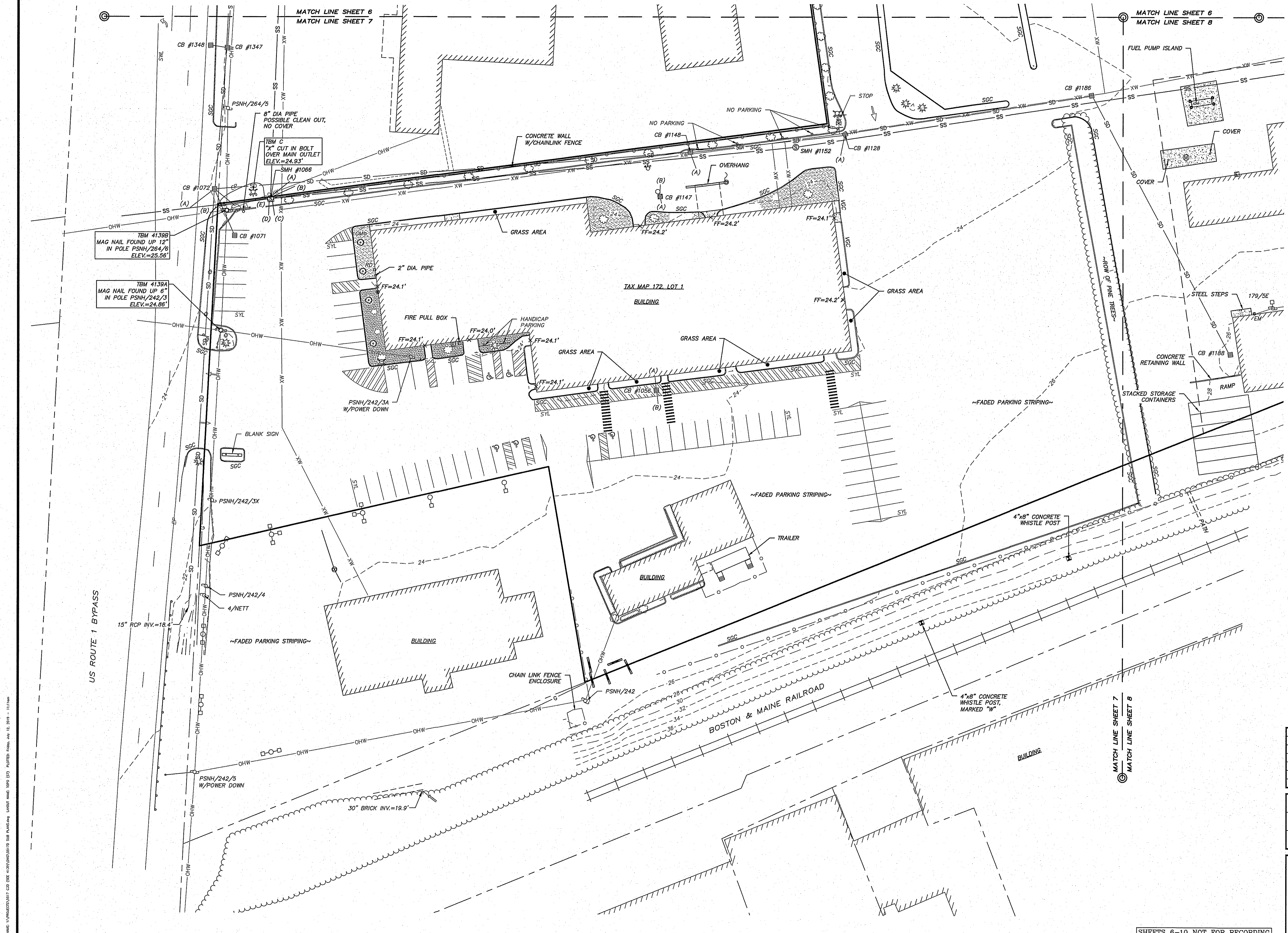
**TOPOGRAPHIC PLAN**  
FOR  
**CATE STREET DEVELOPMENT LLC**  
OF  
TAX MAP 163, LOTS 33 & 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
CATE STREET & US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE  
SHEETS 6-10 NOT FOR RECORDING

NO.	DATE	DESCRIPTION	BY

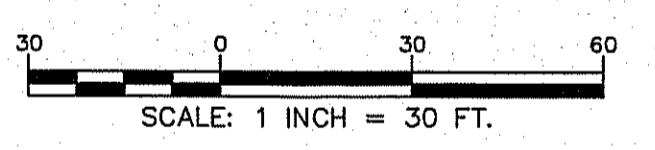
DRAWN BY:	M.W.F.	DATE:	JULY 3, 2019
CHECKED BY:	W.J.D.	DRAWING NO.:	5517D
JOB NO.:	5517	SHEET	6 OF 10

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NEW STATE OF  
 REGISTERED PROFESSIONAL SURVEYOR  
 No. 885  
 MATTHEW A. FAGGINGER-AUER  
 SIGNATURE



**TOPOGRAPHIC PLAN**  
 FOR  
**CATE STREET DEVELOPMENT LLC**  
 OF  
 TAX MAP 163, LOTS 33 & 34  
 TAX MAP 165, LOT 2  
 TAX MAP 172, LOT 1  
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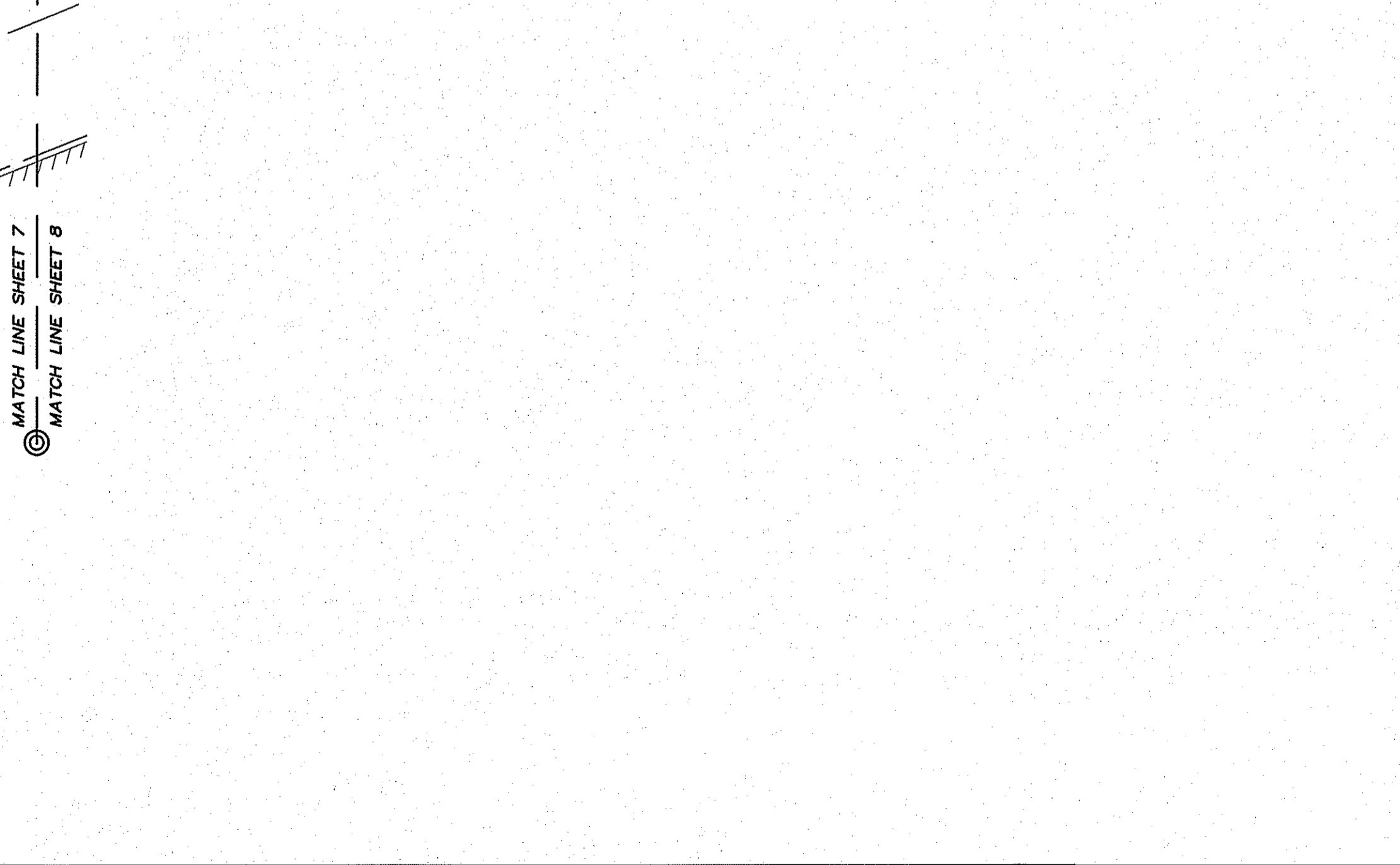
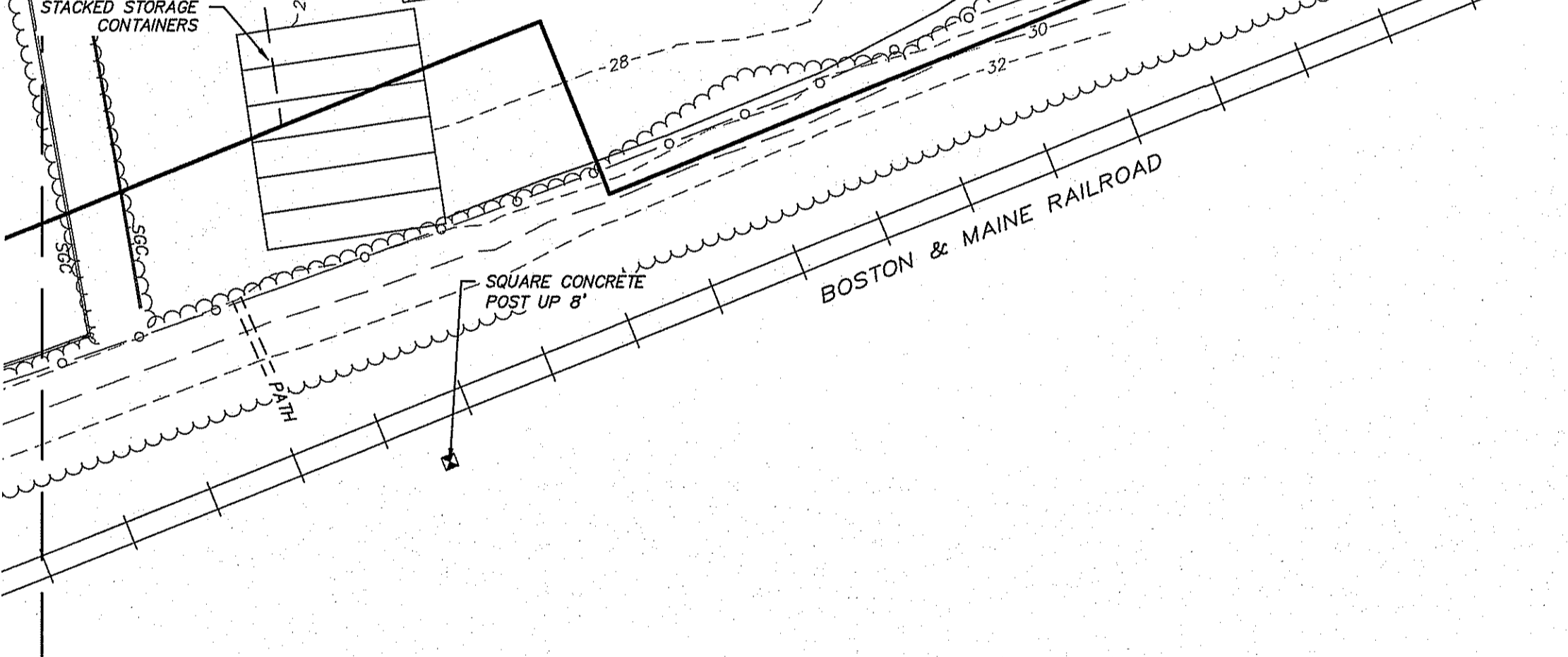
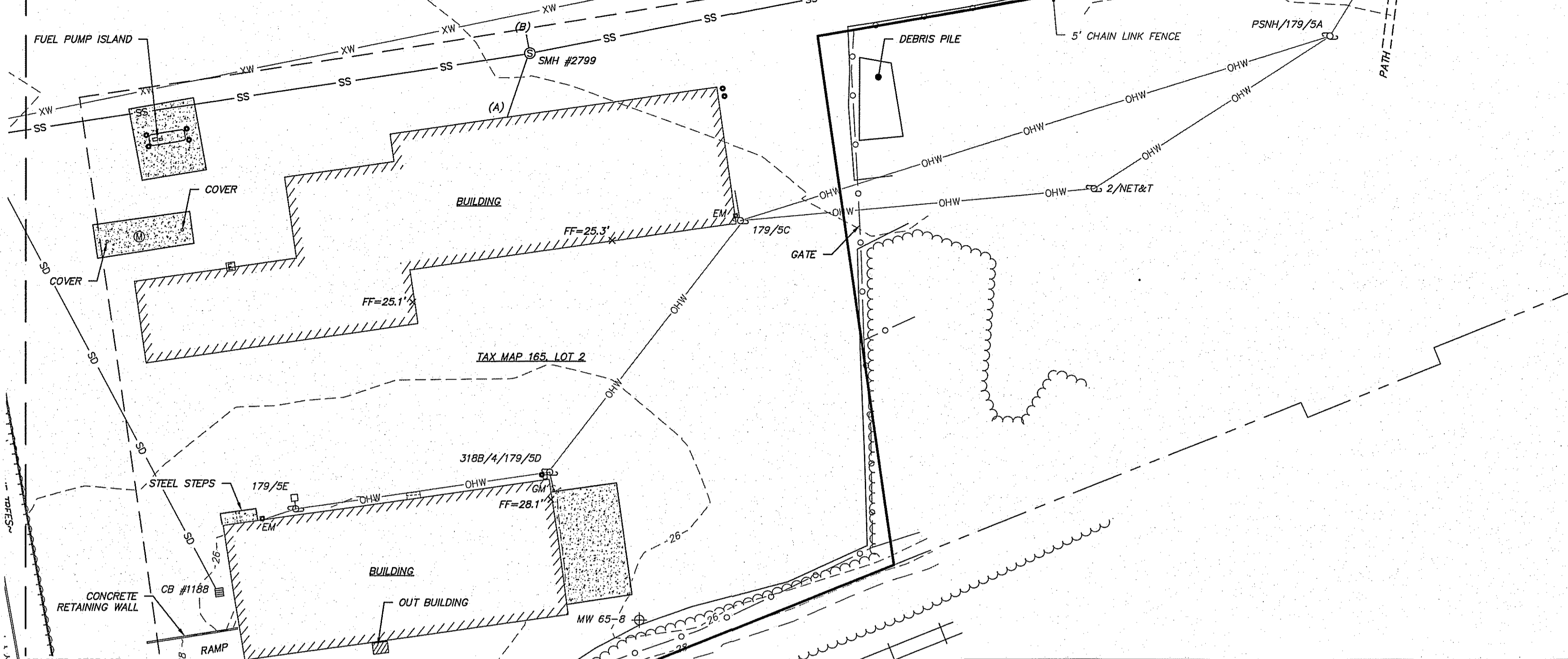
DRAWN BY:	M.W.F.	DATE:	JULY 3, 2019
CHECKED BY:	W.J.D.	DRAWING NO.:	5517D
JOB NO.:	5517	SHEET	7 OF 10

  
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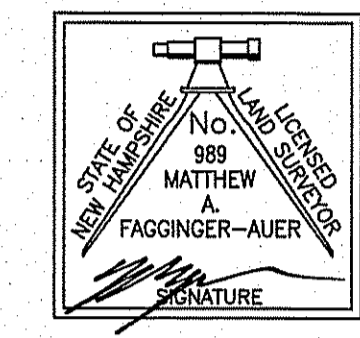
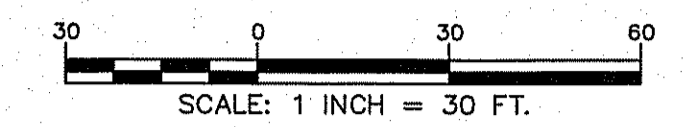
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MATCH LINE SHEET 6  
MATCH LINE SHEET 8



MATCH LINE SHEET 7  
MATCH LINE SHEET 8

**TOPOGRAPHIC PLAN**  
FOR  
CATE STREET DEVELOPMENT LLC  
OF  
TAX MAP 163, LOTS 33 & 34  
TAX MAP 165, LOT 2  
TAX MAP 172, LOT 1  
TAX MAP 173, LOT 2  
CATE STREET & US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE



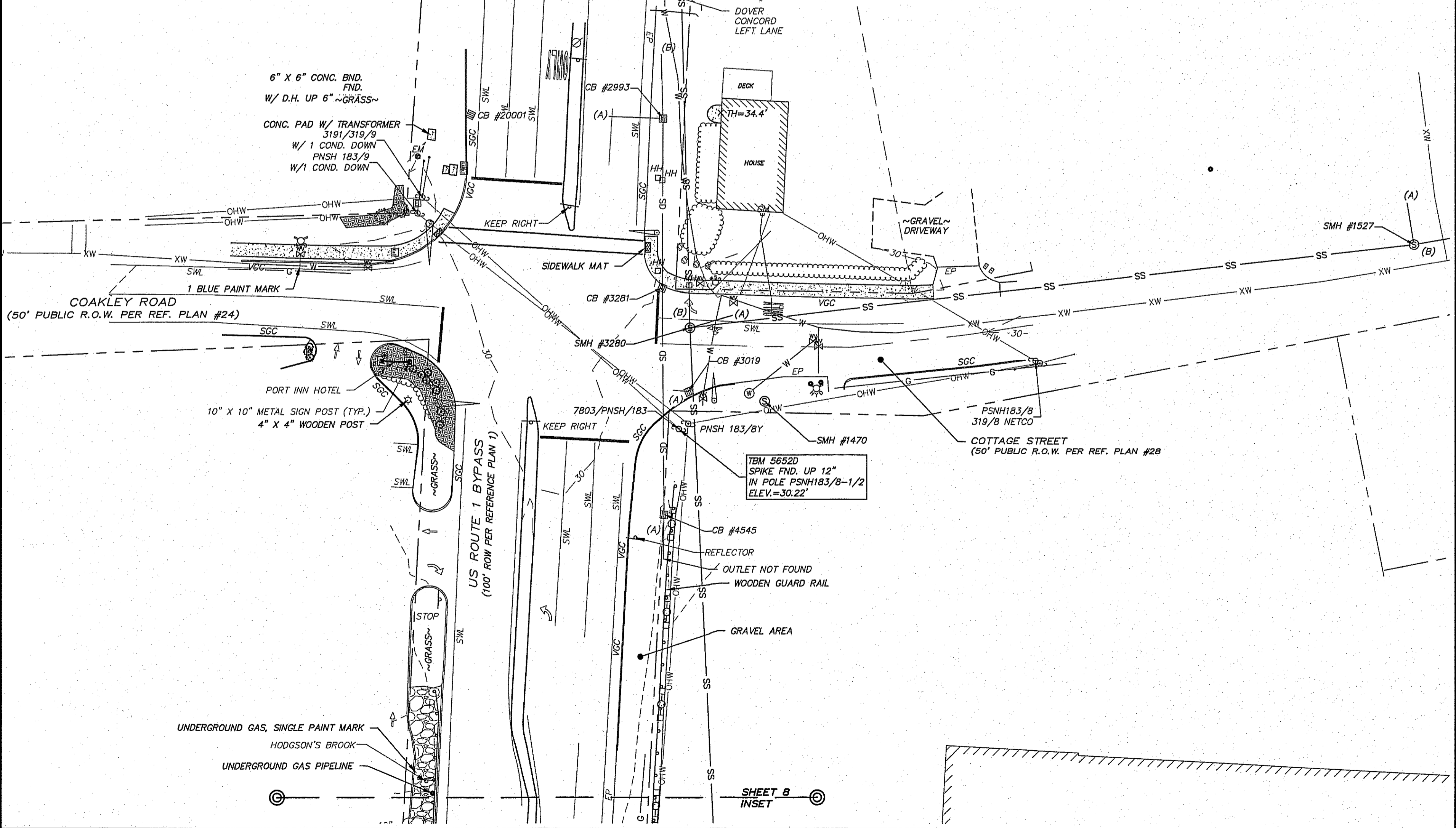
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DRAWN BY:	M.W.F.	DATE:	JULY 3, 2019
CHECKED BY:	W.J.D.	DRAWING NO.:	5517D
JOB NO.:	5517	SHEET	8 OF 10

SHEETS 6-10 NOT FOR RECORDING

**INSET (1"=30')**



SHEET 8  
INSET

FILE NAME: \\P:\PROJECTS\5517\_CSD (SEE 1337)\DWG\5517\_08B PLAN\04.dwg PLOTTED: Friday, July 12, 2019 - 11:15:00am



