

LAKEVIEW AVENUE CULVERT REPLACEMENT

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TOWN OF DRACUT, MA

MARCH 2024
FOR BID

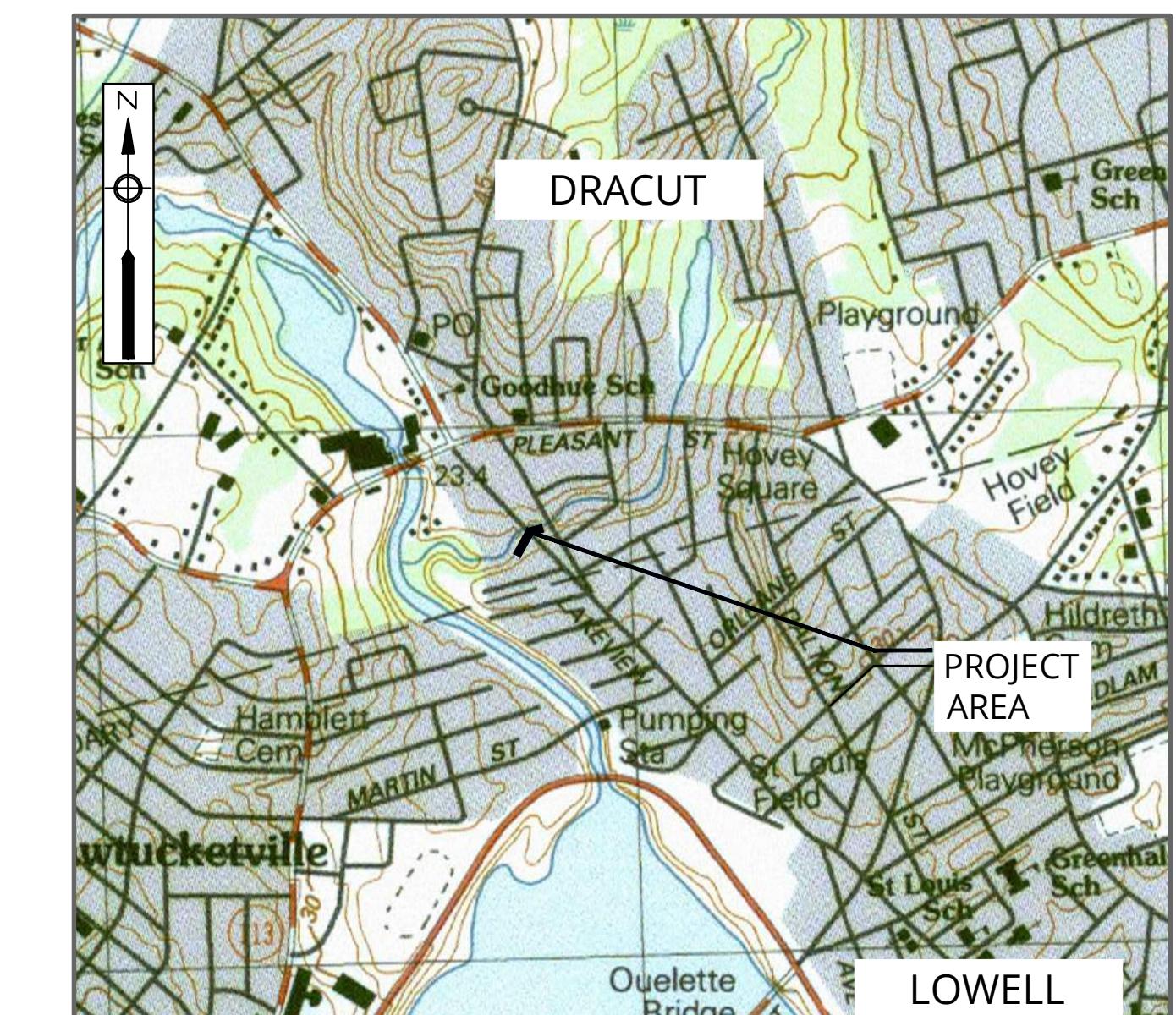


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DRACUT DEPARTMENT OF PUBLIC WORKS

ED PATENAUME - PUBLIC WORKS DIRECTOR

TINA RIVARD - ASSISTANT PUBLIC WORKS DIRECTOR
STORMWATER MANAGER



VICINITY MAP
1" = 1000'

GENERAL NOTES:

- BASE MAP INFORMATION BASED ON SURVEY PREPARED BY ZENITH LAND SURVEYORS IN JULY AND AUGUST 2022. ARCGIS ONLINE DATA DATED MAY 6, 2019, AND SURVEY PERFORMED BY ENVIRONMENTAL PARTNERS IN APRIL 2023. ELEVATION REFERENCES ARE NAVD88. HORIZONTAL COORDINATE SYSTEM DATUM IS MASSACHUSETTS STATE PLANE, NAD83, US SURVEY FEET.
- EXISTING TOPOGRAPHY AND SITE CONDITIONS SHOWN ON THIS PLAN SET WERE TAKEN FROM INSTRUMENT SURVEY PERFORMED BY ZENITH LAND SURVEYORS IN JULY & AUGUST OF 2022, SUPPLEMENTED AS NOTED BELOW.
- 2.1 MASS GIS INFORMATION WAS USED TO SHOW EXISTING BUILDINGS NOT LOCATED BY INSTRUMENT SURVEY. ALL SUCH STRUCTURES ARE LABELED "BUILDING PER GIS".
- 2.2 SEWER, WATER AND DRAINAGE INFORMATION SUPPLEMENTED FROM RECORD PLAN ENTITLED "TOWN OF DRACUT, MASSACHUSETTS SEWAGE WORKS IMPROVEMENTS SEWERS - CONTRACT NO. 1 BEAVER BROOK INTERCEPTOR" PREPARED BY CAMP DRESSER & MCKEE INC. DATED OCTOBER 1979, WITH REVISIONS THROUGH MAY 1981.
- RIGHT OF WAY PROPERTY LINE INFORMATION WITHIN THE LIMIT OF SURVEY TAKEN FROM PLANS ON FILE AT THE MIDDLESEX COUNTY REGISTRY OF DEEDS AND OFFICE OF THE MASSACHUSETTS LAND COURT.
- 3.1 MASS GIS INFORMATION WAS USED TO SUPPLEMENT PROPERTY LINE INFORMATION.
- 3.2 ALL PROPERTY LINES SHOWN ON THIS PLAN SET SHOULD BE CONSIDERED APPROXIMATE AND ARE NOT TO BE USED FOR STAKEOUT.
- THE LIMIT OF FEMA 100-YEAR FLOOD ZONE SHOWN IS BASED ON THE FLOOD INSURANCE STUDY FLOOD PROFILE FOR PEPPERMINT BROOK, PANEL 410P, REVISED JULY 16, 2016 AND FIRM PANEL 25017C0137E, EFFECTIVE JUNE 4, 2010. THE LINWORK SHOULD BE CONSIDERED APPROXIMATE.
- ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS IN ADVANCE, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO ANY EXCAVATION.
- DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS AND STATIONING SHALL PREVAIL. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL RESTORE ALL PUBLIC AND PRIVATE PROPERTY TO ITS PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL COST TO THE OWNER UNLESS NOTED TO BE ALTERED. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE TREES, BUSHES, PLANTS, PARKING METERS, FLOWERS, STONEWALLS, FENCES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED.
- ALL EXISTING STORM DRAIN, SEWER, AND WATER MAIN LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED. THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER SHALL REPAIR ANY EXISTING SEWERS, STORM DRAIN LINES, WATER LINES OR CULVERTS DAMAGED DURING CONSTRUCTION.
- IN THOSE INSTANCE WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE UTILITY COMPANY TO OBTAIN REQUIRED SERVICE. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES OR FOR ANY RELATED DELAYS.
- ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURE CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. ALL UTILITIES REQUIRING REPAIR, RELOCATION, OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED BY THE CONTRACTOR, THROUGH THE RESPECTIVE UTILITY AND THE OWNER.
- THE CONTRACTOR SHALL BE REQUIRED TO FURNISH AND MAINTAIN A TELEPHONE NUMBER WHERE THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY, 7 DAYS A WEEK.
- THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO THE TOWN AND THE ENGINEER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THESE AREAS. NO MATERIAL SHALL BE STORED ON THE PROJECT SITE OR WITHIN WETLAND RESOURCE AREAS OR THEIR BUFFER ZONES.
- THE CONTRACTOR SHALL IDENTIFY AND OBTAIN ALL NECESSARY PERMITS FOR WORK IN ROADWAYS AND TRENCHES. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL PERMITS AS AN INTEGRAL PART OF THE WORK.
- THE CONTRACTOR SHALL SAW CUT ALL PAVEMENT TO ITS FULL DEPTH IN THE PROCESS OF INSTALLING NEW UTILITIES IN ALL PAVED AREAS INCLUDING STREETS, DRIVEWAYS, AND SIDEWALKS.
- TEST PITS MAY BE ORDERED BY THE ENGINEER TO DETERMINE THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR MAY REQUEST TEST PITS TO VERIFY EXISTING UTILITIES AT NO ADDITIONAL COSTS TO THE OWNER.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- ALL EXCAVATION SHALL BE SECURED BY THE END OF EACH WORKING DAY BY BACKFILLING, COVERING WITH STEEL PLATES, OR TEMPORARY CONSTRUCTION FENCING.
- ALL DISTURBED SOILS SHALL BE REMOVED FROM THE PROJECT AREA. THE CONTRACTOR SHALL DELIVER ALL DISTURBED SOILS TO DPW YARD. THE TOWN DPW YARD IS LOCATED AT 833 HILDRETH STREET IN DRACUT, MA. THIS IS A TOWN REQUIREMENT.
- DPW SHALL RETAIN ALL CASTINGS REMOVED FROM THE PROJECT AREA, INCLUDING COVERS, GRATES, FRAMES, AND BOXES.
- CONTRACTOR SHALL PROVIDE A 1-YEAR WARRANTY FOR THE CONTRACT, AND A 2-YEAR WARRANTY PERIOD FOR PLANTINGS AND INSPECTIONS.
- CONTRACTOR SHALL COMPLY WITH MASSDEP SUPERSEDED ORDER OF CONDITIONS (SOC) LOCATED IN APPENDIX C OF THE SPECIFICATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A WETLAND SCIENTIST TO REVIEW AND REPORT ON THE WORK AS DESCRIBED IN THE SOC.
- ALL EXCAVATED STREAMBED MATERIAL AND HYDRIC WETLAND SOILS SHALL BE STOCKPILED AND REUSED.

TRENCH PAY LIMITS

THE TRENCH WIDTH PAY LIMIT SHALL BE AS FOLLOWS AND TAKE PRECEDENCE OVER ANY CONFLICTS WITH PAY LIMITS:

- PIPE ID EQUAL TO OR LESS THAN 24": MAXIMUM OF 5' WHERE DEPTH OF EXCAVATION IS 6' DEEP OR LESS, OR 7' WHERE THE EXCAVATION IS GREATER THAN 6' DEEP.
- PIPE ID GREATER THAN 24" AND EQUAL TO OR LESS THAN 36": MAXIMUM OF 6' WHERE DEPTH OF EXCAVATION IS 6' DEEP OR LESS, OR 8' WHERE THE EXCAVATION IS GREATER THAN 6' DEEP.
- PIPE ID GREATER THAN 36" AND BOX CULVERTS: TRENCH WIDTH PAY SHALL BE THE OUTSIDE DIAMETER (OR WIDTH) PLUS 4'.
- TRENCH WIDTH PAY LIMIT FOR MANHOLE STRUCTURES SHALL BE 2' BEYOND OD OF STRUCTURES.
- TRENCHES MAY BE EXCAVATED WIDER THAN THE PAY LIMIT. ANY SUCH ADDITIONAL EXCAVATION SHALL BE AT NO ADDITIONAL COST TO THE OWNER AND SHALL NOT BE MEASURED FOR PAYMENT. THIS INCLUDES BUT IS NOT LIMITED TO PAVING, PROCESSED GRAVEL, LANDSCAPING, BACKFILL, ETC.

GENERAL DEWATERING, STREAM BYPASS, AND EROSION CONTROL NOTES:

- THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF WORK. ALL WORK SHALL BE IN COMPLIANCE WITH THE ISSUED SUPERSEDED ORDER OF CONDITIONS (SOC) BY MASSDEP. THE MASSDEP SOC WILL TAKE PRECEDENCE OVER ALL DESIGN DOCUMENTS.
- THE CONTRACTOR SHALL HANDLE GROUNDWATER, WHERE ENCOUNTERED, AS DESCRIBED IN SECTION 02140. DURING ANY DEWATERING, THE CONTRACTOR SHALL USE TEMPORARY STONE AROUND THE SUCTION AND DISCHARGE ENDS TO MINIMIZE TRANSPORT OF TRENCH MATERIALS. THE DISCHARGED WATER SHALL PASS THROUGH FILTER FABRIC, SILT BAGS, FRAC TANKS OR A COMBINATION OF ALL.
- DEWATERING SYSTEM DISCHARGE TO INCLUDE ENERGY DISSIPATION TO PREVENT SCOUR.
- TEMPORARY DEWATERING SEDIMENTATION BASINS, IF REQUIRED, SHALL BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN STORAGE CAPACITY.
- CLEARING AND GRUBBING FOR CULVERT AND ACCESSORIES SHALL BE COORDINATED WITH THE ENGINEER AND THE TOWN OF DRACUT PRIOR TO ANY WORK ACTIVITIES. NO WORK SHALL BEGIN UNTIL AUTHORIZATION IS GRANTED BY ENGINEER AND APPROPRIATE CONSERVATION AGENCIES.
- DEWATERING SHALL BE SUPPLEMENTED WITH LOCAL SUMP PUMPS AS REQUIRED TO MAINTAIN DRY WORK.
- ALL FLOW FROM PEPPERMINT BROOK SHALL BE DIVERTED THROUGH THE GRAVITY BY-PASS SYSTEM (PRIMARY), AS SHOWN ON SHEET C-2, WHILE REPLACEMENT WORK IS BEING PERFORMED. GRAVITY BY-PASS PIPE DESIGNED TO HANDLE 2-YEAR, 24 HOUR STORM.
- A BACK-UP BYPASS PUMPING SYSTEM (SECONDARY) SHALL BE PROVIDED AND READY FOR IMMEDIATE OPERATION AND USE IN THE EVENT OF PEAK WET WEATHER CONDITIONS. THE TEMPORARY BACK-UP BYPASS PUMPING SYSTEM SHALL BE DESIGNED TO HANDLE FLOW FOR AT LEAST 2,600 GPM.
- PUMPS AND GENERATORS SHALL BE EQUIPPED WITH DOUBLE CONTAINMENT FUEL TANKS TO PREVENT ANY FUEL LEAKAGE IN THE RESOURCE AREA, UNDERLYING SOILS AND GROUNDWATER AND ADJACENT WATER SURFACES. FUEL TANKS SHALL HAVE A MINIMUM FUEL CAPACITY TO MAINTAIN AN UNINTERRUPTED 24-HOUR PUMPING PERIOD.
- PUMPS SHALL BE EQUIPPED WITH SOUND ATTENUATING ENCLOSURES TO MINIMIZE NOISE LEVELS TO RESIDENTS ADJACENT TO WORK. SOUND LEVELS SHALL BE MAINTAINED AT LESS THAN 73 dB AT A DISTANCE OF 30 FEET.
- FILTER SOCK AND OTHER EROSION AND SEDIMENT CONTROL MEASURES/DEVICES SHALL BE INSPECTED, CLEANED, REPLACED AND/OR REPAIRED AS NECESSARY, WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL.
- CONCRETE WASHOUT AREAS SHALL BE OUTSIDE THE BUFFER ZONES OF ALL RESOURCE AREAS.
- INSTALL FILTER SOCK PRIOR TO COMMENCEMENT OF THE EARTHWORK OPERATIONS. INSPECT EROSION CONTROLS IMMEDIATELY AFTER EACH STORM AND REMOVE ACCUMULATED SEDIMENT AS REQUIRED. REPLACE DAMAGED EROSION CONTROLS AS REQUIRED.
- SPILL KITS SHALL BE MAINTAINED ON-SITE AT ALL TIMES.
- NO STOCKPILING OF MATERIALS IS ALLOWED ON-SITE. THE TOWN DPW YARD SHALL BE USED TO STOCKPILE MATERIAL AND DELIVERED TO THE SITE ON AN AS-NEEDED BASIS.
- ALL FOUNDATIONS AND EXCAVATIONS SHALL OCCUR IN "THE DRY". GROUNDWATER SHALL BE LOWERED BY A MINIMUM OF 2' BELOW OF THE EXCAVATION.
- INSTALL EXCAVATION SUPPORT AS NECESSARY.

ABBREVIATIONS

AC	ASBESTOS CEMENT	HYDRANT
BCC	BITUMINOUS CONCRETE CURB	CATCH BASIN (CB)
CB	CATCH BASIN	DRAIN MANHOLE (DMH)
CB	CONCRETE BOUND	SEWER MANHOLE (SMH)
CCB	CAPE COD BERM	WATER VALVE
CDF	CONTROLLED DENSITY FILL	BITUMINOUS BERM
CI	CAST IRON	EDGE OF PAVEMENT (EOP)
CMP	CORRUGATED METAL PIPE	PROPERTY LINE
CONC	CONCRETE	EASEMENT
D	DRAIN	CONSTRUCTION ACCESS
DH	DRILL HOLE	WOOD FENCE
DI	DUCTILE IRON	CHAINLINK FENCE
DIA	DIAMETER	UTILITY POLE
DMH	DRAIN MANHOLE	GUY WIRE / GUY POLE
DMH	DRAIN MANHOLE	WATER MAIN
EL	ELEVATION	DRAIN LINE
EM	ELECTRIC METER	GAS MAIN
EOP	EDGE OF PAVEMENT	GRAVITY SEWER MAIN
EX	EXISTING	STONEWALL
FL	FOG LINE	OVERHEAD WIRE
FM	FORCEMAN	DECIDUOUS TREE
GM	GAS METER	EVERGREEN TREE
HH	HANDLE	TREE LINE
ID	INSIDE DIAMETER	EXISTING CONTOUR
INV	INVERT	100' RIVERFRONT AREA
LD	LANDSCAPE AREA	MEAN HIGH WATER/BANK LINE
LF	LINEAR FEET	MEAN HIGH WATER/BANK FLAG NUMBER
MAX	MAXIMUM	100' RIVERFRONT ZONE
MB	MAILBOX	STONE BOUND
MIN	MINIMUM	BORING
OC	ON CENTER	MAILBOX
PE	POLYETHYLENE	LIGHTPOLE
PROP	PROPOSED	SIGN
RCP	REINFORCED CONCRETE PIPE	100-YR FLOOD ZONE
RET WALL	RETAINING WALL	PRECAST CONCRETE CULVERT
S	SEWER	DRAIN MANHOLE (DMH)
SAC	SLOPED ASPHALT CURB	CATCH BASIN (CB)
SB	STONE BOUND	DRAIN LINE
SMH	SEWER COVER	WATER LINE
TBP	TO BE PROVIDED	FILTER SOCK
TYP.	TYPICAL	BYPASS PIPING
UP	UTILITY POLE	PROPOSED CONTOUR
VCC	VERTICAL CONCRETE CURB	TEST PIT
VCP	VITRIFIED CLAY PIPE	RIPRAP
VGC	VERTICAL GRANITE CURB	SOLID SLEEVE/COUPLING
W	WATER	GATE VALVE
WG	WATER GATE	LIMIT OF WORK
		UTILITY ABANDONMENT/DEMOLITION
		LIMITS OF FULL DEPTH PAVEMENT/SIDEWALK RESTORATION
		COFFERDAM
		LOAM AND SEED
		STONE RETAINING WALL
		STREAMBED
		GUARDRAIL
		CHAIN LINK FENCE

LEGEND EXISTING

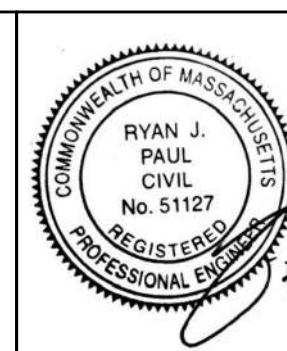
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LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA
GENERAL NOTES AND LEGEND

FOR BID
Sheet No.
G-1

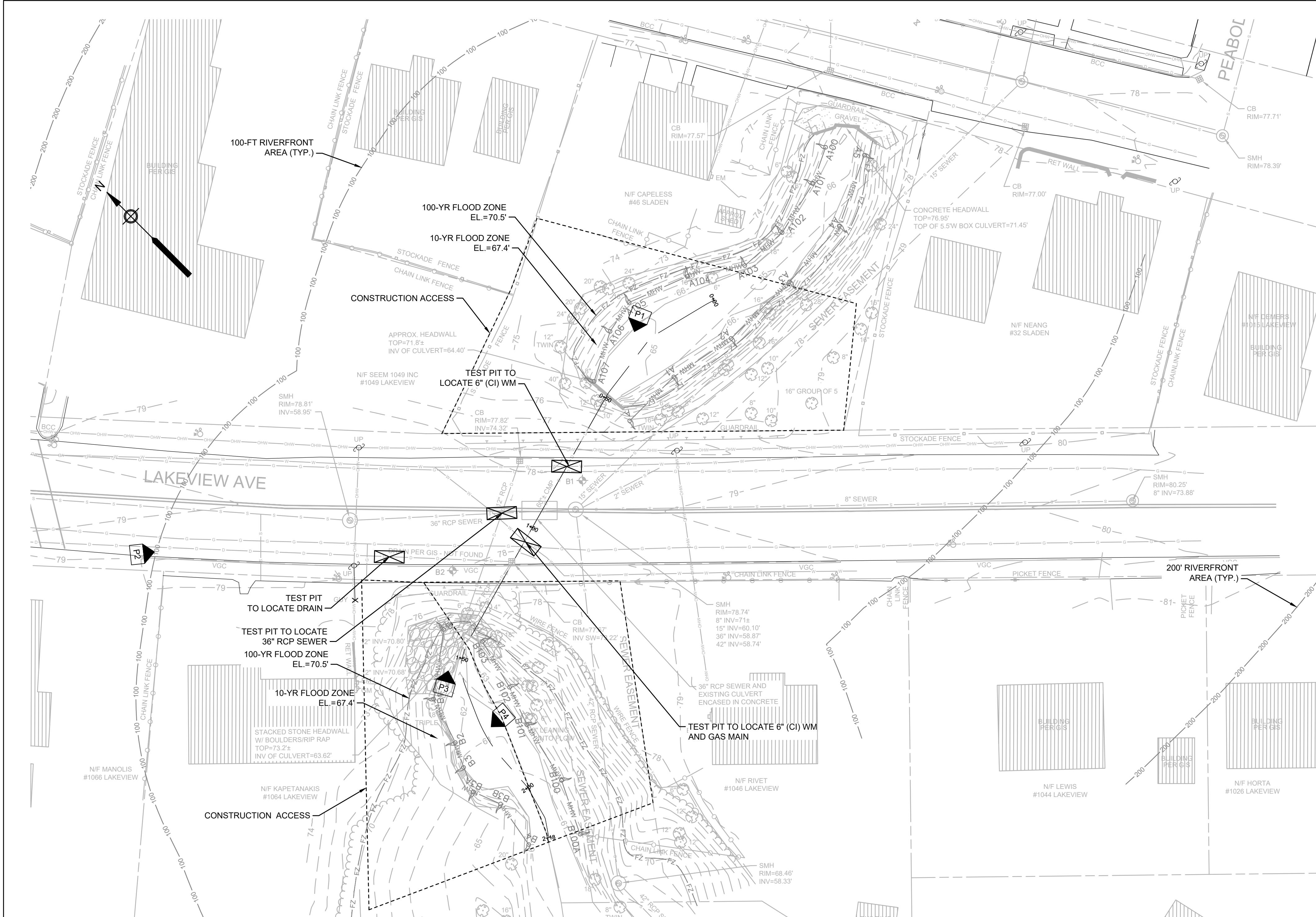


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P1- UPSTREAM HEADWALL



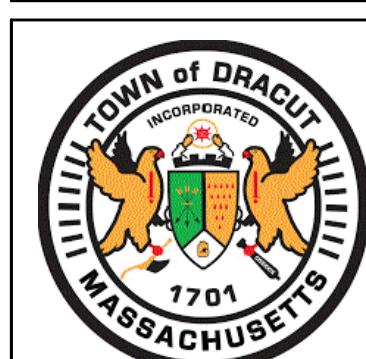
P2- LAKEVIEW AVE



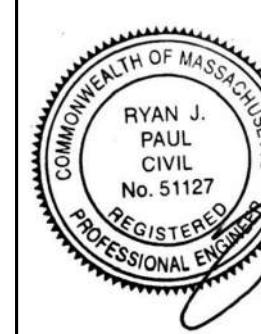
P3- DOWNSTREAM HEADWALL



P4- DOWNSTREAM EROSION



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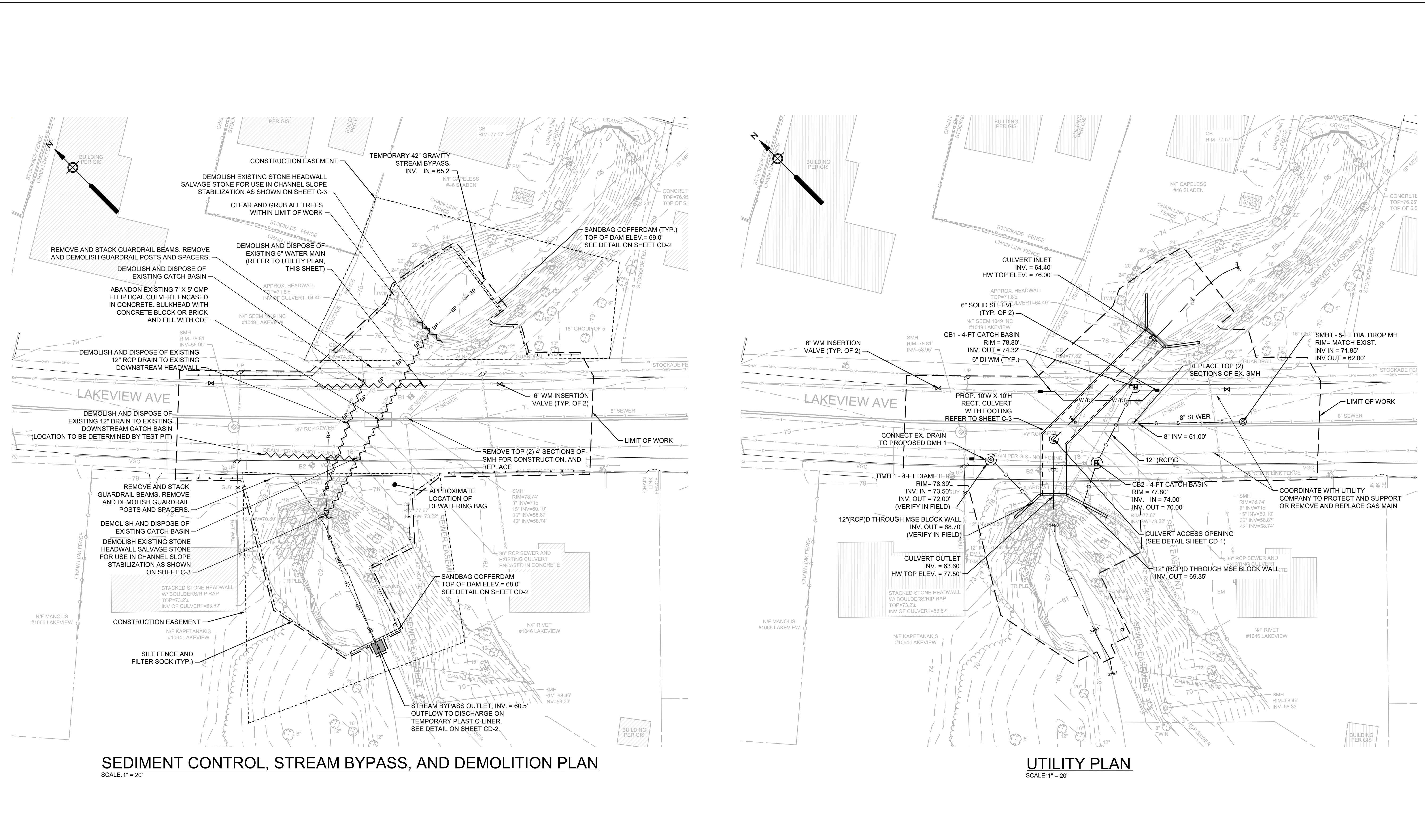
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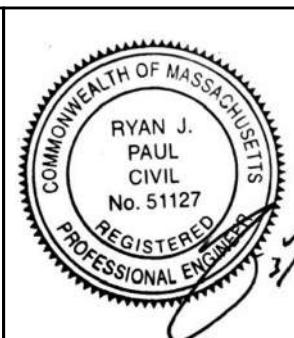
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

EXISTING CONDITIONS

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C-1



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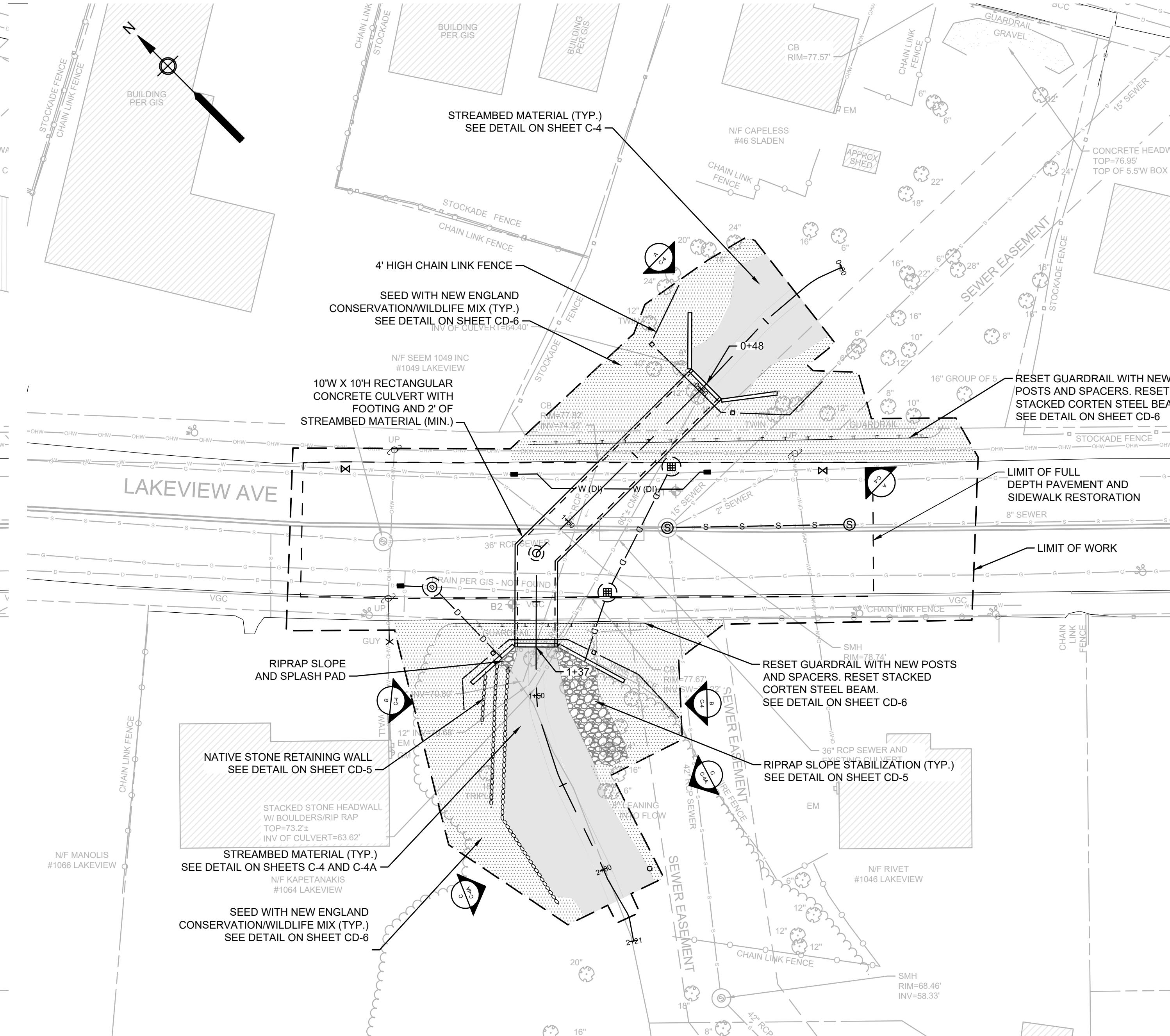
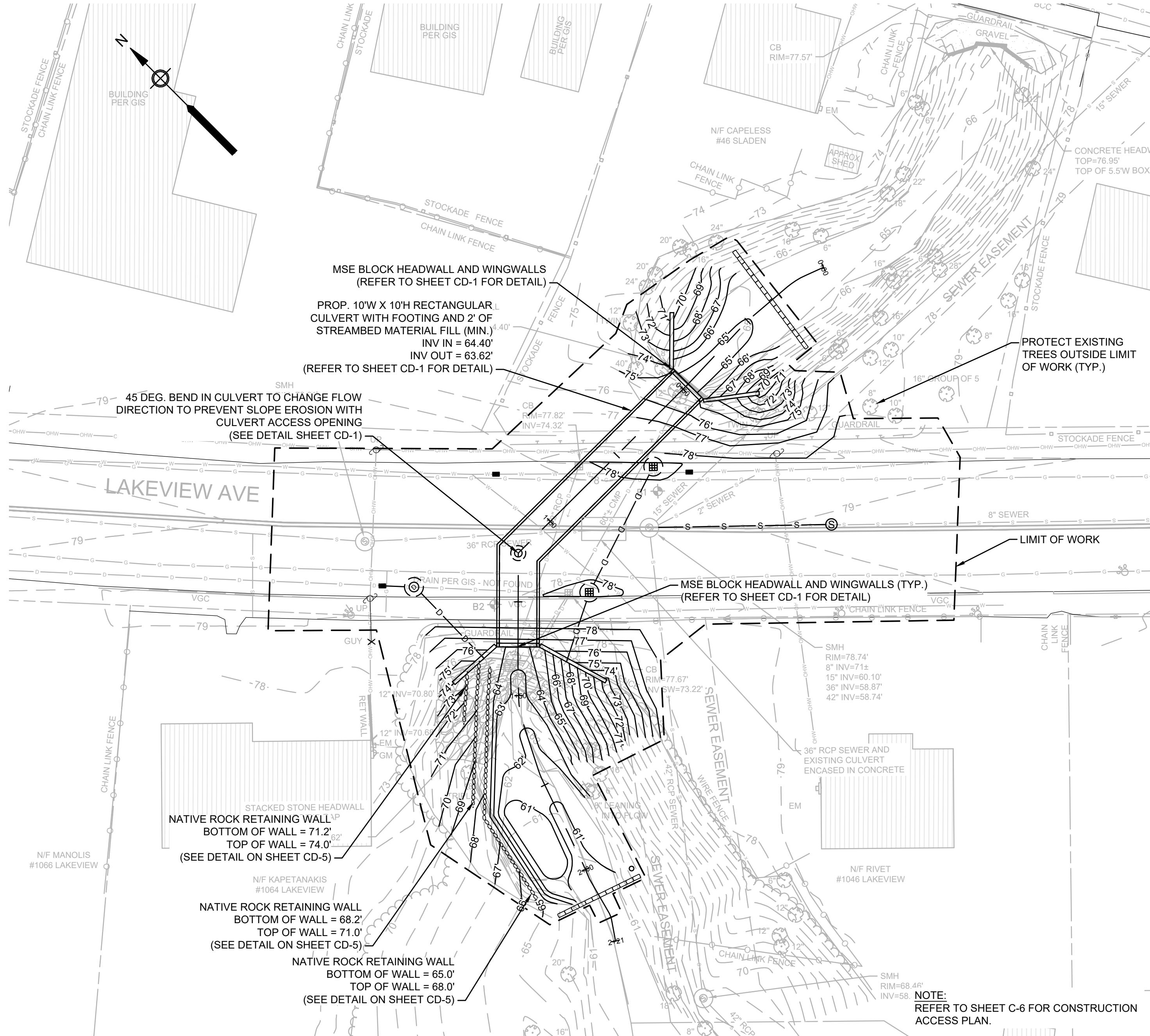
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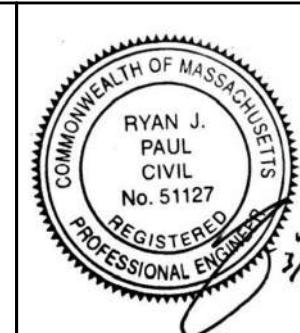
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

**SEDIMENT CONTROL, STREAM BYPASS, DEMOLITION PLAN,
AND UTILITY PLAN**

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C-2



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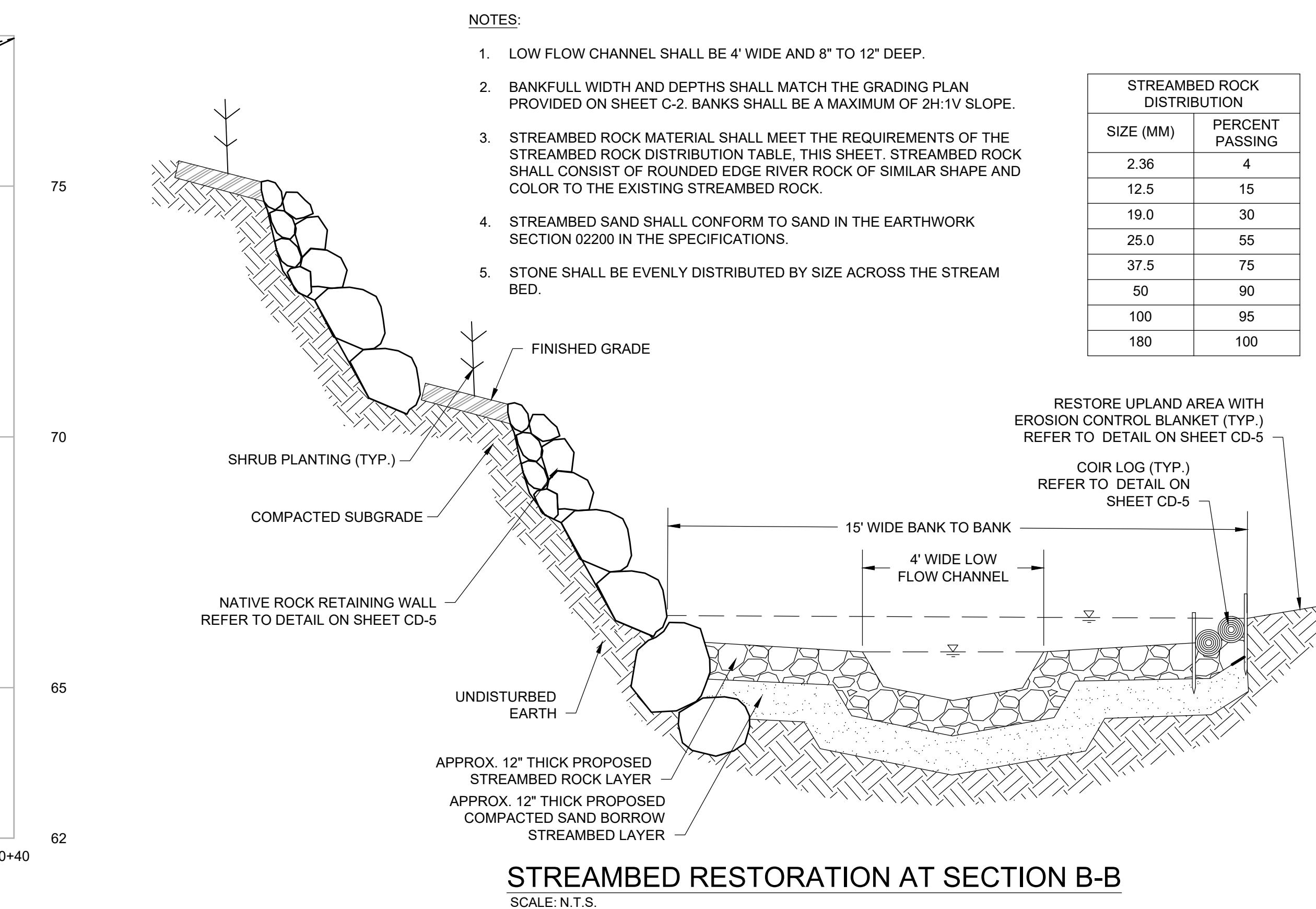
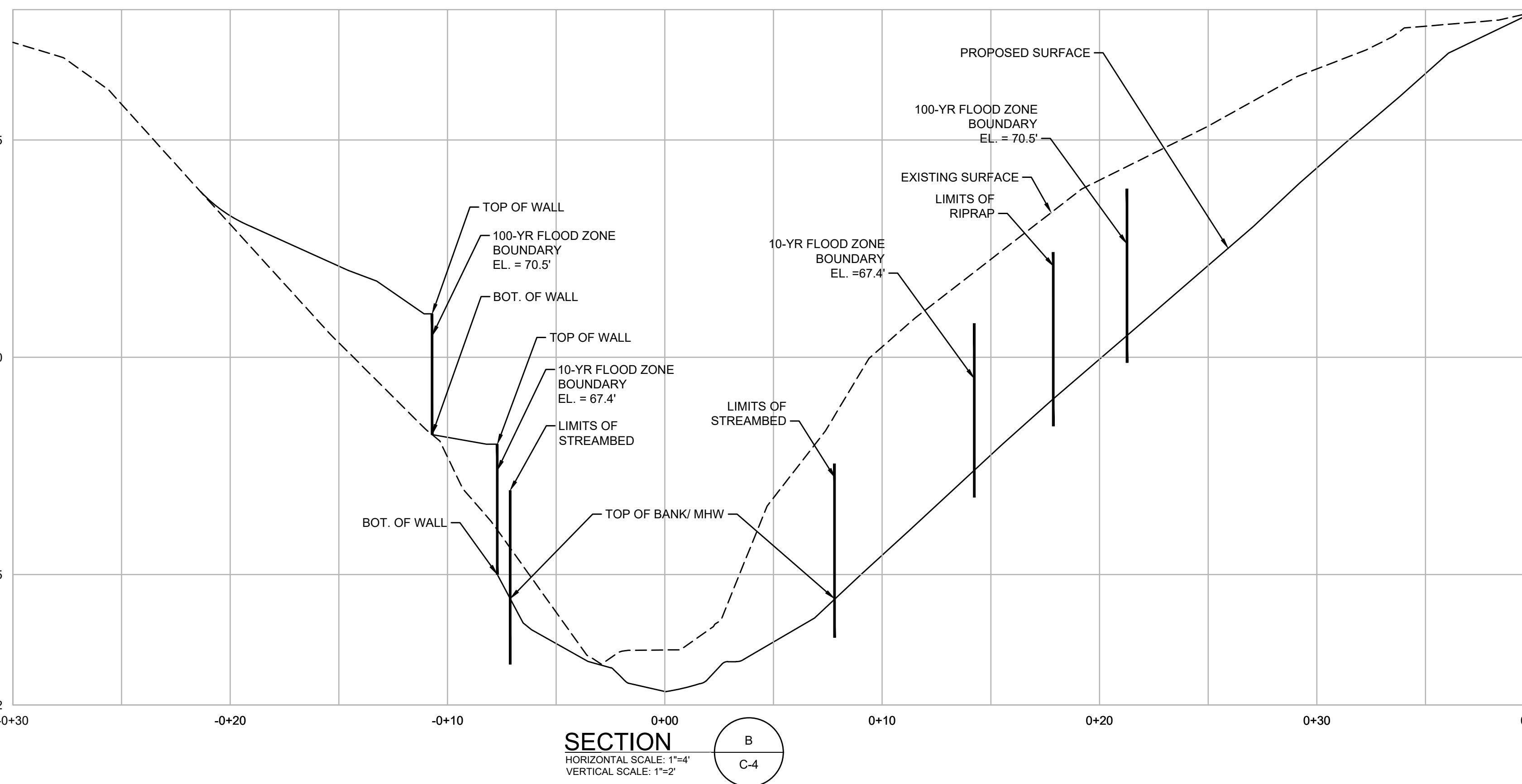
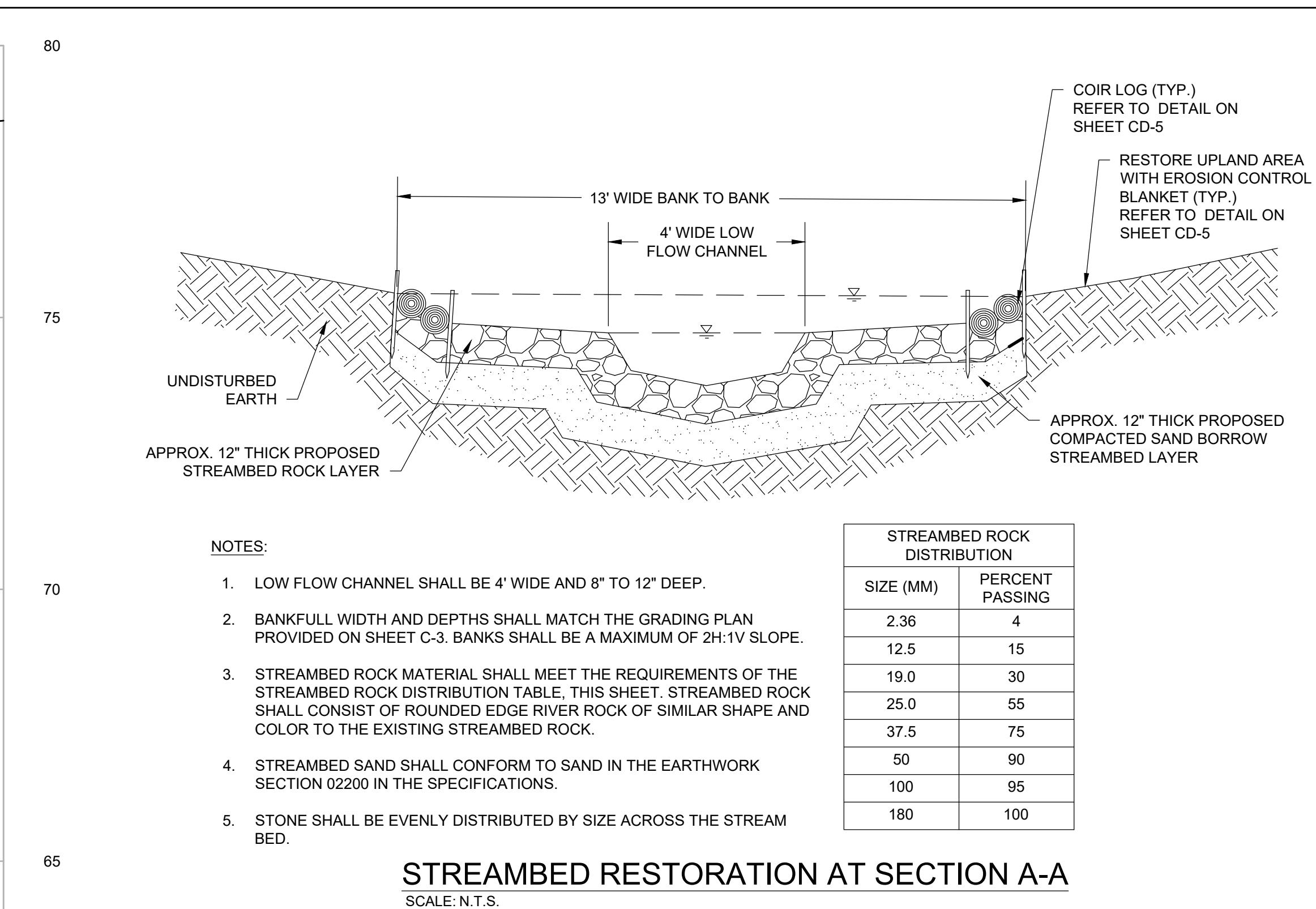
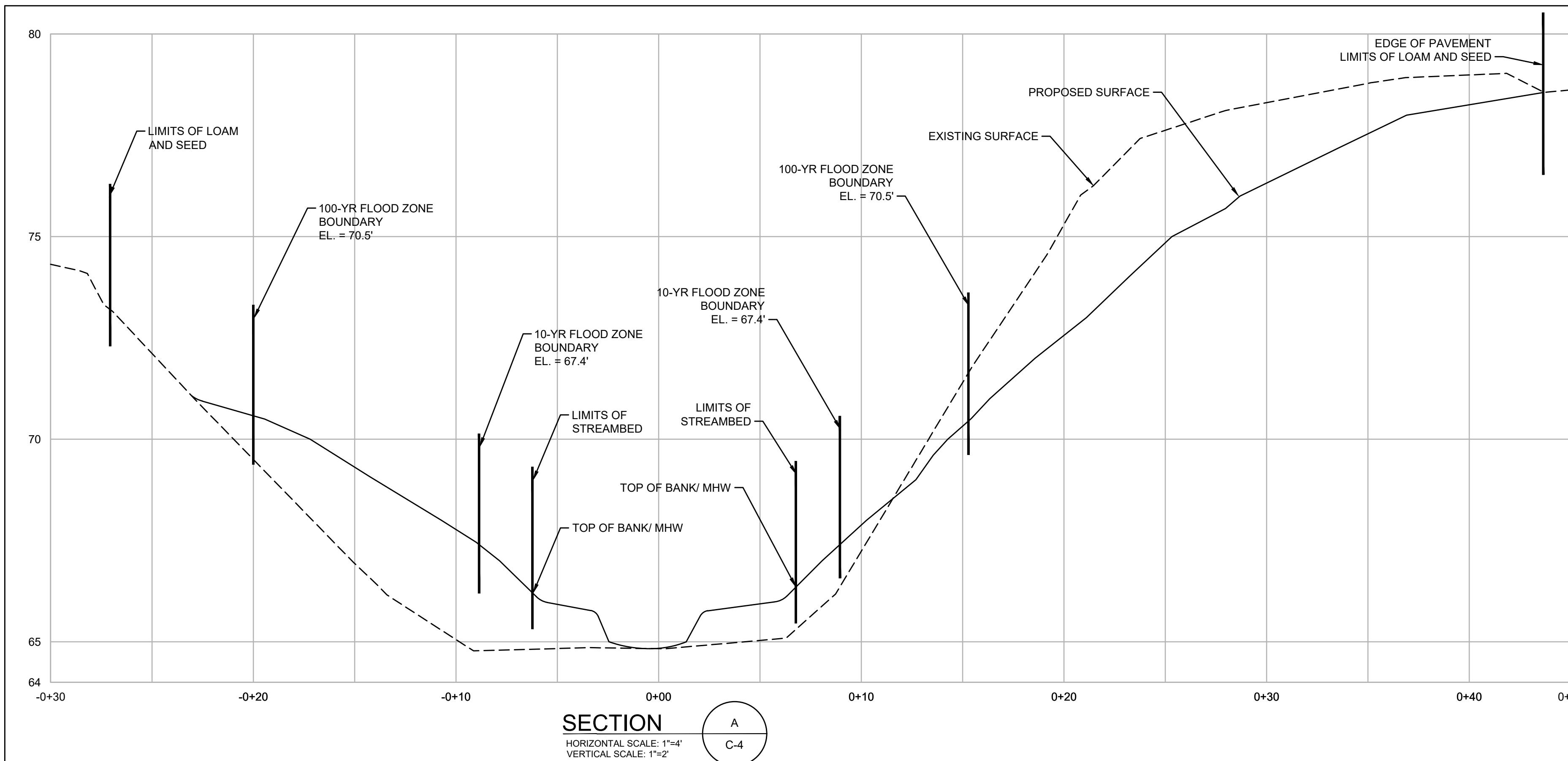
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

**CULVERT AND GRADING PLAN
AND SITE RESTORATION PLAN**

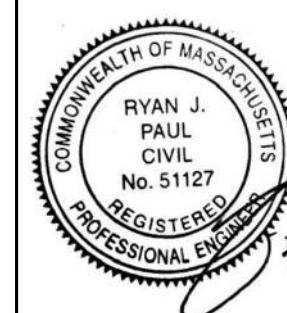
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C-3



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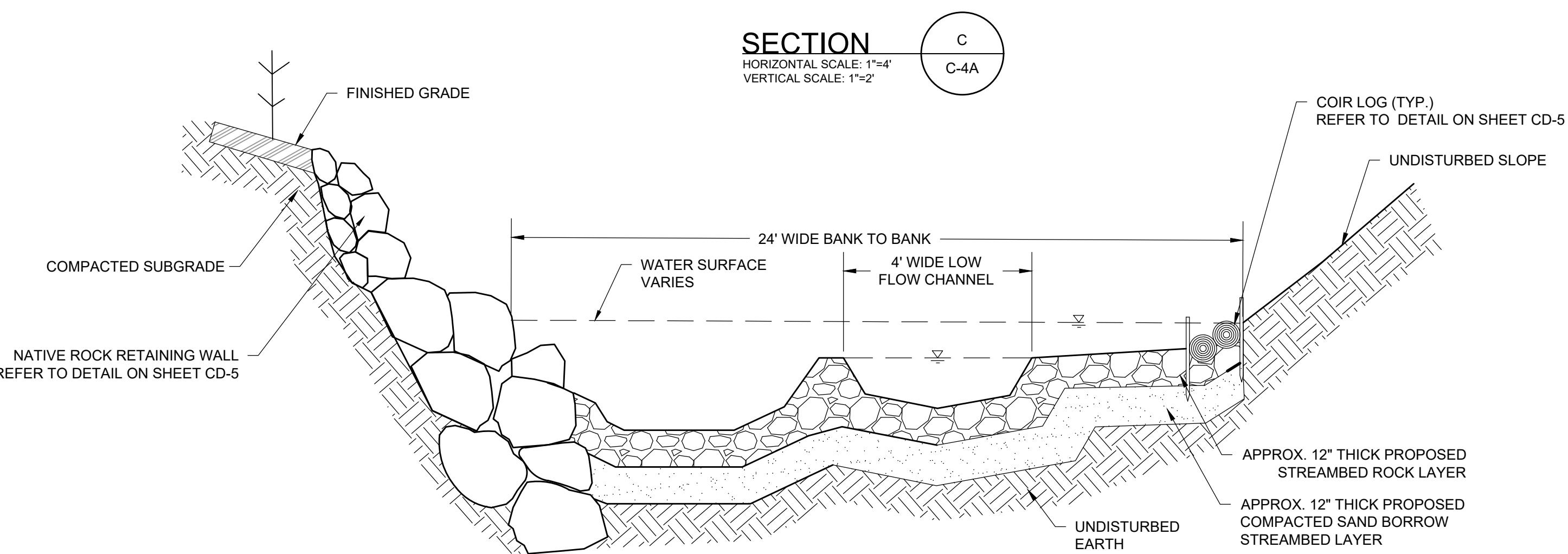
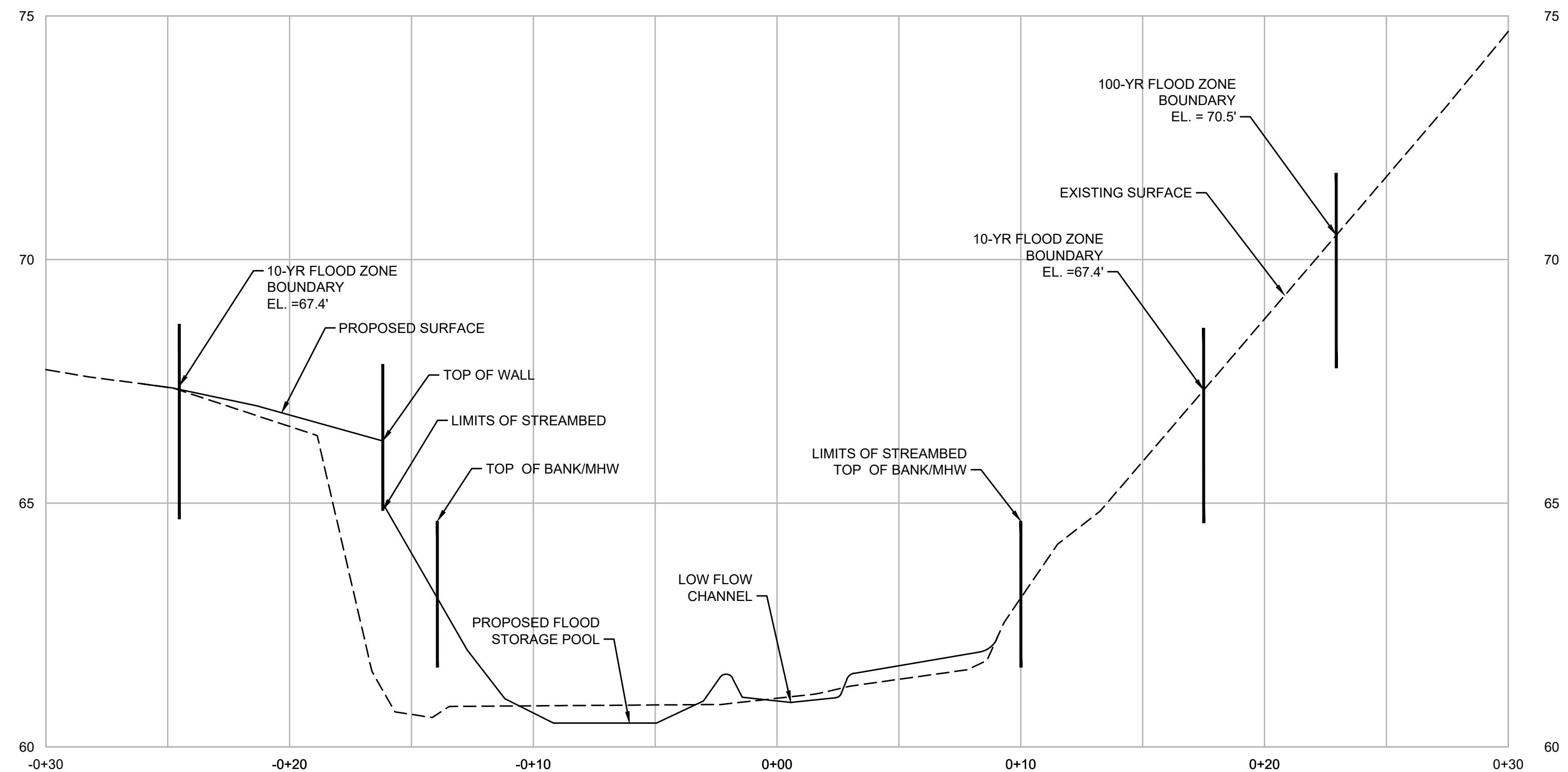
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LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA

STREAM RESTORATION SECTIONS
AND DETAILS

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C-4



NOTES:

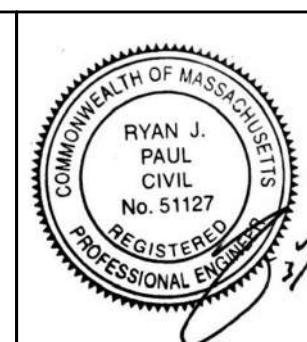
1. LOW FLOW CHANNEL SHALL BE 4' WIDE AND 8" TO 12" DEEP.
2. BANKFULL WIDTH AND DEPTHS SHALL MATCH THE GRADING PLAN PROVIDED ON SHEET C-2. BANKS SHALL BE A MAXIMUM OF 2H:1V SLOPE.
3. STREAMBED ROCK MATERIAL SHALL MEET THE REQUIREMENTS OF THE STREAMBED ROCK DISTRIBUTION TABLE, THIS SHEET. STREAMBED ROCK SHALL CONSIST OF ROUNDED EDGE RIVER ROCK OF SIMILAR SHAPE AND COLOR TO THE EXISTING STREAMBED ROCK.
4. STREAMBED SAND SHALL CONFORM TO SAND IN THE EARTHWORK SECTION 02200 IN THE SPECIFICATIONS.
5. STONE SHALL BE EVENLY DISTRIBUTED BY SIZE ACROSS THE STREAM BED.

STREAMBED ROCK DISTRIBUTION	
SIZE (MM)	PERCENT PASSING
2.36	4
12.5	15
19.0	30
25.0	55
37.5	75
50	90
100	95
180	100

STREAMBED RESTORATION AT SECTION C-C
SCALE: N.T.S.



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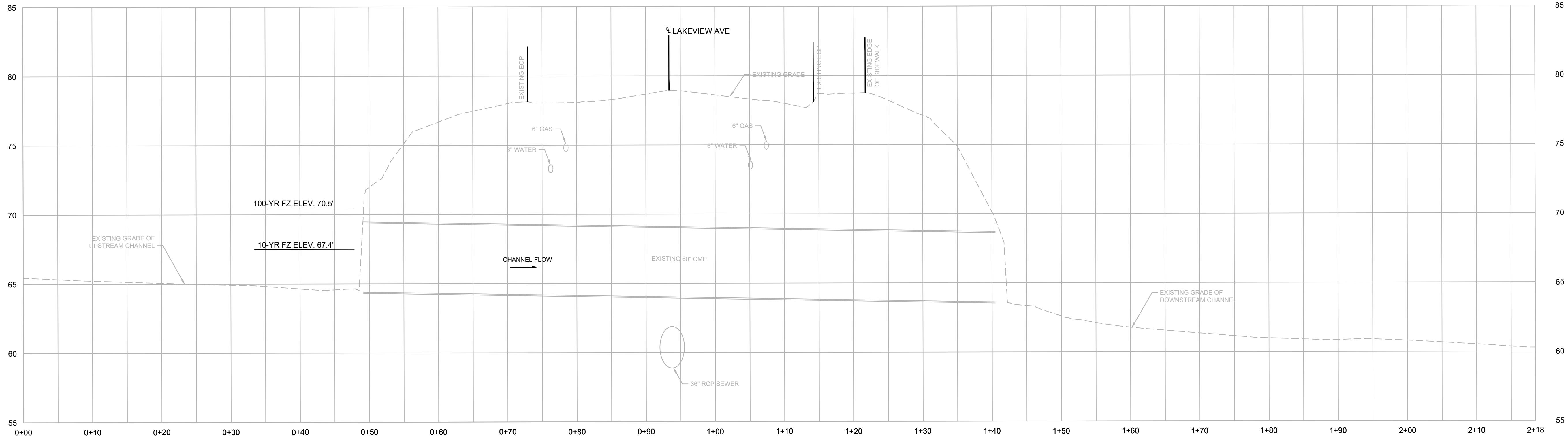
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**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

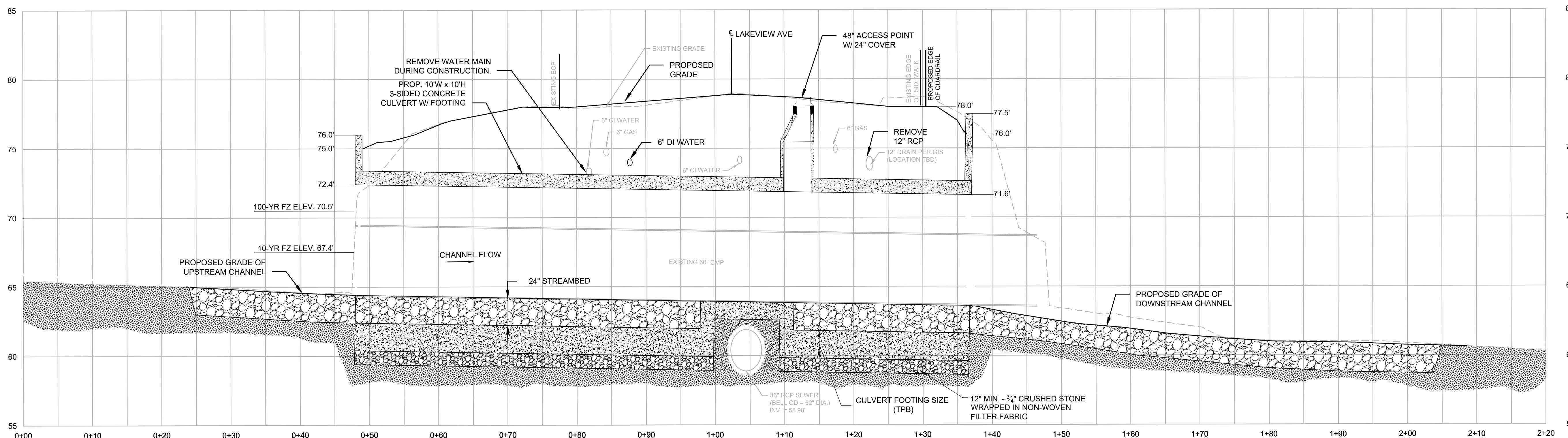
**STREAM RESTORATION SECTIONS
AND DETAILS**

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C-4A



LONGITUDINAL SECTION AT EXISTING CULVERT C-4

HORIZONTAL SCALE: 1'=8'
VERTICAL SCALE: 1'=4'

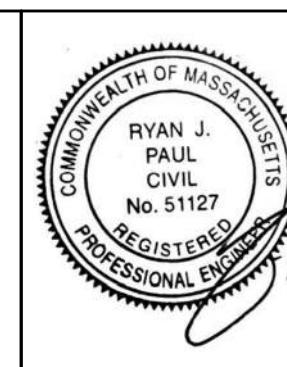


LONGITUDINAL SECTION AT PROPOSED CULVERT C-4

HORIZONTAL SCALE: 1'=8'
VERTICAL SCALE: 1'=4'



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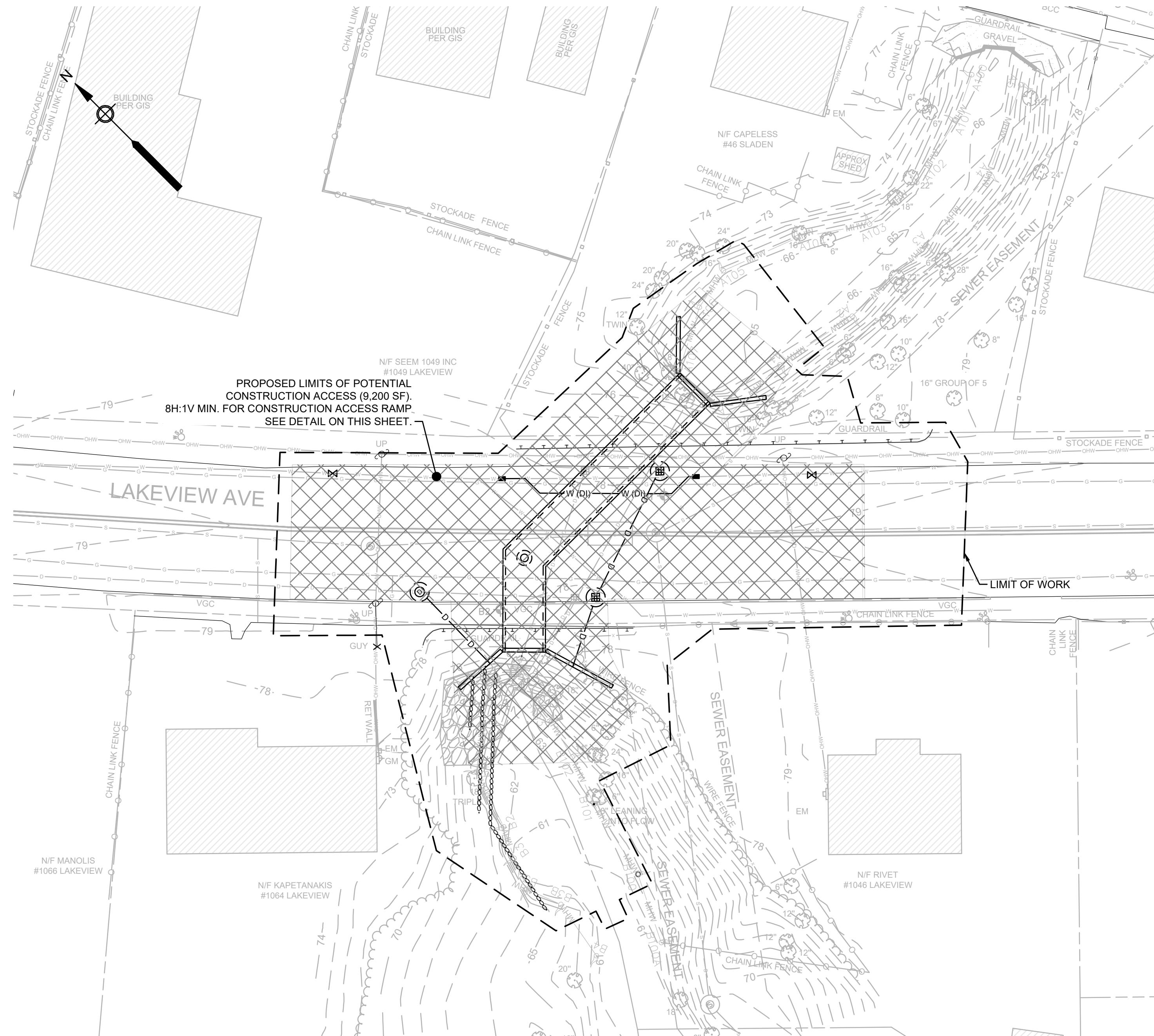
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

CULVERT AND STREAM PROFILES

FOR BID

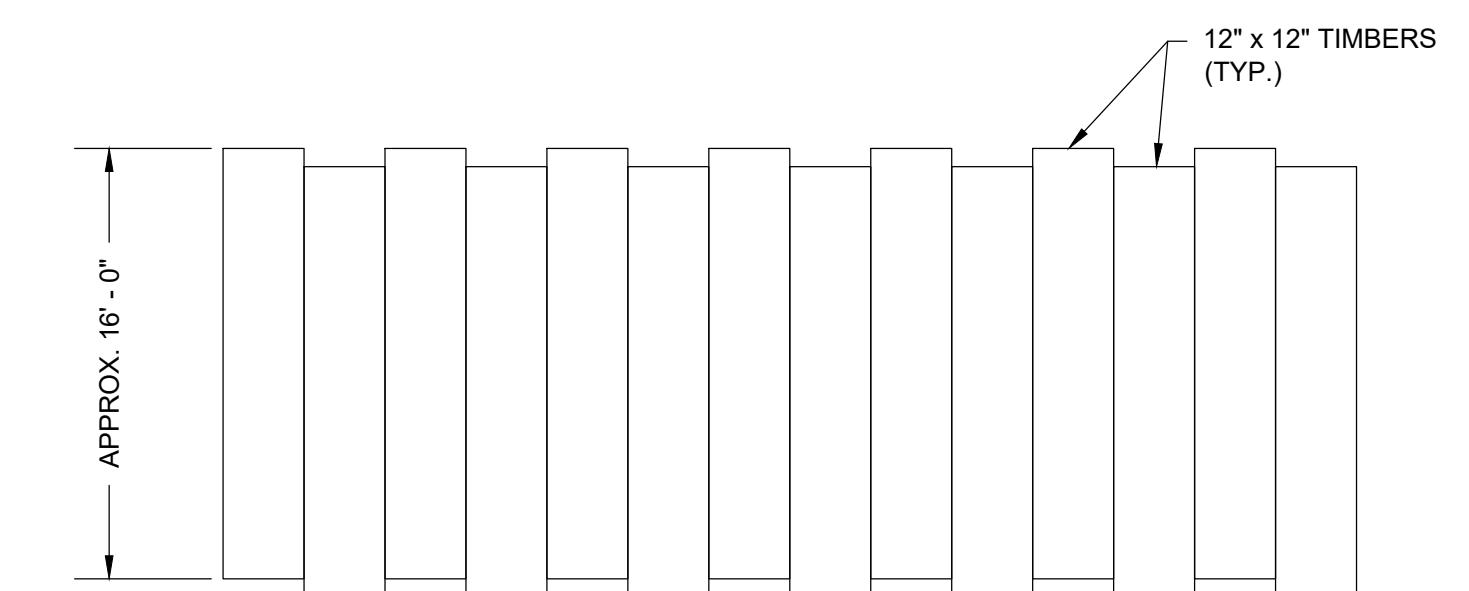
Sheet No.

C-5



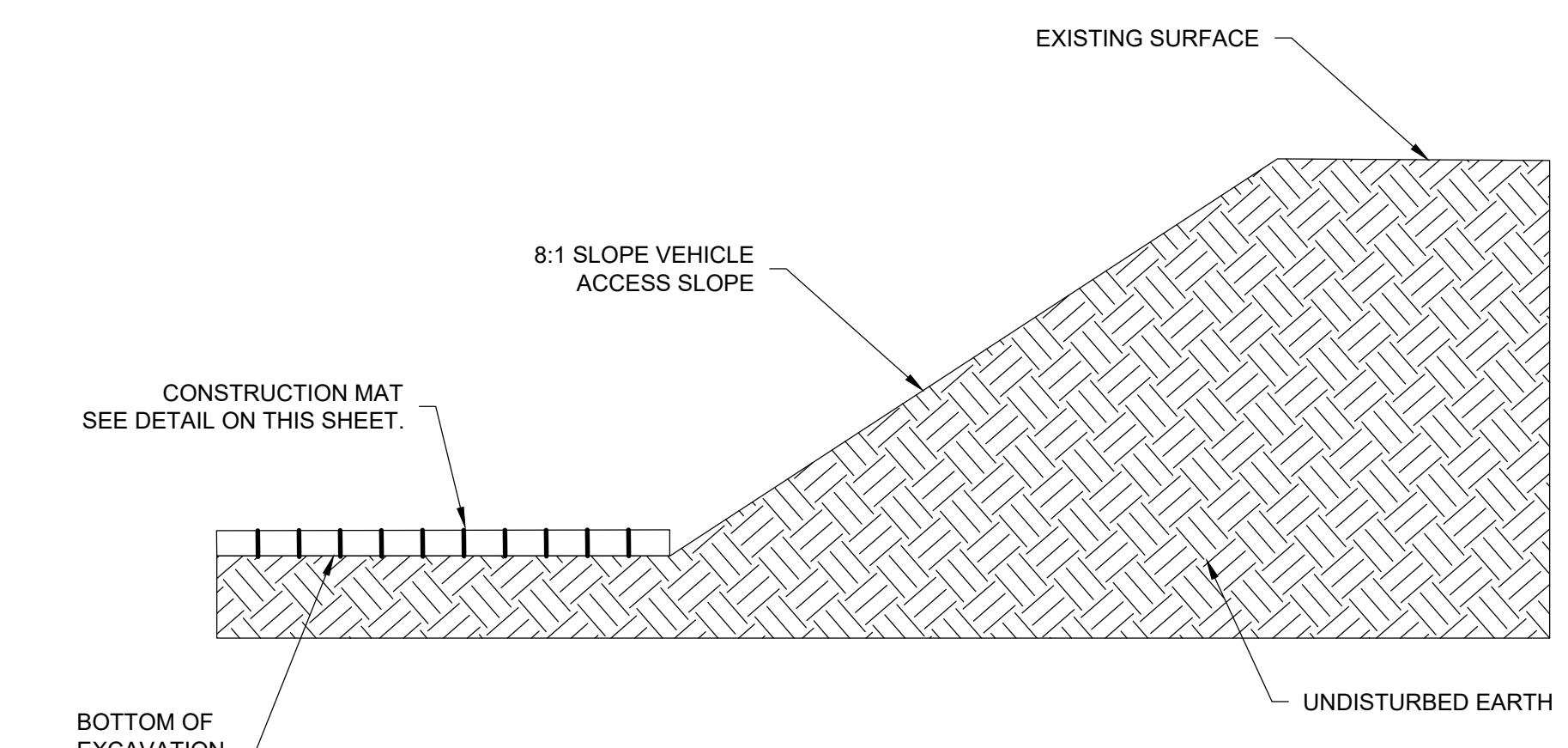
CONSTRUCTION ACCESS NOTES :

1. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACCESS DISTURBANCE TO THE STREAM BED AS SHOWN ON THE "CONSTRUCTION ACCESS PLAN" ON THIS SHEET. THIS IS A REQUIREMENT OF THE SOC.
2. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION ACCESS PLAN PRIOR TO THE START OF WORK. THE PLAN SHALL INCLUDE BUT IS NOT LIMITED TO THE EXTENTS OF DISTURBANCE, ACCESS RAMP SKETCH, TYPE OF EXCAVATION SUPPORT USED, AND METHOD FOR STABILIZING THE STREAMBED.
3. THE CONTRACTOR MAY INSTALL WOODEN CRIBBING OR MATTING FOR STABILIZING THE STREAMBED. SEDIMENT FROM CONSTRUCTION MUST REMAIN IN THE PROJECT AREA AND CLEANED PRIOR TO FINALIZING THE WORK.



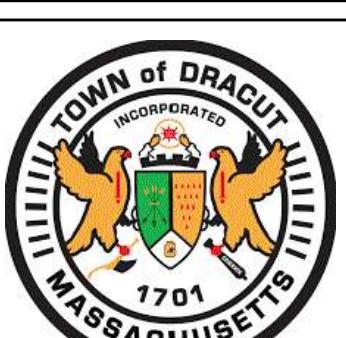
TYPICAL CONSTRUCTION MAT

SCALE: N.T.S.

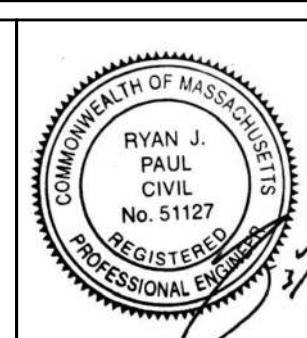


TYPICAL CONSTRUCTION ACCESS RAMP

SCALE: N.T.S.



**ENVIRONMENTAL
PARTNERS**
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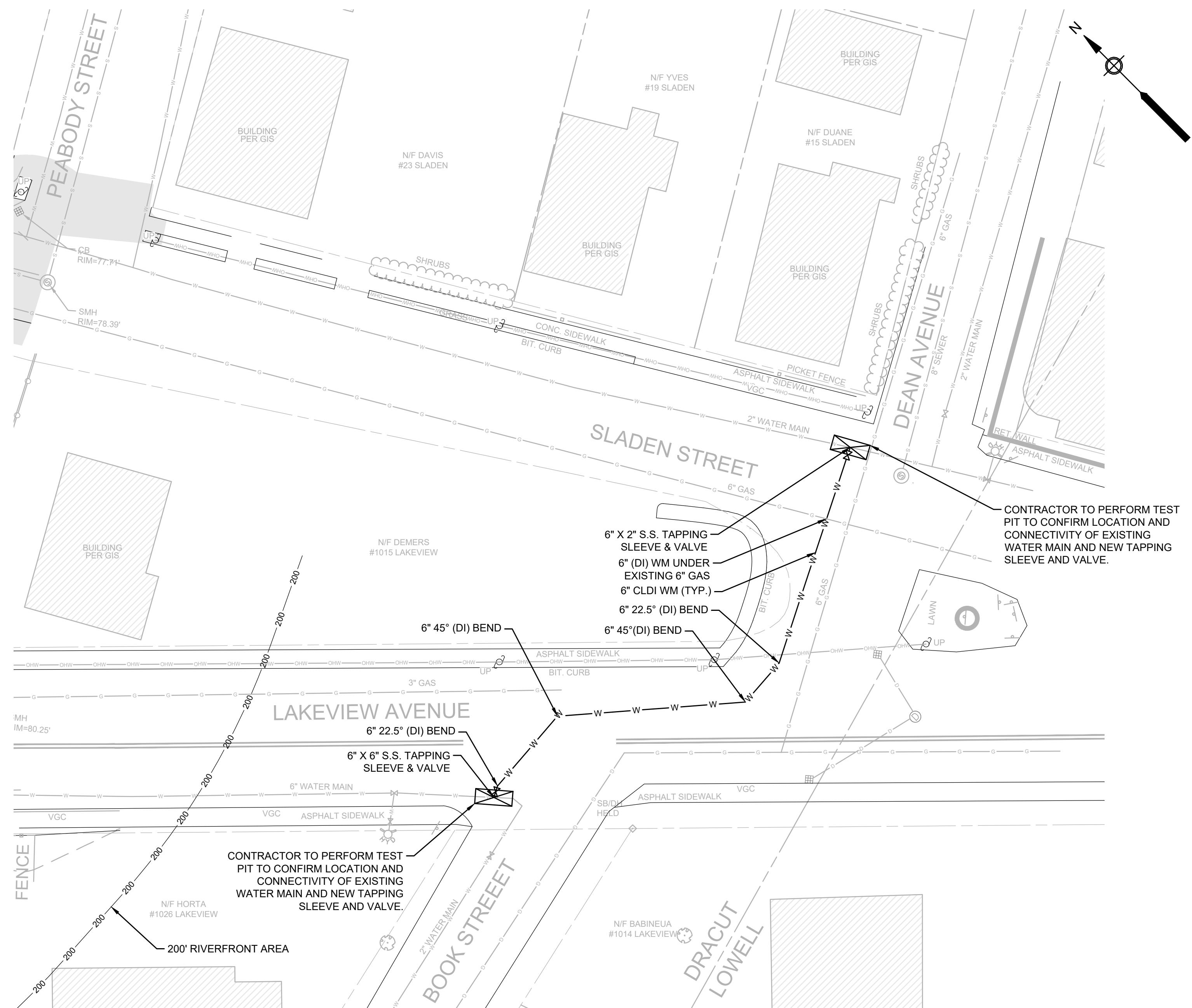
MARK	DATE	DESCRIPTION	Scale	AS NOTED
			Date	MARCH 2024
			Job No.	22003729
			Designed by	JLV/RJP
			Drawn by	JLV
			Checked by	EAK
			Approved by	RJP

THIS LINE IS ONE INCH
LONG WHEN PLOTTED AT
FULL SCALE ON A 22" X
34" DRAWING

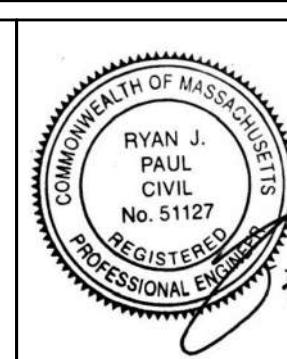
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

**CONSTRUCTION ACCESS PLAN
AND DETAILS**

FOR BID
Sheet No.
C-6



**ENVIRONMENTAL
PARTNERS**
An Apex Company

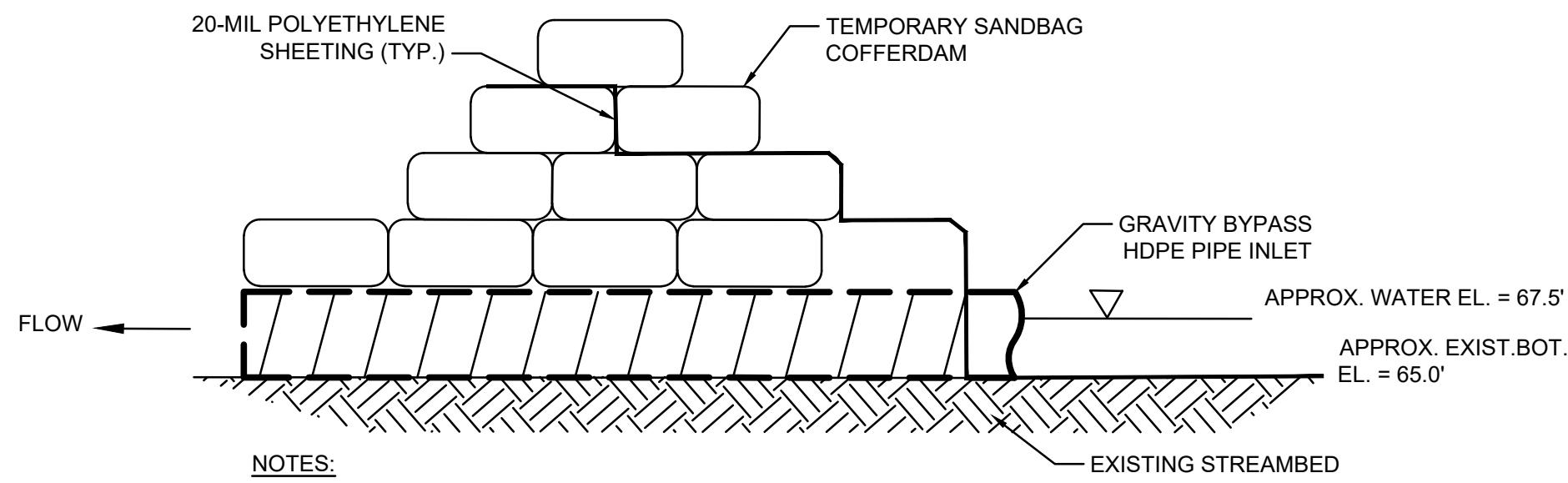


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			Job No.	22003729
			Designed by	JLV/RJP
			Drawn by	JLV
			Checked by	EAK
			Approved by	RJP

THIS LINE IS ONE INCH
LONG WHEN PLOTTED AT
FULL SCALE ON A 22" X
34" DRAWING

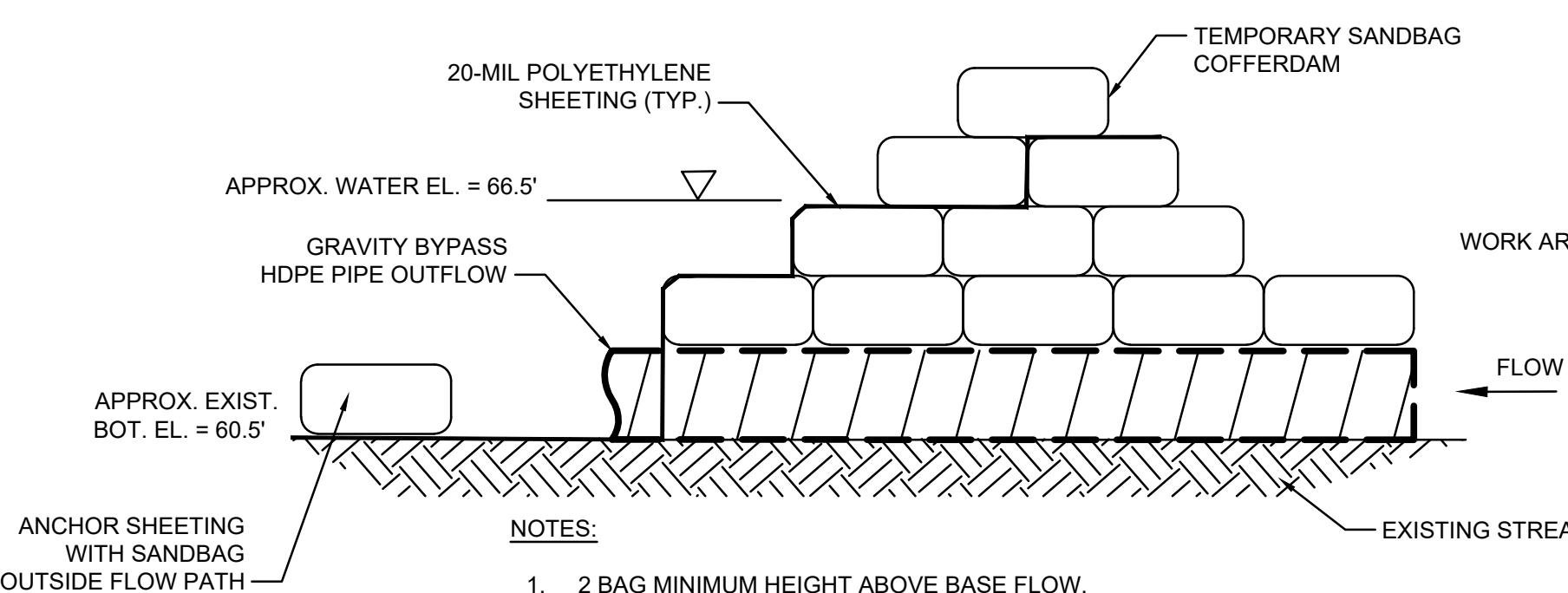
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**
SLADEN STREET TO LAKEVIEW AVENUE WATER MAIN LOOP

FOR BID
Sheet No.
C-7



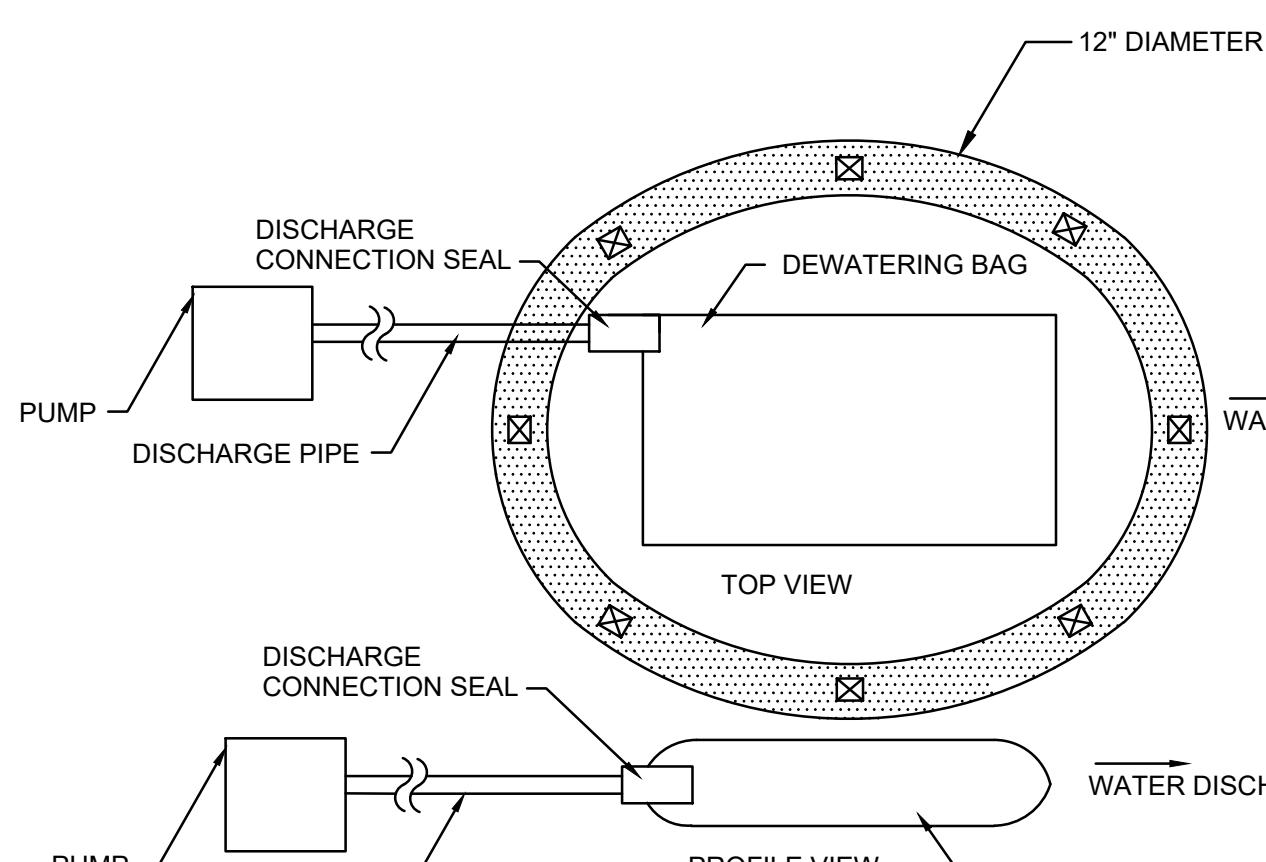
TEMPORARY SANDBAG COFFERDAM AT UPSTREAM SIDE

SCALE: N.T.S.



TEMPORARY SANDBAG COFFERDAM AT DOWNSTREAM SIDE

SCALE: N.T.S.

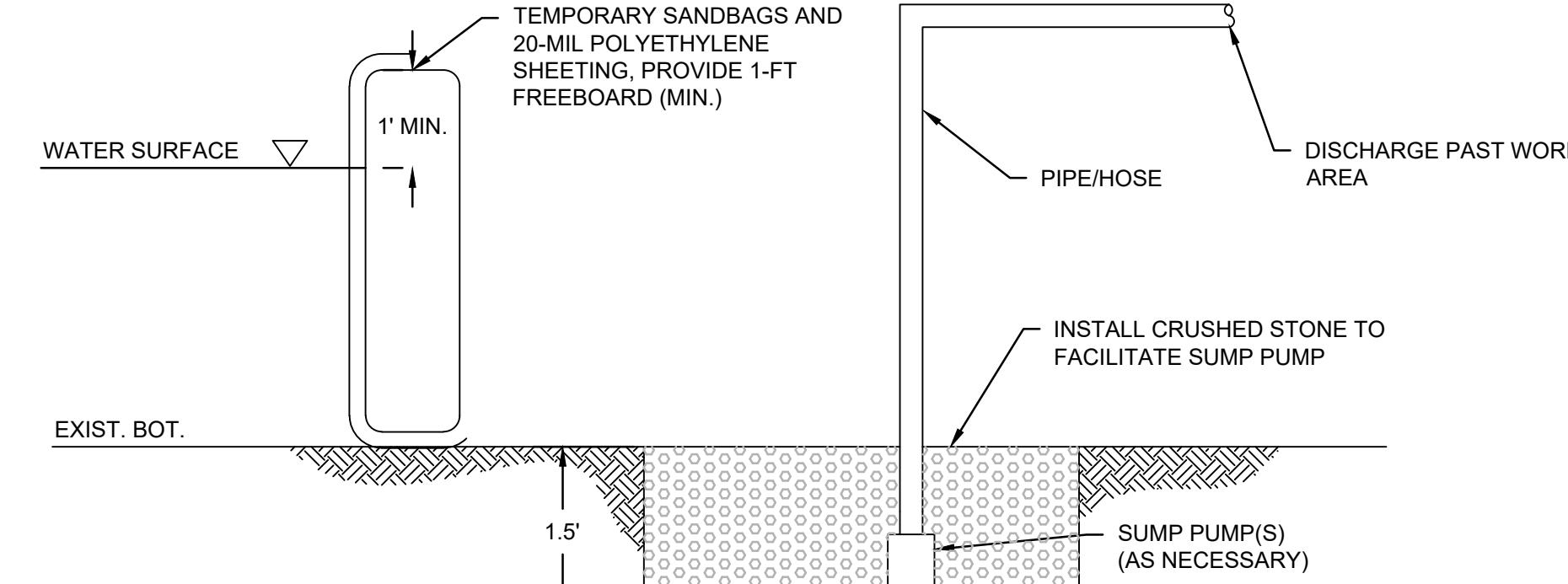


DEWATERING BAGS

SCALE: N.T.S.

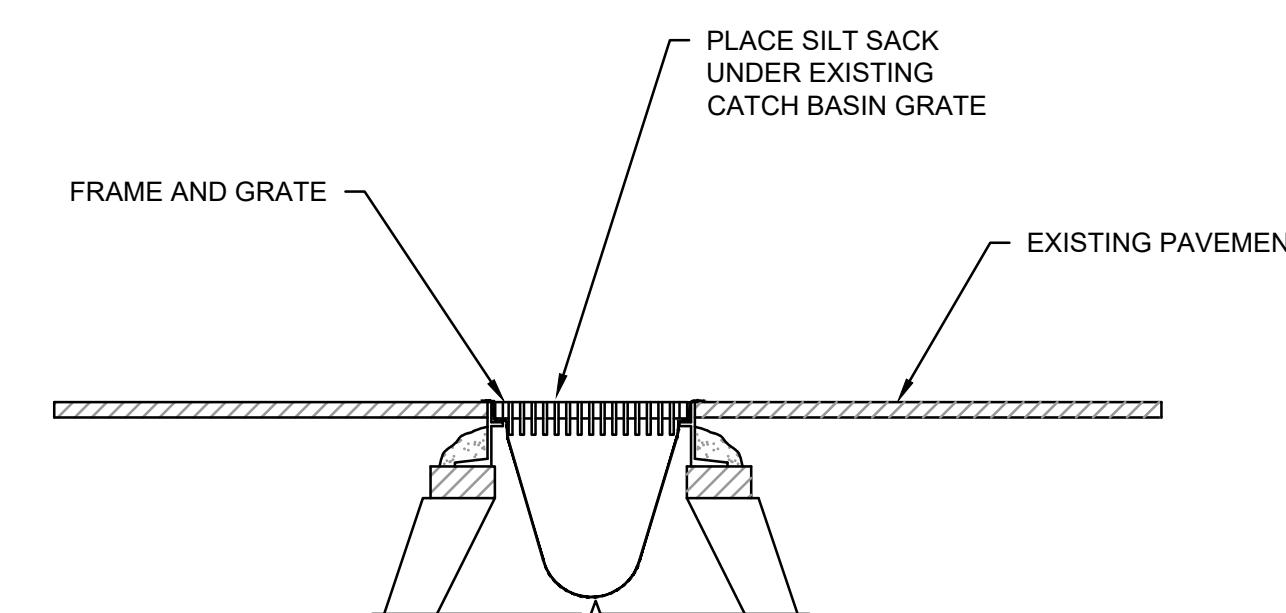
12" DIAMETER FILTER SOCK WITH ORANGE CONSTRUCTION FENCE

SCALE: N.T.S.



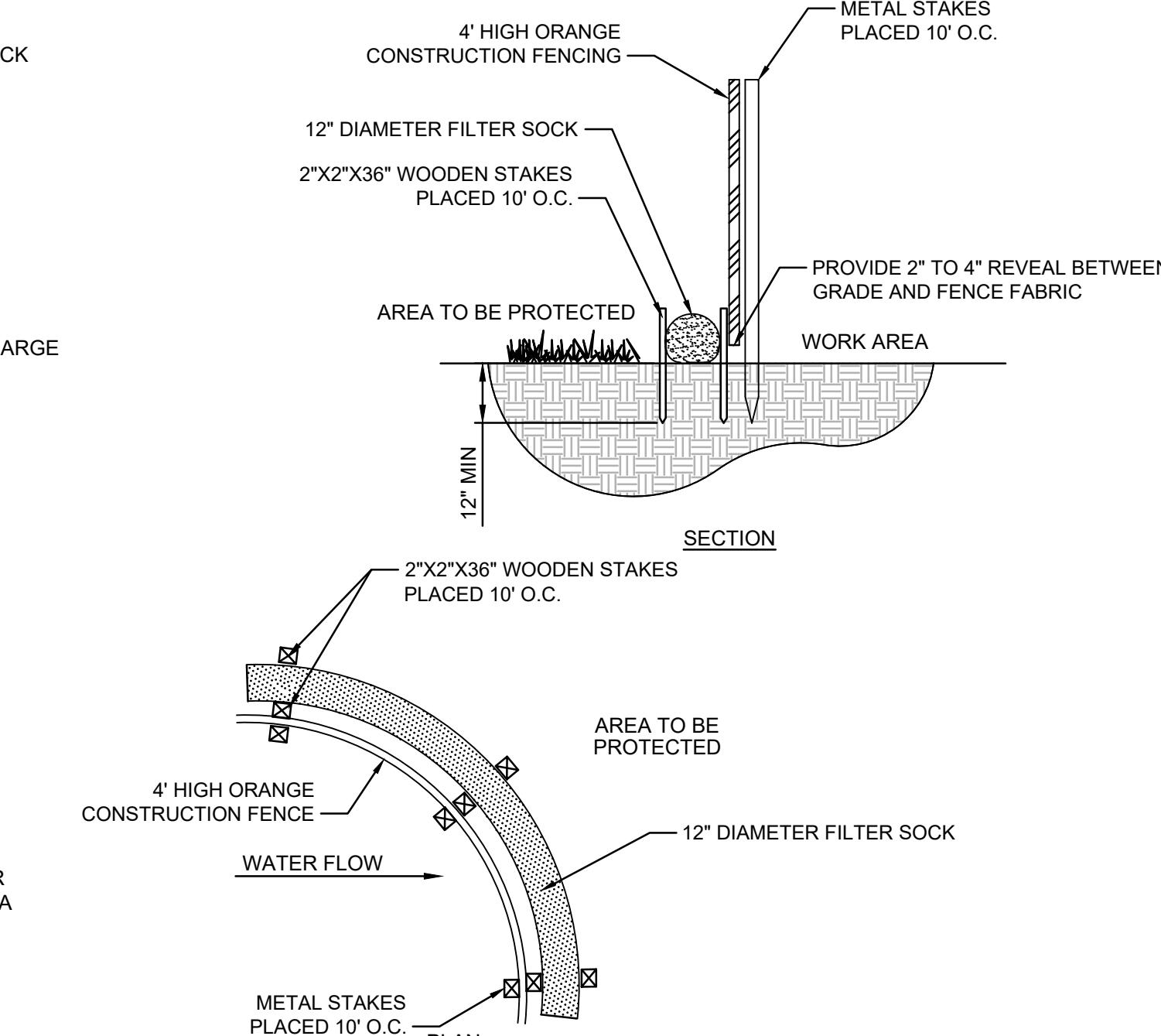
TYPICAL TEMPORARY DEWATERING SYSTEM DETAIL (DOWNSTREAM)

SCALE: N.T.S.



SEDIMENTATION CONTROL AT CATCH BASINS SILT SACKS

SCALE: N.T.S.



1. Silt sacks shall be inspected weekly and accumulated silt removed to allow catch basin to function properly.
2. Silt sack as manufactured by ACF Environmental or approved equal.

SEDIMENTATION CONTROL AT CATCH BASINS SILT SACKS

SCALE: N.T.S.

SECTION

PLAN

TOP VIEW

PROFILE VIEW

WATER DISCHARGE

DEWATERING BAG

WATER DISCHARGE

DEWATERING BAG

DISCHARGE PIPE

DISCHARGE CONNECTION SEAL

DISCHARGE PIPE

DISCHARGE CONNECTION SEAL

PUMP

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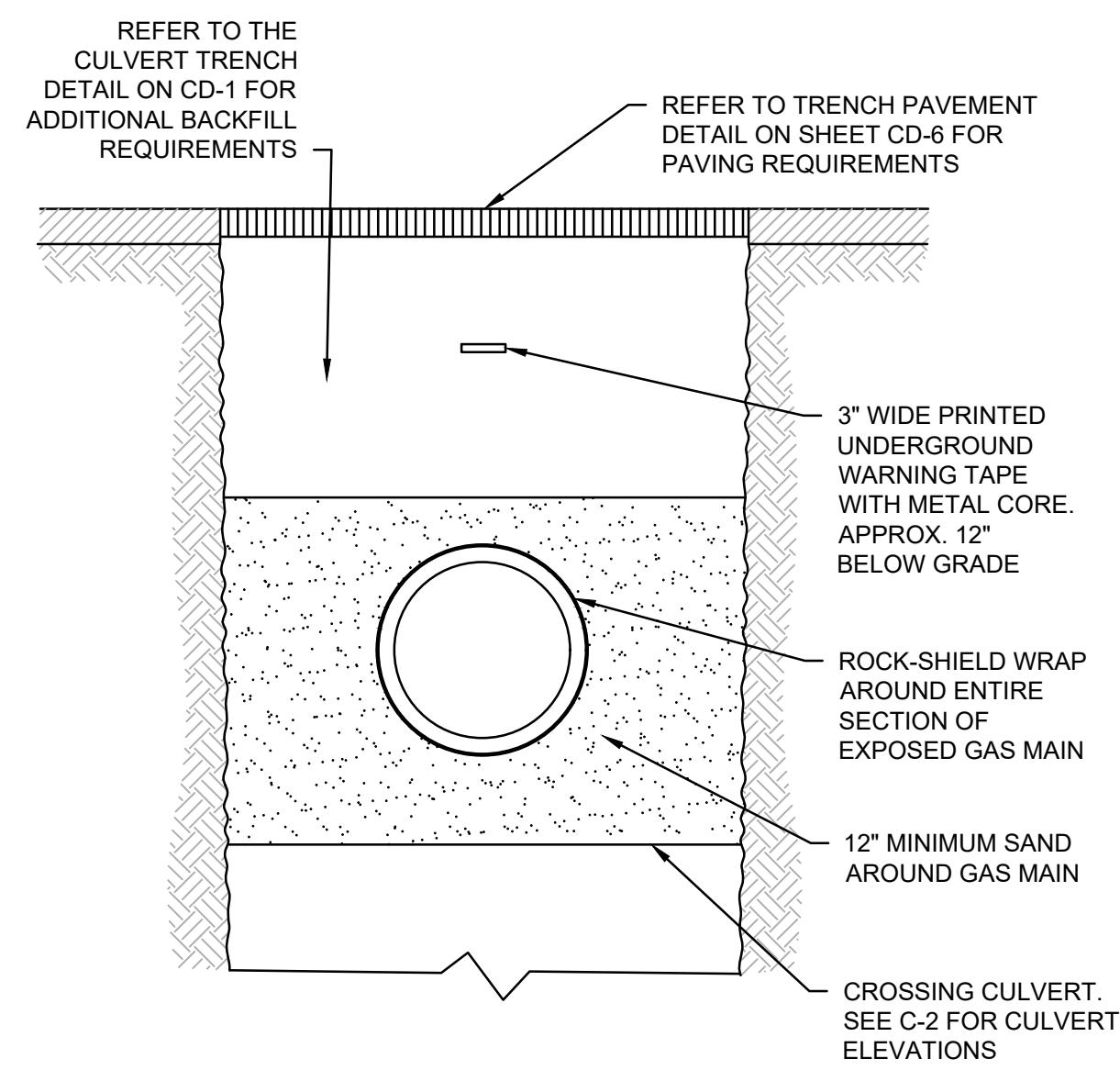
DISCHARGE CONNECTION SEAL

PUMP

DISCHARGE PIPE

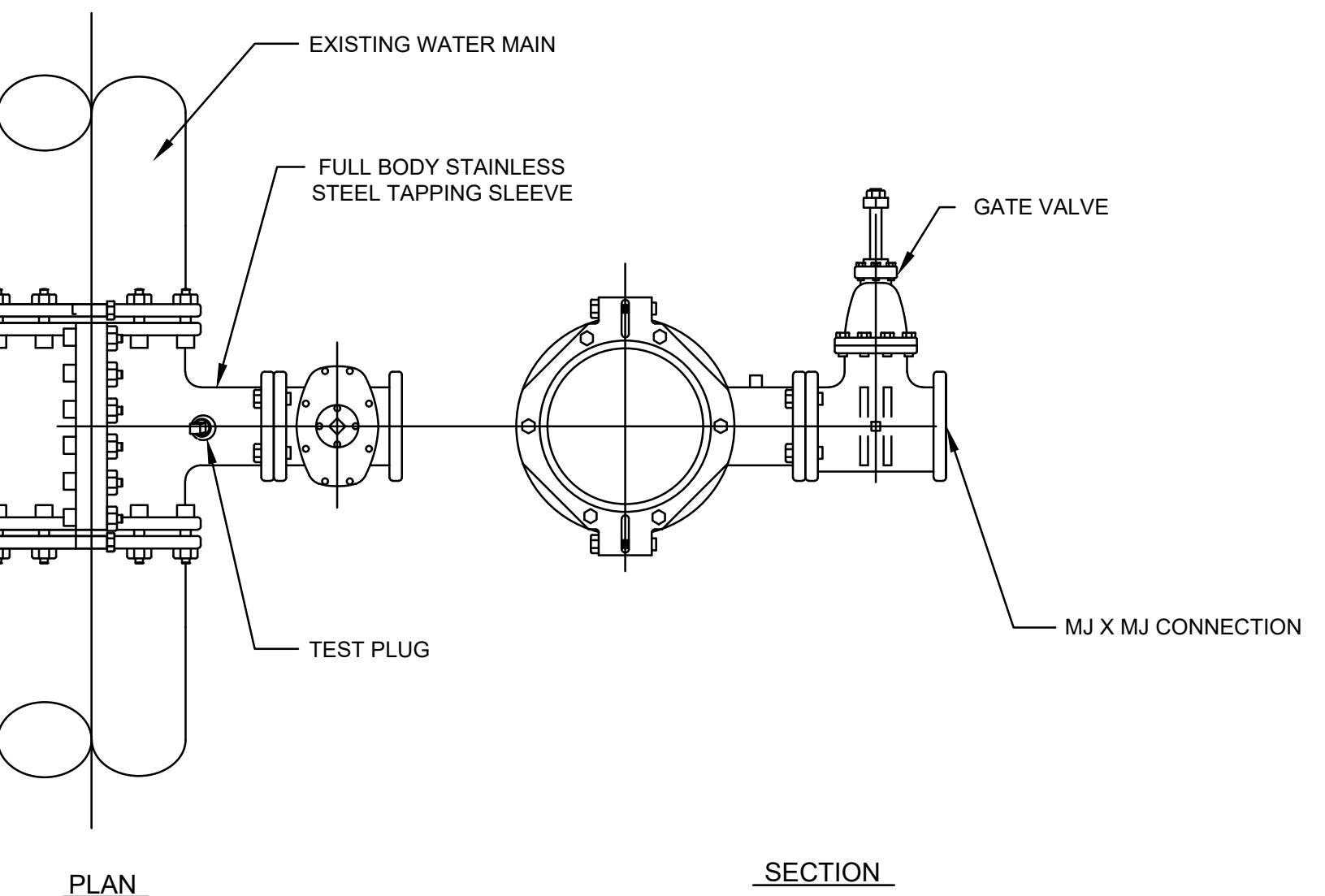
DISCHARGE CONNECTION SEAL

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GAS MAIN PROTECTION DETAIL

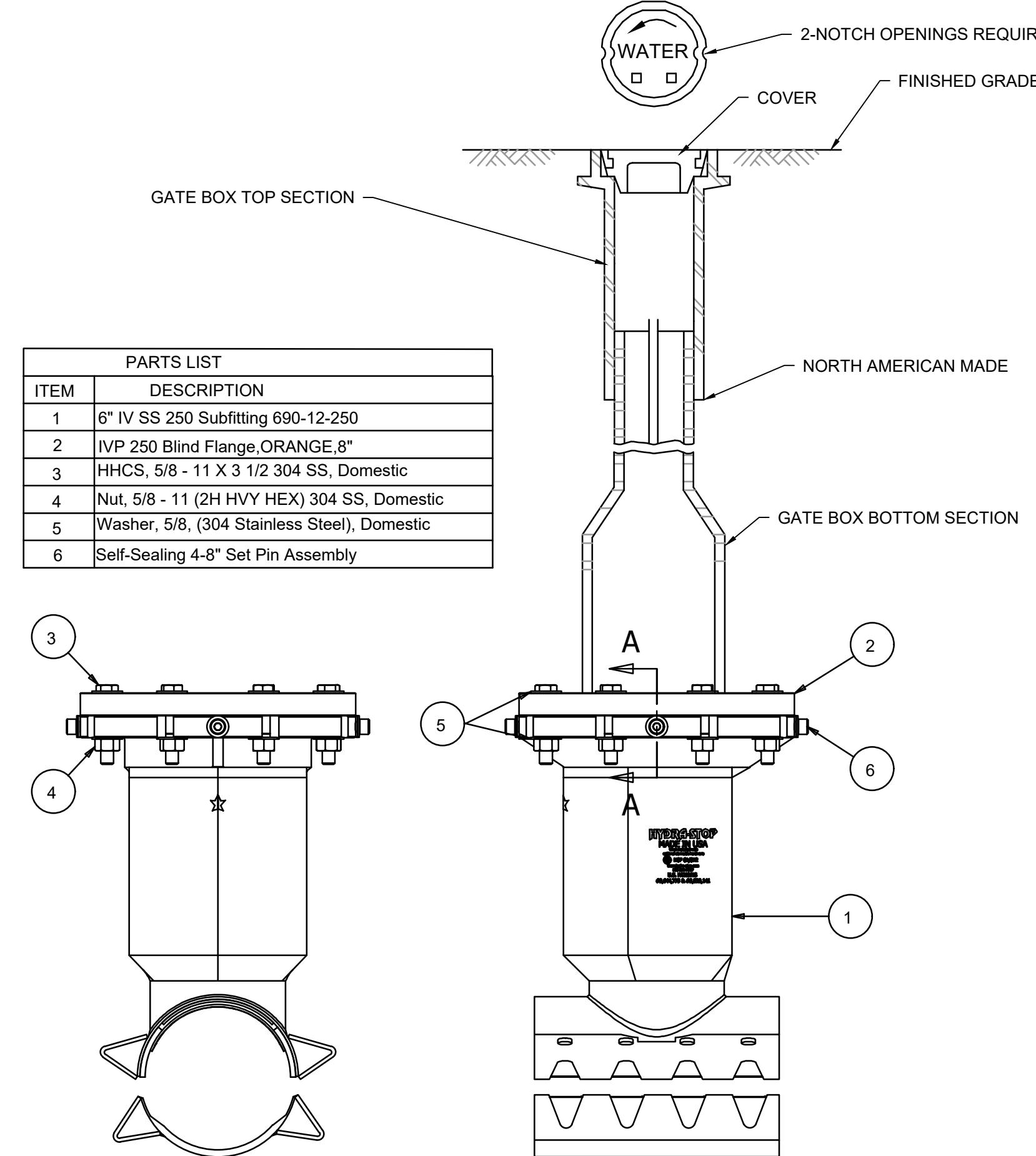
SCALE: N.T.S.



TAPPING SLEEVE AND GATE VALVE

SCALE: N.T.S.

PARTS LIST	
ITEM	DESCRIPTION
1	6" IV SS 250 Subfitting 690-12-250
2	IVP 250 Blind Flange, ORANGE, 8"
3	HHCS, 5/8 - 11 X 3 1/2 304 SS, Domestic
4	Nut, 5/8 - 11 (2H HVY HEX) 304 SS, Domestic
5	Washer, 5/8, (304 Stainless Steel), Domestic
6	Self-Sealing 4-8" Set Pin Assembly

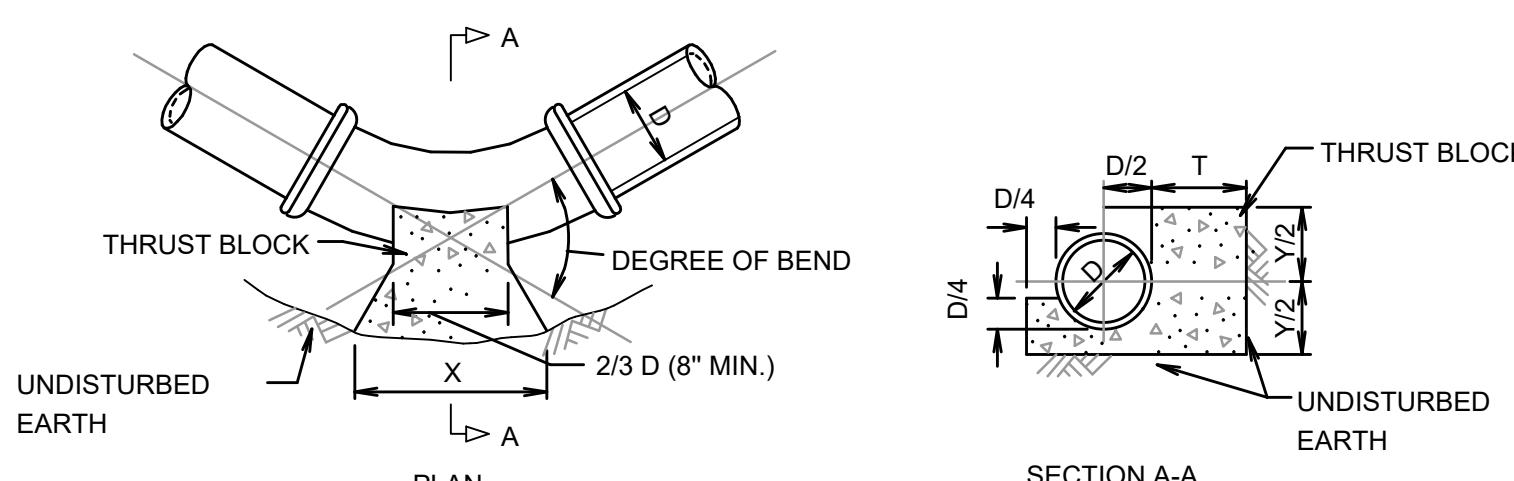


NOTES:

1. ALL COMPONENTS TO BE HYDRA-STOP OR APPROVED EQUAL
2. FLANGE HARDWARE TO BE TIGHTENED WITH WASHERS ON BOTH SIDES OF FLANGES
3. SET PINS TO BE INSERTED SO THAT THE GROMMET IS FLUSH WITH CASTING FACE

INSERTION VALVE AND GATE BOX DETAIL

SCALE: N.T.S.



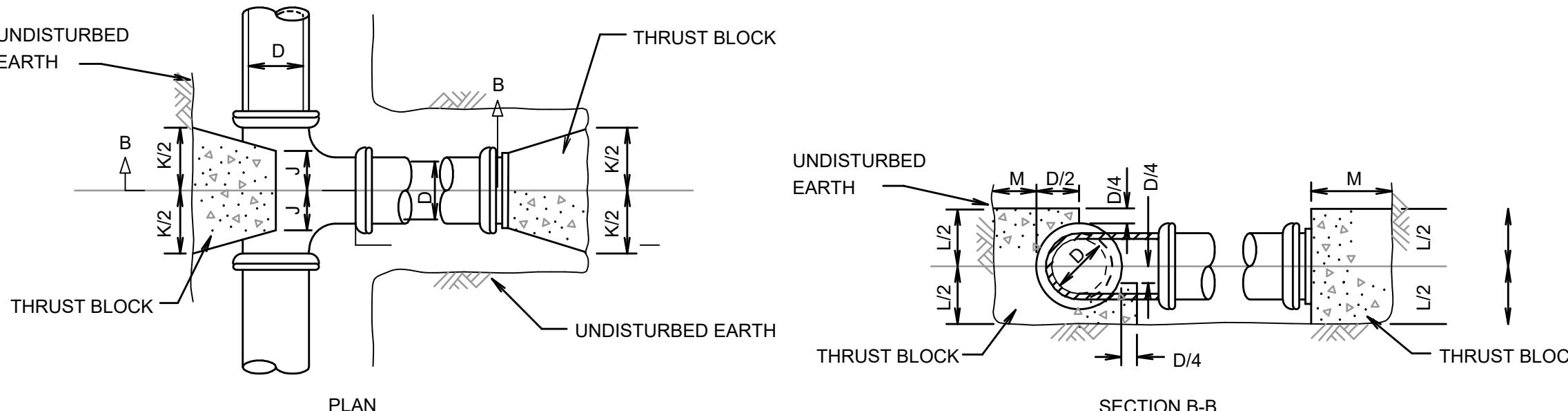
NOTES:

1. ALL CONCRETE SHALL BE 3000 P.S.I. @ 28 DAYS (CLASS "A" CONCRETE)
2. DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 P.S.F. AND TOTAL PRESSURE OF 250 P.S.I. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
3. THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

DIMENSION	90° BEND			45° BEND			22 1/2° BEND			11 1/4° BEND			
	D (in.)	4	6	8	10	12	14	4	6	8	10	12	14
X (in.)	35	35	50	56	72	80	24	35	45	51	60	28	30
Y (in.)	20	20	24	32	35	40	16	19	21	27	33	13	13
T (in.)	11	11	14	16	19	22	11	11	14	16	19	22	11

CONCRETE THRUST BLOCK DETAIL AT BEND

SCALE: N.T.S.



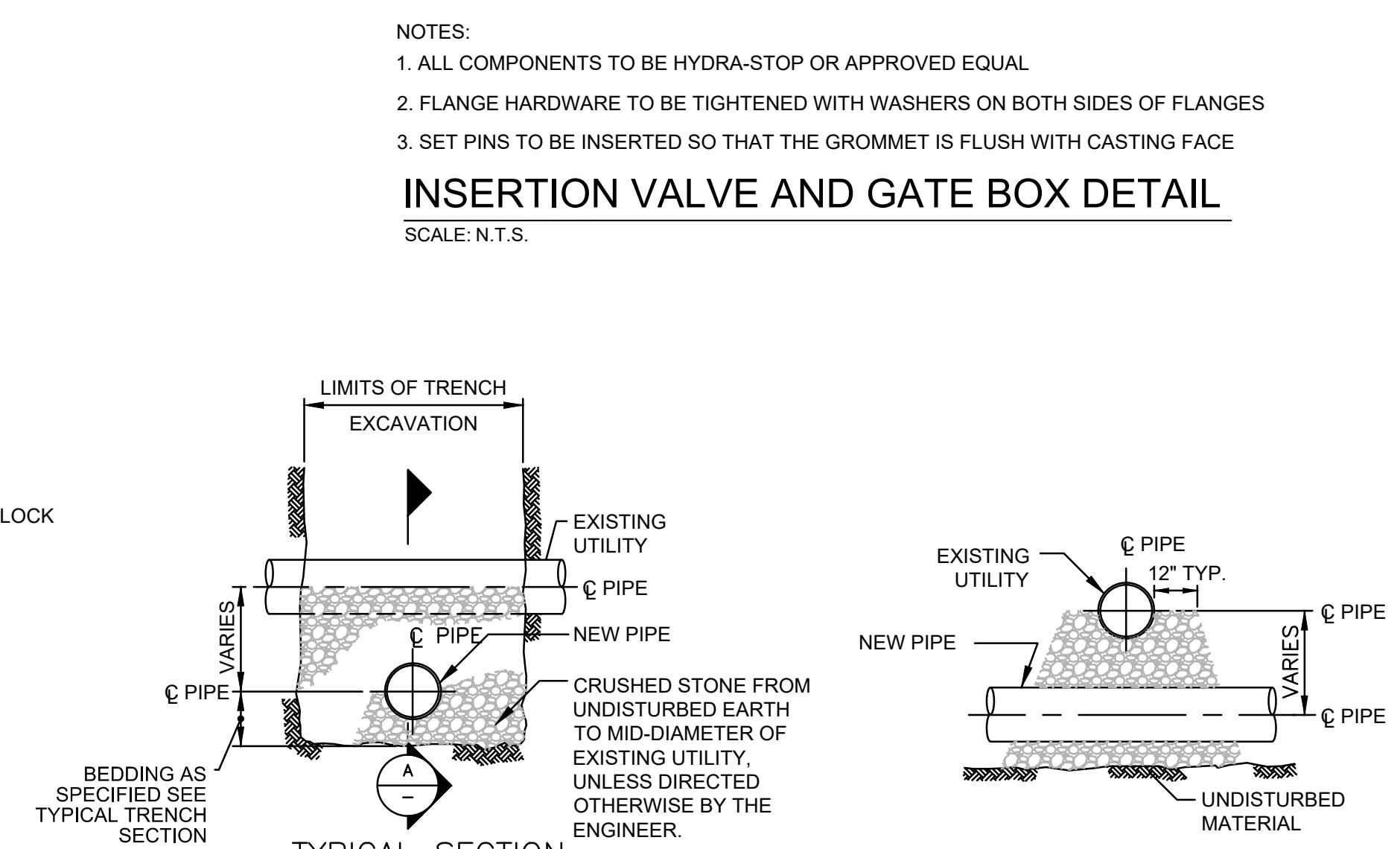
NOTES:

1. ALL CONCRETE SHALL BE 3000 PSI @ 28 DAYS (CLASS 'A' CONCRETE).
2. DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 PSF AND TOTAL PRESSURE OF 250 PSI.
3. THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS													
D (in.)	4	6	8	10	12	14	J (in.)	6	6	7	9	10	12
X (in.)	35	35	50	56	72	80	24	35	45	51	60	28	30
Y (in.)	20	20	24	32	35	40	16	19	21	27	33	13	13
T (in.)	11	11	14	16	19	22	11	11	14	16	19	22	11

CONCRETE THRUST BLOCK DETAIL AT TEE / PLUG / CAP

SCALE: N.T.S.

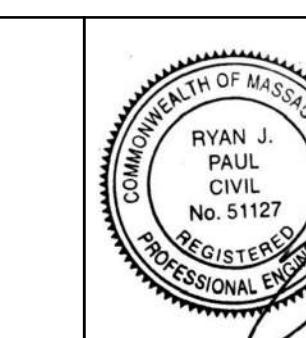


EXISTING UTILITY CROSSING DETAIL

SCALE: N.T.S.



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MARK DATE DESCRIPTION

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Date
Job No.
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Drawn by
Checked by
Approved by

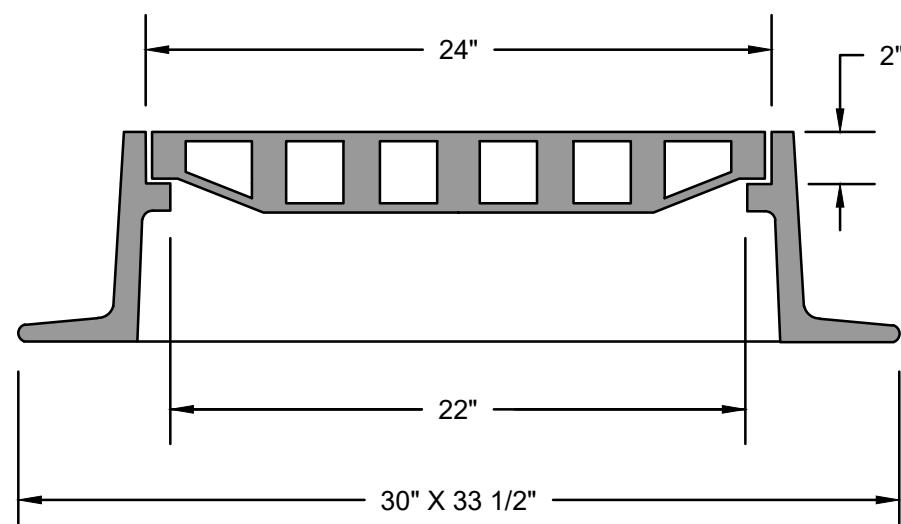
AS SHOWN
MARCH 2024
22003729
JLV/RJP
JLV
EAK
RJP

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LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA

CIVIL DETAILS II

FOR BID
Sheet No.
CD-3

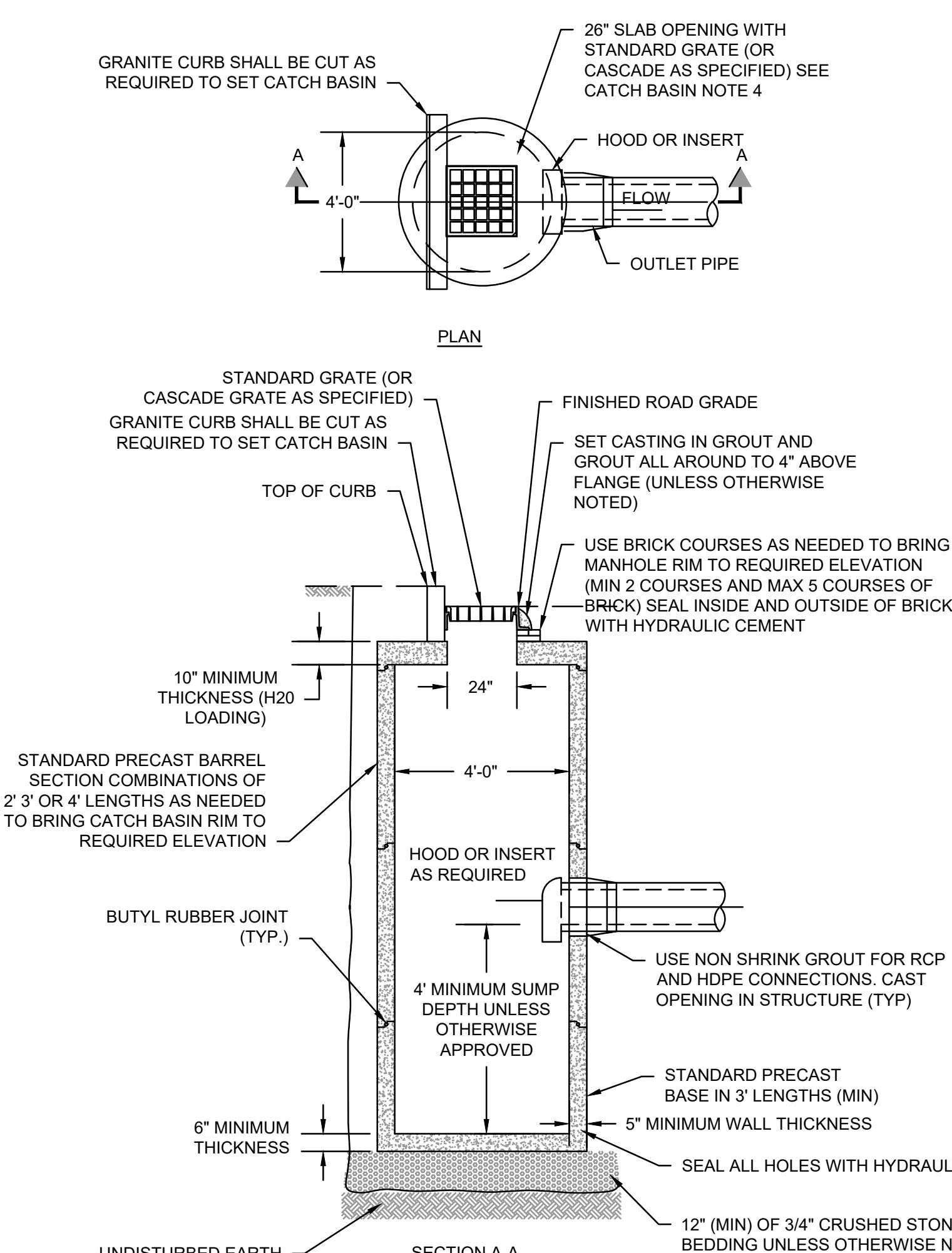


NOTES:

1. FRAME AND GRATE SHALL BE EJ, OR APPROVED EQUAL.
2. FRAME AND GRATE SHALL BE SET IN FULL BED OF MORTAR ON A MINIMUM OF TWO COURSES OF BRICK.
3. FRAME HEIGHT TO BE DETERMINED BY CONTRACTOR.

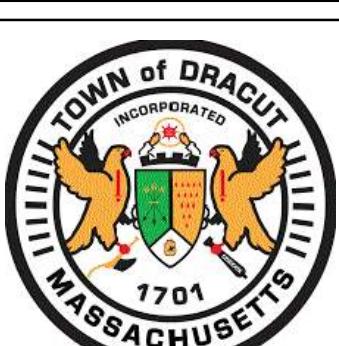
STANDARD CATCH BASIN FRAME AND GRATE

SCALE: N.T.



TYPICAL CATCH BASIN

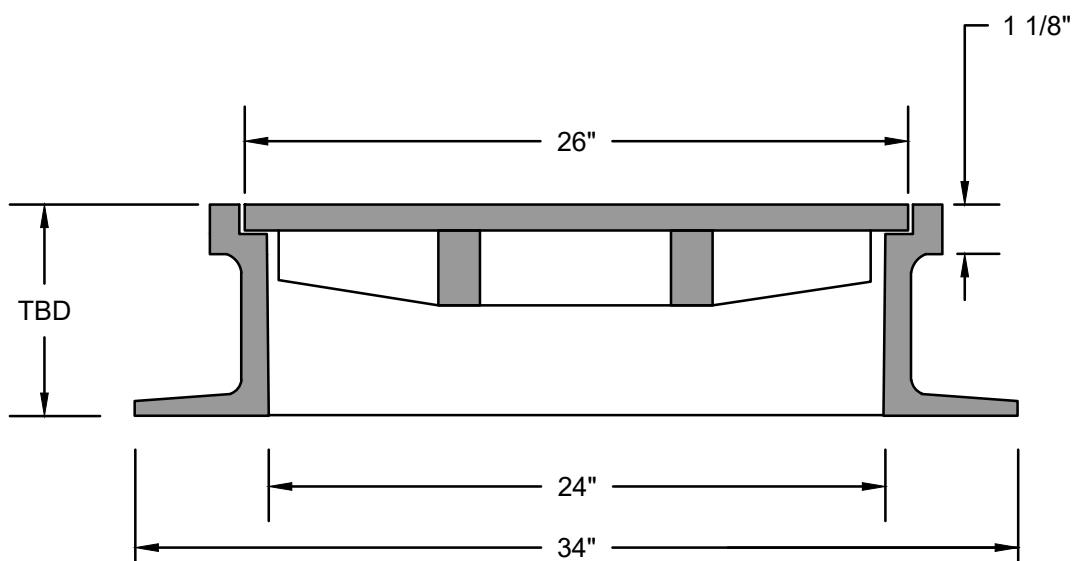
SCALE: N.T.



ENVIRONMENTAL PARTNERS



— An Apex Company —

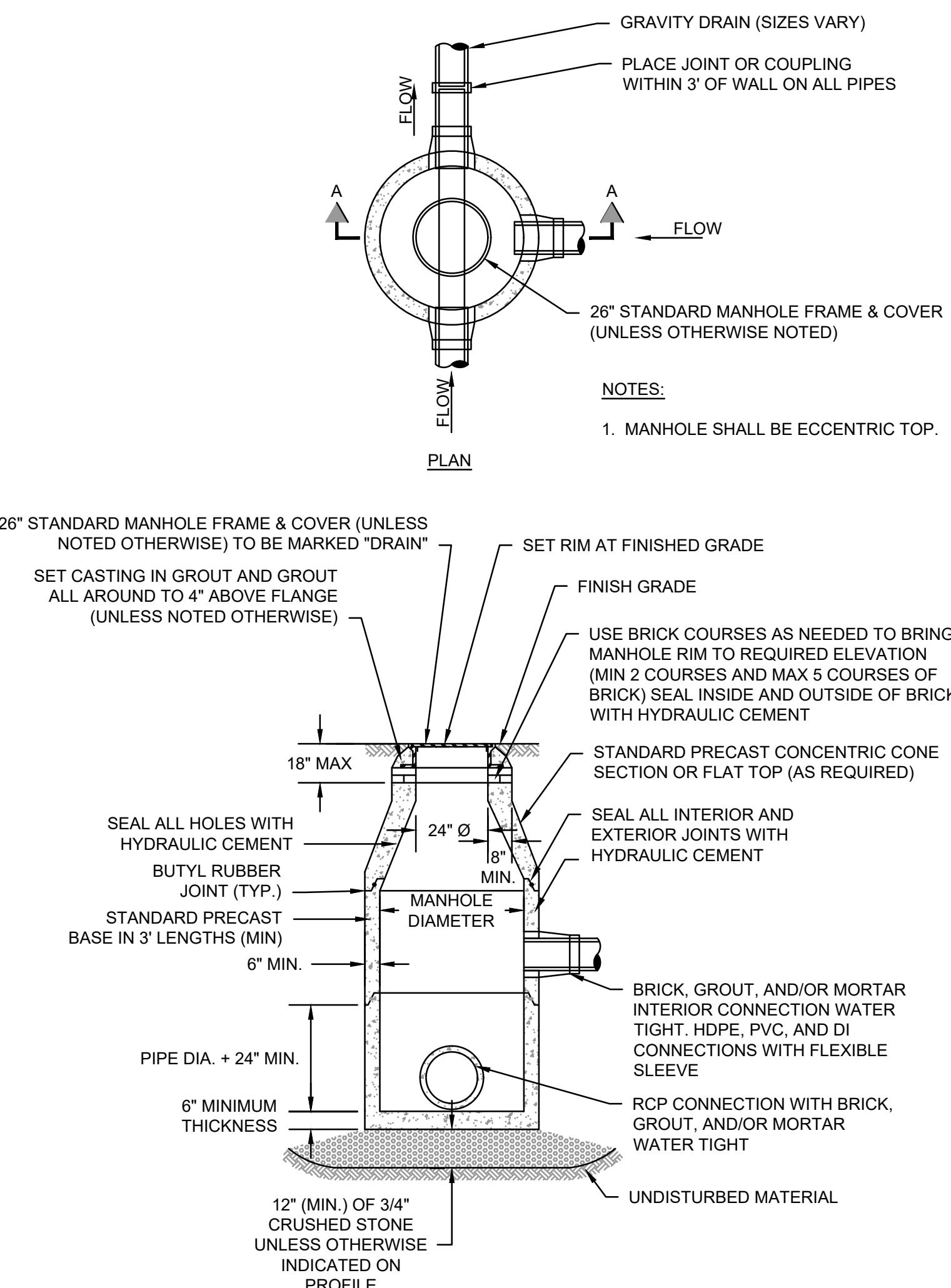


NOTES:

1. FRAME AND COVER SHALL BE EJ, OR APPROVED EQUAL.
2. EACH COVER SHALL READ DRAIN OR SEWER IN 3" LETTERING.
3. FRAME AND COVER SHALL BE SET IN FULL BED OF MORTAR.
4. FRAME HEIGHT TO BE DETERMINED BY CONTRACTOR.

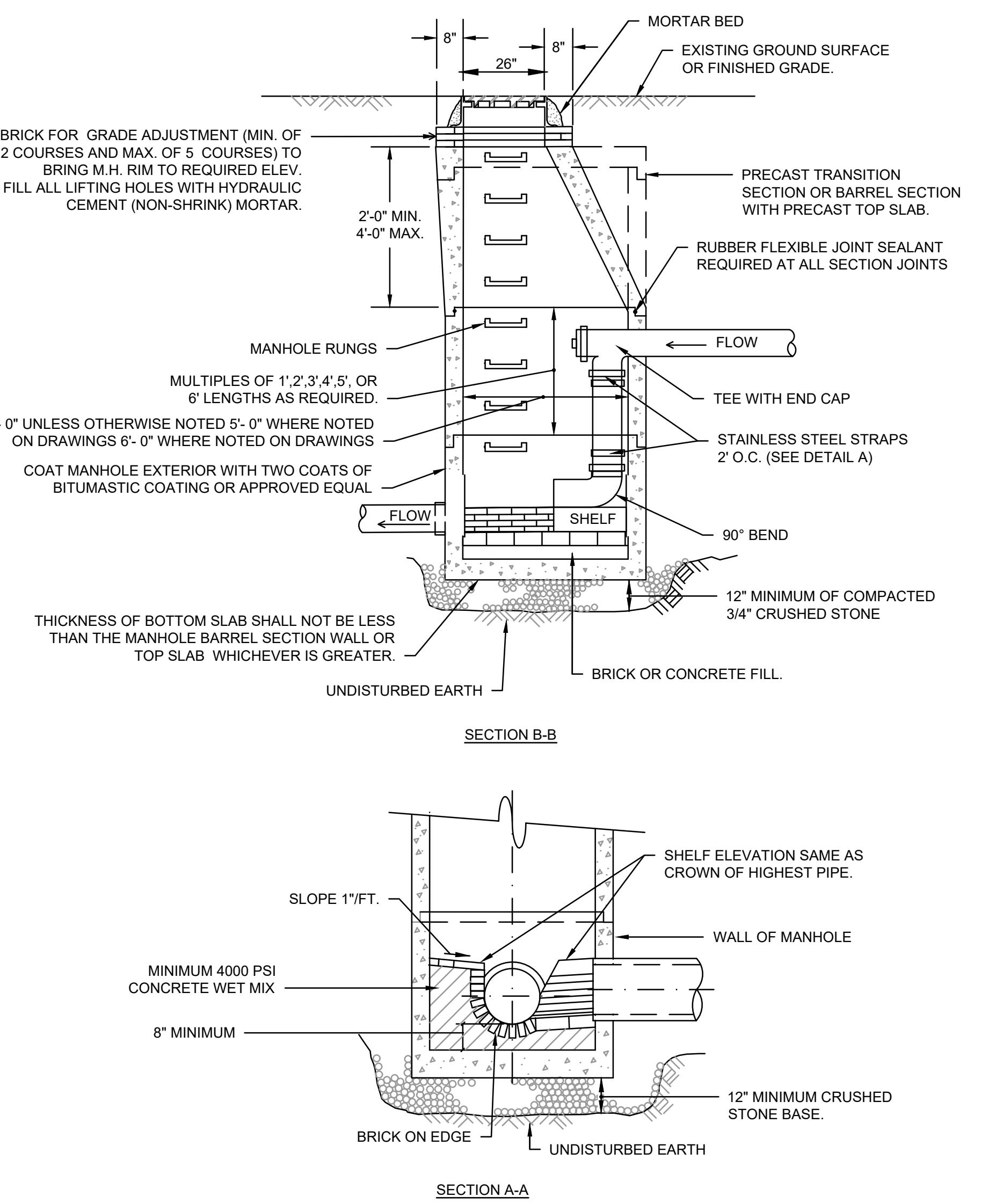
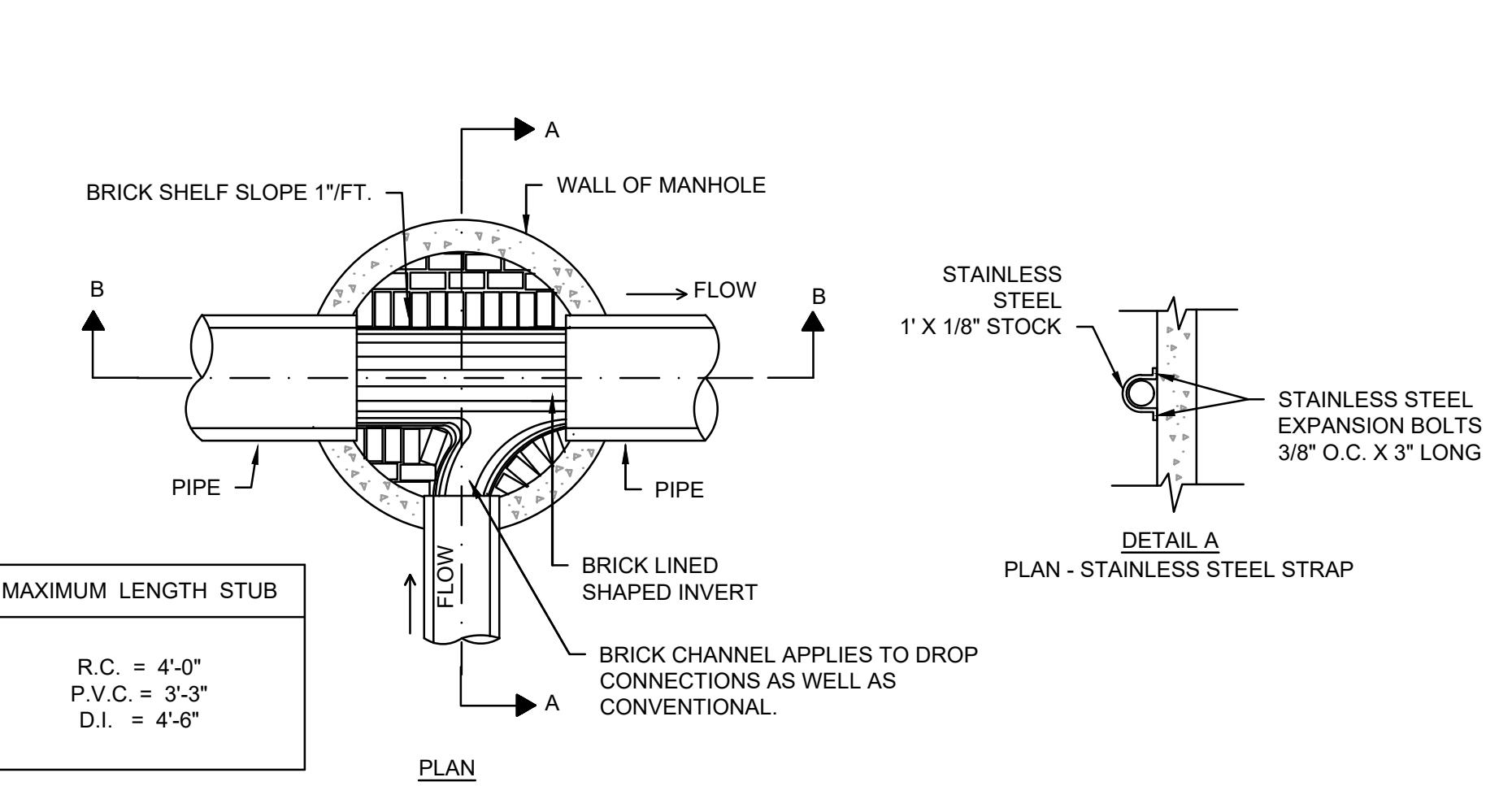
STANDARD MANHOLE FRAME AND COVER

SCALE: N.T.S.



TYPICAL DRAIN MANHOLE

SCALE: N.T.S.



INTERIOR DROP SEWER MANHOLE

SCALE: N.T.

LAKEVIEW AVENUE CULVERT REPLACEMENT TOWN OF DRACUT, MA

CIVIL DETAILS III

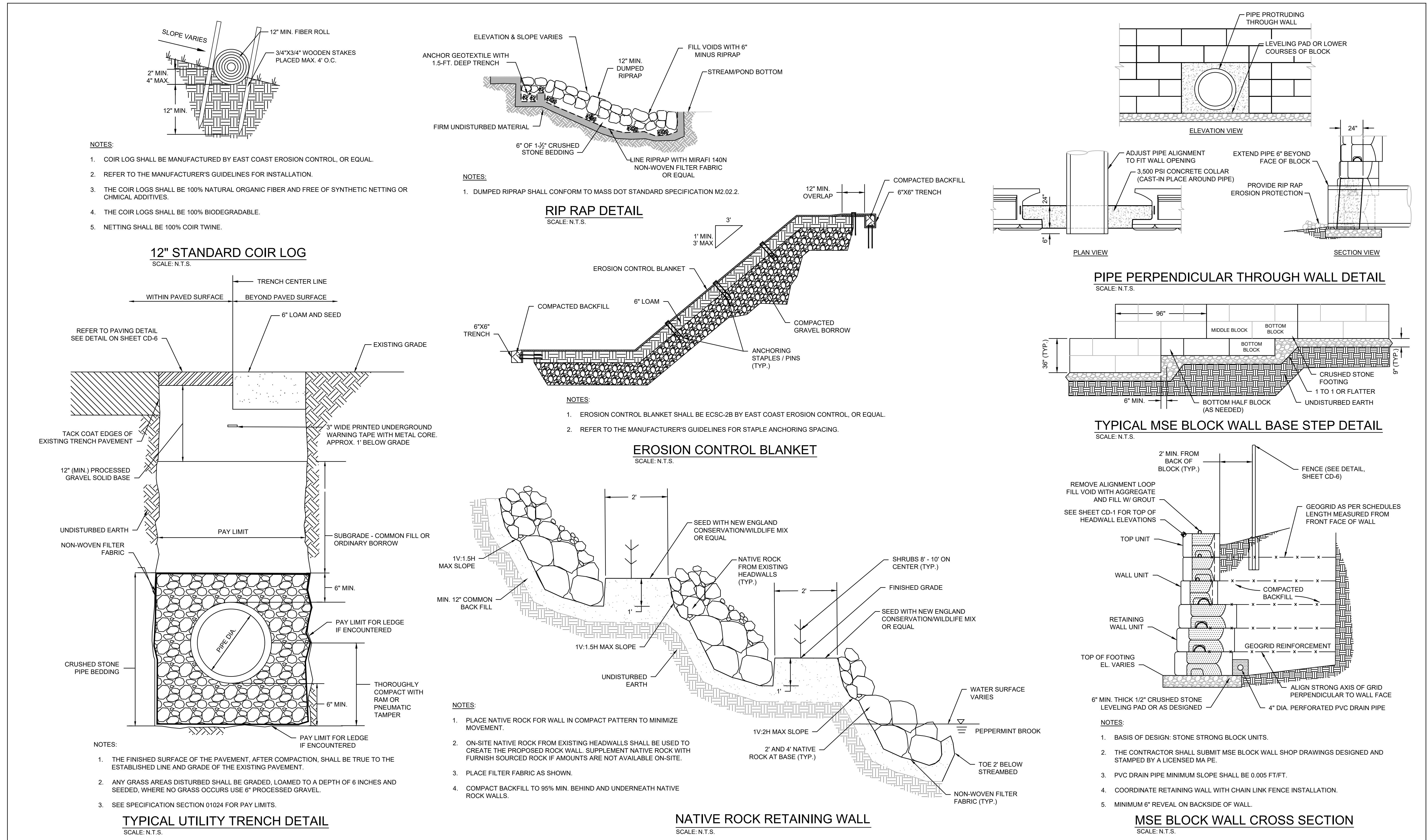
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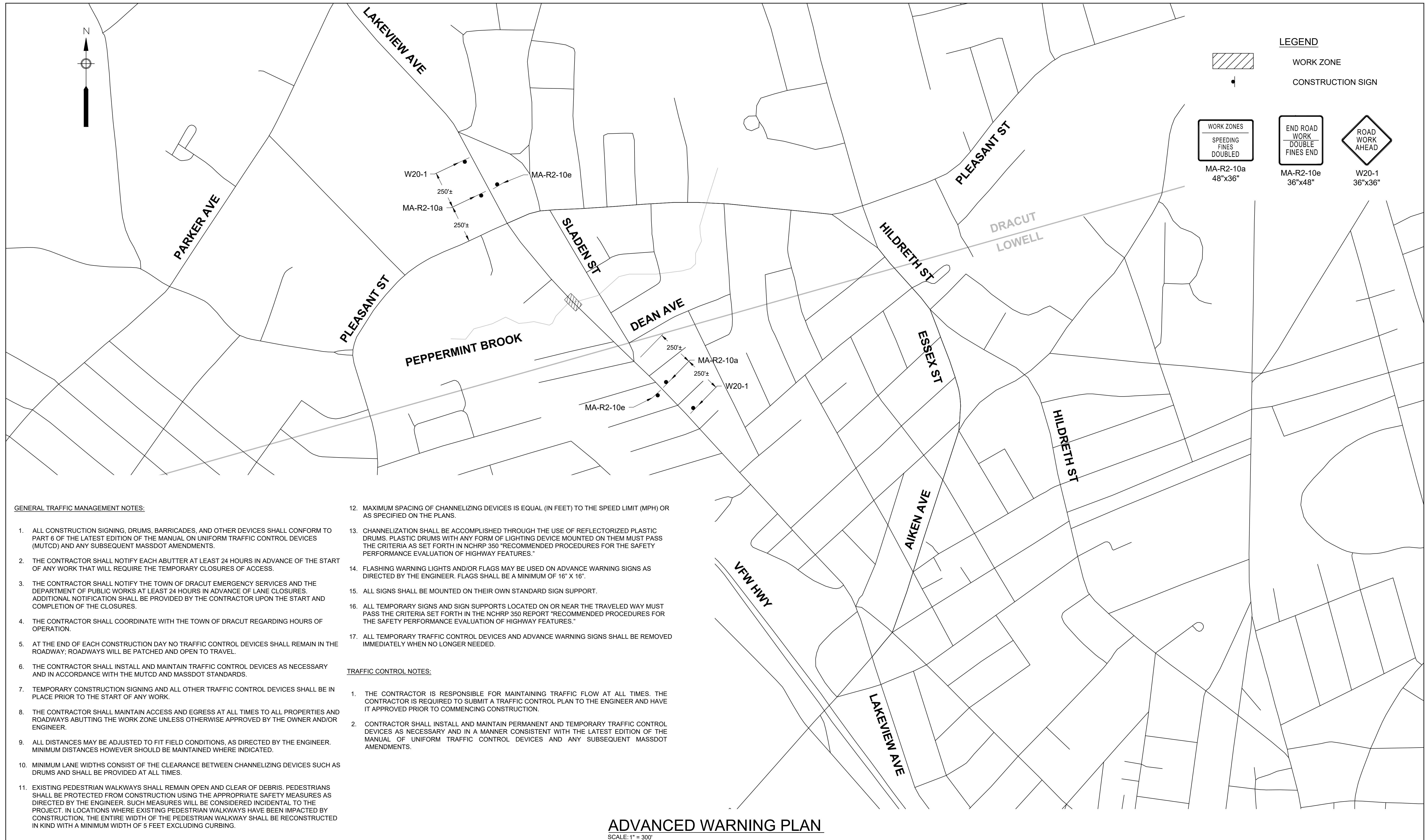
FOR BID

Unit No.

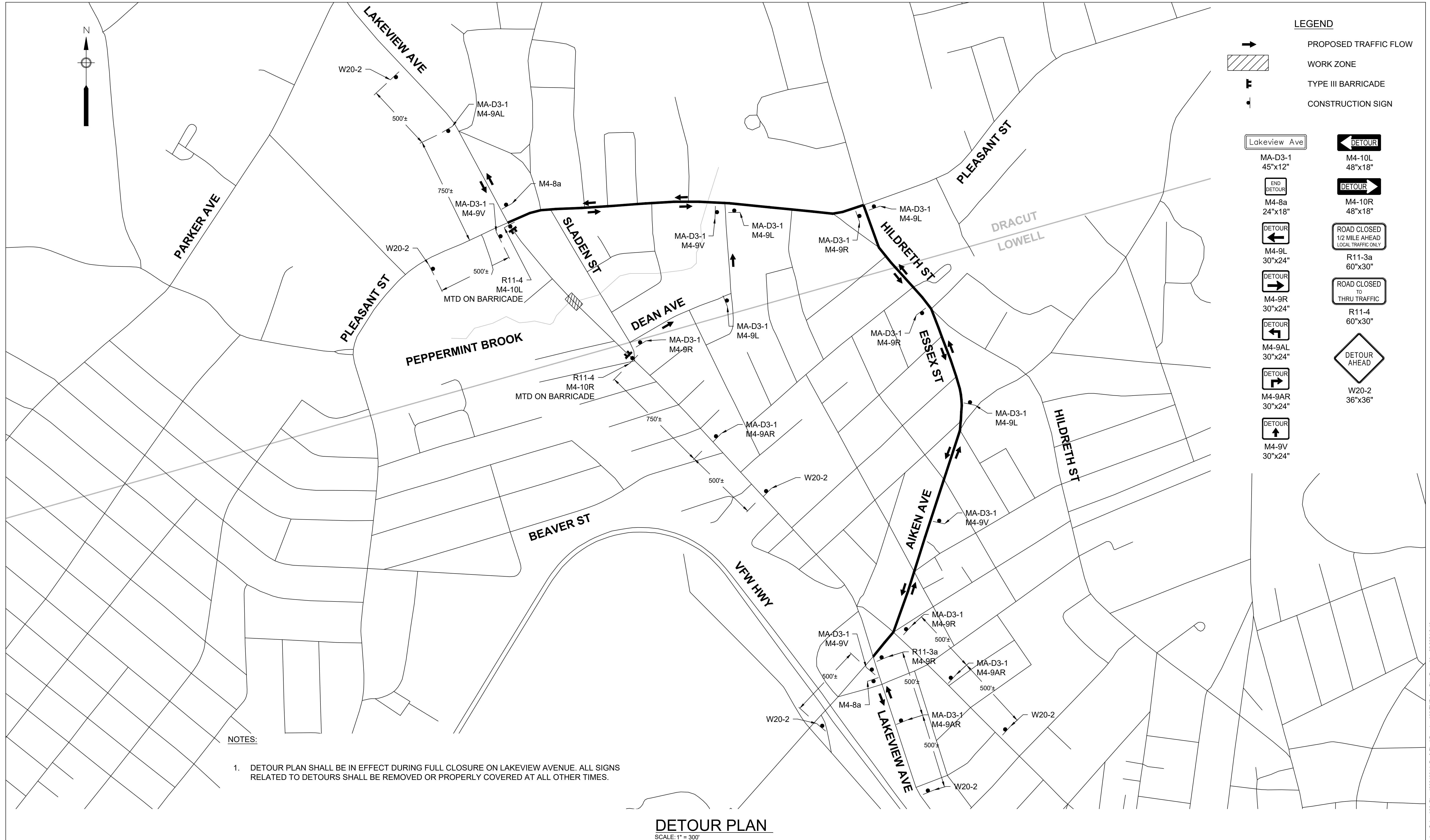
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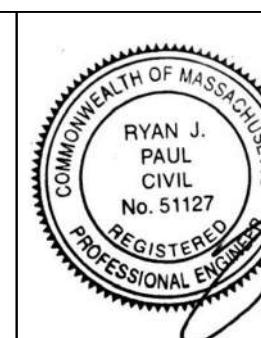
TOWN OF DRACUT			ENVIRONMENTAL PARTNERS			LAKEVIEW AVENUE CULVERT REPLACEMENT			FOR BID		
			An Apex Company			TOWN OF DRACUT, MA			Sheet No.		
			ENVIRONMENTAL PARTNERS						CD-5		
MARK	DATE	DESCRIPTION	Scale	AS SHOWN		THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING					
			Date	MARCH 2024							
			Job No.	22003729							
			Designed by	JLV/RJP							
			Drawn by	JLV							
			Checked by	EAK							
			Approved by	RJP							



	ENVIRONMENTAL PARTNERS — An Apex Company —		<table border="1"> <tr><td></td><td></td><td></td><td>Scale</td><td>AS NOTED</td></tr> <tr><td></td><td></td><td></td><td>Date</td><td>MARCH 2024</td></tr> <tr><td></td><td></td><td></td><td>Job No.</td><td>22003729</td></tr> <tr><td></td><td></td><td></td><td>Designed by</td><td>SS</td></tr> <tr><td></td><td></td><td></td><td>Drawn by</td><td>SS</td></tr> <tr><td></td><td></td><td></td><td>Checked by</td><td>BLH</td></tr> <tr><td>MARK</td><td>DATE</td><td>DESCRIPTION</td><td>Approved by</td><td>BLH</td></tr> </table>				Scale	AS NOTED				Date	MARCH 2024				Job No.	22003729				Designed by	SS				Drawn by	SS				Checked by	BLH	MARK	DATE	DESCRIPTION	Approved by	BLH	<p>LAKEVIEW AVENUE CULVERT REPLACEMENT TOWN OF DRACUT, MA</p> <p>TRAFFIC MANAGEMENT PLAN - 1</p> <p>FOR BID Sheet No. TMP-1</p>
			Scale	AS NOTED																																			
			Date	MARCH 2024																																			
			Job No.	22003729																																			
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MARK	DATE	DESCRIPTION	Approved by	BLH																																			



**ENVIRONMENTAL
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MARK DATE DESCRIPTION

Approved by BLH

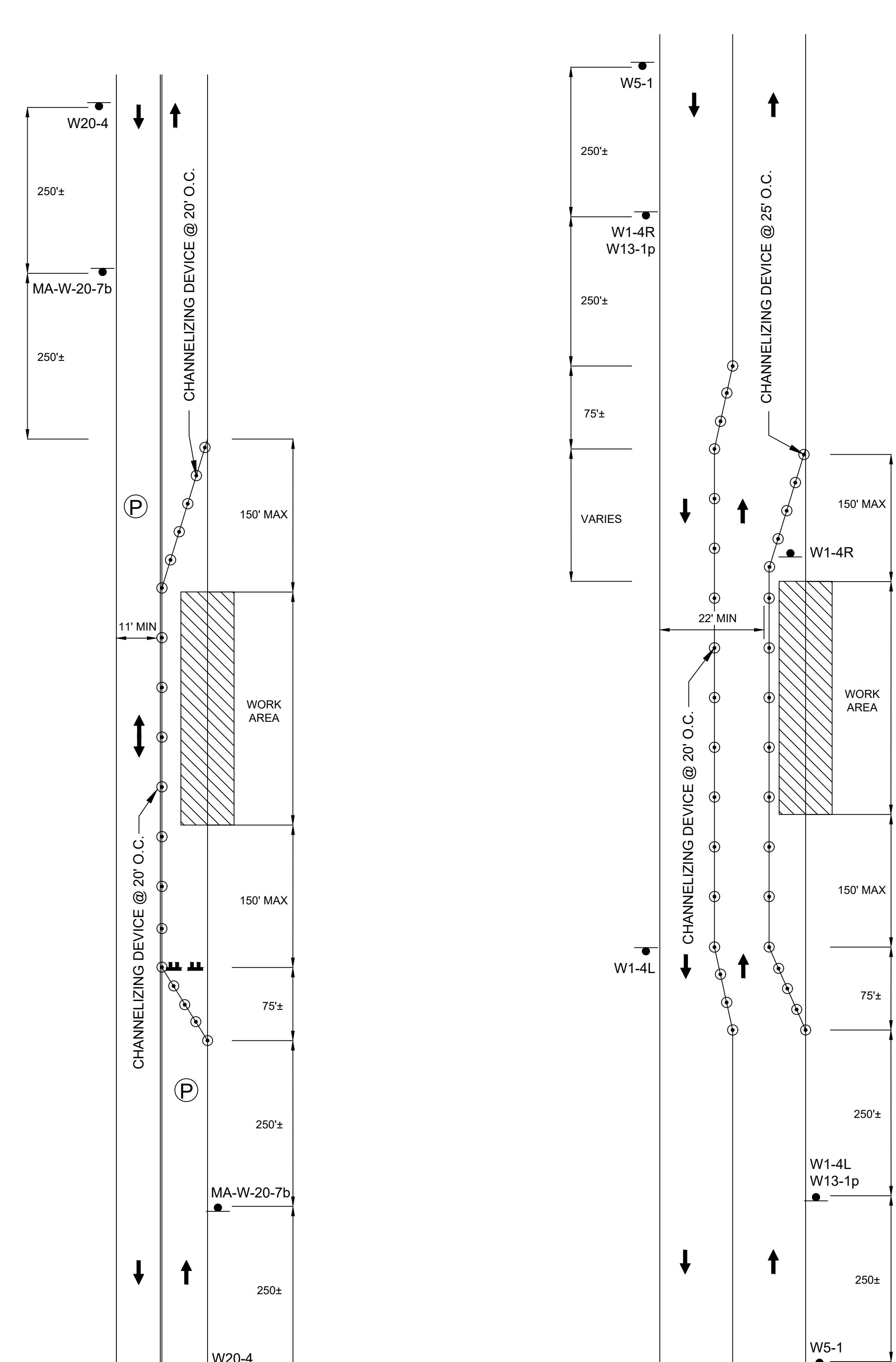
**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

TRAFFIC MANAGEMENT PLAN - 2

FOR BID

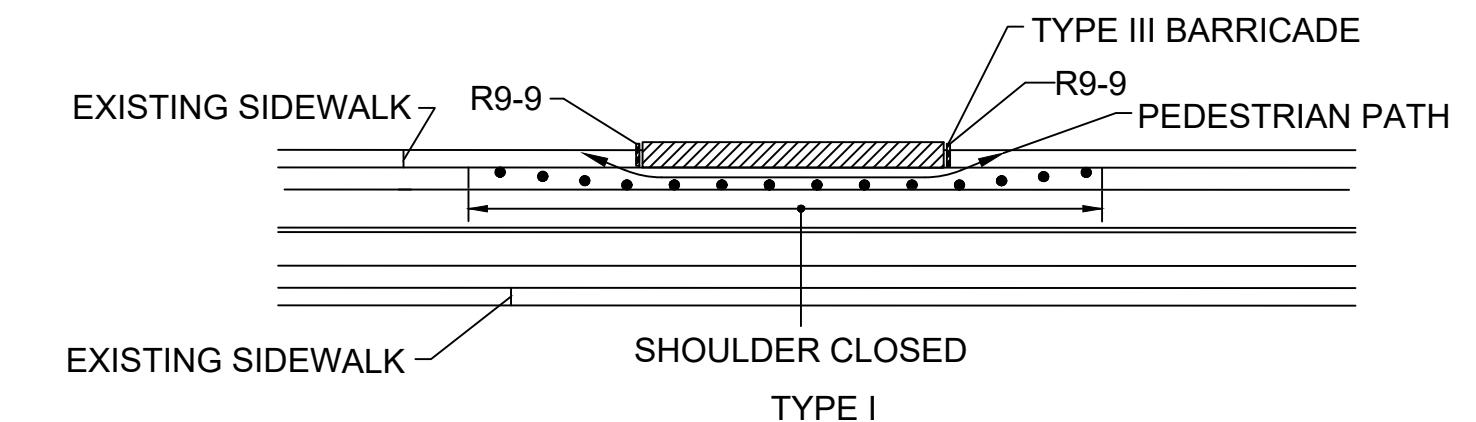
Sheet No.

TMP-2



**TYPICAL TWO-LANE ROAD
ONE-LANE ALTERNATING TRAFFIC**
NOT TO SCALE

**TYPICAL TWO-LANE ROAD
TWO-WAY LANE SHIFT**
NOT TO SCALE

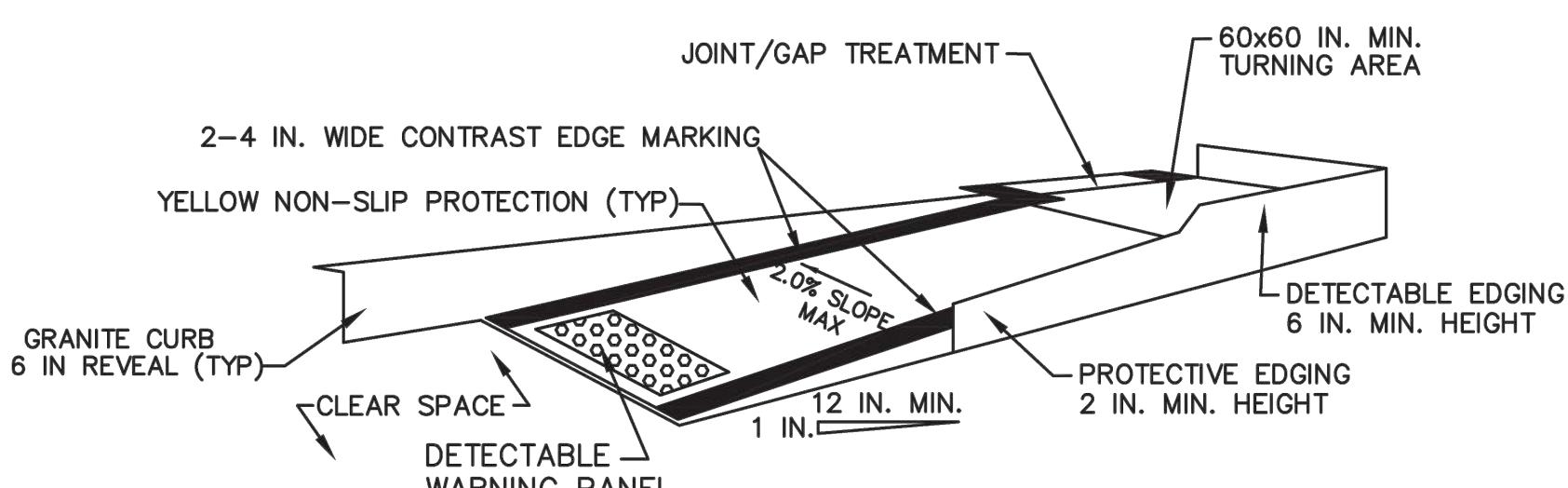


NOTES

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN, PEDESTRIANS MAY BE REQUIRED TO CROSS TO THE OPPOSITE SIDE OF THE STREET AS DIRECTED BY THE RESIDENT ENGINEER.
4. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE RESIDENT ENGINEER.

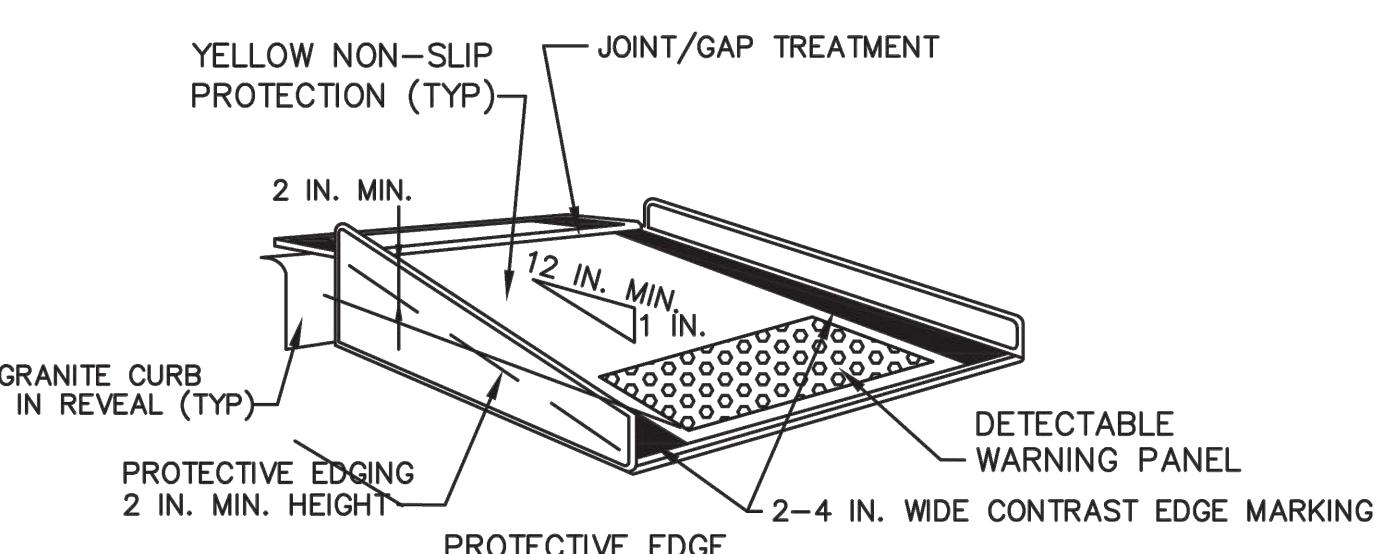
PEDESTRIAN BYPASS

NOT TO SCALE



**TEMPORARY CURB RAMP
PARALLEL TO CURB**

NOT TO SCALE



**TEMPORARY CURB RAMP
PERPENDICULAR TO CURB**

NOT TO SCALE

NOTES

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGE WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
6. CLEAR SPACE OF 48X48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5. IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

REFLECTORIZED DRUM
PROPOSED TRAFFIC FLOW
WORK ZONE
TYPE III BARRICADE
CONSTRUCTION SIGN
POLICE DETAIL



MA-W20-7b
36"x36"



R9-9
30"x18"



W1-4L
36"x36"



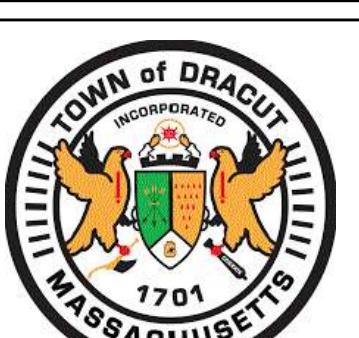
W1-4R
36"x36"



W5-1
36"x36"



W20-4
36"x36"



**ENVIRONMENTAL
PARTNERS**
— An Apex Company —



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			Date	MARCH 2024
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			Approved by	BLH

THIS LINE IS ONE INCH
LONG WHEN PLOTTED AT
FULL SCALE ON A 22" X
34" DRAWING

**LAKEVIEW AVENUE CULVERT REPLACEMENT
TOWN OF DRACUT, MA**

TRAFFIC MANAGEMENT PLAN - 3

FOR BID

Sheet No.

TMP-3