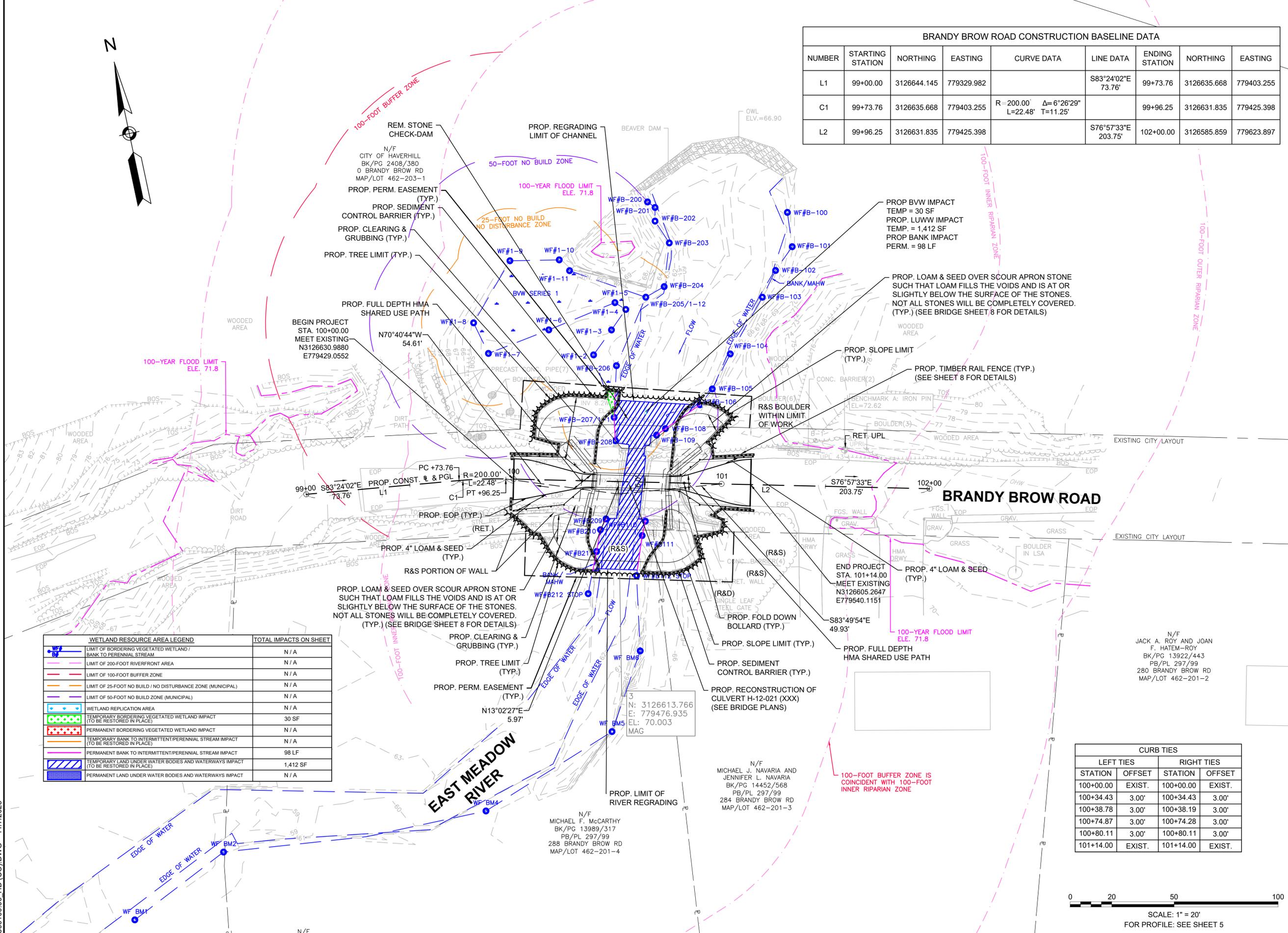


PREPARED FOR
CITY OF HAVERHILL
4 SUMMER STREET
HAVERHILL, MA 01830

**REPLACEMENT OF BRANDY BROW ROAD
CULVERT OVER EAST MEADOW RIVER
BRANDY BROW ROAD
HAVERHILL, MASSACHUSETTS**

| BRANDY BROW ROAD CONSTRUCTION BASELINE DATA | | | | | | | | |
|---|------------------|-------------|------------|---|------------------------|----------------|-------------|------------|
| NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING |
| L1 | 99+00.00 | 3126644.145 | 779329.982 | | S83°24'02"E 73.76' | 99+73.76 | 3126635.668 | 779403.255 |
| C1 | 99+73.76 | 3126635.668 | 779403.255 | R=200.00' Δ=6°26'29" L=22.48' T=11.25' | | 99+96.25 | 3126631.835 | 779425.398 |
| L2 | 99+96.25 | 3126631.835 | 779425.398 | | S76°57'33"E 203.75' | 102+00.00 | 3126585.859 | 779623.897 |



| WETLAND RESOURCE AREA LEGEND | TOTAL IMPACTS ON SHEET | |
|------------------------------|--|----------|
| Blue dashed line | LIMIT OF BORDERING VEGETATED WETLAND / BANK TO PERENNIAL STREAM | N/A |
| Blue solid line | LIMIT OF 200-FOOT RIVERFRONT AREA | N/A |
| Red dashed line | LIMIT OF 100-FOOT BUFFER ZONE | N/A |
| Orange dashed line | LIMIT OF 25-FOOT NO BUILD / NO DISTURBANCE ZONE (MUNICIPAL) | N/A |
| Yellow dashed line | LIMIT OF 50-FOOT NO BUILD ZONE (MUNICIPAL) | N/A |
| Green dashed line | WETLAND REPLICATION AREA | N/A |
| Green with dots | TEMPORARY BORDERING VEGETATED WETLAND IMPACT (TO BE RESTORED IN PLACE) | 30 SF |
| Red with dots | PERMANENT BORDERING VEGETATED WETLAND IMPACT | N/A |
| Orange with dots | TEMPORARY BANK TO INTERMITTENT/PERENNIAL STREAM IMPACT (TO BE RESTORED IN PLACE) | N/A |
| Yellow with dots | PERMANENT BANK TO INTERMITTENT/PERENNIAL STREAM IMPACT | 98 LF |
| Blue with dots | TEMPORARY LAND UNDER WATER BODIES AND WATERWAYS IMPACT (TO BE RESTORED IN PLACE) | 1,412 SF |
| Blue with diagonal lines | PERMANENT LAND UNDER WATER BODIES AND WATERWAYS IMPACT | N/A |

| CURB TIES | | | |
|-----------|--------|------------|--------|
| LEFT TIES | | RIGHT TIES | |
| STATION | OFFSET | STATION | OFFSET |
| 100+00.00 | EXIST. | 100+00.00 | EXIST. |
| 100+34.43 | 3.00' | 100+34.43 | 3.00' |
| 100+38.78 | 3.00' | 100+38.19 | 3.00' |
| 100+74.87 | 3.00' | 100+74.28 | 3.00' |
| 100+80.11 | 3.00' | 100+80.11 | 3.00' |
| 101+14.00 | EXIST. | 101+14.00 | EXIST. |

REVISIONS

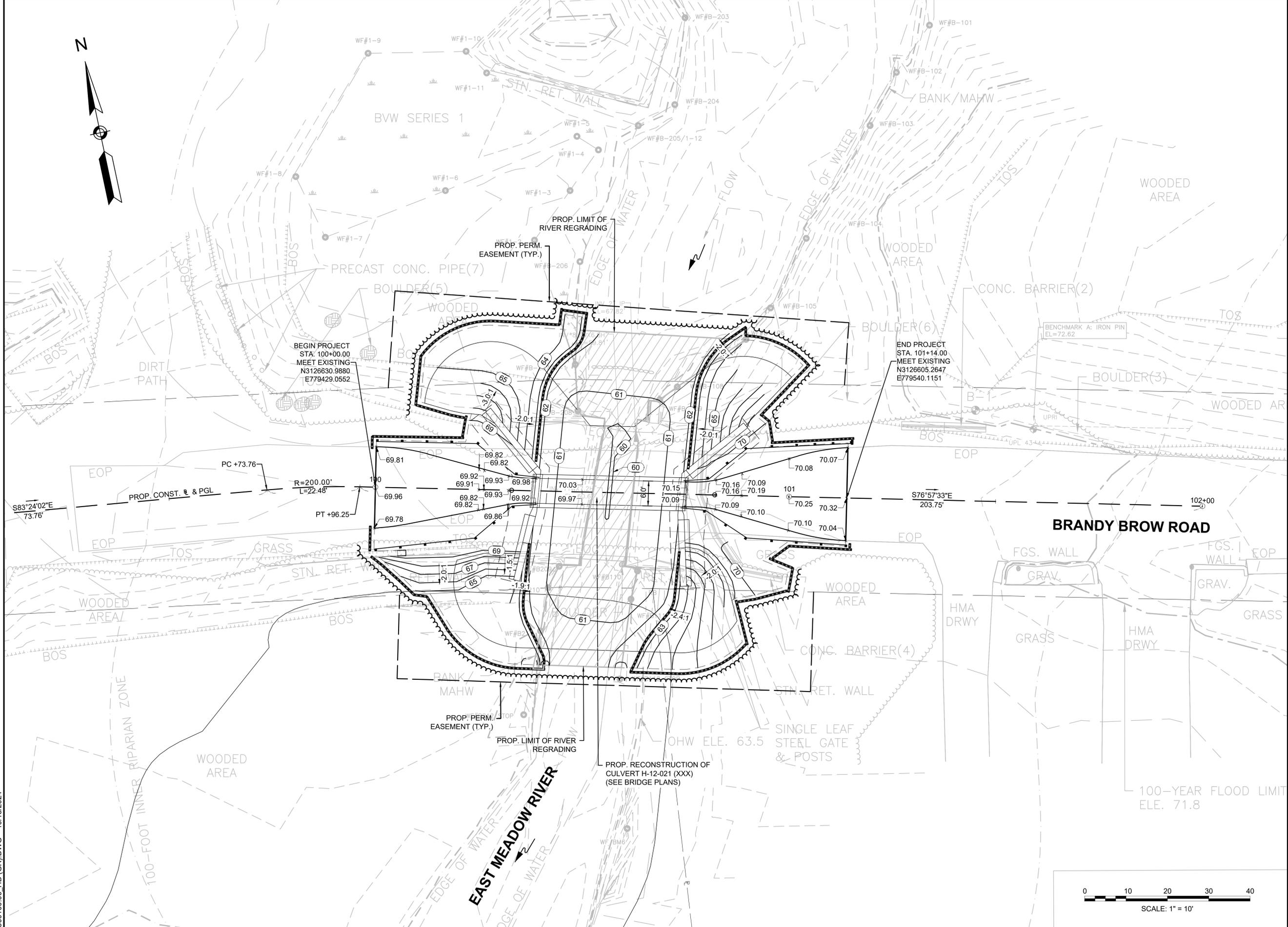
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11/6/2025
DRAWN/DESIGN BY: NHG/GBP
CHECKED BY: GJH

CONSTRUCTION PLAN

SCALE: 1"=20'
NEX-2300100.00
4 OF 20

**REPLACEMENT OF BRANDY BROW ROAD
CULVERT OVER EAST MEADOW RIVER
BRANDY BROW ROAD
HAVERHILL, MASSACHUSETTS**



REVISIONS

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GRADING PLAN

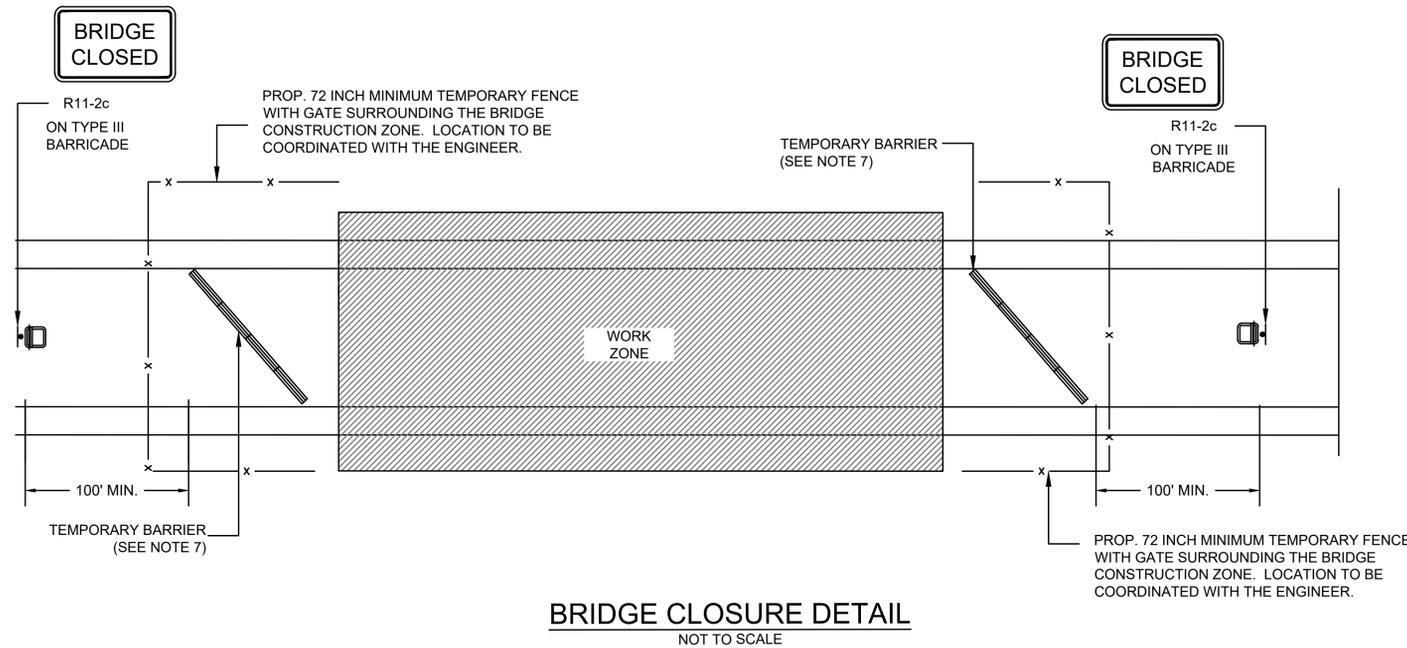
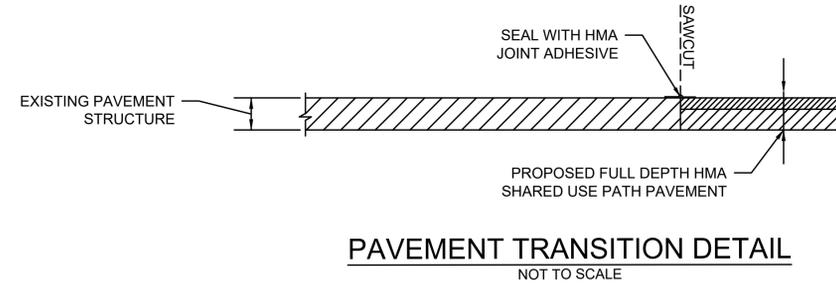
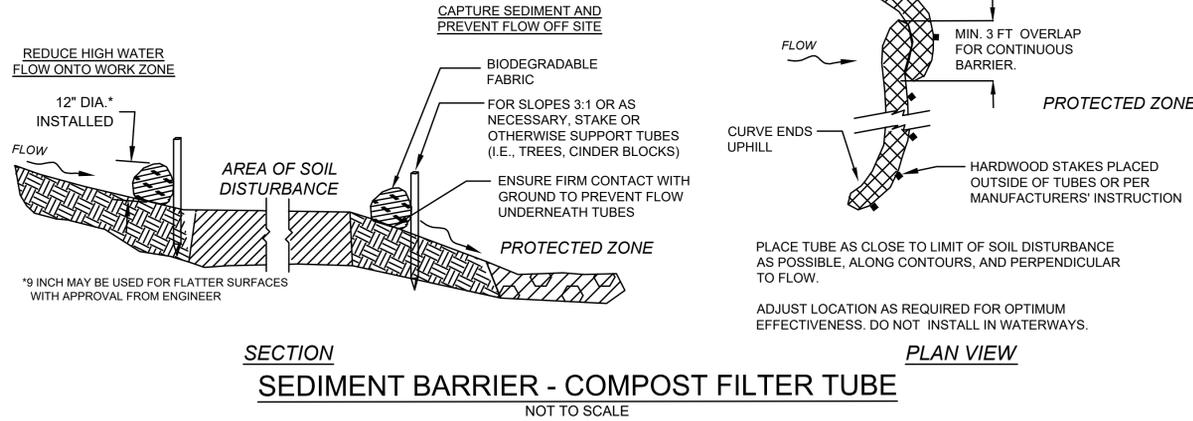
SCALE: 1"=10'

NEX-2300100.00

6 OF 20

2300100.00_HD(GR).DWG 10/15/2024

**REPLACEMENT OF BRANDY BROW ROAD
CULVERT OVER EAST MEADOW RIVER
BRANDY BROW ROAD
HAVERHILL, MASSACHUSETTS**



TRAFFIC MANAGEMENT LEGEND

- WORK AREA
- PORTABLE TYPE III BARRICADE (4' WIDE, MIN.)
- TEMPORARY PRECAST CONCRETE BARRIER WITH TEMPORARY FENCE & WHITE REFLECTORS

NOTES:

1. ALL TRAFFIC MANAGEMENT AND WORK ZONE TRAFFIC CONTROL MEASURES SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), MASSDOT - HIGHWAY DIVISION'S "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS", THE STANDARD SPECIFICATIONS, AND THE FOLLOWING NOTES.
2. THE TEMPORARY TRAFFIC CONTROL PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE REFERENCES LISTED IN NOTE NO. 1 AND AS APPROVED OR DIRECTED BY THE ENGINEER.
3. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY OR FULL DEPTH CONSTRUCTION AREA AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO MOTORISTS. IN CERTAIN CIRCUMSTANCES, AND ONLY WITH THE APPROVAL OF THE CITY AND THE ENGINEER, LANE RESTRICTIONS MAY REMAIN OVERNIGHT.
4. PLACE ALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES FOR EACH PHASE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. DISTANCES SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS ARE A GUIDE ONLY, AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
6. CONTRACTOR SHALL REMOVE SEGMENTS OF TEMPORARY CONCRETE BARRIER AS NECESSARY TO GAIN ACCESS TO THE SITE. CONTRACTOR SHALL REPLACE THE BARRIER AT THE END OF EACH WORKING DAY TO SECURE THE SITE. THE COST ASSOCIATED WITH REMOVING AND RESETING THE TEMPORARY CONCRETE BARRIER SHALL BE CONSIDERED INCIDENTAL TO ITEM 853.2.
7. PROPOSED TEMPORARY BARRIER SHALL CONFORM TO MASH TEST LEVEL 2.

REVISIONS

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11/6/2025

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| DRAWN/DESIGN BY NHG | CHECKED BY GJH |
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**CONSTRUCTION
DETAILS**

SCALE: N.T.S.

NEX-2300100.00

7 OF 20

PREPARED FOR
 CITY OF HAVERHILL
 4 SUMMER STREET
 HAVERHILL, MA 01830

**REPLACEMENT OF BRANDY BROW ROAD
 CULVERT OVER EAST MEADOW RIVER
 BRANDY BROW ROAD
 HAVERHILL, MASSACHUSETTS**

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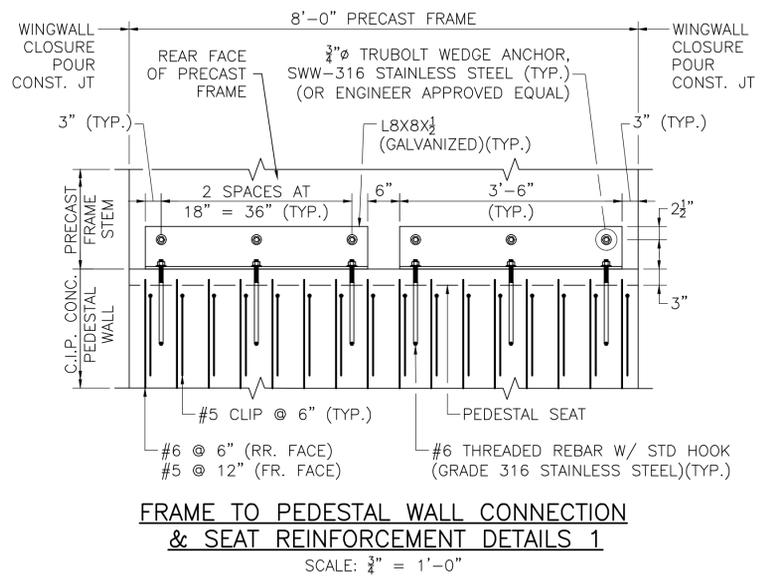
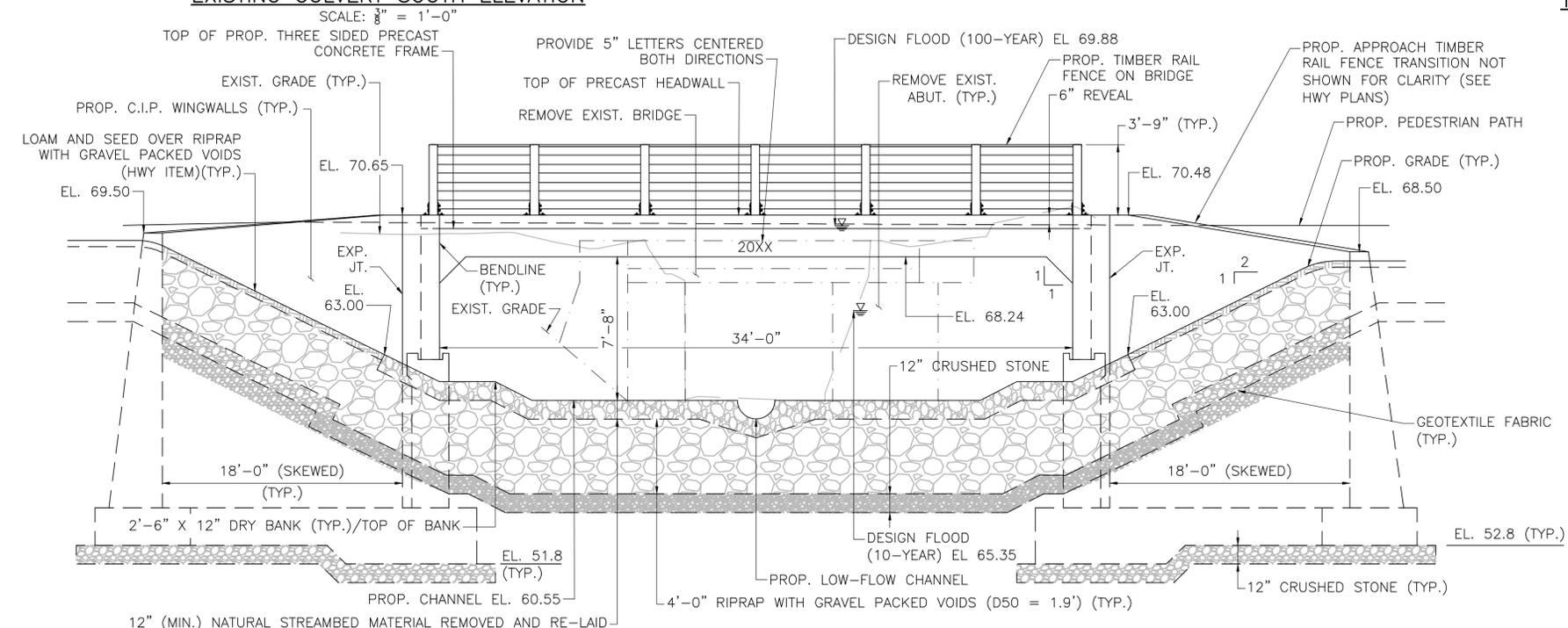
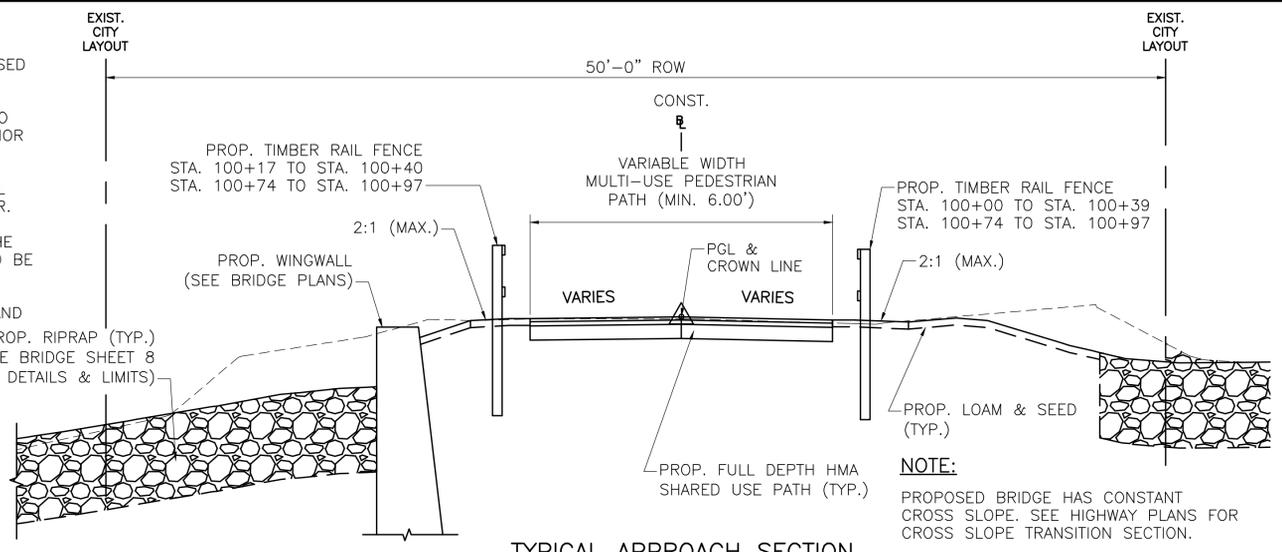
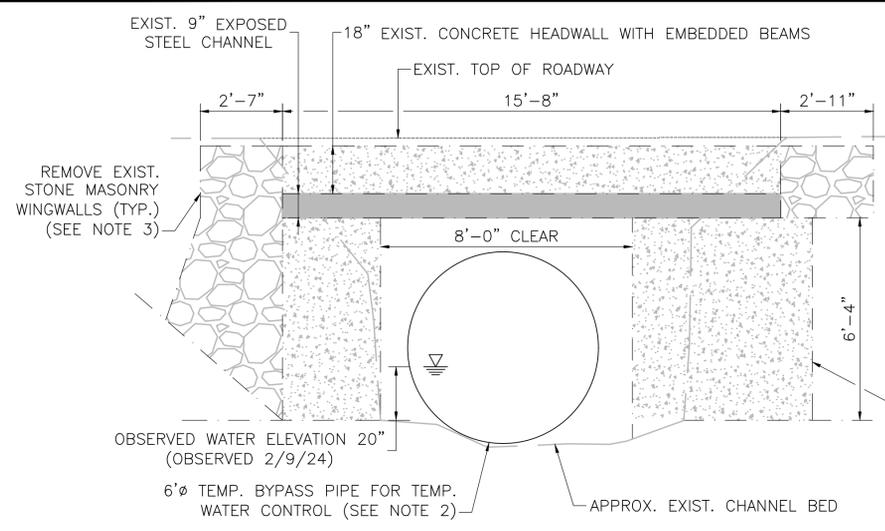
**ELEVATIONS &
 CROSS SECTIONS**

SCALE: AS NOTED

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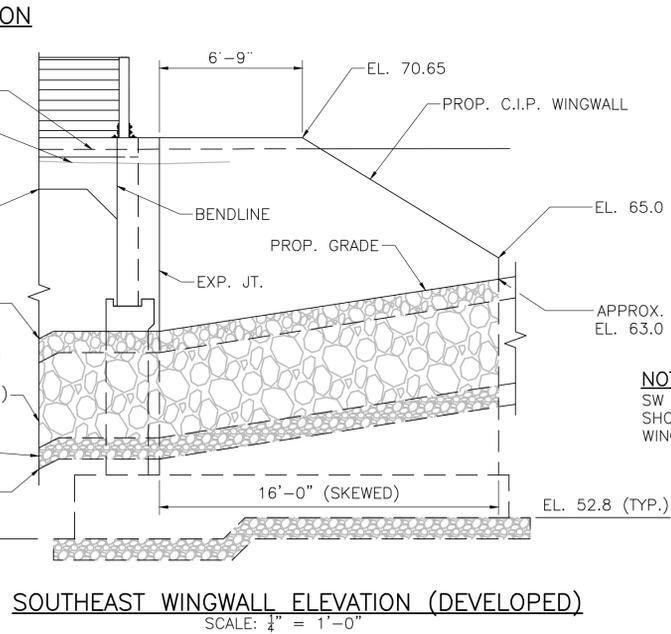
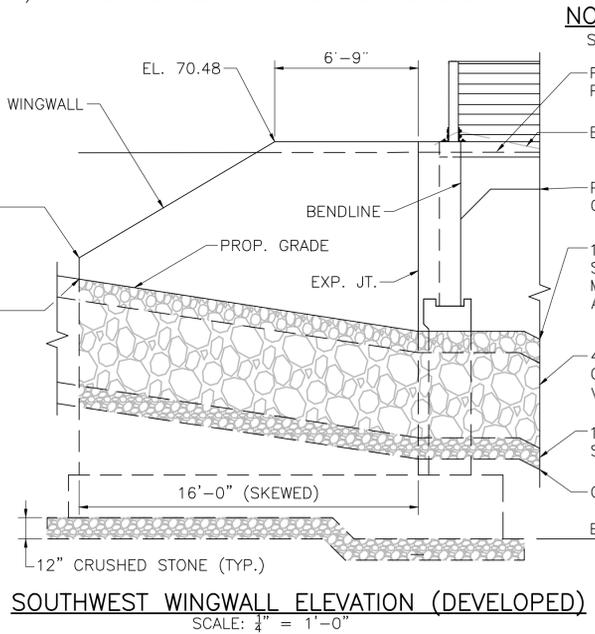
12 OF 20

- NOTES:**
- EXISTING BRIDGE DIMENSIONS SHOWN ARE BASED ON FIELD MEASUREMENTS TAKEN BY GREENMAN-PEDERSEN, INC. AND ARE NOT GUARANTEED. CONTRACTOR IS RESPONSIBLE TO PERFORM THEIR OWN FIELD INVESTIGATION PRIOR TO THE COMMENCEMENT OF WORK.
 - WATER CONTROL SHOWN IS ONLY CONCEPTUAL AND IS TO BE DESIGNED BY THE CONTRACTOR.
 - THERE ARE STONE MASONRY PORTIONS OF THE EXISTING ABUTMENT NOT SHOWN THAT ARE TO BE REMOVED.
 - EMBEDMENT LIMITS OF EXISTING ABUTMENTS AND WINGWALLS ARE UNKNOWN.



- FRAME/PEDESTAL CONN. NOTES:**
- ALL COSTS FOR STEEL ANGLES, WEDGE ANCHORS, AND THREADED REBARS SHALL BE INCIDENTAL TO ITEM 995.01 WITH NO SEPARATE PAYMENT MADE.
 - THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID SWEDGE BOLTS CONFLICTING WITH PRECAST FRAME INTERNAL REINFORCEMENT. PRIOR TO SWEDGE BOLT INSTALLATION, FRAME REBAR LOCATIONS SHALL BE FIELD-VERIFIED.
 - THE CONTRACTOR MAY PROPOSE ALTERNATIVE CONNECTION METHODS TO THE ENGINEER FOR APPROVAL.

- ELEVATION NOTES:**
- CONTRACT COMPLETION DATE TO BE IMPRINTED ON THE TOP SLAB OF BOTH FASCIA FRAME HEADWALL SECTIONS, CENTERED BOTH HORIZONTALLY AND VERTICALLY.
 - CHAMFER WIDTH TO MATCH THREE SIDED FRAME WALL THICKNESS.
 - TIMBER RAIL FENCE INSTALLED BEHIND THE WINGWALLS NOT SHOWN, SEE BRIDGE SHEET 1.
 - ASPHALT SHALL BE APPLIED DIRECTLY TO THE MEMBRANE/TOP OF OF FRAME. THE CONTRACTOR SHALL ADJUST/INCREASE ASPHALT THICKNESS OVER THE FRAME AS REQUIRED TO ACCOMMODATE THE FRAME DESIGN CEILING THICKNESS.
 - WINGWALL TIMBER RAIL FENCE NOT SHOWN FOR CLARITY.
 - FOLD DOWN BOLLARD NOT SHOWN FOR CLARITY.



BR04 ELEV & CROSS SECTION.DWG 2/10/2026

