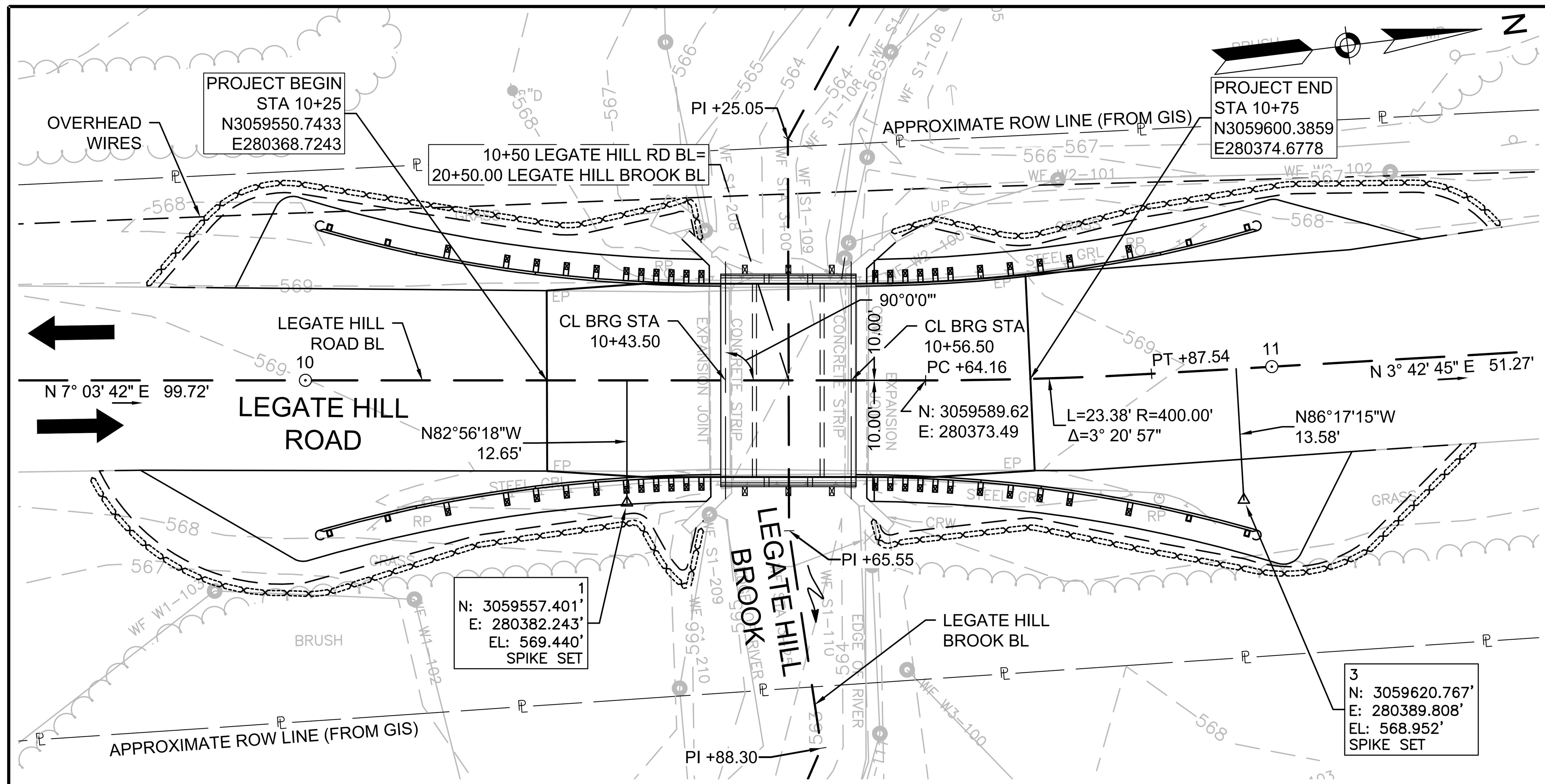
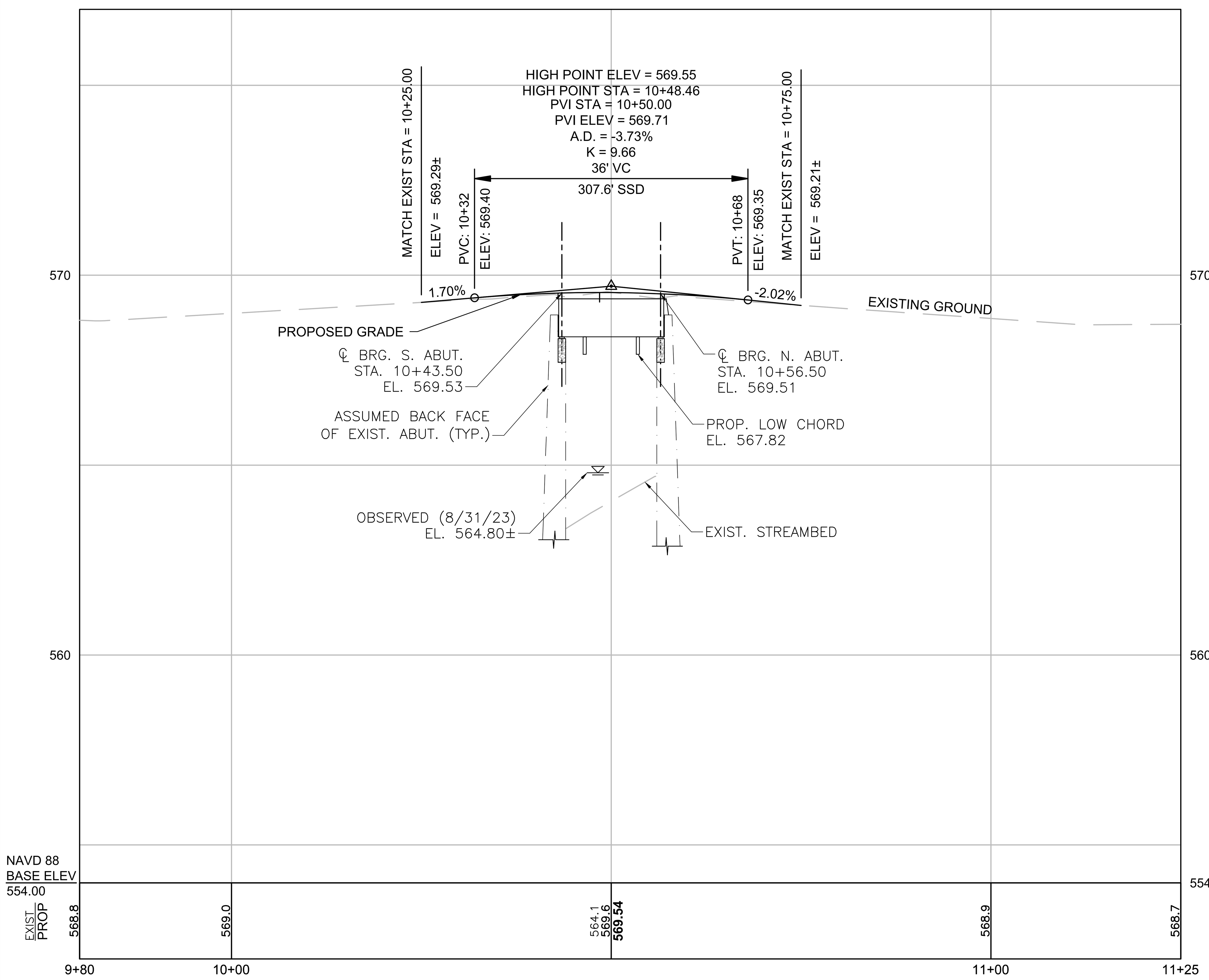


KEY PLAN

SCALE: 1" = 10'



PROFILE – LEGATE HILL RD

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2'

INDEX OF DRAWINGS

GENERAL NOTES:

DESIGN
IN ACCORDANCE WITH THE 9th EDITION (2020) AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, FOR HL-93 LOADING.

PLAN REVISIONS
IF THERE ARE REVISIONS TO THE APPROVED PLANS, THE CONTRACTOR SHALL SUBMIT THESE CHANGES TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ONCE THESE REVISIONS ARE APPROVED BY THE ENGINEER, IT SHALL BE SUBMITTED TO MASSDOT FOR FILING.

BENCHMARK
ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

SPIKE SET "1"
N: 3059557.401
E: 280382.243
EL: 569.440

SURVEY
FIELD SURVEY PERFORMED BY DAWOOD ENGINEERING, INC. IN MAY, 2023.

SCALES
SCALES AS NOTED ON PLANS ARE NOT APPLICABLE TO REDUCE SIZE PRINTS. FOR HALF SIZE PRINTS DIVIDE SCALE BY TWO.

TRAFFIC AND PEDESTRIAN ACCESS
ROAD TO BE CLOSED DURING CONSTRUCTION. HOWEVER, CONSTRUCTION SHALL BE TIMED SO THAT THE ROAD SHALL NOT BE CLOSED DURING THE SPRING AND WINTER SEASONS (NOVEMBER TO MID-APRIL). SEE SHEET 9 FOR ROAD CLOSURE AND DETOUR PLAN.

UTILITIES
CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES.

EXISTING CONDITIONS
THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND EXISTING DETAILS NECESSARY FOR THE COMPLETION OF WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUACY AND ACCURACY THEREOF AND SHALL NOT ORDER ANY MATERIALS OR COMMENCE ANY FABRICATION UNTIL THE REQUIRED MEASUREMENTS HAVE BEEN MADE ON THE ACTUAL STRUCTURE AND THE EXTENT OF PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

DEMOLITION
SHIELDING SYSTEM SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY DEMOLITION. CONTRACTOR SHALL ENSURE THAT ALL DEMOLITION DEBRIS IS RECOVERED USING THE SHIELDING SYSTEM AND PREVENTED FROM FALLING INTO THE BROOK. ALL DEMOLITION AND CONSTRUCTION SHALL BE ACCOMPLISHED FROM DRY LAND ABOVE AND/OR ADJACENT TO BRIDGE, WITH THE EXCEPTION OF THE INSTALLATION PERSONNEL STANDING IN THE WATER. CONTRACTOR SHALL PREVENT CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIALS AND CONSTRUCTION DEBRIS FROM ENTERING THE WATER.

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY NOT TO DAMAGE THOSE PORTIONS OF THE SUBSTRUCTURE THAT ARE TO REMAIN. ANY PORTION OF THE SUBSTRUCTURE TO REMAIN WHICH BECOMES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTORS EXPENSE.

CONCRETE
ALL CONCRETE SHALL BE IN ACCORDANCE WITH SPECIFIED 28 DAY COMPRESSIVE STRENGTH AND MAXIMUM AGGREGATE SIZE AND MINIMUM CEMENTITIOUS MATERIAL CONTENT PER CUBIC YARD AS FOLLOWS:

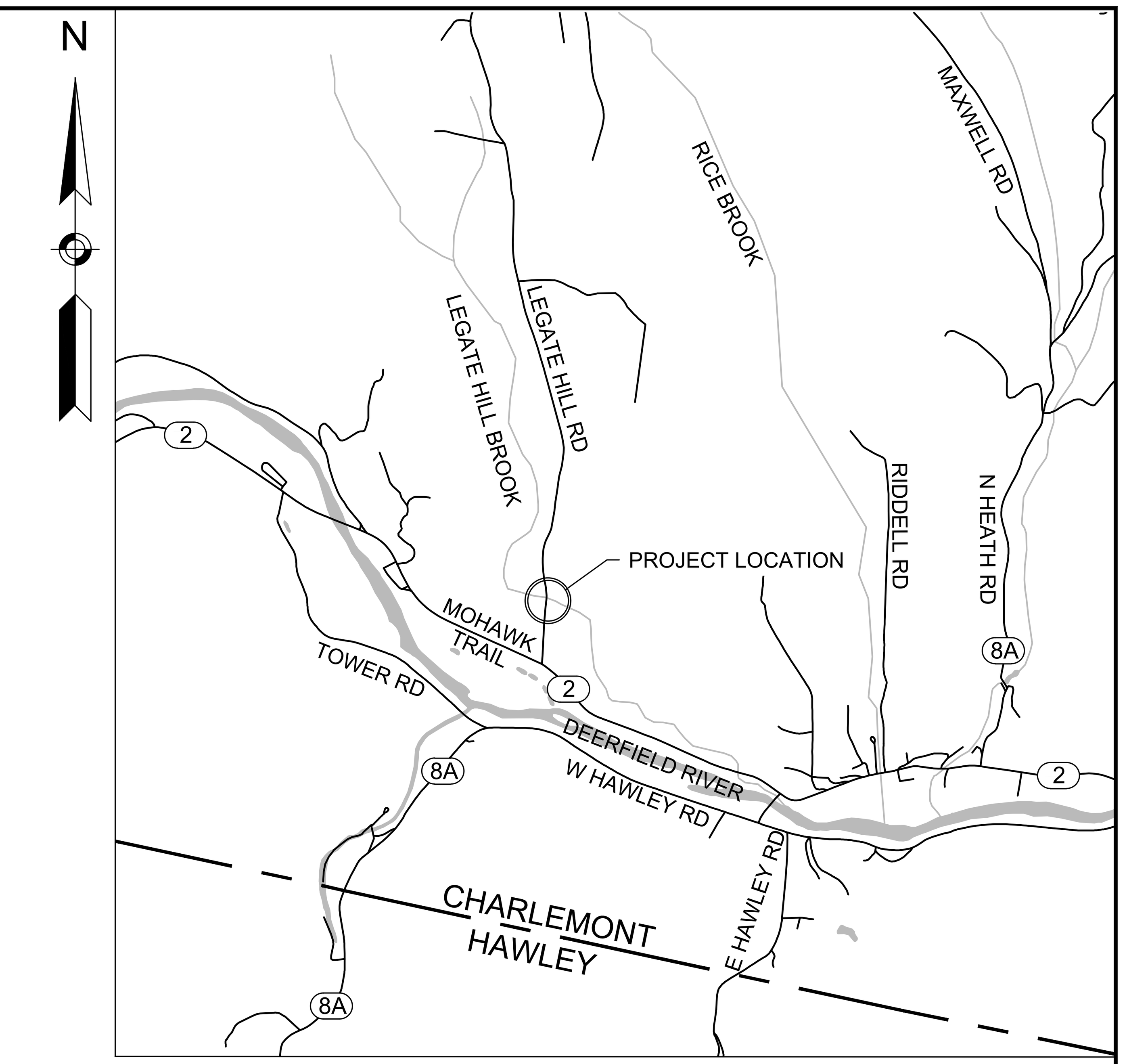
ABUTMENT CAP: 5000 PSI, ¾", 685 HP CEMENT CONCRETE
CONCRETE REPAIR: 4000 PSI, ⅜", 660 CEMENT CONCRETE

RAPID SETTING CONCRETE MAY BE USED TO ACCELERATE CONSTRUCTION

ANCHOR RODS
ANCHOR RODS AND NUTS SHALL BE ASTM F1554 GR 36. ANCHOR RODS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 (ASTM A153).

REINFORCEMENT AND DOWELS
ALL REINFORCING STEEL INCLUDING DOWELS SHALL BE EPOXY COATED CONFORMING TO ASTM A775 AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60.

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35
6/5/2024
STATE BRIDGE ENGINEER DATE



LOCUS

SCALE: 1" = 2000'

DRILL AND GROUT
DOWEL EMBEDMENT MUST BE ADEQUATE TO FULLY DEVELOP 125% OF THE YIELD STRENGTH OF THE BAR. THE EMBEDMENT LENGTH, THE METHOD AND EQUIPMENT USED TO DRILL THE DOWEL HOLES, AND THE DIAMETER OF THE DRILLED HOLE SHALL AT A MINIMUM CONFORM TO THE RECOMMENDATIONS OF THE MANUFACTURER AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

DRILLING OPERATION SHALL BE PERFORMED WITHOUT DAMAGE TO ANY EXISTING REINFORCEMENT OR A PORTION OF THE STRUCTURE THAT IS TO REMAIN IN PLACE.

GROUT MATERIAL SHALL BE ON THE MASSDOT APPROVED PRODUCTS LIST OF MATERIALS. MASSDOT APPROVED EPOXY, VINYL, OR POLYESTER RESIN ADHESIVES MAY BE UTILIZED IN LIEU OF CEMENTITIOUS GROUT WITH ENGINEER APPROVAL.

TIMBER DECK WATERPROOFING
WATERPROOFING SHALL BE SPRAY APPLIED SEAMLESS MEMBRANE BRIDGE DECK WATERPROOFING FOR HIGHWAY AND RAILROAD BRIDGES. WATERPROOFING SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

ESTIMATED QUANTITIES

NOT GUARANTEED

NO.	DESCRIPTION	UNIT	QTY.
114.1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. C-05-054	LS	1
120.	EARTH EXCAVATION	CY	25
151.	GRAVEL BORROW	CY	35
170.	FINE GRADING AND COMPACTING – SUBGRADE AREA	SY	80
452.	ASPHALT EMULSION FOR TACK COAT	GAL	8
460.22	SUPERPAVE SURFACE COURSE -9.5 (SSC -9.5)	TON	12
460.31	SUPERPAVE INTERMEDIATE COURSE -12.5 (SIC -12.5)	TON	18
627.1	TRAILING ANCHORAGE	EA	4
628.24	TRANSITION TO BRIDGE RAIL	EA	4
630.2	HIGHWAY GUARD REMOVED AND DISCARDED	FT	155
657.	TEMPORARY FENCE	FT	250
751.	LOAM FOR ROADSIDES	CY	8
765.	SEEDING	SY	68
767.121	SEDIMENT CONTROL BARRIER	FT	285
769.	PAVEMENT MILLING MULCH UNDER GUARD RAIL	FT	235
833.7	DELINEATION FOR GUARD RAIL TERMINI	EA	4
852.	SAFETY SIGNING FOR TRAFFIC MANAGEMENT	SF	242
853.1	PORTABLE BREAKAWAY BARRICADE TYPE III	EA	10
853.2	TEMPORARY BARRIER (TL-2)	FT	40
856.12	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	21
859.	REFLECTORIZED DRUM	DAY	720
989.22	REINFORCED CONCRETE SURFACE EXCAVATION	SF	4
994.01	TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. C-05-054	LS	1
995.	BRIDGE SUPERSTRUCTURE, BRIDGE NO. C-05-054	LS	1

GILL ENGINEERING
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DATE

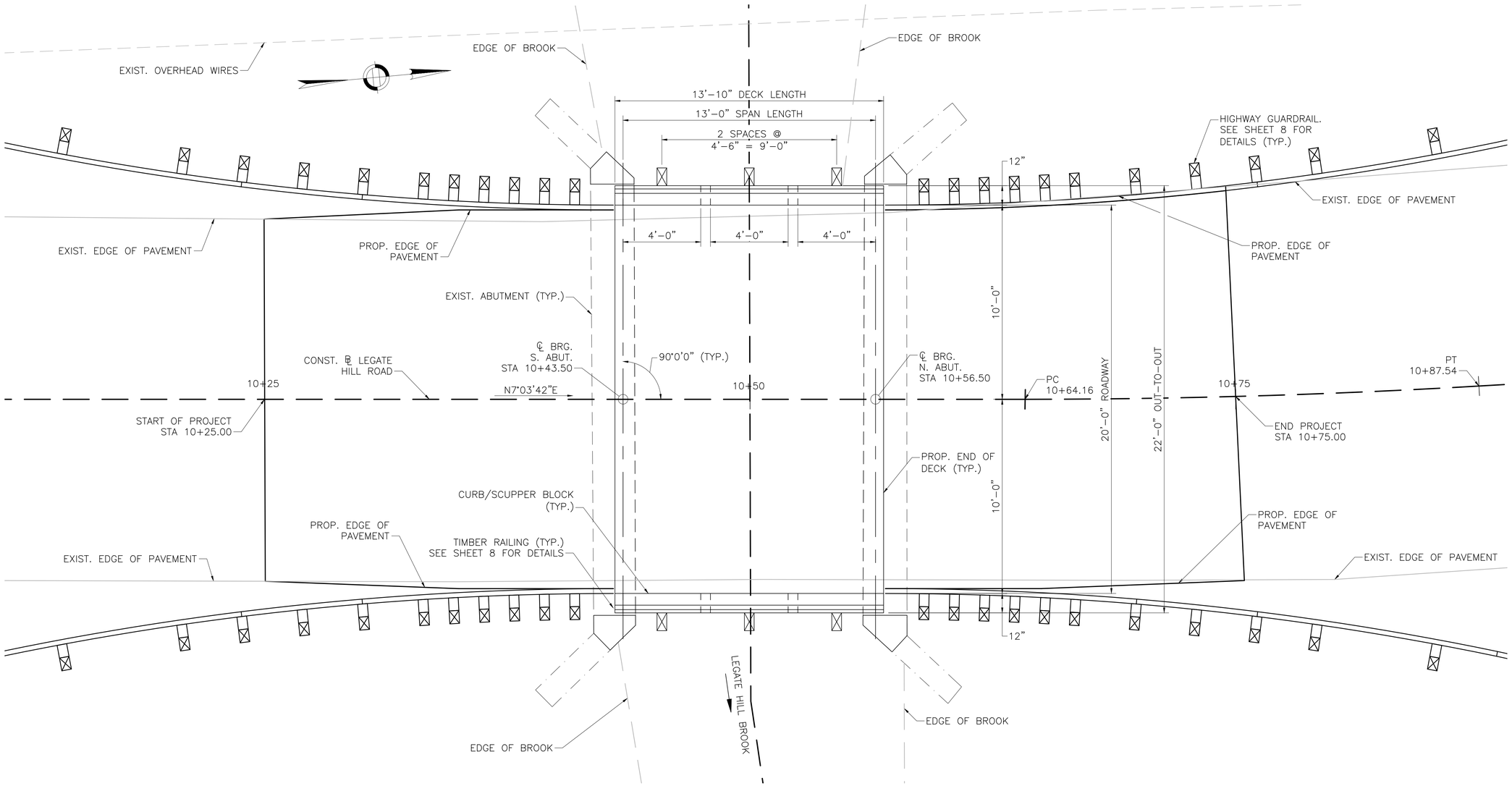
SUPERSTRUCTURE REPLACEMENT

TOWN OF CHARLEMONT

SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C-05-054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

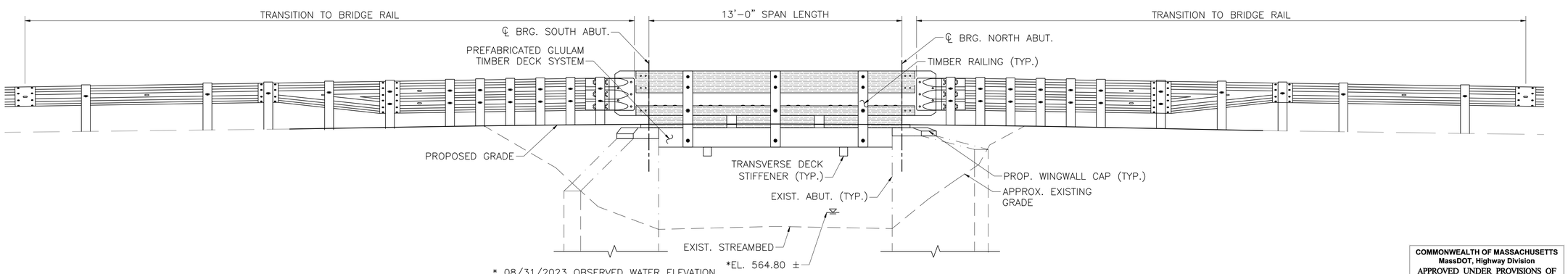
KEY PLAN, PROFILE & NOTES

SHEET 1 OF 9



GENERAL PLAN

SCALE: $\frac{3}{8}$" = 1'–0"



EAST ELEVATION

SCALE: $\frac{3}{8}$" = 1'–0"

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
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GILL ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER

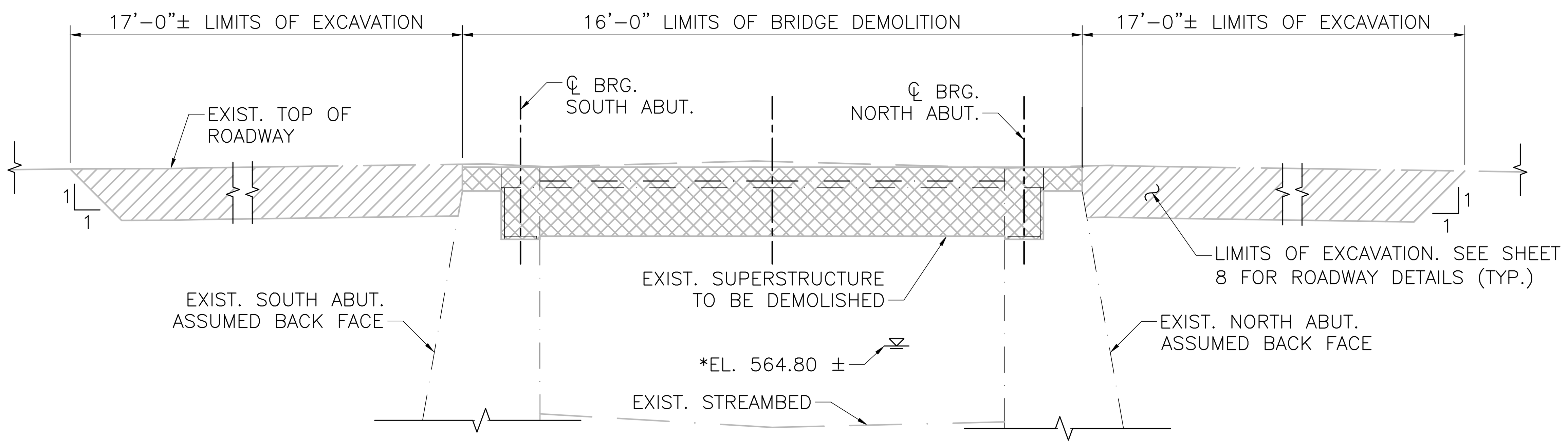
COMMONWEALTH OF MASSACHUSETTS
JOHN L. FISCHER
NO. 54754
REGISTERED PROFESSIONAL ENGINEER
5/31/24

SUPERSTRUCTURE REPLACEMENT

TOWN OF CHARLEMONT

SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C–05–054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

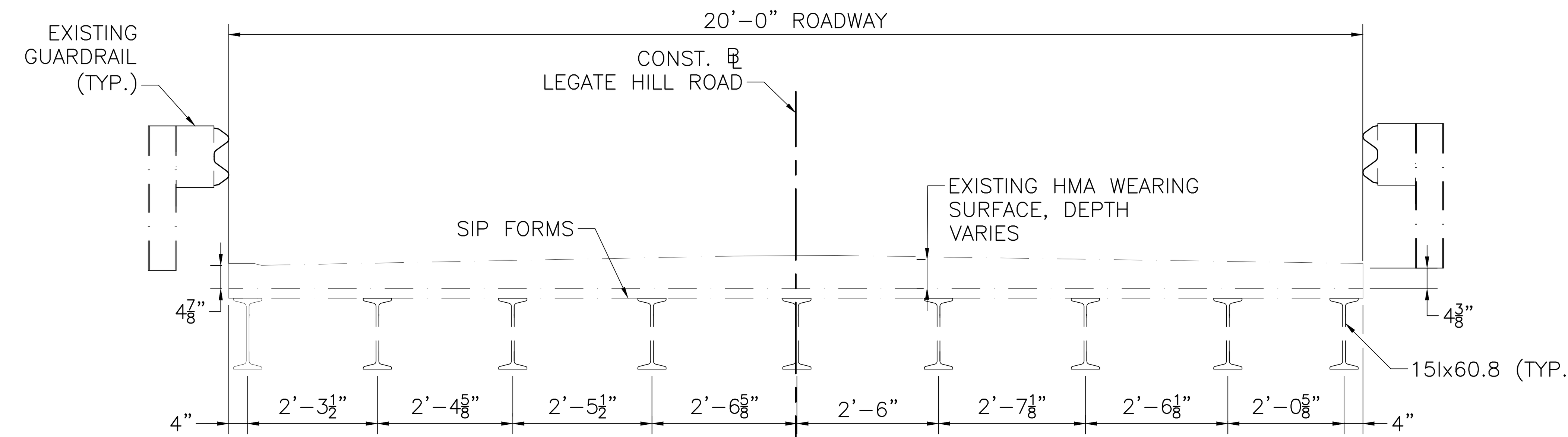
GENERAL PLAN & ELEVATION



* 08/31/2023 OBSERVED WATER ELEVATION

EXISTING LONGITUDINAL SECTION

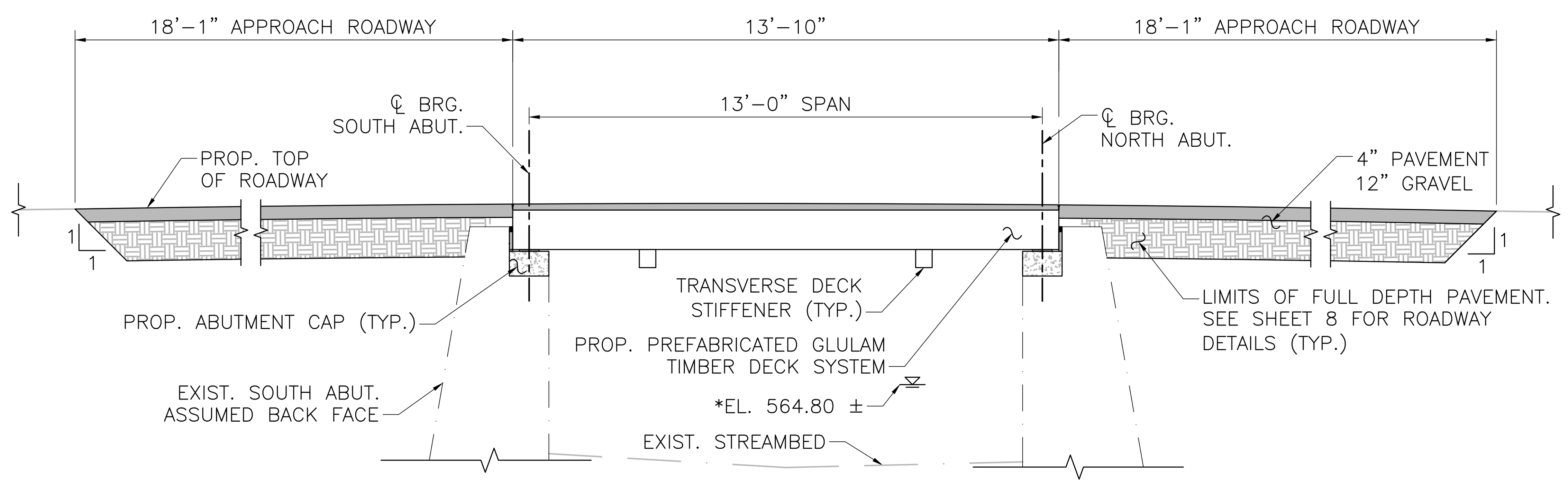
SCALE: ½" = 1'-0"



NOTE:
THERE ARE NO RECORD PLANS AVAILABLE FOR BRIDGE C-05-054. DIMENSIONS SHOWN ARE APPROXIMATE AND FOR INFORMATION PURPOSES. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

EXISTING CROSS SECTION

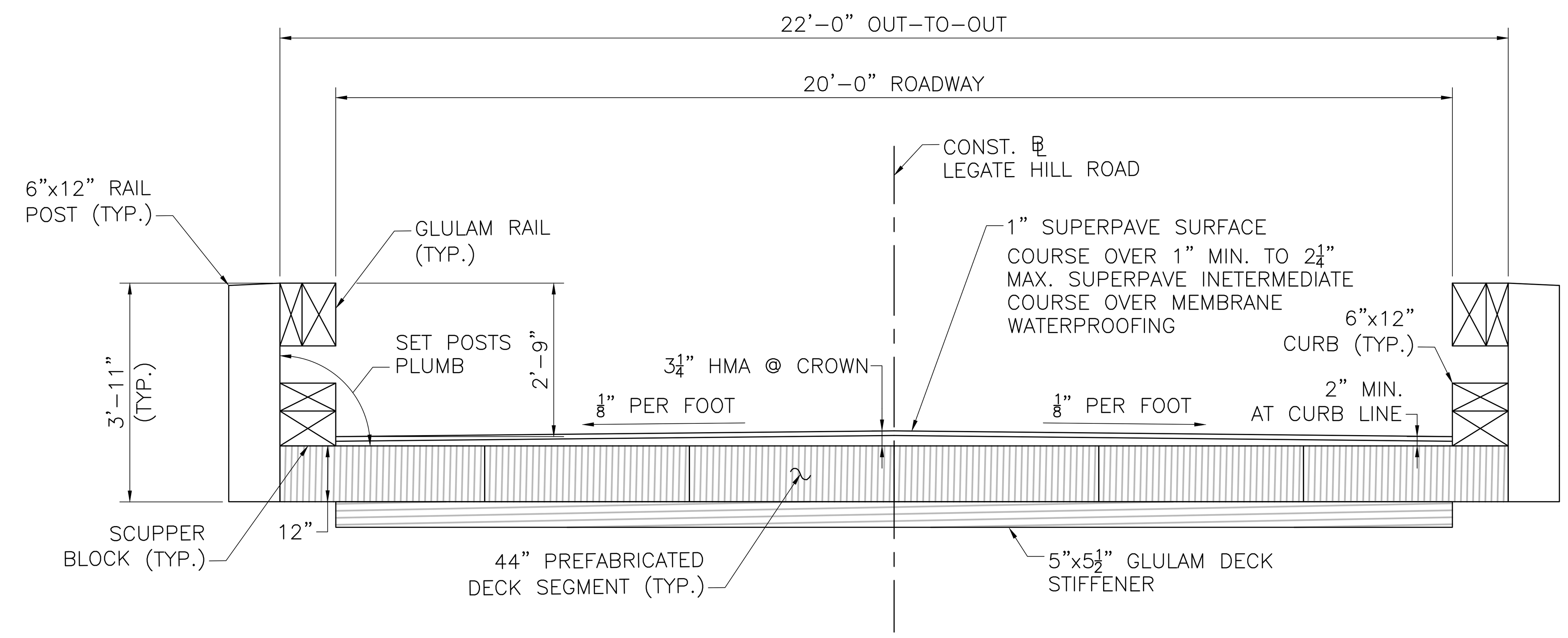
SCALE: ½" = 1'-0"



* 08/31/2023 OBSERVED WATER ELEVATION

PROPOSED LONGITUDINAL SECTION

SCALE: ½" = 1'-0"



PROPOSED CROSS SECTION

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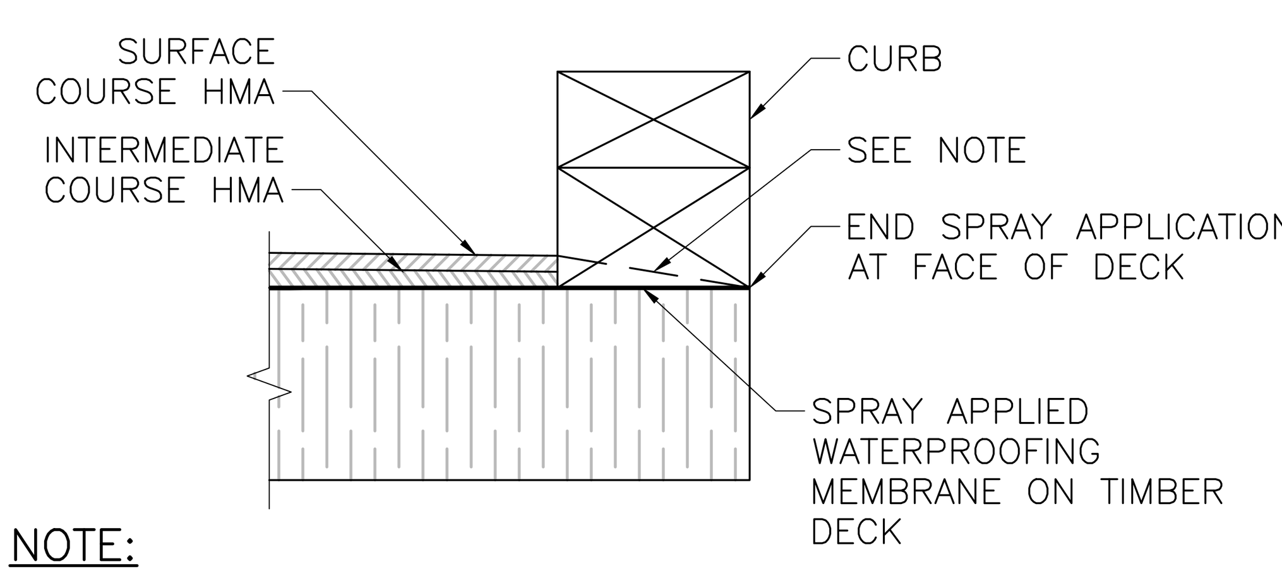

NOTE:
HMA TO BE HAND-TAMPED FROM 2" THICK TO 0" THICK AT EDGE OF DECK BETWEEN SCUPPERS.

WATERPROOFING AND HMA DETAIL AT CURB

SCALE: 1" = 1'-0"

COMMONWEALTH OF MASSACHUSETTS
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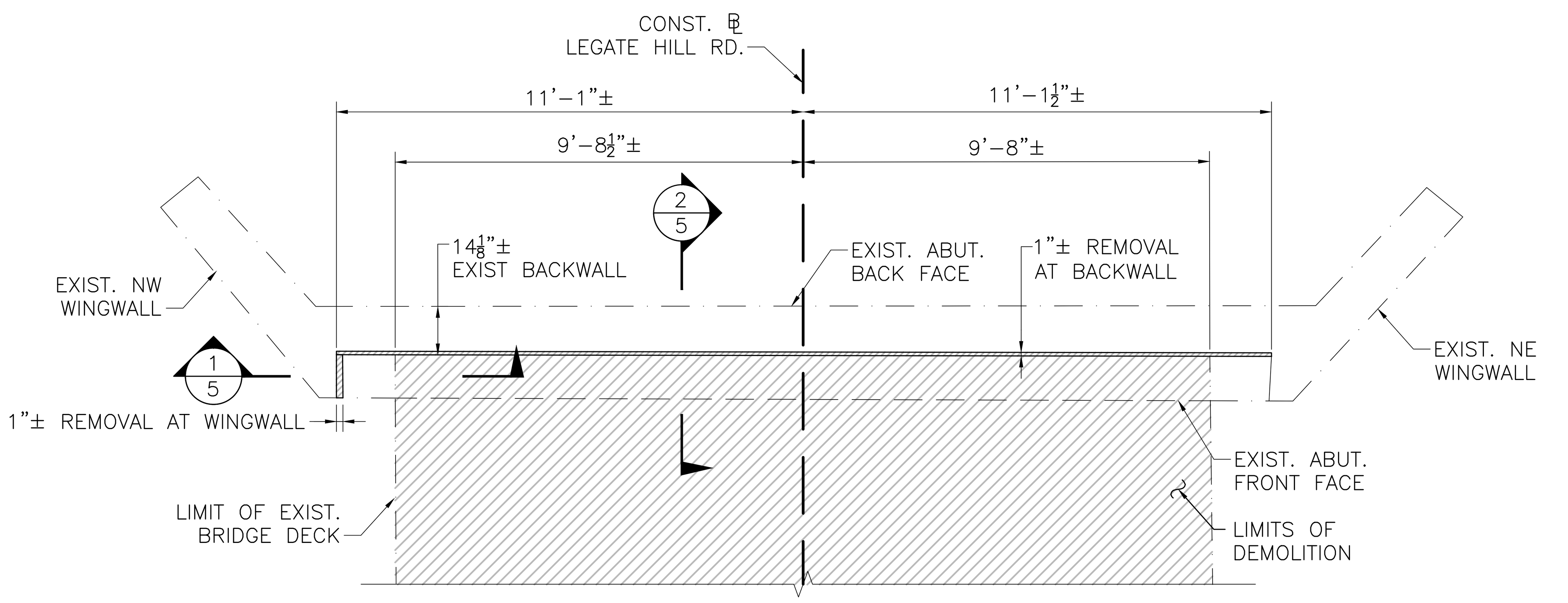
SUPERSTRUCTURE REPLACEMENT

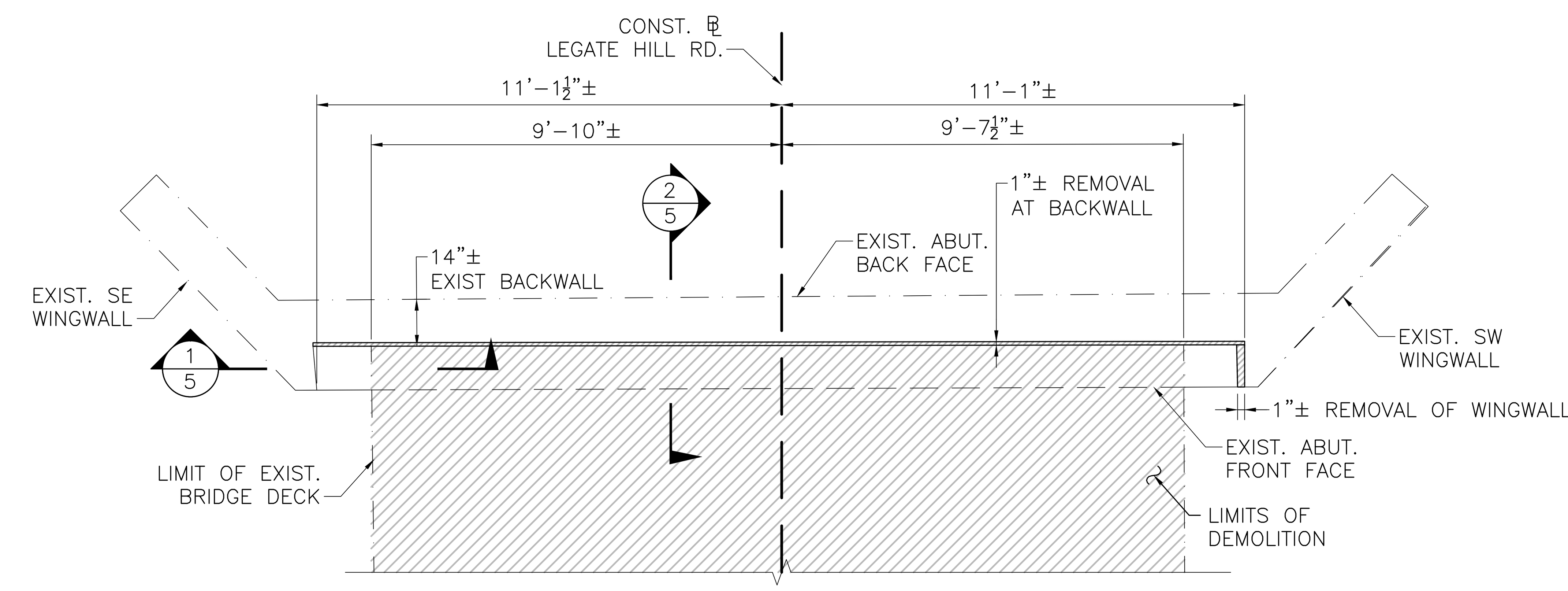
TOWN OF CHARLEMONT

SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C-05-054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

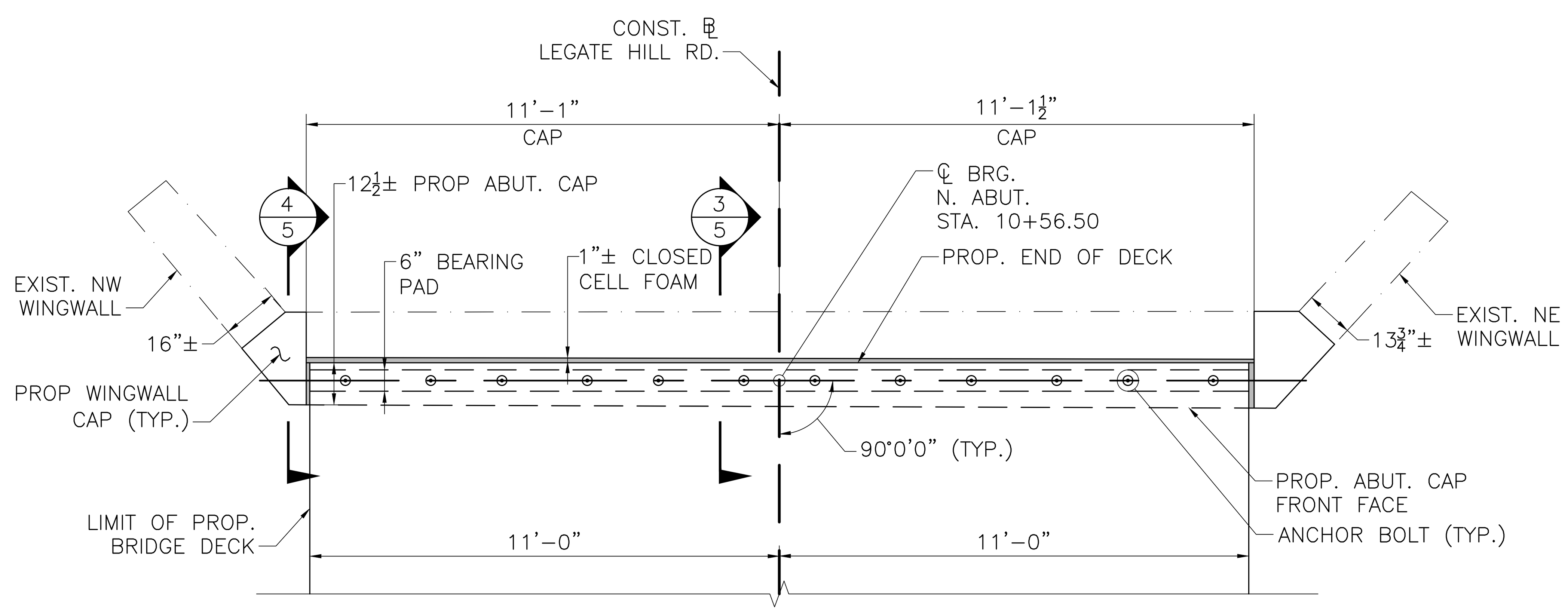
LONG. SECT & CROSS SECT



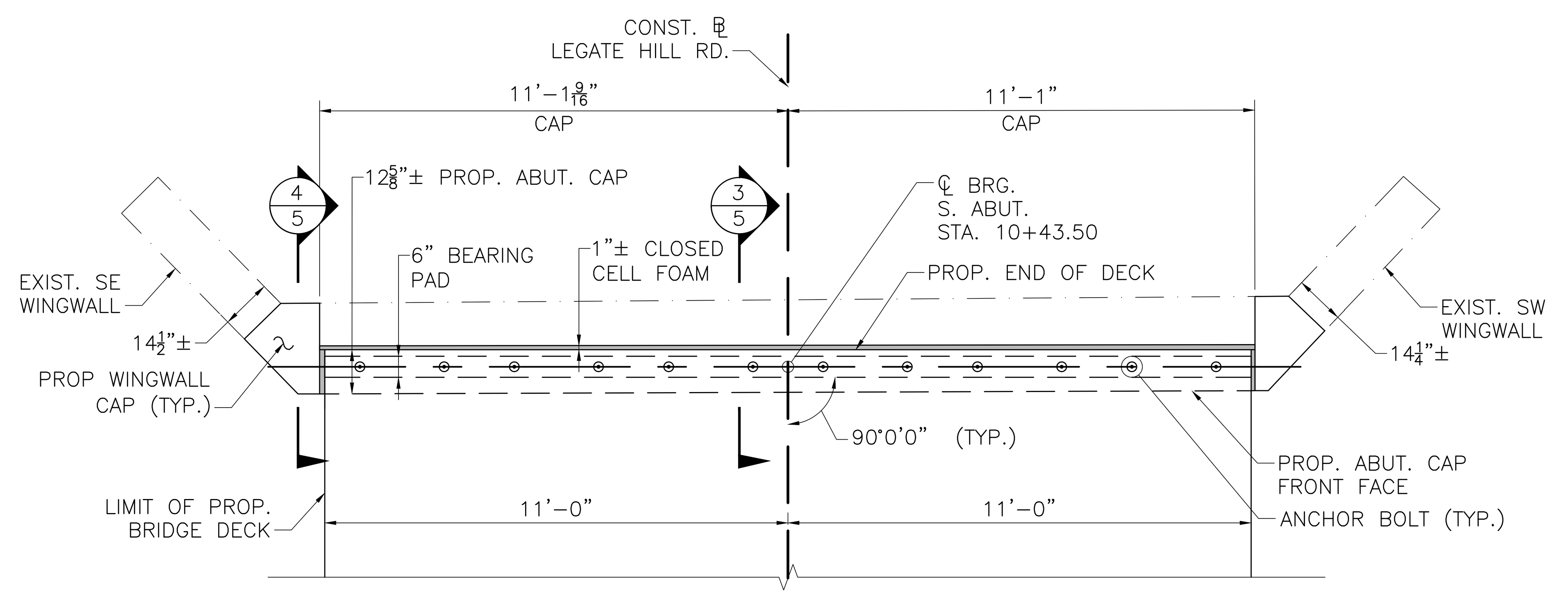
EXISTING PLAN



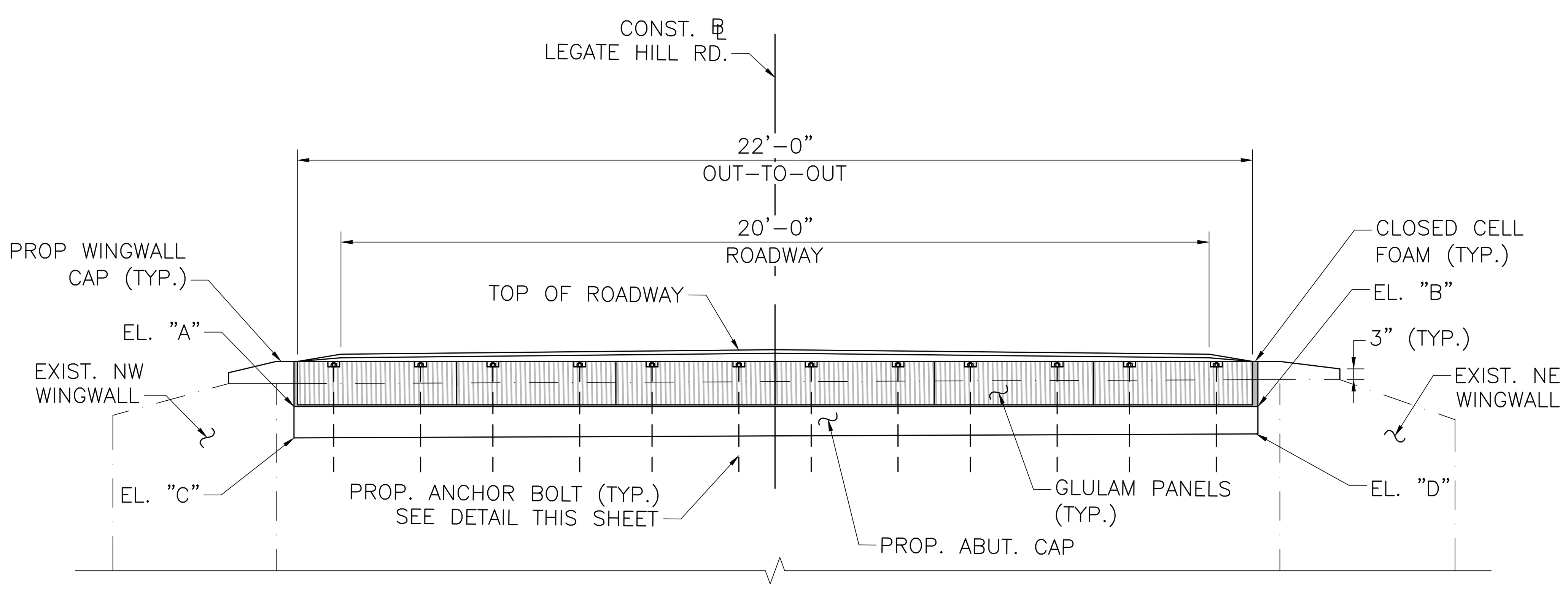
EXISTING PLAN



PROPOSED PLAN



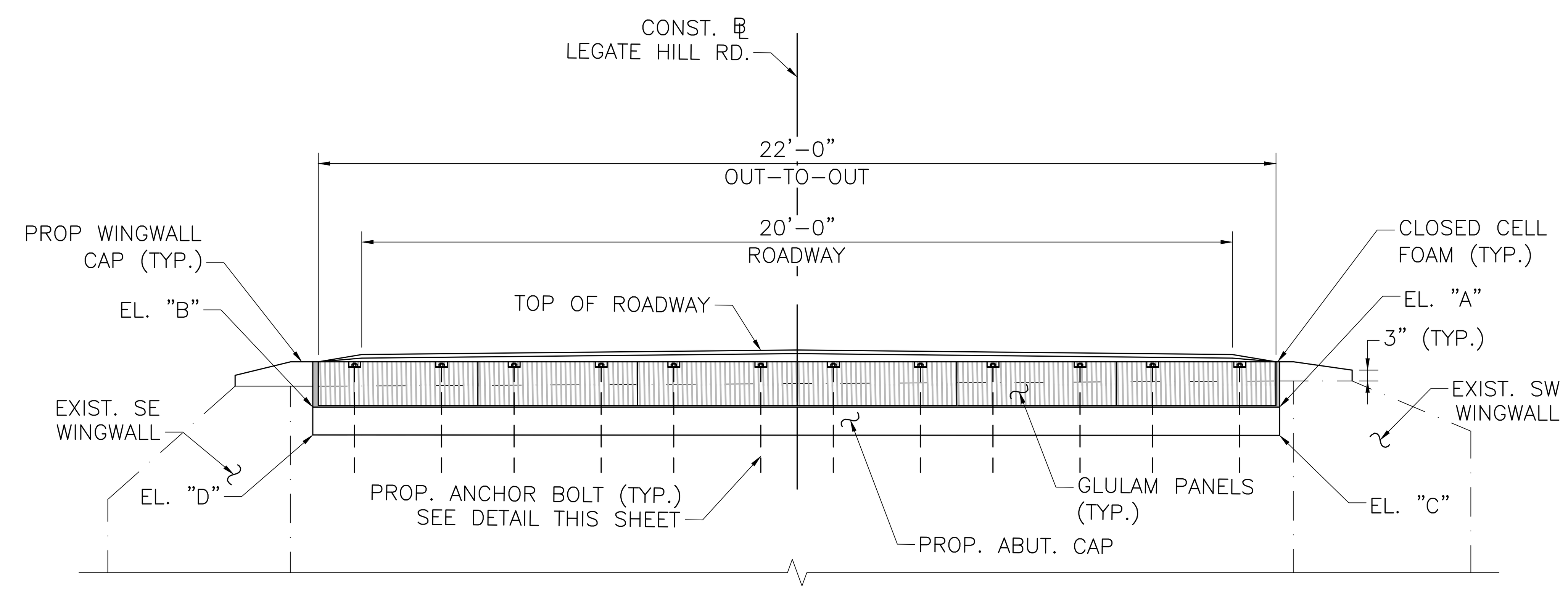
PROPOSED PLAN



PROPOSED ELEVATION

NORTH ABUTMENT CAP DETAILS

SCALE: ⅜" = 1'-0"



PROPOSED ELEVATION

SOUTH ABUTMENT CAP DETAILS

SCALE: ⅜" = 1'-0"

BRIDGE SEAT ELEVATION				
	PROPOSED		EXISTING	
	A	B	C	D
N. ABUT.	568.20	568.20	567.48	567.57
S. ABUT.	568.22	568.22	567.57	567.58

COMMONWEALTH OF MASSACHUSETTS
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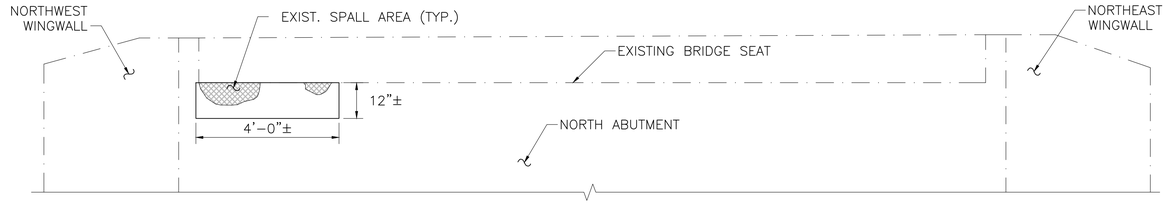
SUPERSTRUCTURE REPLACEMENT

TOWN OF CHARLEMONT

SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C-05-054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

SUBSTRUCTURE DETAILS
1 OF 2

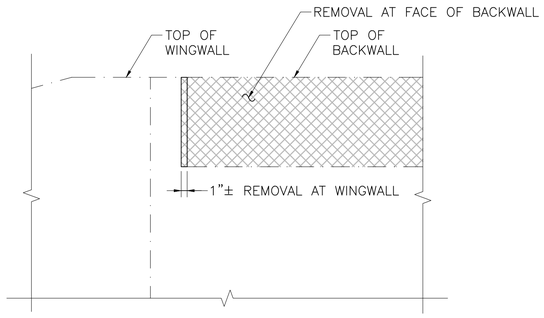


CONCRETE REPAIR AT NORTH ABUTMENT

NOT TO SCALE

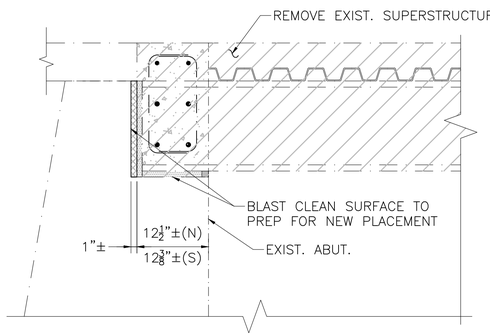
CONCRETE REPAIR NOTES:

1. SHIELDING SYSTEM SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WORK TO PREVENT DEBRIS FROM FALLING INTO THE BROOK.
2. THE CONTRACTOR SHALL ESTABLISH LIMITS OF VARIOUS REPAIRS AS SHOWN ON THE PLANS AND AT THE DIRECTION OF THE ENGINEER. THE LOCATIONS SHOWN ON THE PLANS ARE BASED UPON RECORDS OF BRIDGE INSPECTIONS AND OBSERVATION FROM THE GROUND AND ARE NOT GUARANTEED. THE LOCATION AND EXTENT OF ALL CONCRETE REPAIRS ARE TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREAS. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS.
3. THE LIMITS OF THE REPAIRS SHALL BE SAWCUT ALONG NEAT LINES TO A DEPTH OF $\frac{1}{2}$" TO PRODUCE A CLEAN EDGE.
4. REMOVE DETERIORATED AND UNSOUND CONCRETE AS WELL AS SOUND CONCRETE WHERE NECESSARY TO A MINIMUM DEPTH OF $1\frac{1}{2}$".
5. EXPOSED SURFACE IS TO BE CLEANED BY ABRASION BLASTING OR HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS.
6. CHECK THE CONCRETE SURFACES AFTER CLEANING TO INSURE THAT THE SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
7. 4000 PSI $\frac{3}{8}$" 660 CEMENT CONCRETE SHALL BE USED TO PERFORM THE REPAIRS.
8. PRESOAK CONCRETE SUBSTRATE WITH A WATER HOSE FOR 24 HOURS OR AS LONG AS SITE CONSTRAINTS PERMIT. AT TIME OF REPAIR CONCRETE PLACEMENT, SUBSTRATE SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
9. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES.



SUBSTRUCTURE DEMOLITION DETAILS (1/4)

SCALE: 1" = 1'-0"

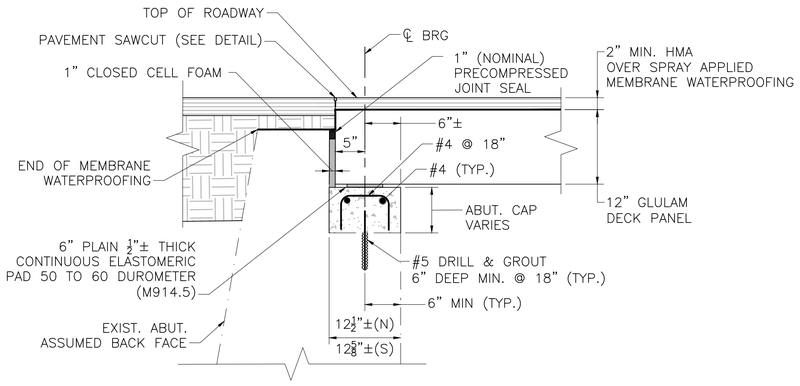


SUPERSTRUCTURE DEMOLITION DETAILS (2/4)

SCALE: 1" = 1'-0"

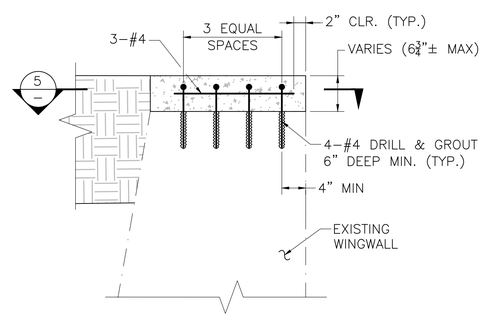
SUBSTRUCTURE DEMOLITION NOTES:

1. SHIELDING SYSTEM SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WORK TO PREVENT DEBRIS FROM FALLING INTO THE BROOK.
2. BASED ON AVAILABLE SURVEY, EXISTING FACES OF BACKWALL AND WINGWALL ARE NOT EXACTLY PLUMB. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY SUBSTRUCTURE DEMOLITION WORK.
3. CONCRETE EXCAVATION AT ANY EXISTING FACE SHALL BE LIMITED TO THE MINIMUM NECESSARY.
4. LIMITS OF EXCAVATION SHALL BE SAWCUT ALONG NEAT LINES TO A DEPTH OF ½" TO PRODUCE A CLEAN EDGE.
5. ALL SURFACES SUBJECT TO CONCRETE EXCAVATION SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLAST CLEANING.



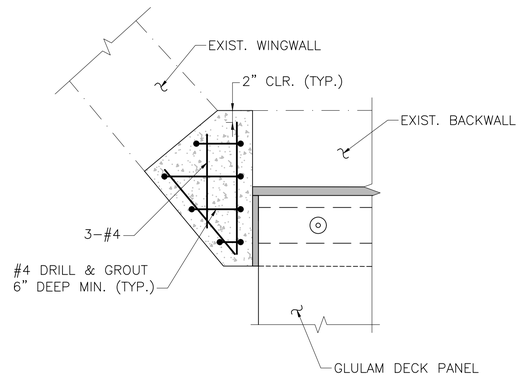
ABUTMENT CAP DETAILS (3/4)

SCALE: 1" = 1'-0"



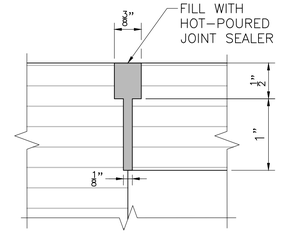
WINGWALL CAP DETAILS (4/4)

SCALE: 1" = 1'-0"



WINGWALL CAP PLAN (5/-)

SCALE: 1" = 1'-0"



PAVEMENT SAWCUT DETAIL

NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
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STATE BRIDGE ENGINEER — 6/5/2024 DATE

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GILL ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER — DATE

COMMONWEALTH OF MASSACHUSETTS — REGISTERED PROFESSIONAL ENGINEER — MICHAEL L. FISCHER — NO. 54734 — 5/31/24

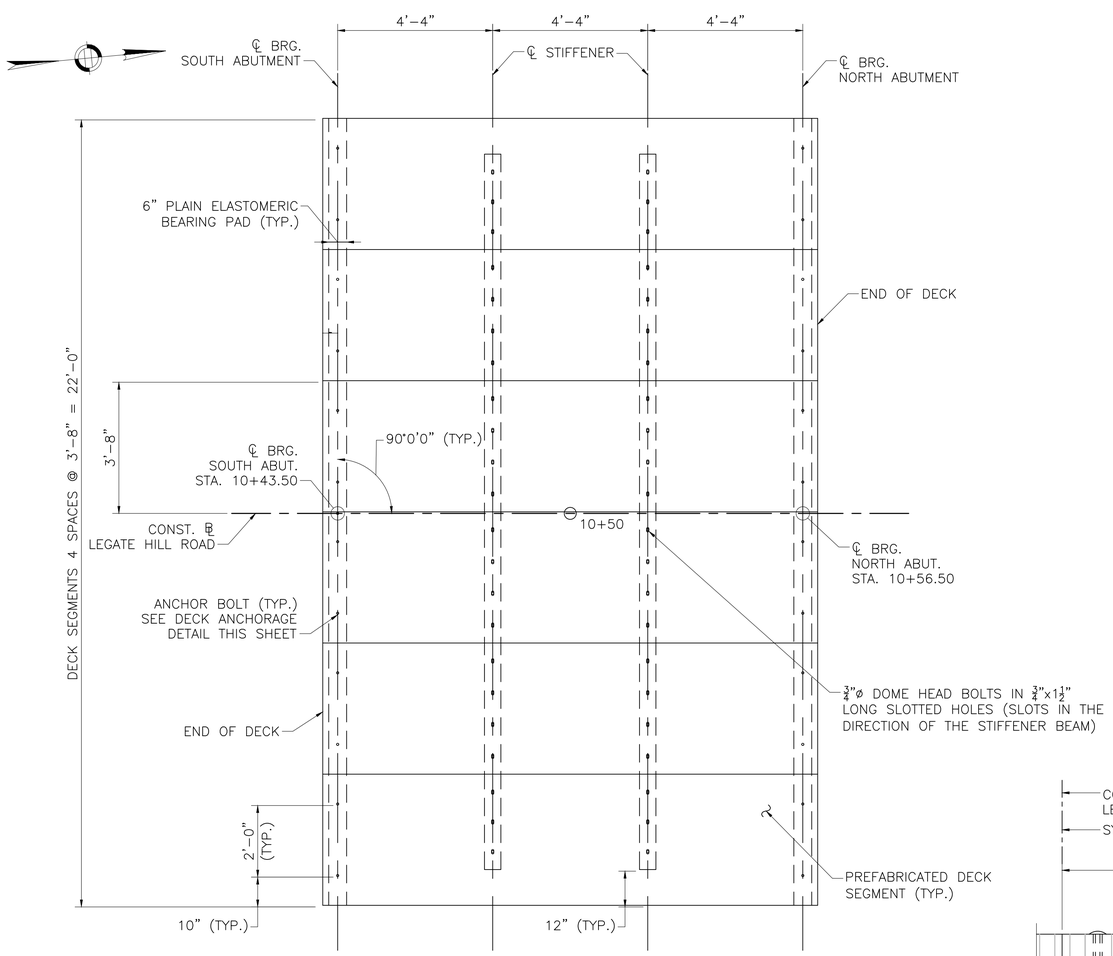
SUPERSTRUCTURE REPLACEMENT

TOWN OF CHARLEMONT

SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C-05-054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

SUBSTRUCTURE DETAILS 2 OF 2

SHEET 5 OF 9

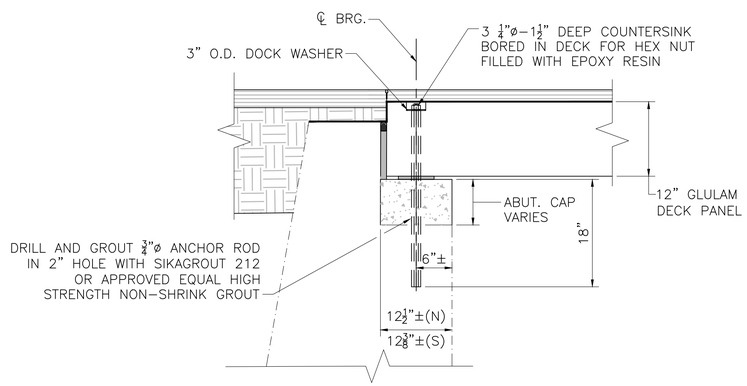


NOTE:

BASED ON THE AVAILABLE SURVEY, THE CENTERLINE OF BEARING IS NOT EXACTLY PARALLEL TO THE EXISTING FACE OF ABUTMENT. THE BRIDGE IS TO BE LAID OUT BASED ON THE CONSTRUCTION BASELINE AND THE CENTERLINES OF BEARING.

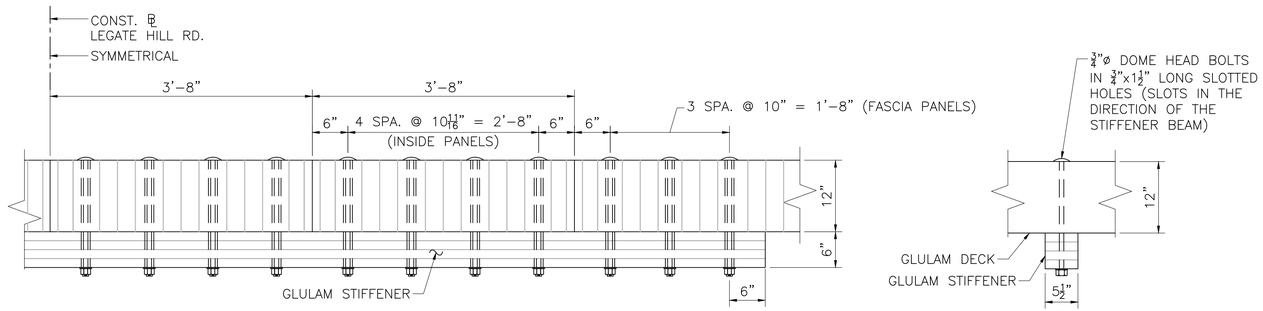
FRAMING PLAN

SCALE: ½" = 1'–0"



DECK ANCHORAGE DETAIL

SCALE: 1" = 1'–0"



ELEVATION

SECTION

STIFFENER CONNECTION DETAIL

SCALE: 1" = 1'–0"

LONGITUDINAL GLUED LAMINATED TIMBER BRIDGE NOTES:

1. CONTRACTOR SHALL FABRICATE AND DELIVER THE GLUED–LAMINATED TIMBER BRIDGE IN ACCORDANCE WITH THE SIZE AND LAYOUT AS SHOWN ON THESE PLANS. BEFORE FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.
2. ALL LUMBER AND TIMBER USED IN FABRICATION OF GLUED–LAMINATED TIMBER DECK AND STIFFENER SHALL BE VISUALLY GRADED N1D14, COMBINATION NO. 50, SOUTHERN YELLOW PINE OR WESTERN SPECIES AS PER ANSI 117–15, MEETING AASHTO M 168, AND HAVE MINIMUM ALLOWABLE VALUES FOR Fby= 2,300 PSI AND E= 1,900,000 PSI.
3. GRADE SHALL BE INDUSTRIAL APPEARANCE AS PER AITC 110.
4. ALL LUMBER AND TIMBER USED IN FABRICATION SHALL BE PRESSURE TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M133. WOOD PRESERVATIVE TO BE PENTACHLOROPHENOL IN TYPE A OIL CONFORMING TO AWPA STANDARD C–28, P–8, AND P–9. RETENTION LEVEL SHALL BE 0.60 PCF. FINAL STEAMING AND VACUUMING SHALL BE PERFORMED.
5. GLULAM TIMBERS SHALL BE MANUFACTURED USING THE WET ADHESIVE METHOD IN CONFORMANCE WITH AASHTO M 168 AND ASTM D2559.
6. ALL DIMENSIONS SHOWN ARE ACTUAL DIMENSIONS.

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
APPROVED UNDER PROVISIONS OF
MASS. GEN. LAWS CH 85 S 35
STATE BRIDGE ENGINEER — 6/5/2024 DATE

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GILL ENGINEERING

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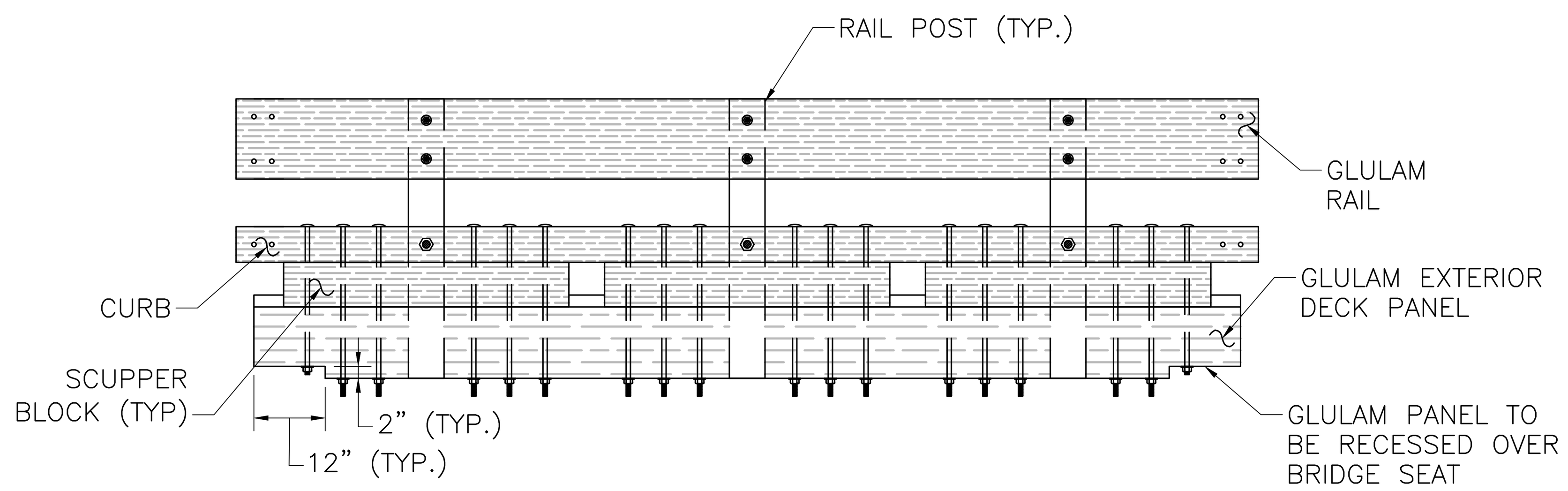
COMMONWEALTH OF MASSACHUSETTS — LUCAS C. SOMER — NO. 54704 — REGISTERED PROFESSIONAL ENGINEER — 5/31/24

SUPERSTRUCTURE REPLACEMENT

TOWN OF CHARLEMONT

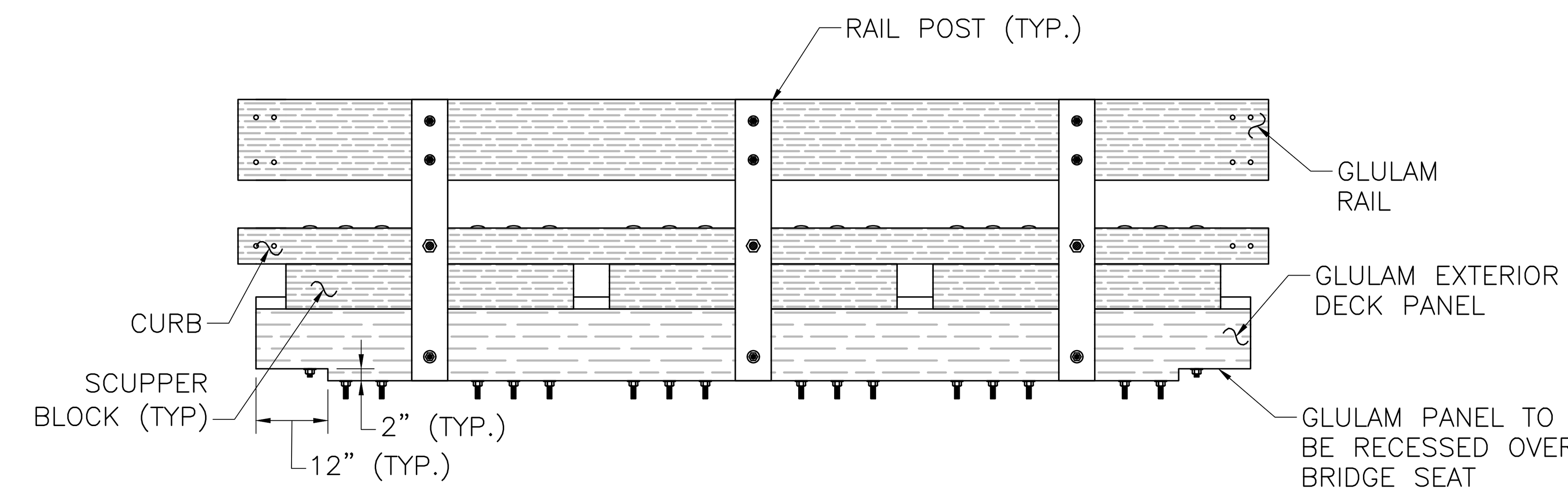
SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C–05–054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

FRAMING PLAN AND DETAILS



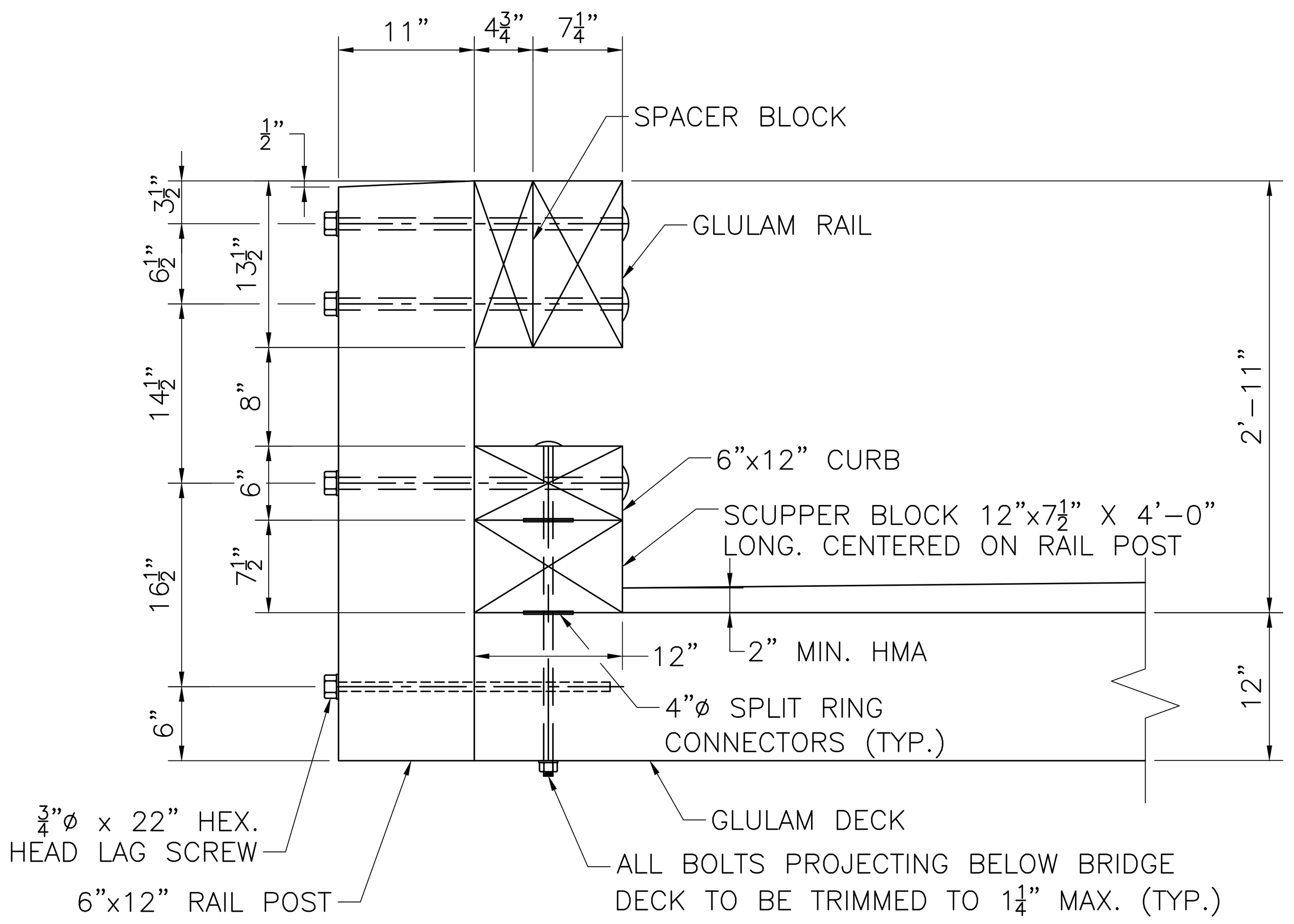
BRIDGE RAILING – FRONT ELEVATION

SCALE: ½" = 1'-0"



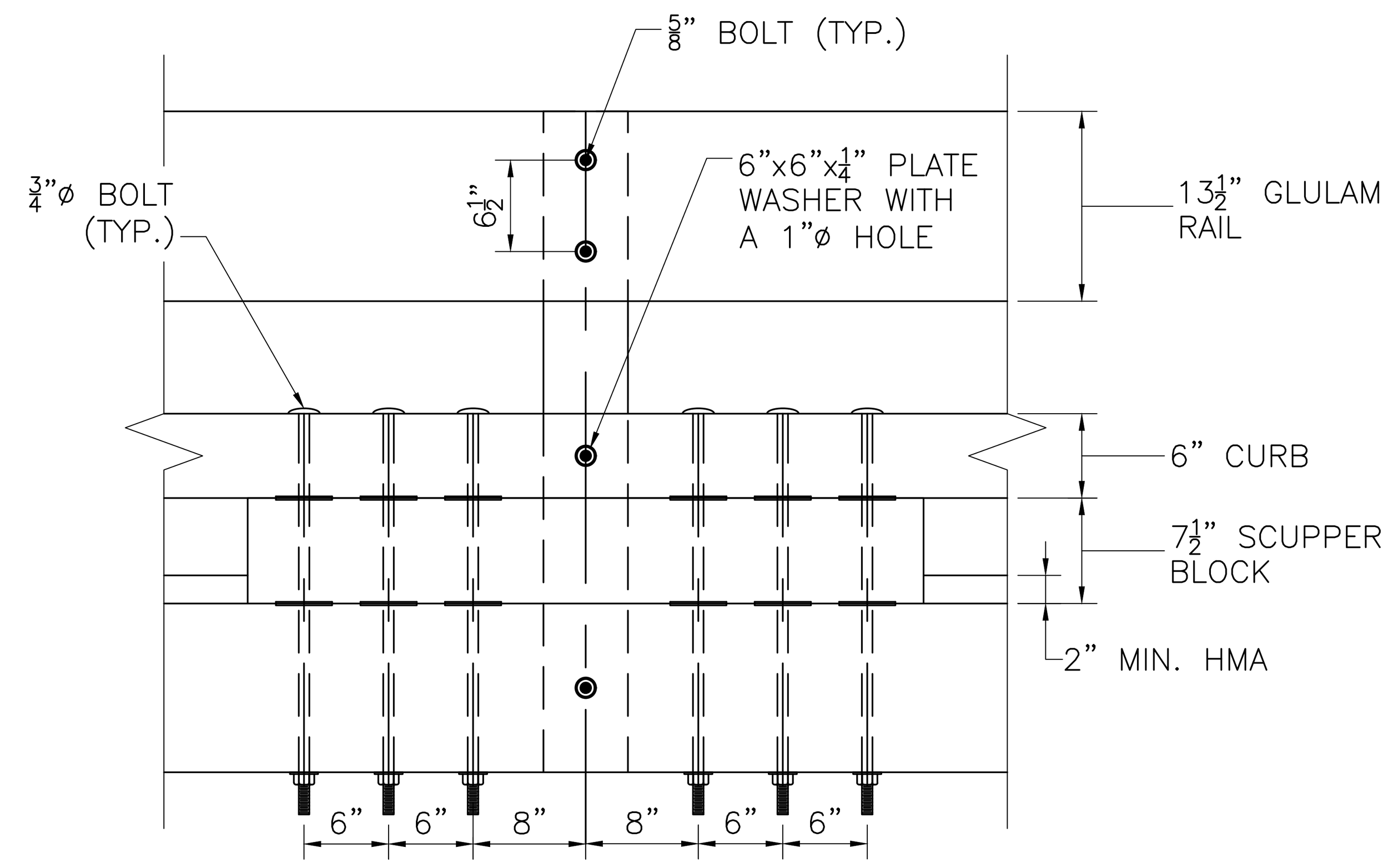
BRIDGE RAILING – BACK ELEVATION

SCALE: ½" = 1'-0"



RAILING DETAILS – SECTION

SCALE: 1" = 1'-0"



RAILING DETAILS – FRONT ELEVATION

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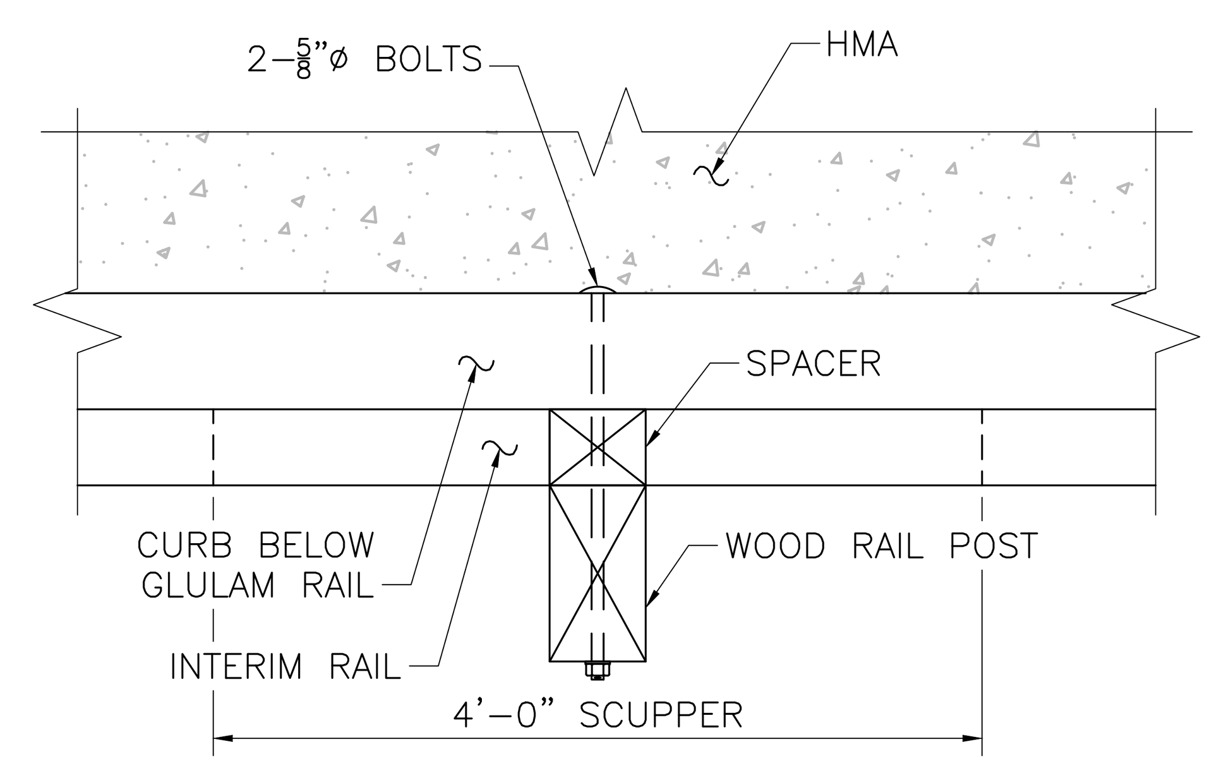
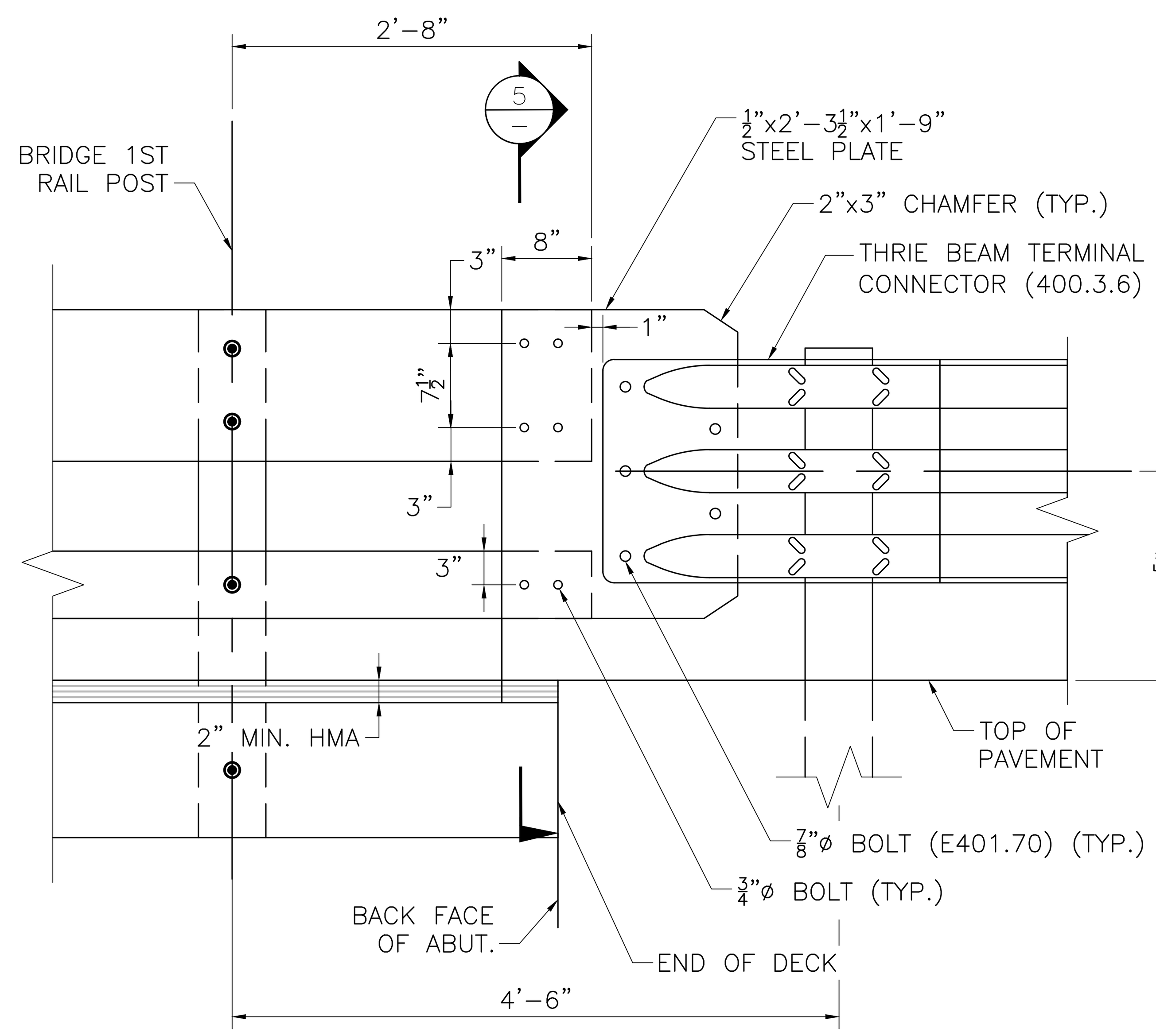


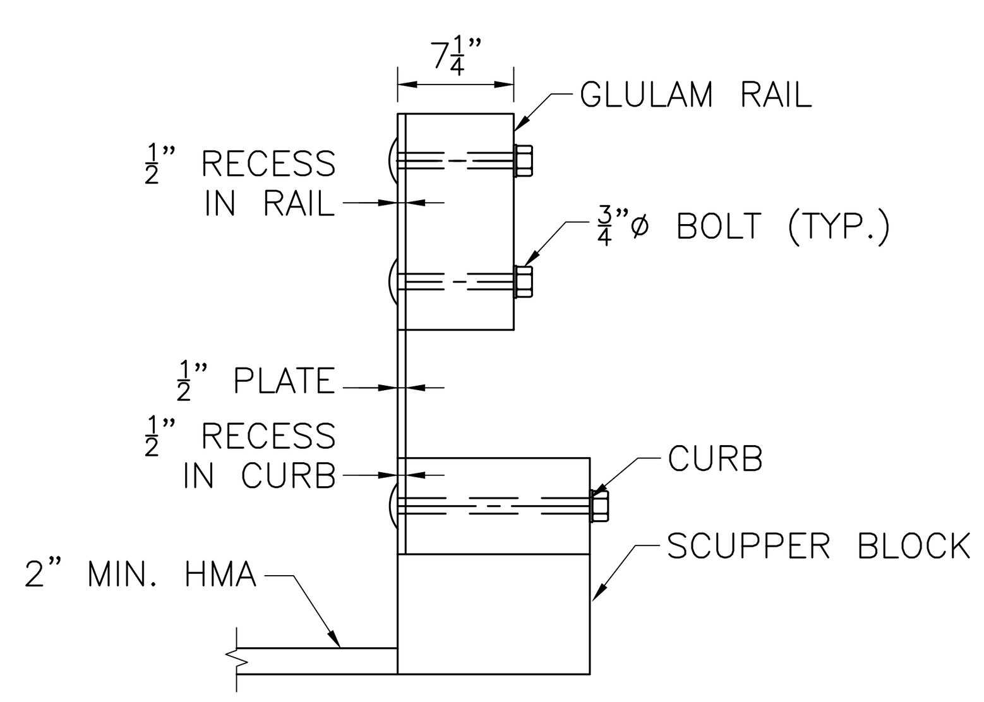
GENERAL CONFIGURATION PLAN

SCALE: 1" = 1'-0"



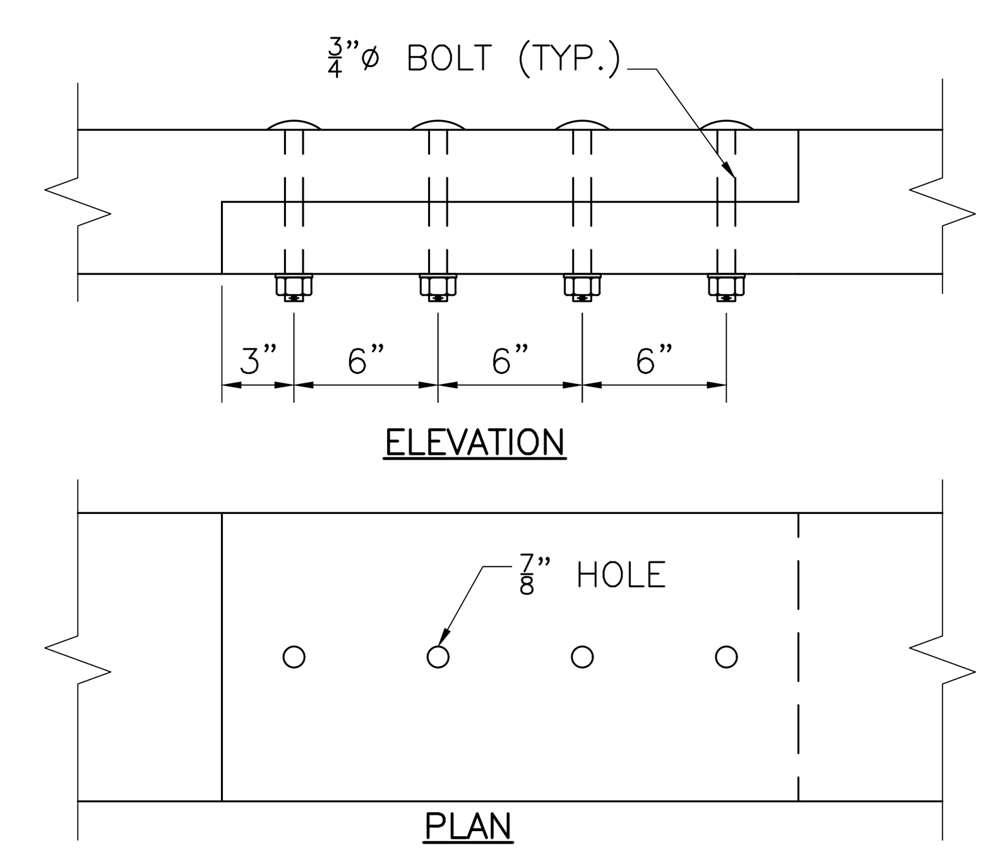
BRIDGE RAIL TO THRIE BEAM CONNECTION

SCALE: 1" = 1'-0"



THRIE BEAM CONNECTION DETAILS

SCALE: 1" = 1'-0"



CURB SPLICE DETAILS

SCALE: 1½" = 1'-0"

TIMBER RAIL NOTES:

DESIGN:

1. THIS BRIDGE RAIL WAS SUCCESSFULLY CRASH TESTED TO THE REQUIREMENTS FOR TEST LEVEL 4 (TL–4), AS OUTLINED IN NCHRP REPORT 350. IN ADDITION, THE RAIL MEETS CRASH TEST REQUIREMENTS FOR PERFORMANCE LEVEL 2 (PL–2), AS OUTLINED IN THE 1989 AASHTO GUIDE SPECIFICATIONS FOR BRIDGE RAILINGS. IT IS ADAPTABLE TO LONGITUDINAL STRESS–LAMINATED, SPIKE–LAMINATED, NAIL–LAMINATED AND GLUE LAMINATED TIMER DECKS WHICH ARE 10½ IN. OR GREATER IN ACTUAL THICKNESS.
2. DIMENSIONS GIVEN FOR GLUED LAMINATED TIMBER RAILS ARE ACTUAL DIMENSIONS. THE DEPTH OF THE GLULAM TIMBER RAIL MAY BE INCREASED TO A MAXIMUM OF 13¾ IN. TO ALLOW FOR OTHER STANDARD GLULAM TIMBER SIZES. IN SUCH CASES DETAIL DIMENSIONS SHALL BE VERIFIED AND MODIFIED ACCORDINGLY.
3. DIMENSIONS FOR WOOD POSTS, CURBS, AND SCUPPERS ARE GIVEN AS ACTUAL DIMENSIONS.
4. CURB AND RAIL SPLICES SHALL BE LOCATED SO THAT CURB AND RAIL MEMBERS ARE CONTINUOUS OVER NOT LESS THAN 2 POSTS. CURB SPLICES SHALL BE LOCATED A MINIMUM OF 1.5 POST SPACINGS AWAY FROM RAIL SPLICES. IT IS RECOMMENDED THAT GLULAM RAILS BE CONTINUOUS OVER THE BRIDGE LENGTH.

MATERIALS:

5. SAWN LUMBER AND GLUED LAMINATED TIMBER SHALL COMPLY WITH THE REQUIREMENTS OF AASHTO M168 AND SHALL BE PRESSURE TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH AASHTO M133.
6. ALL MATERIAL TO BE TREATED WITH THE PRESERVATIVE PENTACHLOROPHENOL IN TYPE A OIL CONFORMING TO AWPA STANDARD C–28, P–8 AND P–9. RETENTION LEVEL SHALL BE 0.60 PCF. FINAL STEAMING AND VACUUMING SHALL BE PERFORMED.
7. THE BRIDGE RAIL SHALL BE HORIZONTALLY LAMINATED GLUED LAMINATED TIMBER; VISUALLY GRADED WESTERN SPECIES COMBINATION NO. 2 OR VISUALLY GRADED SOUTHERN PINE COMBINATION NO. 4B. OTHER SPECIES AND GRADES OF GLUED LAMINATED TIMBER MAY BE USED PROVIDED THAT THE MINIMUM TABULATED VALUES ARE NOT LESS THAN THE FOLLOWING: FBYY = 1,800 PSI E = 1,800,000 PSI.
8. POSTS, CURBS, SCUPPERS, AND SPACER BLOCKS MAY BE SAWN LUMBER OR GLUED LAMINATED TIMBER. WHEN SAWN LUMBER IS USED, MATERIAL SHALL BE VISUALLY GRADED NO. 1 SOUTHERN PINE OR VISUALLY GRADED NO. 1 DOUGLAS FIR–LARCH. GLUED LAMINATED TIMBER AND OTHER SPECIES AND GRADES OF SAWN LUMBER MAY BE USED PROVIDED THAT THE MINIMUM TABULATED VALUES ARE NOT LESS THAN THE FOLLOWING: FBYY = 1,350 PSI E = 1,500,000 PSI.
9. STEEL PLATES AND SHAPES SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A36.
10. BOLTS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A307, GRADE 2 AND SHOULD PREFERABLY BE DOME HEAD TIMBER BOLTS. BOLTS ON TRAFFIC FACE OF RAIL SHALL BE DOME HEAD.
11. SPLIT RINGS SHALL BE MANUFACTURED FROM SAE 1010 HOT ROLLED CARBON STEEL. SHEAR PLATES SHALL BE MALLEABLE IRON MANUFACTURED ACCORDING TO ASTM A47, GRADE 32510.
12. ALL STEEL COMPONENTS AND FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR AASHTO M232 OR SHALL OTHERWISE BE PROVIDED WITH ADEQUATE CORROSION PROTECTION.

FABRICATION AND CONSTRUCTION:

13. TO THE EXTENT POSSIBLE, ALL WOOD SHALL BE CUT, DRILLED, AND COMPLETELY FABRICATED PRIOR TO PRESSURE TREATMENT WITH PRESERVATIVES. WHEN FIELD FABRICATION OF WOOD IS REQUIRED OR IF WOOD IS DAMAGED, ALL CUTS, BORE HOLES, AND DAMAGE SHALL BE IMMEDIATELY FIELD TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH AASHTO M133.
14. UNLESS NOTED, MALLEABLE IRON WASHERS SHALL BE PROVIDED UNDER BOLT HEADS AND UNDER NUTS THAT ARE IN CONTACT WITH WOOD. WASHERS MAY BE OMITTED UNDER HEADS OF DOME–HEAD TIMBER BOLTS WHEN THE SIZE AND STRENGTH OF THE HEAD IS SUFFICIENT TO DEVELOP CONNECTION STRENGTH WITHOUT WOOD CRUSHING.
15. THE TOPS OF RAIL POSTS SHALL BE SEALED WITH ROOFING CEMENT OR OTHERWISE PROTECTED FROM DIRECT EXPOSURE TO WEATHER.

COMMONWEALTH OF MASSACHUSETTS
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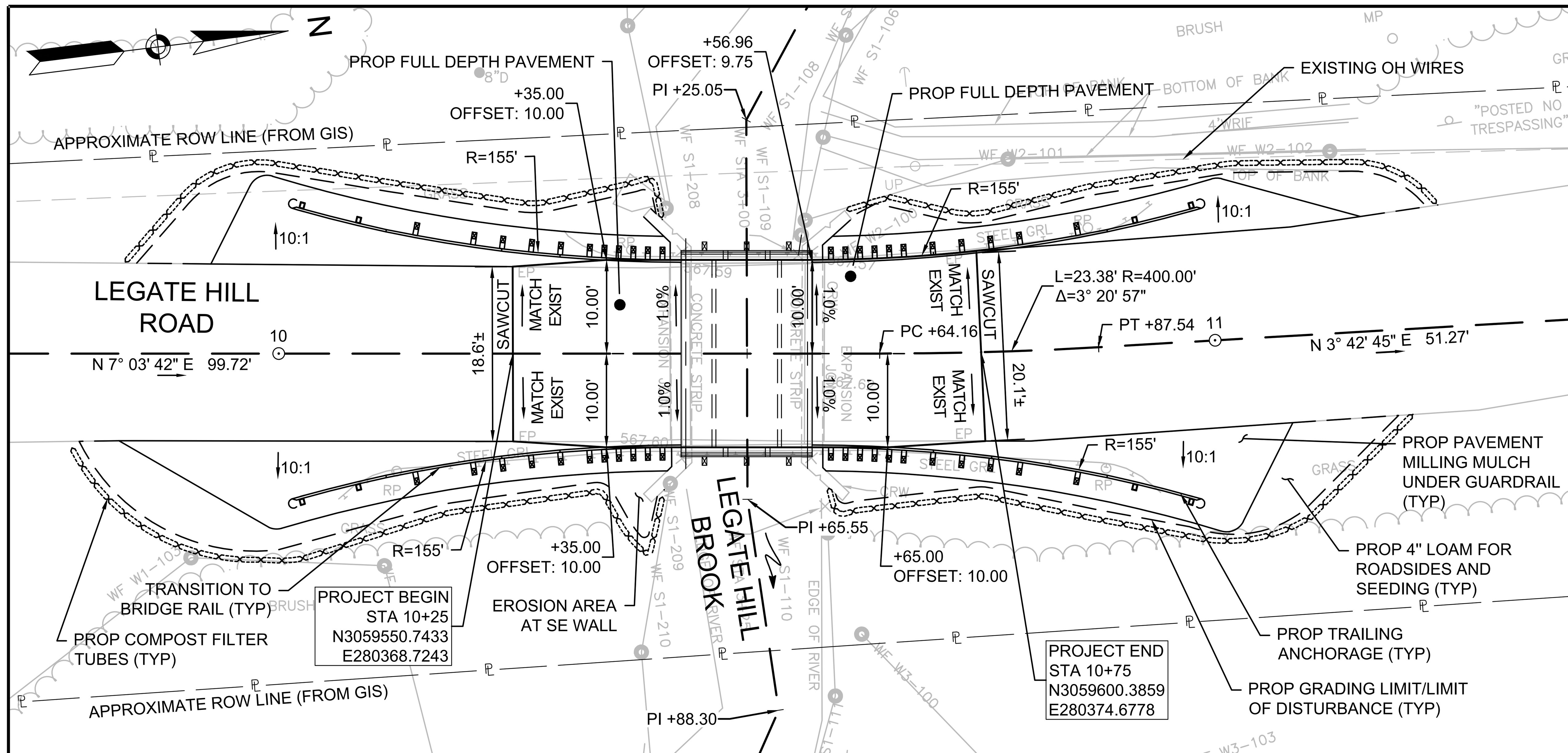
SUPERSTRUCTURE REPLACEMENT
TOWN OF CHARLEMONT
SUPERSTRUCTURE REPLACEMENT FOR CHARLEMONT
C-05-054 (BTE)
LEGATE HILL RD OVER LEGATE HILL BROOK

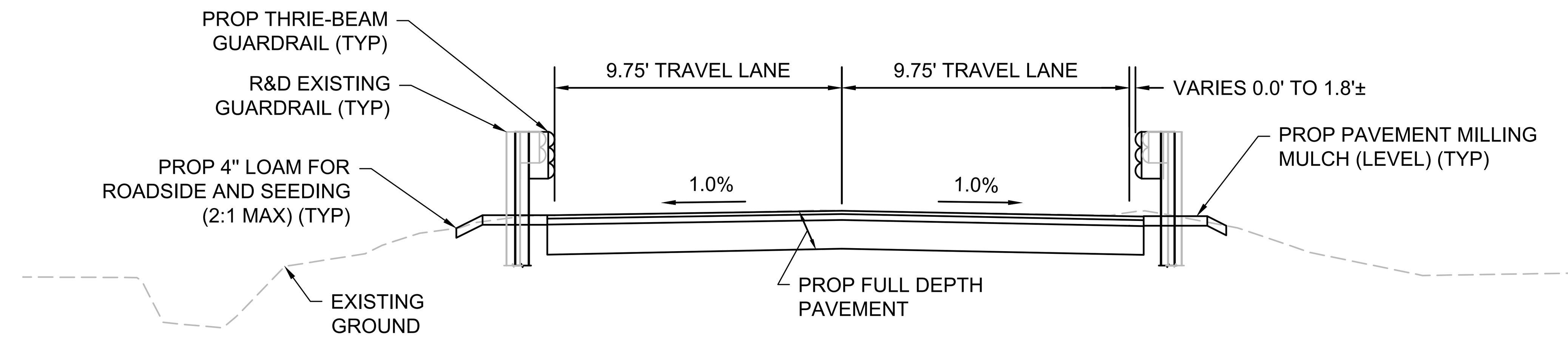
RAILING DETAILS



NOTE: EROSION AREA TO BE FILLED WITH ORDINARY BORROW

ROADWAY PLAN

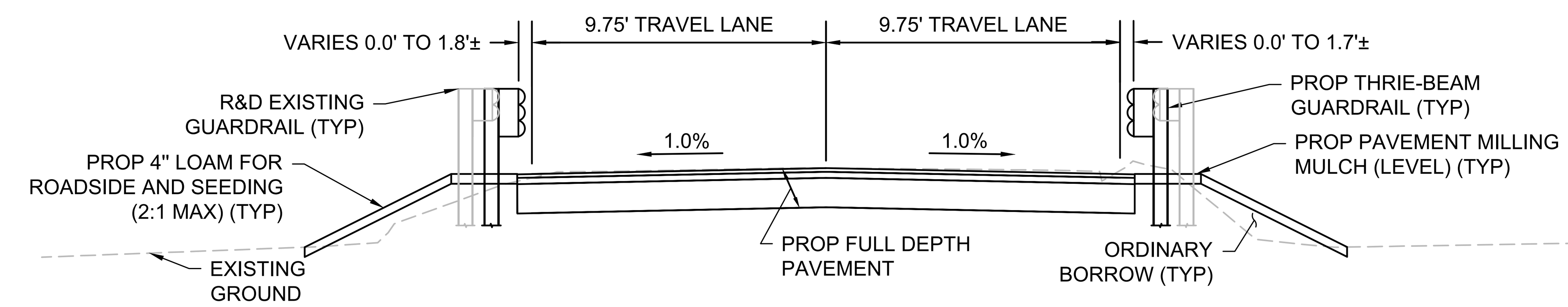
SCALE: 1" = 10'



TYPICAL SECTION – FULL DEPTH NORTHERN APPROACH

SCALE: 1" = 4'

HOR. SCALE IN FEET 4 0 4 8
VER. SCALE IN FEET 4 0 4 8



TYPICAL SECTION – FULL DEPTH SOUTHERN APPROACH

SCALE: 1" = 4'

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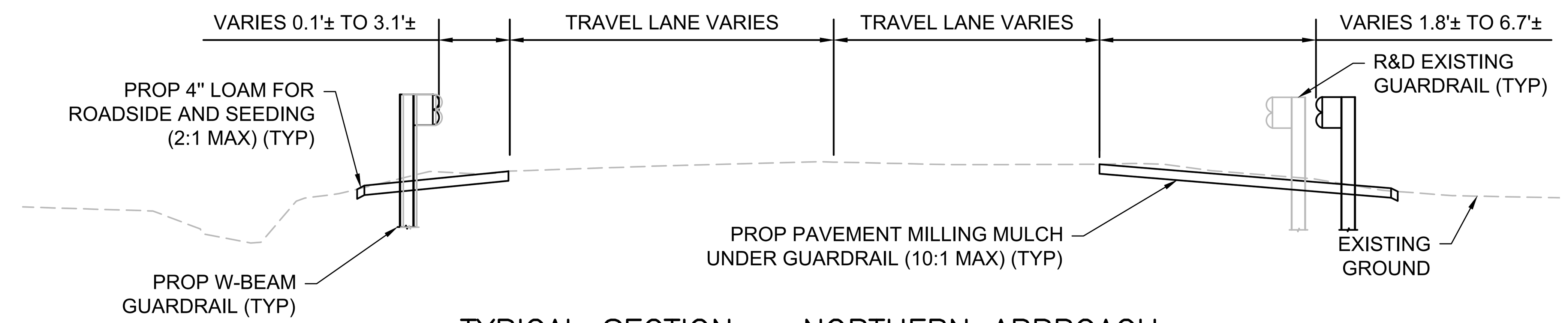
VER. SCALE IN FEET 4 0 4 8



TYPICAL SECTION – NORTHERN APPROACH

SCALE: 1" = 4'

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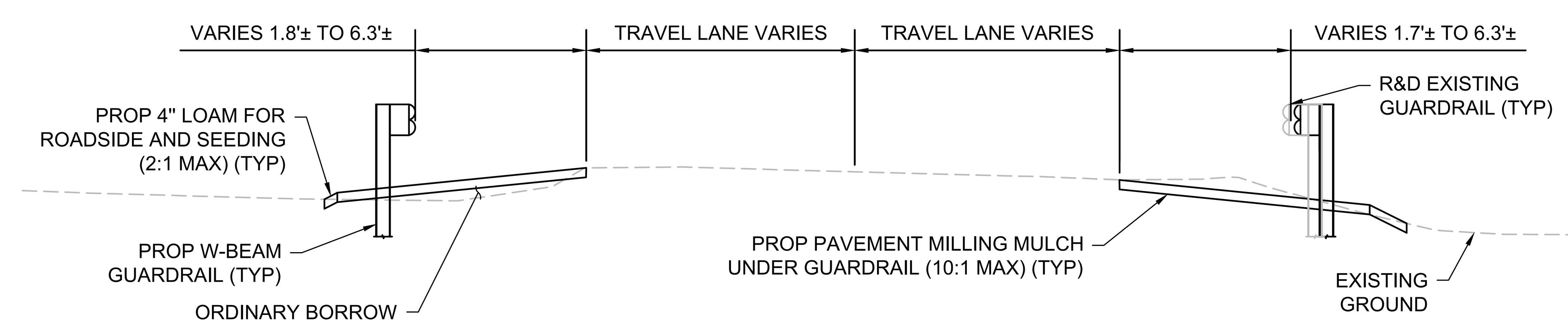
VER. SCALE IN FEET 4 0 4 8



TYPICAL SECTION – SOUTHERN APPROACH

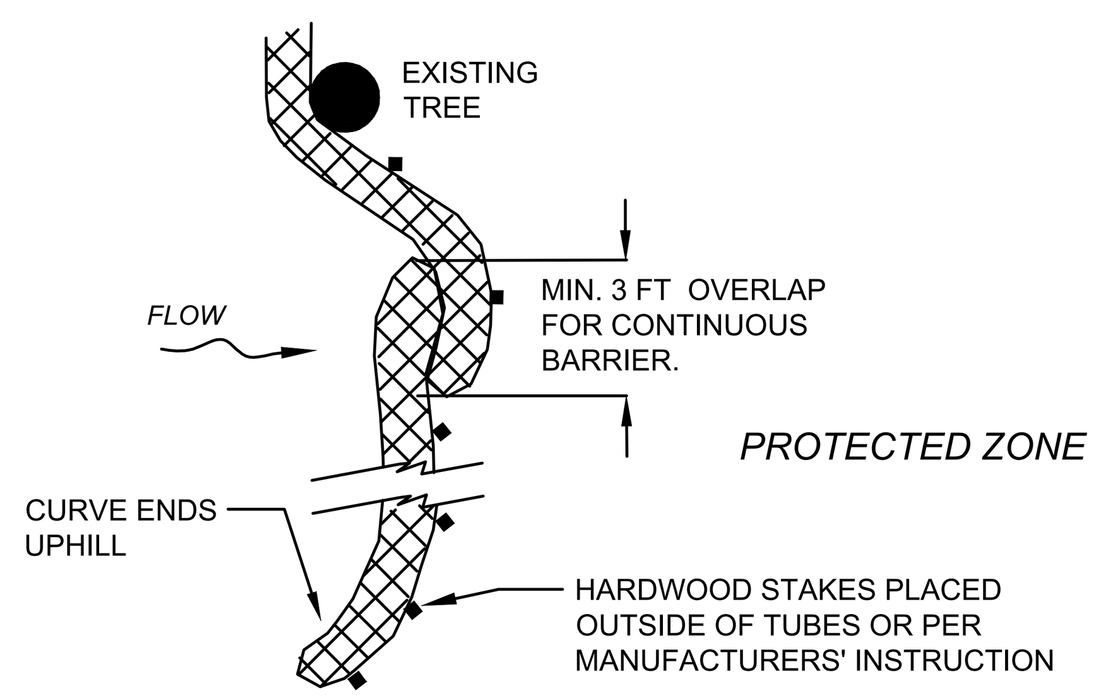
SCALE: 1" = 4'

HOR. SCALE IN FEET 4 0 4 8
VER. SCALE IN FEET 4 0 4 8

PAVEMENT NOTES:

PROPOSED FULL DEPTH PAVEMENT

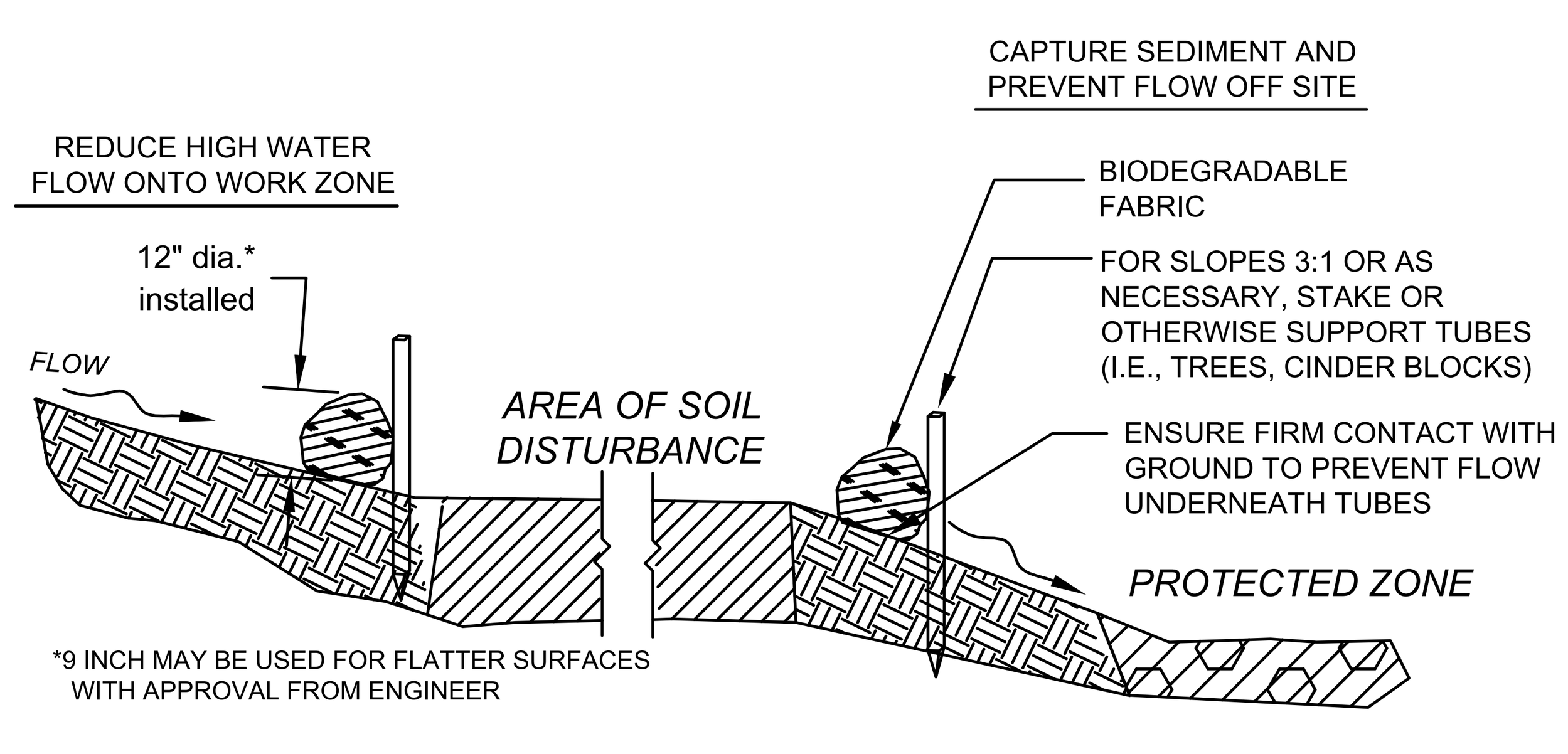
SURFACE COURSE:	1.5" HOT MIX ASPHALT - SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER ASPHALT EMULSION TACK COAT OVER 2.5" HOT MIX ASPHALT - SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)
BASE:	12" GRAVEL BORROW, TYPE B (EXISTING BASE MATERIAL MAY REMAIN IF SUITABLE AS DETERMINED BY THE ENGINEER)



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLAN VIEW



SECTION

SEDIMENT BARRIER – COMPOST FILTER TUBE

NOT TO SCALE

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SUPERSTRUCTURE REPLACEMENT

TOWN OF CHARLEMONT

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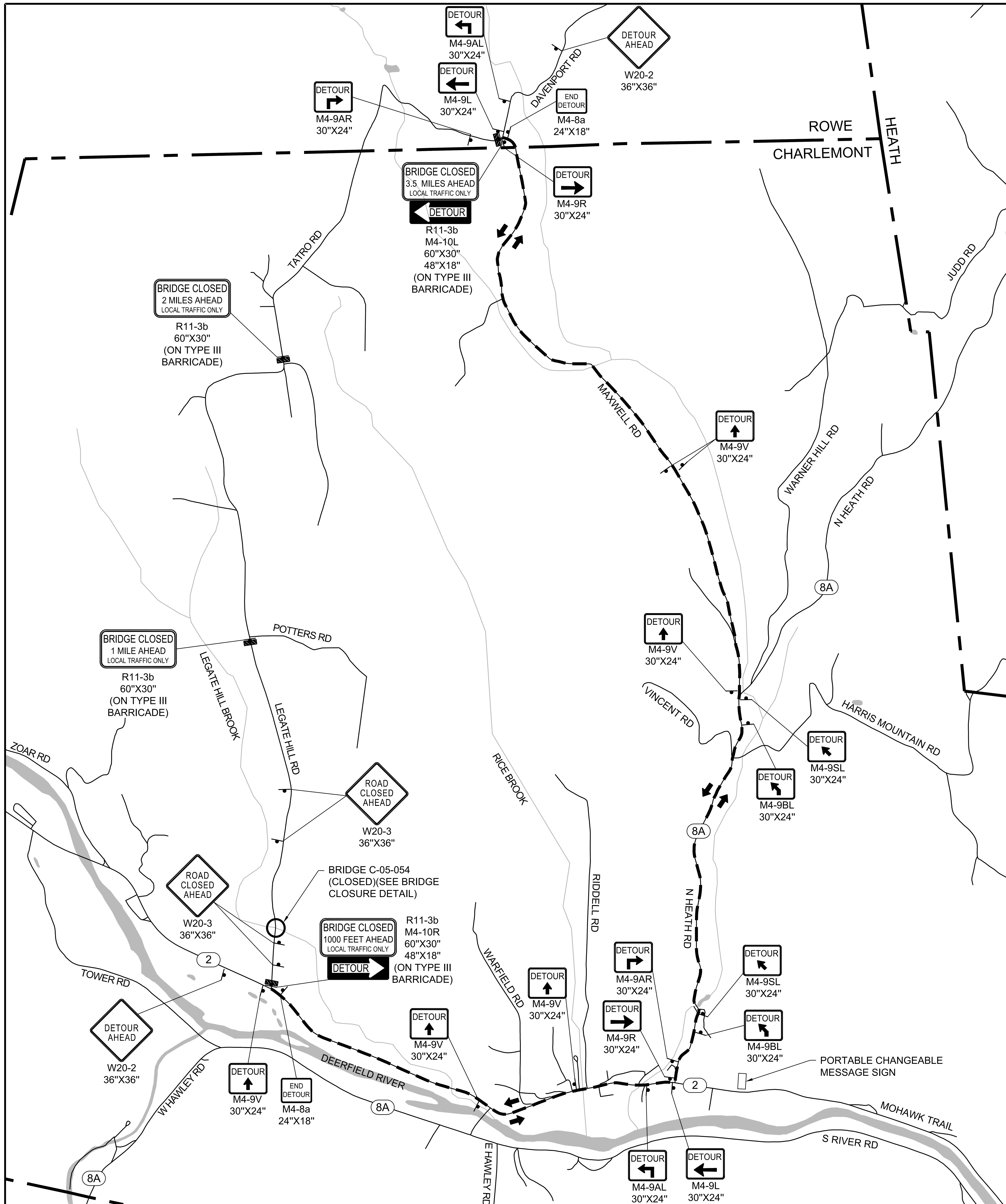
ROADWAY PLAN AND TYPICAL SECTION



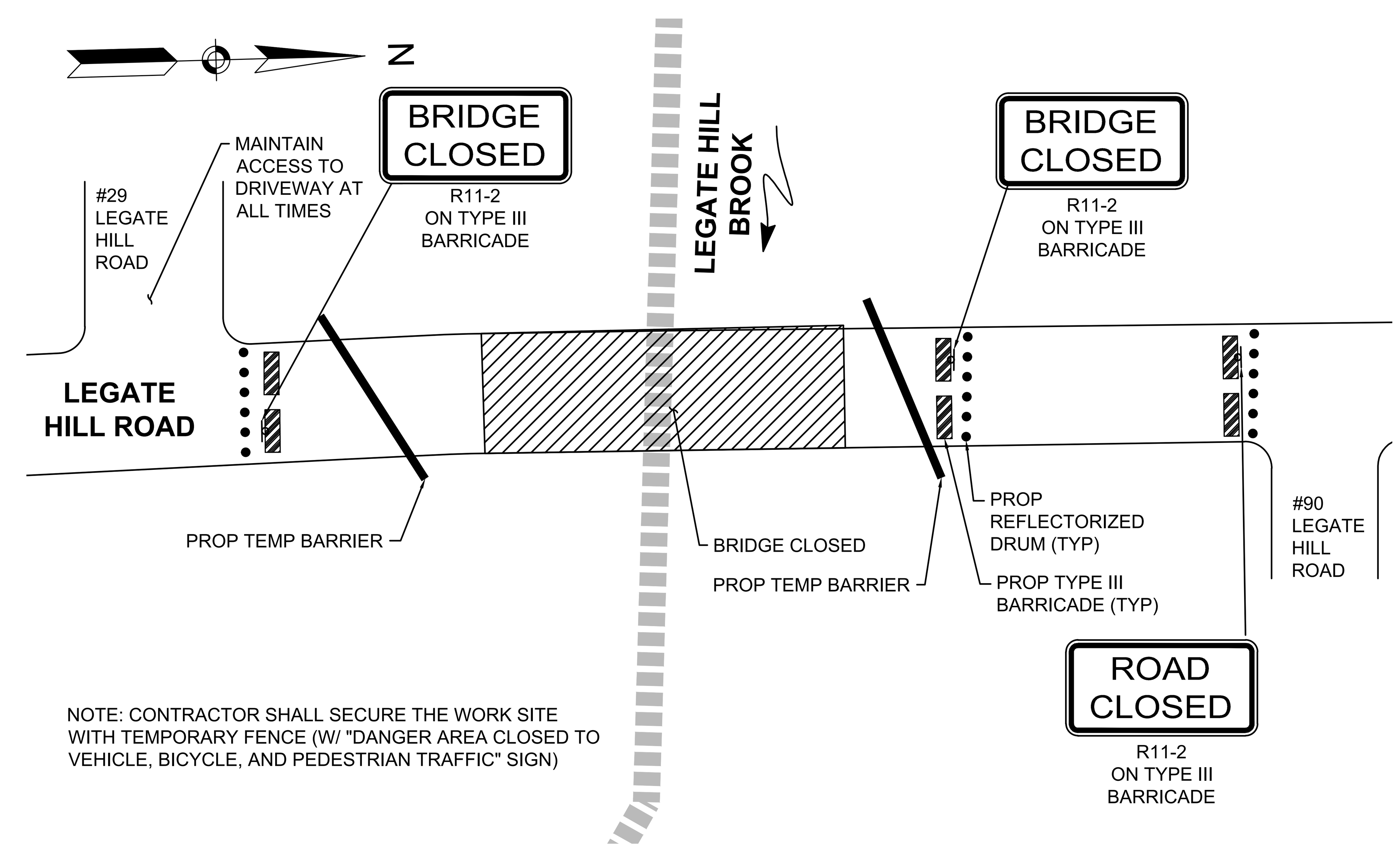
DETOUR
NOT TO SCALE

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
6. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
7. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
8. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS.
9. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND

- REFLECTORIZED DRUM
- WORK ZONE
- DIRECTION OF TRAFFIC
- SIGN
- TEMPORARY BARRIER
- TYPE III BARRICADE
- PORTABLE CHANGEABLE MESSAGE SIGN



NOTE: CONTRACTOR SHALL SECURE THE WORK SITE WITH TEMPORARY FENCE (W/ "DANGER AREA CLOSED TO VEHICLE, BICYCLE, AND PEDESTRIAN TRAFFIC" SIGN)

BRIDGE CLOSURE DETAIL
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TEMPORARY TRAFFIC CONTROL PLAN