

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 1 | 47 |
| PROJECT FILE NO. | | 609428 | |

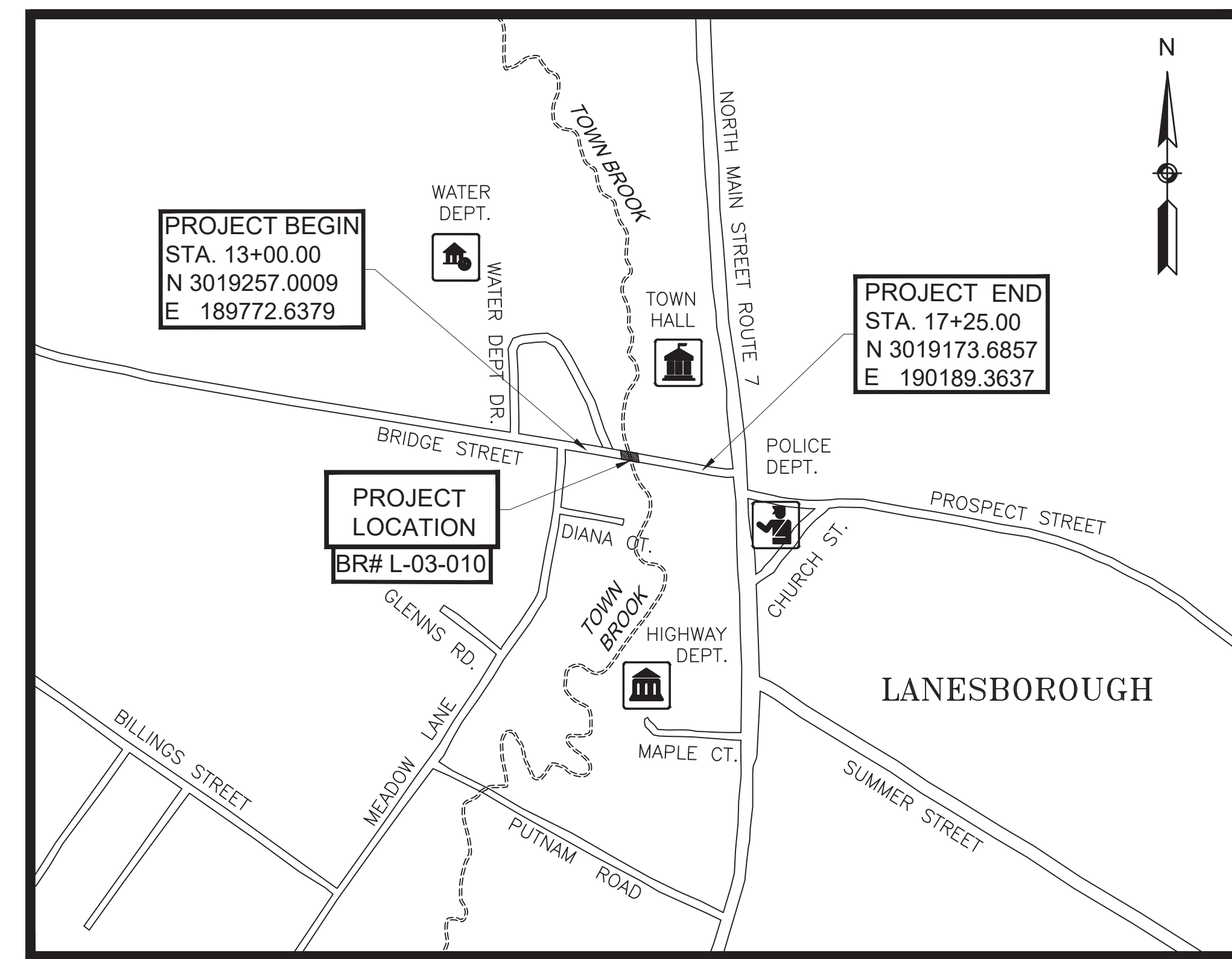
TITLE SHEET & INDEX

PLAN AND PROFILE OF
BRIDGE STREET OVER TOWN BROOK
BRIDGE NO. L-03-010 (CAJ)
IN THE TOWN OF
LANESBOROUGH
BERKSHIRE COUNTY

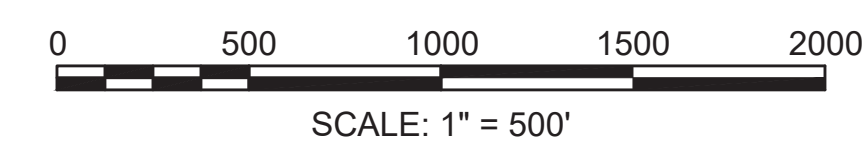
FEDERAL AID PROJECT NO. STP(BR-OFF)-003S(781)X

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

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| DESIGN DESIGNATION BRIDGE STREET | |
|----------------------------------|------------|
| DESIGN SPEED | 40 MPH |
| ADT (2020) | 171 |
| ADT (2030) | 188 |
| K | 11% |
| D | 52% |
| T (PEAK HOUR) | 3% |
| T (AVERAGE DAY) | 3% |
| DHV | 19 V.P.H. |
| DDHV | 10 V.P.H. |
| FUNCTIONAL CLASSIFICATION | Local Road |



LENGTH OF PROJECT = 425.00 FEET = 0.081 MILE

| DATE | DESCRIPTION | REV # |
|------|-------------|-------|
| | | |
| | | |
| | | |
| | | |

Jeff Lewis
Digitally signed by Jeff Lewis
Date: 2024.10.30 16:12:30-0400

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APPROVED

Digitally signed by Carrie Lavelle, P.E.
Date: 2024.11.03 11:25:35 -0500

CHIEF ENGINEER DATE

11/03/2024

GENERAL SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|---|
| | | JERSEY BARRIER |
| | | CATCH BASIN |
| | | CATCH BASIN CURB INLET |
| | | FLAG POLE |
| | | GAS PUMP |
| | | MAIL BOX |
| | | POST SQUARE |
| | | POST CIRCULAR |
| | | WELL |
| | | ELECTRIC HANDHOLE |
| | | FENCE GATE POST |
| | | GAS GATE |
| | | BORING HOLE |
| | | MONITORING WELL |
| | | TEST PIT |
| | | HYDRANT |
| | | LIGHT POLE |
| | | COUNTY BOUND |
| | | GPS POINT |
| | | CABLE MANHOLE |
| | | DRAINAGE MANHOLE |
| | | ELECTRIC MANHOLE |
| | | GAS MANHOLE |
| | | MISC MANHOLE |
| | | SEWER MANHOLE |
| | | TELEPHONE MANHOLE |
| | | WATER MANHOLE |
| | | MASSACHUSETTS HIGHWAY BOUND |
| | | MONUMENT |
| | | STONE BOUND |
| | | TOWN OR CITY BOUND |
| | | TRAVERSE OR TRIANGULATION STATION |
| | | TROLLEY POLE OR GUY POLE |
| | | TRANSMISSION POLE |
| | | UTILITY POLE W/ FIREBOX |
| | | UTILITY POLE WITH DOUBLE LIGHT |
| | | UTILITY POLE W / 1 LIGHT |
| | | UTILITY POLE |
| | | BUSH |
| | | TREE |
| | | STUMP |
| | | SWAMP / MARSH |
| | | WATER GATE |
| | | PARKING METER |
| | | OVERHEAD CABLE/WIRE |
| | | CURBING |
| | | CONTOURS (ON-THE-GROUND SURVEY DATA) |
| | | CONTOURS (PHOTOGRAMMETRIC DATA) |
| | | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | BALANCED STONE WALL |
| | | GUARD RAIL - STEEL POSTS |
| | | GUARD RAIL - WOOD POSTS |
| | | GUARD RAIL - DOUBLE FACE - STEEL POSTS |
| | | GUARD RAIL - DOUBLE FACE - WOOD POSTS |
| | | CHAIN LINK OR METAL FENCE |
| | | WOOD FENCE |
| | | HAY BALES/SILT FENCE |
| | | TREE LINE |
| | | SAWCUT LINE |
| | | TOP OR BOTTOM OF SLOPE |
| | | LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY |
| | | BANK OF RIVER OR STREAM |
| | | BORDER OF WETLAND |
| | | 100 FT WETLAND BUFFER |
| | | 200 FT RIVERFRONT BUFFER |
| | | STATE HIGHWAY LAYOUT |
| | | TOWN OR CITY LAYOUT |
| | | COUNTY LAYOUT |
| | | RAILROAD SIDELINE |
| | | TOWN OR CITY BOUNDARY LINE |
| | | PROPERTY LINE OR APPROXIMATE PROPERTY LINE |
| | | EASEMENT |

TRAFFIC SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|--|
| | | CONTROLLER PHASE ACTUATED |
| | | TRAFFIC SIGNAL HEAD (SIZE AS NOTED) |
| | | WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED) |
| | | VIDEO DETECTION CAMERA |
| | | MICROWAVE DETECTOR |
| | | PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE |
| | | EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT |
| | | VEHICULAR SIGNAL HEAD |
| | | VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED |
| | | FLASHING BEACON |
| | | PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED) |
| | | RAILROAD SIGNAL |
| | | SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED) |
| | | MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED) |
| | | HIGH MAST POLE OR TOWER |
| | | SIGN AND POST |
| | | SIGN AND POST (2 POSTS) |
| | | MAST ARM WITH LUMINAIRE |
| | | OPTICAL PRE-EMPTION DETECTOR |
| | | CONTROL CABINET, GROUND MOUNTED |
| | | CONTROL CABINET, POLE MOUNTED |
| | | FLASHING BEACON CONTROL AND METER PEDESTAL |
| | | LOAD CENTER ASSEMBLY |
| | | PULL BOX 12"x12" (OR AS NOTED) |
| | | ELECTRIC HANDHOLE 12"x24" (OR AS NOTED) |
| | | TRAFFIC SIGNAL CONDUIT |

PAVEMENT MARKINGS SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|------------------------------|
| | | PAVEMENT ARROW - WHITE |
| | | LEGEND "ONLY" - WHITE |
| | | STOP LINE |
| | | CROSSWALK |
| | | SOLID WHITE LINE |
| | | SOLID YELLOW LINE |
| | | BROKEN WHITE LINE |
| | | BROKEN YELLOW LINE |
| | | DOTTED WHITE LINE |
| | | DOTTED YELLOW LINE |
| | | DOTTED WHITE LINE EXTENSION |
| | | DOTTED YELLOW LINE EXTENSION |
| | | DOUBLE WHITE LINE |
| | | DOUBLE YELLOW LINE |

ABBREVIATIONS

| GENERAL | DESCRIPTION |
|---------------|--------------------------------------|
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| ABAN | ABANDON |
| ADJ | ADJUST |
| APPROX. | APPROXIMATE |
| A.C. | ASPHALT CONCRETE |
| ACCM PIPE | ASPHALT COATED CORRUGATED METAL PIPE |
| BIT. | BITUMINOUS |
| BC | BOTTOM OF CURB |
| BD. | BOUND |
| BL | BASELINE |
| BLDG | BUILDING |
| BM | BENCHMARK |
| BO | BY OTHERS |
| BOS | BOTTOM OF SLOPE |
| BR. | BRIDGE |
| CB | CATCH BASIN |
| CBCI | CATCH BASIN WITH CURB INLET |
| CC | CEMENT CONCRETE |
| CCM | CEMENT CONCRETE MASONRY |
| CEM | CEMENT |
| CI | CURB INLET |
| CIP | CAST IRON PIPE |
| CLF | CHAIN LINK FENCE |
| CL | CENTERLINE |
| CMP | CORRUGATED METAL PIPE |
| CSP | CORRUGATED STEEL PIPE |
| CO. | COUNTY |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CONST | CONSTRUCTION |
| CR GR | CROWN GRADE |
| DHV | DESIGN HOURLY VOLUME |
| DI | DROP INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DW | STEADY DON'T WALK - PORTLAND ORANGE |
| DWY | DRIVEWAY |
| ELEV (or EL.) | ELEVATION |
| EMB | EMBANKMENT |
| EOP | EDGE OF PAVEMENT |
| EXIST (or EX) | EXISTING |
| EXC | EXCAVATION |
| F&C | FRAME AND COVER |
| F&G | FRAME AND GRATE |
| FDN. | FOUNDATION |
| FLDSTN | FIELDSTONE |
| GAR | GARAGE |
| GD | GROUND |
| GG | GAS GATE |
| GI | GUTTER INLET |
| GIP | GALVANIZED IRON PIPE |
| GRAN | GRANITE |
| GRAV | GRAVEL |
| GRD | GUARD |
| HDW | HEADWALL |
| HMA | HOT MIX ASPHALT |
| HOR | HORIZONTAL |
| HYD | HYDRANT |
| INV | INVERT |
| JCT | JUNCTION |
| L | LENGTH OF CURVE |
| LB | LEACH BASIN |
| LP | LIGHT POLE |
| LT | LEFT |
| MAX | MAXIMUM |
| MB | MAILBOX |
| MH | MANHOLE |
| MHB | MASSACHUSETTS HIGHWAY BOUND |
| MIN | MINIMUM |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| PCR | PEDESTRIAN CURB RAMP |
| P.G.L. | PROFILE GRADE LINE |
| PI | POINT OF INTERSECTION |
| POC | POINT ON CURVE |
| POT | POINT ON TANGENT |
| PRC | POINT OF REVERSE CURVATURE |
| PROJ | PROJECT |
| PROP | PROPOSED |
| PSB | PLANTABLE SOIL BORROW |
| PT | POINT OF TANGENCY |
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| PVMT | PAVEMENT |

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LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

| GENERAL | DESCRIPTION |
|----------|-----------------------------------|
| PWW | PAVED WATER WAY |
| R | RADIUS OF CURVATURE |
| R&D | REMOVE AND DISPOSE |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROAD |
| RDWY | ROADWAY |
| REM | REMOVE |
| RET | RETAIN |
| RET WALL | RETAINING WALL |
| ROW | RIGHT OF WAY |
| RR | RAILROAD |
| R&R | REMOVE AND RESET |
| R&S | REMOVE AND STACK |
| RT | RIGHT |
| SB | STONE BOUND |
| SHLD | SHOULDER |
| SMH | SEWER MANHOLE |
| ST | STREET |
| STA | STATION |
| SSD | STOPPING SIGHT DISTANCE |
| SHLO | STATE HIGHWAY LAYOUT LINE |
| SW | SIDEWALK |
| T | TANGENT DISTANCE OF CURVE/TRUCK % |
| TAN | TANGENT |
| TEMP | TEMPORARY |
| TC | TOP OF CURB |
| TOS | TOP OF SLOPE |
| TYP | TYPICAL |
| UP | UTILITY POLE |
| VAR | VARIES |
| VERT | VERTICAL |
| VC | VERTICAL CURVE |
| WG | WATER GATE |
| WIP | WROUGHT IRON PIPE |
| WM | WATER METER/WATER MAIN |
| X-SECT | CROSS SECTION |

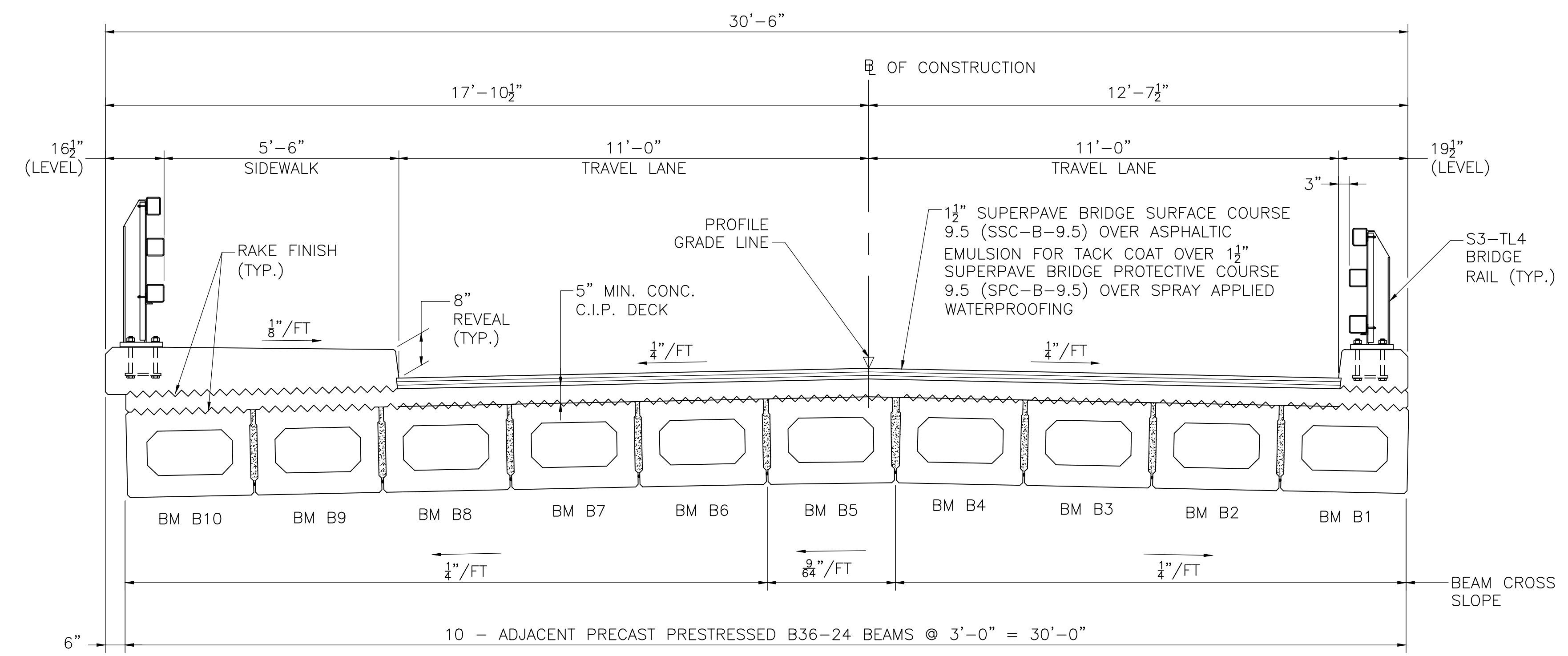
TRAFFIC SIGNAL ABBREVIATIONS

| | |
|--------|--------------------------------|
| CAB | CABINET |
| CCVE | CLOSED CIRCUIT VIDEO EQUIPMENT |
| DW | STEADY UPRAISED HAND |
| FDW | FLASHING UPRAISED HAND |
| FR | FLASHING CIRCULAR RED |
| FRL | FLASHING RED LEFT ARROW |
| FRR | FLASHING RED RIGHT ARROW |
| FY | FLASHING CIRCULAR YELLOW |
| FYL | FLASHING YELLOW LEFT ARROW |
| FYR | FLASHING YELLOW RIGHT ARROW |
| G | STEADY CIRCULAR GREEN |
| GL | STEADY GREEN LEFT ARROW |
| GR | STEADY GREEN RIGHT ARROW |
| GSL | STEADY GREEN SLASH LEFT ARROW |
| GSR | STEADY GREEN SLASH RIGHT ARROW |
| GV | STEADY GREEN VERTICAL ARROW |
| OL | OVERLAP |
| PED | PEDESTRIAN |
| PTZ | PAN, TILT, ZOOM |
| R | STEADY CIRCULAR RED |
| RL | STEADY RED LEFT ARROW |
| RR | STEADY RED RIGHT ARROW |
| TR SIG | TRAFFIC SIGNAL |
| TSC | TRAFFIC SIGNAL CONDUIT |
| W | STEADY WALKING PERSON |
| Y | STEADY CIRCULAR YELLOW |
| YL | STEADY YELLOW LEFT ARROW |

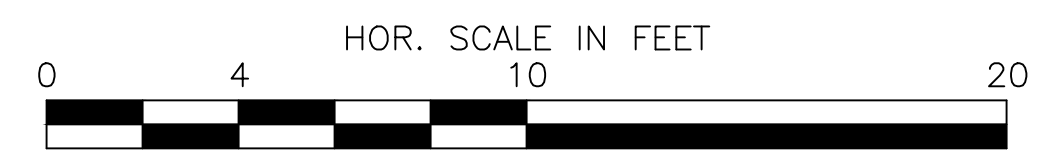
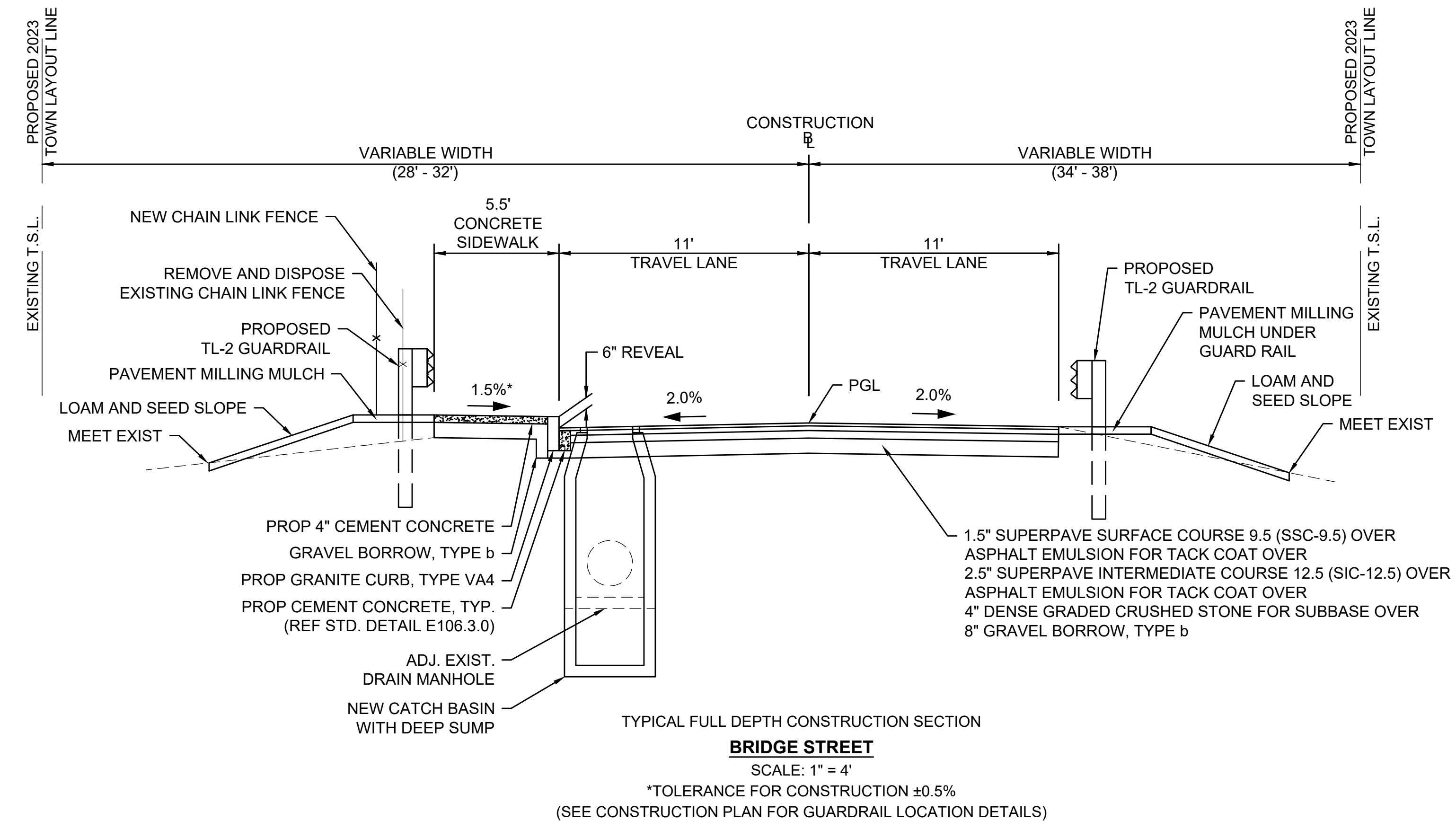
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BRIDGE STREET OVER TOWN BROOK**

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TYPICAL SECTIONS



PROPOSED TRANSVERSE SECTION (LOOKING EAST)
 SCALE: 1/2" = 1'-0"



PAVEMENT NOTES

FULL DEPTH CONSTRUCTION - BRIDGE STREET
 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER 2.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER 8" GRAVEL BORROW, TYPE b
 (NOTE: SUB-BASE TO BE COMPACTED TO 95% DRY DENSITY AND SHALL NOT EXCEED 6" DEEP LIFTS)

FULL DEPTH CONSTRUCTION OVER APPROACH SLABS
 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER 2.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER 8" GRAVEL BORROW, TYPE b
 (NOTE: SUB-BASE TO BE COMPACTED TO 95% DRY DENSITY AND SHALL NOT EXCEED 6" DEEP LIFTS)

BRIDGE PAVEMENT
 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 (SSC-B-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER 1.5" SUPERPAVE BRIDGE PROTECTIVE COURSE 9.5 (SPC-B-9.5) OVER SPRAY APPLIED WATERPROOFING

PROPOSED CEMENT CONCRETE SIDEWALK
 4" CEMENT CONCRETE (4000 PSI, 3/4", 610) OVER 8" GRAVEL BORROW, TYPE b

CEMENT CONCRETE DRIVEWAY
 6" CEMENT CONCRETE (4000 PSI, 3/4", 610) PLACED IN ONE LAYER, BROOM FINISH 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY
 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER 2.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER 8" GRAVEL BORROW, TYPE b

TYPICAL HIGHWAY SECTION NOTES:

1. TYPICAL NORMAL CROWN (2% EACH SIDE OF ROAD) BETWEEN STATIONS 13+50 AND 16+00.
2. ROADWAY CROWN WILL VARY BETWEEN STATIONS 13+00 AND 13+50 AND BETWEEN STATIONS 16+00 AND 17+25. THIS WILL ALLOW FOR A SMOOTH TRANSITION FROM THE 2% NORMAL CROWN IN THE FULL DEPTH PAVEMENT AREAS TO THE EXISTING ROADWAY CROWNS AT THE PROJECT LIMITS.
3. SEE CROSS SECTION SHEETS FOR DETAILS SHOWING CROSS SLOPES FOR THE TRANSITIONAL AREAS.
4. ASPHALT EMULSION FOR TACK COAT AND HMA JOINT ADHESIVE PER SECTION 450.

DRAINAGE DETAILS

| NO. | TYPE | STATION | RIM ELEV. | INV. ELEV. IN | INV. ELEV. OUT | SUMP ELEV. | FRAME AND GRATE/COVER |
|-----|------|----------------------|-----------|---------------|----------------------------|------------|---------------------------|
| 1 | CBC1 | 13+78.90 10.0' LT | 1122.65 | N/A | 1118.65(SE) 1118.15(NW) | 1114.15 | FRAME & GRATE CASCADE (L) |
| 2 | CBC1 | 14+80.26 10.0' LT | 1123.23 | N/A | 1119.23 | 1115.23 | FRAME & GRATE CASCADE (R) |
| 3 | CB1 | 13+78.90 10.0' RT | 1122.65 | N/A | 1118.65(NE) 1118.15(SW) | 1114.15 | FRAME & GRATE CASCADE (R) |

| NO. | TYPE | STATION | RIM ELEV. | INV. ELEV. IN | INV. ELEV. OUT | SUMP ELEV. | FRAME AND GRATE/COVER |
|-----|--------|----------------------|-----------|---|----------------------------|------------|---------------------------|
| 4 | CB2 | 14+94.28 10.0' RT | 1123.32 | N/A | 1119.32(NW) 1118.82(SE) | 1114.82 | FRAME & GRATE CASCADE (L) |
| 5 | DMH1 | 14+85.53 2.48' LT | 1123.44 | 1119.14(NW) 1116.28(NE) 1119.17(SE) | 1116.24 | N/A | FRAME & COVER |
| 6 | LB1 | 13+59.13 13.0' LT | 1123.3 | 1117.95 | N/A | 1115.95 | FRAME & COVER |
| 7 | LB2 | 13+54.31 14.7' RT | 1122.4 | 1117.90 | N/A | 1115.90 | FRAME & COVER |
| 8 | LB3 | 15+07.92 16.3' RT | 1123.0 | 1118.67 | N/A | 1116.67 | FRAME & COVER |
| 9 | EX DMH | 14+98.81 8.76' LT | 1123.39 | 1116.43 | 1116.43 | N/A | FRAME & COVER |

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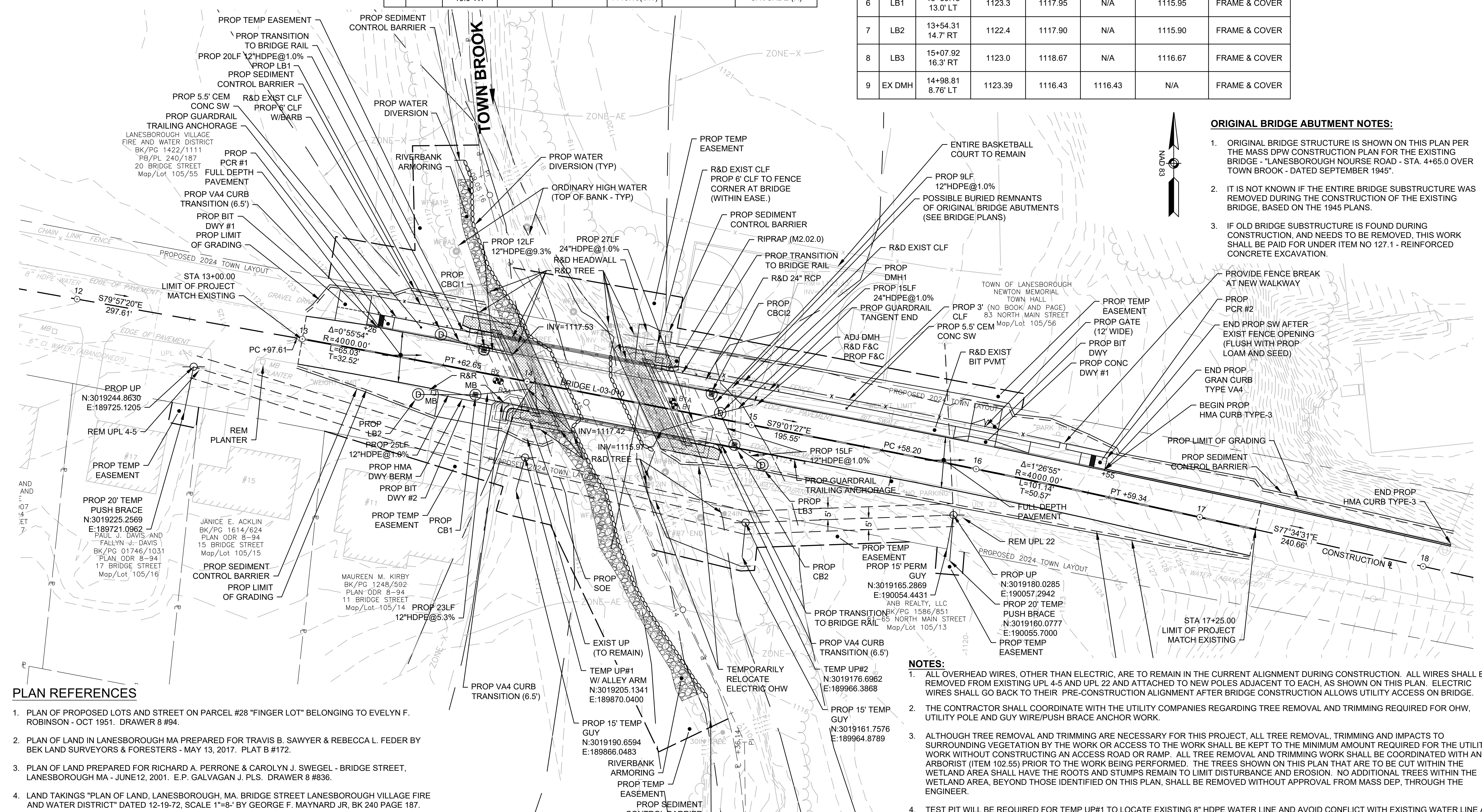
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PROJECT FILE NO. 609428

CONSTRUCTION AND UTILITY PLAN

HIGHWAY GUARD DETAILS

STA 13+30.45 LEFT 16.50' - 13+38.78 LEFT 16.50' GUARDRAIL TRAILING ANCHORAGE
 STA 13+38.78 LEFT 16.50' - 13+73.44 LEFT 16.50' TRANSITION TO BRIDGE RAIL
 STA 14+57.87 LEFT 16.50' - 14+91.62 LEFT 16.50' TRANSITION TO BRIDGE RAIL
 STA 14+91.62 LEFT 16.50' - 15+16.62 LEFT 16.50' GUARDRAIL TANGENT END TREATMENT (TL-2)
 STA 14+83.00 RIGHT 11.25' - 15+16.75 RIGHT 11.25' TRANSITION TO BRIDGE RAIL
 STA 15+16.75 RIGHT 11.25' - 15+26.12 RIGHT 11.25' GUARDRAIL TRAILING ANCHORAGE

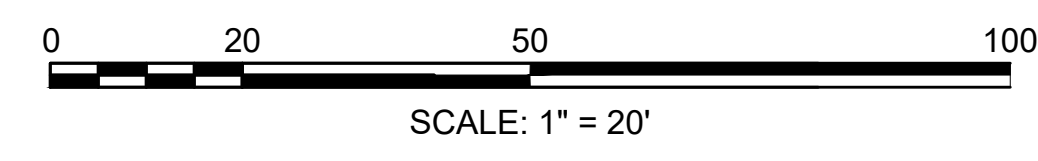


- ORIGINAL BRIDGE ABUTMENT NOTES:**
- ORIGINAL BRIDGE STRUCTURE IS SHOWN ON THIS PLAN PER THE MASS DPW CONSTRUCTION PLAN FOR THE EXISTING BRIDGE - "LANESBOROUGH NOURSE ROAD - STA. 4+65.0 OVER TOWN BROOK - DATED SEPTEMBER 1945".
 - IT IS NOT KNOWN IF THE ENTIRE BRIDGE SUBSTRUCTURE WAS REMOVED DURING THE CONSTRUCTION OF THE EXISTING BRIDGE, BASED ON THE 1945 PLANS.
 - IF OLD BRIDGE SUBSTRUCTURE IS FOUND DURING CONSTRUCTION, AND NEEDS TO BE REMOVED, THIS WORK SHALL BE PAID FOR UNDER ITEM NO 127.1 - REINFORCED CONCRETE EXCAVATION.

PLAN REFERENCES

- PLAN OF PROPOSED LOTS AND STREET ON PARCEL #28 "FINGER LOT" BELONGING TO EVELYN F. ROBINSON - OCT 1951. DRAWER 8 #94.
- PLAN OF LAND IN LANESBOROUGH MA PREPARED FOR TRAVIS B. SAWYER & REBECCA L. FEDER BY BEK LAND SURVEYORS & FORESTERS - MAY 13, 2017. PLAT B #172.
- PLAN OF LAND PREPARED FOR RICHARD A. PERRONE & CAROLYN J. SWEGEL - BRIDGE STREET, LANESBOROUGH MA - JUNE 12, 2001. E.P. GALVAGAN J. PLS. DRAWER 8 #836.
- LAND TAKINGS "PLAN OF LAND, LANESBOROUGH, MA. BRIDGE STREET LANESBOROUGH VILLAGE FIRE AND WATER DISTRICT" DATED 12-19-72, SCALE 1"=8'- BY GEORGE F. MAYNARD JR, BK 240 PAGE 187.

NOTE:
 NO RECORDED STREET LINE WAS FOUND FOR BRIDGE STREET. THE TOWN STREET LINE WAS ESTABLISHED BY HOLDING (2) TWO IRON PIPES FOUND ON THE SOUTH SIDE OF BRIDGE STREET AND A MARBLE BOUND AT THE INTERSECTION OF THE SOUTHERLY STREET LINE OF BRIDGE STREET WITH THE WESTERLY STREET LINE OF MEADOW LANE. HOLDING THE (3) THREE MONUMENTS AND PLAN REFERENCES #1-3, THE SOUTHERLY STREET LINE WAS RECONSTRUCTED AND OFFSET TO THE NORTH BY 66.0' PER PLAN REFERENCE #1. THE MEADOW LANE STREET LINE WAS COMPUTED HOLDING PLAN REFERENCES #1 AND #2 AND SET AT 50' WIDE PER THE PLANS.



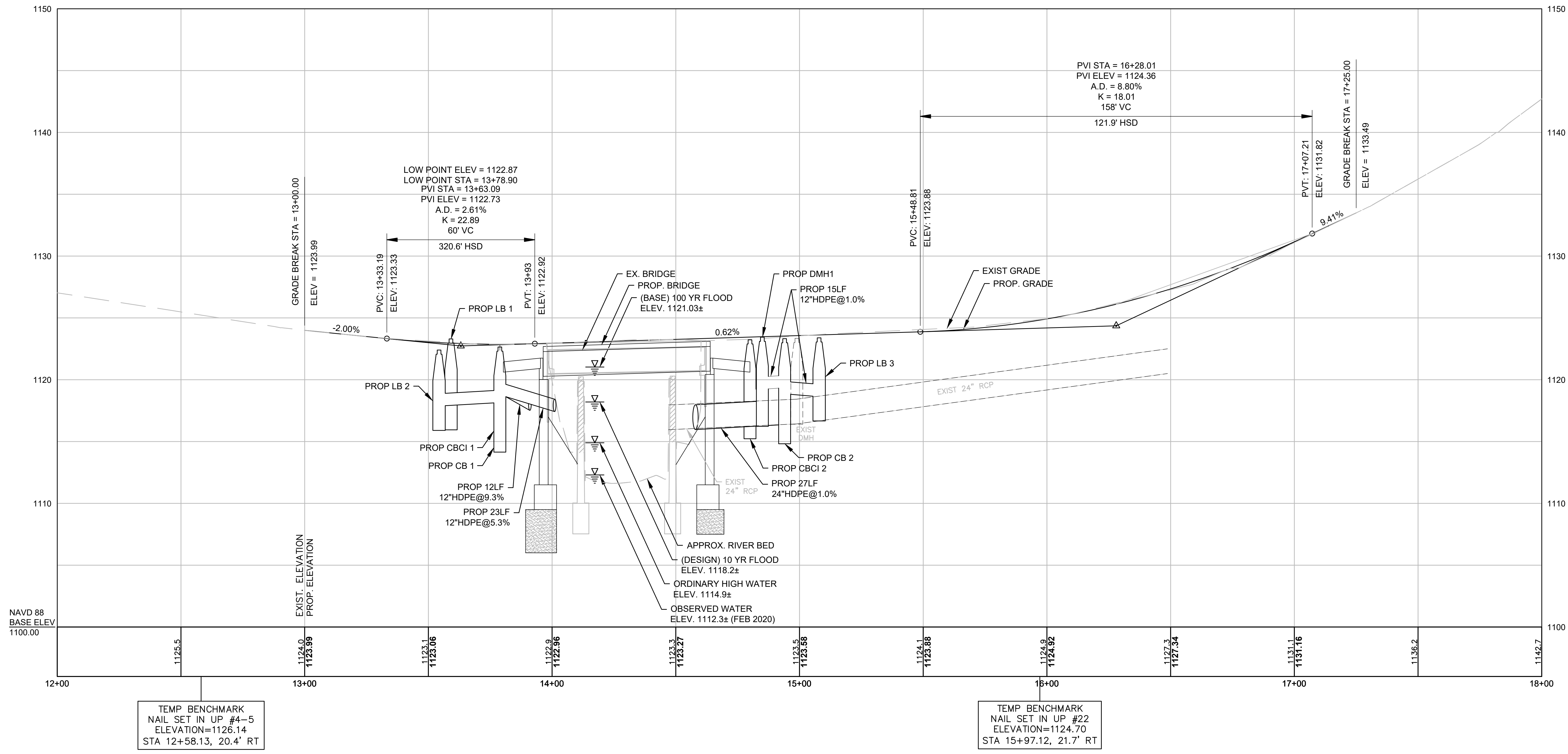
FOR PROFILE PLAN: SEE SHEET NO. 5

- NOTES:**
- ALL OVERHEAD WIRES, OTHER THAN ELECTRIC, ARE TO REMAIN IN THE CURRENT ALIGNMENT DURING CONSTRUCTION. ALL WIRES SHALL BE REMOVED FROM EXISTING UPL 4-5 AND ATTACHED TO NEW POLES ADJACENT TO EACH, AS SHOWN ON THIS PLAN. ELECTRIC WIRES SHALL GO BACK TO THEIR PRE-CONSTRUCTION ALIGNMENT AFTER BRIDGE CONSTRUCTION ALLOWS UTILITY ACCESS ON BRIDGE.
 - THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES REGARDING TREE REMOVAL AND TRIMMING REQUIRED FOR OHW, UTILITY POLE AND GUY WIRE/PUSH BRACE ANCHOR WORK.
 - ALTHOUGH TREE REMOVAL AND TRIMMING ARE NECESSARY FOR THIS PROJECT, ALL TREE REMOVAL, TRIMMING AND IMPACTS TO SURROUNDING VEGETATION BY THE WORK OR ACCESS TO THE WORK SHALL BE KEPT TO THE MINIMUM AMOUNT REQUIRED FOR THE UTILITY WORK WITHOUT CONSTRUCTING AN ACCESS ROAD OR RAMP. ALL TREE REMOVAL AND TRIMMING WORK SHALL BE COORDINATED WITH AN ARBORIST (ITEM 102.55) PRIOR TO THE WORK BEING PERFORMED. THE TREES SHOWN ON THIS PLAN THAT ARE TO BE CUT WITHIN THE WETLAND AREA SHALL HAVE THE ROOTS AND STUMPS REMAIN TO LIMIT DISTURBANCE AND EROSION. NO ADDITIONAL TREES WITHIN THE WETLAND AREA, BEYOND THOSE IDENTIFIED ON THIS PLAN, SHALL BE REMOVED WITHOUT APPROVAL FROM MASS DEP, THROUGH THE ENGINEER.
 - TEST PIT WILL BE REQUIRED FOR TEMP UP#1 TO LOCATE EXISTING 8" HDPE WATER LINE AND AVOID CONFLICT WITH EXISTING WATER LINE AND TEMPORARY POLE.
 - THE OVERHEAD WIRE FROM UPL 22 TO THE POLE WITHIN THE PARK (NORTH OF UPL 22) SHALL BE MAINTAINED. IF TEMPORARY REMOVAL OF THIS SERVICE IS REQUIRED, THE COST AND COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY HIGHWAY BOUND OR PRIVATE PROPERTY PIN THAT MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION, TO ITS LOCATION JUST PRIOR TO CONSTRUCTION.

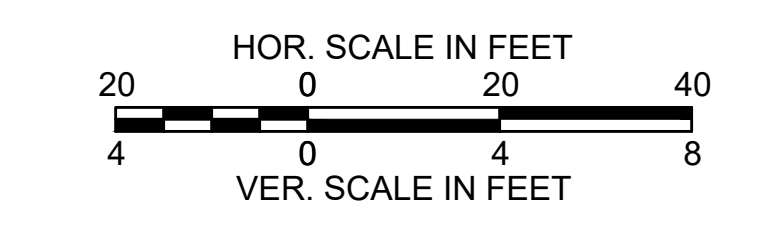
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 5 | 47 |
| PROJECT FILE NO. | | 609428 | |

PROFILE



FOR CONSTRUCTION AND UTILITY PLAN: SEE SHEET NO. 4



PLAN REFERENCES

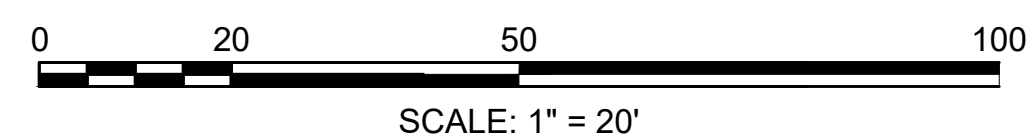
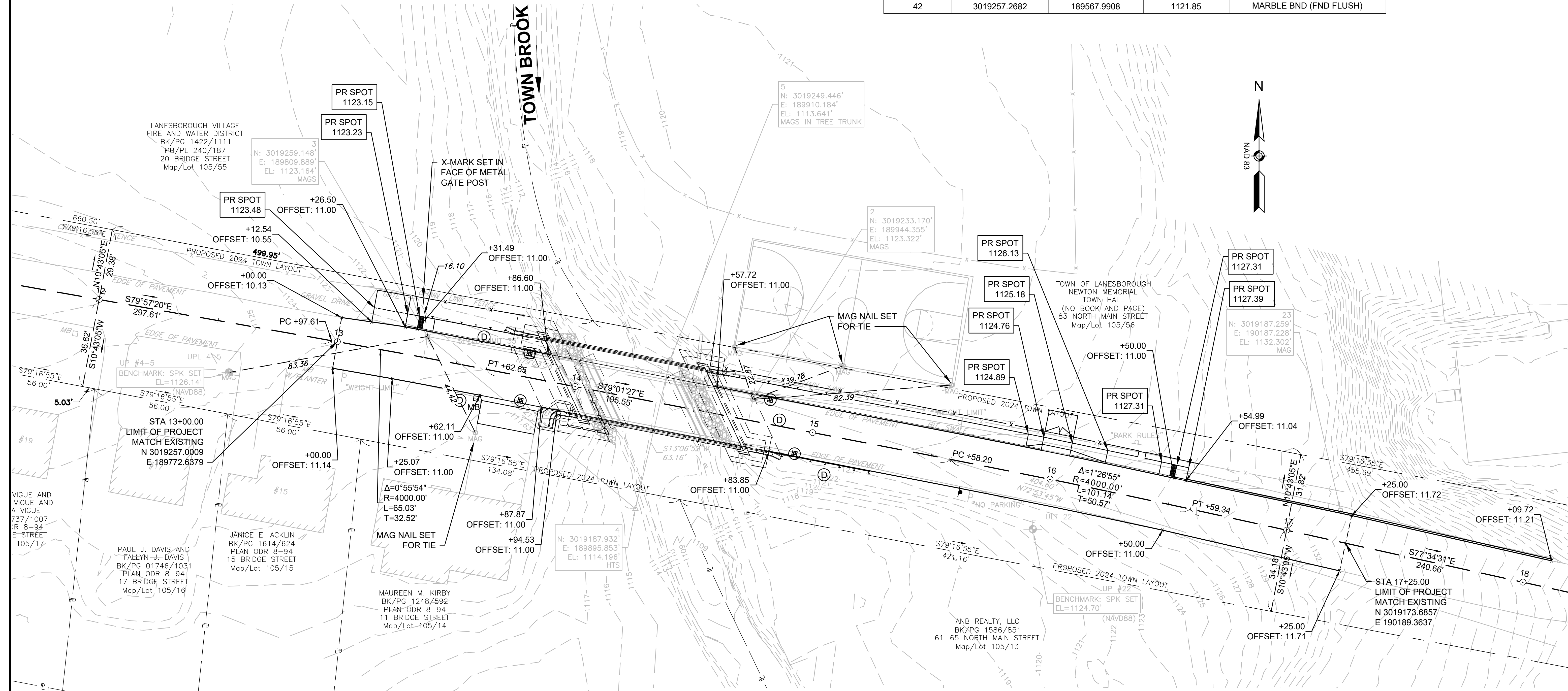
1. PLAN OF PROPOSED LOTS AND STREET ON PARCEL #28 "FINGER LOT" BELONGING TO EVELYN F. ROBINSON - OCT 1951. DRAWER 8 #94.
2. PLAN OF LAND IN LANESBOROUGH MA PREPARED FOR TRAVIS B. SAWYER & REBECCA L. FEDER BY BEK LAND SURVEYORS & FORESTERS - MAY 13, 2017. PLAT B #172.
3. PLAN OF LAND PREPARED FOR RICHARD A. PERRONE & CAROLYN J. SWEGEL - BRIDGE STREET, LANESBOROUGH MA - JUNE12, 2001. E.P. GALVAGAN J. PLS. DRAWER 8 #836.
4. LAND TAKINGS "PLAN OF LAND, LANESBOROUGH, MA. BRIDGE STREET LANESBOROUGH VILLAGE FIRE AND WATER DISTRICT" DATED 12-19-72, SCALE 1"=8'-BY GEORGE F. MAYNARD JR, BK 240 PAGE 187.

NOTE:
 NO RECORDED STREET LINE WAS FOUND FOR BRIDGE STREET. THE TOWN STREET LINE WAS ESTABLISHED BY HOLDING (2) TWO IRON PIPES FOUND ON THE SOUTH SIDE OF BRIDGE STREET AND A MARBLE BOUND AT THE INTERSECTION OF THE SOUTHERLY STREET LINE OF BRIDGE STREET WITH THE WESTERLY STREET LINE OF MEADOW LANE. HOLDING THE (3) THREE MONUMENTS AND PLAN REFERENCES #1-3, THE SOUTHERLY STREET LINE WAS RECONSTRUCTED AND OFFSET TO THE NORTH BY 66.0' PER PLAN REFERENCE #1. THE MEADOW LANE STREET LINE WAS COMPUTED HOLDING PLAN REFERENCES #1 AND #2 AND SET AT 50' WIDE PER THE PLANS.

| SURVEY TRAVERSE DATA | | | | |
|----------------------|--------------|-------------|-----------|------------------------|
| POINT # | NORTHING | EASTING | ELEVATION | DESCRIPTION |
| 1 | 3019114.1730 | 190331.0630 | 1154.57 | DHS |
| 2 | 3019233.1700 | 189944.3550 | 1123.32 | MAG/SET |
| 3 | 3019259.1480 | 189809.8890 | 1123.16 | MAG/SET |
| 4 | 3019187.9320 | 189895.8530 | 1114.20 | HUB/TACK SET |
| 5 | 3019249.4460 | 189910.1840 | 1113.64 | MAG SET IN TREE TRUNK |
| 22 | 3019292.2300 | 189629.8150 | 1127.48 | MAG NAIL |
| 23 | 3019187.2590 | 190187.2280 | 1132.30 | MAG NAIL |
| 42 | 3019257.2682 | 189567.9908 | 1121.85 | MARBLE BND (FND FLUSH) |

| LANESBOROUGH BRIDGE STREET OVER TOWN BROOK | | | |
|---|------------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| PROJECT FILE NO. | | 609428 | |

CURB TIE & GRADING PLAN

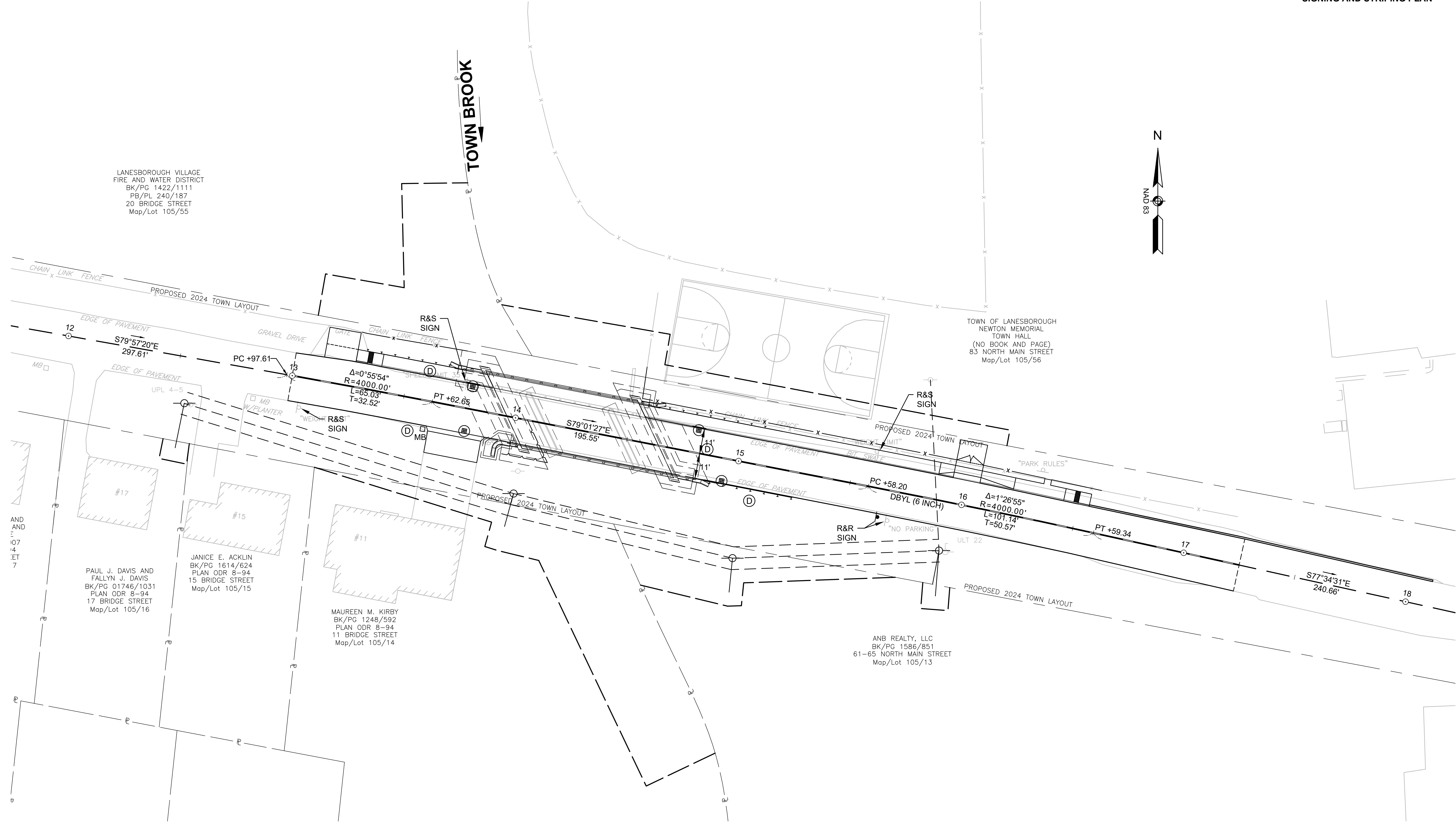


| BRIDGE STREET CONSTRUCTION BASELINE DATA | | | | | | | | |
|--|------------------|--------------|-------------|---|---------------------|----------------|--------------|-------------|
| NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING |
| L1 | 10+00.00 | 3019309.3248 | 189477.2361 | | S79°57'20"E 297.61' | PC 12+97.61 | 3019257.4183 | 189770.2854 |
| C1 | PC 12+97.61 | 3019257.4183 | 189770.2854 | R=4000.00' D=0°55'54" L=65.03' T=32.52' | | PT 13+62.65 | 3019245.5555 | 189834.2284 |
| L2 | PT 13+62.65 | 3019245.5555 | 189834.2284 | | S79°01'27"E 195.55' | PC 15+58.20 | 3019208.3230 | 190026.2042 |
| C2 | PC 15+58.20 | 3019208.3230 | 190026.2042 | R=4000.00' D=01°26'55" L=101.14' T=50.57' | | PT 16+59.34 | 3019187.8129 | 190125.2412 |
| L3 | PT 16+59.34 | 3019187.8129 | 190125.2412 | | S77°34'31"E 240.66' | 19+00.00 | 3019136.0335 | 190360.2651 |

**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
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| PROJECT FILE NO. | | 609428 | |

SIGNING AND STRIPING PLAN



LANESBOROUGH VILLAGE
FIRE AND WATER DISTRICT
BK/PG 1422/1111
PB/PL 240/187
20 BRIDGE STREET
Map/Lot 105/55

TOWN OF LANESBOROUGH
NEWTON MEMORIAL
TOWN HALL
(NO BOOK AND PAGE)
83 NORTH MAIN STREET
Map/Lot 105/56

PAUL J. DAVIS AND
FALLYN J. DAVIS
BK/PG 01746/1031
PLAN ODR 8-94
17 BRIDGE STREET
Map/Lot 105/16

JANICE E. ACKLIN
BK/PG 1614/624
PLAN ODR 8-94
15 BRIDGE STREET
Map/Lot 105/15

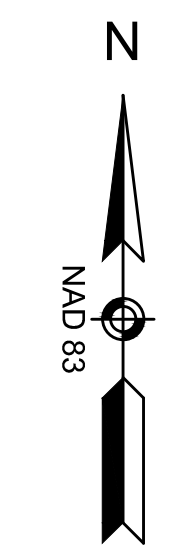
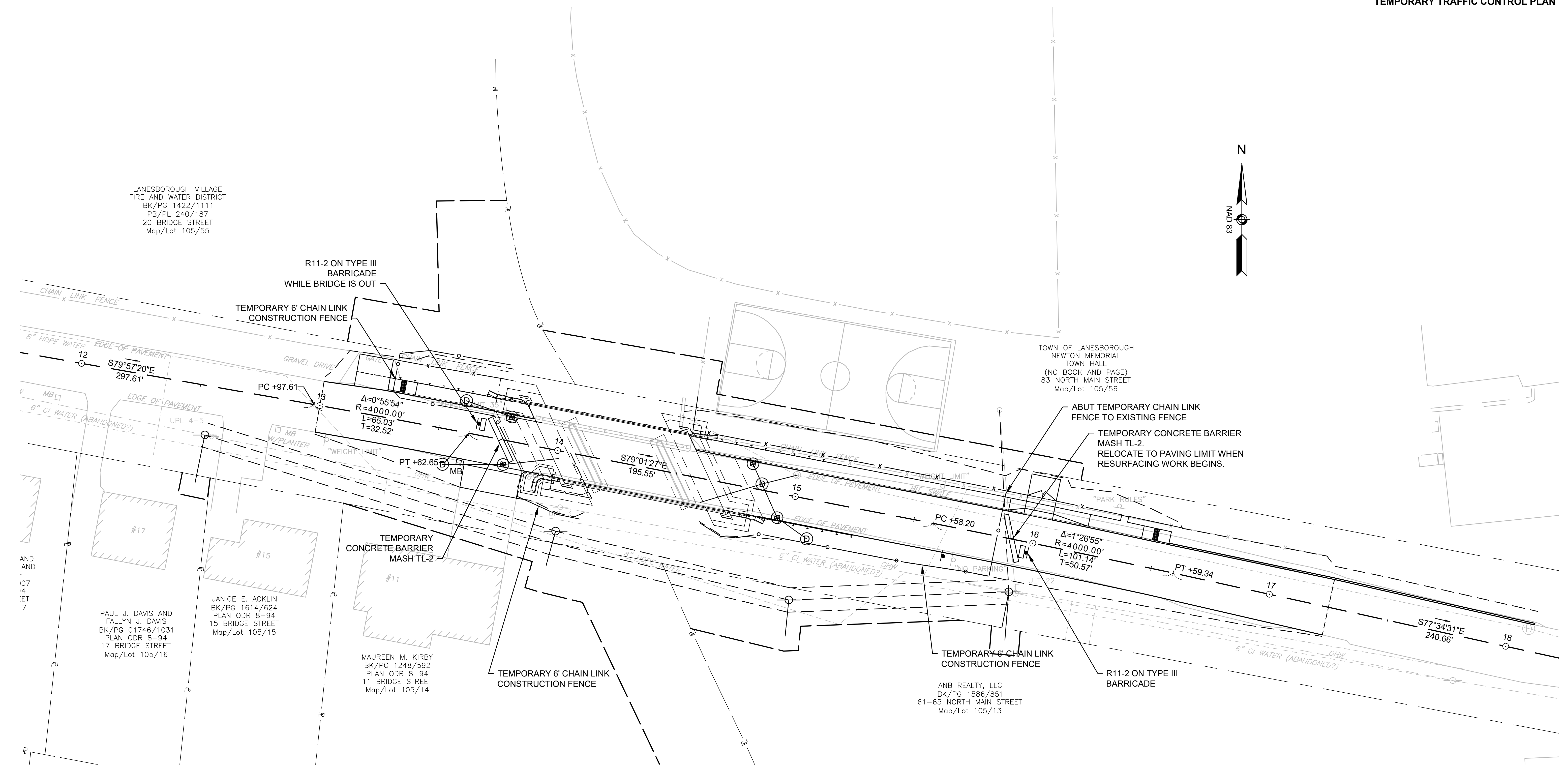
MAUREEN M. KIRBY
BK/PG 1248/592
PLAN ODR 8-94
11 BRIDGE STREET
Map/Lot 105/14

ANB REALTY, LLC
BK/PG 1586/851
61-65 NORTH MAIN STREET
Map/Lot 105/13

**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

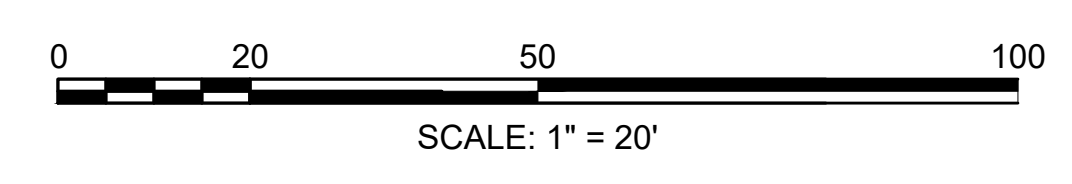
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 8 | 47 |
| PROJECT FILE NO. | | 609428 | |

TEMPORARY TRAFFIC CONTROL PLAN



BRIDGE STREET BRIDGE CLOSURE NOTES:

1. DETOUR PLAN AND SIGNAGE DETAILS ARE SHOWN ON PLAN SHEET 9.
2. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT(S) OF 11 BRIDGE STREET REGARDING ACCESS TO THE HOME AND DRIVEWAY. IF THE DRIVEWAY IS TO BE BARRED FROM ACCESS, THE CONTRACTOR SHALL PROVIDE ALTERNATE MEANS OF VEHICLE PARKING AND ACCESS TO THE HOME, IN AGREEMENT WITH THE RESIDENT(S) AND ENGINEER.
3. CONSTRUCTION STAGING AREA SUGGESTED ON EASTERLY SIDE OF BRIDGE (BETWEEN BRIDGE AND TEMPORARY CONCRETE BARRIER).

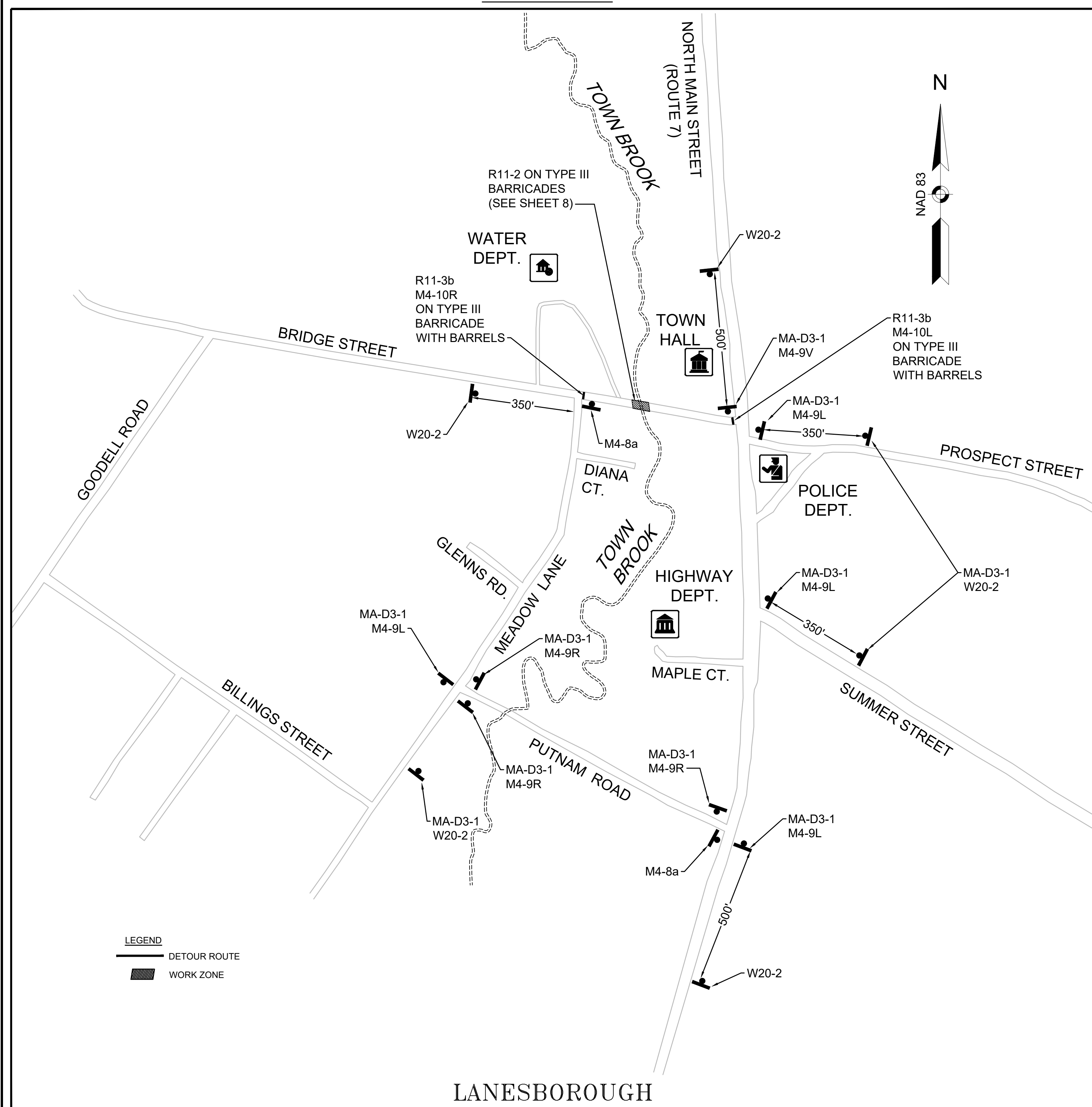


**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 9 | 47 |
| PROJECT FILE NO. | | 609428 | |

DETOUR PLAN WITH SIGN SUMMARY CHART

DETOUR PLAN



LANESBOROUGH

**DETOUR LENGTH = 0.5 MILE
NOT TO SCALE**

BRIDGE STREET BRIDGE CLOSURE NOTES:

- BRIDGE CLOSURE AND BARRICADE DETAILS ARE SHOWN ON PLAN SHEET 8.
- THE CONTRACTOR SHALL NOTIFY THE TOWN (POLICE AND FIRE) AT LEAST 24 HOURS PRIOR TO IMPLEMENTING ANY DETOUR.
- THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT(S) OF 11 BRIDGE STREET REGARDING ACCESS TO THE HOME AND DRIVEWAY. IF THE DRIVEWAY IS TO BE BARRED FROM ACCESS, THE CONTRACTOR SHALL PROVIDE ALTERNATE MEANS OF VEHICLE PARKING AND ACCESS TO THE HOME, IN AGREEMENT WITH THE RESIDENT(S) AND ENGINEER.

SIGN SUMMARY NOTES:

- SIGN TEXT SHALL CONFORM TO MUTCD (LATEST EDITION).
- THE LEGEND BORDER AND BACKGROUND SHALL BE HIGH INTENSITY REFLECTIVE SHEETING.

TEMPORARY TRAFFIC SIGN SUMMARY

| IDENTIFICATION NUMBER | SIZE OF SIGN (INCHES) | | TEXT | TEXT DIMENSIONS (INCHES) | | | NUMBER OF SIGNS REQUIRED | COLOR | | | POST SIZE AND NUMBER REQUIRED | UNIT AREA IN SQUARE FEET | TOTAL AREA IN SQUARE FEET |
|--|-----------------------|--------|--|--------------------------|------------------|-----------------|--------------------------|--------------------|--------|--------|-------------------------------|--------------------------|---------------------------|
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | ARROW RTE. MKR. | | BACKGROUND | LEGEND | BORDER | | | |
| MA-D3-1 | 30" | 18" | BRIDGE ST | SEE MASSDOT STANDARDS | | | 11 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 3.75 | 41.25 |
| M4-8a | 24" | 18" | END DETOUR | SEE MUTCD STANDARDS | | | 2 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 3.0 | 6.0 |
| M4-9L | 30" | 24" | DETOUR ← | | | | 4 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 5.0 | 20.0 |
| M4-9R | 30" | 24" | DETOUR → | | | | 2 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 5.0 | 10.0 |
| M4-9V | 30" | 24" | DETOUR ↑ | | | | 1 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 5.0 | 5.0 |
| M4-10L | 48" | 18" | ← DETOUR | | | | 1 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 6.0 | 6.0 |
| M4-10R | 48" | 18" | DETOUR → | | | | 1 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 6.0 | 6.0 |
| R11-2 | 48" | 30" | ROAD CLOSED | | | | 2 | FLUORESCENT ORANGE | BLACK | BLACK | TYPE III BARRICADE | 10.0 | 20.0 |
| R11-3b | 60" | 30" | BRIDGE OUT ON BRIDGE STREET LOCAL TRAFFIC ONLY | | | | 2 | WHITE | BLACK | BLACK | TYPE III BARRICADE | 12.5 | 25.0 |
| W20-2 | 36" | 36" | DETOUR AHEAD | | | | 6 | FLUORESCENT ORANGE | BLACK | BLACK | WOOD POST 1 | 9.0 | 54.0 |
| TOTAL AREA OF SIGNS (SQUARE FEET) | | | | | | | | | | | | 193.25 | |

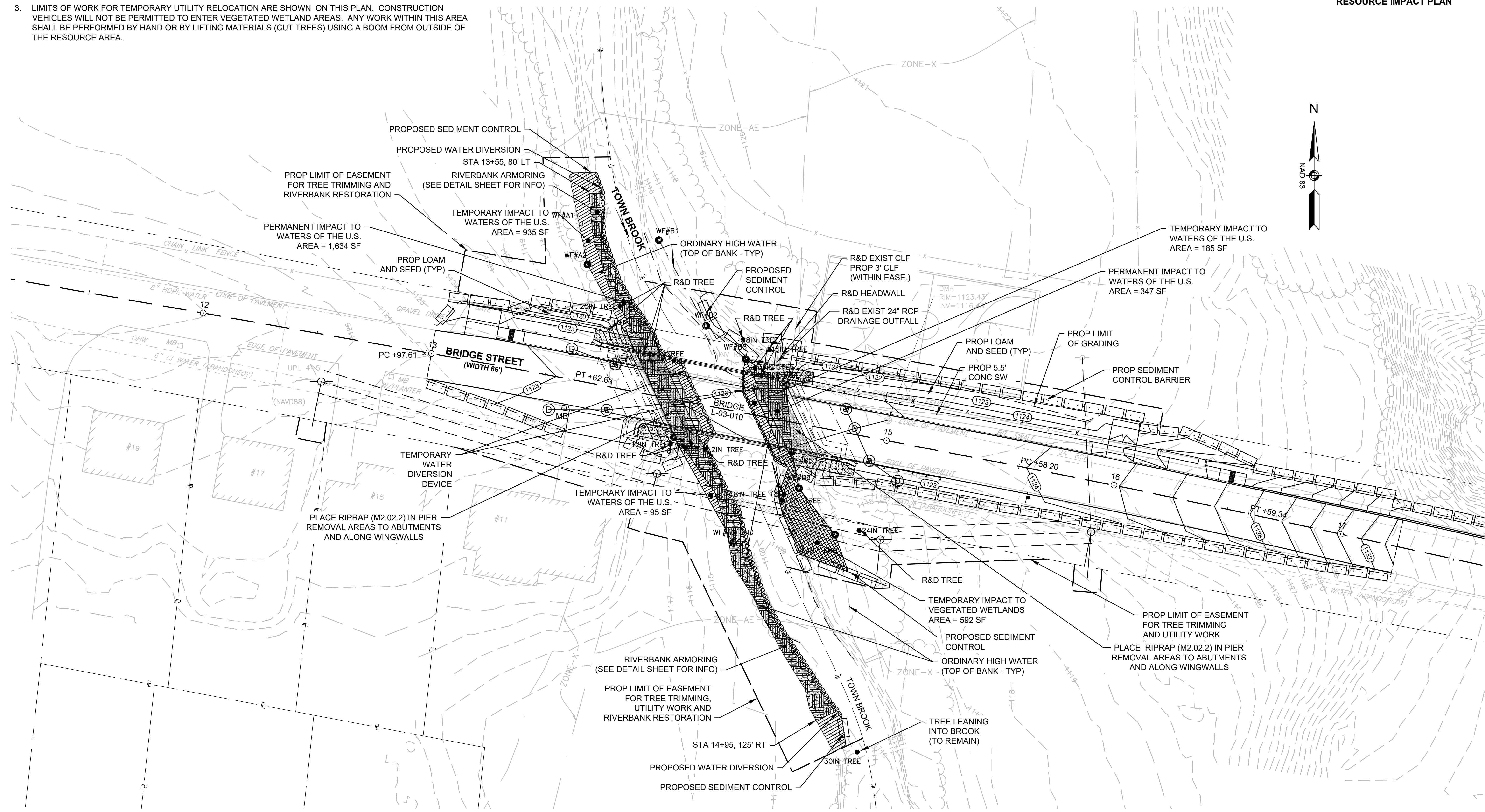
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 10 | 47 |
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RESOURCE IMPACT PLAN

| LEGEND | |
|--------|---|
| | TEMPORARY IMPACTS TO WATERS OF THE U.S. |
| | TEMPORARY IMPACTS TO VEGETATED WETLAND |
| | PERMANENT IMPACTS TO WATERS OF THE U.S. |
| | RIPRAP AROUND BRIDGE ABUTMENTS |

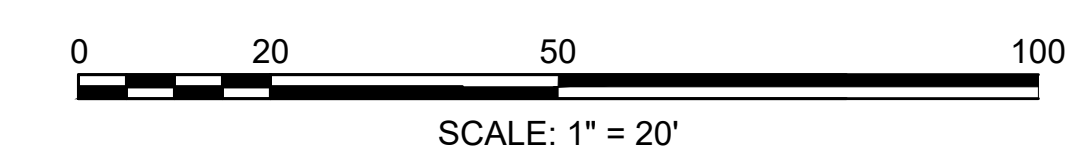
- NOTES:**
- SEE LANDSCAPE PLANTING PLAN FOR SEEDING AND OTHER GROUND COVER PROPOSED FOR THIS PROJECT. SEE SPECIFICATIONS FOR SEEDING MIXES AND PLANTING SPECIFICATIONS.
 - ANY TREES THAT ARE CUT SHALL HAVE THE ROOTS AND STUMPS REMAIN TO LIMIT SOIL DISTURBANCE AND EROSION. HERBICIDE TREATMENT OF INVASIVE PLANTS IS INCLUDED IN THIS PROJECT UNDER ITEM 102.3.
 - LIMITS OF WORK FOR TEMPORARY UTILITY RELOCATION ARE SHOWN ON THIS PLAN. CONSTRUCTION VEHICLES WILL NOT BE PERMITTED TO ENTER VEGETATED WETLAND AREAS. ANY WORK WITHIN THIS AREA SHALL BE PERFORMED BY HAND OR BY LIFTING MATERIALS (CUT TREES) USING A BOOM FROM OUTSIDE OF THE RESOURCE AREA.



| PERMANENT IMPACT AREAS | |
|------------------------|----------|
| WATERS OF THE US | 1,981 SF |
| VEGETATED WETLANDS | 0 SF |

| TEMPORARY IMPACT AREAS | |
|------------------------|----------|
| WATERS OF THE U.S. | 1,215 SF |
| VEGETATED WETLANDS | 592 SF |

| WETLAND FLAG DELINEATION | |
|--------------------------|-----------------------------|
| FLAG SERIES | CLASSIFICATION |
| A1 - A-6, B1 - B7 | BANKS OF TOWN BROOK |
| B5 - B7 | BORDERING VEGETATED WETLAND |

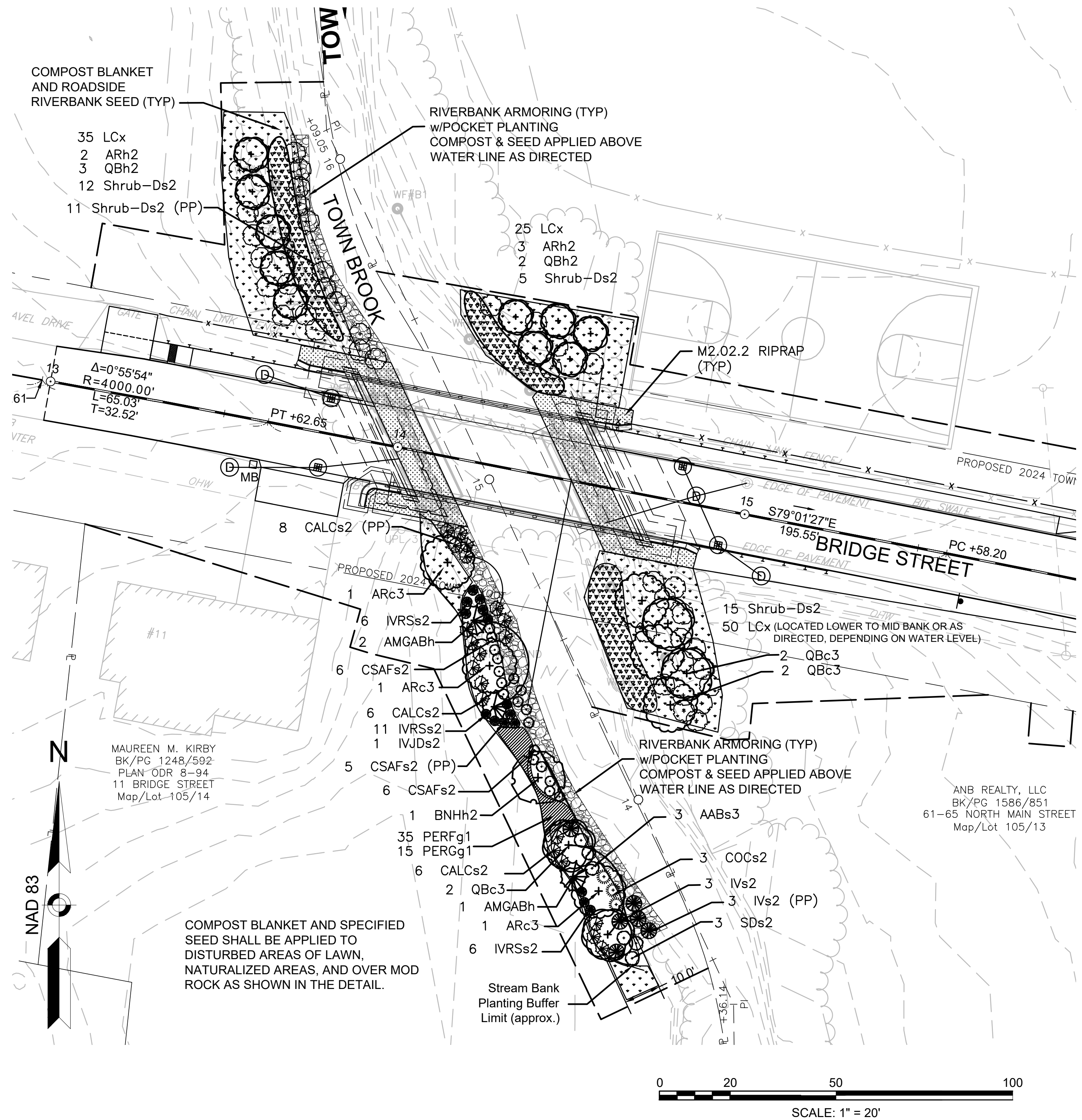


CULVERT OUTLET FROM DRAINAGE (BETWEEN B-3 AND B-3) IS NON-JURISDICTIONAL

**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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LANDSCAPE PLANTING PLAN



PLANT LIST

| SYM | QTY | SPECIES | SIZE | REMARKS |
|-----------|-----|---|--------------|--------------------|
| ARh2 | 5 | Maple - Red <i>Acer rubrum</i> | 6-8 FT | |
| ARc3 | 3 | Maple - Red <i>Acer rubrum</i> | 1-1.5 IN CAL | |
| QBh2 | 5 | Oak - Swamp White <i>Quercus bicolor</i> | 6-8 FT | |
| QBc3 | 6 | Oak - Swamp White <i>Quercus bicolor</i> | 1-1.5 IN CAL | |
| BNHh2 | 3 | Birch - River 'Heritage' <i>Betula nigra</i> 'Heritage' | 6-8 FT | Clump/Note 2 |
| AMGABh | 3 | Serviceberry 'Autumn Brilliance' <i>Amelanchier grand.</i> 'Autumn Brill.' | 4-5 FT CLUMP | |
| COCs2 | 3 | Buttonbush <i>Cephalanthus occidentalis</i> | 2-2.5 FT | |
| AABs3 | 3 | Red Chokeberry - 'Brilliantissima' <i>Aronia arbutifolia</i> 'Brilliantissima' | 2-3 FT | |
| CSAFs2 | 12 | Dogwood 'Arctic Fire' <i>Cornus sericea</i> 'Arctic Fire' | 2-2.5 FT | |
| CALCs2 | 12 | Summersweet 'Compact' <i>Clethra alnifolia</i> 'Compacta' | 2-2.5 FT | |
| IVRSs2 | 23 | Winterberry - Red Sprite (female) <i>Ilex verticillata</i> 'Red Sprite' (female) | 2-2.5 FT | |
| IVJs2 | 1 | Winterberry - 'Jim Dandy' (male) <i>Ilex verticillata</i> 'Jim Dandy' (male) | 2-2.5 FT | |
| SDs2 | 3 | Pussy Willow <i>Salix discolor</i> | 2-2.5 FT | |
| IVs2 | 3 | Winterberry - Common <i>Ilex verticillata</i> | 2-2.5 FT | 1 male |
| PERFg1 | 35 | Perennials Perennials | 1 Gallon | See Specifications |
| PERGg1 | 70 | Perennial Grass Perennial Grass | 1 Gallon | See Specifications |
| Shrub-Ds2 | 32 | Shrub - Deciduous Shrub - Deciduous | 2-2.5 FT | See Specifications |
| Pocket | 27 | Pocket Plantings Pocket Plantings | Varies | See Below |
| LCx | 200 | Live Cuttings Live Cuttings | 3-4 FT | |

THE 27 POCKET PLANTINGS LISTED IN THE TABLE ABOVE WILL BE PAID FOR UNDER ITEM 799.888 "SHRUB - POCKET PLANTING IN MODIFIED ROCK". THEY WILL NOT BE PAID FOR UNDER THE SEPARATE PLANTING ITEMS. THE POCKET PLANTINGS ARE:

- 5 EACH - DOGWOOD "ARCTIC FIRE"
- 8 EACH - SUMMERSWEET "COMPACT"
- 3 EACH - WINTERBERRY - COMMON
- 11 EACH - SHRUB - DECIDUOUS

GENERAL NOTES

1. PLANTING AND SEEDING PLAN IS SCHEMATIC ONLY.
2. ACTUAL PLANT QUANTITIES WILL BE DETERMINED IN CONSTRUCTION AND WILL DEPEND ON PLANTS REMOVED FOR CONSTRUCTION WORK AND ON MANAGEMENT OF INVASIVE SPECIES.
3. PLANT LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS WILL BE PER THE MASSDOT LANDSCAPE ARCHITECT.
4. ADJACENT PROPERTY OWNER/S SHALL BE NOTIFIED PRIOR TO PLANTING.

PLANT NOTES

1. SEE SPECIAL PROVISIONS REGARDING QUANTITIES, SPECIES (IF NOT SHOWN), AND LOCATIONS.
2. PLANTS NOT SHOWN ON PLAN SHALL BE FIELD LOCATED BY THE MASSDOT LANDSCAPE ARCHITECT.
3. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
4. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, CULTIVAR, & SIZE.
6. IMMEDIATELY AFTER ACCEPTANCE OF PLANTING, TAGS AND RIBBONS SHALL BE REMOVED.
7. ALL PLANTS WILL BE MULCHED PER PLANS AND SPECIFICATIONS.
8. ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
9. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.

SEEDING NOTES

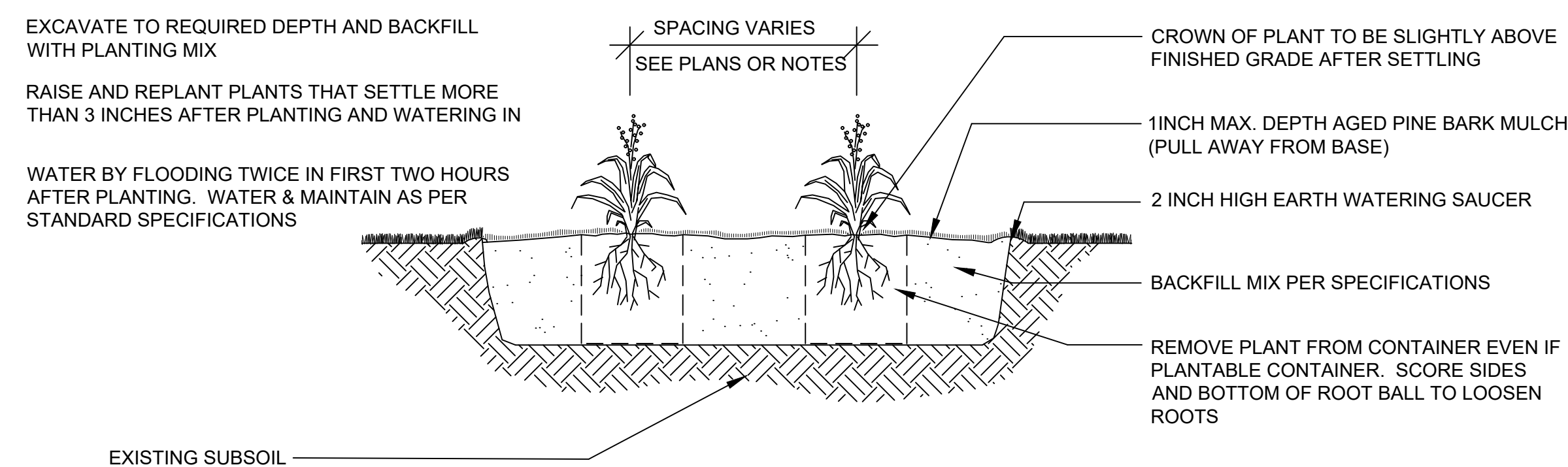
1. SITE PREPARATION SHALL BE APPROVED BY THE ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO SEEDING.
2. **LAWN:**
 - 2.1. AREA OF LAWN DISTURBED FOR STREAM WORK SHALL BE RE-SEEDING WITH LAWN MIX UP TO THE STREAM BANK BUFFER LIMIT. SEEDING AND RESTORATION MEASURES SHALL BE PER THE SPECIAL PROVISION FOR LAWN REMEDIATION AND SEEDING.
 - 2.2. ACTUAL LIMITS OF LAWN SEED VERSUS NATIVE SEED SHALL BE COORDINATED WITH THE HOMEOWNER BASED ON MOWING.
3. **COMPOST BLANKET AND NATIVE SEED:**
 - 3.1. AREAS PROPOSED ARE APPROXIMATE. ACTUAL AREA WILL BE BASED ON SOIL DISTURBANCE AND SOIL RESTORATION NEED.
 - 3.2. SEEDING AND SUBMITTALS SHALL BE PER THE SPECIAL PROVISIONS.
 - 3.3. SUBMITTALS FOR MIXES SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ORDERING AND PRIOR TO APPLICATION.
 - 3.4. SEED SHALL BE APPLIED BY BROADCAST METHOD ONLY.
 - 3.5. WHEN SEEDING OUT OF SEASON NATIVE SEED APPLICATION RATE SHALL BE INCREASED BY 50%.

LEGEND

- COMPOST BLANKET AND ROADSIDE RIVERBANK MIX (TYP)
- PERENNIAL AND GRASS PLANTING
- LIVE STAKE PLANTINGS (ACTUAL LOCATION TO BE DETERMINED IN THE FIELD)
- RIVERBANK ARMORING
- RIPRAP

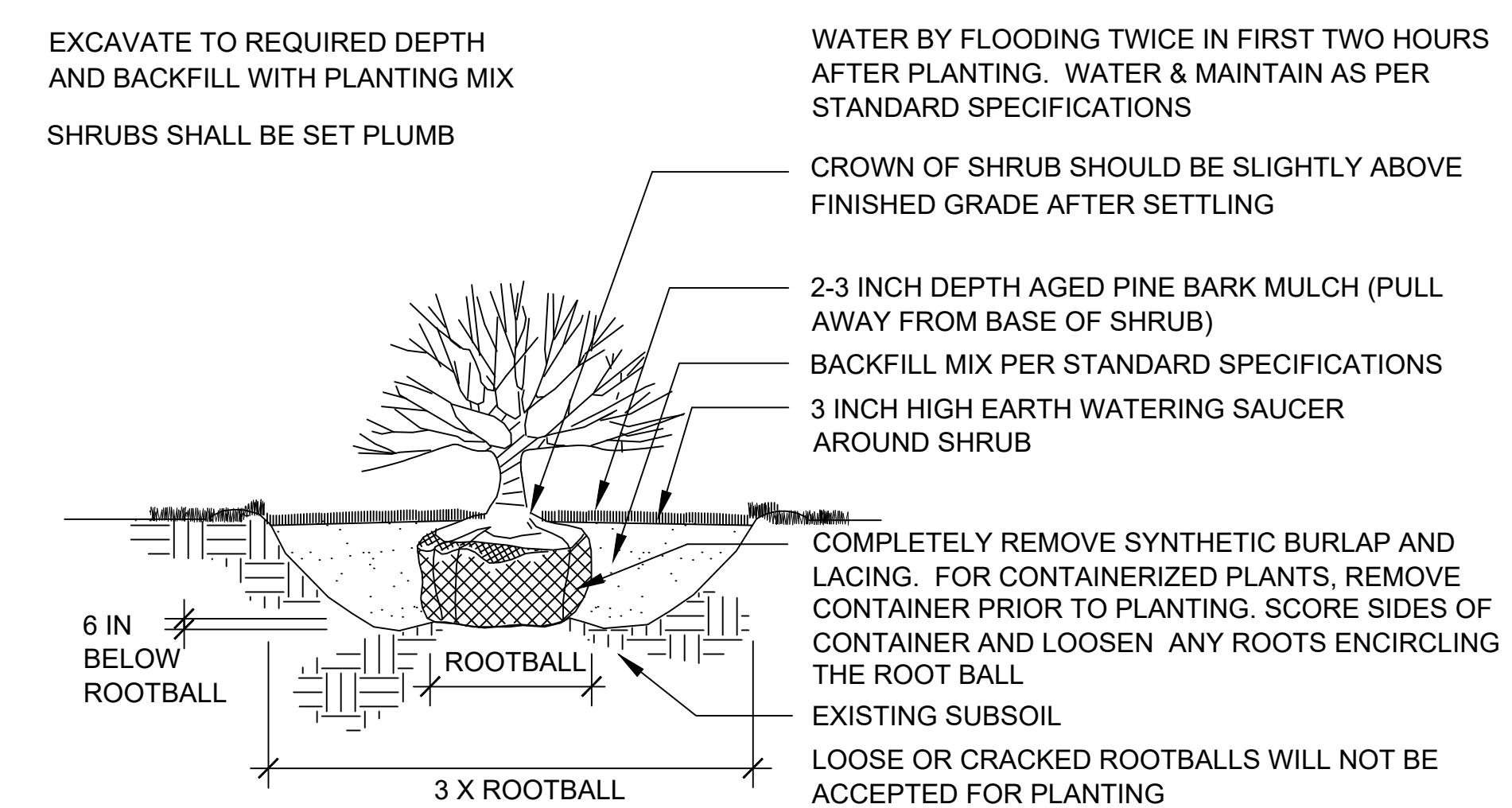
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 12 | 47 |
| PROJECT FILE NO. | | 609428 | |

LANDSCAPE DETAILS



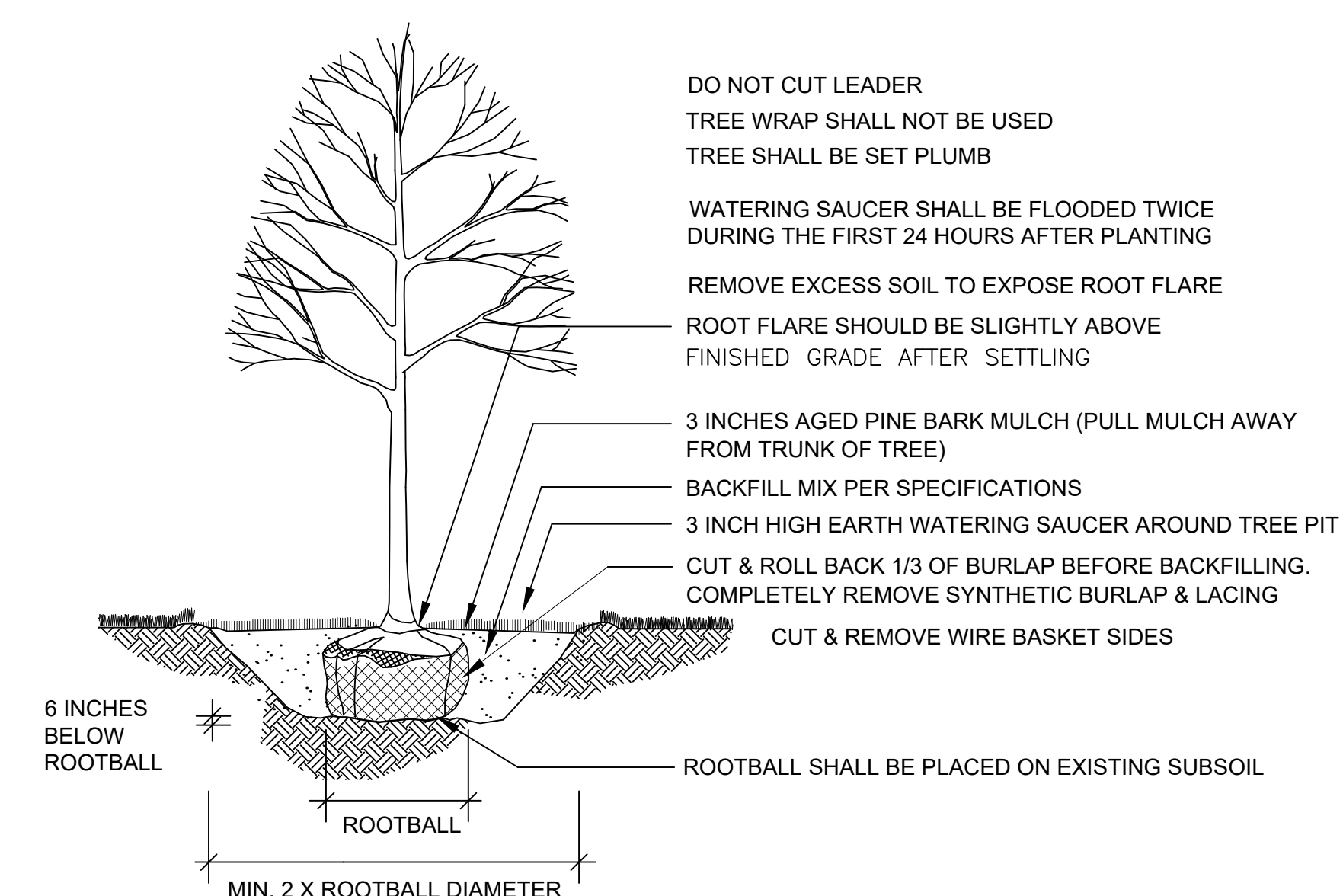
PERENNIAL PLANTING

NOT TO SCALE



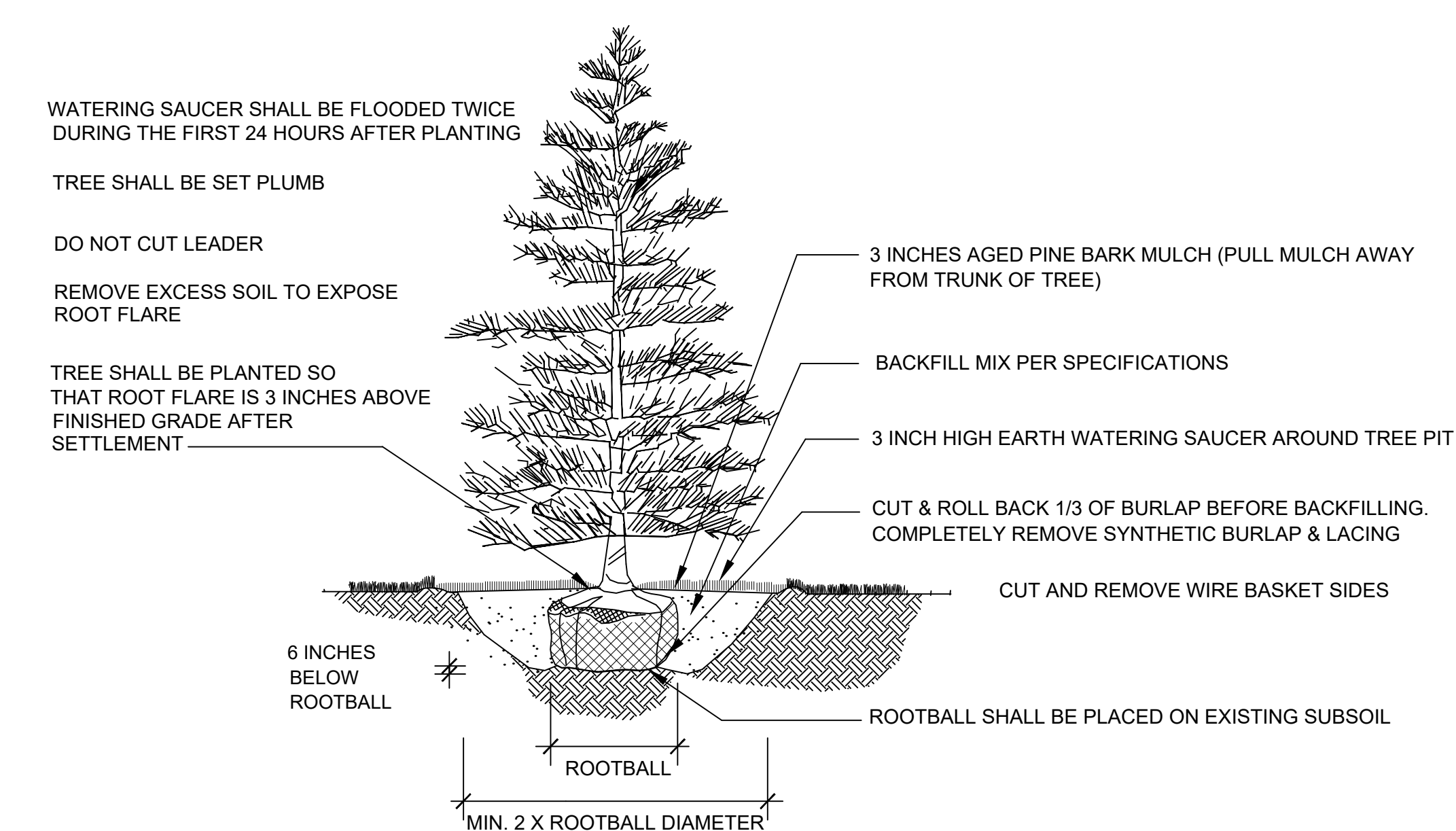
SHRUB PLANTING

NOT TO SCALE



DECIDUOUS TREE PLANTING

NOT TO SCALE

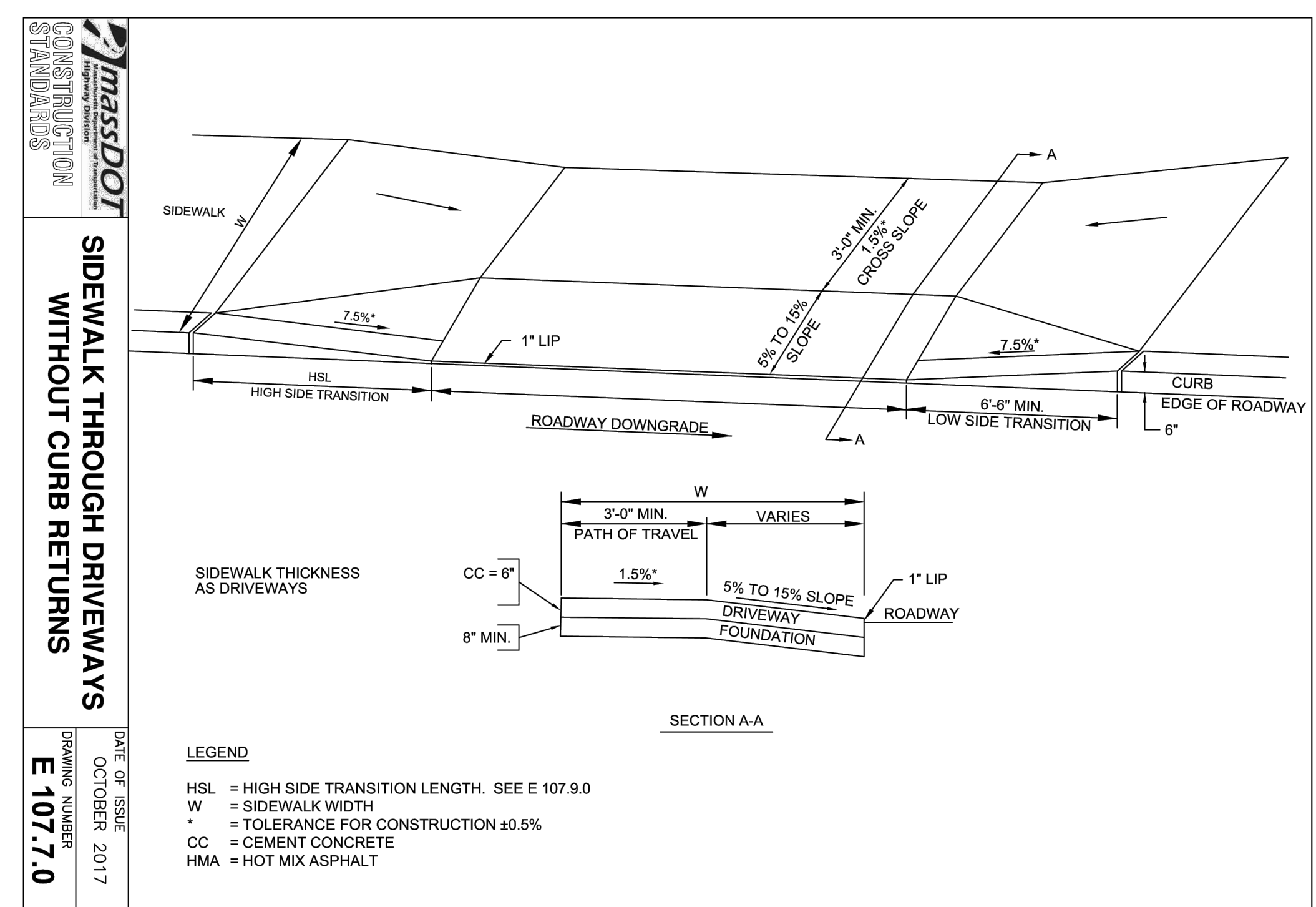


EVERGREEN TREE PLANTING

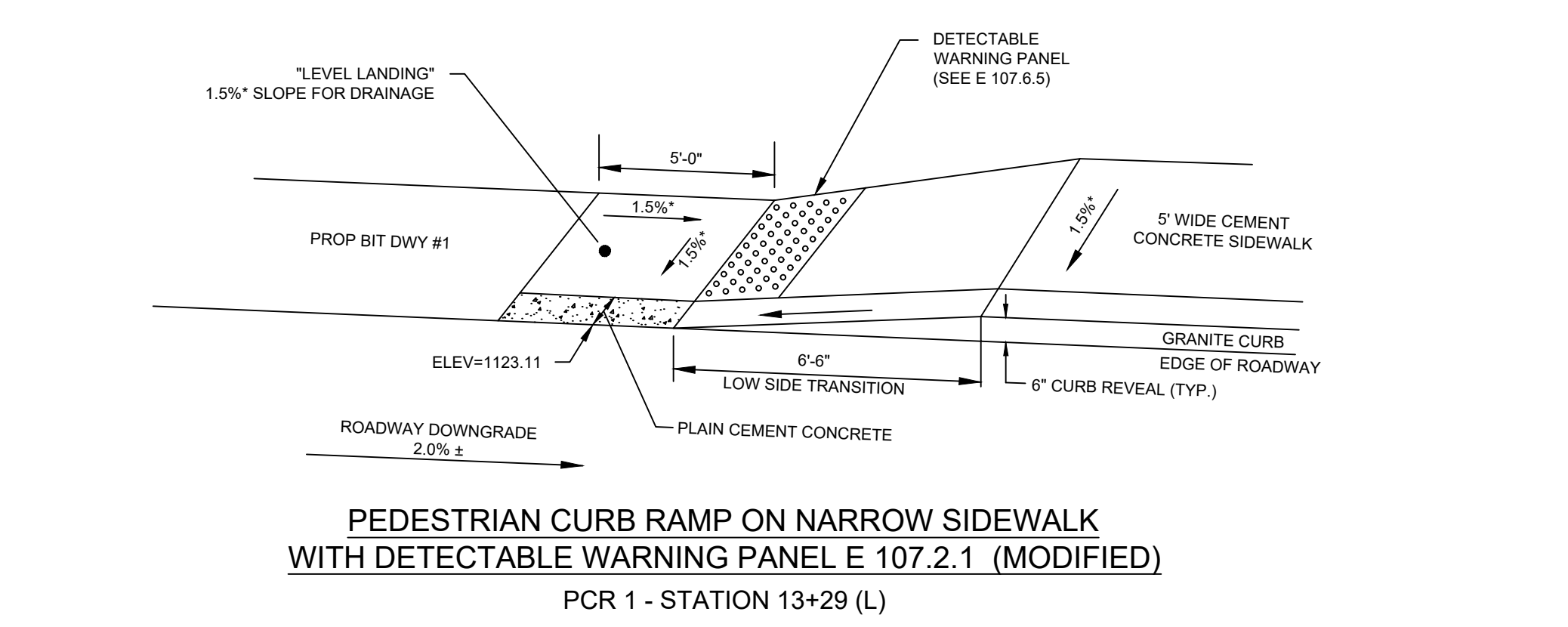
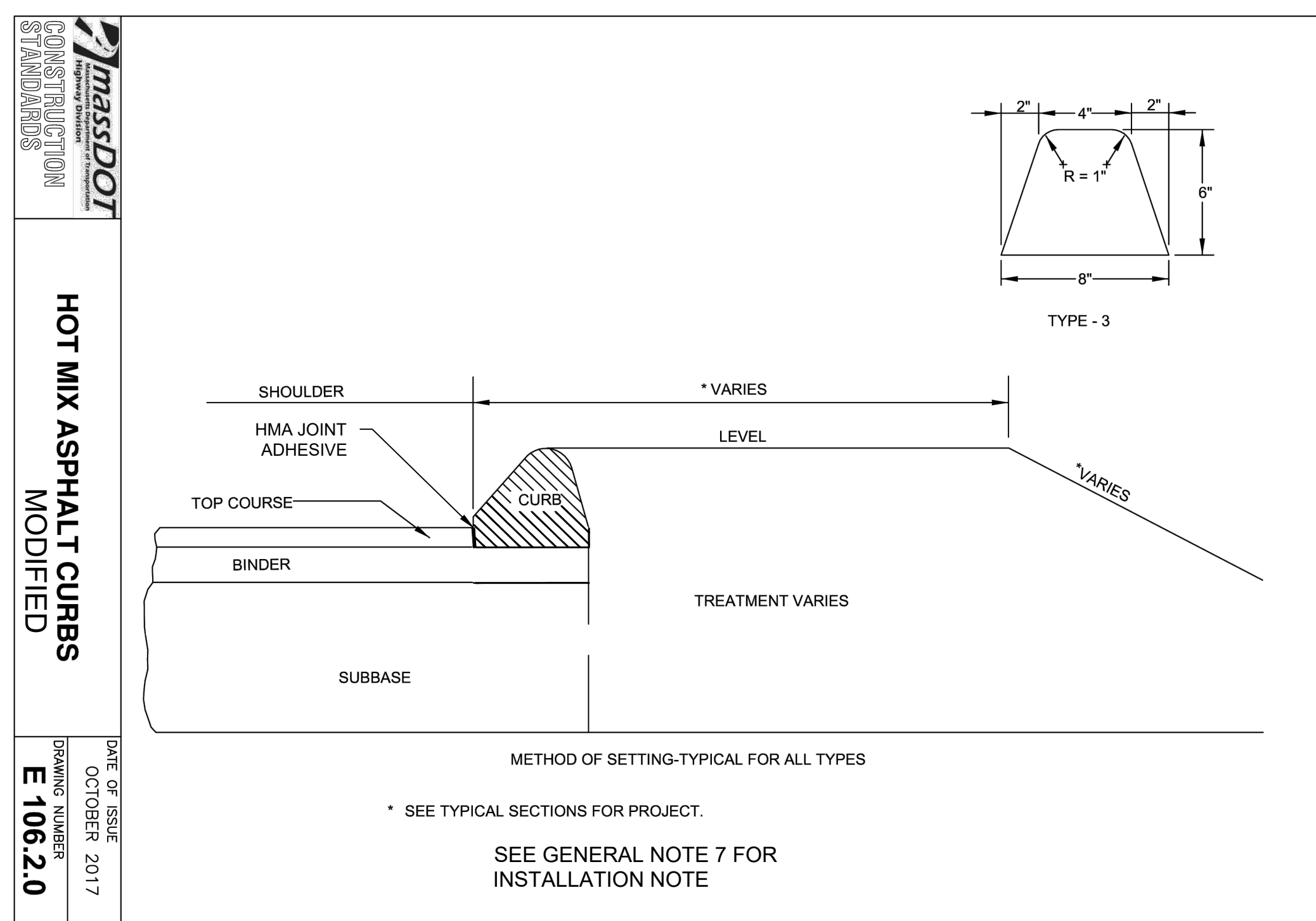
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| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 13 | 47 |
| PROJECT FILE NO. | | 609428 | |

CONSTRUCTION DETAILS 1



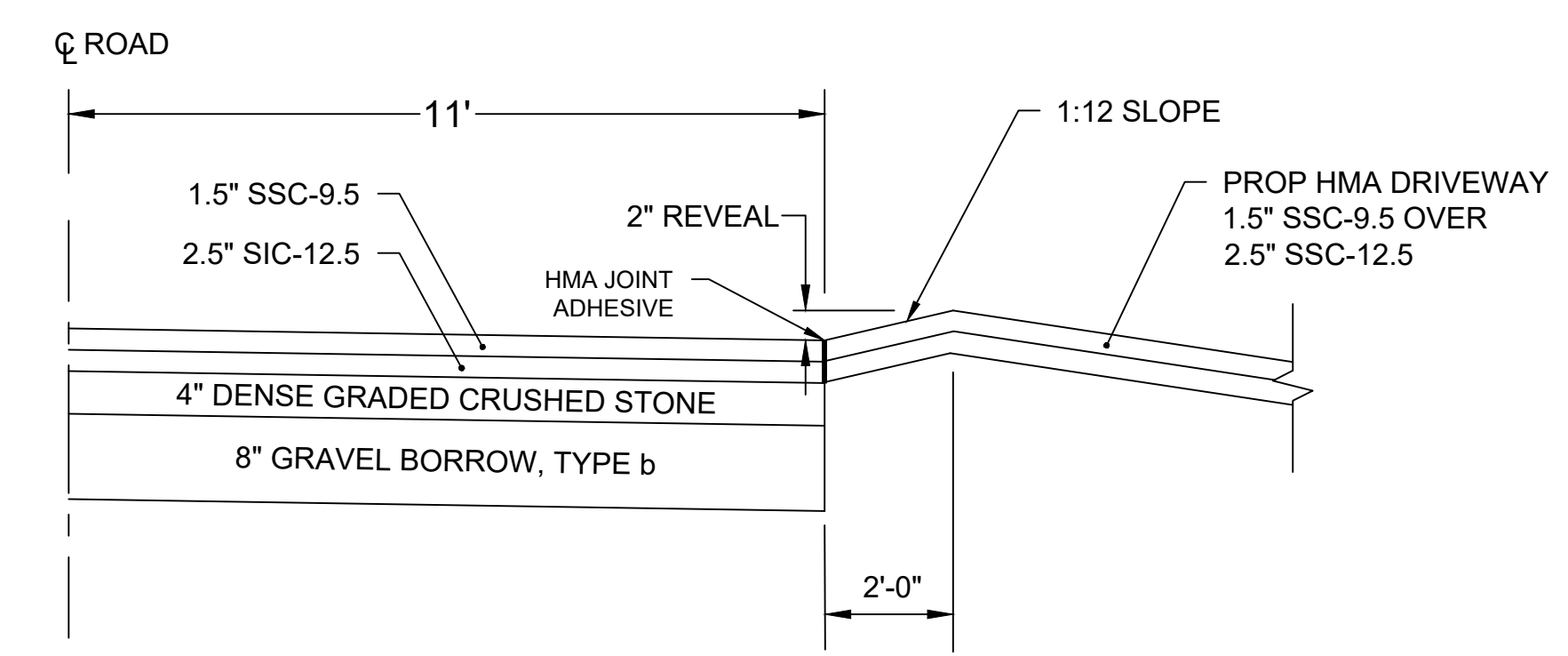
| CONCRETE DRIVEWAY OPENING DATA | | | | | | |
|--------------------------------|------------------------|-----------------------|----------------------------|----------------------|-------------------|------------|
| DWY NO. | RAMP REFERENCE POINT | WIDTH OF SIDEWALK (W) | PATH OF TRAVEL 3'-0" (MIN) | ROADWAY GUTTER SLOPE | TRANSITION LENGTH | |
| | | | | | LEFT SIDE | RIGHT SIDE |
| 1 | STA 16+00.00, 11.0' LT | 5'-5" | 3'-0" | 4.2%± | 6'-6" | 15'-0" |



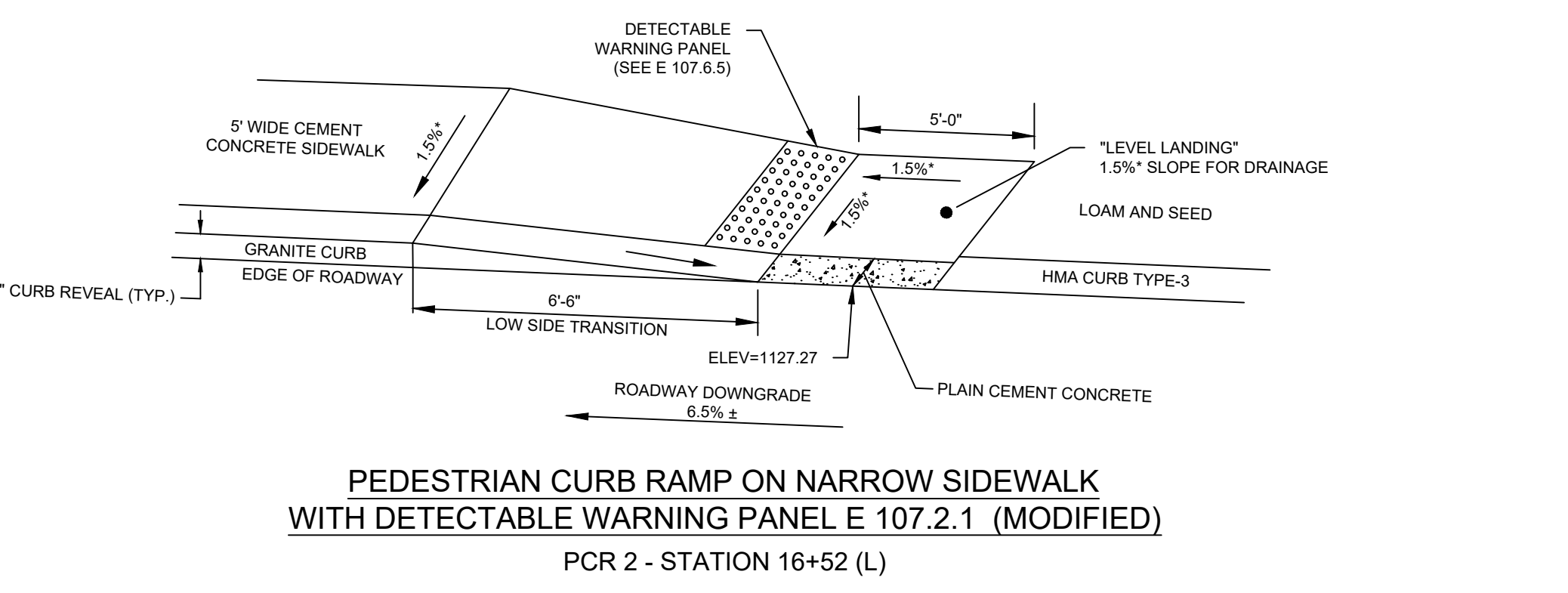
| PCR # | RAMP REFERENCE POINT | | LENGTH OF RAMP | WIDTH OF SIDEWALK (W) | WIDTH OF RAMP ENTRANCE (5' MIN) | DEPTH OF LEVEL LANDING (4' MIN) | ROADWAY GUTTER SLOPE | TRANSITION LENGTH | |
|-------|----------------------|----------|----------------|-----------------------|---------------------------------|---------------------------------|----------------------|-------------------|------------|
| | STATION | OFFSET | | | | | | LEFT SIDE | RIGHT SIDE |
| 1 | 13+29.0 | 11.5' LT | 6'-6" | 5'-0" | 5'-0" | 5'-0" | -2.0% | N/A | 6'-6" |
| 2 | 16+52.5 | 11.5' LT | 6'-6" | 5'-0" | 5'-0" | 5'-0" | +6.0% | 6'-6" | N/A |

GENERAL NOTES

- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL RESTORE THE EXISTING SURFACE PAVEMENTS AND TURF DISTURBED BY THE PROPOSED WORK AND SHALL PATCH ALL HOLES RESULTING FROM THE CONTRACTOR'S OPERATIONS, WITH MATERIALS SIMILAR TO THE EXISTING.
- THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, REUSING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RELOCATE" OR "REMOVE AND RESET" (R&R).
- IN MAKING JOINTS ALONG ANY ADJOINING EDGE SUCH AS CURB, GUTTER, OR AN ADJOINING PAVEMENT, AND AFTER THE MIXTURE IS PLACED BY THE MECHANICAL SPREADER, JUST ENOUGH OF THE HOT MATERIAL SHALL BE PLACED BY HAND METHOD TO FILL ANY SPACE LEFT OPEN. THESE JOINTS SHALL BE PROPERLY "SET-UP" WITH THE BACK OF A RAKE AT THE PROPER HEIGHT AND LEVEL TO RECEIVE THE MAXIMUM COMPACTION. THE WORK OF "SETTING-UP" THESE JOINTS SHALL BE PERFORMED ONLY BY COMPETENT WORKMEN.
- HOT MIX ASPHALT CURB (TYPE-3) SHALL BE SET IN THE SURFACE COURSE AND HAVE A 6 INCH REVEAL.
- ALL SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND RESET UNLESS NOTED OTHERWISE OR AS DIRECTED.
- ALL PROPOSED PAVEMENT MARKINGS SHALL BE WATER-BORNE.
- EXISTING SITE TOPOGRAPHY, DETAIL, PROPERTY LINE, AND CONSTRUCTION BASELINE INFORMATION SHOWN ON THE PLANS WERE DEVELOPED FROM SURVEY INFORMATION PREPARED BY GAROFALO & ASSOCIATES, INC., DATED JANUARY, FEBRUARY, MARCH & AUGUST of 2020. FOR TRAVERSE INFORMATION SEE MASSACHUSETTS HIGHWAY DEPARTMENT LANESBOROUGH, MA. FIELD BOOK #40812.
- A BENCHRUN USING THE SINGLE WIRE METHOD WAS USED TO ESTABLISH VERTICAL CONTROL ON TRAVERSE POINTS AND RECORDED IN FIELD BOOK #40812.
- HORIZONTAL CONTROL WAS ESTABLISHED BY INSTRUMENT SURVEY AND VERTICAL CONTROL BY DIGITAL LEVELING AND PROVIDED BY MASSDOT ON JANUARY, 2020. MASSDOT TRAVERSE CONTROL POINT #'S 2194 AND 2195 WERE USED BY GAROFALO & ASSOCIATES AS THEIR POINT #'S RESPECTIVELY.
- THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) 72 HOURS PRIOR TO THE INITIATION OF WORK AND SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY STATE/LOCAL PERMITS AND/OR APPROVALS.
- ALL BRIDGE WORK, INCLUDING STRUCTURAL COMPONENTS, HAS BEEN SHOWN ON THE BRIDGE DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY HIGHWAY BOUNDS OR PRIVATE PROPERTY MONUMENTATION THAT MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION, TO ITS LOCATION JUST PRIOR TO CONSTRUCTION.



HMA DRIVEWAY BERM DETAIL
STATION 13+62 TO 13+88



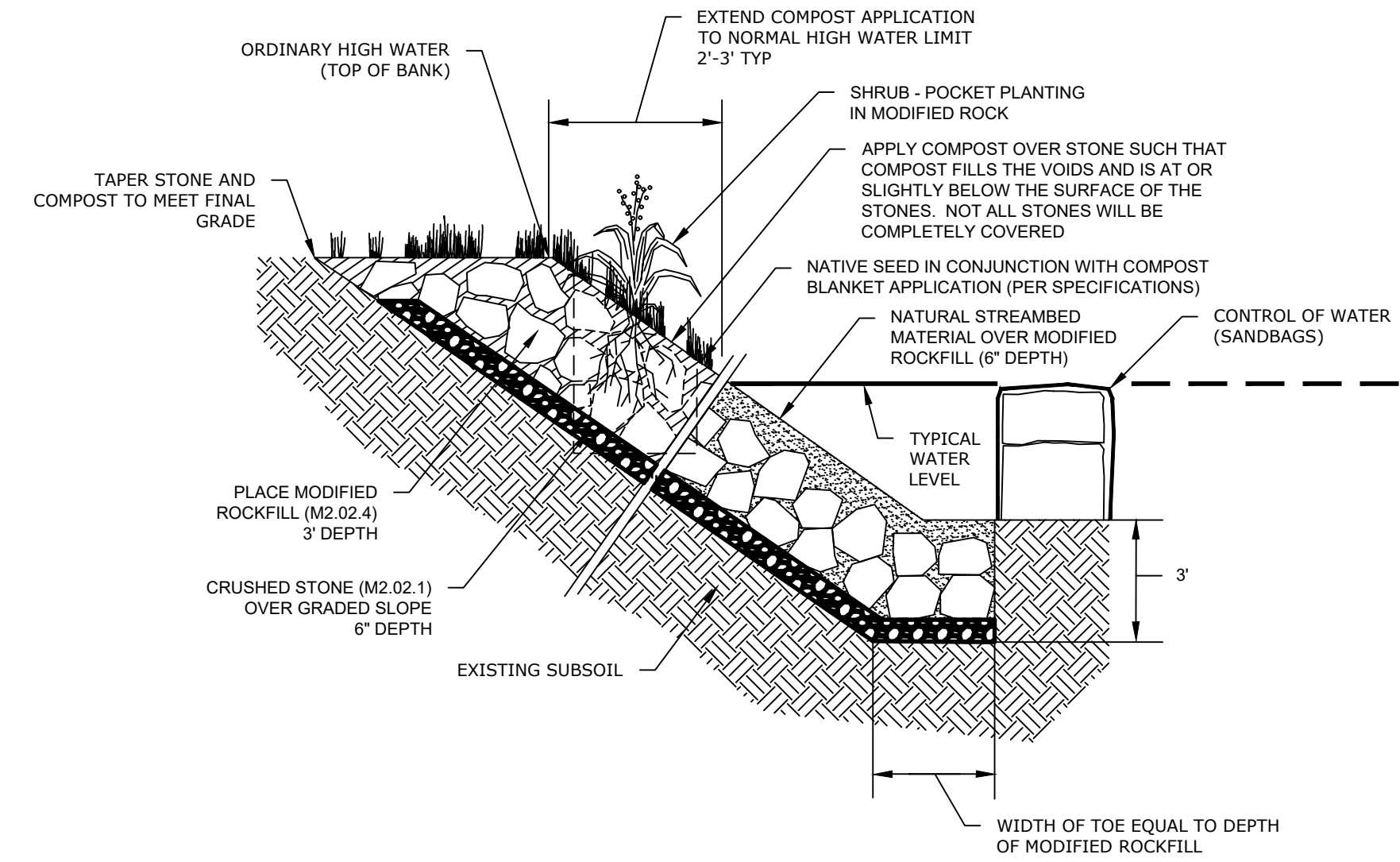
PEDESTRIAN CURB RAMP ON NARROW SIDEWALK
WITH DETECTABLE WARNING PANEL E 107.2.1 (MODIFIED)
PCR 2 - STATION 16+52 (L)

PEDESTRIAN CURB RAMP NOTES

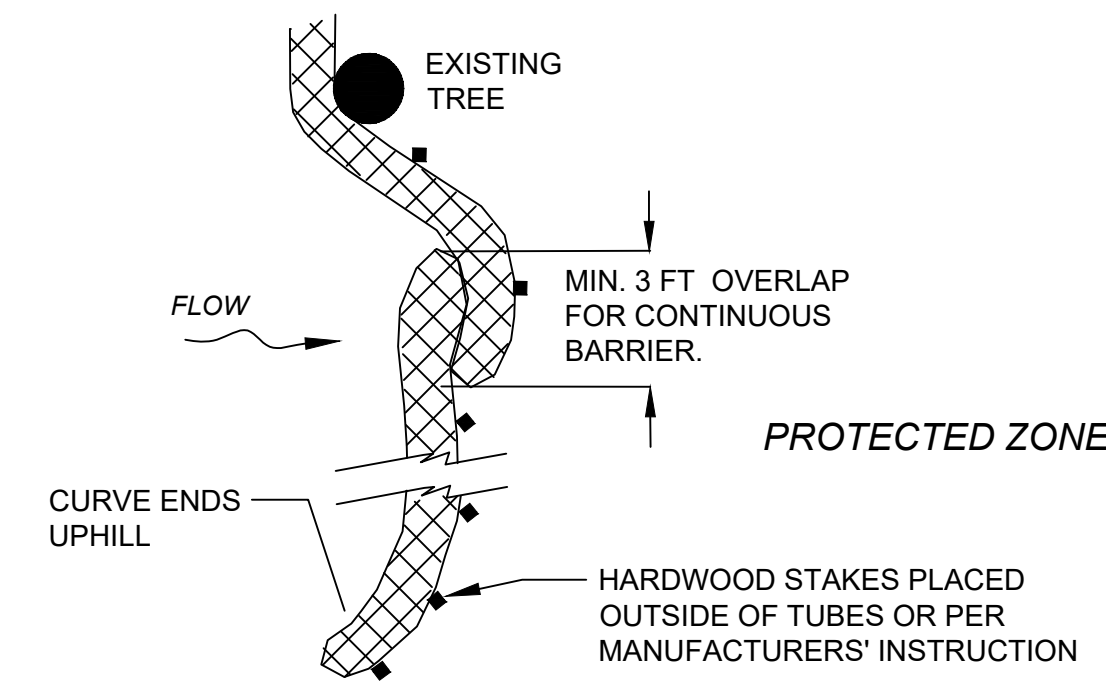
- THIS IS A MODIFICATION OF STANDARD DETAIL E 107.2.1. THE LOCATION OF THE DETECTABLE WARNING PANEL HAS BEEN REVISED AND THE RAMP WILL ONLY BE LOCATED ON ONE SIDE OF THE LEVEL LANDING AREA (AS SHOWN IN EACH INDIVIDUAL DETAIL).
- ROADWAY, GUTTER AND FIRST 6' OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS
- * TOLERANCE FOR CONSTRUCTION ±0.5%.
- SEE 107.6.5 FOR DETAILS OF DETECTABLE WARNING PANEL.

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 14 | 47 |
| PROJECT FILE NO. | | 609428 | |

CONSTRUCTION DETAILS 2

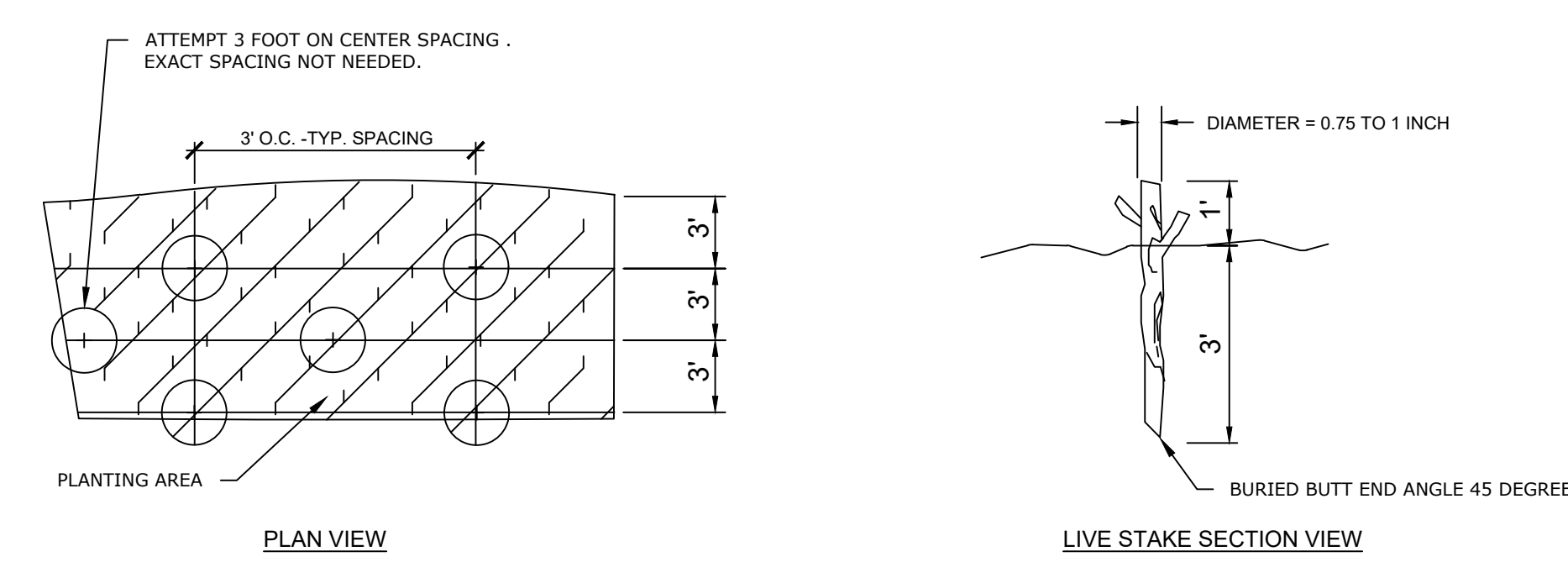


RIVERBANK ARMORING AND COMPOST/SEEDING
NOT TO SCALE



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.

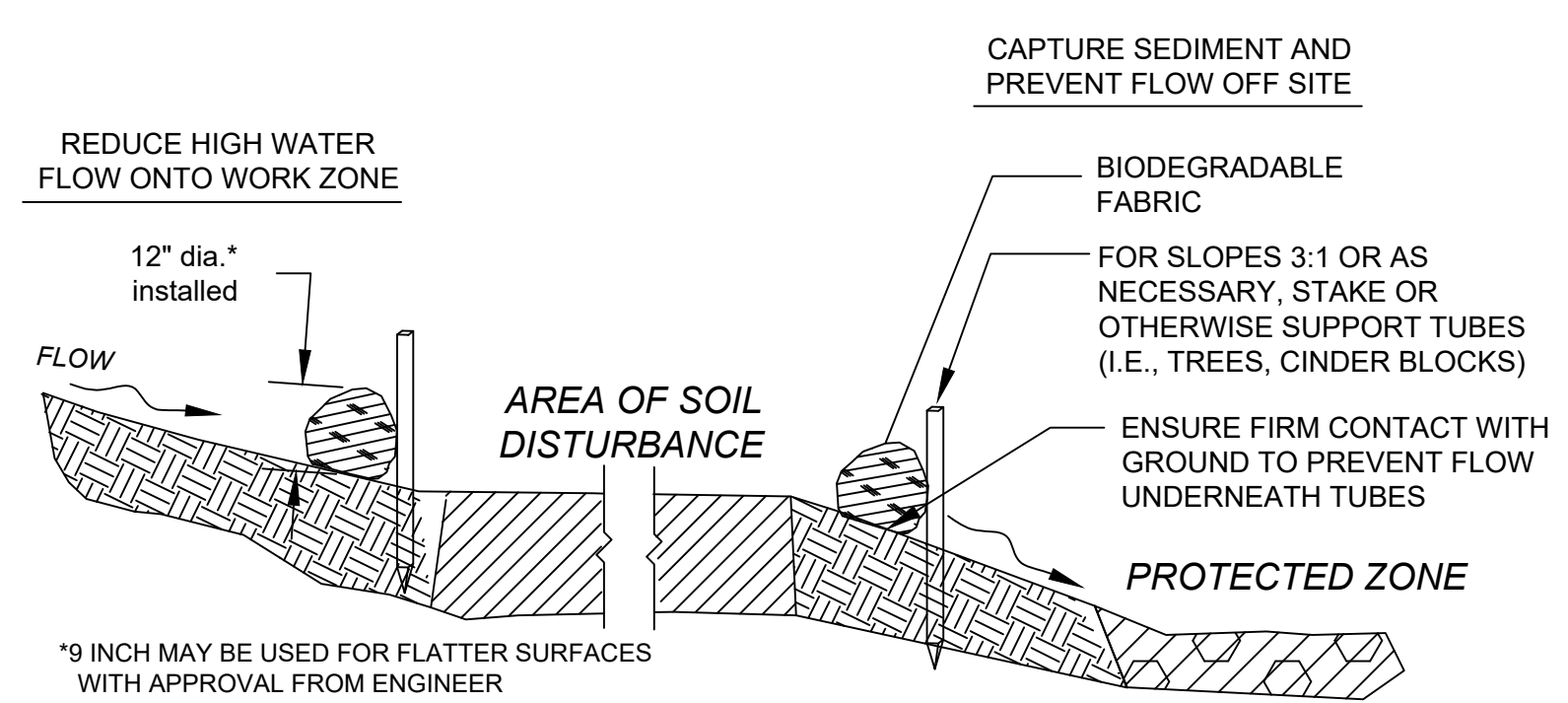
PLAN VIEW



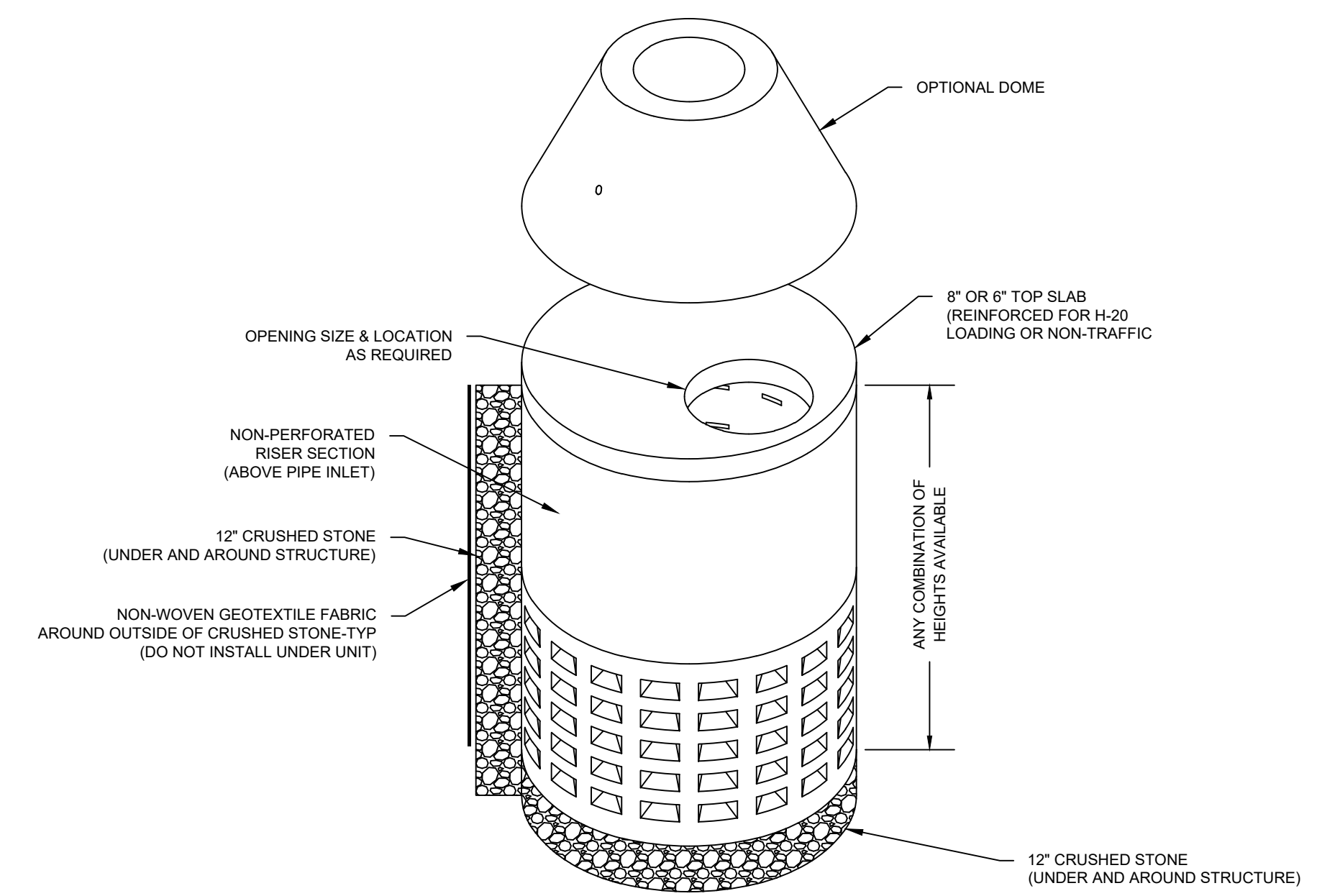
LIVE STAKE PLANTINGS
NOT TO SCALE

LIVE STAKE PLANTING NOTES:

1. PLANT MATERIALS SHOULD BE PLANTED THE DAY THEY ARRIVE ON SITE. PLANTS AND CUTTINGS THAT CANNOT BE PLANTED THE DAY THEY ARRIVE SHALL BE STORED ON SITE UNDER A WET TARP TO PROTECT THEM FROM WIND, DIRECT SUNLIGHT, DRYING OR OTHER DAMAGE. CUTTINGS OR UNROOTED STOCK THAT IS NOT PLANTED WITHIN TWO DAYS AFTER ARRIVAL ON THE SITE SHALL BE DISCARDED UNLESS REFRIGERATED AT 40 TO 50 DEGREES FAHRENHEIT.
2. WILLOW CUTTINGS FOR BIOENGINEERING SHOULD BE SOAKED 24 - 48 HOURS PRIOR TO INSTALLATION.
3. SEEDING WITH ROADSIDE RIVERBANK SEED MIX SHALL BE AS SPECIFIED AND SHALL OCCUR AFTER LIVE STAKES/TUBELINGS HAVE BEEN INSTALLED. PRIOR TO SEEDING, SOILS SHALL BE HAND RAKED OR OTHERWISE LIGHTLY SCARIFIED. SEED SHALL BE HAND BROADCAST WITH SAND OR SAWDUST TO ALLOW FOR EVEN SPREAD. FOLLOWING SEEDING, THE AREA SHALL BE HYDROMULCHED PER SPECIFICATIONS



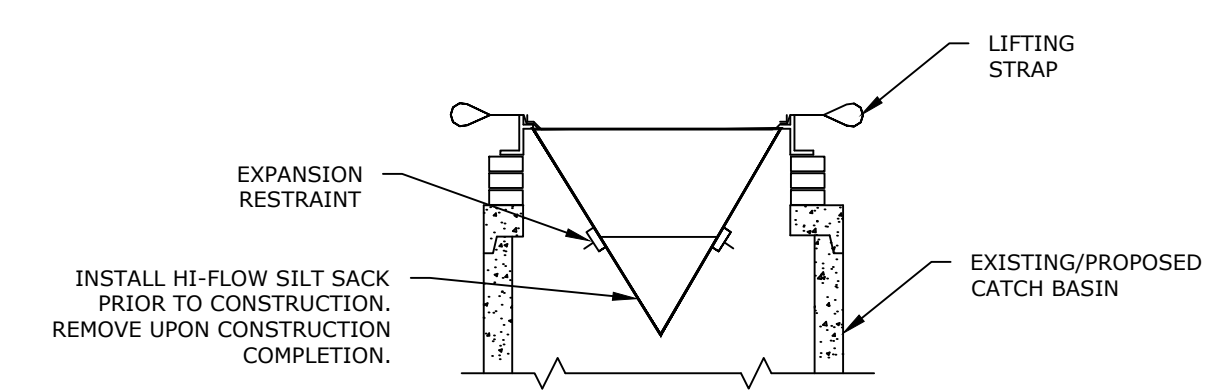
SEDIMENT BARRIER - COMPOST FILTER TUBE
NOT TO SCALE



5' DIAMETER LEACHING BASIN
NOT TO SCALE

LEACHING BASIN NOTES:

1. 12" CRUSHED STONE TO BE INSTALLED UNDER STRUCTURE INVERT AND AROUND SIDES OF STRUCTURE. THIS STONE SHALL BE UNIFORMLY GRADED, WASHED, 1.5-INCH CRUSHED STONE WITH A VOID SPACE OF APPROXIMATELY 40%.
2. NON-WOVEN GEOTEXTILE FABRIC SHALL BE INSTALLED AROUND THE OUTSIDE OF THE CRUSHED STONE. NO FABRIC SHALL BE INSTALLED AT THE BOTTOM OF THIS SYSTEM DUE TO POTENTIAL FOR CLOGGING.
3. PIPE INVERT TO BOTTOM OF PERFORATED CONCRETE UNIT IS 2-FEET. ANY RISER STRUCTURES USED ABOVE THE INLET PIPE SHALL BE NON-PERFORATED.



SILT SACK IN CATCH BASIN DETAIL
NOT TO SCALE

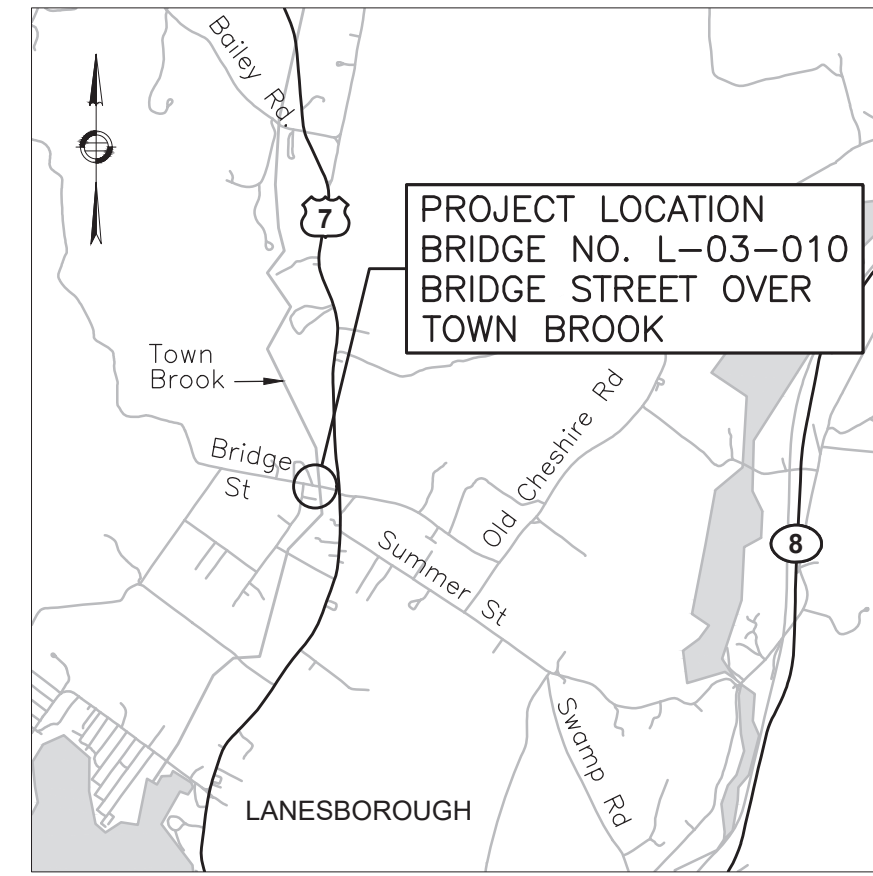
**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 15 | 47 |
| PROJECT FILE NO. | | | 609428 |

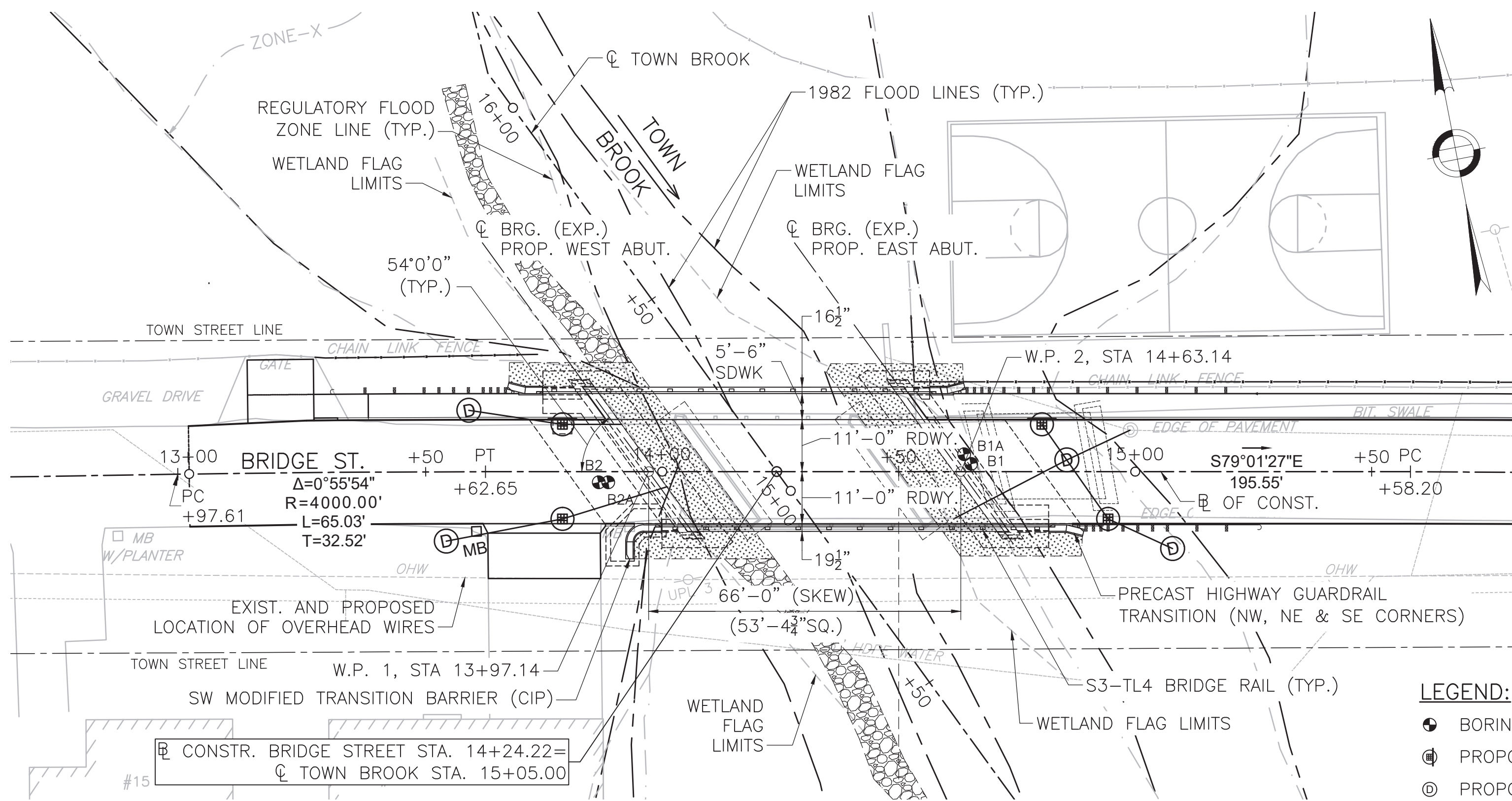
**KEY PLAN, LOCUS, PROFILES AND
ESTIMATED QUANTITIES**

**ESTIMATED QUANTITIES
(NOT GUARANTEED)**

| ITEM | QUANTITY |
|---|----------|
| *114.1 DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. L-03-010 (CAJ)..... | 1 LS |
| 123. MUCK EXCAVATION..... | 50 CY |
| *127.1 REINFORCED CONCRETE EXCAVATION..... | 72 CY |
| 140. BRIDGE EXCAVATION..... | 900 CY |
| 144. CLASS B ROCK EXCAVATION..... | 50 CY |
| 151.2 GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES..... | 225 CY |
| 153.1 CONTROLLED DENSITY FILL - NON-EXCAVATABLE..... | 6 CY |
| 156. CRUSHED STONE..... | 50 TON |
| 156.1 CRUSHED STONE FOR BRIDGE FOUNDATIONS..... | 230 TON |
| *180.02 PERSONAL PROTECTION LEVEL C UPGRADE..... | 24 HR |
| *180.03 LICENSED SITE PROFESSIONAL SERVICES..... | 24 HR |
| *181.11 DISPOSAL OF UNREGULATED SOIL..... | 3 TON |
| *181.12 DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY..... | 3 TON |
| *181.13 DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY..... | 3 TON |
| *181.14 DISPOSAL OF HAZARDOUS WASTE..... | 3 TON |
| *184.1 DISPOSAL OF TREATED WOOD PRODUCTS..... | 1 TON |
| 450.6 SUPERPAVE BRIDGE SURFACE COURSE - 9.5 (SSC-B - 9.5)..... | 16 TON |
| 450.7 SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 (SPC-B - 9.5)..... | 16 TON |
| *950.11 TEMPORARY SUPPORT OF EXCAVATION..... | 1 LS |
| *983.1 RIPRAP..... | 260 TON |
| *991.1 CONTROL OF WATER - STRUCTURE NO. L-03-010 (CAJ)..... | 1 LS |
| *994.011 TEMPORARY PROTECTIVE SHIELDING OUTSIDE FASCIA BEAMS..... | 1 LS |
| *994.012 TEMPORARY PROTECTIVE SHIELDING BETWEEN FASCIA BEAMS..... | 1 LS |
| *995.01 BRIDGE STRUCTURE, BRIDGE NO. L-03-010 (CAJ)..... | 1 LS |



LOCUS MAP
SCALE: 1" = 2,000'



KEY PLAN
SCALE: 1" = 20'

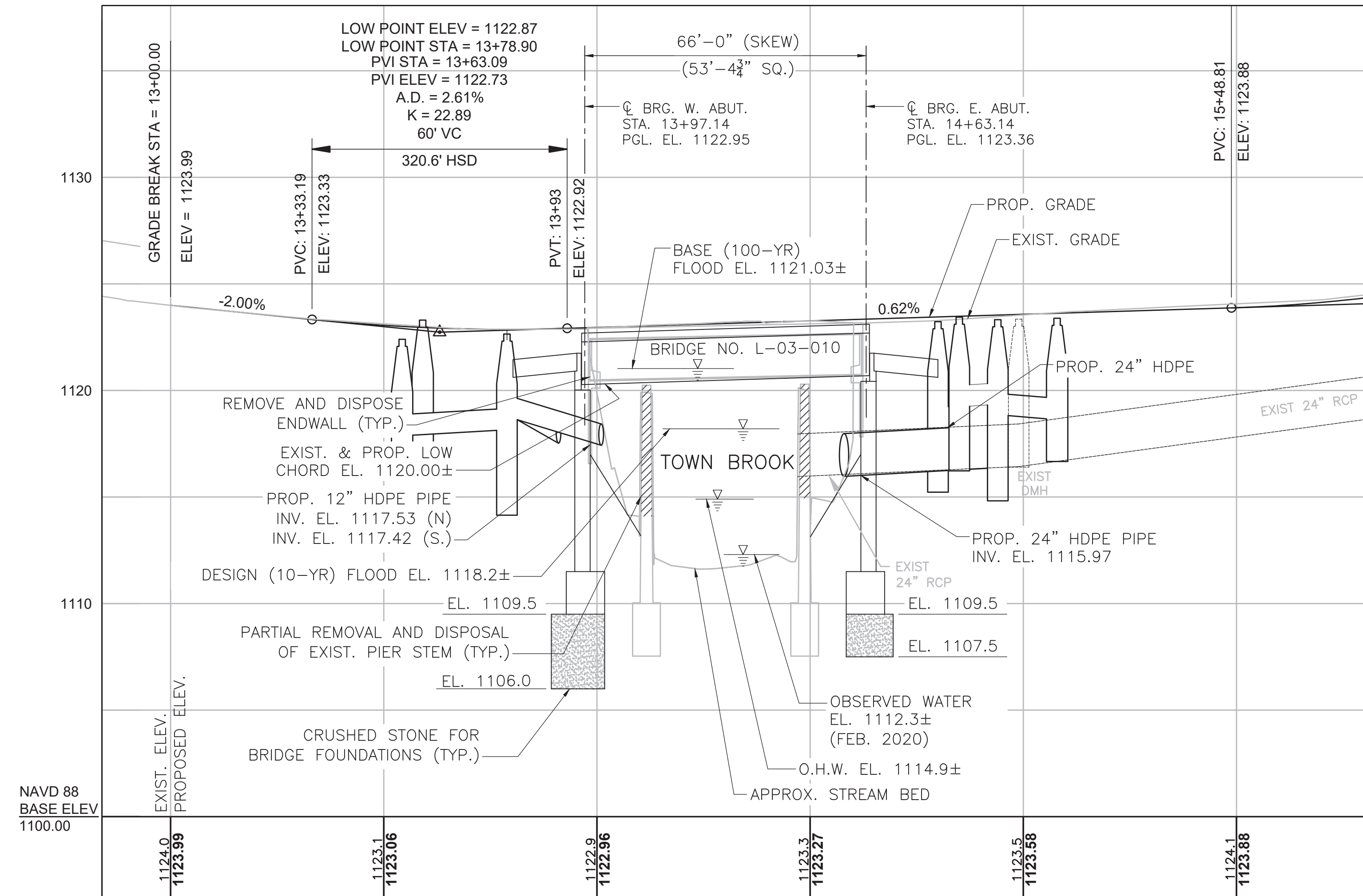
LEGEND:

- BORING
- ⊕ PROPOSED CATCH BASIN
- ⊙ PROPOSED MANHOLE/LEACH BASIN
- ▨ DENOTES PROP. RIPRAP FOR BRIDGES
- ▩ DENOTES PROP. RIPRAP FOR STREAM BANK (HWY. ITEM)

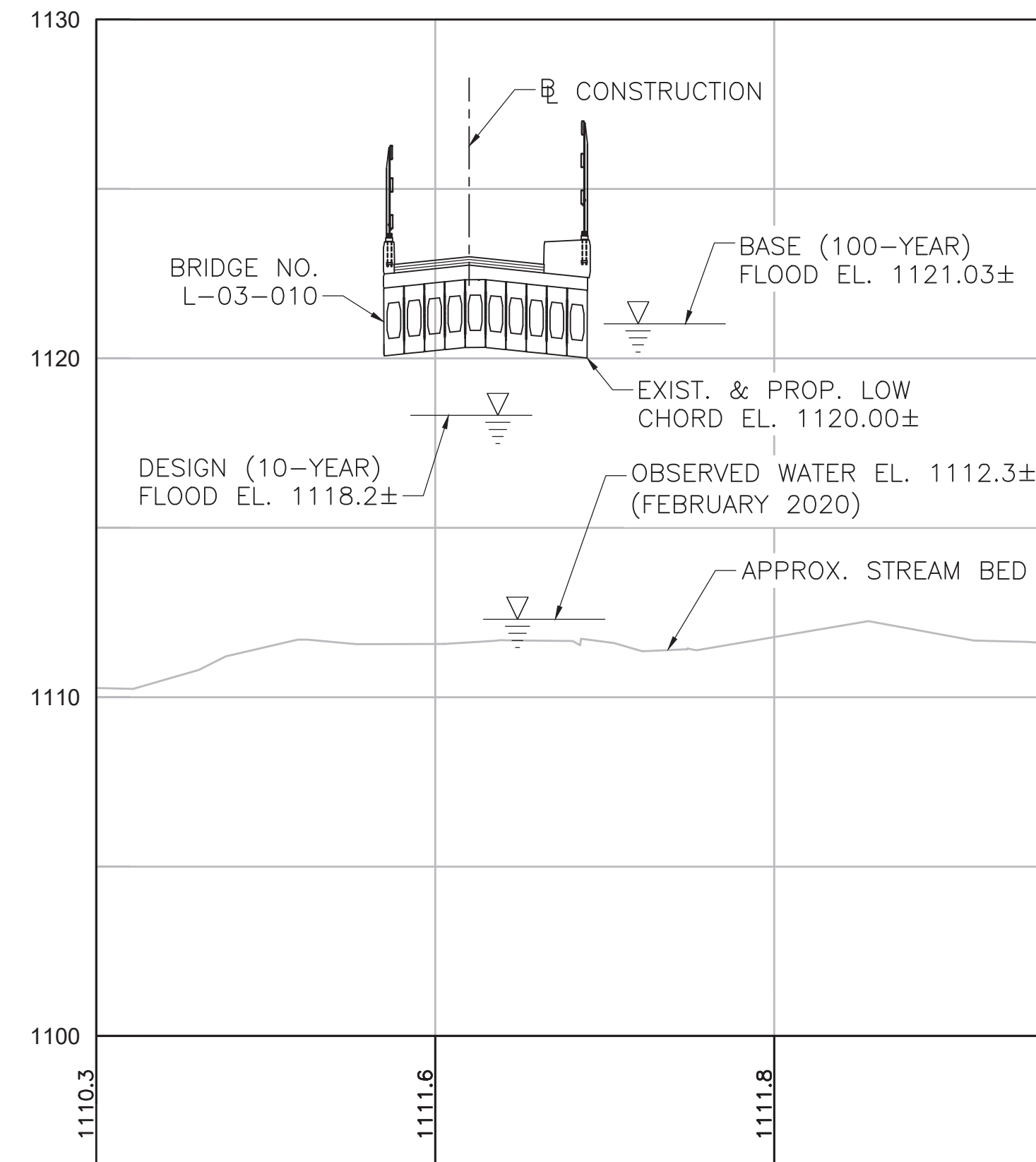
NOTE:
FOR PROJECT LIMITS AND SURVEY BENCH MARKS, SEE HIGHWAY PLANS.

INDEX OF BRIDGE SHEETS

- 1 KEY PLAN, LOCUS, PROFILES AND ESTIMATED QUANTITIES
- 2 GENERAL NOTES
- 3-7 BORING LOGS I-V
- 8 BRIDGE GENERAL PLAN AND ELEVATION
- 9 FOUNDATION PLAN
- 10 WEST ABUTMENT PLAN AND ELEVATION
- 11 EAST ABUTMENT PLAN AND ELEVATION
- 12 ABUTMENT DETAILS I
- 13 ABUTMENT DETAILS II
- 14 ABUTMENT DETAILS III
- 15 WINGWALL DETAILS
- 16 SOUTHWEST MODIFIED BARRIER DETAILS
- 17 FRAMING PLAN
- 18 BEAM DETAILS
- 19 BEARING DETAILS
- 20 PROPOSED TRANSVERSE SECTION AND DECK GRADING PLAN
- 21 DECK, SIDEWALK AND SAFETY CURB DETAILS
- 22 PRECAST GUARDRAIL TRANSITION DETAILS I
- 23 PRECAST GUARDRAIL TRANSITION DETAILS II
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- 25 S3-TL4 BRIDGE RAILING DETAILS



PROFILE ALONG BRIDGE STREET
SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=4'



PROFILE ALONG CENTERLINE OF TOWN BROOK
SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=4'

| | | |
|--|--|--|
| <p>Jeff Lewis Digitally signed by Jeff Lewis Date: 2024.10.30 15:09:09 -0400</p> | NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| | <p>PROPOSED BRIDGE LANESBOROUGH BRIDGE STREET OVER TOWN BROOK</p> <p>MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION 10 PARK PLAZA BOSTON, MASS</p> | |
| <p>GAROFALO & ASSOCIATES, INC. 85 CORLISS STREET P.O. BOX 6145 PROVIDENCE RI 02940</p> | <p>Alexander K. Bardow, P.E. Digitally signed by Alexander K. Bardow, P.E. Date: 2024.10.30 15:30:09 -0400</p> <p>STATE BRIDGE ENGINEER</p> | <p>Chris Sallie Digitally signed by Chris Sallie Date: 2024.11.03 11:24:17 -0500</p> <p>CHIEF ENGINEER</p> |

**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 16 | 47 |
| PROJECT FILE NO. | | 609428 | |

GENERAL NOTES

GENERAL NOTES

DESIGN:

IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS FOR HL-93 LOADING.

EXISTING PLANS:

PLANS FOR EXISTING BRIDGE MAY BE SEEN AT THE OFFICE OF THE BRIDGE ENGINEER, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

BENCH MARKS:

| | | |
|-----------|-------------------|-------------------|
| | SPIKE SET | SPIKE SET |
| ℞ STA. | 12+58.13, 20.4 RT | 15+97.12, 21.7 RT |
| NORTHING | 3019244.3 | 3019179.5 |
| EASTING | 189727.9 | 190060.0 |
| ELEVATION | 1126.14 | 1124.70 |

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

TRAFFIC:

BRIDGE L-03-010 (CAJ) BRIDGE REPLACEMENT SHALL BE DONE IN ONE STAGE WITH COMPLETE BRIDGE CLOSURE AND TRAFFIC DETOUR DURING CONSTRUCTION.

EXISTING CONDITIONS:

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

DATE:

TO BE PLACED ON THE INSIDE FACE OF THE SOUTHWEST MODIFIED TRANSITION BARRIER AND NORTHEAST HIGHWAY GUARDRAIL TRANSITION. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. ALL HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS:

GAROFALO & ASSOCIATES SURVEY NOTEBOOK NO. 40812, PAGE 114 TO 125, WAS USED IN PREPARATION OF THESE CONSTRUCTION DRAWINGS. FILES CAN BE OBTAINED AT THE SURVEY OFFICE, MASSDOT - HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

SCALES:

SCALES AS NOTED ON PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY TWO FOR HALF-SIZE PRINTS (A3).

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

UTILITIES:

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

REINFORCEMENT:

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60.

UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

| MODIFICATION CONDITION | #4 BARS | #5 BARS | #6 BARS |
|--|---------|---------|---------|
| 1. NONE | 16" | 19" | 23" |
| 2. 12" OF CONCRETE BELOW BAR | 20" | 25" | 30" |
| 3. EPOXY COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db | 23" | 29" | 34" |
| 4. COATED BARS, ALL OTHER CASES | 18" | 23" | 27" |
| 5. CONDITION 2. AND 3. | 26" | 32" | 39" |
| 6. CONDITION 2. AND 4. | 24" | 30" | 36" |

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

GENERAL NOTES (CONT.)

CONCRETE:

ALL CAST-IN-PLACE CONCRETE AND PRECAST HIGHWAY GUARDRAIL TRANSITION CONCRETE SHALL BE 5000 HP CONCRETE.

ALL EXPOSED CORNERS SHALL HAVE 1" CHAMFER UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING CONCRETE STAINS OR DISCOLORATIONS DURING CONSTRUCTION UNTIL SUCH TIME AS THE SURFACES ARE APPROVED AND ACCEPTED, ANY CONCRETE STAINS OR DISCOLORATIONS OCCURRING PRIOR TO ACCEPTANCE OF THE SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE.

MEMBRANE WATERPROOFING

ALL MEMBRANE WATERPROOFING USED ON BRIDGE DECKS SHALL BE MEMBRANE WATERPROOFING FOR BRIDGE DECKS - SPRAY APPLIED.

UTILITY NOTES:

FOR SPECIFICS ON THE INSTALLATION OF UTILITIES, SEE APPLICABLE SPECIAL PROVISIONS AND GENERAL PLAN SHEET 4.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY COMPANIES PRIOR TO COMMENCING WORK.

NO CONSTRUCTION EQUIPMENT OR PERSONNEL SHALL BE PERMITTED WITHIN A TEN (10) FOOT RADIUS OF THE ENERGIZED OVERHEAD LINES.

THE EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND WERE LOCATED USING THE BEST AVAILABLE INFORMATION. NO BUILDING SERVICE CONNECTIONS (ELECTRIC, TELEPHONE, GAS, WATER, SANITARY AND OTHERS) ARE SHOWN. THE CONTRACTOR IS TO ASSUME THAT SERVICES TO ALL BUILDINGS ARE PRESENT.

EXCAVATION NEAR UTILITY POLES SHALL NOT EXCEED A 2:1 SLOPE BEGINNING WITH THE EXISTING GRADE 1'-0" FROM THE BASE OF THE POLE.

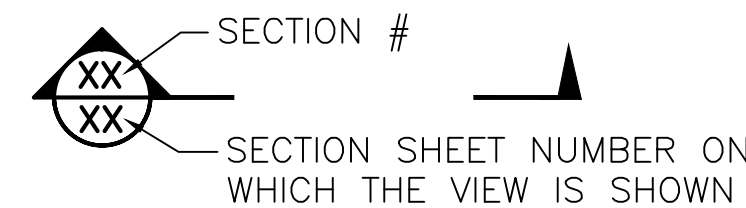
INSTALLATION OF VARIOUS UTILITY LINES WILL BE BY RESPECTIVE UTILITY COMPANY. CONTRACTOR SHALL CLOSELY COORDINATE WITH VARIOUS UTILITY COMPANIES REGARDING SCHEDULE OF WORK AND SHALL PROVIDE FULL ACCESS TO EACH WORK ZONE AS REQUIRED TO PERFORM THE NECESSARY WORK.

TEST PITS SHALL BE DUG SUFFICIENTLY TO LOCATE DEPTH AND HORIZONTAL LOCATION OF EXISTING UTILITY LINES PRIOR TO ANY ROADWAY RECONSTRUCTION AND SHALL BE DONE UNDER DIRECT SUPERVISION OF DULY AUTHORIZED REPRESENTATIVES OF EACH UTILITY.

A RADIAL CLEARANCE OF THREE FEET (3') MUST BE MAINTAINED BETWEEN VERIZON'S EQUIPMENT (CABLES, TERMINALS, POLES ETC) IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS. THIS INCLUDES TRAFFIC SIGNAL AND CONSTRUCTION EQUIPMENT EITHER TEMPORARY OR PERMANENT.

CONTRACTOR SHALL BE AWARE OF RELOCATED OVERHEAD WIRES ALONG THE SOUTH SIDE OF THE BRIDGE STRUCTURE. DE-ENERGIZING OF THE OVERHEAD WIRES WILL NOT BE ALLOWED DURING CONSTRUCTION.

SECTION MARK:



TRAFFIC DATA

| | ROADWAY OVER | ROADWAY UNDER |
|-------------------------------------|--------------|---------------|
| DESIGN YEAR | 2030 | |
| AVERAGE DAILY TRAFFIC - PRESENT | 171 | |
| AVERAGE DAILY TRAFFIC - DESIGN YEAR | 188 | |
| DESIGN HOURLY VOLUME | 19 VPH | |
| DIRECTIONAL DISTRIBUTION | 52-48 | |
| TRUCK PERCENTAGE - AVERAGE DAY | 3% | |
| TRUCK PERCENTAGE - PEAK HOUR | 3% | |
| DESIGN SPEED | 40 MPH | |
| DIRECTIONAL DESIGN HOURLY VOLUME | 10 VPH | |

SEISMIC DESIGN CRITERIA

| | |
|-------------------------------|-------|
| DESIGN RETURN PERIOD: | 1000 |
| DESIGN SPECTRA | |
| As | 0.096 |
| SDs | 0.224 |
| SD1 | 0.096 |
| SITE CLASS | D |
| SEISMIC DESIGN CATEGORY (SDC) | A |

HYDRAULIC DESIGN DATA

| | |
|---|---------|
| DRAINAGE AREA (SQ. MILES) | 10.6 |
| DESIGN FLOOD DISCHARGE (C.F.S.) | 1,240 |
| DESIGN FLOOD FREQUENCY (YEARS) | 10 |
| DESIGN FLOOD VELOCITY (F.P.S.) | 4.66 |
| DESIGN FLOOD ELEVATION (FEET, NAVD) | 1118.2 |
| BASE (100-YEAR) FLOOD DATA | |
| BASE FLOOD DISCHARGE (C.F.S.) | 2,610 |
| BASE FLOOD ELEVATION (FEET, NAVD) | 1121.03 |
| DESIGN AND CHECK SCOUR DATA | |
| DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS) | 25 |
| DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET) | 3.52 |
| DESIGN FLOOD PIER SCOUR DEPTH (FEET) | N/A |
| CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS) | 50 |
| CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET) | 4.2 |
| CHECK FLOOD PIER SCOUR DEPTH (FEET) | N/A |
| FLOOD OF RECORD | |
| DISCHARGE (C.F.S.) | N/A |
| FREQUENCY (IF KNOWN, YEARS) | 100 |
| MAXIMUM ELEVATION (FEET, NAVD) | N/A |
| DATE (MM/YYYY) | 01/1949 |
| HISTORY OF ICE FLOES | N/A |
| EVIDENCE OF SCOUR AND EROSION | N/A |

| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: | STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |

**LANESBOROUGH
BRIDGE STREET**

| | | | |
|------------------|------------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | STP(BR-OFF)-003S(781)X | 17 | 47 |
| PROJECT FILE NO. | | 609428 | |

BORING LOGS I

| | | |
|--|---|---------------------------------------|
| BORING INFORMATION | | BORING B-1 PAGE 1 of 2 |
| LOCATION: East side of the bridge (N. 3019227.6239, E.189935.3264) | | |
| GROUND SURFACE EL. (ft): 1123.21 | DATE START/END: 3/3/2020 - 3/4/2020 | |
| VERTICAL DATUM: NAVD88 | DRILLING COMPANY: Seaboard Drilling, Inc. | |
| TOTAL DEPTH (ft): 54.0 | DRILLER NAME: Mike and Ben | |
| LOGGED BY: M. Alstede | RIG TYPE: Mobile B-53 | |

| | | |
|--|-------------------------------------|--------------------------------|
| DRILLING INFORMATION | | |
| HAMMER TYPE: Automatic | CASING I.D./O.D.: 4 inch / 4.5 inch | CORE BARREL TYPE: |
| AUGER I.D./O.D.: NA / NA | DRILL ROD O.D.: 2.625 inch | CORE BARREL I.D./O.D.: NA / NA |
| DRILLING METHOD: Drive and Wash | | |
| WATER LEVEL DEPTHS (ft): 10.7 3/5/2020 8:05 am | | |

ABBREVIATIONS:

| | | | |
|---|-------------------------|--|--|
| Pen. = Penetration Length | S = Split Spoon Sample | Qp = Pocket Penetrometer Strength | NA, NM = Not Applicable, Not Measured |
| Rec. = Recovery Length | C = Core Sample | Sv = Pocket Torvane Shear Strength | Blows per 6 in.: 140-lb hammer falling |
| RQD = Rock Quality Designation | U = Undisturbed Sample | LL = Liquid Limit | 30 inches to drive a 2-inch-O.D. |
| = Length of Sound Cores > 4 in / Pen. % | SC = Sonic Core | PI = Plasticity Index | |
| WOR = Weight of Rods | DP = Direct Push Sample | PID = Photoionization Detector | split spoon sampler. |
| WOH = Weight of Hammer | HSA = Hollow-Stem Auger | I.D./O.D. = Inside Diameter/Outside Diameter | |


| Elev. (ft) | Depth (ft) | Sample Information | | | Drilling Remarks/ Field Test Data | Layer Name | Soil and Rock Description |
|------------|------------|--------------------|------------|-----------------|--------------------------------------|------------------------|---|
| | | Sample No. | Depth (ft) | Pen./ Rec. (in) | | | |
| 1120 | 0-8 | | | | (0-8"): Asphalt | | |
| | 5 | S1 | 1 to 3 | 24/17 | 15-8-7-9 | SAND AND GRAVEL | S1: Dry, medium dense, brown, FINE TO COARSE SAND, some fine to coarse gravel, some inorganic silt. |
| | 7 | S2 | 5 to 7 | 24/4 | 4-4-6-6 | SAND AND GRAVEL | S2: Moist, loose, dark brown, FINE TO COARSE GRAVEL, some fine to coarse sand, some inorganic silt. |
| | 10 | S3 | 7 to 9 | 24/0 | 6-6-4-4 | SAND AND GRAVEL | (7-9"): No recovery. |
| | 10 | S3 | 9 to 11 | 24/4 | 4-4-4-4 | SAND AND GRAVEL | S3: Moist, loose, dark brown, FINE TO COARSE SAND, some fine to coarse gravel, some inorganic silt, large green glass fragments. |
| | 11 | S4 | 11 to 13 | 24/7 | 4-2-2-2 | SAND AND GRAVEL | S4: Wet, very loose, dark brown, FINE TO COARSE GRAVEL, some fine to coarse sand, trace inorganic silt. |
| | 15 | S5 | 13 to 15 | 24/6 | 9-6-1-2 | ORG. SAND | S5: Moist, loose, dark brown and grey, FINE TO COARSE SAND, some organic silt, trace fine to coarse gravel, wood fragments found in shoe. |
| | 15 | S6 | 15 to 17 | 24/10 | 3-5-6-6 | SAND AND GRAVEL | S6: Wet, medium dense, dark brown and orange, FINE TO COARSE GRAVEL, some fine to coarse sand, some inorganic silt. |
| | 20 | S7 | 20 to 22 | 24/14 | 4-5-5-5 | SAND, SILT, AND GRAVEL | S7(0-7"): Similar to S6. S7(7-14"): Moist, medium dense, dark brown and gray, FINE SAND, some inorganic silt. |

NOTES: See Boring B-1A for samples below 54 ft.

PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA

CITY/STATE: Lanesborough, MA

GEI PROJECT NUMBER: 2000533



| | | |
|--|---|---------------------------------------|
| BORING INFORMATION | | BORING B-1 PAGE 2 of 2 |
| LOCATION: East side of the bridge (N. 3019227.6239, E.189935.3264) | | |
| GROUND SURFACE EL. (ft): 1123.21 | DATE START/END: 3/3/2020 - 3/4/2020 | |
| VERTICAL DATUM: NAVD88 | DRILLING COMPANY: Seaboard Drilling, Inc. | |

| Elev. (ft) | Depth (ft) | Sample Information | | | Drilling Remarks/ Field Test Data | Layer Name | Soil and Rock Description |
|------------|------------|--------------------|------------|-----------------|--------------------------------------|------------------------|---|
| | | Sample No. | Depth (ft) | Pen./ Rec. (in) | | | |
| 1095 | 25 | S8 | 25 to 27 | 24/13 | 14-14-7-9 | SAND, SILT, AND GRAVEL | Encountered cobble at ~25 ft. Drill chatter at ~25 ft. S8(0-7"): Wet, medium dense, gray and brown, FINE TO COARSE GRAVEL, some fine to coarse sand, trace inorganic silt. S8(7-14"): Similar to S7(7-14") |
| 1090 | 30 | S9 | 30 to 32 | 24/15 | 12-23-29-30 | CLAY WITH SAND | Drill chatter at ~30 ft. S9: Moist, very dense, gray, INORGANIC CLAY, some fine to coarse sand, some fine to coarse gravel. |
| 1085 | 35 | S10 | 35 to 37 | 24/15 | 23-37-50-43 | TILL | S10: Moist, very dense, brown and gray, FINE TO COARSE SAND, some inorganic clay, some fine to coarse gravel. |
| 1080 | 40 | S11 | 40 to 42 | 24/12 | 11-18-19-30 | TILL | S11: Similar to S10 except dense. |
| 1075 | 45 | S12 | 45 to 47 | 24/17 | 20-42-60-70 | TILL | S12: Moist, very dense, brown, INORGANIC CLAY AND FINE SAND, trace fine gravel. |
| 1070 | 50 | S13 | 50 to 51 | 12/7 | 68-100 | TILL | S13: Similar to S12. BOULDER |
| 1100 | 55 | | | | | | Very hard drilling from ~51 to ~54 ft. Advanced 4-inch-ID casing to 54 ft. End of borehole at 54 ft. While driving casing through the boulder at 51-54 ft, some casing broke off and the hole was terminated. Backfilled with soil cuttings and patched with asphalt. Drillers offset hole ~2.5 ft to the North for boring B-1A |

NOTES: See Boring B-1A for samples below 54 ft.

PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA

CITY/STATE: Lanesborough, MA

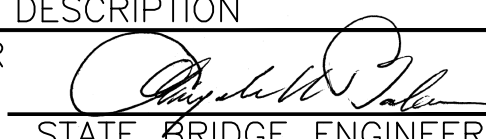
GEI PROJECT NUMBER: 2000533



BORING NOTES:

- LOCATION OF BORINGS SHOWN ON THE PLAN THUS: BB
- BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
- WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
- FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 1/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".

- BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVENUE) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
- ALL BORINGS WERE MADE IN MARCH OF 2020.
- BORINGS WERE MADE BY SEABOARD DRILLING, INC., 649 MEADOW ST, CHICOPEE, MA 01013.
- THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

| | |
|---|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY:  | |
| STATE BRIDGE ENGINEER | |
| USE ONLY PRINTS OF LATEST DATE | |

GEI\WOBURN\STD-1\LOCATION-LAYER NAME BORING LOGS 2020.GPJ 4/13/20

GEI\WOBURN\STD-1\LOCATION-LAYER NAME BORING LOGS 2020.GPJ 4/13/20

18-October-2024 3:10 PM 609428_BR03-07(L03-010)BORING LOGS.DWG Plotted on 28-Oct-2024 3:10 PM Final Structural Submittal (SF)

**LANESBOROUGH
BRIDGE STREET**


| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 19 | 47 |
| PROJECT FILE NO. | | 609428 | |

BORING LOGS III

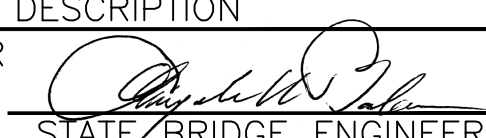
| | | | | | | | |
|---|--|--|--|--|--|--|--|
| LOCATION: East side of the bridge (N. 3019229.8869, E.189934.2640) | | | | | | BORING B-1A PAGE 3 of 3 | |
| GROUND SURFACE EL. (ft): 1123.21 | | | DATE START/END: 3/5/2020 - 3/6/2020 | | | | |
| VERTICAL DATUM: NAVD88 | | | DRILLING COMPANY: Seaboard Drilling, Inc. | | | | |

| Elev. (ft) | Depth (ft) | Sample Information | | | | Drilling Remarks/ Field Test Data | Layer Name | Soil and Rock Description |
|------------|------------|--------------------|------------|----------------|------------------------|--------------------------------------|----------------|--|
| | | Sample No. | Depth (ft) | Pen./Rec. (in) | Blows per 6 in. or RQD | | | |
| | | | 57 | | | | TILL | |
| 1065 | 60 | S3 | 60 to 62 | 24/18 | 20-36-91-90 | | WEATHERED ROCK | S3: Moist, very dense, black, orange and white, INORGANIC SILT, some fine sand. Decomposed rock into soil. |
| 1060 | 65 | S4 | 65 to 67 | 24/15 | 29-32-55-92 | Drilled open hole from 50 to 65 ft. | | S4: Similar to S3. |
| 1055 | | | | | | | | End of borehole at 67 ft in weathered rock. Backfilled with soil cuttings and patched with asphalt |
| 1050 | 70 | | | | | | | |
| 1045 | 75 | | | | | | | |
| 1040 | 80 | | | | | | | |
| | 85 | | | | | | | |

| | |
|---|---|
| NOTES: See Boring B-1 for samples above 50 ft. | PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA CITY/STATE: Lanesborough, MA GEI PROJECT NUMBER: 2000533 |
|---|---|



GEI WOBURN STD 1-LOCATION LAYER NAME BORING LOGS 2020.GPJ 4/13/20

| | |
|--|--|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: |  STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |

609428_BR03-07(L03-010)BORING LOGS.DWG Plotted on 17-Oct-2024 4:40 PM 18-October-2024 Final Structural Submittal (SF)

LANESBOROUGH
BRIDGE STREET

| | | | |
|------------------|------------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | STP(BR-OFF)-003S(781)X | 20 | 47 |
| PROJECT FILE NO. | | 609428 | |

BORING LOGS IV

| BORING INFORMATION | | BORING | | | | | | | | |
|--|---|--------------------------------|------------|----------------|------------------------|----------------------------------|--|---|--|--|
| LOCATION: West side of the bridge (N. 3019238.7832, E.189857.2901) | | B-2 | | | | | | | | |
| GROUND SURFACE EL. (ft): 1122.87 | DATE START/END: 3/2/2020 - 3/2/2020 | PAGE 1 of 2 | | | | | | | | |
| VERTICAL DATUM: NAVD88 | DRILLING COMPANY: Seaboard Drilling, Inc. | | | | | | | | | |
| TOTAL DEPTH (ft): 37.0 | DRILLER NAME: Mike and Ben | | | | | | | | | |
| LOGGED BY: M. Alstede | RIG TYPE: Mobile B53 | | | | | | | | | |
| DRILLING INFORMATION | | | | | | | | | | |
| HAMMER TYPE: Automatic | CASING I.D./O.D.: 4 inch / 4.5 inch | CORE BARREL TYPE: | | | | | | | | |
| AUGER I.D./O.D.: NA / NA | DRILL ROD O.D.: 2.625 inch | CORE BARREL I.D./O.D.: NA / NA | | | | | | | | |
| DRILLING METHOD: Drive and Wash | | | | | | | | | | |
| WATER LEVEL DEPTHS (ft): 10.4 3/2/2020 1:49 pm | | | | | | | | | | |
| ABBREVIATIONS: Pen. = Penetration Length S = Split Spoon Sample Qp = Pocket Penetrometer Strength NA, NM = Not Applicable, Not Measured Rec. = Recovery Length C = Core Sample Sv = Pocket Torvane Shear Strength Blows per 6 in.: 140-lb hammer falling RQD = Rock Quality Designation U = Undisturbed Sample LL = Liquid Limit 30 inches to drive a 2-inch-O.D. = Length of Sound Cores > 4 in / Pen., % SC = Sonic Core PI = Plasticity Index split spoon sampler. WOR = Weight of Rods DP = Direct Push Sample PID = Photoinization Detector WOH = Weight of Hammer HSA = Hollow-Stem Auger I.D./O.D. = Inside Diameter/Outside Diameter | | | | | | | | | | |
| | | | | | | | | | | |
| Elev. (ft) | Depth (ft) | Sample No. | Depth (ft) | Pen./Rec. (in) | Blows per 6 in. or RQD | Drilling Remarks/Field Test Data | Layer Name | Soil and Rock Description | | |
| | | | | | | (0-4"): Asphalt | | | | |
| 1120 | | S1 | 1 to 3 | 24/19 | 10-12-7-6 | | SAND AND GRAVEL | S1: Dry, medium dense, brown, FINE TO COARSE SAND and FINE TO COARSE GRAVEL, trace inorganic silt. | | |
| 5 | | S2 | 5 to 7 | 24/11 | 7-11-16-12 | | SAND AND GRAVEL | S2: Wet, medium dense, dark brown and black, FINE TO COARSE GRAVEL, some inorganic silt, trace fine to coarse sand. Purple glass pieces. | | |
| 1115 | | S3 | 7 to 9 | 24/15 | 17-16-10-7 | | SAND AND GRAVEL | S3: Wet, medium dense, dark brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt. | | |
| 10 | | S4 | 9 to 11 | 24/8 | 6-3-2-2 | EL. 1112.5 | ORG. SILT | S4: Wet, loose, dark gray, ORGANIC SILT, some fine to coarse sand. | | |
| 1110 | | S5 | 11 to 13 | 24/7 | 3-1-1-2 | | ORG. SILT | S5: Wet, very loose, dark brown, FINE TO COARSE SAND, trace organic silt. | | |
| 15 | | S6 | 13 to 15 | 24/6 | 4-5-4-3 | | SAND AND ORGANIC SILT | S6: Wet, loose, dark gray, FINE TO COARSE SAND, some organic silt, some fine to coarse gravel. | | |
| 1105 | | S7 | 15 to 17 | 24/15 | 5-11-6-3 | | SAND AND ORGANIC SILT | S7: Wet, medium dense, dark gray, FINE TO COARSE SAND, some fine to coarse gravel, some organic silt. Organic wood fragments found in shoe. | | |
| 20 | | S8 | 20 to 22 | 24/9 | 6-6-7-9 | | SILT AND SAND | S8: Wet, medium dense, brown, INORGANIC SILT AND FINE TO COARSE SAND, trace fine to coarse gravel. | | |
| 1100 | | | | | | | | | | |
| NOTES: See Boring B-2A for samples below 37 ft. | | | | | | | PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA CITY/STATE: Lanesborough, MA GEI PROJECT NUMBER: 2000533 | | | |


| BORING INFORMATION | | BORING | | | | | | | | |
|--|------------|---|------------|----------------|------------------------|---|--|--|--|--|
| LOCATION: West side of the bridge (N. 3019238.7832, E.189857.2901) | | B-2 | | | | | | | | |
| GROUND SURFACE EL. (ft): 1122.87 | | DATE START/END: 3/2/2020 - 3/2/2020 | | | | | | | | |
| VERTICAL DATUM: NAVD88 | | DRILLING COMPANY: Seaboard Drilling, Inc. | | | | | | | | |
| PAGE 2 of 2 | | | | | | | | | | |
| | | | | | | | | | | |
| Elev. (ft) | Depth (ft) | Sample No. | Depth (ft) | Pen./Rec. (in) | Blows per 6 in. or RQD | Drilling Remarks/Field Test Data | Layer Name | Soil and Rock Description | | |
| 25 | | S9 | 25 to 27 | 24/14 | 4-4-4-6 | | SILT AND SAND | S9: Wet, medium dense, brown, INORGANIC SILT AND FINE TO COARSE SAND. | | |
| 1095 | | | | | | | | | | |
| 30 | | S10 | 30 to 32 | 24/16 | 4-5-4-5 | | SILT AND SAND | S10: Similar to S9. | | |
| 1090 | | | | | | | | | | |
| 35 | | S11 | 35 to 37 | 24/0 | 21-51-12-21 | Advanced 4-inch-ID casing to 34 ft. Spoon is lost in the hole, unable to retrieve. | TILL | | | |
| 1085 | | | | | | | | End of borehole at 37 ft. Unable to retrieve spoon from the bottom of the borehole. Backfilled with soil cuttings and patched with asphalt. Drillers offset hole ~2 ft to the west for boring B-2A | | |
| 40 | | | | | | | | | | |
| 1080 | | | | | | | | WEST ABUTMENT BOTTOM FTG. EL. 1109.5 | | |
| 45 | | | | | | | | WEST ABUTMENT BOTTOM OF CRUSHED STONE FOR BRIDGE FOUNDATIONS EL. 1106.0 | | |
| 1075 | | | | | | | | | | |
| 50 | | | | | | | | | | |
| 1070 | | | | | | | | | | |
| 55 | | | | | | | | | | |
| NOTES: See Boring B-2A for samples below 37 ft. | | | | | | | PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA CITY/STATE: Lanesborough, MA GEI PROJECT NUMBER: 2000533 | | | |


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|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: | STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |

LANESBOROUGH
BRIDGE STREET

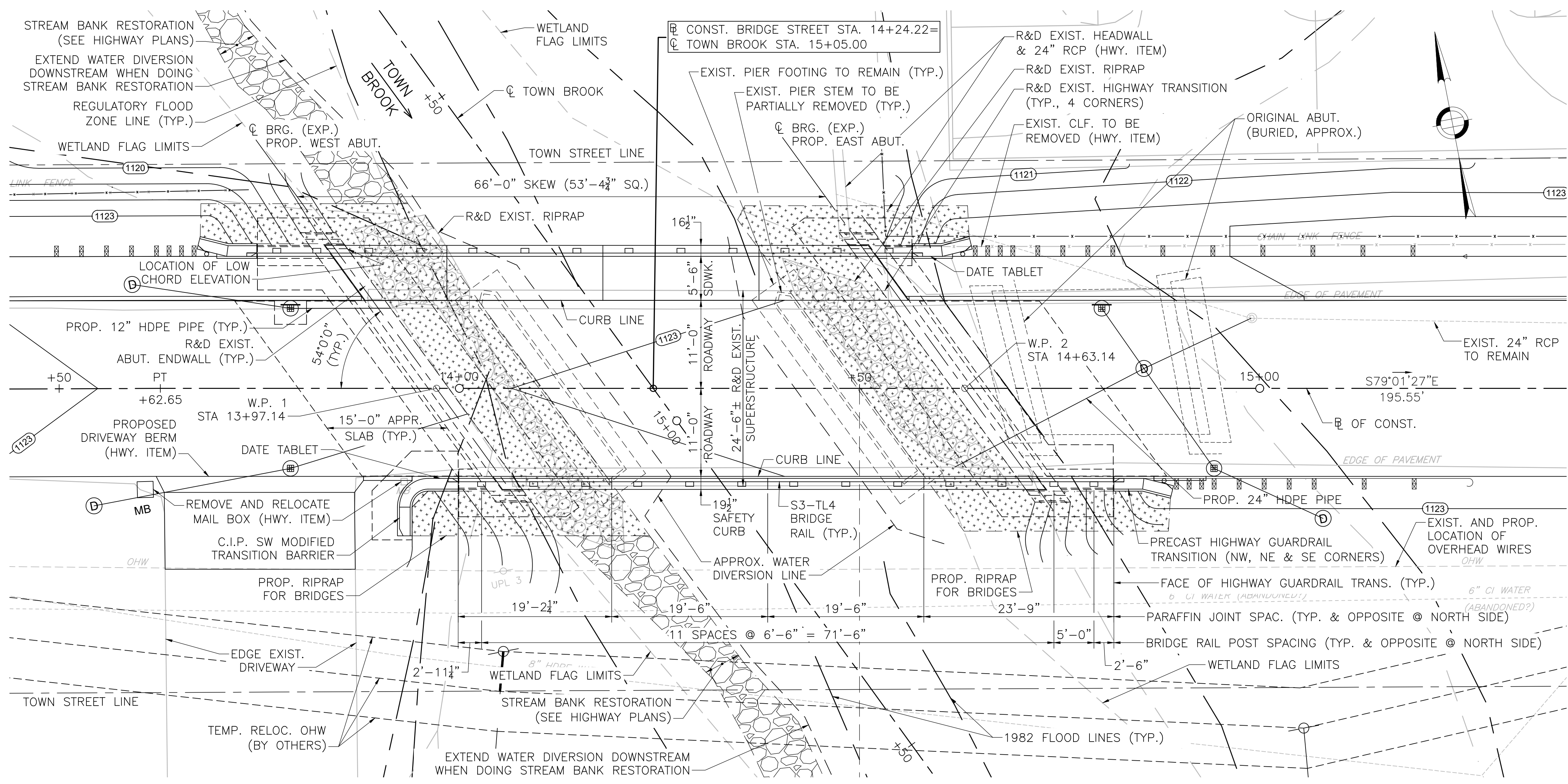
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 21 | 47 |
| PROJECT FILE NO. | | 609428 | |

BORING LOGS V

| BORING INFORMATION | | BORING B-2A PAGE 1 of 2 | | | | |
|--|------------|---|---|----------------|---------------------------|--------------------------------|
| LOCATION: West side of the bridge (N. 3019238.4024, E.189857.2652) GROUND SURFACE EL. (ft): 1122.87 DATE START/END: 3/2/2020 - 3/3/2020 VERTICAL DATUM: NAVD88 DRILLING COMPANY: Seaboard Drilling, Inc. TOTAL DEPTH (ft): 52.5 DRILLER NAME: Mike and Ben LOGGED BY: M. Alstede RIG TYPE: Mobile B53 | | | | | | |
| DRILLING INFORMATION | | | | | | |
| HAMMER TYPE: Automatic CASING I.D./O.D.: 4 inch / 4.5 inch CORE BARREL TYPE: NX AUGER I.D./O.D.: NA / NA DRILL ROD O.D.: 2.625 inch CORE BARREL I.D./O.D.: NA / NA DRILLING METHOD: Drive and Wash WATER LEVEL DEPTHS (ft): 10.2 3/3/2020 12:10 pm | | | | | | |
| ABBREVIATIONS: Pen. = Penetration Length S = Split Spoon Sample Qp = Pocket Penetrometer Strength NA, NM = Not Applicable, Not Measured Rec. = Recovery Length C = Core Sample Sv = Pocket Torvane Shear Strength Blows per 6 in.: 140-lb hammer falling RQD = Rock Quality Designation U = Undisturbed Sample LL = Liquid Limit 30 inches to drive a 2-inch-O.D. split spoon sampler. = Length of Sound Cores > 4 in / Pen., % SC = Sonic Core PI = Plasticity Index WOR = Weight of Rods DP = Direct Push Sample PID = Photolonization Detector WOH = Weight of Hammer HSA = Hollow-Stem Auger I.D./O.D. = Inside Diameter/Outside Diameter | | | | | | |
| Elev. (ft) | Depth (ft) | Sample Information | Drilling Remarks/Field Test Data | Layer Name | Soil and Rock Description | |
| | | Sample No. | Depth (ft) | Pen./Rec. (in) | Blows per 6 in. or RQD | |
| 1120 | 5 | | | | | |
| 1115 | 10 | | | | | Layer of wood found at ~10 ft. |
| 1110 | 15 | | | | | |
| 1105 | 20 | | | | | |
| 1100 | | | | | | |
| NOTES: Borehole collapsed in on itself while coring C1. Drillers were able to wash it out and proceed with coring C2, but while coring, the borehole collapsed again and they were unable to continue. See Boring B-2 for samples above 35 ft. | | | | | | |
| PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA CITY/STATE: Lanesborough, MA GEI PROJECT NUMBER: 2000533 | | |  | | | |

| BORING INFORMATION | | BORING B-2A PAGE 2 of 2 | | | | |
|--|------------|---|---|----------------|---------------------------|---|
| LOCATION: West side of the bridge (N. 3019238.4024, E.189857.2652) GROUND SURFACE EL. (ft): 1122.87 DATE START/END: 3/2/2020 - 3/3/2020 VERTICAL DATUM: NAVD88 DRILLING COMPANY: Seaboard Drilling, Inc. | | | | | | |
| DRILLING INFORMATION | | | | | | |
| HAMMER TYPE: Automatic CASING I.D./O.D.: 4 inch / 4.5 inch CORE BARREL TYPE: NX AUGER I.D./O.D.: NA / NA DRILL ROD O.D.: 2.625 inch CORE BARREL I.D./O.D.: NA / NA DRILLING METHOD: Drive and Wash WATER LEVEL DEPTHS (ft): 10.2 3/3/2020 12:10 pm | | | | | | |
| ABBREVIATIONS: Pen. = Penetration Length S = Split Spoon Sample Qp = Pocket Penetrometer Strength NA, NM = Not Applicable, Not Measured Rec. = Recovery Length C = Core Sample Sv = Pocket Torvane Shear Strength Blows per 6 in.: 140-lb hammer falling RQD = Rock Quality Designation U = Undisturbed Sample LL = Liquid Limit 30 inches to drive a 2-inch-O.D. split spoon sampler. = Length of Sound Cores > 4 in / Pen., % SC = Sonic Core PI = Plasticity Index WOR = Weight of Rods DP = Direct Push Sample PID = Photolonization Detector WOH = Weight of Hammer HSA = Hollow-Stem Auger I.D./O.D. = Inside Diameter/Outside Diameter | | | | | | |
| Elev. (ft) | Depth (ft) | Sample Information | Drilling Remarks/Field Test Data | Layer Name | Soil and Rock Description | |
| | | Sample No. | Depth (ft) | Pen./Rec. (in) | Blows per 6 in. or RQD | |
| 1095 | 30 | | | | | |
| 1085 | 35 | S1 | 35 to 37 | 24/6 | 12-8-8-9 | TILL S1: Wet, medium dense, gray, FINE TO COARSE GRAVEL, some fine to coarse sand. |
| 1080 | 40 | S2 | 40 to 42 | 24/12 | 23-25-16-23 | TILL S2: Moist, dense, gray and brown, FINE TO COARSE SAND, some fine to coarse gravel, some inorganic silt. |
| 1075 | 45 | C1 | 45 to 50 | 60/29 | 35 | BEDROCK C1: LIMESTONE, medium hard to hard, fine grained, fresh to slightly weathered, smooth joints with slight dipping (~15%), white and gray. Stockbridge Formation |
| 1070 | 50 | C2 | 50 to 52.5 | 30/6 | 20 | BEDROCK C2: LIMESTONE, similar to C1 with severe dipping (~50%) and quartz veins. Stockbridge Formation. |
| 1065 | 52.5 | | | | | End of borehole at 52.5 ft. Backfilled with soil cuttings and patched with asphalt |
| NOTES: Borehole collapsed in on itself while coring C1. Drillers were able to wash it out and proceed with coring C2, but while coring, the borehole collapsed again and they were unable to continue. See Boring B-2 for samples above 35 ft. | | | | | | |
| PROJECT NAME: Bridge Street over Town Brook, Lanesborough, MA CITY/STATE: Lanesborough, MA GEI PROJECT NUMBER: 2000533 | | |  | | | |

| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: | STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |



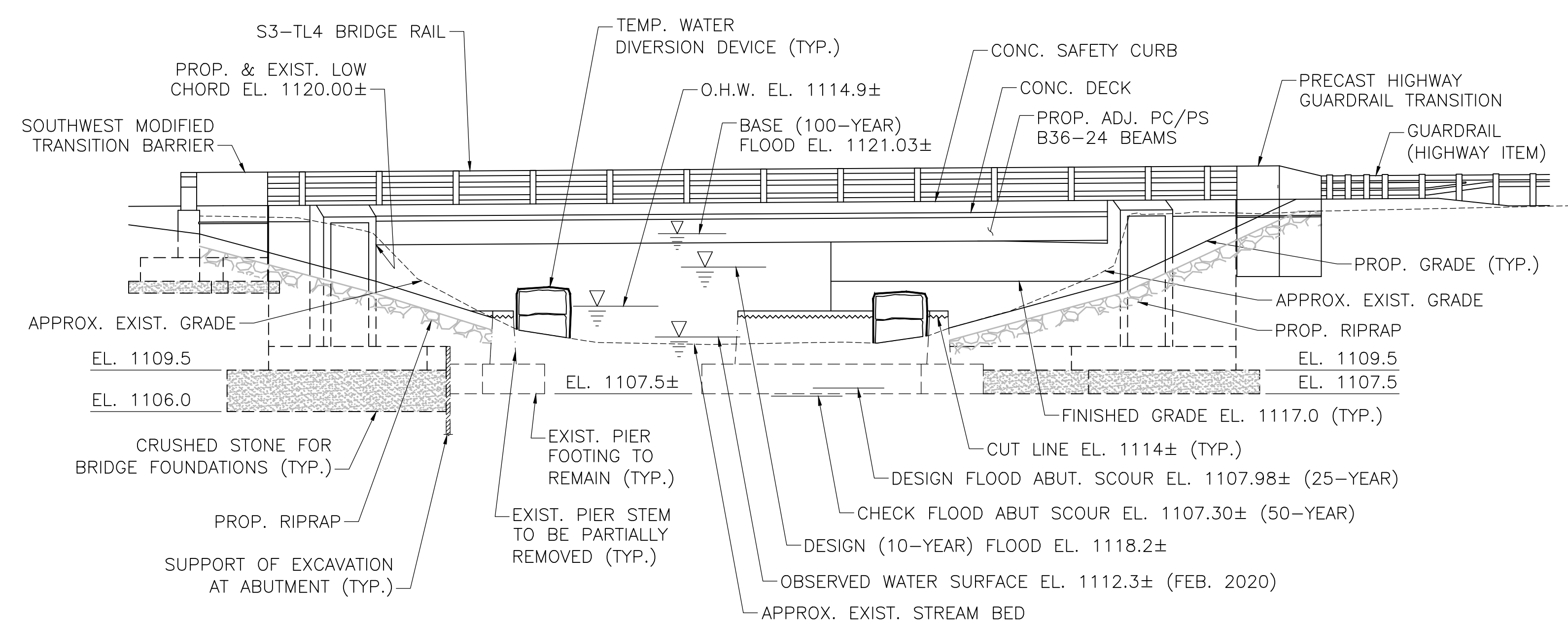
BRIDGE GENERAL PLAN
SCALE: $\frac{1}{8}" = 1'-0"$

NOTES: 1. CRUSHED STONE FOR BRIDGE FOUNDATIONS NOT SHOWN FOR CLARITY.
2. R&D DENOTES REMOVE AND DISPOSE.

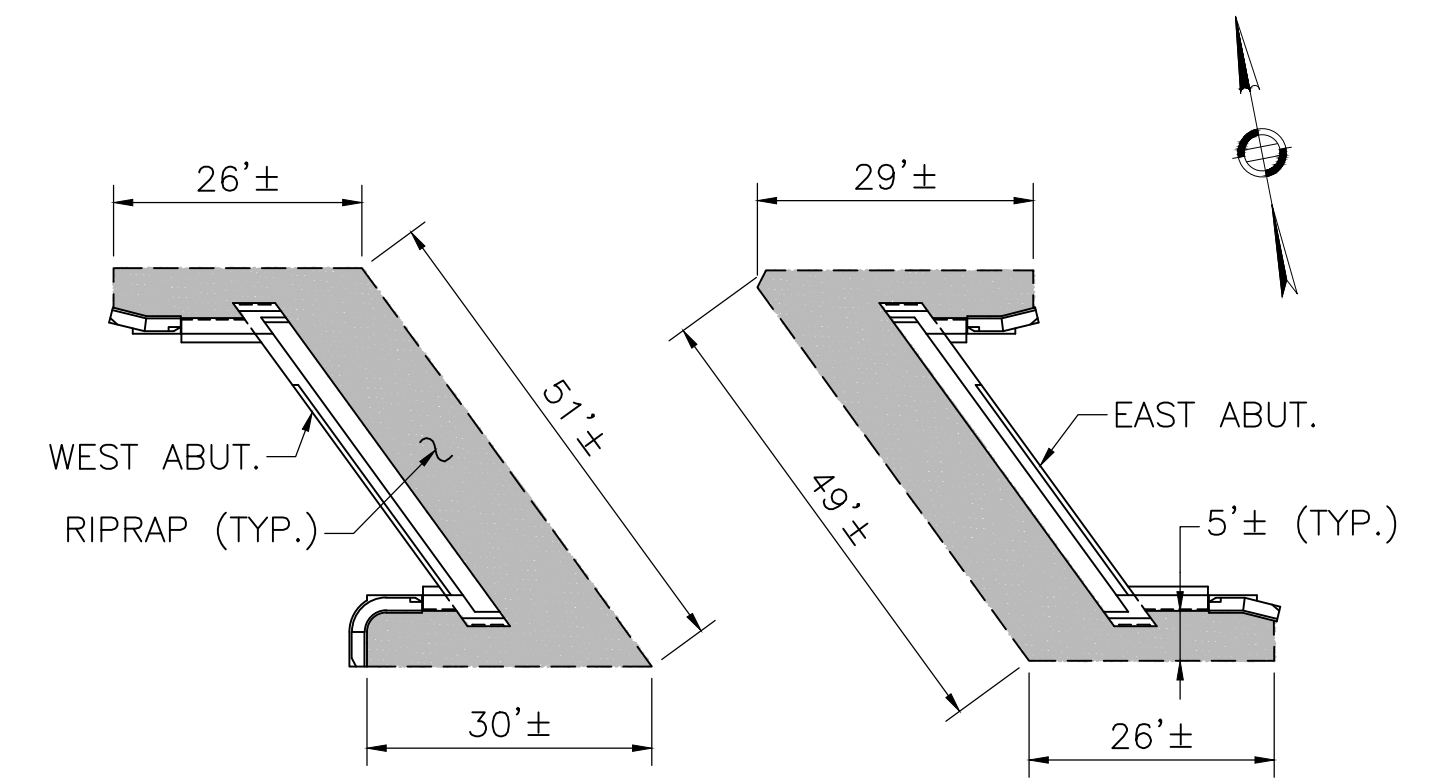
| WORKING POINT | W.P. 1 | W.P. 2 |
|---------------|--------------|--------------|
| NORTHING | 3019238.9876 | 3019226.4214 |
| EASTING | 189868.0933 | 189932.8865 |

- NOTES:**
- ENTIRE EXISTING BRIDGE TO BE REPLACED.
 - EXISTING PIERS TO BE PARTIALLY REMOVED.
 - THE MAXIMUM FACTORED BEARING PRESSURE = 2.85 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR EXTREME II CASE LOAD COMBINATION FOR SCOUR.
 - FACTORED BEARING RESISTANCE = 2.95 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 1.0.

- LEGEND:**
- ⊕ PROPOSED CATCH BASIN
 - ⊙ PROPOSED MANHOLE/LEACH BASIN
 - DENOTES EXIST. RIPRAP
 - DENOTES PROP. RIPRAP FOR BRIDGES (M2.02.0)
 - DENOTES PROP. RIPRAP FOR STREAM BANK (M2.02.0) (HWY. ITEM)



SOUTH ELEVATION OF BRIDGE
SCALE: $\frac{1}{8}" = 1'-0"$



RIPRAP PLAN AT ABUTMENTS
NOT TO SCALE

NOTE: FOR RIPRAP QUANTITIES SEE HIGHWAY ESTIMATE

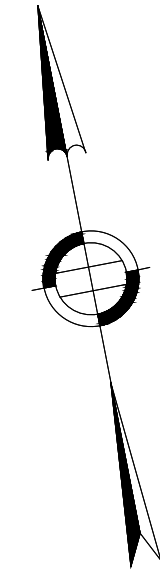
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|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: | STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |

609428_BR08(L03010)PLAN AND ELEVATION.DWG 18-October-2024 10:36 AM Final Structural Submittal (SF)

**LANESBOROUGH
BRIDGE STREET**

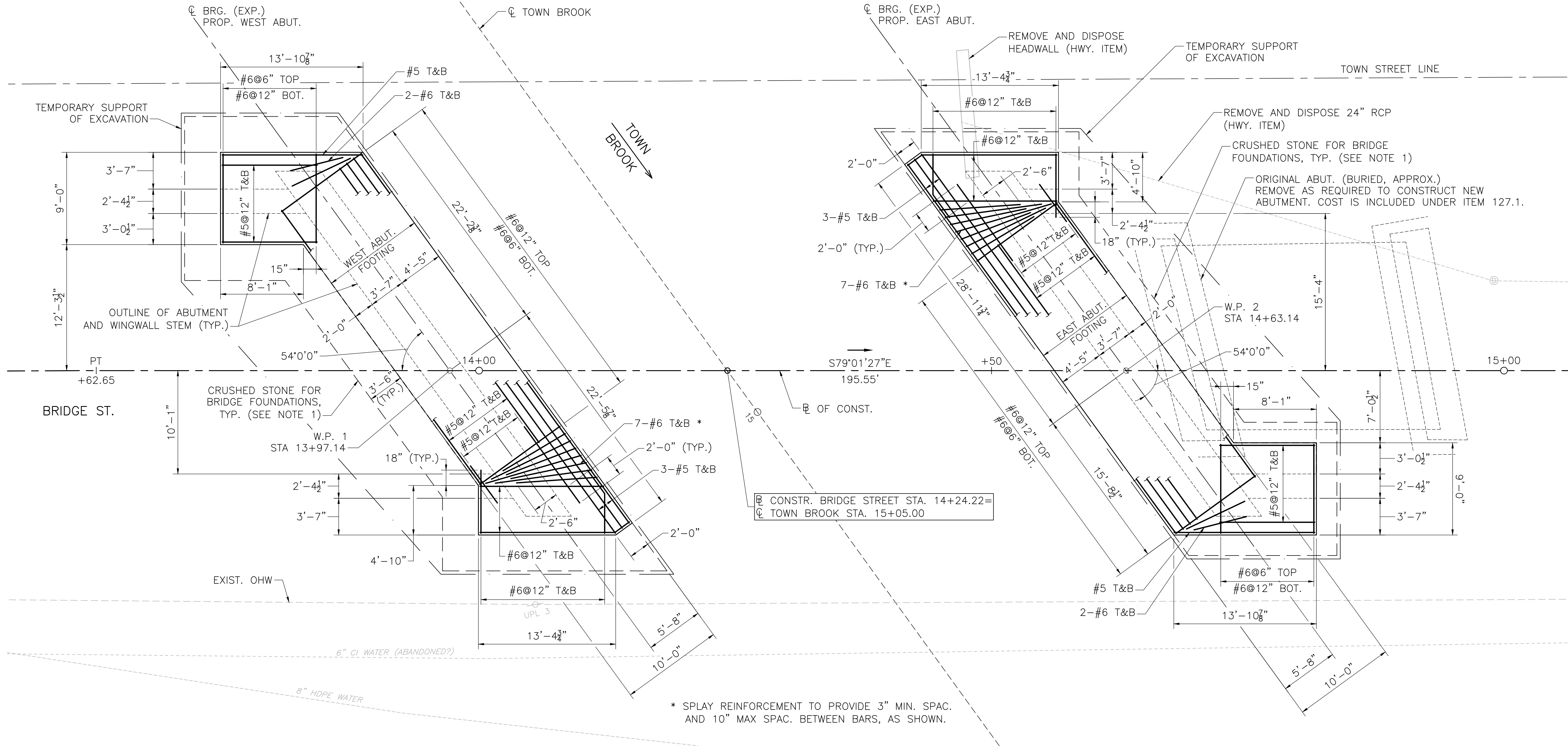
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 23 | 47 |
| PROJECT FILE NO. | | 609428 | |

FOUNDATION PLAN



NOTE:

1. FINAL LIMITS OF CRUSHED STONE FOR BRIDGE FOUNDATIONS TO BE DETERMINED BASED ON ACTUAL SOIL CONDITIONS. SEE LIMITS OF CRUSHED STONE FOR BRIDGE FOUNDATION DETAILS ON SHEET 12 AND 15.



WEST ABUTMENT FOUNDATION PLAN

SCALE: 3/8" = 1'-0"

EAST ABUTMENT FOUNDATION PLAN

SCALE: 3/8" = 1'-0"

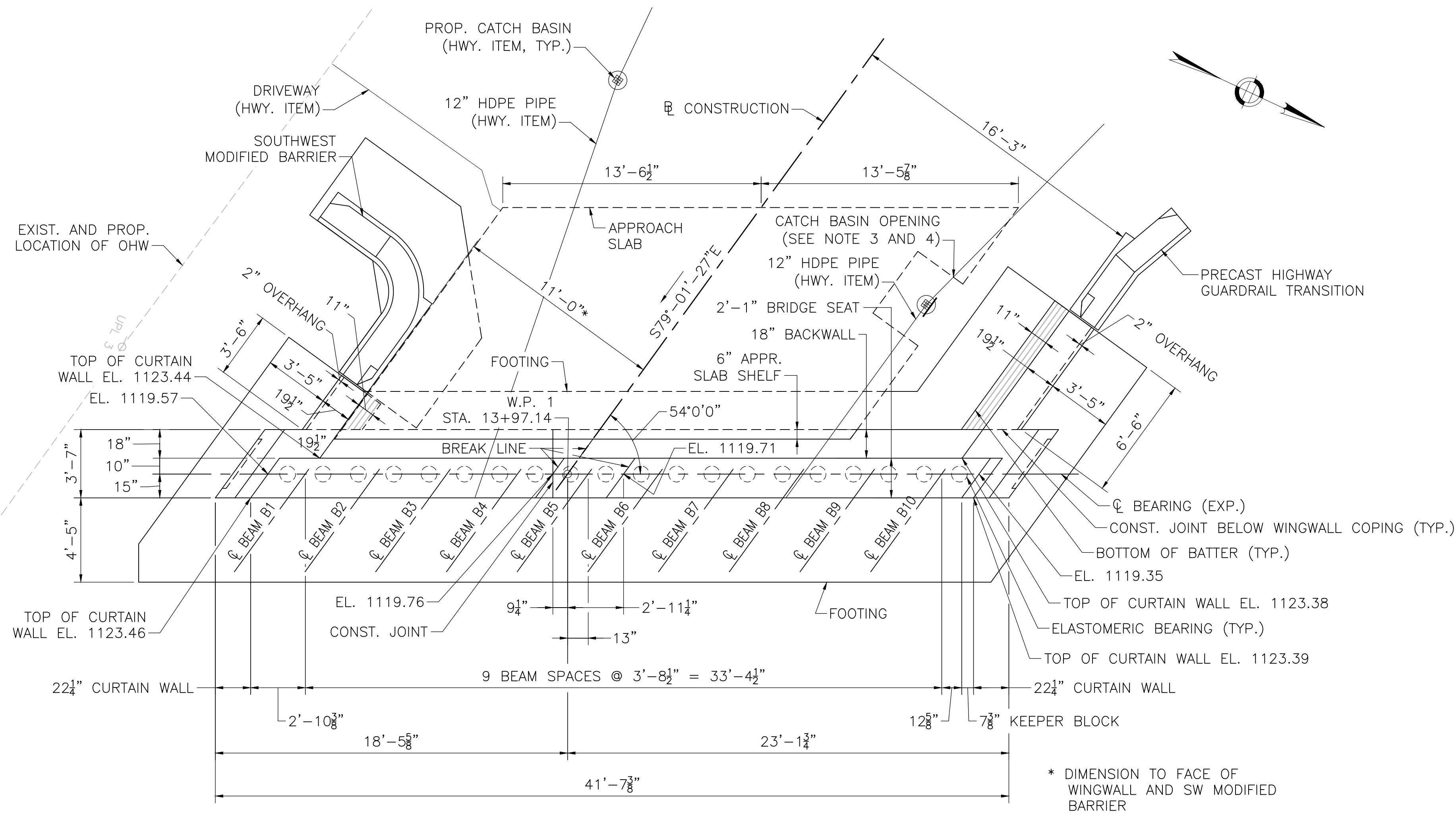
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|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
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| AUTHORIZED SIGNATORY: | STATE/BRIDGE ENGINEER |
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609428_BR09(L03-010)FOUNDATION PLAN.DWG 18-October-2024 10:45 AM Final Structural Submittal (SF)

**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 24 | 47 |
| PROJECT FILE NO. | | 609428 | |

WEST ABUTMENT PLAN AND ELEVATION



NOTE: CRUSHED STONE FOR BRIDGE FOUNDATIONS NOT SHOWN FOR CLARITY.

WEST ABUTMENT PLAN

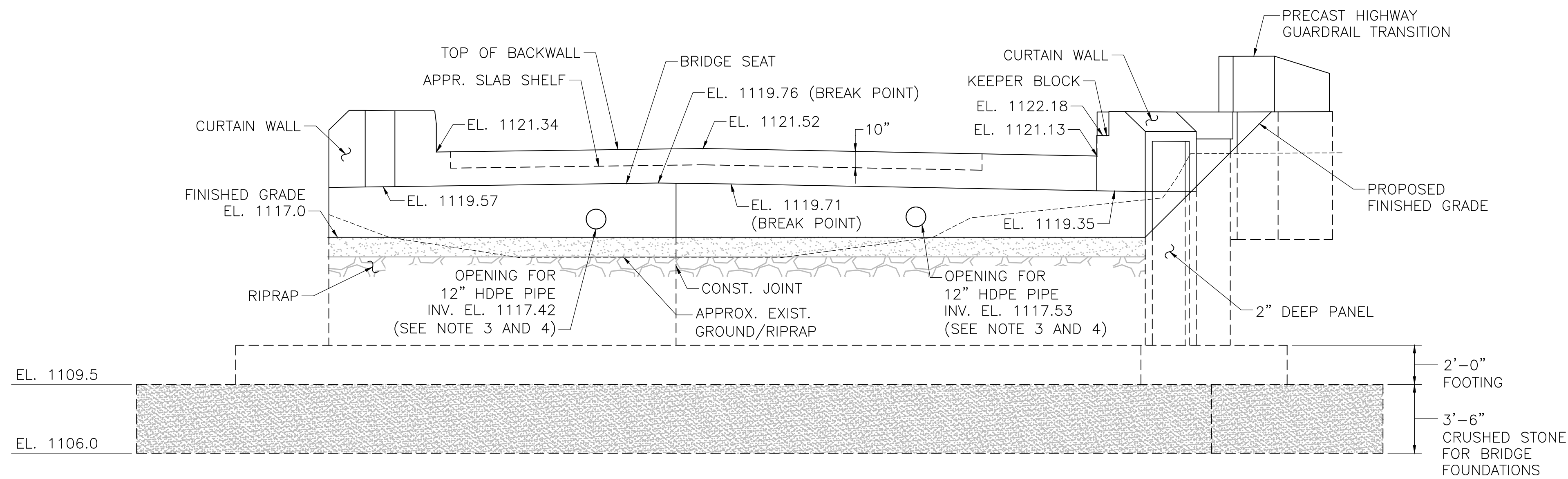
SCALE: 1/4" = 1'-0"

NOTES:

- BRIDGE SEAT AND KEEPER BLOCK ELEVATIONS ARE GIVEN AT CENTERLINE OF BEARING.
- TOP OF BACKWALL ELEVATIONS ARE GIVEN AT FRONT FACE OF BACKWALL.
- UTILITY OPENING SIZE, LOCATION AND INVERT ELEVATION TO BE VERIFIED BY THE CONTRACTOR.
- FOR UTILITY OPENING DETAILS SEE SHEET 14.
- PLACE 1/2" CLOSED FOAM BETWEEN EDGE OF APPROACH SLAB AND WINGWALL AND GUARDRAIL TRANSITION BASE.

**WEST ABUT BEAM SEAT
ELEVATION TABLE**

| BEAM NO. | SOUTH BRG. | NORTH BRG. |
|----------|------------|------------|
| B1 | 1119.58 | 1119.60 |
| B2 | 1119.63 | 1119.65 |
| B3 | 1119.68 | 1119.70 |
| B4 | 1119.73 | 1119.75 |
| B5 | 1119.75 | 1119.73 |
| B6 | 1119.69 | 1119.65 |
| B7 | 1119.62 | 1119.58 |
| B8 | 1119.55 | 1119.51 |
| B9 | 1119.47 | 1119.44 |
| B10 | 1119.40 | 1119.36 |



NOTES:

- TEMPORARY SUPPORT OF EXCAVATION NOT SHOWN FOR CLARITY.
- FOR TOP OF WINGWALL AND HIGHWAY GUARDRAIL TRANSITION ELEVATIONS, SEE THEIR RESPECTIVE DETAILS.
- BEAM SEAT ELEVATIONS SHALL BE SET LINEARLY BETWEEN BREAK POINTS.

WEST ABUTMENT ELEVATION

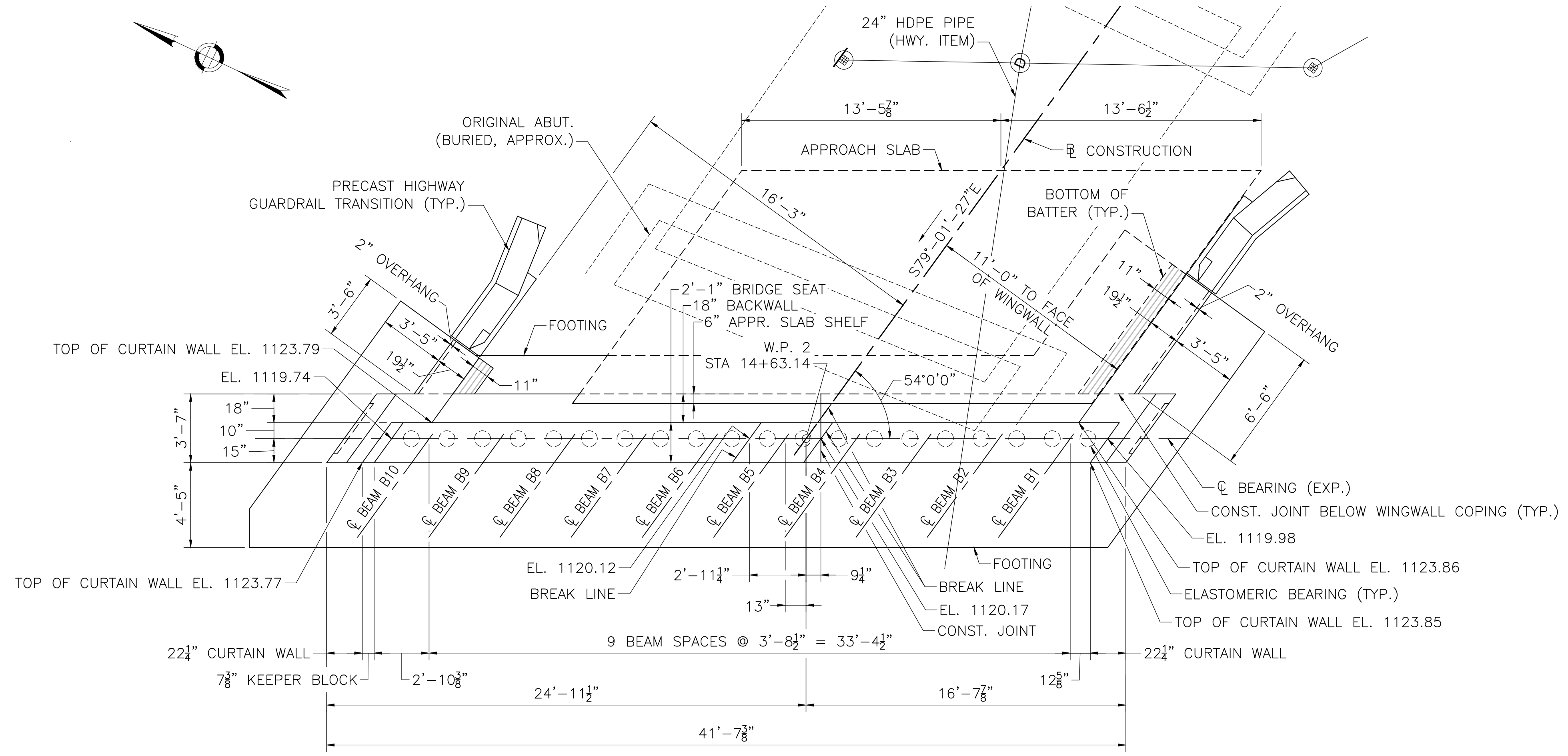
SCALE: 1/4" = 1'-0"

| DATE | DESCRIPTION |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER | |
| USE ONLY PRINTS OF LATEST DATE | |

**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 25 | 47 |
| PROJECT FILE NO. | | 609428 | |

EAST ABUTMENT PLAN AND ELEVATION



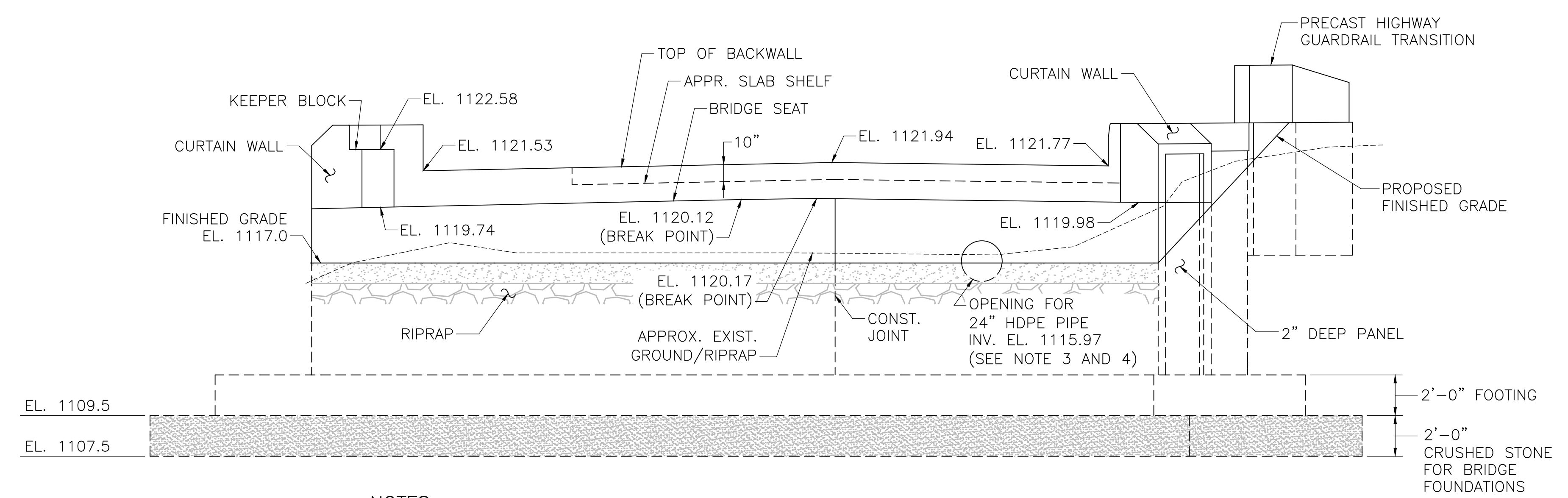
NOTE: CRUSHED STONE FOR BRIDGE FOUNDATIONS NOT SHOWN FOR CLARITY.

EAST ABUTMENT PLAN
SCALE: 1/4" = 1'-0"

NOTES:

- BRIDGE SEAT AND KEEPER BLOCK ELEVATIONS ARE GIVEN AT CENTERLINE OF BEARING.
- TOP OF BACKWALL ELEVATIONS ARE GIVEN AT FRONT FACE OF BACKWALL.
- UTILITY OPENING SIZE, LOCATION AND INVERT ELEVATION TO BE VERIFIED BY THE CONTRACTOR.
- FOR UTILITY OPENING DETAILS SEE SHEET 14.
- PLACE 1/2" CLOSED FOAM BETWEEN EDGE OF APPROACH SLAB AND WINGWALL AND GUARDRAIL TRANSITION BASE.

| BEAM NO. | SOUTH BRG. | NORTH BRG. |
|----------|------------|------------|
| B1 | 1119.99 | 1120.01 |
| B2 | 1120.04 | 1120.06 |
| B3 | 1120.09 | 1120.11 |
| B4 | 1120.13 | 1120.16 |
| B5 | 1120.16 | 1120.14 |
| B6 | 1120.10 | 1120.06 |
| B7 | 1120.02 | 1119.99 |
| B8 | 1119.95 | 1119.91 |
| B9 | 1119.87 | 1119.84 |
| B10 | 1119.80 | 1119.76 |



NOTES:

- TEMPORARY SUPPORT OF EXCAVATION NOT SHOWN FOR CLARITY.
- FOR TOP OF WINGWALL AND HIGHWAY GUARDRAIL TRANSITION ELEVATIONS, SEE THEIR RESPECTIVE DETAILS.
- BEAM SEAT ELEVATIONS SHALL BE SET LINEARLY BETWEEN BREAK POINTS.

EAST ABUTMENT ELEVATION
SCALE: 1/4" = 1'-0"

| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: | STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |

609428_BR11(L03010)EAST ABUT.DWG 18-October-2024 4:43 PM Final Structural Submittal (SF)

**LANESBOROUGH
BRIDGE STREET**

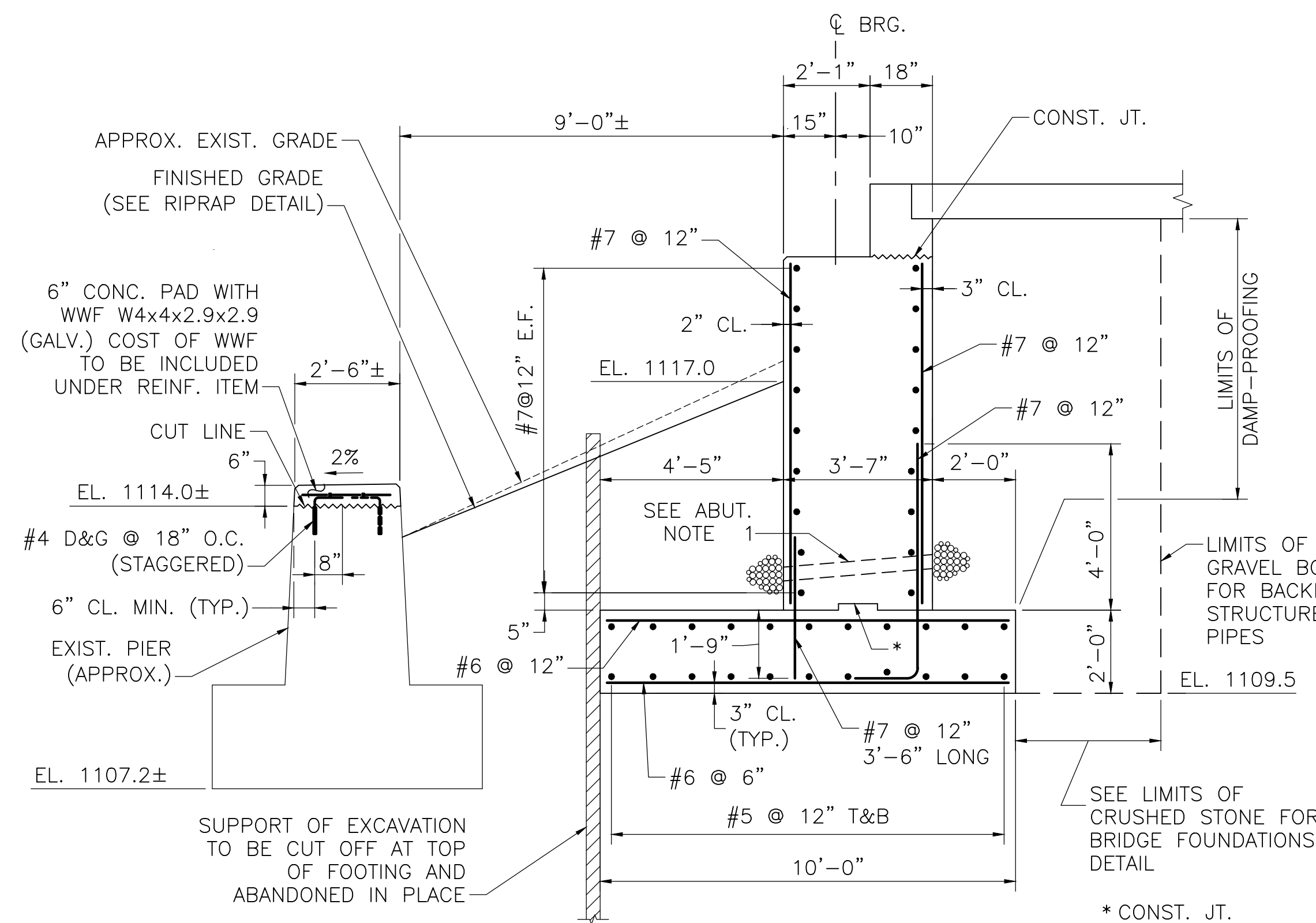
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 26 | 47 |
| PROJECT FILE NO. | | | 609428 |

ABUTMENT DETAILS I

ABUTMENT NOTES:

- 4" ϕ WEEP HOLES 10'-0" O.C. LOCATED 12" ABOVE THE HEEL OF THE FOOTING, SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
- THE MAXIMUM FACTORED BEARING PRESSURE = 2.85 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR EXTREME II CASE LOAD COMBINATION FOR SCOUR.
- FACTORED BEARING RESISTANCE = 2.95 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 1.0.
- PROVIDE 1/2" CLOSED CELL FOAM BETWEEN POURED CONCRETE FOOTING AND EXISTING CONCRETE FOOTING.

(SEE SHT. 14 FOR ADDITIONAL ABUTMENT NOTES)

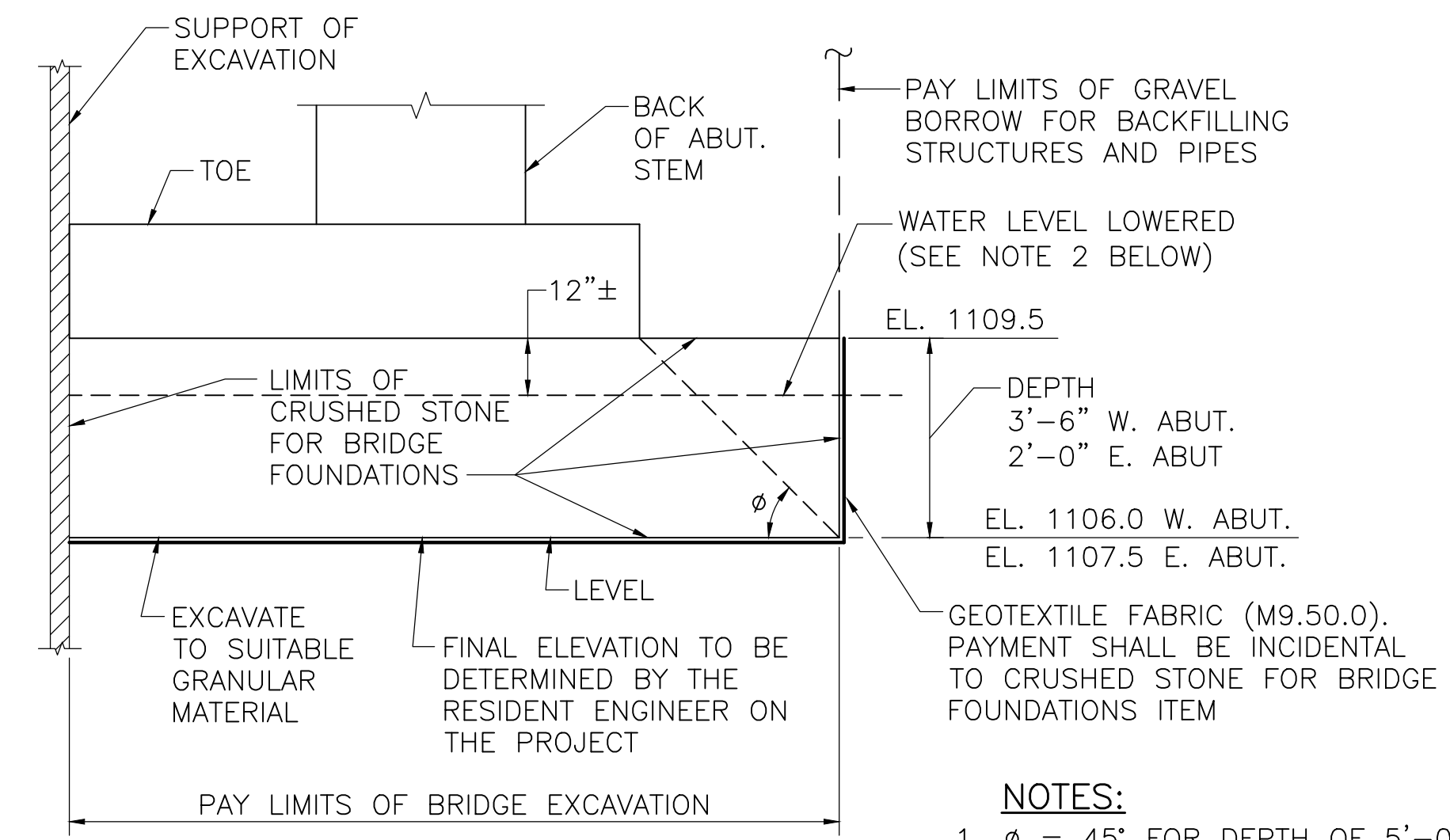


NOTES:

- FOR ADDITIONAL REINFORCEMENT AT TOP OF ABUTMENT STEM SEE BRIDGE SEAT SECTIONS ON SHEET 14.
- CRUSHED STONE FOR BRIDGE FOUNDATIONS NOT SHOWN FOR CLARITY.

TYPICAL ABUTMENT SECTION

SCALE: 3/8" = 1'-0"



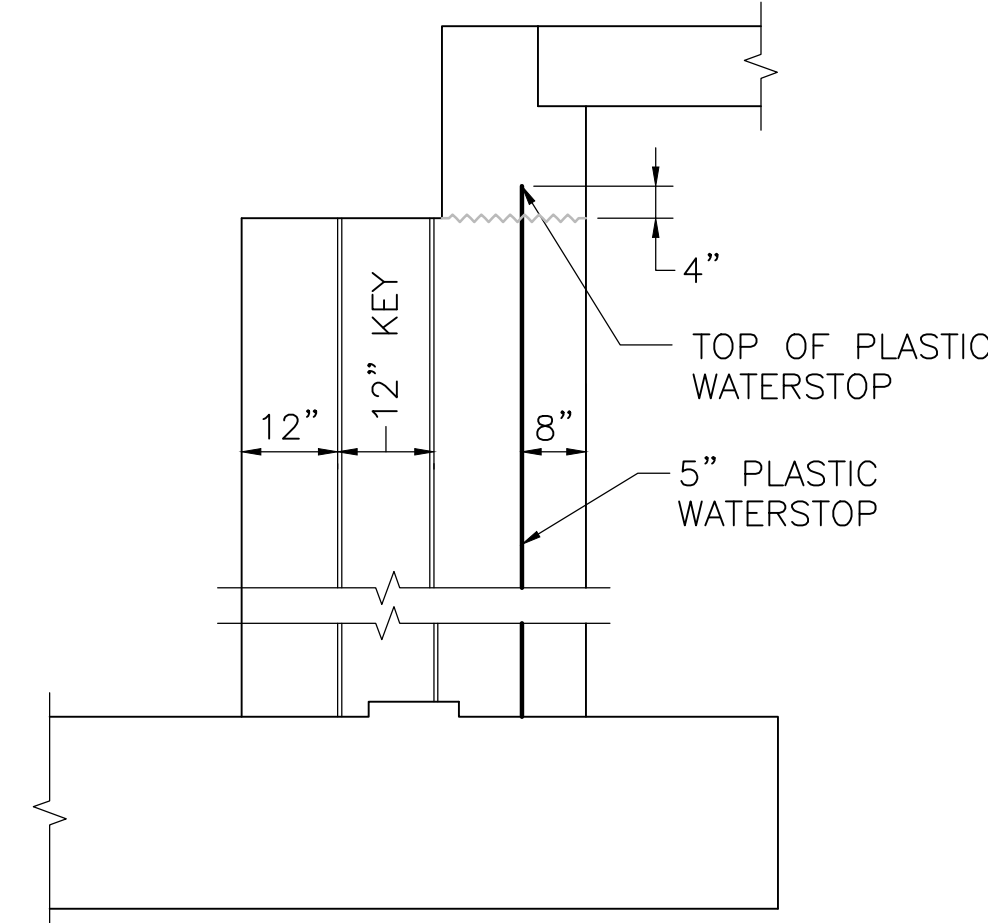
ABUTMENT LIMITS OF CRUSHED STONE FOR BRIDGE FOUNDATIONS

NOT TO SCALE

NOTES:

- ϕ = 45° FOR DEPTH OF 5'-0" OR LESS.
 ϕ = 60° FOR DEPTH OVER 5'-0".
- LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES AND BOTTOM) AND TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS).

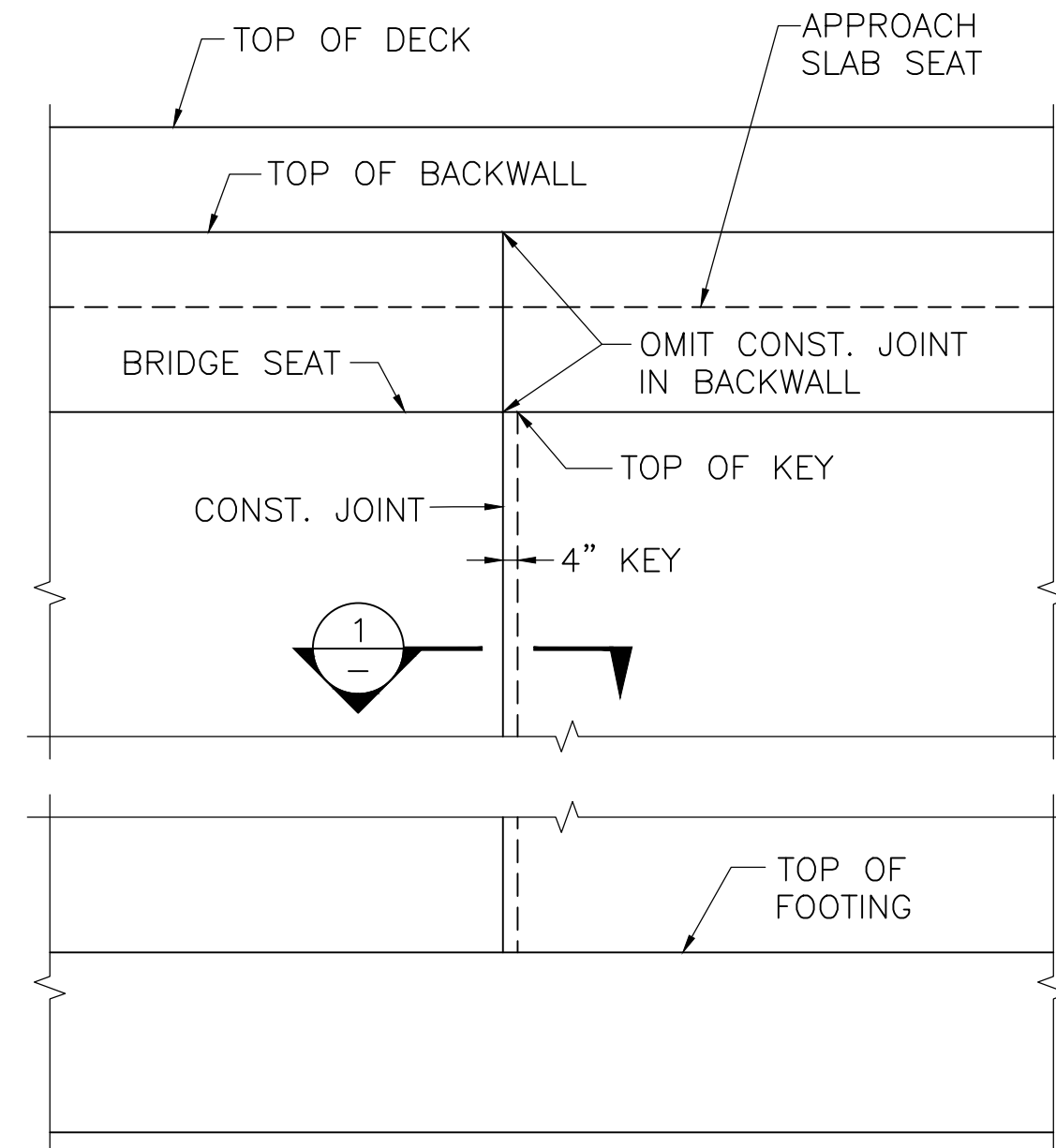
* CONST. JT. WITH 12"x12"x2" SHEAR KEYS @ 3'-0" O.C.



NOTE:
REINFORCEMENT SHALL BE CONTINUOUS THRU CONSTRUCTION JOINT.

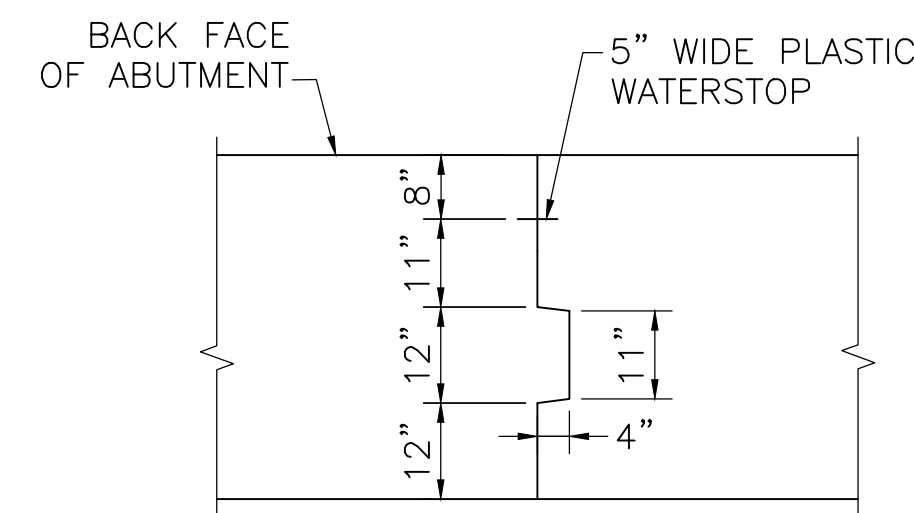
VERTICAL SECTION THRU CONSTRUCTION JOINT

SCALE: 1/2" = 1'-0"



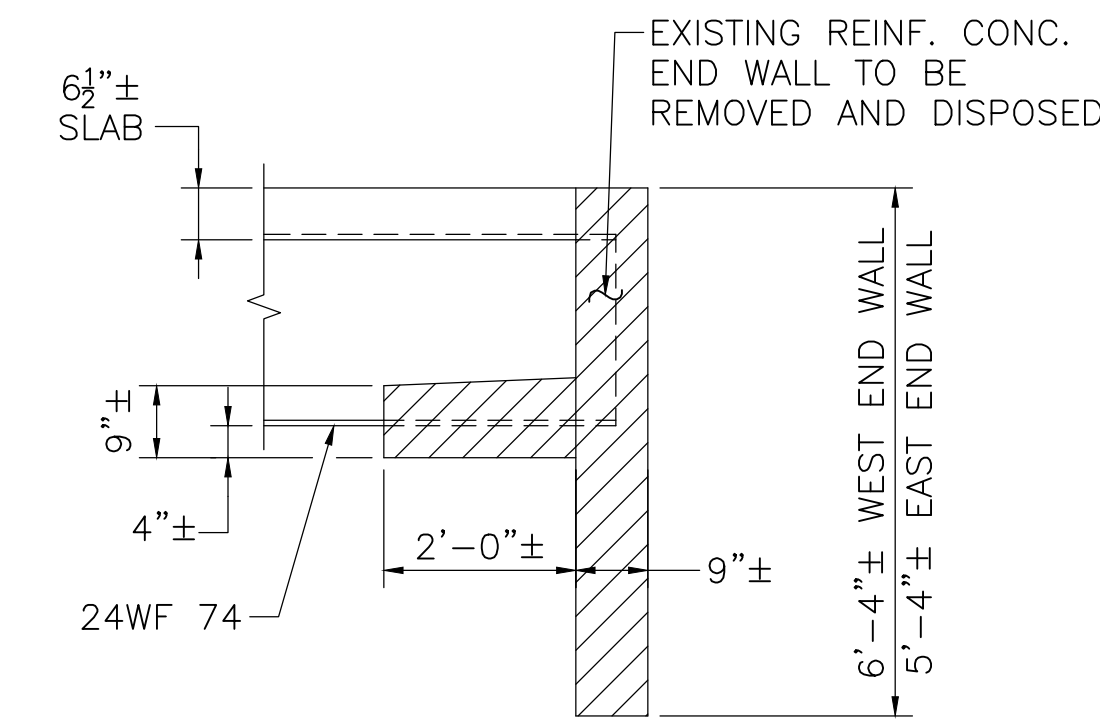
CONSTRUCTION JOINT ELEVATION

SCALE: 1/2" = 1'-0"



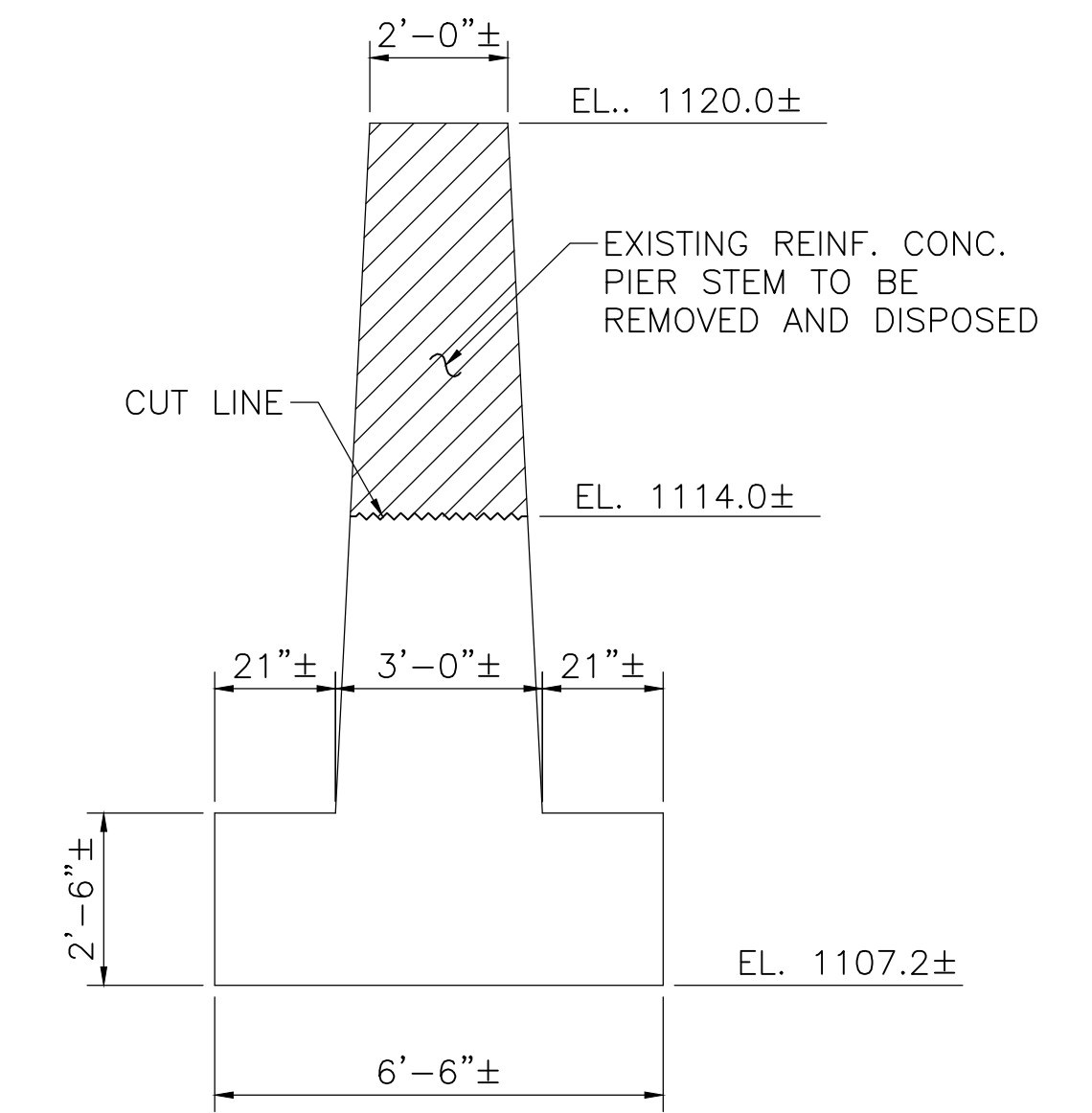
SECTION 1

SCALE: 1/2" = 1'-0"



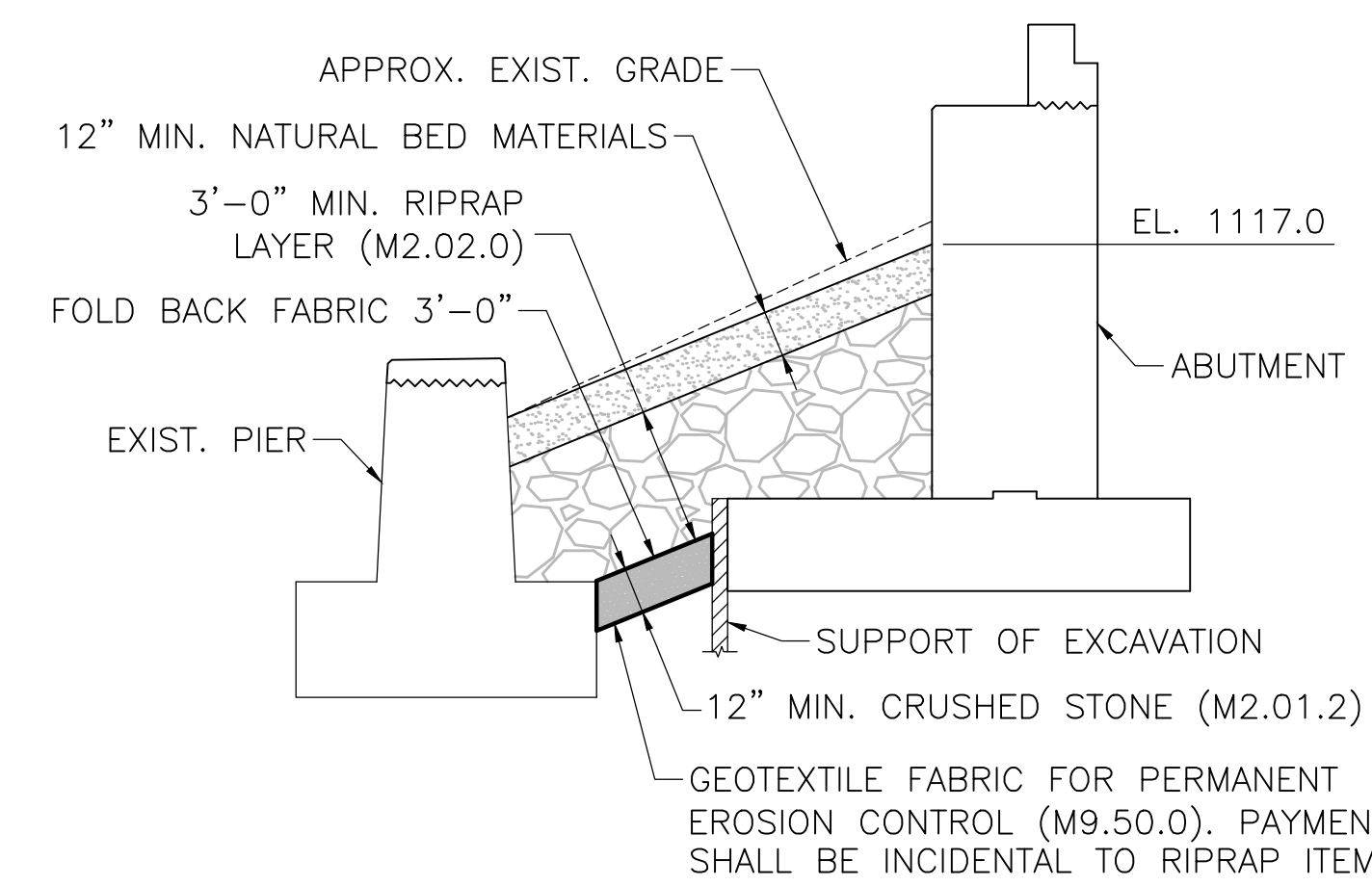
DEMOLITION DETAIL OF EXISTING END WALL

SCALE: 1/2" = 1'-0"



DEMOLITION DETAIL OF EXISTING PIER

SCALE: 3/8" = 1'-0"

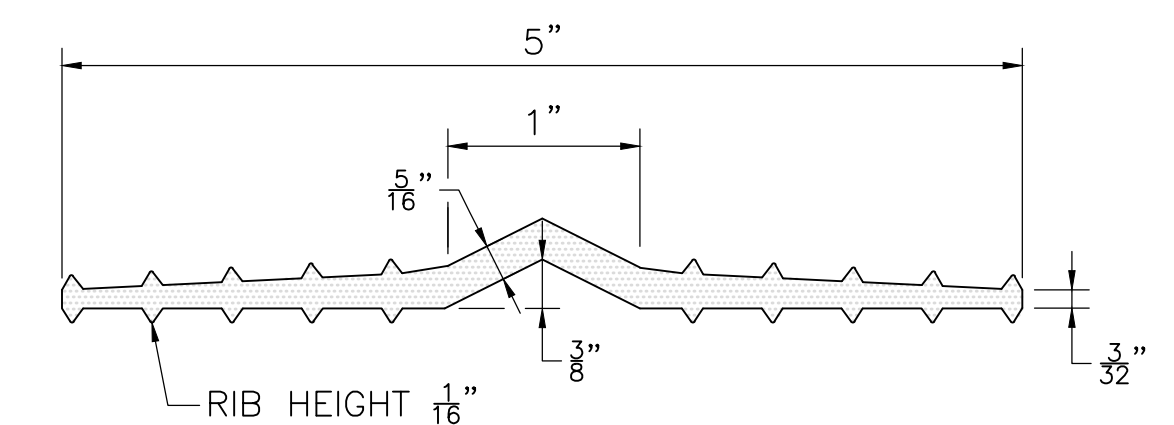


RIPRAP DETAIL AT ABUTMENT AND PIER

SCALE: 1/4" = 1'-0"

NOTES:

- RIPRAP SHALL BE SLOPED AT APPROXIMATELY 2:1 TOWARD EXISTING PIER AND BEYOND.
- EXCAVATION FOR RIPRAP SHALL BE PAID UNDER ITEM 140 - BRIDGE EXCAVATION.
- THE NATURAL BED MATERIALS SHALL CONSIST OF EXCAVATED MATERIAL FROM THE EXISTING STREAM BED AND EMBANKMENT. PAYMENT SHALL BE INCIDENTAL TO RIPRAP ITEM.



5" WATERSTOP

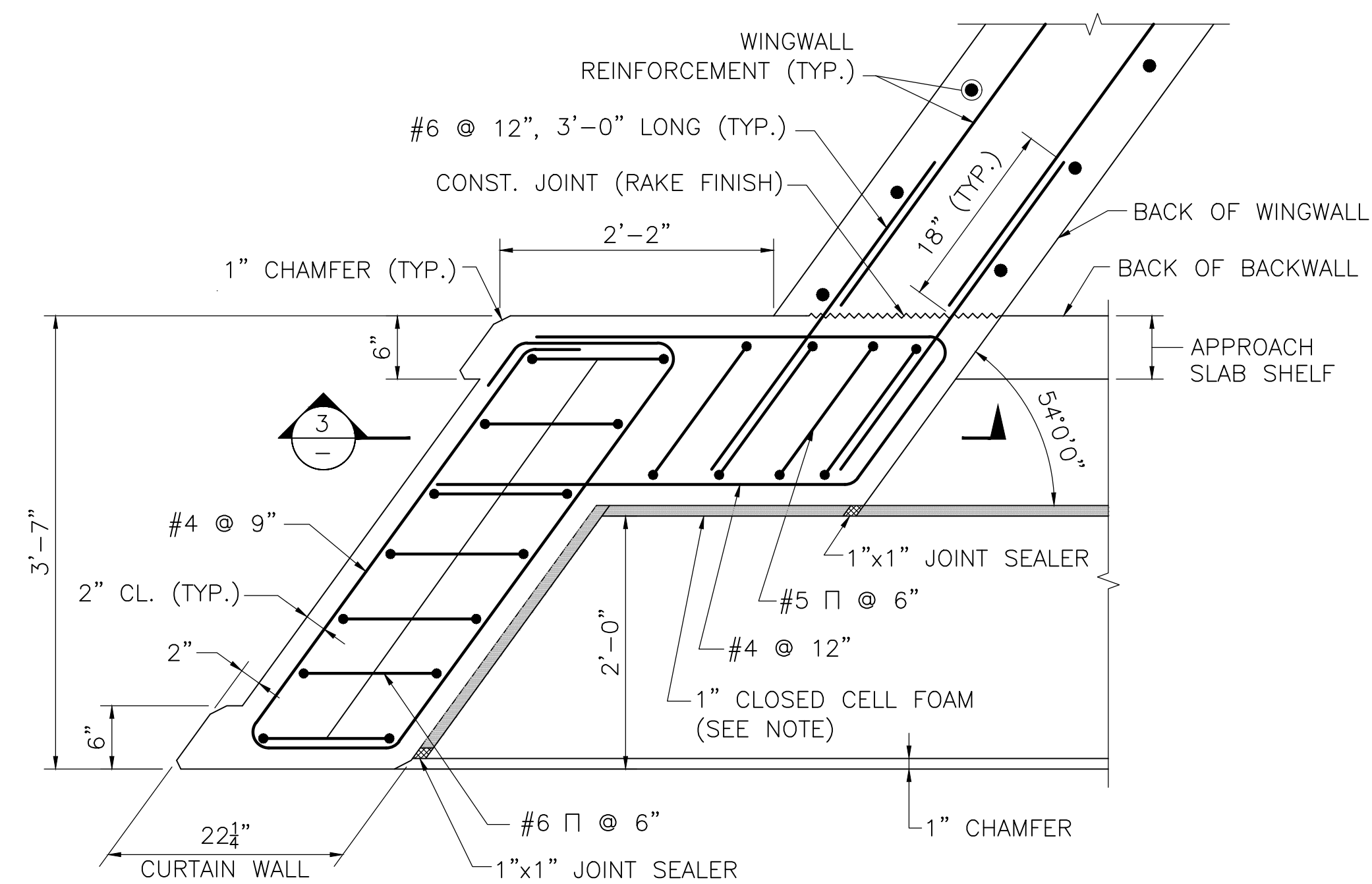
NOT TO SCALE

| DATE | DESCRIPTION |
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| | AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER |
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**LANESBOROUGH
BRIDGE STREET**

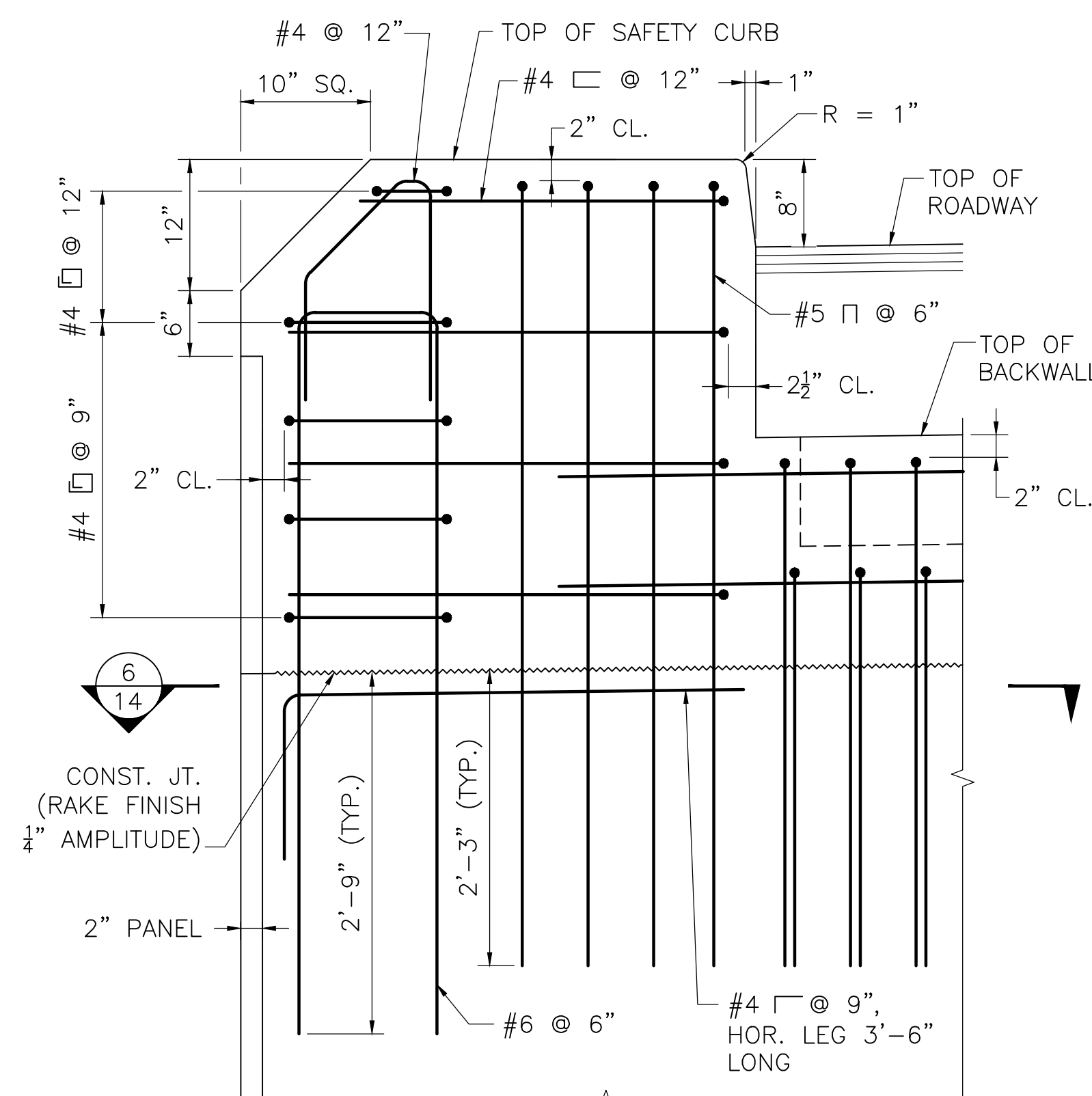
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 27 | 47 |
| PROJECT FILE NO. | | | 609428 |

ABUTMENT DETAILS II



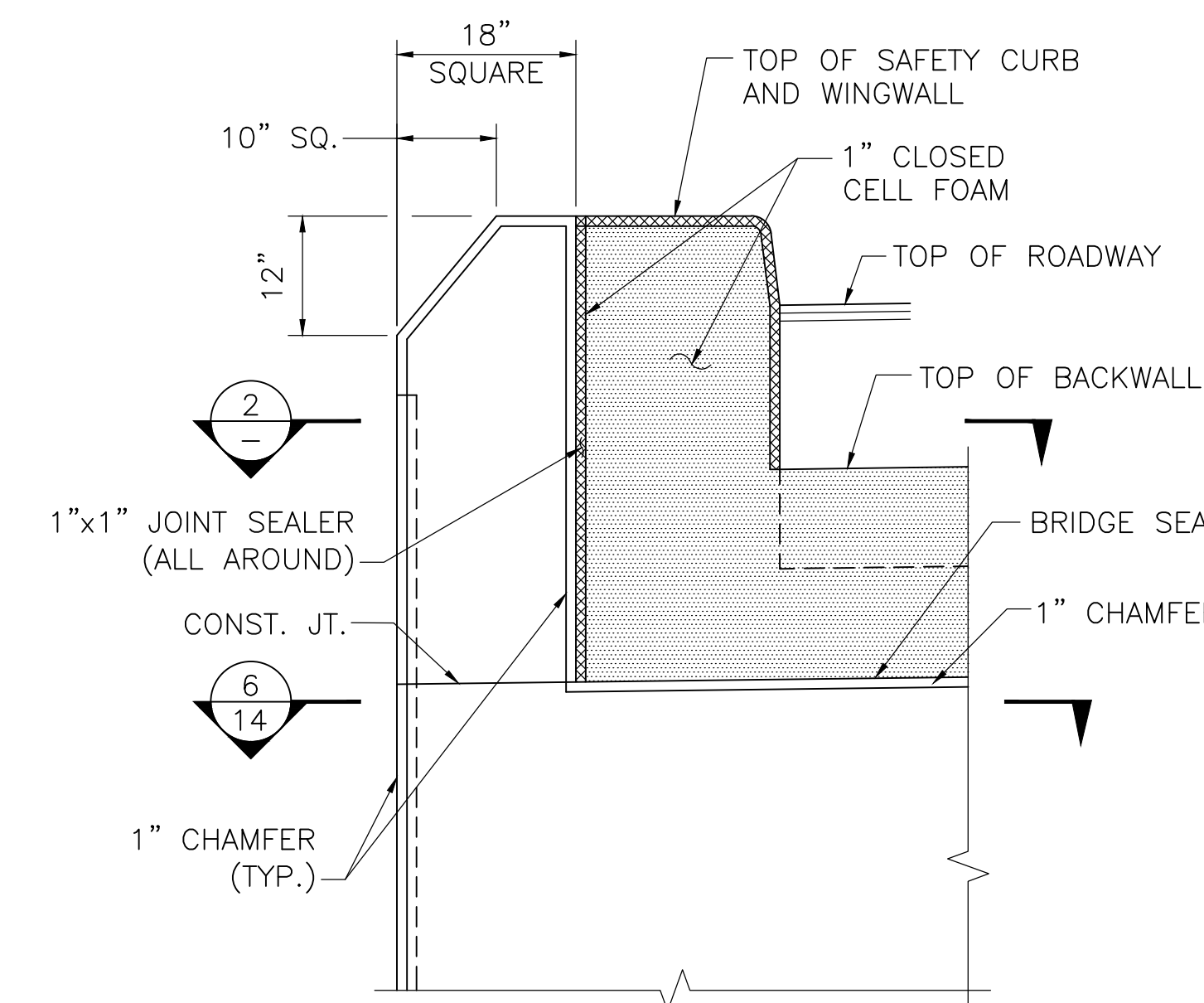
NOTE:
ATTACH CLOSED CELL FOAM TO THE BACK AND SIDE OF THE EXTERIOR PRECAST BEAM PRIOR TO PLACING THE CONCRETE FOR THE BACKWALL AND CURTAIN WALL.

SECTION 2
SCALE: 1" = 1'-0"

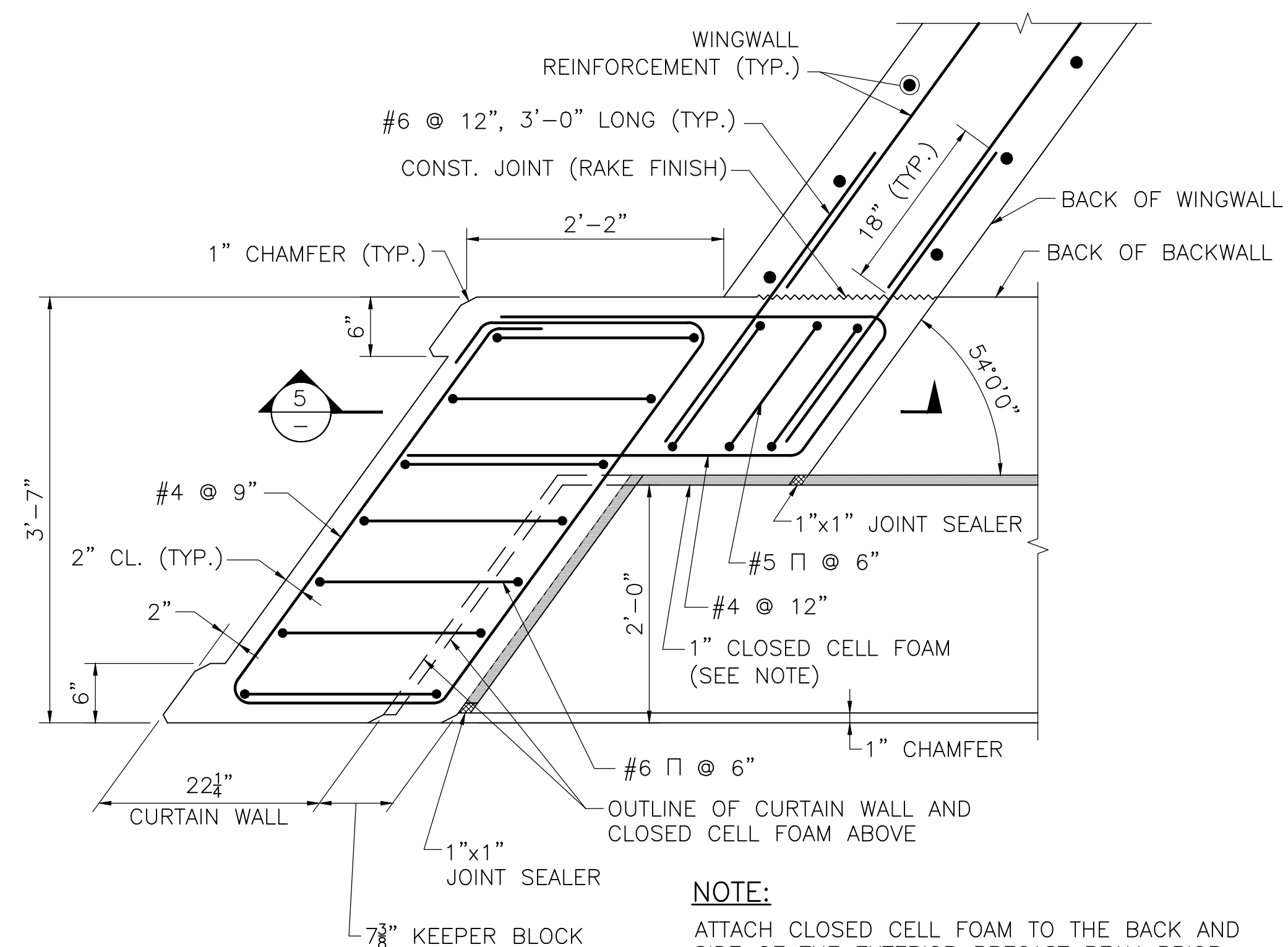


NOTE:
ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.

SECTION 3
SCALE: 1" = 1'-0"

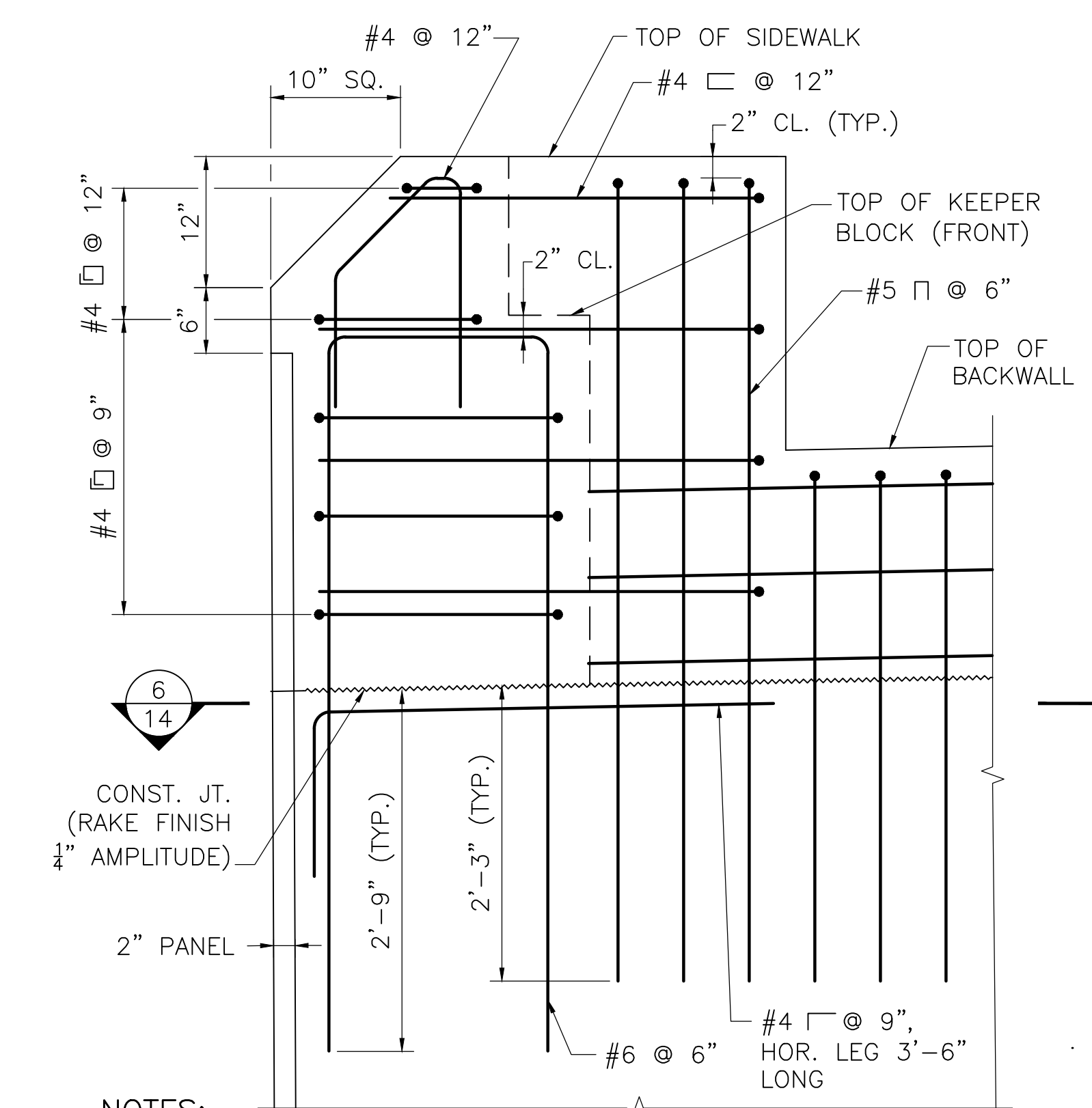


CURTAIN WALL ELEVATION
SCALE: 3/4" = 1'-0"



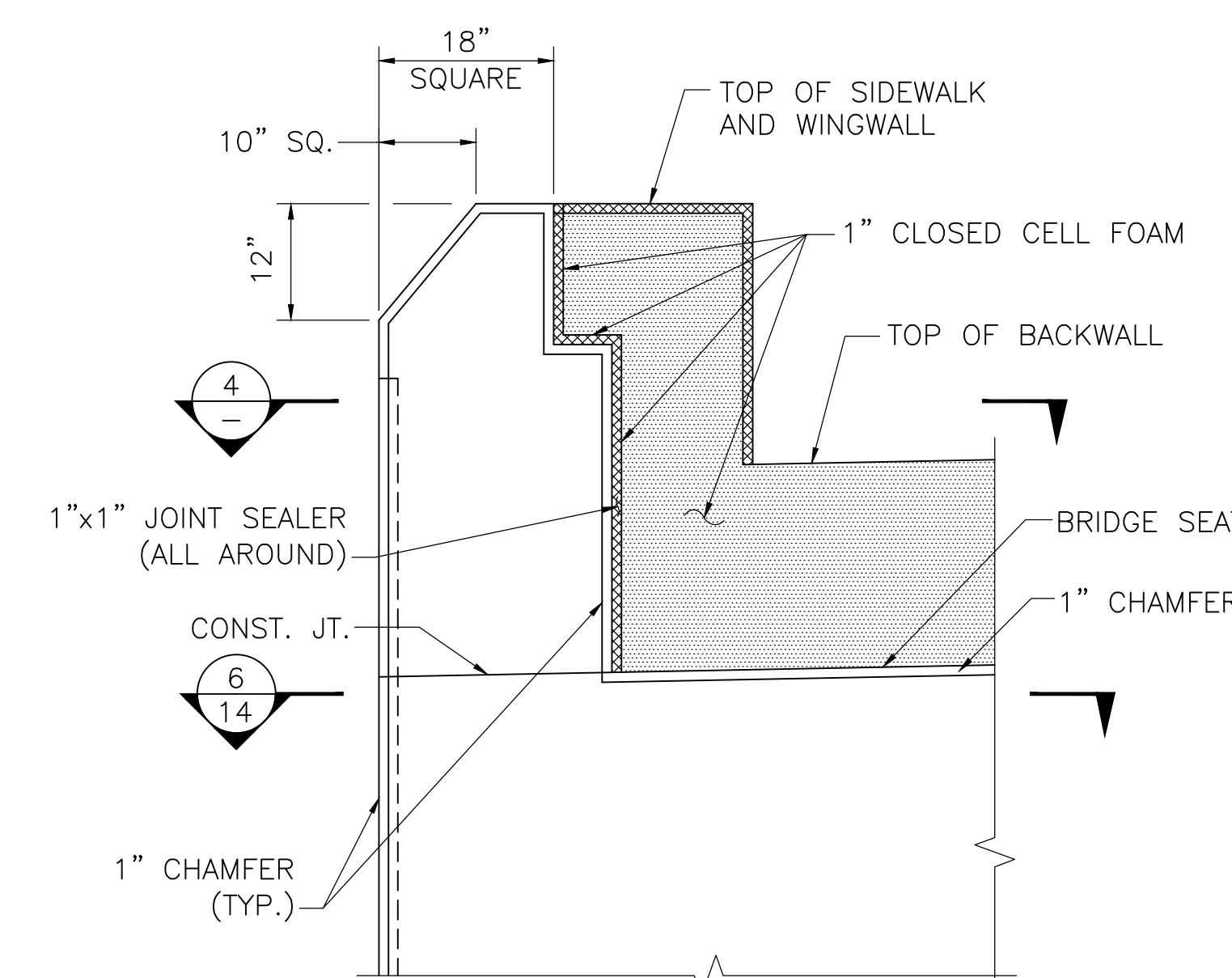
NOTE:
ATTACH CLOSED CELL FOAM TO THE BACK AND SIDE OF THE EXTERIOR PRECAST BEAM PRIOR TO PLACING THE CONCRETE FOR THE BACKWALL, KEEPER BLOCK AND CURTAIN WALL.

SECTION 4
SCALE: 1" = 1'-0"



NOTES:
1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
2. ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.

SECTION 5
SCALE: 1" = 1'-0"



CURTAIN WALL ELEVATION
SCALE: 3/4" = 1'-0"

CURTAIN WALL DETAILS AT SIDEWALK

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|--|-------------------------|
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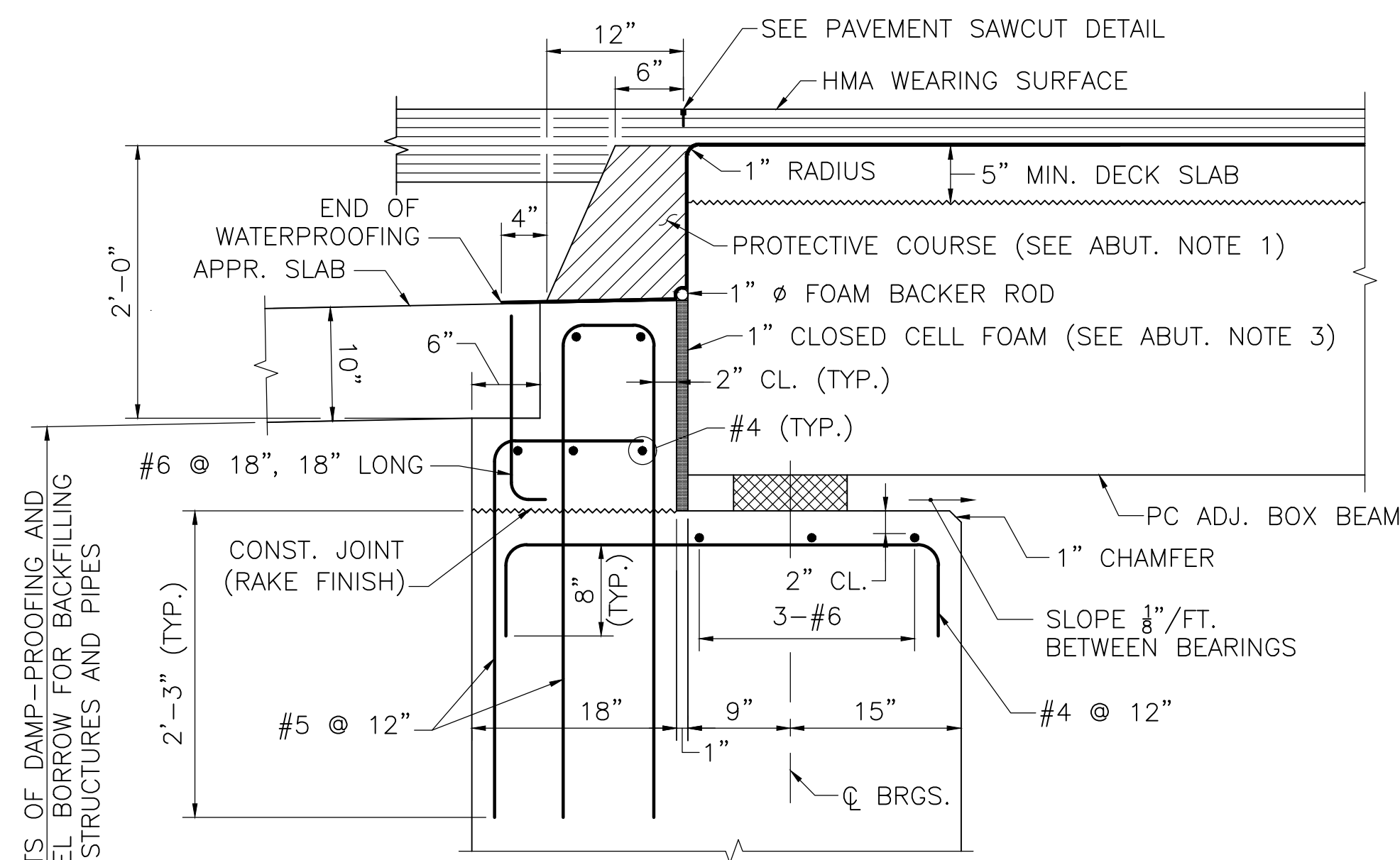
**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 28 | 47 |
| PROJECT FILE NO. | | 609428 | |

ABUTMENT DETAILS III

ABUTMENT NOTES:

1. PROTECTIVE COURSE TO BE CLASS I DENSE BINDER COURSE FOR BRIDGES, PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND-GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING WATERPROOFING.
2. ATTACH CLOSED CELL FOAM TO BACK OF PRECAST BEAM WITH ADHESIVE.
3. ALL BACKWALL, CURTAIN WALL AND KEEPER BLOCK CONCRETE SHALL BE PLACED AFTER ALL BEAMS HAVE BEEN ERECTED.
4. THE CONSTRUCTION JOINT AT THE BRIDGE SEAT SHALL BE GIVEN A RAKE FINISH WITH A 1/4" MINIMUM AMPLITUDE.

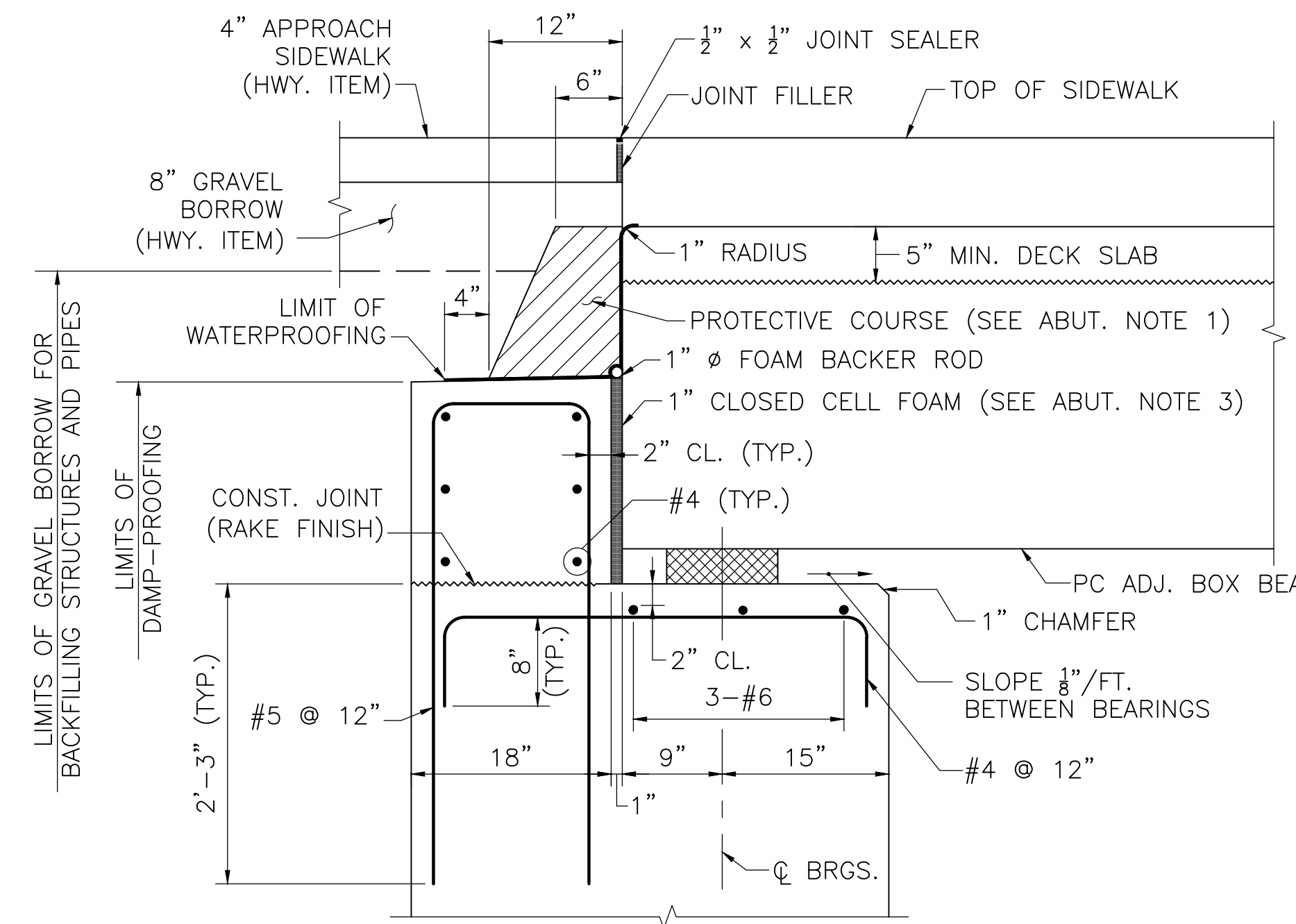


NOTE:

FOR LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES AND LIMITS OF DAMP-PROOFING SEE TYPICAL ABUTMENT SECTION ON SHEET 12.

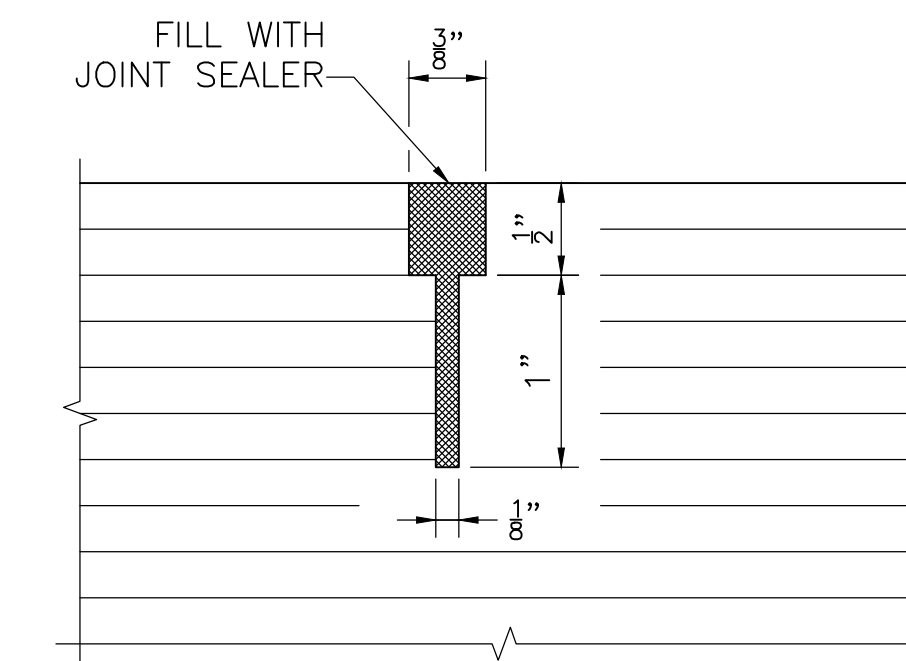
DETAILS AT ABUTMENT - ROADWAY SECTION

SCALE: 1" = 1'-0"



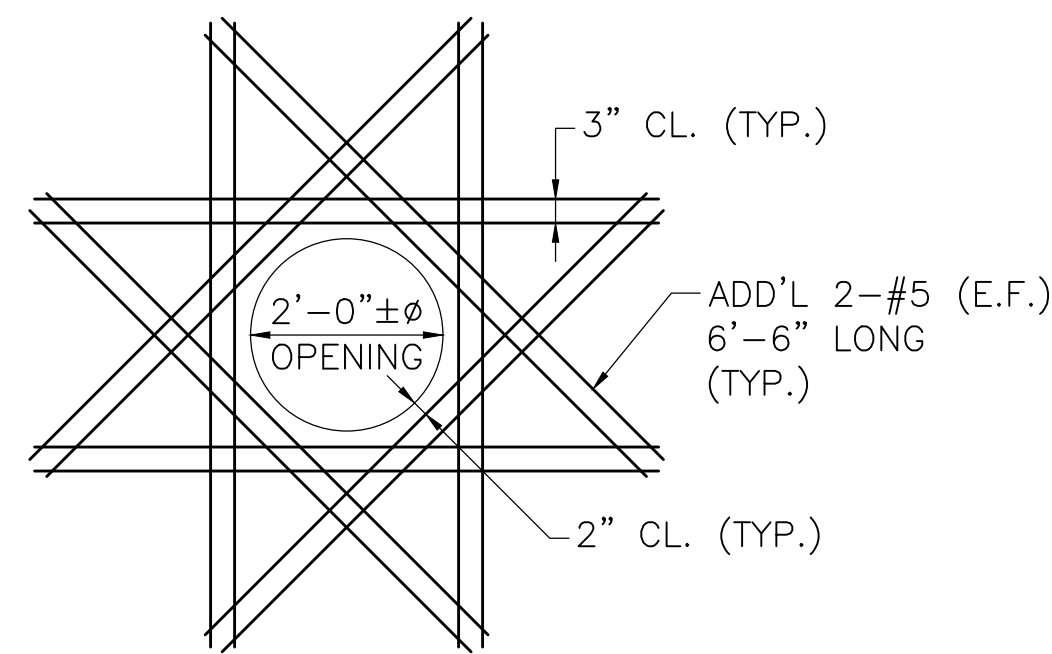
DETAILS AT ABUTMENT - SIDEWALK SECTION

SCALE: 1" = 1'-0"



PAVEMENT SAWCUT DETAIL

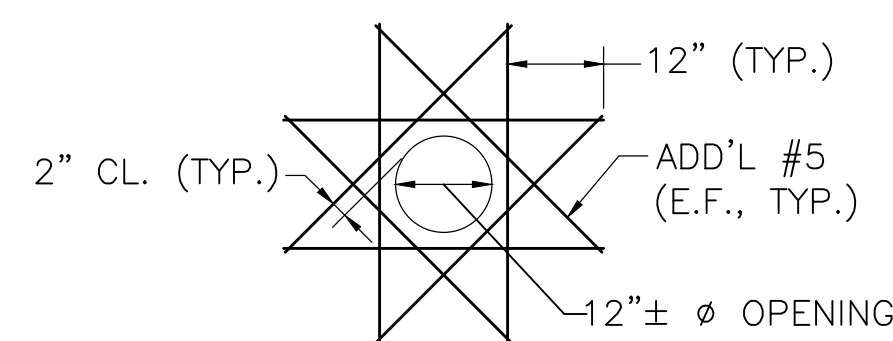
FULL SIZE



NOTE: ADJUST BARS AS NEEDED.

24" HDPE PIPE OPENING DETAIL

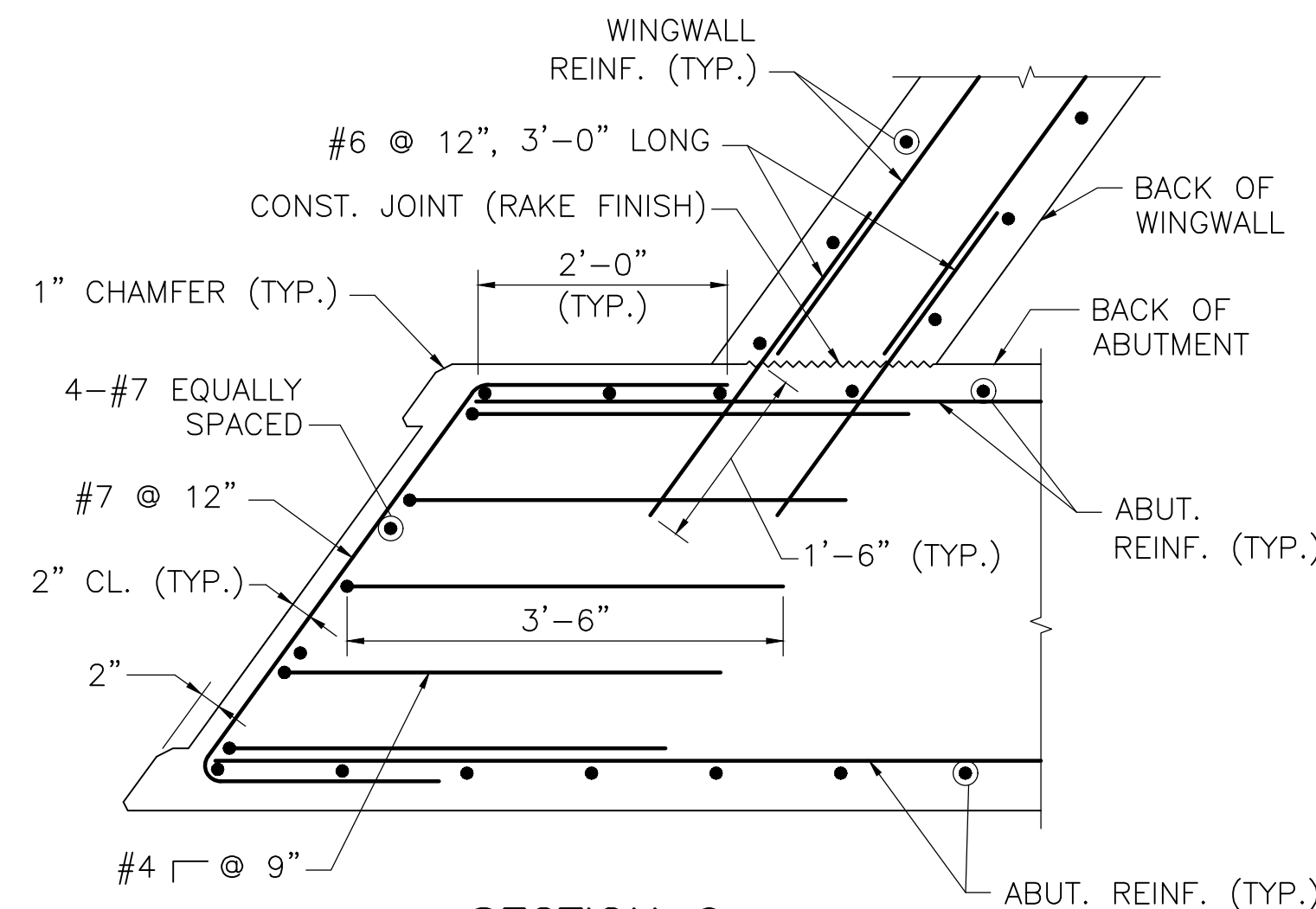
SCALE: 1/2" = 1'-0"



NOTE: ADJUST BARS AS NEEDED.

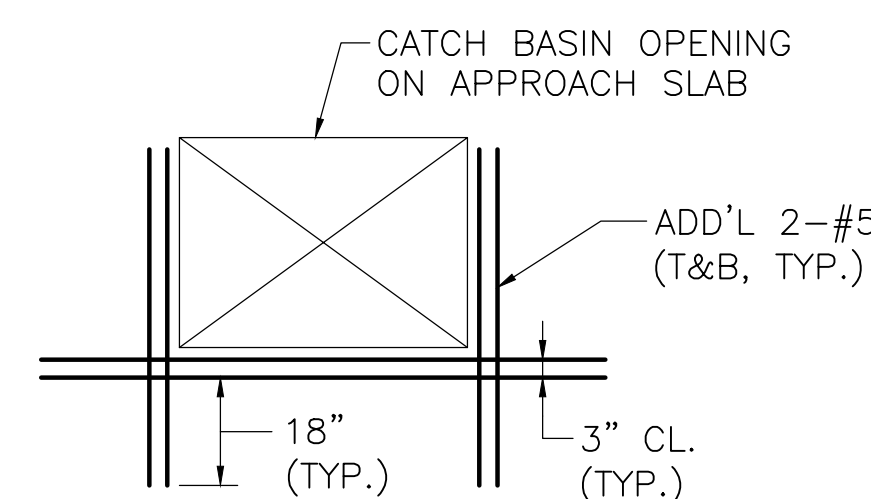
12" HDPE PIPE OPENING DETAIL

SCALE: 1/2" = 1'-0"



SECTION 6

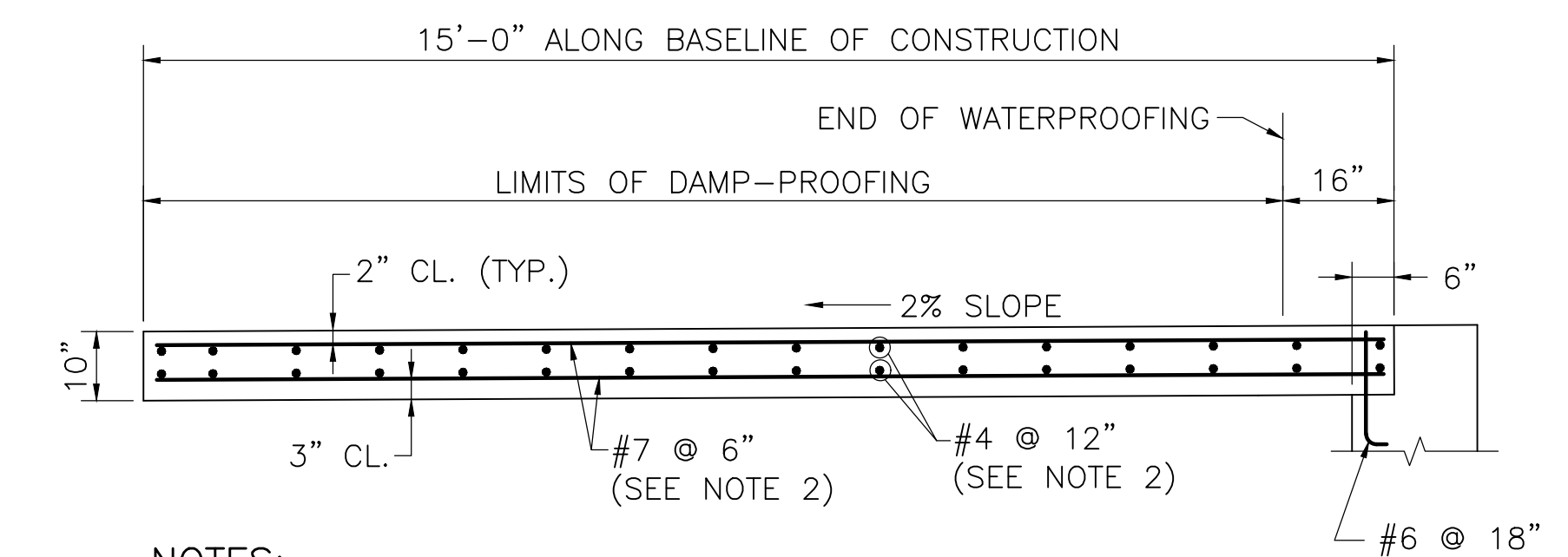
SCALE: 3/4" = 1'-0"



NOTE: THE LOCATION AND SIZE OF THE CATCH BASIN OPENING SHALL BE DETERMINED BY THE CONTRACTOR.

CATCH BASIN OPENING DETAIL

SCALE: 3/8" = 1'-0"



NOTES:

1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO BASELINE OF CONSTRUCTION. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
2. SEE CATCH BASIN OPENING DETAIL FOR UTILITY OPENING AT WEST ABUTMENT.

APPROACH SLAB DETAILS

SCALE: 1/2" = 1'-0"

| DATE | DESCRIPTION |
|--|-------------------------|
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| | |
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**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 29 | 47 |
| PROJECT FILE NO. | | 609428 | |

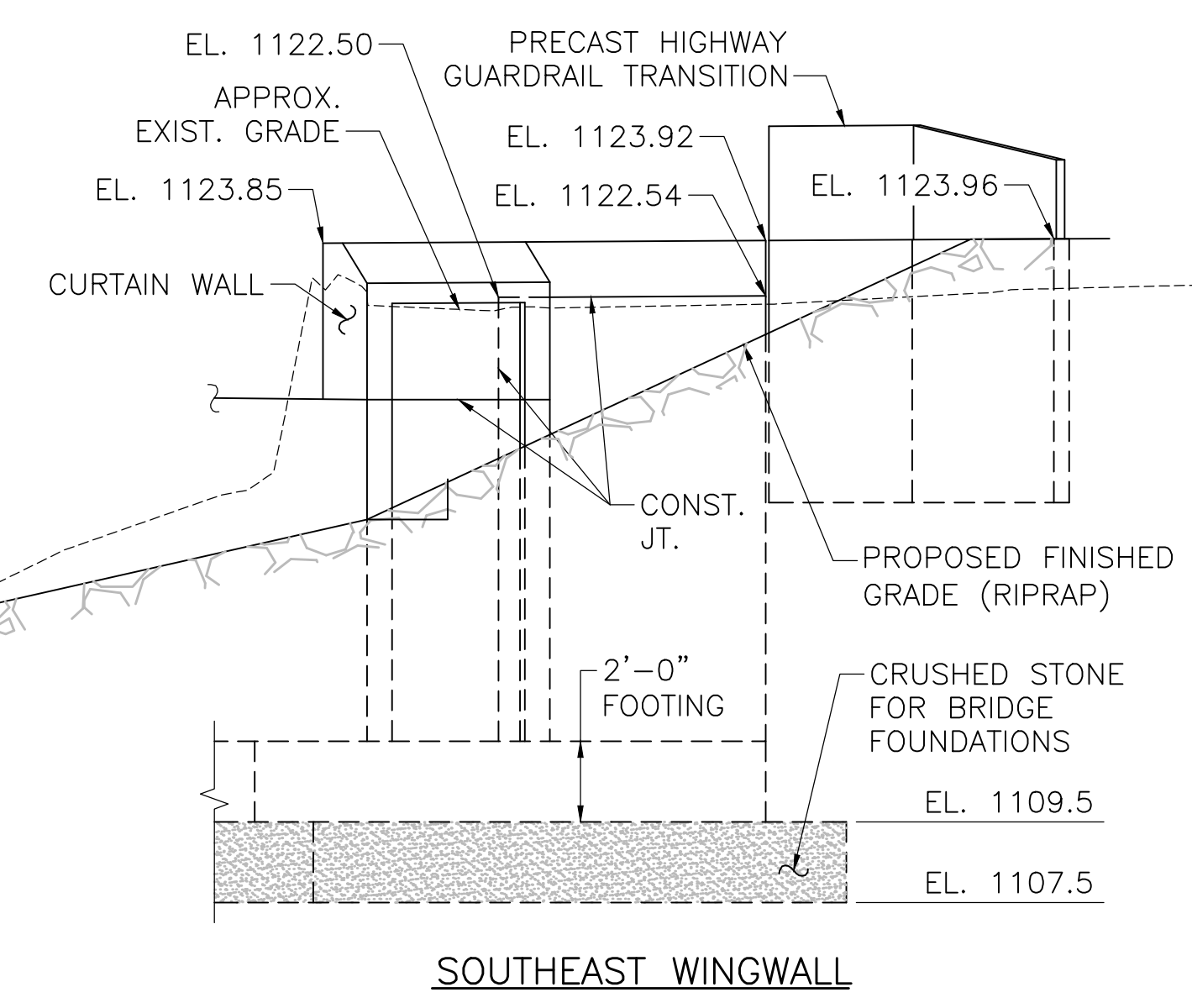
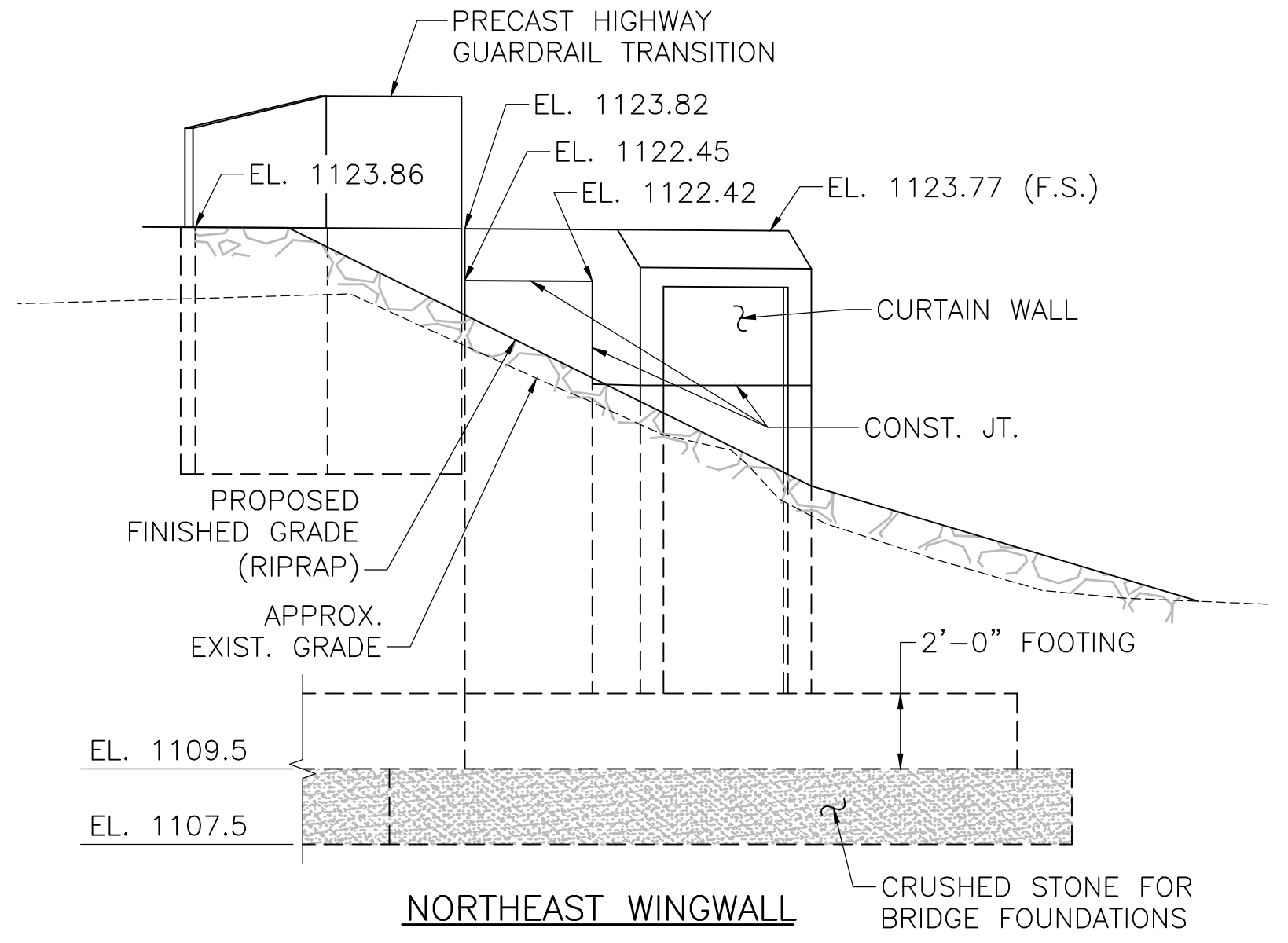
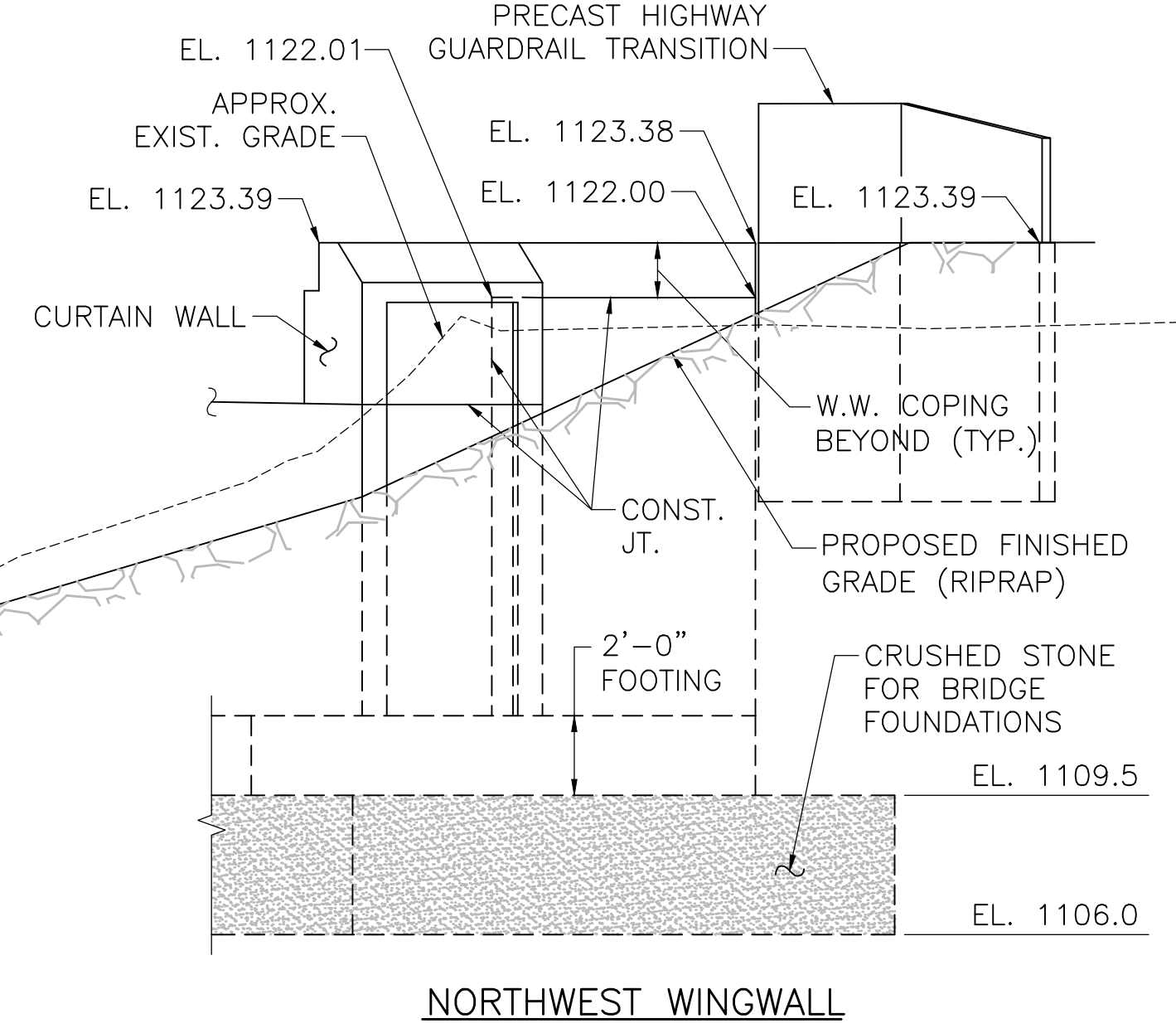
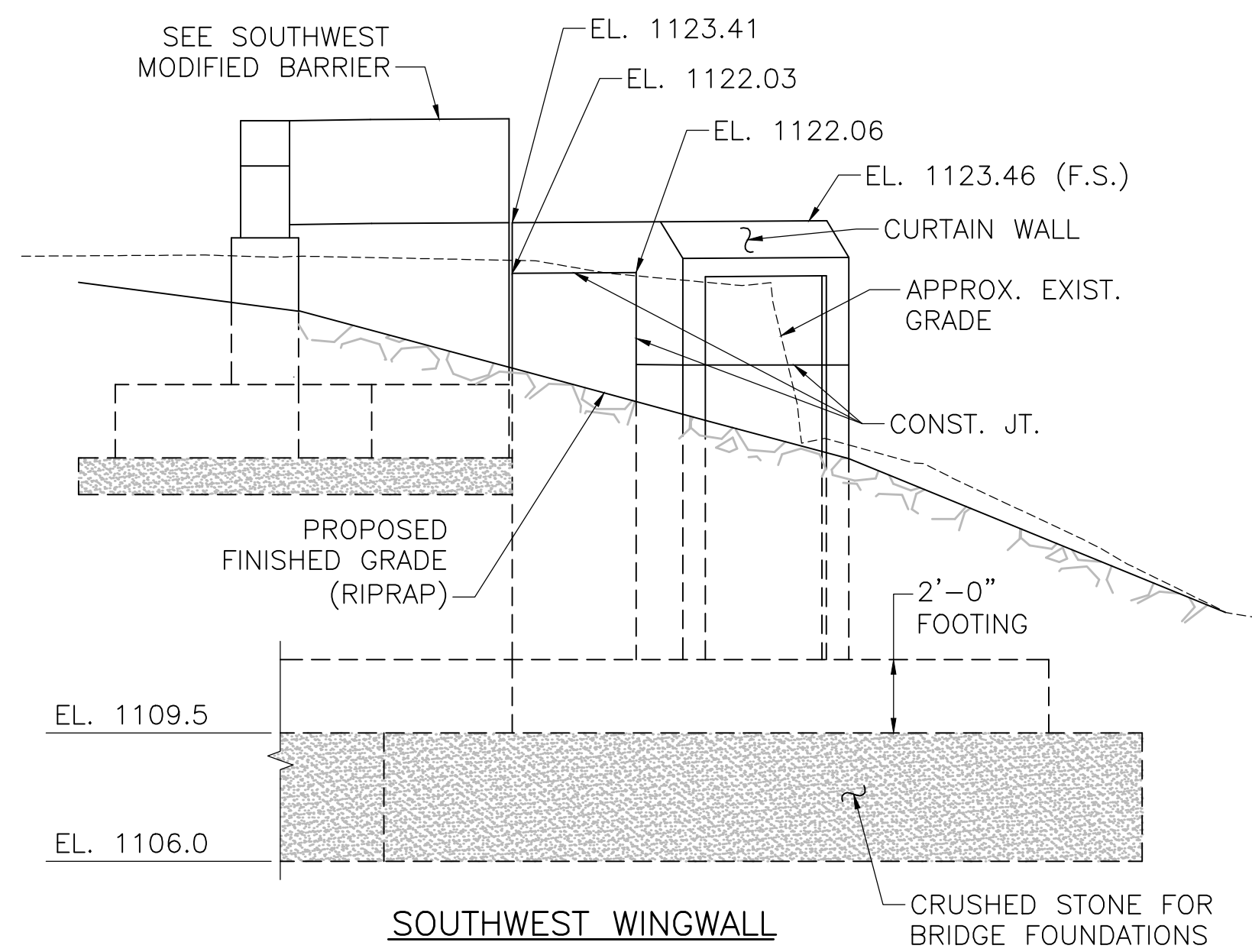
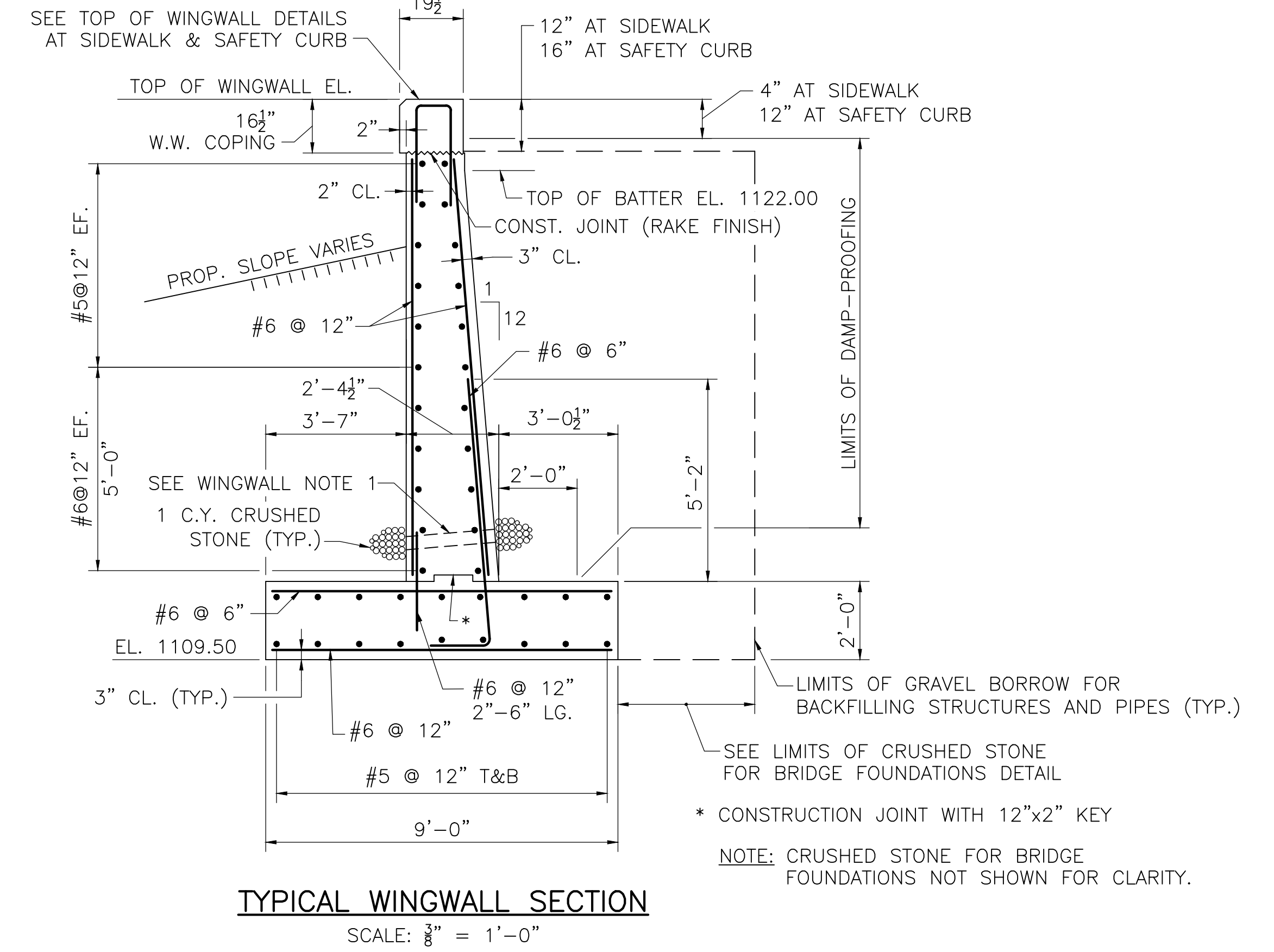
WINGWALL DETAILS

WINGWALL NOTES:

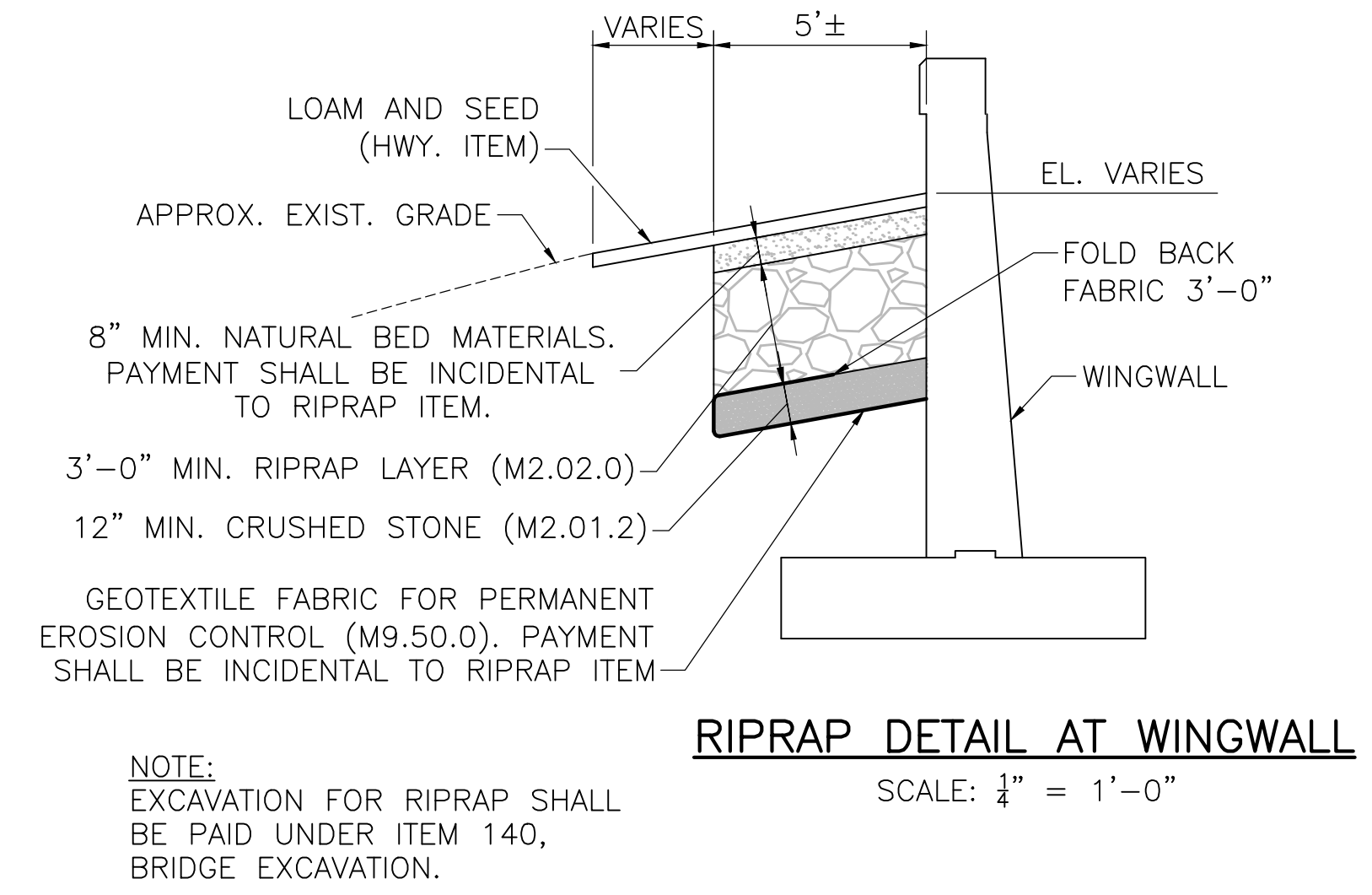
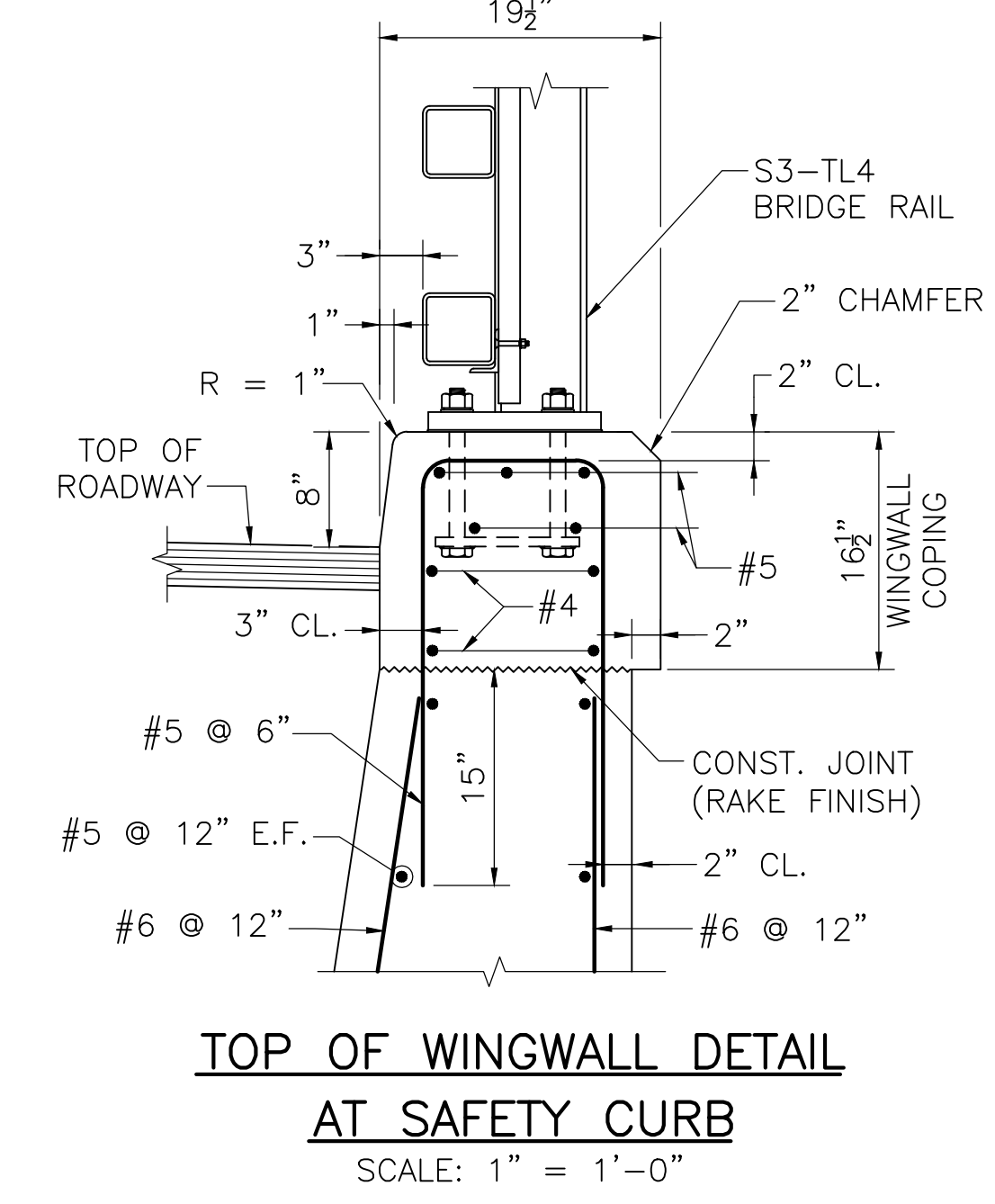
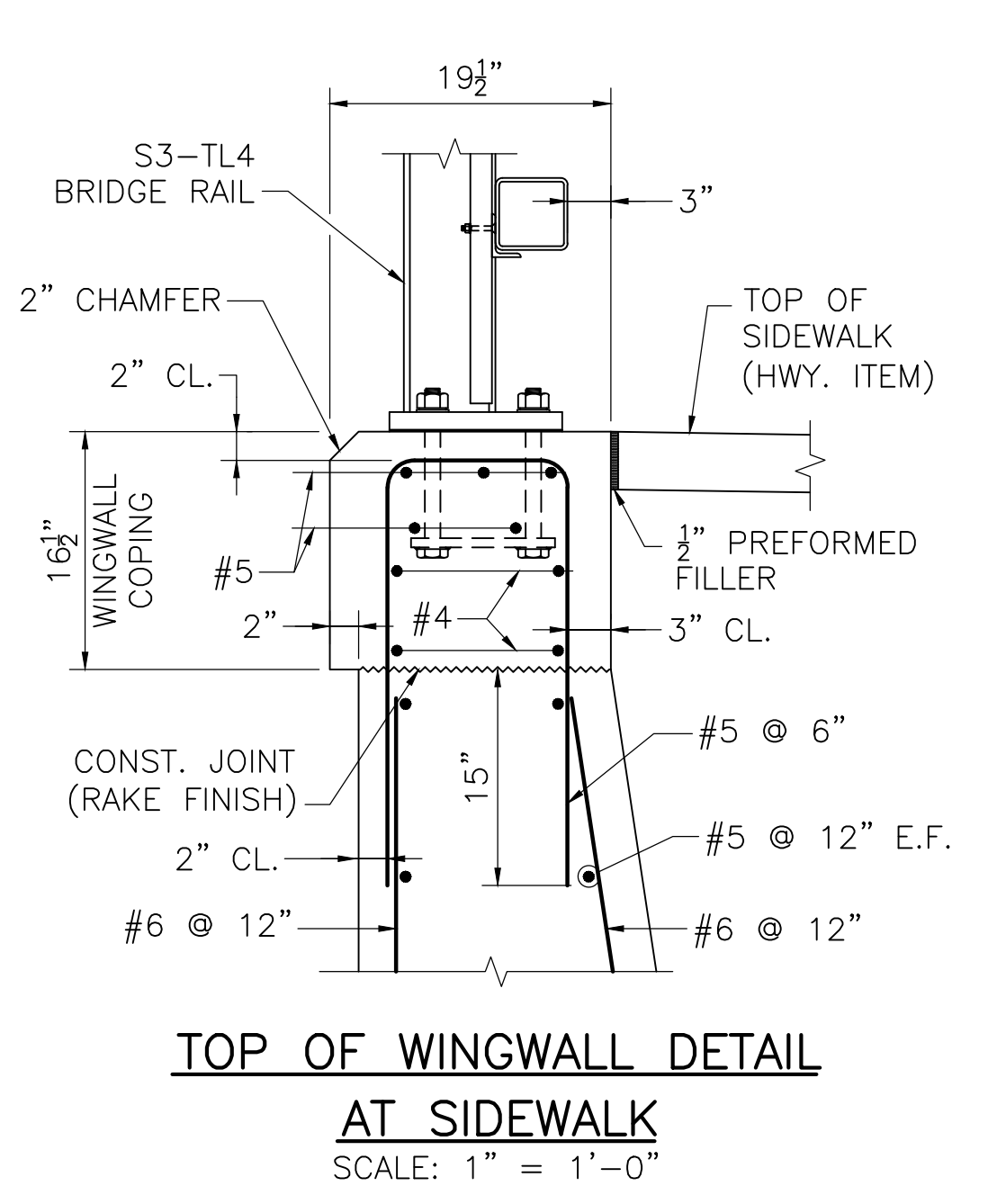
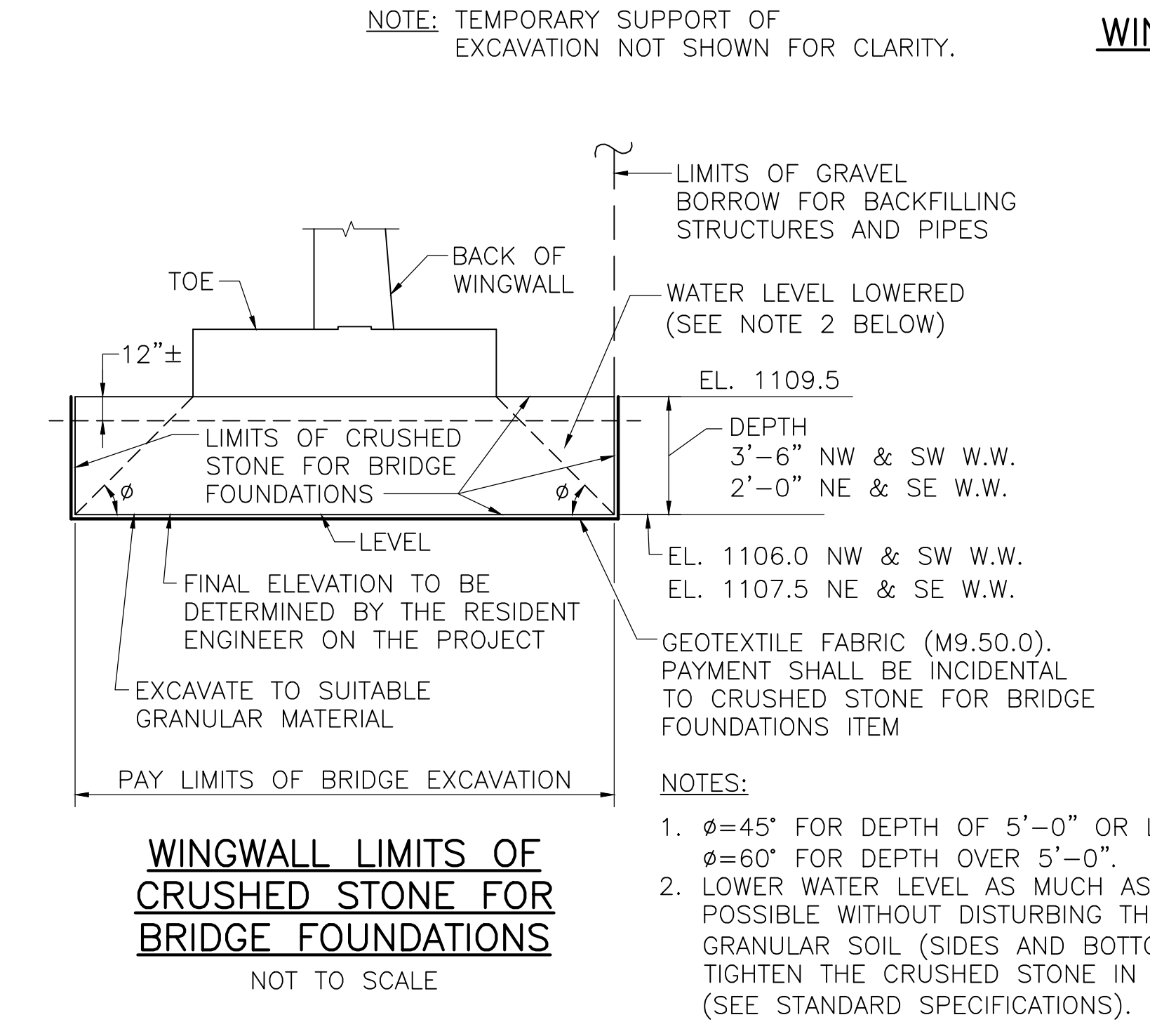
1. 4" Ø WEEP HOLES 10'-0" O.C. LOCATED 12" ABOVE THE HEEL OF THE FOOTING, SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.

2. THE SERVICE BEARING PRESSURE = 1.78 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SERVICE II LOAD COMBINATION.

THE SERVICE BEARING RESISTANCE = 3.0 KSF WITH A RESISTANCE FACTOR OF 1.0.



WINGWALL ELEVATIONS
SCALE: 1/4" = 1'-0"



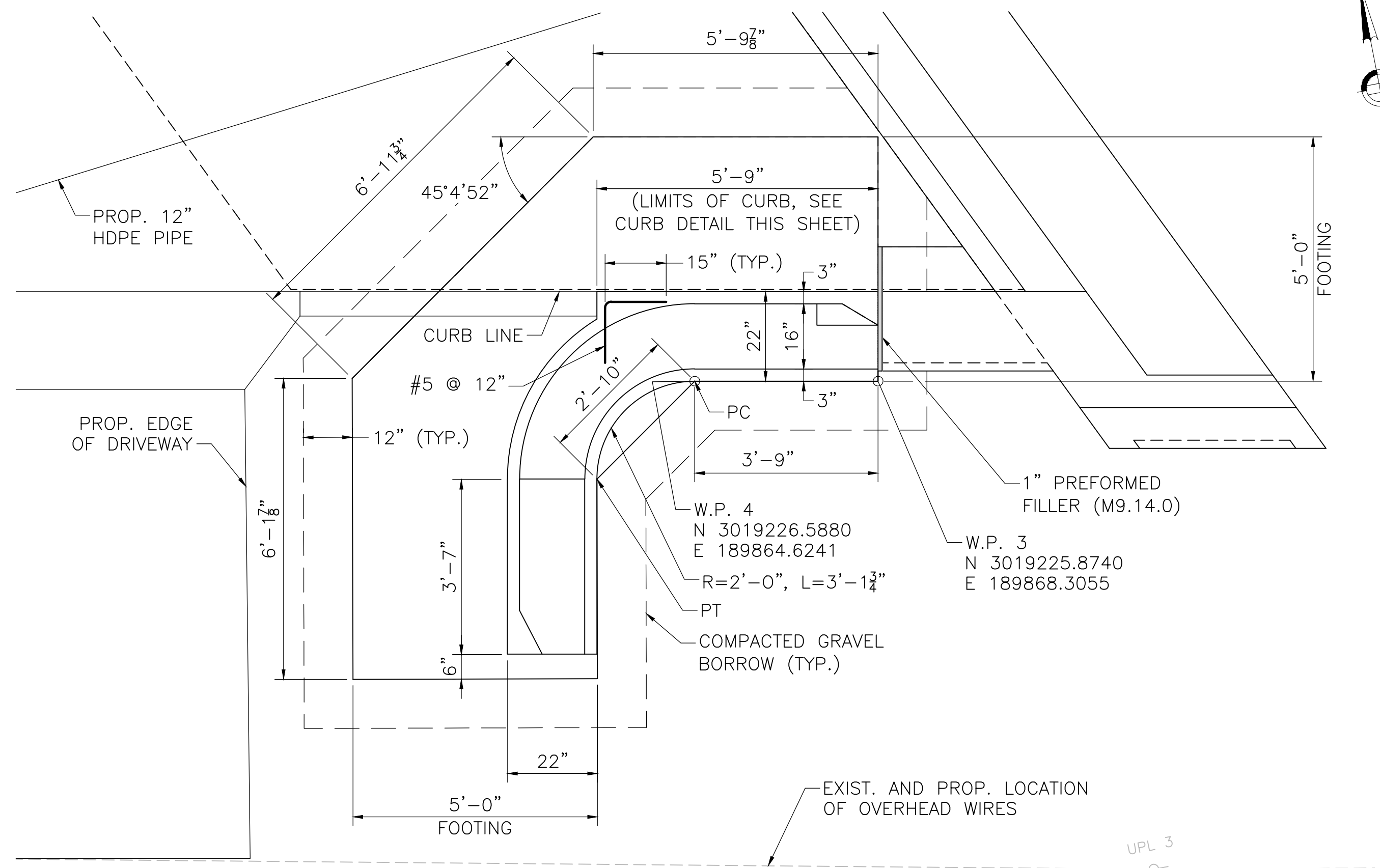
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|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
| AUTHORIZED SIGNATORY: | STATE BRIDGE ENGINEER |
| USE ONLY PRINTS OF LATEST DATE | |

609428_BR15(L03010)WINGWALL.DWG Plotted on 17-Oct-2024 4:46 PM 18-October-2024 Final Structural Submittal (SF)

**LANESBOROUGH
BRIDGE STREET**

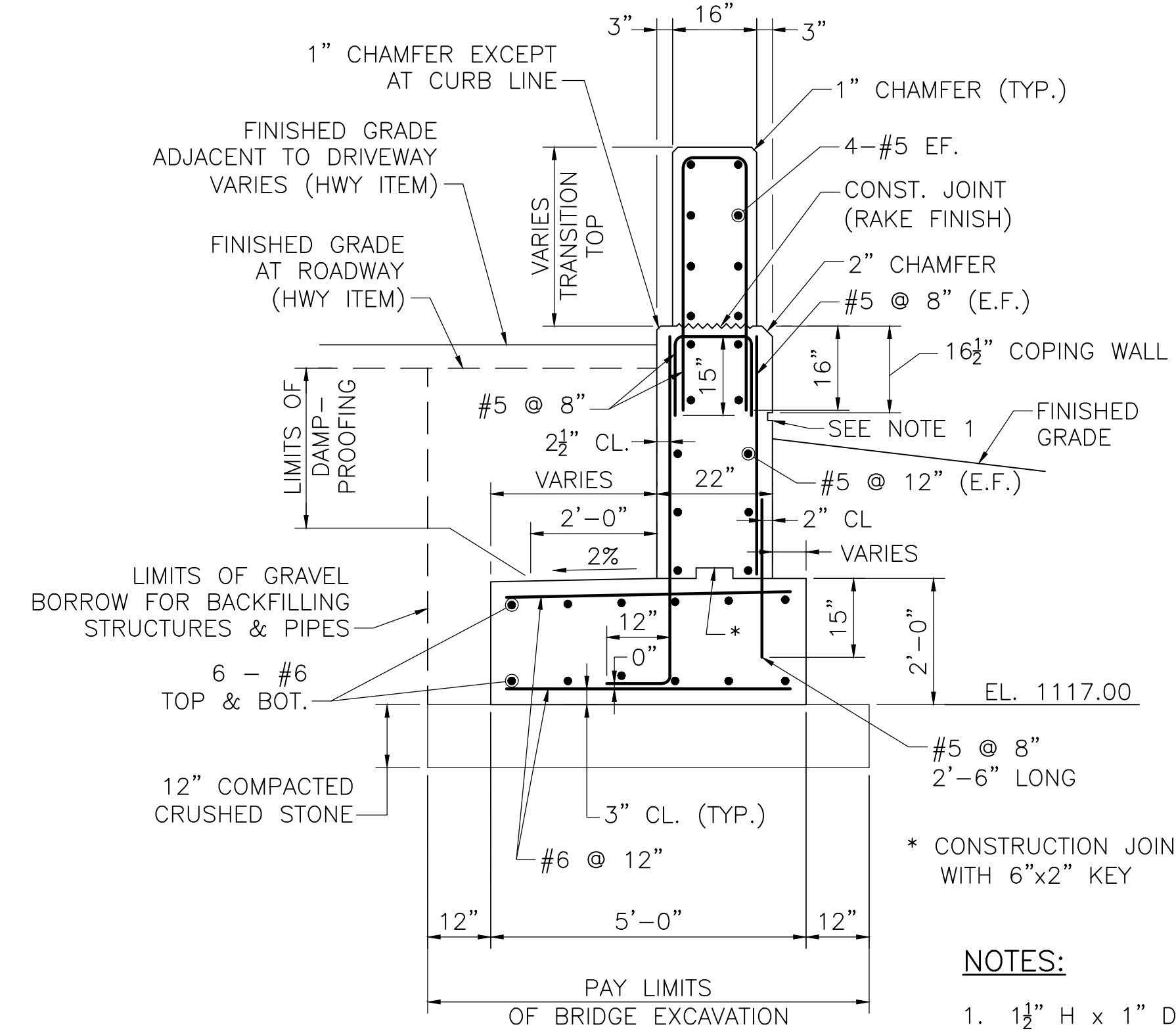
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 30 | 47 |
| PROJECT FILE NO. | | 609428 | |

SOUTHWEST MODIFIED BARRIER DETAILS



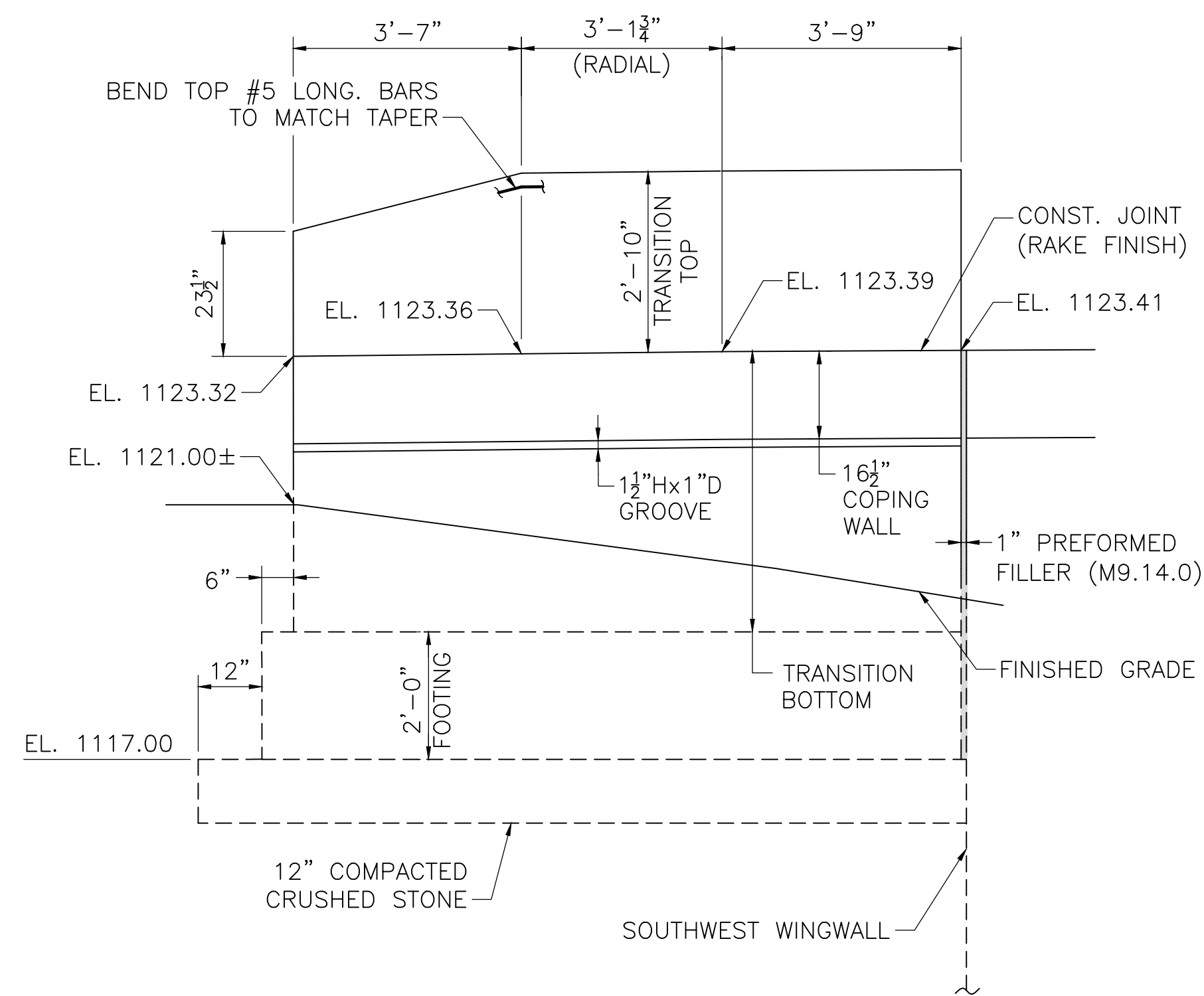
SOUTHWEST MODIFIED BARRIER PLAN

SCALE: 1/2" = 1'-0"



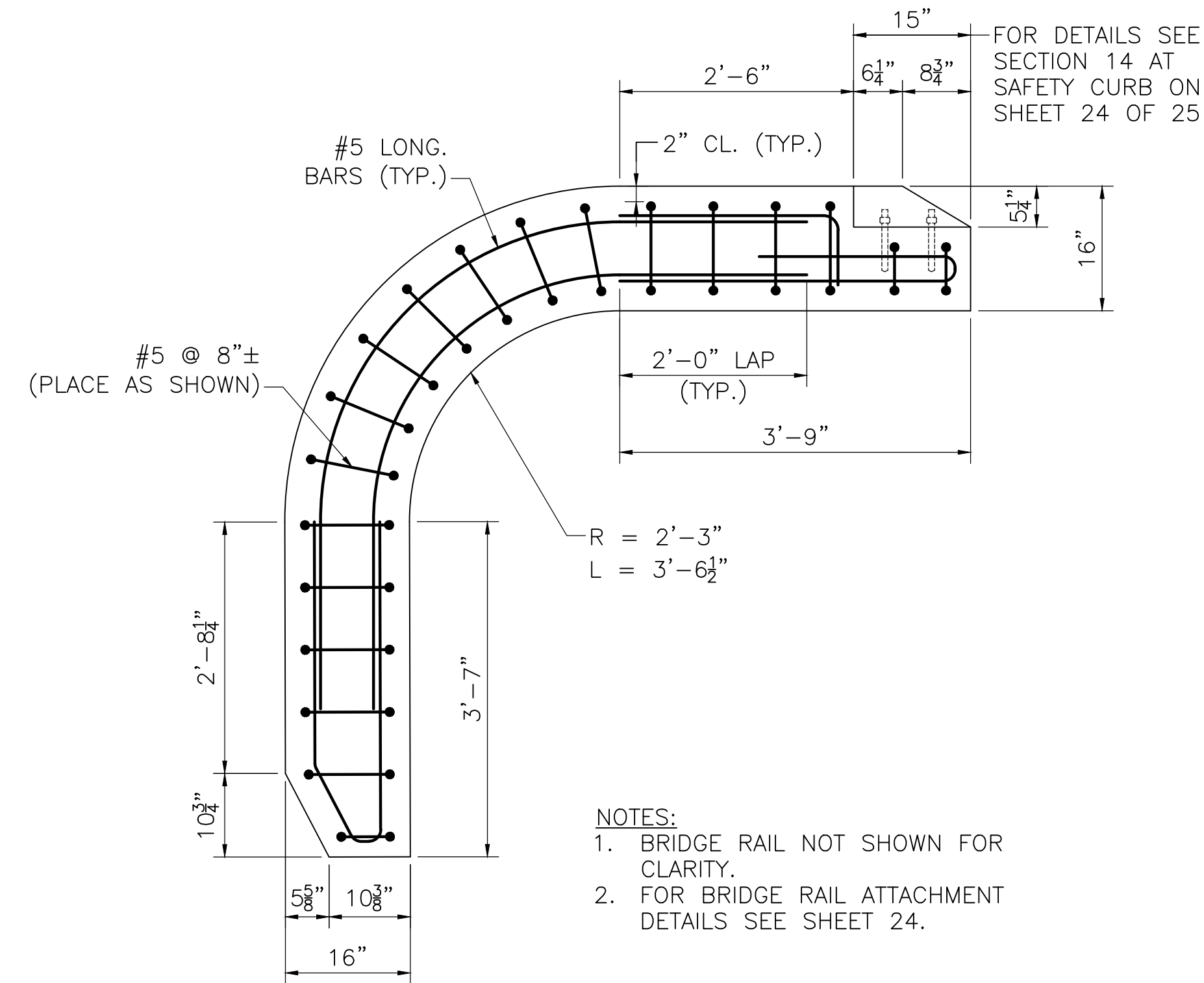
SOUTHWEST MODIFIED TRANSITION BARRIER SECTION

SCALE: 1/2" = 1'-0"



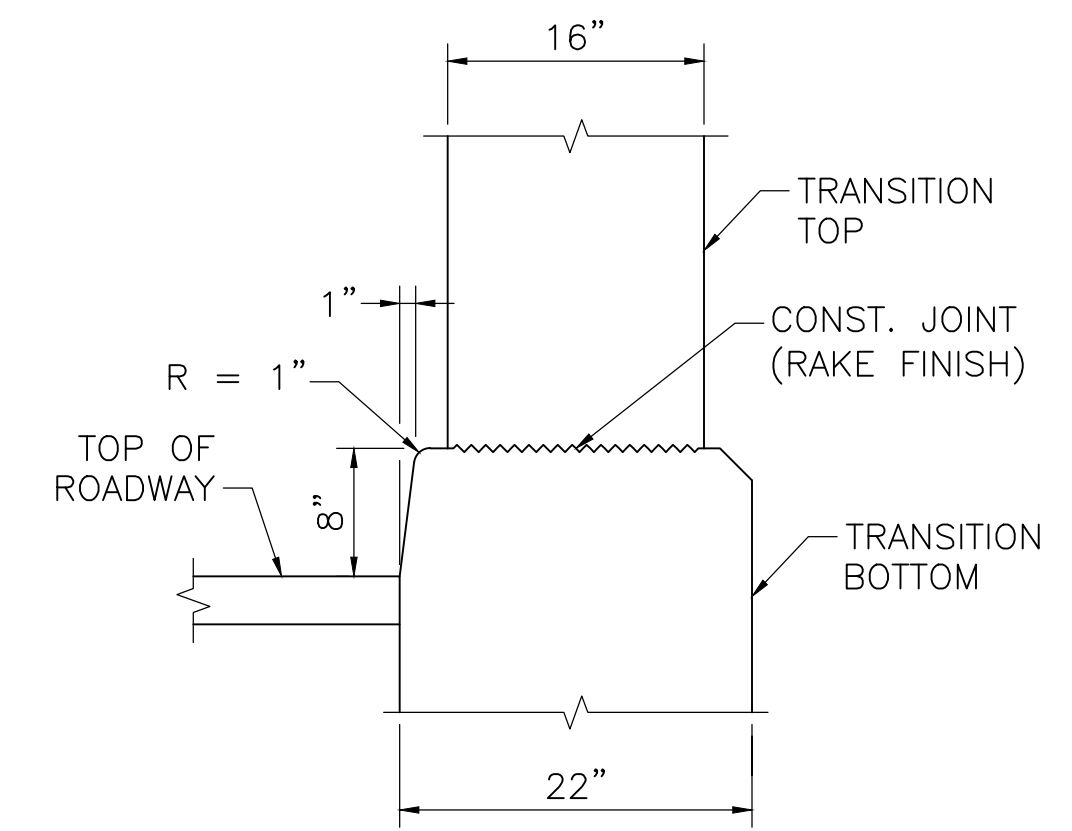
SOUTHWEST MODIFIED BARRIER DEVELOPED ELEVATION

SCALE: 1/2" = 1'-0"



HORIZONTAL SECTION THRU TRANSITION TOP

SCALE: 3/4" = 1'-0"



NOTE: REINFORCEMENT NOT SHOWN.

CURB DETAIL

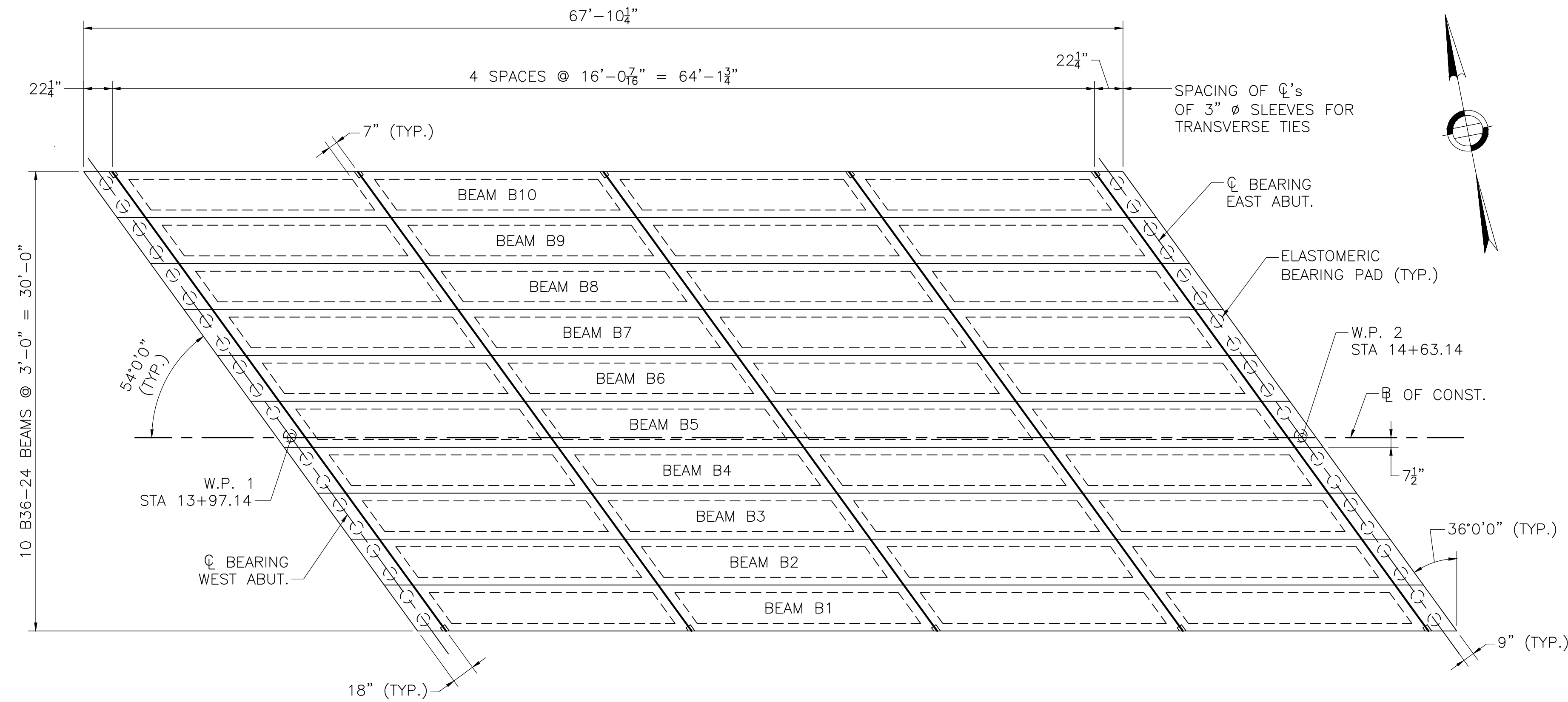
SCALE: 1" = 1'-0"

| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
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**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 31 | 47 |
| PROJECT FILE NO. | | 609428 | |

FRAMING PLAN



FRAMING PLAN

SCALE: $\frac{3}{16}'' = 1'-0''$

NOTE:

SEE SPECIAL PROVISIONS, ITEM 995.01, FOR BEAM ERECTION AND LAYOUT. RESIDUAL CAMBER AT ERECTION IS CALCULATED USING THE PCI "AT ERECTION" MULTIPLIERS FOR PRESTRESSING, MINUS THE TOTAL DEAD LOAD DEFLECTION. INITIAL BEAM POSITION IS BASED UPON A CAMBER GROWTH FACTOR OF 1.8 AT TIME OF ERECTION WHICH IS ANTICIPATED TO BE APPROXIMATELY 30 DAYS AFTER FABRICATION. THE CAMBER SHOULD BE ADJUSTED IF A DIFFERENT CAMBER GROWTH FACTOR OR TIME OF ERECTION IS ANTICIPATED.

NOTES:

- ALL PRETENSIONING ELEMENTS SHALL BE 0.6" ϕ , UNCOATED, SEVEN-WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
- THE TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
- THE INITIAL TENSION PER 0.6" ϕ STRAND SHALL BE 44 KIPS.
- THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 6500 PSI.
- NO PRESTRESSING SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY CYLINDER TEST, OF AT LEAST 4500 PSI.
- THE TOP OF ALL BEAMS SHALL BE GIVEN A RAKE FINISH ($\frac{1}{4}''$ AMPLITUDE) ACROSS THE WIDTH (PERPENDICULAR TO THE BEAM'S AXIS).
- THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
- ALL STRANDS SHALL BE STRAIGHT. NO DRAPED STRANDS SHALL BE PERMITTED.
- THE DRILLING OF HOLES IN THE PRESTRESSING BEAMS AND THE USE OF POWER ACTUATED TOOLS ON THE BEAMS WILL NOT BE PERMITTED.
- DETAILS OF THE ANCHORAGE ASSEMBLY ARE TO BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER.

CONSTRUCTION SEQUENCE NOTES:

- AFTER ALL BEAMS HAVE BEEN ERECTED, TENSION EACH TRANSVERSE TIE TO 5 KIPS.
- FILL ALL KEYWAYS WITH MORTAR (M4.04.0). IF THE KEYWAYS ARE NOT FILLED WITHIN FIVE (5) DAYS AFTER THE BEAMS ARE ERECTED, THE CONTRACTOR SHALL COVER AND PROTECT THE KEYWAYS FROM WEATHER AND DEBRIS UNTIL THEY ARE FILLED.
- AFTER THE MORTAR HAS CURED (24 HOURS MINIMUM), TENSION EACH TRANSVERSE TIE TO 44 KIPS.
- THE CONCRETE DECK SLAB SHALL BE PLACED AFTER THE TRANSVERSE TIES HAVE BEEN FULLY TENSIONED.
- NO TRAFFIC OR HEAVY EQUIPMENT WILL BE PERMITTED ON THE BRIDGE UNTIL ALL TRANSVERSE TIES HAVE BEEN PROPERLY TENSIONED AND THE DECK HAS BEEN CAST AND CURED PER THE STANDARD SPECIFICATIONS.

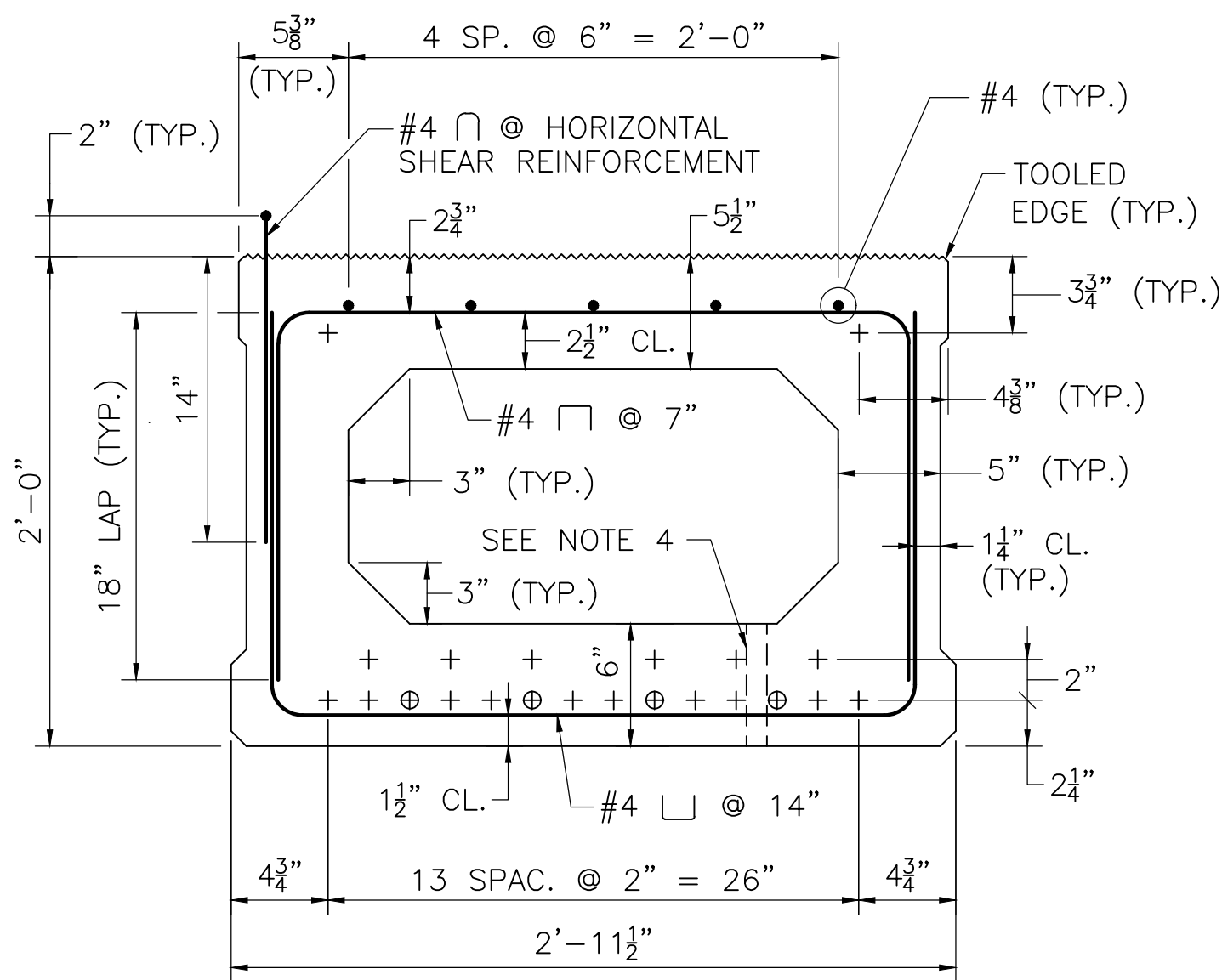
| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
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**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 32 | 47 |
| PROJECT FILE NO. | | 609428 | |

BEAM DETAILS

NOTE:
FOR ADDITIONAL BEAM REINFORCEMENT SEE SECTION THRU SIDEWALK AND SAFETY CURB, SHEET 21.

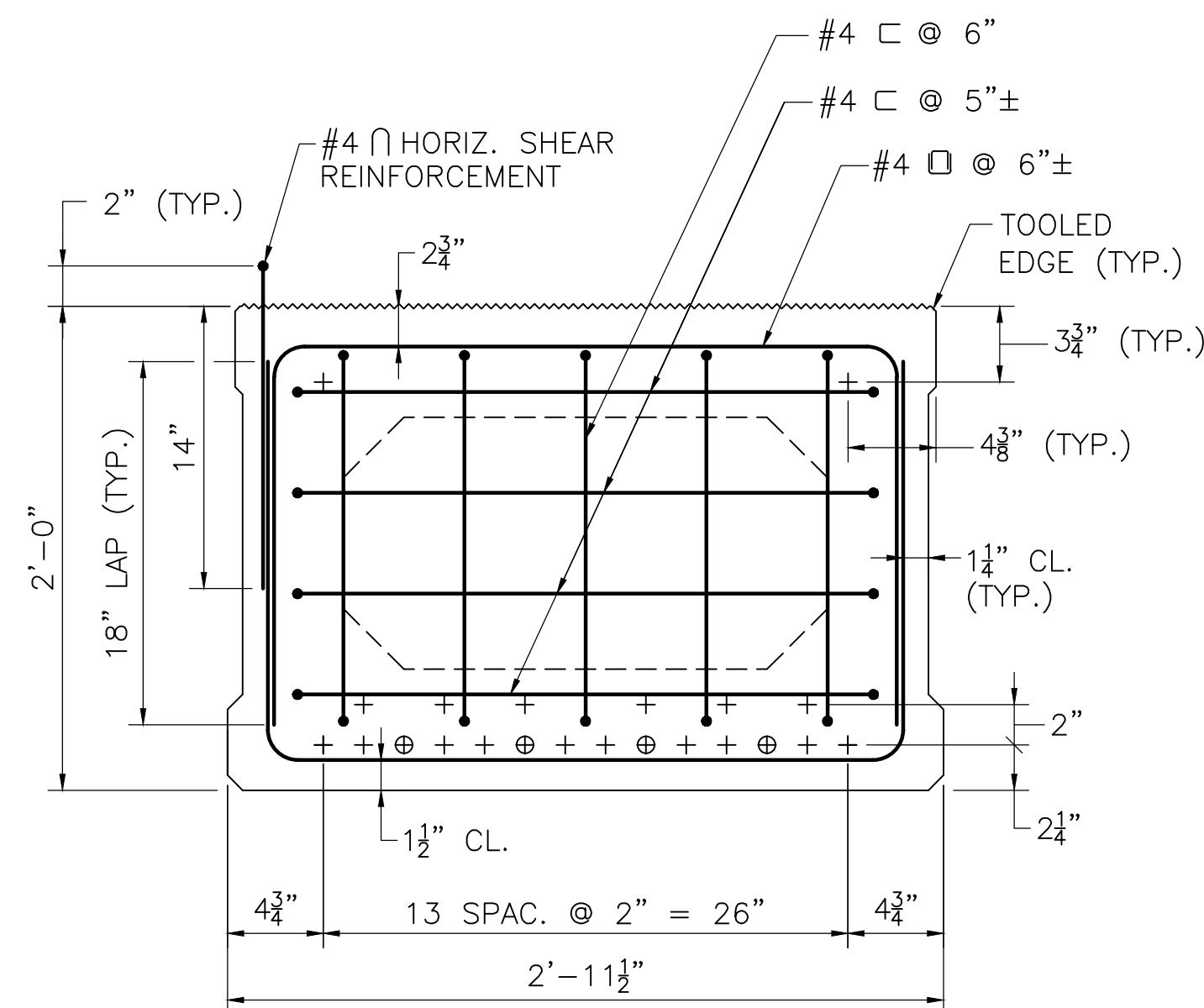


NOTES:

- + DENOTES STRAIGHT STRANDS.
- ⊕ DENOTES DEBONDED STRANDS AT 6'-0" FROM END.
- SEE SHEAR KEY DETAIL.
- 1" Ø DRAIN PLACED AT BOTH ENDS OF EACH VOID.

MIDSPAN SECTION

SCALE: 1 1/2" = 1'-0"

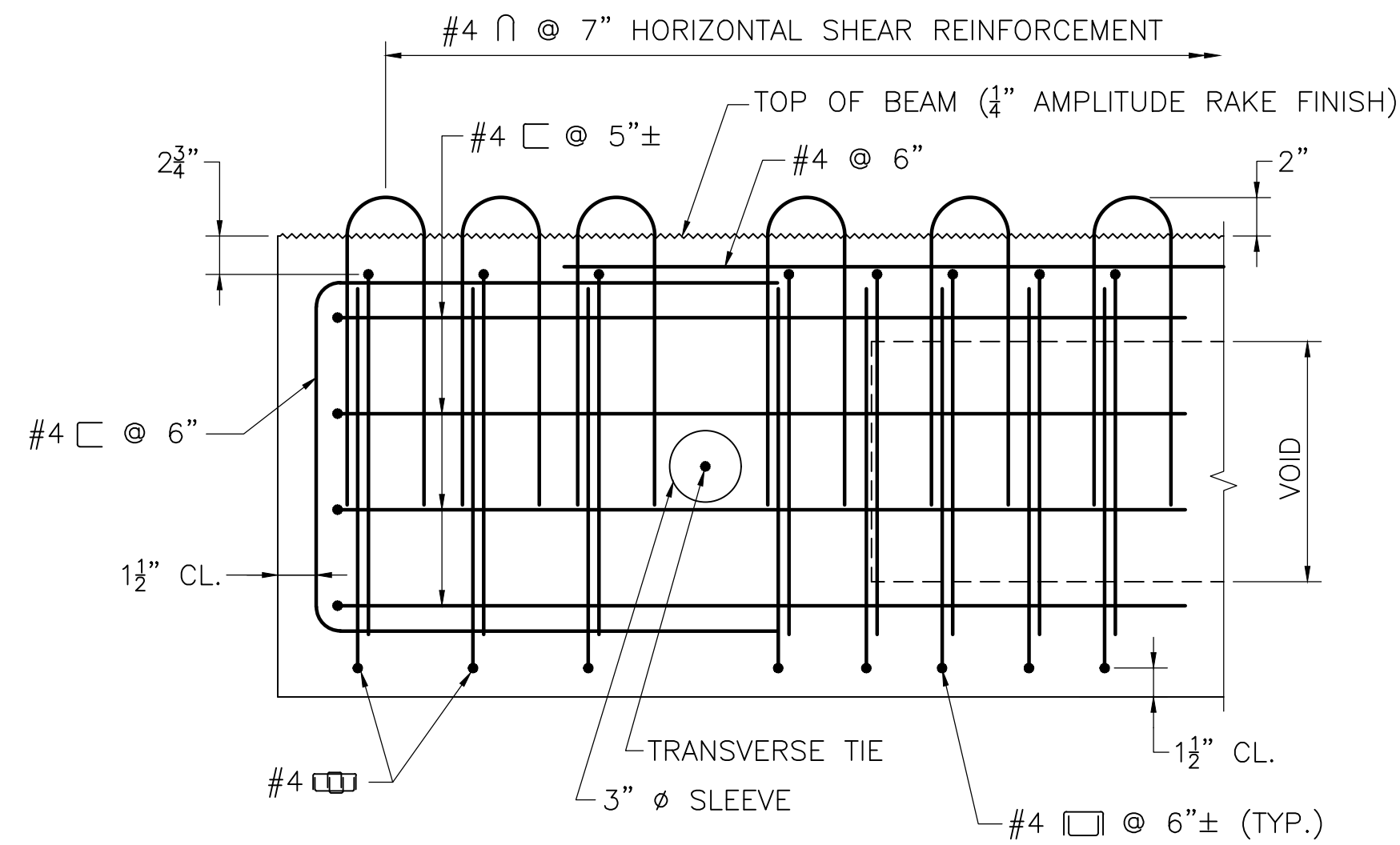


NOTES:

- + DENOTES STRAIGHT STRANDS.
- ⊕ DENOTES DEBONDED STRANDS AT 6'-0" FROM END.
- SEE SHEAR KEY DETAIL.
- SEE END OF BEAM PLAN FOR STIRRUP SPACING.

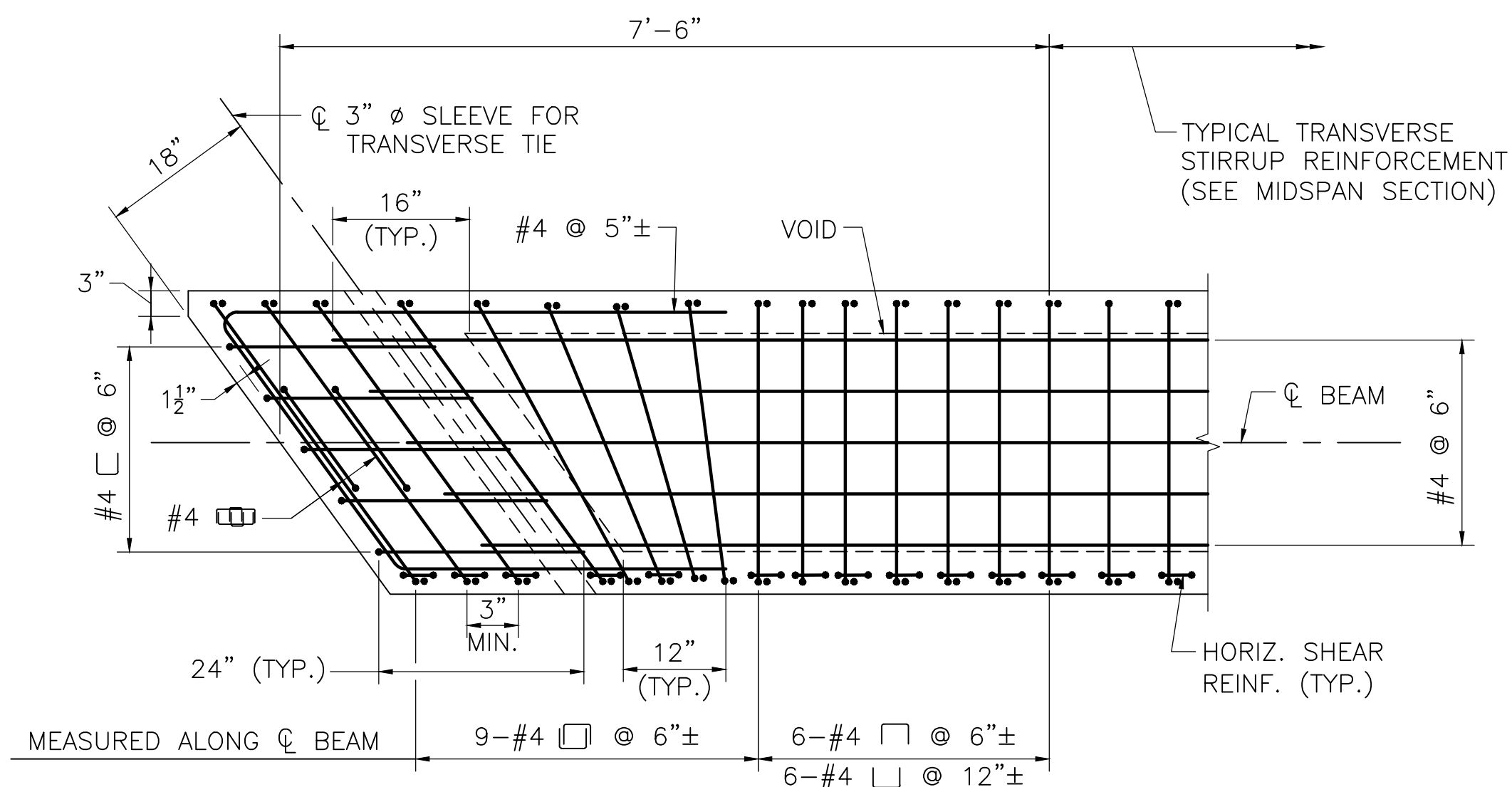
END OF BEAM SECTION

SCALE: 1 1/2" = 1'-0"



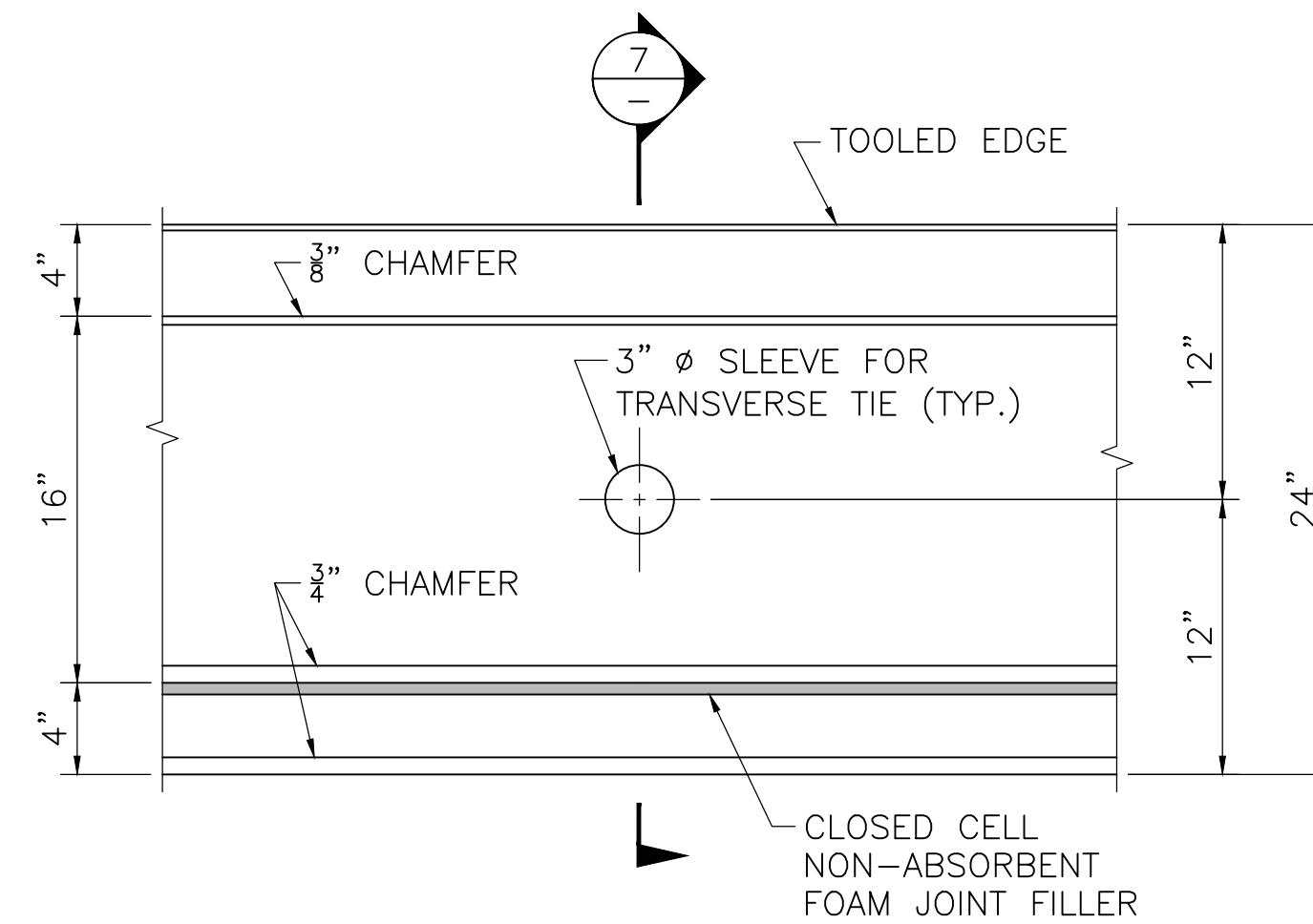
LONGITUDINAL SECTION

SCALE: 1 1/2" = 1'-0"



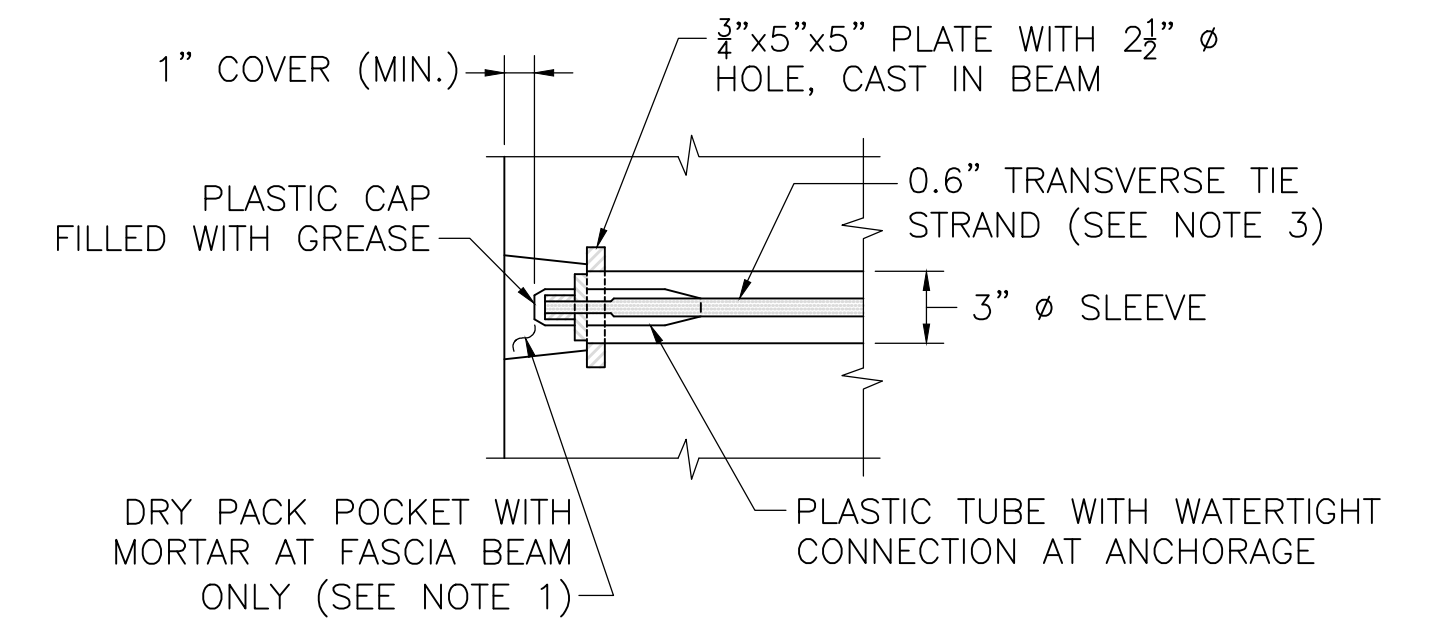
END OF BEAM PLAN

SCALE: 3/4" = 1'-0"



TYPICAL BEAM ELEVATION AT TRANSVERSE TIE LOCATIONS

SCALE: 1 1/2" = 1'-0"

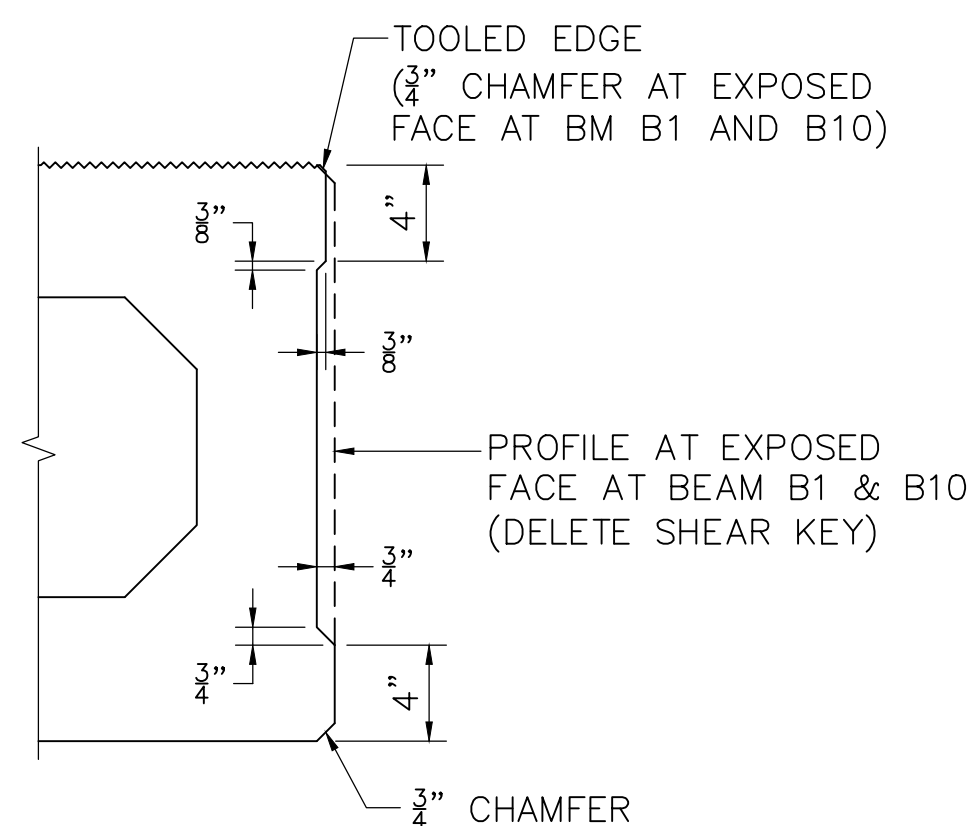


NOTES:

- MORTAR FOR EXTERIOR POCKETS SHALL CONFORM TO M4.02.15 AND SHALL BE THE SAME COLOR AND TEXTURE AS THE BEAM CONCRETE.
- OTHER ANCHORAGE SYSTEMS MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. ALTERNATE ANCHORAGE SYSTEMS SHALL BE WATERTIGHT AND CORROSION PROOF.
- TRANSVERSE TIES SHALL BE COVERED BY A SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITING GREASE BETWEEN THE STRAND AND SHEATH) FOR THE FULL LENGTH OF THE STRAND, EXCEPT AT THE ANCHORAGE LOCATION.

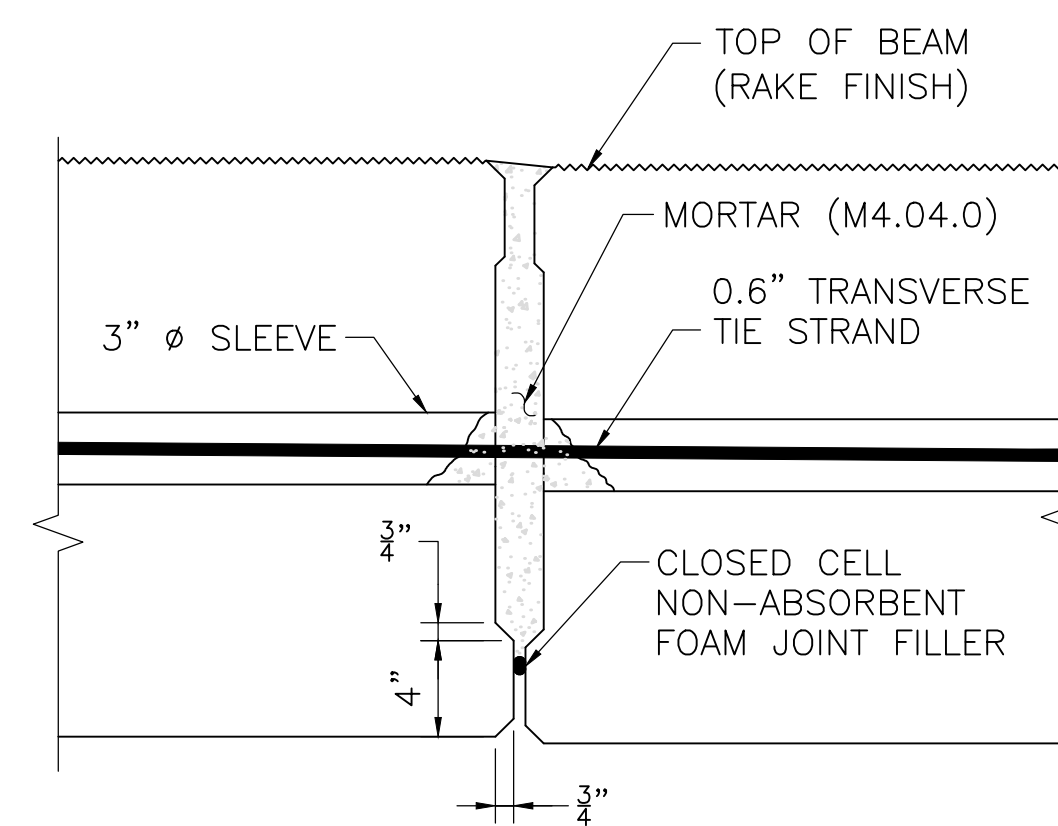
TRANSVERSE TIE ANCHORAGE

SCALE: 1 1/2" = 1'-0"



SHEAR KEY DETAIL

SCALE: 1 1/2" = 1'-0"



SECTION 7

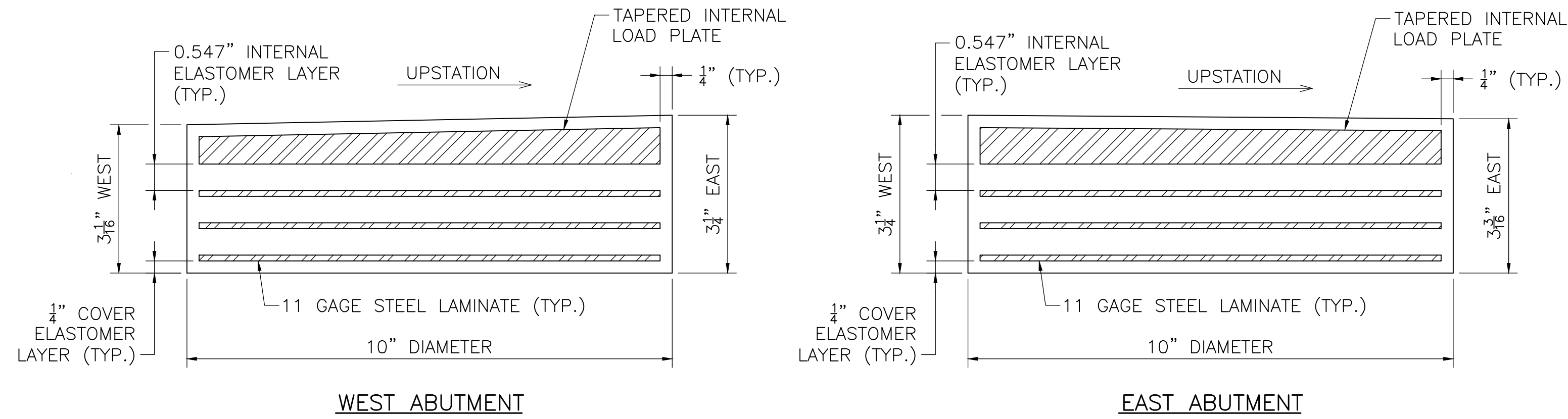
SCALE: 1 1/2" = 1'-0"

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**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 33 | 47 |
| PROJECT FILE NO. | | 609428 | |

BEARING DETAILS

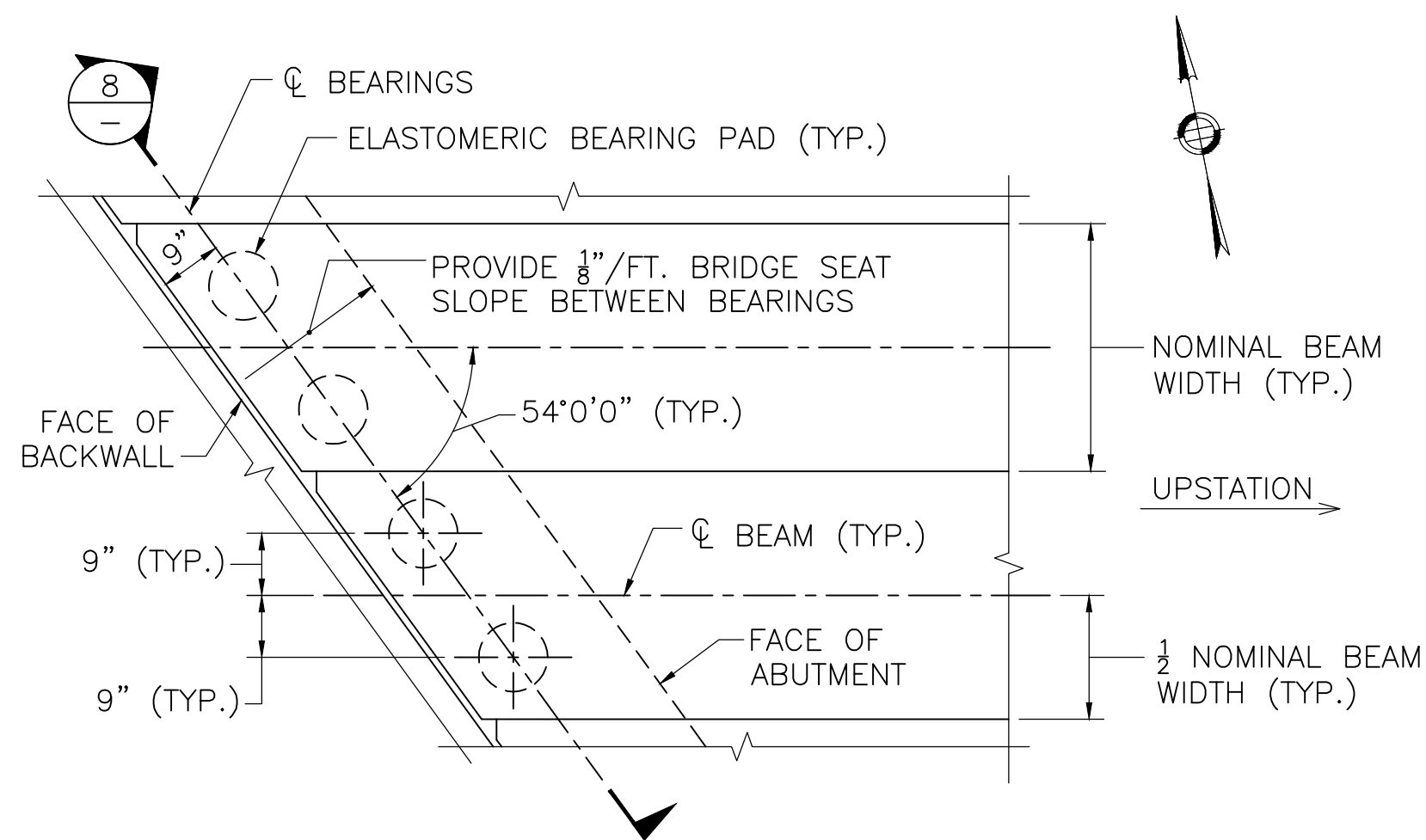


NOTE: TAPERED INTERNAL LOAD PLATE SHALL BE BEVELED IN THE DIRECTION ALONG CENTERLINE OF BEAM

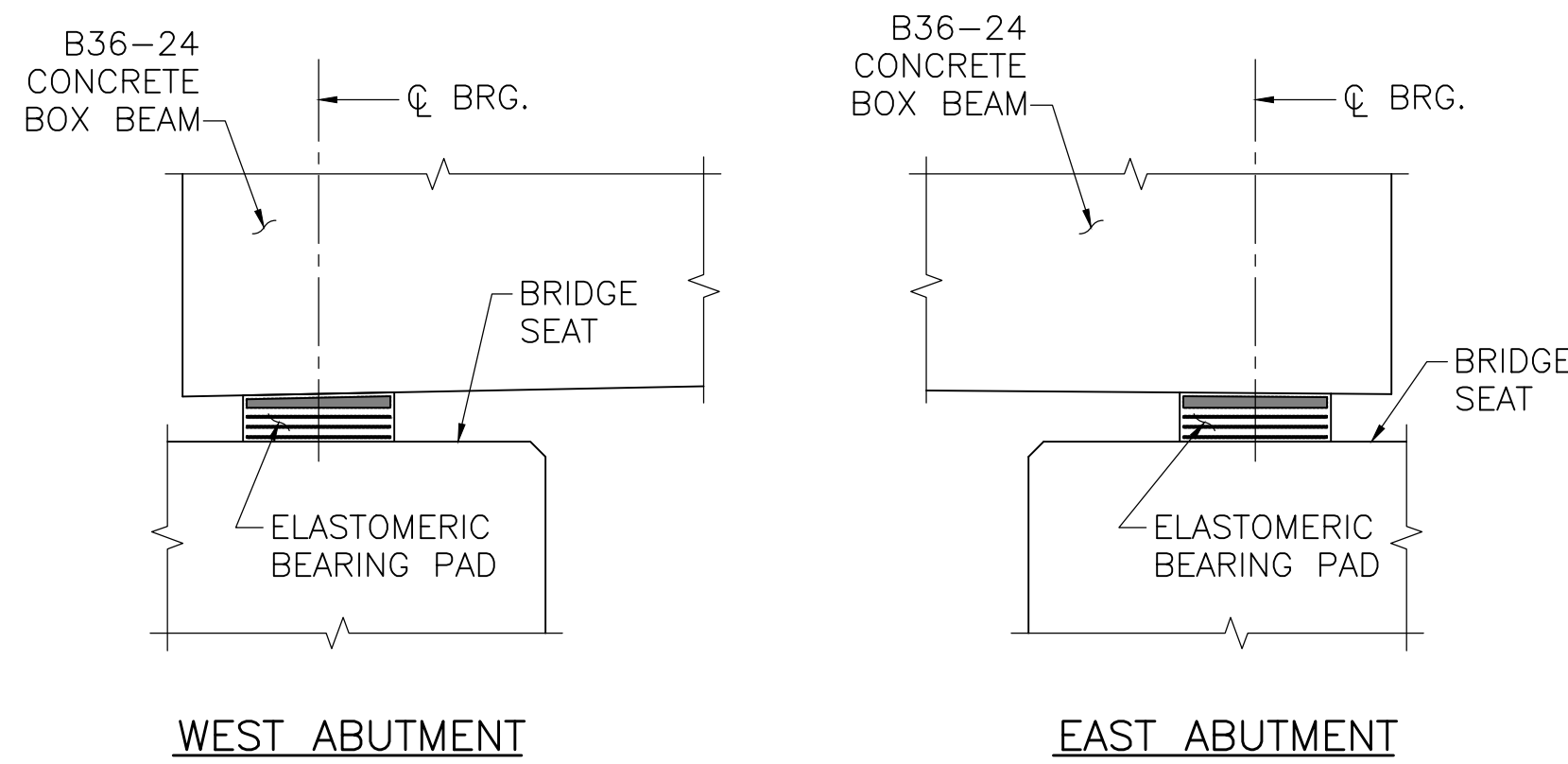
ELASTOMERIC BEARING PAD
NOT TO SCALE

NOTES:

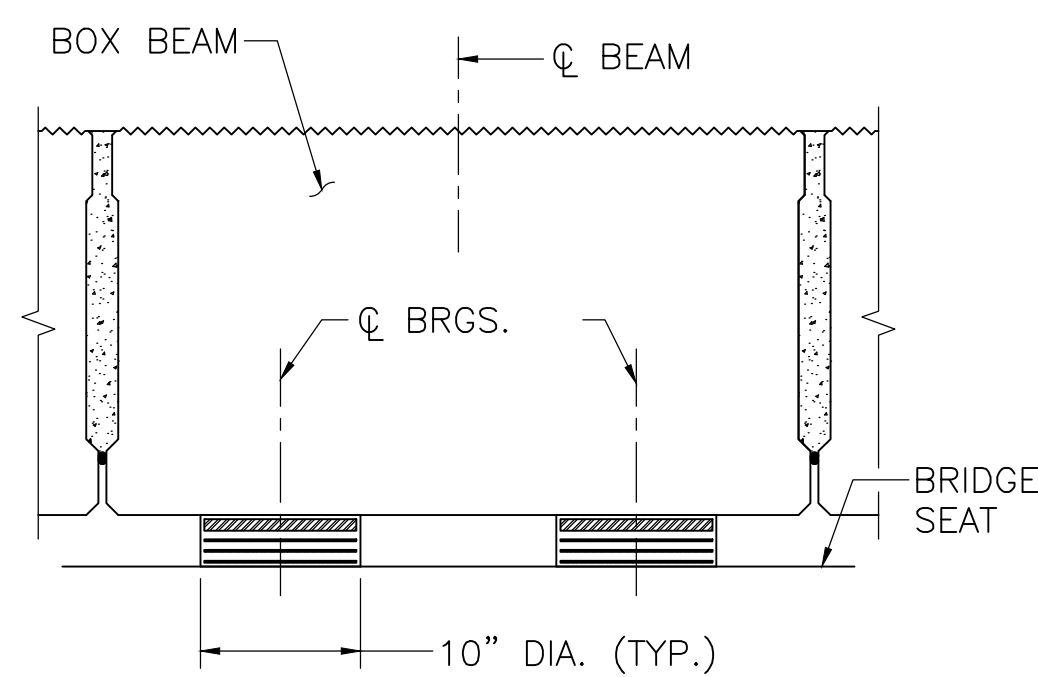
- ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
- STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER.
- THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 51 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.65 KSI.
- TAPERED INTERNAL LOAD PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36.
- ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION AND BEVEL DIRECTION ON THE BRIDGE, AND A 1/2" DEEP DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.



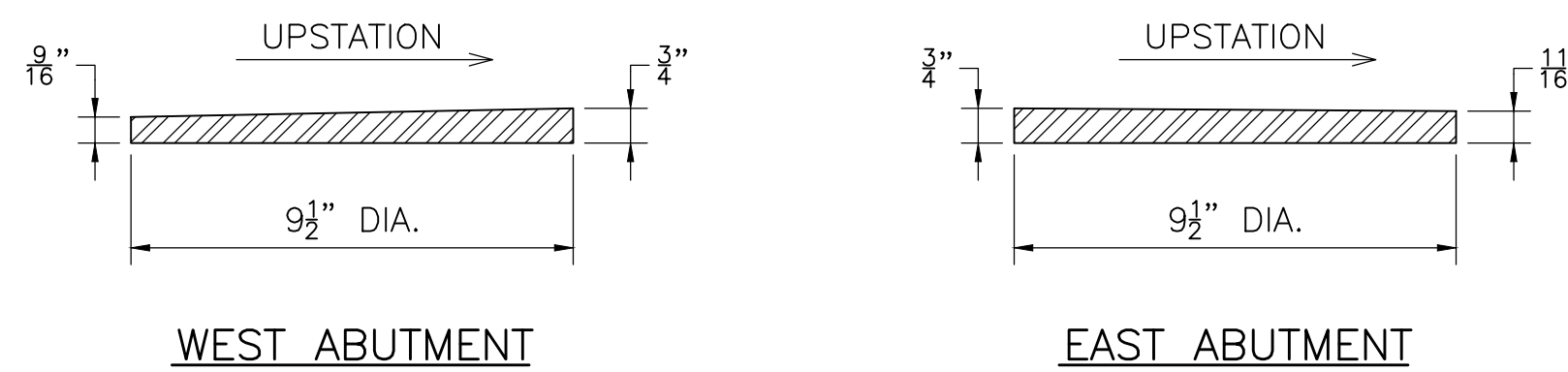
LAYOUT OF BEARINGS
(WEST ABUTMENT SHOWN, EAST ABUTMENT OPP.)
SCALE: 1/2" = 1'-0"



ELEVATION
SCALE: 1" = 1'-0"



SECTION 8
SCALE: 1" = 1'-0"



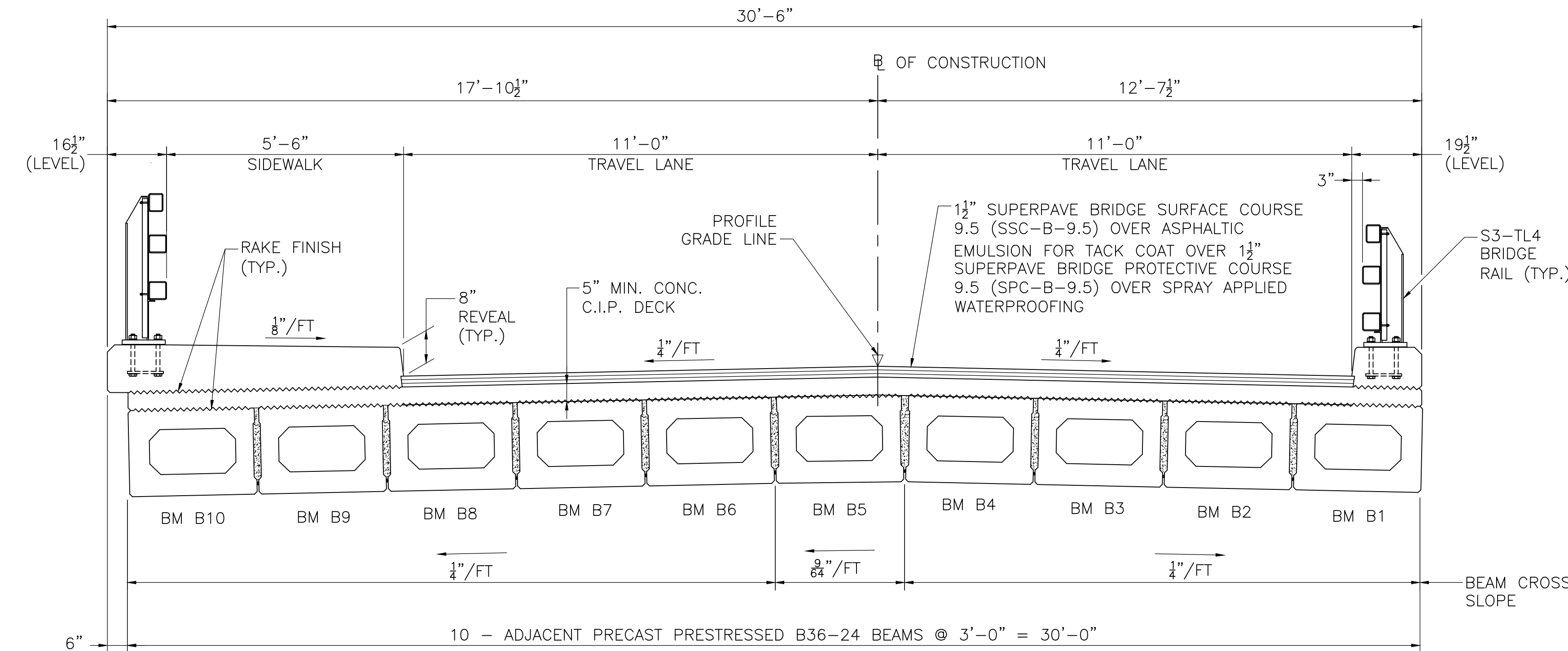
TAPERED INTERNAL LOAD PLATE DETAIL
SCALE: 3" = 1'-0"

| | |
|--|-------------------------|
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**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 34 | 47 |
| PROJECT FILE NO. | | 609428 | |

**PROPOSED TRANSVERSE SECTION
AND DECK GRADING PLAN**



PROPOSED TRANSVERSE SECTION (LOOKING EAST)

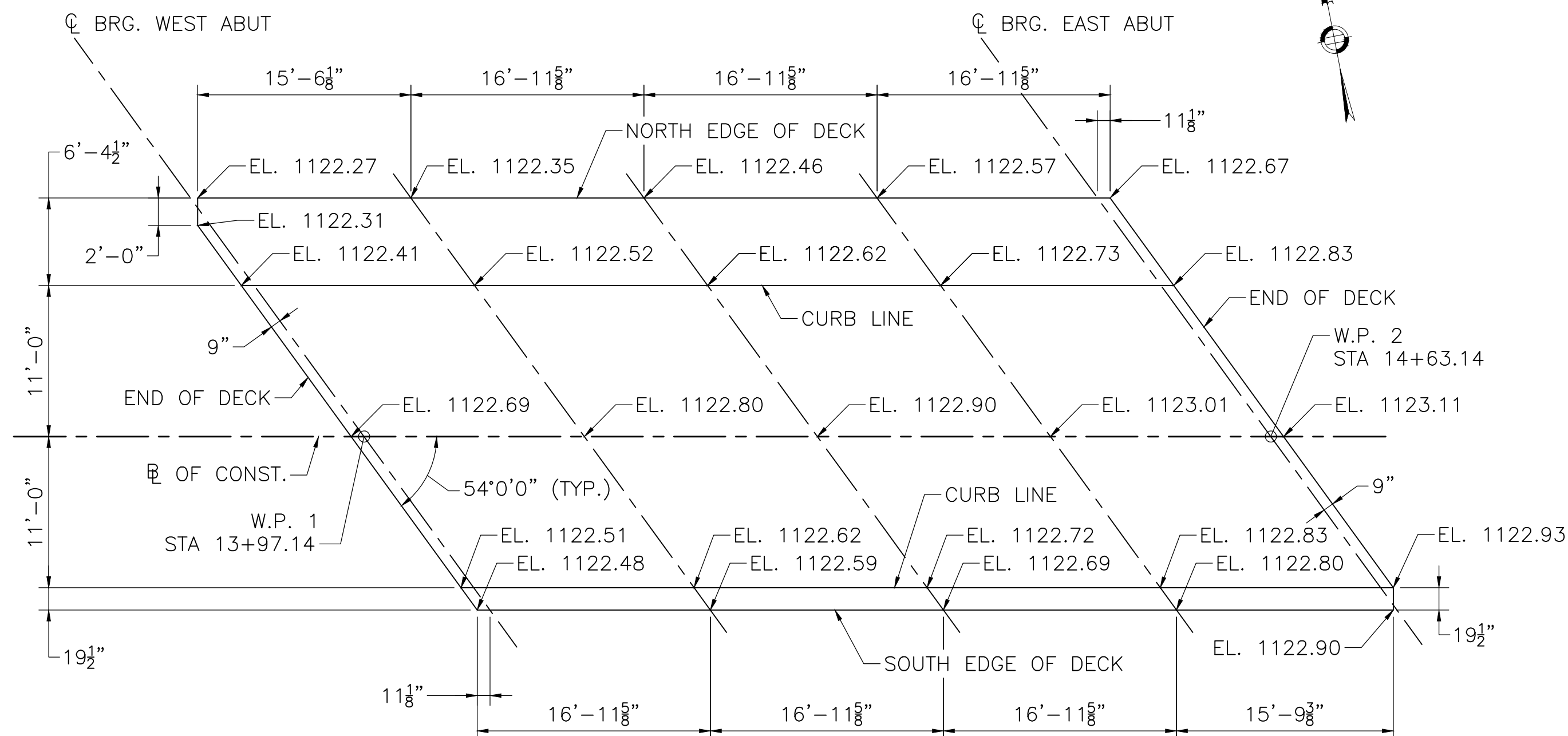
SCALE: 1/2" = 1'-0"

| LOCATION | NORTH EDGE OF DECK SLAB | PROFILE GRADE LINE | SOUTH EDGE OF DECK SLAB |
|-------------------|-------------------------|--------------------|-------------------------|
| CL BRGS. W. ABUT. | 8" | 8" | 8" |
| MIDSPAN | 5" | 5" | 5" |
| CL BRGS. E. ABUT. | 8" | 8" | 8" |

NOTES:

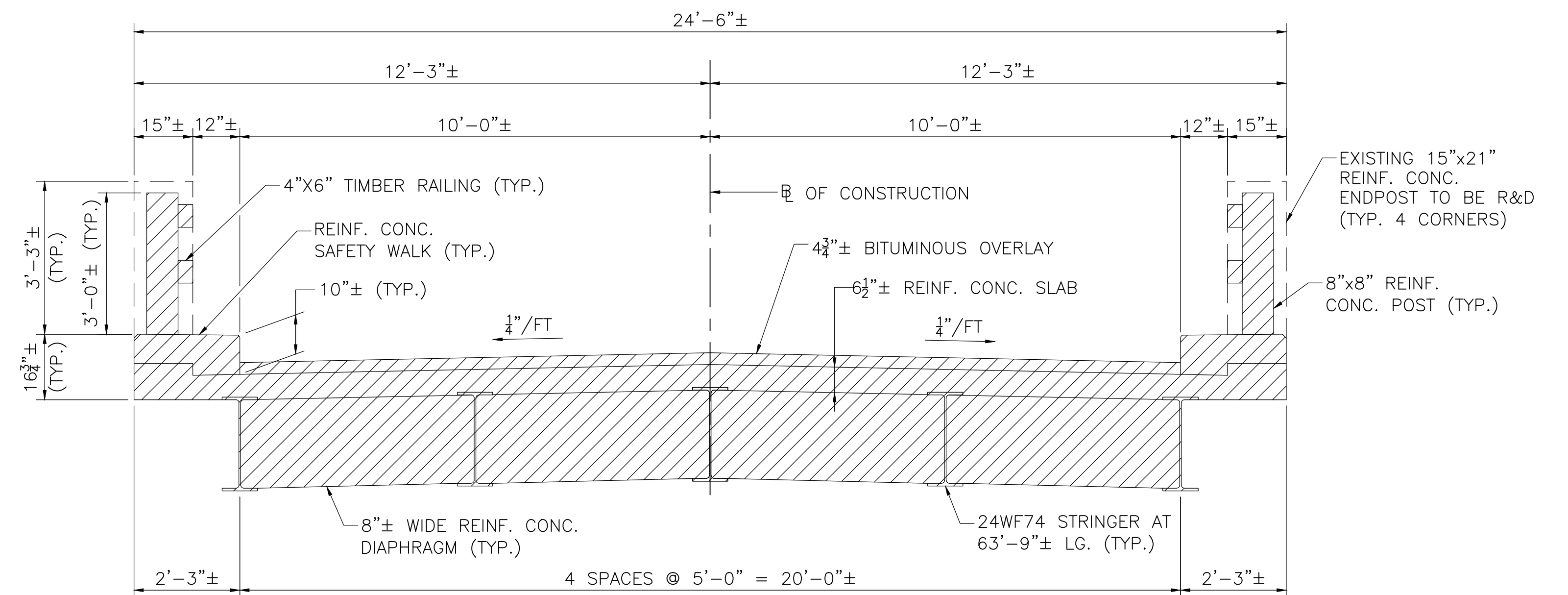
1. THIS TABLE INDICATES THE THEORETICAL THICKNESS OF THE DECK SLAB IN INCHES BASED UPON ASSUMED BEAM CAMBERS AT ERECTION.
2. TABLE IS PROVIDED TO ASSIST IN ESTIMATING THE REQUIRED CONCRETE VOLUME.
3. THE ACTUAL DECK THICKNESSES WILL BE AS REQUIRED TO MEET THE PROFILE GRADES.

THEORETICAL DECK SLAB THICKNESS TABLE



DECK GRADING PLAN

SCALE: 1/8" = 1'-0"



EXISTING TRANSVERSE SECTION

SCALE: 1/2" = 1'-0"

LEGEND

REMOVED AND DISPOSED

| | |
|--|-------------------------|
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**LANESBOROUGH
BRIDGE STREET**

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|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 35 | 47 |
| PROJECT FILE NO. | | 609428 | |

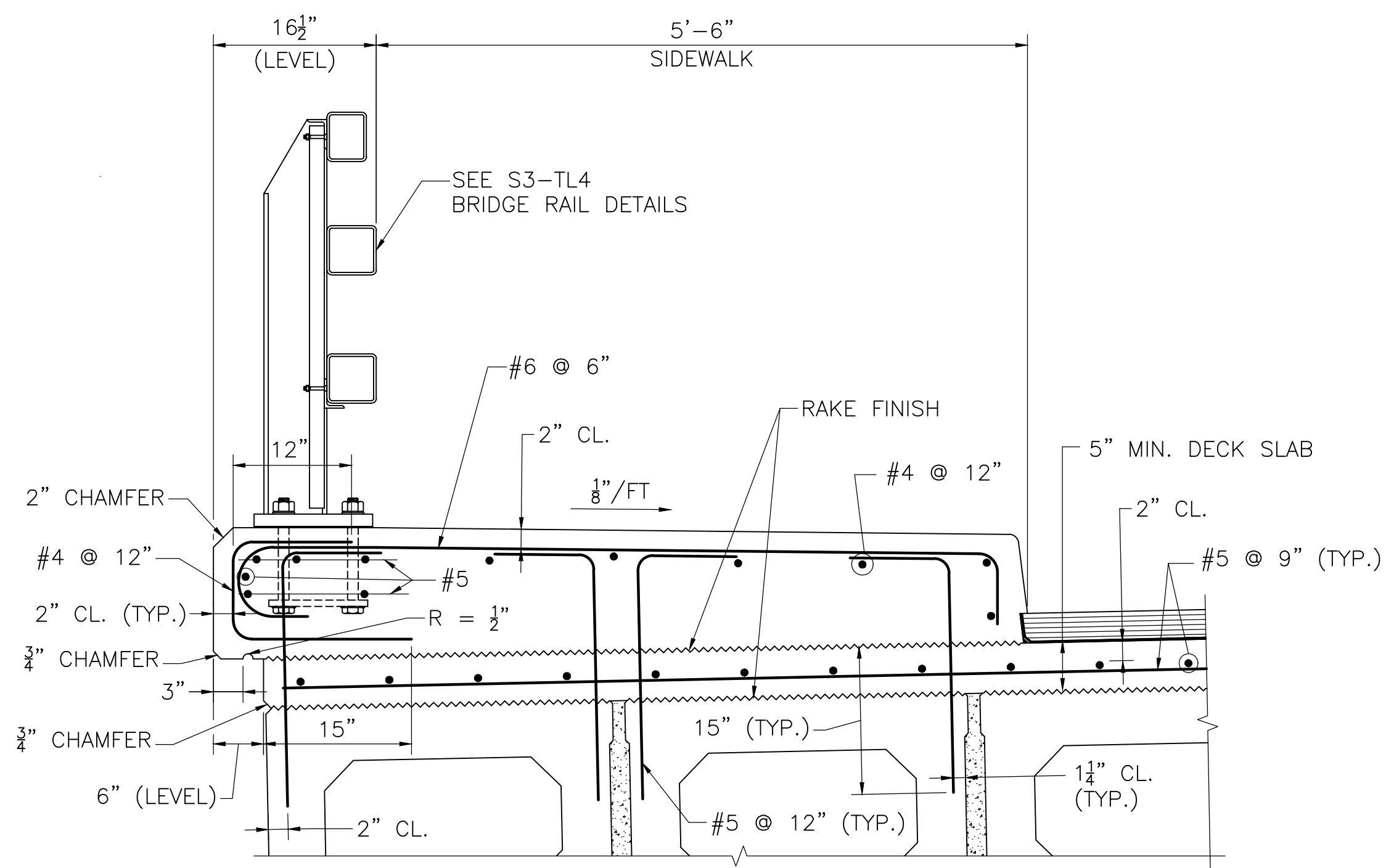
**DECK, SIDEWALK AND
SAFETY CURB DETAILS**

Plotted on 17-Oct-2024 4:48 PM

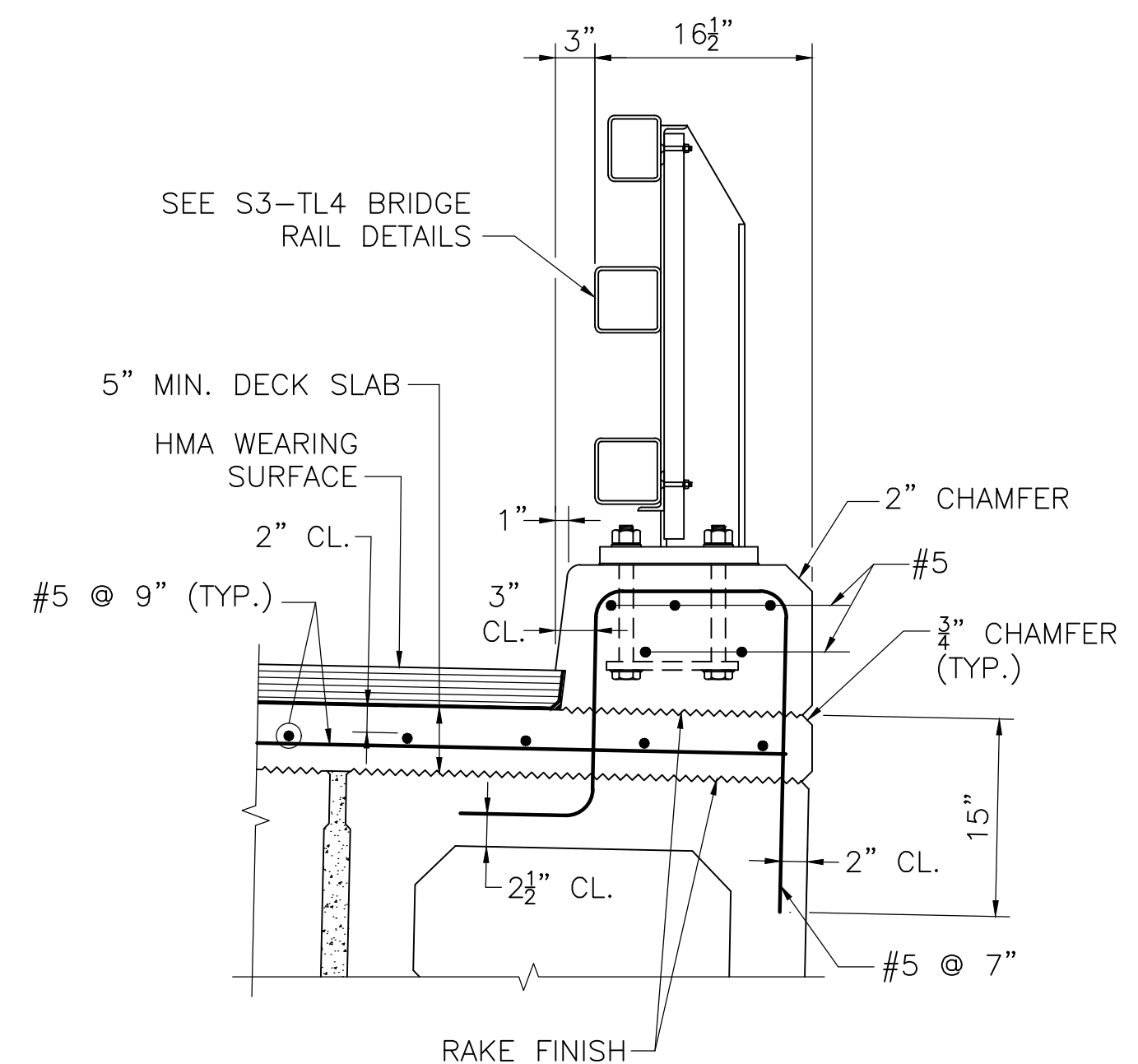
609428_BR20-21(L03010)(CROSS SECTION-DECK DETAILS).DWG

18-October-2024

Final Structural Submittal (SF)



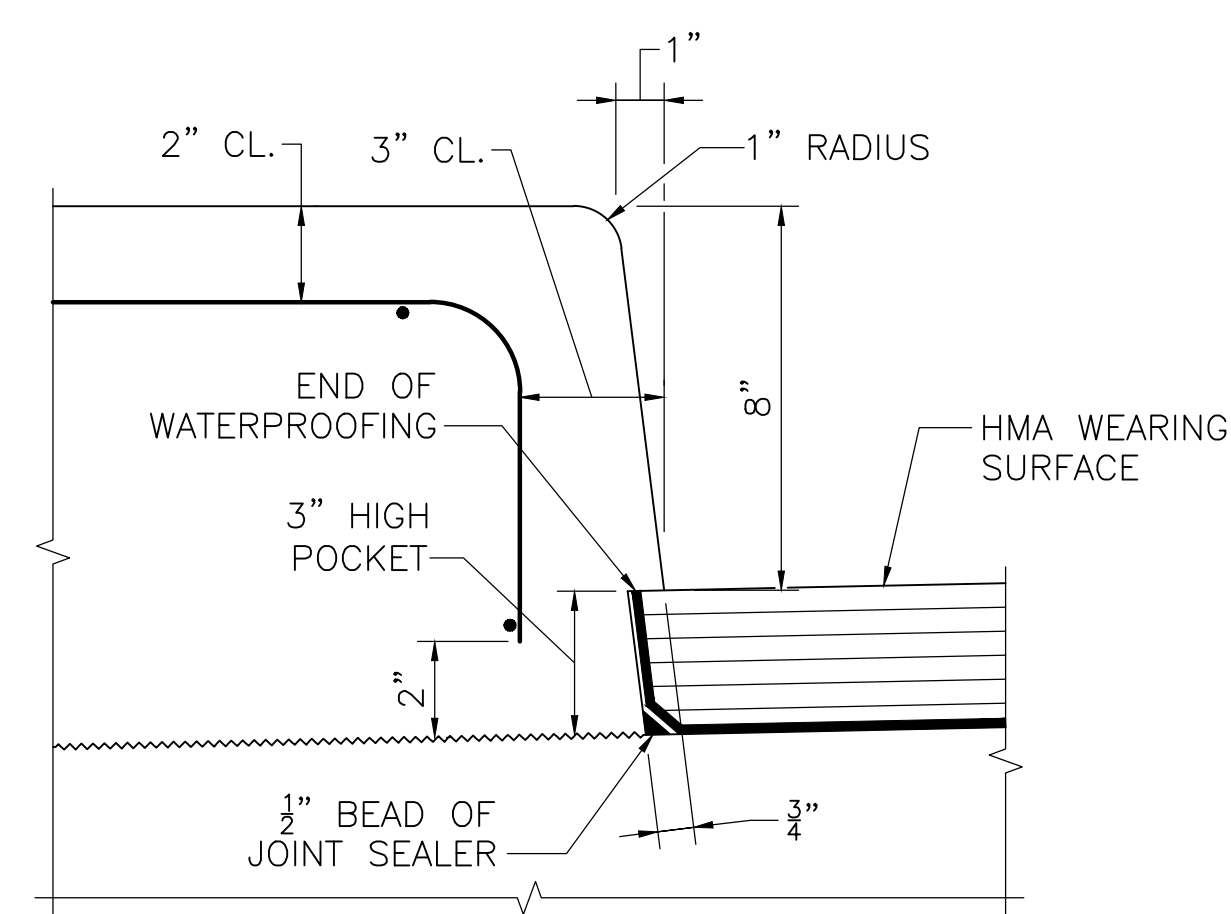
SECTION THRU SIDEWALK
SCALE: 1" = 1'-0"



SECTION THRU SAFETY CURB
SCALE: 1" = 1'-0"

NOTES:

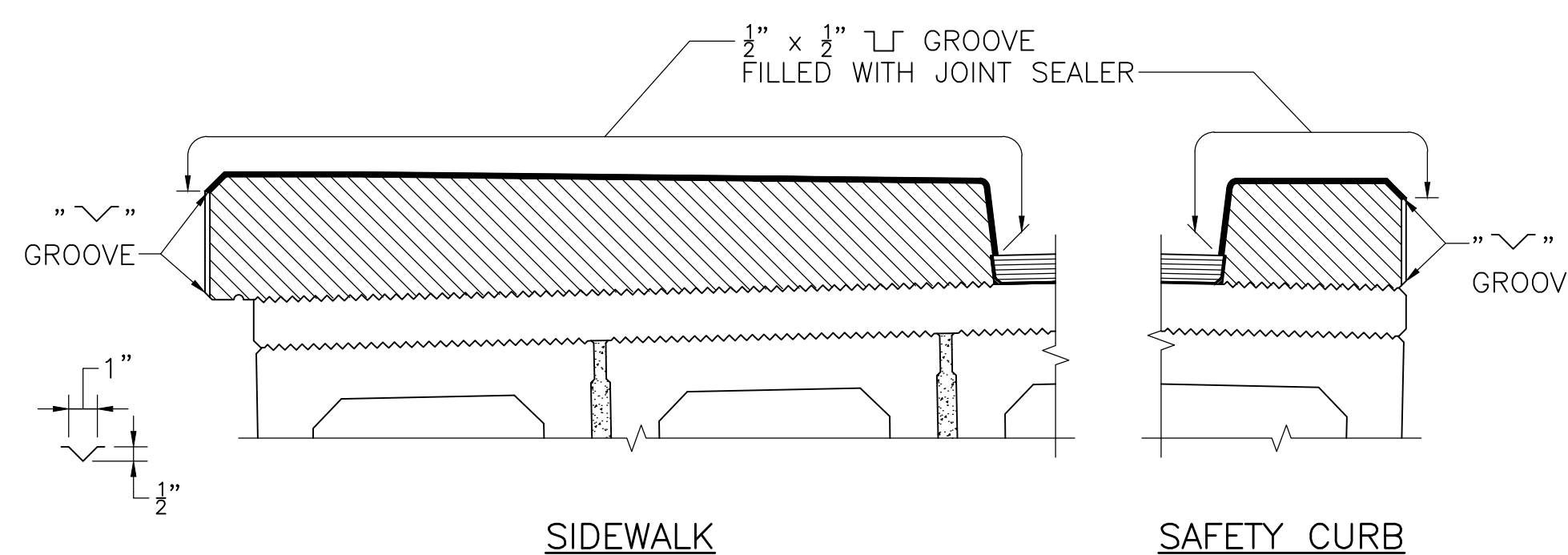
1. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ϕ OF CONSTRUCTION.
2. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ϕ OF CONSTRUCTION.
3. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE EPOXY COATED.
4. THE FINISHED SURFACE OF BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY DEPRESSIONS THAT COULD RETAIN WATER.
5. ALL CONCRETE ABOVE DECK SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
6. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINT. END THE REINFORCEMENT 2" CLEAR OF PARAFFIN JOINT.
7. PARAFFIN JOINTS SHALL BE SQUARE TO FACE OF CURB.



NOTE:

1. DIMENSIONS AT THE FACE OF CURB ARE THE SAME FOR THE SAFETY CURB.

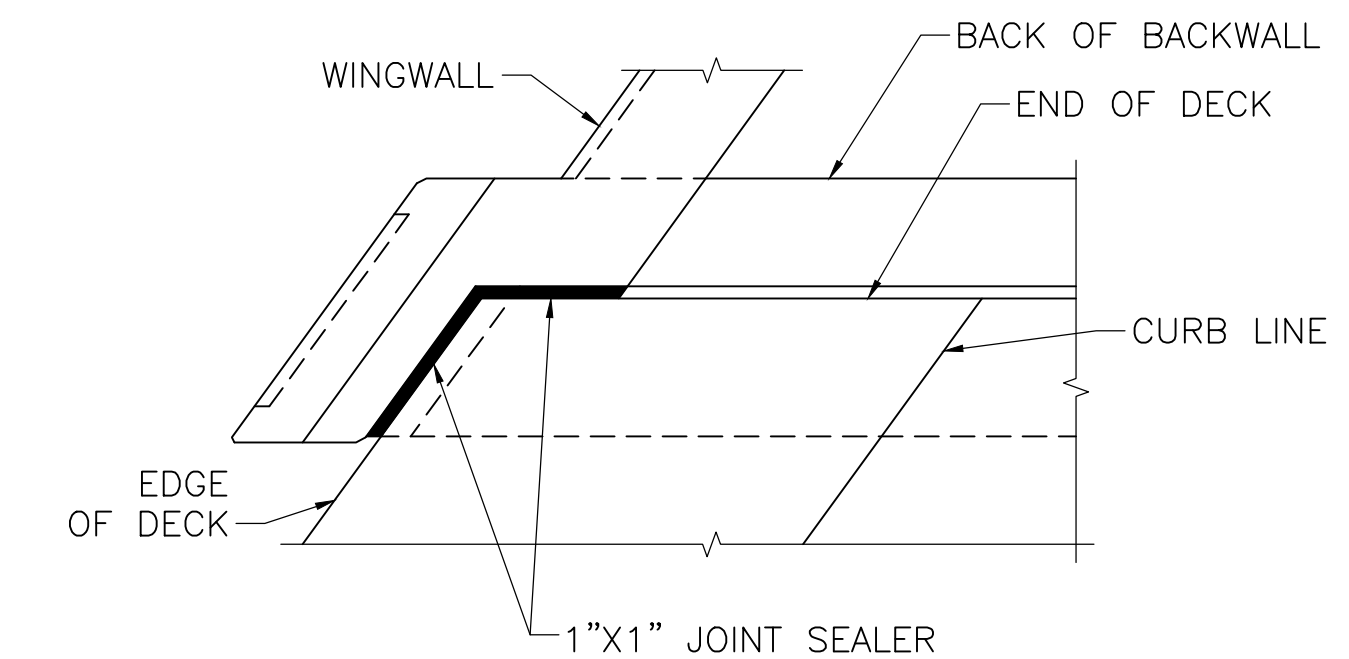
FACE OF SIDEWALK CURB DETAILS
SCALE: 3" = 1'-0"



SIDEWALK

SAFETY CURB

PARAFFIN JOINT DETAILS
SCALE: 3/4" = 1'-0"



NOTES:

1. PLAN AT SIDEWALK SHOWN, PLAN AT SAFETY CURB SIMILAR.
2. FOR VERTICAL LIMITS OF JOINT SEALER SEE CURTAIN WALL ELEVATIONS ON ABUTMENT DETAILS II.

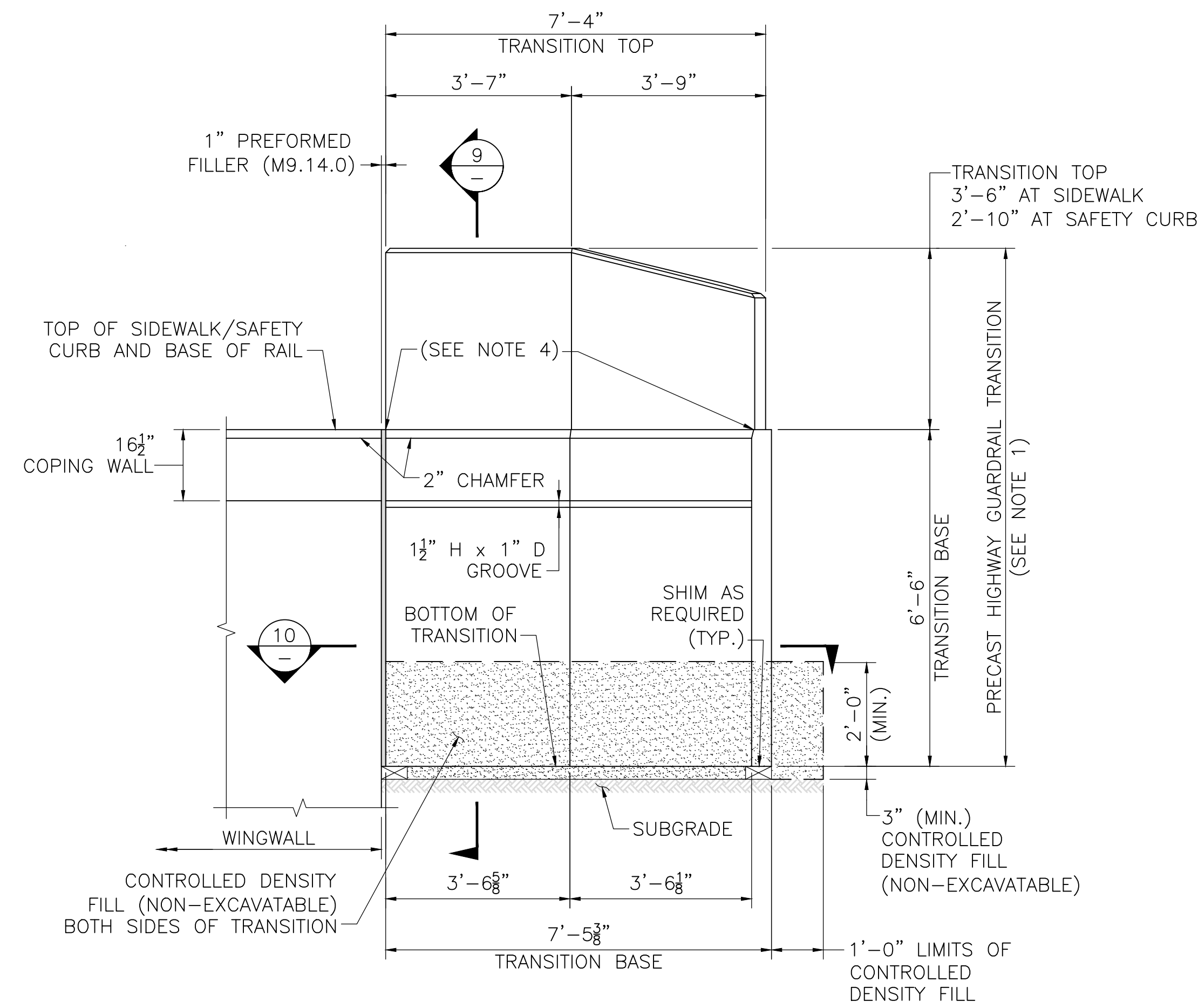
END OF DECK PLAN
NOT TO SCALE

| | |
|--|-------------------------|
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LANESBOROUGH
BRIDGE STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 36 | 47 |
| PROJECT FILE NO. | | 609428 | |

PRECAST GUARDRAIL
TRANSITION DETAILS I

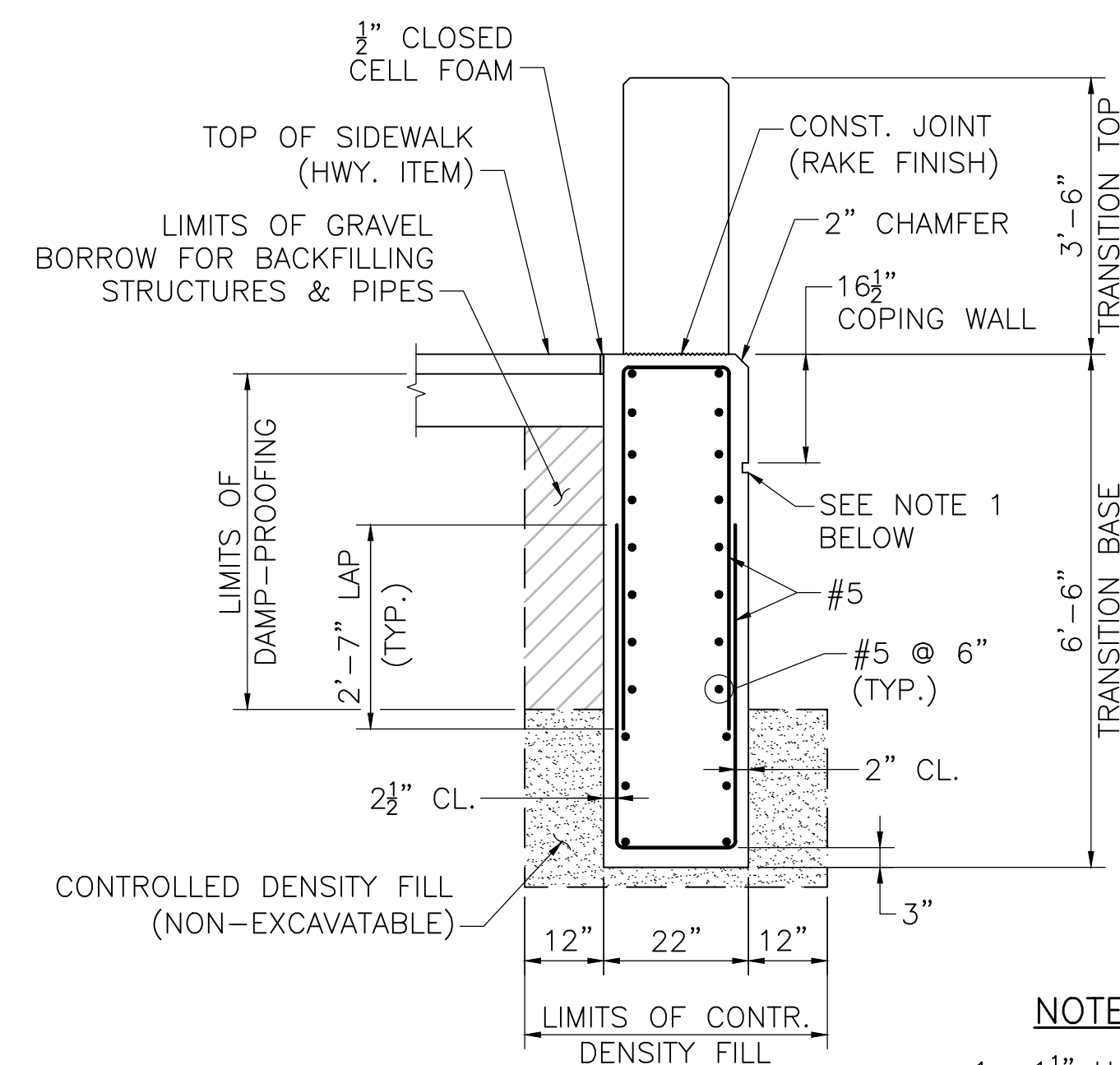


PRECAST GUARDRAIL TRANSITION
ELEVATION AT U-WINGWALL

SCALE: 1/2" = 1'-0"

NOTES:

- GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
- CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKFILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON-EXCAVATABLE) TO THE ELEVATION SHOWN.
- FOR TOP OF TRANSITION BASE ELEVATIONS SEE WINGWALL ELEVATIONS, SHEET 15.

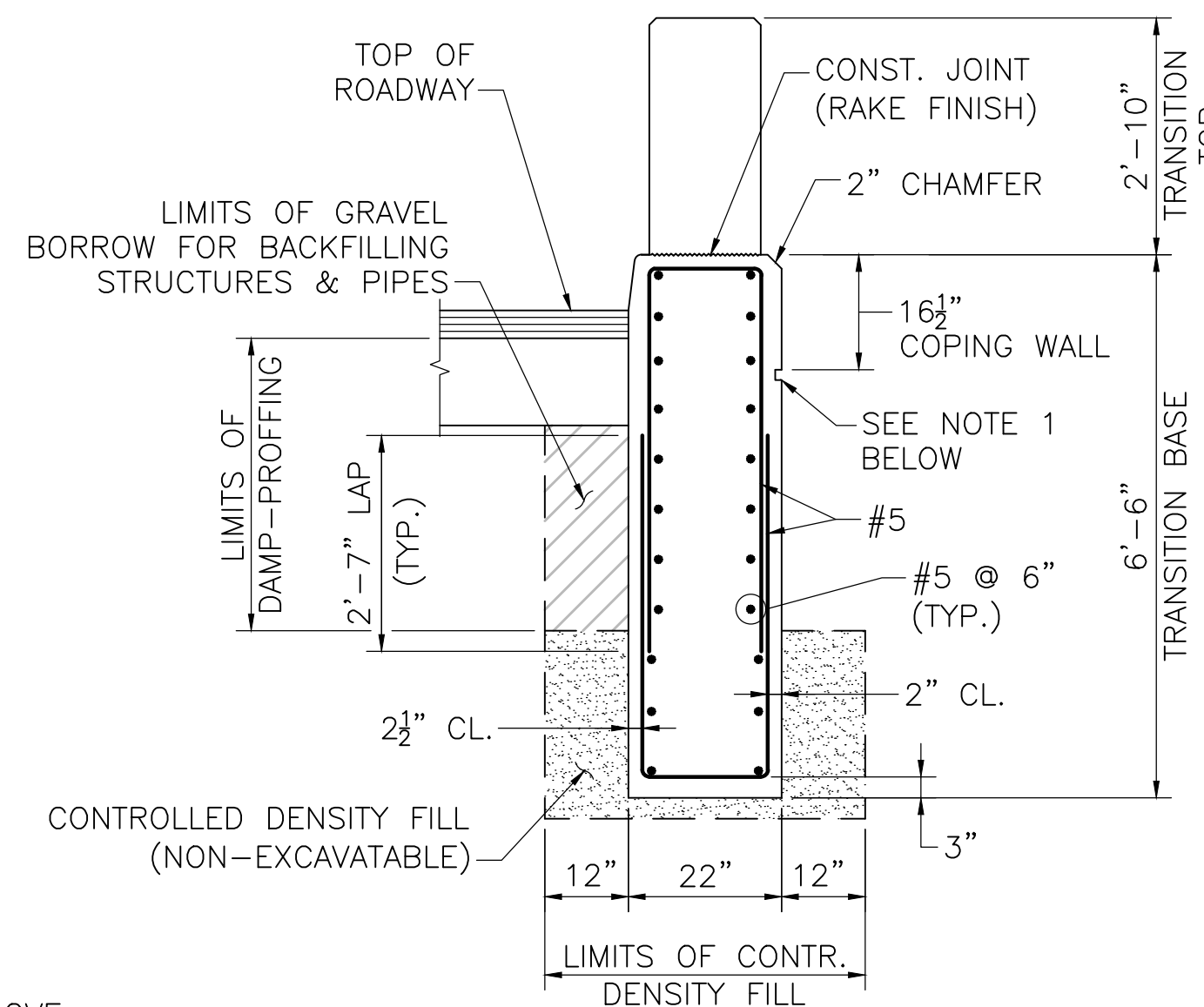


SIDEWALK

NOTES:

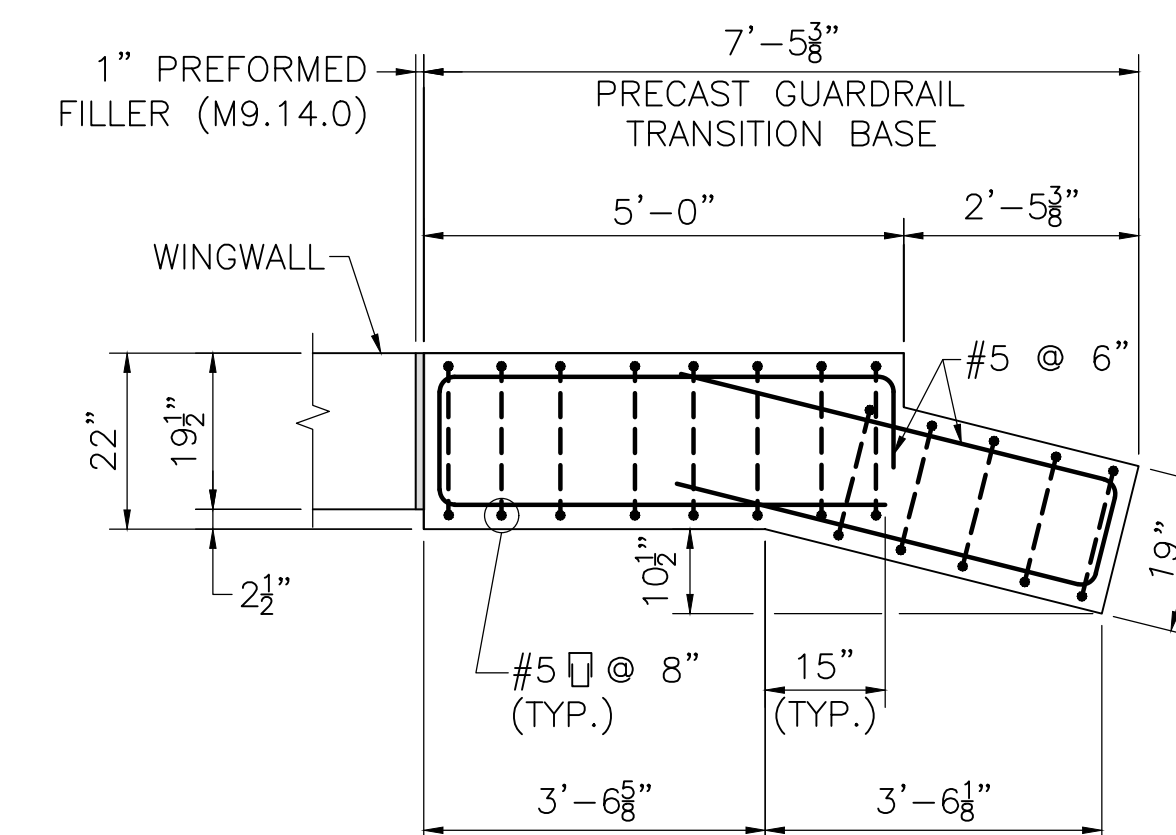
- 1 1/2" H x 1" D GROOVE.
- REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

SECTION 9
SCALE: 1/2" = 1'-0"



SAFETY CURB

SECTION 10
SCALE: 1/2" = 1'-0"



NOTE:

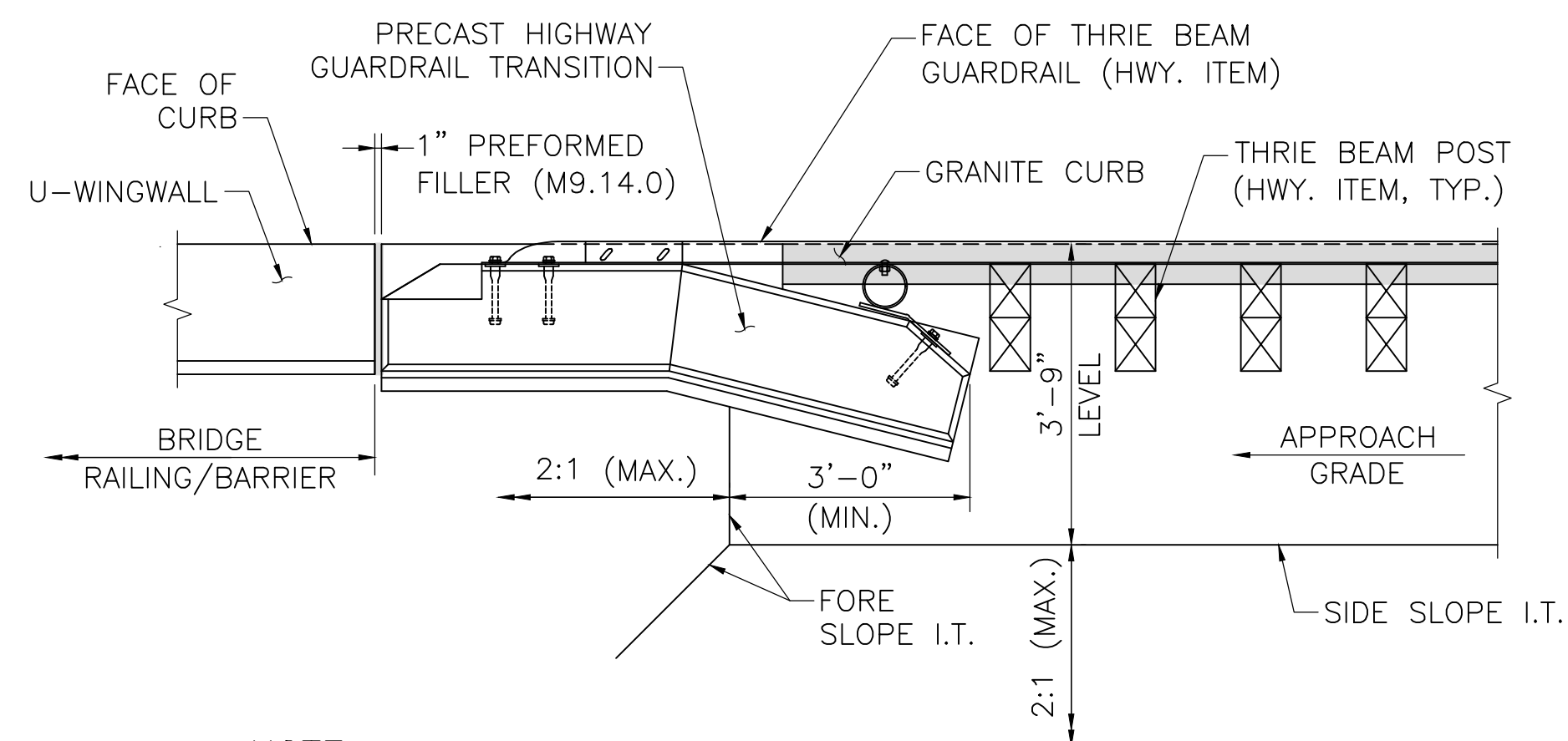
WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

| DATE | DESCRIPTION |
|--|-------------------------|
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**LANESBOROUGH
BRIDGE STREET**

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| MA | STP(BR-OFF)-003S(781)X | 37 | 47 |
| PROJECT FILE NO. | | 609428 | |

**PRECAST GUARDRAIL
TRANSITION DETAILS II**

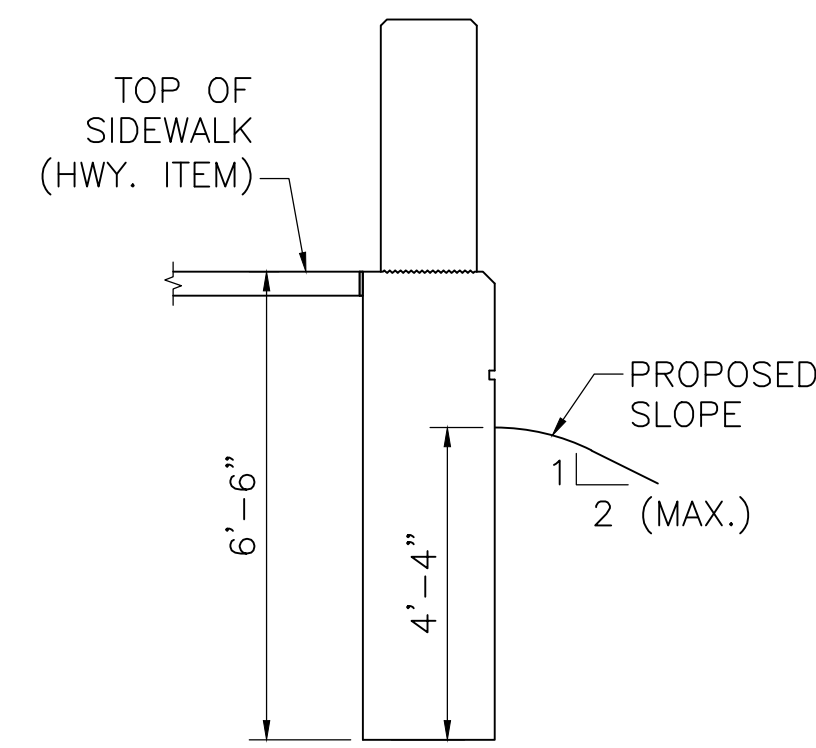


NOTE:

PLAN AT SAFETY CURB SHOWN. PLAN AT SIDEWALK SIMILAR.

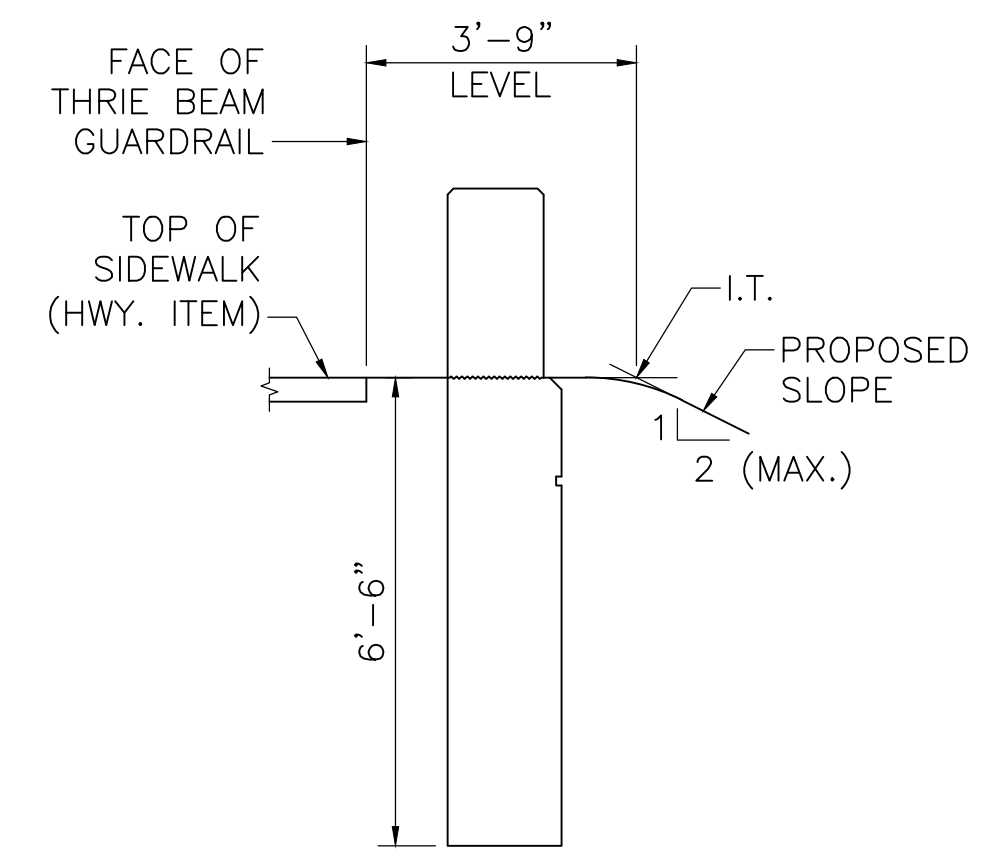
**GRADING REQUIREMENTS
PLAN**

SCALE: 1/2" = 1'-0"



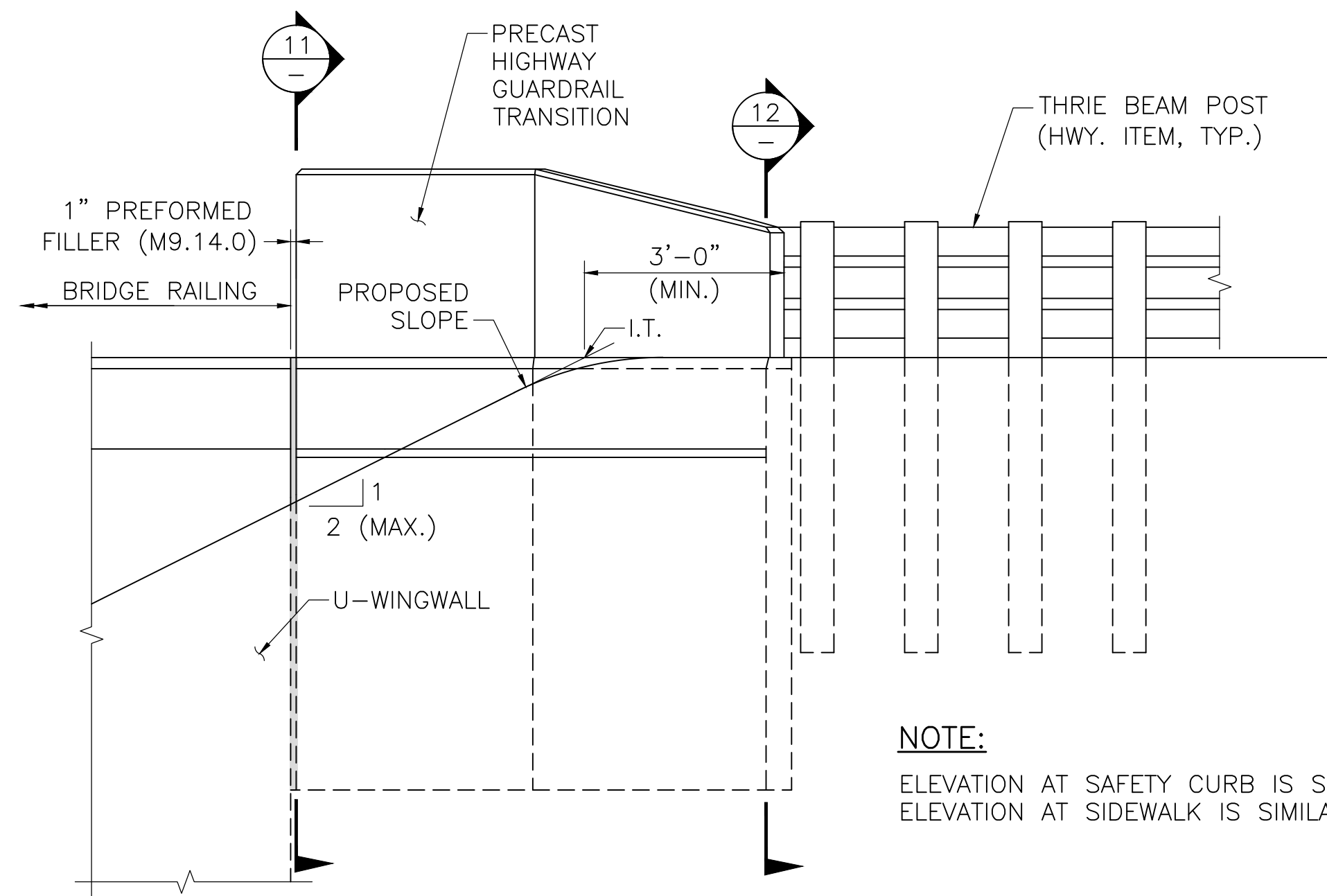
SECTION 11 AT SIDEWALK

SCALE: 3/8" = 1'-0"



SECTION 12 AT SIDEWALK

SCALE: 3/8" = 1'-0"

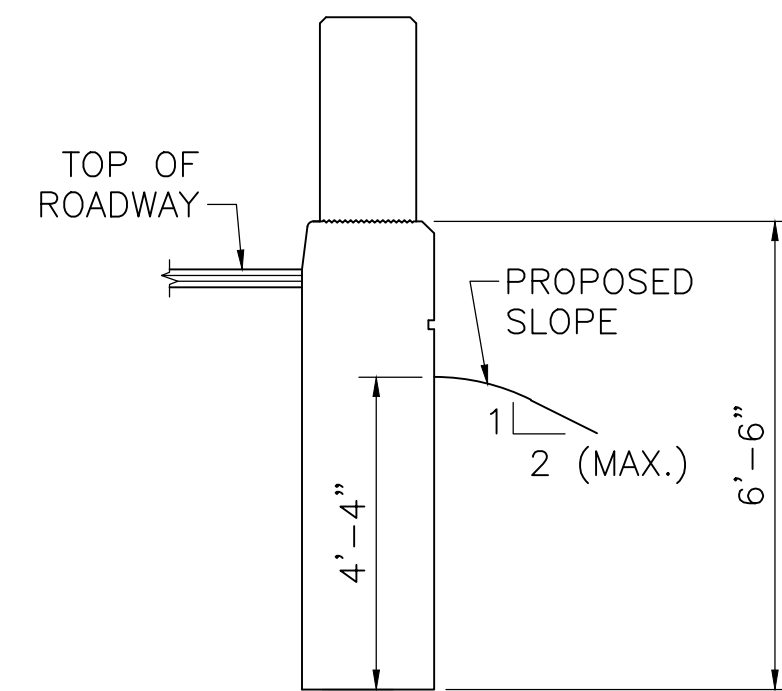


NOTE:

ELEVATION AT SAFETY CURB IS SHOWN.
ELEVATION AT SIDEWALK IS SIMILAR.

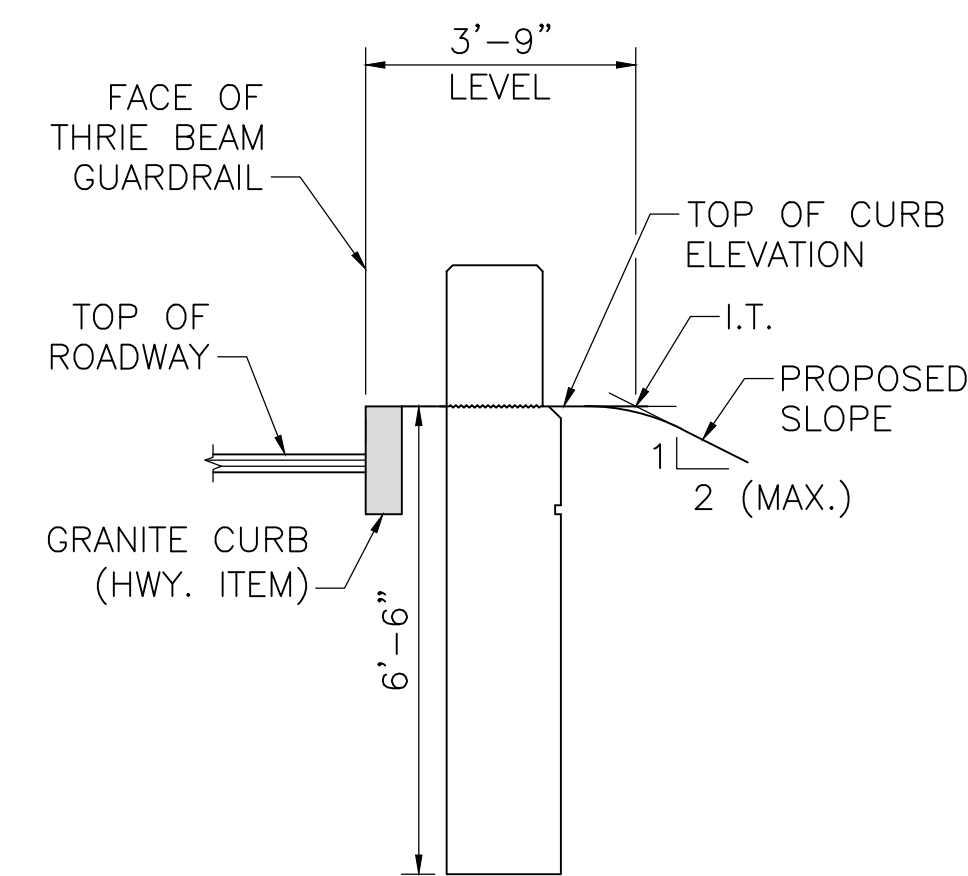
**GRADING REQUIREMENTS
ELEVATION**

SCALE: 1/2" = 1'-0"



SECTION 11 AT SAFETY CURB

SCALE: 3/8" = 1'-0"



SECTION 12 AT SAFETY CURB

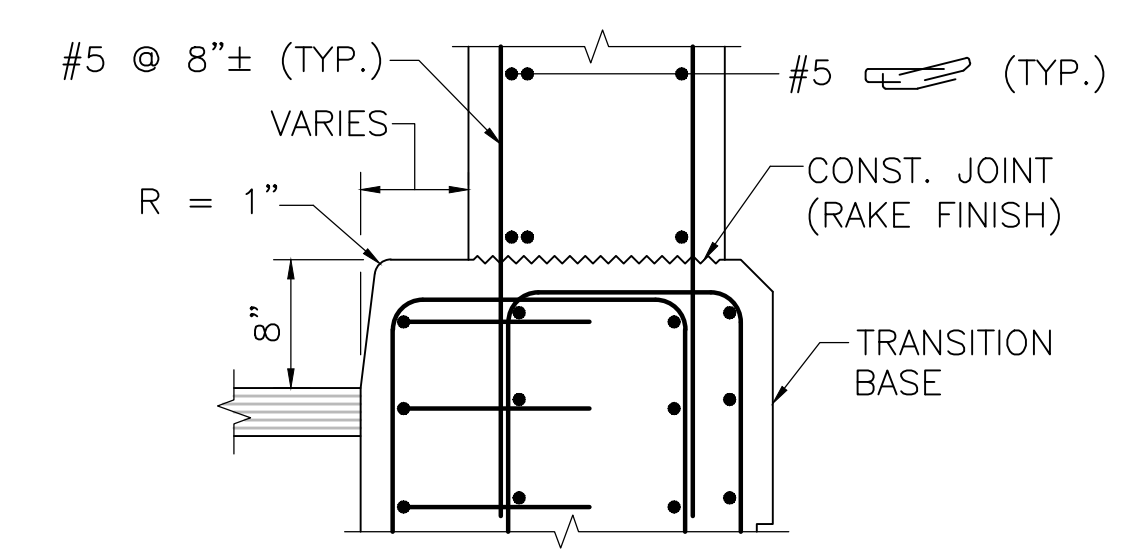
SCALE: 3/8" = 1'-0"

| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT | |
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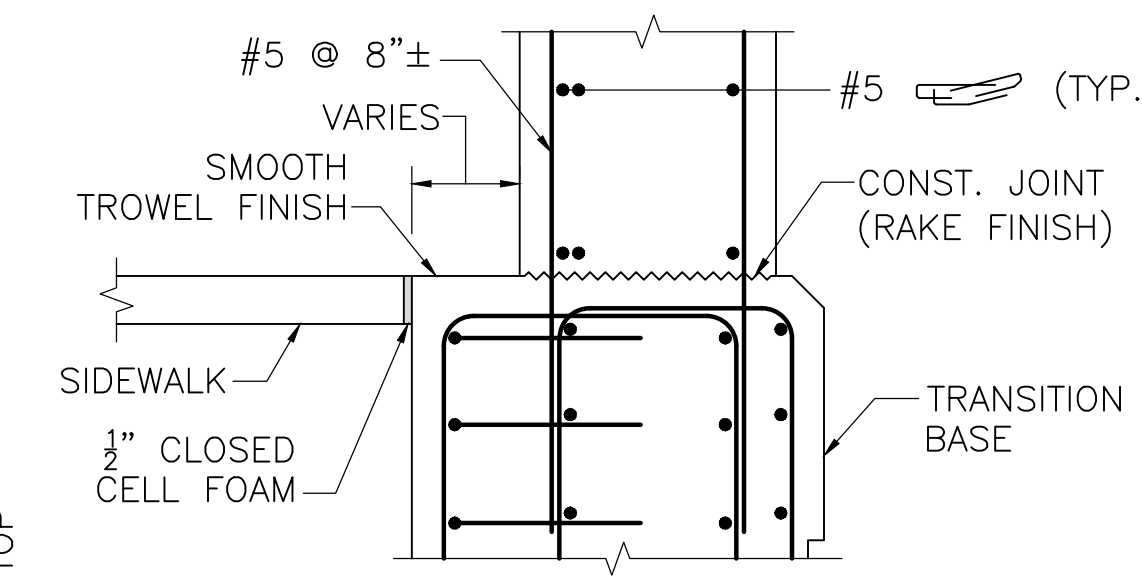
**LANESBOROUGH
BRIDGE STREET**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 38 | 47 |
| PROJECT FILE NO. | | | 609428 |

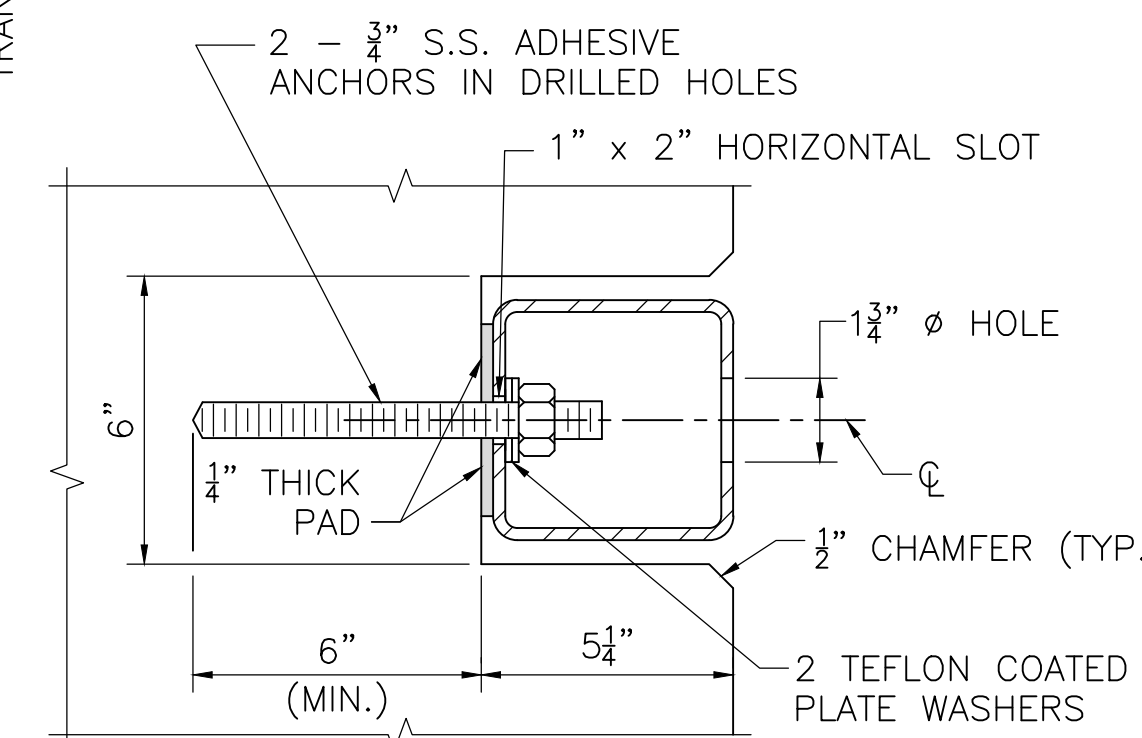
**TOP OF PRECAST HIGHWAY GUARDRAIL
TRANSITION DETAILS**



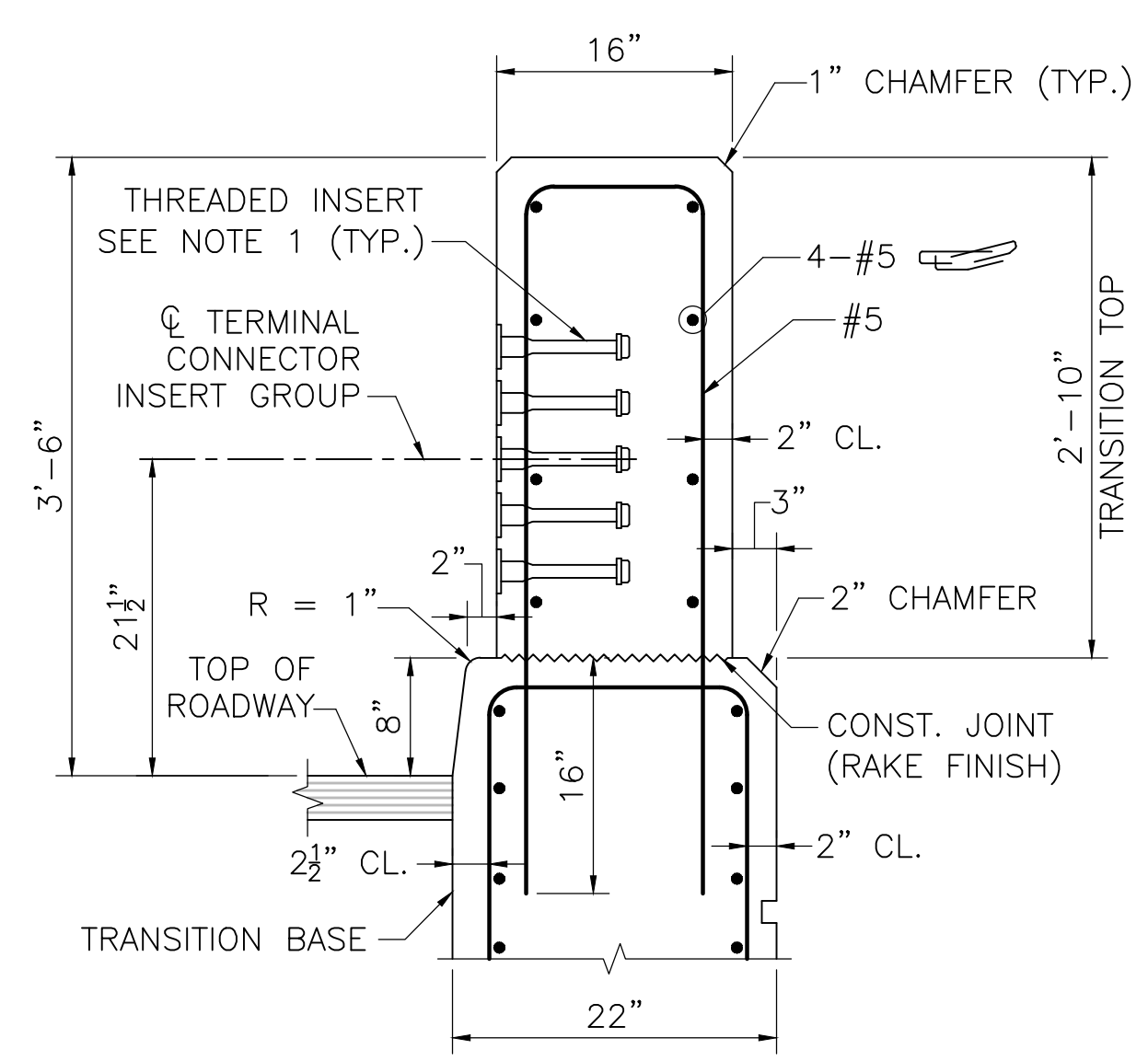
SECTION 16 AT SAFETY CURB
SCALE: 1" = 1'-0"



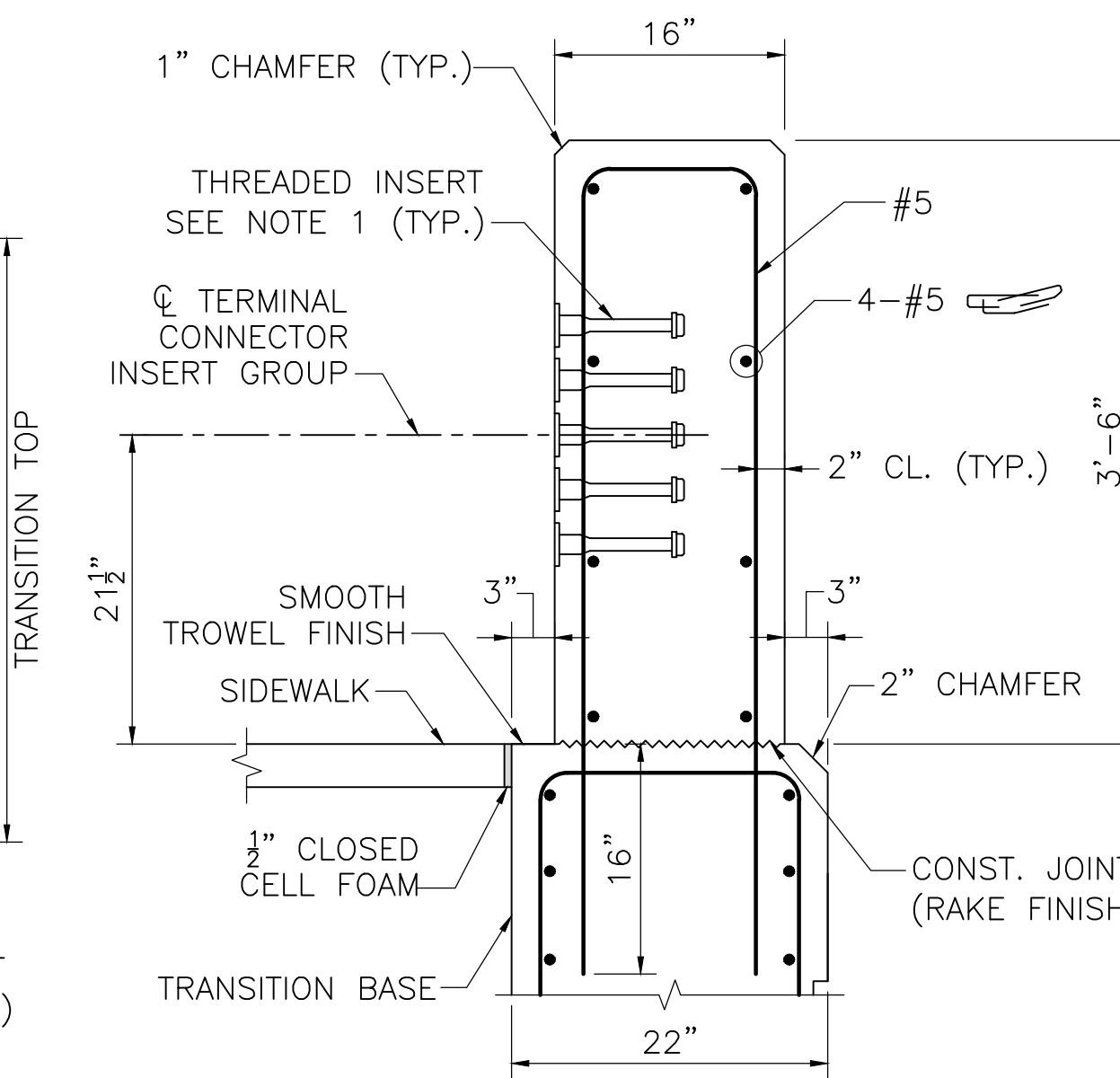
SECTION 16 AT SIDEWALK
SCALE: 1" = 1'-0"



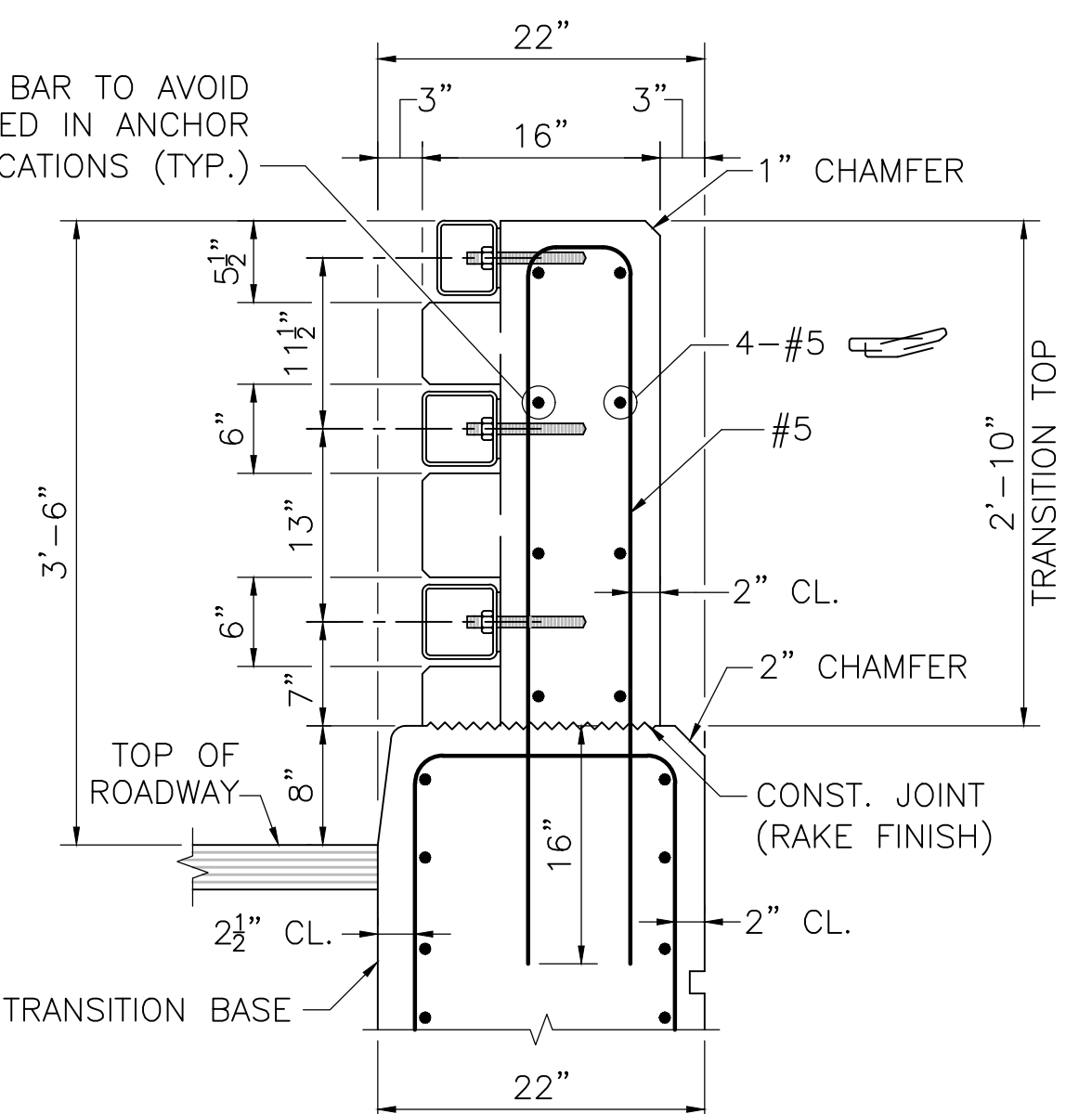
SECTION 17
SCALE: 3" = 1'-0"



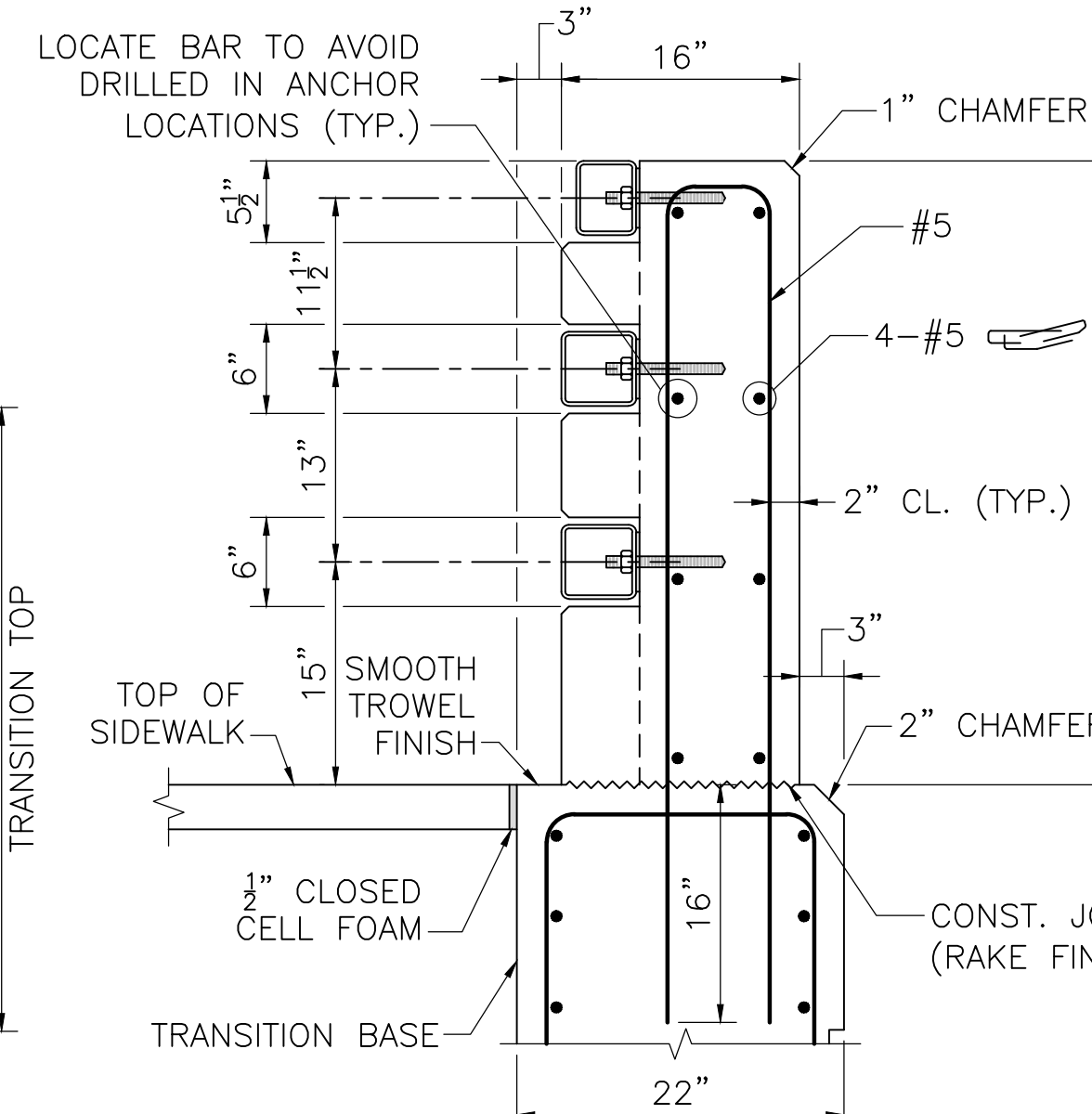
SECTION 15 AT SAFETY CURB
SCALE: 1" = 1'-0"



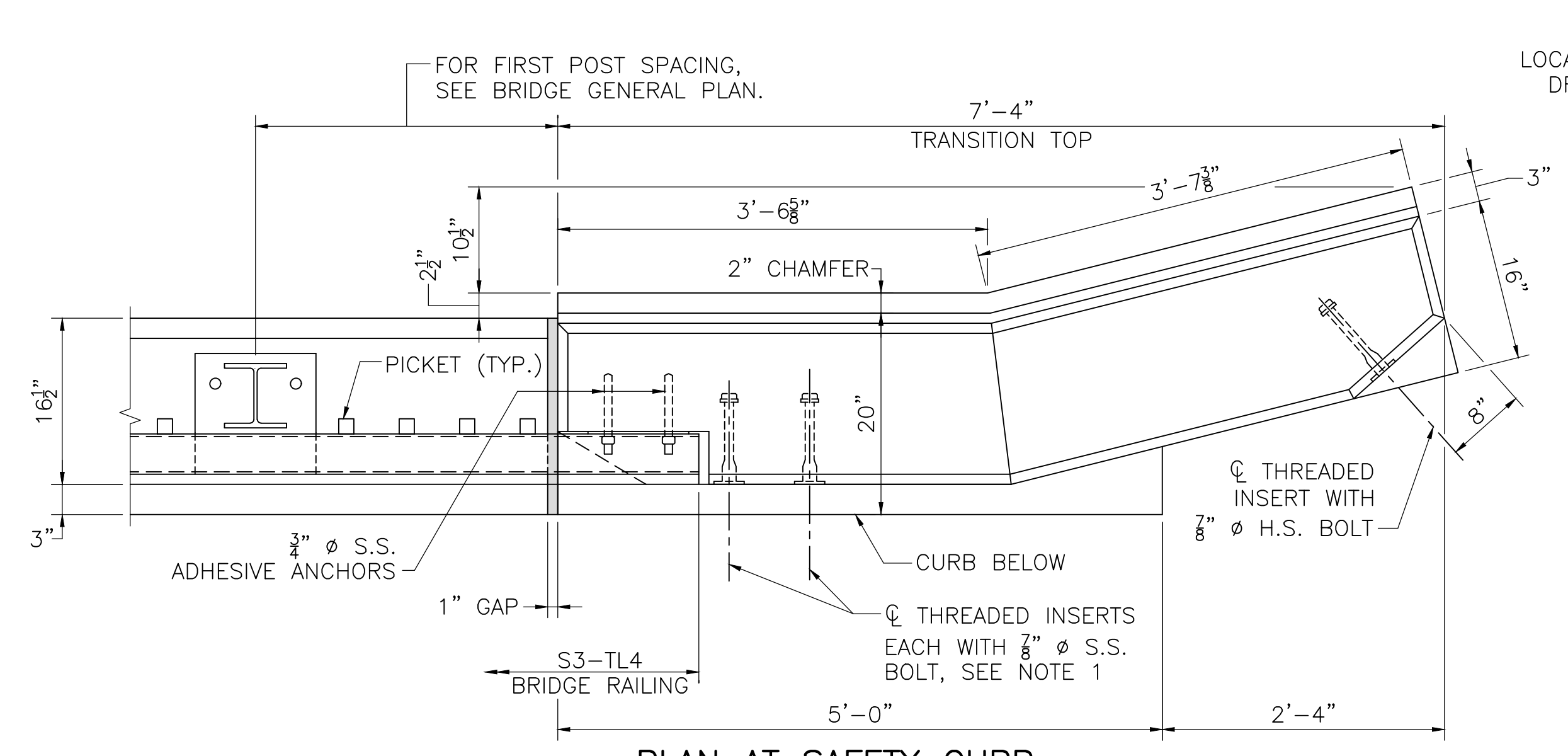
SECTION 15 AT SIDEWALK
SCALE: 1" = 1'-0"



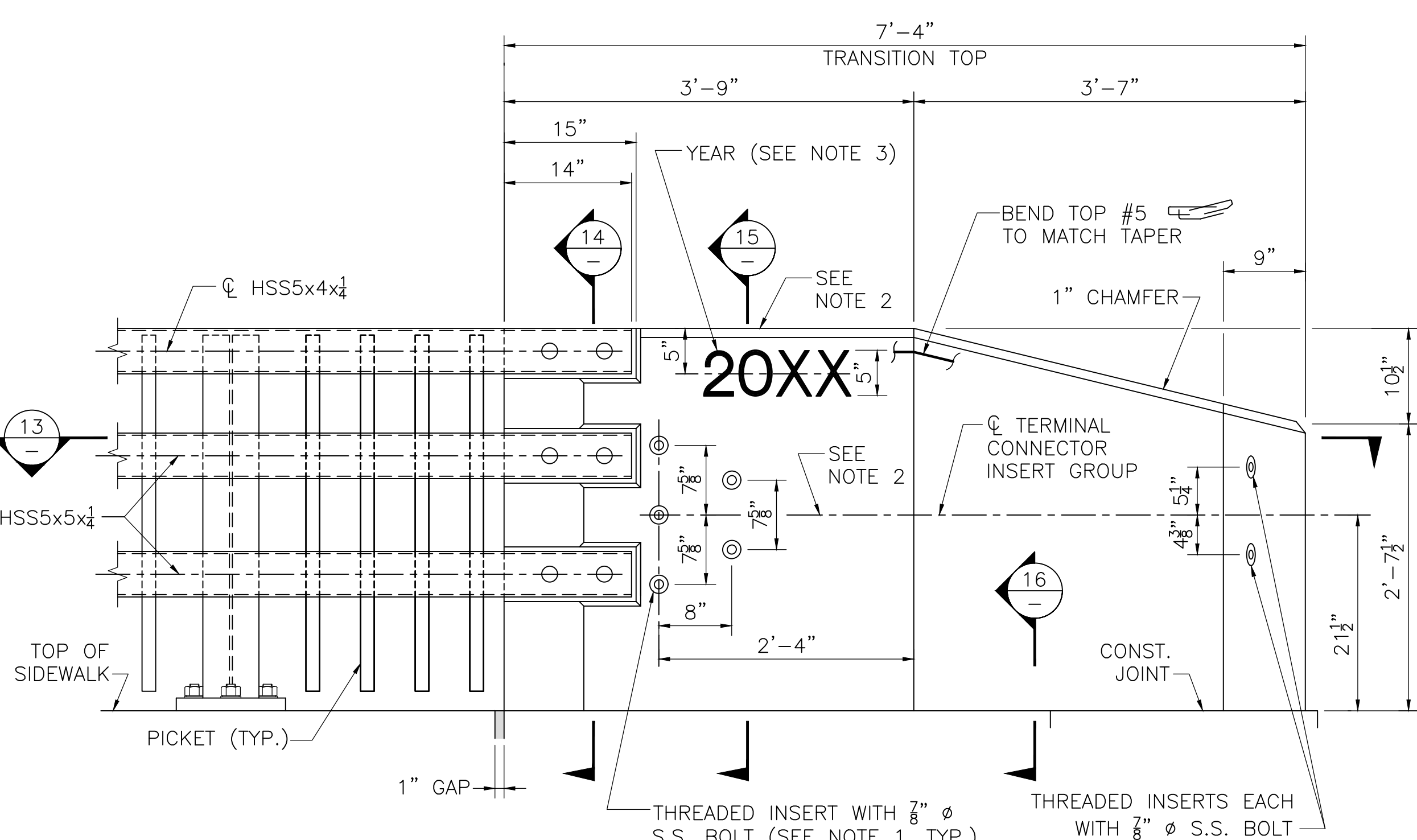
SECTION 14 AT SAFETY CURB
SCALE: 1" = 1'-0"



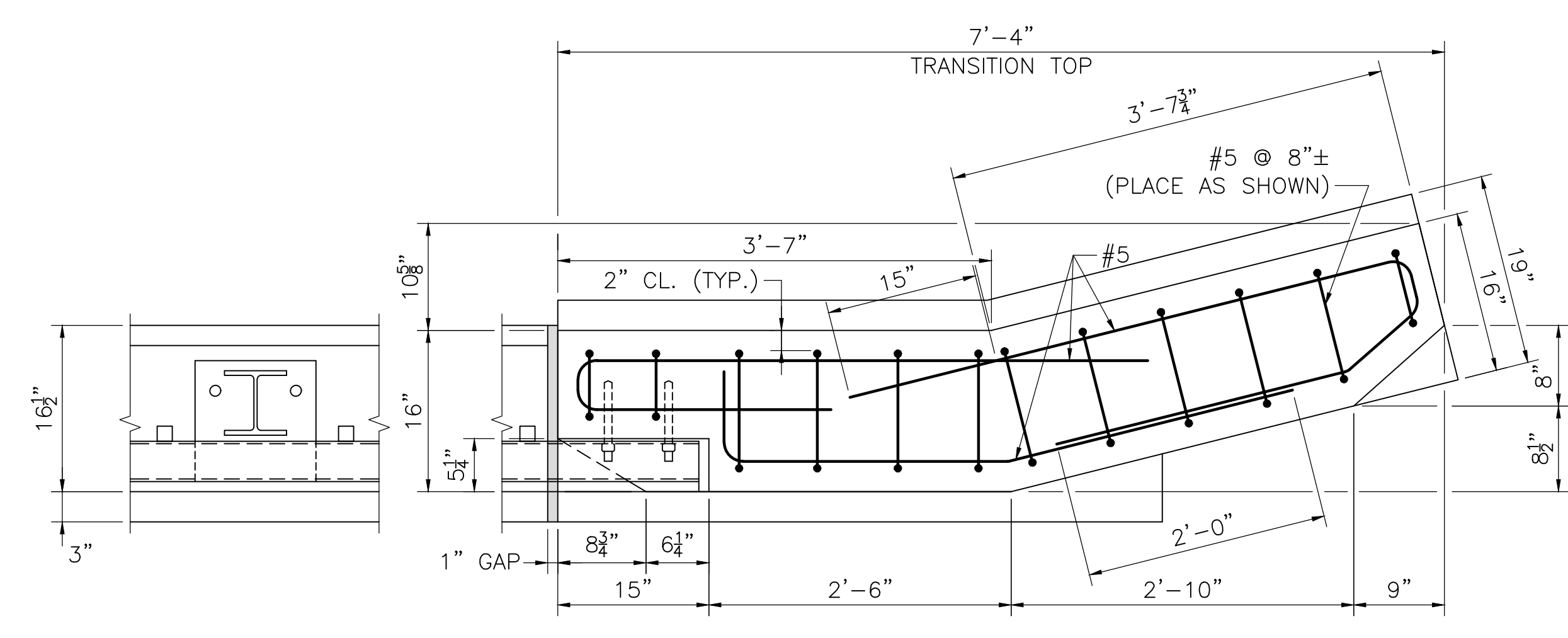
SECTION 14 AT SIDEWALK
SCALE: 1" = 1'-0"



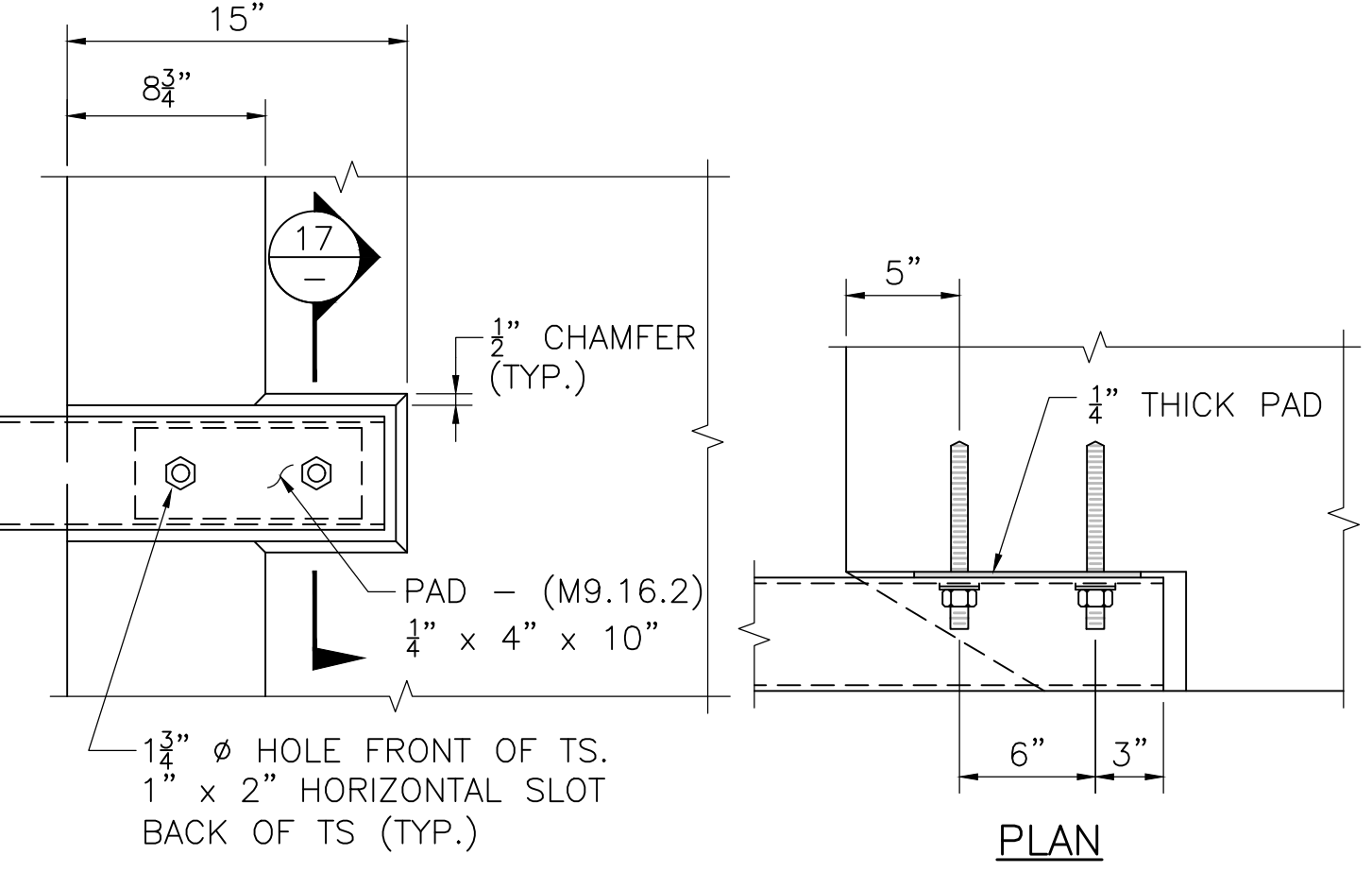
PLAN AT SAFETY CURB
SCALE: 1" = 1'-0"



ELEVATION AT SIDEWALK
SCALE: 1" = 1'-0"



SECTION 13
SCALE: 1" = 1'-0"



RAIL ATTACHMENT
SCALE: 1 1/2" = 1'-0"

NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER 7/8" Ø S.S. BOLT. S.S. BOLTS SHALL BE 7/8" Ø x 1 1/2" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR 7/8" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST. FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF CURB SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1 1/2" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

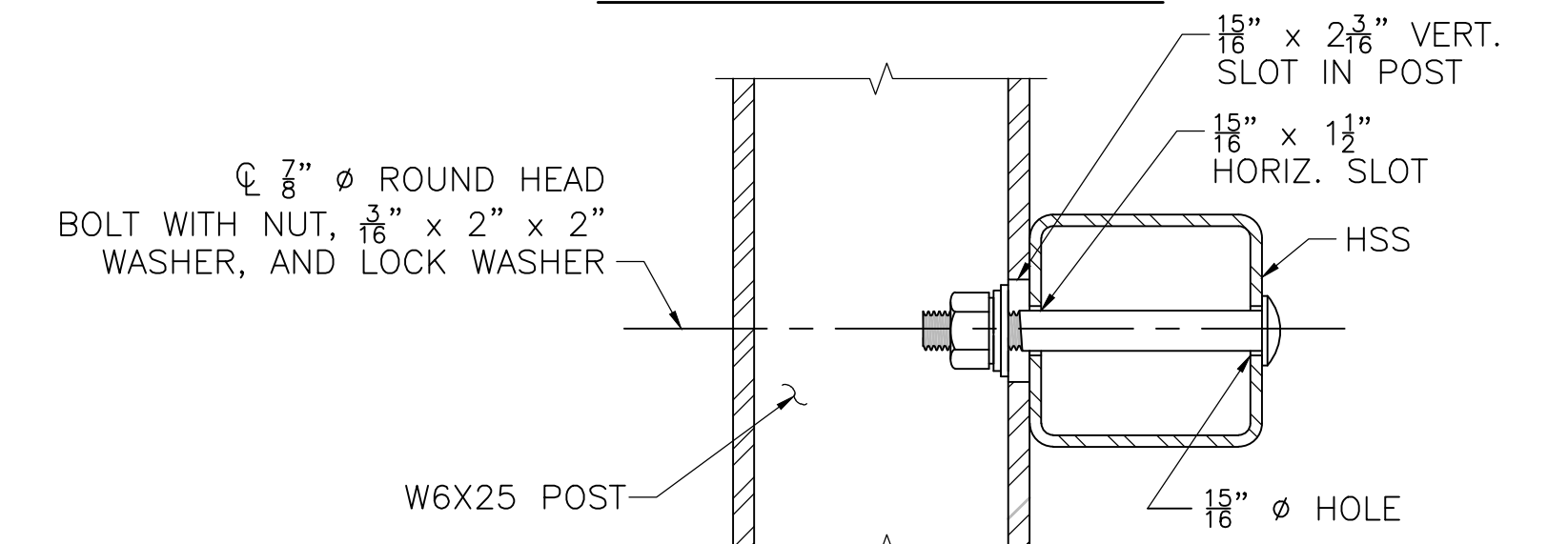
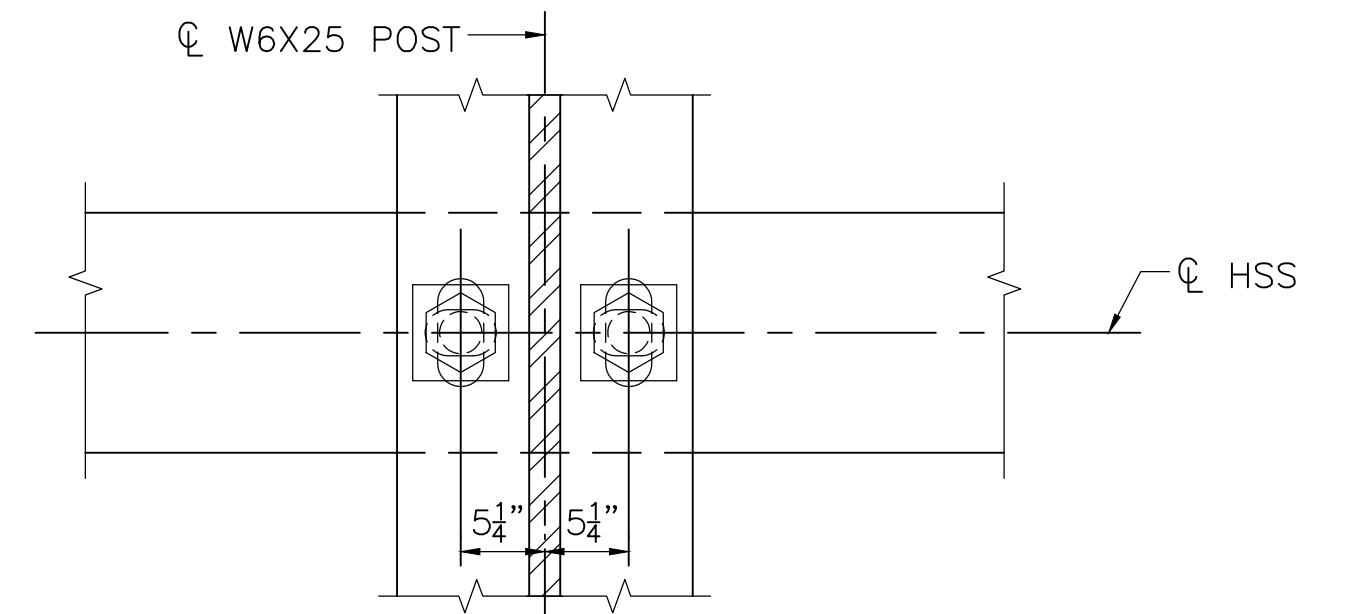
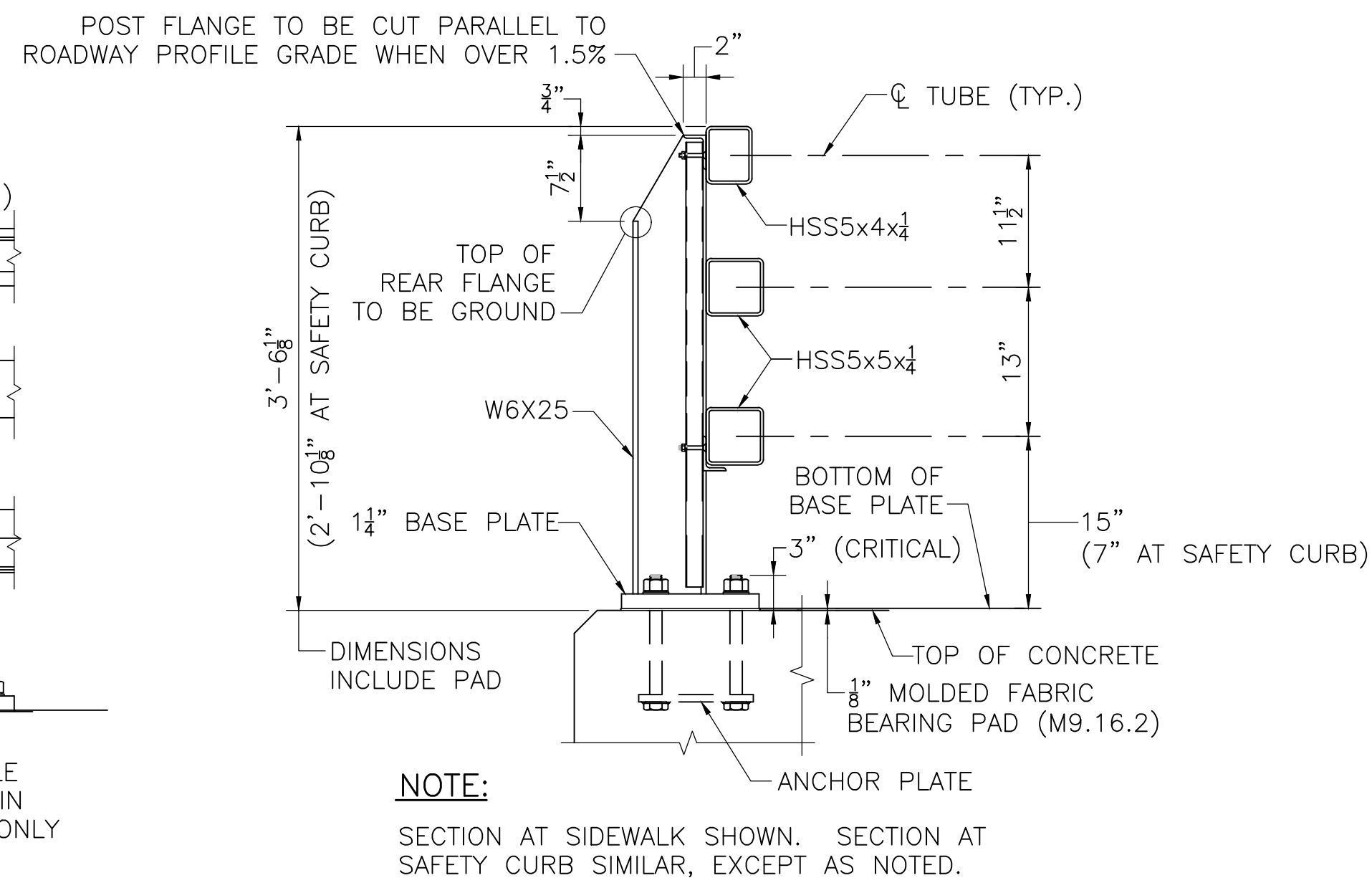
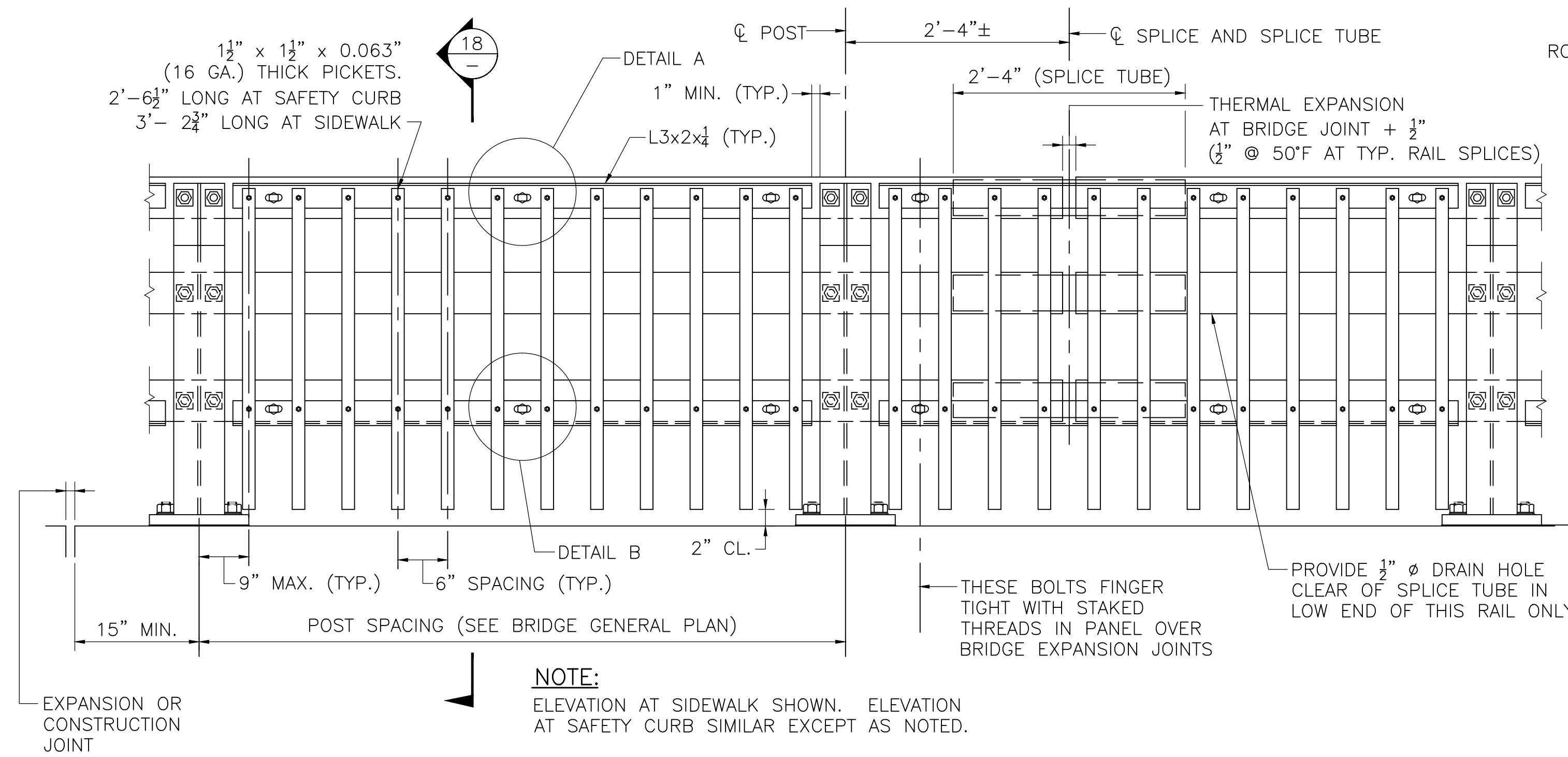
| | |
|--|-------------------------|
| NOV. 02, 2024 | ISSUED FOR CONSTRUCTION |
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TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION DETAILS

**LANESBOROUGH
BRIDGE STREET**

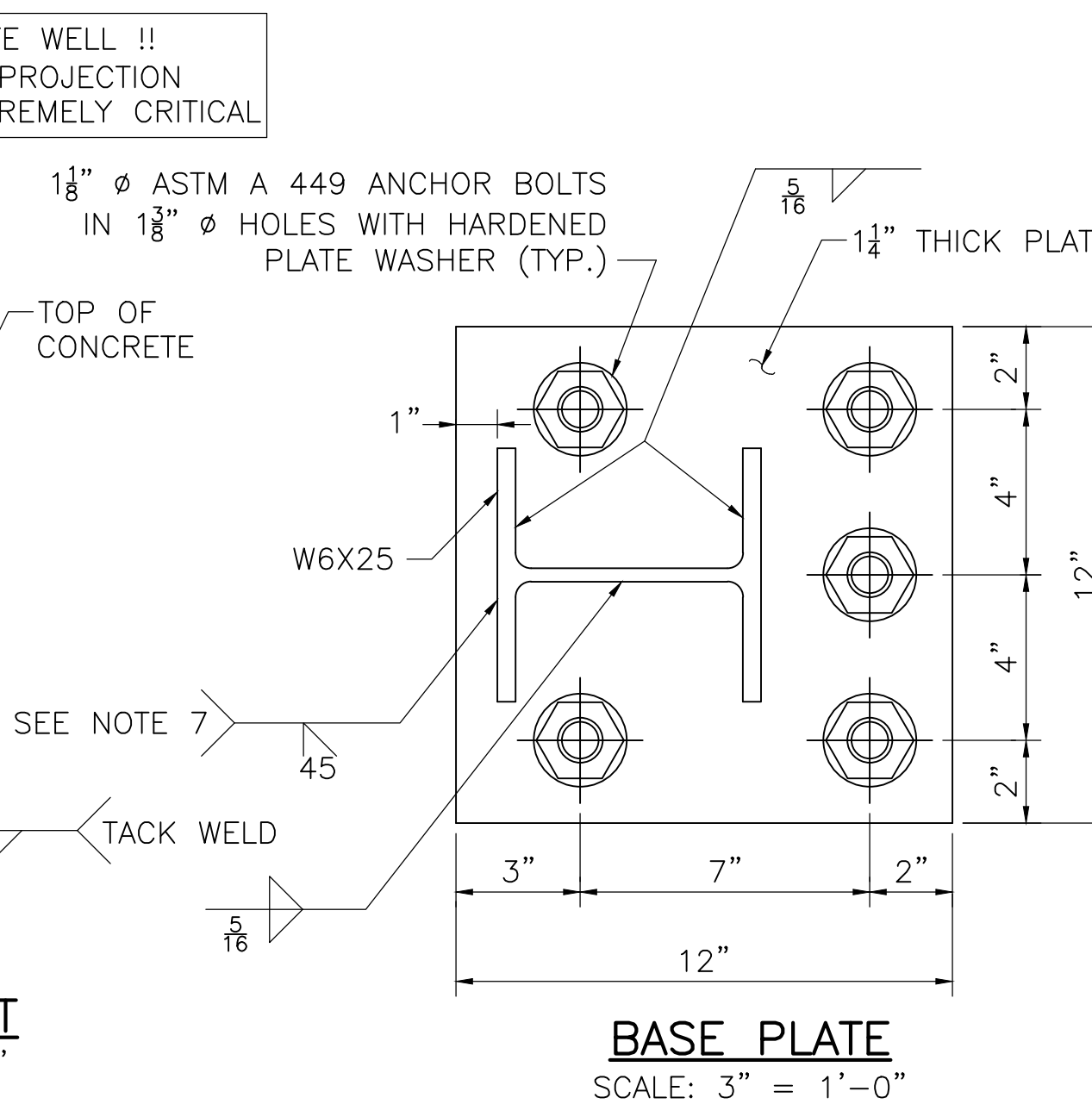
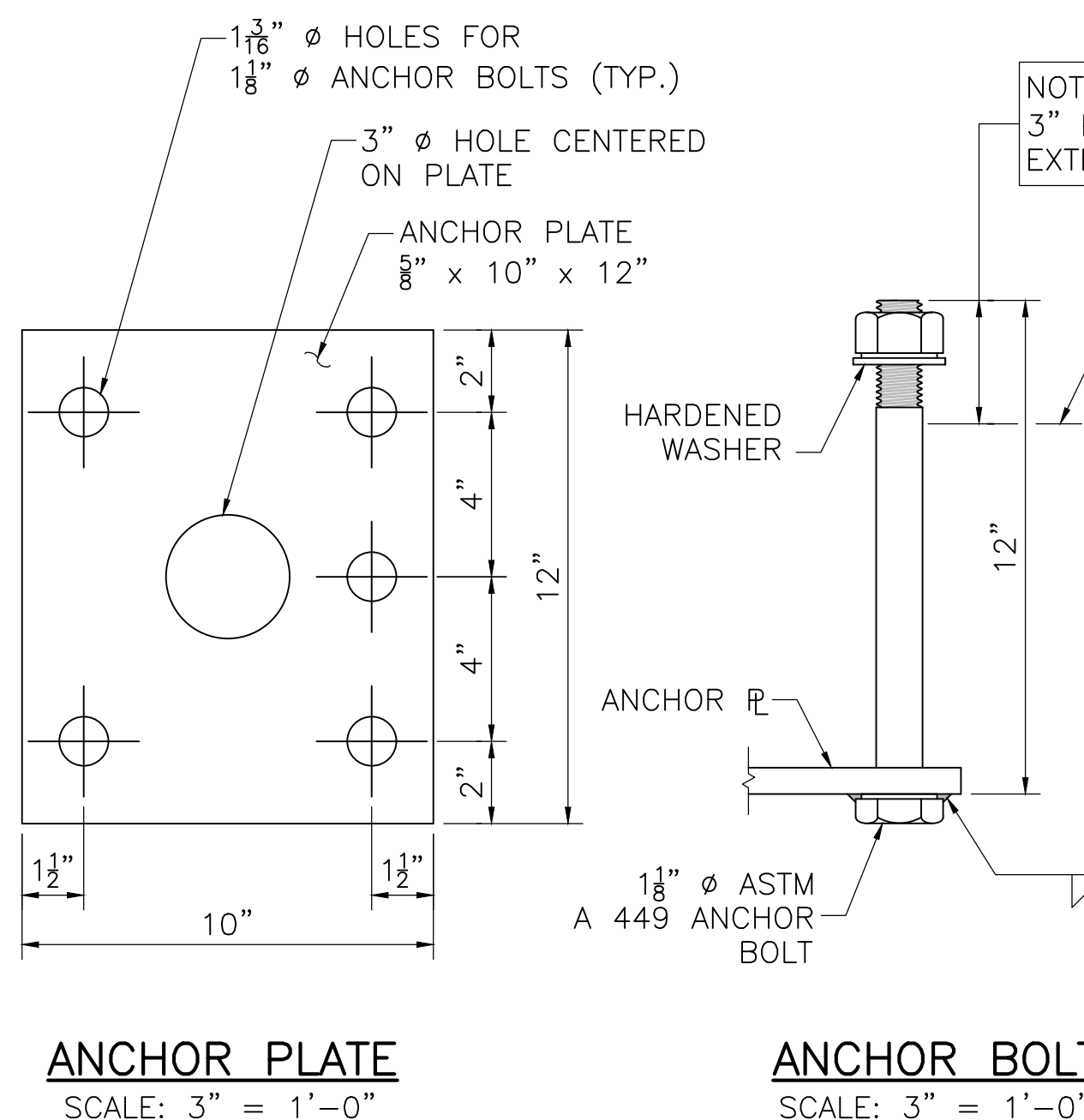
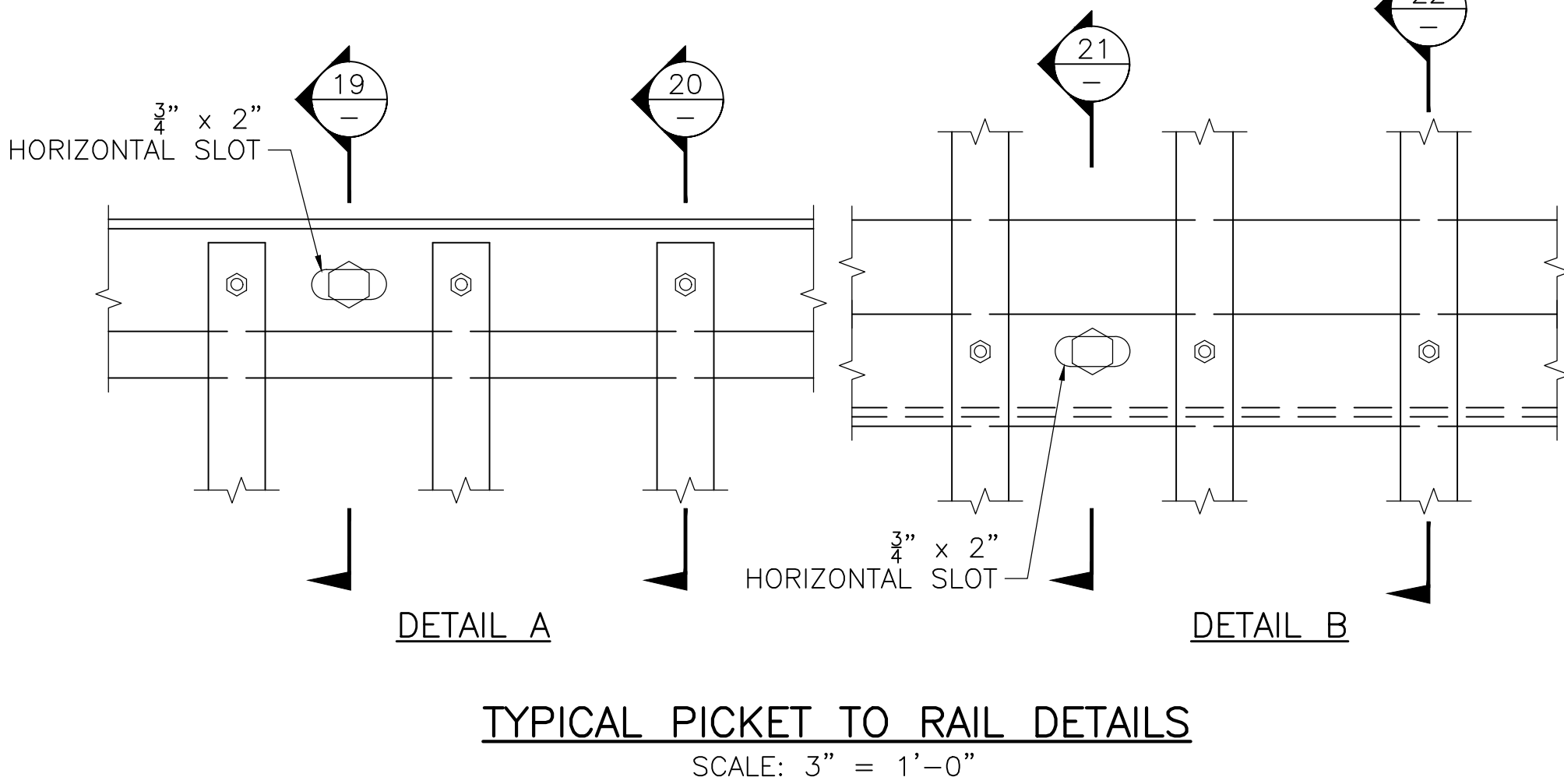
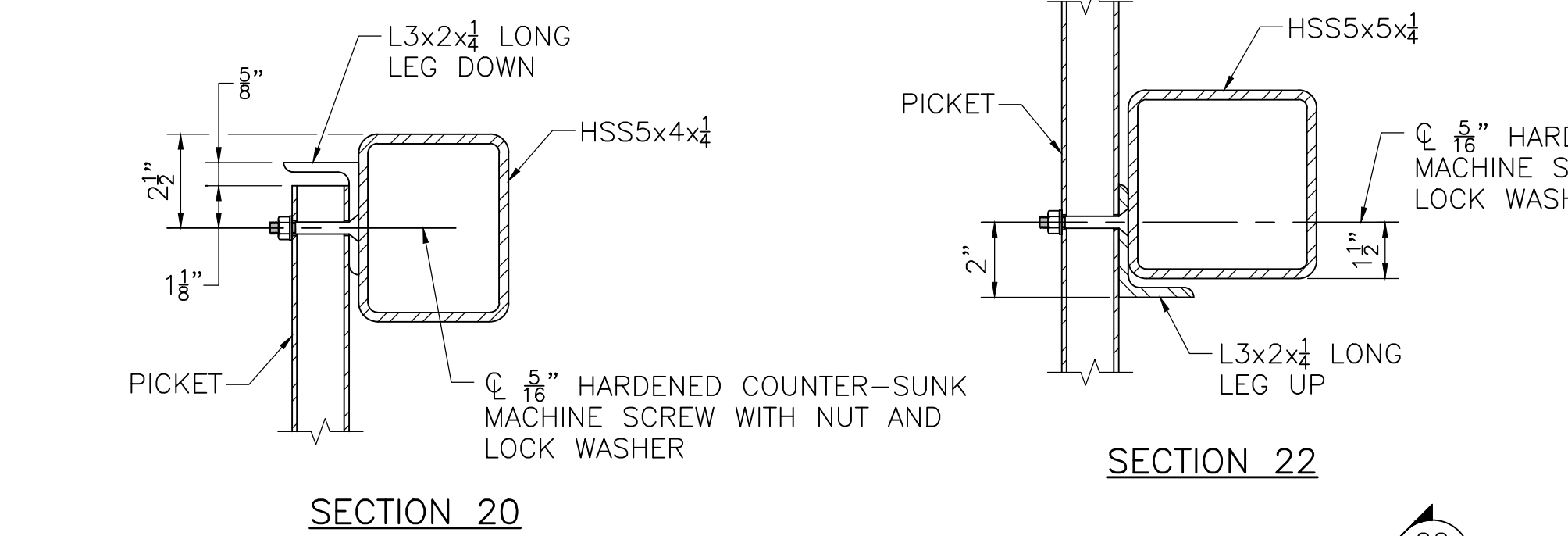
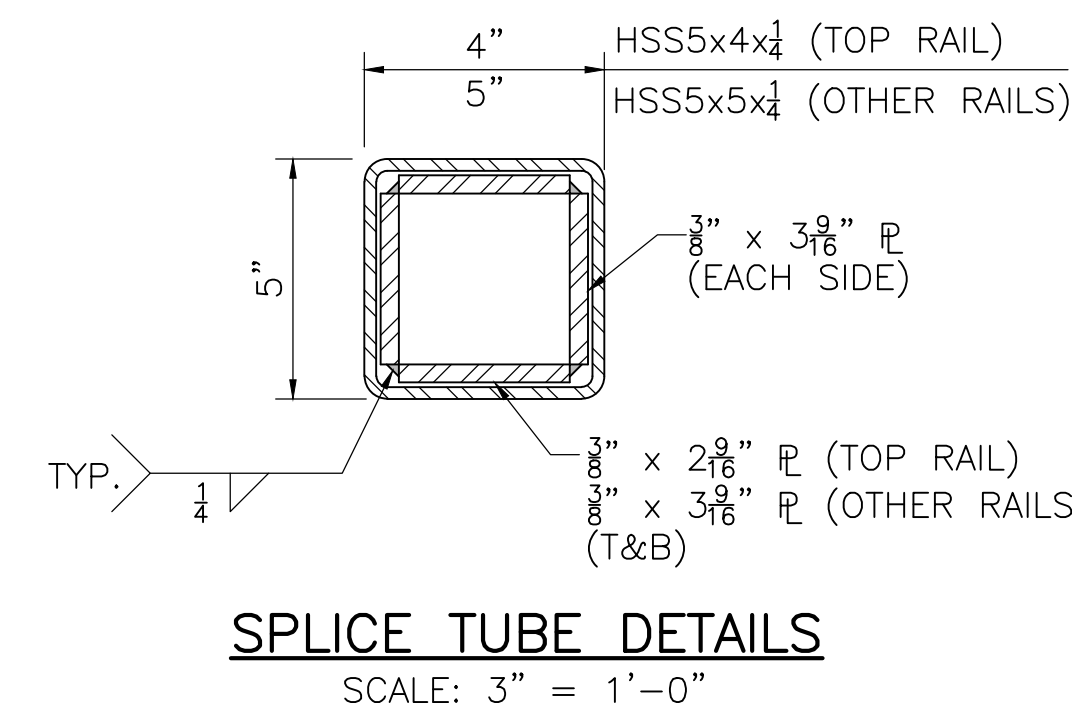
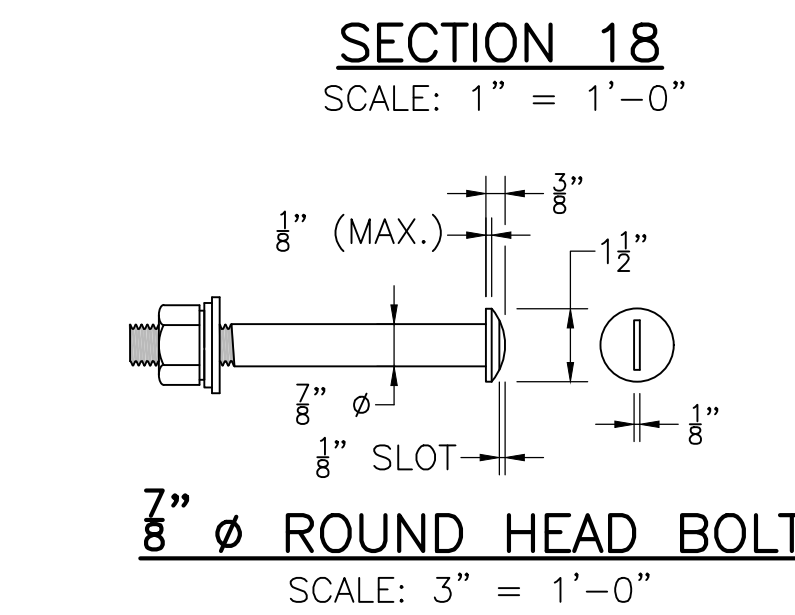
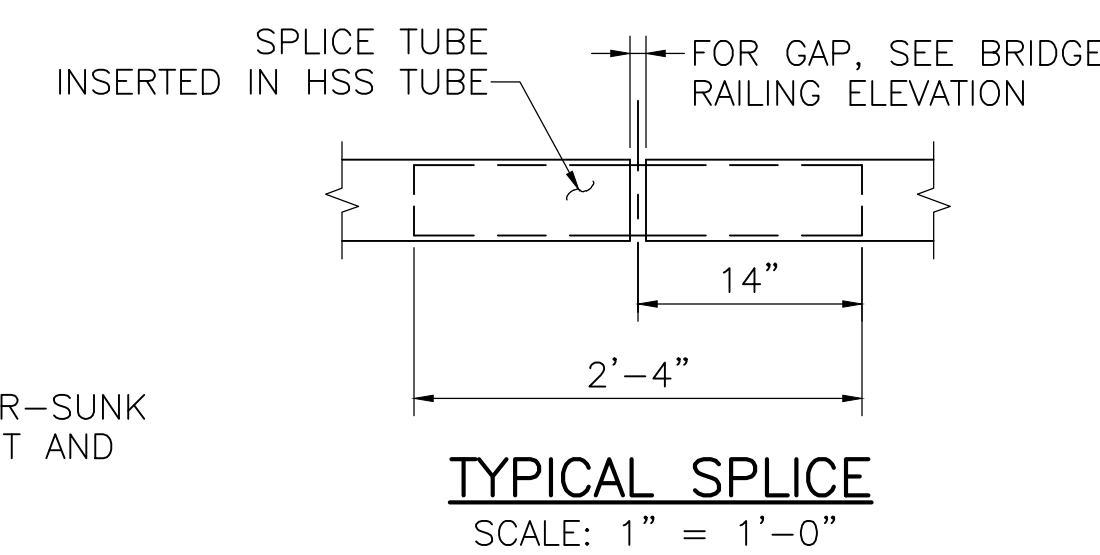
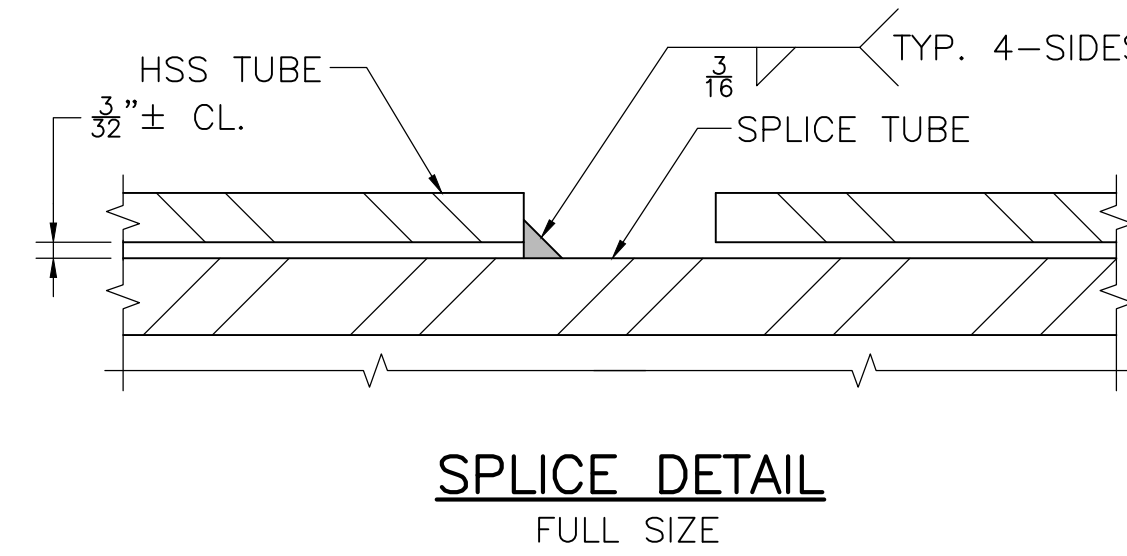
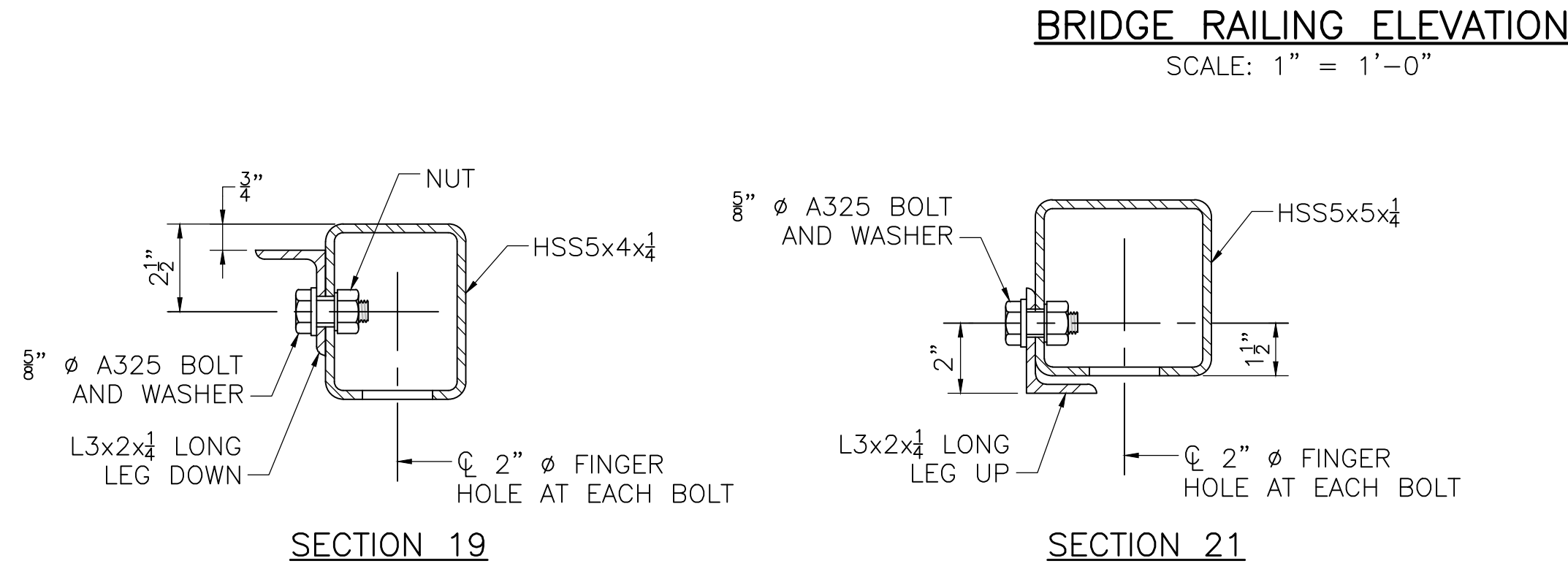
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 39 | 47 |
| PROJECT FILE NO. | | | 609428 |

S3-TL4 BRIDGE RAILING DETAILS



NOTE:
CONNECTIONS AT LOWER RAILS SHOWN.
CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS
SCALE: 1" = 1'-0"



RAILING NOTES:

- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED $F_y = 50$ KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADI OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPlice TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH $F_y = 36$ KSI MIN. OR A 500 GRADE B.
- ALL STEEL (EXCEPT THE 7/8" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF 7/8" ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
- ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPlices WHERE POSSIBLE. RAILS SHALL BE SPliced IN THE PANELS OVER EXPANSION JOINT.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
- POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK-GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
- 7/8" ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

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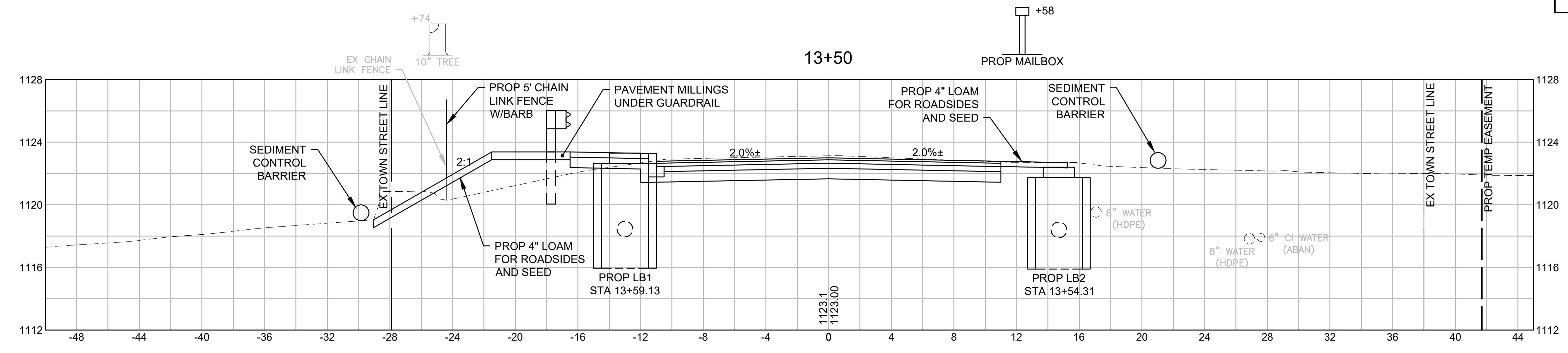
S3-TL4 BRIDGE RAILING

**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

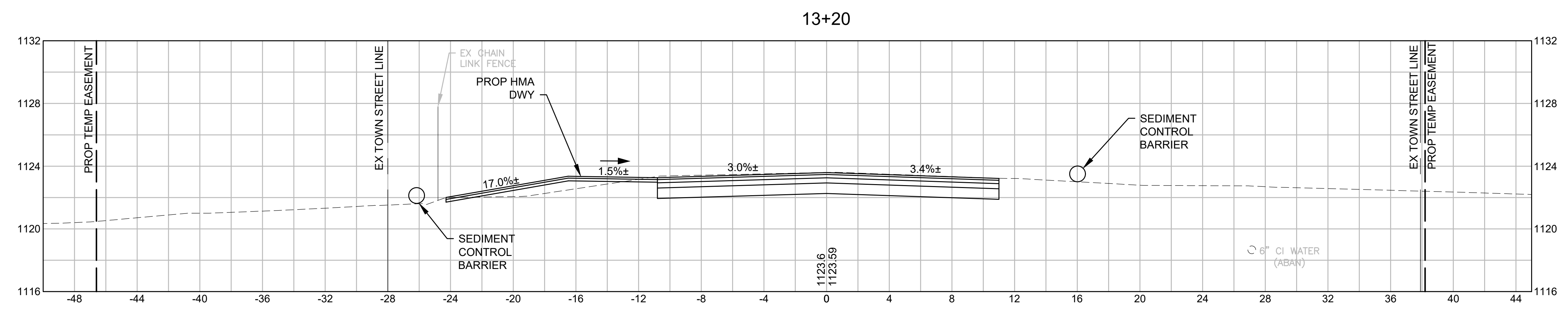
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 40 | 47 |
| PROJECT FILE NO. | | 609428 | |

**CROSS SECTIONS - SHEET 1
BRIDGE STREET**

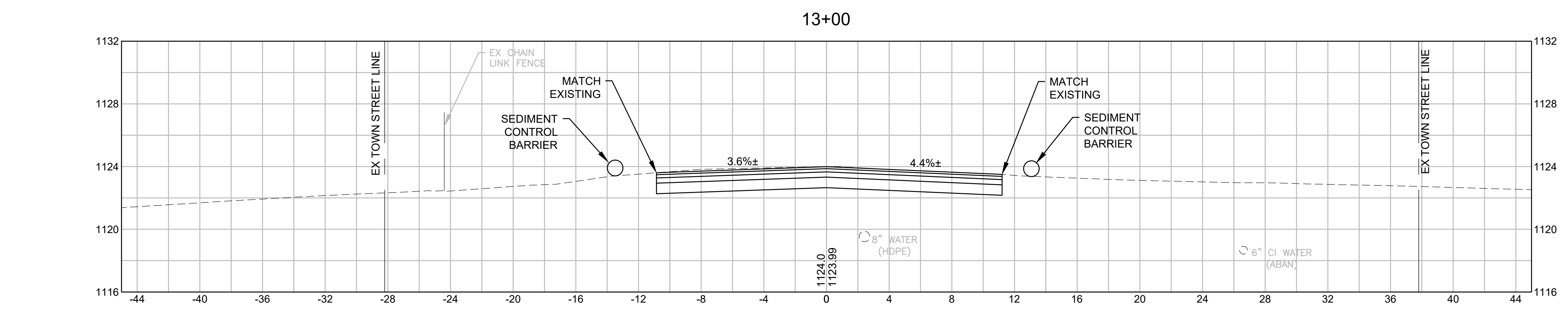
PROF TEMP EASEMENT
95' LT



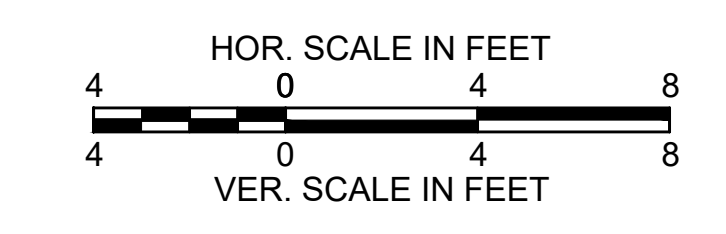
CUT: 35 SF
FILL: 15 SF



CUT: 30 SF
FILL: 5 SF



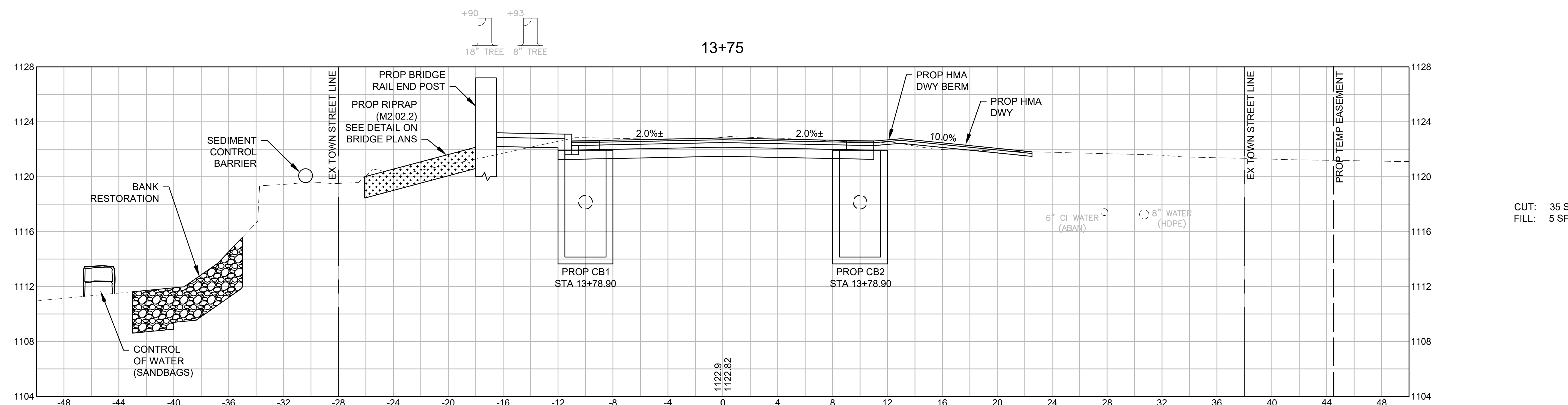
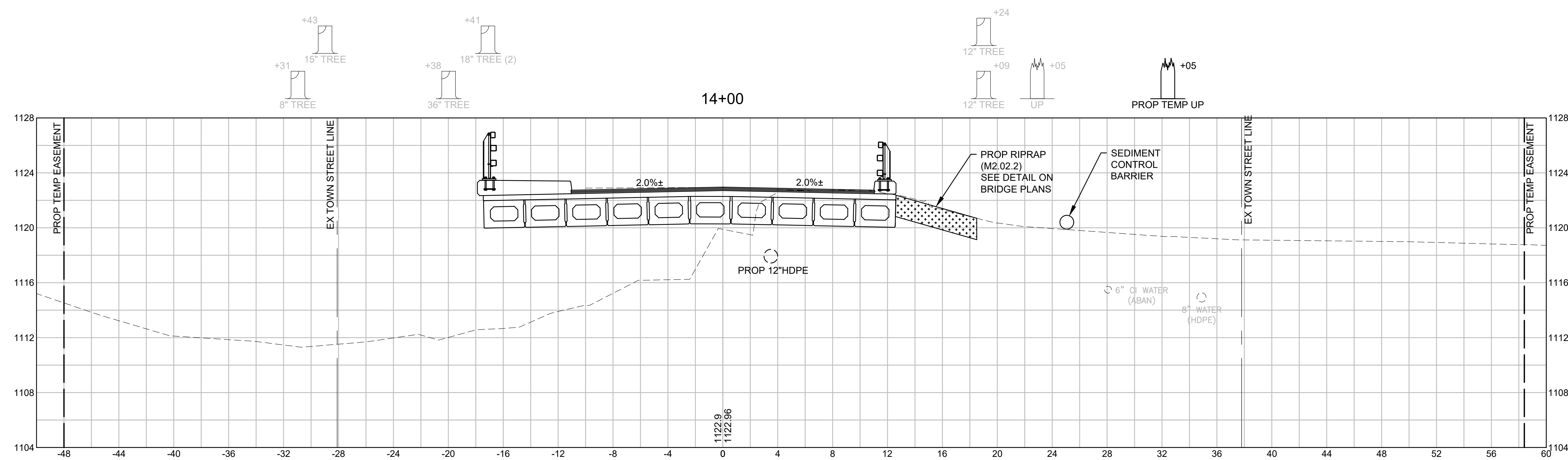
CUT: 30 SF
FILL: 0 SF



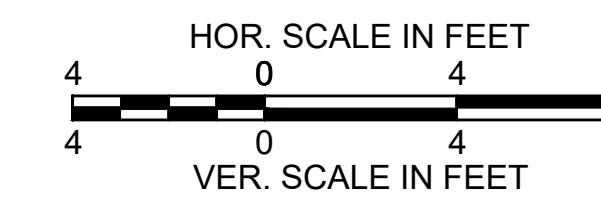
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 41 | 47 |
| PROJECT FILE NO. | | 609428 | |

**CROSS SECTIONS - SHEET 2
BRIDGE STREET**



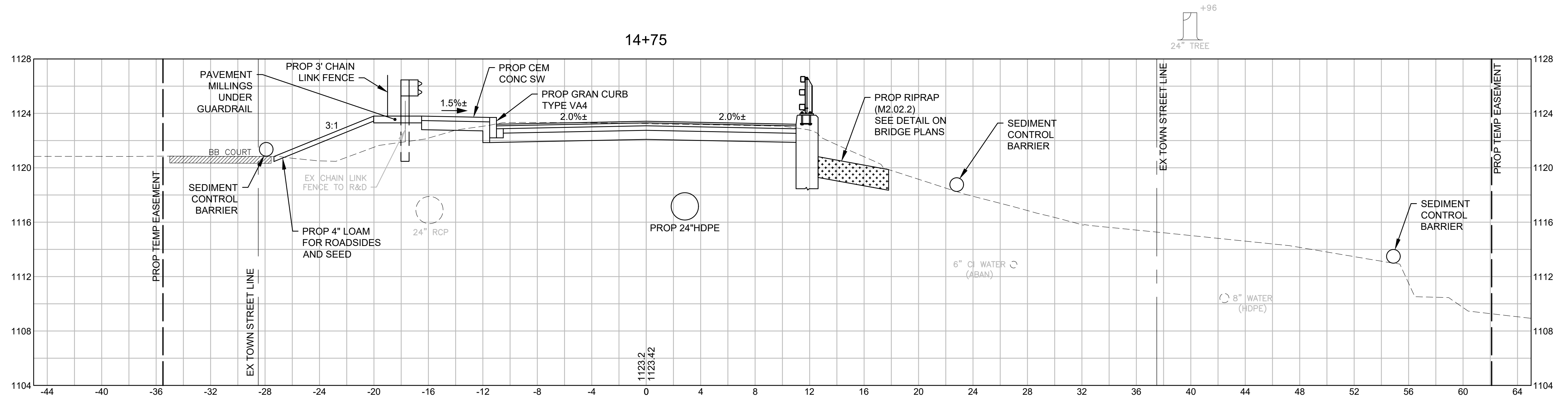
CUT: 35 SF
FILL: 5 SF



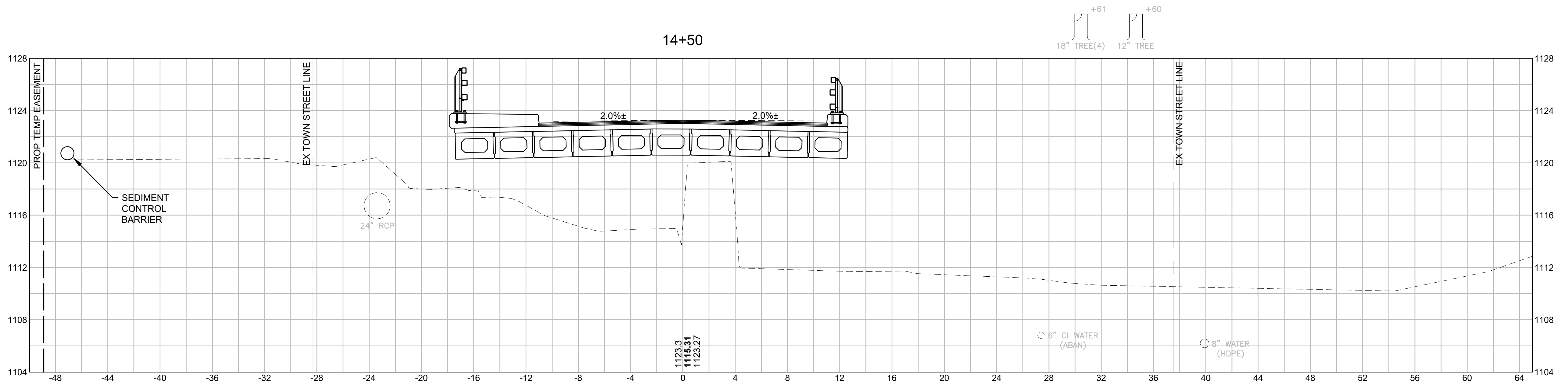
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 42 | 47 |
| PROJECT FILE NO. | | 609428 | |

**CROSS SECTIONS - SHEET 3
BRIDGE STREET**



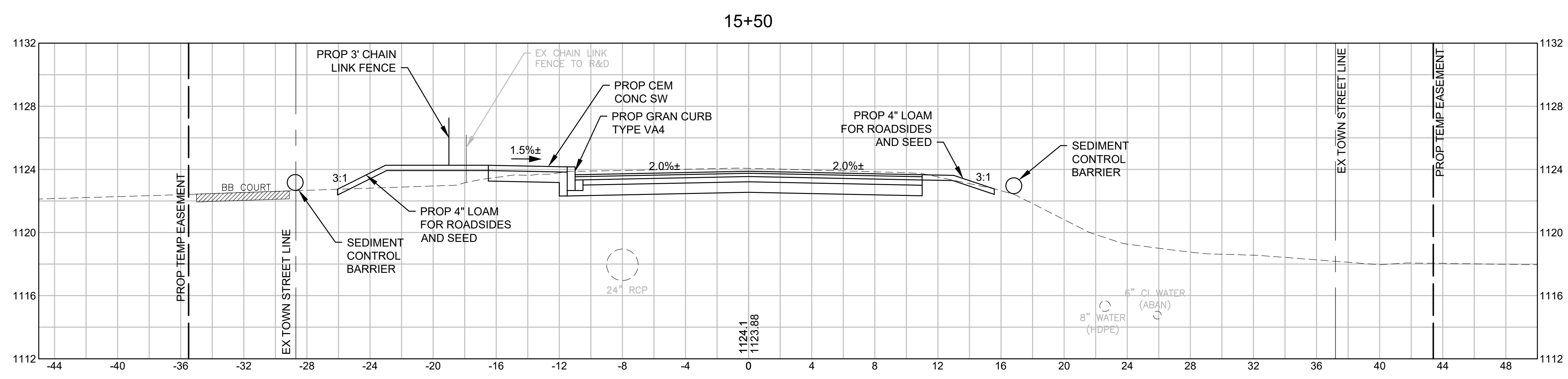
CUT: 30 SF
FILL: 15 SF



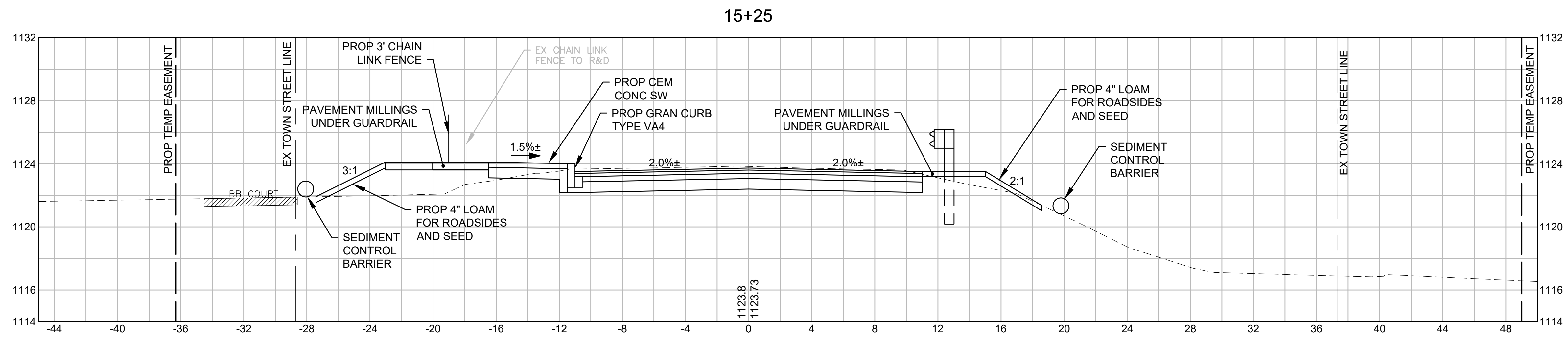
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 43 | 47 |
| PROJECT FILE NO. | | 609428 | |

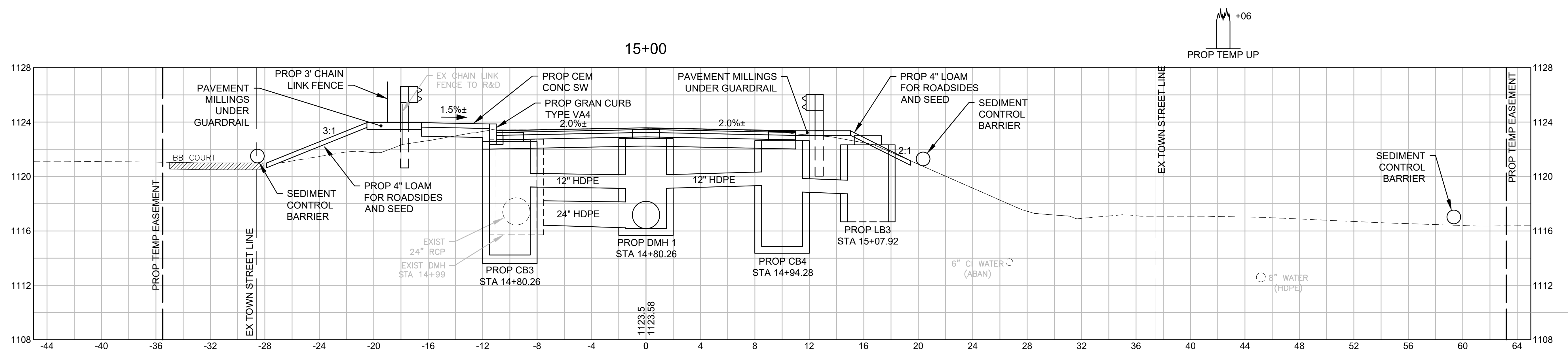
**CROSS SECTIONS - SHEET 4
BRIDGE STREET**



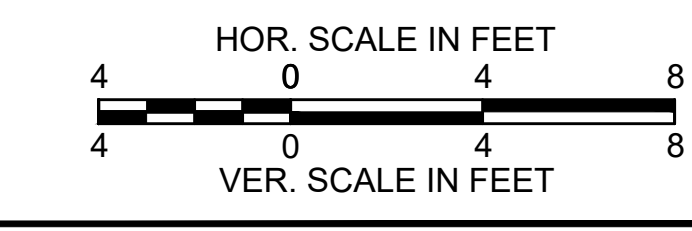
CUT: 40 SF
FILL: 5 SF



CUT: 35 SF
FILL: 10 SF



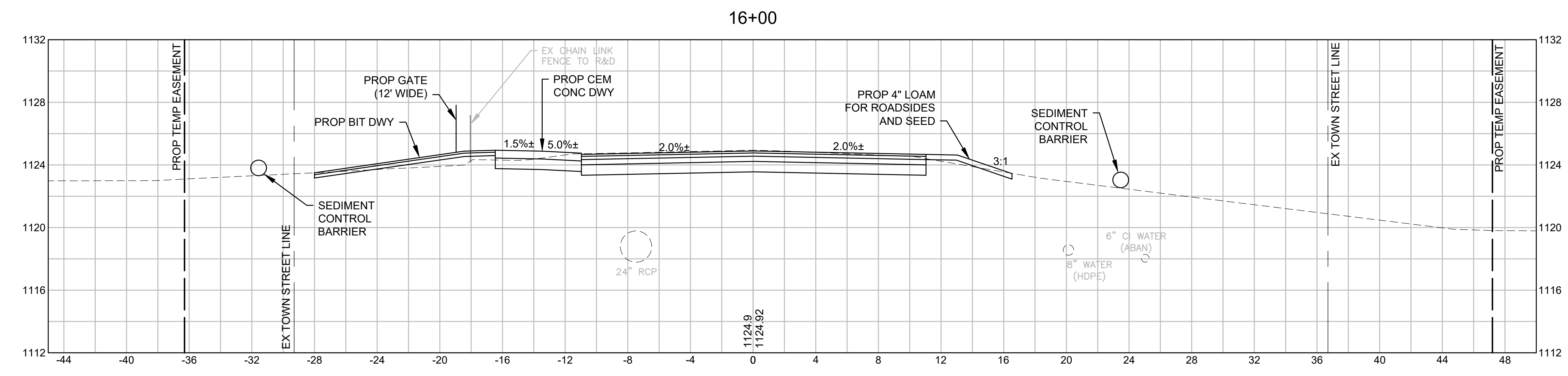
CUT: 35 SF
FILL: 10 SF



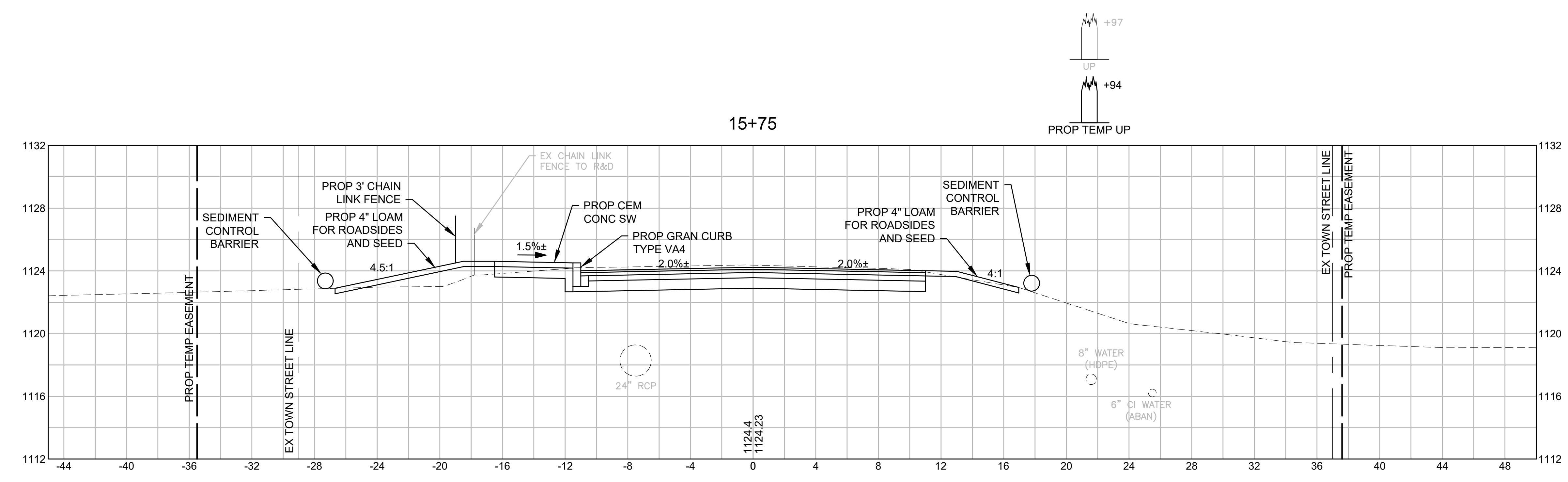
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 44 | 47 |
| PROJECT FILE NO. | | 609428 | |

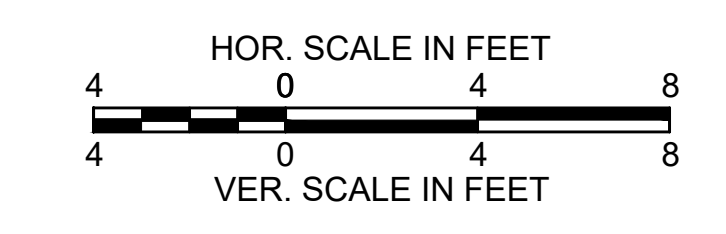
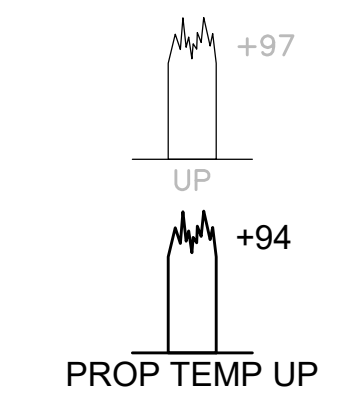
**CROSS SECTIONS - SHEET 5
BRIDGE STREET**



CUT: 35 SF
FILL: 5 SF



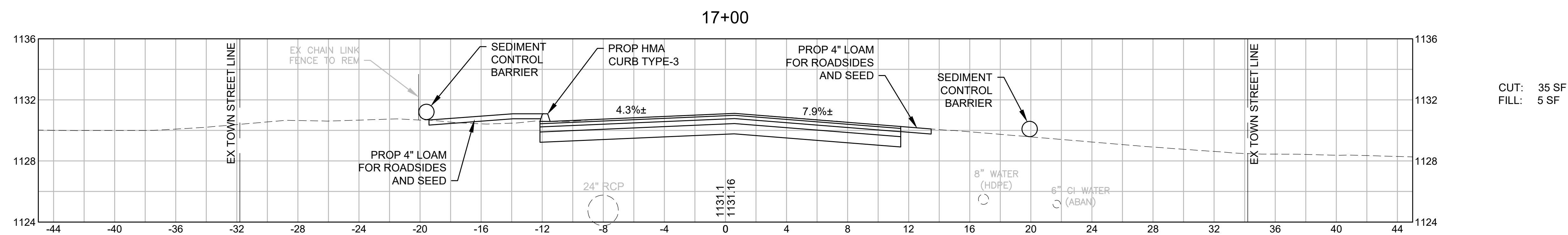
CUT: 40 SF
FILL: 5 SF



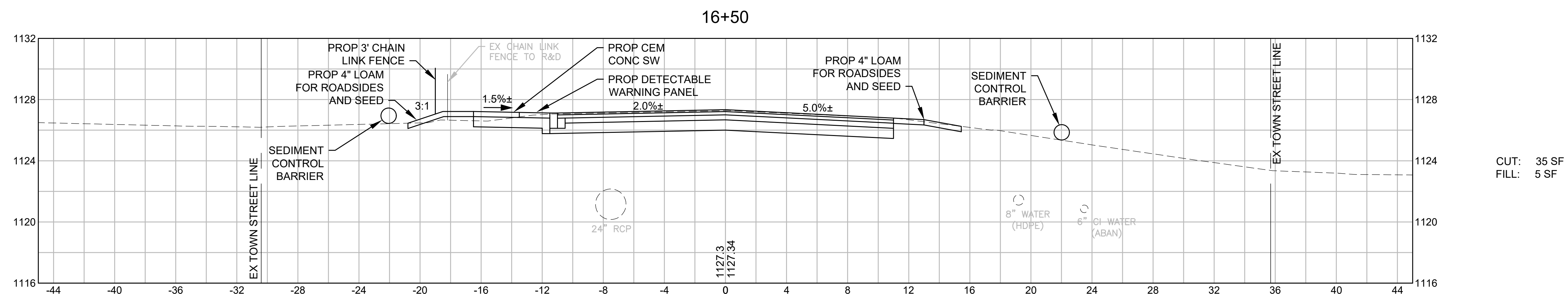
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 45 | 47 |
| PROJECT FILE NO. | | 609428 | |

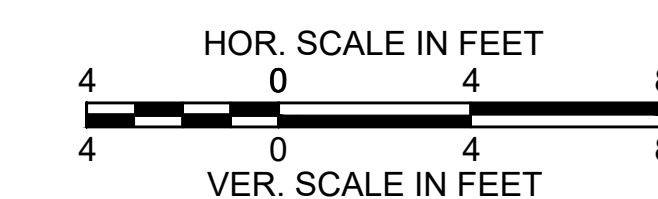
**CROSS SECTIONS - SHEET 6
BRIDGE STREET**



CUT: 35 SF
FILL: 5 SF



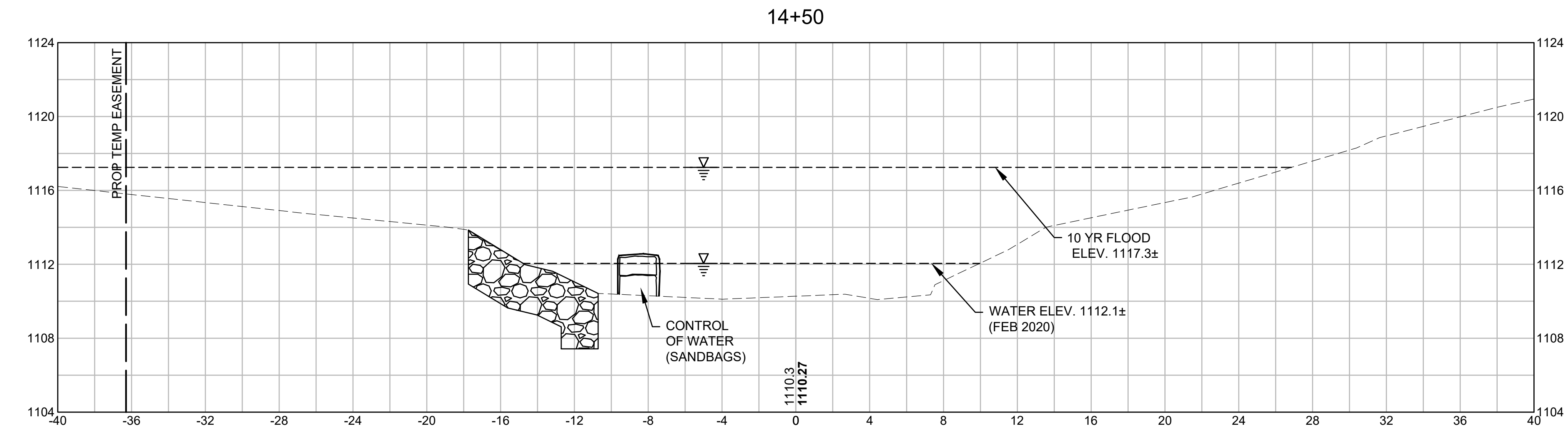
CUT: 35 SF
FILL: 5 SF



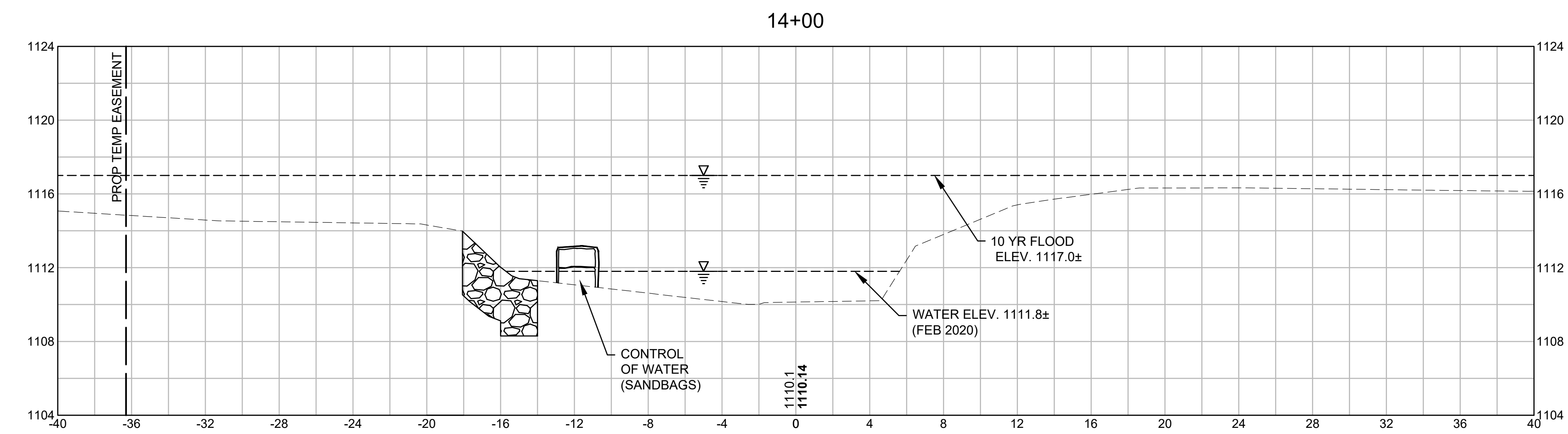
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 46 | 47 |
| PROJECT FILE NO. | | 609428 | |

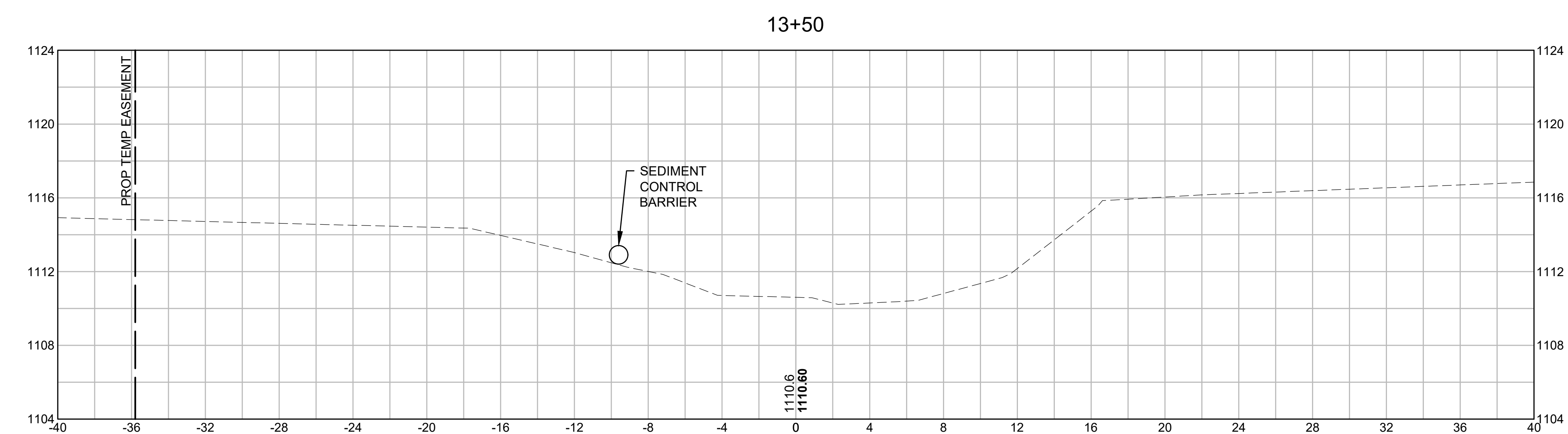
**CROSS SECTIONS - SHEET 7
TOWN BROOK**



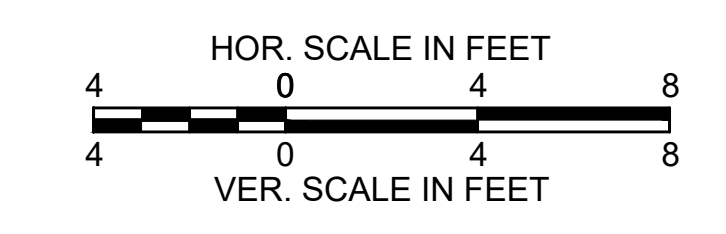
CUT: 25 SF
FILL: 25 SF (STONE)



CUT: 15 SF
FILL: 15 SF (STONE)



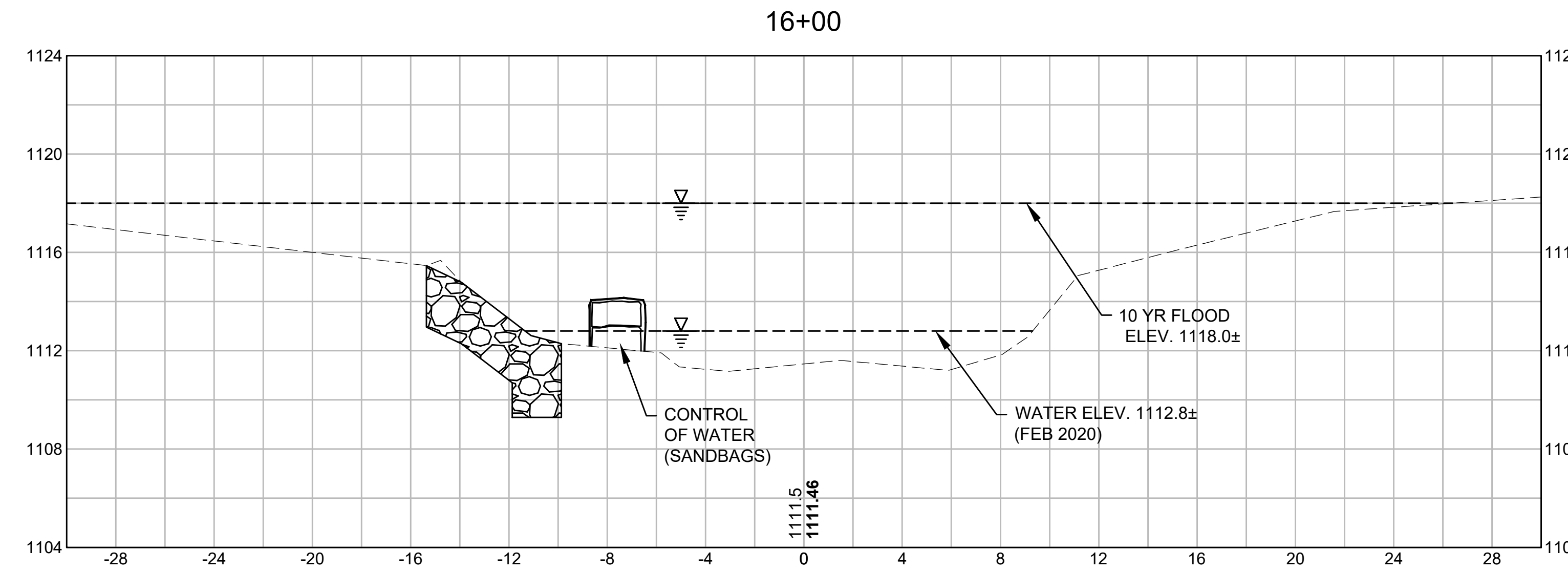
CUT: 0 SF
FILL: 0 SF



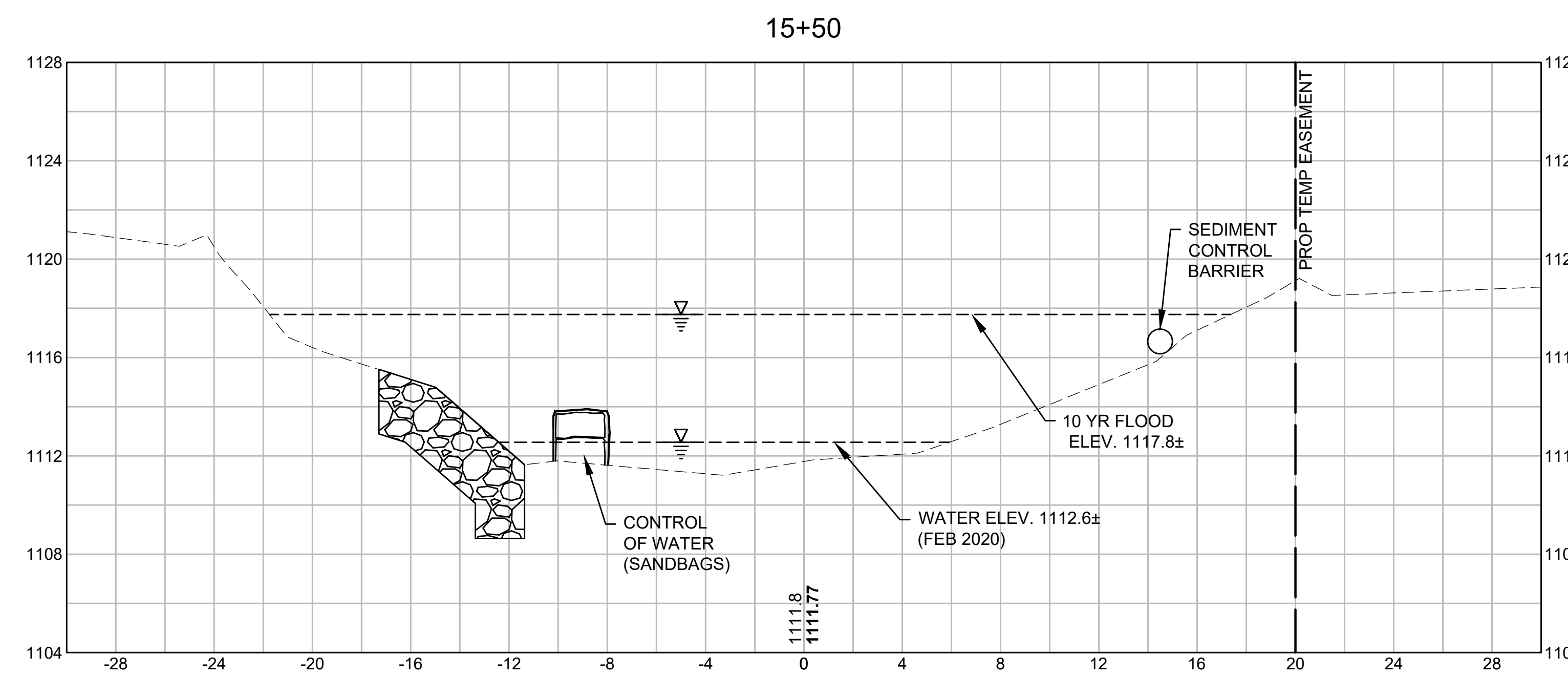
**LANESBOROUGH
BRIDGE STREET OVER TOWN BROOK**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------|-----------|--------------|
| MA | STP(BR-OFF)-003S(781)X | 47 | 47 |
| PROJECT FILE NO. | | 609428 | |

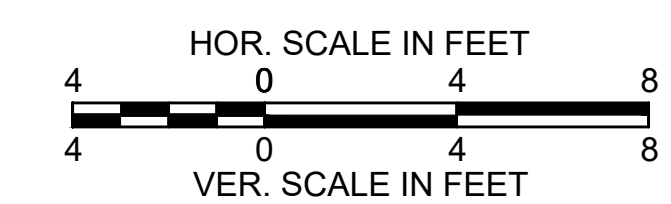
**CROSS SECTIONS - SHEET 8
TOWN BROOK**

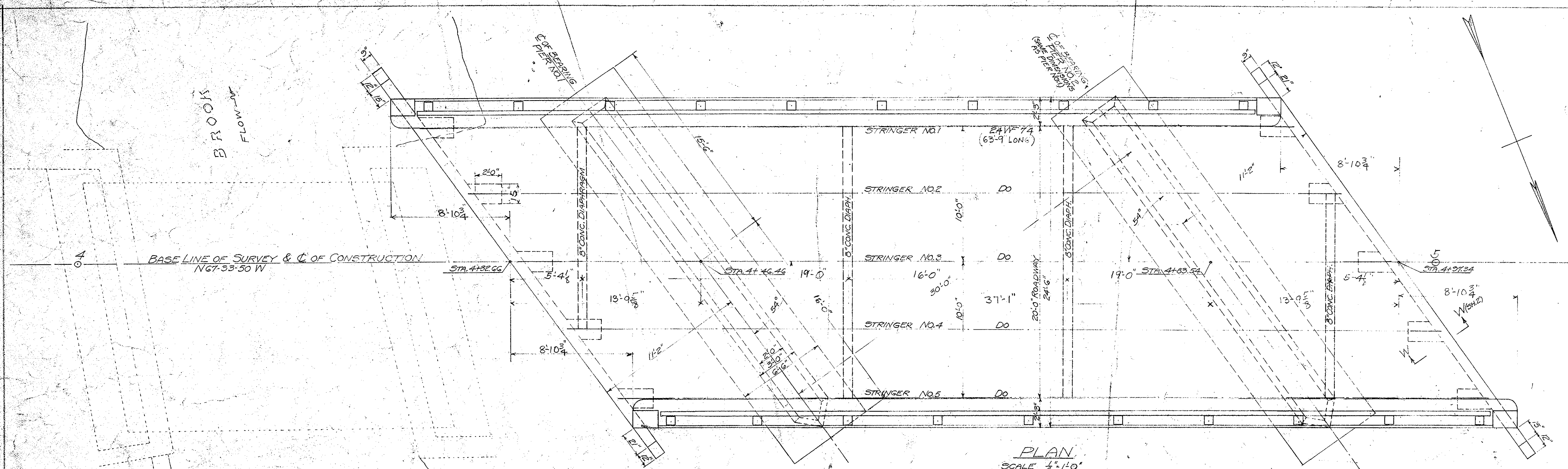


CUT: 20 SF
FILL: 20 SF (STONE)

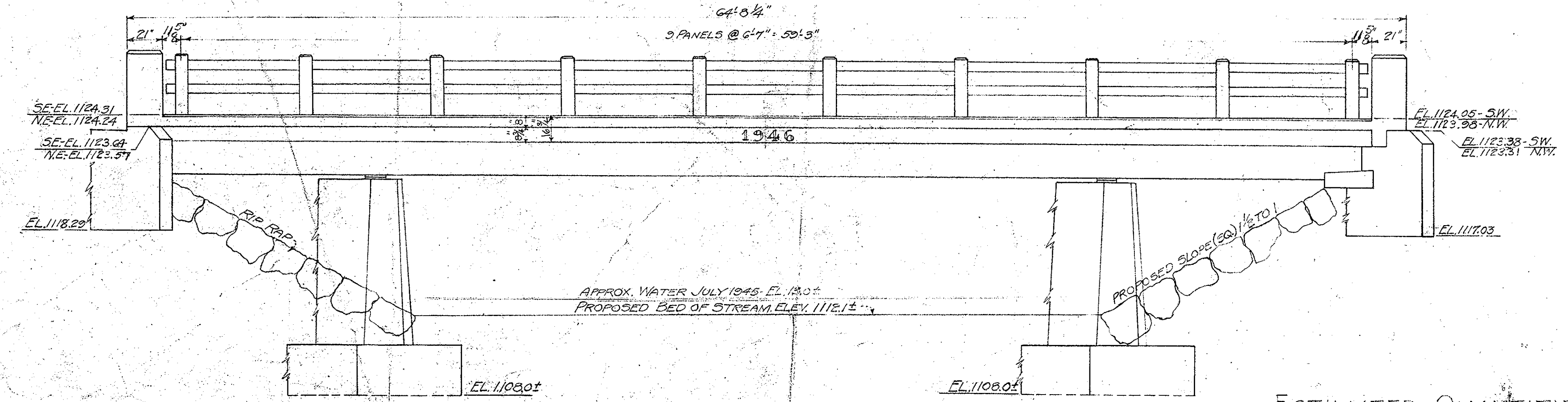


CUT: 20 SF
FILL: 20 SF (STONE)

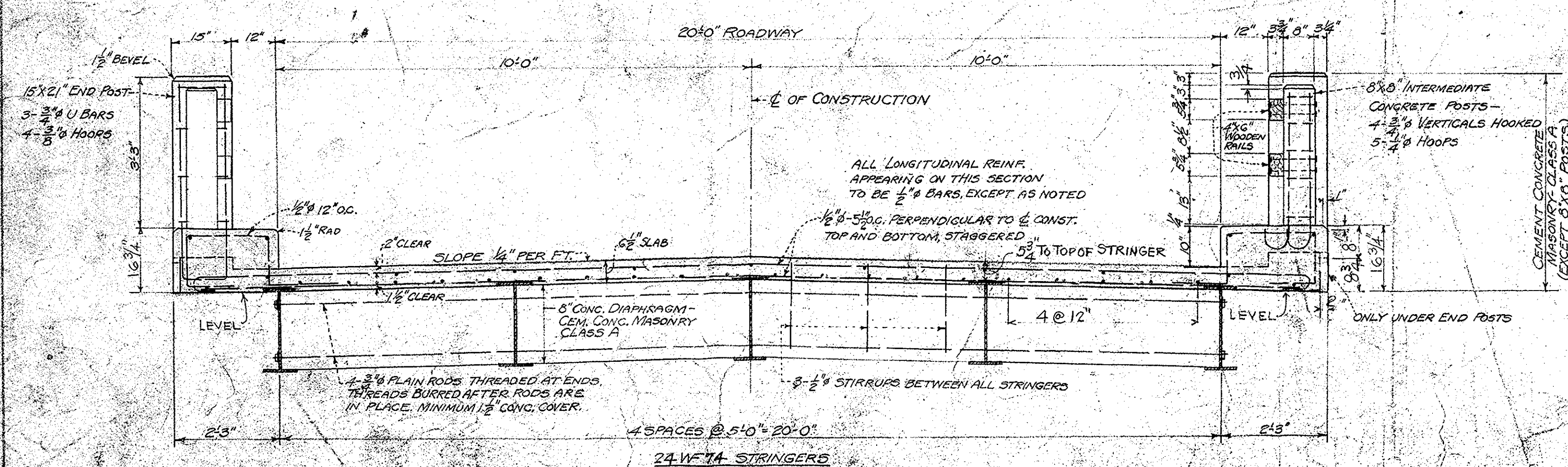




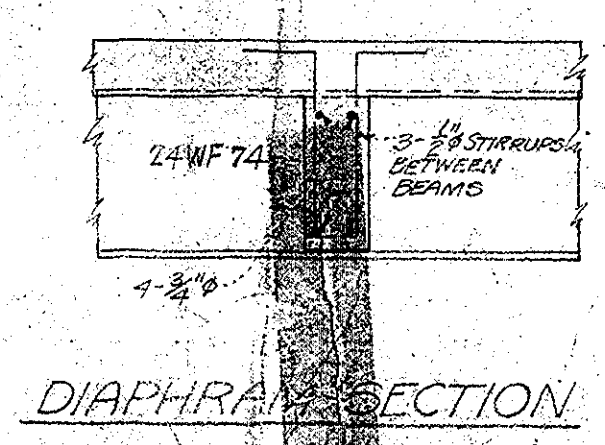
PLAN
SCALE 1/4" = 1'-0"



NORTHERLY ELEVATION
SOUTHERLY ELEVATION SIMILAR
SCALE 1/4" = 1'-0"



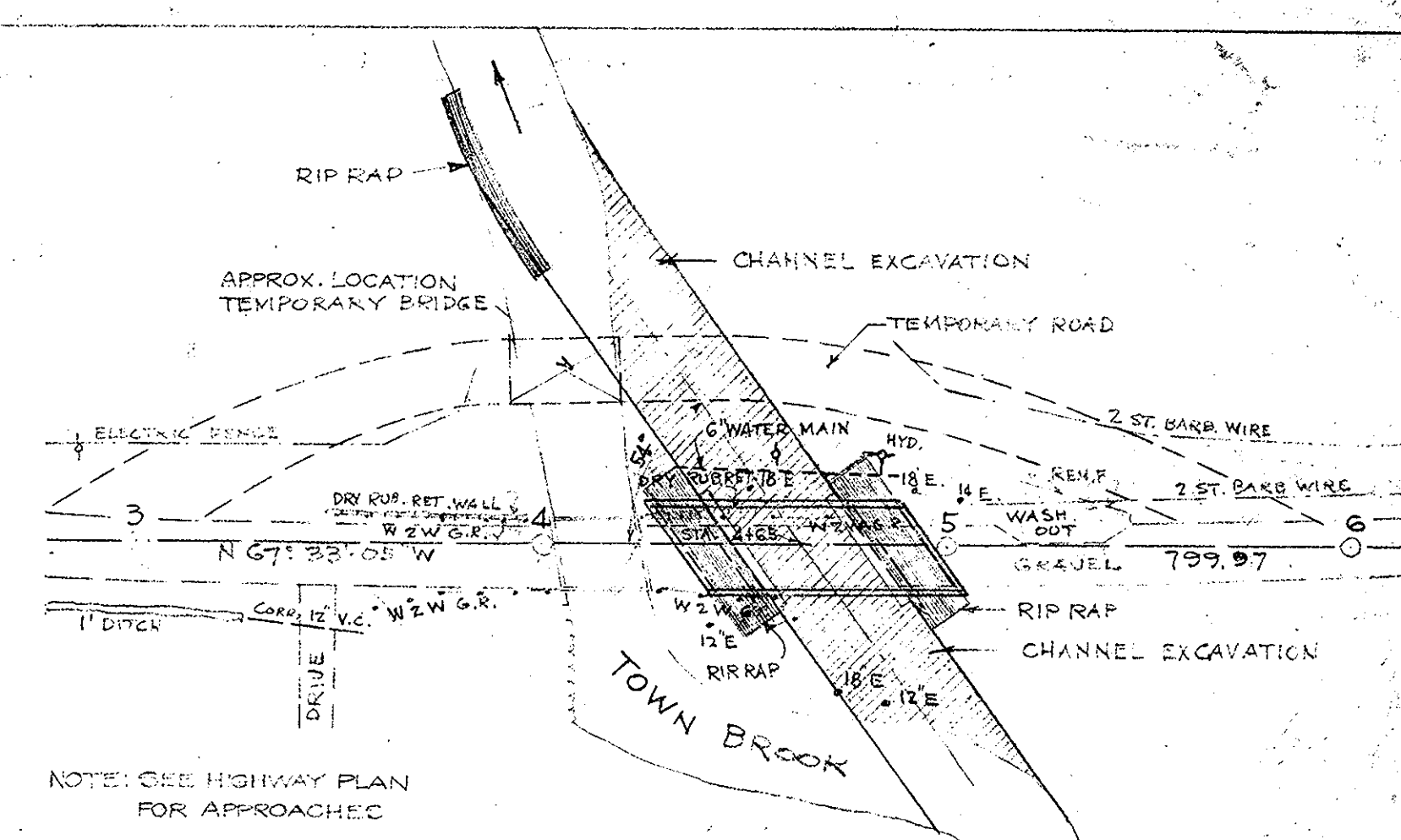
SUPERSTRUCTURE CROSS SECTION
SCALE 1/2" = 1'-0"



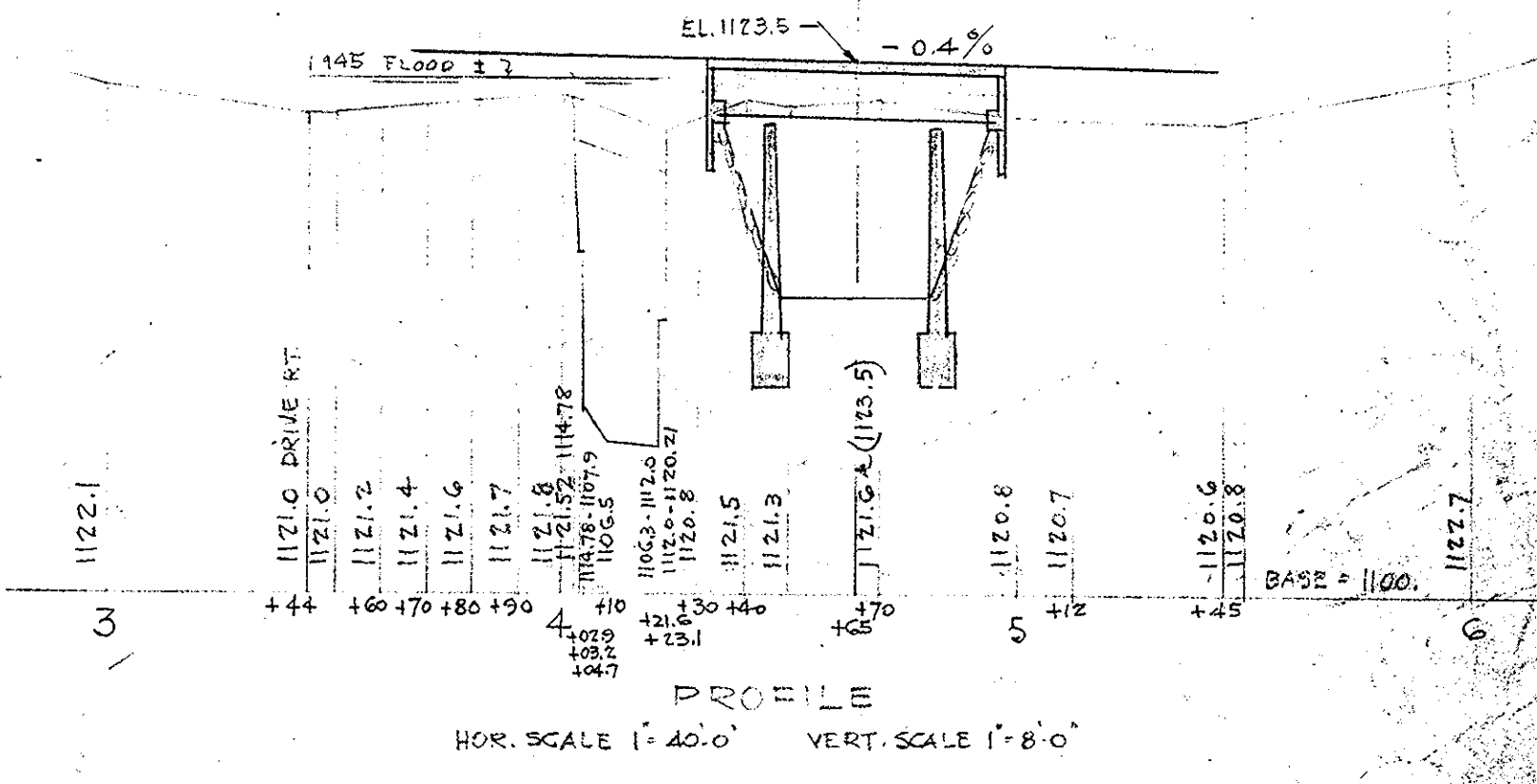
DIAPHRAM SECTION
SCALE 1/2" = 1'-0"

ESTIMATED QUANTITIES
(NOT GUARANTEED)

| | |
|-------------------------------------|----------------|
| - EXCAVATION (BRIDGE) | 300. CU. YDS. |
| - EXCAVATION (CHANNEL) | 900. CU. YDS. |
| - CLASS A ROCK EXCAVATION | 10. CU. YDS. |
| - CLASS B ROCK EXCAVATION | 10. CU. YDS. |
| - GRAVEL BORROW | 50. CU. YDS. |
| - STRIPPING GRAVEL PITS | 10. CU. YDS. |
| - CEM. CONC. MASONRY - CLASS A | 56. CU. YDS. |
| - CEM. CONC. MASONRY - CLASS B | 90. CU. YDS. |
| - STEEL REINF. FOR STRUCTURES | 9,900. POUNDS |
| - STRUCTURAL STEEL | 25,500. POUNDS |
| - WOOD BRIDGE RAILING | 122. LIN. FT. |
| - RIP RAP | 100. CU. YDS. |
| - TEMPORARY BRIDGE | ONE LUMP SUM |
| - REMOVAL OF PRESENT SUPERSTRUCTURE | ONE LUMP SUM |
| - TREES REMOVED | 6 EACH |
| - TRENCH EXCAVATION | 300. CU. YDS. |



KEY PLAN
SCALE 1" = 40'-0"



PROFILE
HOR. SCALE 1" = 40'-0" VERT. SCALE 1" = 8'-0"

GENERAL NOTES

FOUNDATIONS:
MAY BE ALTERED IF NECESSARY TO SUIT CONDITIONS OF CONSTRUCTION.

DATE:
TO BE LOCATED IN CENTER OF OUTSIDE FACE OF COPINGS.
FOR SIZE AND CHARACTER OF NUMERALS, SEE DETAILS ON ANOTHER SHEET.

DESIGN:
ACCORDING TO SPECIFICATIONS OF AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (1941 ED) FOR H-10 LOADINGS.

BENCH MARK:
RR SPIKE IN 18' ELM. STA. 3+96 RT. 50' ELEV. 1118.91
SEA LEVEL DATUM OF 1929

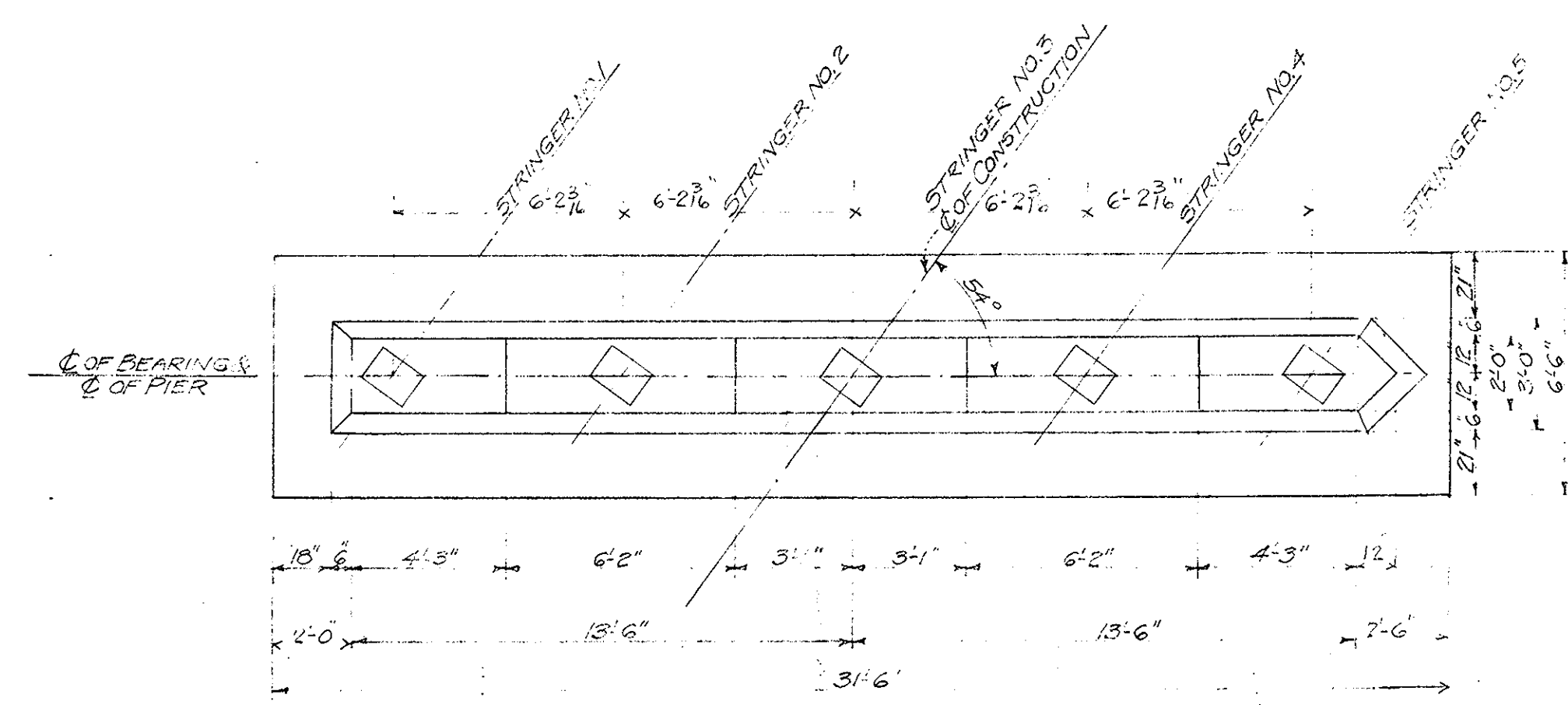
THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED BRIDGE
LANESBORO
NOURSE ROAD - STA. 4+65.0
OVER TOWN BROOK

SCALES AS NOTED
OFFICE OF
DEPARTMENT OF PUBLIC WORKS
100 NASHUA ST. - BOSTON, MASS.
SEPTEMBER 1945

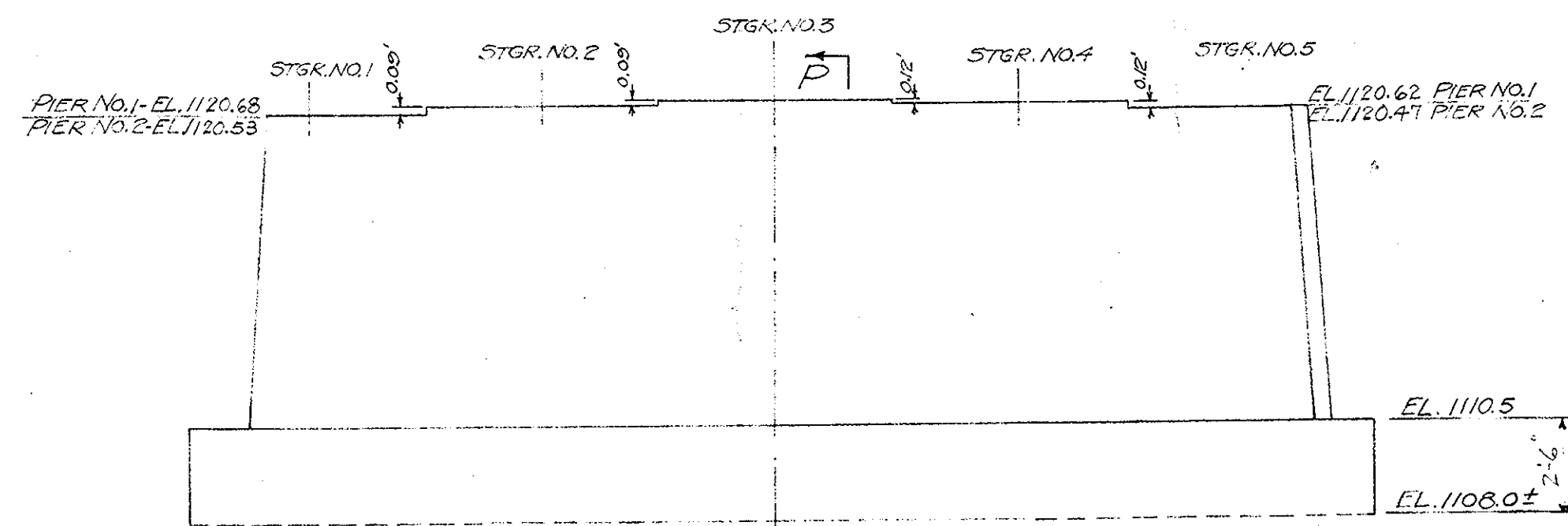
R. O. Mofford, BRIDGE ENGINEER
B. W. Edson, CHIEF ENGINEER

DESIGNED BY J.H.K. DRAWN BY J.H.K. CHECKED BY J.R.B.
DATE OF ISSUE
ADVERTISING OR CONSTRUCTION
9/13/45 10-3-45

SHEET 1 OF 2 SHEETS D. RIDGEN



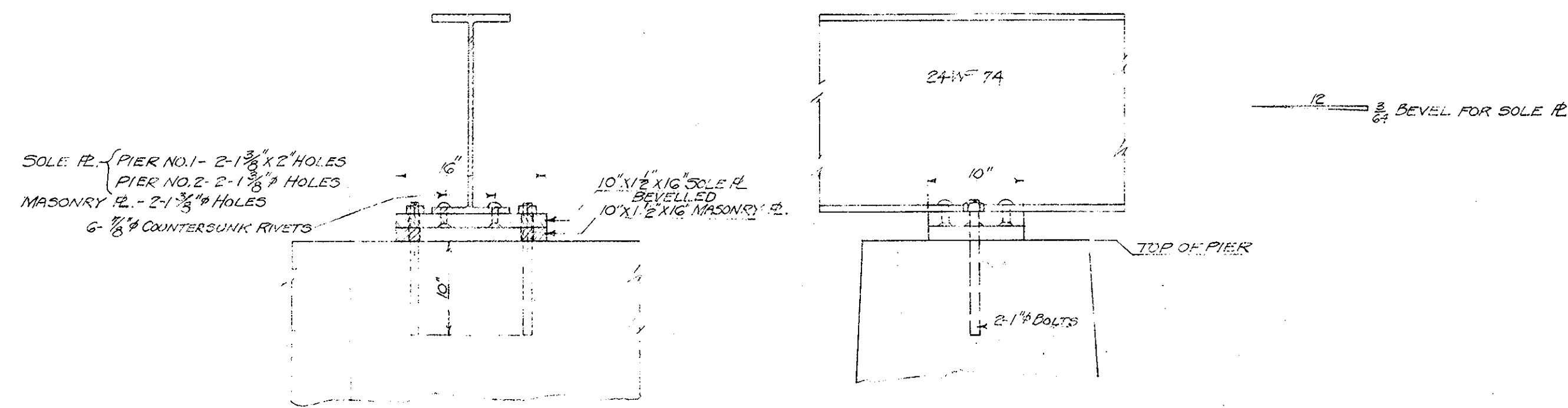
PLAN



ELEVATION

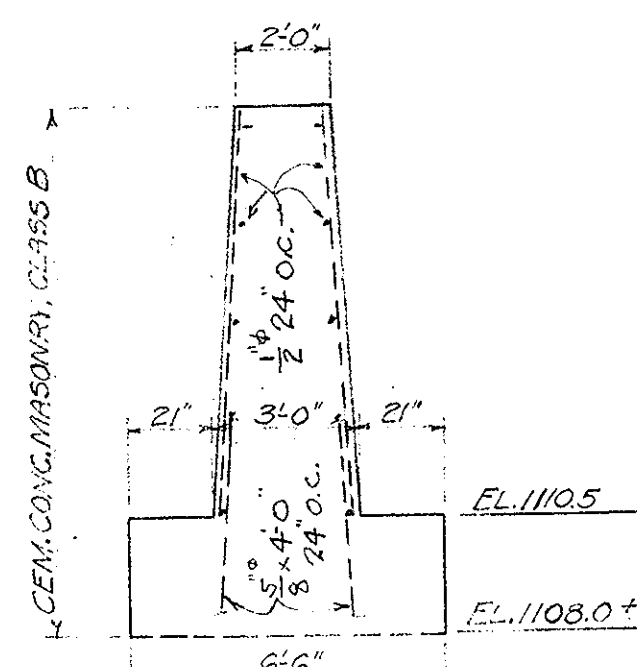
TYPICAL PIER

SCALE 1/4"=1'-0"



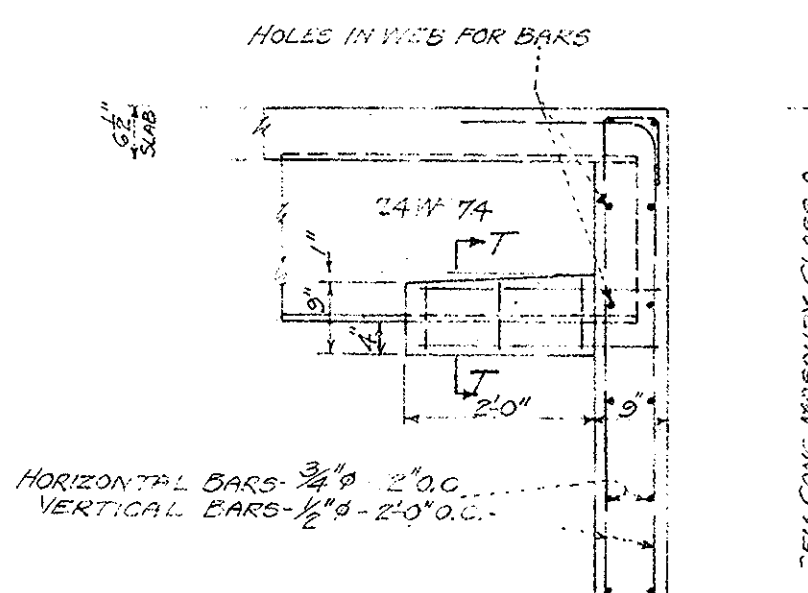
DETAIL OF ANCHORAGE AT PIERS

SCALE 1"=1'-0"



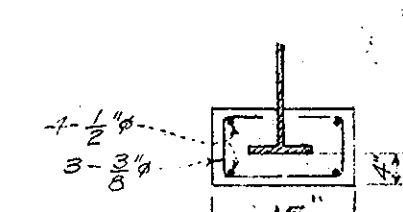
MAX. BEAR. PRESSURE = 2000 #/SQ. FT.

SECTION P-P



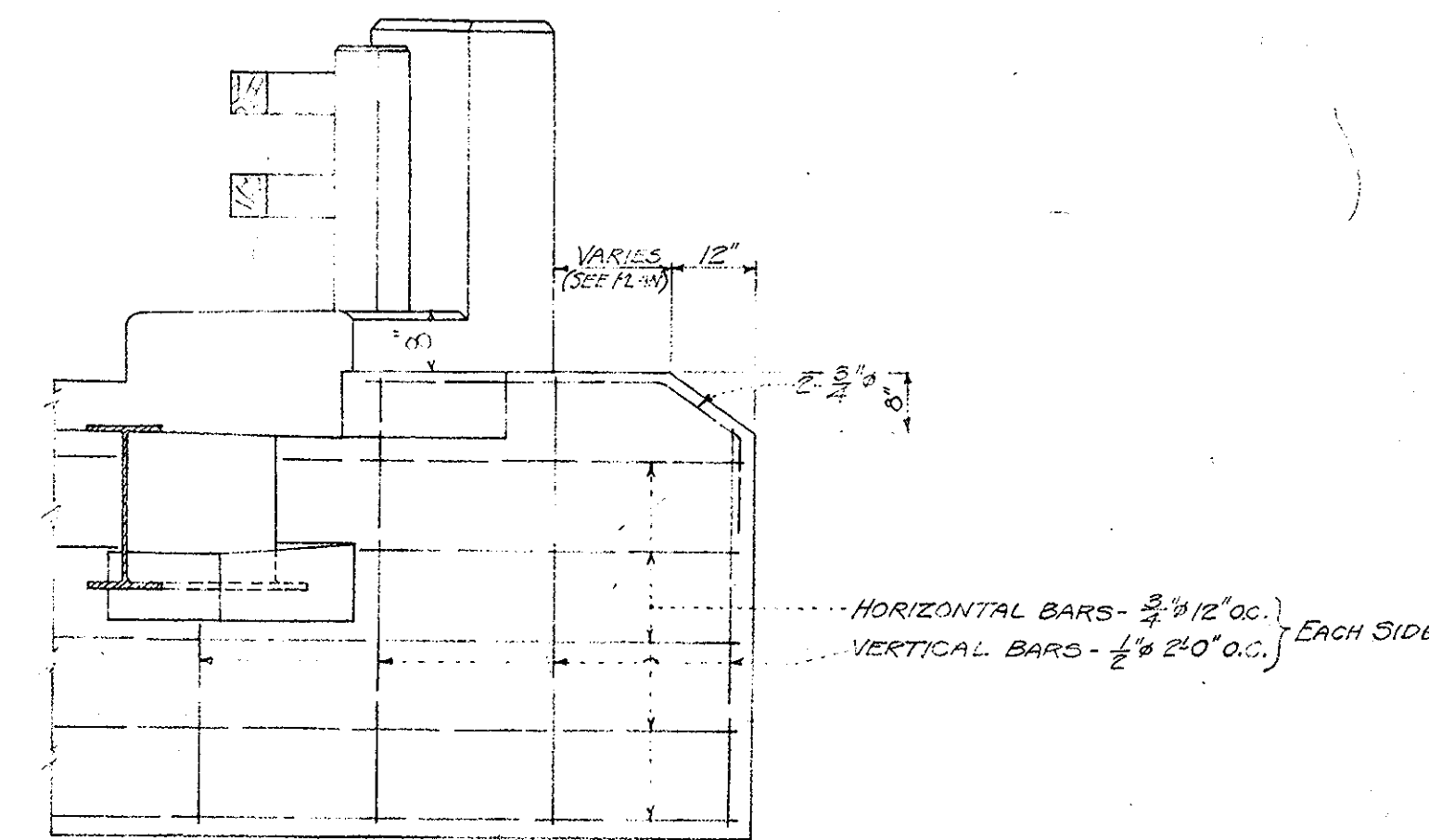
SECTION W-W

SCALE 1/2"=1'-0"



SECTION T-T

SCALE 1/2"=1'-0"



TYPICAL WING ELEVATION

SCALE 1/2"=1'-0"

| | |
|--------------------------------|--------------|
| 10-9-45 | CONSTRUCTION |
| 7/15/45 | ADVERTISING |
| | DESCRIPTION |
| DATE | |
| USE ONLY PRINTS OF LATEST DATE | |