

# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

BOSTON  
WEST ROXBURY PARKWAY OVER MBTA

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	1	90
PROJECT FILE NO.		606902	

TITLE SHEET & INDEX

## PLAN AND PROFILE OF WEST ROXBURY PARKWAY OVER MBTA (BRIDGE NO. B-16-181)

IN THE CITY OF

### BOSTON

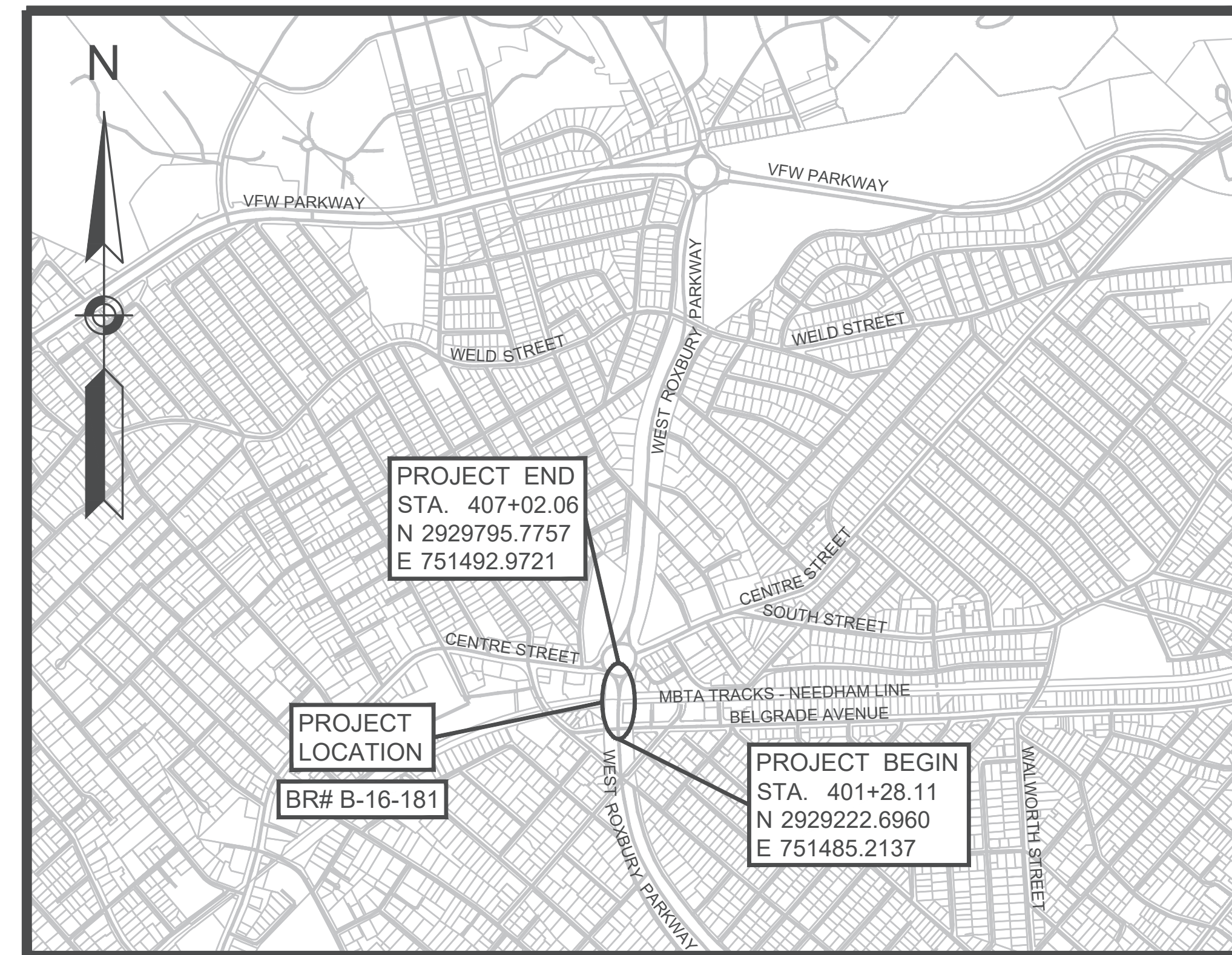
### SUFFOLK COUNTY

FEDERAL AID PROJECT NO. HIP(BR)-003S(777)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 1988 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

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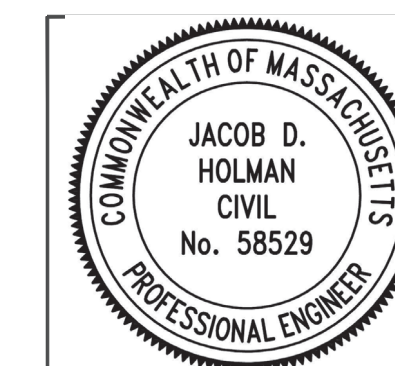


SCALE: 1" = 800'

LENGTH OF PROJECT = 895.95 FEET = 0.17 MILES

#### DESIGN DESIGNATION (WEST ROXBURY PARKWAY)

DESIGN SPEED	25 MPH
ADT (2021)	18,834
ADT (2031)	21,300
K	7.1%
D	63%
T (PEAK HOUR)	2.1%
T (AVERAGE DAY)	2.5%
DHV	950
DDHV	1,500
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL
FUNCTIONAL CLASSIFICATION - BELGRADE AVENUE	PRINCIPAL ARTERIAL



JACOB D. HOLMAN  
Digitally signed by JACOB D. HOLMAN  
Date: 2024.08.19 10:29:26 -0400

DATE	DESCRIPTION	REV #



APPROVED  
*Carrie Laalke* Digitally signed by Carrie Laalke, P.E.  
Date: 2024.08.19 10:29:26 -0400 08/19/2024  
CHIEF ENGINEER DATE

GENERAL SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for items like JB (Jersey Barrier), CB (Catch Basin), FP (Flag Pole), GP (Gas Pump), MB (Mail Box), POST SQUARE, WELL, EHH (Electric Handhole), GG (Gas Gate), BHL (Boring Hole), MW (Monitoring Well), TP (Test Pit), HYDRANT, LIGHT POLE, CO.BD. (County Bound), GPS POINT, CABLE MANHOLE, DRAINAGE MANHOLE, ELECTRIC MANHOLE, GAS MANHOLE, MISC MANHOLE, SEWER MANHOLE, TELEPHONE MANHOLE, WATER MANHOLE, MHB (Massachusetts Highway Bound), MONUMENT, STONE BOUND, TOWN OR CITY BOUND, TRAVERSE OR TRIANGULATION STATION, TPL or GUY (Trolley Pole or Guy Pole), HTP (Transmission Pole), UFB (Utility Pole w/ Firebox), UPDL (Utility Pole with Double Light), ULT (Utility Pole w/ 1 Light), UPL (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, UNDERGROUND ELECTRIC DUCT, UNDERGROUND GAS MAIN, UNDERGROUND SEWER MAIN, UNDERGROUND TELEPHONE DUCT, UNDERGROUND WATER MAIN, 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, SEDIMENT CONTROL BARRIER, 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

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for CONTROLLER PHASE ACTUATED, TRAFFIC SIGNAL HEAD, WIRE LOOP DETECTOR, VIDEO DETECTION CAMERA, MICROWAVE DETECTOR, PEDESTRIAN PUSH BUTTON, EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT, VEHICULAR SIGNAL HEAD, VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, FLASHING BEACON, PEDESTRIAN SIGNAL HEAD, RAILROAD SIGNAL, SIGNAL POST AND BASE, MAST ARM, SHAFT AND BASE, 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, ELECTRIC HANDHOLE, TRAFFIC SIGNAL CONDUIT.

PAVEMENT MARKINGS SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for 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

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations like AADT (Annual Average Daily Traffic), ABAN (Abandon), ADJ (Adjust), APPROX. (Approximate), 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), BOT (Bottom of Trough), 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), LOCLS (Left Outside Corner Lowest Conc. Step), LP (Light Pole), LT (Left), MAX (Maximum), MB (Mailbox), MH (Manhole), MHB (Massachusetts Highway Bound), MIN (Minimum), MWRA (Massachusetts Water Resources Authority), NIC (Not in Contract), NO. (Number), NPV (No Pipe Visible), 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).

Table for BOSTON WEST ROXBURY PARKWAY OVER MBTA. Columns: STATE (MA), FED. AID PROJ. NO. (HIP(BR)-003S(777)X), SHEET NO. (2), TOTAL SHEETS (90). PROJECT FILE NO. 606902.

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations like PVC (Point of Vertical Curvature), PVI (Point of Vertical Intersection), PVT (Point of Vertical Tangency), PVMT (Pavement), PWW (Paved Water Way), R&D (Remove and Dispose), RCP (Reinforced Concrete Pipe), RD (Road), RDWY (Roadway), REM (Remove), RET (Retain), RET WALL (Retaining Wall), ROCLSS (Right Outside Corner Lowest Stone Step), ROW (Right of Way), RR (Railroad), R&R (Remove and Reset), R&S (Remove and Stack), REC (Record), RT (Right), SB (Stone Bound), SHLD (Shoulder), SMH (Sewer Manhole), ST (Street), STY (Story), 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 Sump), TOP (Top of Pipe), TOW (Top of Water), 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

Table with columns: 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).

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	3	90
PROJECT FILE NO.		606902	

**GENERAL NOTES**

**GENERAL NOTES**

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BETWEEN APRIL 22, 2021 AND JUNE 28, 2022 BY GREEN INTERNATIONAL AFFILIATES, INC. (GREEN). SEE FIELD NOTES IN MASSDOT DISTRICT 6 FIELD BOOK 28398.
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY MASSDOT SURVEY, IN FIELD BOOK 41673, PAGE 84, ON APRIL 28, 2021. HORIZONTAL DATUM IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83 (2011), 2010.00 EPOCH, VERTICAL DATUM IS NAVD88 ESTABLISHED BY DIFFERENTIAL LEVELING FROM KNOWN PUBLISHED BENCHMARK 33 BA (ELEVATION 156.61 FEET) TO POINTS 2735 AND 2736.

MASSDOT ESTABLISHED THE FOLLOWING POINTS FOR THIS PROJECT:

POINT	GRID NORTHING	GRID EASTING	ELEVATION	COMBINED GROUND TO GRID SCALE FACTOR
2735	2929519.293	751453.482	145.544	0.999963103027215
2736	2929644.307	751457.471	146.204	0.999963094353581

THE UNIT OF LINEAR MEASUREMENTS IS US FEET. THE PROJECT AVERAGE COMBINED SCALE FACTOR IS 0.999964280. BEARINGS ARE ROTATED 00°17'30" CCW FROM METROPOLITAN PARK COMMISSIONERS PLAN NO. 709.

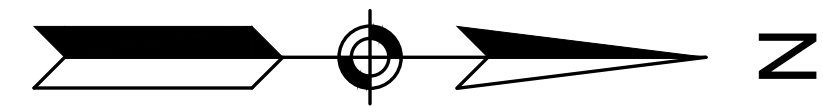
3. THE RIGHT OF WAY LINES SHOWN ON THIS BASE MAP ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES HAVE NOT BEEN SURVEYED, THEY ARE COMPILED FROM RECORD DEED AND PLAN INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.
4. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS, OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE & RESET" (R & R).
5. 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, UNLESS OTHERWISE PROVIDED FOR UNDER CONTRACT ITEMS.
6. ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED OR AS PAVEMENT MILLING MULCH SHALL HAVE LOAM BORROW PLACED AND SEDED. THE LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4 INCHES AND SHALL BE PLACED FLUSH WITH THE TOP OF THE ADJACENT CURB, EDGING, BERM OR PAVEMENT SURFACE.
7. CATCH BASINS DAMAGED OR FILLED WITH SEDIMENTATION DURING THE CONSTRUCTION PROCESS SHALL BE CLEANED, FLUSHED AND/OR REPLACED AT CONTRACTOR'S EXPENSE.
8. JOINTS IN HOT MIX ASPHALT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR SECTION 450.
9. TOP OF CURB SHALL BE 6 INCHES ABOVE GUTTER GRADE UNLESS OTHERWISE NOTED.
10. BEFORE ANY DRAINAGE STRUCTURES ARE CONSTRUCTED OR CONNECTIONS ARE MADE THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES AND DRAINAGE INVERTS TO AVOID CONFLICTS WITH UTILITIES, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION PLANS OR DIRECTED BY THE ENGINEER.
11. ANY ADJUSTMENTS MADE TO MUNICIPALLY OWNED SANITARY AND WATER MANHOLES, HYDRANTS, GATE BOXES, ETC., SHALL MEET APPLICABLE MUNICIPAL STANDARDS AND CRITERIA.
12. TREES AND SHRUBS NOT NOTED TO BE REMOVED, AND TREE AND SHRUBS NOTED "RET" ON THE DRAWINGS, SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION OPERATIONS. TREES OR SHRUBS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN-KIND BY THE CONTRACTOR AT HIS OR HER OWN EXPENSE.
13. THE CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND SILTATION BARRIERS AT CATCH BASIN AND DRAINAGE INLETS WITHIN THE WORKZONE.
14. SEDIMENT CONTROL BARRIERS SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIAL PROVISIONS AND DETAIL ON SHEET 33. BARRIERS SHALL BE INSTALLED DURING CONSTRUCTION ALONG ALL BOTTOM OF SLOPES PRIOR TO DISTURBING UPSLOPE SOIL. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT BARRIERS FULFILL THE INTENT OF ADEQUATELY CONTROLLING SILTATION AND RUNOFF.
15. ALL EROSION CONTROLS SHALL BE CHECKED/REPAIRED AND ANY SILTATION REMOVED AFTER EACH RAIN EVENT.

**PLAN REFERENCES**

1. OCTOBER 10, 1894 PLAN OF TAKING FOR PARKWAY IN WEST ROXBURY BY METROPOLITAN PARK COMMISSION, FILED IN BOOK 2244 PAGE 113 AT SUFFOLK COUNTY REGISTRY OF DEEDS.
2. DECEMBER 29, 1915 PLAN SHOWING BUILDING LINE ON THE EASTERLY SIDE OF BEECH STREET, WEST ROXBURY, FROM CENTRE STREET TO N.Y.N.H.&H. R.R., FILED AS L-4926 WITH THE CITY OF BOSTON DEPARTMENT OF PUBLIC WORKS.
3. DECEMBER 29, 1915 PLAN AND PROFILE SHOWING THE EXTENSION AND ESTABLISHED GRADE OF BELGRADE AVE. WEST ROXBURY FROM ANAWAN AVE. TO CENTRE ST., FILED AS L-4926 ½ WITH THE CITY OF BOSTON DEPARTMENT OF PUBLIC WORKS.
4. NOVEMBER 17, 1916 PLAN OF TRANSFER IN BOSTON FOR CARE AND CONTROL TO CITY OF BOSTON OF LAND FOR EXTENSION OF BELGRADE AVENUE BY COMMONWEALTH OF MASSACHUSETTS, METROPOLITAN PARK COMMISSION, FILED AS PLAN NO. 709 WITH THE DEPARTMENT OF CONSERVATION AND RECREATION.
5. FEBRUARY 1, 1917 PLAN AND PROFILE SHOWING THE RELOCATION AND ESTABLISHED GRADE OF BEECH STREET, WEST ROXBURY, FROM BELGRADE AVE. TO WEST ROXBURY PARKWAY, FILED AS L-5106 WITH THE CITY OF BOSTON DEPARTMENT OF PUBLIC WORKS.
6. SEPTEMBER 21, 1938 PLAN OF TAKING OF A PORTION OF CENTRE STREET AT WEST ROXBURY PARKWAY BY COMMONWEALTH OF MASSACHUSETTS, METROPOLITAN DISTRICT COMMISSION, PARKS DIVISION, FILED IN BOOK 5755 PAGE 62 AT SUFFOLK COUNTY REGISTRY OF DEEDS.
7. APRIL, 1956 PLAN NO. 302 OF LAND TAKINGS, LAND IN BOSTON (WEST ROXBURY DISTRICT) BY COMMONWEALTH OF MASSACHUSETTS, METROPOLITAN DISTRICT COMMISSION, WATER DIVISION, FILED IN BOOK 7167 PAGE 539 AT SUFFOLK COUNTY REGISTRY OF DEEDS.
8. AUGUST 28, 1978 PLAN OF LAND TO BE CONVEYED TO CLAY CHEVROLET INC. UNDER CHAPTER 851 OF ACTS OF 1977 BY COMMONWEALTH OF MASSACHUSETTS FILED IN BOOK 9096 PAGE 274 AT SUFFOLK COUNTY REGISTRY OF DEEDS.
9. LAND COURT CASE NO. 7128B
10. LAND COURT CASE NO. 10602F

**UTILITY NOTES:**

1. ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
3. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
4. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
5. SUBSURFACE UTILITY LOCATIONS HAVE BEEN PLOTTED TO MEET UTILITY QUALITY LEVEL "C" AS DESCRIBED IN ASCE STANDARD 38-02. THE UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON ABOVE-GROUND FIELD OBSERVATION AND EXISTING RECORD INFORMATION RECEIVED FROM UTILITY STAKE-HOLDERS. UTILITY RECORD PLANS WERE REQUESTED AND RECEIVED FROM THE FOLLOWING UTILITY COMPANIES/AGENCIES/MUNICIPALITIES:
  - BWSC
  - COMCAST CABLE CORPORATION
  - CROWN CASTLE
  - DCR
  - EVERSOURCE ELECTRIC
  - MASSDOT
  - MWRA WATER AND SEWER
  - NATIONAL GRID GAS
  - VERIZON
6. INVERTS SHOWN ON PLAN ARE NOT GUARANTEED TO BE ACCURATE. DUE TO THE LIMITATIONS OF FIELD OBSERVATION AND SURVEY TECHNIQUES THE INVERTS ARE SHOWN AS APPROXIMATE ONLY AND SHALL NOT BE WARRANTED TO BE CORRECT. ADDITIONAL FIELD INVESTIGATION IS NECESSARY WHERE ACCURATE MEASUREMENTS ARE REQUIRED FOR DESIGN OF CRITICAL AREAS.
7. THE EXISTING CONDITIONS MAPPING IS TO BE USED FOR THE SPECIFIED PROJECT ONLY AND IS NOT WARRANTED TO BE COMPLETE FOR ANY OTHER FUTURE PROJECTS.
8. ALL PIPES LABELED AS (REC) ARE BASED ON RECORD INFORMATION ONLY AND NOT OBSERVED IN THE FIELD.
9. WHERE AN EXISTING UNDERGROUND 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.
10. ALL EXISTING UTILITY GATE BOXES, MANHOLE FRAMES AND COVERS, CATCH BASIN FRAMES AND GRATES AND OTHER CASTINGS TO BE RETAINED SHALL BE ADJUSTED TO LINE AND/OR GRADE.
11. WORK REQUIRED ON ELECTRIC, GAS, CABLE T.V. OR TELEPHONE STRUCTURES AND LINES SHALL BE CARRIED OUT BY THE OWNER OF THAT UTILITY. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS TO COORDINATE THE ALTERATION AND ADJUSTMENT OF THESE AND ANY OTHER PRIVATE UTILITIES WITH THE UTILITY COMPANIES.
12. PRIOR WRITTEN NOTICE OF AT LEAST 48 HOURS SHALL BE GIVEN BY THE CONTRACTOR TO AFFECTED MUNICIPAL WATER AND FIRE DEPARTMENTS, WITH A COPY OF SUCH NOTICE SUBMITTED TO THE ENGINEER, BEFORE ANY WATER MAIN IS SHUT OFF AND IN NO CASE SHALL A GATE OR HYDRANT BE OPENED OR SHUT WITHOUT PROPER AUTHORIZATION.
13. THE CONTRACTOR SHALL COORDINATE ALL ARRANGEMENTS FOR THE ALTERATION AND/OR ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITY THROUGH THE MASSDOT HIGHWAY DIVISION UTILITY SECTION.
14. WITHIN AREAS OF RESURFACING OR RECONSTRUCTION, ALL EXISTING DRAINAGE MANHOLES, CATCH BASINS, SEWER MANHOLES, AND WATER GATES SHALL BE ADJUSTED TO PROPOSED LINE AND GRADE UNLESS OTHERWISE NOTED ON THE PLANS.
15. SHOP DRAWINGS OF ALL CASTINGS, PRECAST CONCRETE STRUCTURES, PIPE AND OTHER MANUFACTURED ITEMS SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER, IN CONFORMANCE WITH CONTRACT SPECIFICATIONS, AND SAID APPROVAL SHALL BE REQUIRED PRIOR TO INITIATING PROCUREMENT OF MATERIALS.
16. ALL DRAINAGE STRUCTURES TO BE ABANDONED SHALL BE FILLED WITH GRAVEL AND ALL CONNECTIONS SHALL BE PLUGGED AT THE PIPE LOCATIONS WITH A CEMENT CONCRETE MASONRY PLUG.
17. THE CONTRACTOR PERFORMING ANY WATER, SANITARY SEWER OR STORM DRAIN WORK WITHIN THE CITY OF BOSTON MUST BE LICENSED WITH THE CITY AND HAVE A PERMIT FROM THE CITY TO PERFORM THE WORK ON THE UTILITIES AS WELL AS ALL OTHER WORK IN THE CITY RELATED TO THIS PROJECT. THE CONTRACTOR IS REQUIRED TO OBTAIN A STREET OCCUPANCY PERMIT FROM THE CITY FOR THE DURATION OF THE PROJECT.
18. FINAL LOCATION OF TRAFFIC SIGNS AND SUPPORTS AS SHOWN IN THE PLANS SHALL BE FIELD-CONFIRMED BY THE ENGINEER PRIOR TO INSTALLATION.



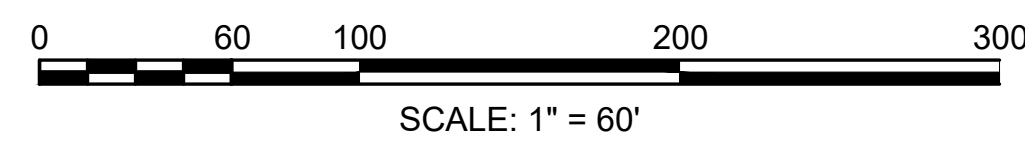
**BOSTON  
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	4	90
PROJECT FILE NO.		606902	

**KEY PLAN**



	PLATE 1	PLATE 2	PLATE 3
SURVEY CONTROL	7	8	9
CONSTRUCTION PLAN	--	12	--
CURB TIE & GRADING PLAN	--	15	--
DRAINAGE AND UTILITY PLAN	--	16	--
SIGNING & PAVEMENT MARKING PLAN	17	18	--
TRAFFIC SIGNAL PLAN	--	19	--
BRIDGE CLOSURE DETAIL	--	29	--



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**BORING LOGS 1**

TEST BORING LOG												MassDOT Project No.: 606902	
				<b>Alfred Benesch &amp; Company</b> West Roxbury Parkway over MBTA Bridge No. B-16-1814(EH) Boston, Massachusetts				BORING NO.: MA-1 SHEET: 1 of 1 PROJECT FILE NO. 01.0175121.00 REVIEWED BY: MPS					
Drilling Co.: New England Boring Contractors Foreman: Mark D'Ambrasio Logged By: S. Doyle / M. Meschwitz		Type of Rig: Truck Mounted Rig Model: GT-8 Drilling Method: Drive & Wash		Boring Location: See Plan Ground Surface Elev. (ft.): 143 Final Boring Depth (ft.): 21 Date Start - Finish: 9/20/2023 - 9/21/2023		H. Datum: NAD83 V. Datum: NAVD88 Northing: 2529474 Easting: 731418							
Auger/Casing Type: HW I.D./O.D. (in.): 4.0/4.5 Hmr Weight (lb.): 140 Hmr Fall (in.): 30 Other: Auto Hammer		Sampler Type: Split Spoon I.D./O.D. (in.): 1.375/2.0 Sampler Hmr Wt (lb.): 140 Sampler Hmr Fall (in.): 30 Other: Auto Hammer		Groundwater Depth (ft.) Date Time Water Depth Casing Stab. Time 9/21/23 1000 7.5 15 13 min									
Depth (ft)	Casing No.	Sample No.	Depth (ft)	Pen (in)	Blows (per 6 in)	SPT Value	Sample Description Modified Burmister	Field Test Data	Stratum	Equipment Installed	Remarks		
												Field Test Data	Stratum
1	G-1	0-2					G-1: Dark Brown to black, fine to medium SAND, some SIL, little (-) fine Gravel, trace organics, dry.			No Equipment Installed			
2								TOPSOIL 141.0					
3	G-2	3-4					G-2: Light brown, fine to coarse SAND, some coarse Gravel, little (+) SIL, moist.						
4								FILL					
5	S-1	7-9	24	6	2	1	S-1: Very loose, brown, fine to medium SAND, some SIL, trace fine Gravel, moist.						
6													
7	S-2	9-11	24	10	6	3	S-2: Loose, brown, fine to medium SAND, some (-) SIL, little (-) fine to coarse Gravel, moist.						
8													
9													
10	S-3	15-17	24	13	12	15	S-3: Medium dense, olive-brown to brown, fine to medium SAND, some SIL, trace (-) fine Gravel, wet.						
11													
12	S-4	20-21	12	13	105	R	S-4: (Top 6") Tan to brown, fine to medium SAND, little SIL, little fine Gravel. (Bottom 6") Gray, fine to coarse GRAVEL, some Clayey SIL, little fine to coarse Sand. Bottom of boring at 21 feet.						
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

1/17/21:00 WEST ROXBURY PARKWAY OVER MBTA, GPS, STANDARD MASSDOT, W. NO. 200, W. NE. 200, 1/12/2023

**REMARKS**  
 1. Ground surface elevation and coordinates estimated based on drawing entitled "006902\_BRXX-XXB(16181)\_PLAN AND ELEVATION DWG" provided by Alfred Benesch & Company on November 4, 2021.  
 2. Borehole pre-excavated using air knife and vacuum truck from approximately 0 to 7 ft bgs.  
 3. Down 4-inch casing through pre-excavation backfill to 15 ft bgs.  
 4. Possible change in strata from fill to natural soils based on casing blows at 11 ft bgs.  
 5. Open hole drilling from 15 ft to 20 ft bgs.  
 6. Split Spoon refusal at 21 ft bgs.  
 7. Upon completion, the borehole was backfilled with soil cuttings to ground surface.

Boring No.:  
**MA-1**

TEST BORING LOG												MassDOT Project No.: 606902	
				<b>Alfred Benesch &amp; Company</b> West Roxbury Parkway over MBTA Bridge No. B-16-1814(EH) Boston, Massachusetts				BORING NO.: MA-2 SHEET: 1 of 1 PROJECT FILE NO. 01.0175121.00 REVIEWED BY: MPS					
Drilling Co.: New England Boring Contractors Foreman: Mark D'Ambrasio Logged By: S. Doyle / M. Meschwitz		Type of Rig: Truck Mounted Rig Model: GT-8 Drilling Method: Drive & Wash		Boring Location: See Plan Ground Surface Elev. (ft.): 143 Final Boring Depth (ft.): 22 Date Start - Finish: 9/19/2023 - 9/21/2023		H. Datum: NAD83 V. Datum: NAVD88 Northing: 2529462 Easting: 731514							
Auger/Casing Type: HW I.D./O.D. (in.): 4.0/4.5 Hmr Weight (lb.): 140 Hmr Fall (in.): 30 Other: Auto Hammer		Sampler Type: Split Spoon I.D./O.D. (in.): 1.375/2.0 Sampler Hmr Wt (lb.): 140 Sampler Hmr Fall (in.): 30 Other: Auto Hammer		Groundwater Depth (ft.) Date Time Water Depth Casing Stab. Time 9/21/23 1212 13.6 15 15 min									
Depth (ft)	Casing No.	Sample No.	Depth (ft)	Pen (in)	Blows (per 6 in)	SPT Value	Sample Description Modified Burmister	Field Test Data	Stratum	Equipment Installed	Remarks		
												Field Test Data	Stratum
1													
2													
3													
4													
5	G-1	3-4					G-1: Gray to olive-brown, fine to coarse SAND, some SIL, little (-) fine Gravel.						
6													
7	S-1	8-10	24	8	8	7	S-1: Medium dense, brown to gray, fine to coarse SAND, little (+) fine to coarse Gravel, trace (+) SIL.						
8													
9	S-2	10-12	24	10	7	21	S-2: Medium Dense, brown to gray, fine to medium SAND, some fine to coarse Gravel, little SIL.						
10													
11	S-3	15-17	24	14	18	24	S-3: Very dense, olive-brown, fine to coarse SAND, little (+) fine Gravel, little SIL, wet.						
12													
13													
14													
15													
16													
17													
18													
19													
20	S-4	20-22	24	15	17	16	S-4: Dense, tan, fine SAND, little SIL.						
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

1/17/21:00 WEST ROXBURY PARKWAY OVER MBTA, GPS, STANDARD MASSDOT, W. NO. 200, W. NE. 200, 1/12/2023

**REMARKS**  
 1. Ground surface elevation and coordinates estimated based on drawing entitled "006902\_BRXX-XXB(16181)\_PLAN AND ELEVATION DWG" provided by Alfred Benesch & Company on November 4, 2021.  
 2. Used pneumatic jackhammer to penetrate through approximately 7-inch thick bituminous asphalt layer and 6.5-inch thick concrete layer.  
 3. Borehole pre-excavated using air knife and vacuum truck from approximately 1 ft to 7.5 ft bgs.  
 4. At 2.5 ft and 4.5 ft bgs, pushing stone was encountered during pre-excavation.  
 5. Cobble observed in drilled material as well as in debris at borehole from 0 ft to 7.5 ft bgs during pre-excavation.  
 6. Down 4" casing through pre-excavation backfill to 15 ft bgs.  
 7. Down 4" casing through pre-excavation backfill to 15 ft bgs.  
 8. Split Spoon refusal at 21 ft bgs.  
 9. Open hole drilling from 15 ft to 20 ft bgs.  
 10. Casing refusal at 13.5 ft (170° blow count). Rollerbit through possible boulder from 13.5 ft to 15 ft bgs.  
 11. Upon completion, the borehole was backfilled with soil cuttings. Concrete and asphalt core patch used to repair ground surface.

Boring No.:  
**MA-2**

- BORING NOTES:**
- LOCATION OF BORINGS ARE SHOWN ON THE PLANS THUS: MA-1 THRU MA-4
  - 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" WITH A 140 POUND WEIGHT FALLING 30".
  - THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
  - BORING LOGS FOR BORINGS BB-1 THROUGH BB-4 ARE FOUND ON THE BRIDGE PLANS.
  - BORINGS MA-1 THRU MA-4 WERE MADE IN SEPTEMBER 2023.
  - BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET, DERRY, NH 03038.
  - THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	6	90
PROJECT FILE NO.		606902	

**BORING LOGS 2**

TEST BORING LOG										MassDOT Project No.: 606902	
		Alfred Benesch & Company West Roxbury Parkway over MBTA Bridge No. B-16-161(4EN) Boston, Massachusetts				BORING NO.: MA-3 SHEET: 1 of 1 PROJECT FILE NO: 01.0175121.00 REVIEWED BY: MPS				H. Datum: NAD83 V. Datum: NAVD88 Northing: 2929419 Easting: 751530	
Drilling Co.: New England Boring Contractors Foreman: Mark D'Ambrosio Logged By: Samantha Doyle		Type of Rig: Truck Mounted Rig Model: GT-8 Drilling Method: Drive & Wash		Boring Location: See Plan Ground Surface Elev. (ft.): 142 Final Boring Depth (ft.): 22 Date Start - Finish: 9/20/2023 - 9/20/2023		Sampler Type: Split Spoon I.D./O.D. (in.): 4.0/4.5 Hwr Weight (lb.): 140 Sampler Hwr Wt (lb.): 140 Sampler Hwr Fall (in.): 30 Other: Auto Hammer		Groundwater Depth (ft.)		Equipment Installed	
Depth (ft.)	Casing Blow/ Core Data	No.	Depth (ft.)	Plan (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Field Test Data	Stratum Description	Equipment Installed
1									142.0	ASPHALT	No Equipment Installed
2									141.2	CONCRETE	No Equipment Installed
3											
5		G-1	3-4					G-1: Dark brown, fine to coarse SAND and GRAVEL, little SIL.			
5		S-1	7-9	24	10	7 5	8	S-1: Loose, brown, fine to medium SAND, some SIL, little fine Gravel, moist.		FILL	
10		S-2	10-12	24	4	12 6	9	S-2: Loose, brown to olive-brown, fine to coarse SAND, some fine to coarse Gravel, little SIL, wet.			
25		S-3	15-17	24	14	19 21	44	S-3: Dense, brown to olive-brown, fine to medium SAND, some (c) fine Gravel, little SIL, wet.		GLACIAL TILL	
24		S-4	20-22	24	9	23 26	54	S-4: Very dense, olive-brown, fine to medium SAND, some fine to coarse Gravel, little SIL, wet.			
167								Bottom of boring at 22 feet.			
177											
15									129.2		
147											
155											
175									120.2		
20											
20		S-4	20-21	14	10	28 72	R	S-4: Very dense, olive-gray, fine to medium SAND, little (c) Clayey SIL, trace fine Gravel, wet.			
21								Bottom of boring at 21.2 feet.			
22											
22									121.2		
25											
30											

REMARKS: 1. Ground surface elevation and coordinates estimated based on drawing entitled "006902\_BR000XX(B16161)\_PLAN AND ELEVATION.DWG" provided by Alfred Benesch & Company on November 4, 2021.  
2. Used pneumatic jackhammer to penetrate through approximately 4-inch thick bituminous asphalt layer and 6-inch thick concrete layer.  
3. Borehole pre-excavated using air tools and vacuum truck from approximately 0.7 to 7.5 ft top.  
4. Cobbles observed in borehole at 7 ft top during pre-excavation.  
5. Drive 4" casing through pre-excavation to 15 ft top.  
6. Rock stuck in split spoon for sample S-2.  
7. Possible strain change from fill to natural soils based on increase in casing blow counts at 13 ft top.  
8. Open hole drilling from 15 ft to 20 ft top.  
9. Upon completion, the borehole was backfilled with soil cuttings. Concrete used to repair ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual boundaries may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:  
**MA-3**

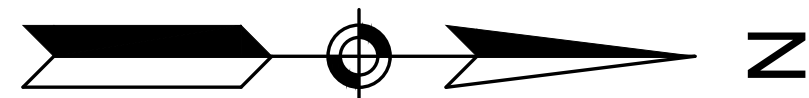
TEST BORING LOG										MassDOT Project No.: 606902	
		Alfred Benesch & Company West Roxbury Parkway over MBTA Bridge No. B-16-161(4EN) Boston, Massachusetts				BORING NO.: MA-4 SHEET: 1 of 1 PROJECT FILE NO: 01.0175121.00 REVIEWED BY: MPS				H. Datum: NAD83 V. Datum: NAVD88 Northing: 2929417 Easting: 751429	
Drilling Co.: New England Boring Contractors Foreman: Mark D'Ambrosio Logged By: Samantha Doyle		Type of Rig: Truck Mounted Rig Model: GT-8 Drilling Method: Drive & Wash		Boring Location: See Plan Ground Surface Elev. (ft.): 143 Final Boring Depth (ft.): 21.2 Date Start - Finish: 9/19/2023 - 9/20/2023		Sampler Type: Split Spoon I.D./O.D. (in.): 4.0/4.5 Hwr Weight (lb.): 140 Sampler Hwr Wt (lb.): 140 Sampler Hwr Fall (in.): 30 Other: Auto Hammer		Groundwater Depth (ft.)		Equipment Installed	
Depth (ft.)	Casing Blow/ Core Data	No.	Depth (ft.)	Plan (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Field Test Data	Stratum Description	Equipment Installed
1									142.7	ASPHALT	No Equipment Installed
2									142.2	FILL	No Equipment Installed
3									141.7	CONCRETE	No Equipment Installed
5		G-1	3-4					G-1: Dark brown, fine to coarse SAND, some (c) fine Gravel, little (+) SIL.			
5		S-1	8-10	24	18	6 2	6	S-1: Loose, light brown to dark brown, fine to medium SAND, some SIL, little (c) Gravel.		FILL	
29		S-2	10-12	24	13	15 23	57	S-2: Very dense, light brown to olive-gray, fine to medium SAND, little SIL, little (c) fine to coarse Gravel.			
34		S-3	15-17	24	14	14 20	42	S-3: Dense, olive-gray, fine to medium SAND, little (+) fine Gravel, little SIL, wet.		GLACIAL TILL	
69											
89											
155											
175											
20		S-4	20-21	14	10	28 72	R	S-4: Very dense, olive-gray, fine to medium SAND, little (c) Clayey SIL, trace fine Gravel, wet.			
21								Bottom of boring at 21.2 feet.			
21.2											
21.2									121.2		
25											
30											

REMARKS: 1. Ground surface elevation and coordinates estimated based on drawing entitled "006902\_BR000XX(B16161)\_PLAN AND ELEVATION.DWG" provided by Alfred Benesch & Company on November 4, 2021.  
2. Used pneumatic jackhammer to penetrate through approximately 4-inch thick bituminous asphalt layer and 6-inch thick concrete layer.  
3. Borehole pre-excavated using air tools and vacuum truck from approximately 0.7 to 7.5 ft top.  
4. Cobbles observed in extracted material and in strata of borehole from 3.17 ft to 7.5 ft top during pre-excavation.  
5. Drive 4" casing through pre-excavation to 15 ft top.  
6. Open hole drilling from 15 ft to 20 ft top.  
7. Upon completion, the borehole was backfilled with soil cuttings. Concrete and asphalt cold patch used to repair ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual boundaries may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:  
**MA-4**

- BORING NOTES:**
- LOCATION OF BORINGS ARE SHOWN ON THE PLANS THUS: MA-1 THRU MA-4
  - 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" WITH A 140 POUND WEIGHT FALLING 30".
  - THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
  - BORING LOGS FOR BORINGS BB-1 THROUGH BB-4 ARE FOUND ON THE BRIDGE PLANS.
  - BORINGS MA-1 THRU MA-4 WERE MADE IN SEPTEMBER 2023.
  - BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET, DERRY, NH 03038.
  - THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.



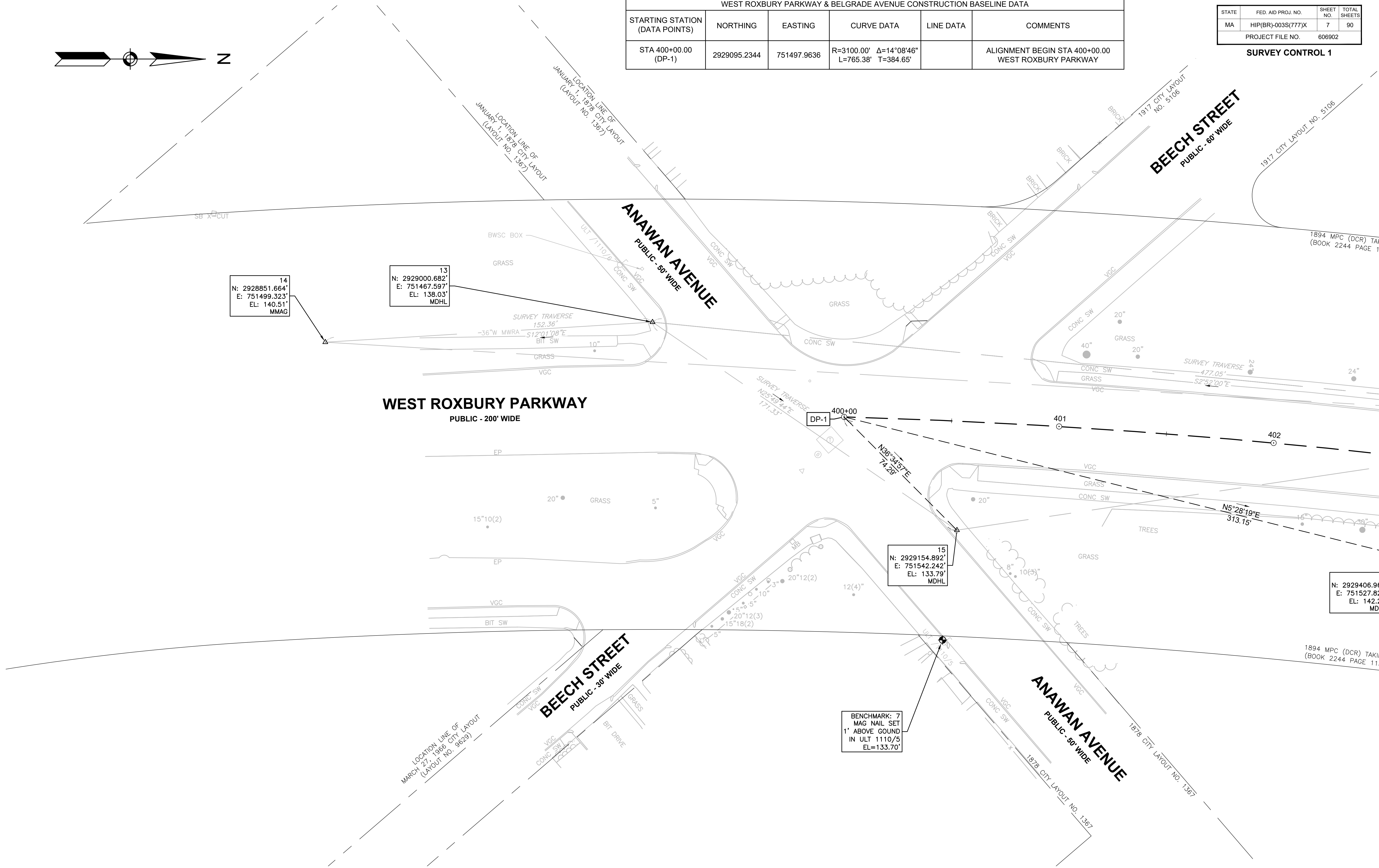
WEST ROXBURY PARKWAY & BELGRADE AVENUE CONSTRUCTION BASELINE DATA					
STARTING STATION (DATA POINTS)	NORTHING	EASTING	CURVE DATA	LINE DATA	COMMENTS
STA 400+00.00 (DP-1)	2929095.2344	751497.9636	R=3100.00' Δ=14°08'46" L=765.38' T=384.65'		ALIGNMENT BEGIN STA 400+00.00 WEST ROXBURY PARKWAY

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	7	90

PROJECT FILE NO. 606902

**SURVEY CONTROL 1**



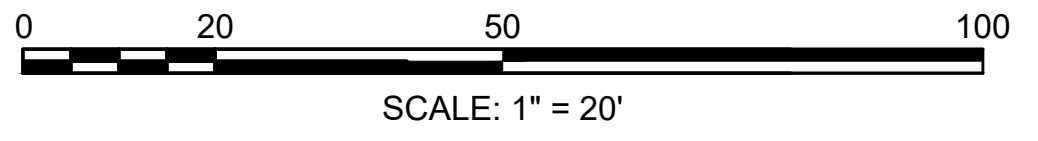
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N: 2928851.664'  
E: 751499.323'  
EL: 140.51'  
MMAG

13  
N: 2929000.682'  
E: 751467.597'  
EL: 138.03'  
MDHL

15  
N: 2929154.892'  
E: 751542.242'  
EL: 133.79'  
MDHL

7  
N: 2929406.960'  
E: 751527.826'  
EL: 142.22'  
MDHL

BENCHMARK: 7  
MAG NAIL SET  
1' ABOVE GROUND  
IN ULT 1110/5  
EL=133.70'

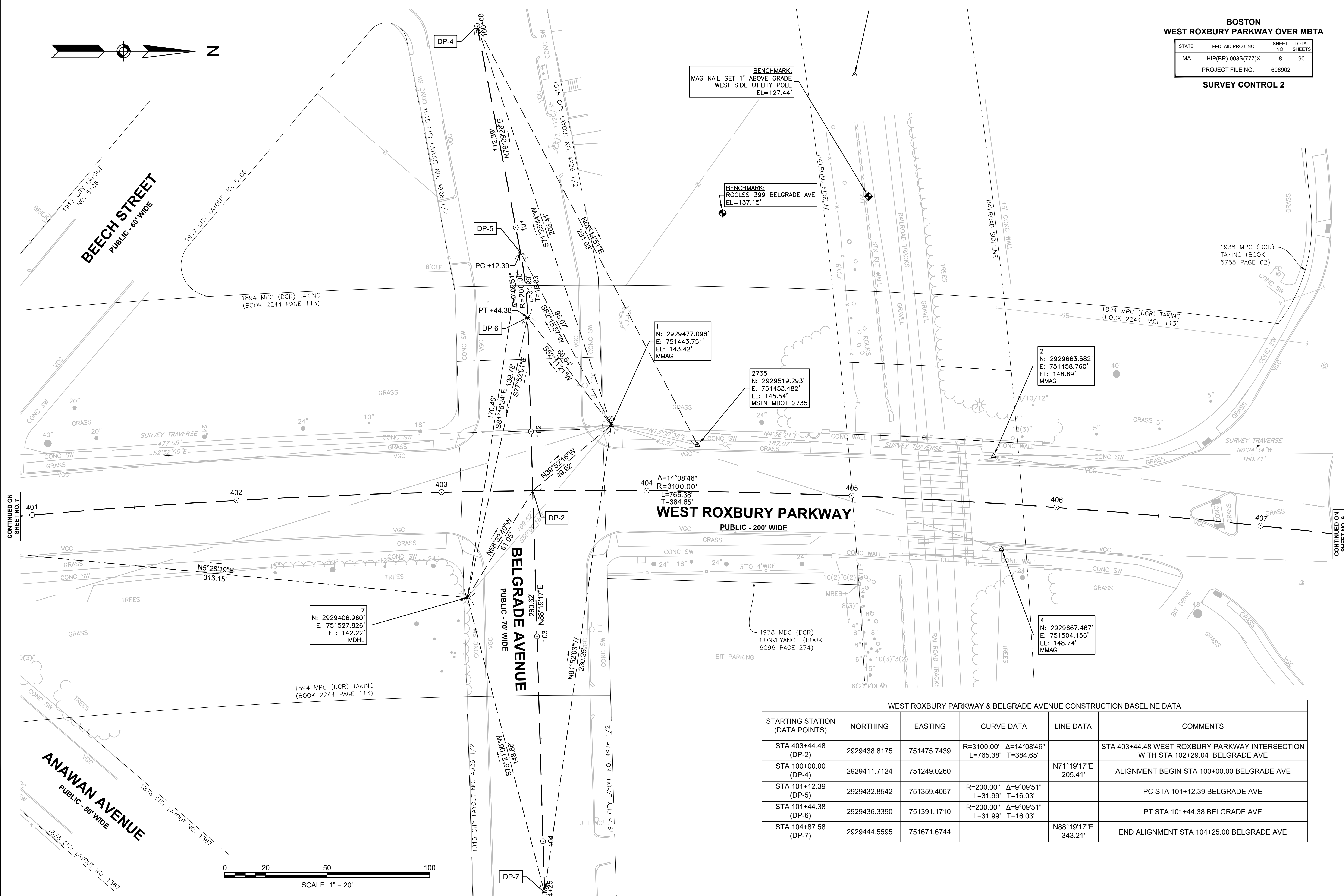
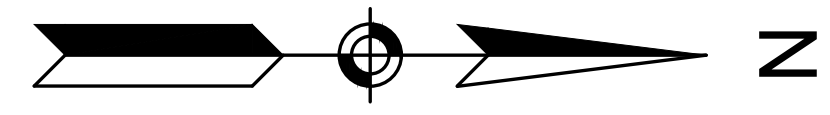


CONTINUED ON  
SHEET NO. 8

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	8	90
PROJECT FILE NO.		606902	

**SURVEY CONTROL 2**

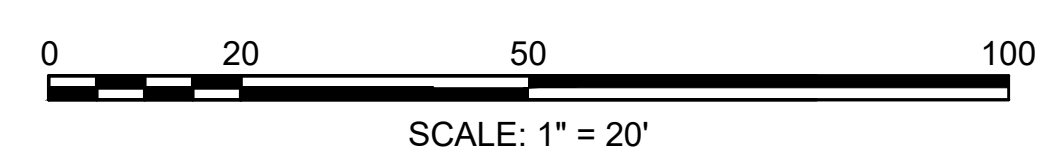


CONTINUED ON SHEET NO. 7

CONTINUED ON SHEET NO. 9

**WEST ROXBURY PARKWAY & BELGRADE AVENUE CONSTRUCTION BASELINE DATA**

STARTING STATION (DATA POINTS)	NORTHING	EASTING	CURVE DATA	LINE DATA	COMMENTS
STA 403+44.48 (DP-2)	2929438.8175	751475.7439	R=3100.00' Δ=14°08'46" L=765.38' T=384.65'		STA 403+44.48 WEST ROXBURY PARKWAY INTERSECTION WITH STA 102+29.04 BELGRADE AVE
STA 100+00.00 (DP-4)	2929411.7124	751249.0260		N71°19'17"E 205.41'	ALIGNMENT BEGIN STA 100+00.00 BELGRADE AVE
STA 101+12.39 (DP-5)	2929432.8542	751359.4067	R=200.00' Δ=9°09'51" L=31.99' T=16.03'		PC STA 101+12.39 BELGRADE AVE
STA 101+44.38 (DP-6)	2929436.3390	751391.1710	R=200.00' Δ=9°09'51" L=31.99' T=16.03'		PT STA 101+44.38 BELGRADE AVE
STA 104+87.58 (DP-7)	2929444.5595	751671.6744		N88°19'17"E 343.21'	END ALIGNMENT STA 104+25.00 BELGRADE AVE



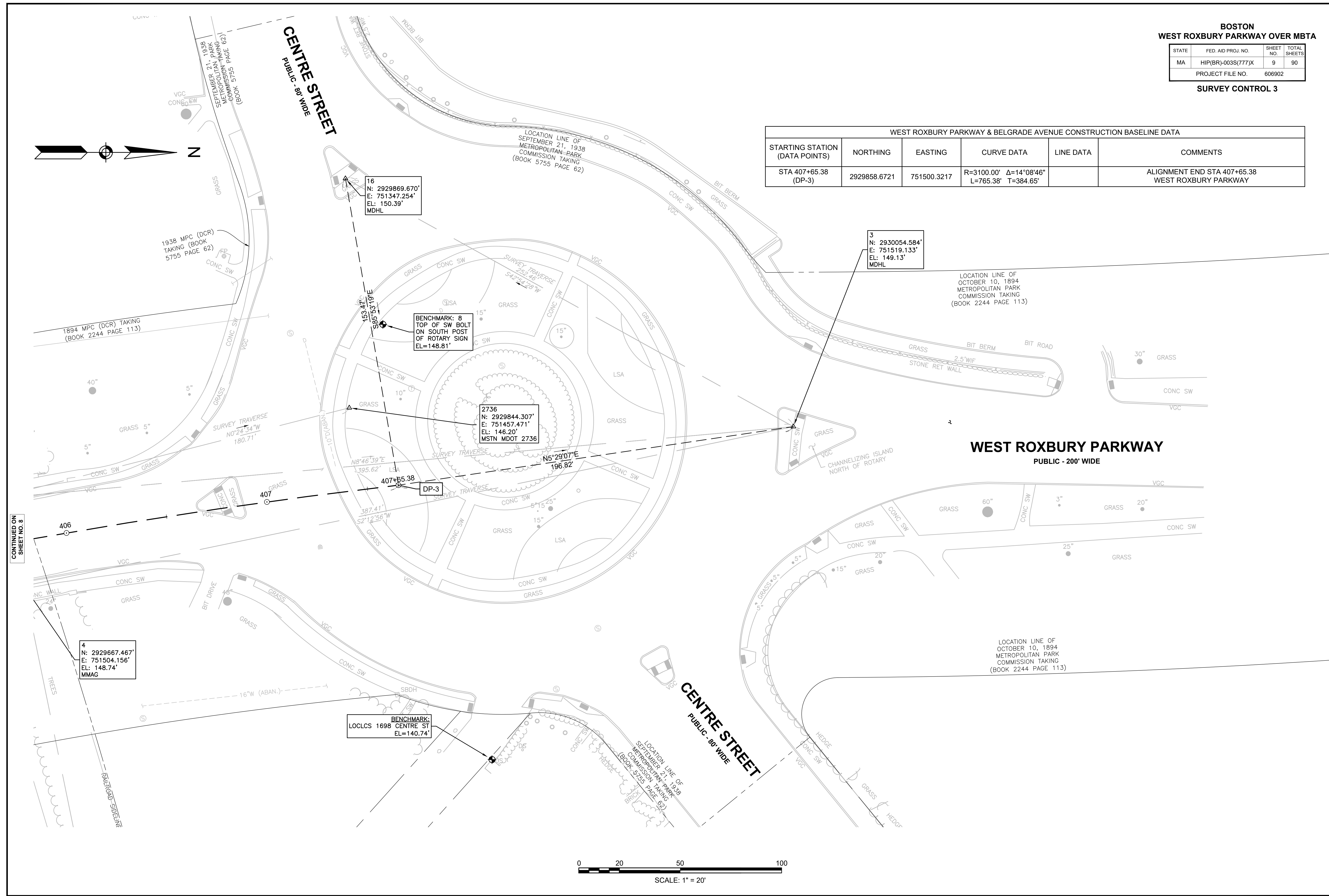


**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

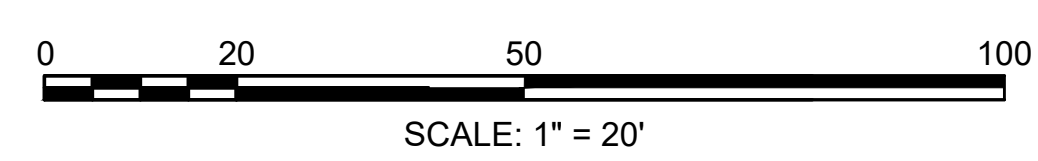
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	9	90
PROJECT FILE NO.		606902	

**SURVEY CONTROL 3**

WEST ROXBURY PARKWAY & BELGRADE AVENUE CONSTRUCTION BASELINE DATA					
STARTING STATION (DATA POINTS)	NORTHING	EASTING	CURVE DATA	LINE DATA	COMMENTS
STA 407+65.38 (DP-3)	2929858.6721	751500.3217	R=3100.00' Δ=14°08'46" L=765.38' T=384.65'		ALIGNMENT END STA 407+65.38 WEST ROXBURY PARKWAY



CONTINUED ON SHEET NO. 8



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	10	90
PROJECT FILE NO.		606902	

**TYPICAL SECTIONS**

**PAVEMENT NOTES**

**GENERAL PAVEMENT NOTES:**

- ALL HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT AND HMA JOINT ADHESIVE SHALL BE IN ACCORDANCE WITH SECTION 450. ALL PERMANENT PAVEMENT REPAIRS TO THE MILLED SURFACE SHALL BE MADE PRIOR TO RESURFACING. ASPHALT EMULSION SHALL BE APPLIED AT THE RATE OF 0.06-0.08 GALLONS PER SQUARE YARD OVER SMOOTH PAVEMENTS AND 0.07-0.09 GALLONS PER SQUARE YARD OVER MILLED SURFACES PRIOR TO PAVING. ALL JOINTS IN THE SURFACE COURSE SHALL BE SEALED WITH HMA JOINT ADHESIVE.
- ALL SUPERPAVE HMA SHALL BE PRODUCED WITH A WARM MIX ASPHALT ADDITIVE.
- PROVIDE TEMPORARY HMA TRANSITIONS IF TRAFFIC IS EXPECTED TO BE WITHIN BOX WIDENED AREAS OR IF BOX WIDENING IS TO LAST OVER THE WINTER MONTHS.
- THE POLYMER MODIFIED TACK COAT SHALL BE APPLIED IN ACCORDANCE WITH SUBSECTION 965.

**PROPOSED FULL DEPTH CONSTRUCTION**

- 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
- 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER
- 4 1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER
- 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER
- 8" GRAVEL BORROW (TYPE B)

**PROPOSED HMA WEARING SURFACE FOR BRIDGES**

- 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
- 1 1/2" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 (SPC-B-9.5) OVER
- SPRAY APPLIED MEMBRANE WATERPROOFING

**PROPOSED PAVEMENT MILLING TRANSITIONS**

- 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
- 1 1/2" PAVEMENT FINE MILLING

**PROPOSED CURB INSTALLATION IN AREAS OF FINE MILLING**

- 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
- 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER
- 8" HIGH-EARLY-STRENGTH CEMENT CONCRETE BASE COURSE
- 8" EXISTING SUITABLE GRAVEL OR GRAVEL BORROW (TYPE B)

**PROPOSED HMA DRIVEWAYS**

- 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
- 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
- 8" GRAVEL BORROW (TYPE B)

**PROPOSED HMA PERMANENT TRENCH PATCHING**

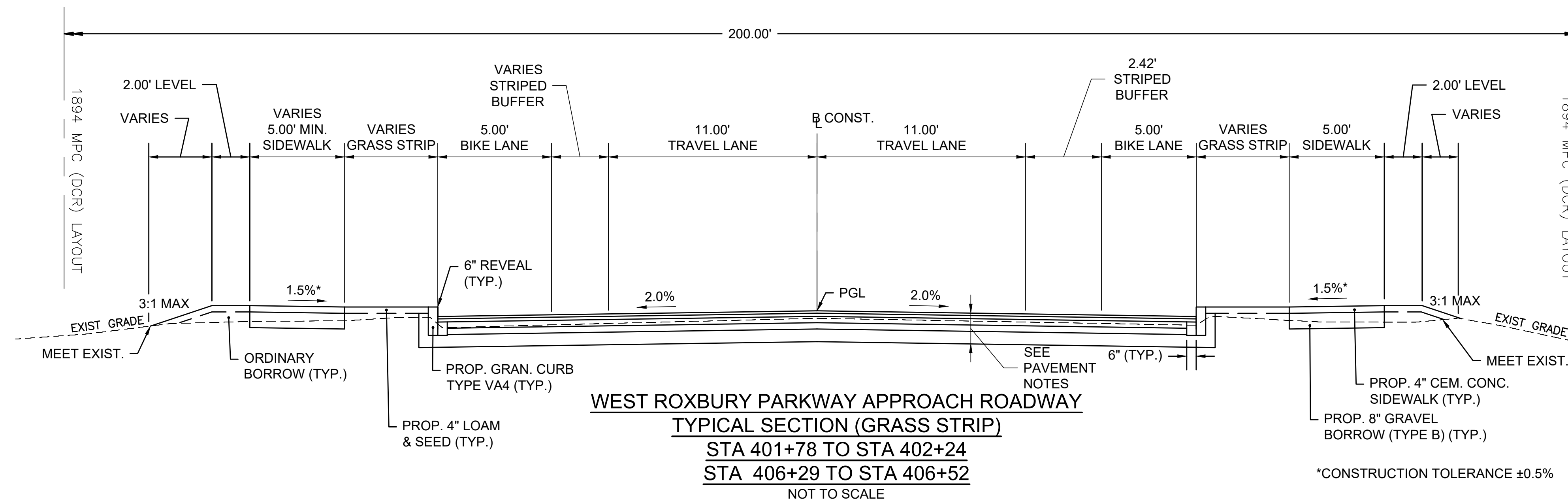
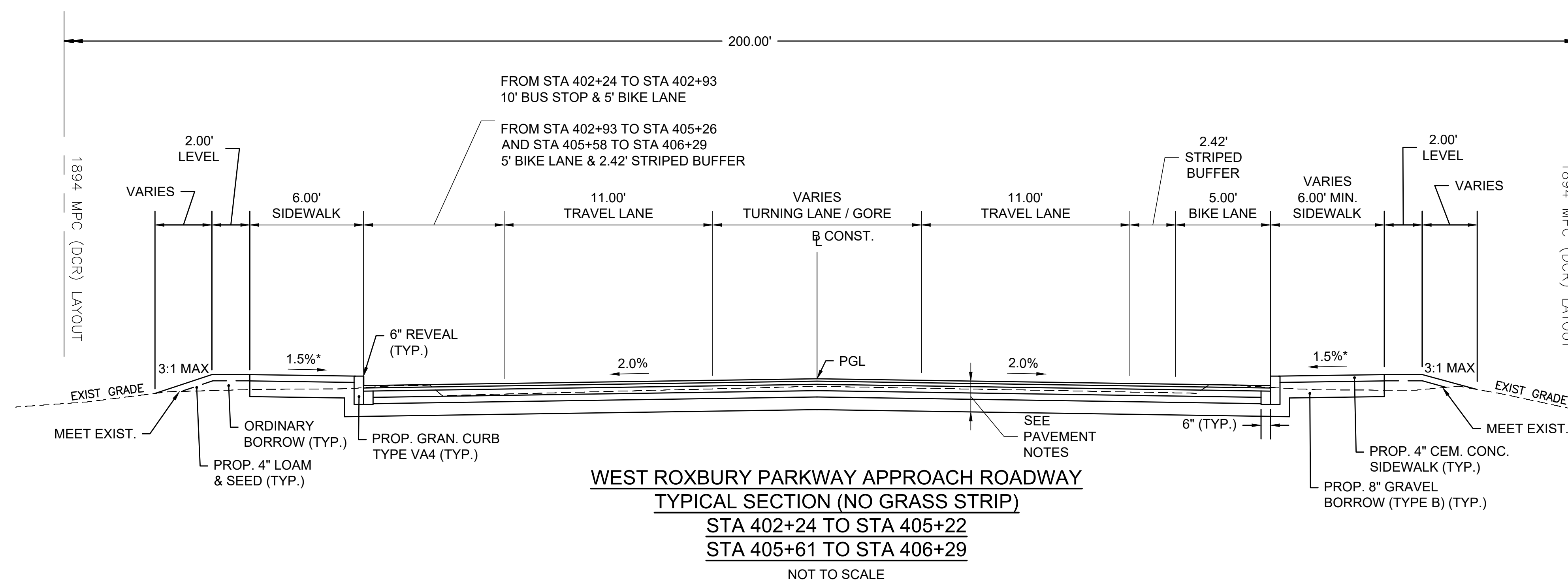
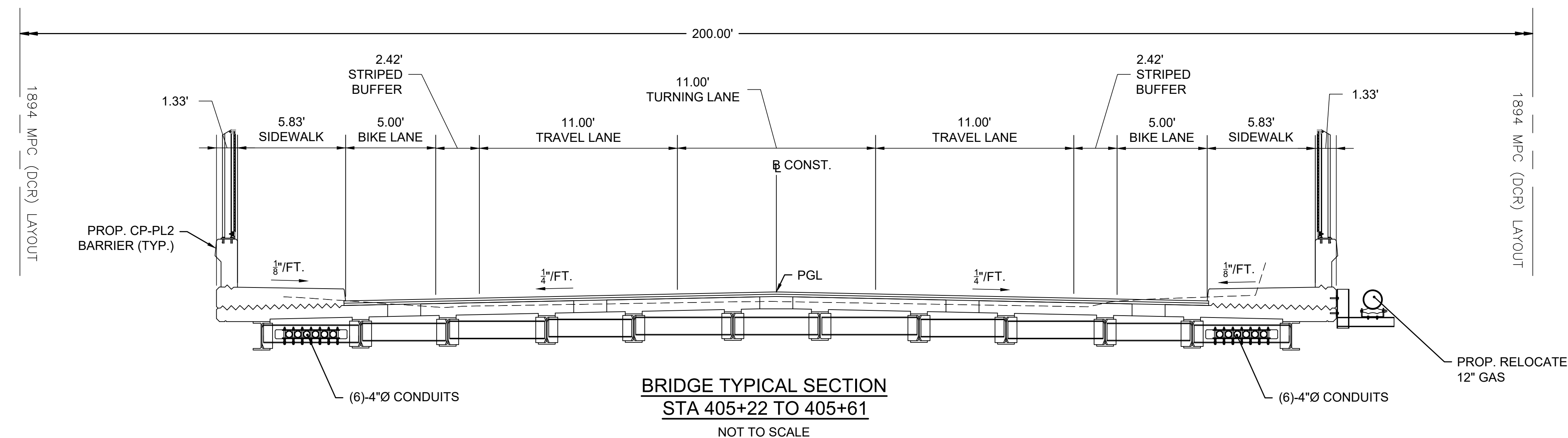
- NOTE: SURFACE COURSE SHALL BE TEMPORARY UNTIL MILLING OPERATIONS ARE PERFORMED
- 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
  - 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER
  - 3 1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER
  - TRENCH BACKFILL AS REQUIRED
  - (SEE PLAN DETAILS AND CONTRACT SPECIAL PROVISIONS)
  - VARIES GRAVEL BORROW (TYPE b) TO SUPPLEMENT SUITABLE BACKFILL.

**PROPOSED CEMENT CONCRETE SIDEWALK, PED. CURB RAMP, & ISLANDS**

- 4" (AIR-ENTRAINED, 4000 PSI, 3/4", 610) CEMENT CONC. PLACED IN ONE COURSE
- 8" GRAVEL BORROW (TYPE B)

**PROPOSED CEMENT CONCRETE SIDEWALK AT DRIVEWAYS**

- 6" (AIR-ENTRAINED, 4000 PSI, 3/4", 610) CEMENT CONC. PLACED IN ONE COURSE
- 8" GRAVEL BORROW (TYPE B)

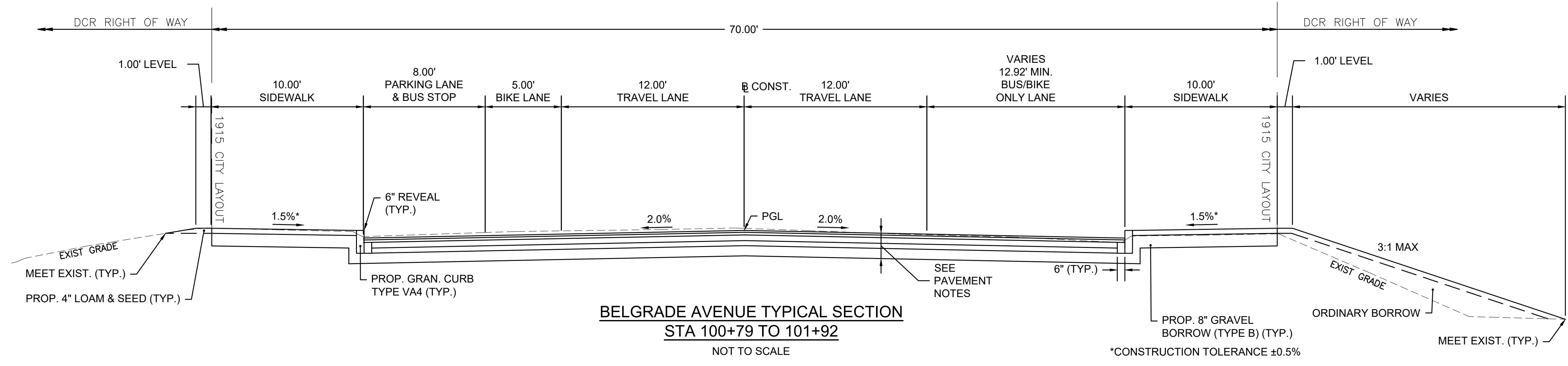
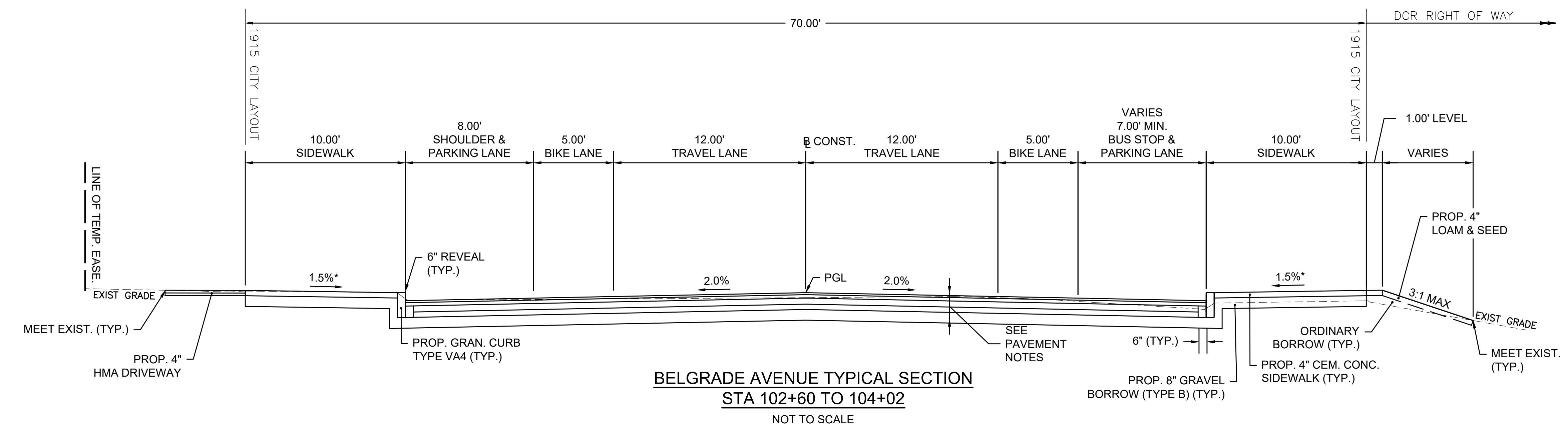


\*CONSTRUCTION TOLERANCE ±0.5%

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	11	90
PROJECT FILE NO.		606902	

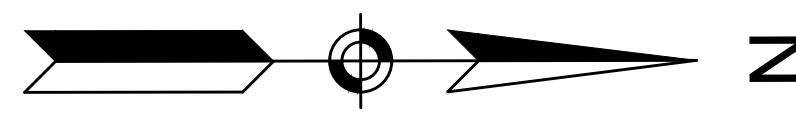
**TYPICAL SECTIONS 2**



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	12	90
PROJECT FILE NO.		606902	

**CONSTRUCTION PLAN**

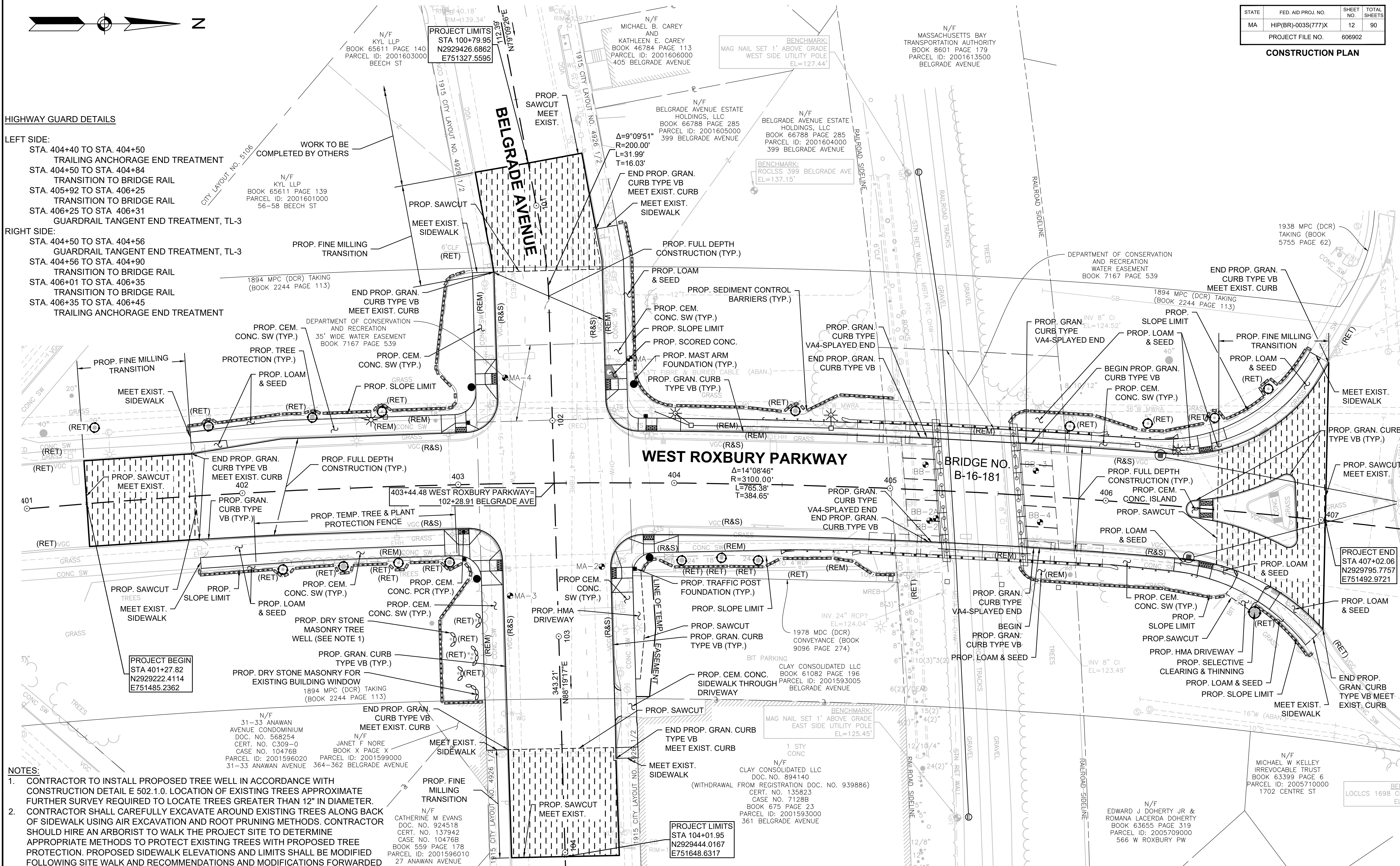


TRAFFIC SIGNAL CONDUIT  
WATER SUPPLY ALTERATIONS  
DRAINAGE DETAILS

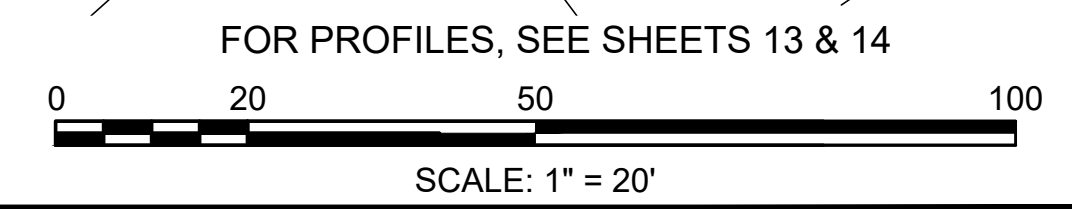
SEE SHEET 19  
NONE  
SEE SHEET 16

**HIGHWAY GUARD DETAILS**

- LEFT SIDE:**
- STA. 404+40 TO STA. 404+50  
TRAILING ANCHORAGE END TREATMENT
  - STA. 404+50 TO STA. 404+84  
TRANSITION TO BRIDGE RAIL
  - STA. 405+92 TO STA. 406+25  
TRANSITION TO BRIDGE RAIL
  - STA. 406+25 TO STA. 406+31  
GUARDRAIL TANGENT END TREATMENT, TL-3
- RIGHT SIDE:**
- STA. 404+50 TO STA. 404+56  
GUARDRAIL TANGENT END TREATMENT, TL-3
  - STA. 404+56 TO STA. 404+90  
TRANSITION TO BRIDGE RAIL
  - STA. 406+01 TO STA. 406+35  
TRANSITION TO BRIDGE RAIL
  - STA. 406+35 TO STA. 406+45  
TRAILING ANCHORAGE END TREATMENT



- NOTES:**
- CONTRACTOR TO INSTALL PROPOSED TREE WELL IN ACCORDANCE WITH CONSTRUCTION DETAIL E 502.1.0. LOCATION OF EXISTING TREES APPROXIMATE FURTHER SURVEY REQUIRED TO LOCATE TREES GREATER THAN 12" IN DIAMETER.
  - CONTRACTOR SHALL CAREFULLY EXCAVATE AROUND EXISTING TREES ALONG BACK OF SIDEWALK USING AIR EXCAVATION AND ROOT PRUNING METHODS. CONTRACTOR SHOULD HIRE AN ARBORIST TO WALK THE PROJECT SITE TO DETERMINE APPROPRIATE METHODS TO PROTECT EXISTING TREES WITH PROPOSED TREE PROTECTION. PROPOSED SIDEWALK ELEVATIONS AND LIMITS SHALL BE MODIFIED FOLLOWING SITE WALK AND RECOMMENDATIONS AND MODIFICATIONS FORWARDED TO THE ENGINEER FOR APPROVAL.
  - TREES AND VEGETATION SHALL BE TRIMMED TO PROVIDE MINIMUM CLEARANCE OF 80 INCHES VERTICAL AND 2 FEET HORIZONTAL FROM BACK OF SIDEWALK.

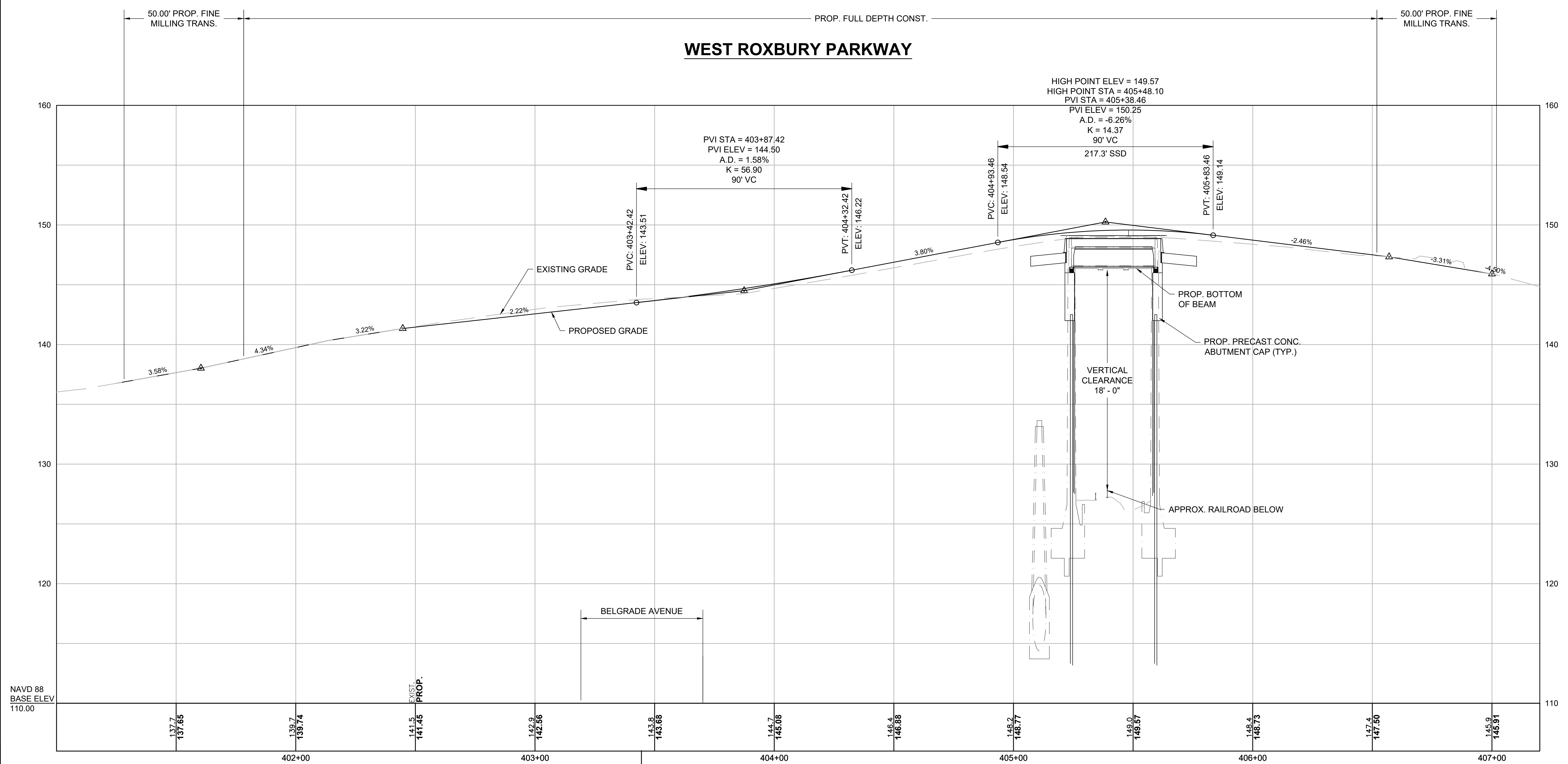


FOR PROFILES, SEE SHEETS 13 & 14

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	13	90
PROJECT FILE NO.		606902	

**WEST ROXBURY PARKWAY PROFILE**

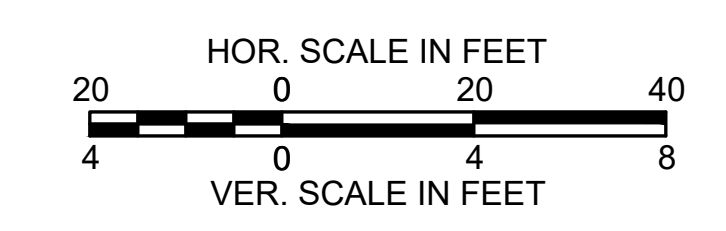


NAVD 88  
BASE ELEV  
110.00

403+44.48 WEST ROXBURY PARKWAY =  
102+28.91 BELGRADE AVENUE

Benchmark  
MAG Nail Set  
1' Above Grade  
West Side Utility Pole  
Elevation = 127.44'  
Sta. 405+02.17, 146.16' LT

Benchmark  
MAG Nail Set  
1' Above Grade  
East Side Utility Pole  
Elevation = 125.45'  
Sta. 405+39.31, 150.98' RT

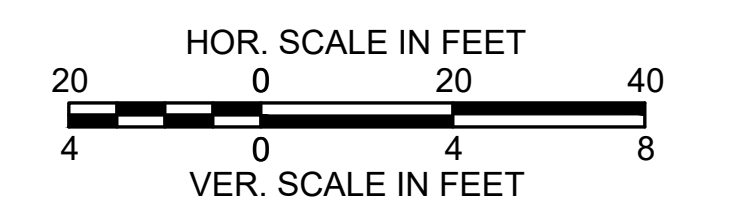
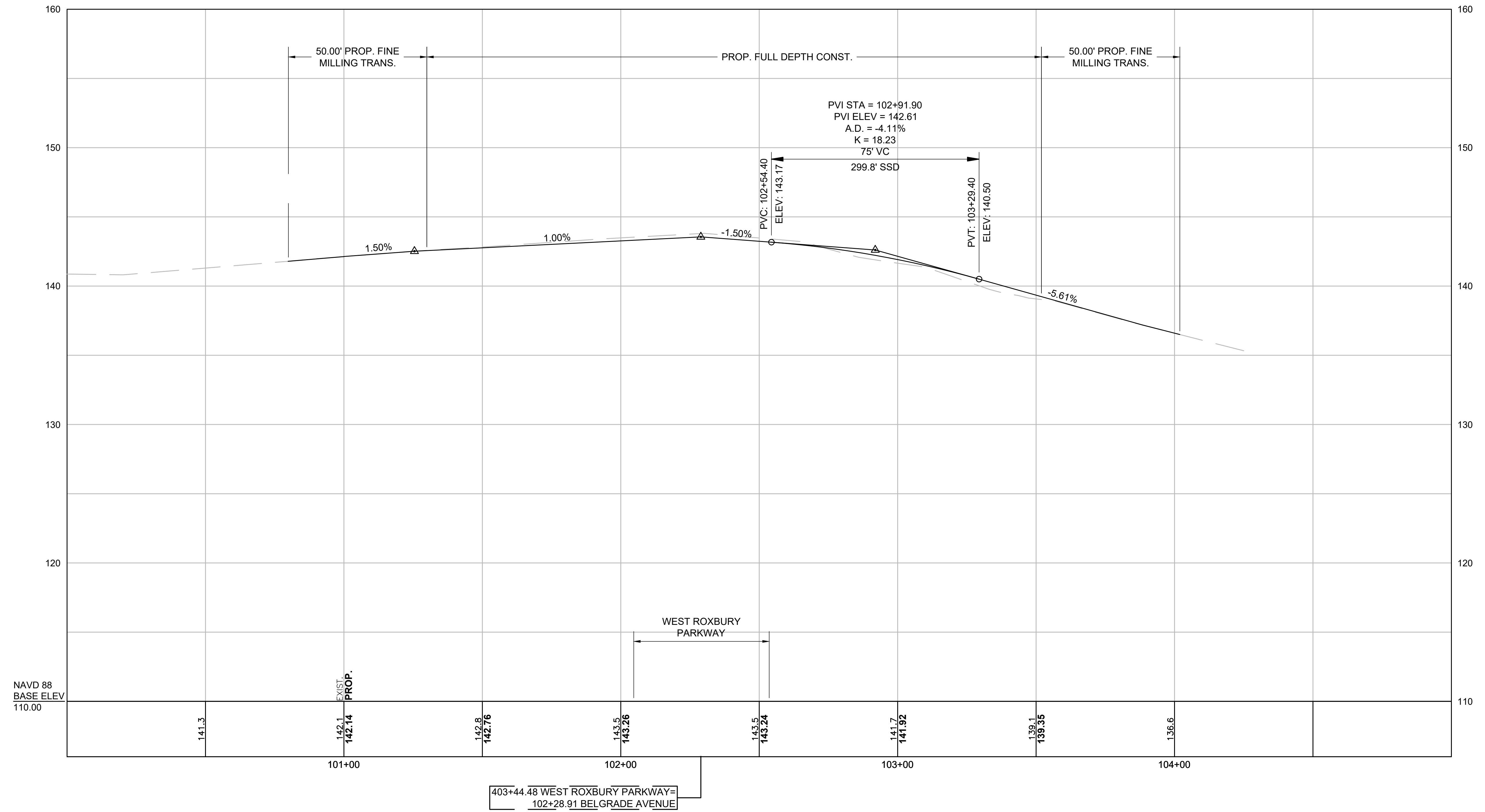


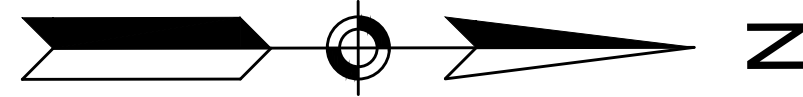
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	14	90
PROJECT FILE NO.		606902	

**BELGRADE AVENUE PROFILE**

**BELGRADE AVENUE**



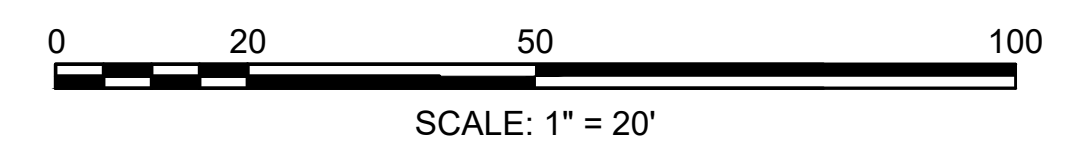
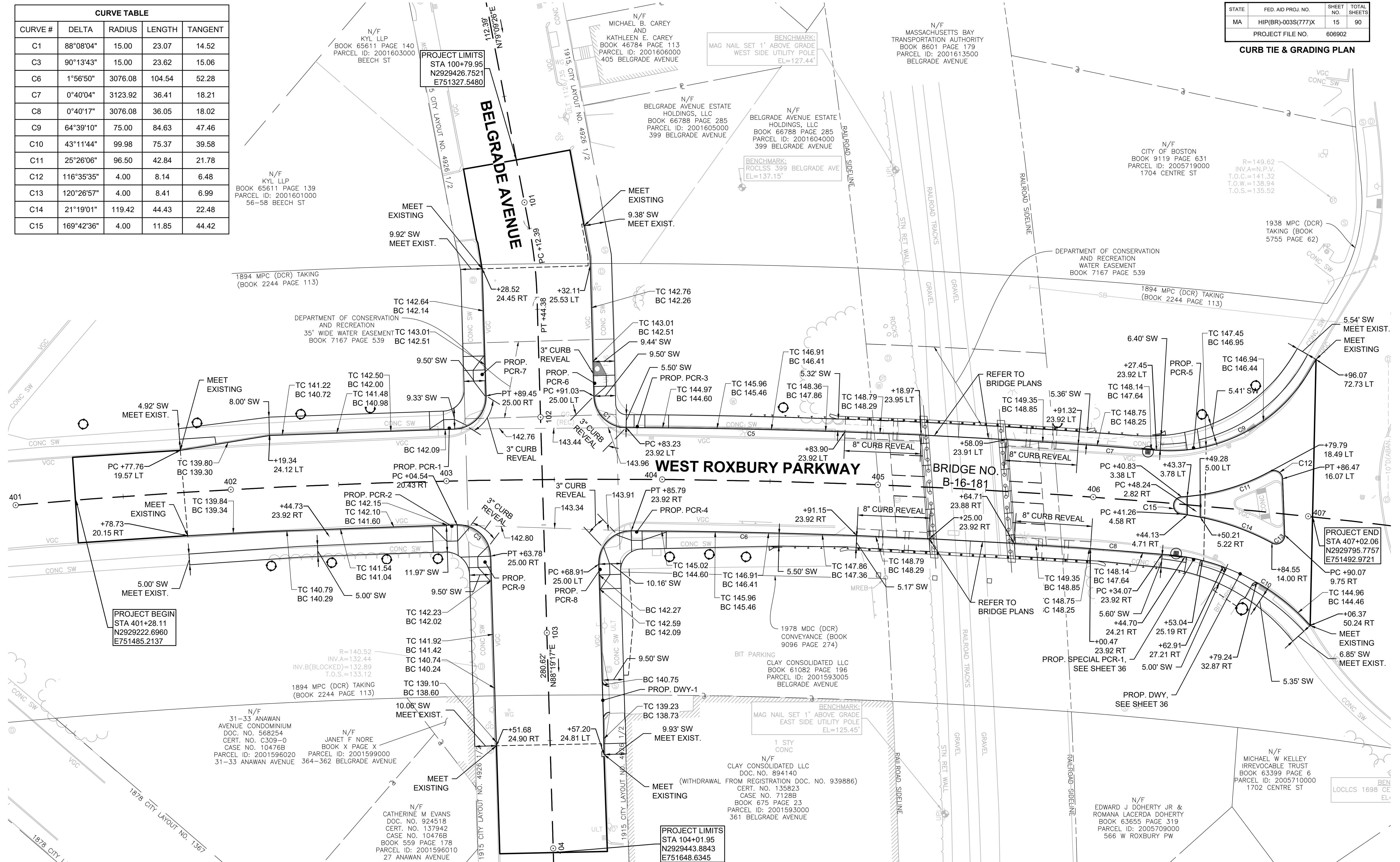


**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	15	90
PROJECT FILE NO. 606902			

**CURB TIE & GRADING PLAN**

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C1	88°08'04"	15.00	23.07	14.52
C3	90°13'43"	15.00	23.62	15.06
C6	1°56'50"	3076.08	104.54	52.28
C7	0°40'04"	3123.92	36.41	18.21
C8	0°40'17"	3076.08	36.05	18.02
C9	64°39'10"	75.00	84.63	47.46
C10	43°11'44"	99.98	75.37	39.58
C11	25°26'06"	96.50	42.84	21.78
C12	116°35'35"	4.00	8.14	6.48
C13	120°26'57"	4.00	8.41	6.99
C14	21°19'01"	119.42	44.43	22.48
C15	169°42'36"	4.00	11.85	44.42



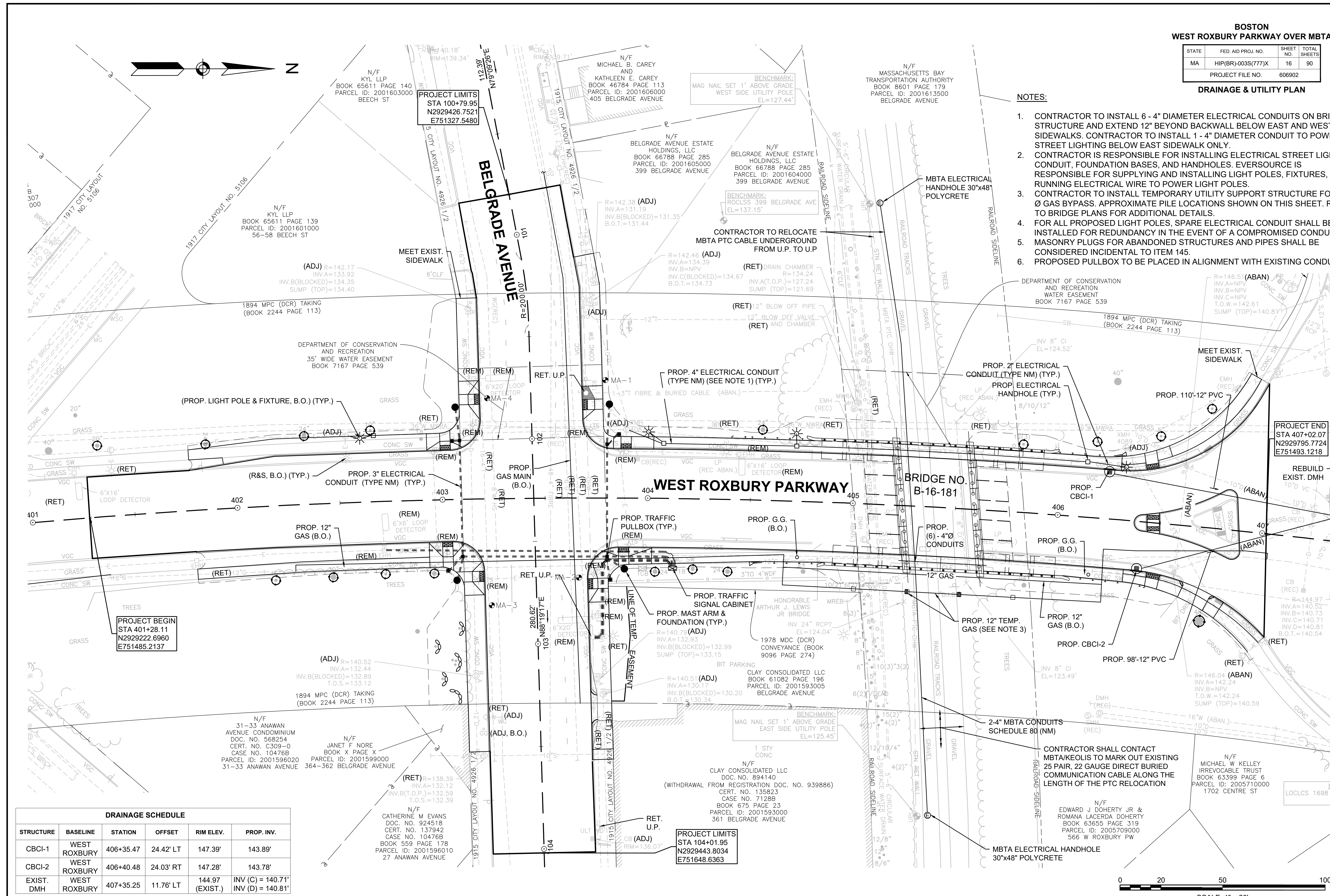
**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	16	90
PROJECT FILE NO.		606902	

**DRAINAGE & UTILITY PLAN**

**NOTES:**

- CONTRACTOR TO INSTALL 6 - 4" DIAMETER ELECTRICAL CONDUITS ON BRIDGE STRUCTURE AND EXTEND 12" BEYOND BACKWALL BELOW EAST AND WEST SIDEWALKS. CONTRACTOR TO INSTALL 1 - 4" DIAMETER CONDUIT TO POWER STREET LIGHTING BELOW EAST SIDEWALK ONLY.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING ELECTRICAL STREET LIGHTING CONDUIT, FOUNDATION BASES, AND HANDHOLES. EVERSOURCE IS RESPONSIBLE FOR SUPPLYING AND INSTALLING LIGHT POLES, FIXTURES, AND RUNNING ELECTRICAL WIRE TO POWER LIGHT POLES.
- CONTRACTOR TO INSTALL TEMPORARY UTILITY SUPPORT STRUCTURE FOR 12" Ø GAS BYPASS. APPROXIMATE PILE LOCATIONS SHOWN ON THIS SHEET. REFER TO BRIDGE PLANS FOR ADDITIONAL DETAILS.
- FOR ALL PROPOSED LIGHT POLES, SPARE ELECTRICAL CONDUIT SHALL BE INSTALLED FOR REDUNDANCY IN THE EVENT OF A COMPROMISED CONDUIT.
- MASONRY PLUGS FOR ABANDONED STRUCTURES AND PIPES SHALL BE CONSIDERED INCIDENTAL TO ITEM 145.
- PROPOSED PULLBOX TO BE PLACED IN ALIGNMENT WITH EXISTING CONDUIT.



**PROJECT BEGIN**  
STA 401+28.11  
N2929222.6960  
E751485.2137

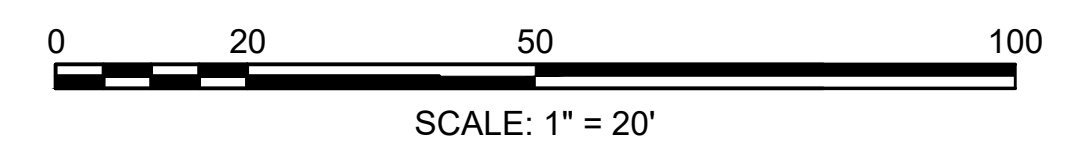
**PROJECT LIMITS**  
STA 100+79.95  
N2929426.7521  
E751327.5480

**PROJECT END**  
STA 407+02.07  
N2929795.7724  
E751493.1218

**PROJECT LIMITS**  
STA 104+01.95  
N2929443.8034  
E751648.6363

**DRAINAGE SCHEDULE**

STRUCTURE	BASELINE	STATION	OFFSET	RIM ELEV.	PROP. INV.
CBCI-1	WEST ROXBURY	406+35.47	24.42' LT	147.39'	143.89'
CBCI-2	WEST ROXBURY	406+40.48	24.03' RT	147.28'	143.78'
EXIST. DMH	WEST ROXBURY	407+35.25	11.76' LT	144.97 (EXIST.)	INV (C) = 140.71' INV (D) = 140.81'

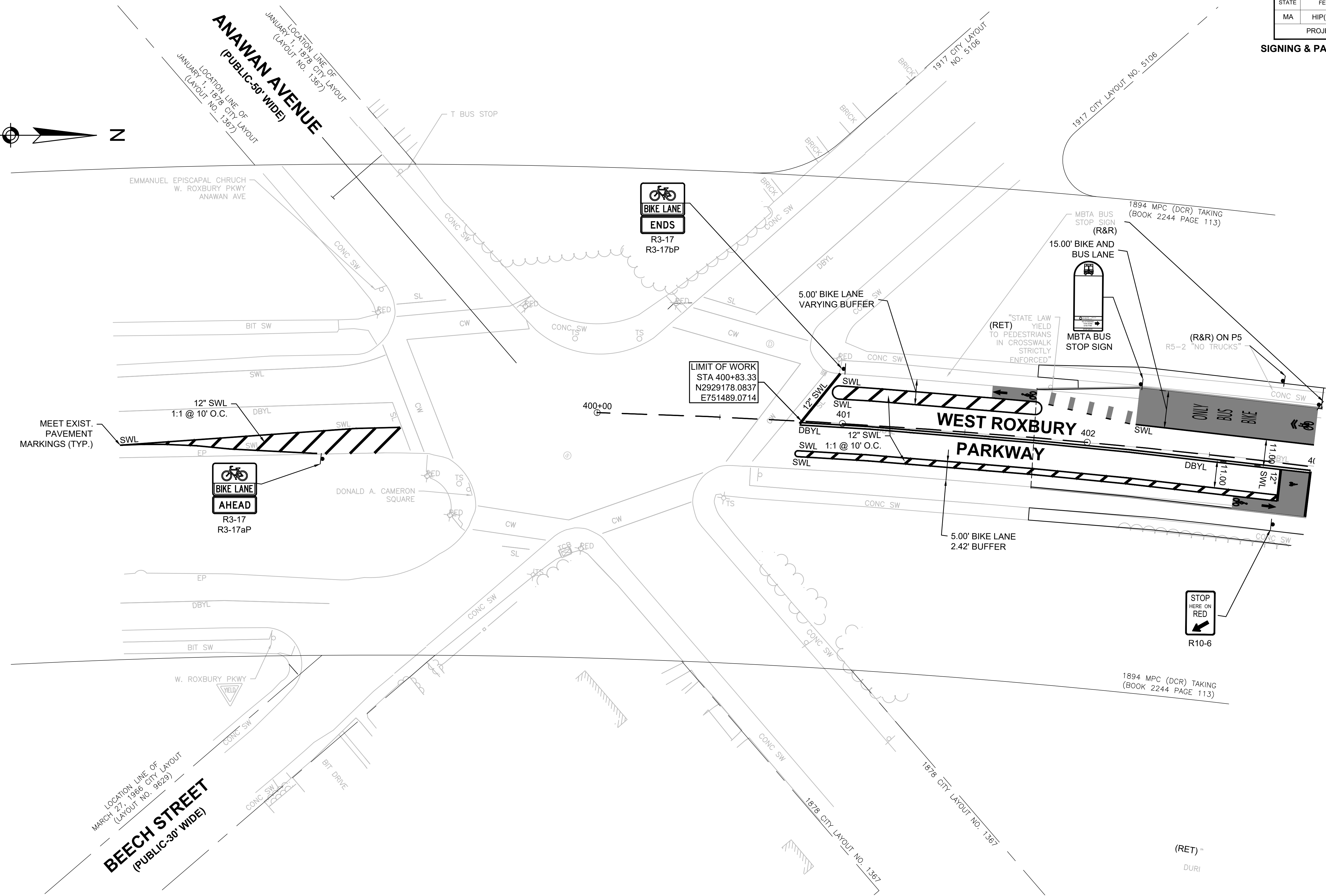
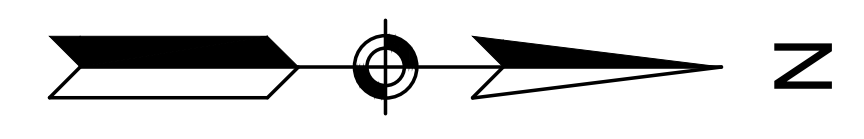




**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

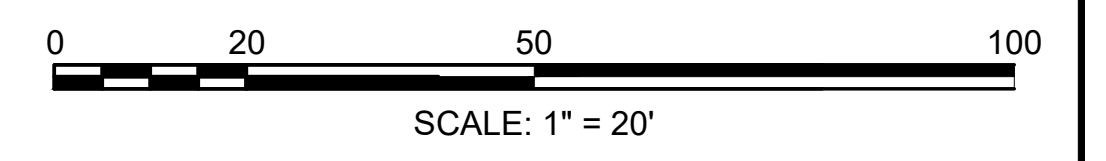
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	17	90
PROJECT FILE NO.		606902	

**SIGNING & PAVEMENT MARKING PLAN 1**



MEET EXIST. PAVEMENT MARKINGS (TYP.)

LIMIT OF WORK  
STA 400+83.33  
N2929178.0837  
E751489.0714

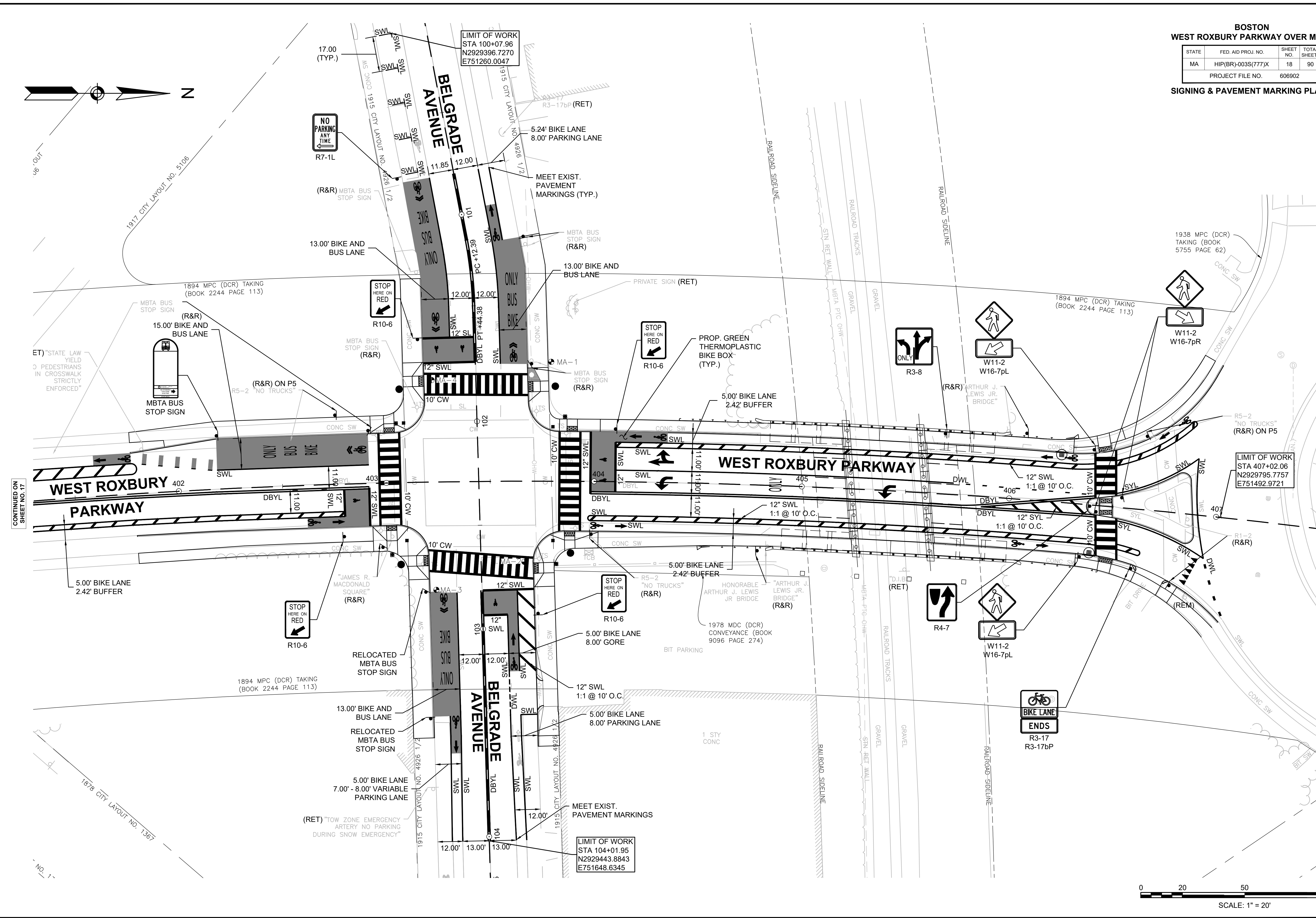
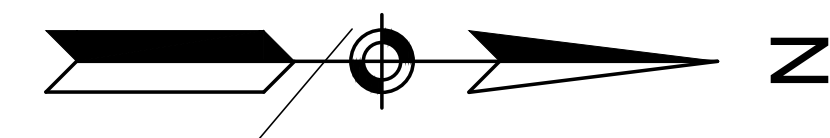


CONTINUED ON SHEET NO. 18

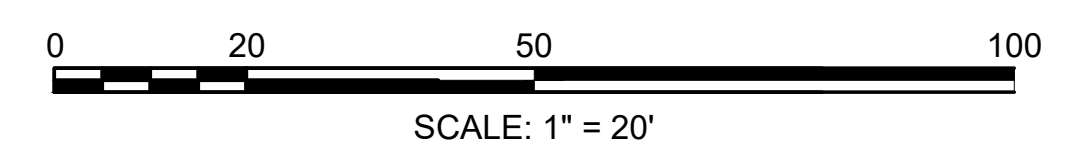
**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

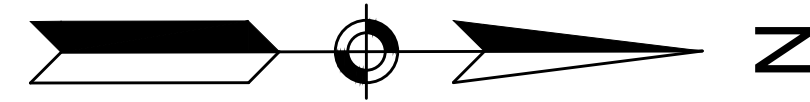
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	18	90
PROJECT FILE NO.		606902	

**SIGNING & PAVEMENT MARKING PLAN 2**



CONTINUED ON  
SHEET NO. 17

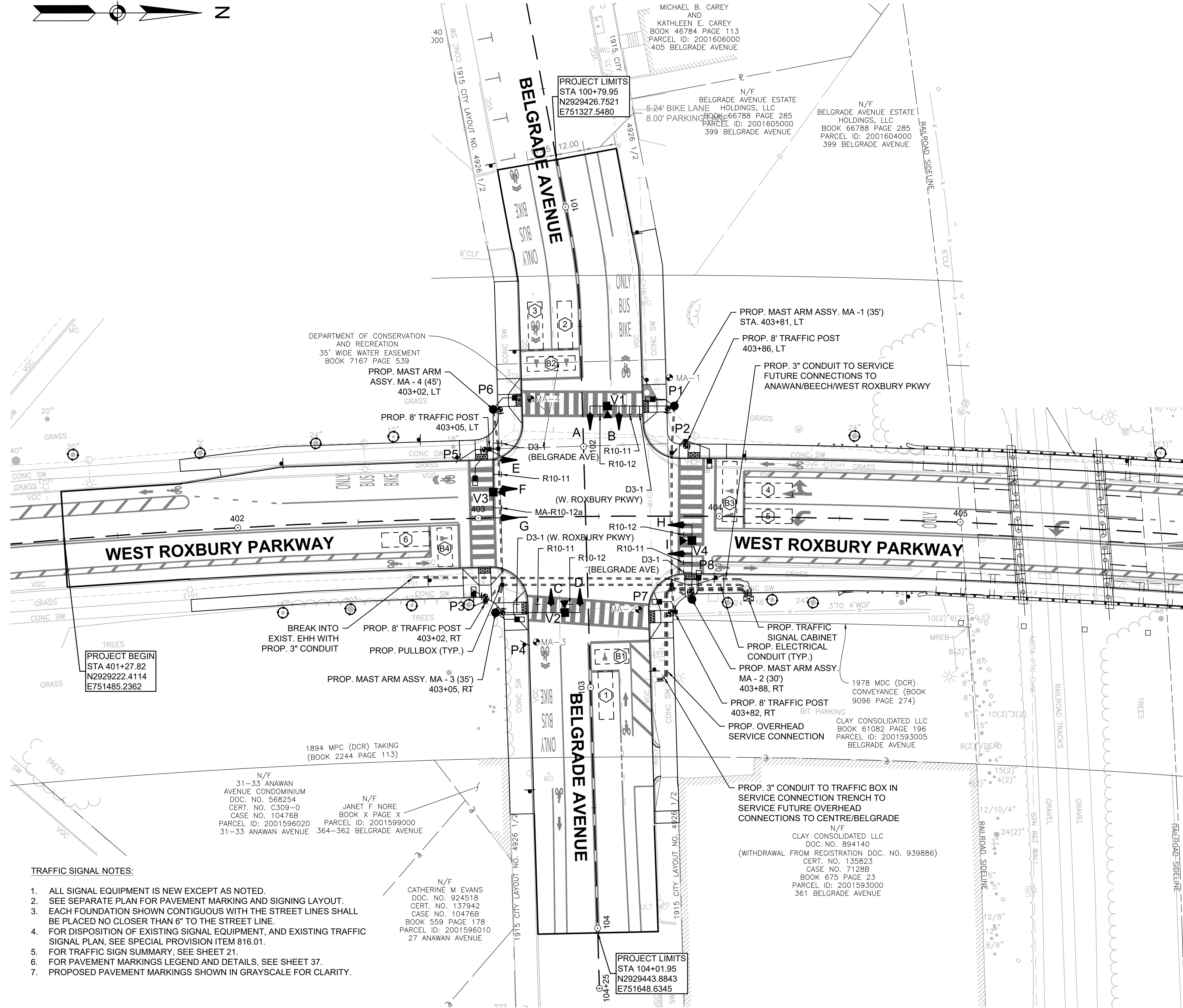




**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	19	90
PROJECT FILE NO.		606902	

**TRAFFIC SIGNAL PLAN**

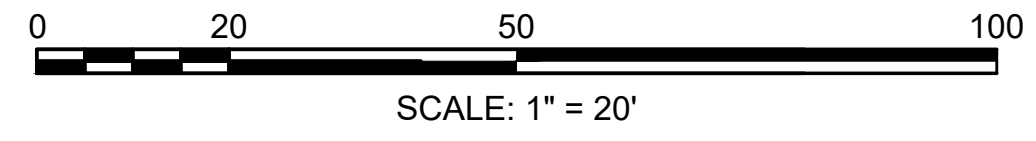


MAJOR ITEMS REQUIRED		
PAY ITEM	QUANTITY	ITEM
	1 EA	BTD ATC CONTROLLER WITH FOUNDATION AND CONC. PAD
	1 EA	30' MAST ARM AND FOUNDATION
	2 EA	35' MAST ARM AND FOUNDATION
	1 EA	45' MAST ARM AND FOUNDATION
	9 EA	1 WAY - 3 SECTION HOUSING (12" LENSES); A, B, C, D, E, F, G, H, I
	8 EA	COUNTDOWN PEDESTRIAN SIGNAL HEAD
	4 EA	SIGNAL POST 8' (1 PIECE ALUMINUM) & FOUNDATION
816.01	8 EA	APS PEDESTRIAN PUSH BUTTON (NON-MOVING) WITH SADDLE AND SIGN R10-3e
	1 EA	VIDEO DETECTION SYSTEM 16/CHANNEL
	4 EA	VIDEO DETECTION CAMERA
	1 EA	OVERHEAD SERVICE CONNECTION
		NECESSARY DUCT, CABLE, FOUNDATIONS, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION
811.31	4 EA	PULL BOX
804.3	625 FT	3" ELECTRIC CONDUIT, TYPE NM PLASTIC (UL)

PROPOSED MAST ARMS							
LOCATIONS	MAST ARM	BORING NO.	SOIL TYPE	FOUNDATION DEPTH	DIAMETER	VERTICAL BARS	TIE BARS
STA. 403+81 LT	35'	MA-1	WET SAND (LOOSE)	17' - 0"	3' - 6"	18 - #8	#5 @ 8"
STA. 403+88 RT	30'	MA-2	WET SAND (LOOSE)	13' - 6"	3' - 6"	18 - #8	#5 @ 12"
STA. 403+05 RT	35'	MA-3	WET SAND (LOOSE)	17' - 0"	3' - 6"	18 - #8	#5 @ 8"
STA. 403+02 LT	45'	MA-4	WET SAND (LOOSE)	18' - 6"	4' - 0"	18 - #9	#5 @ 6"

**TRAFFIC SIGNAL NOTES:**

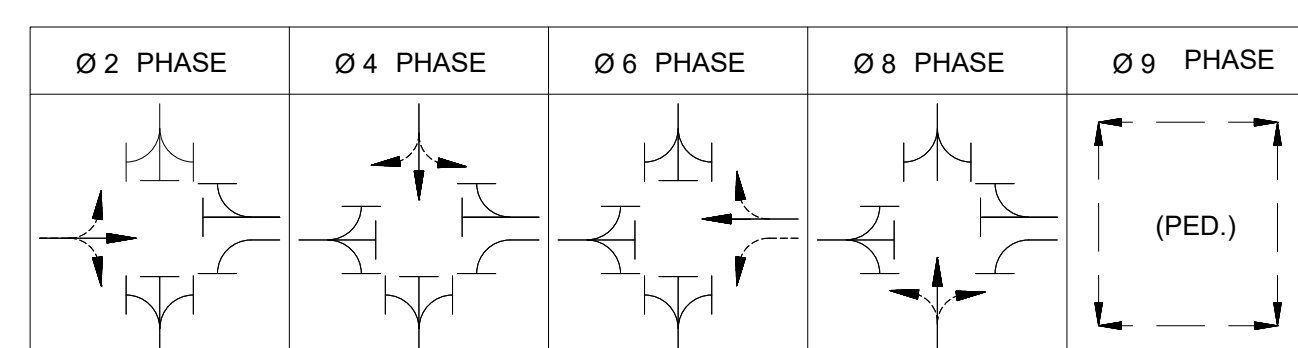
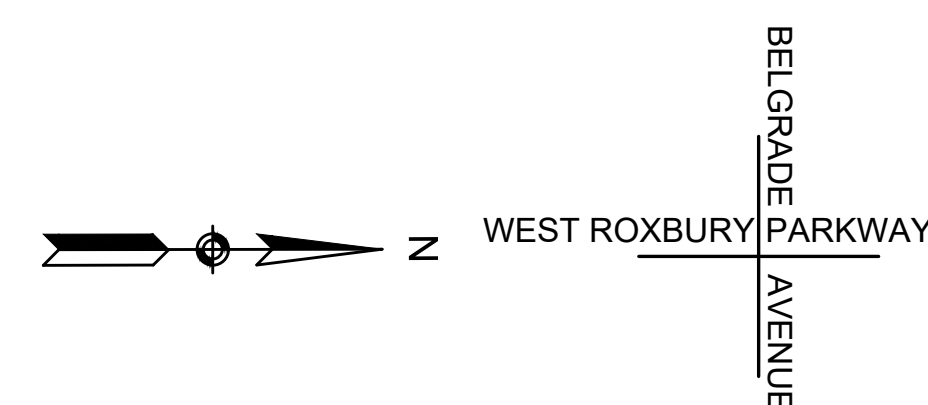
- ALL SIGNAL EQUIPMENT IS NEW EXCEPT AS NOTED.
- SEE SEPARATE PLAN FOR PAVEMENT MARKING AND SIGNING LAYOUT.
- EACH FOUNDATION SHOWN CONTIGUOUS WITH THE STREET LINES SHALL BE PLACED NO CLOSER THAN 6" TO THE STREET LINE.
- FOR DISPOSITION OF EXISTING SIGNAL EQUIPMENT, AND EXISTING TRAFFIC SIGNAL PLAN, SEE SPECIAL PROVISION ITEM 816.01.
- FOR TRAFFIC SIGN SUMMARY, SEE SHEET 21.
- FOR PAVEMENT MARKINGS LEGEND AND DETAILS, SEE SHEET 37.
- PROPOSED PAVEMENT MARKINGS SHOWN IN GRAYSCALE FOR CLARITY.



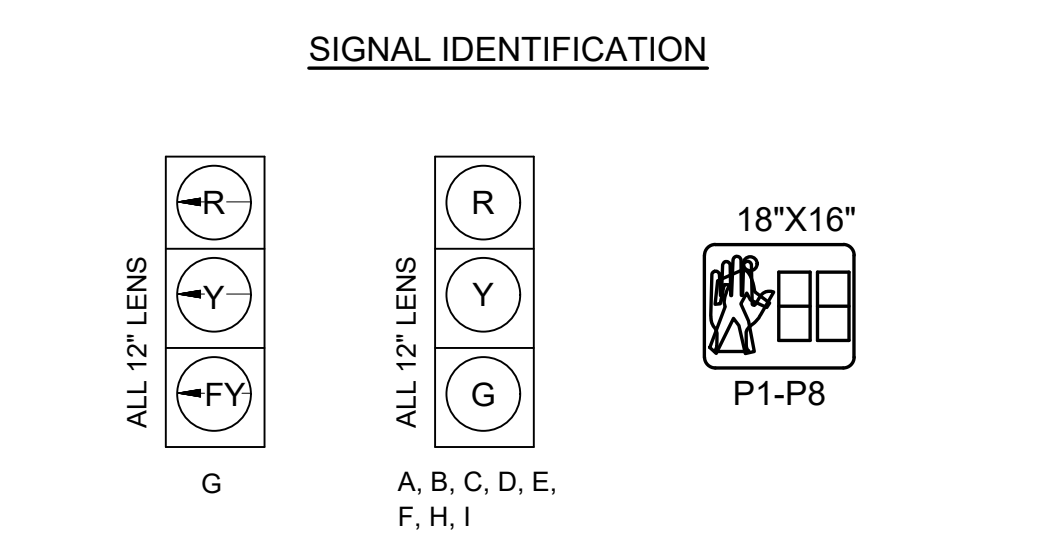
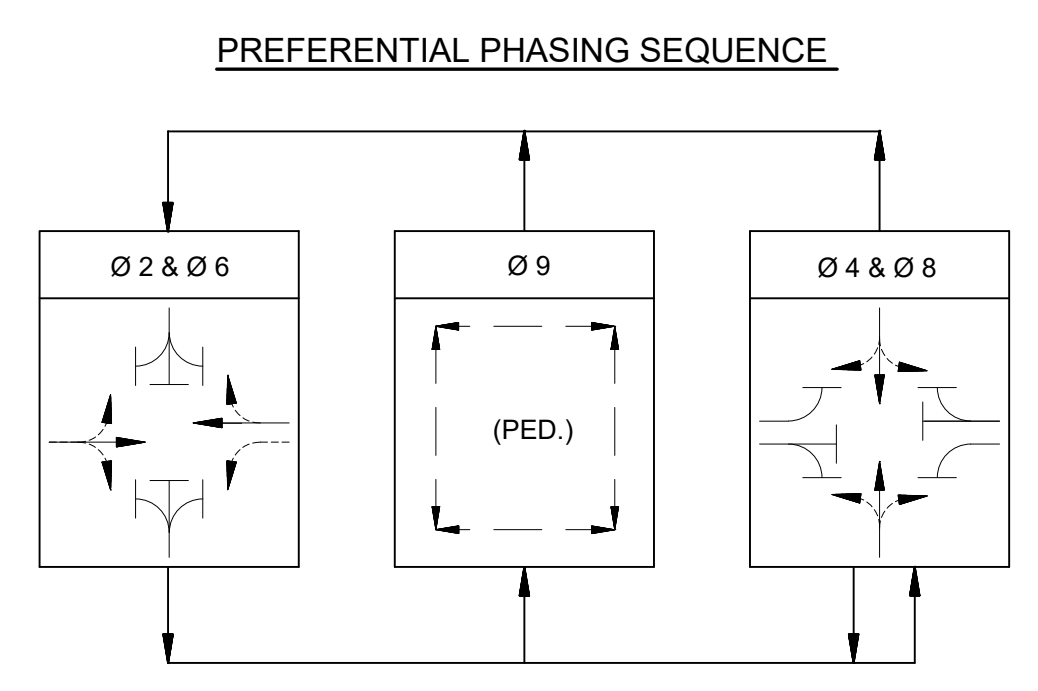
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	20	90
PROJECT FILE NO.		606902	

**TRAFFIC SIGNAL PLAN DETAILS**



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)																				
STREET	DIRECTION	HOUSINGS		R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	FLASH OPER.	
WEST ROXBURY PARKWAY	NB	H, I		G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
WEST ROXBURY PARKWAY	SBL	G		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
WEST ROXBURY PARKWAY	SB	E, F		R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	FY
BELGRADE AVENUE	EB	C, D		R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	FR
BELGRADE AVENUE	WB	A, B		R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	FR
PEDESTRIAN	ALL	P1-P8		DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	WØ	FDW	DW	OFF	
TIMING IN SECONDS																				
MINIMUM GREEN (INITIAL)				10			10			10			10							
PASSAGE TIME (VEHICLE)				1.5		1.5		1.5		1.5										
MAXIMUM 1				48		18		48		18										
MAXIMUM 2				35		11		35		11										
YELLOW CLEARANCE					3.5		3.5		3.5		3.5		3.5							
RED CLEARANCE						2.5		2.5		2.5		2.5		2.5						0
WALK (W)																7				
PEDESTRIAN CLEARANCE																	15	4		
RECALL						MIN		OFF		MIN		OFF								OFF
MEMORY						NON-LOCK		NON-LOCK		NON-LOCK		NON-LOCK								LOCK
COORDINATION DATA				COORDINATION PHASE TIMING																
TIMING PLAN	CYCLE LENGTH	REF/OFFSET		SEC.	SEC.	SEC.	SEC.	SEC.												



VIDEO DETECTOR DATA							
DETECTOR NUMBER	VIDEO CAMERA	DET AREA (FEET)	Ø CALLED	Ø EXTENDED	DELAY TIME	DET AREA	OPERATION
1	V1	20' X 6'	8	8	-	NON-LOCK	PRESENCE
2	V2	20' X 6'	4	4	-	NON-LOCK	PRESENCE
3	V2	20' X 6'	4	4	-	NON-LOCK	PRESENCE
4	V3	20' X 6'	6	6	-	NON-LOCK	PRESENCE
5	V3	20' X 6'	6	6	-	NON-LOCK	PRESENCE
6	V4	20' X 6'	2	2	-	NON-LOCK	PRESENCE
11	V1	14' X 6'	8	8	-	NON-LOCK	PRESENCE
12	V2	20' X 6'	4	4	-	NON-LOCK	PRESENCE
13	V3	25' X 6'	6	6	-	NON-LOCK	PRESENCE
14	V4	16' X 6'	2	2	-	NON-LOCK	PRESENCE

- NOTES:**
- ALL VEHICLE INDICATIONS SHALL BE 12" L.E.D. AND SHALL BE EQUIPPED WITH TUNNEL VISORS.
  - ALL PEDESTRIAN INDICATIONS SHALL BE L.E.D. AND SHALL COUNTDOWN AND BE EQUIPPED WITH SUN CAP VISORS.
  - PEDESTRIAN WALK AND DON'T WALK SYMBOL SHALL BE SOLID-TYPE L.E.D. OUTLINED SYMBOLS SHALL NOT BE USED PER BTD SPECS.
  - MAST ARM AND TRAFFIC POST LOCATION MAY BE FIELD ADJUSTED AND SHALL BE PLACED SUCH THAT PED PUSH BUTTON (IF PROPOSED) IS WITHIN 10" OF WCR LEVEL LANDING.
  - ALL MAST-ARM MOUNTED SIGNALS HAVE 5.0" NON-LOUVERED BACKPLATES WITH YELLOW REFLECTIVE BORDERS.
  - PEDESTRIAN BUTTON ACTUATION IS TO CALL PHASE 9.

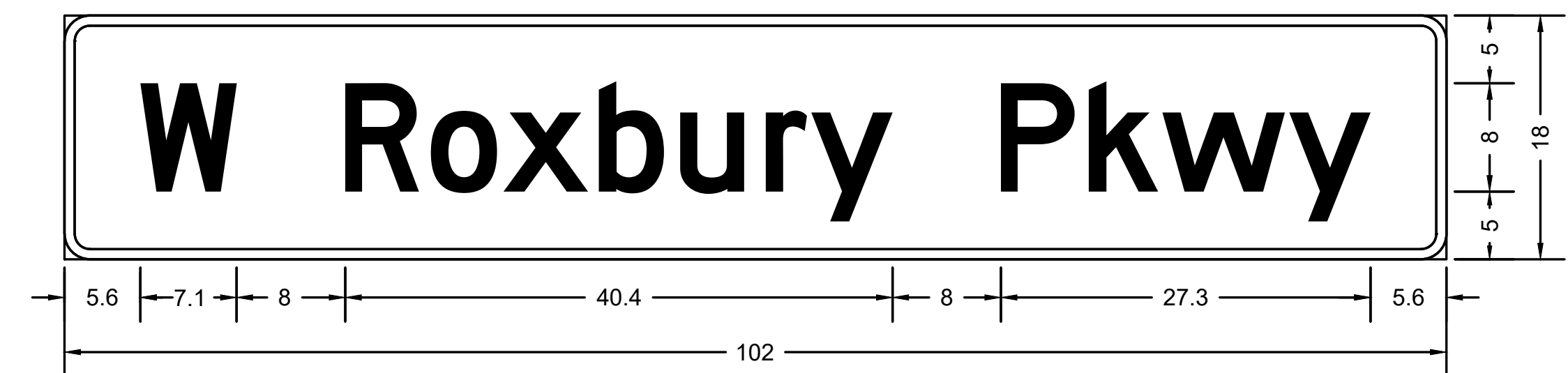
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	21	90
PROJECT FILE NO.		606902	

**TRAFFIC SIGN SUMMARY**

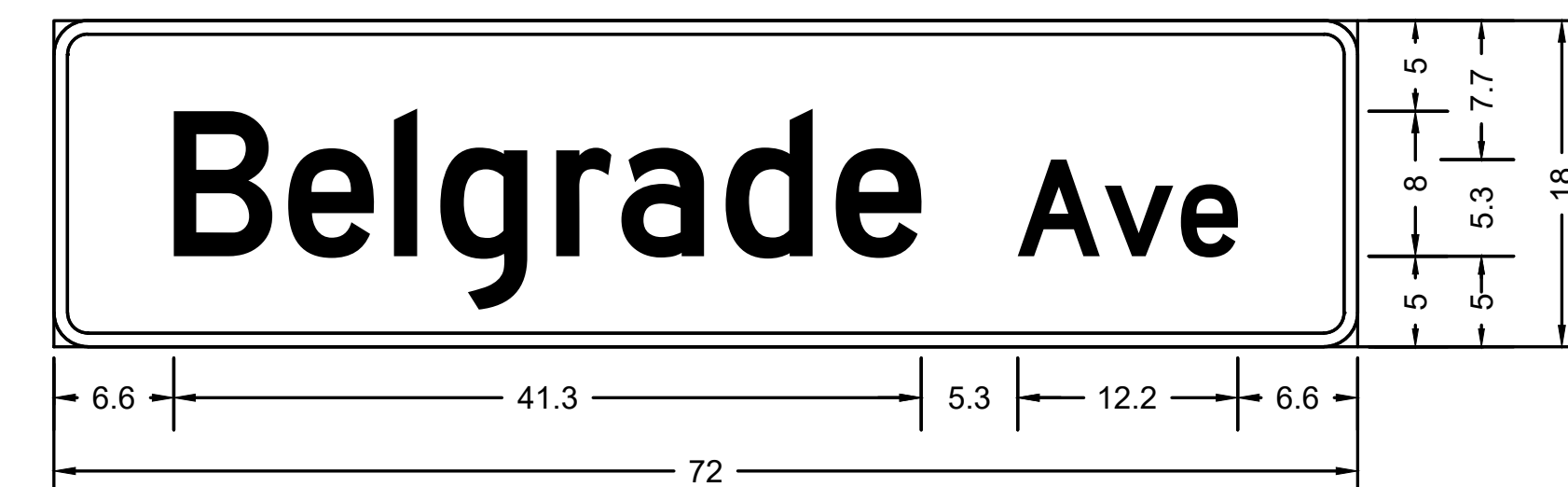
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET		
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER					
MA-D3-1 WEST ROXBURY	102"	18"	SEE DETAILS THIS SHEET	MASSDOT STANDARD			2	GREEN H/I	WHITE H/I	WHITE H/I	MOUNTED ON MAST ARM	12.75	25.50		
MA-D3-1 BELGRADE	72"	18"	SEE DETAILS THIS SHEET				2						MOUNTED ON MAST ARM	9.00	18.00
MA-R10-12a	30"	36"					1						MOUNTED ON MAST ARM	7.50	7.50
R3-8	30"	30"					1						P5 (1 REQ'D)	6.25	6.25
R3-17	30"	24"					3				BLACK H/I	BLACK H/I	P5 (3 REQ'D)	5.00	15.00
R3-17aP	30"	12"	<b>AHEAD</b>				1						MOUNTED WITH R3-17	2.50	2.50
R3-17bP	30"	12"	<b>ENDS</b>				2						MOUNTED WITH R3-17	2.50	5.00
R4-7	24"	30"					1			WHITE H/I			P5 (1 REQ'D)	5.00	5.00
R7-1L	12"	18"					1				RED H/I	RED H/I	P5 (1 REQ'D)	1.50	1.50
R10-6	24"	36"					4	MUTCD					P5 (4 REQ'D)	6.00	24.00
R10-11	24"	30"		4							MOUNTED ON MAST ARM	5.00	20.00		
R10-12	30"	36"		3							MOUNTED ON MAST ARM	7.50	22.50		
W11-2	30"	30"		4					BLACK H/I	BLACK H/I	P5 (4 REQ'D)	6.25	25.00		
W16-7PL	24"	12"		2			FLUOR. YELLOW-GREEN				MOUNTED WITH W11-2	2.00	4.00		
W16-7PR	24"	12"		2							MOUNTED WITH W11-2	2.00	4.00		

142.25 SF PAID UNDER ITEM 832.  
10 EA PAID UNDER ITEM 847.1  
4 EA PAID UNDER ITEM 874.



1.9" Radius, 0.8" Border, White on Green;  
"W Roxbury Pkwy", D 2K;

**SIGN MA-D3-1 (W. ROXBURY PKWY)**  
NOT TO SCALE



1.9" Radius, 0.8" Border, White on Green;  
"Belgrade Ave", D 2K;

**SIGN MA-D3-1 (BELGRADE AVE)**  
NOT TO SCALE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	22	90
PROJECT FILE NO.		606902	

**TTCP DETAILS 1**

**NOTES:**

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
- ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
- CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
- THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF CHANNELIZING DEVICE OR BARRIER.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

**LEGEND:**

● REFLECTORIZED PLASTIC DRUM OR 36" CONE	▨ WORK ZONE	▭ WORK VEHICLE
P/F POLICE/FLAGGER DETAIL	→ DIRECTION OF TRAFFIC	▭ TRUCK MOUNTED ATTENUATOR
▨ TYPE III BARRICADE	▭ IMPACT ATTENUATOR	→ TRAFFIC OR PEDESTRIAN SIGNAL
▭ CHANGEABLE MESSAGE SIGN	▭ MEDIAN BARRIER	● SIGN
▭ ARROW BOARD	▭ MEDIAN BARRIER WITH WARNING LIGHTS	

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

**MEASURED AVERAGE WORK ZONE CAPACITIES**

NUMBER OF LANES		NUMBER OF STUDIES	AVERAGE CAPACITY	
NORMAL (EXISTING)	OPEN (TO TRAFFIC)		VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C., *Notes on Work Zone Capacity and Level of Service*. Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.

**SUGGESTED WORK ZONE WARNING SIGN SPACING**

ROAD TYPE	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1,000	1,500	2,640

\* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

\*\* DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (I.E. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (I.E. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

MA-R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

MA-R2-10a, MA-R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

**STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED**

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

\*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION

**CONVENTIONAL ROADWAY**- A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

**EXPRESSWAY**- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

**FREEWAY**- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

**LOW-VOLUME ROAD**- A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

**TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN. 100 FT MAX.
DOWNSTREAM TAPER	50 FT MIN. 100 FT MAX. PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

**FORMULAS FOR DETERMINING TAPER LENGTHS**

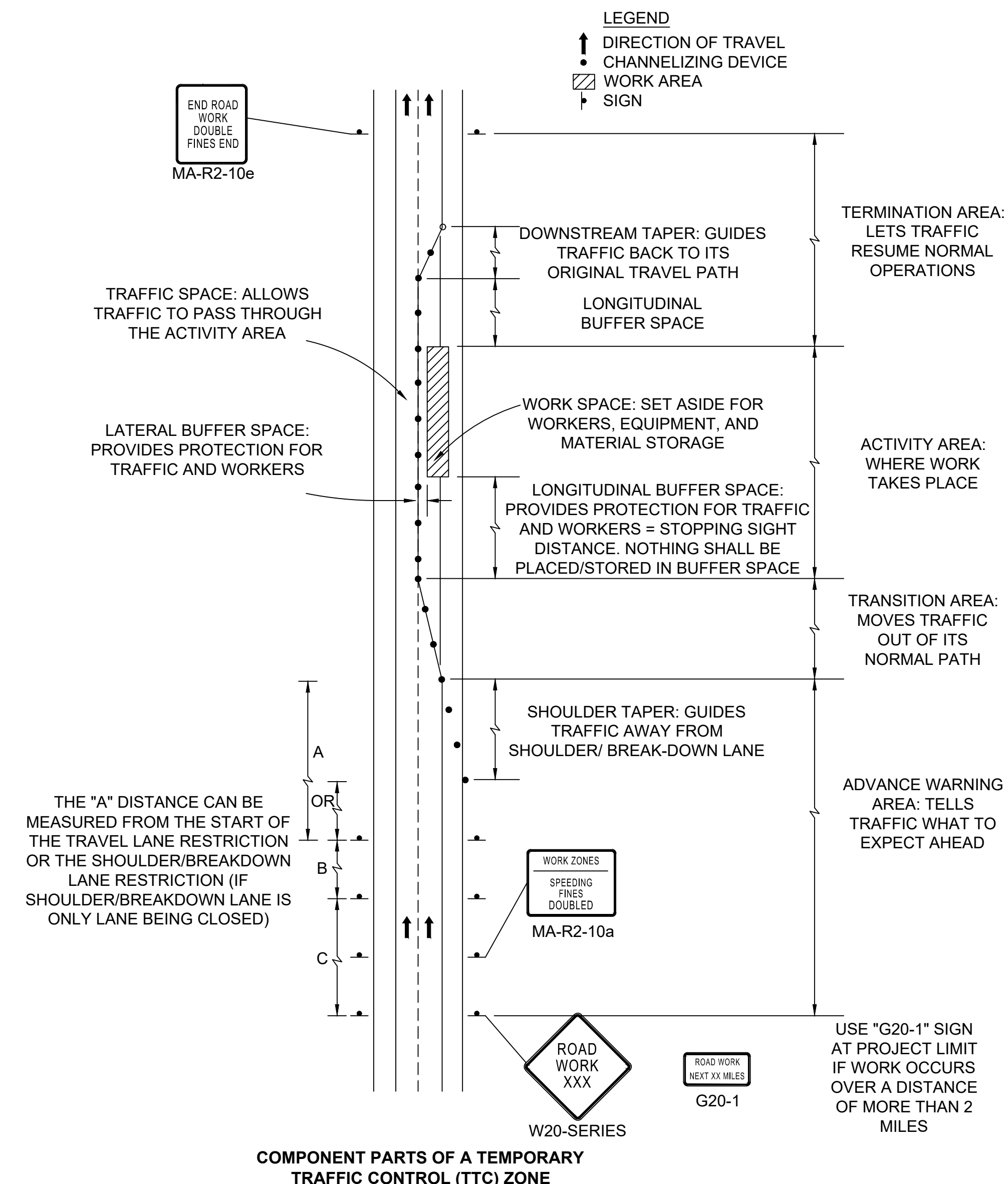
SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

Source: Table 6C-4 MUTCD LATEST EDITION

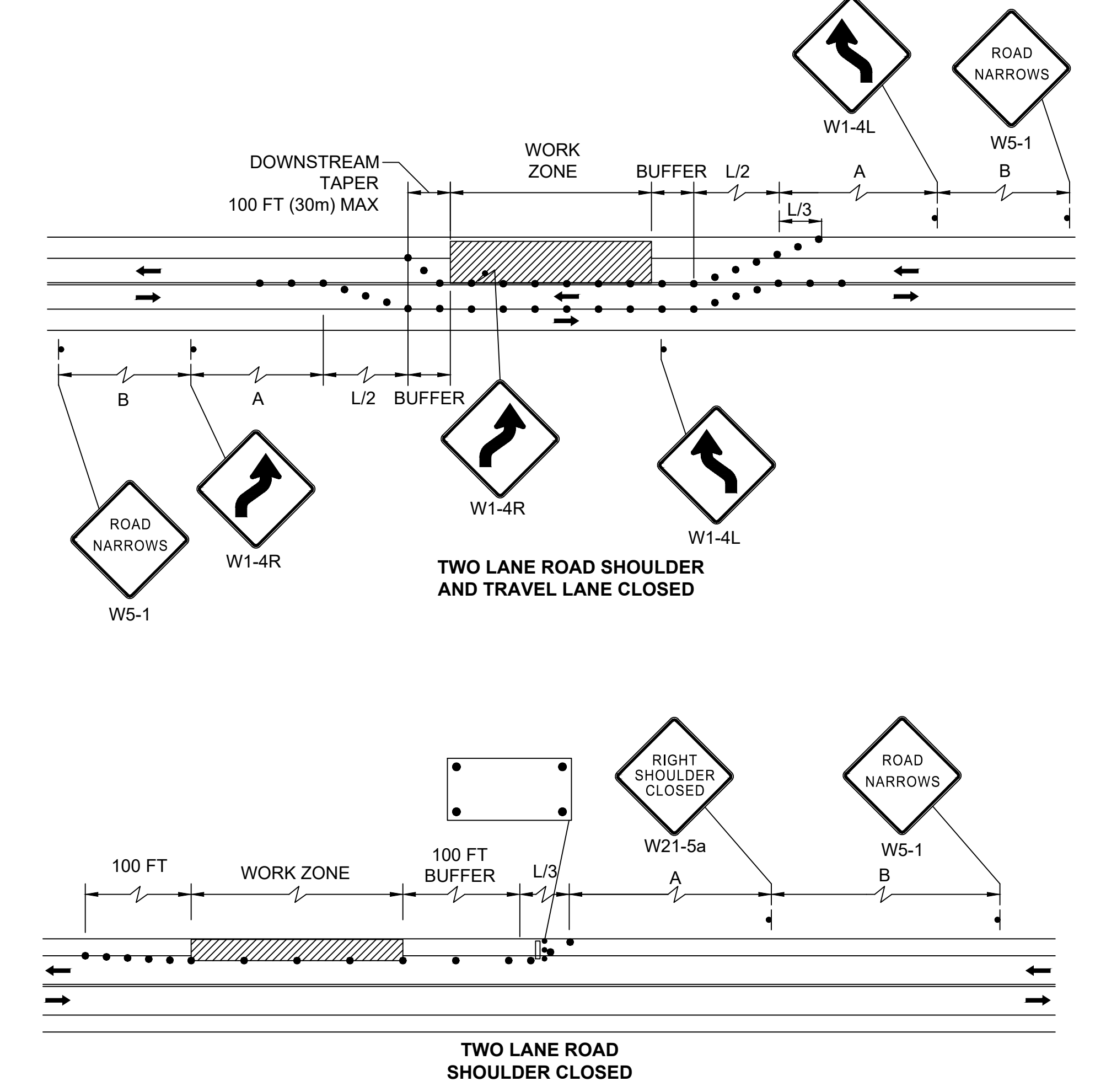
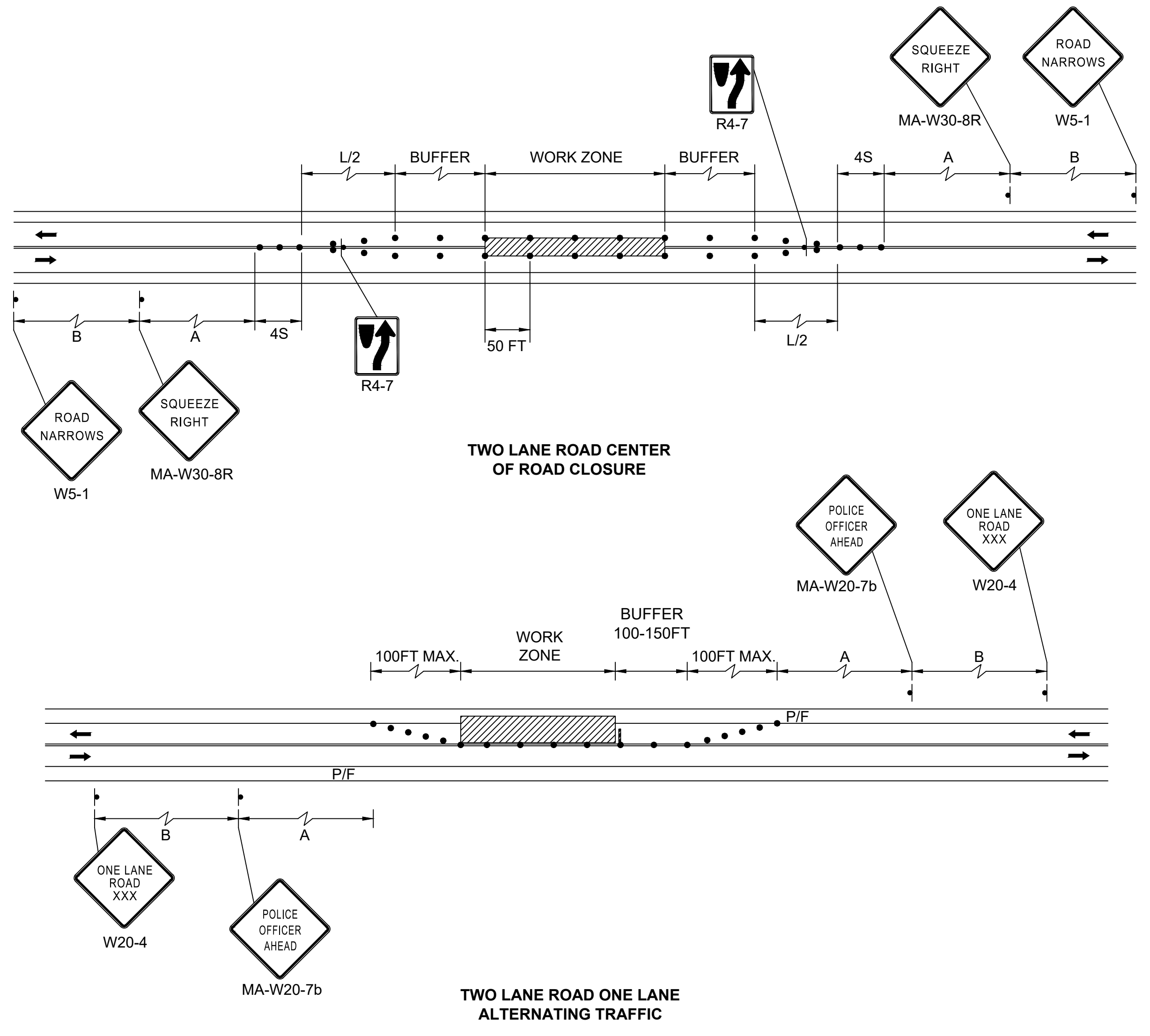
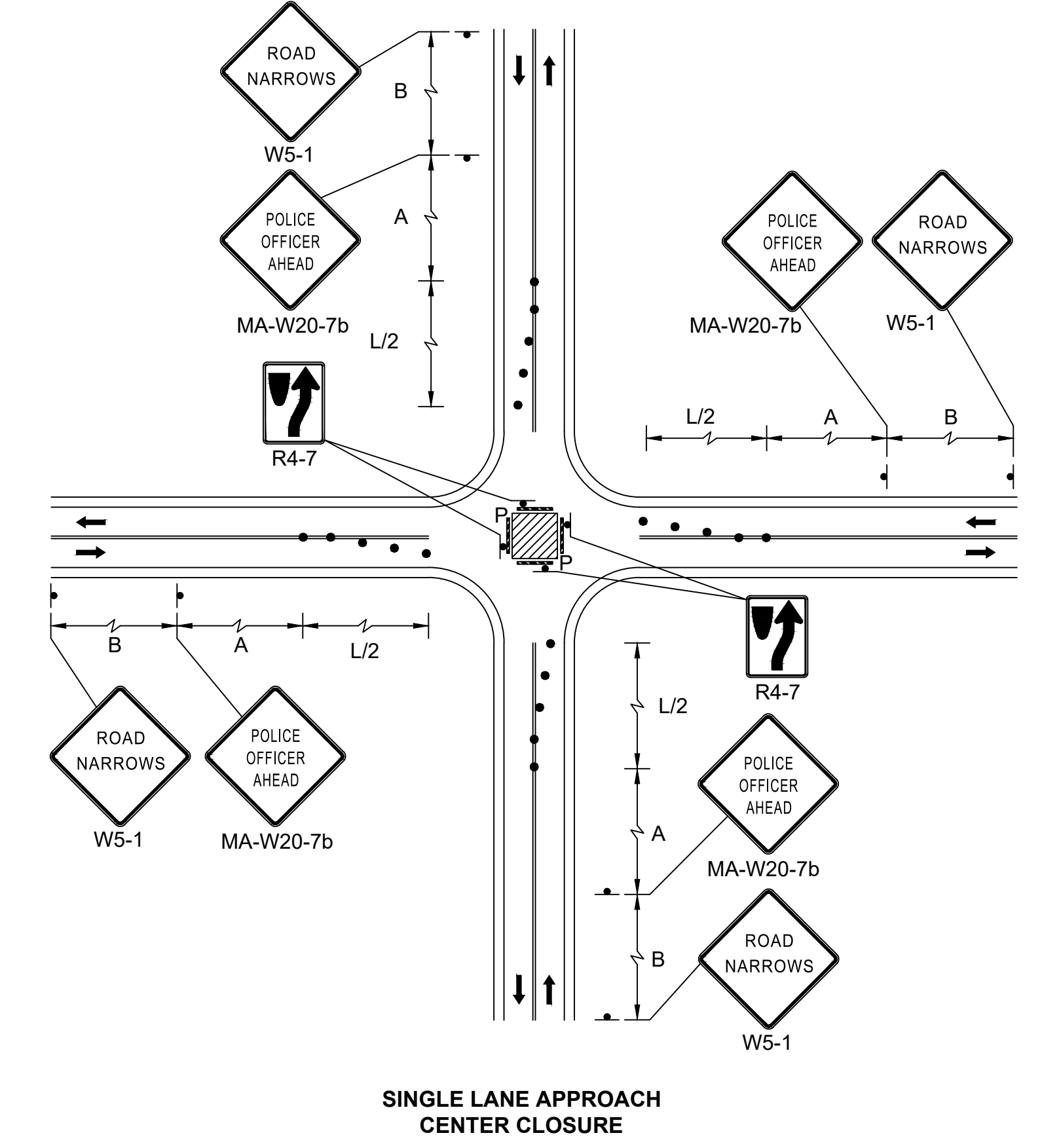
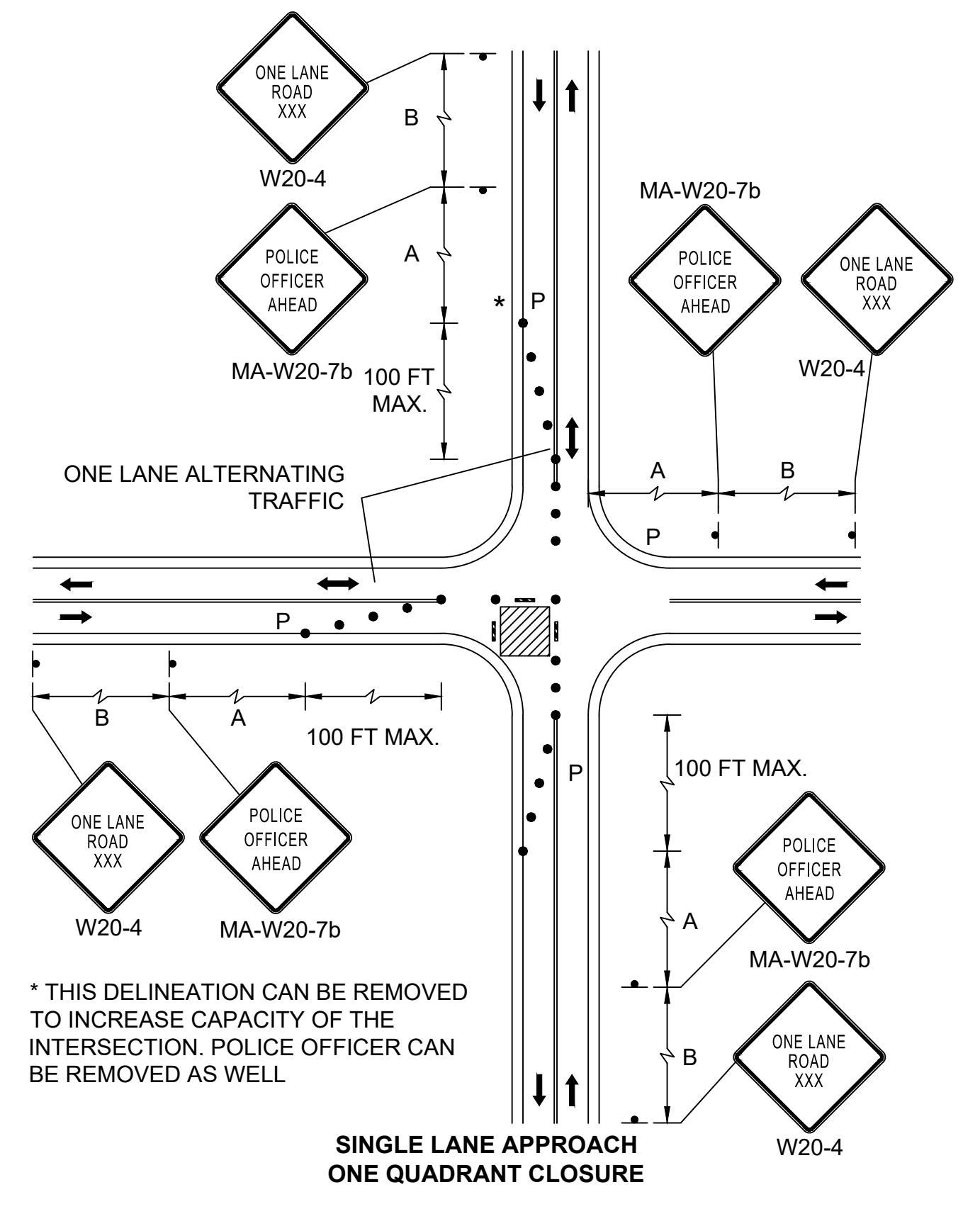


**COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE**

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	23	90
PROJECT FILE NO.		606902	

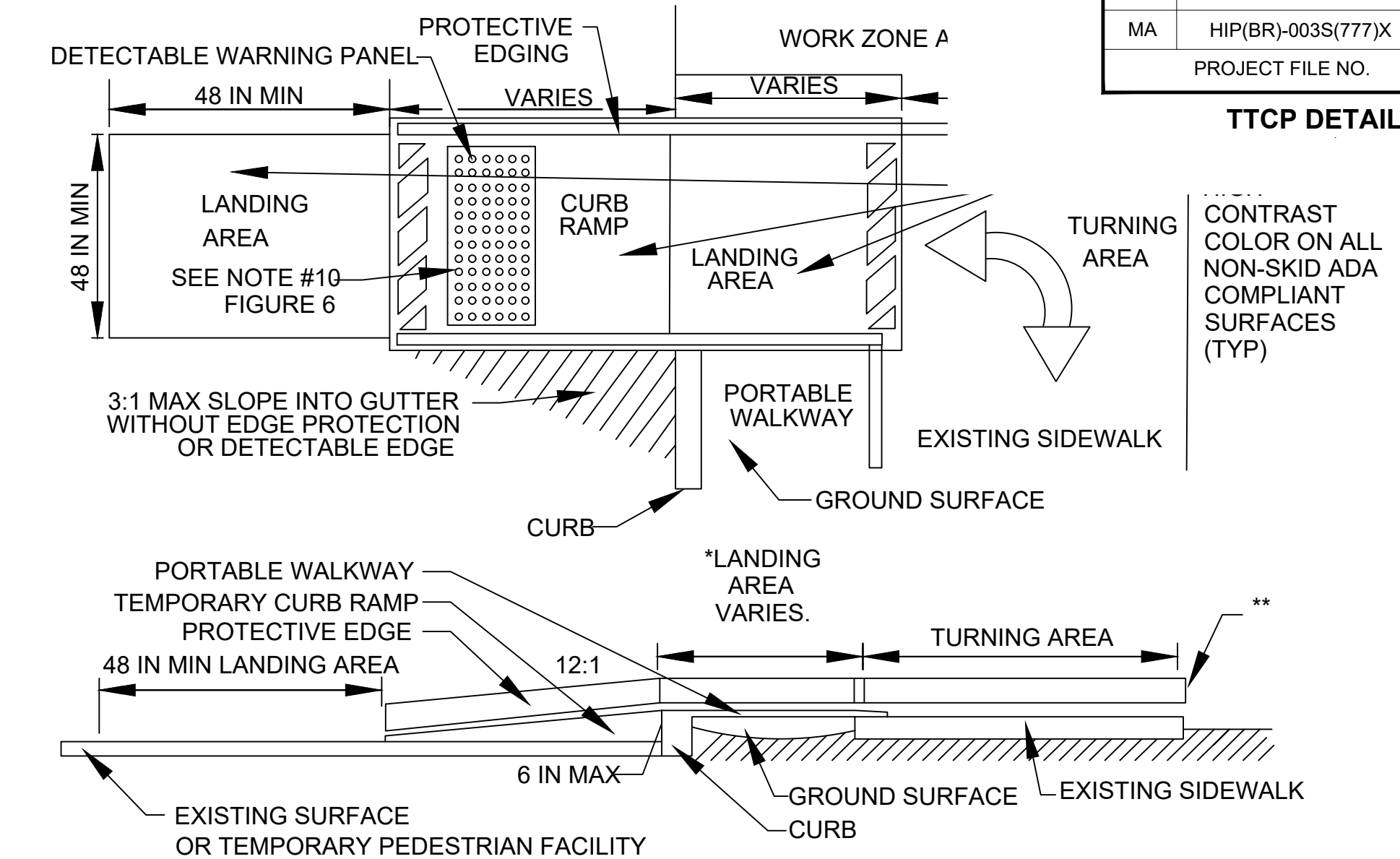
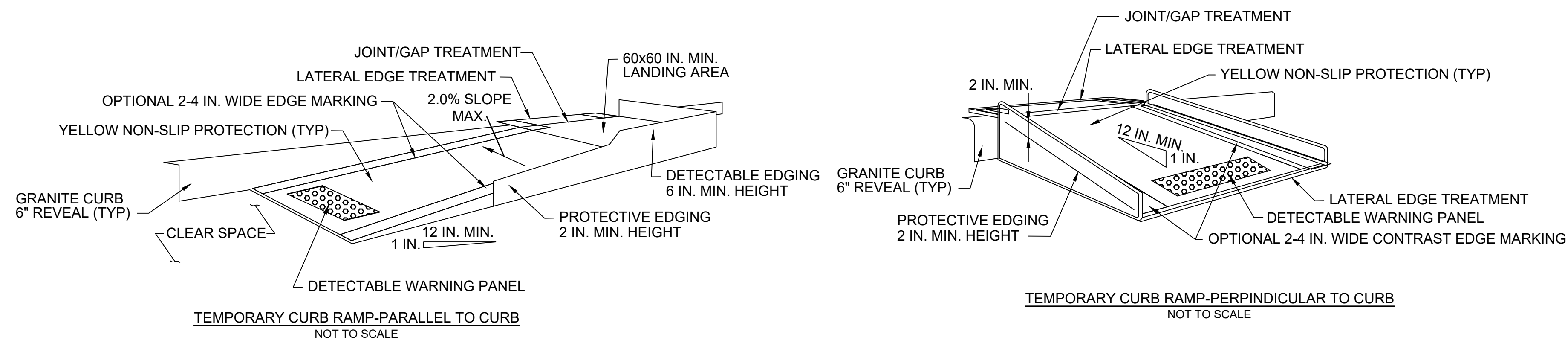
**TTCP DETAILS 2**



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

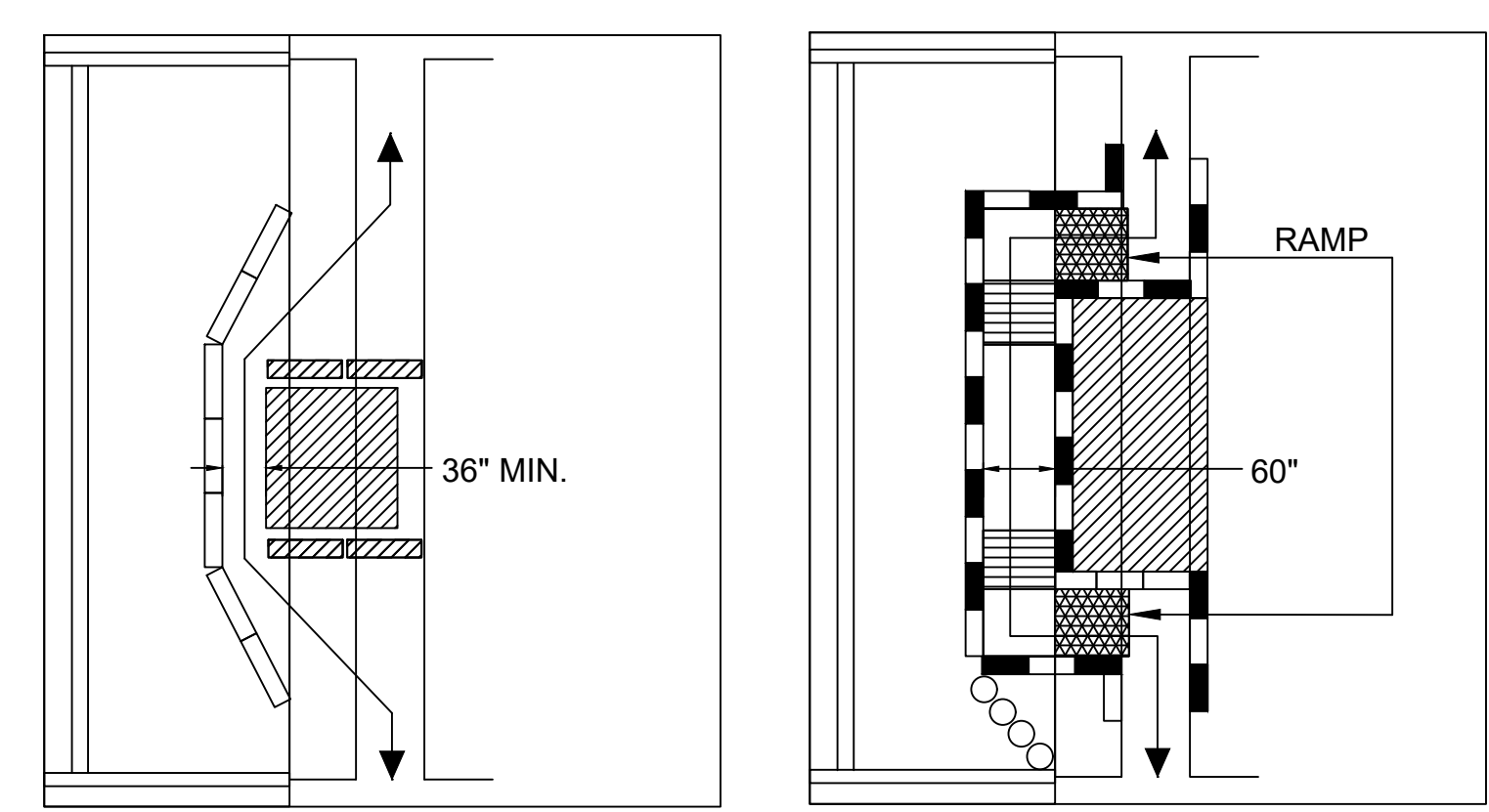
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	24	90
PROJECT FILE NO.		606902	

**TTCP DETAILS 3**



- \* LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- \*\* DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- \*\*\* 60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK.

**TEMPORARY CURB RAMP - TYPE 2**  
NOT TO SCALE



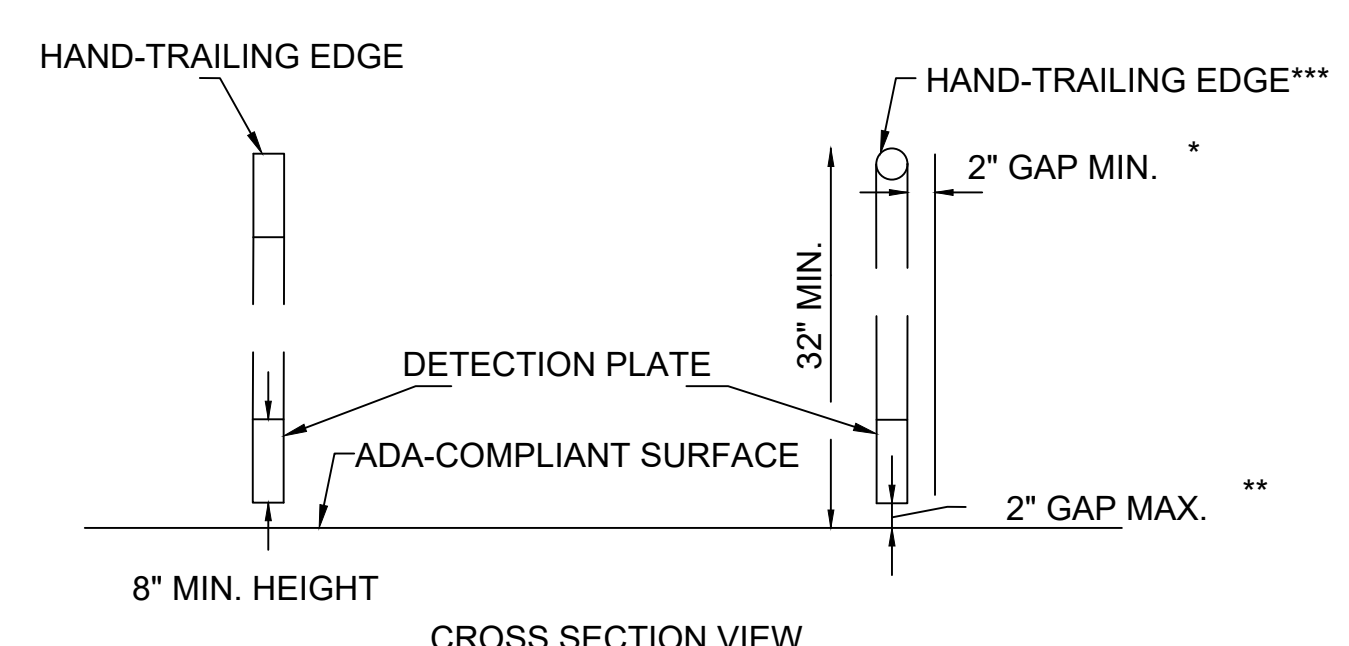
- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES PED-1 & PED-2).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE PROTECTIVE REQUIREMENTS OF A TTC SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.

**AUDIBLE DEVICES**

FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

**NOTES:**

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. PROTECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



**PEDESTRIAN CHANNELIZATION DEVICE**  
NOT TO SCALE

**NOTES:**

- \* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- \*\* A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
- \*\*\* THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH



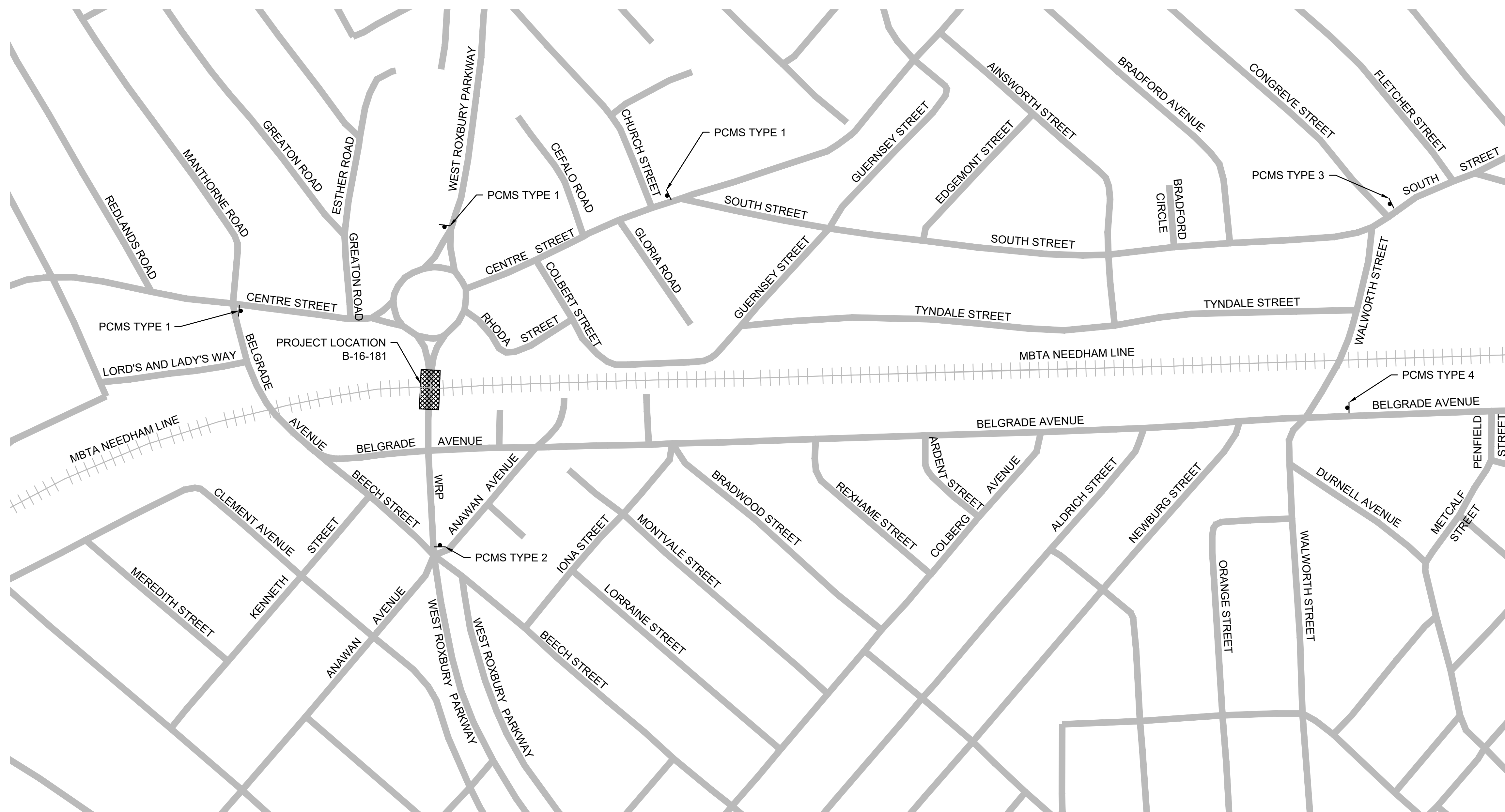
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	25	90
PROJECT FILE NO.		606902	

**ADVANCED PCMS PLAN**

**ADVANCED PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) NOTES:**

1. PORTABLE CHANGEABLE MESSAGE BOARD SIGNS SHALL BE FURNISHED AND PLACED FOR MAJOR HIGHWAY APPROACHES TO THE PROJECT AREA AS SHOWN ON THIS PLAN, AS REQUIRED BY THE ENGINEER. MESSAGES FOR DISPLAY SHALL BE IN ACCORDANCE WITH THE STANDARDS AND THEIR USE WILL BE TO ADVISE THE MOTORISTS OF THE BRIDGE CONSTRUCTION.
2. PLACEMENT LOCATIONS OF PCMS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER.
3. ALL PCMS LEGENDS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER. POSSIBLE LEGENDS ARE SHOWN BELOW.
4. FOR BRIDGE CLOSURE DETAIL, SEE SHEET 29.



**PORTABLE CHANGEABLE MESSAGE SIGN PLAN**

**PCMS TYPE 1 LEGEND:**

TWO WEEKS PRIOR TO CONSTRUCTION:

SCREEN 1			SCREEN 2		
W	R	O	C	O	N
P	A	R	B	E	G
B	R	S	M	M	/
			D	D	/
			Y	Y	

**PCMS TYPE 2 LEGEND:**

TWO WEEKS PRIOR TO CONSTRUCTION:

SCREEN 1			SCREEN 2		
W	R	O	C	O	N
P	A	R	B	E	G
B	R	N	M	M	/
			D	D	/
			Y	Y	

**PCMS TYPE 3 LEGEND:**

TWO WEEKS PRIOR TO CONSTRUCTION:

SCREEN 1			SCREEN 2		
W	R	O	C	O	N
P	A	R	B	E	G
B	R	S	M	M	/
			D	D	/
			Y	Y	

DURING CONSTRUCTION

SCREEN 1			SCREEN 2		
W	R	O		S	E
P	A	R		A	L
S	C	C		R	O

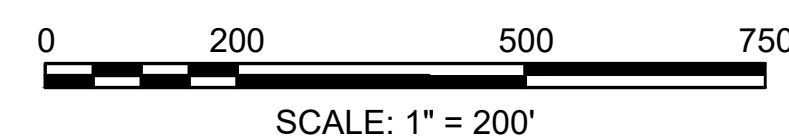
**PCMS TYPE 4 LEGEND:**

TWO WEEKS PRIOR TO CONSTRUCTION:

SCREEN 1			SCREEN 2		
W	R	O	C	O	N
P	A	R	B	E	G
B	R	N	M	M	/
			D	D	/
			Y	Y	

DURING CONSTRUCTION

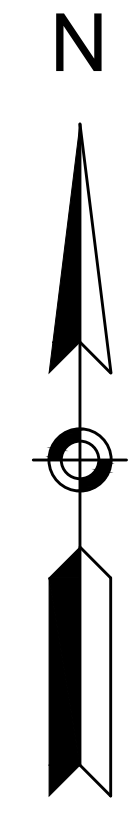
SCREEN 1			SCREEN 2		
W	R	O		S	E
P	A	R		A	L
N	C	C		R	O



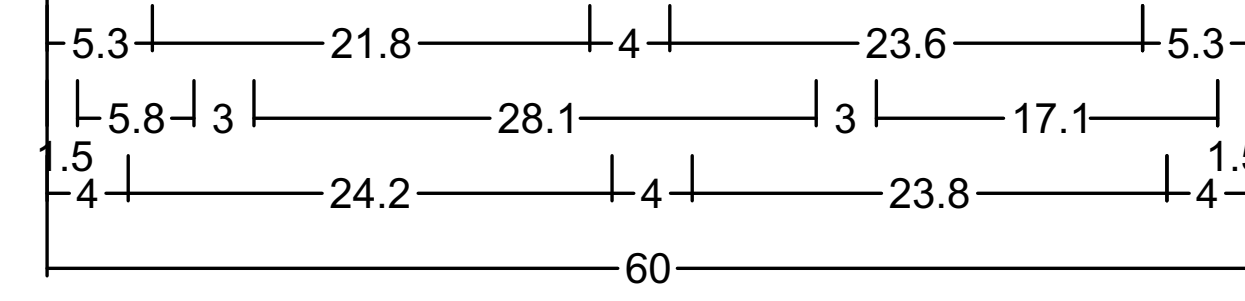
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	26	90
PROJECT FILE NO. 606902			

**DETOUR PLAN**

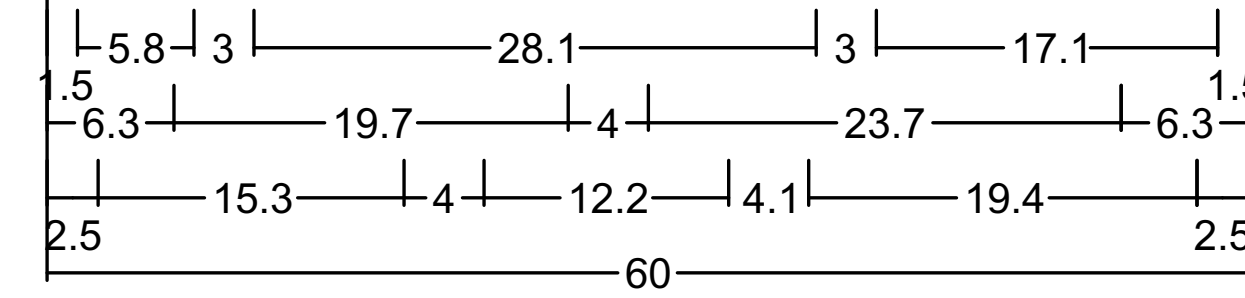


**BRIDGE CLOSED  
W. ROXBURY Pkwy  
FOLLOW DETOUR**



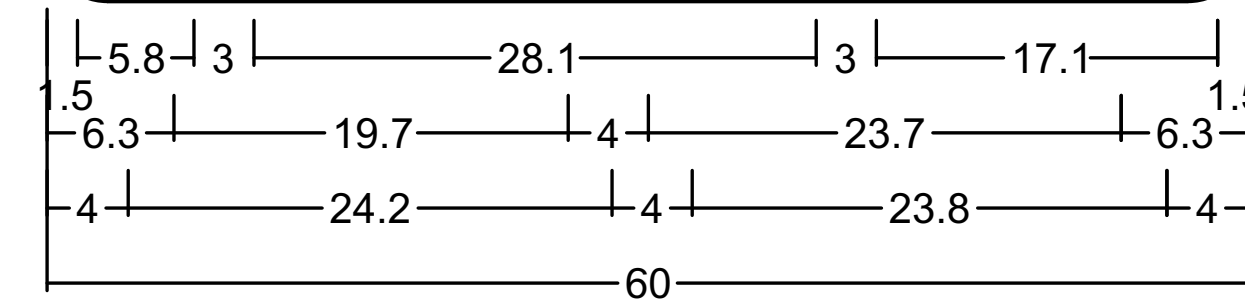
3.0" Radius, 1.0" Border, Black on Fluorescent orange;  
 "BRIDGE CLOSED", C 2K 80% spacing;  
 "W. ROXBURY Pkwy", C 2K 70% spacing;  
 "FOLLOW DETOUR", C 2K 80% spacing;  
**SP-1**  
 NOT TO SCALE

**W. ROXBURY Pkwy  
SOUTH CLOSED  
SEEK ALT ROUTE**

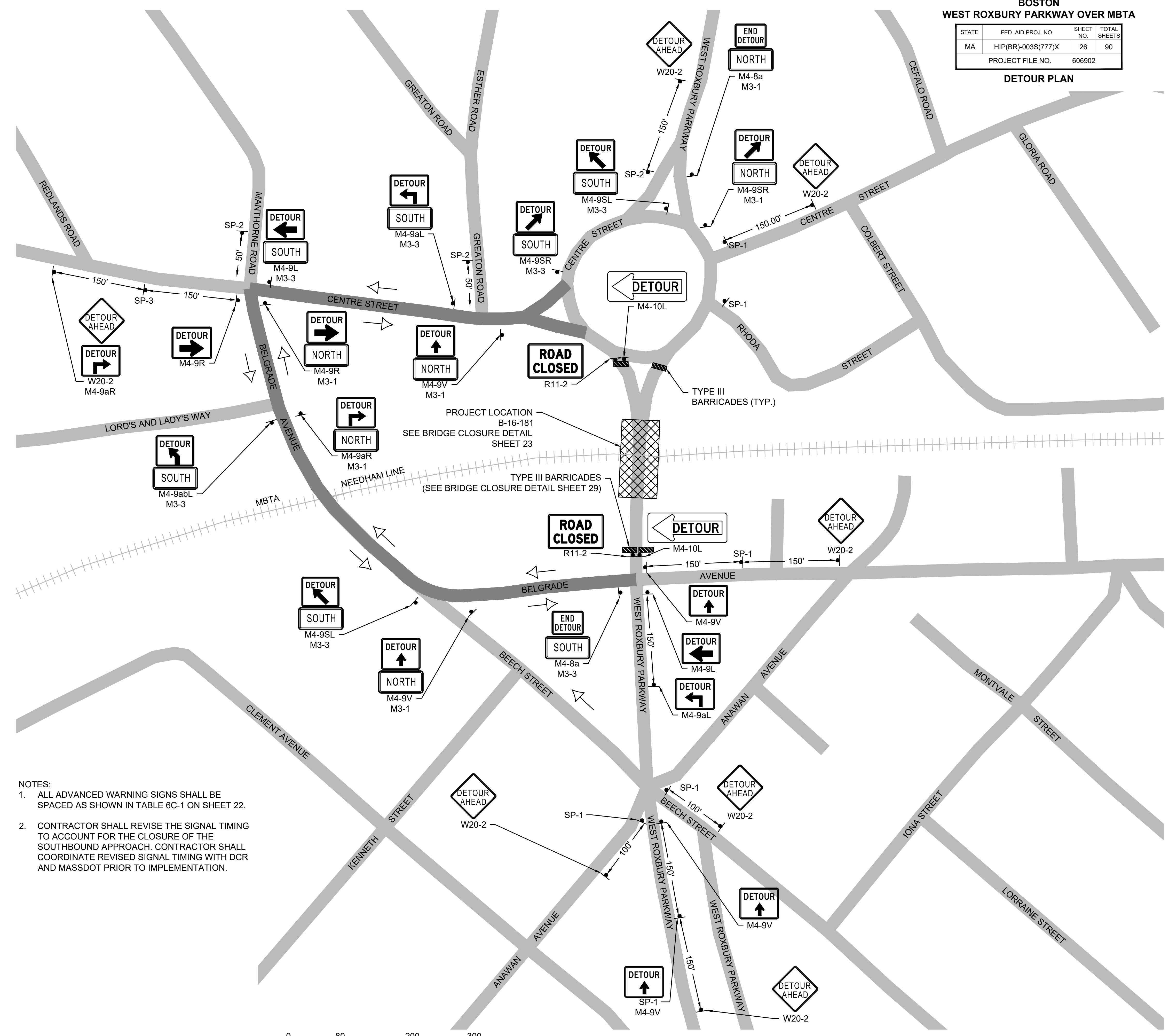


3.0" Radius, 1.0" Border, Black on Fluorescent orange;  
 "W. ROXBURY Pkwy", C 2K 70% spacing;  
 "SOUTH CLOSED", C 2K 80% spacing;  
 "SEEK ALT. ROUTE", C 2K 80% spacing;  
**SP-2**  
 NOT TO SCALE

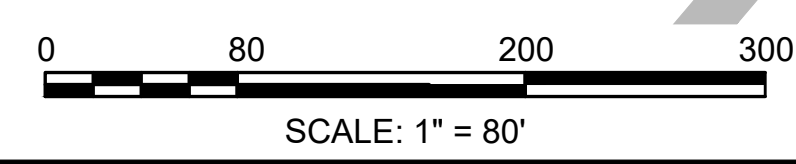
**W. ROXBURY Pkwy  
SOUTH CLOSED  
FOLLOW DETOUR**



3.0" Radius, 1.0" Border, Black on Fluorescent orange;  
 "W. ROXBURY Pkwy", C 2K 70% spacing;  
 "SOUTH CLOSED", C 2K 80% spacing;  
 "FOLLOW DETOUR", C 2K 80% spacing;  
**SP-3**  
 NOT TO SCALE



- NOTES:
1. ALL ADVANCED WARNING SIGNS SHALL BE SPACED AS SHOWN IN TABLE 6C-1 ON SHEET 22.
  2. CONTRACTOR SHALL REVISE THE SIGNAL TIMING TO ACCOUNT FOR THE CLOSURE OF THE SOUTHBOUND APPROACH. CONTRACTOR SHALL COORDINATE REVISED SIGNAL TIMING WITH DCR AND MASSDOT PRIOR TO IMPLEMENTATION.

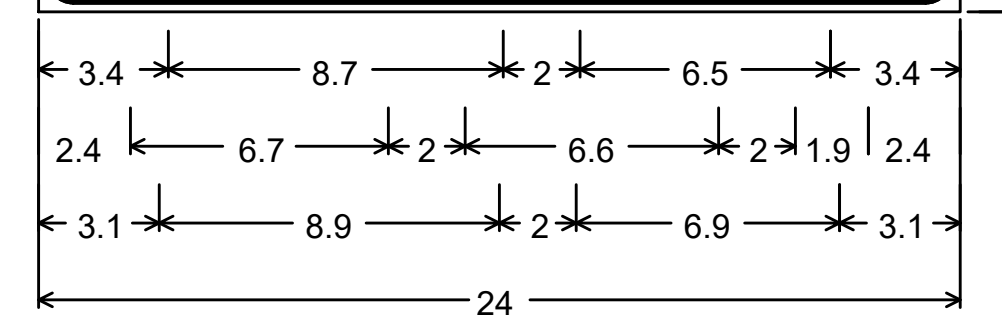


**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	27	90
PROJECT FILE NO.		606902	

**PEDESTRIAN DETOUR**

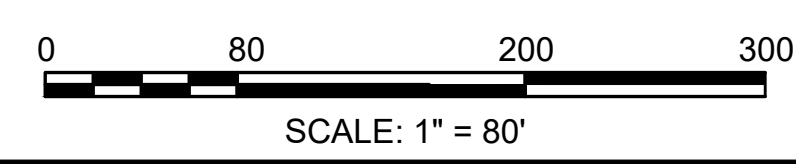
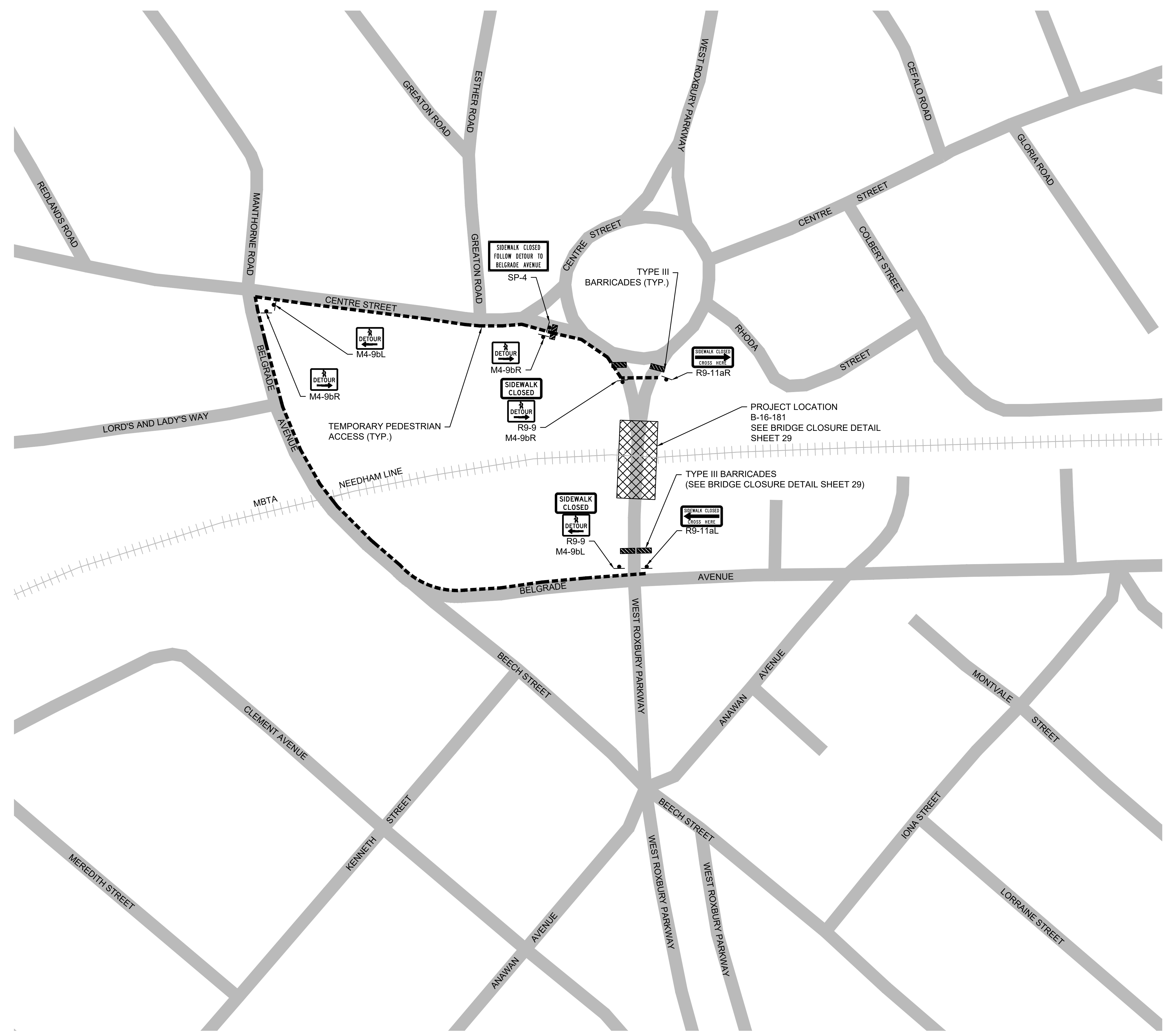
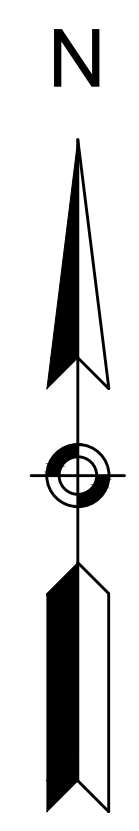
**SIDEWALK CLOSED  
FOLLOW DETOUR TO  
BELGRADE AVENUE**



0.9" Radius, 0.4" Border, 0.2" Indent, Black on Orange;  
 "SIDEWALK CLOSED", B 2K;  
 "FOLLOW DETOUR TO", B 2K;  
 "BELGRADE AVENUE", B 2K;

**SP-4**  
NOT TO SCALE

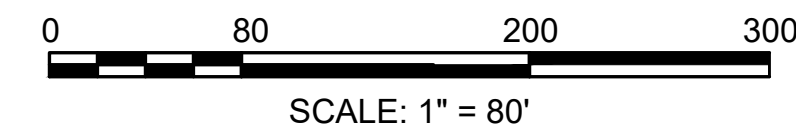
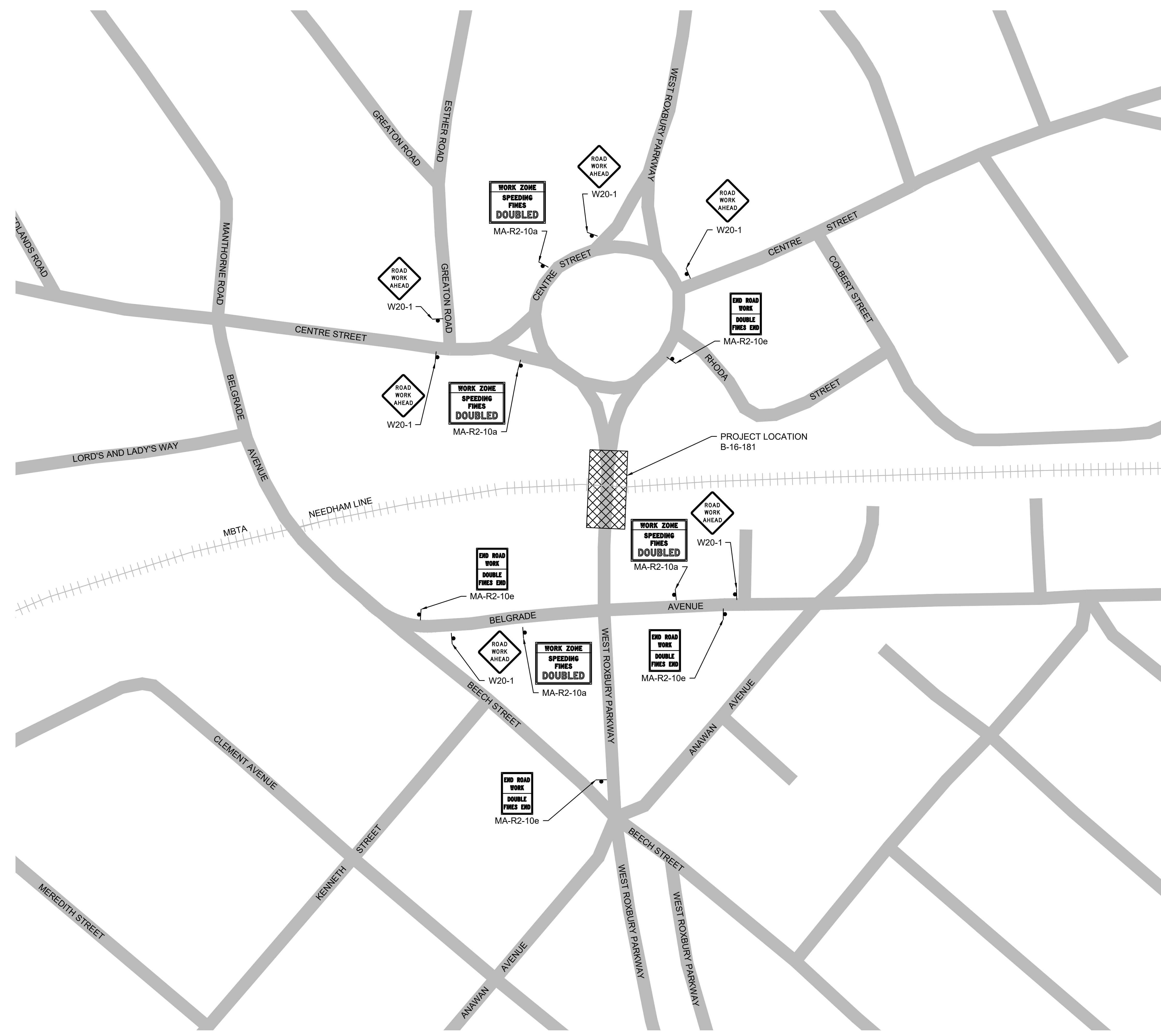
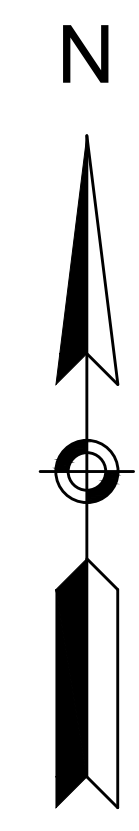
**NOTE:**  
 1. ADVANCED SIGNING PLAN SHALL BE IMPLEMENTED WHEN DETOUR IS NOT IN PLACE AND SHALL BE COORDINATED WITH STANDARD TTCP DAILY SETUP DETAILS ON SHEET 23. ACTUAL LOCATION OF ADVANCED SIGNS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	28	90
PROJECT FILE NO.		606902	

**ADVANCED SIGNING PLAN**





# CONSTRUCTION SIGN SUMMARY

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	30	90
PROJECT FILE NO.		606902	

**CONSTRUCTION SIGN SUMMARY**

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER		
MA-R2-10a	48"	36"					4	WHITE H/I			12.00	48.00
MA-R2-10e	36"	48"					4	FLUOR. ORANGE H/I			12.00	48.00
MA-W20-7b	36"	36"					4	FLUOR. ORANGE H/I			9.00	36.00
MA-W30-8R	36"	36"					2	FLUOR. ORANGE H/I			9.00	18.00
M3-1	24"	12"					6	WHITE H/I			2.00	12.00
M3-3	24"	12"					7	WHITE H/I			2.00	14.00
M4-8a	24"	18"					2				3.00	6.00
M4-9V	30"	24"					5				5.00	25.00
M4-9L	30"	24"					2		BLACK H/I	BLACK H/I	5.00	10.00
M4-9aL	30"	24"					2		BLACK H/I	BLACK H/I	5.00	10.00
M4-9SL	30"	24"					2		BLACK H/I	BLACK H/I	5.00	10.00
M4-9abL	30"	24"					1	FLUOR. ORANGE H/I			5.00	5.00
M4-9R	30"	24"					2				5.00	10.00
M4-9aR	30"	24"					2				5.00	10.00
M4-9SR	30"	24"					2				5.00	10.00
M4-9bL	30"	24"					2				5.00	10.00
M4-9bR	30"	24"					3				5.00	15.00
M4-10L	48"	18"					2				6.00	12.00

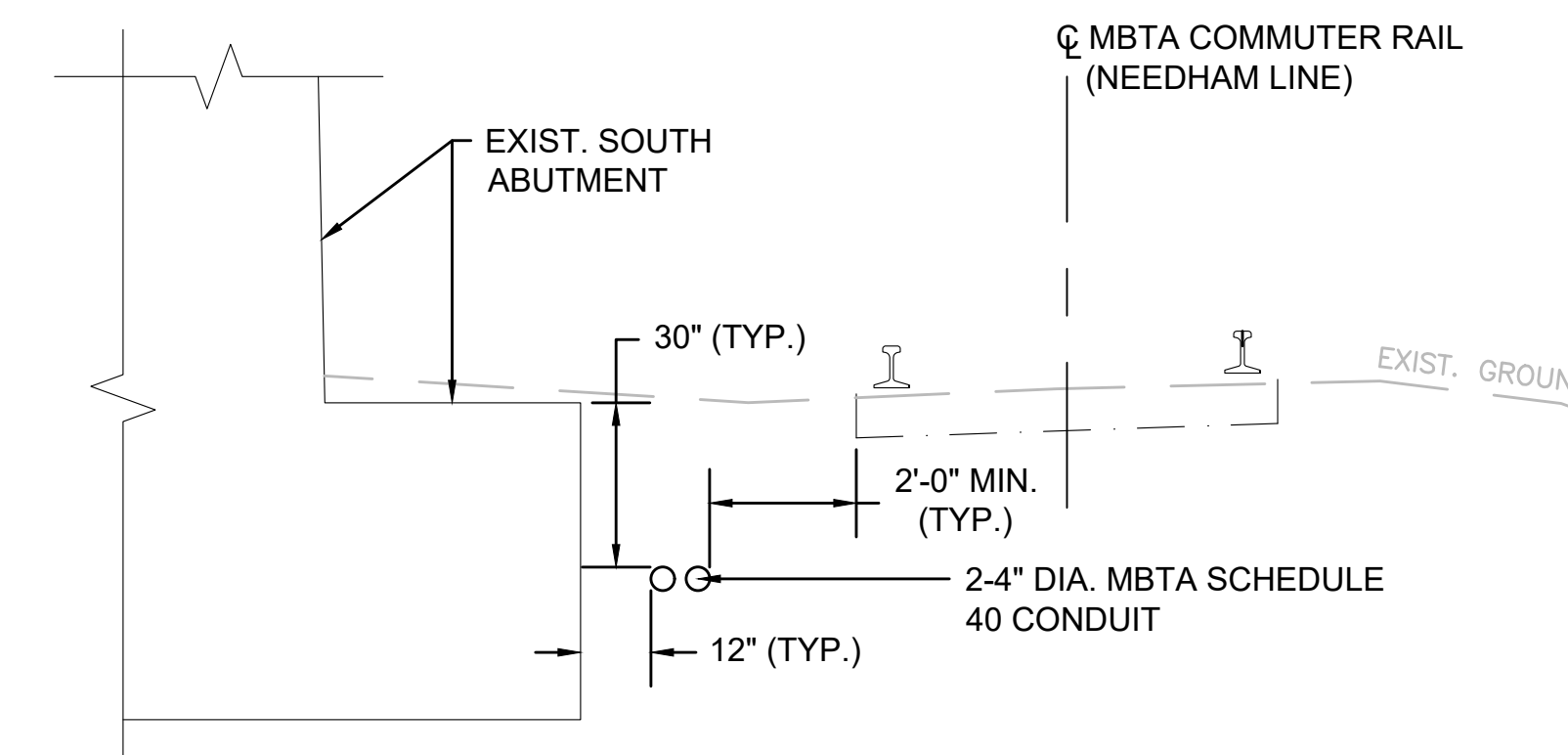
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER		
R4-7	24"	30"					2				3.75	7.50
R9-9	24"	12"					2				2.00	4.00
R9-11aL	24"	12"					1	WHITE H/I			2.00	2.00
R9-11aR	24"	12"					1	WHITE H/I			2.00	2.00
R11-2	48"	30"					2				10.00	20.00
W1-4R	36"	36"					2				9.00	18.00
W1-4L	36"	36"					2				9.00	18.00
W5-1	36"	36"					4				9.00	36.00
W20-1 (AHEAD)	36"	36"					6		BLACK H/I	BLACK H/I	9.00	54.00
W20-2 (AHEAD)	36"	36"					7				9.00	63.00
W20-4	36"	36"					4	FLUOR. ORANGE H/I			9.00	36.00
W21-5a	36"	36"					1				9.00	9.00
SP-1	60"	30"	SEE SP-1 DETAIL SHEET 26				6				12.50	75.00
SP-2	60"	30"	SEE SP-2 DETAIL SHEET 26				3				12.50	37.50
SP-3	60"	30"	SEE SP-3 DETAIL SHEET 26				1				12.50	12.50
SP-4	24"	12"	SEE SP-4 DETAIL SHEET 27				1				2.00	2.00

713.50 SF PAID UNDER ITEM 852.

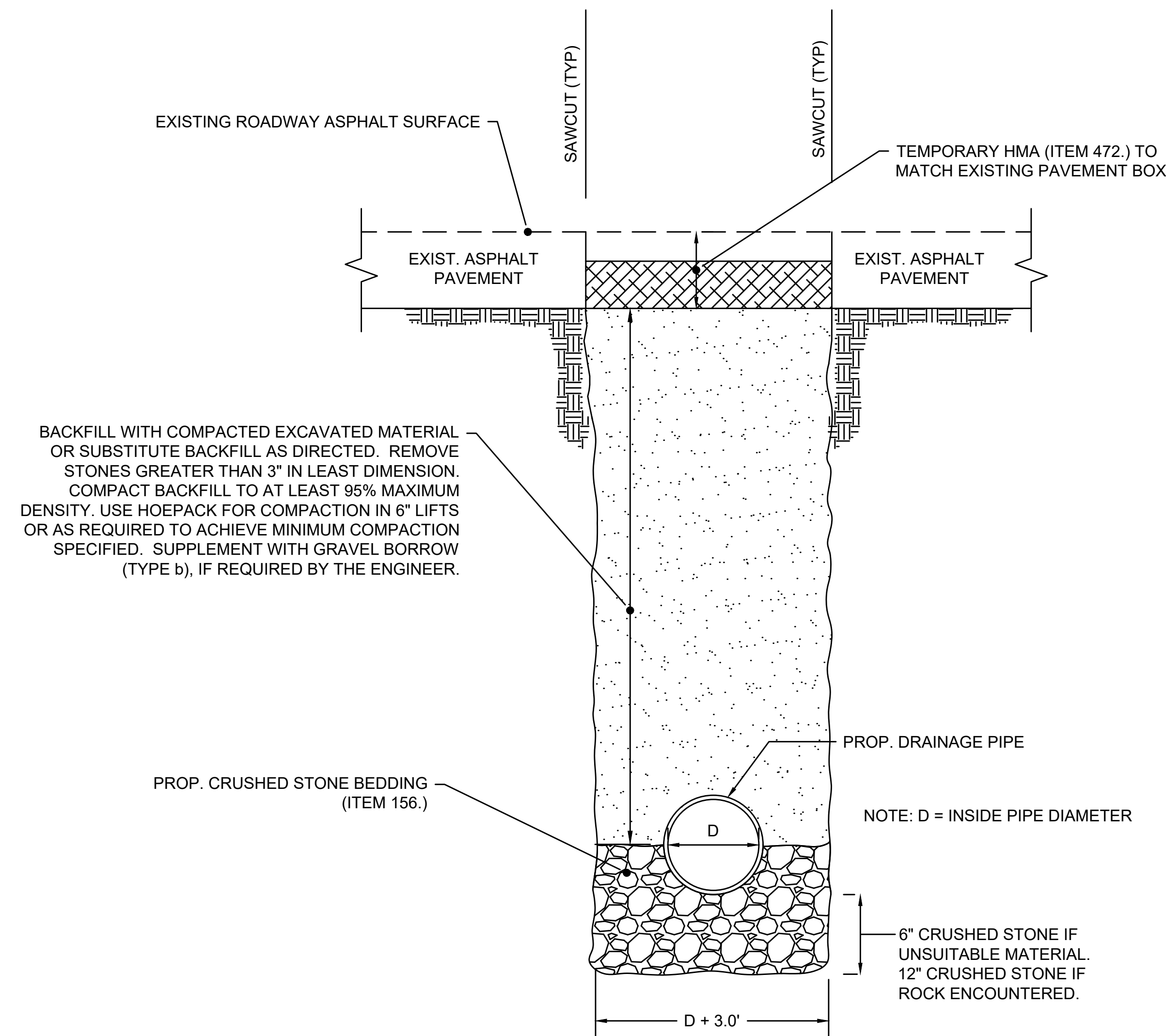
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	31	90
PROJECT FILE NO.		606902	

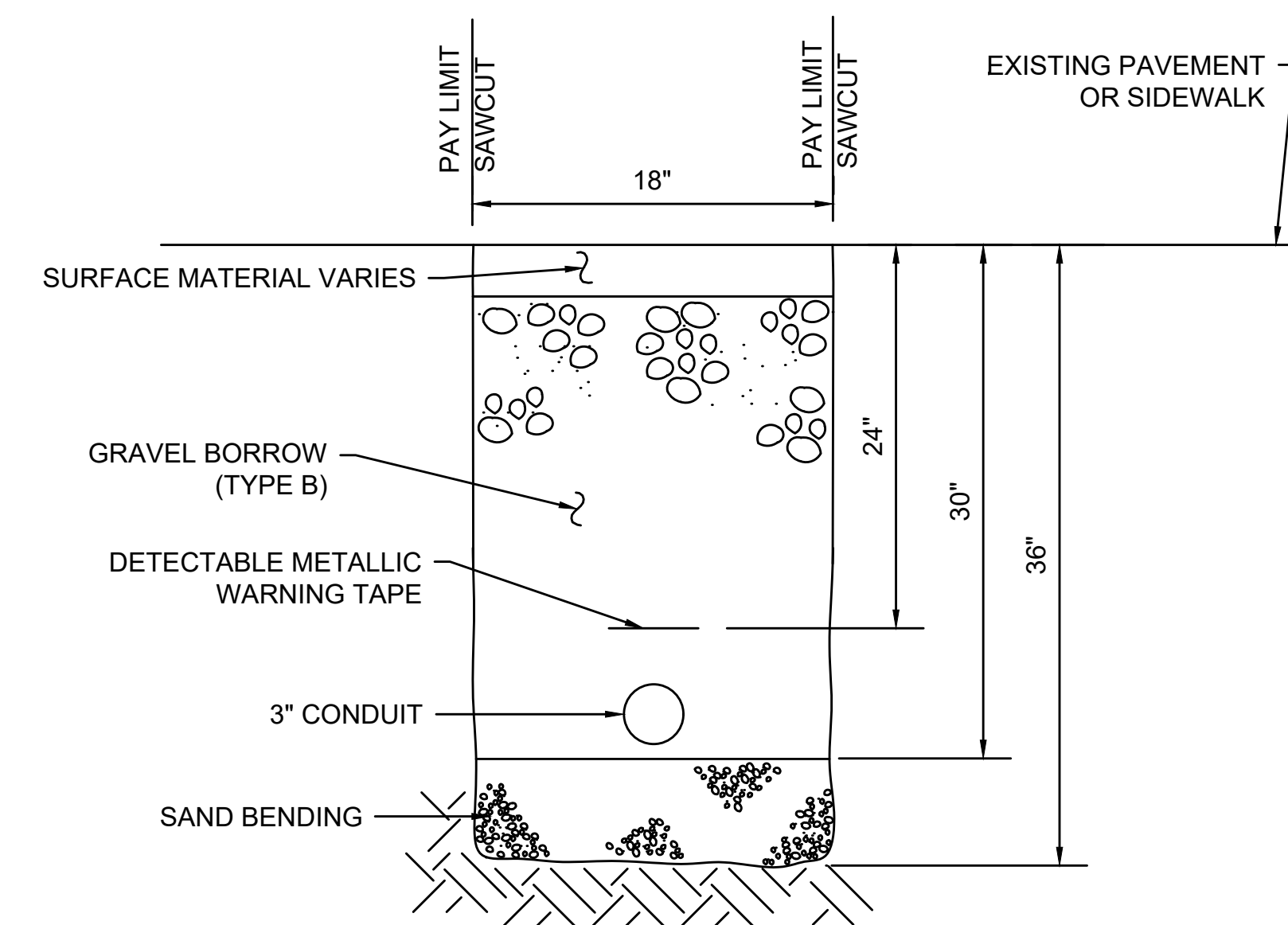
**UTILITY DETAILS**



**CONDUIT DETAIL ADJACENT TO RAILROAD TRACKS**  
NOT TO SCALE



**DRAINAGE TRENCH DETAIL IN EXISTING ROADWAY AREAS**  
NOT TO SCALE

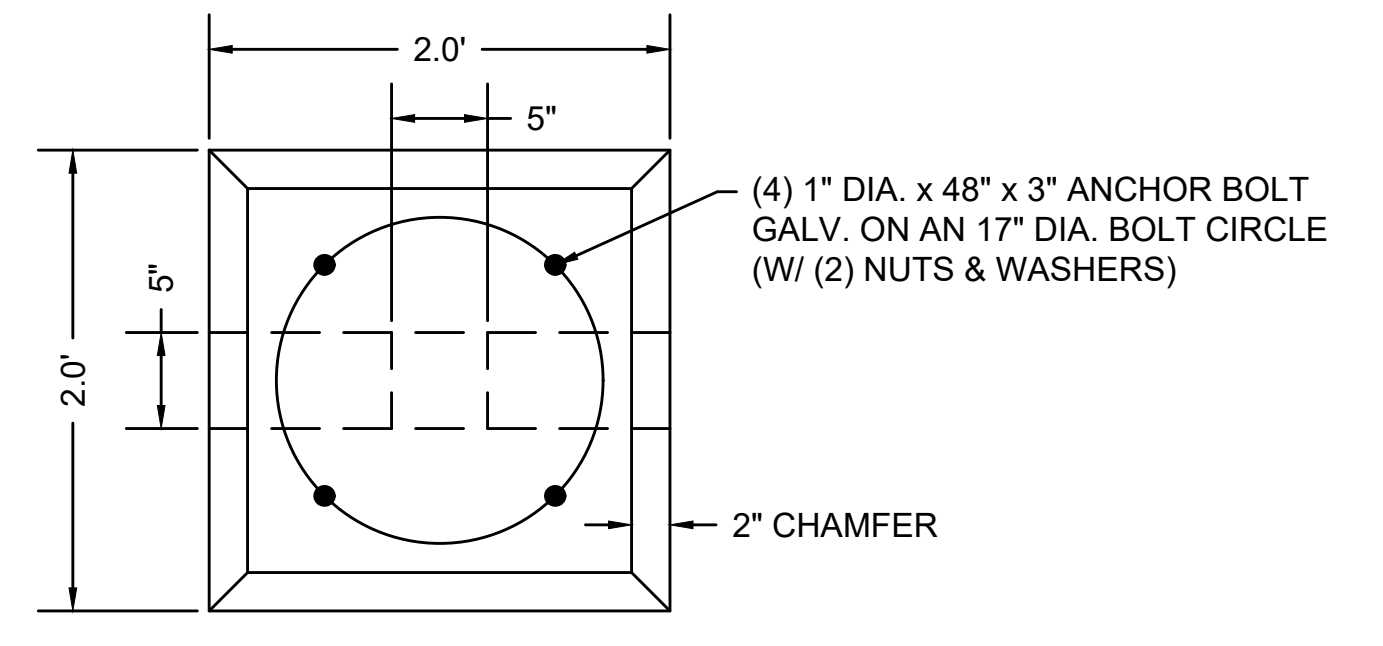


**TRENCH DETAIL TRAFFIC SIGNAL CONDUIT IN FULL DEPTH PAVEMENT, SIDEWALK OR GRASS AREAS**  
NOT TO SCALE

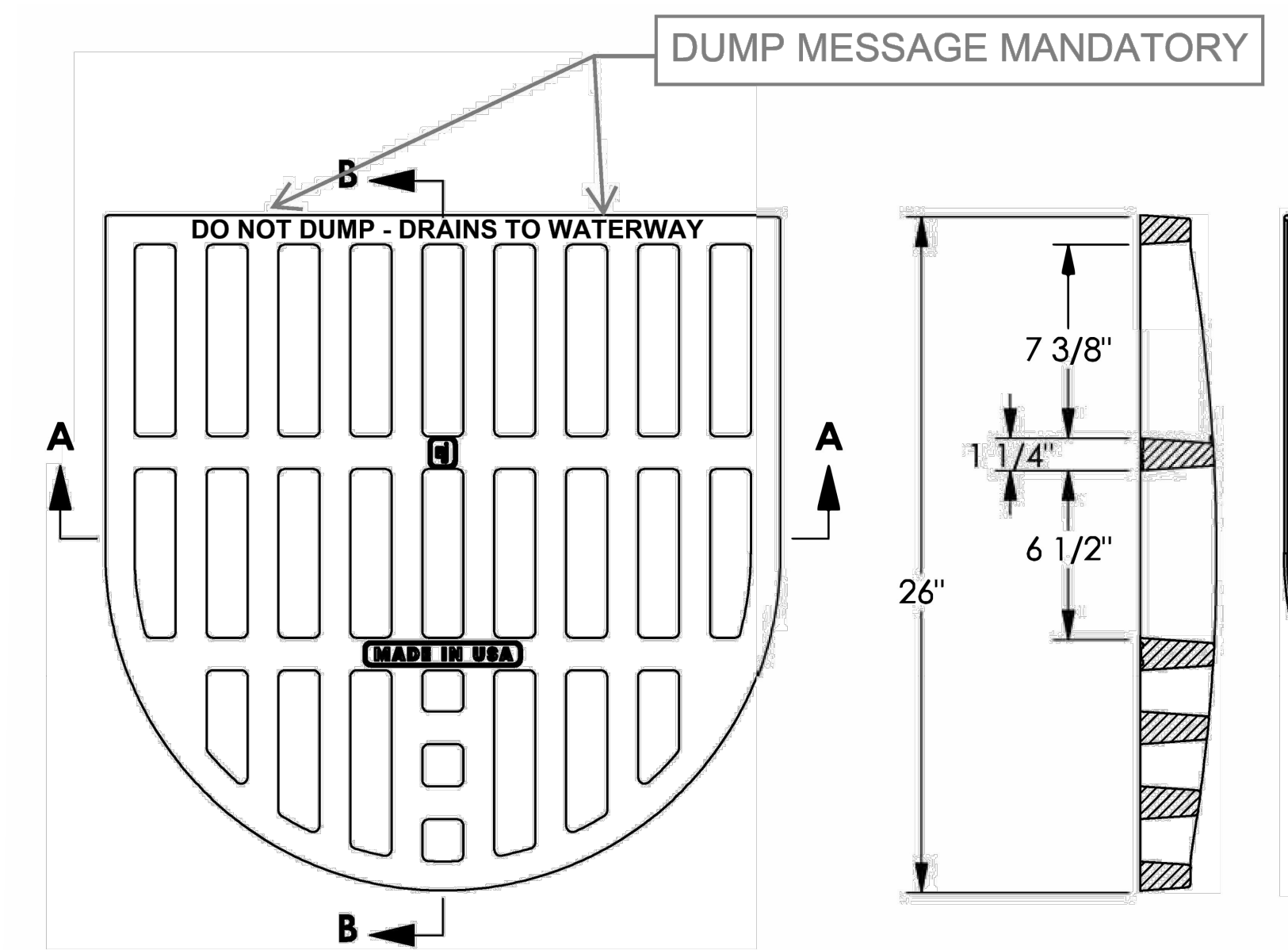
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	32	90
PROJECT FILE NO.		606902	

**UTILITY DETAILS 2**



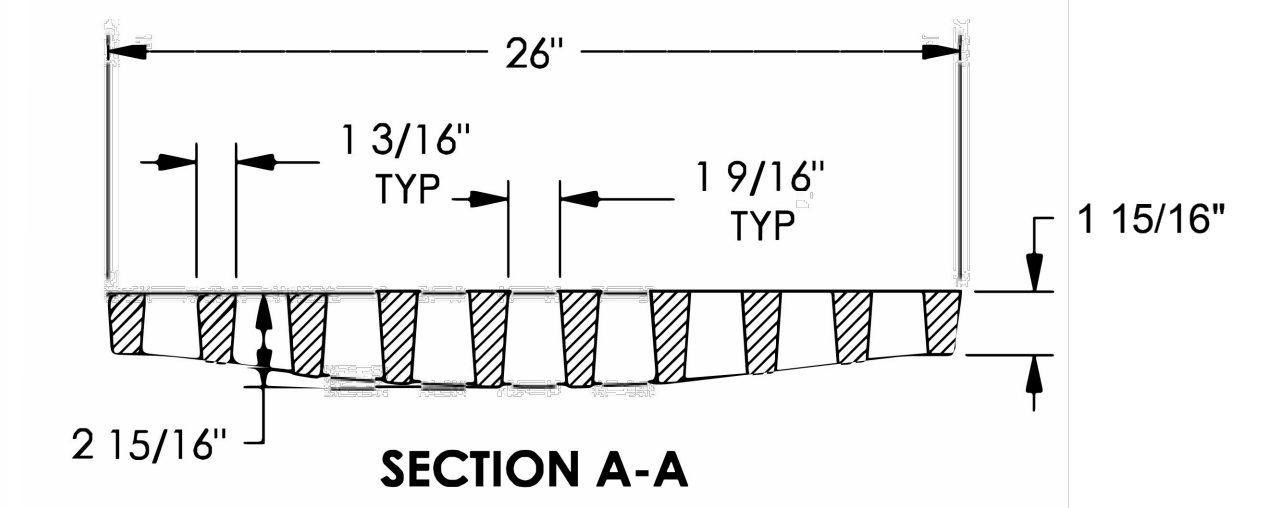
**PLAN VIEW**



**SECTION B-B  
BOTTOM VIEW**

- Materials  
Gray Iron (CL35B)
- Design Load  
Heavy Duty
- Open Area  
256 sq in
- Coating  
Undipped
- √ Designates Machined Surface

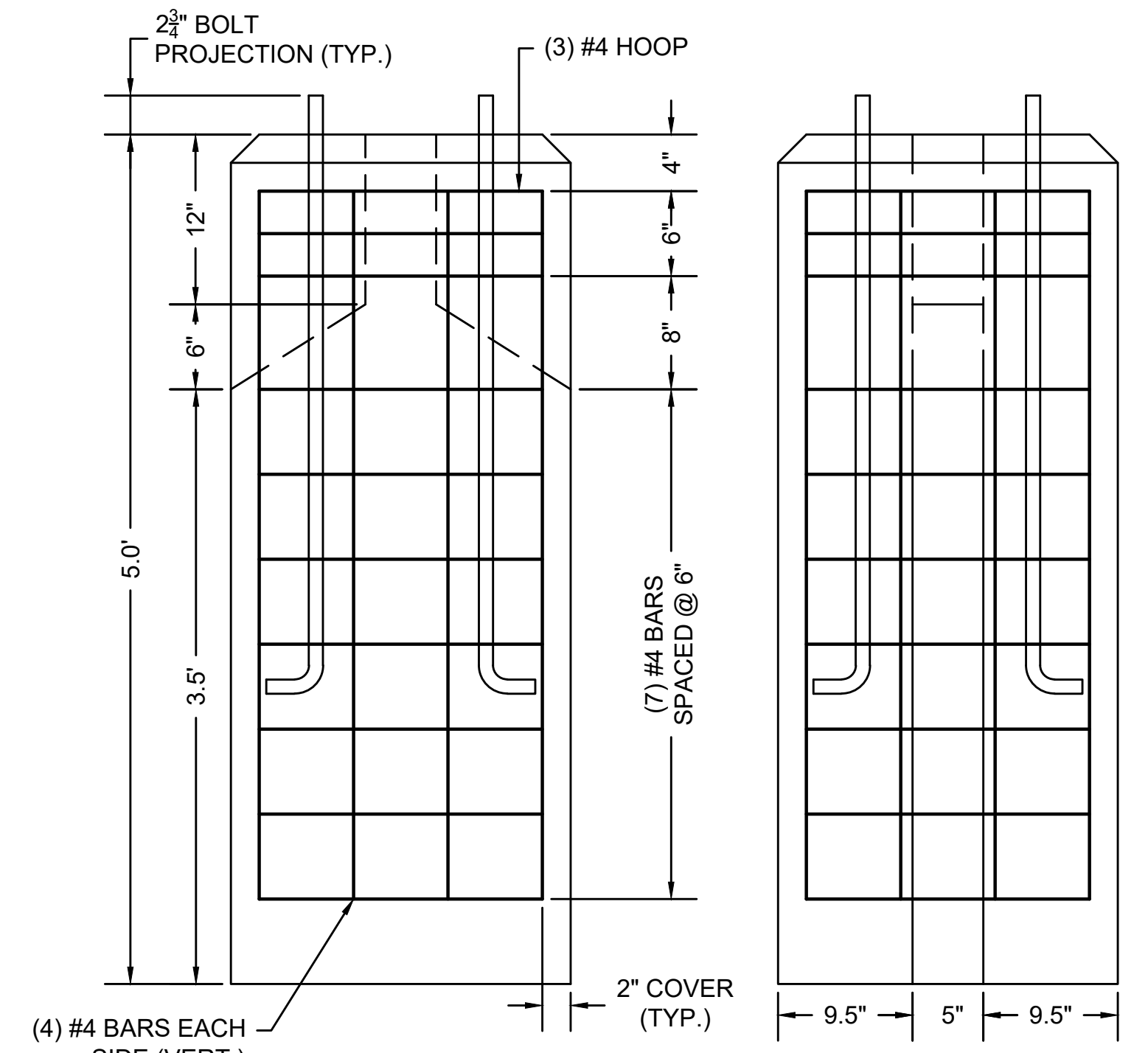
**Certification**  
-ASTM A48  
-Country of Origin: USA



**SECTION A-A**

**MA DCR STANDARD CATCH BASIN GRATE**

NOT TO SCALE

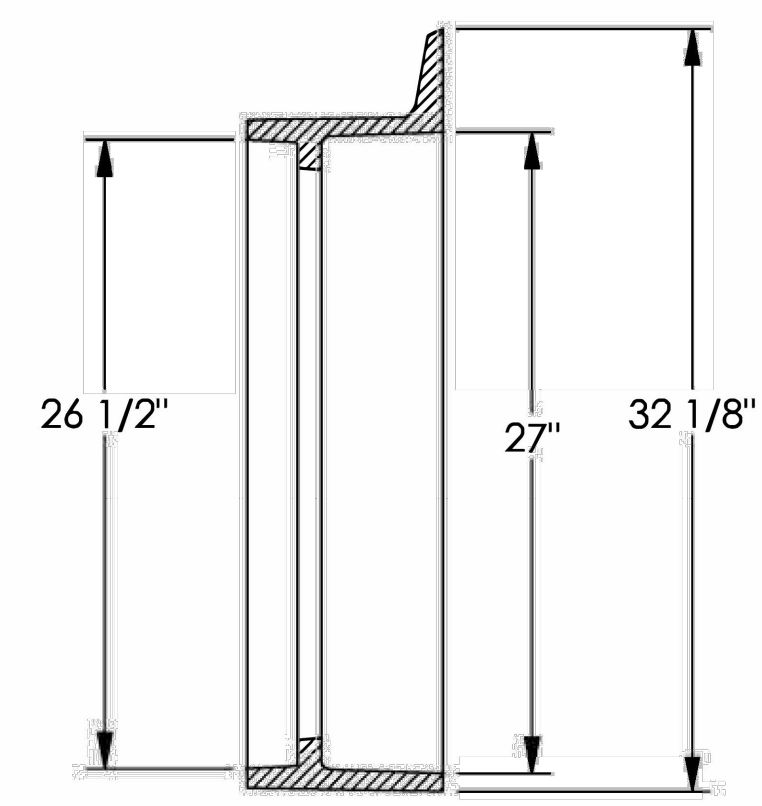
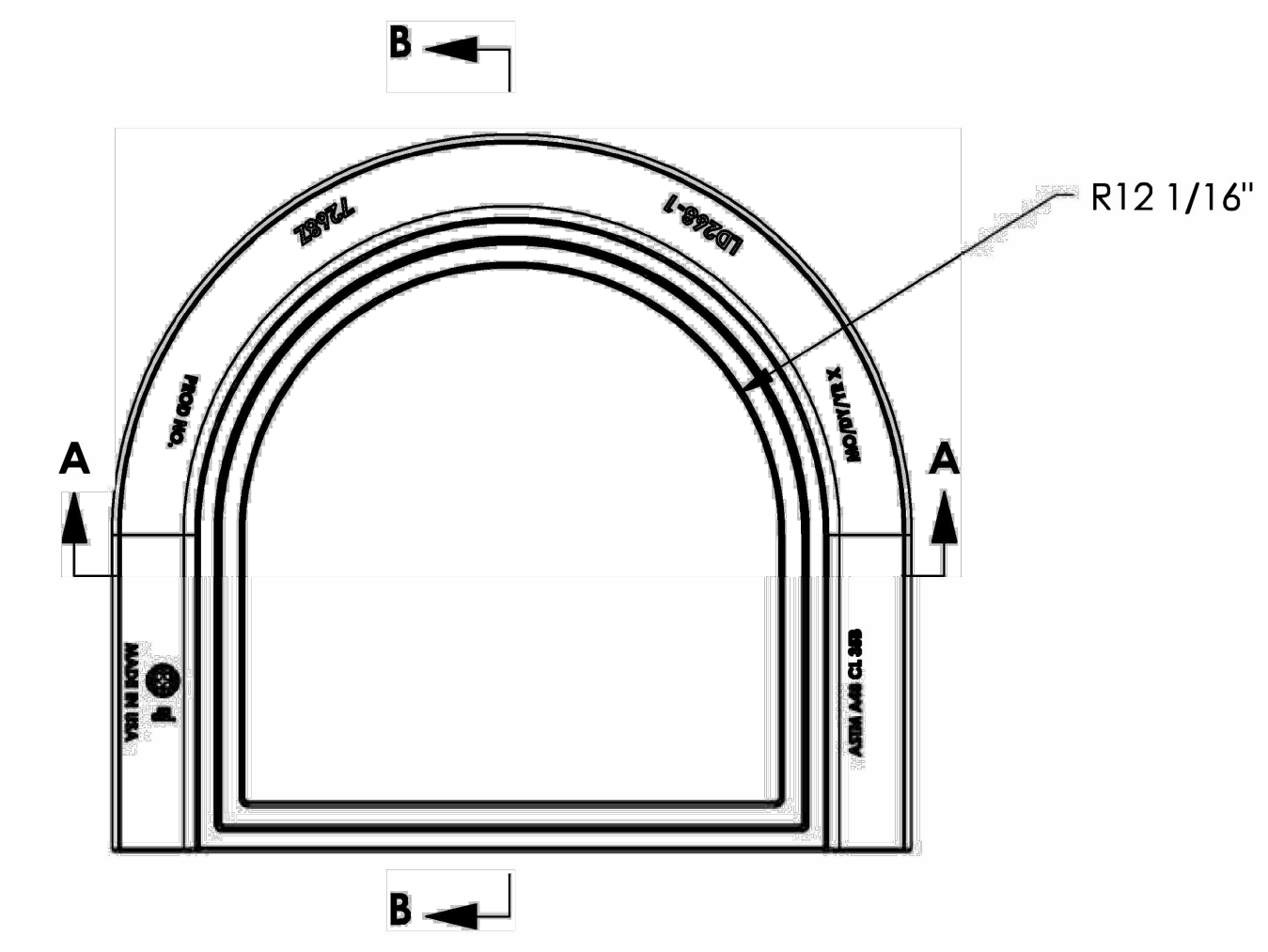


**ELEVATION**

**END VIEW**

**MA DCR STANDARD LIGHT POLE  
FOUNDATION DETAIL**

NOT TO SCALE



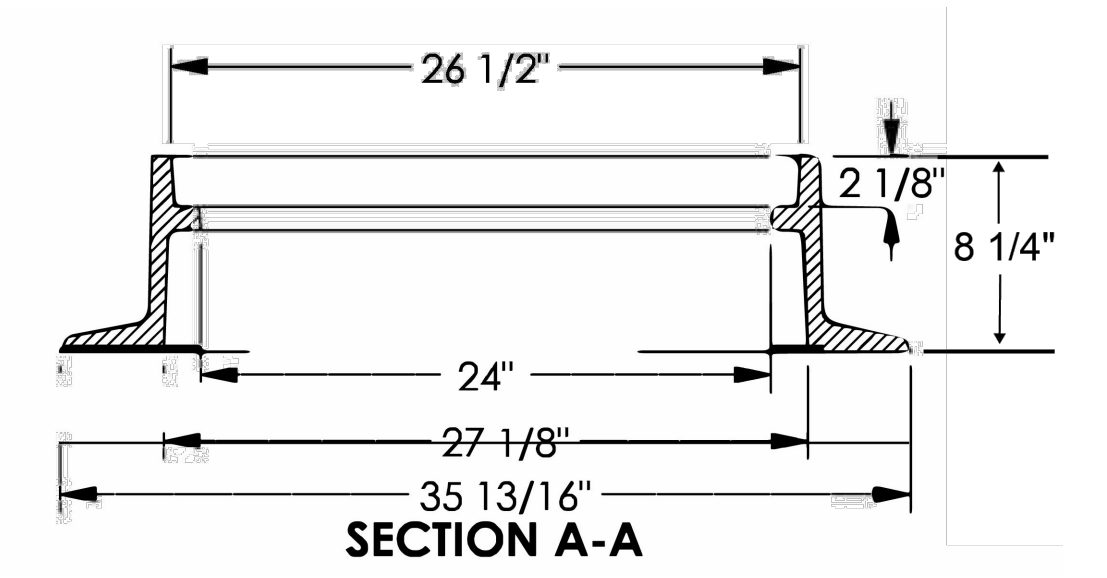
**SECTION B-B**

**MA DCR STANDARD CATCH BASIN FRAME**

NOT TO SCALE

- Materials  
Gray Iron (CL35B)
- Design Load  
Heavy Duty
- Open Area  
n/a
- Coating  
Undipped
- √ Designates Machined Surface

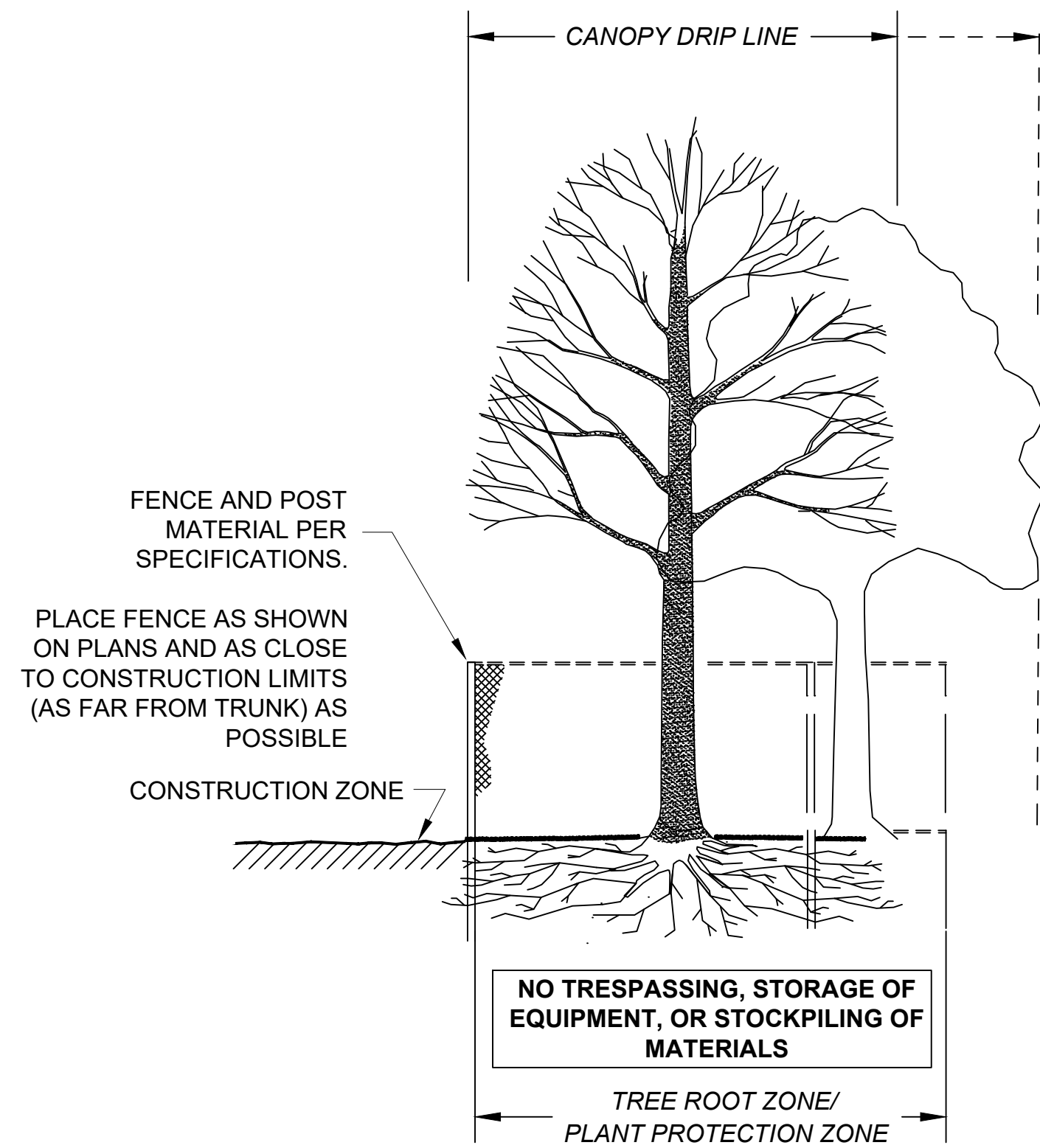
**Certification**  
-ASTM A48  
-Country of Origin: USA



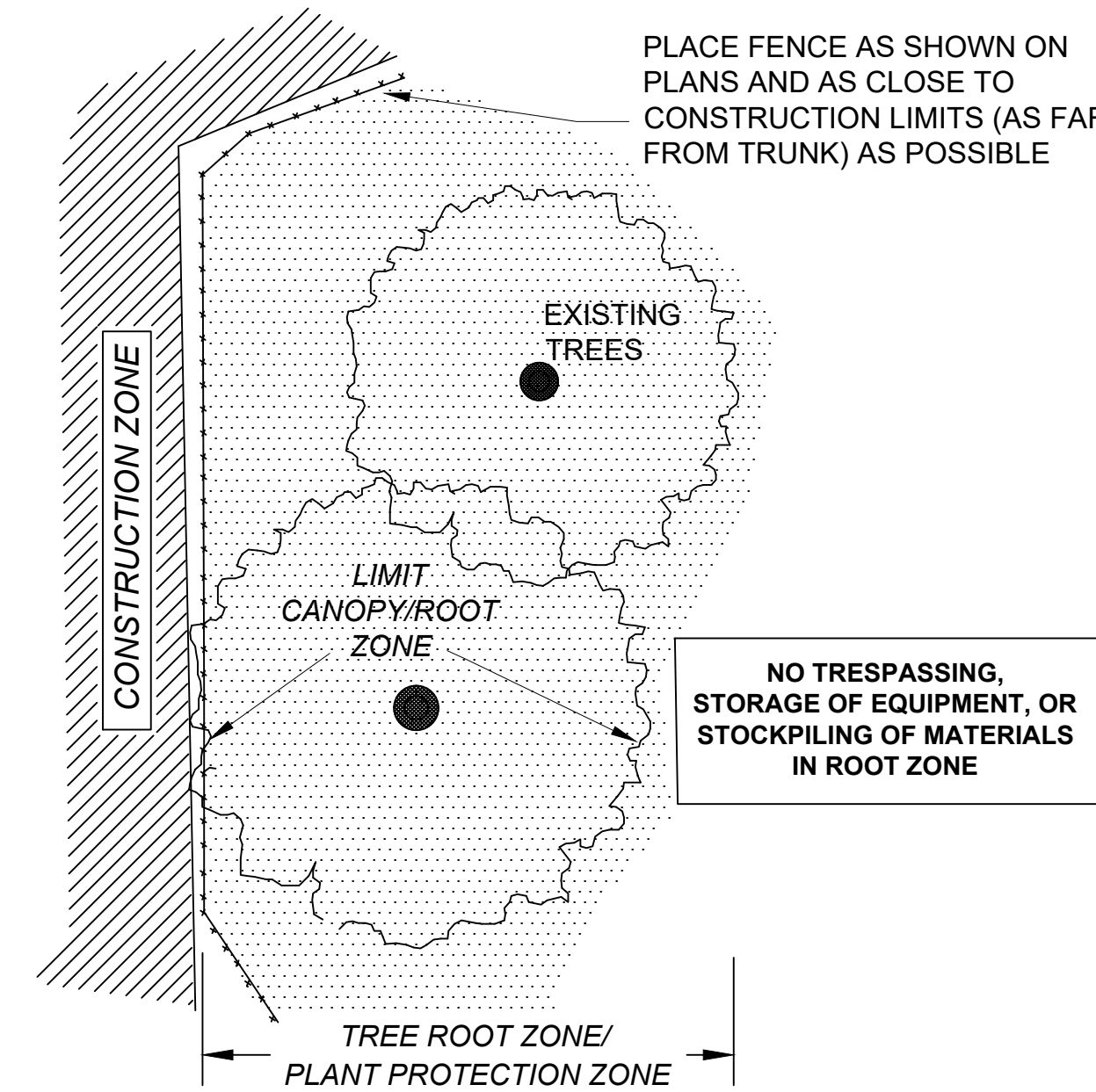
**SECTION A-A**



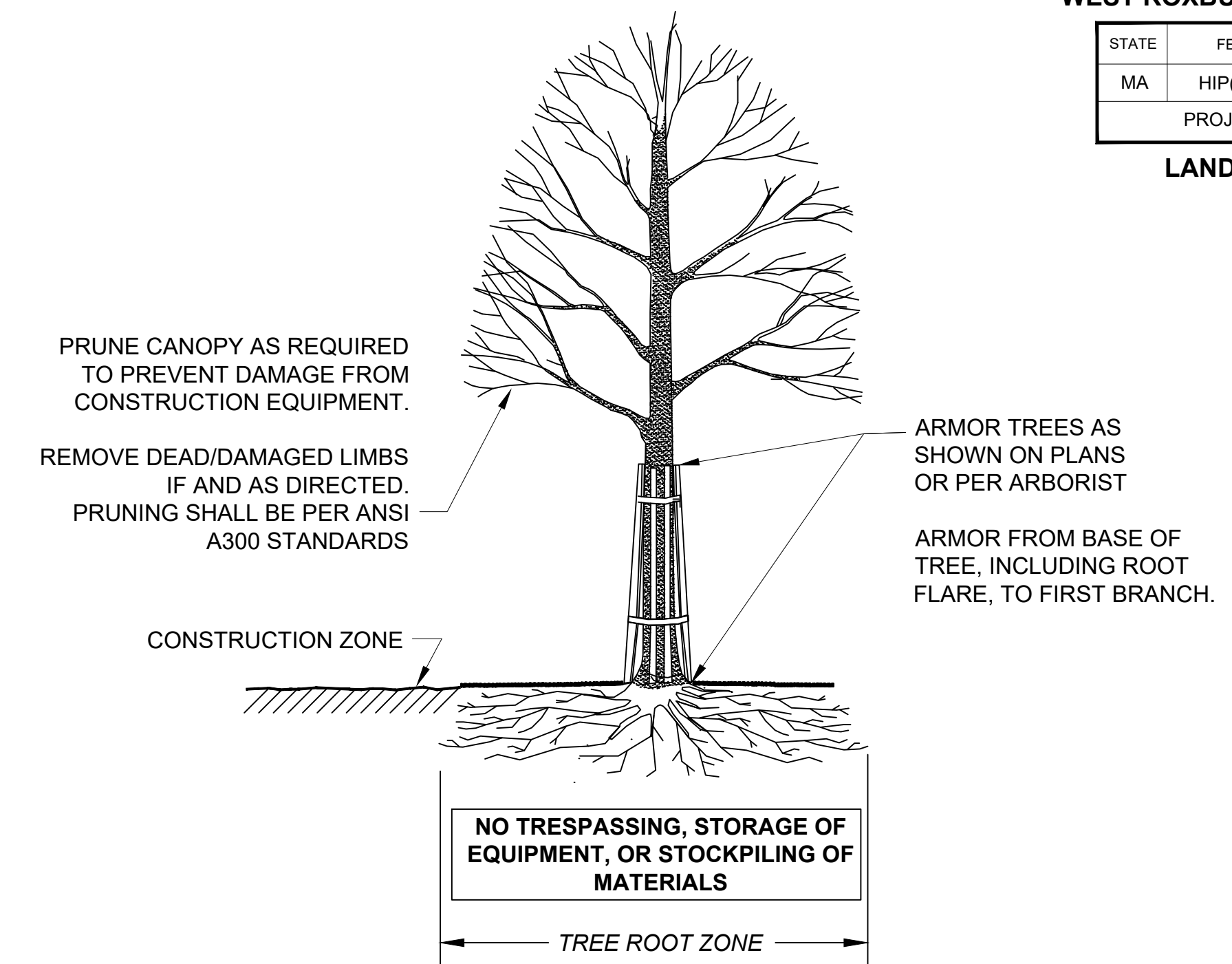
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	33	90
PROJECT FILE NO.		606902	



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

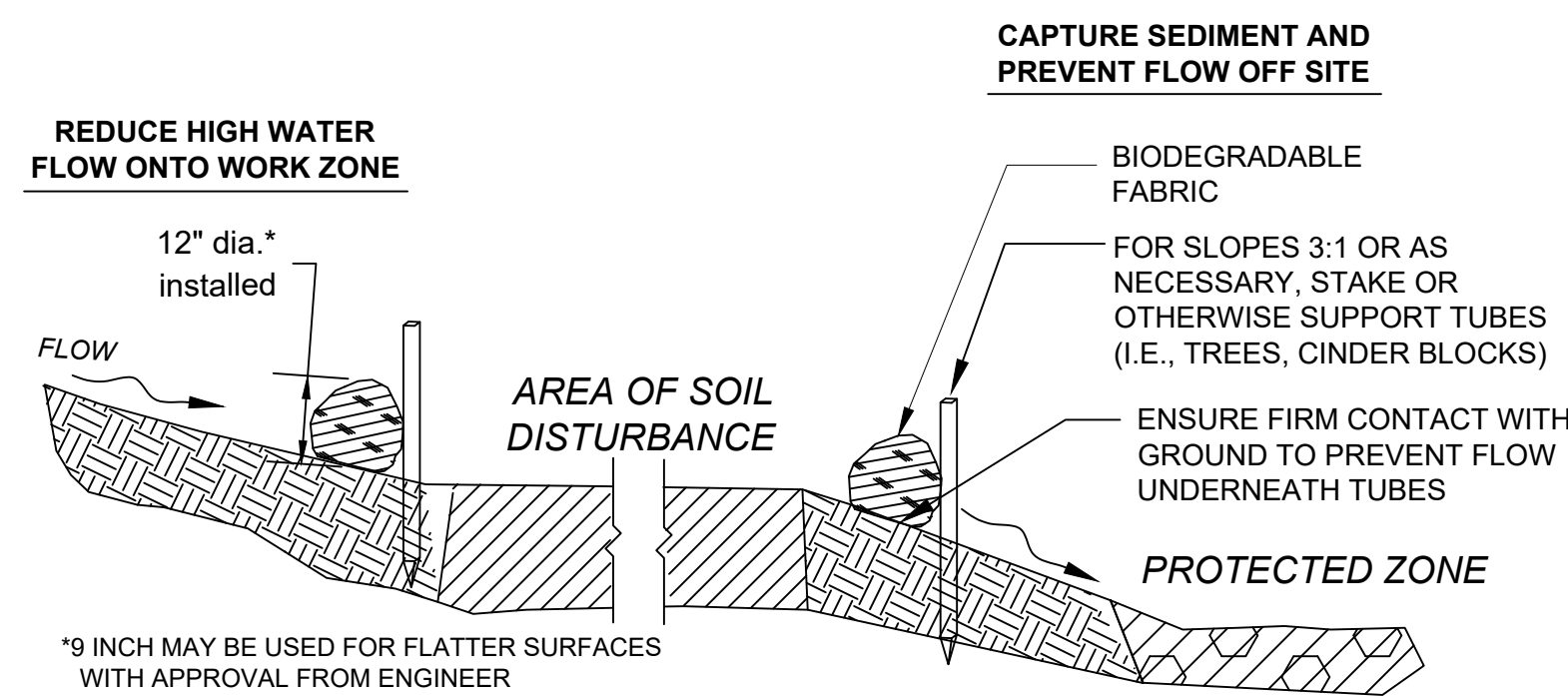


SECTION - TRUNK ARMORING & PRUNING

**TREE PROTECTION - ROOT ZONE**

NOT TO SCALE

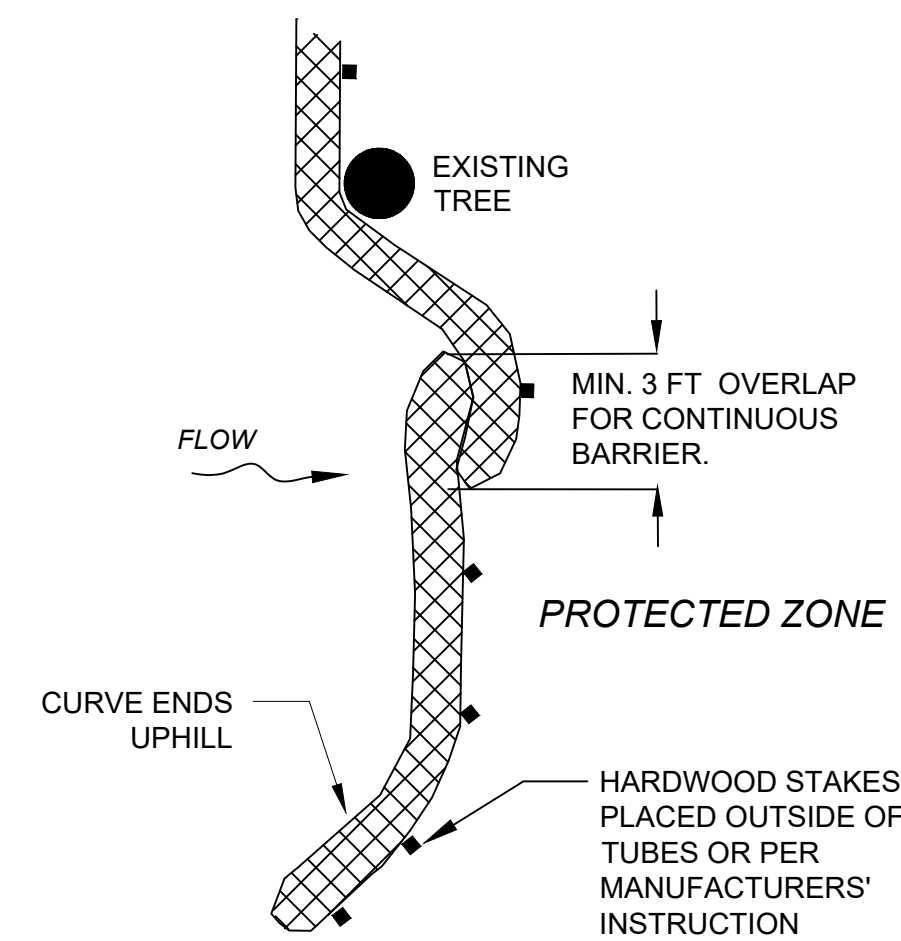
**TREE PROTECTION - TRUNK**



SECTION

**SEDIMENT BARRIER - COMPOST FILTER TUBES**

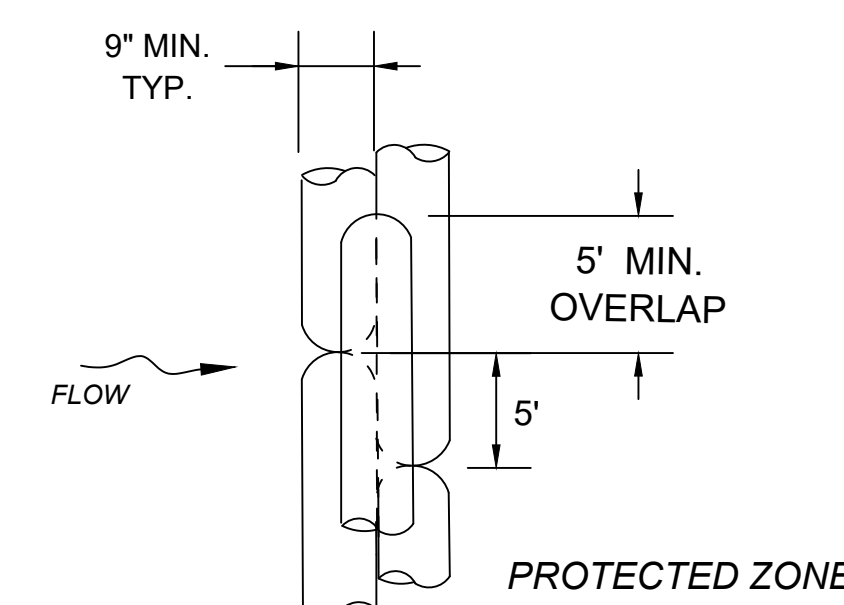
NOT TO SCALE



PLAN VIEW

**COMPOST FILTER TUBE**

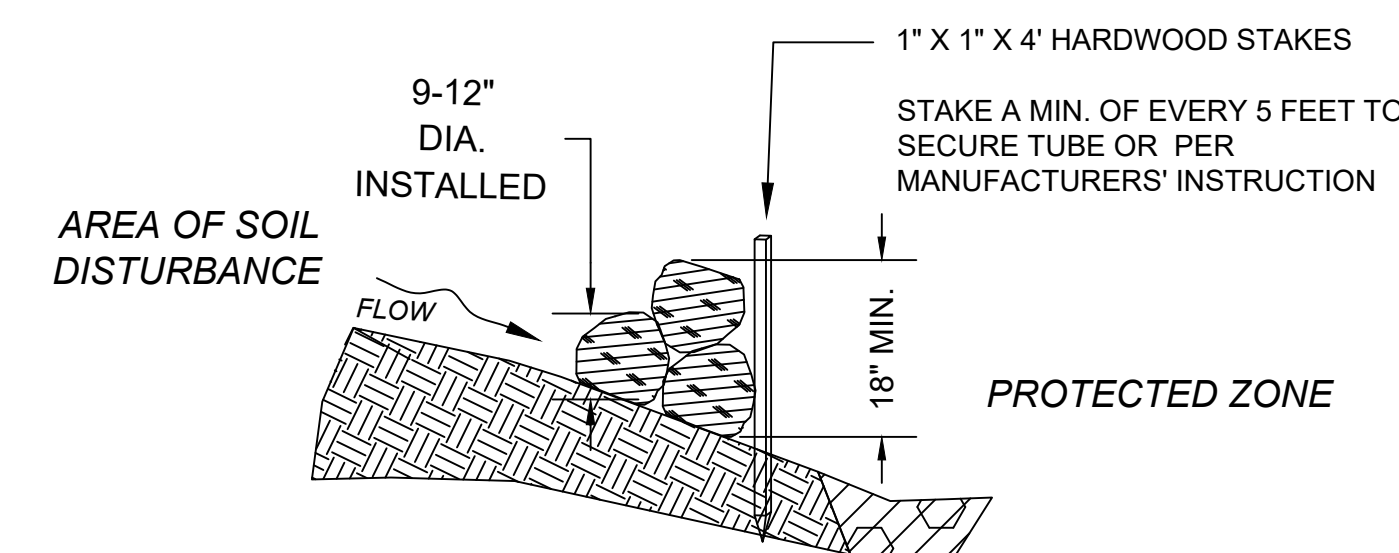
NOT TO SCALE



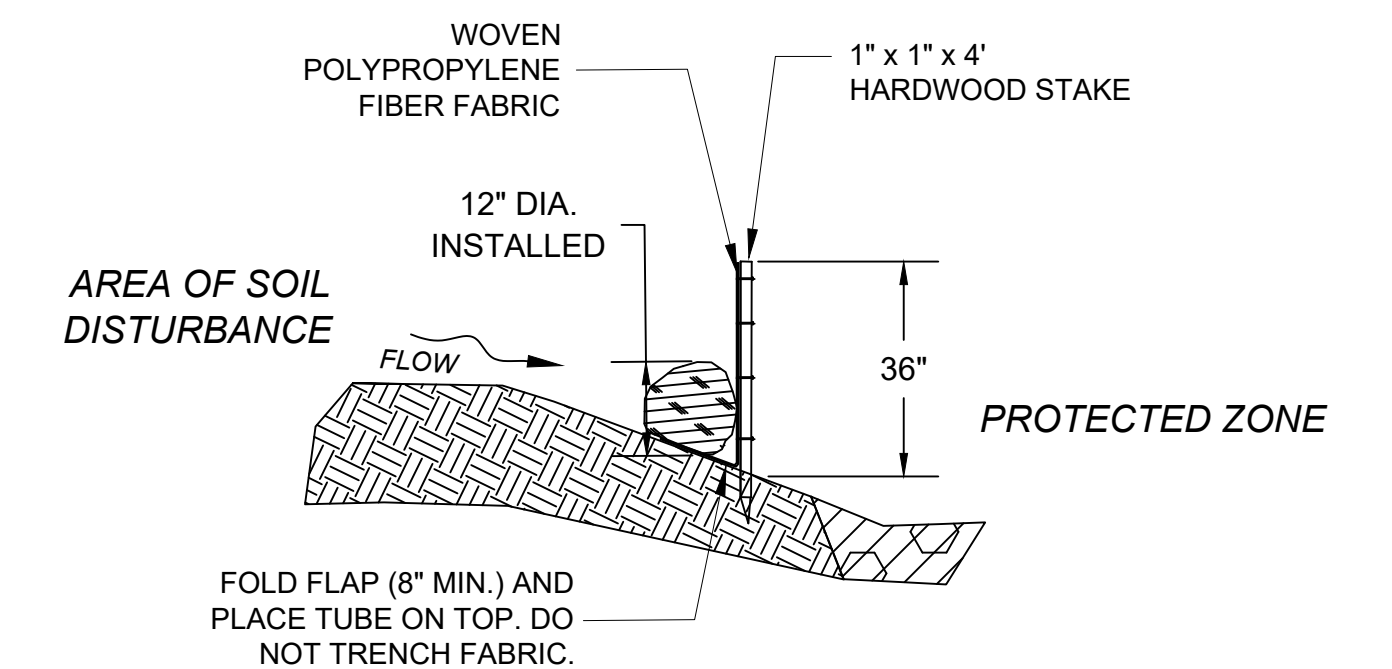
PLAN VIEW

**COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)**

NOT TO SCALE



SECTION



SECTION

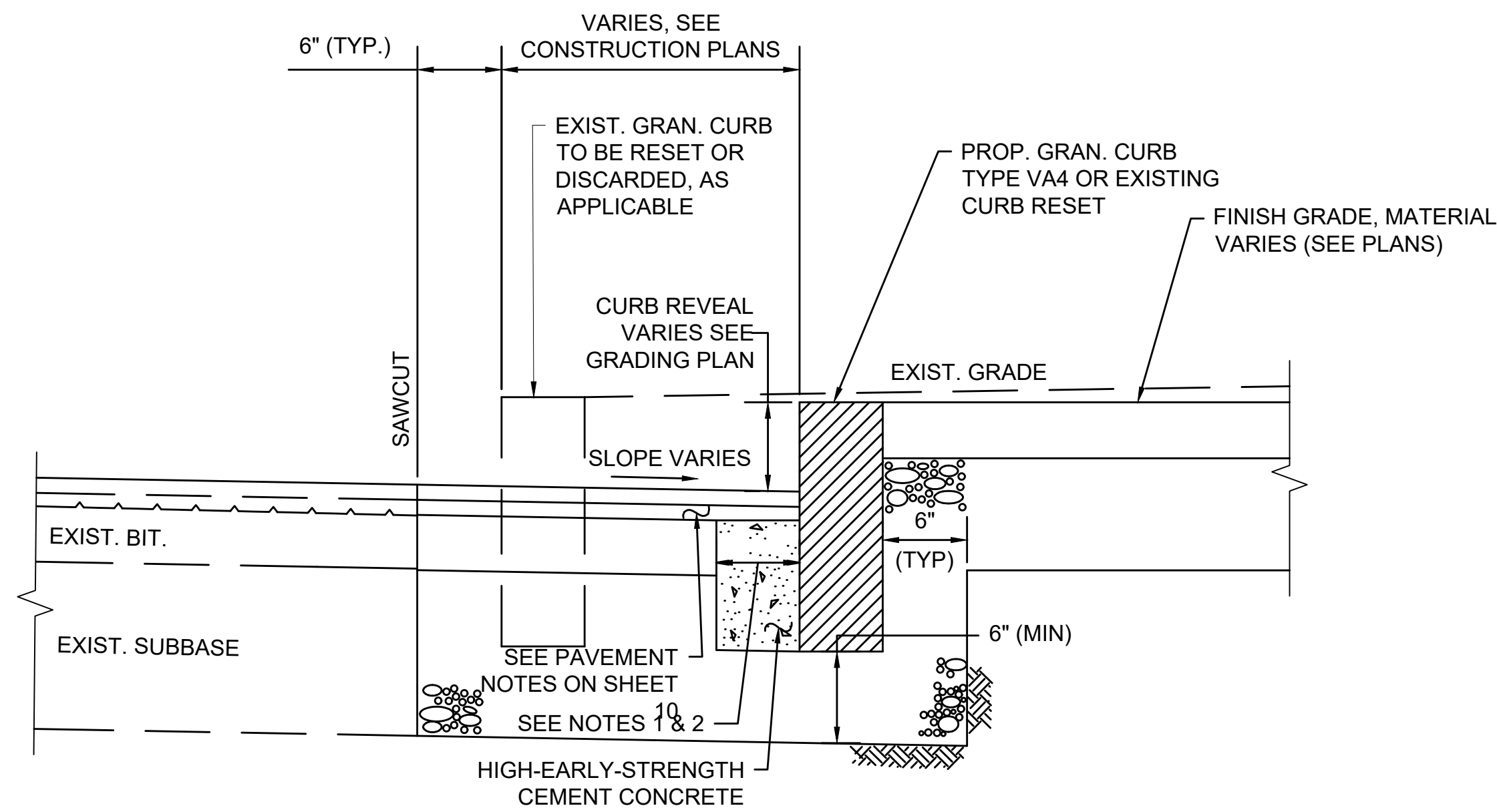
**COMPOST FILTER TUBE & SILT FENCE**

NOT TO SCALE

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	34	90
PROJECT FILE NO.		606902	

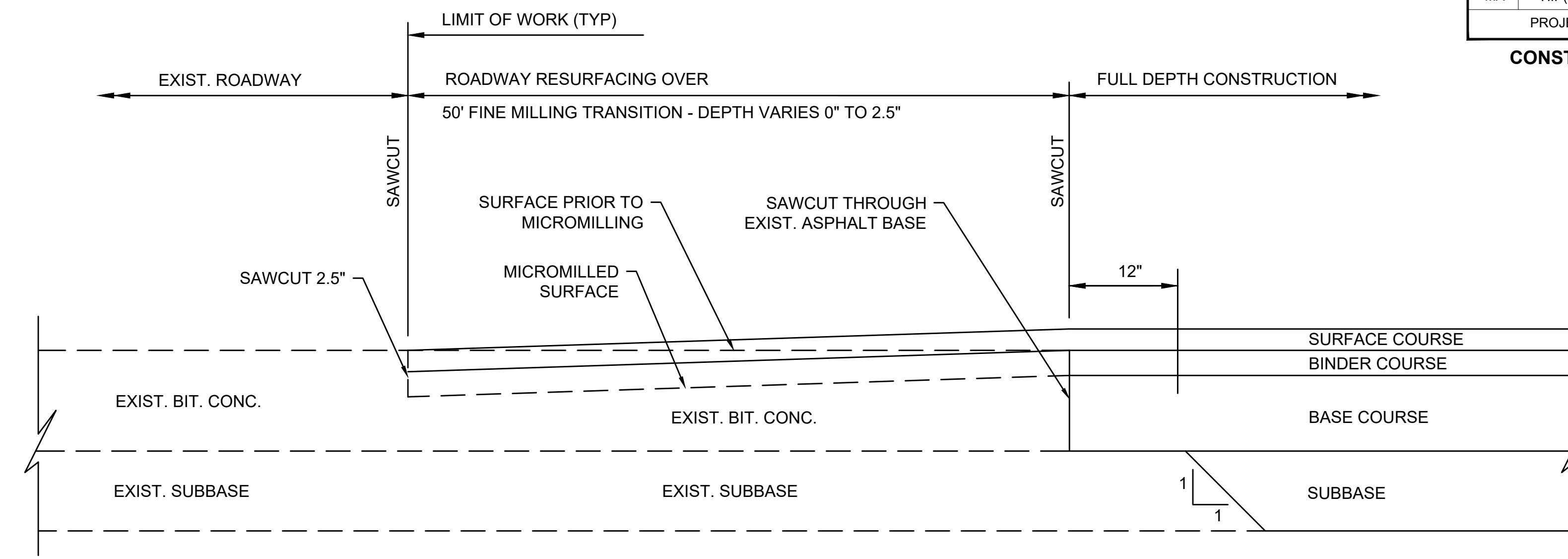
**CONSTRUCTION DETAILS**



- NOTES:**
1. IN AREAS OF FULL DEPTH CONSTRUCTION WHERE THE PROPOSED CURBLINE IS TO BE RESET BEYOND THE EXISTING CURBLINE, 6" (MIN.) OF HIGH-EARLY-STRENGTH CEMENT CONCRETE IS TO BE USED. ALL CEMENT CONCRETE USED IS TO BE CONSIDERED INCIDENTAL TO RESETTING THE EXISTING CURB.
  2. IN AREAS OF FINE MILLING WHERE THE PROPOSED CURBLINE IS TO BE RESET BEYOND THE EXISTING CURBLINE, HIGH-EARLY-STRENGTH CEMENT CONCRETE IS TO BE USED FULL WIDTH FROM THE SAWCUT TO THE PROPOSED CURBLINE WITH TWO LIFTS OF PAVEMENT AS SHOWN ON THE PAVEMENT NOTES ON SHEET 10.

GRANITE CURB INSTALLATION DETAIL

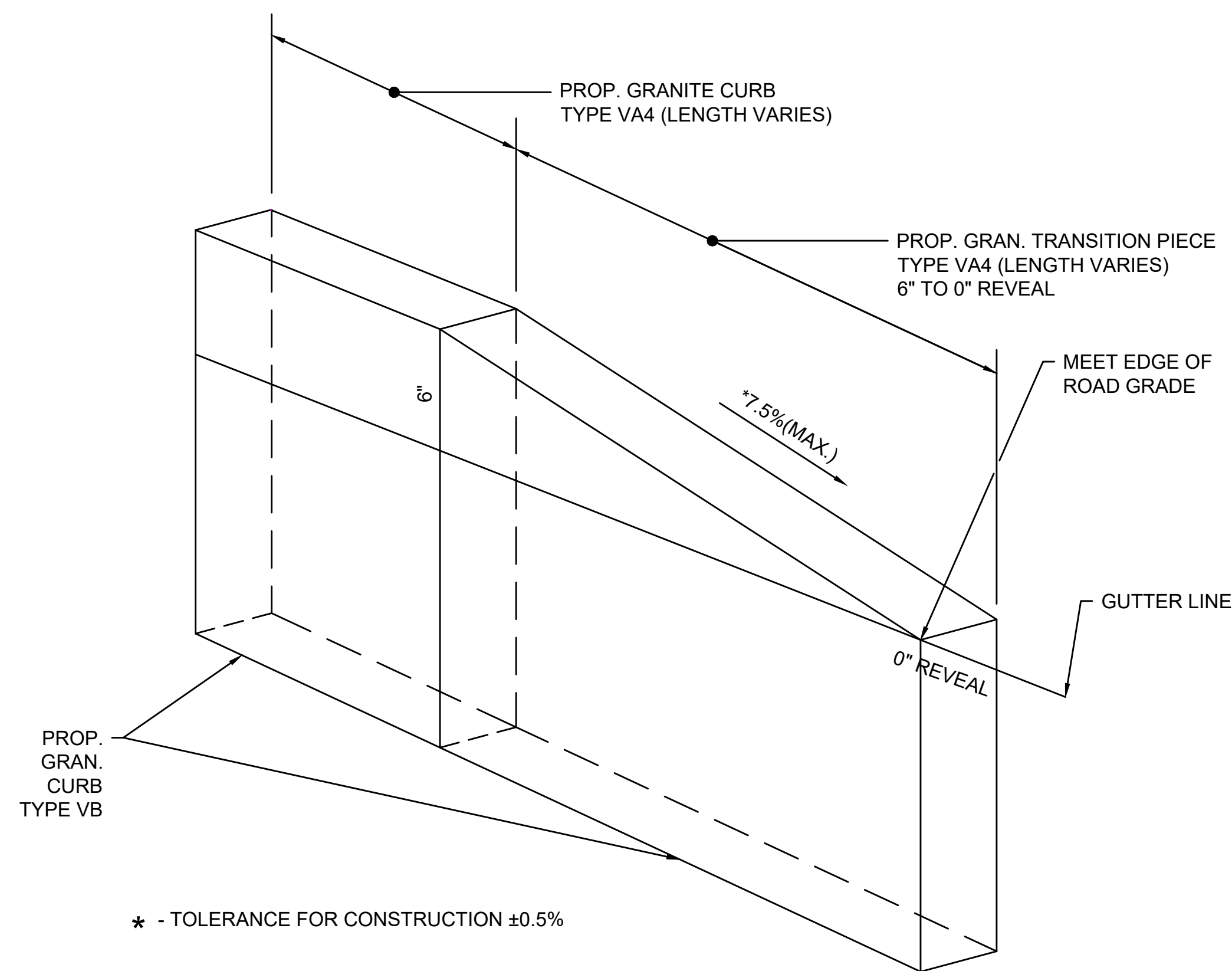
NOT TO SCALE



LONGITUDINAL PAVEMENT TRANSITION DETAIL

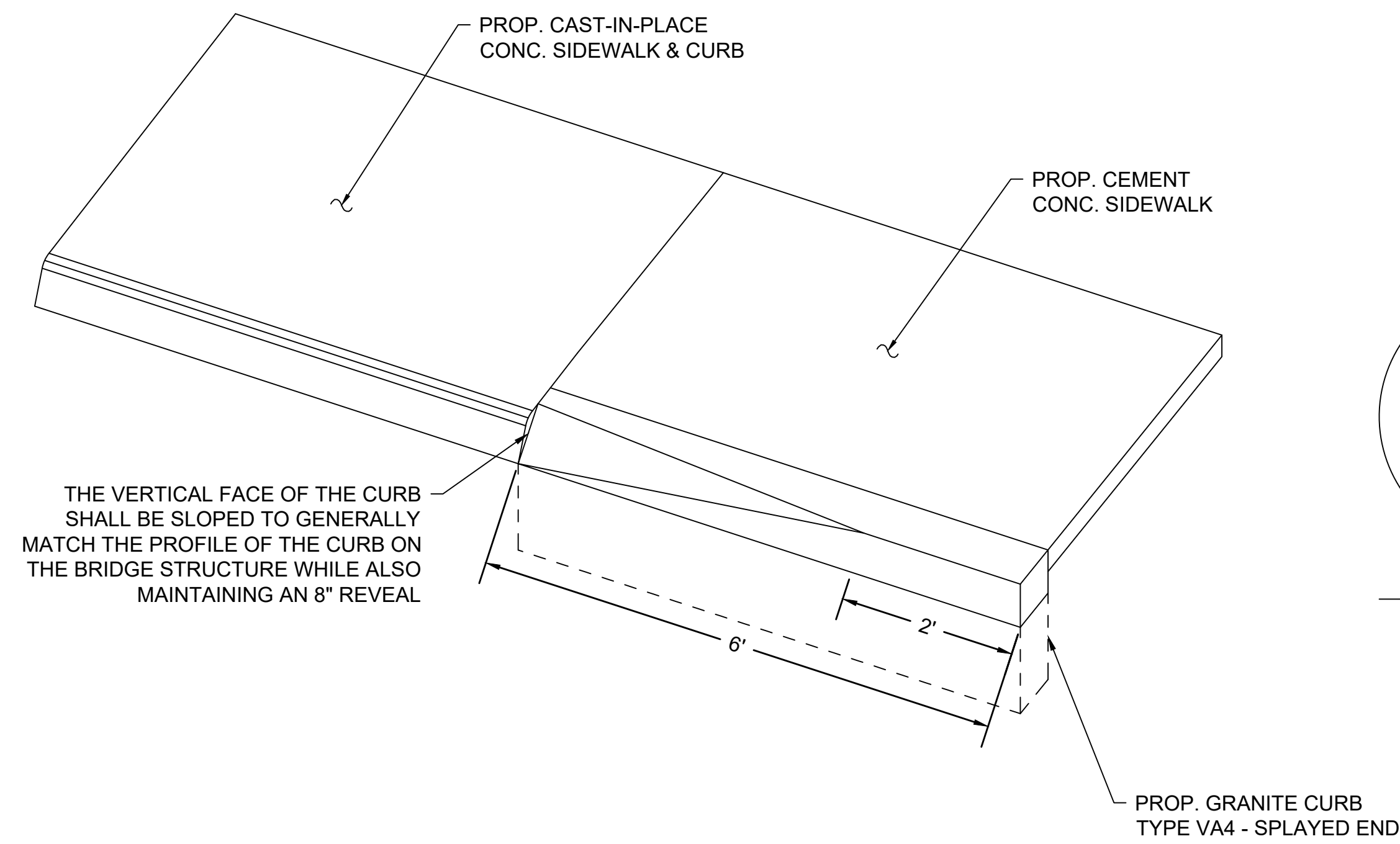
TWO LIFT TO ONE LIFT TRANSITION AT LIMITS OF WORK

NOT TO SCALE



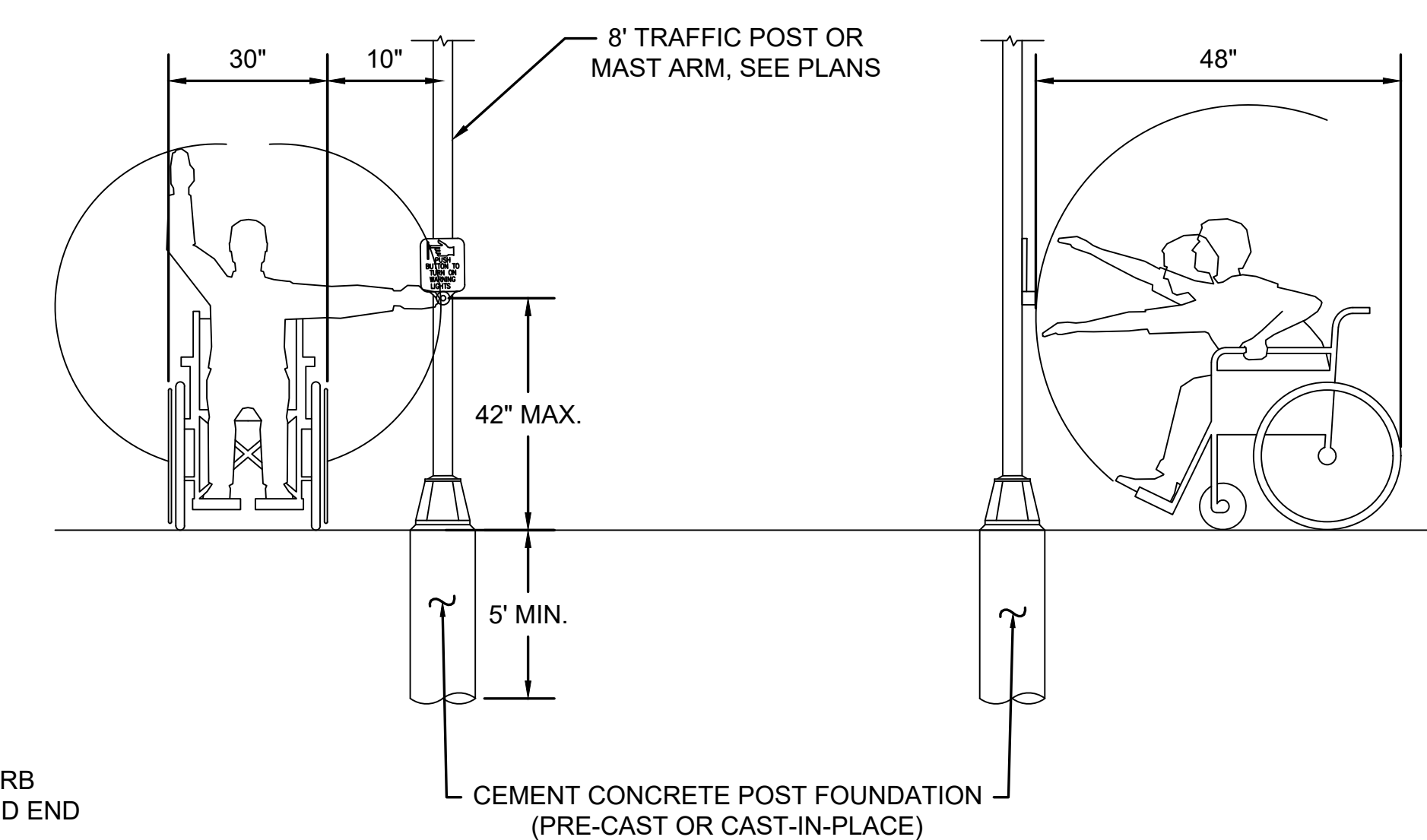
GRANITE CURB TRANSITION (6" TO 0" REVEAL)

NOT TO SCALE



6" GRANITE CURB TYPE VA4 - SPLAYED END

NOT TO SCALE



AAB HEIGHT AND REACH LIMITS FOR ACCESSIBLE PUSH BUTTONS

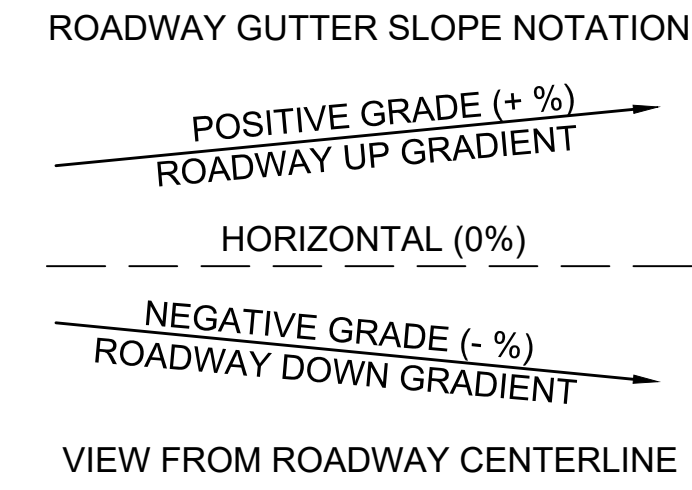
NOT TO SCALE

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

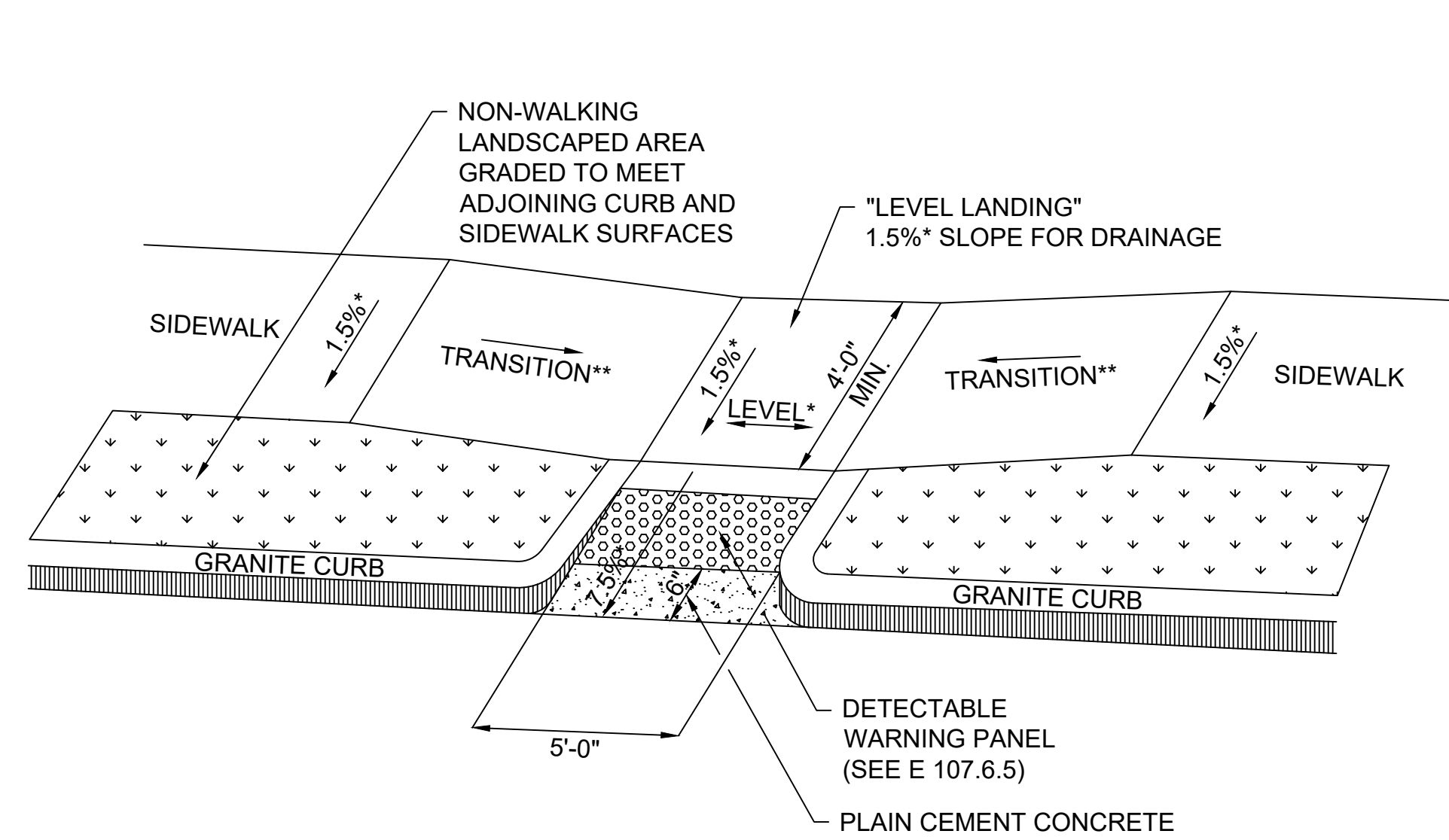
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	35	90
PROJECT FILE NO.		606902	

**PED. CURB RAMP & DRIVEWAY DETAILS**

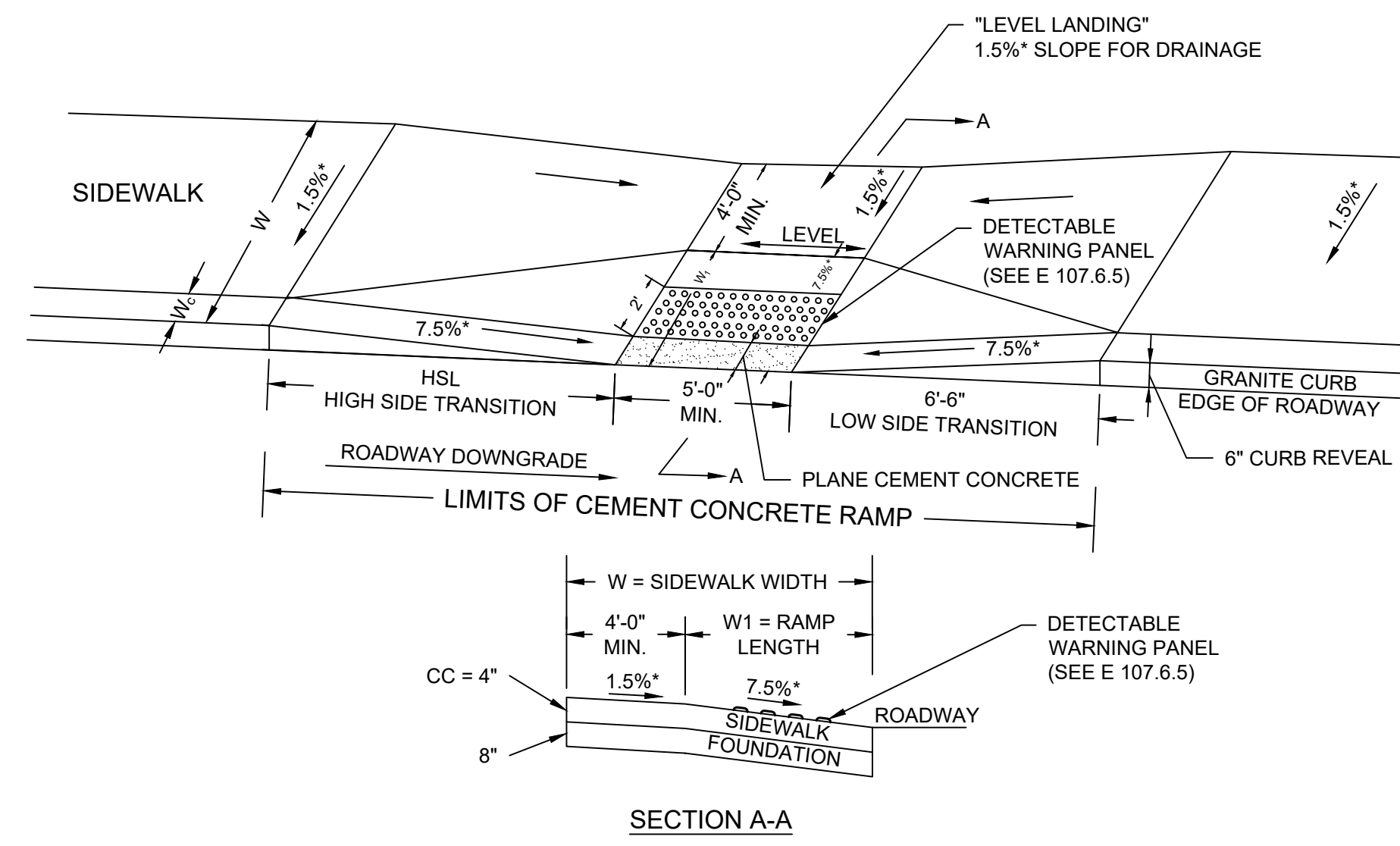
PCR #	BASELINE	PCR REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF CURB (Wc)	W <sub>1</sub> = W - 4'-0" MIN.	PROFILE GUTTER SLOPE	TRANSITION LENGTH		WIDTH OF RAMP OPENING	RAMP TYPE (SEE DETAILS THIS SHEET)	
		STATION	OFFSET					LEFT SIDE	RIGHT SIDE		LEFT SIDE	RIGHT SIDE
1	WEST ROXBURY PARKWAY	403+01.90	23.97' L	8'-0"	0'-5"	4.50'	2.22%	6'-6"	5'-6"	5'-0"	TYPE 2	TYPE 4
2	WEST ROXBURY PARKWAY	403+02.02	20.46' R	5'-0"	0'-5"	7.45'	2.22%	5'-6"	6'-6"	5'-0"	TYPE 4	TYPE 2
3	WEST ROXBURY PARKWAY	403+89.36	23.92' L	5'-6"	0'-5"	N/A	2.22%	5'-6"	11'-0"	5'-0"	TYPE 3	TYPE 3
4	WEST ROXBURY PARKWAY	403+88.31	23.92' R	7'-11"	0'-5"	4.39'	2.22%	11'-0"	6'-6"	5'-0"	TYPE 2	TYPE 4
5	WEST ROXBURY PARKWAY	406+44.42	25.94' L	5'-9"	0'-5"	N/A	2.46%	11'-0"	6'-6"	6'-0"	TYPE 1	TYPE 1
6	BELGRADE AVENUE	101+84.03	25.00' L	9'-6"	0'-5"	N/A	1.25%	6'-6"	4'-6"	5'-0"	TYPE 1	TYPE 4
7	BELGRADE AVENUE	101+79.87	25.00' R	9'-6"	0'-5"	5.58'	1.25%	4'-6"	6'-6"	5'-0"	TYPE 4	TYPE 2
8	BELGRADE AVENUE	102+71.41	25.00' L	9'-6"	0'-5"	5.00'	4.70%	7'-6"	6'-6"	5'-0"	TYPE 4	TYPE 2
9	BELGRADE AVENUE	102+69.78	24.84' R	9'-6"	0'-5"	6.00'	4.70%	6'-6"	7'-6"	5'-0"	TYPE 2	TYPE 4



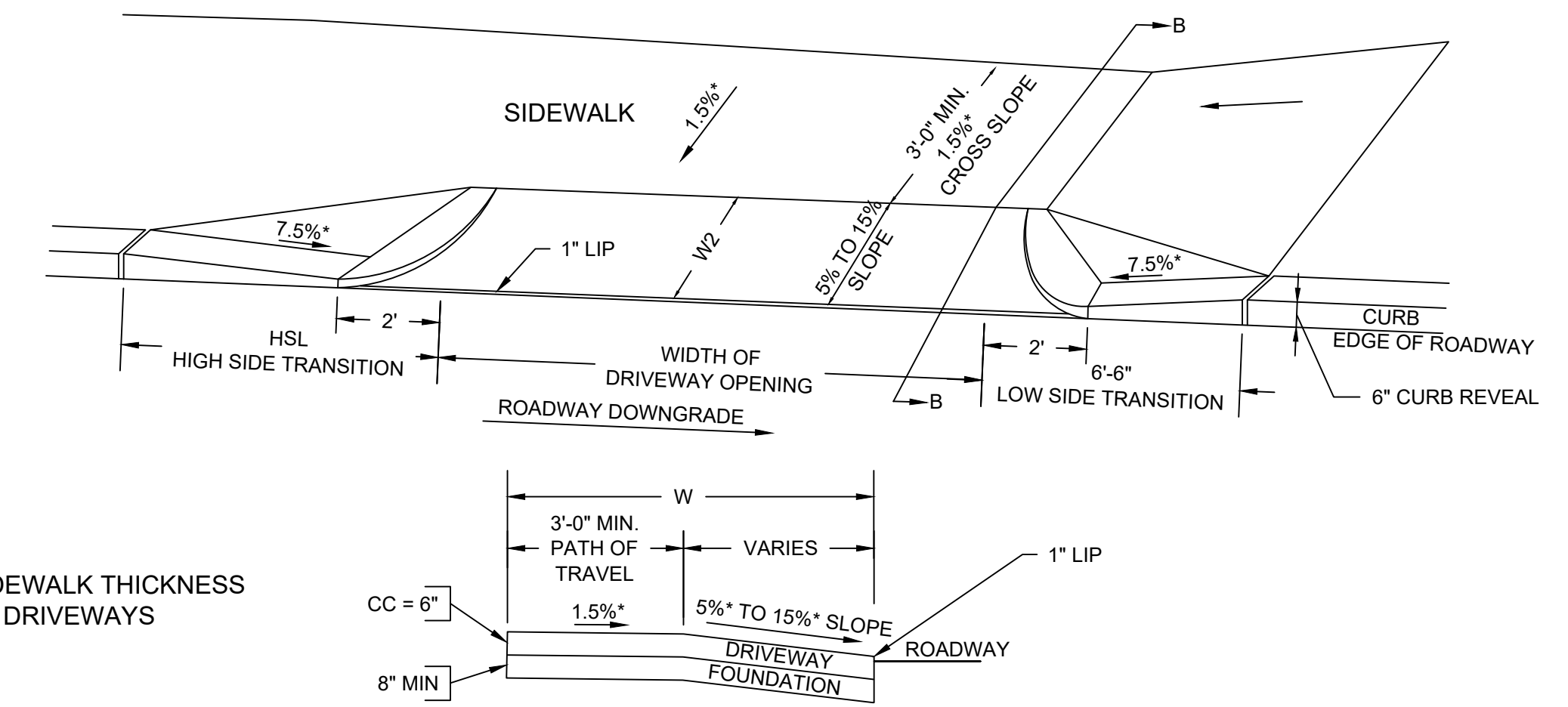
DWY #	BASELINE	DWY REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF CURB (Wc)	PROFILE GUTTER SLOPE	TRANSITION LENGTH		WIDTH OF DWY OPENING	WIDTH OF APRON (W2)	SLOPE OF APRON	DRIVEWAY TYPE (SEE DETAILS THIS SHEET)
		STATION	OFFSET				LEFT SIDE	RIGHT SIDE				
1	BELGRADE AVENUE	103+31.70	25.00 L	7'-0"	0'-5"	5.50%	15'-0"	14'-0"	13'-0"	3'-0"	8.33%	1



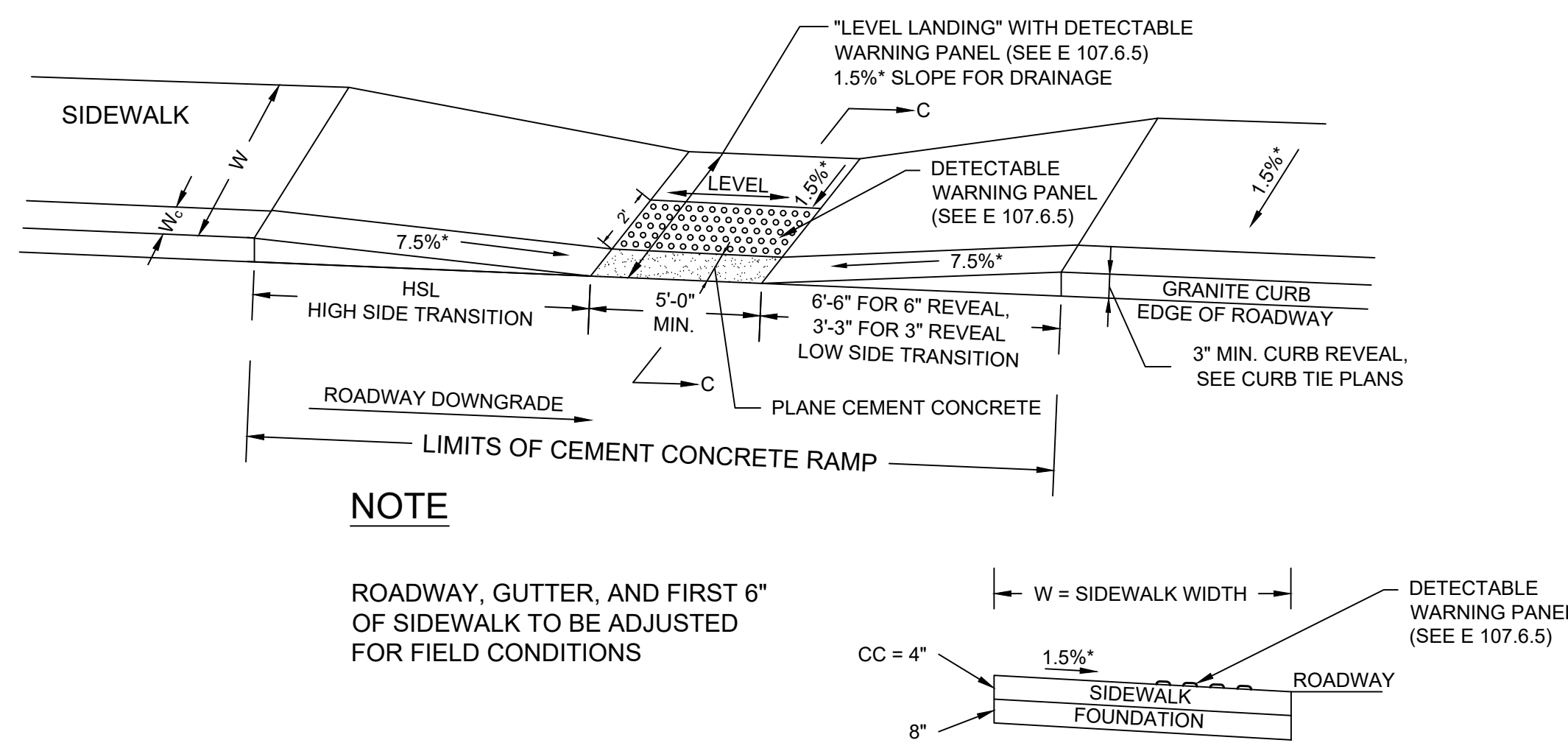
PCR WITH LANDSCAPING STRIP  
REFER TO E 107.6.9  
(RAMP TYPE 1)



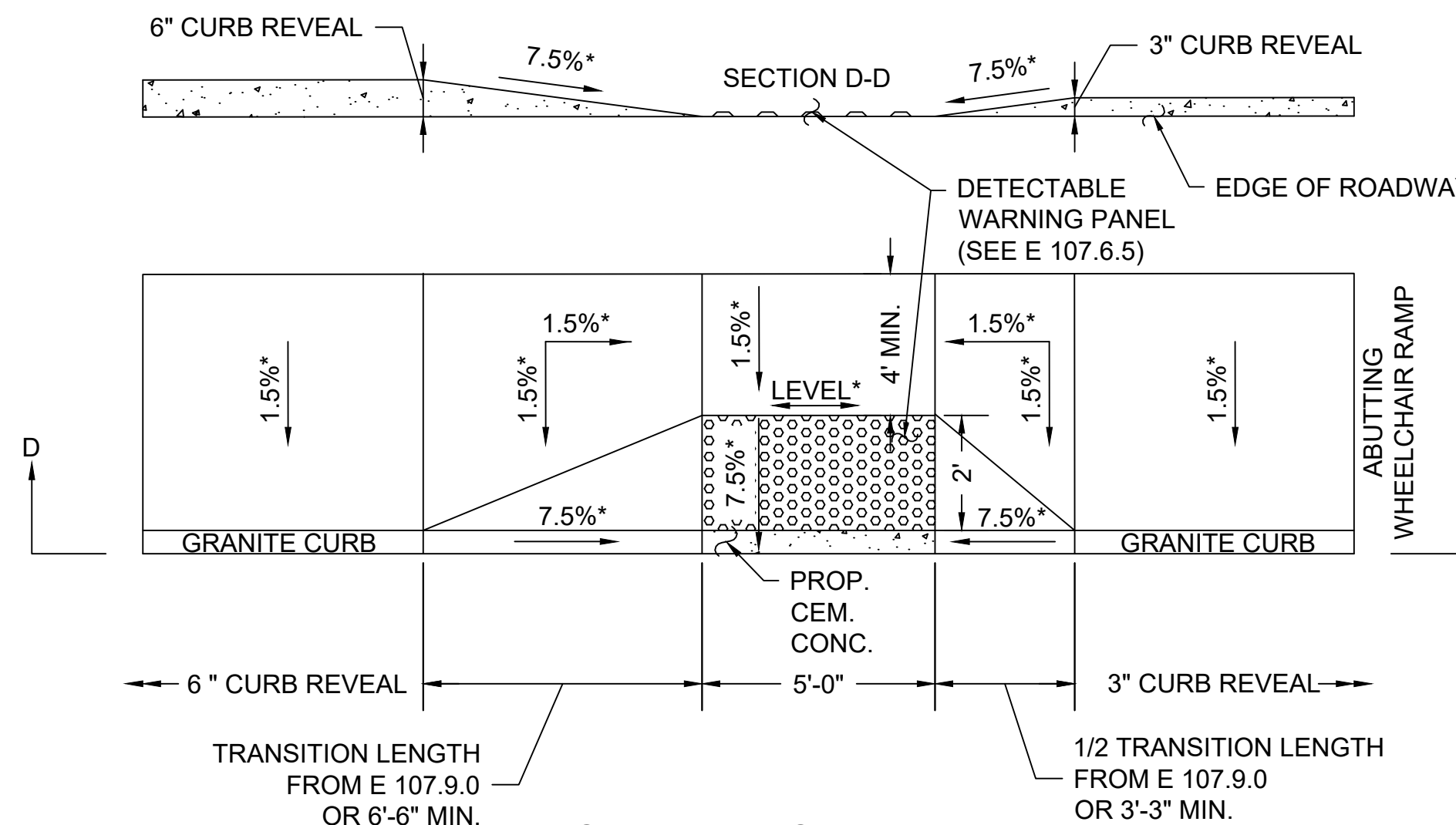
PCR LESS THAN 12'-4" SIDEWALK  
REFER TO E 107.2.0  
(RAMP TYPE 2)



SECTION B-B  
SIDEWALK THROUGH DRIVEWAY  
WITH CURB CORNERS  
REFER TO E 107.8.0  
(DRIVEWAY TYPE 1)



PCR ON NARROW SIDEWALK  
REFER TO E 107.2.1  
(RAMP TYPE 3)



PCR WITH 3" CURB REVEAL  
REFER TO E 107.6.3  
(RAMP TYPE 4)

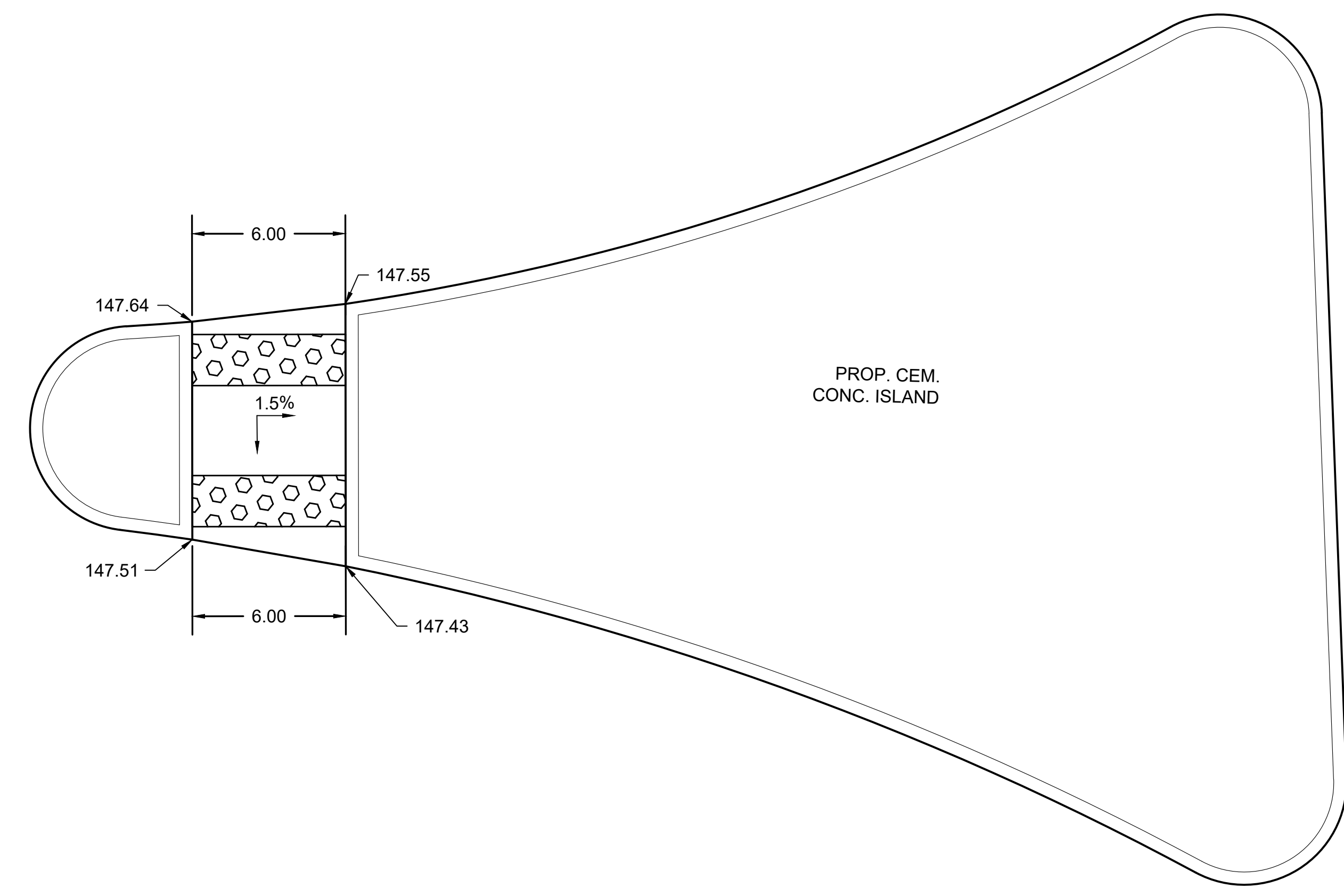
**LEGEND**

- HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
- W = SIDEWALK WIDTH
- W<sub>c</sub> = CURB WIDTH
- C = CEMENT CONCRETE
- HMA = HOT MIX ASPHALT
- \* = TOLERANCE FOR CONSTRUCTION +/- 0.5%
- \*\* = SEE E 107.9.0 FOR TRANSITION LENGTH
- USABLE SIDEWALK WIDTH PER AAB = W - W<sub>c</sub>
- USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
- SEE 107.6.5 FOR DETAILS OF DETECTABLE WARNING PANEL
- RAMP LENGTH, W<sub>1</sub> = W - 4'-0" MIN

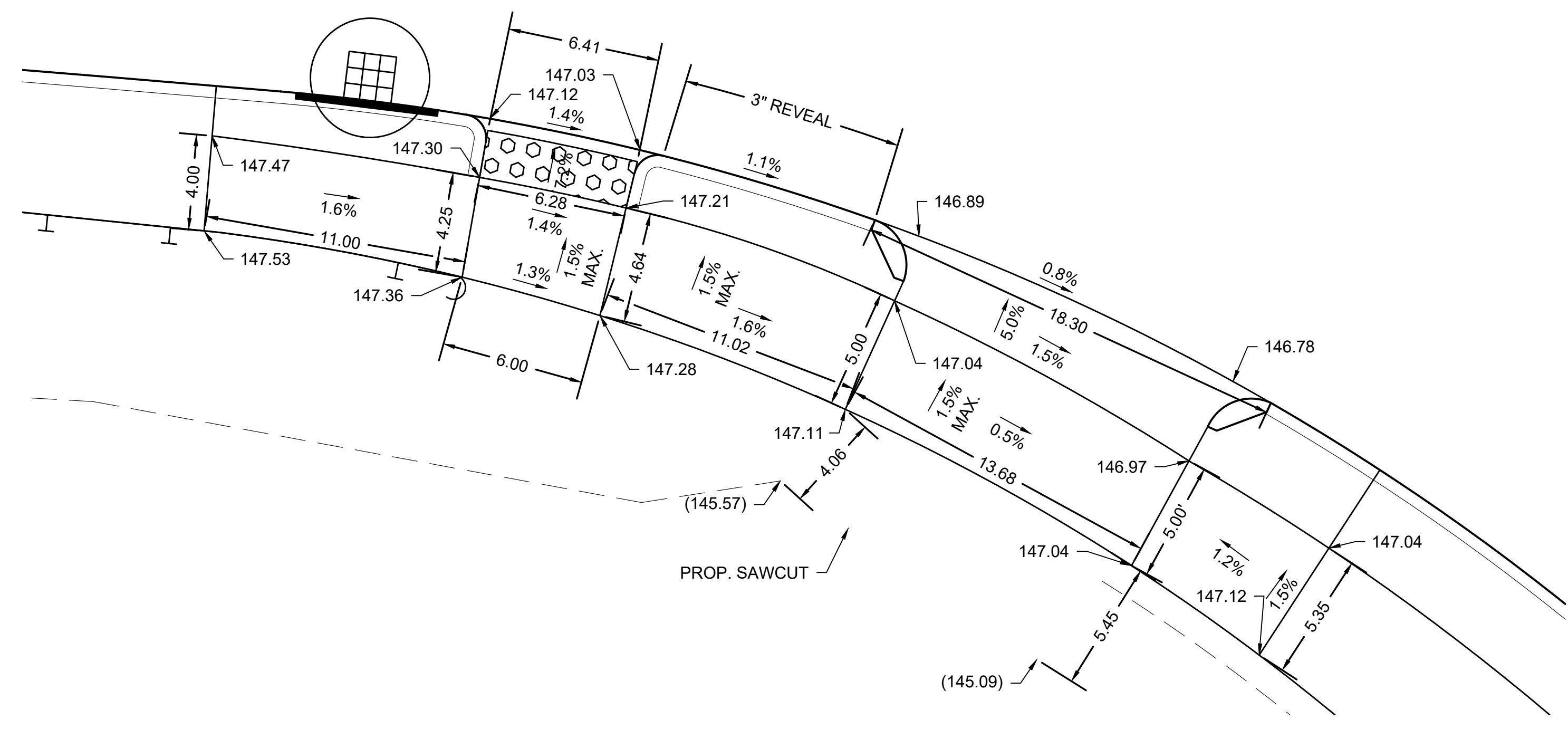
**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	36	90
PROJECT FILE NO.		606902	

**PED. CURB RAMP & DRIVEWAY DETAILS 2**



**PEDESTRIAN CURB RAMP DETAIL FOR  
 CUT-THROUGH AT CEM. CONC. ISLAND**  
 NOT TO SCALE



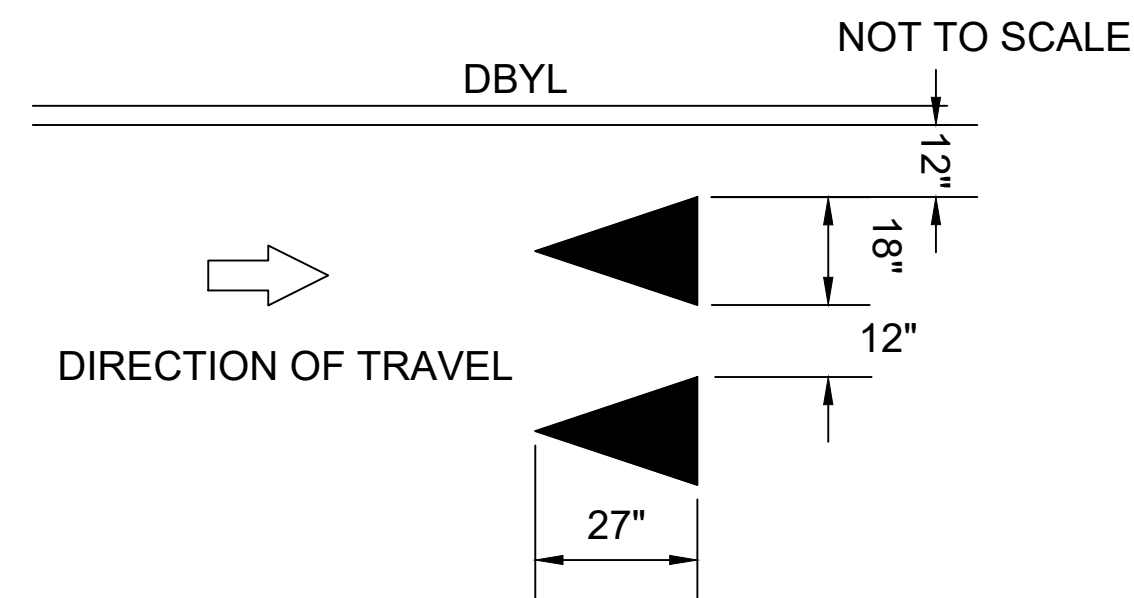
**PEDESTRIAN CURB RAMP DETAIL FOR  
 SPECIAL PCR-1 AND DWY #1**  
 NOT TO SCALE

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

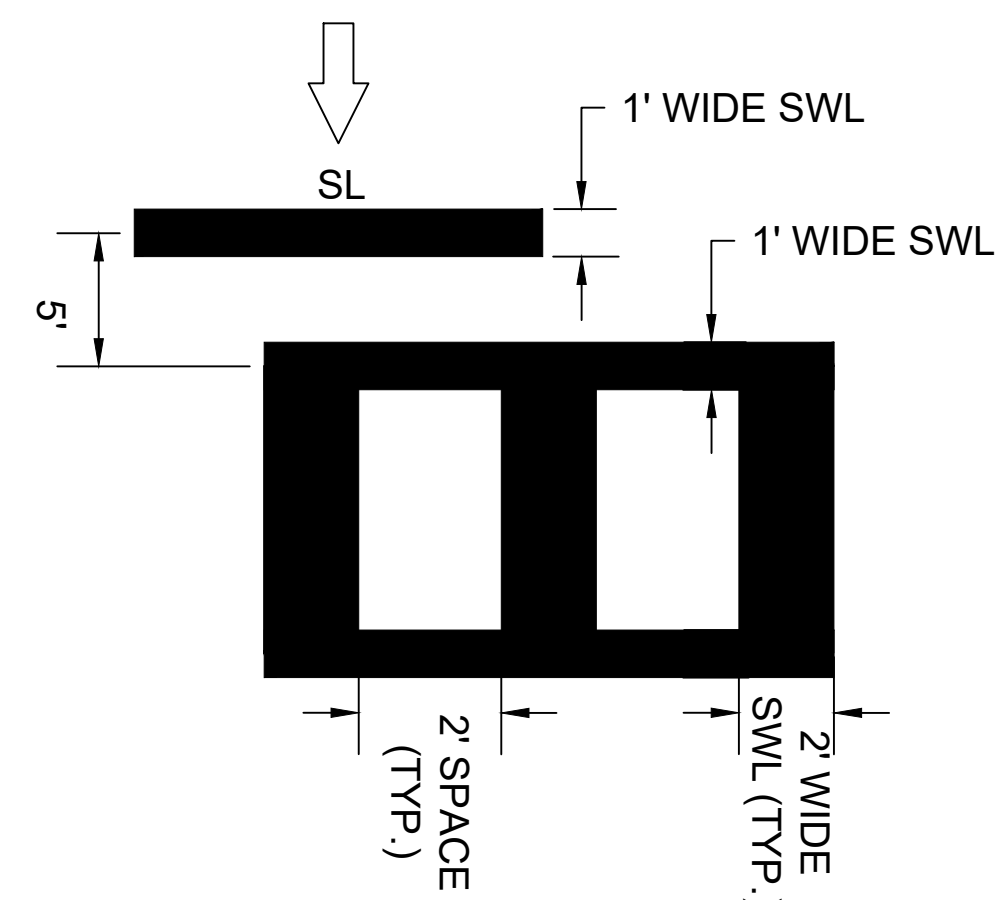
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	37	90
PROJECT FILE NO.		606902	

**SIGNING & PAVEMENT MARKING DETAILS**

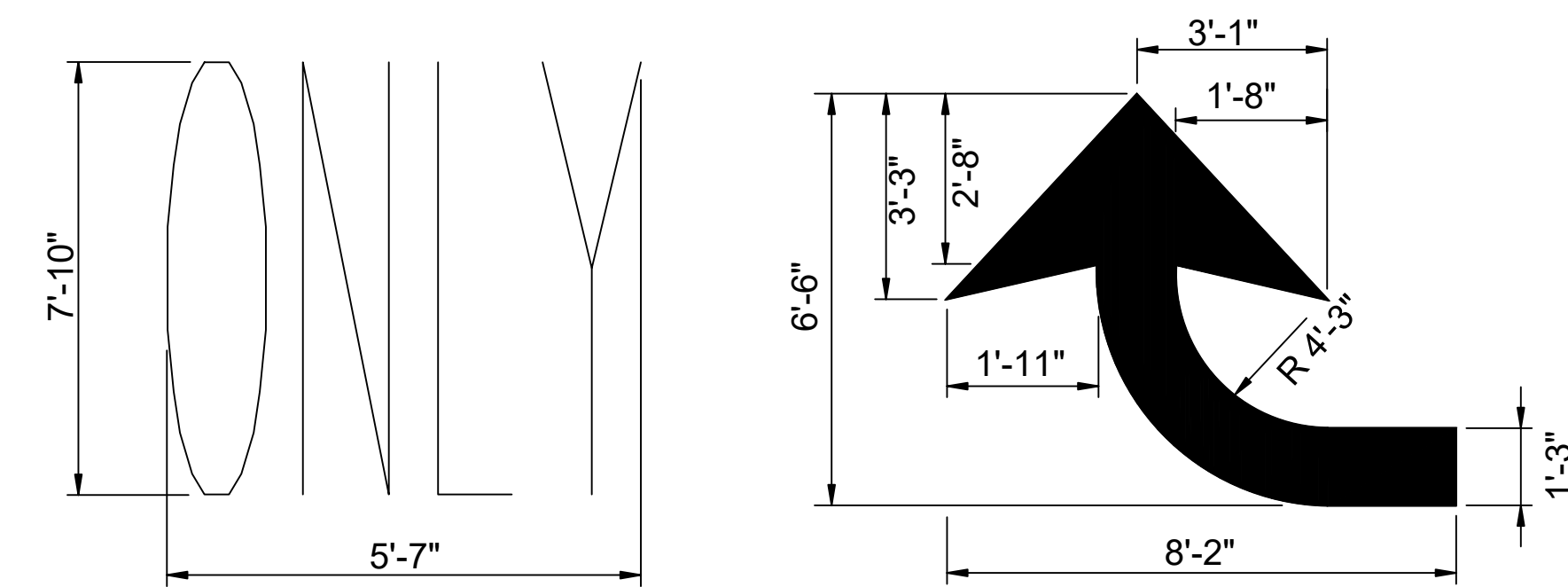
606902\_HD37 (SIGNING & PM DETAILS)DWG Plotted on 17-Jul-2024 11:29 AM



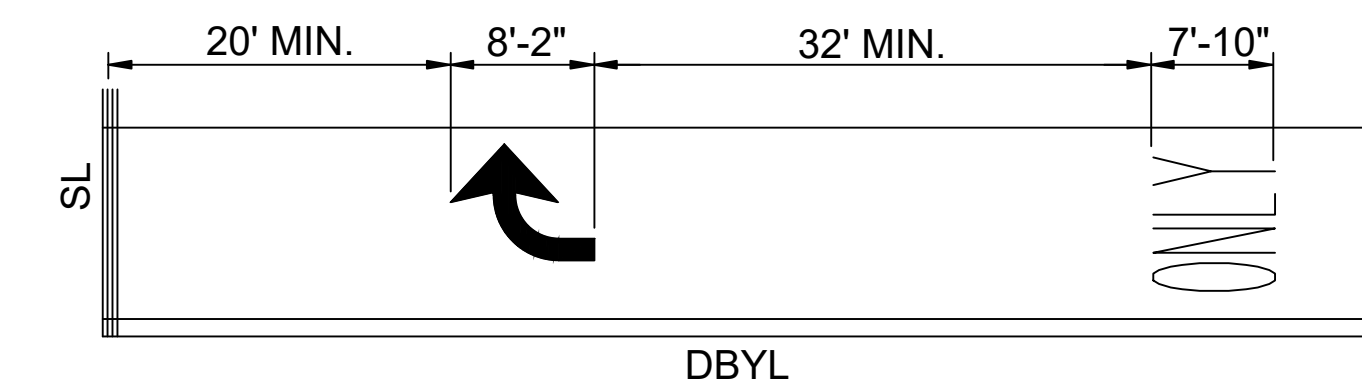
**YIELD LINES-ROADWAY**  
NOT TO SCALE



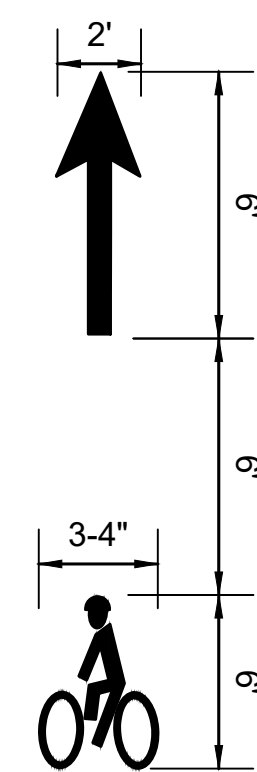
**CROSSWALK AT STOP CONTROL**  
NOT TO SCALE



NOTE:  
1) ARROW & ONLY=APPROX. 4.3 SQ. M. OF PAINT.  
2) ARROW(S) & ONLY(S) SHALL BE WHITE.

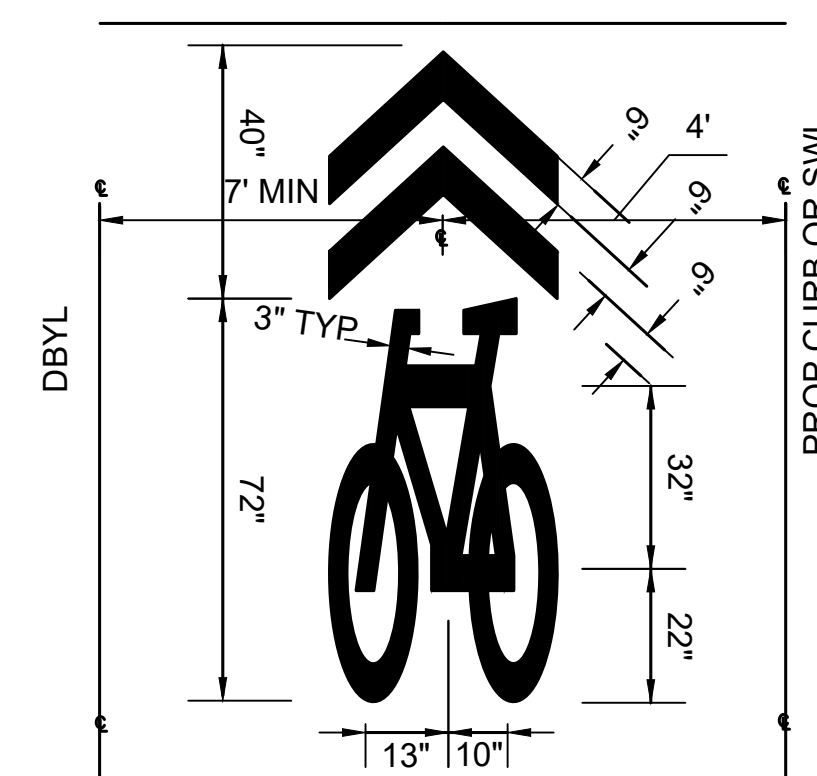


**ARROW & ONLY DETAIL**  
NOT TO SCALE



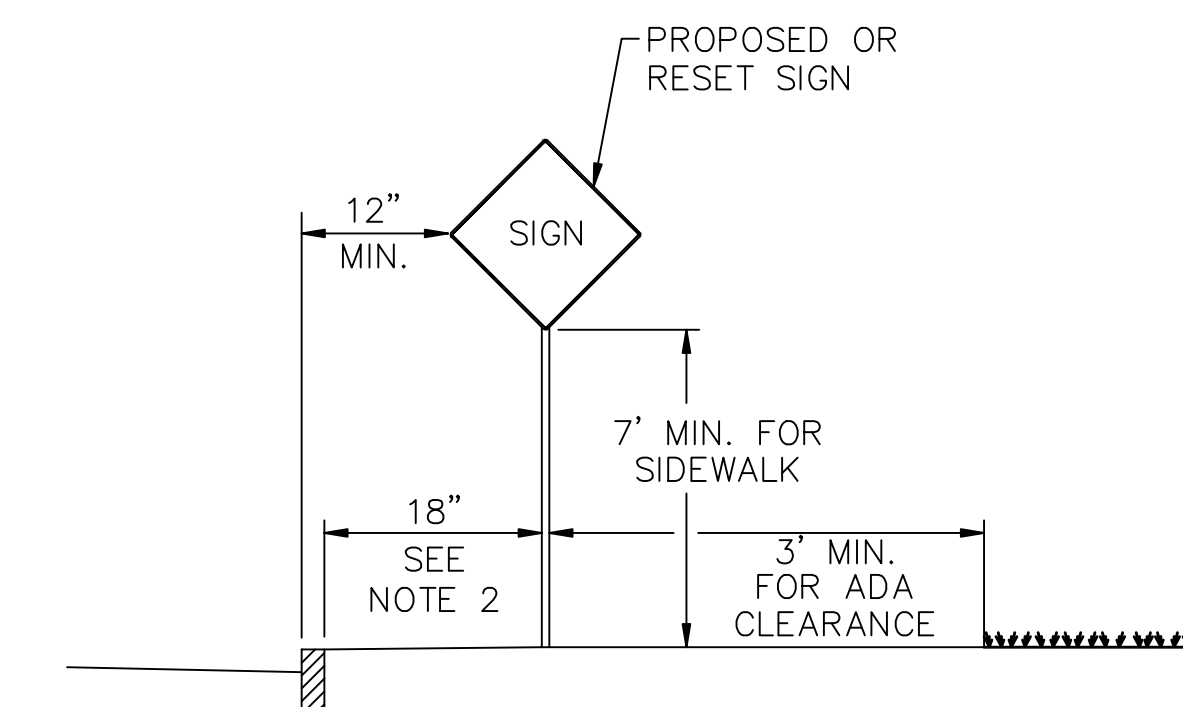
NOTES:  
1. SEE MUTCD FIGURE 9C-3 FOR MORE INFO  
2. BIKE LANE MARKINGS SHALL BE REFLECTORIZED PRE-FORMED THERMOPLASTIC

**BIKE LANE PAVEMENT MARKINGS**  
NOT TO SCALE



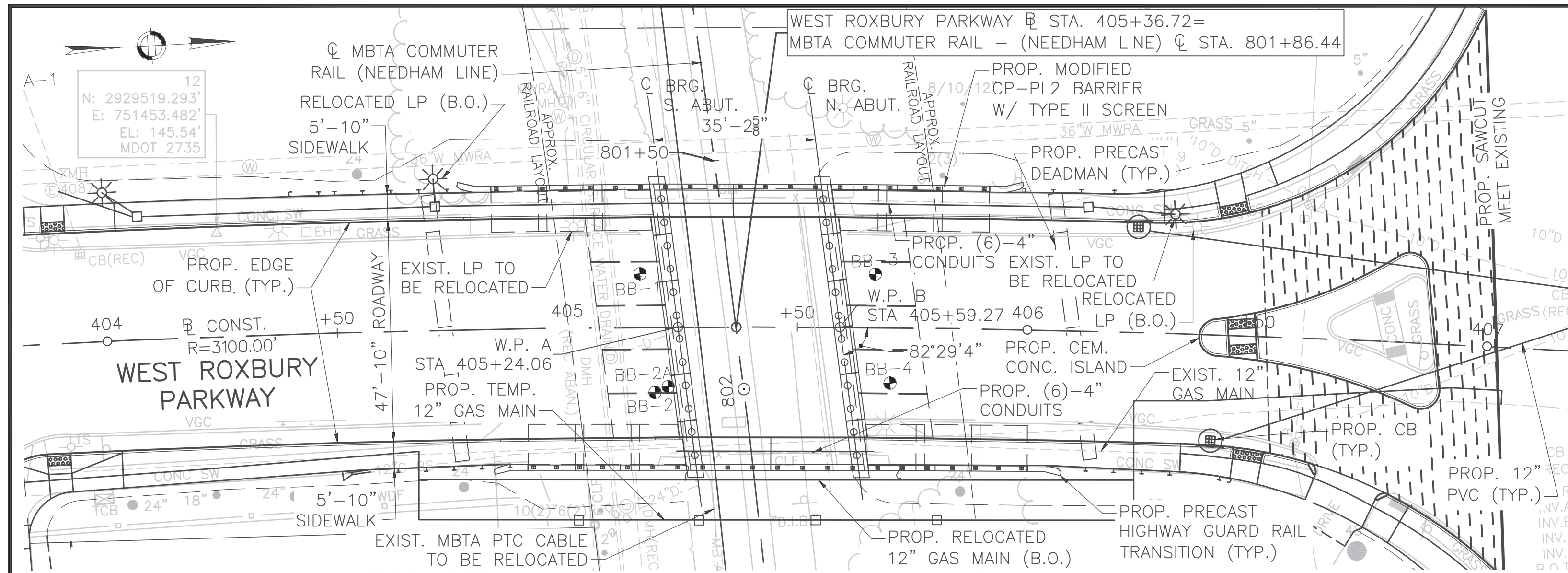
NOTES:  
1. SEE MUTCD FIGURE 9C-9 FOR MORE INFO  
2. BIKE LANE MARKINGS SHALL BE REFLECTORIZED PRE-FORMED THERMOPLASTIC

**SHARROW PAVEMENT MARKING LAYOUT**  
NOT TO SCALE



NOTES:  
1. MIN. POST EMBEDMENT TO BE 4'  
2. OFFSET FROM ROADWAY EDGE MAY VARY BASED ON ACTUAL SITE CONDITIONS. EXACT SIGN LOCATIONS TO BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

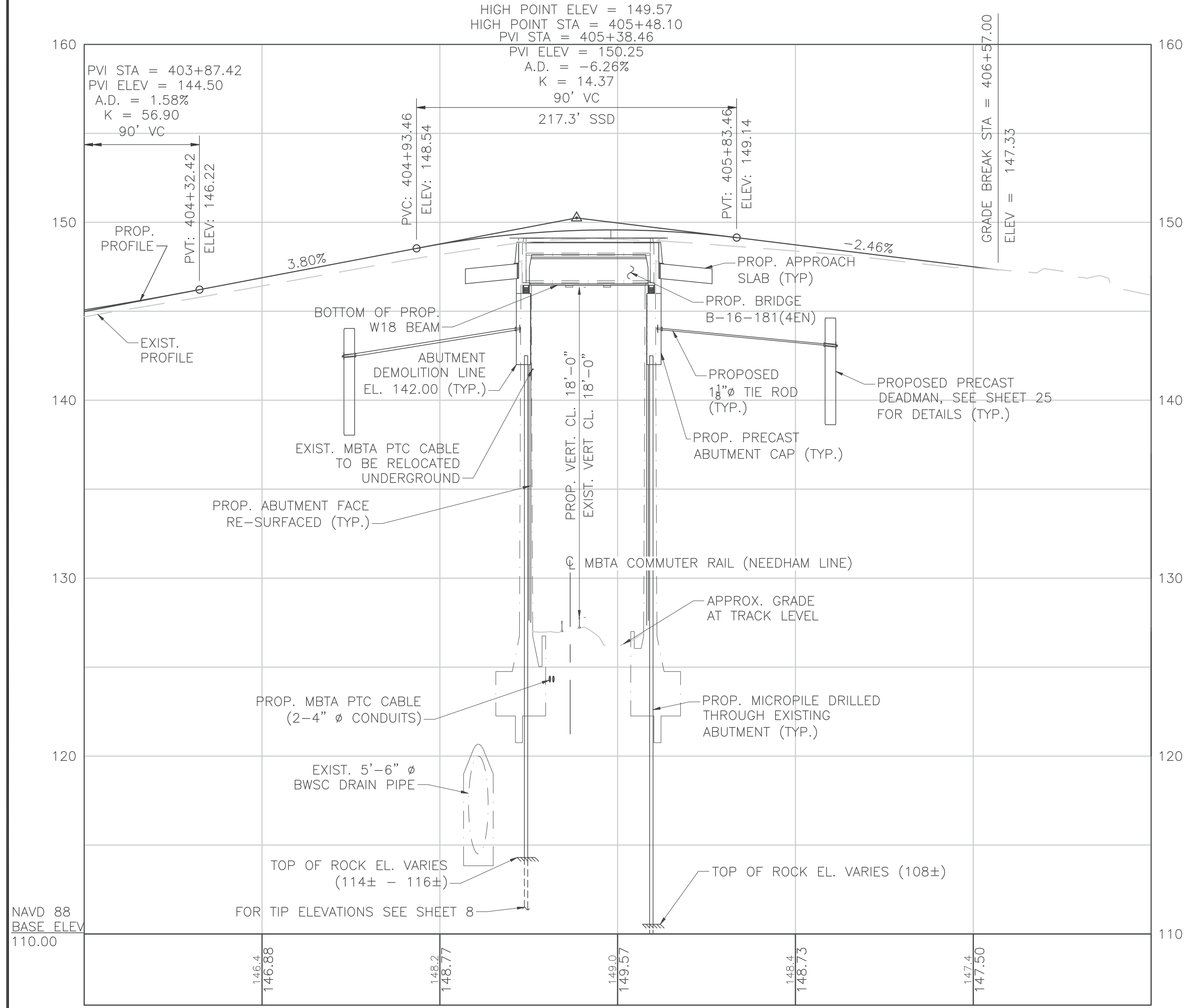
**TYPICAL SIGN INSTALLATION**  
NOT TO SCALE



**KEY PLAN**

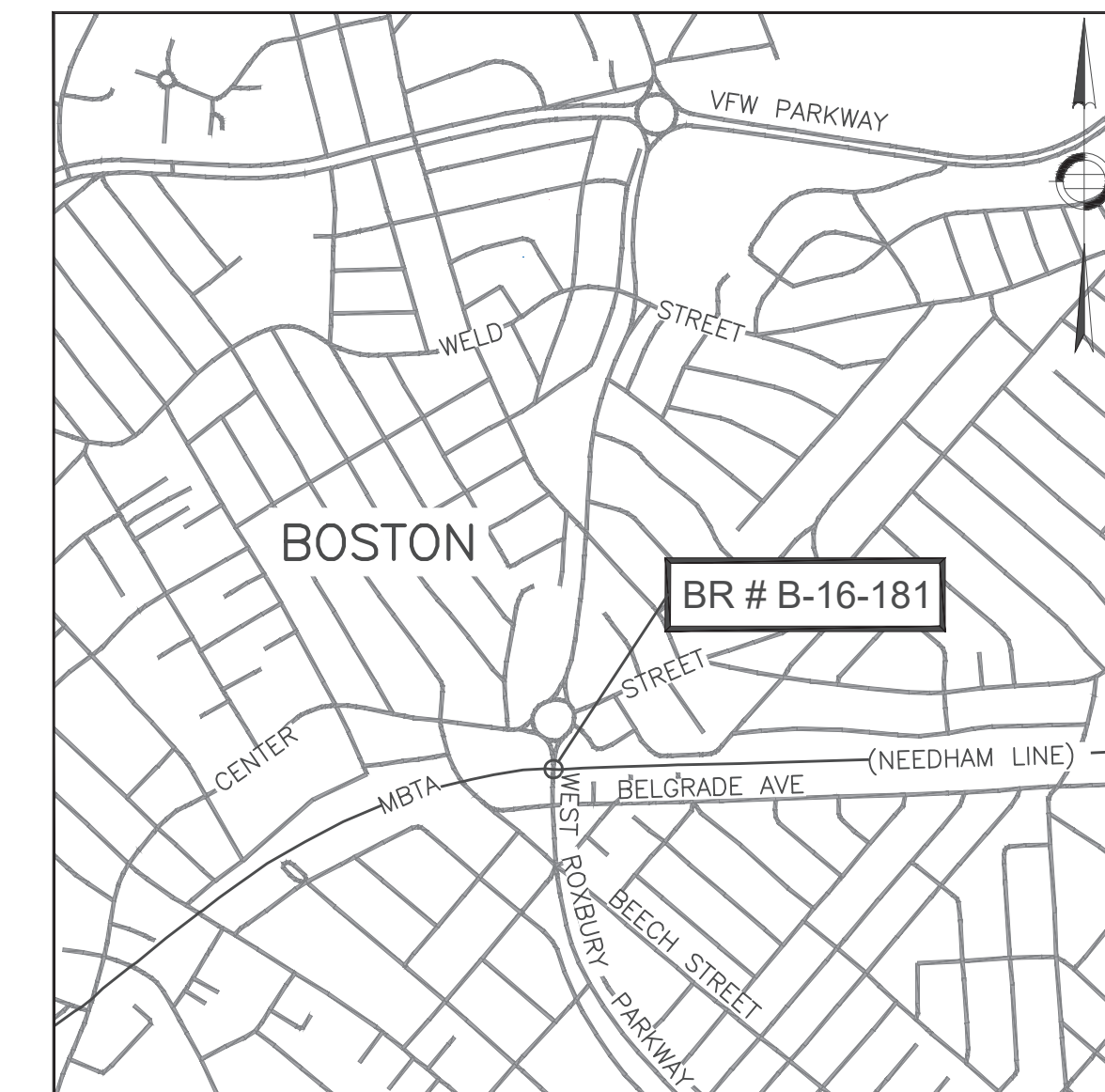
SCALE: 1"=20'

HIGH POINT ELEV = 149.57  
 HIGH POINT STA = 405+48.10  
 PVI STA = 405+38.46  
 PVI ELEV = 150.25  
 A.D. = -6.26%  
 K = 14.37  
 90' VC



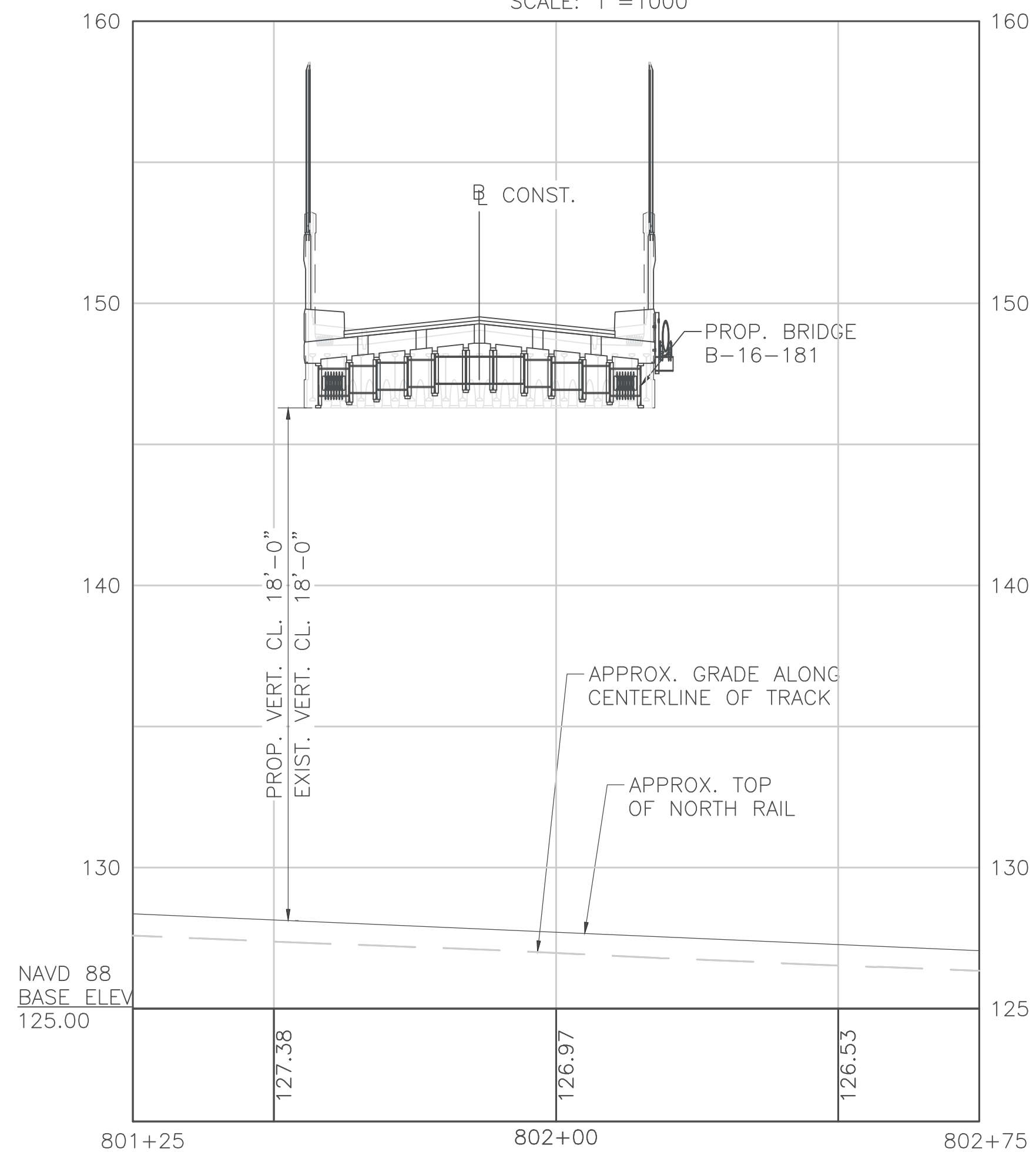
**PROFILE - WEST ROXBURY PARKWAY**

HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 4'-0"



**LOCUS MAP**

SCALE: 1"=1000'



**PROFILE - MBTA COMMUTER RAIL (NEEDHAM LINE)**

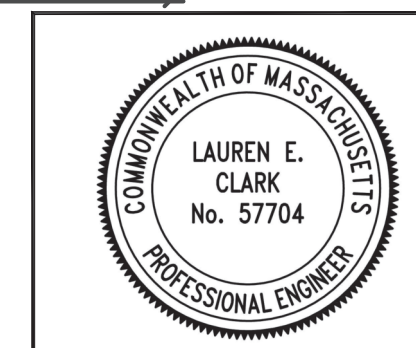
(LOOKING NORTH)  
 HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 4'-0"

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	38	90
PROJECT FILE NO. 606902			

**TITLE SHEET**

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	GENERAL NOTES
3	BRIDGE LAYOUT AND QUANTITIES
4	BORING DATA I
5	BORING DATA II
6	BORING DATA III
7	GENERAL PLAN
8	ELEVATION
9	CONSTRUCTION STAGING
10	DEMOLITION PLAN
11	GAS RELOCATION
12	FOUNDATION LAYOUT PLAN
13	MICROPILE DETAILS
14	SOUTH ABUTMENT PLAN
15	SOUTH ABUTMENT ELEVATION
16	NORTH ABUTMENT PLAN
17	NORTH ABUTMENT ELEVATION
18	ABUTMENT DETAILS I
19	ABUTMENT DETAILS II
20	ABUTMENT DETAILS III
21	ABUTMENT DETAILS IV
22	ABUTMENT DETAILS V
23	APPROACH SLAB DETAILS
24	LIMITS OF GRAVEL BORROW AND MODIFIED ROCKFILL
25	DEADMAN ANCHOR PLAN AND DETAILS
26	MOMENT SLAB DETAILS I
27	MOMENT SLAB DETAILS II
28	MOMENT SLAB AND DEADMAN ANCHOR DETAILS
29	SUBSTRUCTURE RESURFACING DETAILS
30	FRAMING PLAN
31	STEEL DETAILS
32	BEARING DETAILS
33	PBU DETAILS
34	PBU DECK DETAILS
35	CROSS SECTION
CONTINUED ON SHEET 2	



Lauren Clark  
 Digitally signed by Lauren Clark  
 Date: 2024.09.16 18:11:52 -0400



50 REDFIELD STREET  
 BOSTON, MA 02122

AUG. 03, 2024 ISSUED FOR CONSTRUCTION



**PROPOSED SUPERSTRUCTURE REPLACEMENT BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
 HIGHWAY DIVISION  
 10 PARK PLAZA BOSTON, MASS

Alexander K. Bardow, P.E. Digitally signed by Alexander K. Bardow, P.E. Date: 2024.09.16 18:43:44 -0400  
 Carrie Fuller Digitally signed by Carrie Fuller Date: 2024.09.17 11:28:55 -0400  
 STATE BRIDGE ENGINEER CHIEF ENGINEER

**GENERAL NOTES:**

**DESIGN:**

IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2022, FOR HL-93 LOADING.

**MASSDOT BENCH MARK:**

BENCHMARK #2735  
STAKE AND NAIL  
N: 2929519.293  
E: 751453.482  
ELEV. = 145.544

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

**DATE:**

TO BE PLACED ON THE INSIDE FACE OF THE NORTHWEST AND SOUTHEAST HIGHWAY GUARDRAIL TRANSITIONS. 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:**

ELECTRONIC SURVEY PROVIDED BY GREEN INTERNATIONAL AFFILIATES, INC. HAS BEEN USED. COPIES OF THE FILE MAY BE OBTAINED FROM MASSDOT.

**SCALES:**

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZED PRINTS (A3).

**STAGING:**

WEST ROXBURY PARKWAY SHALL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING PROPOSED SUPERSTRUCTURE AND PROPOSED SUBSTRUCTURE CONSTRUCTION. CONTRACTOR SHALL REFER TO THE DETOUR PLAN IN THE HIGHWAY DRAWINGS.

TWO LANES OF TRAFFIC SHALL REMAIN OPEN DURING EXISTING SUBSTRUCTURE SURFACE REPAIRS.

**DIMENSIONS:**

DIMENSIONS, ANGLES AND ELEVATIONS GIVEN FOR THE STRUCTURE ARE BASED ON THE BEST AVAILABLE INFORMATION SUPPLEMENTED BY LIMITED FIELD MEASUREMENTS AND ARE NOT GUARANTEED TO BE CORRECT. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS, ANGLES AND ELEVATIONS NECESSARY FOR THE COMPLETION OF ALL WORK, BY FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY EXISTING FIELD CONDITIONS (i.e. MEMBER SIZE, PLATE SIZES, AND MEMBER CONFIGURATION) BY FIELD MEASUREMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE HAVE BEEN MADE AND SUBMITTED SHOP DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER. SHOP DRAWINGS SHALL STATE THAT THE EXISTING DIMENSIONS, ANGLES, ELEVATIONS AND FIELD CONDITIONS HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR.

**UNSUITABLE MATERIAL:**

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

**ANCHOR BOLTS**

ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE CONCRETE IS PLACED.

**REINFORCEMENT:**

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31, GRADE 60. REINFORCING SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED. 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. COATED BARS, COVER <3d <sub>b</sub> , OR CLEAR SPACING <6d <sub>b</sub>	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.

**CAST-IN-PLACE CONCRETE:**

SIDEWALKS AND MODIFIED CP-PL2 BARRIERS SHALL BE 5000 PSI, HP CEMENT CONCRETE.

ABUTMENT/WINGWALL RESURFACING SHALL BE 5000 PSI, HP CEMENT CONCRETE.

CORRUGATED METAL PIPE (CMP) VOIDS IN PRECAST ABUTMENT CAPS SHALL BE FILLED WITH 5000 PSI, HP CEMENT CONCRETE.

KEEPER BLOCKS, DECK/END DIAPHRAGM, MOMENT SLAB CLOSURE POUR AND CURTAIN WALLS SHALL BE 5000 PSI, HP CEMENT CONCRETE.

**PRECAST CONCRETE:**

HIGHWAY GUARDRAIL TRANSITIONS SHALL BE 5000 PSI, HP CEMENT CONCRETE.

PRECAST DECK, PRECAST END DIAPHRAGMS, MOMENT SLAB, AND MOMENT SLAB WALL SHALL BE 5000 PSI, HP CEMENT CONCRETE.

APPROACH SLABS SHALL BE 5000 PSI, HP CEMENT CONCRETE.

ABUTMENT CAP, BACKWALL, AND PRECAST DEADMANS SHALL BE 5000 PSI, HP CEMENT CONCRETE.

**CONTROLLED LOW DENSITY FILL**

CONTROLLED LOW DENSITY FILL WHERE INDICATED ON PLANS SHALL MEET THE REQUIREMENTS OF AND BE PAID FOR UNDER ITEM 160.3 CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI).

**MEMBRANE WATERPROOFING:**

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

**MICROPILES:**

STEEL CASING SHALL BE PRIME STEEL AND MEET THE REQUIREMENTS OF API 5L PSL1 GRADE 52 WITH SR15 SUPPLEMENTAL REQUIREMENTS.

REINFORCING BAR SHALL BE CONTINUOUSLY THREADED FOR THE ENTIRE BAR LENGTH CONFORMING TO AASHTO M31, HAVING A MINIMUM YIELD STRENGTH OF 75 KSI.

THREADBAR NUT AND COUPLING FROM THE SAME MANUFACTURER AS THE THREADBAR SHALL CONFORM TO THREADBAR MANUFACTURER REQUIREMENTS.

ANCHOR PLATE SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50.

GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI AND CEMENT SHALL CONFORM TO AASHTO M85 TYPE I OR II.

**BOLTS:**

ALL BOLTS SHALL BE 7/8" DIAMETER AND SHALL CONFORM TO ASTM F3125, GRADE A325, THREADS EXCLUDED FROM SHEAR PLANE. HARDENED WASHERS SHALL BE PLACED UNDER THE TURNED ELEMENT. NUTS SHALL BE AS LISTED IN ASTM F3125 AS RECOMMENDED OR SUITABLE FOR THE BOLT. ALL BOLTS SHALL BE HOT-DIPPED GALVANIZED. ALL CONNECTIONS SHALL BE CONSIDERED SLIP-CRITICAL WITH CLASS C FAYING SURFACES

**STEEL AND WELDING**

ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270, GRADE 50. HOT-DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M111 AND M232, UNLESS OTHERWISE NOTED ON THE PLANS, OR OTHERWISE SPECIFIED BELOW.

EXTERIOR FASCIA AND BOTTOM OF EXTERIOR BEAMS SHALL BE PAINTED GREEN FEDERAL STANDARD NO. 14223, SEE SPECIFICATIONS.

STRUCTURAL STEEL DESIGNATED AS A MAIN MEMBER SHALL CONFORM TO CHARPY V-NOTCH REQUIREMENTS OF AASHTO M270 ZONE T2.

ALL WELDING, WELDING MATERIAL, PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING STEEL SHALL CONFORM TO THE LATEST MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, THE BRIDGE WELDING CODE (AASHTO/AWS D1.5), AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO, AND THE LATEST AASHTO BRIDGE CONSTRUCTION SPECIFICATIONS.

THE CONTRACTOR IS NOTIFIED THAT TACK WELDING IS NOT PERMITTED.

**EXISTING CONDITIONS:**

PLANS OF THE EXISTING BRIDGE ARE AVAILABLE FOR INSPECTION AT THE OFFICE OF PLANS AND RECORDS, ROOM 6262, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, 10 PARK PLAZA, BOSTON, MA 02116.

THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT.

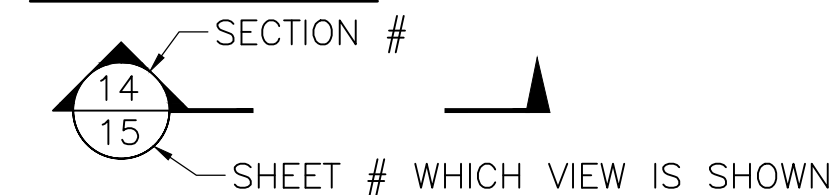
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS REQUIRED FOR THE PROPER PERFORMANCE OF THE WORK. FIELD CONDITIONS MAY EXIST WHICH DEVIATE FROM THE TYPICAL AND THEORETICAL DIMENSIONS SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FABRICATION AND FIT OF THE WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF ALL EXISTING MATERIALS WHICH ARE TO BE REMOVED FROM THE STRUCTURE AS SHOWN ON THE PLANS. THE BID PRICE FOR EACH REPAIR SHALL INCLUDE THE COMPLETE COST OF REMOVAL, HANDLING AND LEGAL DISPOSAL OF SUCH MATERIALS. THE RAILROAD RIGHT OF WAY IS TO REMAIN CLEAR OF DEBRIS AND MATERIALS.

**FOUNDATIONS:**

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

**SECTION MARK:**



**UTILITIES:**

THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE OR RELOCATE, AS NECESSARY, ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE RESPECTIVE UTILITY OWNER FOR ALL UTILITIES THAT ARE TO BE TEMPORARILY OR PERMANENTLY RELOCATED FOR THE BRIDGE SUPERSTRUCTURE REPLACEMENT WORK.

**ABBREVIATIONS:**

RSLP – RAPID SETTING LOW PERMEABILITY CEMENT CONCRETE  
PBU – PRECAST BRIDGE UNIT

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	39	90
PROJECT FILE NO.		606902	

**GENERAL NOTES**

**TRAFFIC DATA**

	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2031	N/A
AVERAGE DAILY TRAFFIC – PRESENT	18,834	N/A
AVERAGE DAILY TRAFFIC – DESIGN YEAR	21,300	N/A
DESIGN HOURLY VOLUME	950	N/A
DIRECTIONAL DISTRIBUTION	63%	N/A
TRUCK PERCENTAGE – AVERAGE DAY	2.5%	N/A
TRUCK PERCENTAGE – PEAK HOUR	2.1%	N/A
DESIGN SPEED	25 MPH	N/A
DIRECTIONAL DESIGN HOURLY VOLUME	1,500	N/A

**SEISMIC DESIGN CRITERIA**

DESIGN RETURN PERIOD:	1000 YEAR
DESIGN SPECTRA	
As	0.113g
SDs	0.233g
SD1	0.091g
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

**DRAWING LIST (CONT'D FROM SHEET 1)**

SHEET NUMBER	SHEET TITLE
36	MODIFIED CP-PL2 BARRIER AND SIDEWALK DETAILS
37	END DIAPHRAGM DETAILS
38	DECK DETAILS
39	GAS MAIN SUPPORT DETAILS
40	CONSTRUCTION TOLERANCES
41	HIGHWAY GUARDRAIL TRANSITION I
42	HIGHWAY GUARDRAIL TRANSITION II
43	TYPE II SCREEN I
44	TYPE II SCREEN II

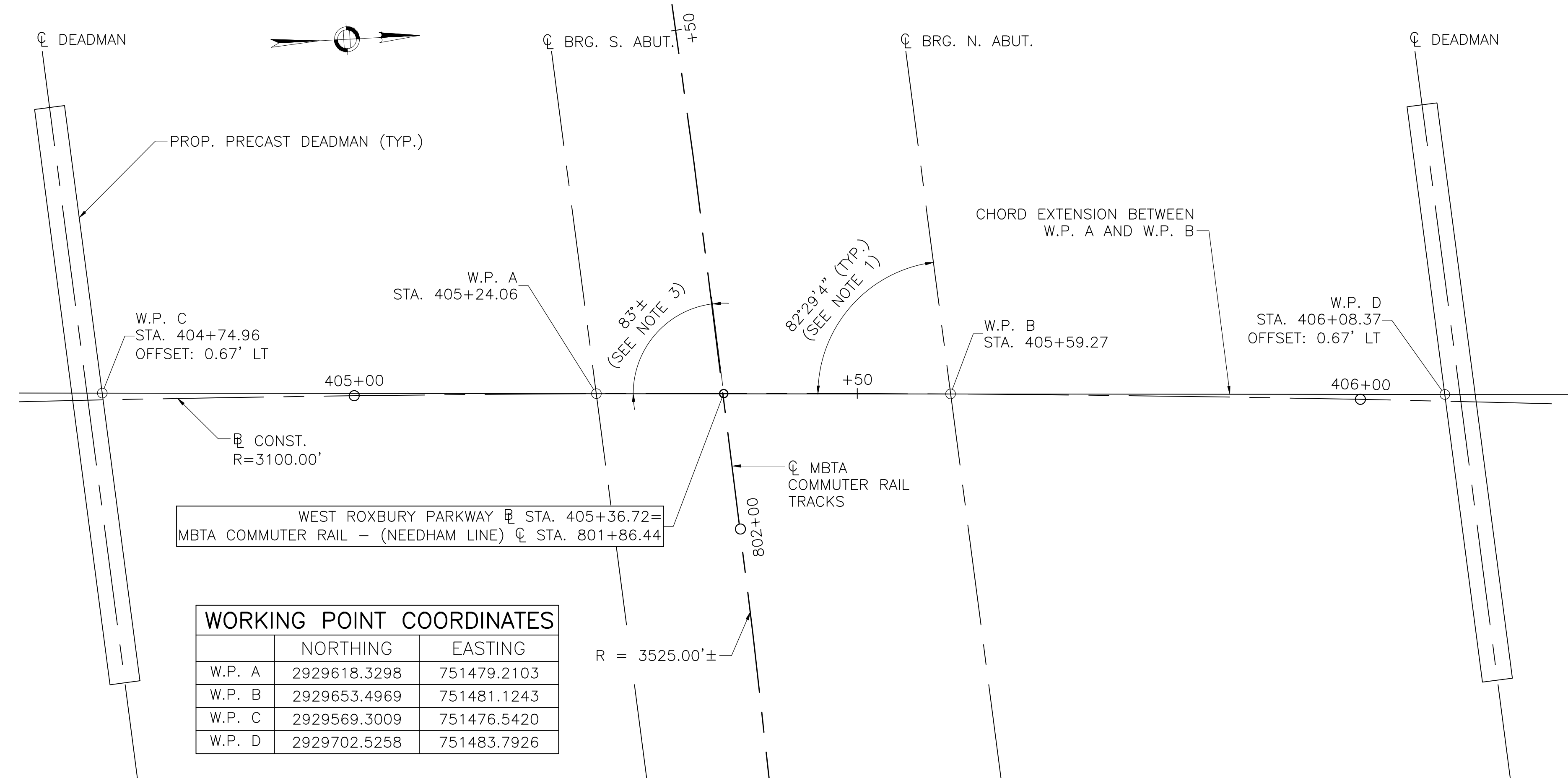
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	40	90
PROJECT FILE NO.		606902	

**BRIDGE LAYOUT AND QUANTITIES**

ITEM	DESCRIPTION	UNITS	QUANTITY
114.1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B-16-181 (4EN)	LS	1
127.	CONCRETE EXCAVATION	CY	75
127.1	REINFORCED CONCRETE EXCAVATION	CY	65
127.4	REINFORCED CONCRETE DECK EXCAVATION (FULL DEPTH)	SY	5
127.41	REINFORCED CONCRETE DECK EXCAVATION (PARTIAL DEPTH)	CY	10
140.	BRIDGE EXCAVATION	CY	820
144.	CLASS B ROCK EXCAVATION	CY	80
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES & PIPES	CY	675
160.3	CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI)	CY	65
450.601	SUPERPAVE BRIDGE SURFACE COURSE-9.5 POLYMER (SSC-B-9.5-P)	TON	20
450.70	SUPERPAVE BRIDGE PROTECTIVE COURSE-9.5 (SSC-B-9.5)	TON	20
802.1	TEMPORARY UTILITY SUPPORT STRUCTURE	LS	1
905.21	5000 PSI, 3/8 IN, 710 HP CEMENT CONCRETE	CY	80
909.5	RAPID SETTING CONCRETE	CY	12
910.	STEEL REINFORCEMENT FOR STRUCTURES	LB	950
910.12	EMBEDDED GALVANIC ANODE	EA	900
912.5	DRILLED AND GROUTED #5 DOWELS	EA	1870
945.01	DRILLED MICROPILE MOBILIZATION	LS	1
945.10	DRILLED MICROPILES	FT	1200
945.20	MICROPILE - PENETRATING OBSTRUCTIONS	FT	120
948.60	MICROPILE VERIFICATION LOAD TEST	EA	1
957.	GEOTECHNICAL INSTRUMENTATION	LS	1
986.	MODIFIED ROCKFILL	TON	150
995.01	BRIDGE STRUCTURE, BRIDGE NO. B-16-181 (4EN)	LS	1



WORKING POINT COORDINATES		
	NORTHING	EASTING
W.P. A	2929618.3298	751479.2103
W.P. B	2929653.4969	751481.1243
W.P. C	2929569.3009	751476.5420
W.P. D	2929702.5258	751483.7926

- NOTES:**
- ANGLE SHOWN IS BETWEEN CENTERLINE OF BEARINGS AND CHORD BETWEEN W.P. A AND W.P. B.
  - CL BRIDGE LOCATED ALONG CHORD BETWEEN W.P. A AND W.P. B.
  - ANGLE SHOWN IS APPROXIMATE AND IS BETWEEN RAILROAD CL CURVE TANGENT AT INTERSECTION WITH CHORD BETWEEN W.P. A AND W.P. B.

**BRIDGE LAYOUT**  
SCALE: 1/8" = 1'-0"

AUG. 03, 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	



BOSTON  
WEST ROXBURY PARKWAY OVER MBTA

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	41	90
PROJECT FILE NO.		606902	

BORING DATA I

BB-1

TEST BORING LOG										MassDOT Project File No.: 606902		
GZA GeoEnvironmental, Inc. Engineers and Scientists			Alfred Benesch & Company West Roxbury Parkway over MBTA Bridge No. B-16-181(4EN) Boston, Massachusetts			BORING NO.: BB-1 SHEET: 1 of 2 PROJECT FILE NO.: 01.0175121.00 REVIEWED BY: LWP/MPS						
Drilling Co.: New England Boring Contractors		Type of Rig: Truck Mounted		Boring Location: STA. 405+17.5 OFF 11.7' W		H. Datum: NAD83						
Foreman: Ken Smith		Rig Model: GEFCO Stratostar		Ground Surface Elev. (ft.): 148.3		V. Datum: NAVD88						
Logged By: Ernesto Pena		Drilling Method: Drive & Wash		Final Boring Depth (ft.): 36.5		Northing: 2929610.7						
				Date Start - Finish: 5/10/2022 - 5/12/2022		Easting: 751467.2						
Auger/Casing Type: SW, HW		Sampler Type: Split Spoon		Groundwater Depth (ft.)								
I.D./O.D. (in.): 6.5/6.0 / 4.5/4.0		L.D./O.D. (in.): 1.375/2.0		Date		Time		Water Depth		Casing Stob. Time		
Hmr Weight (lb.): 300		Sampler Hmr Wt (lb.): 140		5/10/22		1345		23.3		28 10 min.		
Hmr Fall (in.): 24		Sampler Hmr Fall (in.): 30		5/11/22		1400		22.5		32 5 min.		
Other: Safely Hammer		Other: Auto Hammer		5/12/22		1300		26.0		30 30 min.		
Depth (ft)	Casing Blows/ Core Rate	Sample			SPT Value	Sample Description Modified	Stratification	Equipment Installed	Groundwater			
		No.	Depth (ft.)	Pen. (in)					Blows (per 6 in.)	Time	Water Depth	Casing
0-2	S-1	24	14	21	18	S-1: Medium dense, brown, fine to coarse SAND, little Gravel, little Silt.	ASPHALT	No Equipment Installed				
2-4	S-2	24	12	10	8	S-2: Medium dense, brown, fine to coarse SAND, some Silt, little Gravel.						
4-6	S-3	24	9	7	6	S-3: Medium dense, brown, fine to coarse SAND, little (+) Silt, little (+) Gravel.						
6-8	S-4	24	2	5	5	S-4: Medium dense, brown, fine to coarse SAND, little (+) Silt, little (+) Gravel.						
8-10	S-5	24	6	12	8	S-5: Medium dense, brown, fine to coarse SAND and GRAVEL, little Silt.						
10-12	S-6	24	8	7	4	S-6: Loose, brown, fine to coarse SAND, some Gravel, little Silt.						
12-14	S-7	24	3	5	6	S-7: Loose, brown, fine to coarse SAND, little Silt, trace Gravel.						
14-16	S-8	24	6	7	3	S-8: Loose, brown, fine to coarse SAND, some Silt, trace Gravel.	FILL					
16-18	S-9	24	6	3	2	S-9: Loose, brown, fine to coarse SAND, trace Silt, trace Gravel.						
18-20	S-10	24	8	10	6	S-10: Loose, brown, fine to coarse SAND, little Gravel, little Silt.						
20-22	S-11	24	10	3	3	S-11: Loose, brown, fine to coarse SAND, some Clayey Silt, little Gravel.						
22-24	S-12	24	2	5	4	S-12: Loose, brown/dark brown, fine to coarse SAND, some Clayey Silt, little Gravel.						
24-26	S-13	24	13	6	5	S-13: Medium dense, brown, fine to medium SAND, some Gravel, trace Silt.						
26-28	S-14	24	8	6	9	S-14: Medium dense, brown, fine to medium SAND, little Silt, trace Gravel.						
28-30	S-15	24	9	9	6	S-15: (Top 4") Brown, fine to coarse SAND, trace Silt, trace Gravel.						
30-31.5	S-16	15	6	9	6	S-15: (Bottom 5") Brown, fine to medium SAND, little Silt, trace Gravel.						
31.5-36.5	C-1	60	0	100/3"	R	S-16: Very dense, fine to coarse SAND and GRAVEL, little Silt. C-1: No recovery.	FILL 117.0' CONCRETE FOOTING 114.3' BEDROCK 111.8'					
Bottom of boring at 36.5 feet.												

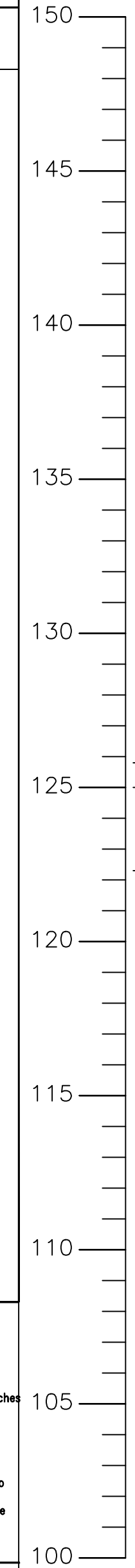
175121.00 WEST ROXBURY PARKWAY OVER MBTA; STANDARD MASSDOT W/E NO. SUPPL. W/E PRC. 6/24/2022

REMARKS

- Ground surface elevation, coordinates, staking, and offset estimated based on drawing entitled 7506902\_BROX-10(1818)\_PLAN AND ELEVATION.DWG provided by Alfred Benesch & Company on November 4, 2021.
- Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in headspace of sealed soil sample jars using an Ion Science Picocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). NO indicated nothing was detected (Clipped).
- Drillers advanced 4-inch diameter casing to sample depths between about 4 and 31 feet below ground surface (bgs). Drillers removed 4-inch casing and advanced 6-inch diameter casing to 31.5 feet prior to beginning core run C-1.
- Low recovery on first attempt with 2-inch spoon for samples S-4, S-7 and S-12. Used 3-inch spoon to obtain additional sample. With 3-inch spoon recovered 5 inches, 0 inches, and 5 inches for samples S-4, S-7 and S-12, respectively.
- Slight rig chatter observed between approximately 17 and 18 feet bgs.
- Wood fragments were observed in wash water between about 27 and 28 feet bgs while washing out 6-inch diameter casing.
- Used PQ size rock core barrel to core from approximately 31.5 to 36.5 feet bgs using up to approximately 100 psi of down pressure. Core rate presented in minutes per foot core.
- A change in wash color was observed from light gray to gray brown at approximately 34 feet bgs, indicating possible change in strata from concrete to bedrock.
- Driller had difficulty retrieving core barrel. Driller indicated that inner core barrel had jammed. The casing was lifted 5 feet up and the driller was able to recover the core barrel; however, no core was recovered. The PQ core barrel was also damaged and not usable.
- A weighted tape was used to sound the bottom of the borehole. Measurements indicated the top of the core was at approximately 29 feet bgs and the core was jammed in the borehole. The driller indicated they did not have any means to recover the core. The borehole and core were abandoned.
- Upon completion the borehole initially backfilled with concrete from approximately 29 and 26 feet bgs. The borehole was then backfilled with sand and soil cuttings. Asphalt cold patch was used to repair the ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual stratifications may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: BB-1



NOTES:

- LOCATION OF BORINGS SHOWN ON THE PLANS THUS: BB-X
- 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" WITH A 140 POUND WEIGHT FALLING 30".
- BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVE.) 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 MAY 2022.
- BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET DERRY, NH 03038.
- THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

BORING DATA  
SCALE: 1" = 4'-0"

AUG. 03, 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	

606902\_BR03-05(B16181)\_BORING DATA.DWG Plotted on 24-Jul-2024 11:50 AM 19-July-2024 Final Structural Submittal (SF)

BOSTON  
WEST ROXBURY PARKWAY OVER MBTA

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	42	90
PROJECT FILE NO.		606902	

BORING DATA II

BB-2

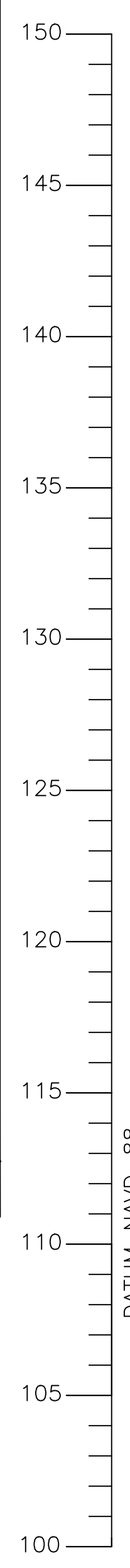
BB-2A

TEST BORING LOG										MassDOT Project File No.: 606902			
GZA GeoEnvironmental, Inc. Engineers and Scientists		Alfred Benesch & Company West Roxbury Parkway over MBTA Bridge No. B-16-181(4EN) Boston, Massachusetts			BORING NO.: BB-2 SHEET: 1 of 1 PROJECT FILE NO.: 01.0175121.00 REVIEWED BY: LWP/MP5								
Drilling Co.: New England Boring Contractors Foreman: Ken Smith Logged By: Ernesto Pena		Type of Rig: Truck Mounted Rig Model: GEFCO Stratostar Drilling Method: Drive & Wash		Boring Location: STA. 405+17.5 OFF 14.1' E Ground Surface Elev. (ft.): 148.4 Final Boring Depth (ft.): 26.5 Date Start - Finish: 5/13/2022 - 5/13/2022			H. Datum: NAD83 V. Datum: NAVD88 Northing: 2929612.6 Easting: 751493.1						
Auger/Casing Type: HW I.D./O.D. (in.): 4.0/4.5 Hmr Weight (lb.): 300 Hmr Fall (in.): 24 Other: Safety Hammer		Sampler Type: Split Spoon I.D./O.D. (in.): 1.375/2.0 Sampler Hmr Wt (lb.): 140 Sampler Hmr Fall (in.): 30 Other: Auto Hammer		Groundwater Depth (ft.)									
				Date		Time		Water Depth		Casing		Slab. Time	
				Not recorded									
Depth (ft)	Casing No.	Sample			Blows (per 6 in.)	SPT Value	Sample Description Modified	Stratum Description	Equipment Installed	Field Test Data	Remarks	Groundwater Depth (ft.)	
		Depth (ft.)	Pen. (in)	Rec. (in)								Date	Time
0-2	S-1	24	11	18	11	S-1: Medium dense, brown, fine to coarse SAND and GRAVEL, little SILT.	ASPHALT	No Equipment Installed	148.3				
2-4	S-2	24	14	10	6	S-2: Medium dense, brown, fine to coarse SAND, some Gravel, little SILT.			0.2				
4-6	S-3	24	11	8	7	S-3: Medium dense, brown, fine to coarse SAND, little SILT, trace Gravel.			0.1				
6-8	S-4	24	9	4	4	S-4: Loose, brown, fine to coarse SAND, little SILT, trace Gravel.			0.2				
8-10	S-5	24	6	8	4	S-5: Loose, brown, fine to coarse SAND, little SILT, trace Gravel.			0.2				
10-12	S-6	24	9	3	2	S-6: Very loose, brown, fine to coarse SAND, little SILT, trace Gravel.			0.2				
12-14	S-7	24	7	12	8	S-7: Medium dense, brown, fine to coarse SAND, little SILT, trace Gravel.	FILL		0.2				
14-16	S-8	24	0	12	12	S-8: No recovery.			-				
16-18	S-9	24	5	15	13	S-9: Medium dense, brown, fine to coarse SAND, little SILT, trace Gravel.			0.2				
18-20	S-10	24	6	5	5	S-10: Medium dense, brown, fine to coarse SAND, little SILT, trace Gravel.			0.3				
20-22	S-11	24	6	5	5	S-11: Medium dense, brown, fine to coarse SAND, little SILT, trace Gravel.			0.2				
22-24	S-12	24	9	8	4	S-12: Loose, brown, fine to coarse SAND, little SILT, trace Gravel.			0.2				
24-24.1	S-13	1	0	100/1"	R	S-13: No recovery.	CONCRETE FOOTING		24'	124.4'			
Bottom of boring at 26.5 feet.										26.5'	121.9'		

REMARKS  
1. Ground surface elevation, coordinates, stationing, and offset estimated based on drawing entitled "606902\_BRXX-XX(16181)\_PLAN AND ELEVATION.DWG" provided by Alfred Benesch & Company on November 4, 2021.  
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in headspace of sealed soil sample jars using an Ion Science Phoscheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicated nothing was detected (<1ppmv).  
3. Drillers advanced 4-inch diameter casing to sample depths between about 4 and 24 feet below ground surface (bgs).  
4. No recovery on first attempt with 2-inch spoon for sample S-8. Used 3-inch spoon to attempt to obtain sample. No recovery.  
5. Driller advanced rollerbit from approximately 24.1 to 26.5 feet bgs. Sharp decrease in drill effort observed at approximately 26.5 feet bgs. Based on location and thickness of obstruction it is likely the concrete footing was encountered at this interval.  
6. Upon completion the borehole initially backfilled with concrete from approximately 26.5 to 22 feet bgs. The borehole was then backfilled with soil cuttings and sand. Asphalt cold patch was used to repair ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

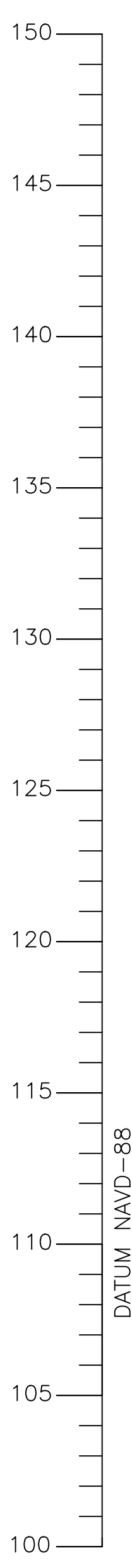
ESTIMATED MICROPILE TIP ELEVATION AT S. ABUTMENT - EL. 103.3'±



TEST BORING LOG										MassDOT Project File No.: 606902			
GZA GeoEnvironmental, Inc. Engineers and Scientists		Alfred Benesch & Company West Roxbury Parkway over MBTA Bridge No. B-16-181(4EN) Boston, Massachusetts			BORING NO.: BB-2A SHEET: 1 of 2 PROJECT FILE NO.: 01.0175121.00 REVIEWED BY: MPS								
Drilling Co.: New England Boring Contractors Foreman: Ken Smith Logged By: Luke Prohaske		Type of Rig: Truck Mounted Rig Model: GEFCO Stratostar Drilling Method: Drive & Wash		Boring Location: STA. 405+20.2 OFF 13.0' E Ground Surface Elev. (ft.): 148.4 Final Boring Depth (ft.): 47 Date Start - Finish: 5/16/2022 - 5/17/2022			H. Datum: NAD83 V. Datum: NAVD88 Northing: 2929615.5 Easting: 751492						
Auger/Casing Type: HW, NW I.D./O.D. (in.): 4.0/4.5 / 3.0/3.5 Hmr Weight (lb.): 300 Hmr Fall (in.): 24 Other: Safety Hammer		Sampler Type: Split Spoon I.D./O.D. (in.): 1.375/2.0 Sampler Hmr Wt (lb.): 140 Sampler Hmr Fall (in.): 30 Other: Auto Hammer		Groundwater Depth (ft.)									
				Date		Time		Water Depth		Casing		Slab. Time	
				Not recorded									
Depth (ft)	Casing No.	Sample			Blows (per 6 in.)	SPT Value	Sample Description Modified	Stratum Description	Equipment Installed	Field Test Data	Remarks	Groundwater Depth (ft.)	
		Depth (ft.)	Pen. (in)	Rec. (in)								Date	Time
0-0.5							ASPHALT	No Equipment Installed	147.9				
0.5-2.5	C-1	24.5-27	30	24		C-1: Concrete Footing.			24'	124.4'			
2.5-2.5							CONCRETE FOOTING						
2.5-2.5							CONCRETE FOOTING						
2.5-2.5	S-1	27-29	24	11	6 7	S-1: Medium dense, brown with gray, fine to coarse SAND and GRAVEL, some SILT.			27'	121.4'			
2.5-2.5	S-2	29-29.92	11	6	12	S-2: Very dense, brown to gray, fine to coarse SAND, some SILT, little Gravel.			30'	118.4'			
2.5-2.5							GLACIAL TILL						
2.5-2.5							WEATHERED ROCK						
2.5-2.5	C-2	32-37	60	58		C-2: Medium hard, moderate to moderately severely weathered, gray, amorphous, ARGILLITE, with very thin, horizontal to moderately dipping bedding, smooth, irregular, close to very close, horizontal to vertical joints/fractures.			32'	116.4'			
2.5-2.5							BEDROCK						
2.5-2.5	C-3	37-42	60	58		C-3: Moderately hard, slightly weathered, gray, amorphous, ARGILLITE, with very thin, sub-horizontal bedding, smooth, planar, very close to moderately close, horizontal to moderately dipping joints/fractures.							
2.5-2.5							BEDROCK						
2.5-2.5	C-4	42-47	60	60		C-4: Moderately hard, slightly to very slightly weathered, gray, amorphous, ARGILLITE, with very thin, horizontal to sub-horizontal bedding, smooth, planar, close to moderately close, subhorizontal to moderately dipping joints/fractures.							
2.5-2.5							BEDROCK						
2.5-2.5							Bottom of boring at 47 feet.		47'	101.4'			

REMARKS  
1. Ground surface elevation, coordinates, stationing, and offset estimated based on drawing entitled "606902\_BRXX-XX(16181)\_PLAN AND ELEVATION.DWG" provided by Alfred Benesch & Company on November 4, 2021.  
2. Driller advanced rollerbit through approximately 6 inches of asphalt.  
3. Driller advanced 4-inch diameter casing from 0 to 24 feet below ground surface (bgs), then washed out casing.  
4. Increase in drill effort at approximately 24 feet bgs. Driller advanced rollerbit using approximately 250 psi of down pressure from approximately 24 to 24.5 feet bgs. No change in effort observed. No concrete fragments observed in wash.  
5. Core C-1 advanced with NX size core barrel using approximately 250 psi of down pressure. Decrease in effort observed at approximately 27 feet bgs indicating bottom of footing.  
6. Driller advanced rollerbit through concrete, then telescoped 3-inch diameter casing to sample depths from approximately 29 to 30 feet bgs.  
7. Weathered rock observed in log of sample S-2.  
8. Used NX size rock core barrel to core from approximately 32 to 47 feet bgs using up to approximately 100 psi of down pressure. Core rate presented in minutes per foot cored.  
9. Upon completion, borehole backfilled with sand, bentonite chips, and cuttings. Concrete was placed between approximately 28 to 23 feet bgs. Asphalt cold patch used to repair ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.



ESTIMATED MICROPILE TIP ELEVATION AT S. ABUTMENT - EL. 103.3'±

BORING DATA  
SCALE: 1" = 4'-0"

AUG. 03, 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	

BB-3

TEST BORING LOG BB-3. Includes header with project info, drilling details, groundwater depth table, and a main data table with columns for Depth, Sample No., Blows, SPT Value, Sample Description, and Equipment Installed. Includes remarks and a scale on the right.

BB-4

TEST BORING LOG BB-4. Includes header with project info, drilling details, groundwater depth table, and a main data table with columns for Depth, Sample No., Blows, SPT Value, Sample Description, and Equipment Installed. Includes remarks and a scale on the right.

BOSTON WEST ROXBURY PARKWAY OVER MBTA

Table with columns: STATE, FED. AID PROJ. NO., SHEET NO., TOTAL SHEETS. Values: MA, HIP(BR)-0035(777)X, 43, 90.

BORING DATA III

WATER EL. RECORDED ON 05/02/2022

ESTIMATED MICROPILE TIP ELEVATION AT N. ABUTMENT - EL. 96.5±

BORING DATA SCALE: 1" = 4'-0"

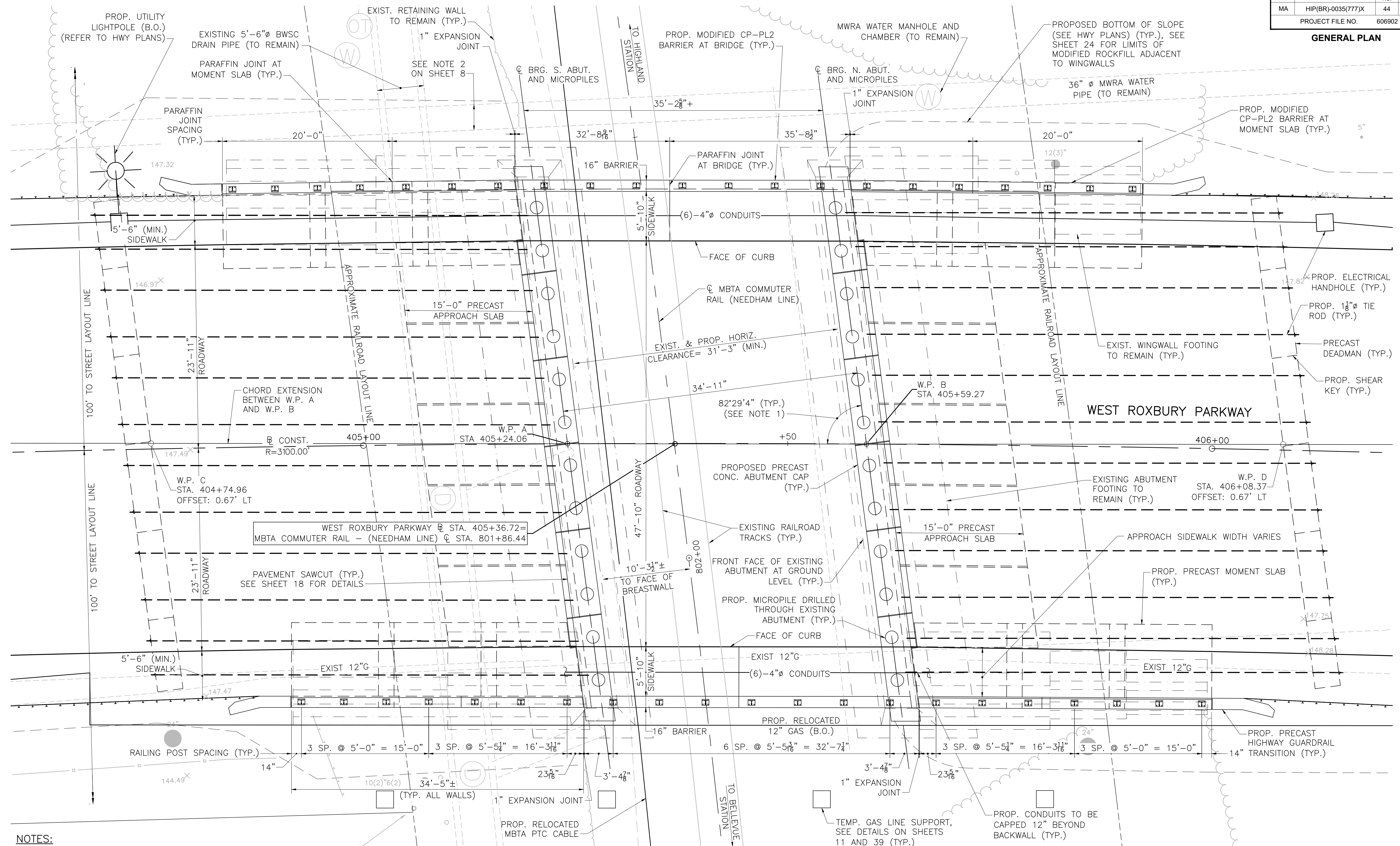
Approval table with columns: DATE, DESCRIPTION, AUTHORIZED SIGNATORY, USE ONLY PRINTS OF LATEST DATE. Includes a signature.

Vertical text on the right edge: 606902\_BR03-05(B16181)\_BORING DATA.DWG 19-July-2024 Final Structural Submittal (SF) Plotted on 24-Jul-2024 11:50 AM

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	44	90
PROJECT FILE NO.		606902	

**GENERAL PLAN**



**NOTES:**

1. ANGLE MEASURED BETWEEN CENTERLINE OF BEARING AND CHORD BETWEEN W.P. A AND W.P. B., SEE BRIDGE LAYOUT ON SHEET 3.
2. GAS MAIN SUPPORTS AT EAST FASCIA NOT SHOWN FOR CLARITY. SEE DETAILS ON SHEET 39.
3. PROPOSED ABUTMENT TIE RODS NOT SHOWN FOR CLARITY, SEE DETAILS ON SHEET 25.
4. SEE CURB TIE PLANS ON HIGHWAY SHEET FOR CURB LOCATION OFF THE BRIDGE.

**GENERAL PLAN**

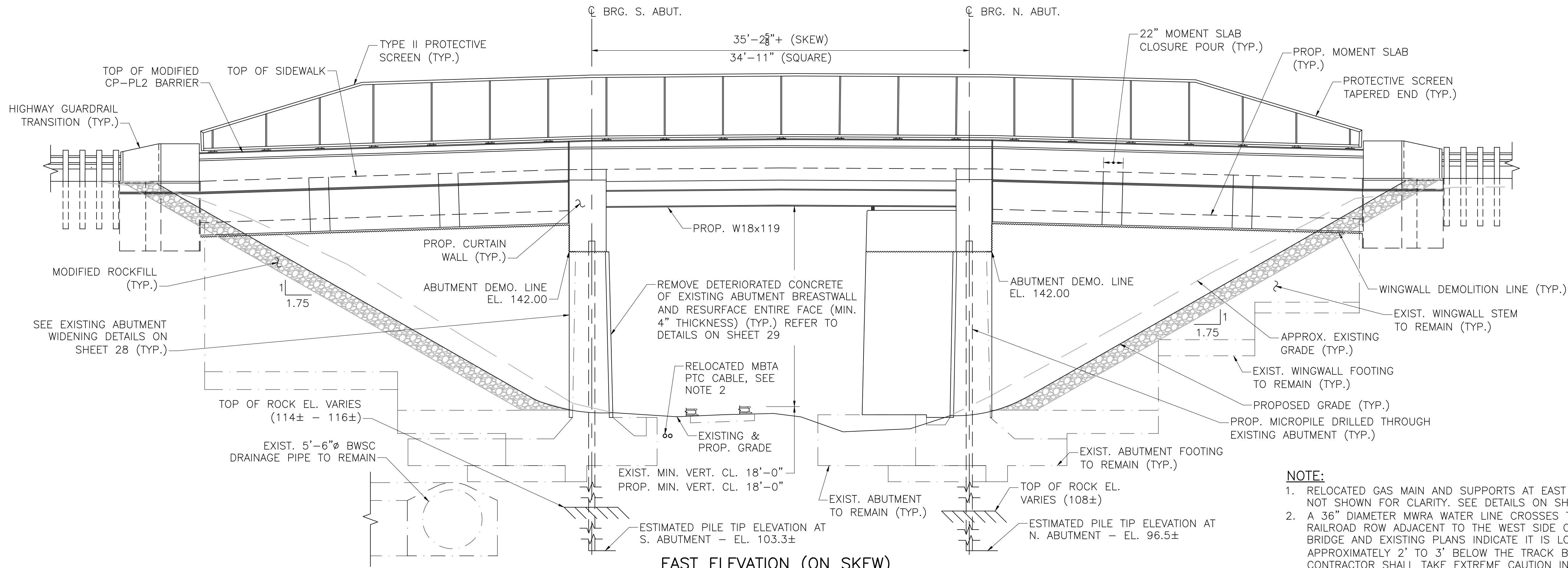
SCALE:  $\frac{3}{8}'' = 1'-0''$

DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	45	90
PROJECT FILE NO.		606902	

**ELEVATION**

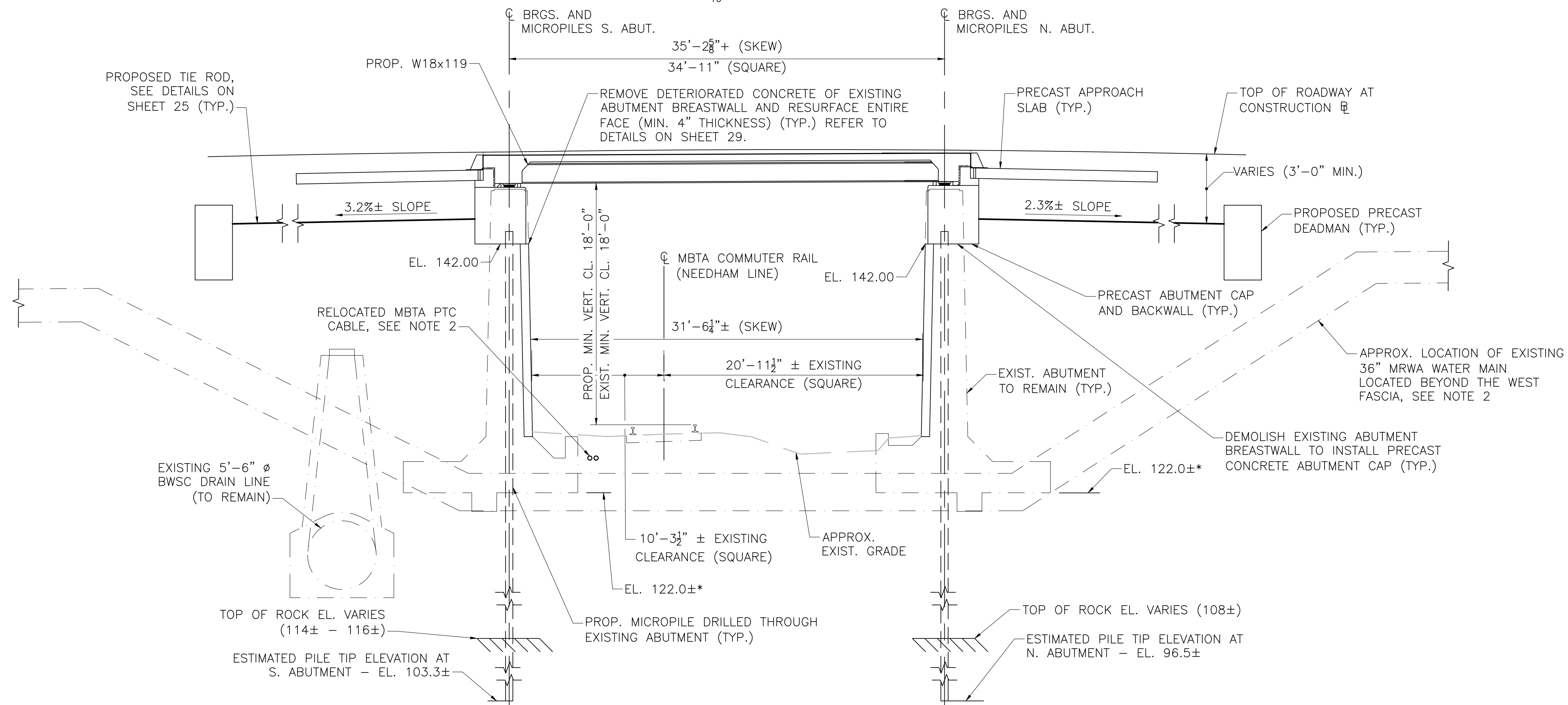


**EAST ELEVATION (ON SKEW)**

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

**NOTE:**

1. RELOCATED GAS MAIN AND SUPPORTS AT EAST FASCIA NOT SHOWN FOR CLARITY. SEE DETAILS ON SHEET 39.
2. A 36" DIAMETER MWRA WATER LINE CROSSES THE RAILROAD ROW ADJACENT TO THE WEST SIDE OF THE BRIDGE AND EXISTING PLANS INDICATE IT IS LOCATED APPROXIMATELY 2' TO 3' BELOW THE TRACK BED. THE CONTRACTOR SHALL TAKE EXTREME CAUTION IN EXCAVATING NEAR THE VICINITY OF THIS LINE.



**LONGITUDINAL SECTION (SQUARE) (LOOKING WEST)**

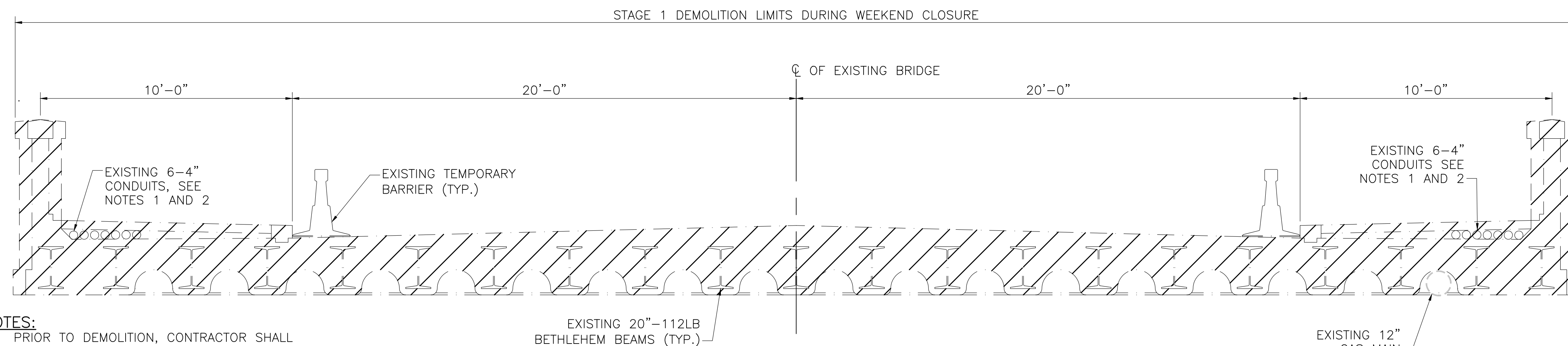
SCALE:  $\frac{3}{16}'' = 1'-0''$

\*ELEVATIONS ARE NOT GUARANTEED. ELEVATION CONVERTED TO 1988 NAVD DATUM FROM EXISTING PLANS.

DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	46	90
PROJECT FILE NO.		606902	

CONSTRUCTION STAGING



NOTES:

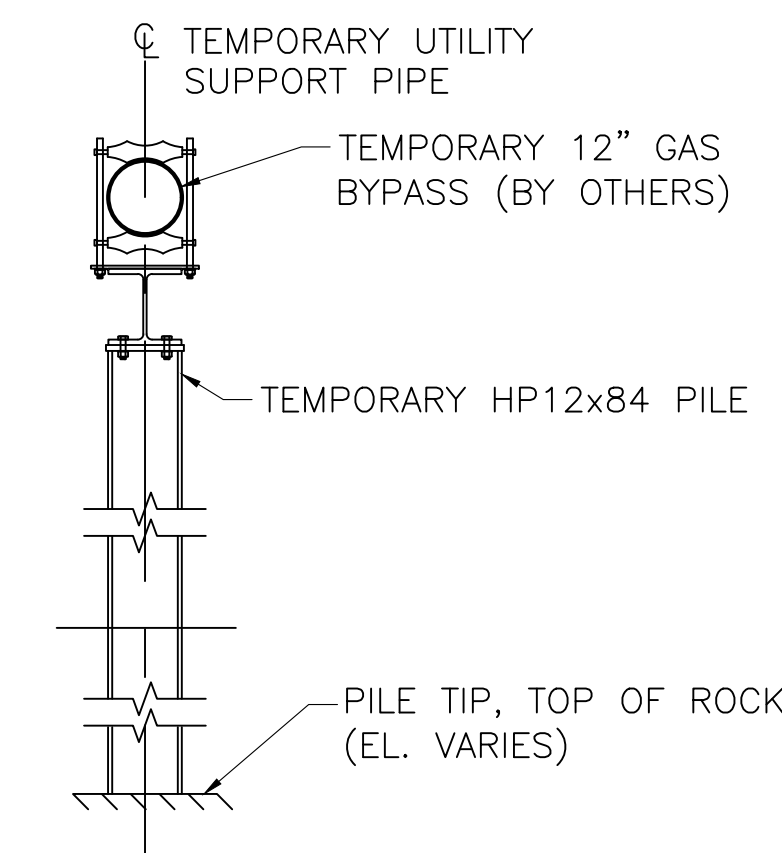
1. PRIOR TO DEMOLITION, CONTRACTOR SHALL COORDINATE WITH EVERSOURCE TO VERIFY THE ACTIVE CONDUITS IN THE SIDEWALK.
2. CONTRACTOR SHALL COORDINATE WITH EVERSOURCE TO CUT POWER TO EXISTING ACTIVE WIRES PRIOR TO ANY DEMOLITION PROCEDURES.

EXISTING TRANSVERSE SECTION STAGE 1 DEMOLITION (LOOKING NORTH)

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

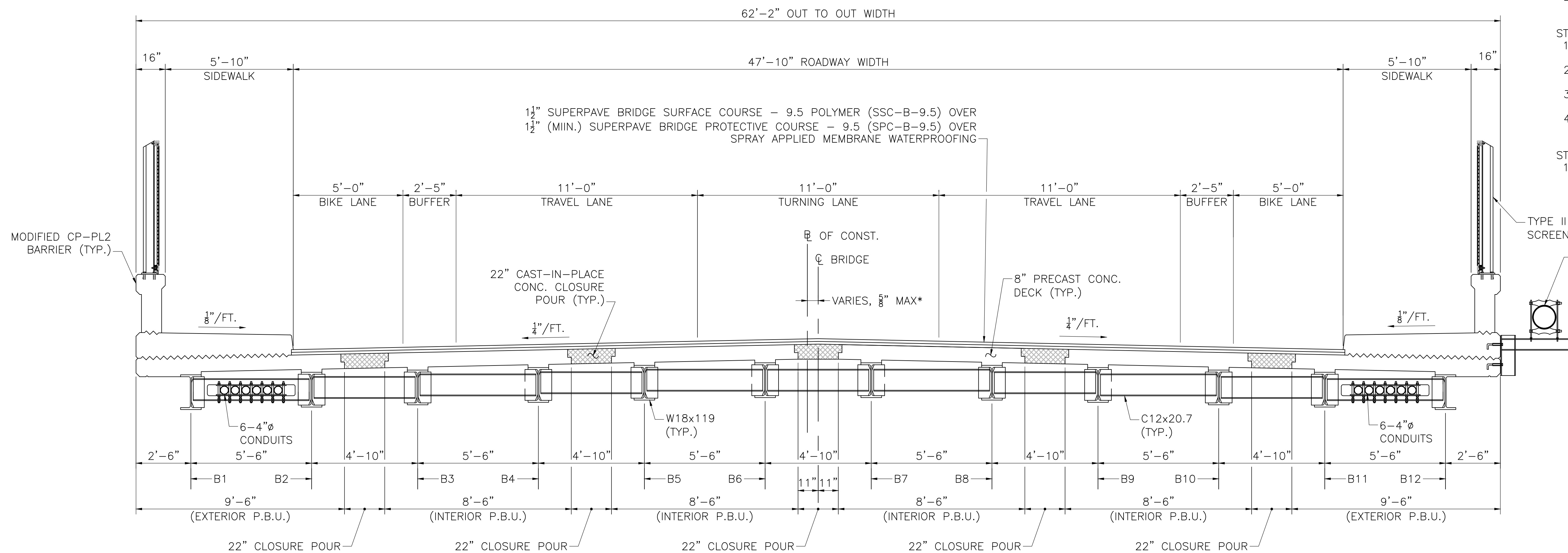
LEGEND:

▨ LIMITS OF DEMOLITION



CONSTRUCTION SEQUENCE:

- STAGE 1A:
1. CONTRACTOR TO INSTALL TEMPORARY UTILITY SUPPORT STRUCTURE FOR 12"Ø GAS BYPASS. SEE DEMOLITION PLAN ON SHEET 10.
  2. NATIONAL GRID TO INSTALL 12"Ø GAS BYPASS ON TEMPORARY SUPPORT AND DEACTIVATE 12"Ø GAS PIPE ON BRIDGE STRUCTURE.
  3. DETOUR TRAFFIC (SEE HIGHWAY PLANS).
- STAGE 1B:
1. DEMOLISH SUPERSTRUCTURE.
  2. DEMOLISH SUBSTRUCTURE TO LIMITS SHOWN ON SHEET 10.
- STAGE 2:
1. CONSTRUCT ENTIRE SUBSTRUCTURE AND SUPERSTRUCTURE.
  2. END DETOUR DIVERSION AND OPEN BRIDGE TO PEDESTRIANS AND VEHICULAR TRAFFIC.
  3. NATIONAL GRID TO TRANSFER GAS TO FINAL PROPOSED LOCATION.
  4. REMOVE AND DISCARD TEMPORARY UTILITY SUPPORT STRUCTURE.
- STAGE 3:
1. PERFORM SUBSTRUCTURE RESURFACING REPAIRS DURING OFF-PEAK HOURS OF MBTA COMMUTER RAIL. SEE SHEET 29.



STAGE 2 TRANSVERSE SECTION (LOOKING NORTH)

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

\*DIMENSION IS NOT TO SCALE

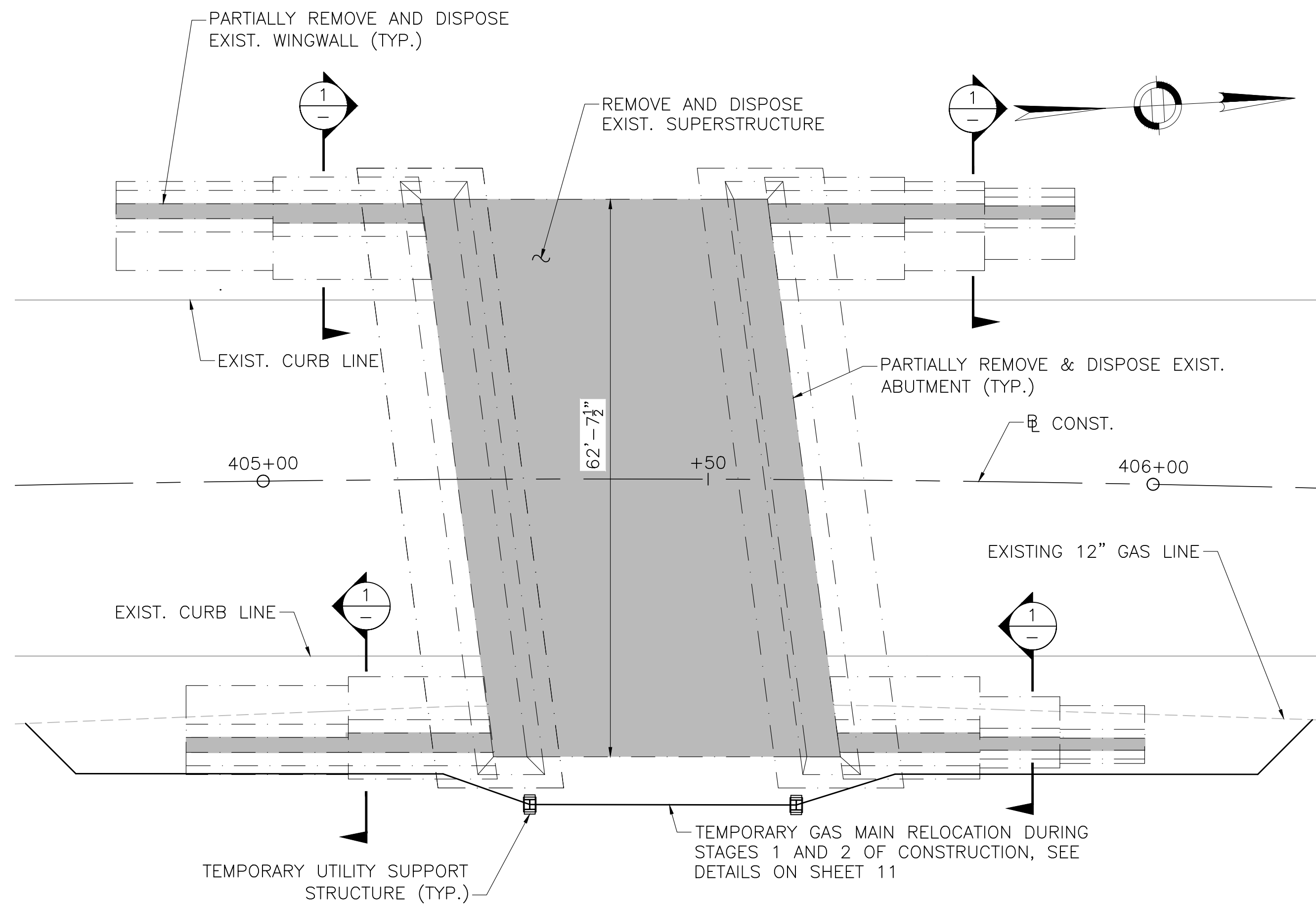
DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	47	90
PROJECT FILE NO.		606902	

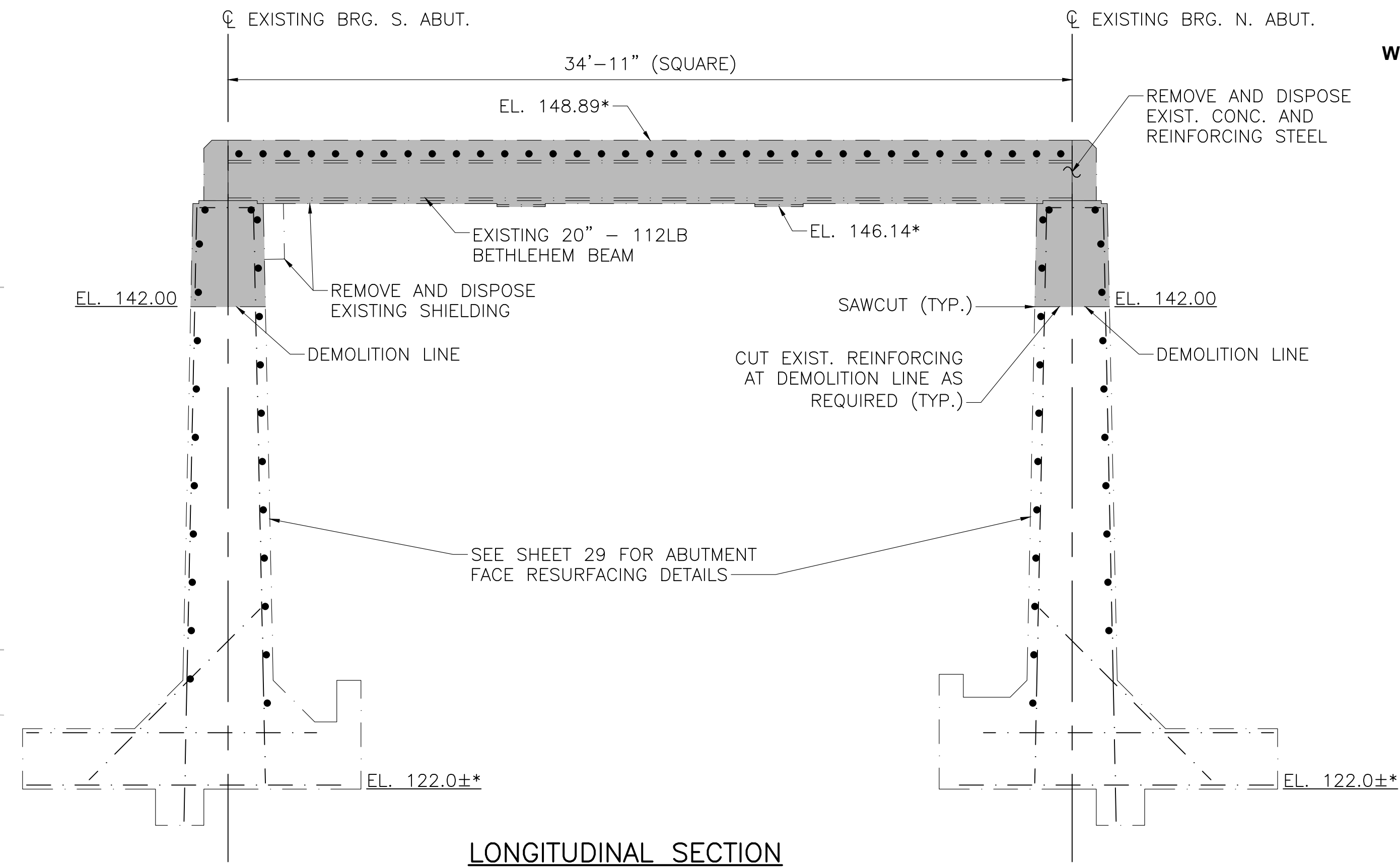
**DEMOLITION PLAN**

**LEGEND:**  
LIMITS OF DEMOLITION



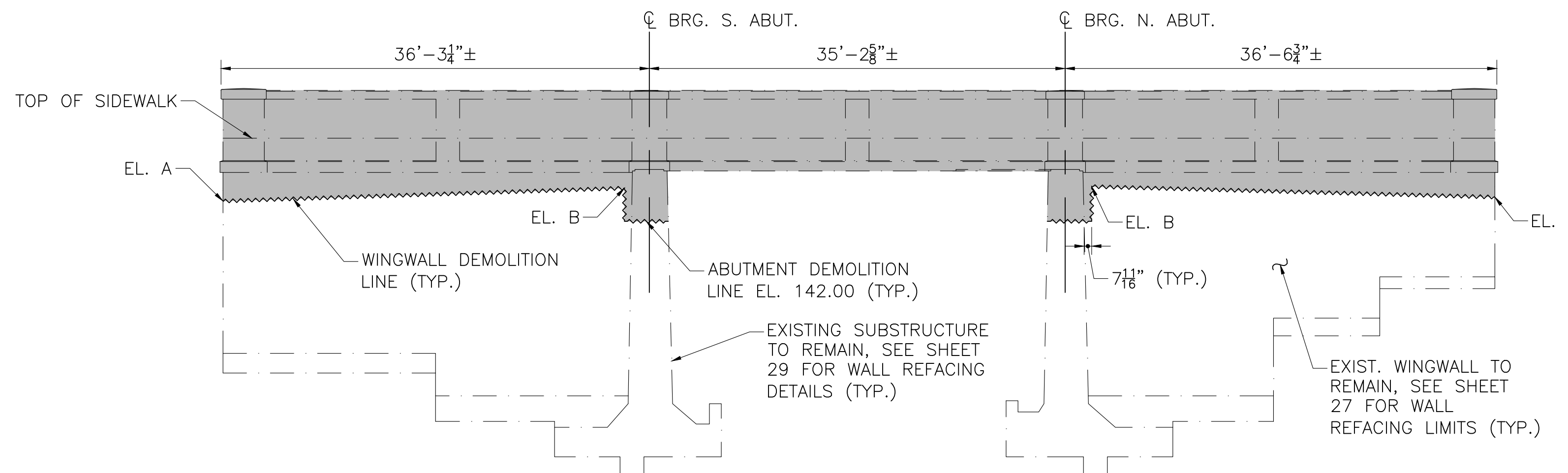
**DEMOLITION PLAN**

SCALE: 3/32" = 1'-0"



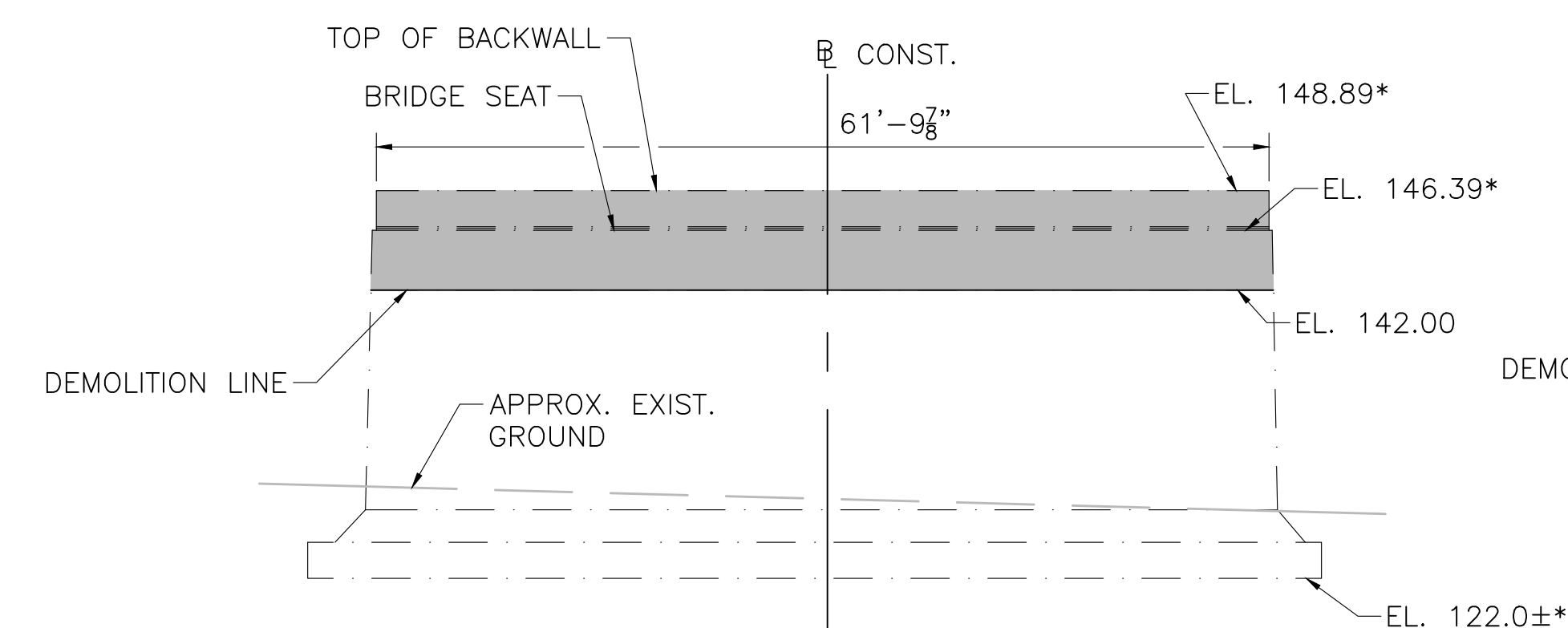
**LONGITUDINAL SECTION**

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



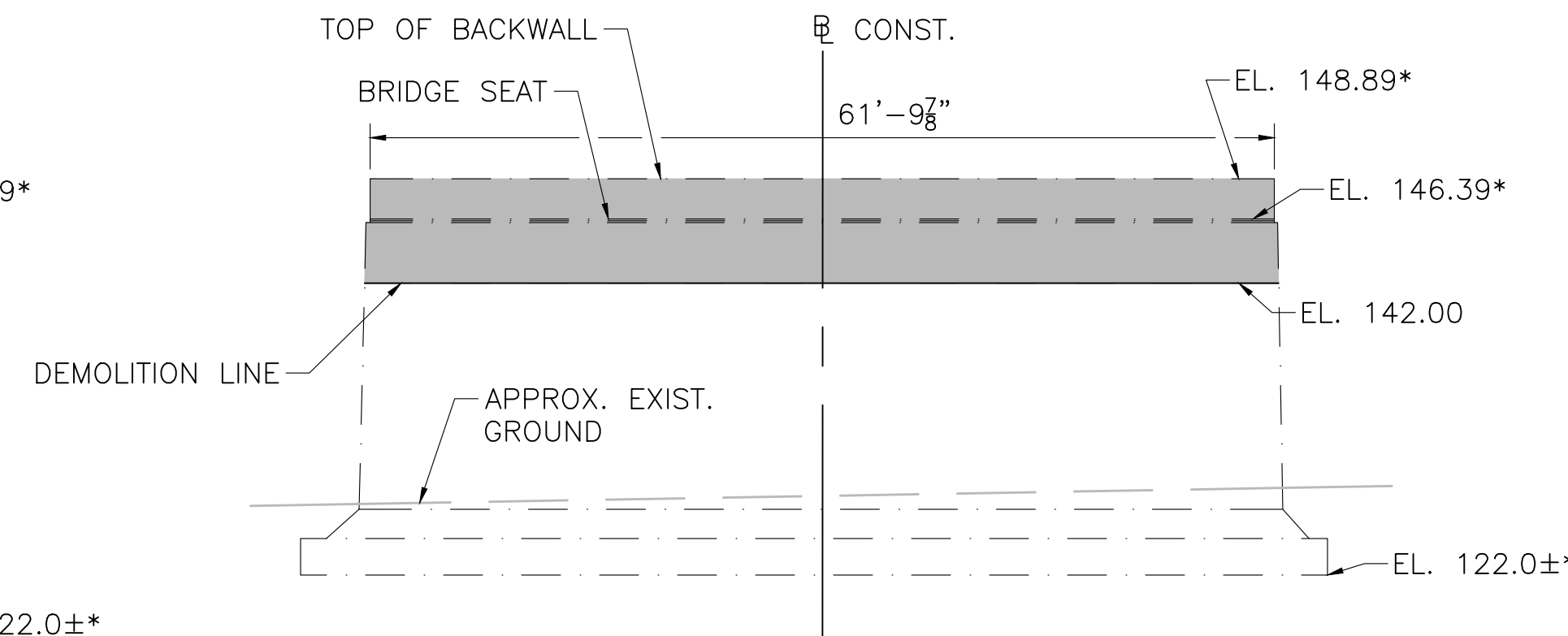
**EXISTING BRIDGE ELEVATION**

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



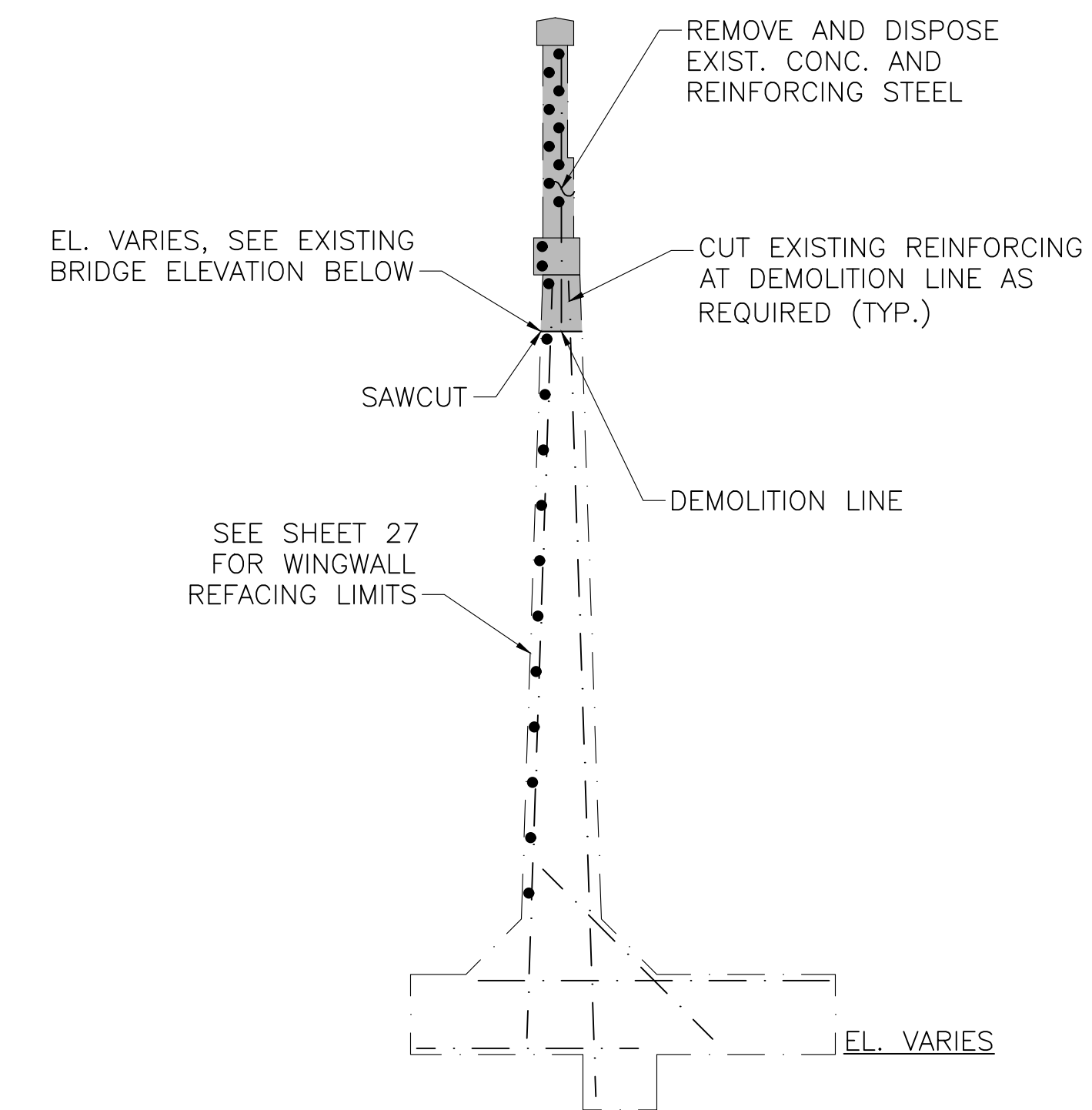
**NORTH ABUTMENT ELEVATION**

SCALE: 3/32" = 1'-0"



**SOUTH ABUTMENT ELEVATION**

SCALE: 3/32" = 1'-0"



**SECTION 1**

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

WINGWALL DEMOLITION ELEVATION		
LOCATION	EL. A	EL. B.
SW WINGWALL	143.50	144.56
SE WINGWALL	143.73	144.68
NW WINGWALL	144.21	144.81
NE WINGWALL	144.05	144.79

\*ELEVATION NOT GUARANTEED.  
ELEVATION CONVERTED TO 1988  
NAVD DATUM FROM EXISTING PLANS.

**NOTE:**  
BRIDGE SUPERSTRUCTURE  
NOT SHOWN FOR CLARITY.

DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR10(B16161)\_GAS RELOCATION.DWG Plotted on 24-Jul-2024 11:52 AM 19-July-2024 Final Structural Submittal (SF)

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

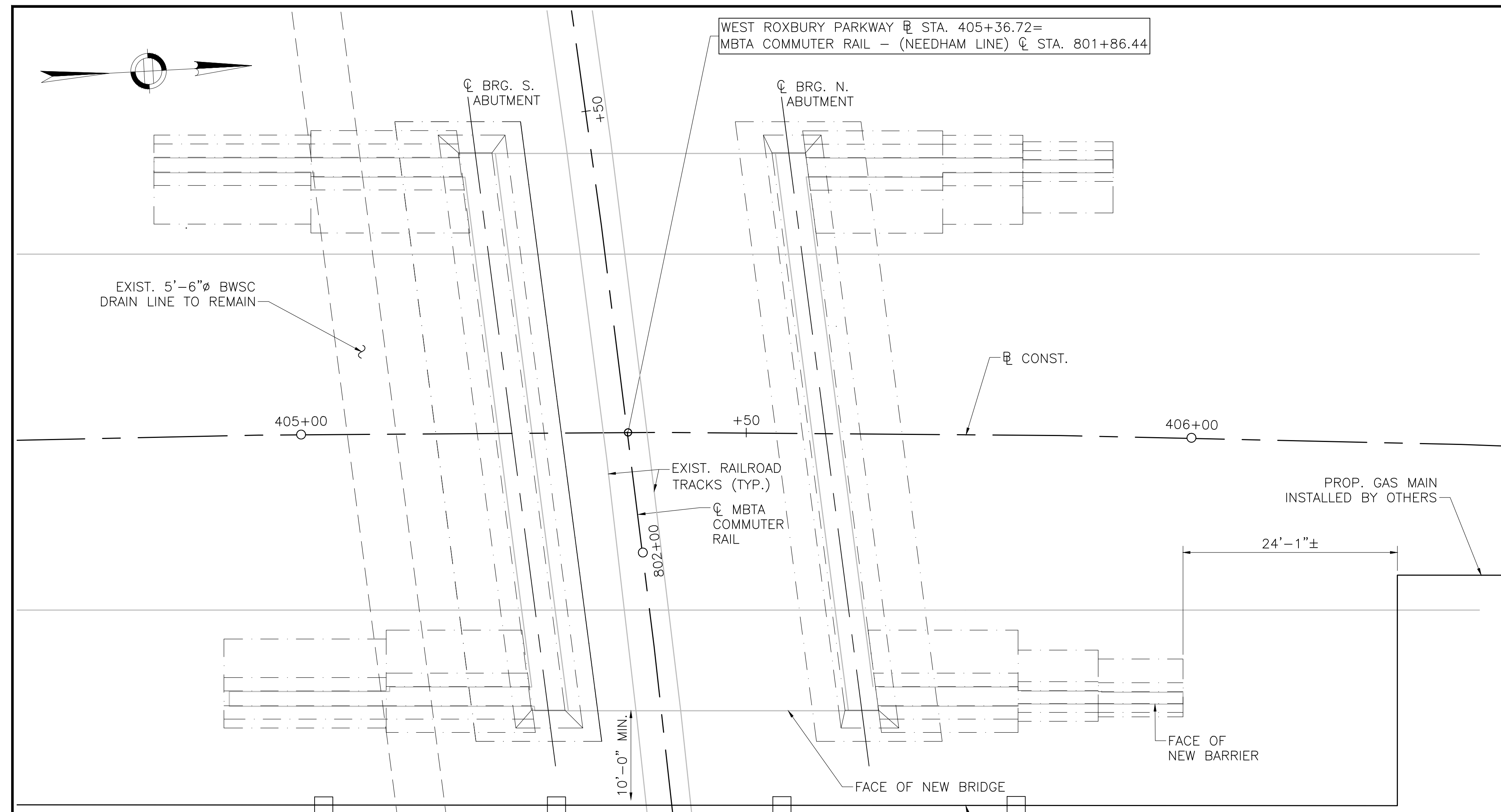
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	48	90
PROJECT FILE NO.		606902	

**GAS RELOCATION**

**NOTES:**

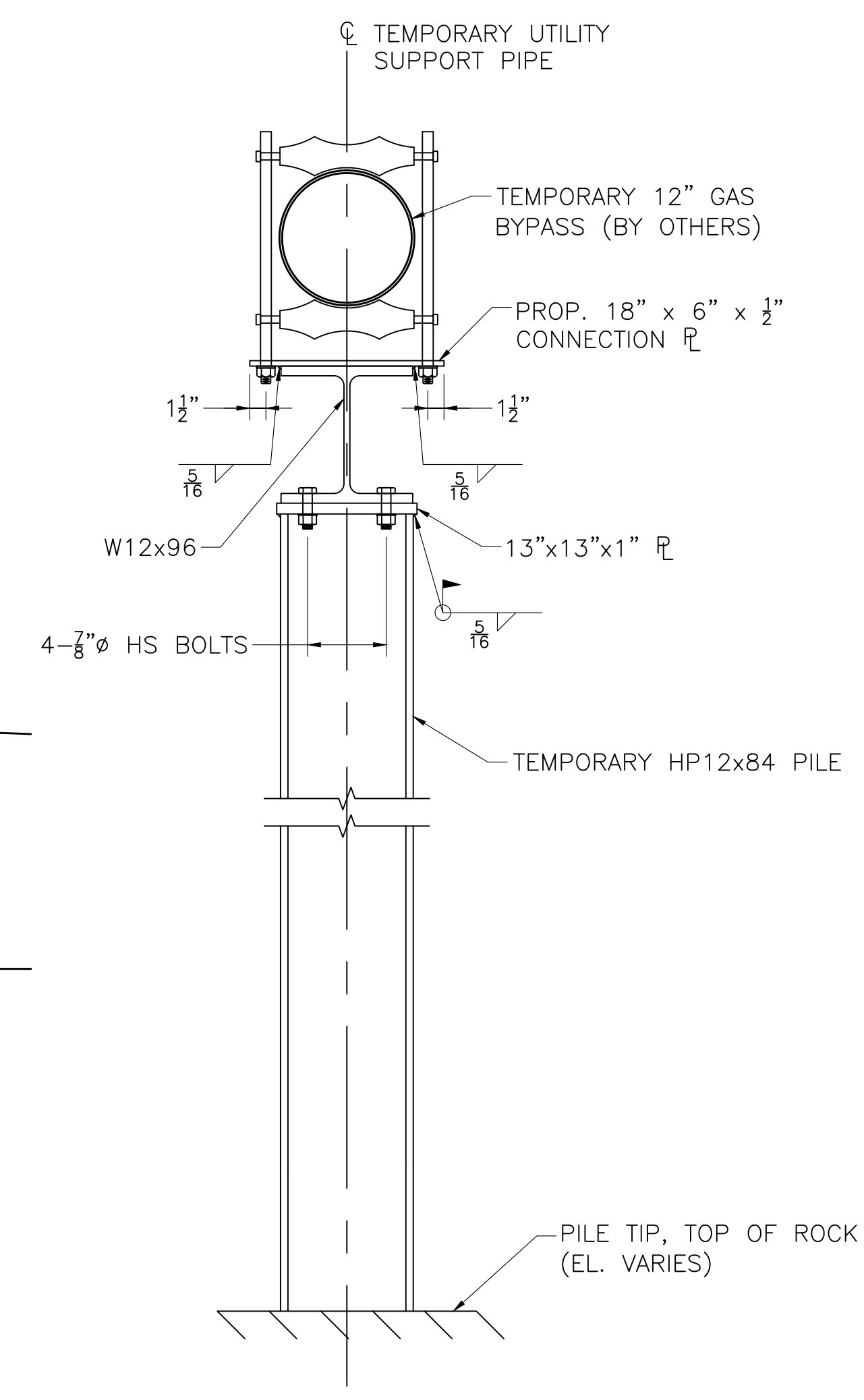
1. MINIMUM CLEARANCE BETWEEN TEMPORARY GAS LINE SUPPORT AND CENTERLINE OF MBTA TRACK SHALL BE 12'-0".
2. SUPPORT LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE SUPPORTS AS REQUIRED BY MBTA AND THE GAS UTILITY.
3. CONTRACTOR TO SET TEMPORARY PILES AND SUPPORT STRUCTURE THAT DOES NOT DIRECTLY INTERFERE WITH GAS PIPE. CONTRACTOR TO ERECT GAS PIPE. NATIONAL GRID'S CONTRACTOR TO SET ROLLERS AND ANY COMPONENT THAT INTERFACES WITH GAS PIPE. NATIONAL GRID'S CONTRACTOR TO WELD GAS PIPE. ELEVATION NOT GUARANTEED. ELEVATION CONVERTED TO 1988 NAVD DATUM FROM EXISTING PLANS.
4. FOR ADDITIONAL GAS LINE LAYOUT INFORMATION BEYOND BRIDGE SEE HIGHWAY PLANS SHEET 16.

\*\*LOCATION OF TEMPORARY GAS LINE SHOWN IS APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH NATIONAL GRID DURING CONSTRUCTION FOR EXACT LOCATION.



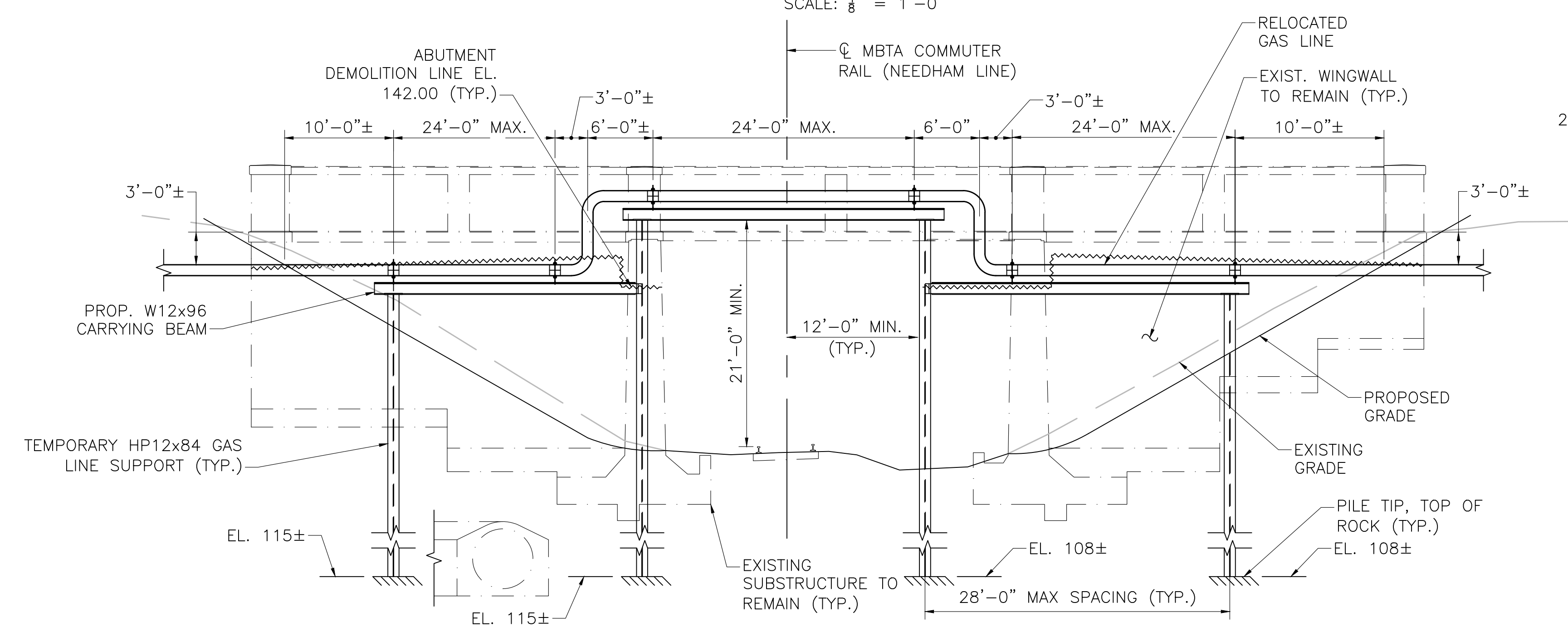
**GAS LINE RELOCATION PLAN**

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



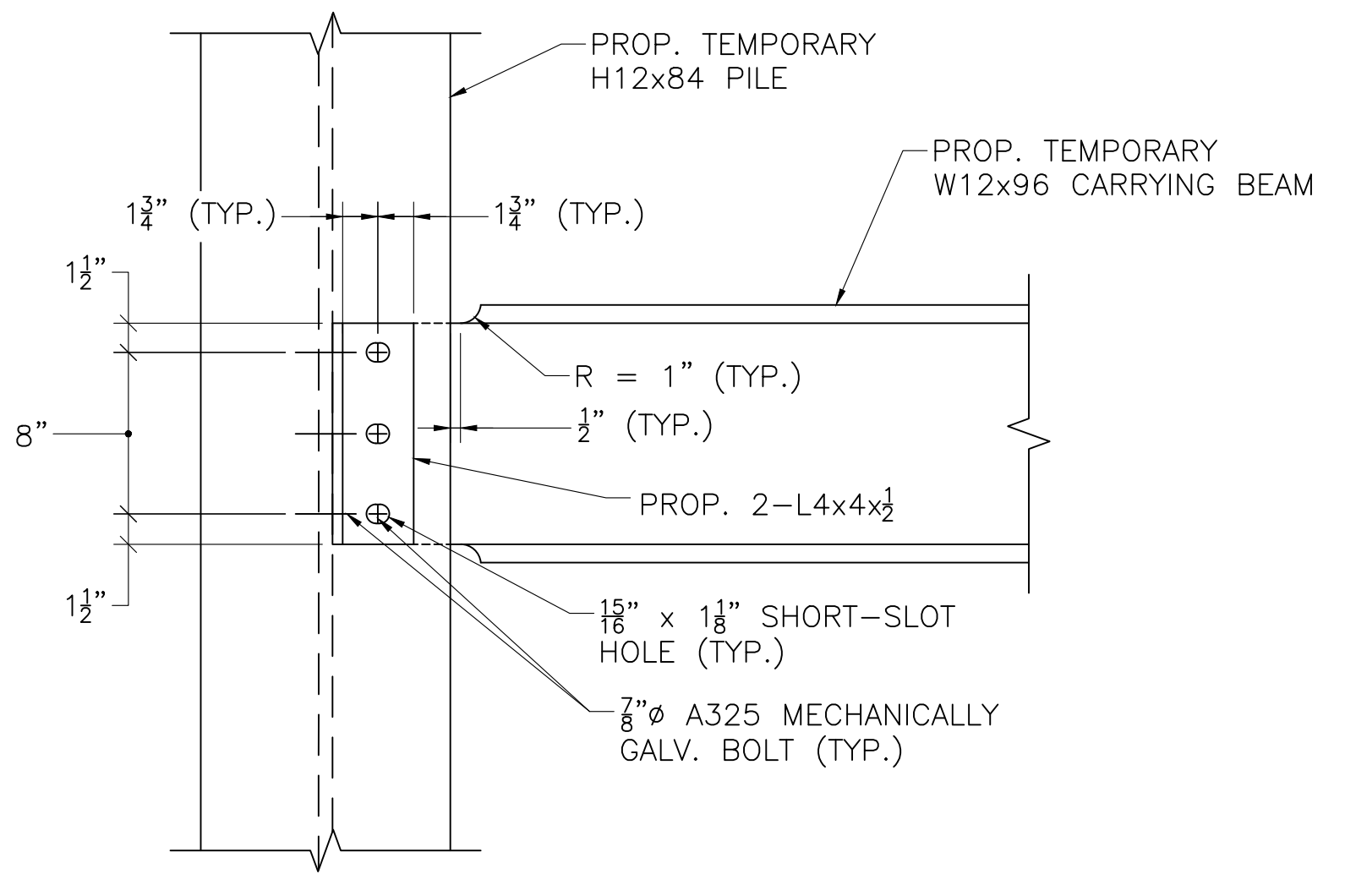
**TEMPORARY GAS LINE SUPPORT DETAIL**

SCALE: 1" = 1'-0"



**GAS LINE RELOCATION ELEVATION**

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

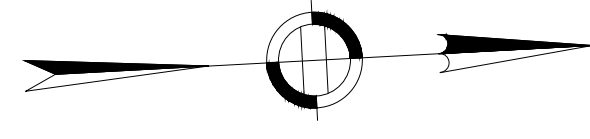


**CARRYING BEAM TO PILE CONNECTION DETAIL**

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

AUG. 03, 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	

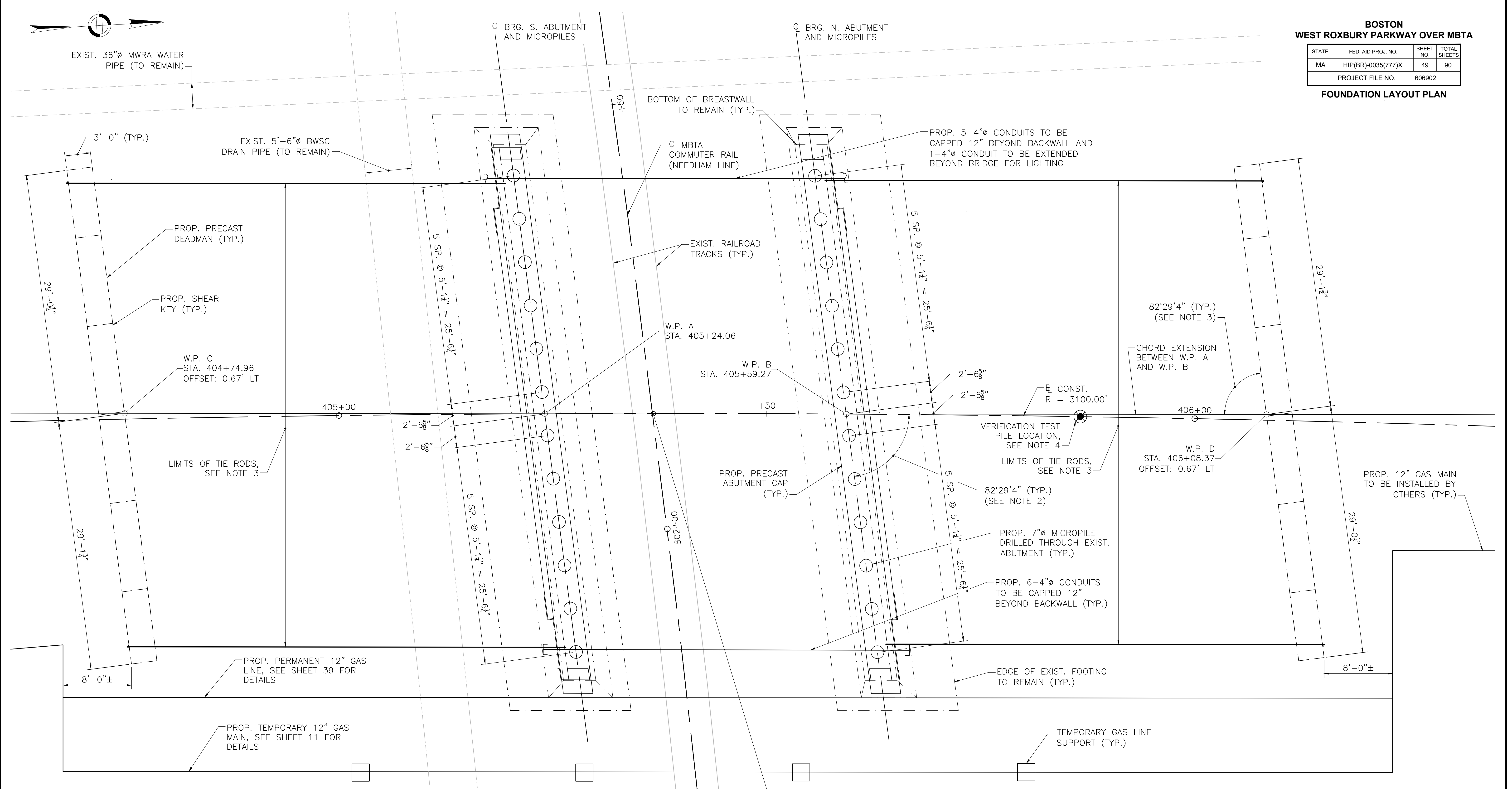




**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	49	90
PROJECT FILE NO.		606902	

**FOUNDATION LAYOUT PLAN**



- FOUNDATION LAYOUT NOTES:**
- EXIST. WINGWALLS TO REMAIN, PROP. MOMENT SLABS, APPROACH SLABS, AND TIE RODS NOT SHOWN FOR CLARITY.
  - ANGLE SHOWN AT ABUTMENT IS BETWEEN C BRG. & CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT ON SHEET 3.
  - TIE RODS LAYOUT BETWEEN BACK OF ABUTMENT AND DEADMAN NOT SHOWN. FOR DETAILS SEE SHEET 25.
  - THE VERIFICATION TEST SHALL BE PERFORMED FROM THE ROADWAY BEHIND THE NORTH ABUTMENT AFTER THE ROADWAY IS CLOSED TO TRAFFIC. IN GENERAL, THE LOCATION OF THE VERIFICATION TEST SHALL BE WITHIN 25 FEET OF THE FOOTPRINT OF A SUBSTRUCTURE AS SELECTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER.

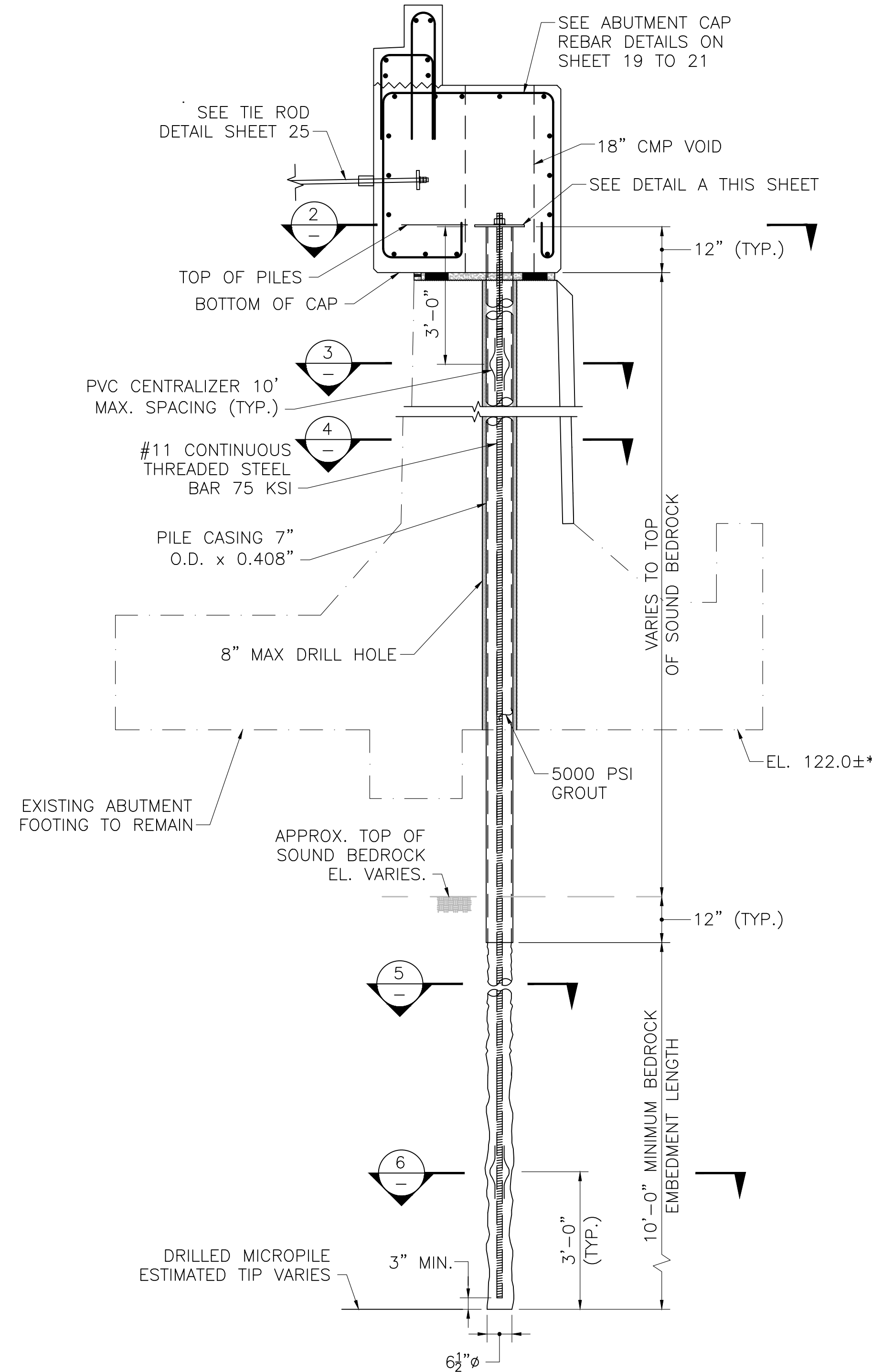
**FOUNDATION LAYOUT PLAN**  
SCALE:  $\frac{3}{16}'' = 1'-0''$

DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

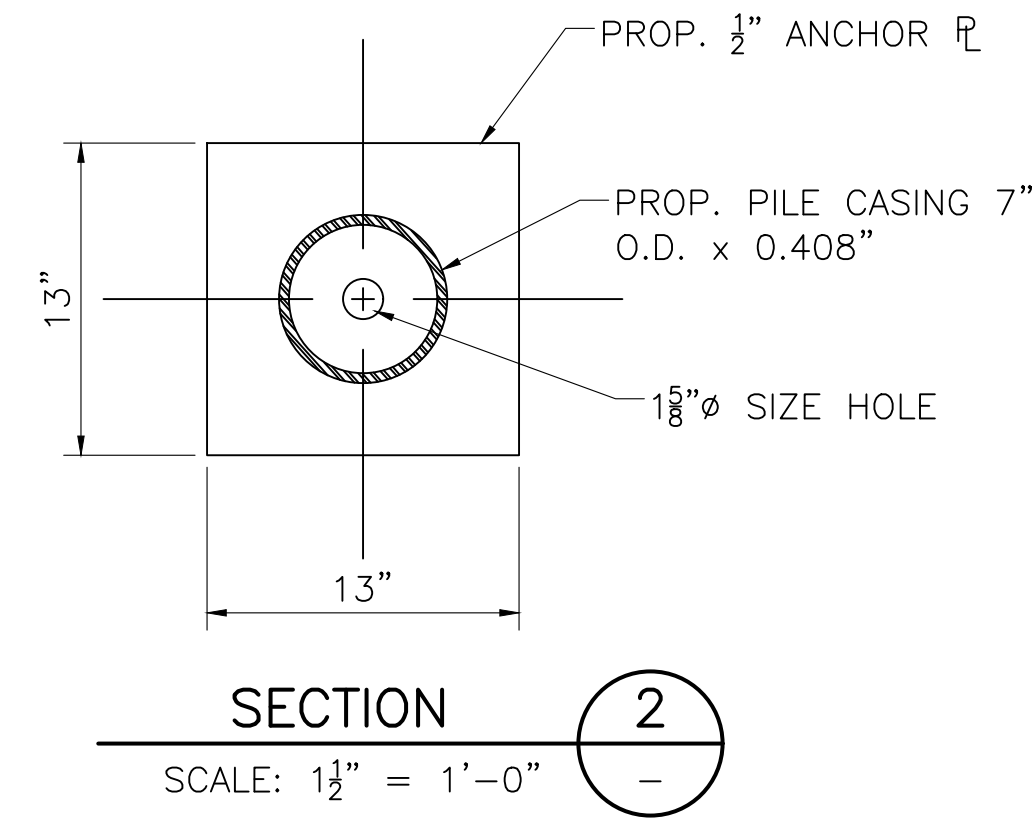
606902\_BR11(16181)\_LAYOUT PLAN.DWG Plotted on 25-Jul-2024 1:49 PM 19-July-2024 Final Structural Submittal (SF)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	50	90
PROJECT FILE NO.		606902	

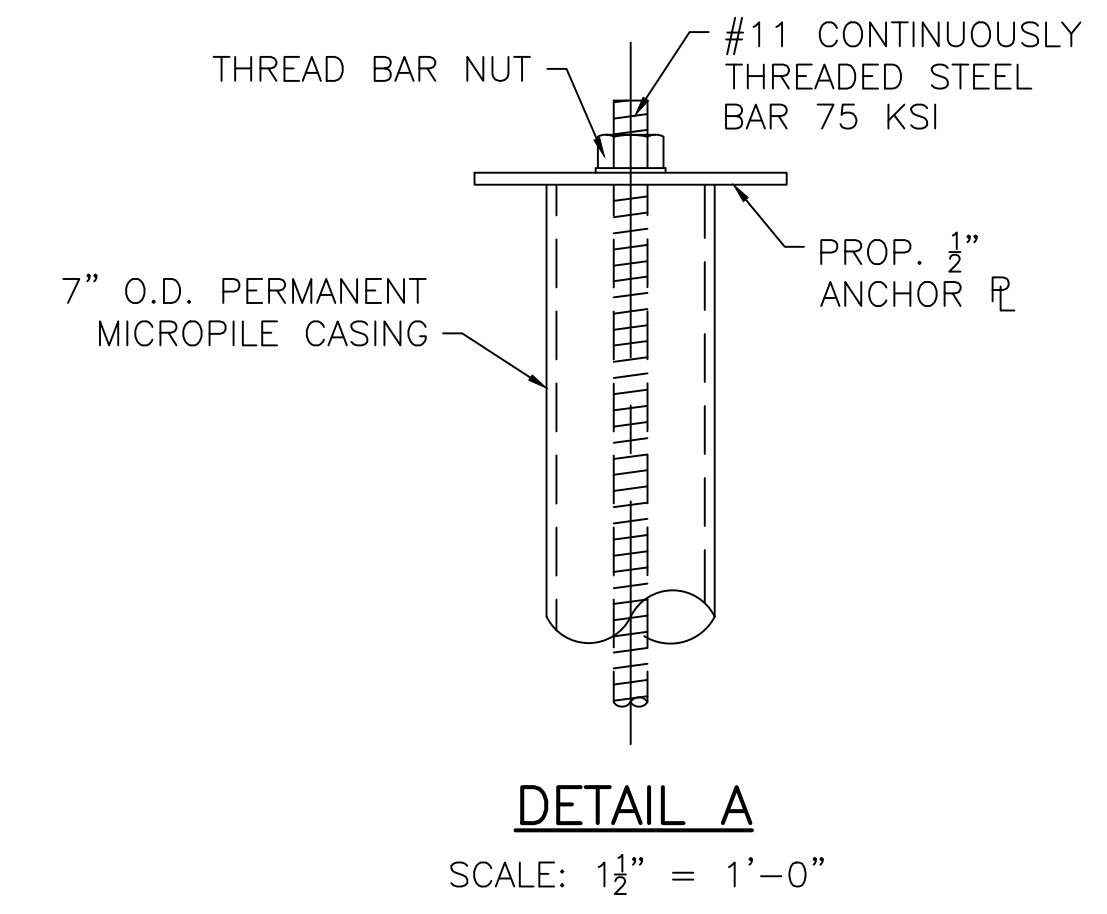
MICROPILE DETAILS



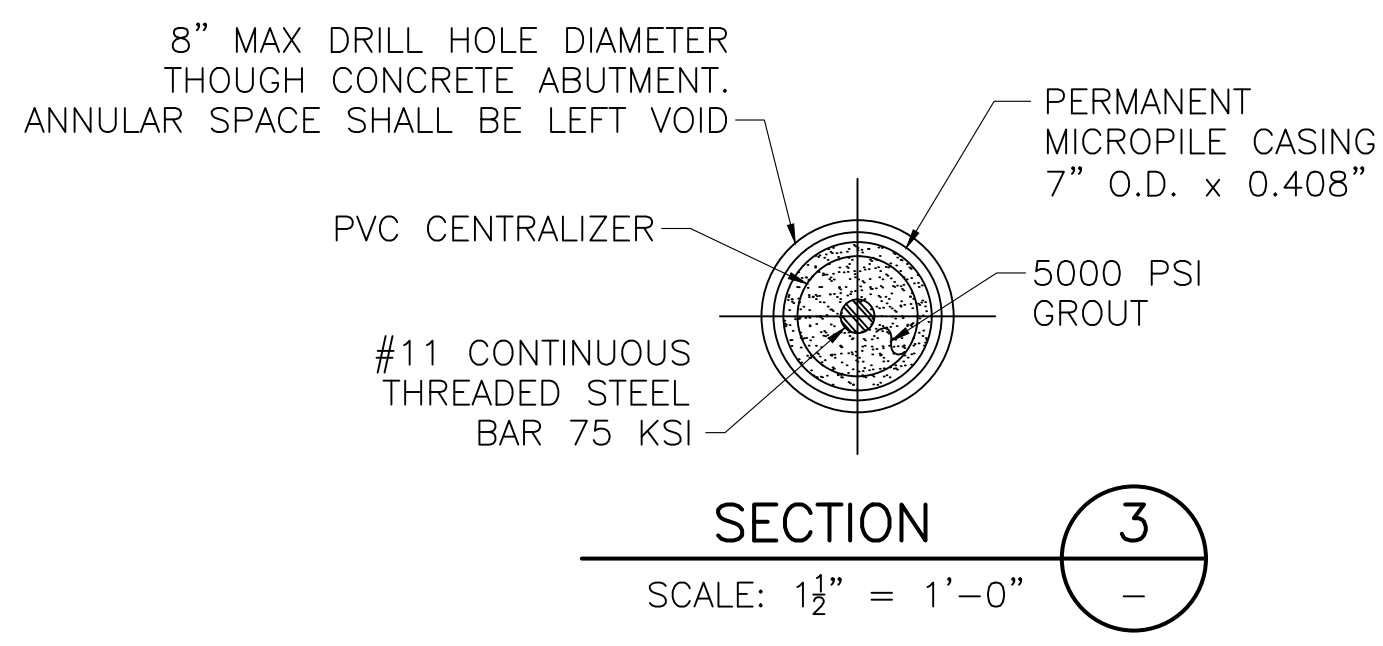
**VERTICAL SECTION THROUGH ABUTMENT CAP**  
SCALE: 1/2" = 1'-0"



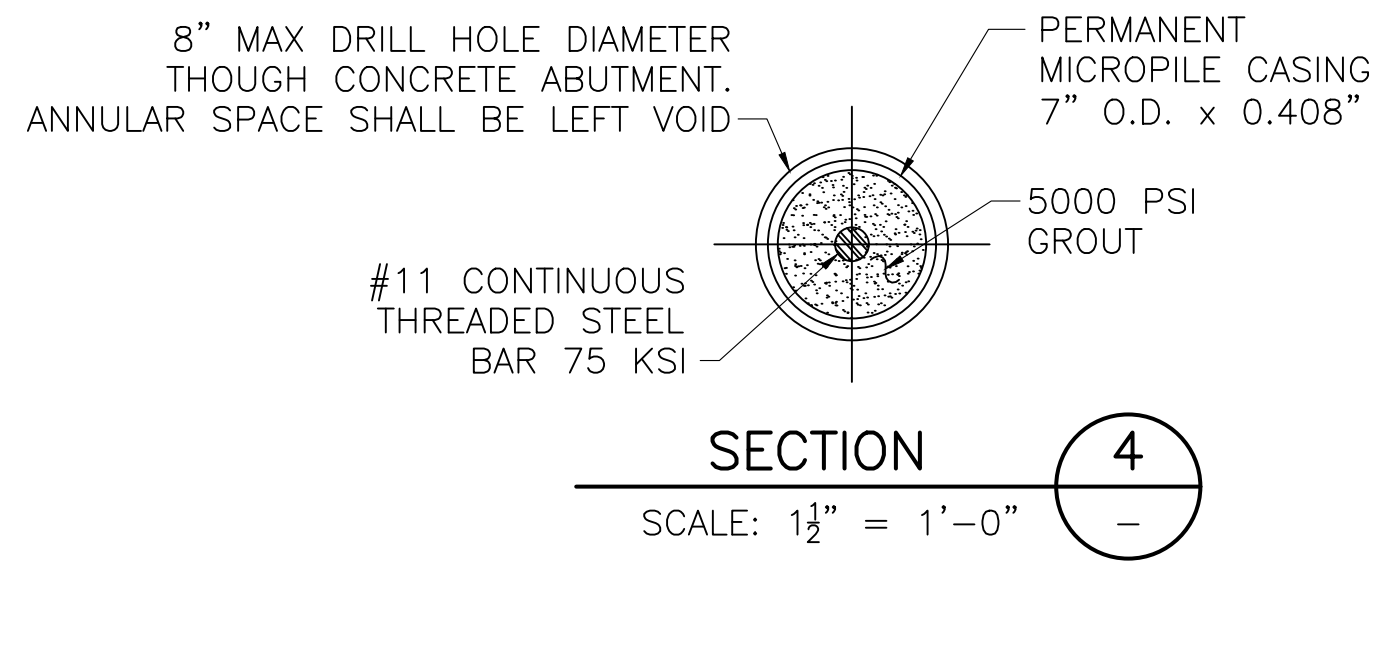
**SECTION 2**  
SCALE: 1 1/2" = 1'-0"



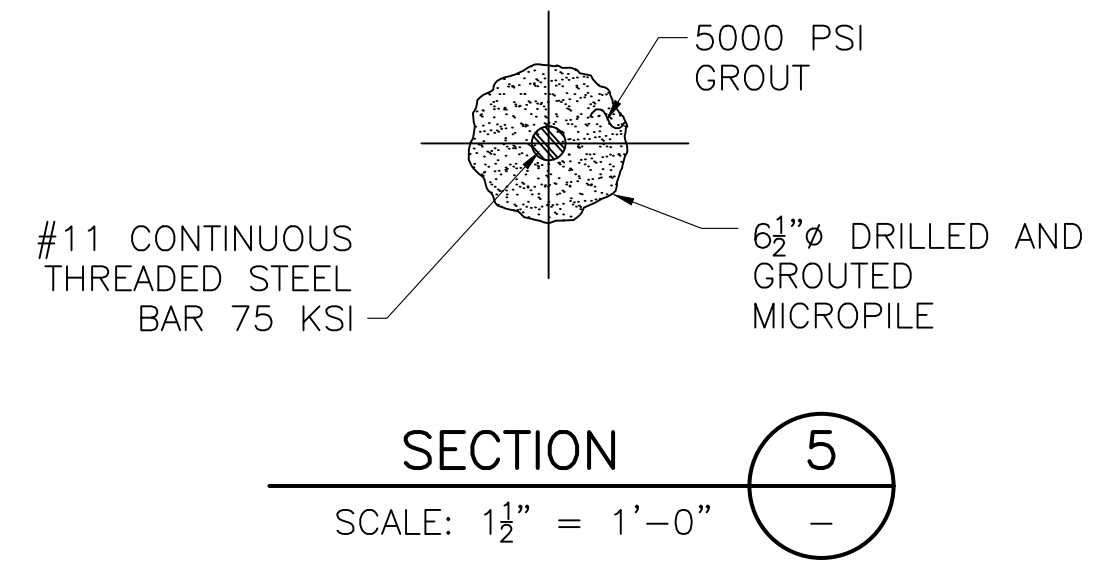
**DETAIL A**  
SCALE: 1 1/2" = 1'-0"



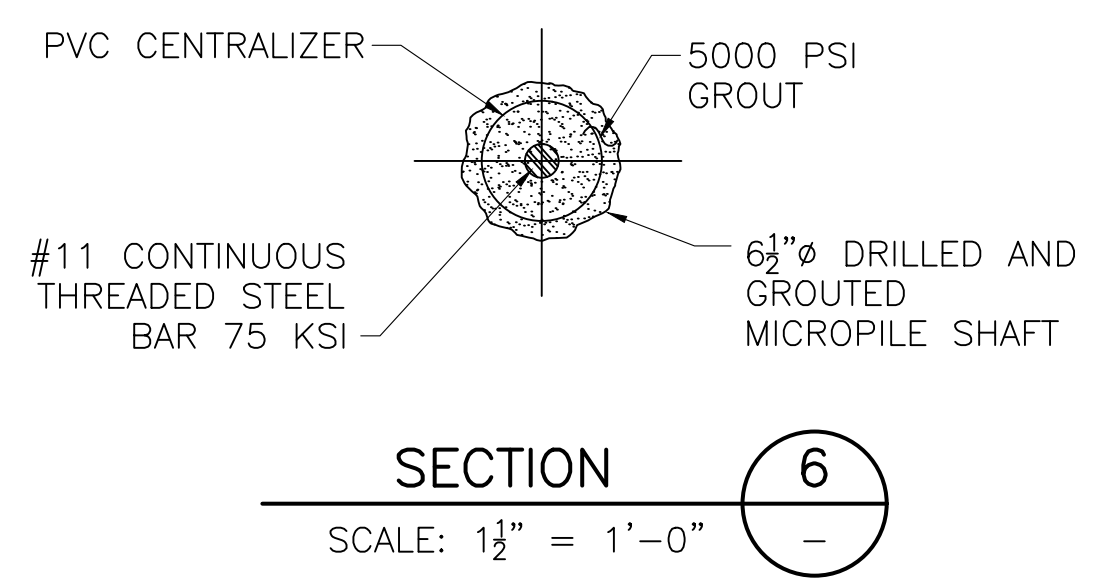
**SECTION 3**  
SCALE: 1 1/2" = 1'-0"



**SECTION 4**  
SCALE: 1 1/2" = 1'-0"



**SECTION 5**  
SCALE: 1 1/2" = 1'-0"



**SECTION 6**  
SCALE: 1 1/2" = 1'-0"

**DRILLED MICROPILE NOTES:**

1. THE MAXIMUM FACTORED AXIAL LOAD PER PILE IS 156.0 KIPS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
2. THE FACTORED STRUCTURAL RESISTANCE PER PILE IS 160.3 KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 213.7 KIPS AND A RESISTANCE FACTOR OF 0.75.
3. THE MINIMUM FACTORED GEOTECHNICAL PILE RESISTANCE IS 171.5 KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 245.0 KIPS AND A RESISTANCE FACTOR OF 0.70.
4. STEEL CASING SHALL BE PRIME STEEL AND MEET THE REQUIREMENTS OF API 5L PSL1 GRADE 52 WITH SR15 SUPPLEMENTAL REQUIREMENTS. TYPICAL CORROSION COVER ASSUME TO BE 1/8" LOSS TO THE CASING. FOR CASING SPLICE REQUIREMENTS SEE SPECIAL PROVISIONS.
5. THE BOND LENGTH OF THE PILES HAS BEEN DESIGNED BASED ON A NOMINAL BOND RESISTANCE OF 100 PSI IN SOUND ARGILLITE BEDROCK.
6. REINFORCEMENT BAR SHALL BE CONTINUOUSLY THREADED FOR THE ENTIRE BAR LENGTH CONFORMING TO AASHTO M31 HAVING A MINIMUM YIELD STRENGTH OF 75 KSI.
7. ANCHOR PLATE SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50.
8. GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI AND CEMENT SHALL CONFORM TO AASHTO M85 TYPE I OR II.
9. SEE SHEET 12 FOR LOCATION OF MICROPILES.
10. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE AND PILE INSTALLATION PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER.
11. THREADED BAR NUT AND COUPLING SHALL BE SUPPLIED FROM THE SAME MANUFACTURER AS THE THREADED BAR AND SHALL CONFORM TO THE MANUFACTURERS SPECIFICATIONS.
12. BAR COUPLING SHALL BE FULL ENGAGEMENT BAR COUPLER. BAR COUPLING SHALL NOT BE LOCATED IN THE TOP THIRD OF THE MICROPILE LENGTH.
13. SEE SPECIAL PROVISIONS ITEM 945.10 DRILLED MICROPILES AND ITEM 948.60 MICROPILE VERIFICATION LOAD TEST FOR ADDITIONAL MICROPILE SPECIFICATIONS.

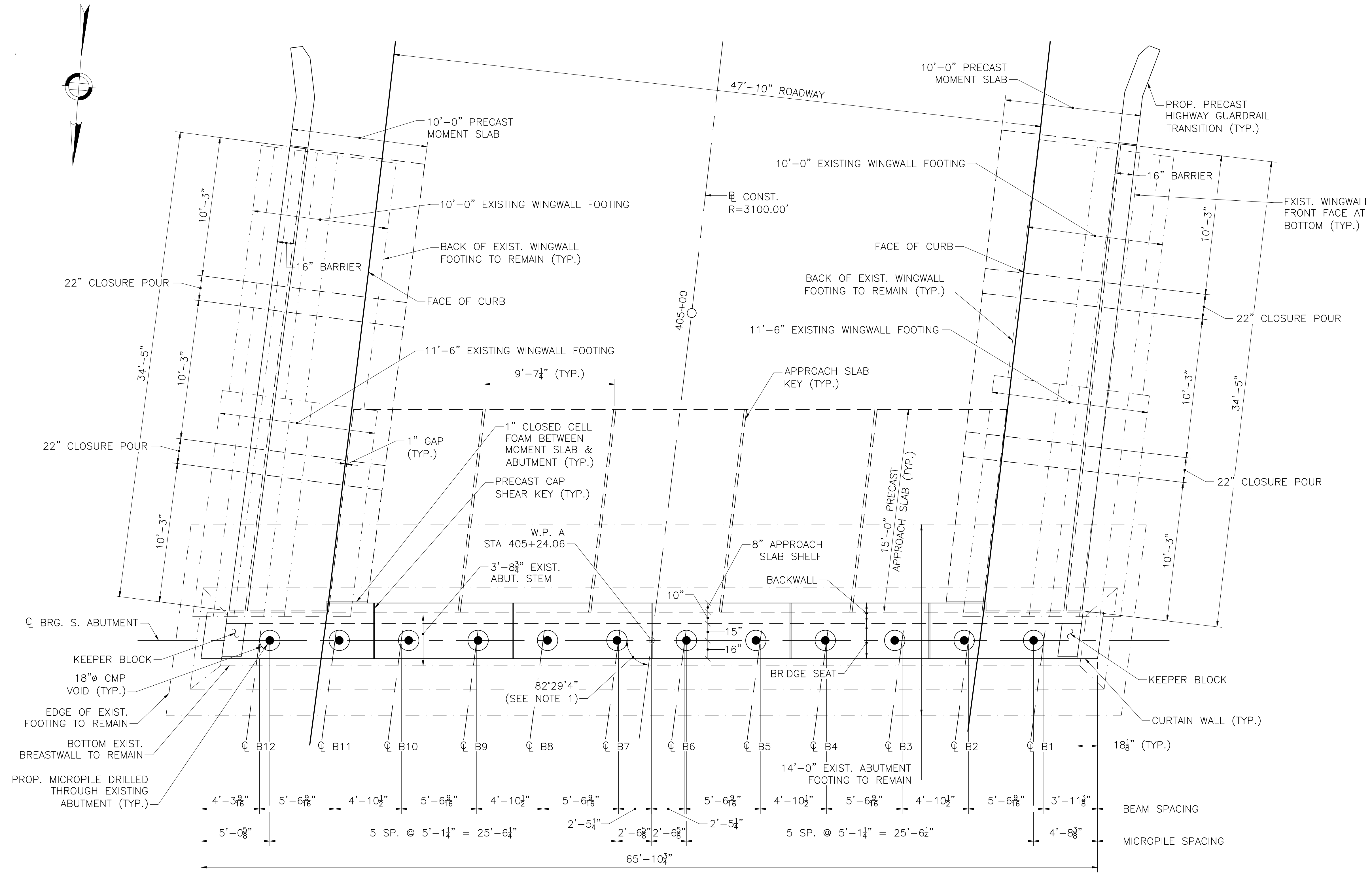
DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG Plotted on 24-Jul-2024 11:53 AM 19-July-2024 Final Structural Submittal (SF)

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	51	90
PROJECT FILE NO.		606902	

**SOUTH ABUTMENT PLAN**



- NOTES:**
- ANGLE MEASURED BETWEEN  $\odot$  BEARINGS & CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT ON SHEET 3.
  - PROPOSED MOMENT SLAB IS LOCATED BELOW PROPOSED APPROACH SLAB, SEE DETAILS ON SHEETS 26 TO 28.
  - PROPOSED ABUTMENT TIE RODS AND DEADMAN NOT SHOWN FOR CLARITY, SEE DETAILS ON SHEET 25.

BEAM	BEAM SEAT ELEVATIONS
1	145.78
2	145.93
3	146.04
4	146.17
5	146.28
6	146.41
7	146.42
8	146.32
9	146.22
10	146.12
11	146.03
12	145.93

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

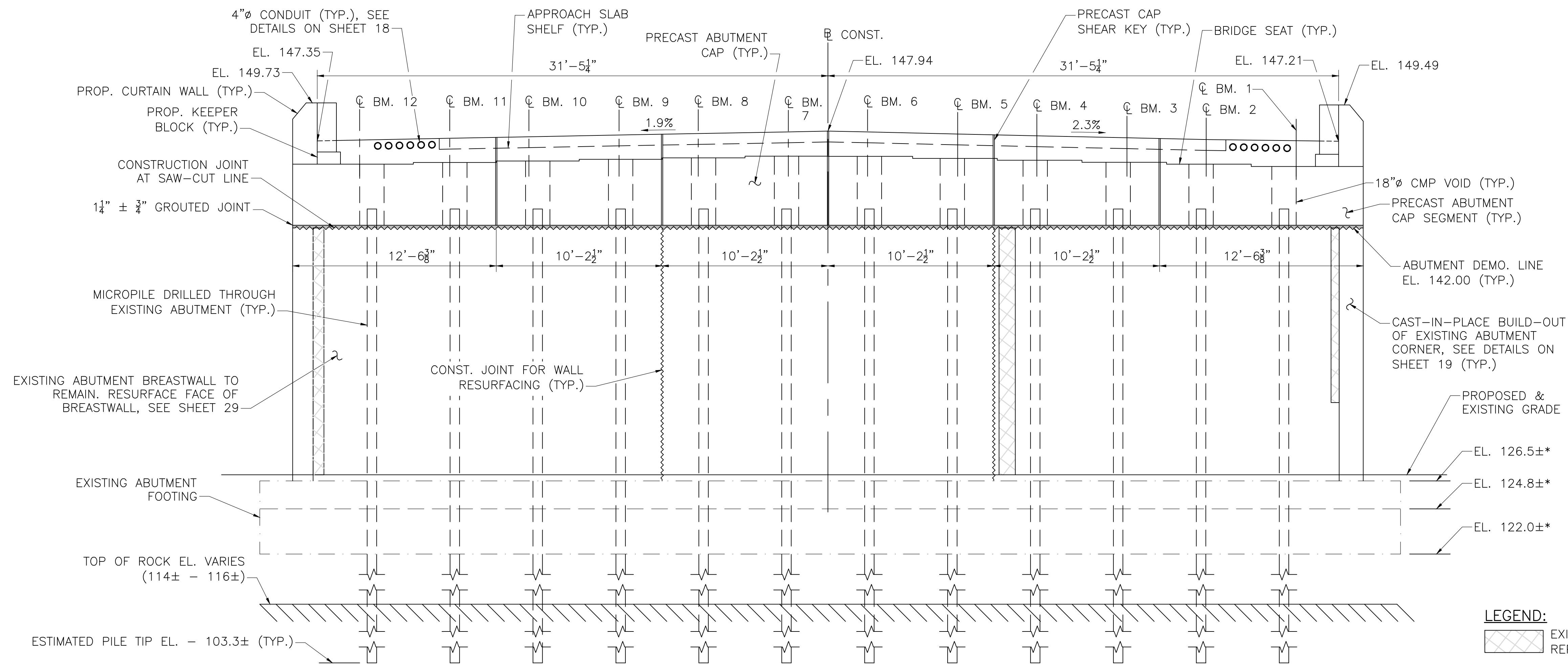
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR13(B16181)\_S\_ABUT\_PLAN & ELDWG Plotted on 24-Jul-2024 11:53 AM 19-July-2024 Final Structural Submittal (SF)

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	52	90
PROJECT FILE NO.		606902	

**SOUTH ABUTMENT ELEVATION**



**PROPOSED SOUTH ABUTMENT ELEVATION**

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

\*ELEVATIONS ARE NOT GUARANTEED. ELEVATION CONVERTED TO 1988 NAVD DATUM FROM EXISTING PLANS.

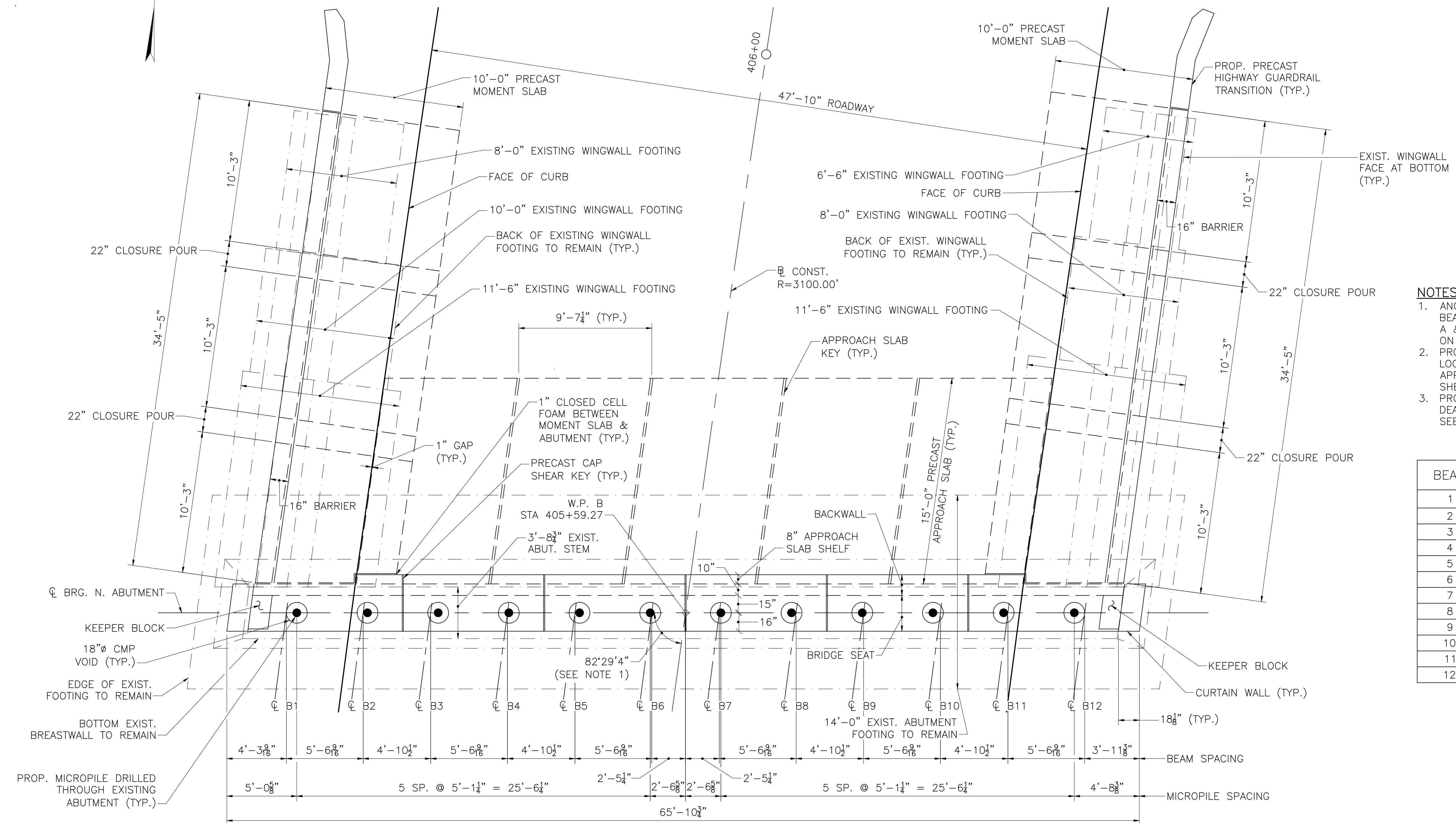
**LEGEND:**  
 EXISTING SPALLED CONCRETE AREAS TO BE REPAIRED THAT ARE DEEPER THAN 4"

DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	53	90
PROJECT FILE NO.		606902	

**NORTH ABUTMENT PLAN**



- NOTES:**
1. ANGLE MEASURED BETWEEN  $\odot$  BEARINGS & CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT ON SHEET 3.
  2. PROPOSED MOMENT SLAB IS LOCATED BELOW PROPOSED APPROACH SLAB, SEE DETAILS ON SHEETS 26 TO 28.
  3. PROPOSED ABUTMENT TIE RODS AND DEADMAN NOT SHOWN FOR CLARITY, SEE DETAILS ON SHEET 25.

BEAM	BEAM SEAT ELEVATIONS
1	146.05
2	146.16
3	146.26
4	146.37
5	146.46
6	146.57
7	146.57
8	146.45
9	146.34
10	146.22
11	146.11
12	145.99

**NORTH ABUTMENT PLAN**

SCALE:  $\frac{1}{4}'' = 1'-0''$

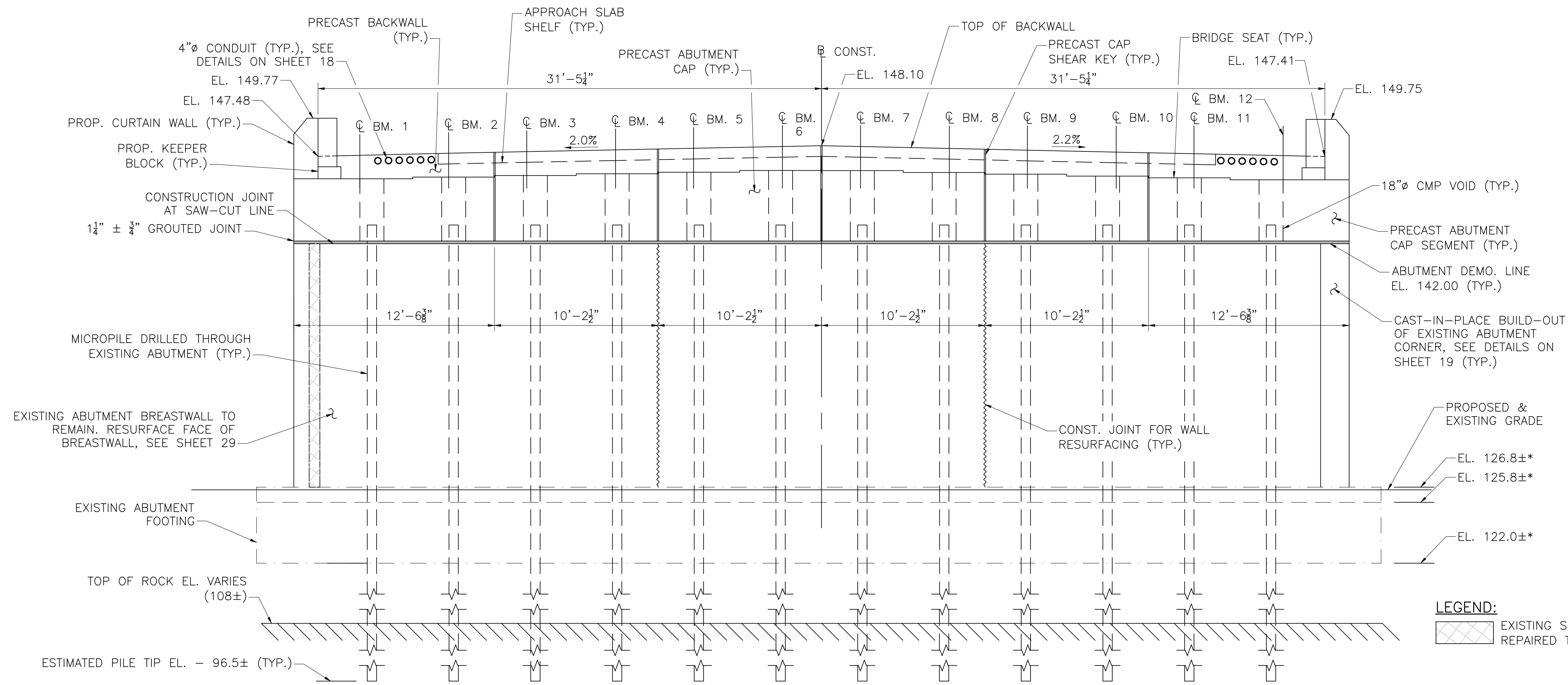
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR14(B16181)\_N. ABUT. PLAN & ELDWG 19-July-2024 11:53 AM Final Structural Submittal (SF)

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	54	90
PROJECT FILE NO.		606902	

**NORTH ABUTMENT ELEVATION**

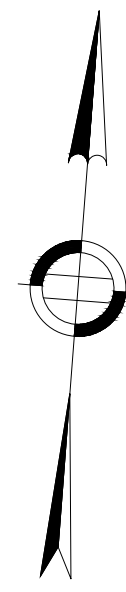


\*ELEVATIONS ARE NOT GUARANTEED. ELEVATION CONVERTED TO 1988 NAVD DATUM FROM EXISTING PLANS.

**LEGEND:**  
 EXISTING SPALLED CONCRETE AREAS TO BE REPAIRED THAT ARE DEEPER THAN 4"

**PROPOSED NORTH ABUTMENT ELEVATION**

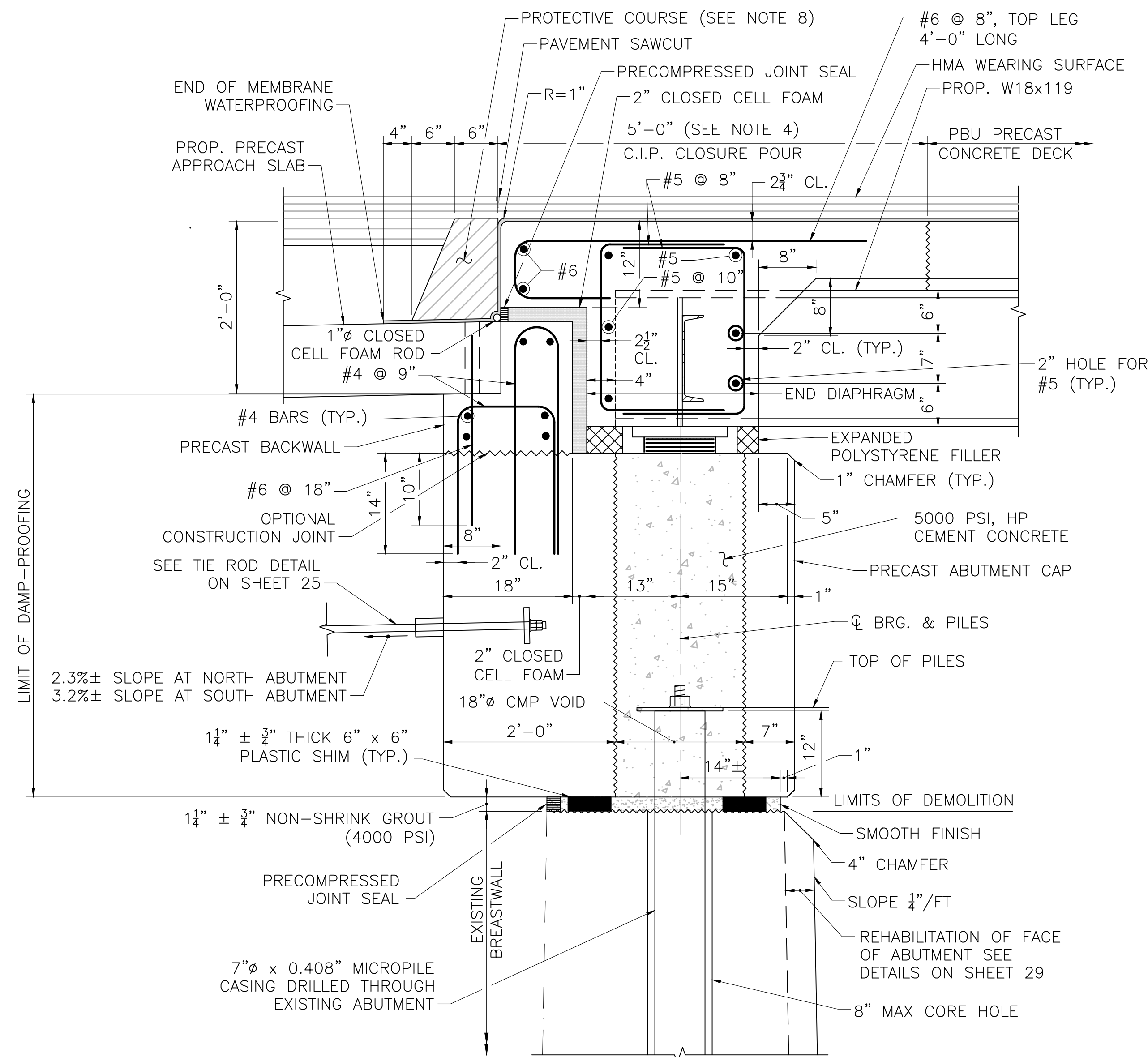
SCALE: 1/4" = 1'-0"



DATE	DESCRIPTION
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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

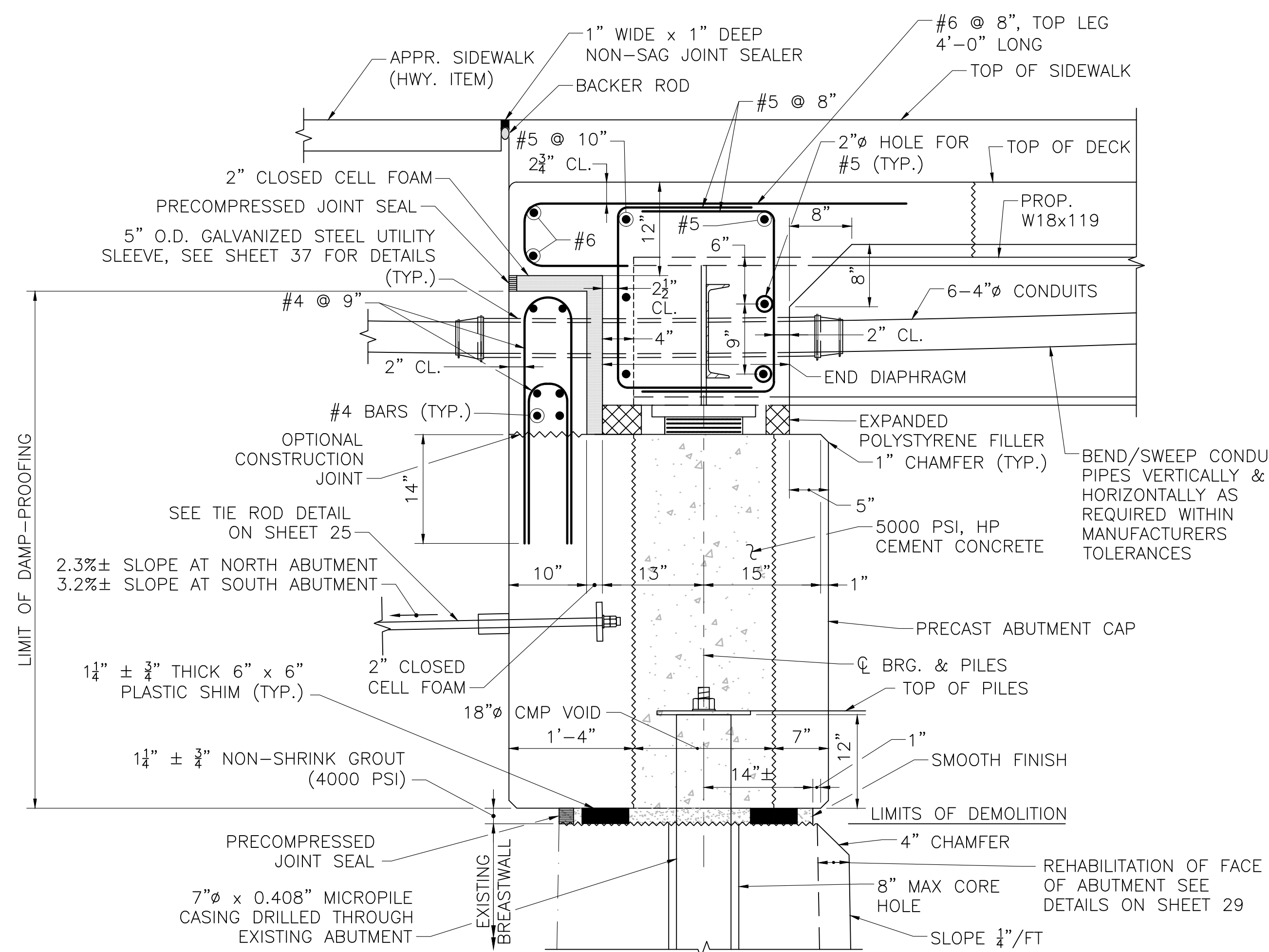
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	55	90
PROJECT FILE NO.		606902	

ABUTMENT DETAILS I



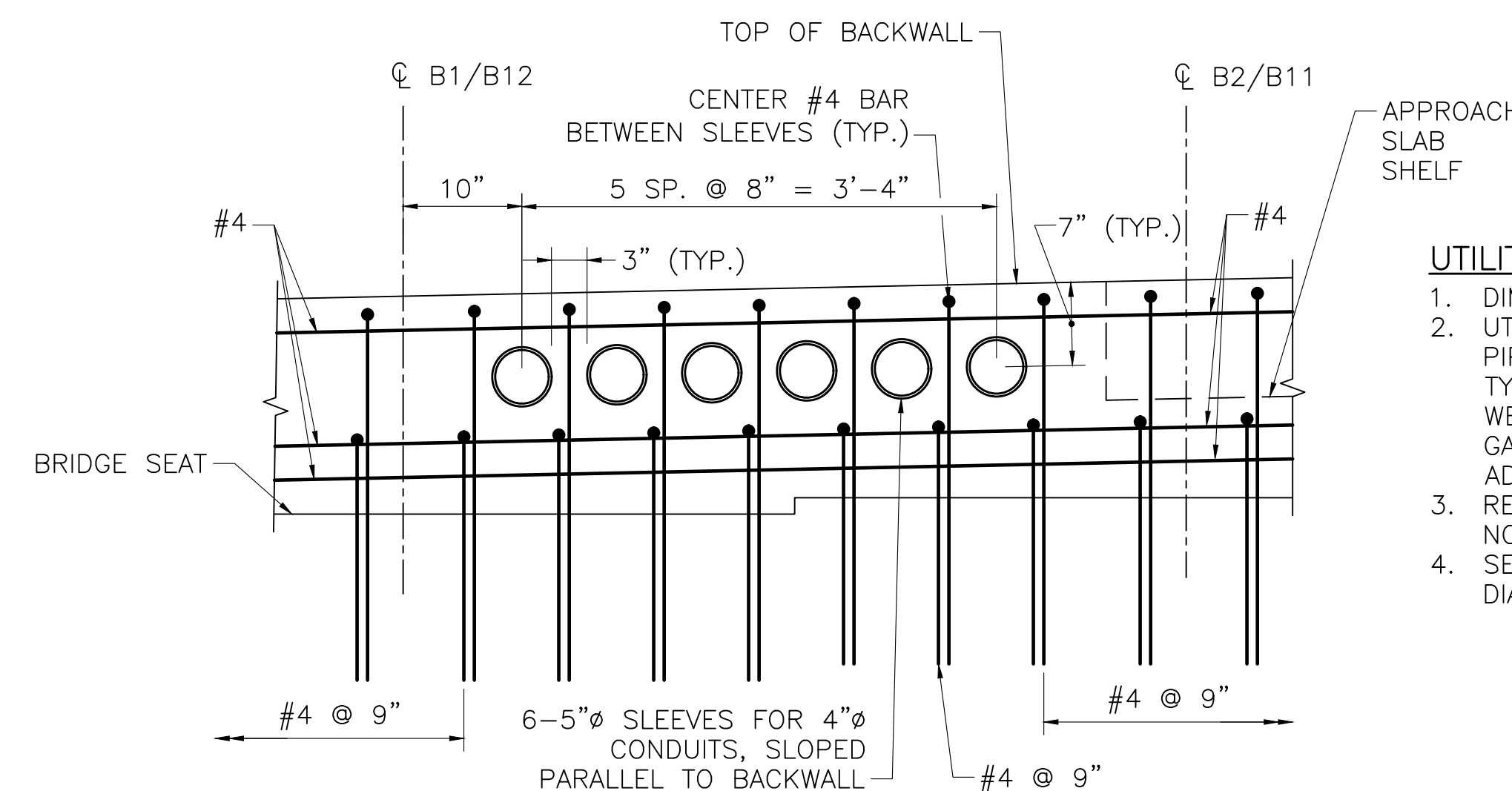
DETAILS AT ABUTMENT - ROADWAY SECTION (WITHIN PBU)

SCALE: 1" = 1'-0"



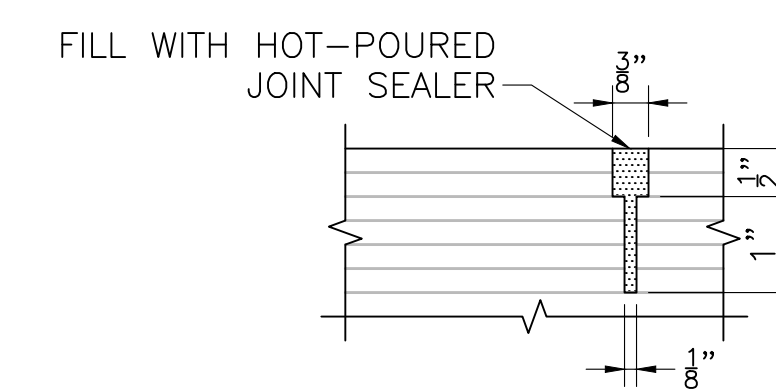
DETAILS AT ABUTMENT - SIDEWALK SECTION WITHOUT APPROACH SLAB SEAT (WITHIN PBU)

SCALE: 1" = 1'-0"



UTILITY DETAILS AT BACKWALL

SCALE: 1" = 1'-0"



PAVEMENT SAWCUT DETAILS

NOT TO SCALE

ROADWAY/SIDEWALK ABUTMENT SECTION NOTES:

- ALL REINFORCEMENT SHOWN IN THESE DETAILS SHALL BE EPOXY COATED EXCEPT FOR THE APPROACH SLAB REINFORCEMENT.
- ALL ABUTMENT CAP & BACKWALL CONCRETE SHALL BE 5000 PSI, HP CEMENT CONCRETE. THE TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
- FOR ABUTMENT REINFORCING DETAILS NOT SHOWN HERE, SEE SHEET 20 & 21.
- THE C.I.P. CLOSURE POUR IS OPTIONAL AT THE ENDS OF THE PBU'S IF THE CONTRACTOR CAN DEMONSTRATE THAT HIS/HER MEANS AND METHODS CAN ERECT AND INSTALL THE PBU'S WITHOUT THE CLOSURE POUR TO THE SATISFACTION OF THE ENGINEER.
- PLASTIC SHIMS SHALL BE SECURED TO THE EXISTING ABUTMENT WITH COUNTER SUNK SCREWS PRIOR TO PRE-BEDDING GROUT.
- PRE-BED SEAT WITH NON-SHRINK GROUT THICKNESS MORE THAN SHIM STACK.
- THE KEEPER BLOCK CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE CLOSURE POUR CONCRETE.
- PRIOR TO PLACING THE PBU CLOSURE POUR CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESSES SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCK, CURTAIN WALL AND AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE FILLER SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE CLOSURE POUR SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT ALL ABUTMENT CONCRETE IS PROPERLY LINED. CLOSURE POUR CONCRETE MUST NOT COME IN DIRECT CONTACT WITH ABUTMENT CONCRETE.
- DRAPE MEMBRANE WATERPROOFING OVER CLOSED CELL FOAM BACKER ROD.
- PROTECTIVE COURSE TO BE HOT MIX ASPHALT DENSE BINDER COURSE FOR BRIDGES, PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND-GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING MEMBRANE WATERPROOFING.
- SECTIONS WITHIN PBU SHOWN. FOR SECTIONS THROUGH CLOSURE POUR, SEE SHEET 37.

UTILITY DETAIL NOTES:

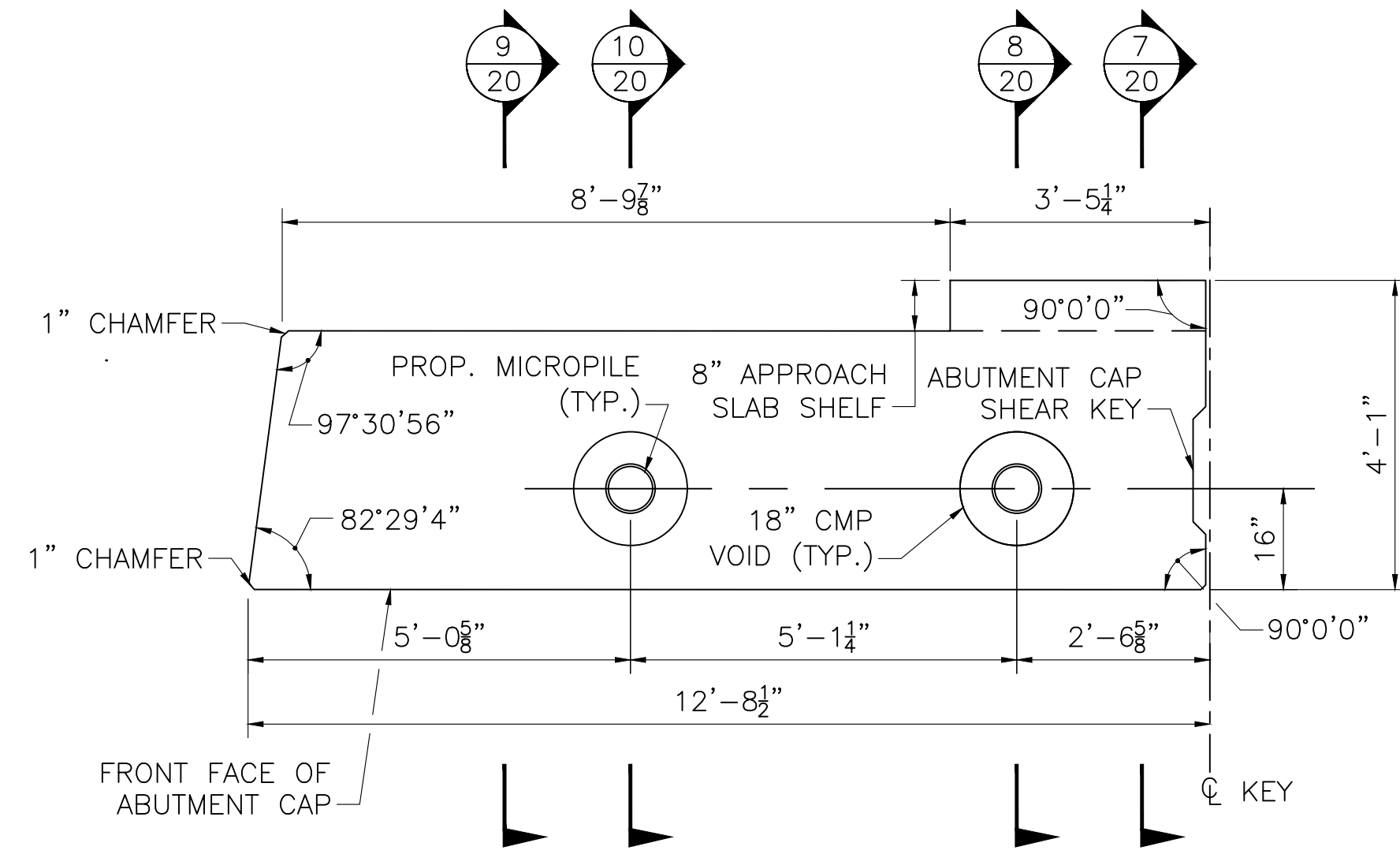
- DIMENSIONS ARE SQUARE TO BEAMS. UTILITY SLEEVES SHALL BE STEEL PIPE CONFORMING TO ASTM A-53, TYPE S, GRADE B, STANDARD WEIGHT, PLAIN ENDS, AND HOT-DIP GALVANIZED, SEE SHEET 37 FOR ADDITIONAL DETAILS.
- REINFORCEMENT IN ABUTMENT STUB NOT SHOWN FOR CLARITY.
- SEE SHEET 37 FOR DETAILS AT END DIAPHRAGM.

DATE	DESCRIPTION
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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

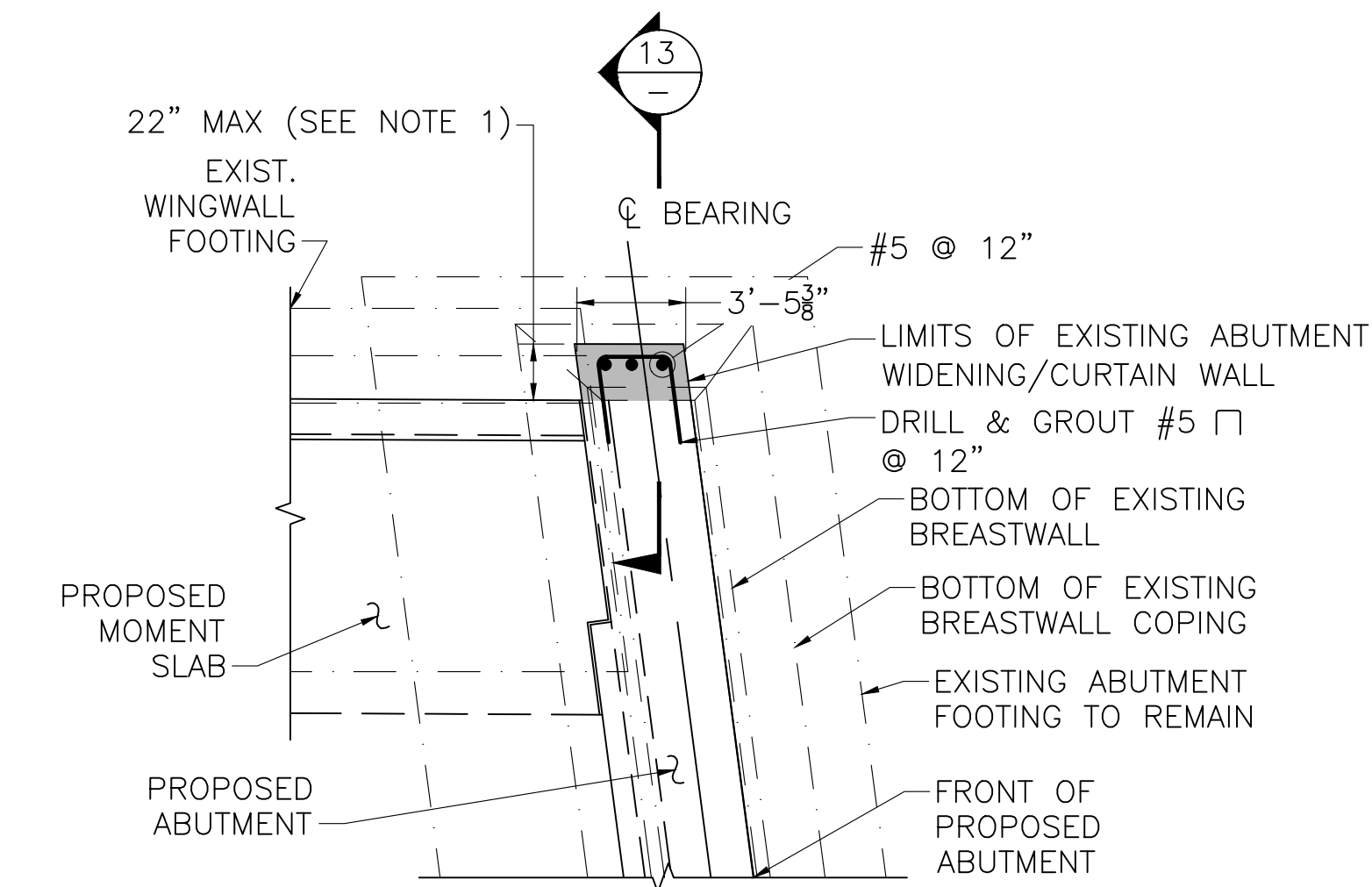
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	56	90
PROJECT FILE NO.		606902	

**ABUTMENT DETAILS II**



**EXTERIOR ABUTMENT CAP SEGMENT PLAN**  
**SOUTHEAST & NORTHWEST CORNER**

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

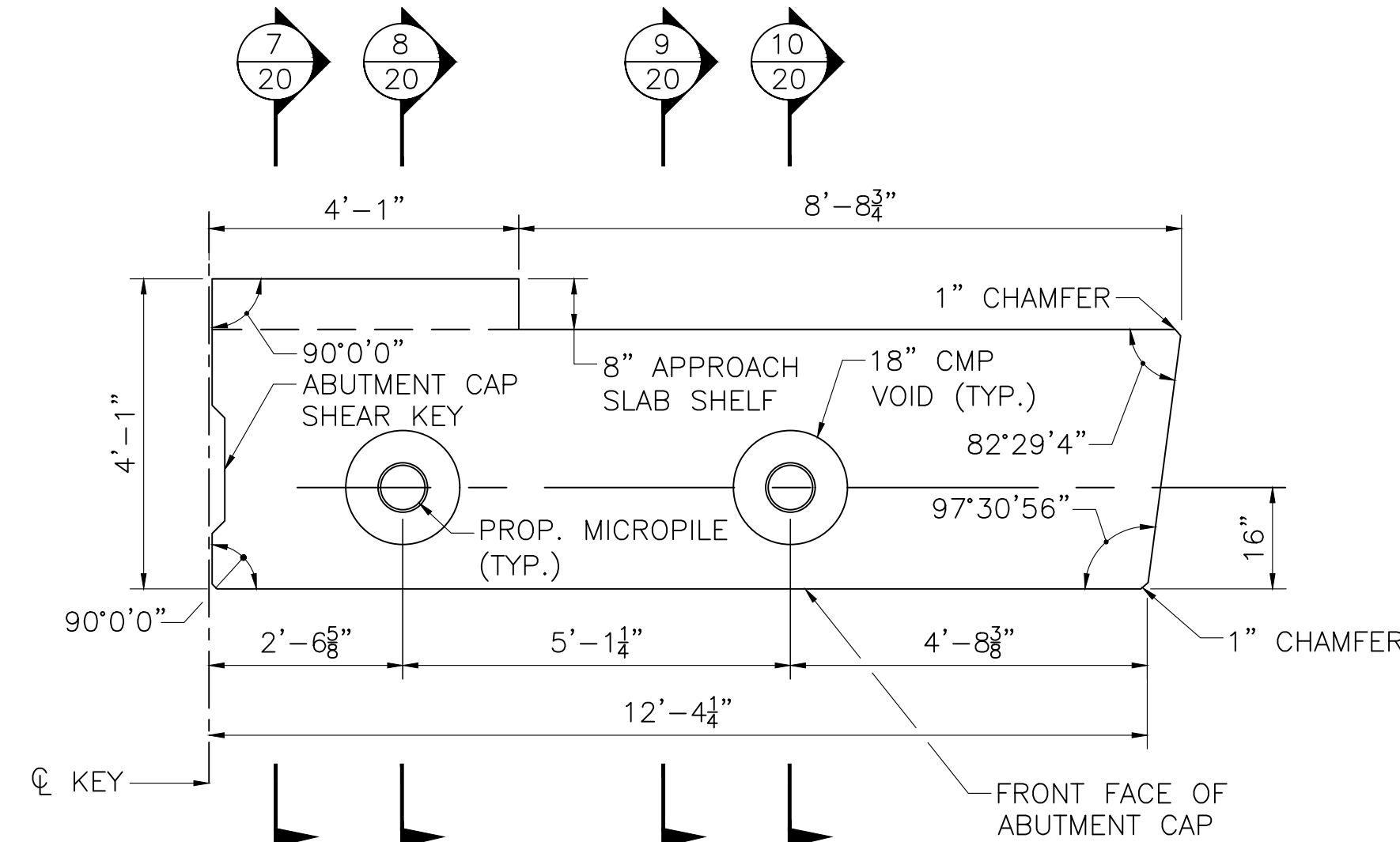


**EXISTING ABUTMENT WIDENING PLAN VIEW**  
**(SOUTHEAST CORNER SHOWN, OTHER CORNERS SIMILAR)**

SCALE: 3/16" = 1'-0"

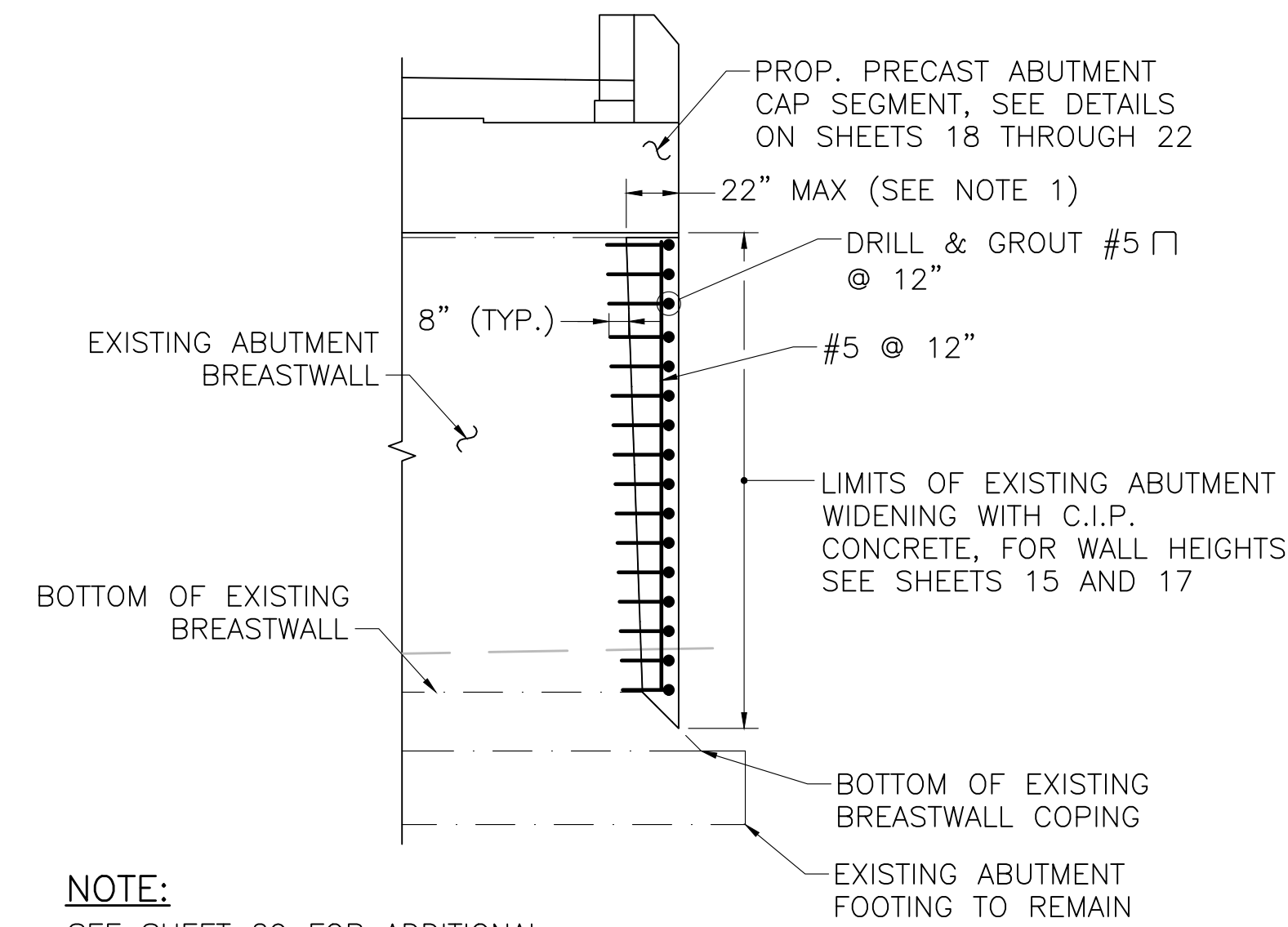
**ABUTMENT WIDENING NOTES:**

1. ABUTMENT WIDENING AMOUNT BASED ON LIMITED INFORMATION. CONTRACTOR TO FIELD VERIFY WIDENING AMOUNT REQUIRED AT EACH CORNER PRIOR TO WIDENING.
2. ABUTMENT WIDENING AT CORNERS SHALL BE COMPLETED PRIOR TO SETTING OF PRECAST ABUTMENT CAPS.



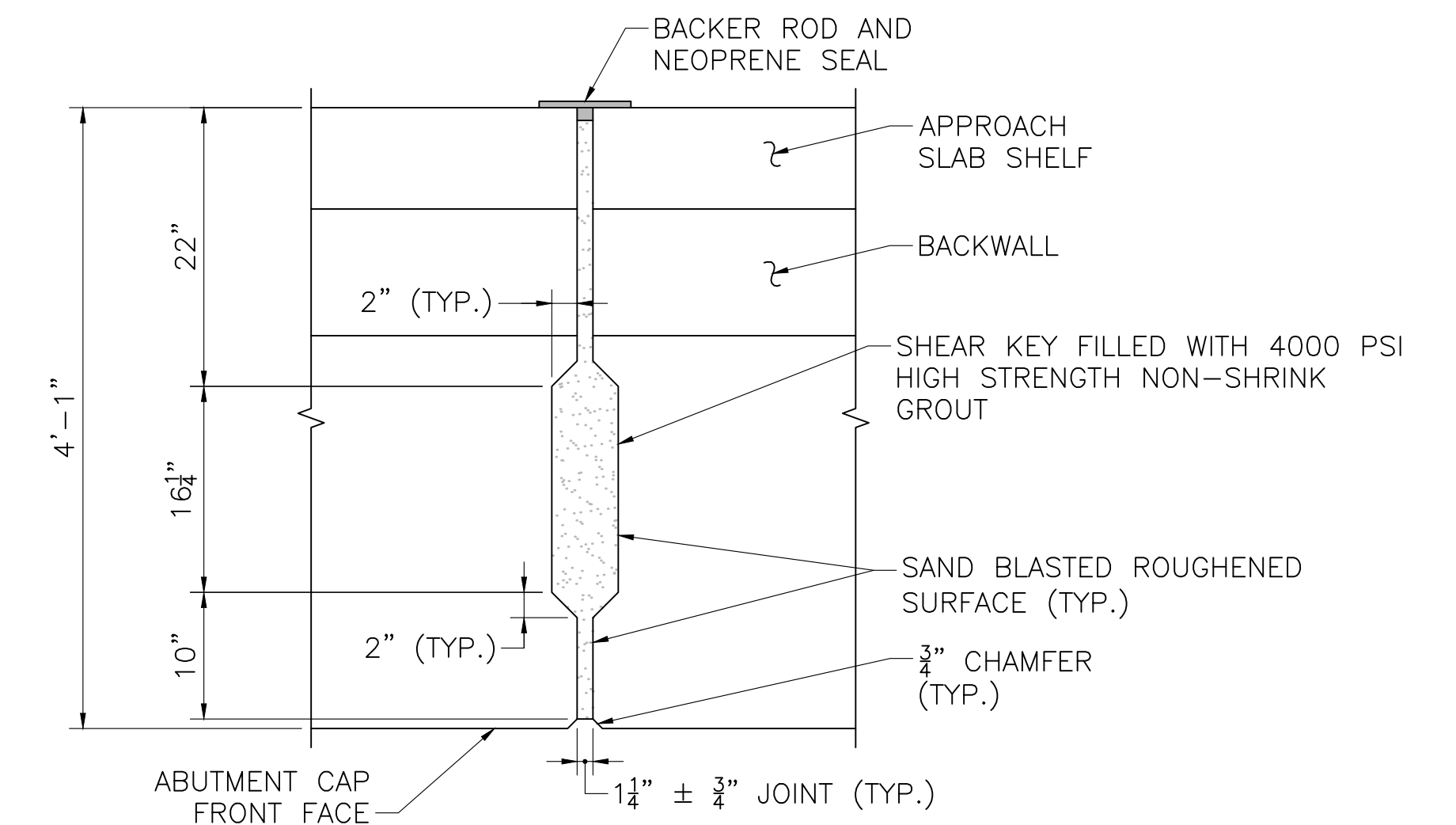
**EXTERIOR ABUTMENT CAP SEGMENT PLAN**  
**SOUTHWEST & NORTHEAST CORNER**

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



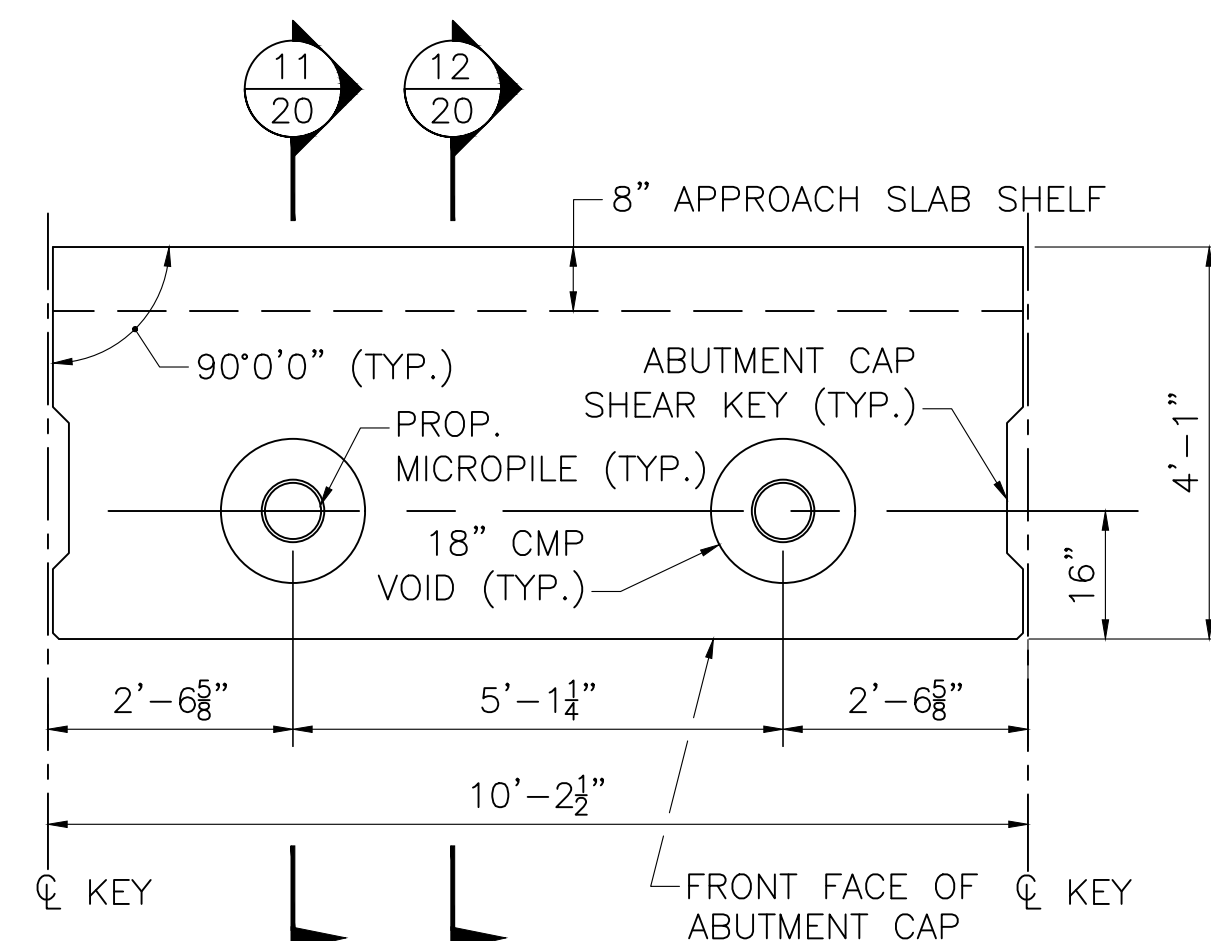
**NOTE:**  
SEE SHEET 29 FOR ADDITIONAL RESURFACING DETAILS.

**SECTION 13**  
SCALE: 3/16" = 1'-0"



**PRECAST ABUTMENT CAP SHEAR KEY DETAIL**

SCALE: 1" = 1'-0"



**INTERIOR ABUTMENT CAP SEGMENT PLAN**

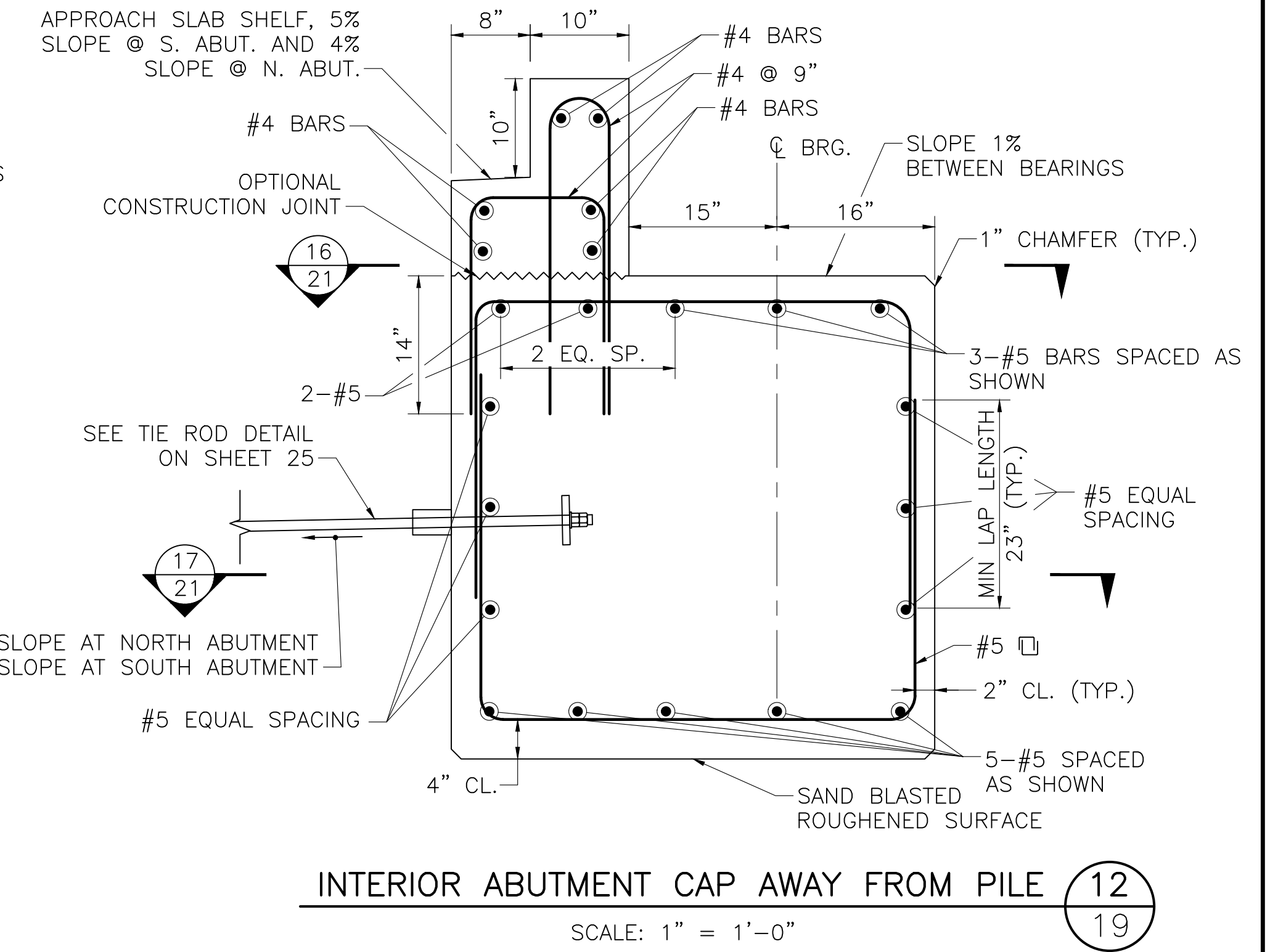
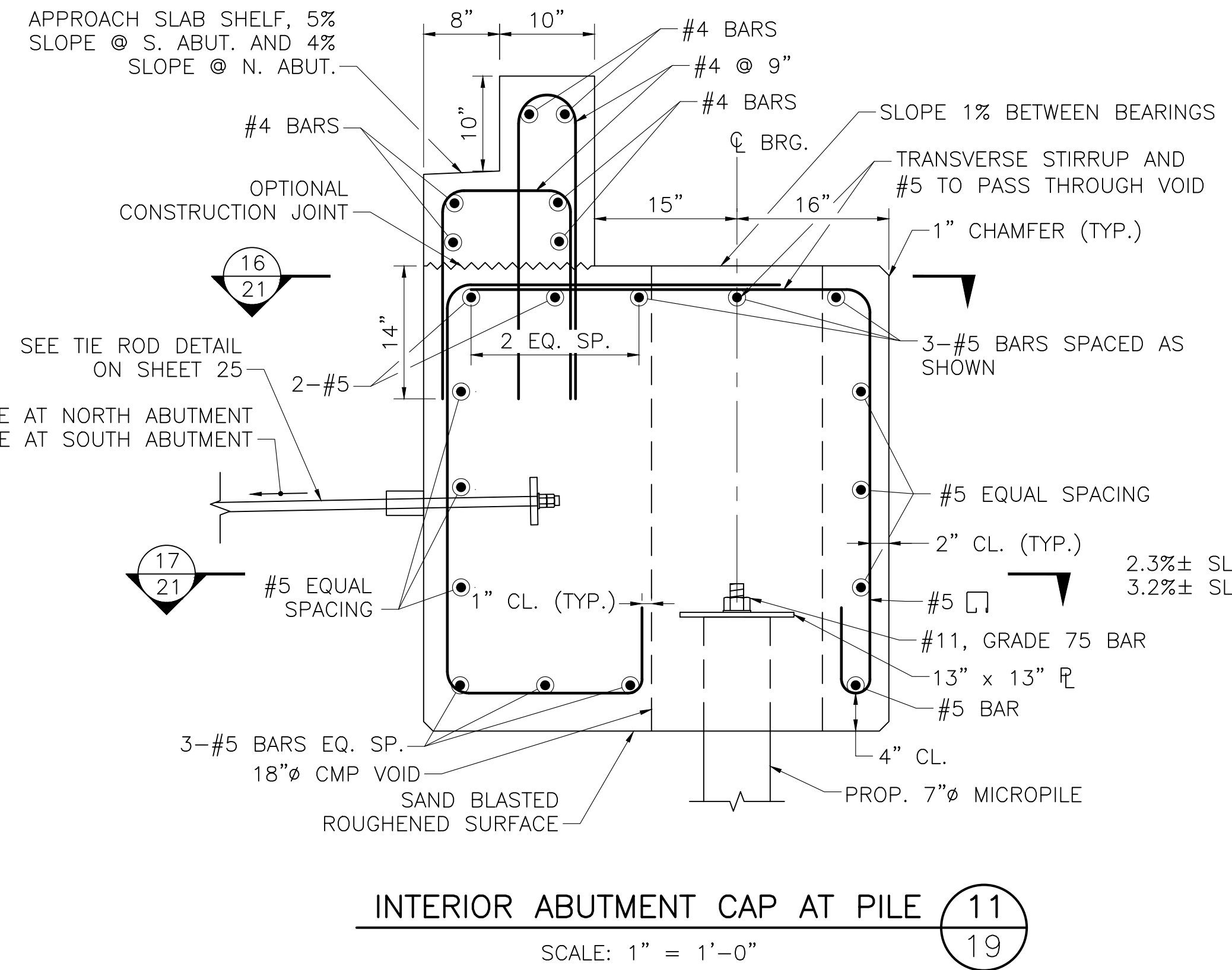
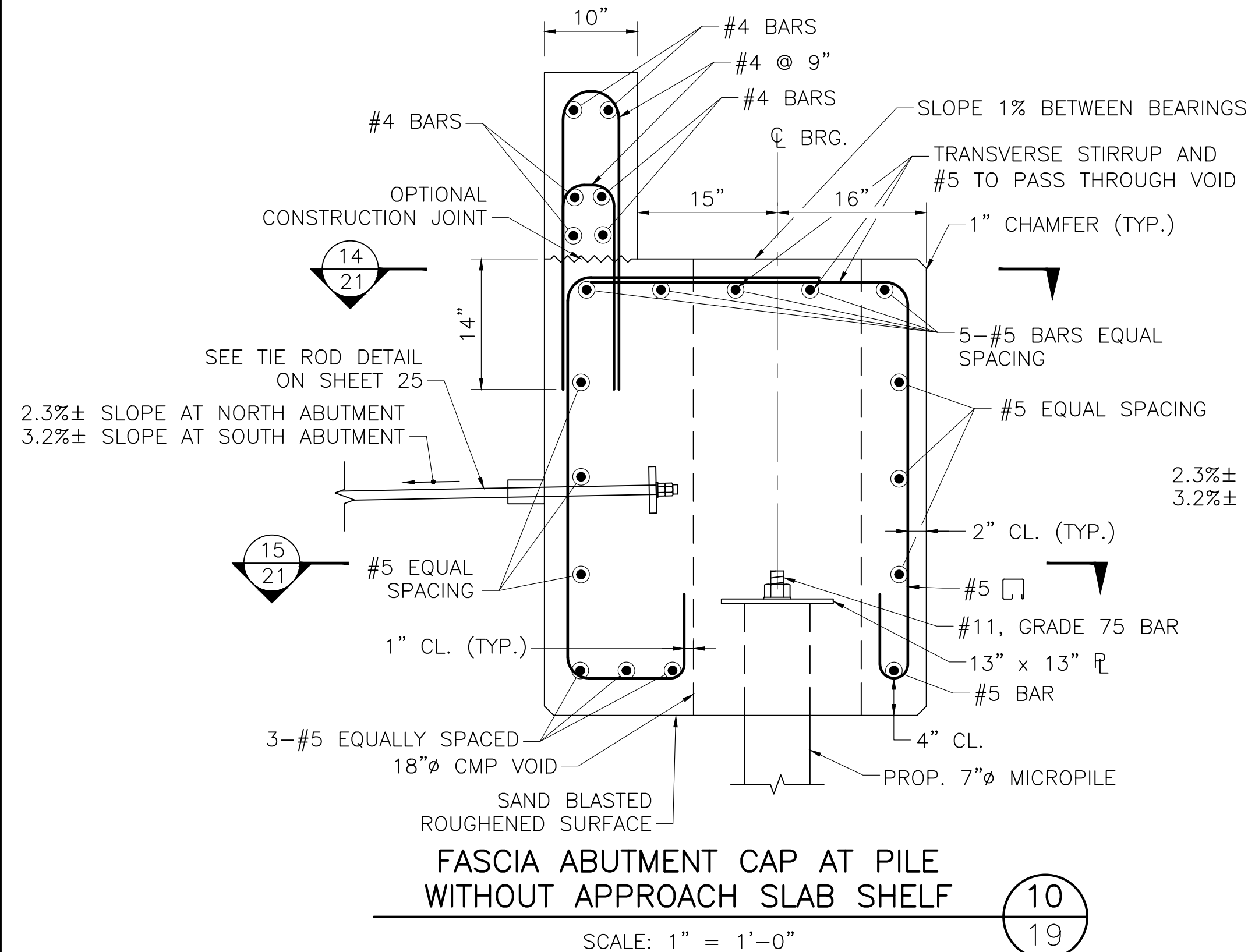
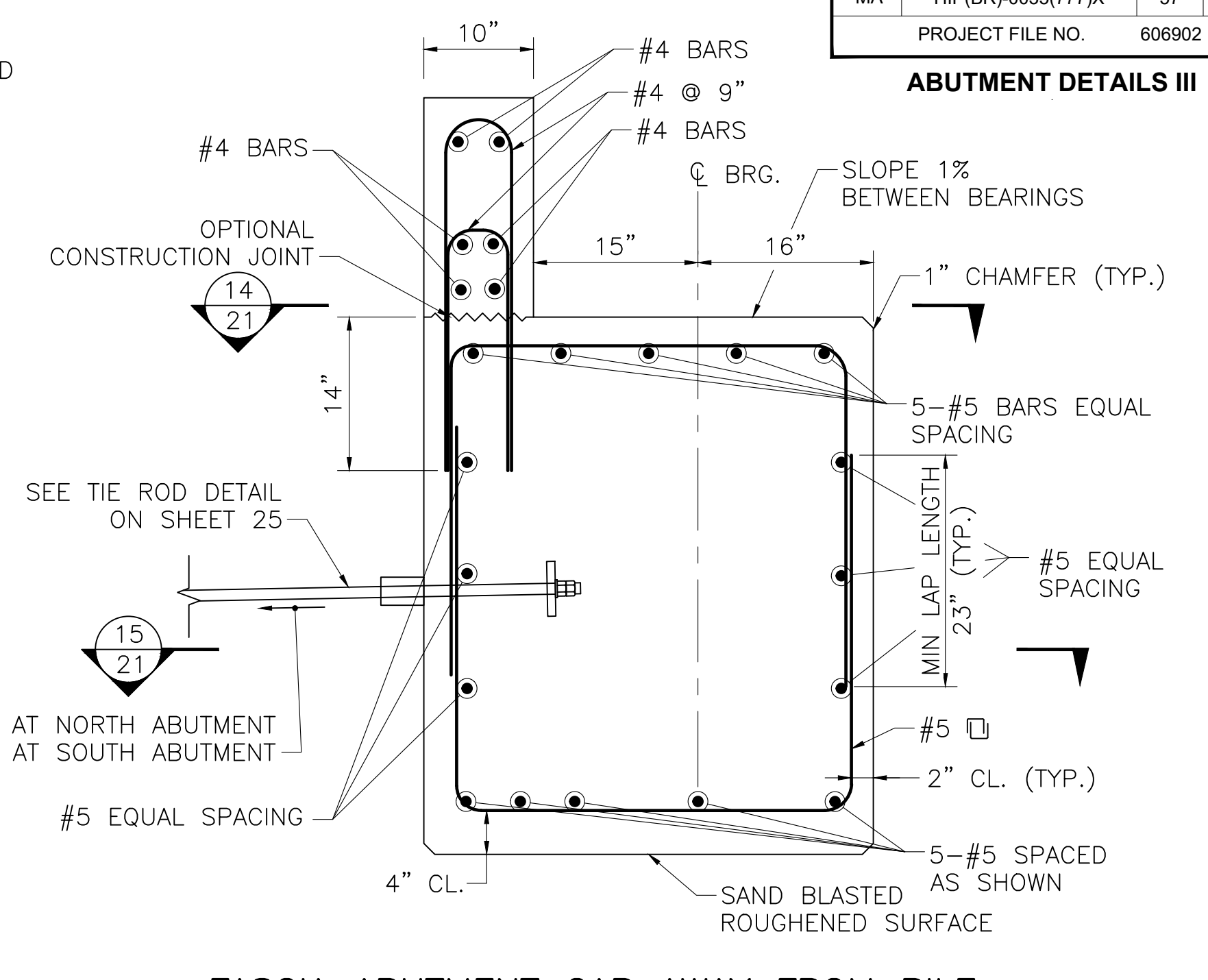
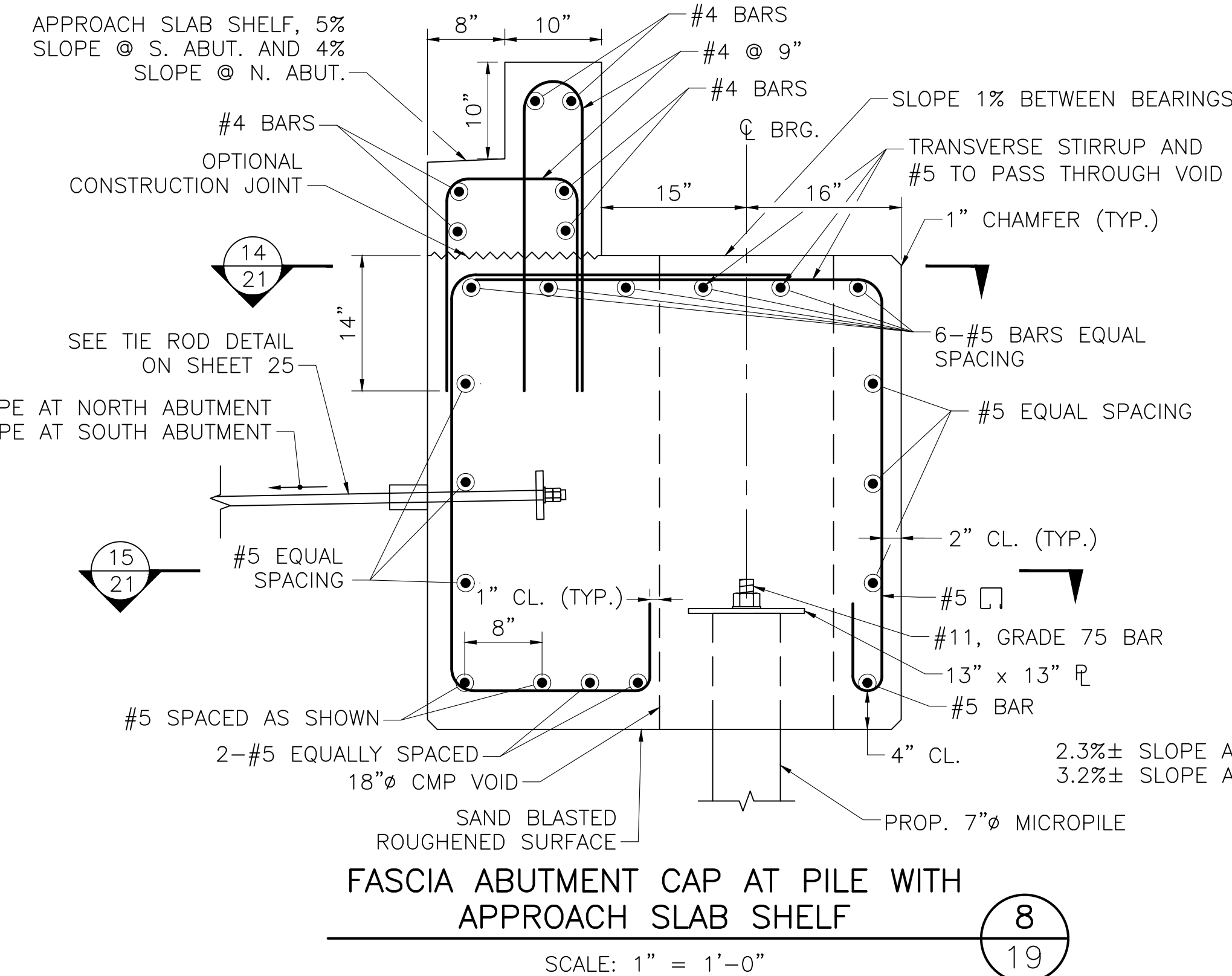
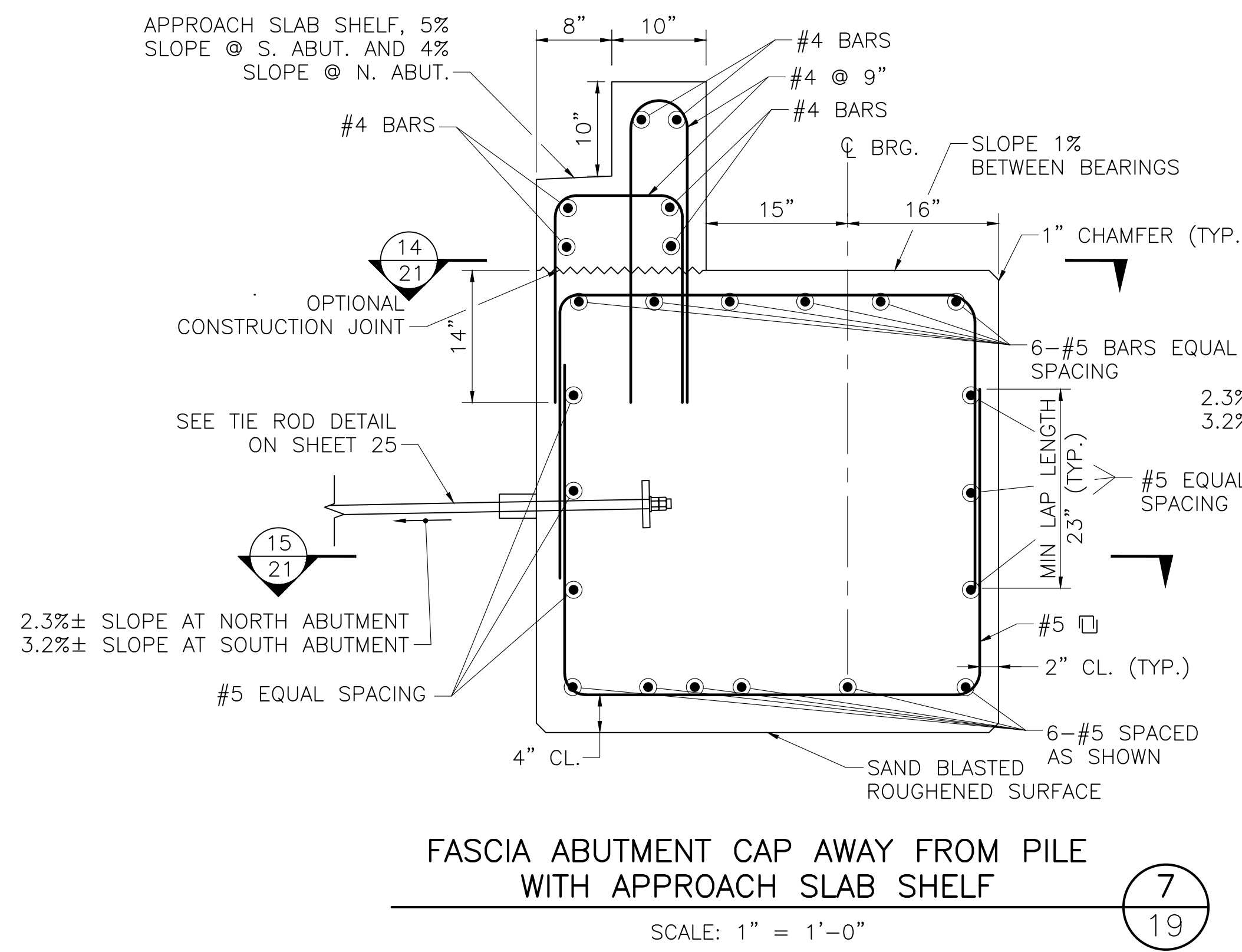
SCALE: 1/2" = 1'-0"

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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	57	90
PROJECT FILE NO.		606902	

**ABUTMENT DETAILS III**



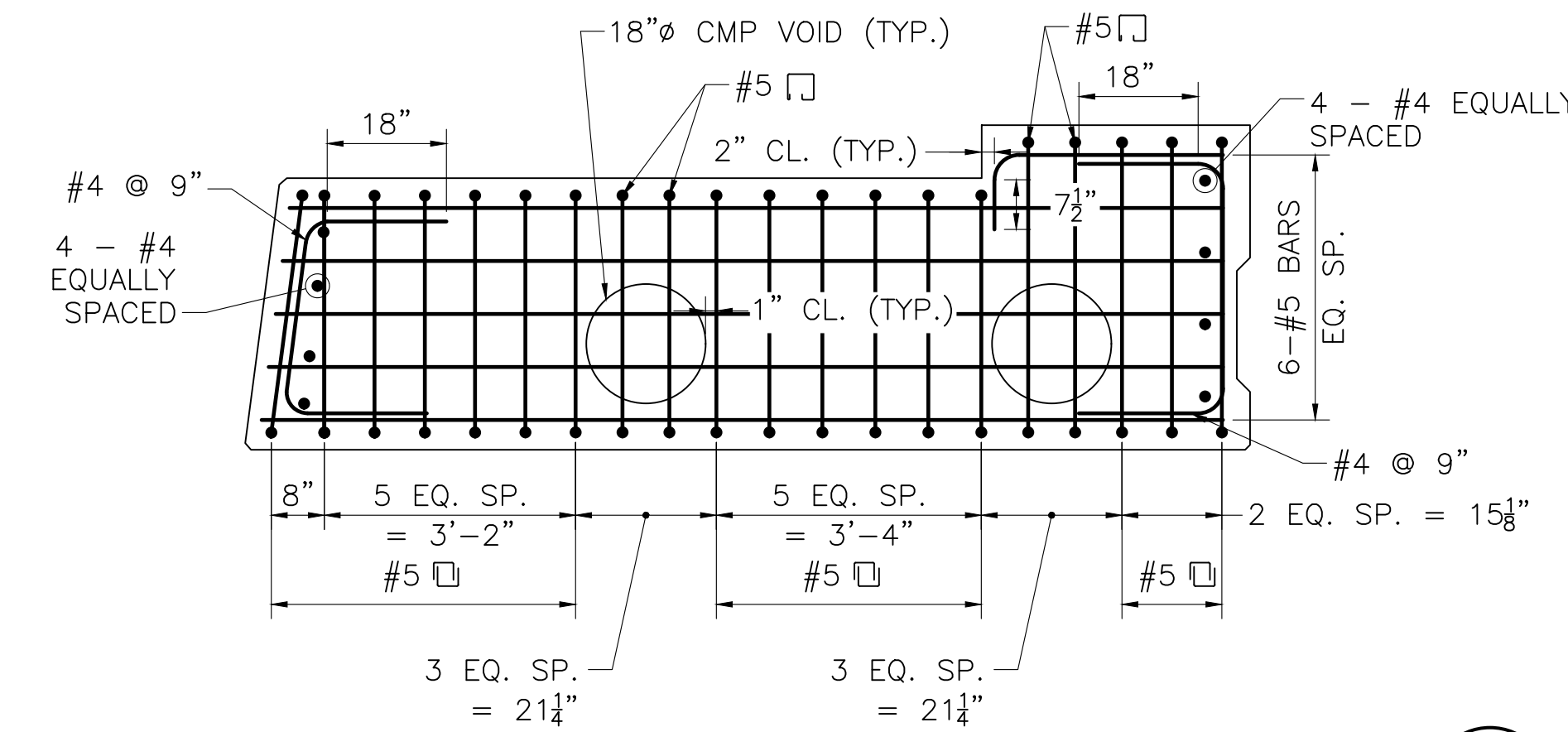
DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG 19-July-2024 11:56 AM Final Structural Submittal (SF)

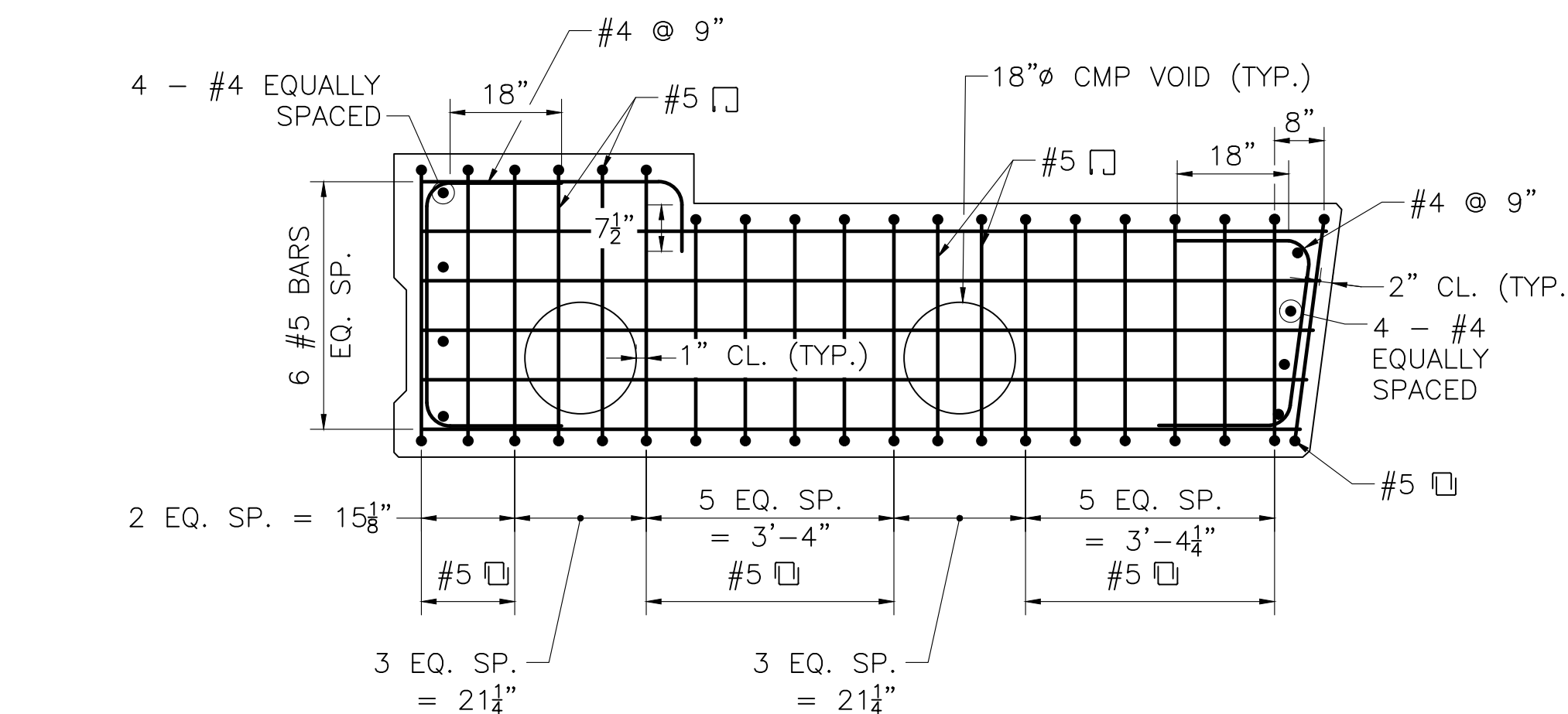
BOSTON  
WEST ROXBURY PARKWAY OVER MBTA

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	58	90
PROJECT FILE NO.		606902	

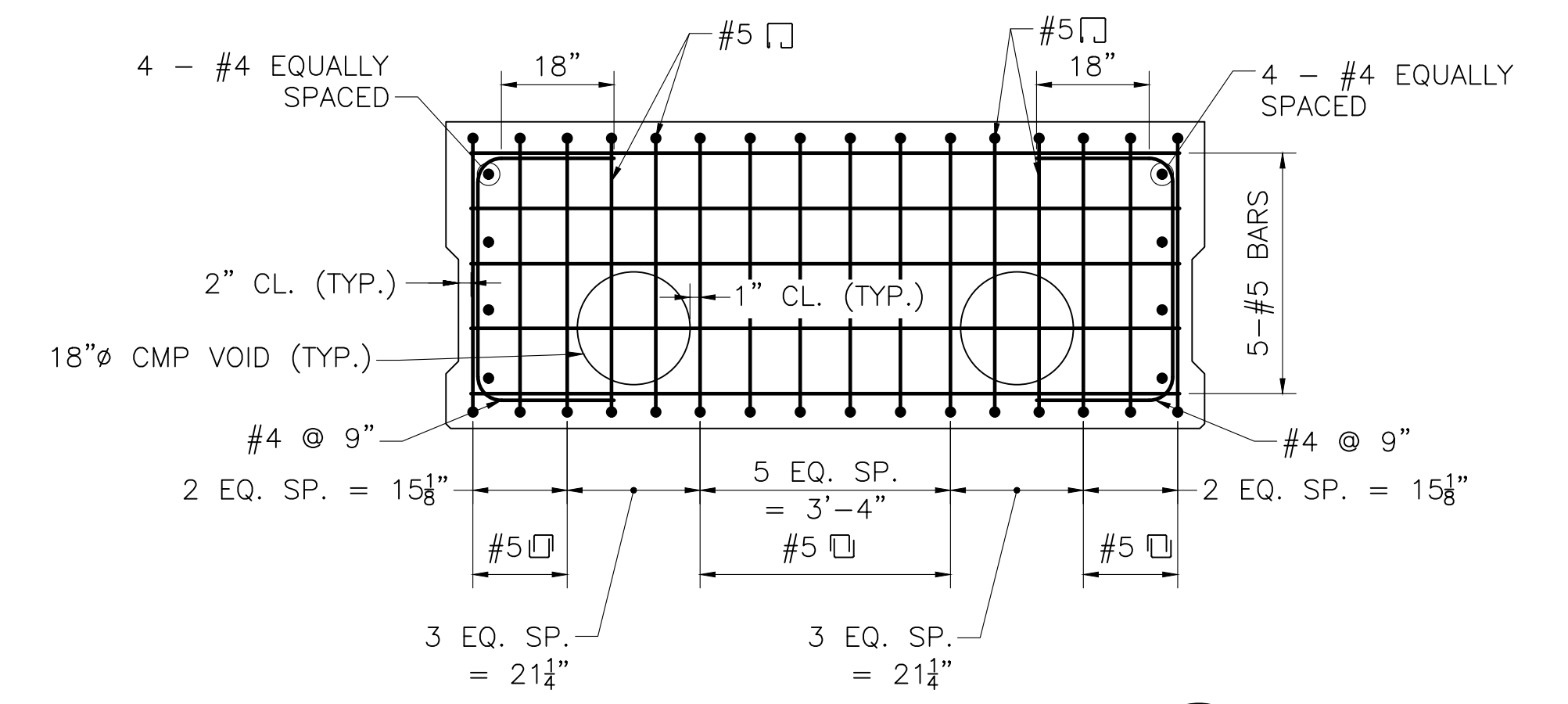
ABUTMENT DETAILS IV



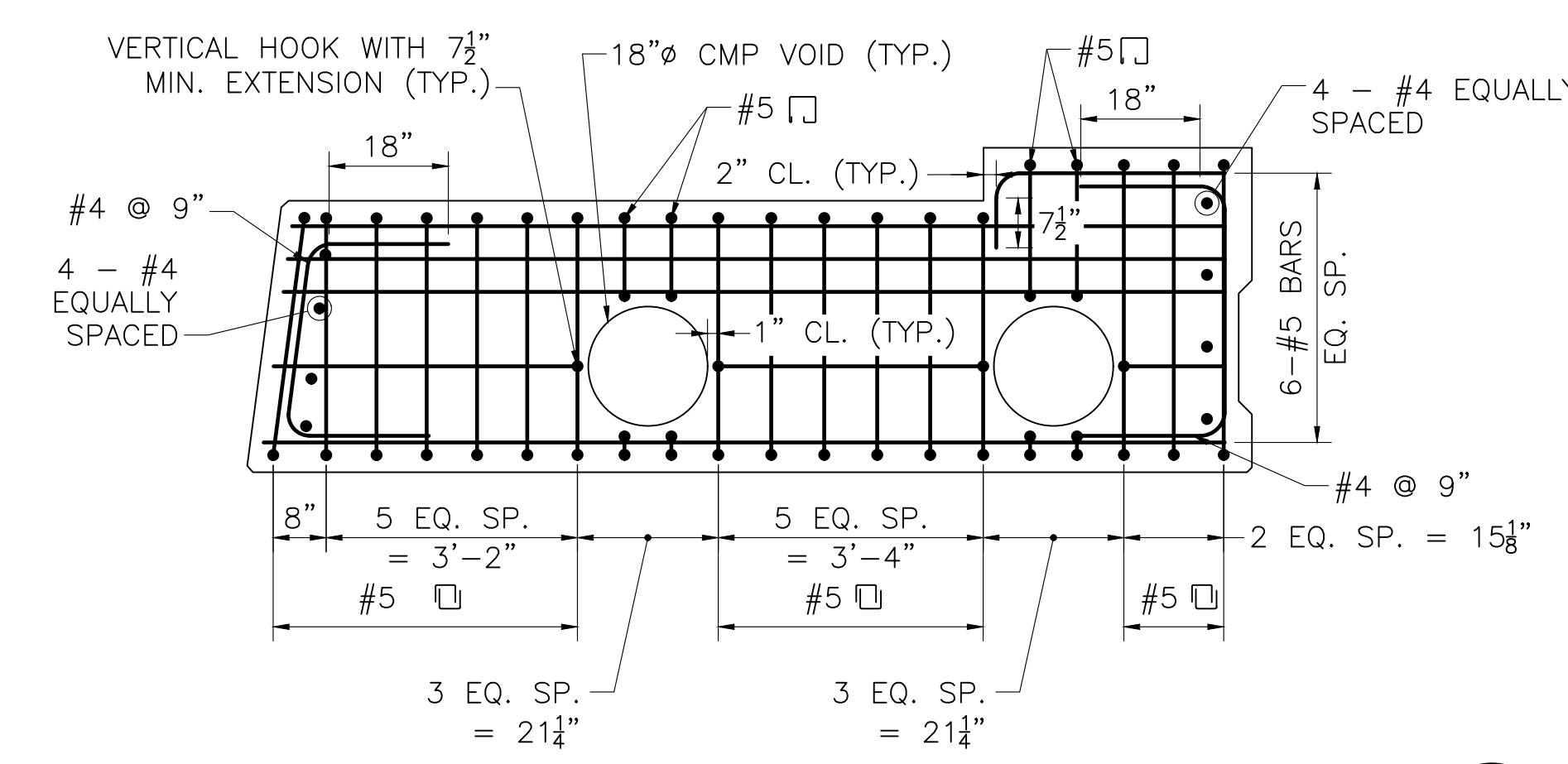
SOUTHEAST & NORTHWEST CORNER ABUTMENT CAP SECTION **14**  
SCALE: 1/2" = 1'-0" **20**



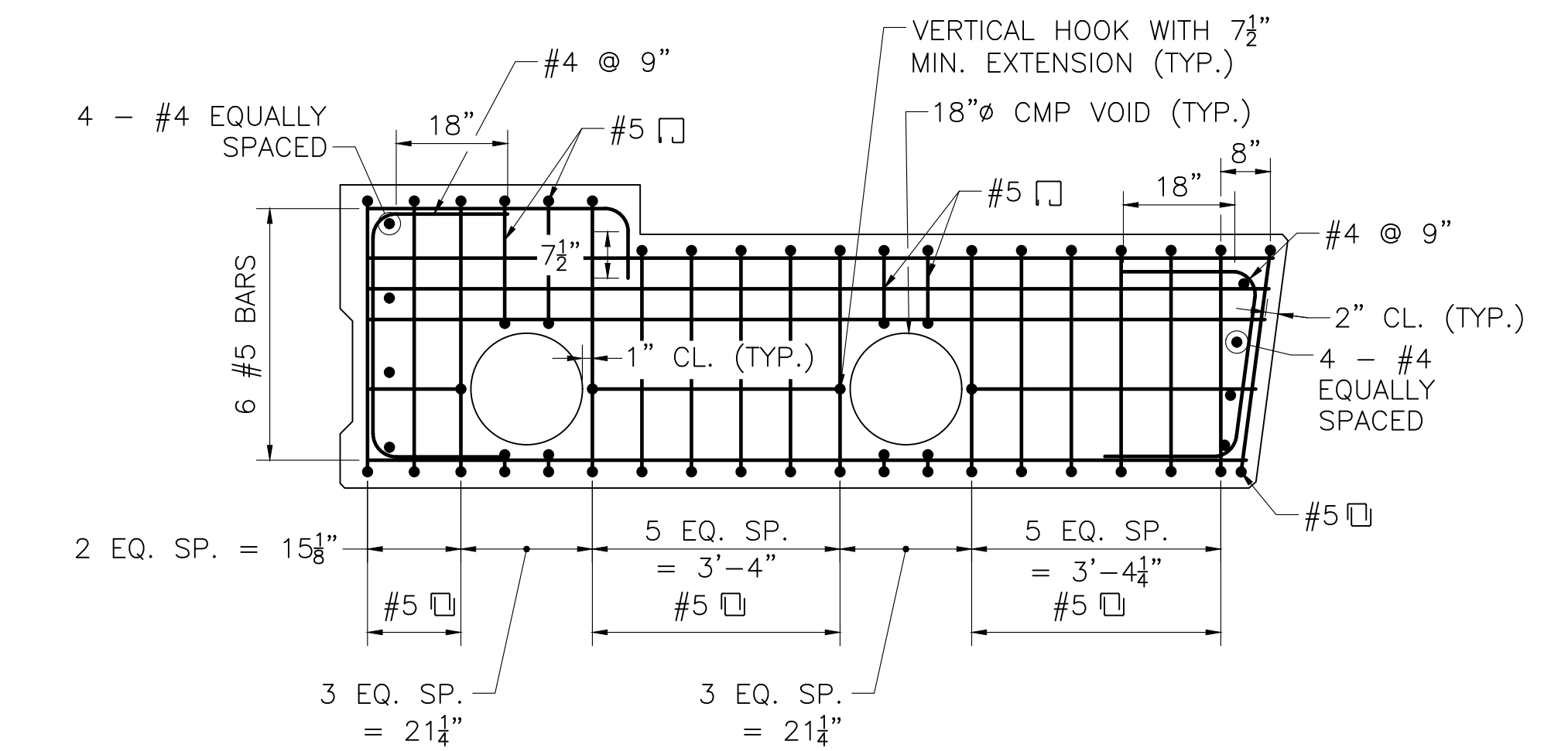
SOUTHWEST & NORTHEAST CORNER ABUTMENT CAP SECTION **14**  
SCALE: 1/2" = 1'-0" **20**



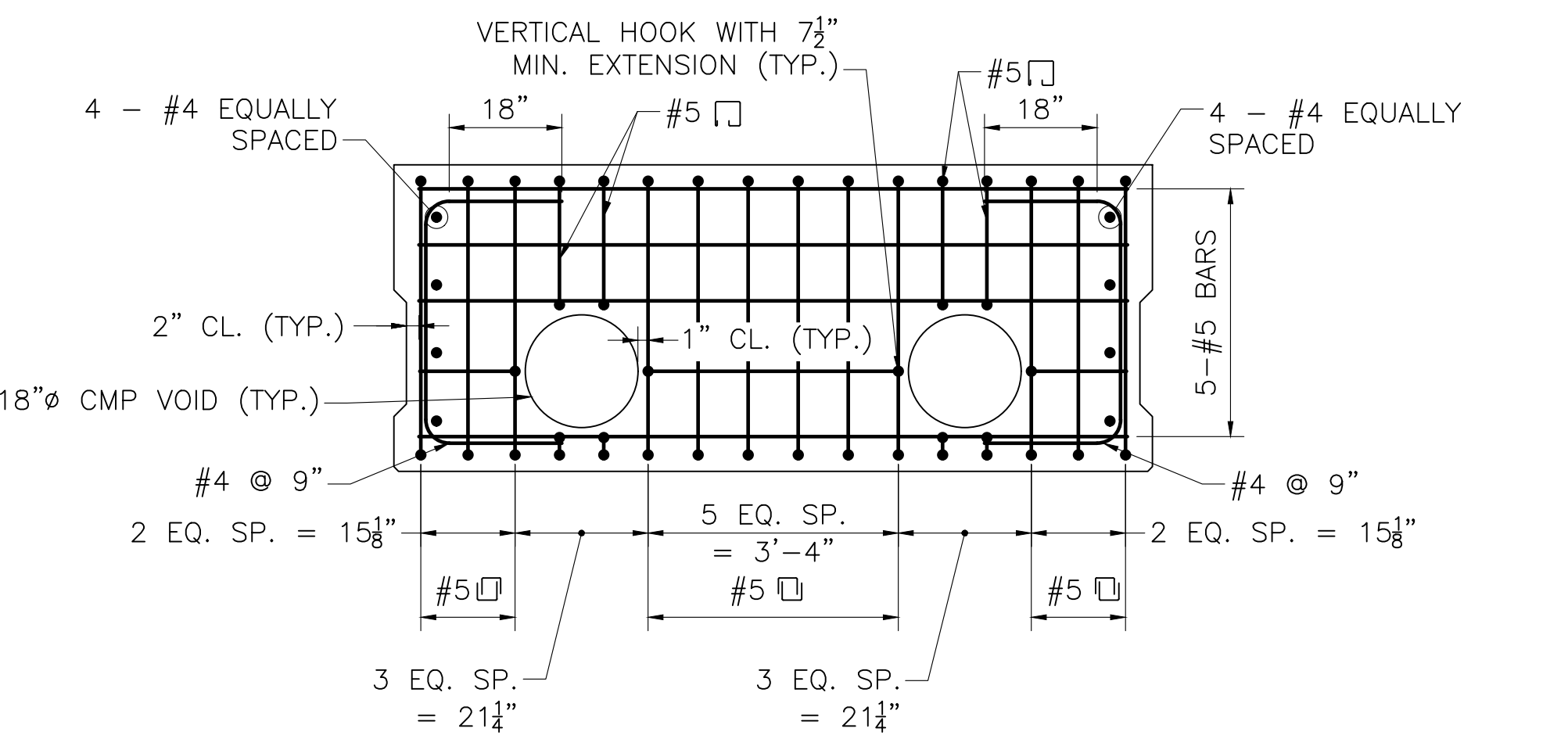
INTERIOR ABUTMENT CAP SECTION **16**  
SCALE: 1/2" = 1'-0" **20**



SOUTHEAST & NORTHWEST CORNER ABUTMENT CAP SECTION **15**  
SCALE: 1/2" = 1'-0" **20**



SOUTHWEST & NORTHEAST CORNER ABUTMENT CAP SECTION **15**  
SCALE: 1/2" = 1'-0" **20**



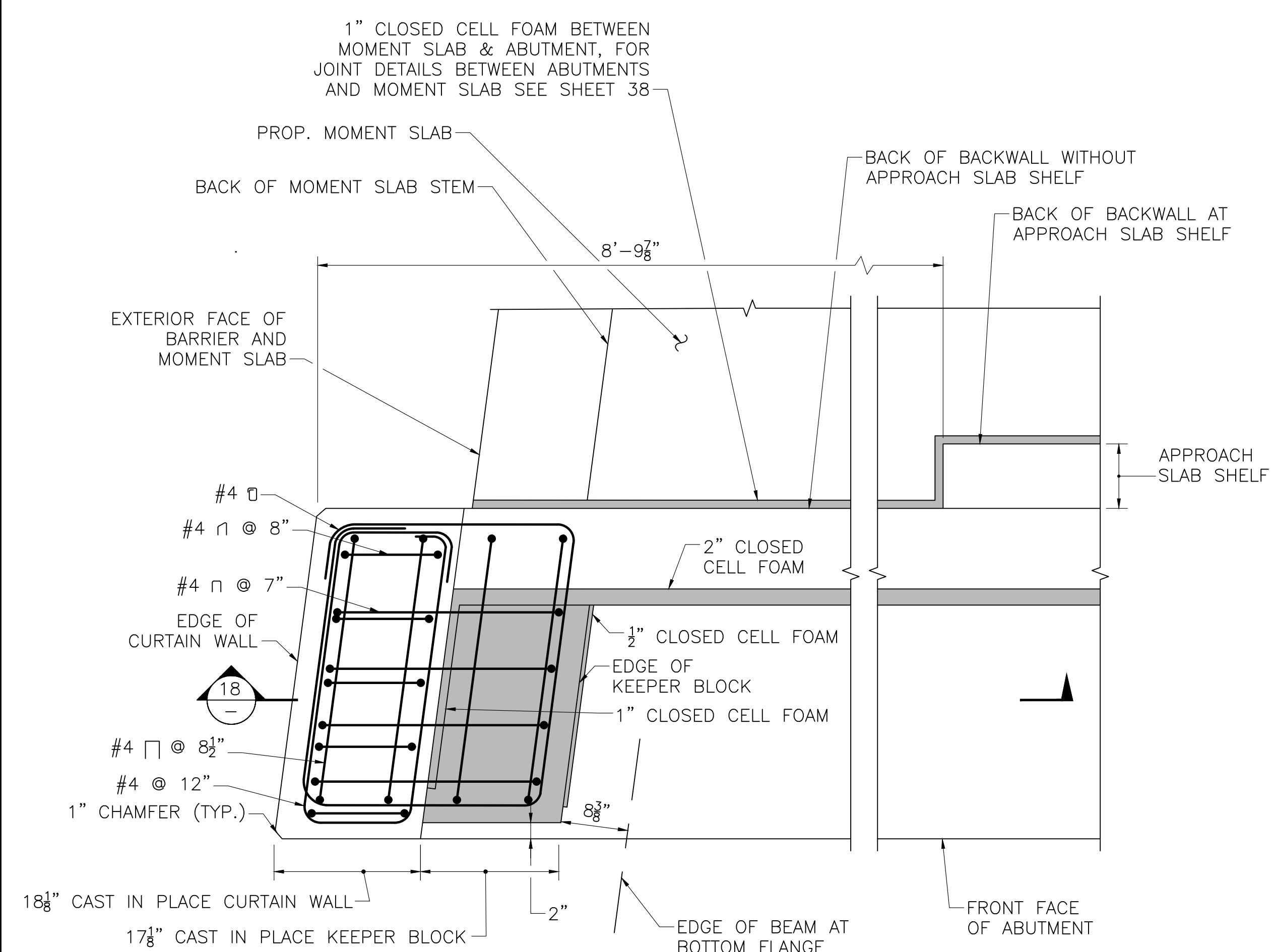
INTERIOR ABUTMENT CAP SECTION **17**  
SCALE: 1/2" = 1'-0" **20**

AUG. 03, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
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USE ONLY PRINTS OF LATEST DATE	

606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG Plotted on 24-Jul-2024 11:56 AM 19-July-2024 Final Structural Submittal (SF)

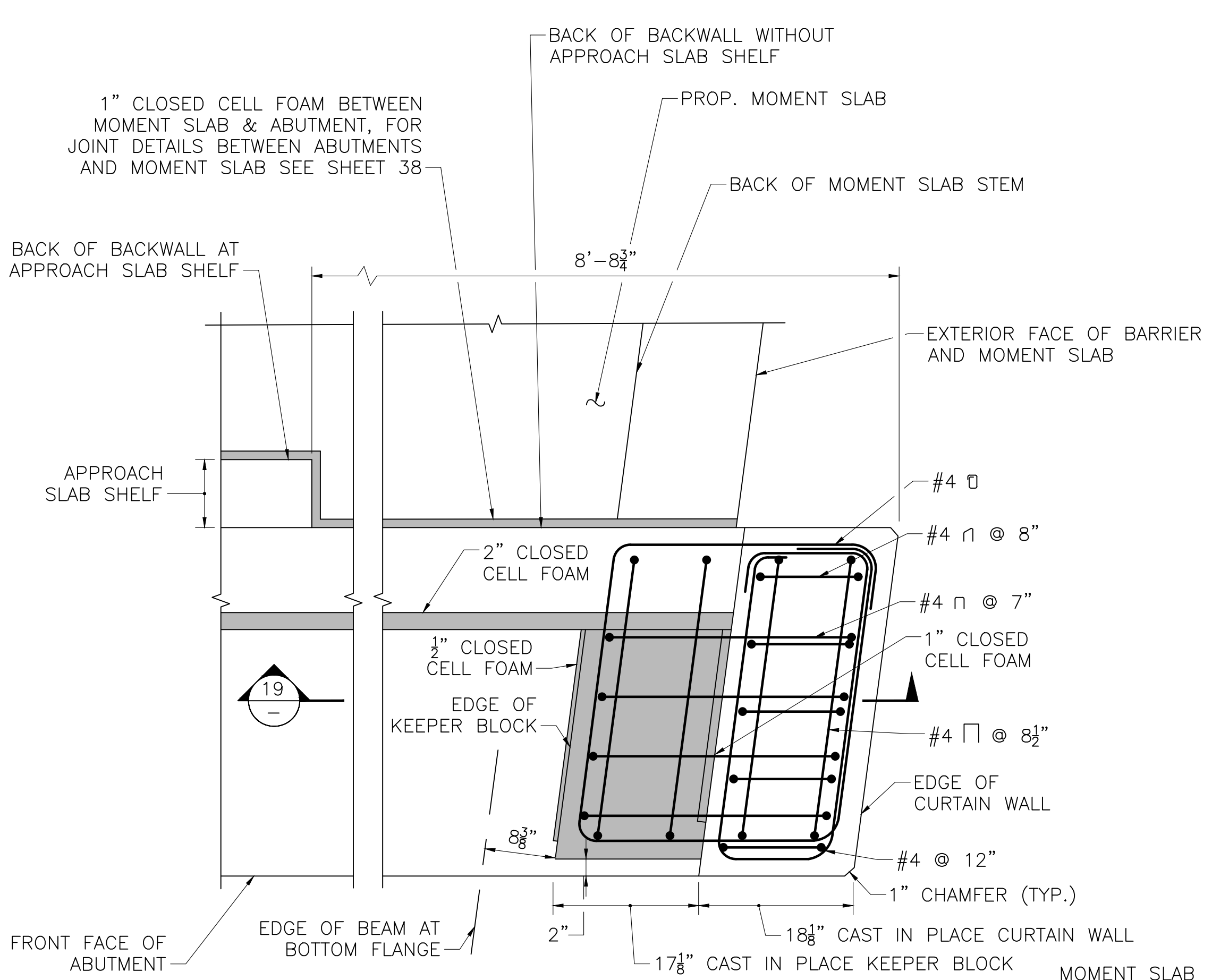
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	59	90
PROJECT FILE NO.		606902	

ABUTMENT DETAILS V



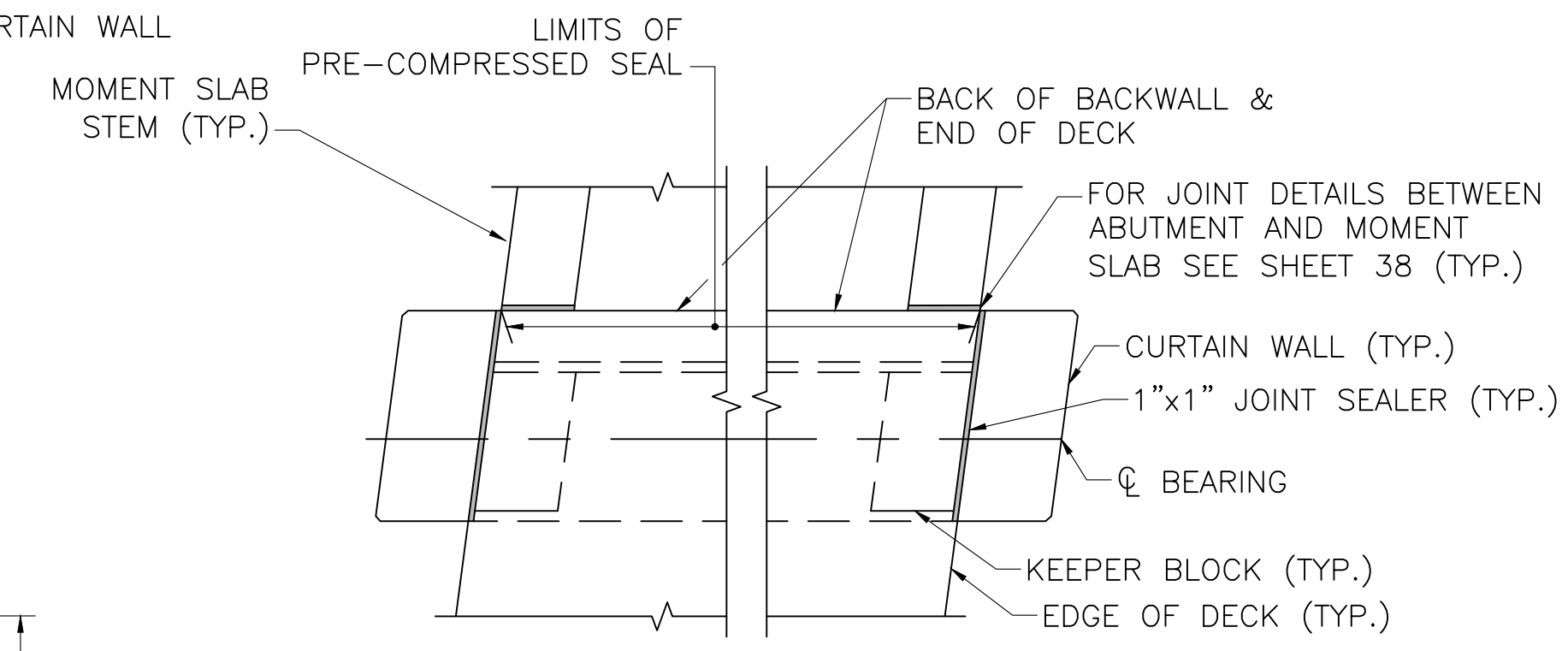
SOUTHWEST & NORTHEAST  
ABUTMENT CORNER PLAN

SCALE: 1" = 1'-0"



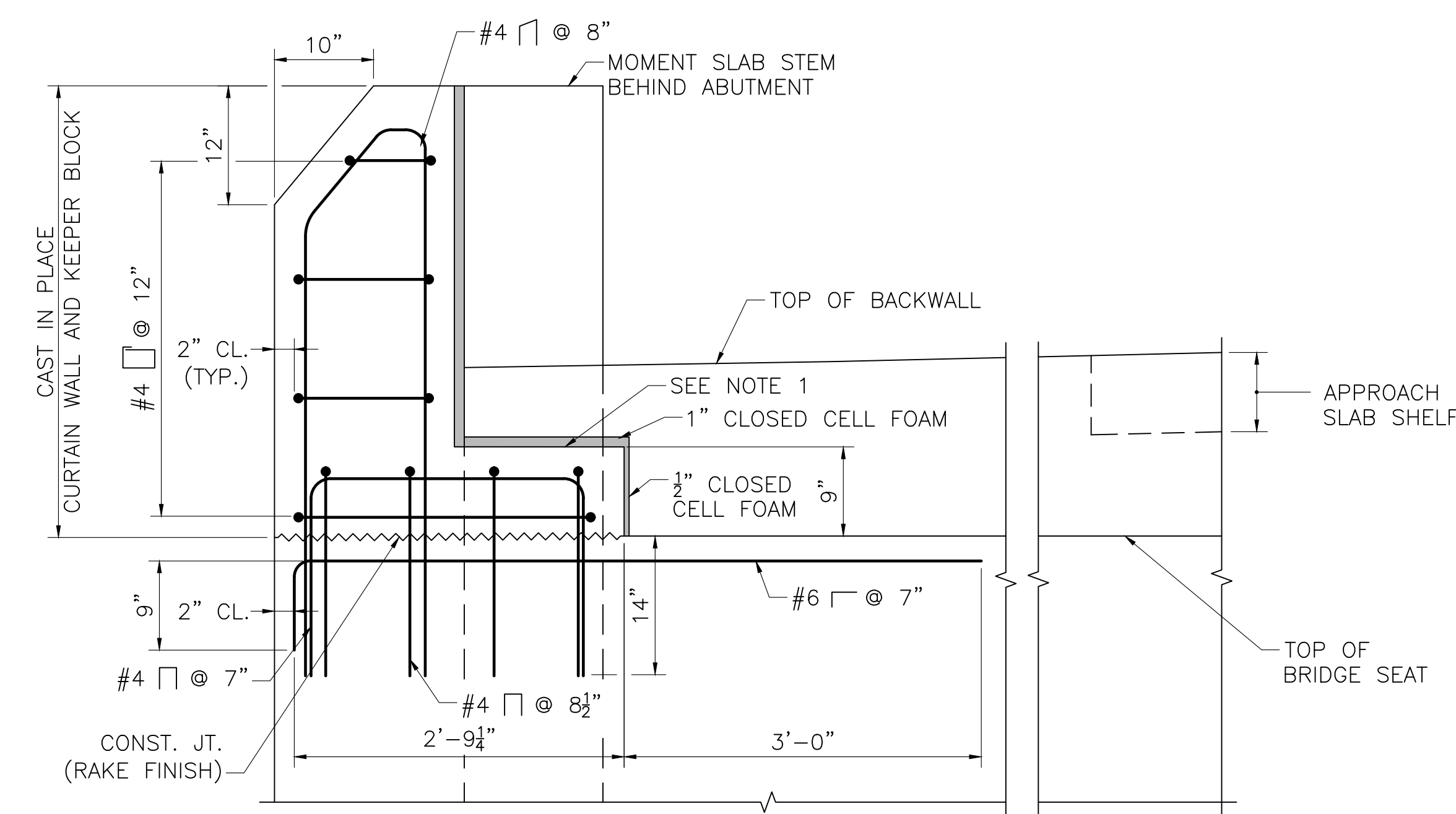
SOUTHWEST & NORTHEAST  
ABUTMENT CORNER PLAN

SCALE: 1" = 1'-0"



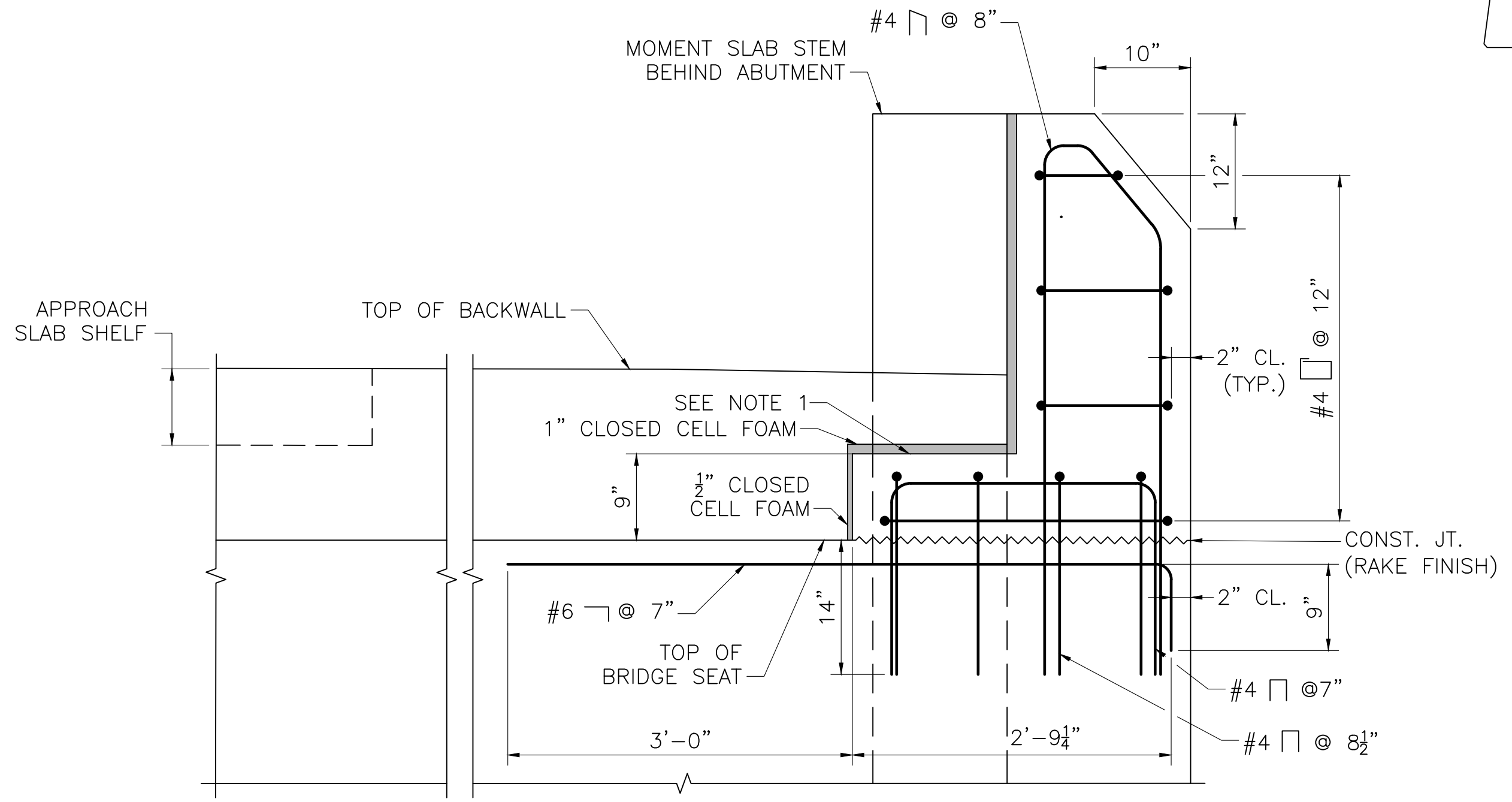
END OF DECK PLAN

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



SECTION 18

SCALE: 1" = 1'-0"



SECTION 19

SCALE: 1" = 1'-0"

NOTES:

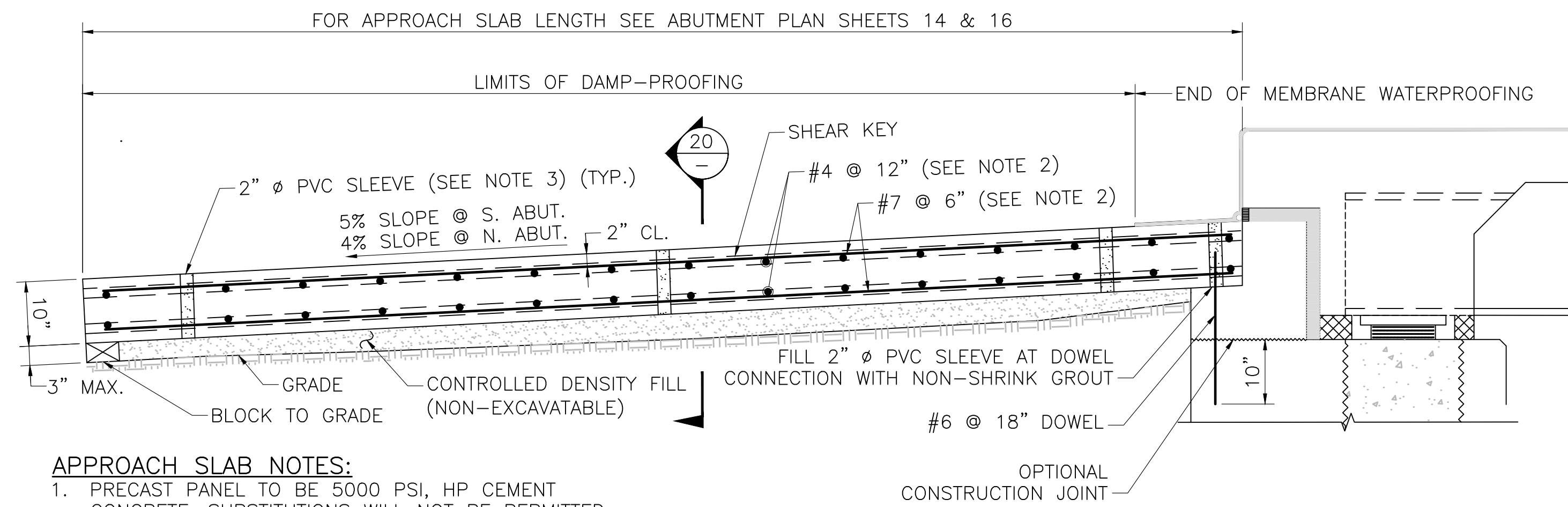
- TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
- ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.

AUG. 03, 2024	ISSUED FOR CONSTRUCTION
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**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

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PROJECT FILE NO.		606902	

**APPROACH SLAB DETAILS**

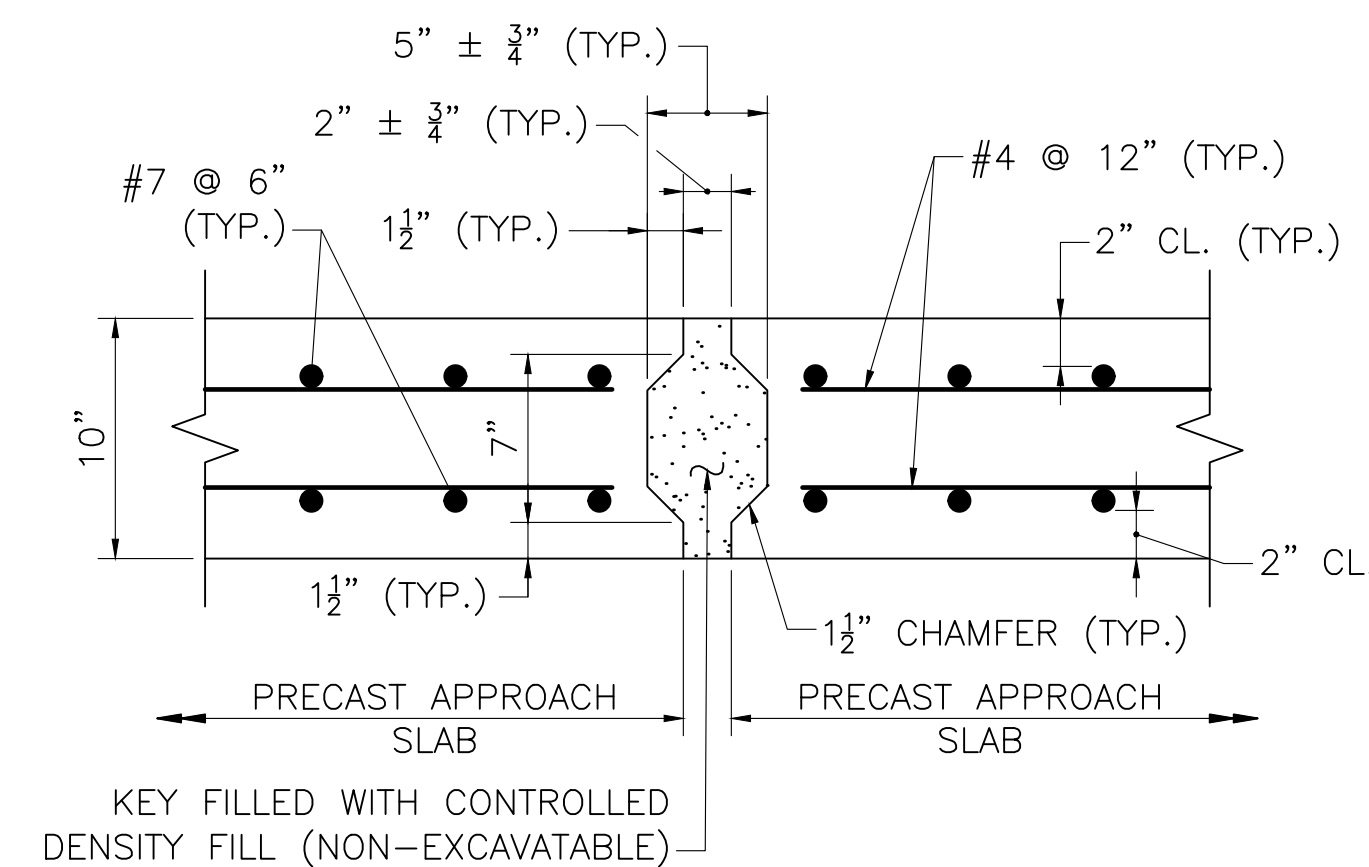


**APPROACH SLAB NOTES:**

1. PRECAST PANEL TO BE 5000 PSI, HP CEMENT CONCRETE. SUBSTITUTIONS WILL NOT BE PERMITTED.
2. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO CENTERLINE OF CONSTRUCTION. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
3. PVC SLEEVES TO BE INCLUDED IN PRECAST APPROACH SLABS TO FACILITATE PLACEMENT OF CONTROLLED DENSITY FILL (NON-EXCAVATABLE).

**TYPICAL PRECAST APPROACH SLAB**

SCALE:  $\frac{3}{4}$ " = 1'-0"



**SECTION**

**20**

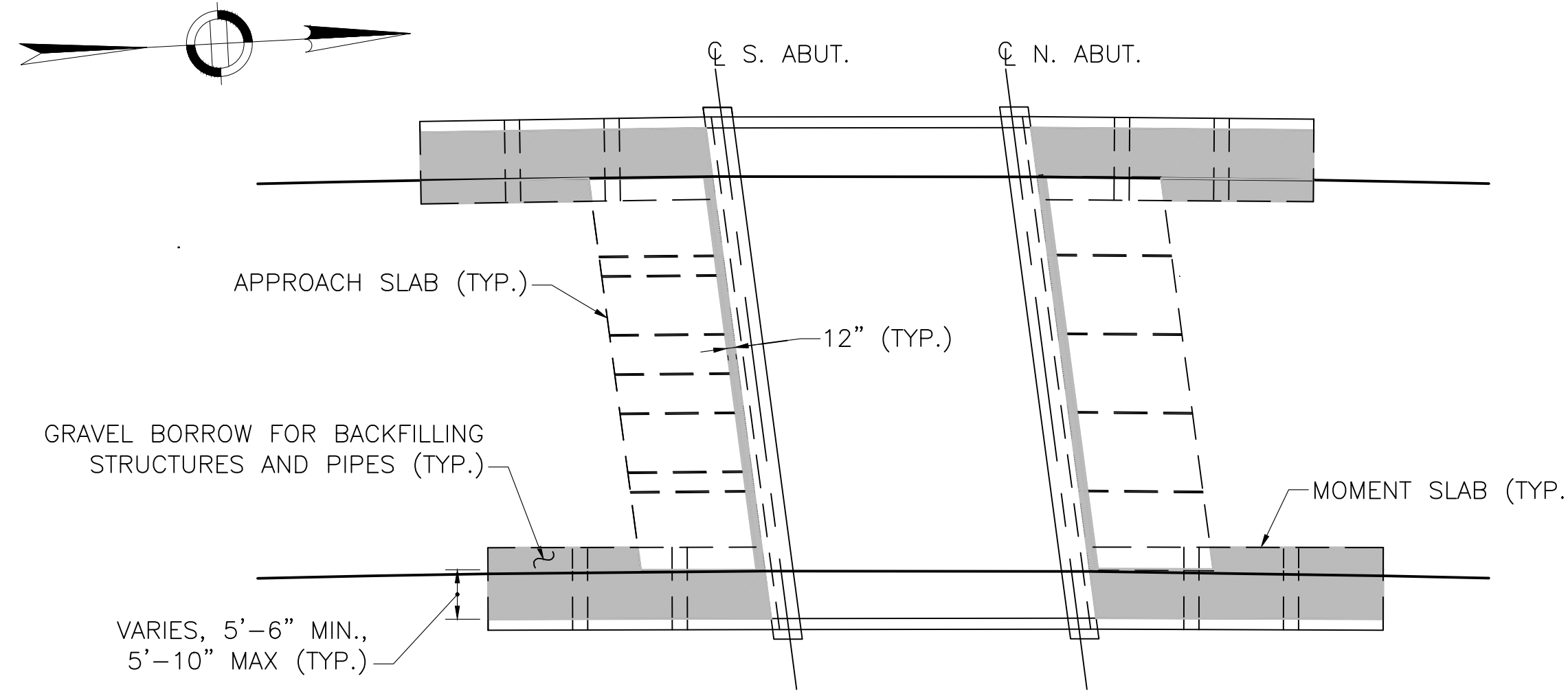
SCALE:  $1\frac{1}{2}$ " = 1'-0"

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**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

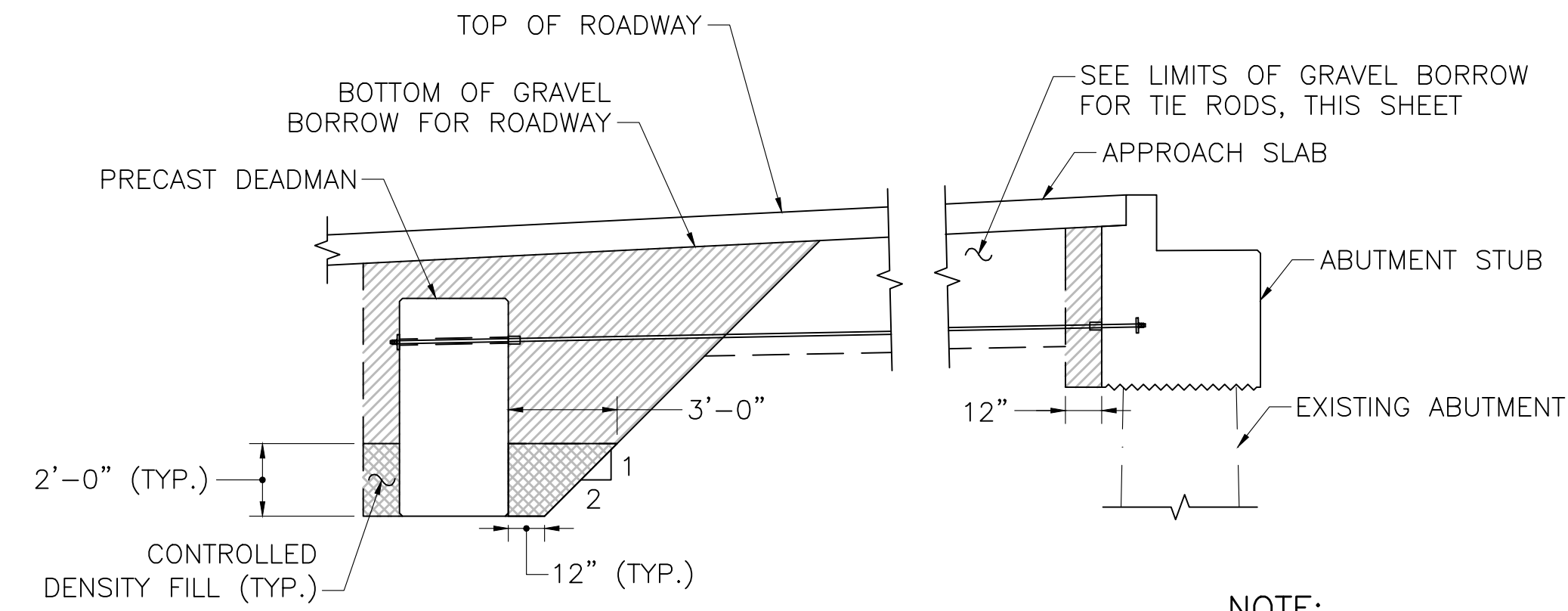
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	61	90
PROJECT FILE NO.		606902	

**LIMITS OF GRAVEL BORROW AND MODIFIED ROCKFILL**



**PLAN OF LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES**

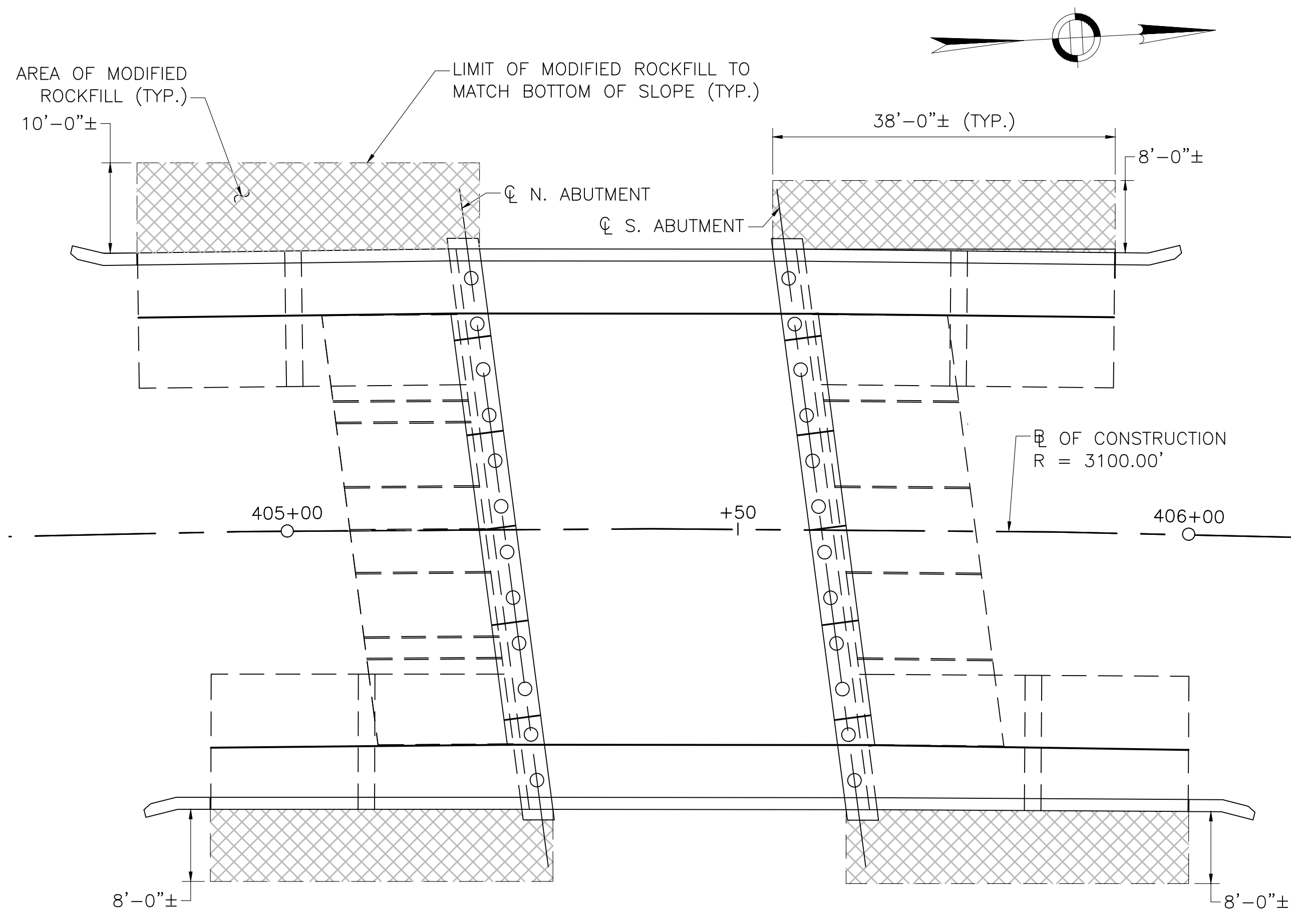
NOT TO SCALE



**LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES FOR ABUTMENT AND ANCHOR**

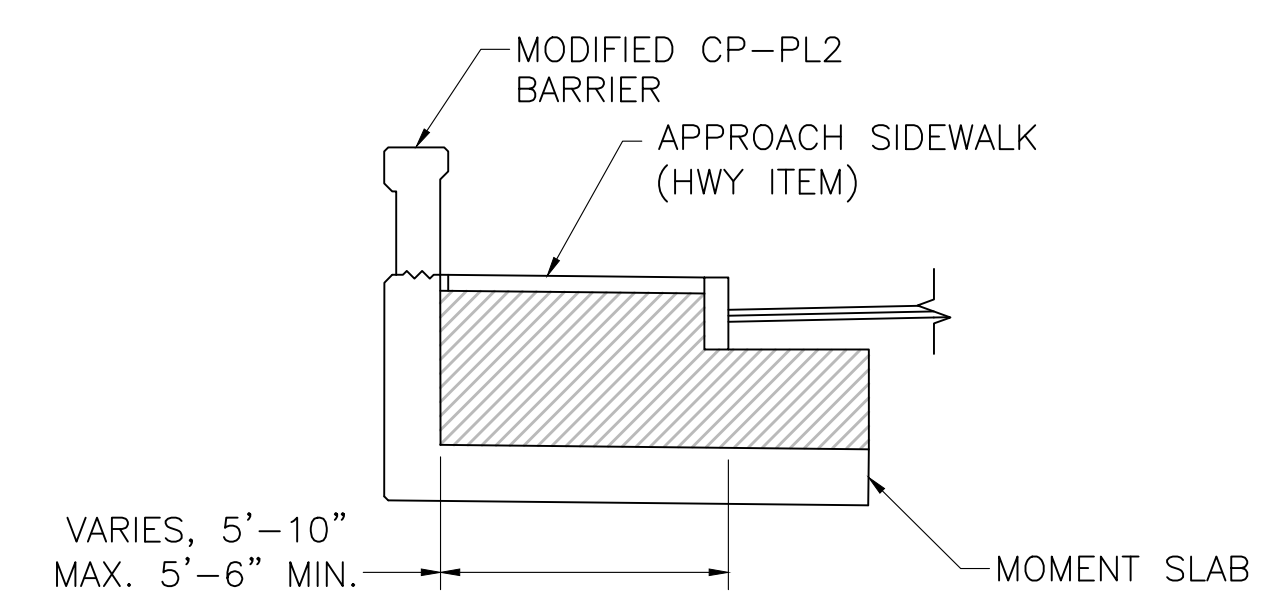
NOT TO SCALE

**NOTE:**  
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.



**LIMITS OF MODIFIED ROCKFILL**

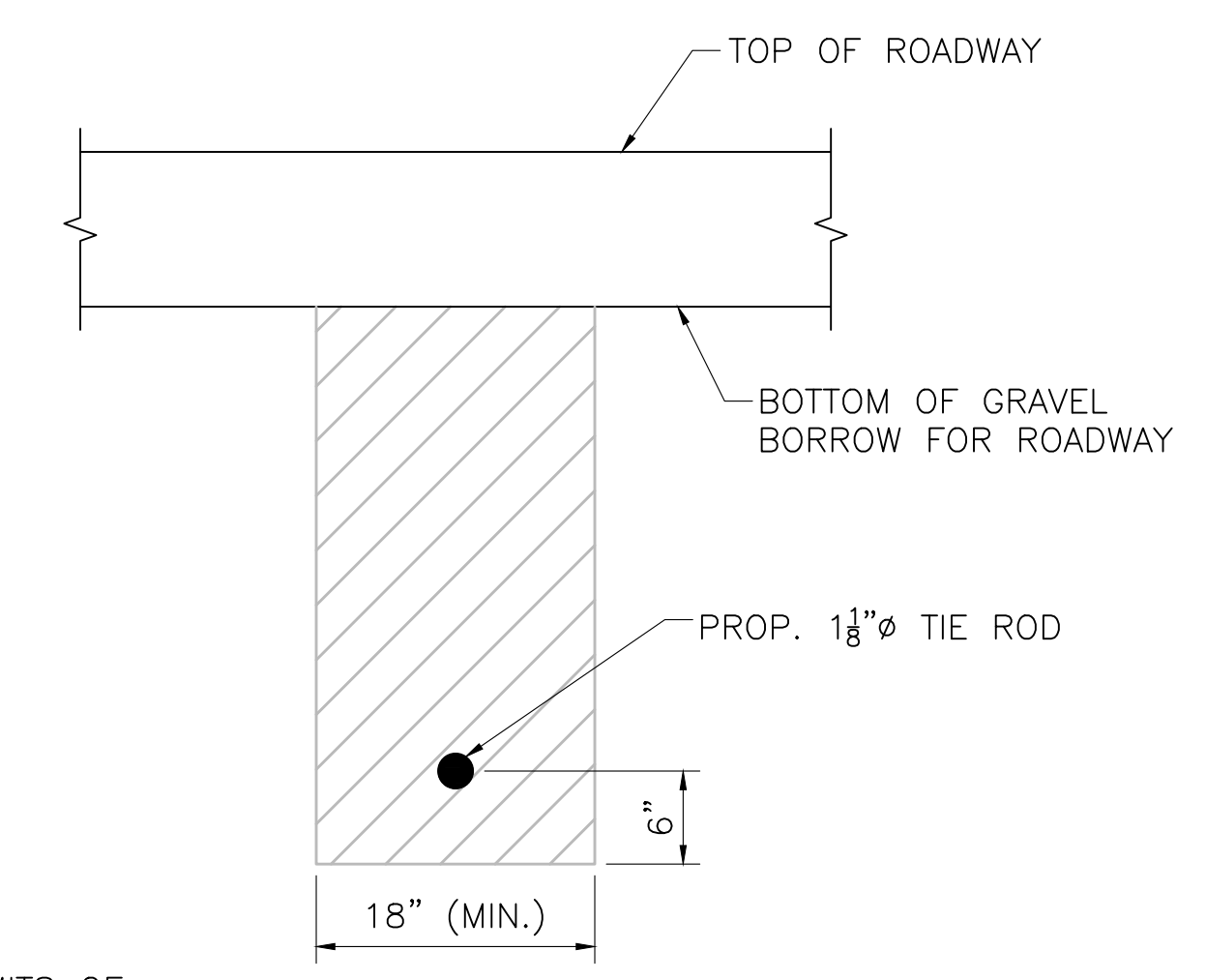
SCALE:  $\frac{3}{32}$ " = 1'-0"



**LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES FOR MOMENT SLAB**

NOT TO SCALE

**NOTE:**  
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.



**LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES FOR TIE RODS**

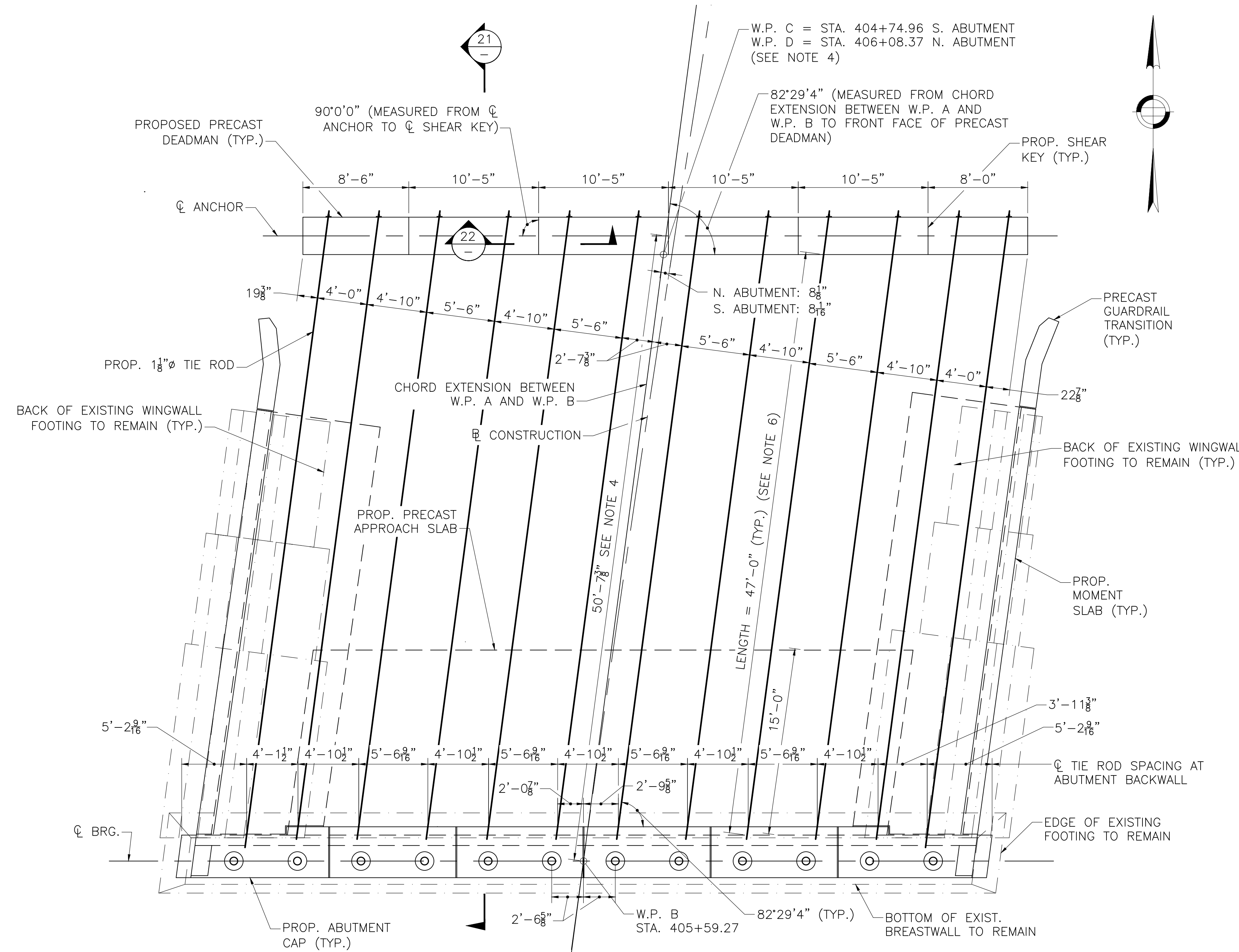
NOT TO SCALE

**NOTE:**  
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.

AUG. 03, 2024	ISSUED FOR CONSTRUCTION
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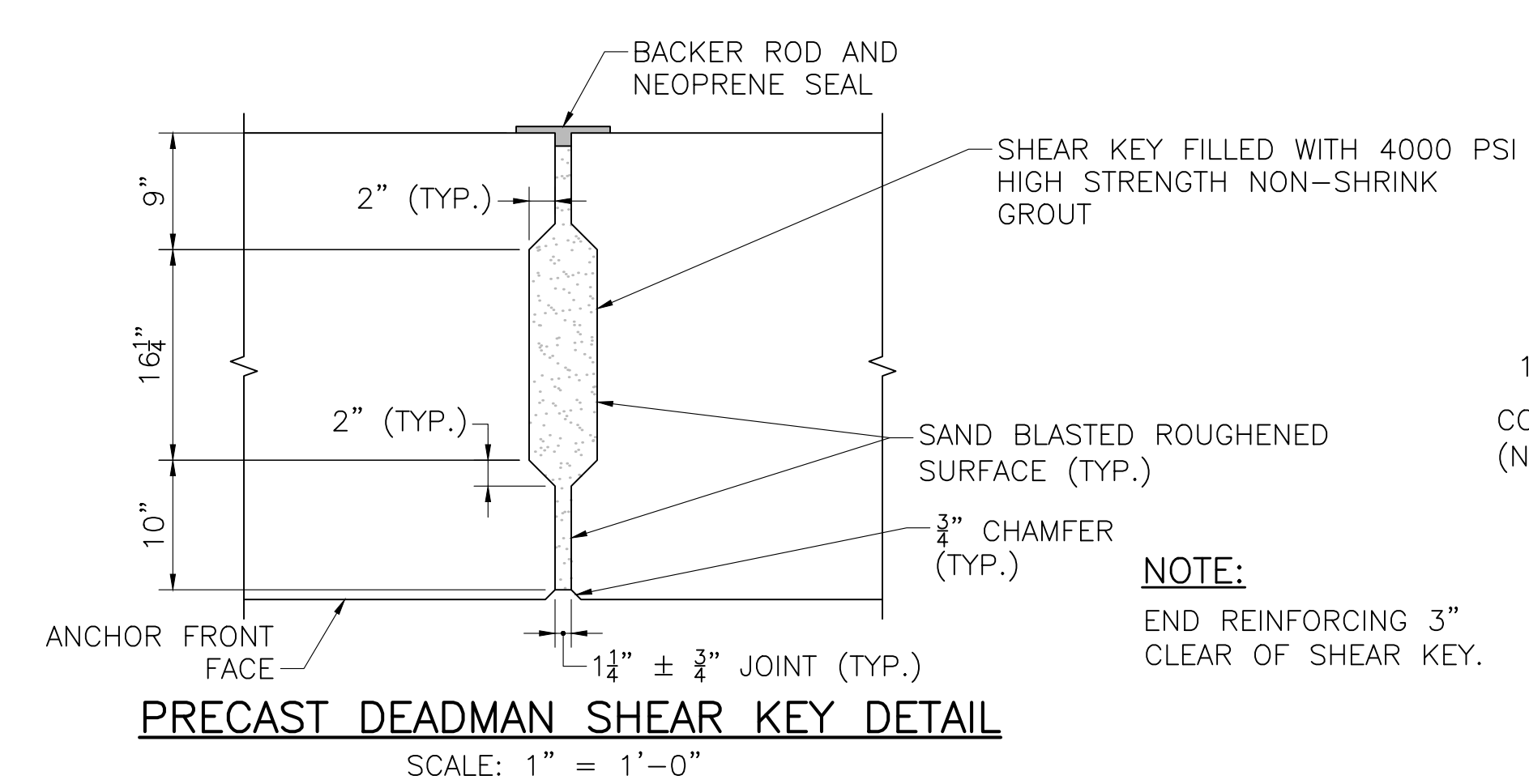
606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG Plotted on 24-Jul-2024 11:58 AM 19-July-2024 Final Structural Submittal (SF)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	62	90
PROJECT FILE NO.		606902	



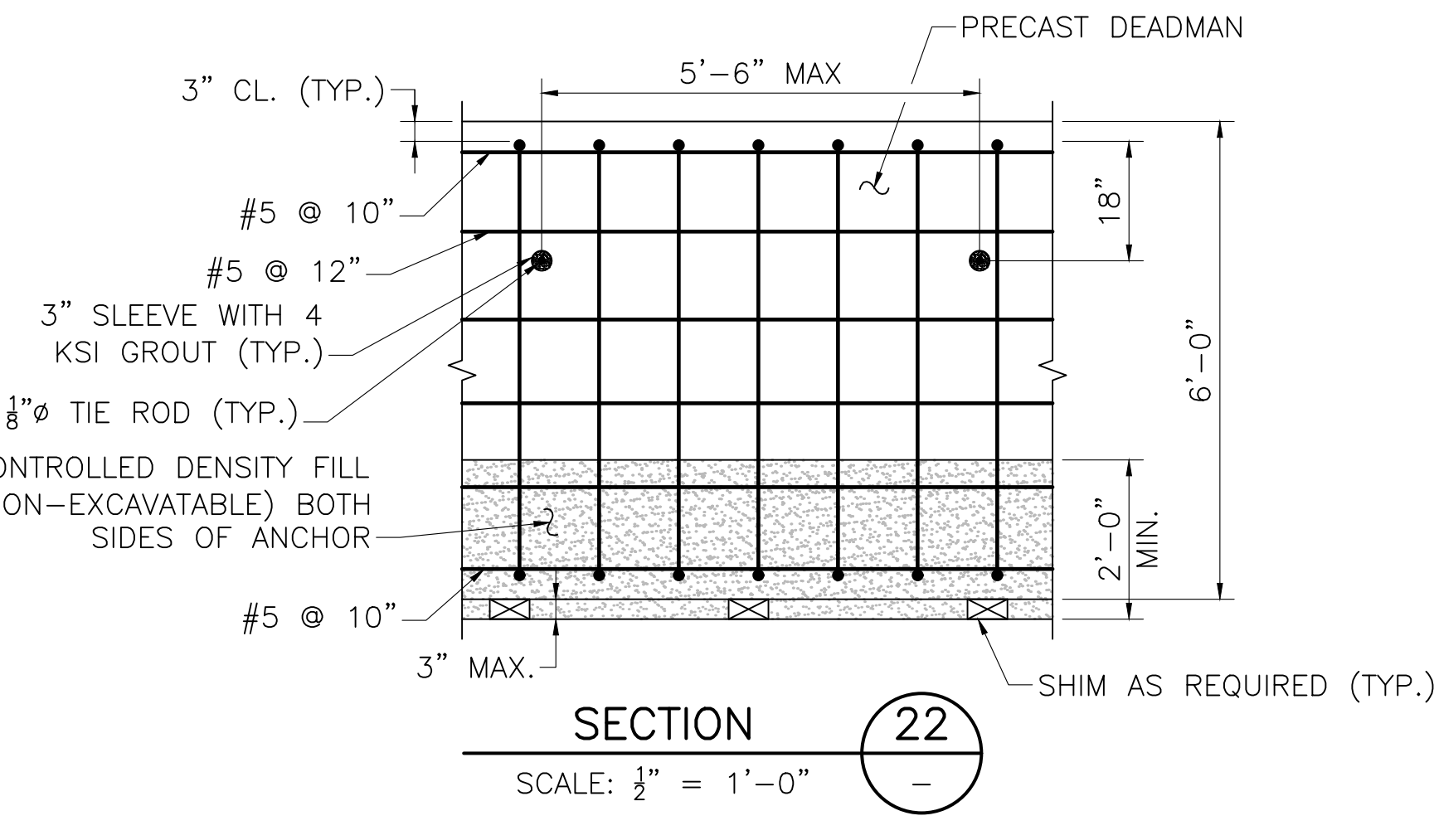
**NORTH ABUTMENT PRECAST DEADMAN ANCHOR & TIE ROD PLAN (SOUTH ABUTMENT SIMILAR)**

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



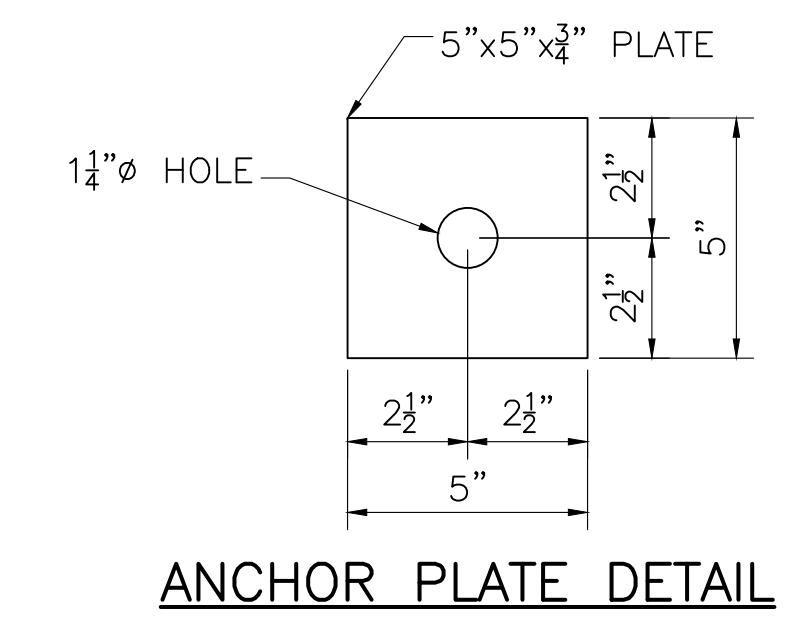
**PRECAST DEADMAN SHEAR KEY DETAIL**

SCALE: 1" = 1'-0"



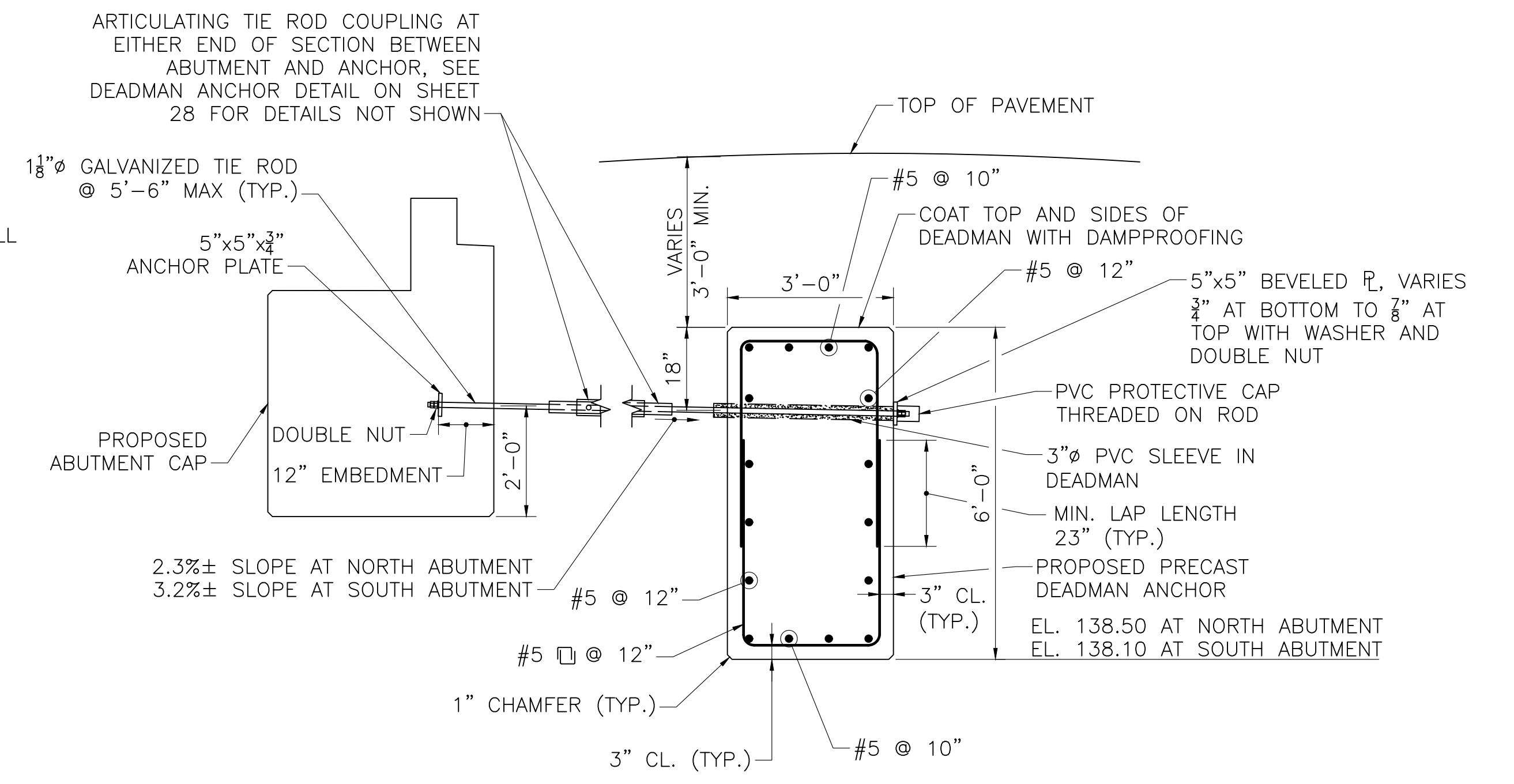
**SECTION 22**

SCALE:  $\frac{1}{2}$ " = 1'-0"



**ANCHOR PLATE DETAIL**

SCALE: 3" = 1'-0"



**SECTION 21**

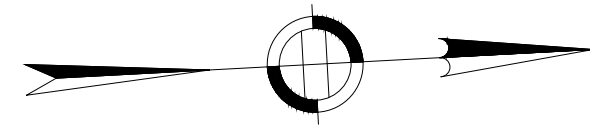
SCALE:  $\frac{1}{2}$ " = 1'-0"

**PRECAST DEADMAN ANCHOR AND TIE ROD NOTES:**

1. PRECAST DEADMAN ANCHORS SHALL BE 5000 PSI, HP CEMENT CONCRETE.
2. TIE RODS SHALL BE CONTINUOUSLY THREADED AND CONFORM TO AASHTO M31 HAVING A MINIMUM YIELD STRENGTH OF 75 KSI. TIE RODS AND ALL ASSOCIATED HARDWARE TO BE HOT DIP GALVANIZED.
3. TIE RODS SHALL BE SUPPORTED IN A NON-SAG CONDITION AND TIGHTENED TO BE "SNUG TIGHT" BEFORE BACKFILLING AGAINST ABUTMENT BACKWALL, DEADMAN ANCHOR AND TIE RODS OCCURS.
4. DIMENSION MEASURED ALONG EXTENSION OF CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT ON SHEET 3 FOR DETAILS.
5. FOR ABUTMENT DETAILS NOT SHOWN ABOVE, SEE SHEETS 14 THROUGH 22.
6. TIE ROD LENGTHS SHOWN BETWEEN ABUTMENT AND DEADMAN ARE MEASURED FROM THE BACK FACE OF THE ABUTMENT TO THE FRONT FACE OF DEADMAN PARALLEL TO CHORD EXTENSION BETWEEN W.P. A TO W.P. B. ADDITIONAL LENGTHS OF TIE ROD ARE REQUIRED FOR EMBEDMENT INTO ABUTMENT AND FOR EXTENSION THROUGH DEADMAN ANCHOR AS INDICATED.

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	AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
	USE ONLY PRINTS OF LATEST DATE

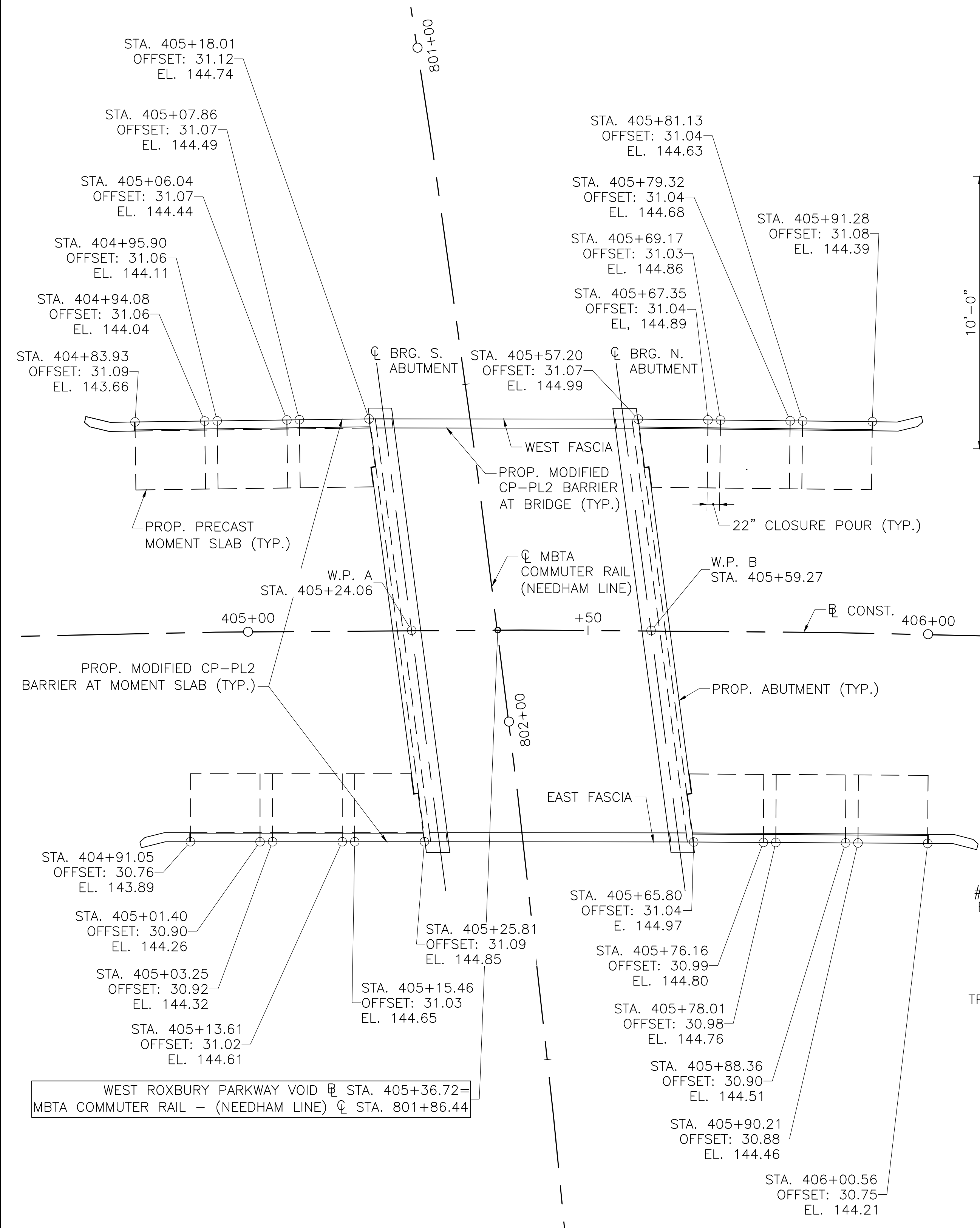
606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG 11:59 AM 19-July-2024 Final Structural Submittal (SF)



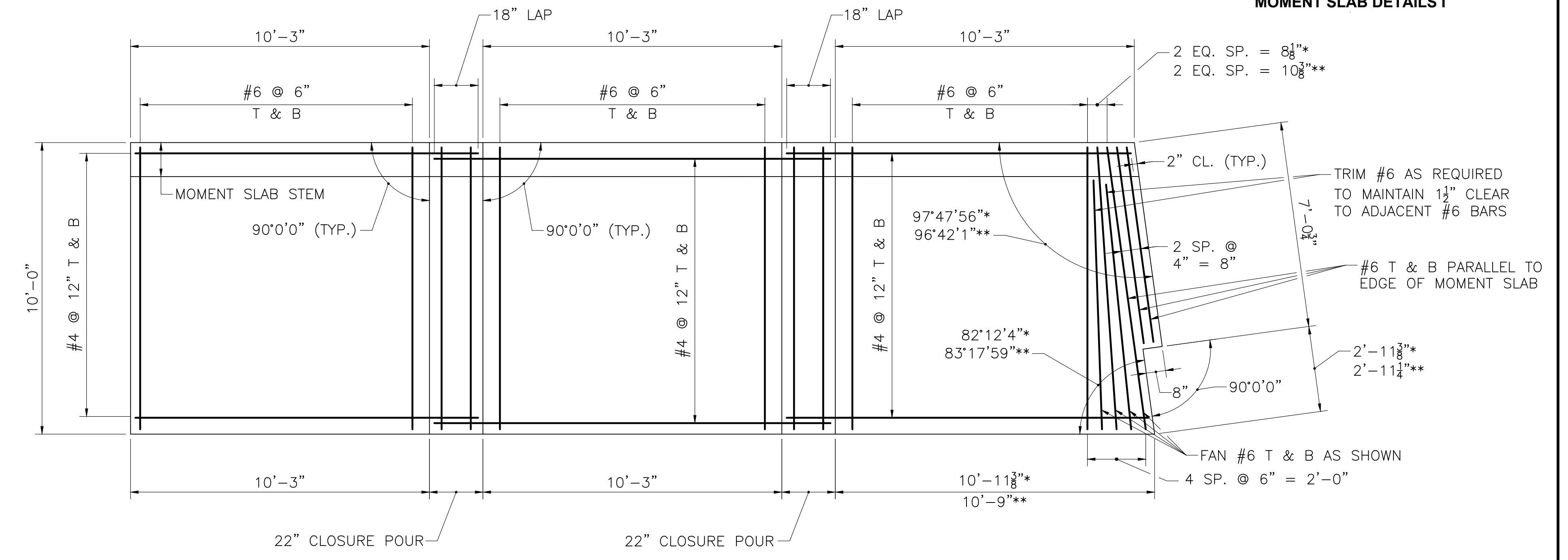
**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	63	90
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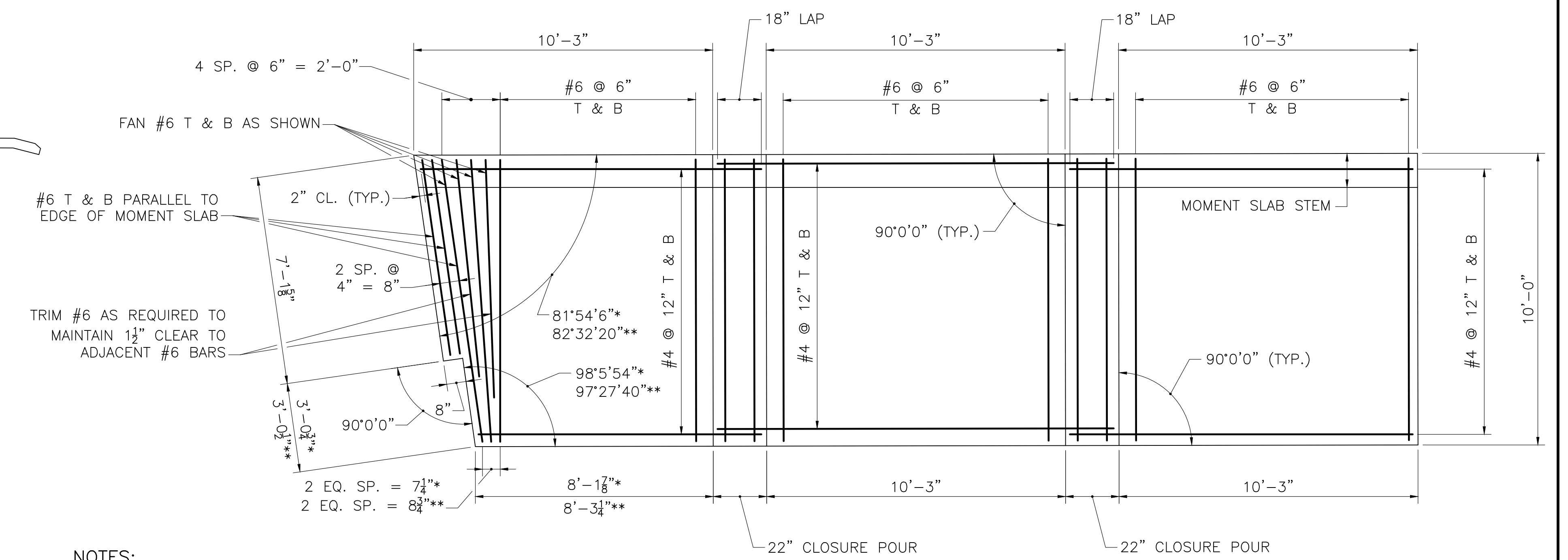
**MOMENT SLAB DETAILS I**



**MOMENT SLAB LAYOUT PLAN**  
SCALE:  $\frac{3}{32}$ " = 1'-0"



**SOUTHWEST & NORTHEAST MOMENT SLAB DETAILS**  
SCALE:  $\frac{3}{8}$ " = 1'-0"



**SOUTHEAST & NORTHWEST MOMENT SLAB DETAILS**  
SCALE:  $\frac{3}{8}$ " = 1'-0"

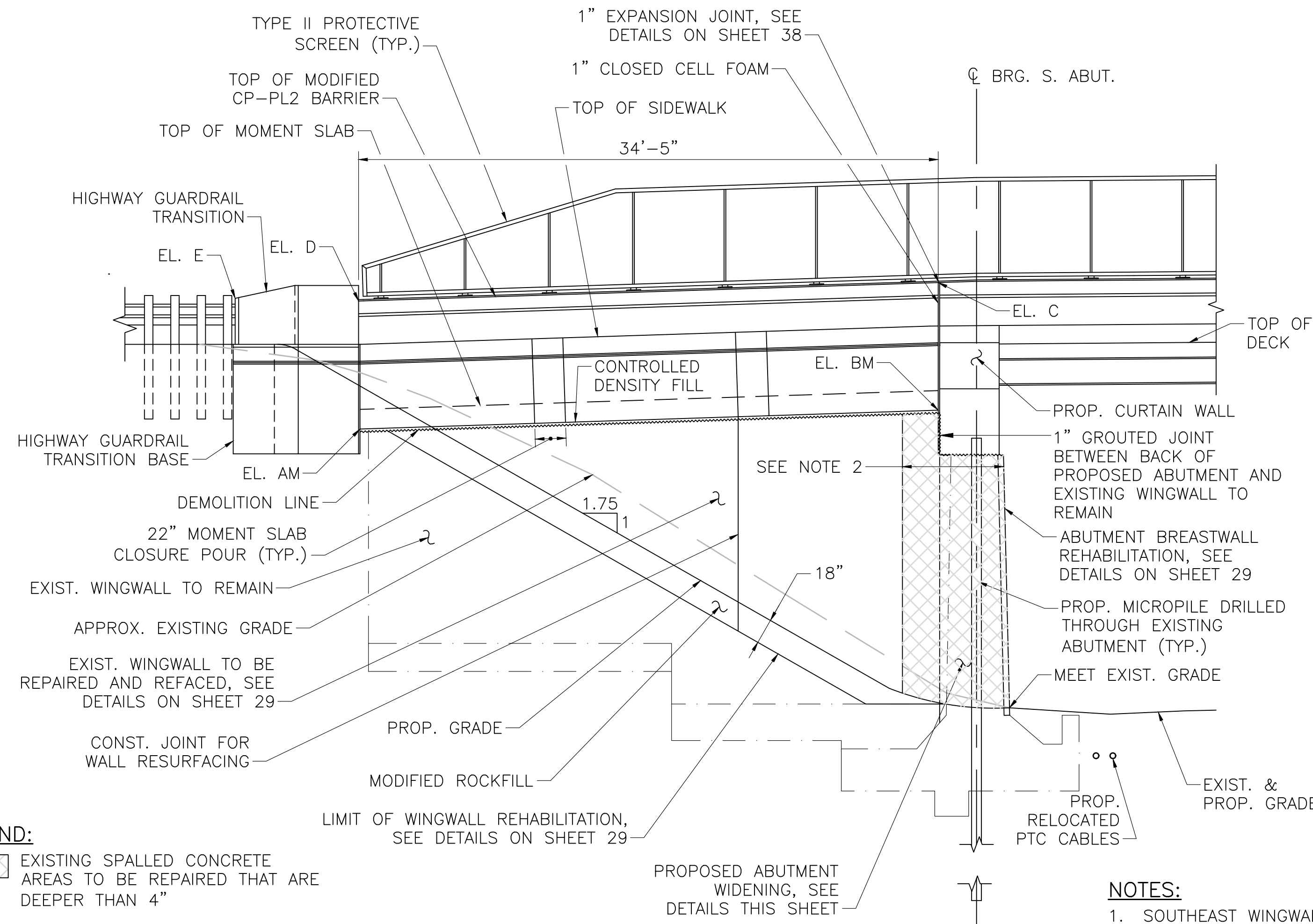
- NOTES:**
- MOMENT SLAB STEM REINFORCING NOT SHOWN FOR CLARITY, SEE SHEET 27.
  - \* = MEASUREMENT FROM NORTH ABUTMENT  
\*\* = MEASUREMENT FROM SOUTH ABUTMENT
  - EXISTING SUBSTRUCTURE TO REMAIN NOT SHOWN FOR CLARITY.
  - STATION AND OFFSET CALLOUTS LOCATED AT CORNERS OF PROPOSED PRECAST MOMENT SLAB.  
ELEVATIONS SHOWN CORRESPOND TO BOTTOM OF MOMENT SLAB.

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606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG Plotted on 24-Jul-2024 11:59 AM 19-July-2024 Final Structural Submittal (SF)

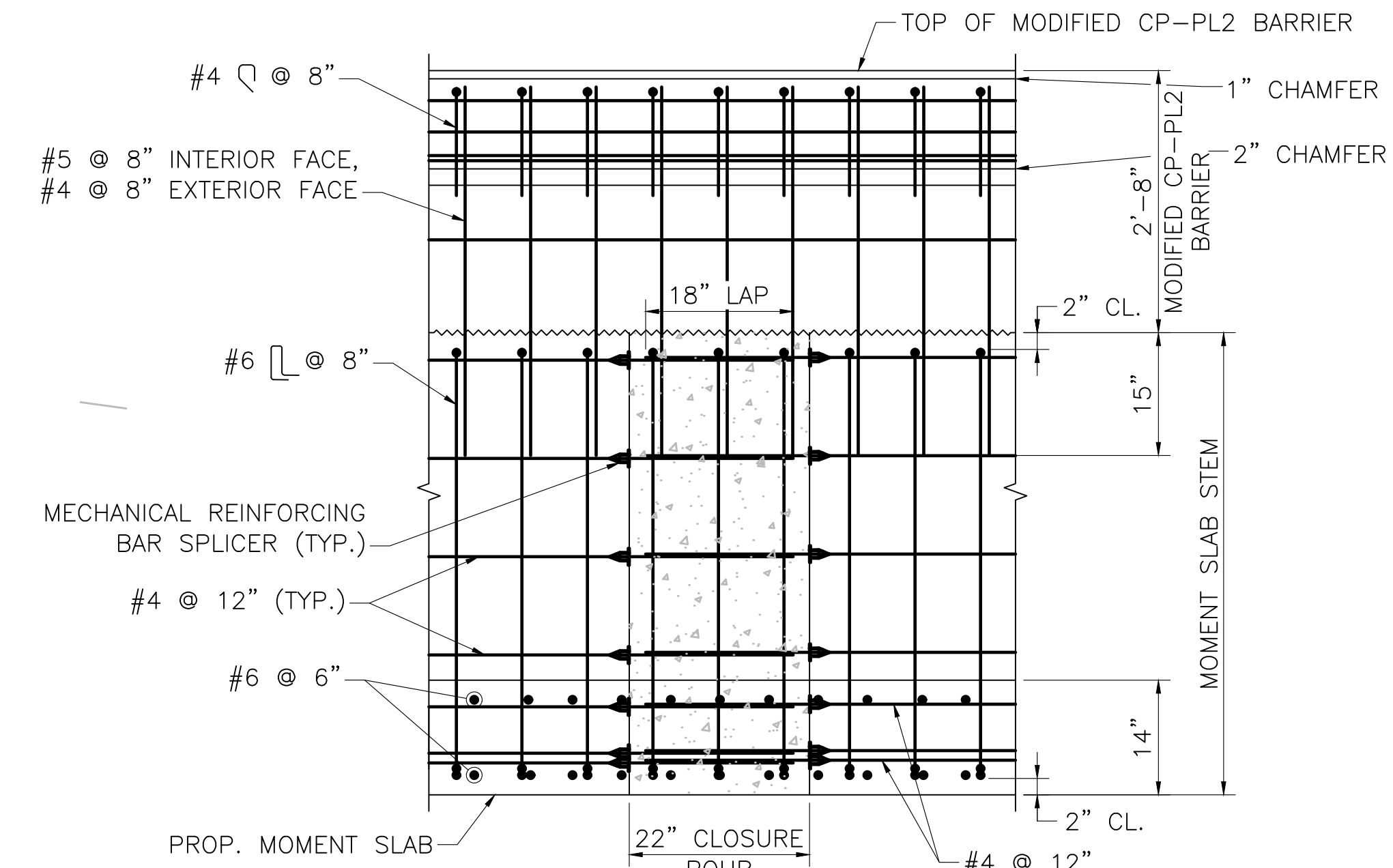
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	64	90
PROJECT FILE NO.		606902	

**MOMENT SLAB DETAILS II**



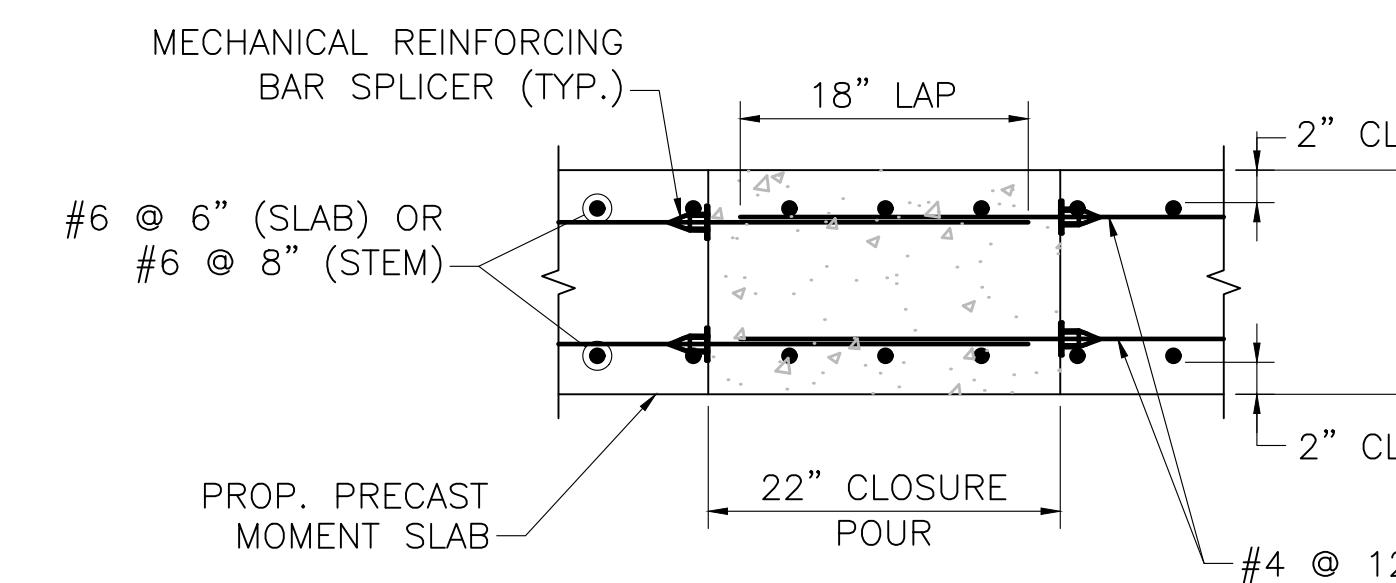
**TYPICAL WINGWALL/MOMENT SLAB ELEVATION  
(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)**

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



**TYPICAL TRANSVERSE MOMENT SLAB  
CLOSURE POUR DETAIL AT BARRIER**

SCALE:  $\frac{3}{4}$ " = 1'-0"



**MOMENT SLAB CLOSURE POUR DETAIL**

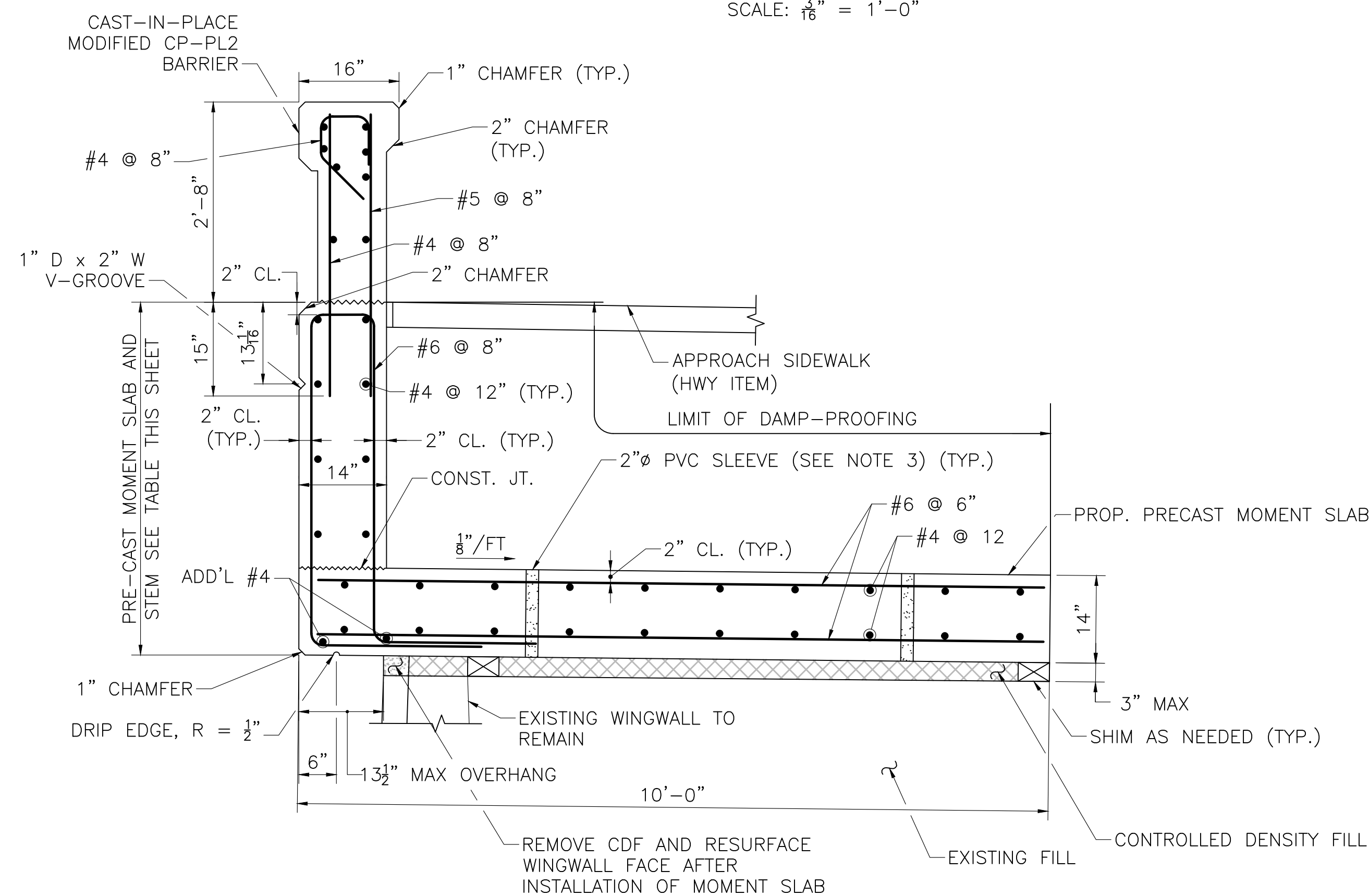
SCALE: 1" = 1'-0"

**NOTES:**

1. SOUTHEAST WINGWALL/MOMENT SLAB SHOWN, ALL OTHER WINGWALL/MOMENT SLABS SIMILAR.
2. DIMENSION FROM CORNER OF ABUTMENT TO LEFT WINGWALL WITH DETERIORATION DEEPER THAN 4" VARIES FROM 4'-8" TO 6'-0", REFER TO 2022 INSPECTION REPORT FOR MORE INFORMATION.

**MOMENT SLAB NOTES:**

1. FOR MODIFIED CP-PL2 BARRIER REINFORCEMENT SEE SHEET 36.
2. TYPE II PROTECTIVE SCREEN NOT SHOWN FOR CLARITY.
3. PVC SLEEVES TO BE INCLUDED IN PRECAST MOMENT SLABS TO FACILITATE PLACEMENT OF CONTROLLED DENSITY FILL (NON-EXCAVATABLE).
4. FOR MODIFIED CP-PL2 BARRIER REINFORCEMENT AT MOMENT SLAB SEE SHEET 36.



**MOMENT SLAB**

SCALE:  $\frac{3}{4}$ " = 1'-0"

	BOTTOM OF MOMENT SLAB ELEVATION				
	EL. AM	EL. BM	EL. C	EL. D	EL. E
SW WINGWALL	143.66	144.74	152.22	151.16	150.65
SE WINGWALL	143.89	144.85	152.37	151.42	150.91
NW WINGWALL	144.39	144.99	152.51	151.91	151.52
NE WINGWALL	144.21	144.97	152.43	151.69	151.29

	MOMENT SLAB STEM HEIGHT (FT)
SOUTHWEST	4.82
SOUTHEAST	4.85
NORTHWEST	4.86
NORTHEAST	4.80

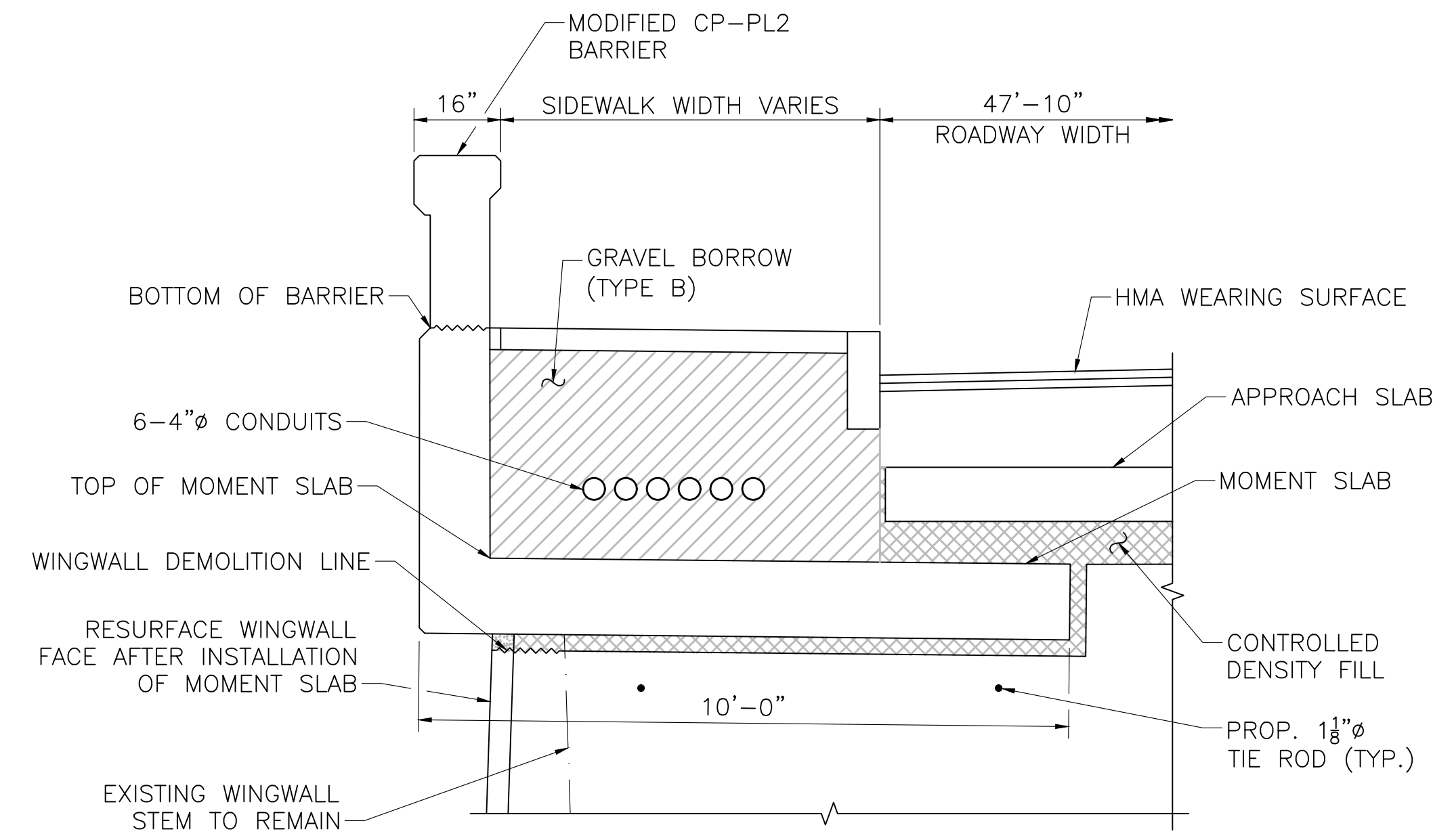
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**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

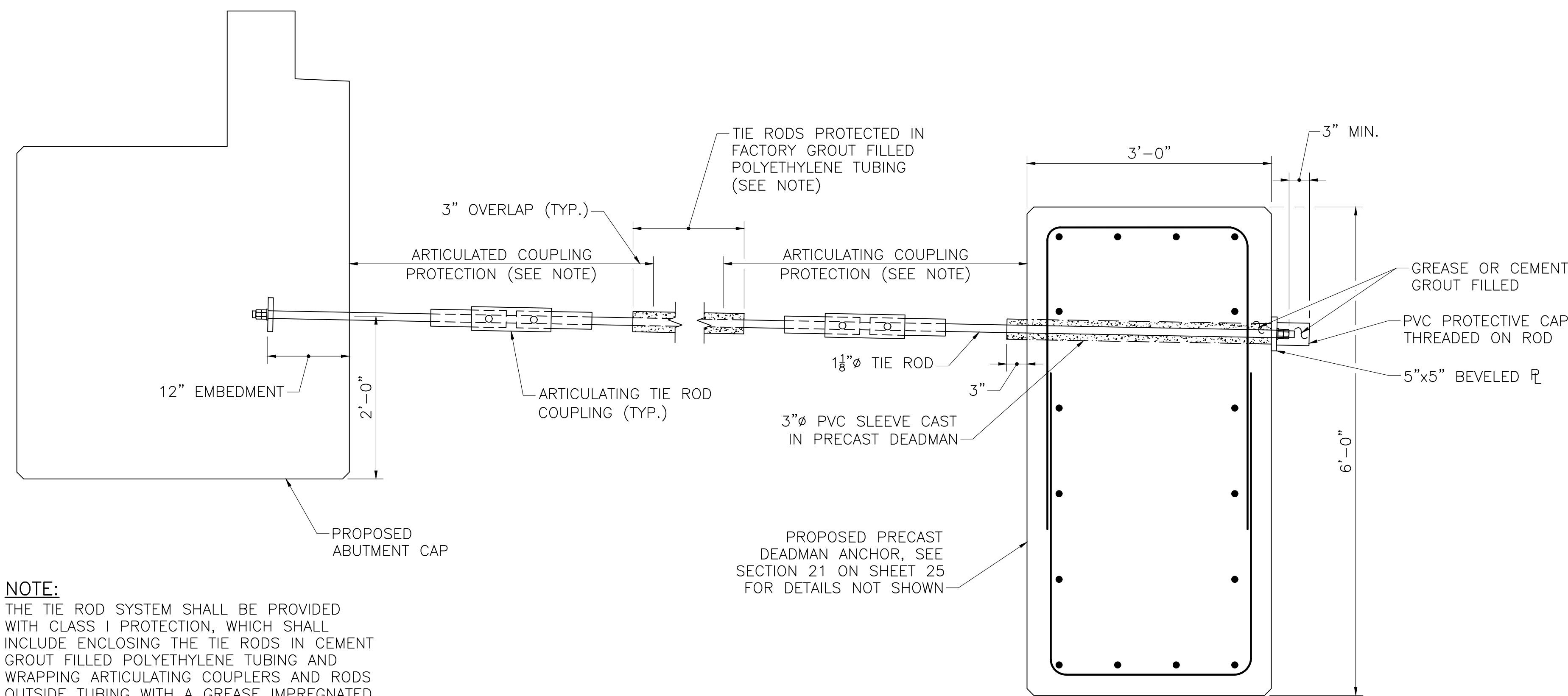
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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**MOMENT SLAB AND DEADMAN ANCHOR DETAILS**



**SECTION THROUGH SIDEWALK AT APPROACH**

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



**NOTE:**

THE TIE ROD SYSTEM SHALL BE PROVIDED WITH CLASS I PROTECTION, WHICH SHALL INCLUDE ENCLOSING THE TIE RODS IN CEMENT GROUT FILLED POLYETHYLENE TUBING AND WRAPPING ARTICULATING COUPLERS AND RODS OUTSIDE TUBING WITH A GREASE IMPREGNATED TAPE UNDER A HEAT SHRINK SLEEVE.

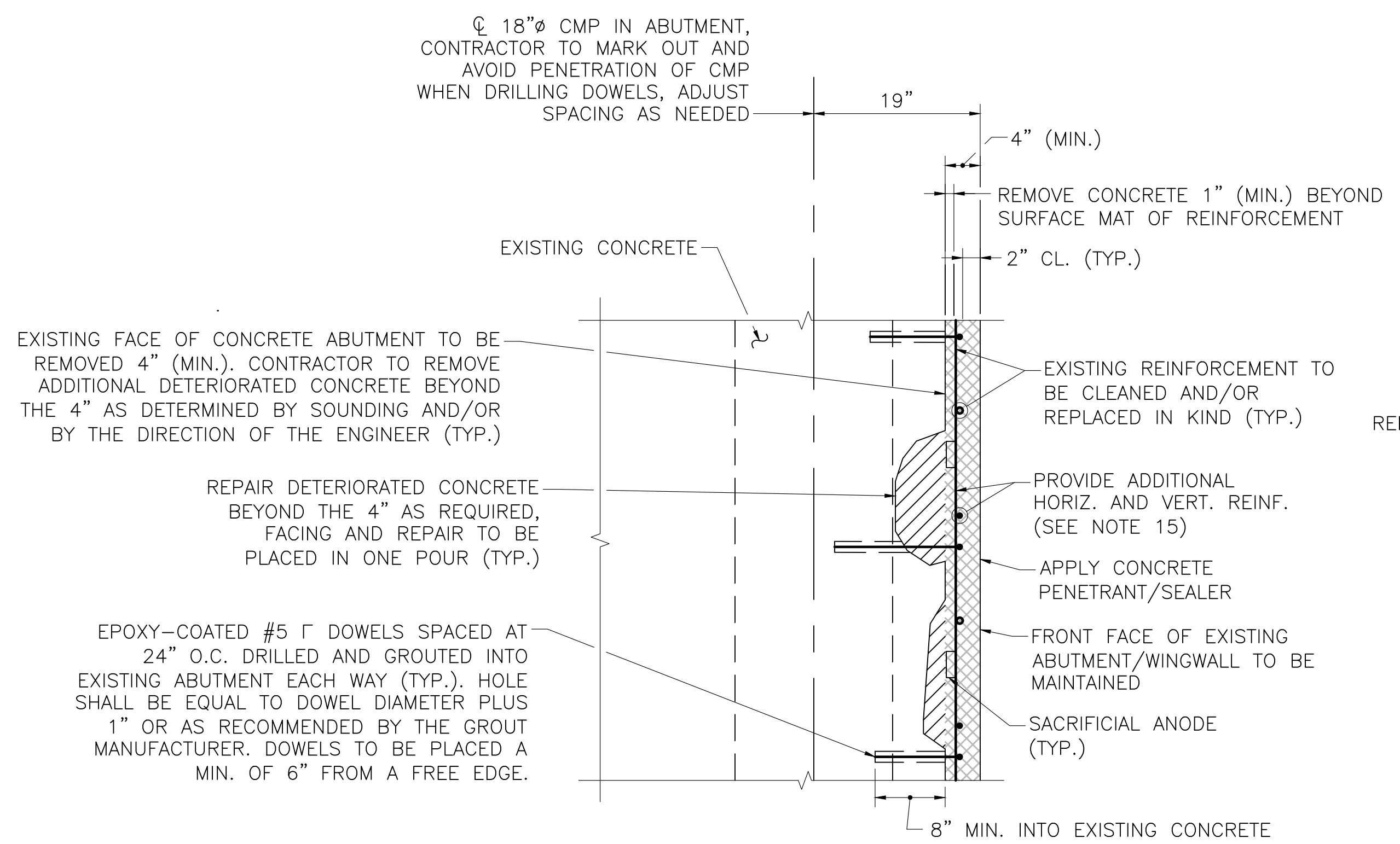
**DEADMAN ANCHOR DETAIL**

SCALE: 1" = 1'-0"

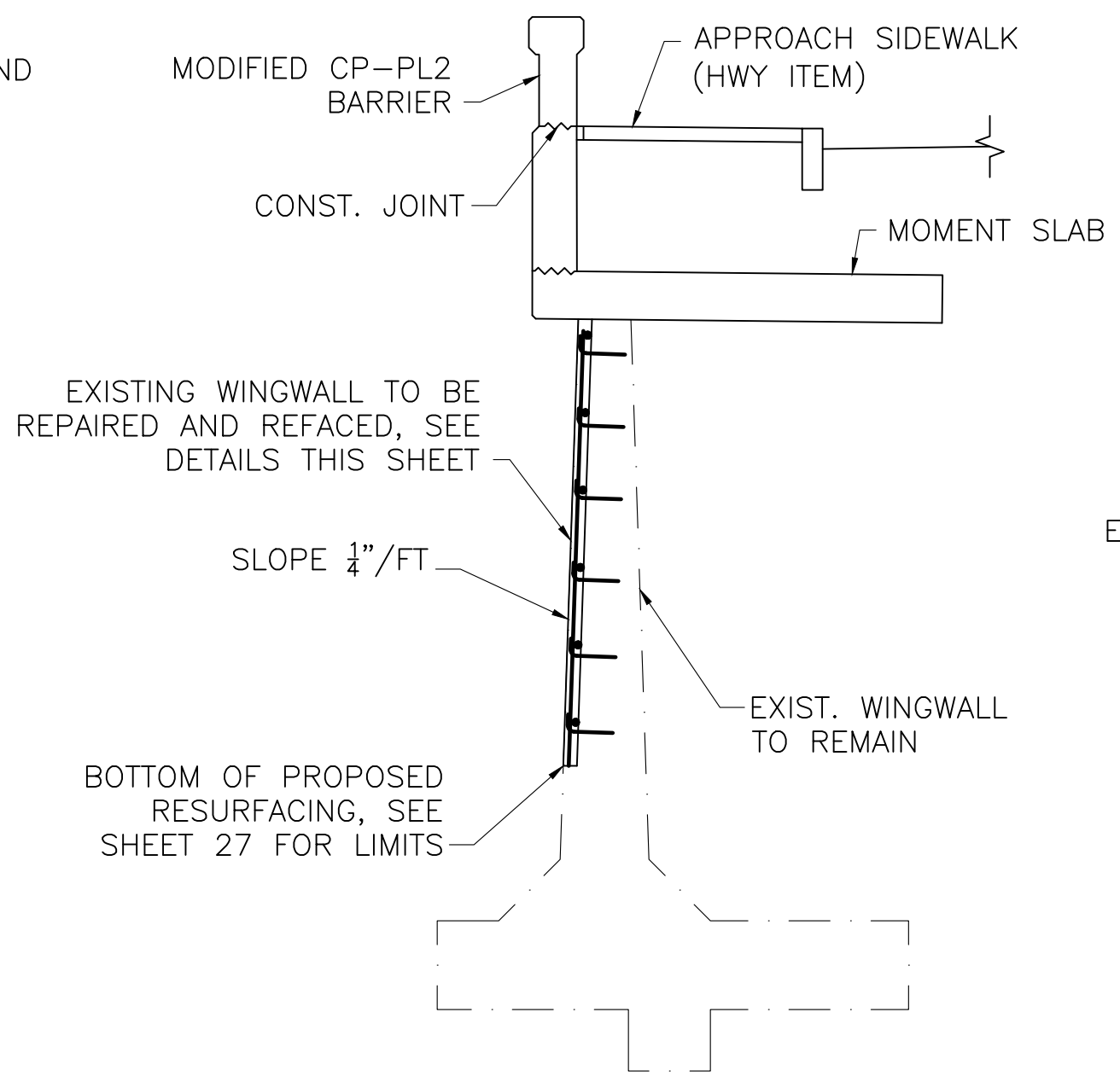
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PROJECT FILE NO.		606902	

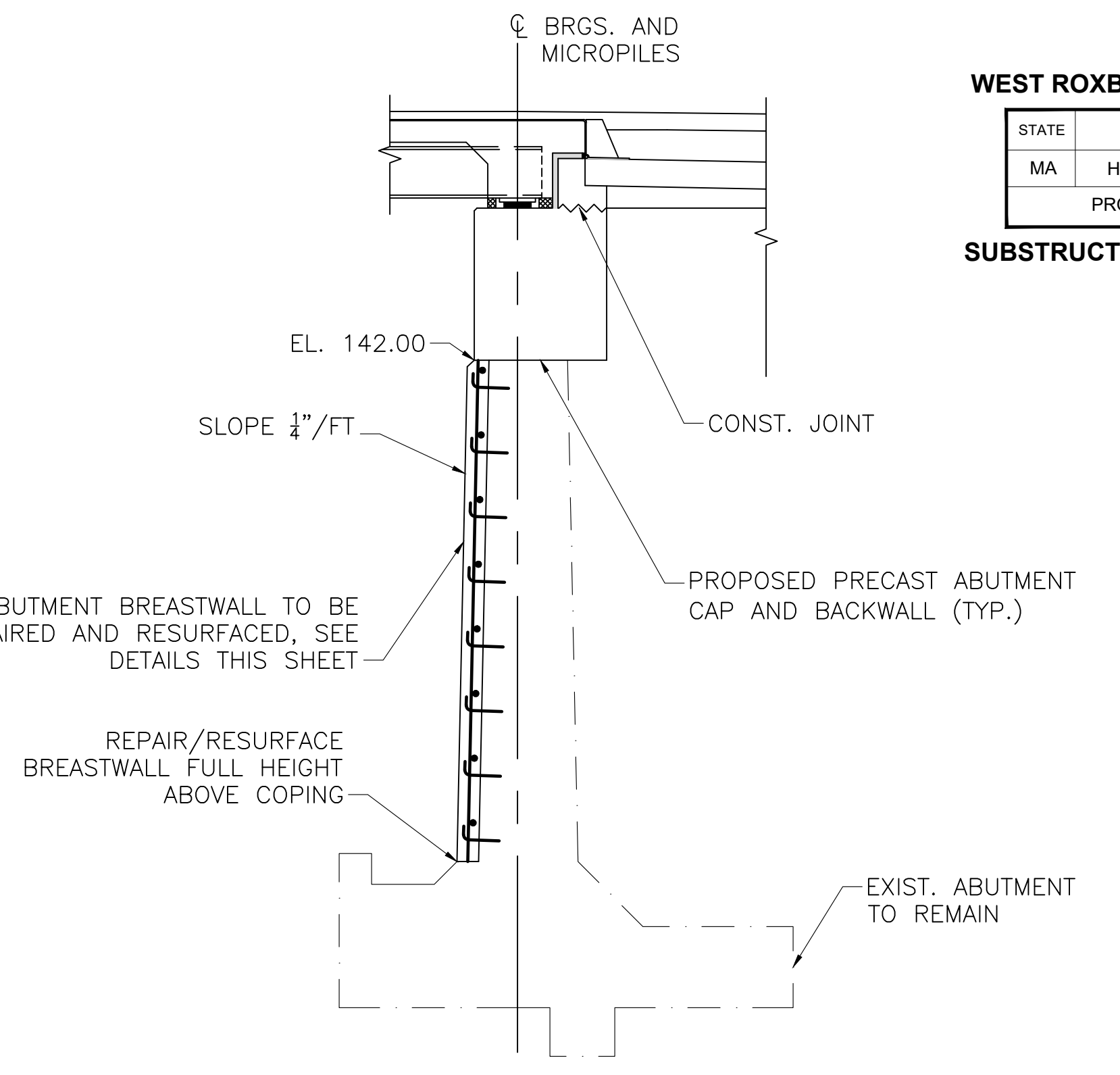
**SUBSTRUCTURE RESURFACING DETAILS**



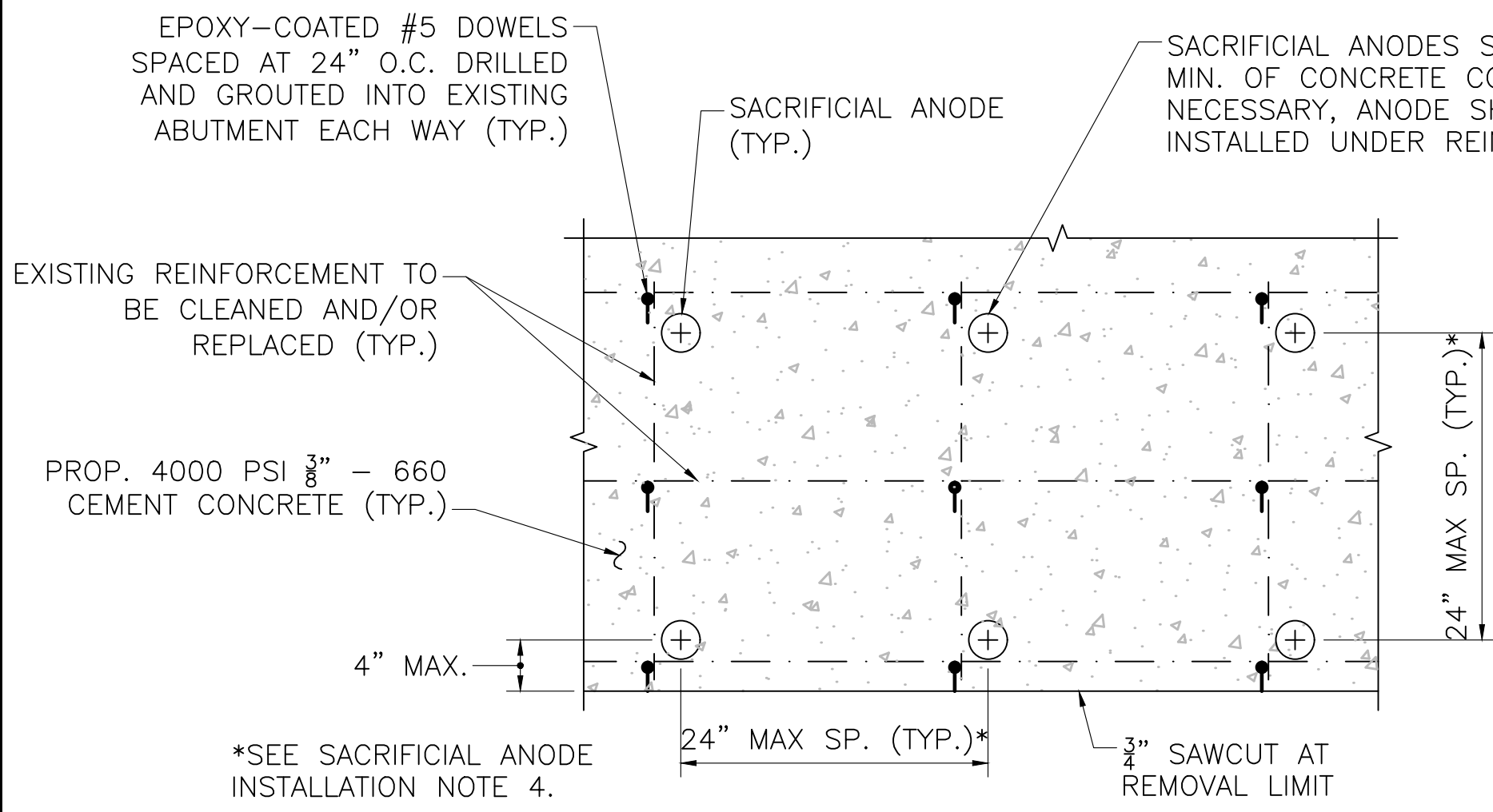
**ABUTMENT/WINGWALL FACE REHABILITATION SECTION**  
SCALE: 1" = 1'-0"



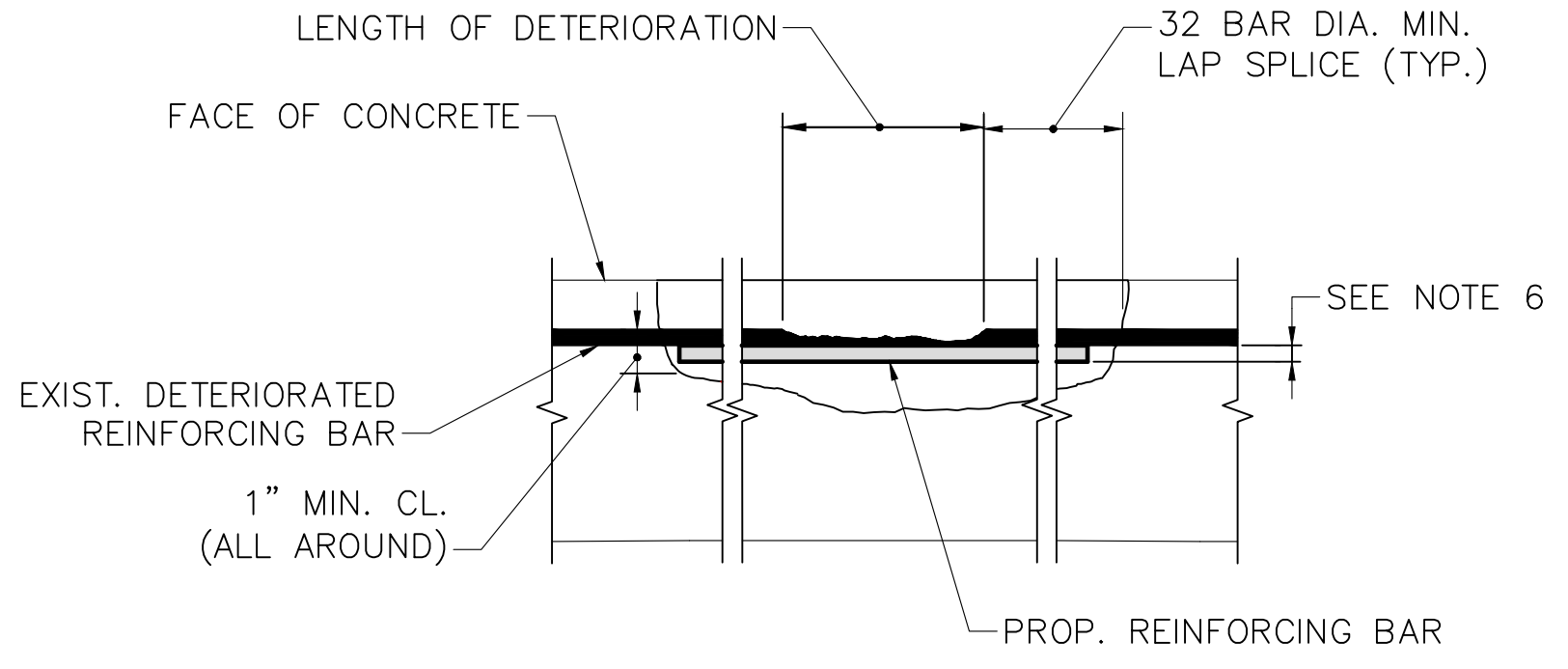
**TYPICAL SECTION AT RECONSTRUCTED WINGWALLS**  
SCALE: 1/4" = 1'-0"



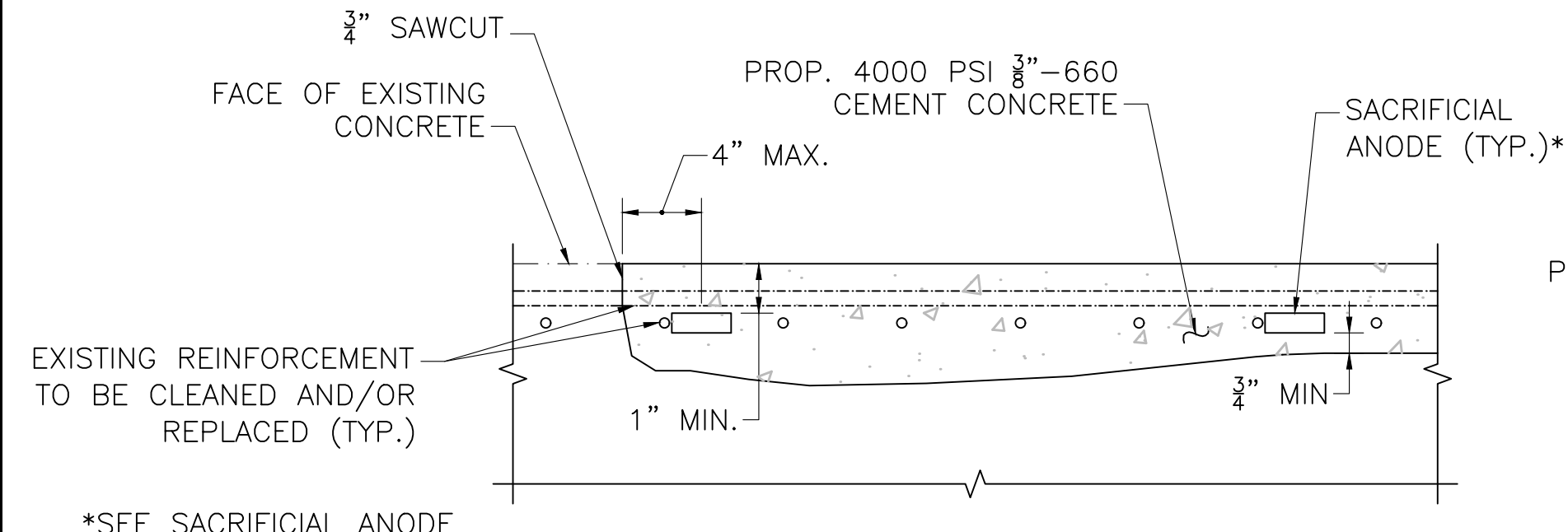
**TYPICAL SECTION AT RECONSTRUCTED ABUTMENT**  
SCALE: 1/4" = 1'-0"



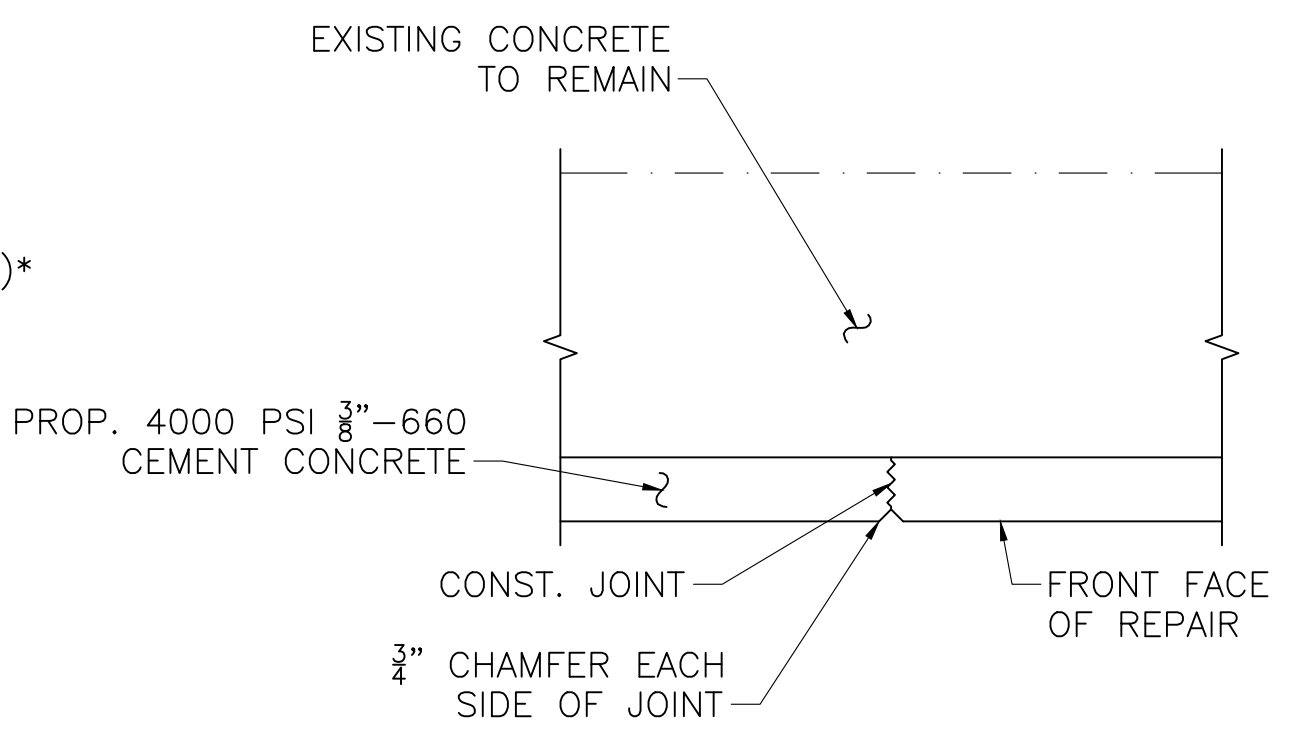
**SACRIFICIAL ANODE INSTALLATION PLAN**  
SCALE: 1" = 1'-0"



**DETERIORATED REINFORCING BAR REPAIR DETAIL**  
SCALE: 1 1/2" = 1'-0"



**SACRIFICIAL ANODE INSTALLATION SECTION**  
SCALE: 1 1/2" = 1'-0"



**CONSTRUCTION JOINT FOR ABUTMENT/WALL RESURFACING**  
NOT TO SCALE

**EXCAVATION AND SURFACE REPAIR/RESURFACING NOTES:**

1. THE CONTRACTOR SHALL EXERCISE CARE WHEN REMOVING CONCRETE AROUND REINFORCEMENT TO ONLY REMOVE DETERIORATED CONCRETE AND TO LIMIT THE SOUND CONCRETE REMOVED BEYOND 4" FROM THE EXISTING SURFACE TO THE MINIMUM NECESSARY TO EFFECT A GOOD REPAIR.
2. THE LIMITS OF SUBSTRUCTURE RESURFACING ARE AS SHOWN ON THE PLANS.
3. THE LOWER LIMITS OF THE REPAIRS SHALL BE SAWCUT ALONG NEAT LINES TO A DEPTH OF 3/4" TO PRODUCE A CLEAN EDGE.
4. REMOVE DETERIORATED AND UNSOUND CONCRETE AS WELL AS SOUND CONCRETE WHERE NECESSARY TO A MINIMUM OF 4" BEYOND THE ORIGINAL SURFACE. REMOVE ADDITIONAL DETERIORATED CONCRETE BEYOND THE SURFACE 4" AS DETERMINED BY SOUNDING AND APPROVED BY THE ENGINEER.
5. EXPOSED REINFORCEMENT IS TO BE CLEANED BY MECHANICAL CLEANING AND HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED (THAT WHICH WOULD INHIBIT BONDING) SANDBLAST STEEL TO SSPC-SP5.
6. A NEW REINFORCEMENT BAR SHALL BE PLACED TO SUPPLEMENT AN EXISTING REINFORCEMENT BAR WHEN AN EXISTING BAR HAS A SECTION LOSS OF 25% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE ENGINEER, OR THE EXISTING REINFORCEMENT IS BROKEN. A NEW REINFORCEMENT BAR SHALL EXTEND 32 BAR DIAMETERS PAST LOCATIONS WHERE THE EXISTING REINFORCEMENT BAR HAS A SECTION LOSS OF 25% OR MORE, OR THE EXISTING REINFORCEMENT BAR IS BROKEN. THE NEW REINFORCING BARS SHALL BE PLACED AT THE SAME LEVEL ALONG SIDE EXISTING DETERIORATED OR BROKEN REINFORCEMENT THE BAR.
7. AFTER REMOVAL AND EDGE PREPARATION FOR NEW REINFORCING BARS ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, GREASE, LOOSELY BONDED AGGREGATE) BY ABRASION BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. CHECK THE CONCRETE SURFACES AFTER CLEANING TO INSURE THAT THE SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
8. 4000 PSI 3/8" 660 CEMENT CONCRETE SHALL BE USED TO PERFORM THE REPAIRS.
9. PRESOAK CONCRETE SUBSTRATE WITH A WATER HOSE FOR 24 HOURS OR AS LONG AS SITE CONSTRAINTS PERMIT. AT TIME OF REPAIR/RESURFACING CONCRETE PLACEMENT, SUBSTRATE SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
10. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES.
11. NEW REQUIRED REINFORCING STEEL SHALL BE LAPPED TO THE EXISTING DETERIORATED REINFORCING MATCHING THE SAME SIZE AND INSTALLED IN THE SAME PLACE AS THE DETERIORATED REINFORCING.
12. FRONT FACE OF EXISTING ABUTMENT/WINGWALL TO BE MAINTAINED.
13. CONTRACTOR SHALL LIMIT THEIR EXCAVATION 2" (MAX) BEYOND THE 4" RESURFACING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE EXISTING CONCRETE IS DETERIORATED BEYOND THE 2" MAX LIMIT FOR DETERMINATION OF HOW MUCH MORE EXCAVATION IS ALLOWED.
14. ABUTMENT AND WINGWALL RESURFACING SHALL BE PLACED IN SEPARATE POURS BETWEEN CONSTRUCTION JOINTS AS INDICATED ON THE PLANS.
15. PROVIDE ADDITIONAL #6 VERTICAL AND #4 HORIZONTAL REINFORCING BARS (AS NEEDED) TO PROVIDE COMBINED SPACING OF 12" O.C. WHEN ALTERNATED WITH EXISTING REINFORCING SPACED AT 24" O.C.

**SACRIFICIAL ANODE INSTALLATION NOTES:**

1. REMOVE CONCRETE ACCORDING TO DRAWINGS AND CONTRACT SPECIFICATIONS.
2. REPLACE, AND/OR CLEAN DAMAGED REINFORCING STEEL. ALL NEW REBAR SHALL BE UNCOATED BLACK STEEL WHEN SACRIFICIAL ANODES ARE USED.
3. ENSURE ALL EXPOSED REINFORCING STEEL IS SECURELY FASTENED TOGETHER WITH TIE WIRE TO PROVIDE ELECTRICAL CONTINUITY.
4. ATTACH SACRIFICIAL ANODE TO CLEAN REINFORCING STEEL WITHIN THE REPAIR AREA AT SPACING DETERMINED BY THE ENGINEER AND ACCORDING TO MANUFACTURER'S SPECIFICATIONS. MINIMUM SPACING OF 3/4" BETWEEN ANODES AND EXISTING CONCRETE, A MINIMUM OF 4" EDGE DISTANCE FROM ANY CORNER AND/OR EDGE OF EXCAVATION, AND A MINIMUM OF 1" CONCRETE COVER SHALL BE PROVIDED.
5. TEST THE ELECTRICAL CONTINUITY BETWEEN THE ANODE TIES AND THE REBAR AND BETWEEN THE REBARS ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
6. PLACE REPAIR CONCRETE ACCORDING TO DRAWINGS AND CONTRACT SPECIFICATIONS. WHEN SACRIFICIAL ANODES ARE USED, THE REPAIR MATERIAL USED SHALL BE NON-HP CONCRETE AND APPROVED BY THE ENGINEER.

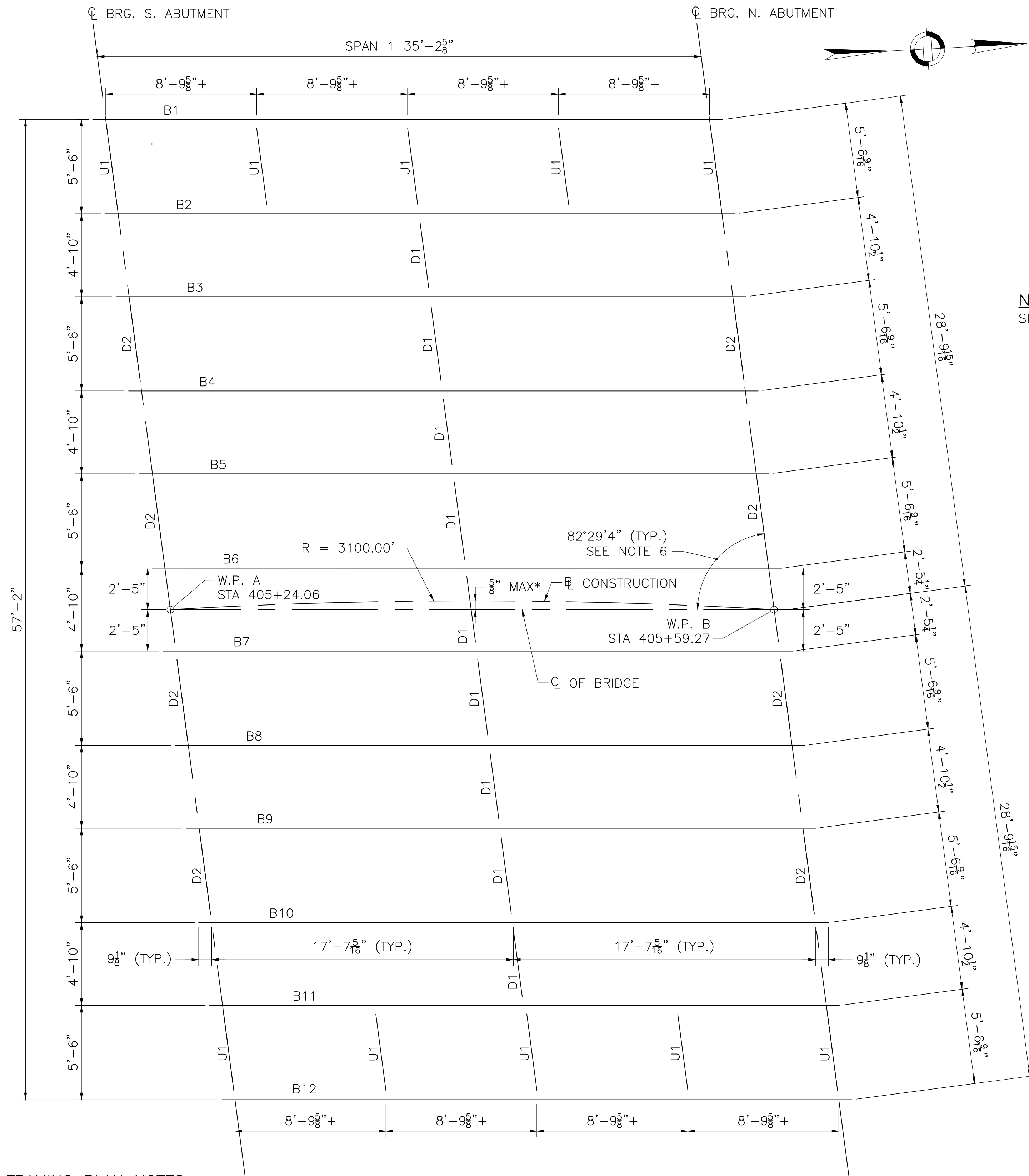
DATE	DESCRIPTION
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THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR15-22(B16181)\_ABUTMENT DETAILS.DWG 19-July-2024 12:01 PM Final Structural Submittal (SF)

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	67	90
PROJECT FILE NO.		606902	

**FRAMING PLAN**



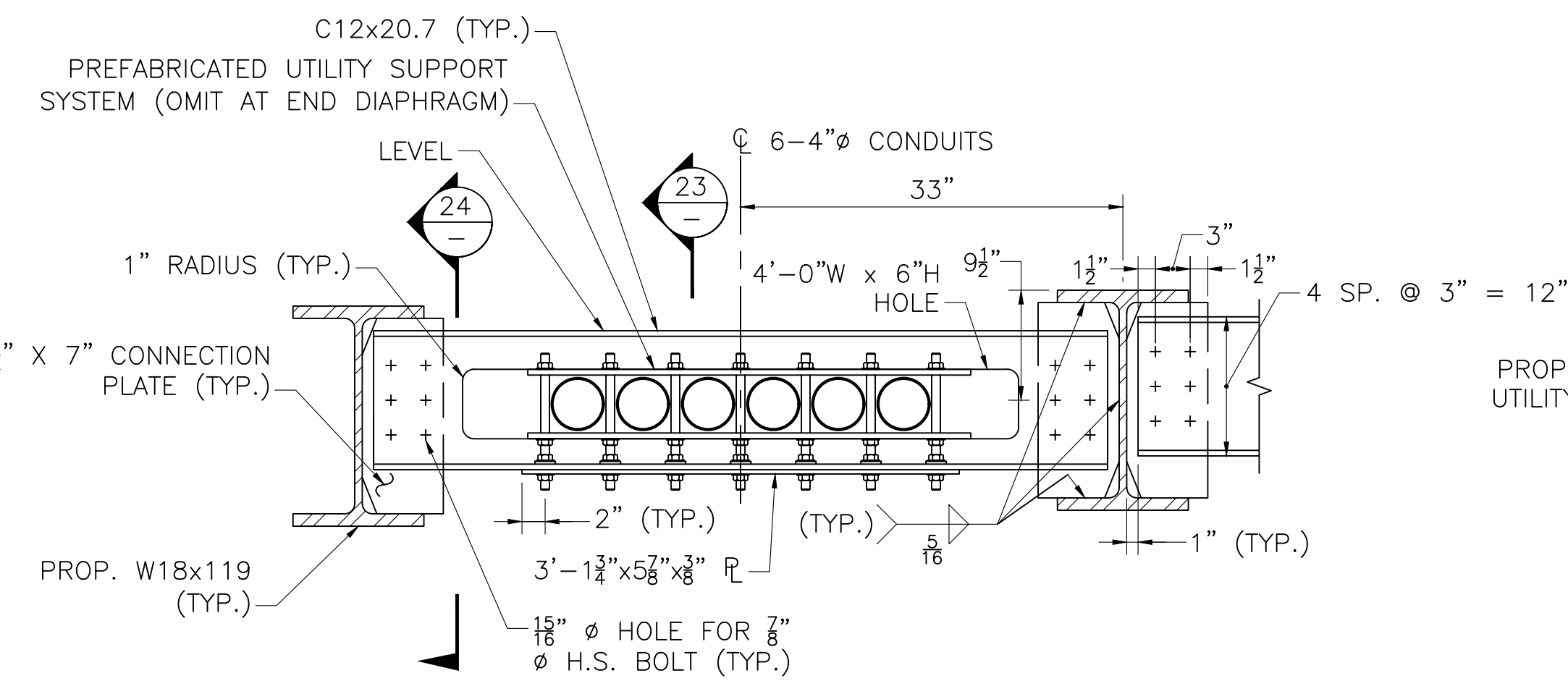
**FRAMING PLAN NOTES:**

- D1 = C12x20.7 (TYP. INTERMEDIATE DIAPHRAGM)  
D2 = C12x20.7 (TYP. END DIAPHRAGM)  
U1 = C12x20.7 (TYP. UTILITY SUPPORT)
- SEE THIS SHEET FOR DIAPHRAGM AND UTILITY SUPPORT DETAILS.
- BEAMS B1 THROUGH B12 ARE W18x119.
- BEAMS B1 THROUGH B12 ARE MAIN LOAD CARRYING MEMBERS.
- ALL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50.
- ANGLE TAKEN BETWEEN C BRG. & CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT ON SHEET 3.
- BEAMS B1 THROUGH B12 ARE PARALLEL TO CHORD BETWEEN W.P. A & W.P. B.

\*DIMENSION IS NOT TO SCALE

**FRAMING PLAN**

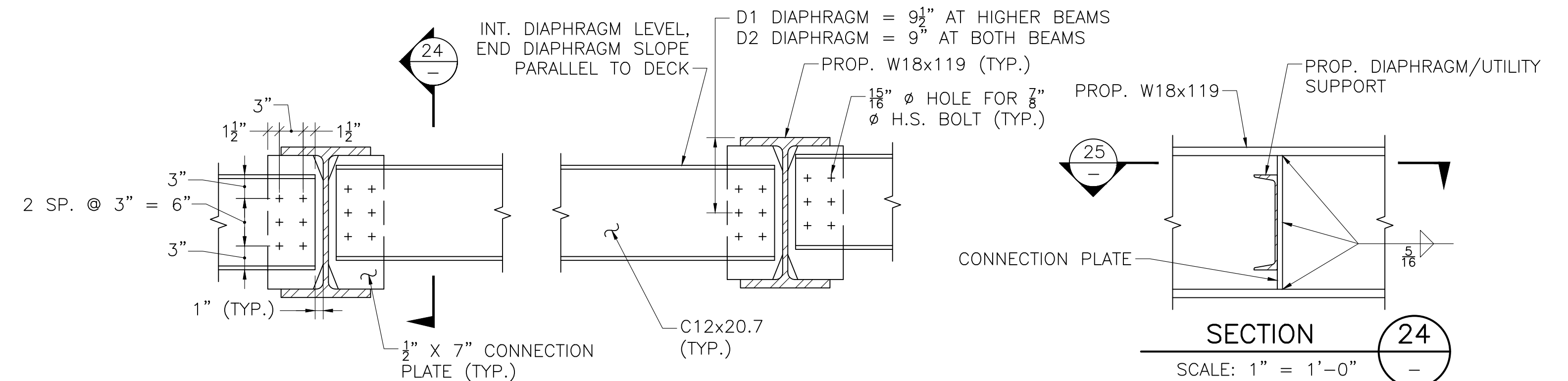
SCALE: 1/4" = 1'-0"



**NOTE:**  
SEE CLIP DETAIL ON THIS SHEET.

**UTILITY SUPPORT DETAILS - U1**

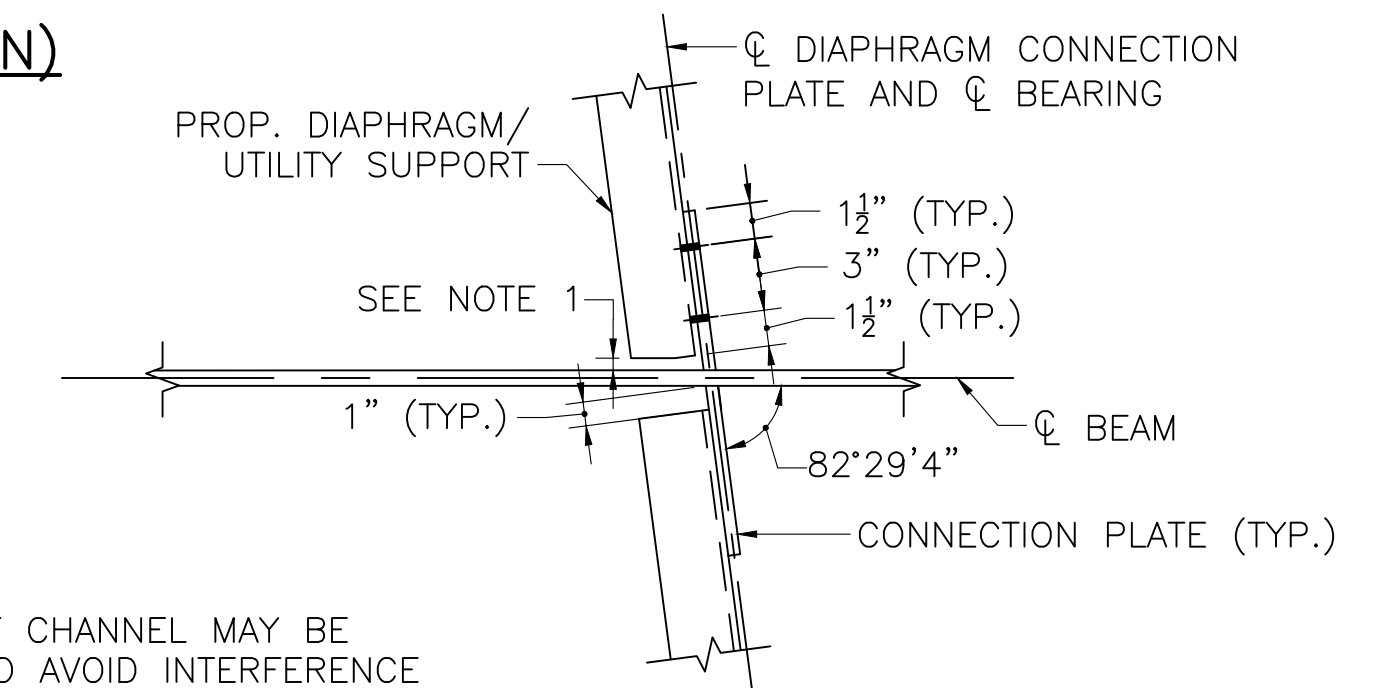
SCALE: 1" = 1'-0"



**NOTE:**  
SEE CLIP DETAIL ON THIS SHEET.

**INTERMEDIATE DIAPHRAGM DETAILS - D1 (SHOWN)  
END DIAPHRAGM D2 (SIMILAR)**

SCALE: 1" = 1'-0"

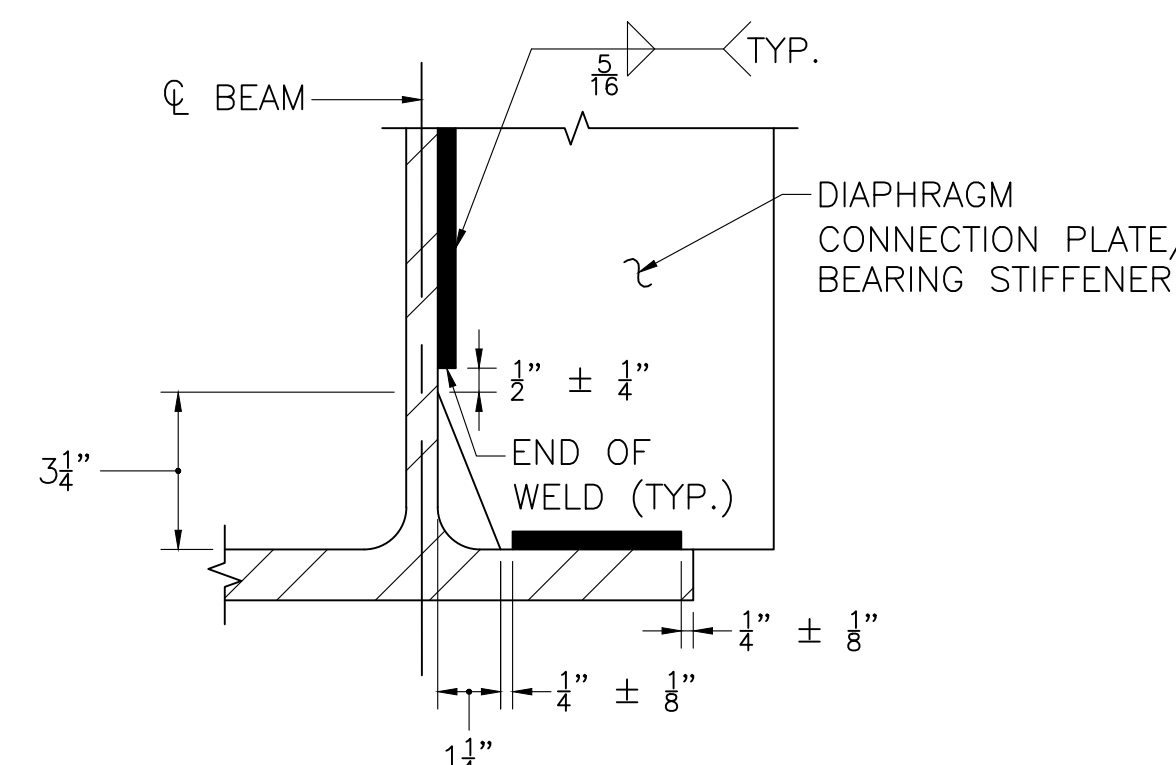


**NOTES:**

- FLANGE OF CHANNEL MAY BE CLIPPED TO AVOID INTERFERENCE WITH WEB.
- INTERIOR BEAM CONNECTION SHOWN, FASCIA BEAM CONNECTION SIMILAR.

**SECTION 25**

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



**CLIP DETAIL**

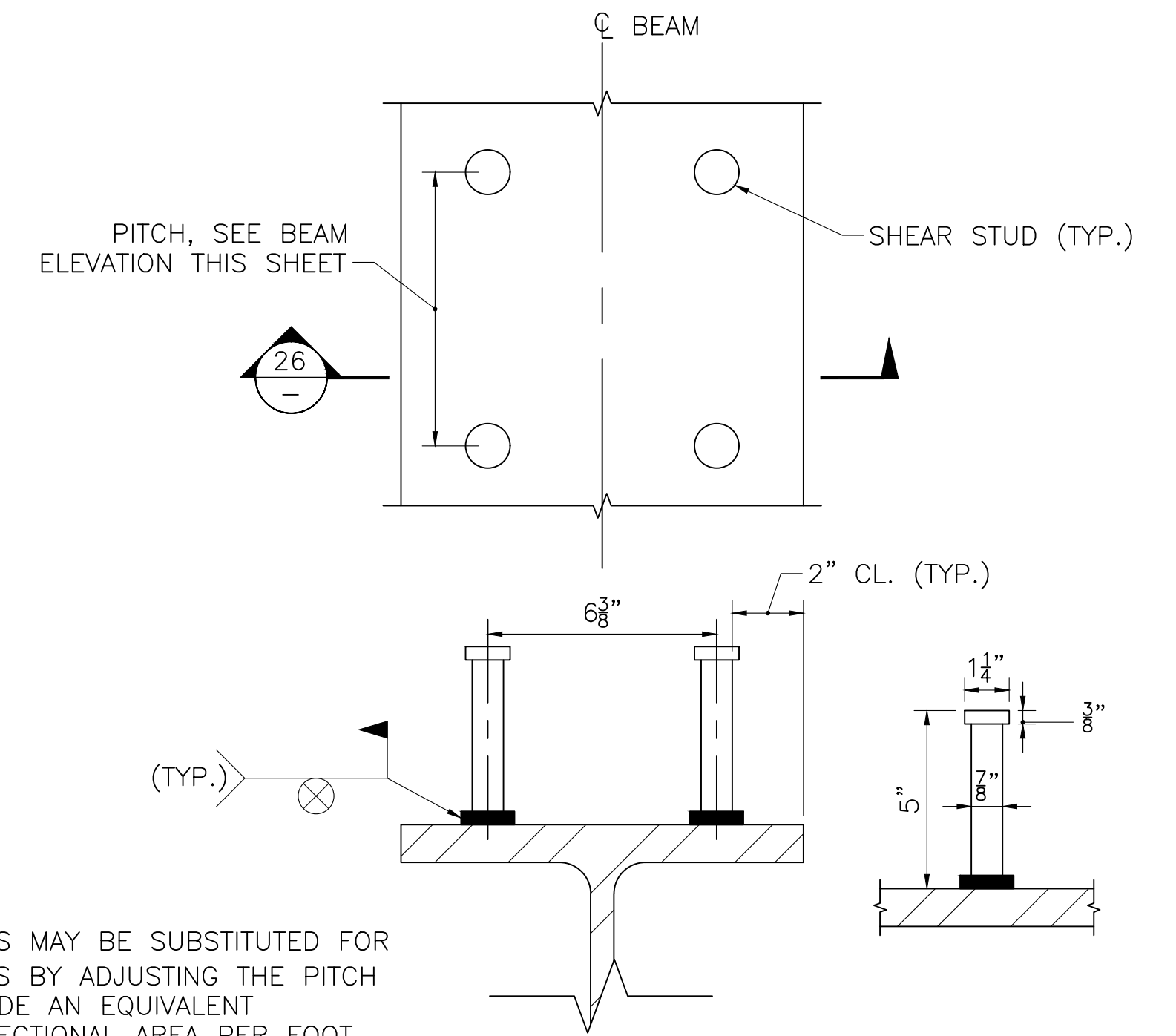
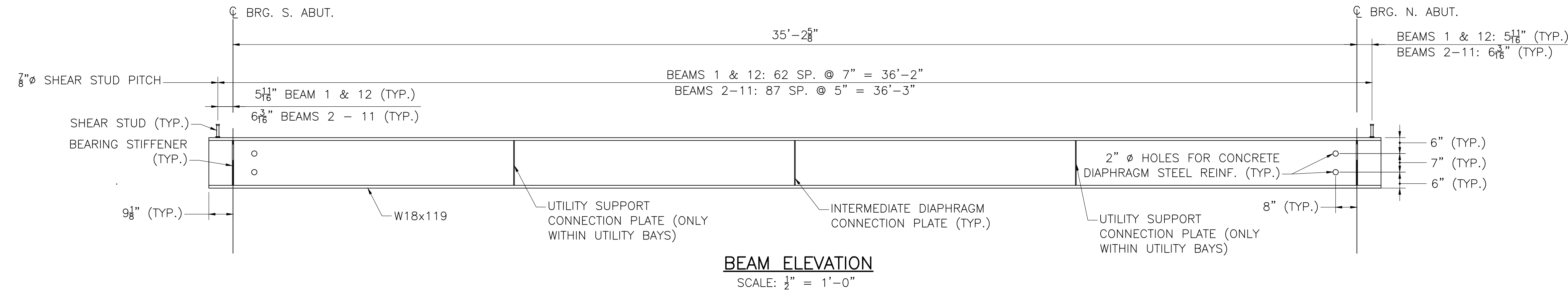
SCALE: 3" = 1'-0"

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**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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**STEEL DETAILS**



STUD SHEAR CONNECTORS

**SECTION 26**

SCALE: 3" = 1'-0"

CAMBER TABLE FOR BEAMS 1-12												
BEAM No.		CL. BRG. S. ABUT.	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	CL. BRG. N. ABUT.
EXTERIOR BEAM (B1)	STEEL DL DEFLECTION	0.00	0.02	0.04	0.06	0.07	0.07	0.07	0.06	0.04	0.02	0.00
	CONC. DL DEFLECTION	0.00	0.11	0.20	0.27	0.32	0.33	0.32	0.27	0.20	0.11	0.00
	S.D.L. DEFLECTION	0.00	0.04	0.08	0.11	0.12	0.13	0.12	0.11	0.08	0.04	0.00
	VERTICAL CURVE	0.00	0.46	0.83	1.08	1.24	1.29	1.24	1.08	0.83	0.46	0.00
	ADDITIONAL CAMBER	0.00	0.022	0.044	0.066	0.088	0.220	0.088	0.066	0.044	0.022	0.00
	TOTAL CAMBER	0.00	0.649	1.190	1.578	1.833	2.041	1.833	1.578	1.190	0.649	0.00
INTERIOR BEAM (B2)	STEEL DL DEFLECTION	0.00	0.02	0.04	0.06	0.07	0.07	0.07	0.06	0.04	0.02	0.00
	CONC. DL DEFLECTION	0.00	0.09	0.17	0.24	0.28	0.29	0.28	0.24	0.17	0.09	0.00
	S.D.L. DEFLECTION	0.00	0.04	0.07	0.09	0.11	0.12	0.11	0.09	0.07	0.04	0.00
	VERTICAL CURVE	0.00	0.46	0.83	1.08	1.24	1.29	1.24	1.08	0.83	0.46	0.00
	ADDITIONAL CAMBER	0.00	0.022	0.044	0.066	0.088	0.220	0.088	0.066	0.044	0.022	0.00
	TOTAL CAMBER	0.00	0.631	1.155	1.532	1.779	1.985	1.779	1.532	1.155	0.631	0.00
INTERIOR BEAMS (B3-B10)	STEEL DL DEFLECTION	0.00	0.02	0.04	0.06	0.06	0.07	0.06	0.06	0.04	0.02	0.00
	CONC. DL DEFLECTION	0.00	0.09	0.17	0.24	0.28	0.29	0.28	0.24	0.17	0.09	0.00
	S.D.L. DEFLECTION	0.00	0.02	0.04	0.05	0.06	0.06	0.06	0.05	0.04	0.02	0.00
	VERTICAL CURVE	0.00	0.46	0.83	1.08	1.24	1.29	1.24	1.08	0.83	0.46	0.00
	ADDITIONAL CAMBER	0.00	0.022	0.044	0.066	0.088	0.220	0.088	0.066	0.044	0.022	0.00
	TOTAL CAMBER	0.00	0.612	1.120	1.483	1.723	1.924	1.723	1.483	1.120	0.612	0.00
INTERIOR BEAM (B11)	STEEL DL DEFLECTION	0.00	0.02	0.04	0.06	0.07	0.07	0.07	0.06	0.04	0.02	0.00
	CONC. DL DEFLECTION	0.00	0.09	0.17	0.24	0.28	0.29	0.28	0.24	0.17	0.09	0.00
	S.D.L. DEFLECTION	0.00	0.04	0.07	0.10	0.11	0.12	0.11	0.10	0.07	0.04	0.00
	VERTICAL CURVE	0.00	0.46	0.83	1.08	1.24	1.29	1.24	1.08	0.83	0.46	0.00
	ADDITIONAL CAMBER	0.00	0.022	0.044	0.066	0.088	0.220	0.088	0.066	0.044	0.022	0.00
	TOTAL CAMBER	0.00	0.632	1.156	1.534	1.782	1.988	1.782	1.534	1.156	0.632	0.00
EXTERIOR BEAM (B12)	STEEL DL DEFLECTION	0.00	0.02	0.04	0.06	0.07	0.07	0.07	0.06	0.04	0.02	0.00
	CONC. DL DEFLECTION	0.00	0.11	0.20	0.27	0.32	0.33	0.32	0.27	0.20	0.11	0.00
	S.D.L. DEFLECTION	0.00	0.04	0.08	0.11	0.13	0.13	0.13	0.11	0.08	0.04	0.00
	VERTICAL CURVE	0.00	0.46	0.83	1.08	1.24	1.29	1.24	1.08	0.83	0.46	0.00
	ADDITIONAL CAMBER	0.00	0.022	0.044	0.066	0.088	0.220	0.088	0.066	0.044	0.022	0.00
	TOTAL CAMBER	0.00	0.650	1.192	1.581	1.836	2.043	1.836	1.581	1.192	0.650	0.00

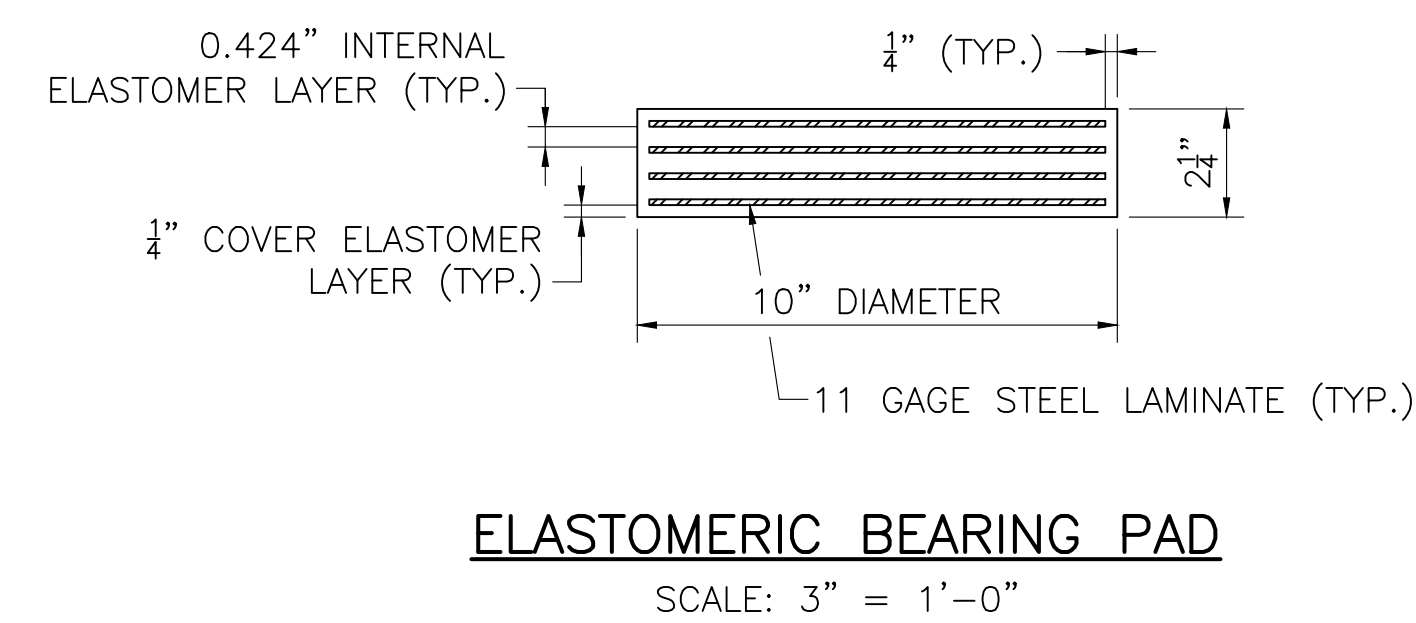
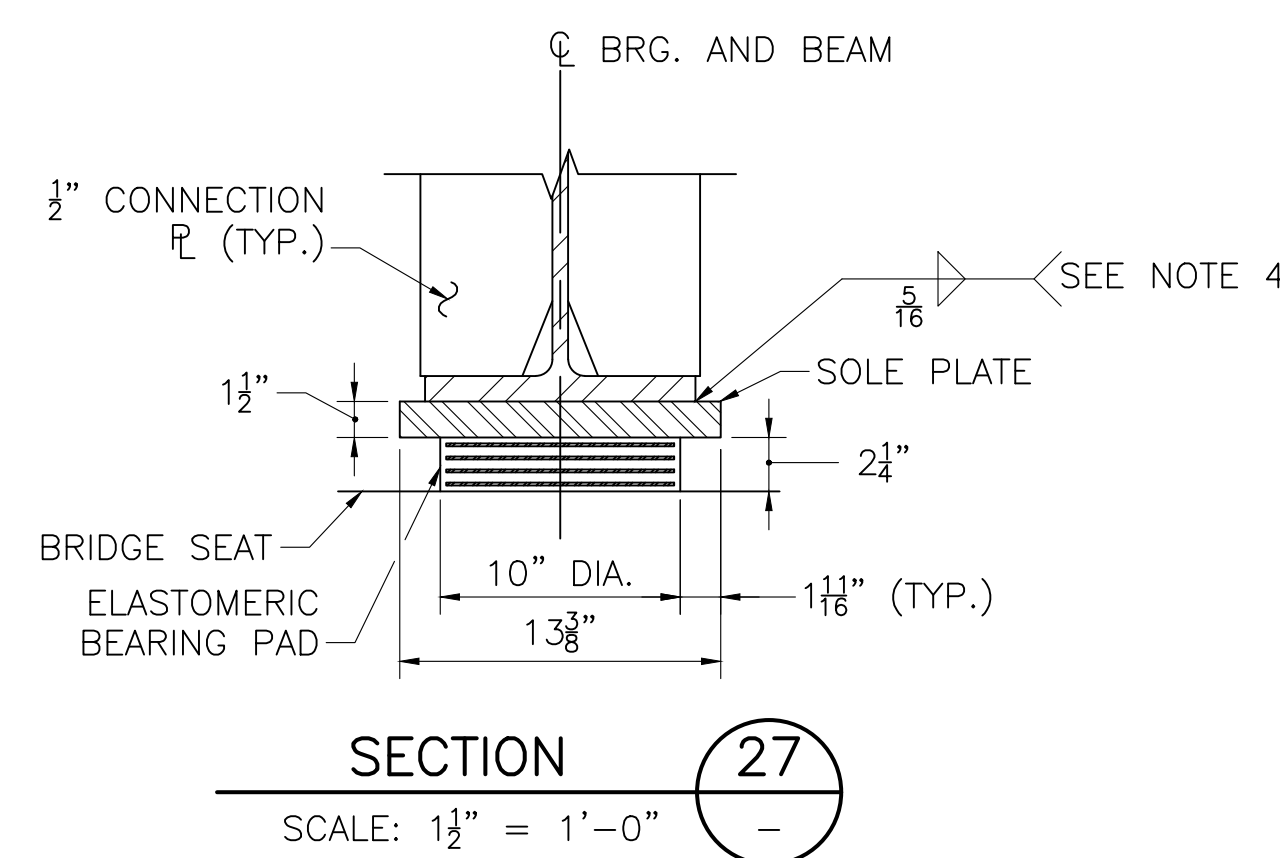
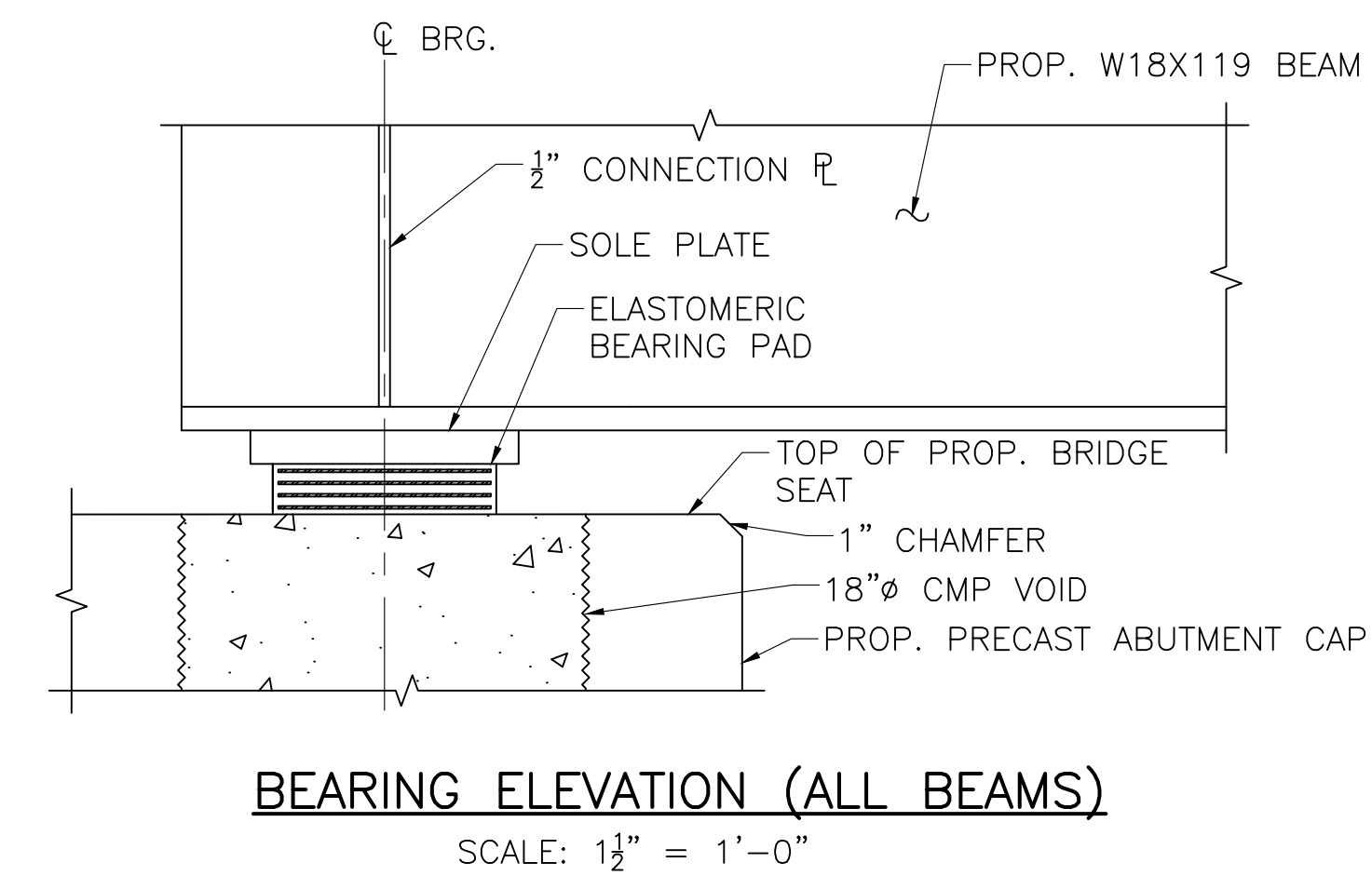
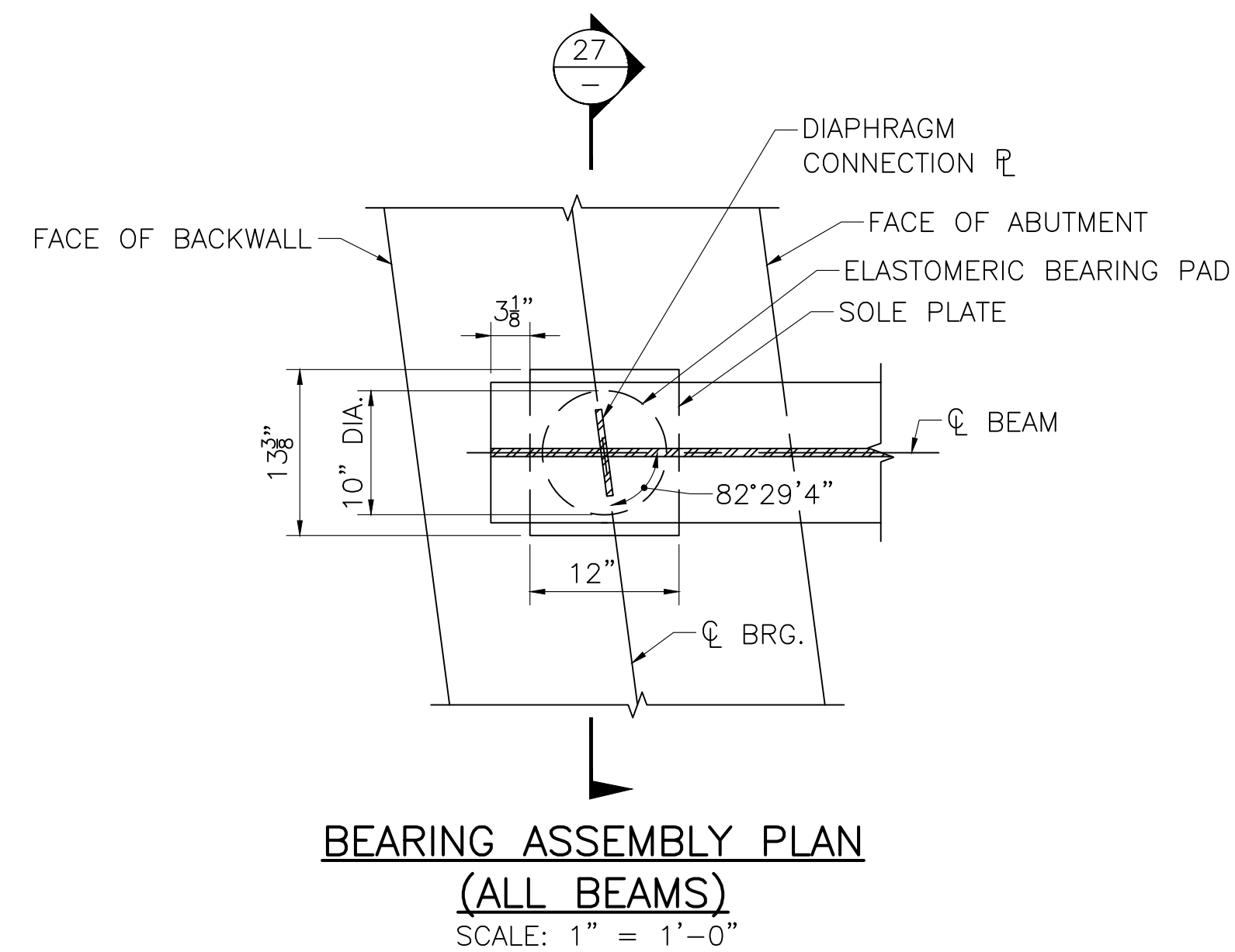
**NOTE:**  
ALL LISTED VALUES IN INCHES.

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**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	69	90
PROJECT FILE NO.		606902	

**BEARING DETAILS**



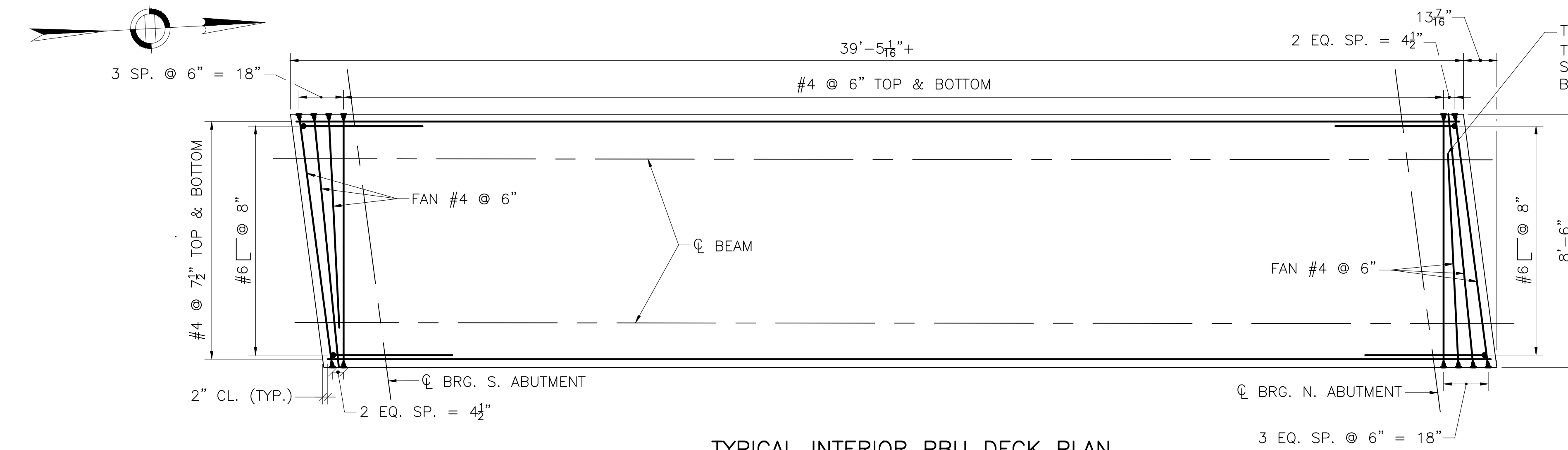
**BEARING NOTES:**

1. STEEL SOLE PLATE SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE HOT-DIPPED GALVANIZED.
2. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING BEAM ERECTION.
3. BEAMS SHALL BE ERECTED WHEN AMBIENT TEMPERATURE IS BETWEEN 50°F AND 77°F. IF BEAMS ARE ERECTED AT OTHER AMBIENT TEMPERATURES, THEY WILL HAVE TO BE JACKED AND THE ELASTOMERIC BEARINGS RECENTERED WHEN THE TEMPERATURE RETURNS TO THAT RANGE.
4. WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE.
5. ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
6. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36.
7. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 126 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 1.60 KSI.
8. ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.

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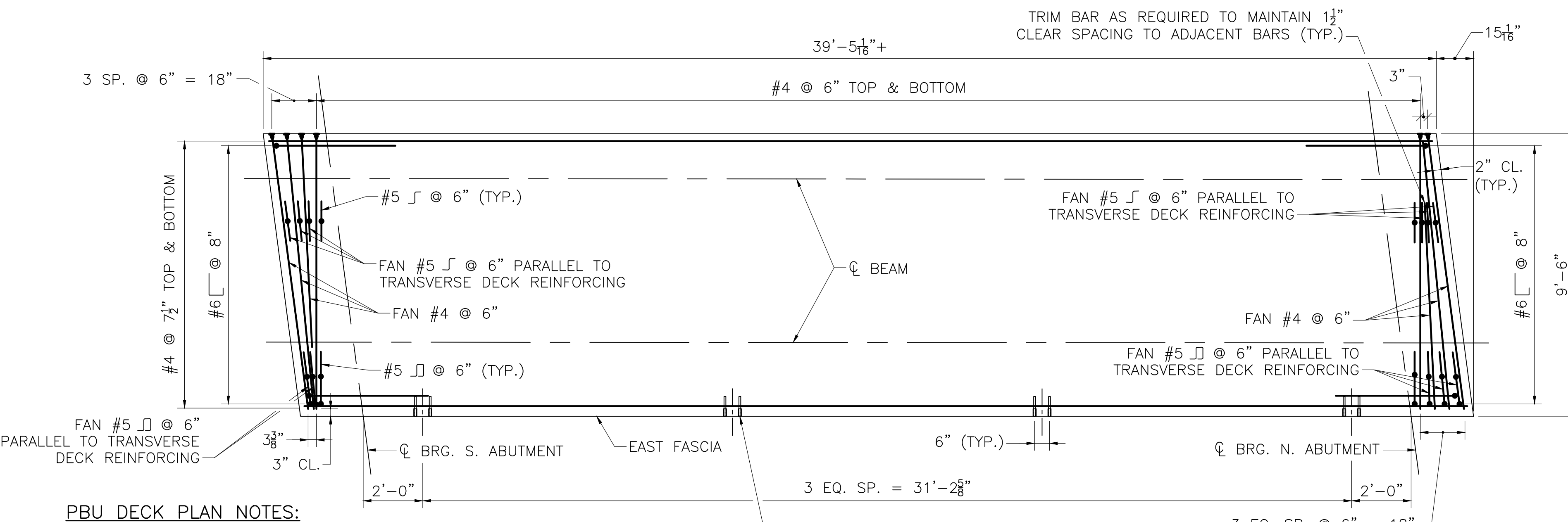
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	70	90
PROJECT FILE NO.		606902	

**PBU DETAILS**



**TYPICAL INTERIOR PBU DECK PLAN**

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

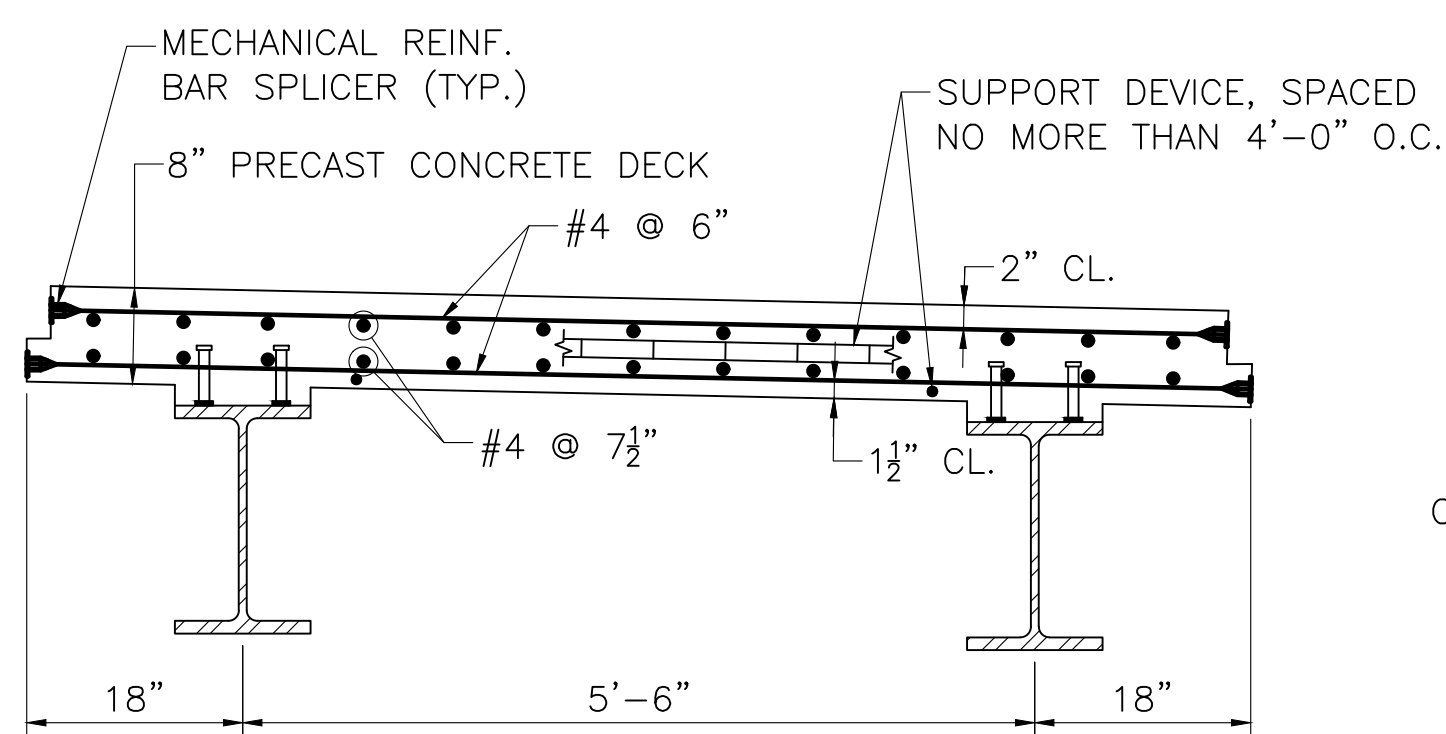


**EXTERIOR PBU DECK PLAN (EAST SHOWN, WEST SIMILAR)**

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

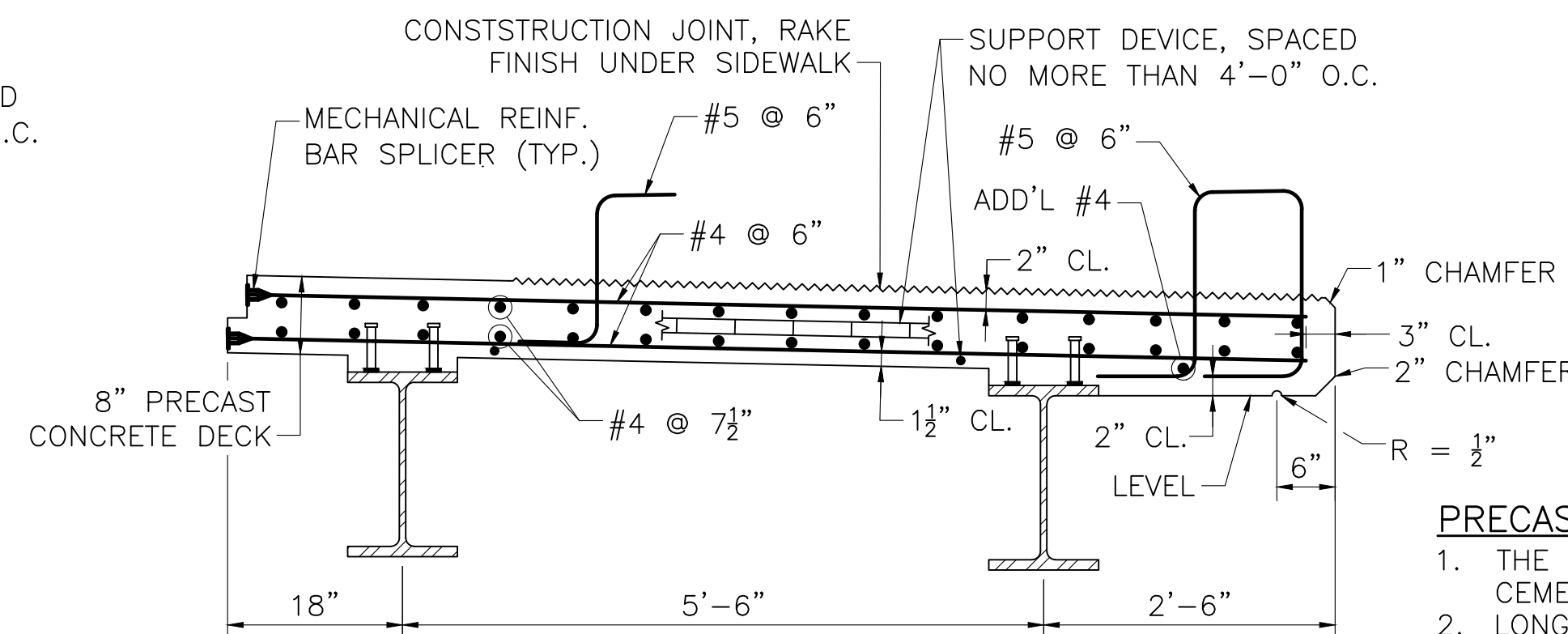
- PBU DECK PLAN NOTES:**
1. END DIAPHRAGM REINFORCING NOT SHOWN FOR CLARITY, SEE SHEET 37.
  2. #6 TRANSVERSE END OF DECK BARS ABOVE THE BACKWALL NOT SHOWN FOR CLARITY, SEE DETAILS ON SHEET 18.

2-3/8" Ø INSERTS CAST INTO DECK FOR GAS LINE SUPPORT AT EAST FASCIA, SEE SHEET 39 FOR DETAILS



**PRECAST BRIDGE UNIT - INTERIOR (UNITS 2 AND 3 SHOWN, UNITS 4 AND 5 MIRRORED)**

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



**PRECAST BRIDGE UNIT - EXTERIOR (UNIT 6 SHOWN, UNIT 1 MIRRORED)**

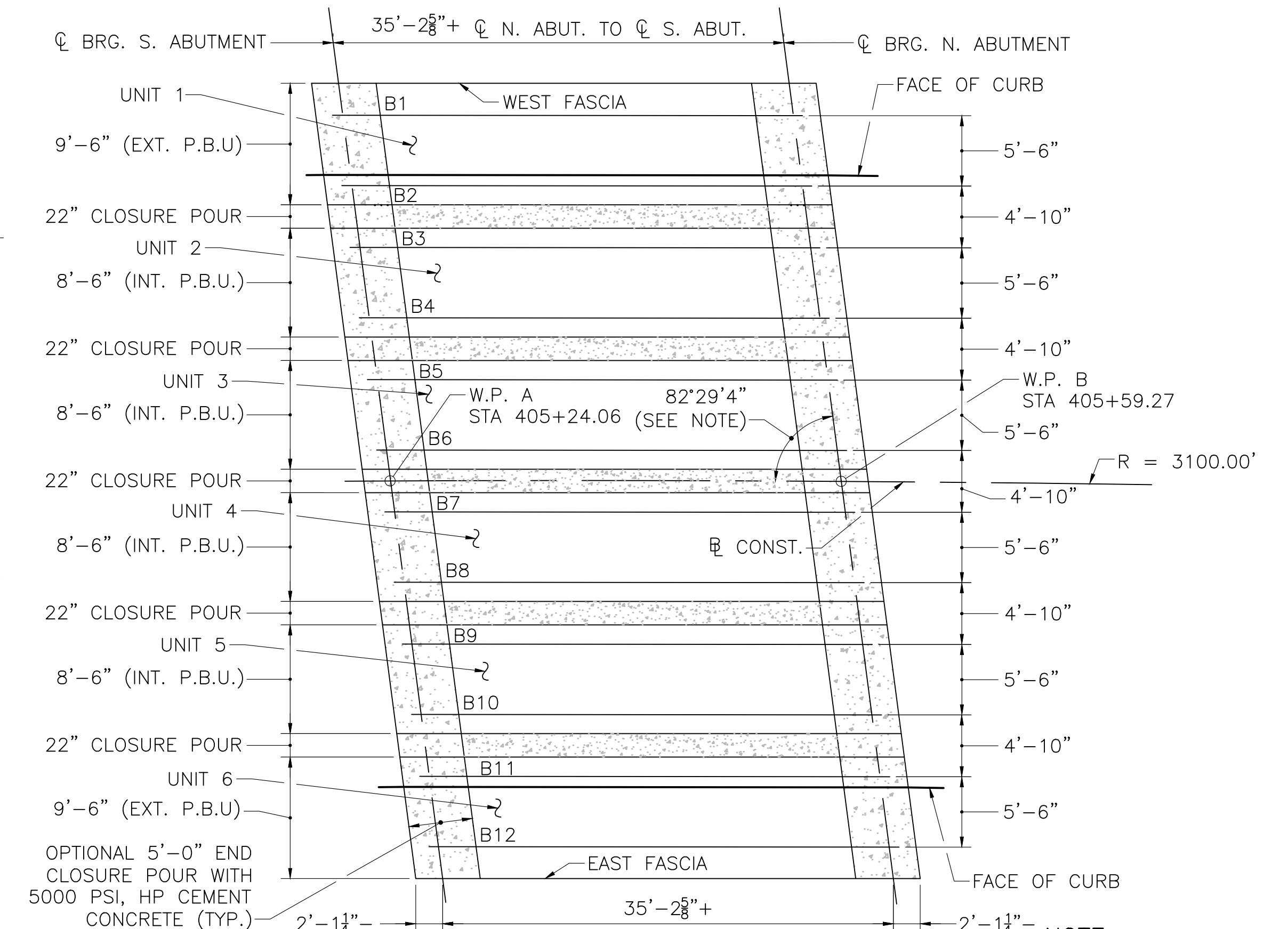
SCALE: 3/4" = 1'-0"

**C.I.P. CLOSURE POUR NOTES:**

1. REINFORCING BARS EXTENDING FROM THE EDGE OF DECK MAY BE USED IN LIEU OF MECHANICAL REINFORCING BAR SPLICERS.
2. THE EDGE SURFACE OF THE PRECAST CONCRETE DECK PANELS SHALL BE BLAST CLEANED AND WETTED WITH CLEAN WATER, IMMEDIATELY PRIOR TO PLACING CLOSURE POUR CONCRETE.
3. CLOSURE POUR CONCRETE BETWEEN PBU UNITS SHALL BE 5000 PSI, HP CEMENT CONCRETE.

**PRECAST BRIDGE UNIT NOTES:**

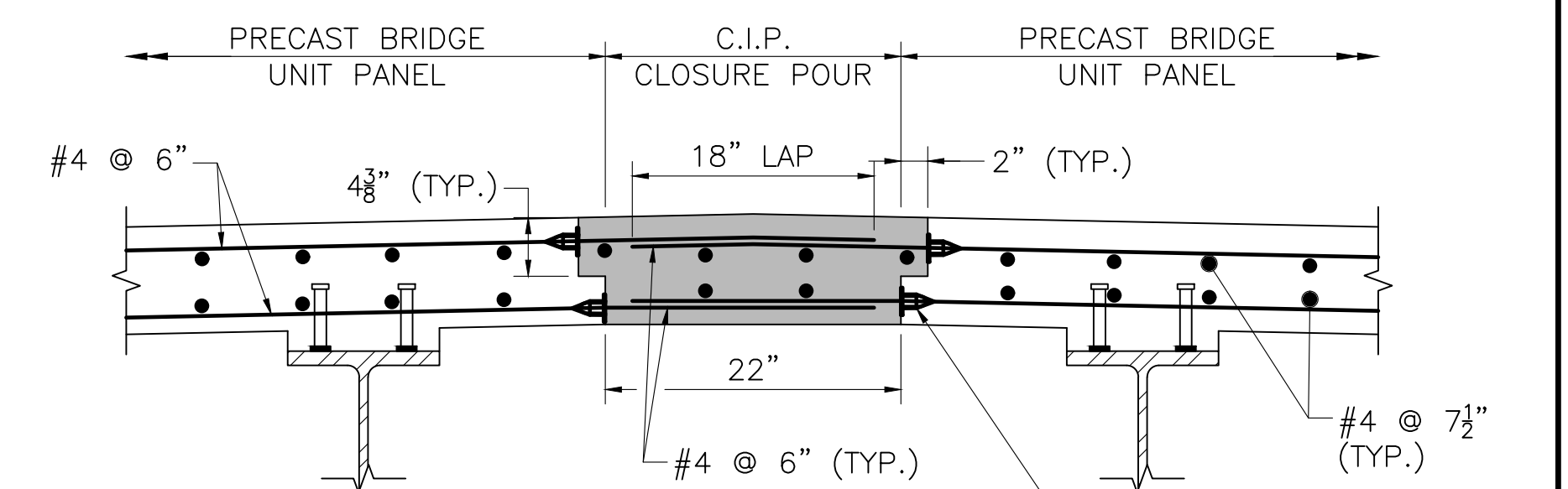
1. THE CONCRETE DECK AND DIAPHRAGMS SHALL BE 5000 PSI, HP CEMENT CONCRETE.
2. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT SHEET 3.
3. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE CHORD BETWEEN W.P. A & W.P. B.
4. SEE SHEET 34 FOR SPLAYED REINFORCING AT DECK ENDS.
5. THE FINISHED SURFACE OF BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.
6. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.
7. ENDS OF BEAMS SHALL BE SUPPORTED FOR LATERAL DISPLACEMENT UNTIL PRECAST DECK & END DIAPHRAGMS HAVE SUFFICIENTLY CURED.
8. SEE SHEET 40 FOR PBU TOLERANCES.



**PRECAST BRIDGE UNIT PLAN**

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

**NOTE:**  
ANGLE MEASURED BETWEEN CL BEARINGS & CHORD BETWEEN W.P. A & W.P. B, SEE BRIDGE LAYOUT SHEET 3.



**C.I.P. CLOSURE POUR DETAILS**

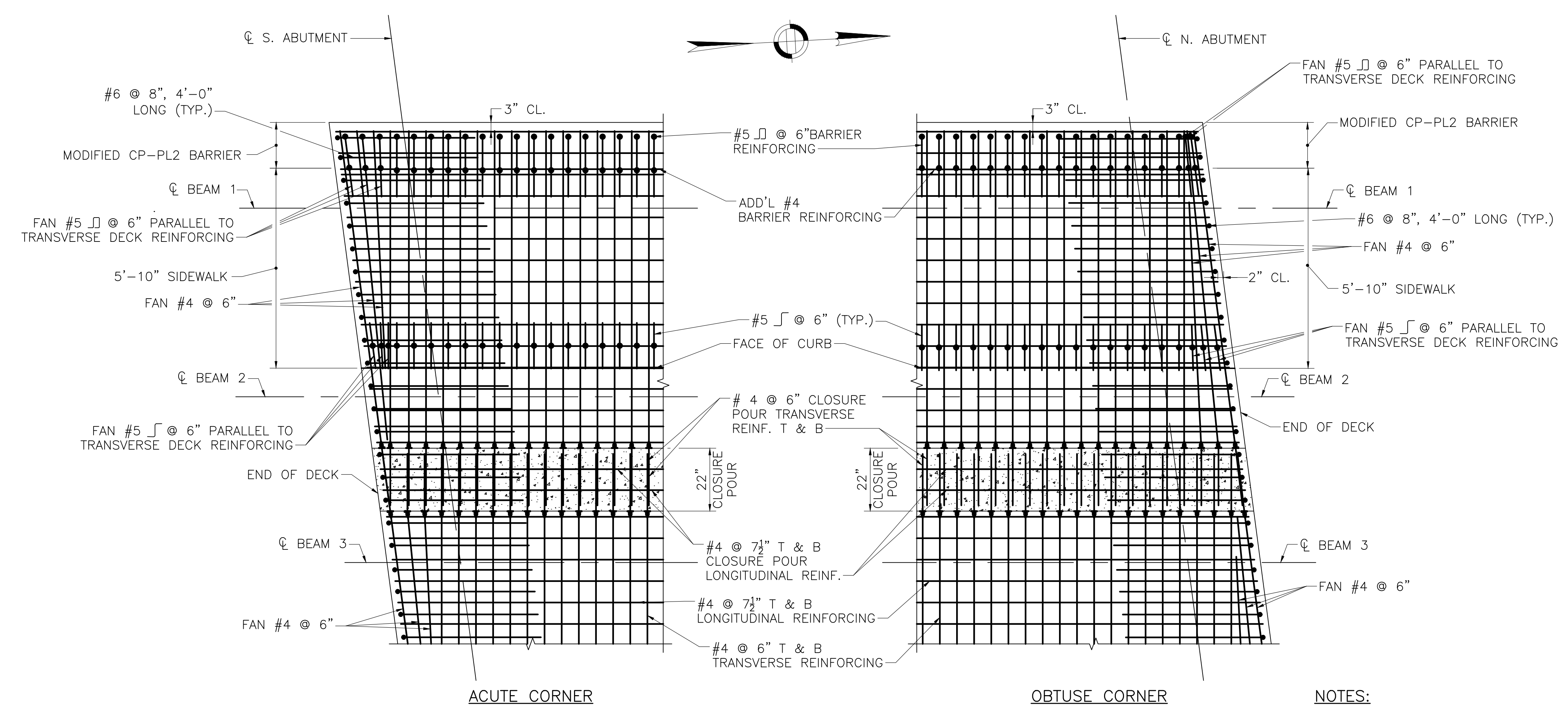
SCALE: 1" = 1'-0"

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**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	71	90
PROJECT FILE NO.		606902	

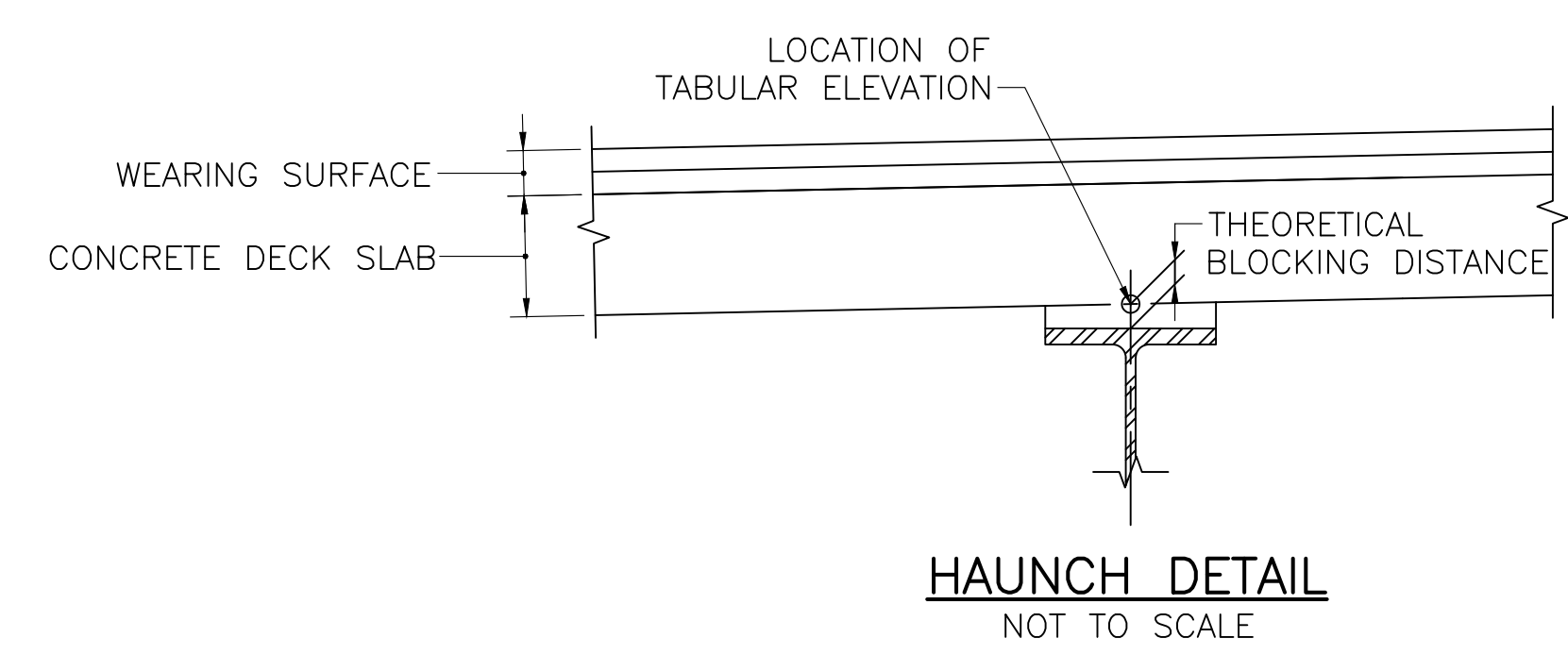
**PBU DECK DETAILS**



**NOTES:**  
FOR SECTIONS AND DETAILS  
NOT SHOWN, SEE SHEET 33.

**END OF DECK PLAN DETAILS (WEST FASCIA SHOWN, EAST FASCIA SIMILAR)**

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



BEAM NO.	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE				
	CL BRG.	1/4 PT.	1/2 PT.	3/4 PT.	CL BRG.
BEAM 1	147.78	147.96	148.07	148.10	148.05
BEAM 2	147.93	148.09	148.19	148.21	148.16
BEAM 3	148.04	148.20	148.29	148.31	148.25
BEAM 4	148.17	148.32	148.68	148.42	148.36
BEAM 5	148.18	148.33	148.68	148.52	148.36
BEAM 6	148.40	148.55	148.63	148.64	148.57
BEAM 7	148.42	148.56	148.64	148.63	148.57
BEAM 8	148.31	148.45	148.52	148.52	148.44
BEAM 9	148.22	148.36	148.43	148.42	148.34
BEAM 10	148.12	148.25	148.31	148.30	148.22
BEAM 11	148.03	148.16	148.22	148.20	148.11
BEAM 12	147.92	148.05	148.11	148.09	147.99

- TOP OF FORM ELEVATION NOTE:**
- AFTER THE BEAMS ARE ERECTED BUT BEFORE THE FORMS ARE BUILT, ELEVATIONS ON TOP OF THE FLANGE OF THE BEAMS ARE TO BE OBTAINED AT THE POINTS INDICATED IN THE TABLE. THE DIFFERENCE BETWEEN THE ELEVATIONS OBTAINED AND THOSE SHOWN IN THE TABLE GIVES THE ACTUAL BLOCKING DISTANCE FROM THE TOP OF THE BEAM TO THE BOTTOM OF THE SLAB AT THE CENTER LINE OF BEAM.
  - TOP OF FORM AND CAMBER VALUES ASSUME THE SLAB AND BEAM ARE FULLY SUPPORTED WHEN THE SLAB IS PLACED, AND THEREFORE THE DEFLECTION DUE TO THE SLAB AND BEAM DEAD LOADS ACT ON THE COMPOSITE SECTION. THE CONTRACTOR SHALL VERIFY TOP OF FORM AND CAMBER VALUES IF A DIFFERENT CONSTRUCTION PROCEDURE IS USED.
  - TOP OF FORM ELEVATIONS ARE SHOWN FOR FABRICATOR INFORMATION ONLY FOR RELATIVE ELEVATIONS.

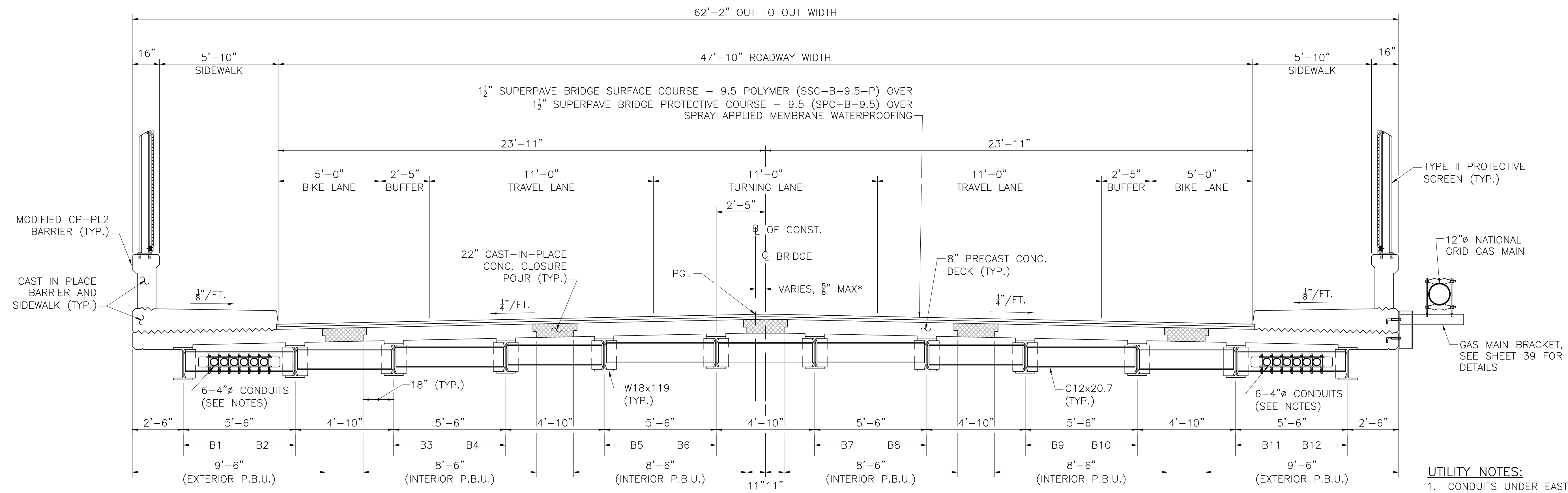
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606902\_BR27-30(B16181)\_DECK DETAILS.DWG 19-July-2024 12:03 PM Final Structural Submittal (SF)

**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

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MA	HIP(BR)-0035(777)X	72	90
PROJECT FILE NO.		606902	

**CROSS SECTION**



**FINAL TRANSVERSE SECTION (LOOKING NORTH)**

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

**UTILITY NOTES:**

- CONDUITS UNDER EAST SIDEWALK ARE DESIGNATED FOR FUTURE UTILITIES. CONDUITS UNDER WEST SIDEWALK ARE DESIGNATED FOR BOTH STREET LIGHTING PROVIDED BY EVERSOURCE AND FUTURE UTILITIES.
- SUPPORT HANGERS SHOWN SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AND SHALL BE PROVIDED FOR UNDER ITEM 995.01. 4" DIAMETER CONDUITS WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AND SHALL BE PROVIDED FOR UNDER ITEM 804.4. CONDUITS THAT WILL NOT BE OCCUPIED SHALL BE TERMINATED 2' BEYOND BACKWALLS AND CAPPED.

\*DIMENSION NOT TO SCALE

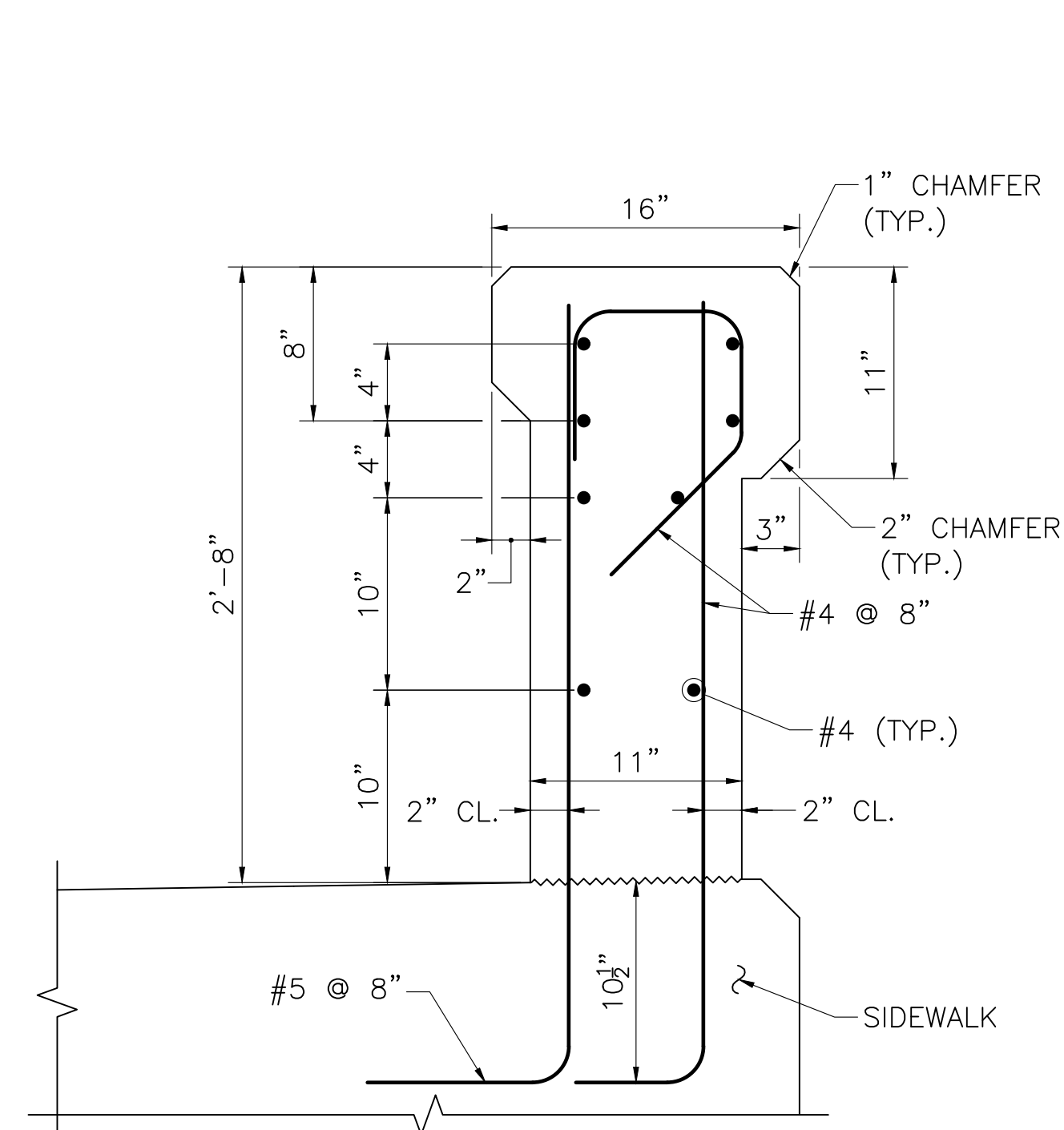
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**BOSTON  
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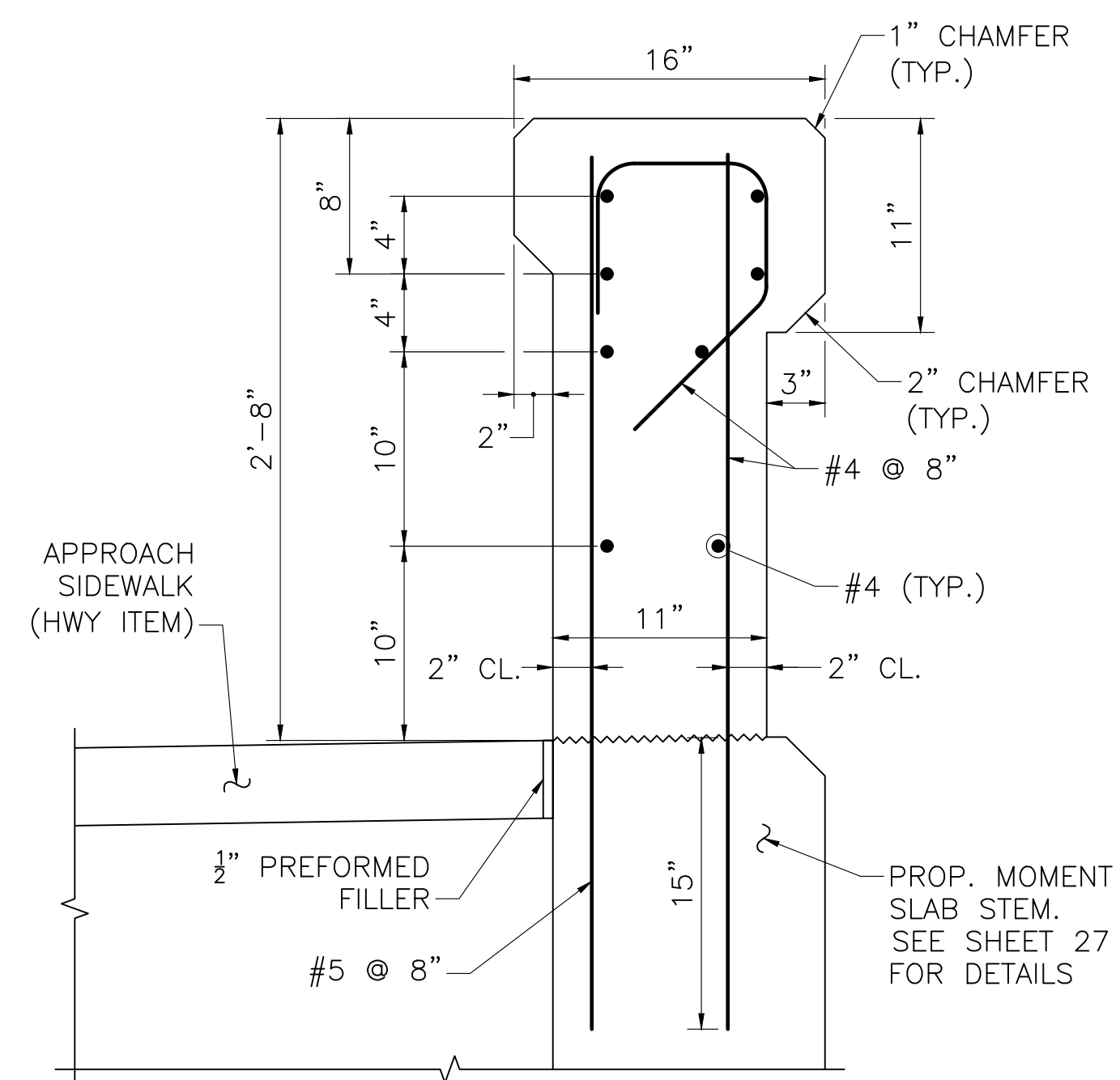
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	73	90
PROJECT FILE NO.		606902	

**MODIFIED CP-PL2 BARRIER AND SIDEWALK DETAILS**



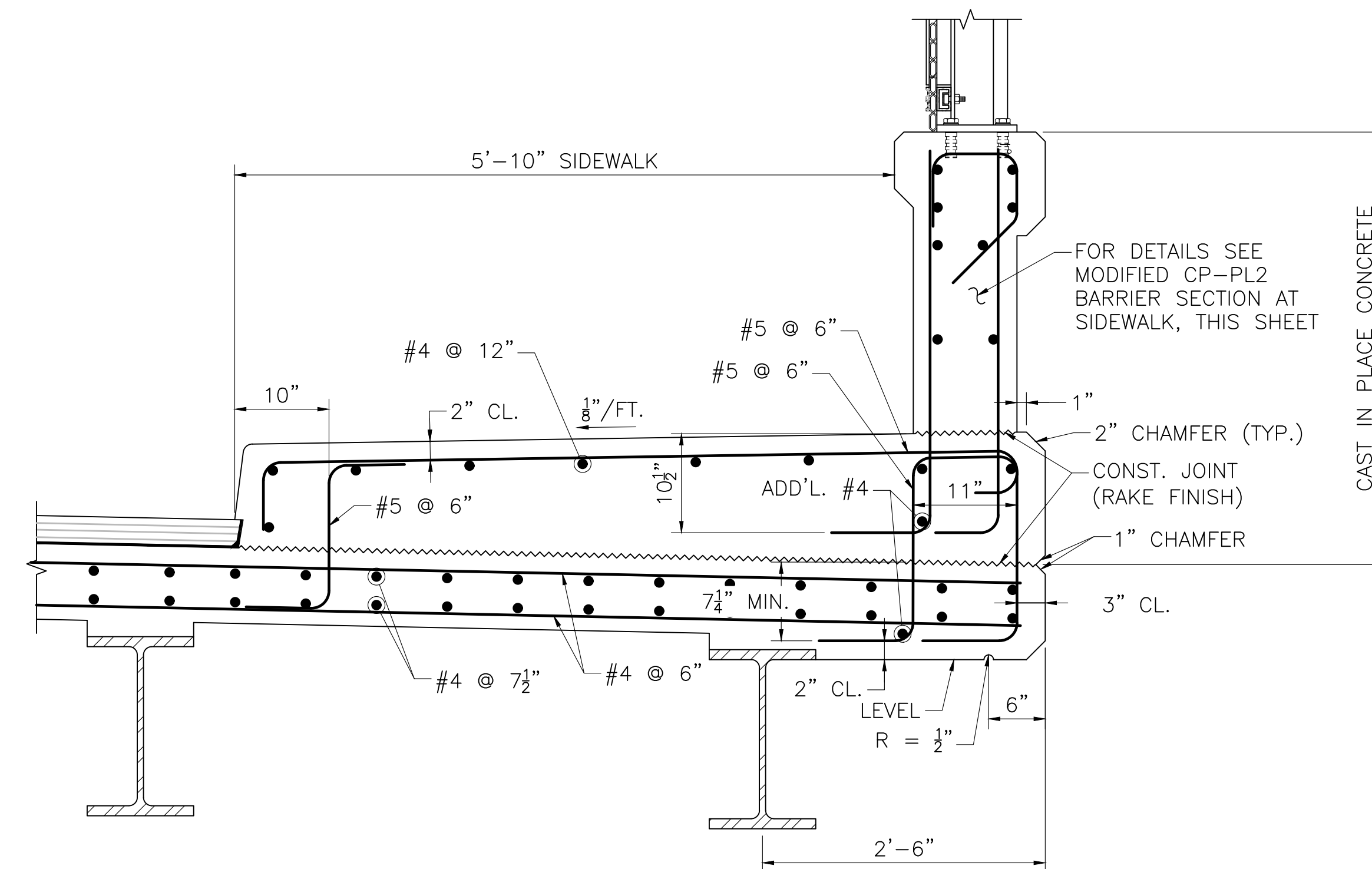
**MODIFIED CP-PL2 BARRIER  
SECTION AT SIDEWALK**

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



**MODIFIED CP-PL2 BARRIER  
SECTION AT MOMENT SLAB**

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



**MODIFIED CP-PL2 BARRIER  
SECTION THRU SIDEWALK**

SCALE: 1" = 1'-0"

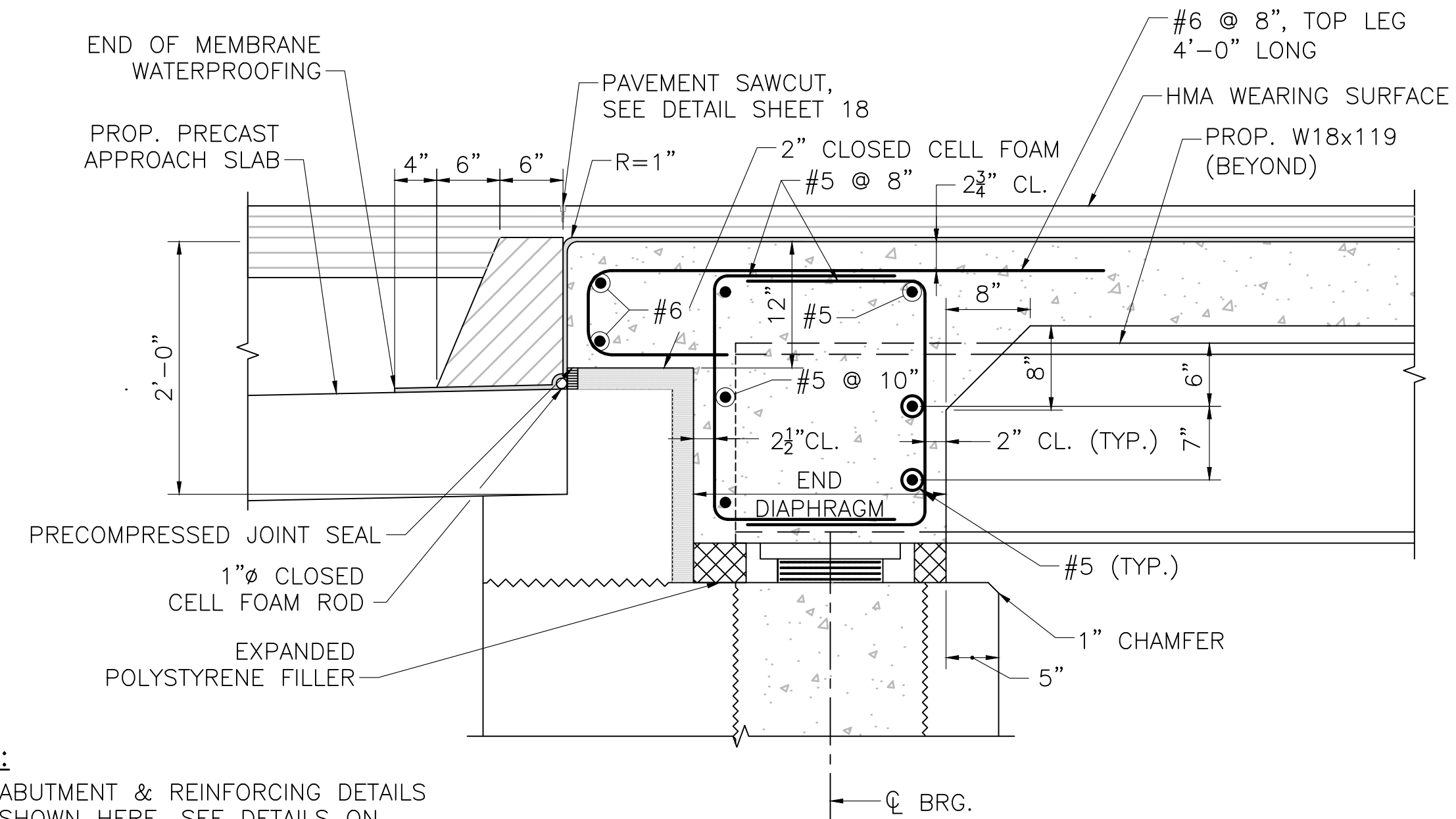
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**WEST ROXBURY PARKWAY OVER MBTA**

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**END DIAPHRAGM DETAILS**

606902\_BR27-30(B16181)\_DECK DETAILS.DWG Plotted on 24-Jul-2024 12:03 PM 19-July-2024 Final Structural Submittal (SF)

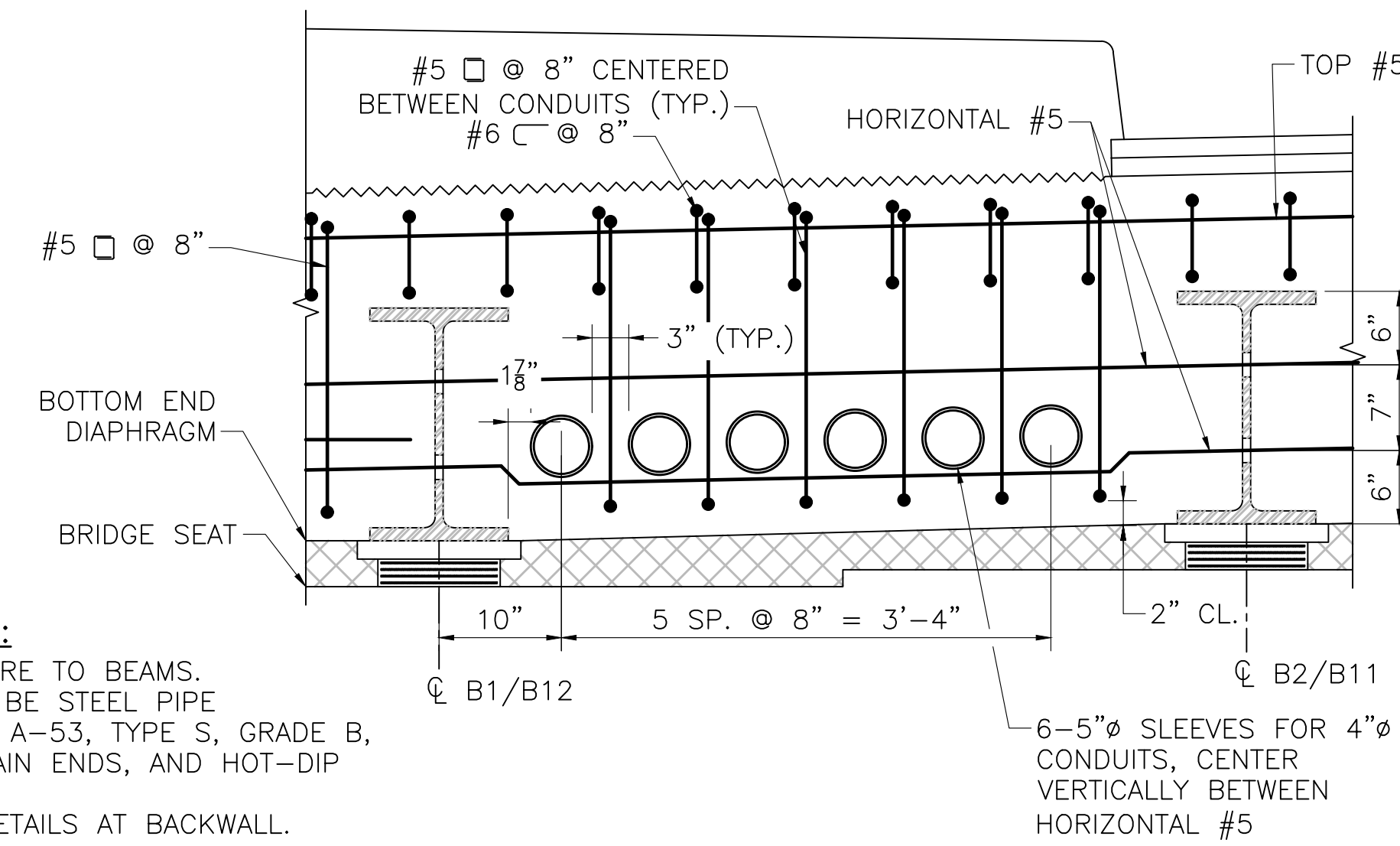


- NOTES:**
1. FOR ABUTMENT & REINFORCING DETAILS NOT SHOWN HERE, SEE DETAILS ON SHEET 18.
  2. DECK/END DIAPHRAGM CLOSURE POUR CONCRETE SHALL BE RAPID SETTING LOW PERMEABILITY CONCRETE.

**ROADWAY SECTION AT CLOSURE POUR**

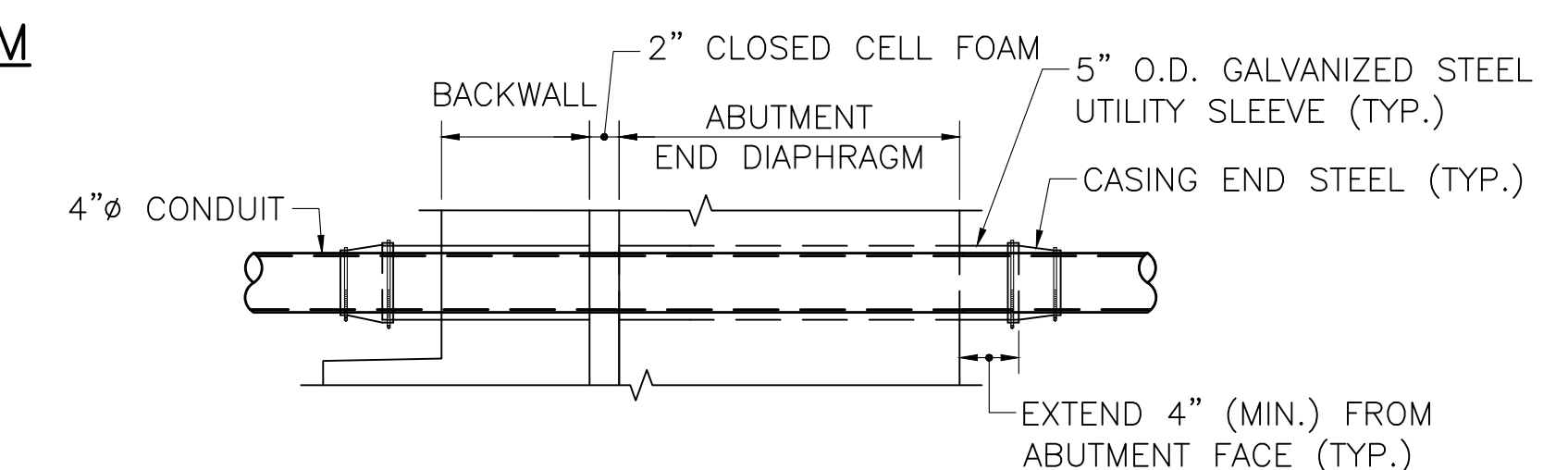
SCALE: 1" = 1'-0"

- UTILITY DETAIL NOTES:**
1. DIMENSIONS ARE SQUARE TO BEAMS.
  2. UTILITY SLEEVE SHALL BE STEEL PIPE CONFORMING TO ASTM A-53, TYPE S, GRADE B, STANDARD WEIGHT, PLAIN ENDS, AND HOT-DIP GALVANIZED.
  3. SEE SHEET 18 FOR DETAILS AT BACKWALL.



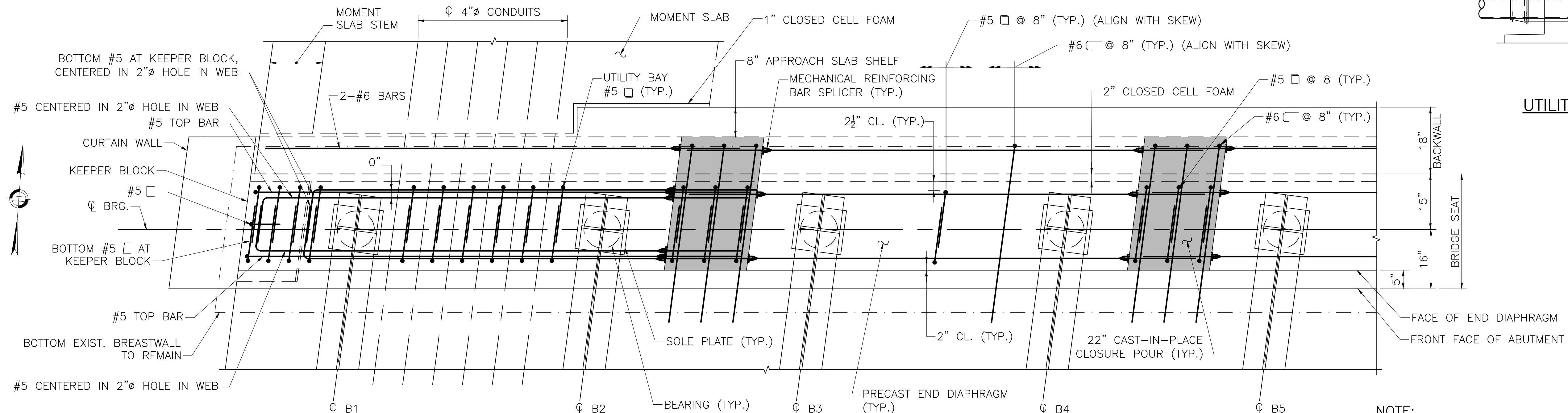
**UTILITY DETAILS AT END DIAPHRAGM**

SCALE: 1" = 1'-0"



**UTILITY SECTION DETAILS AT ABUTMENT**

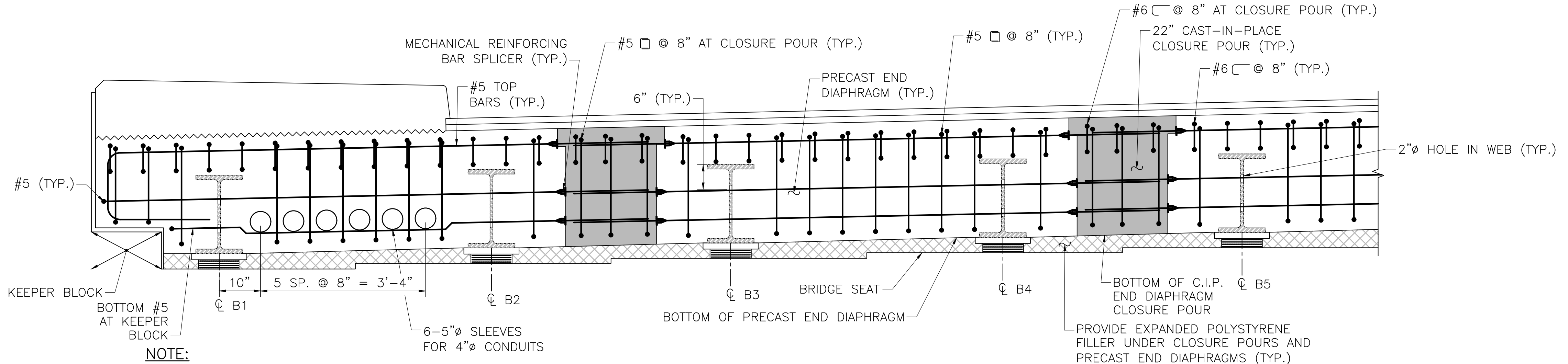
SCALE: 1" = 1'-0"



**END DIAPHRAGM PARTIAL PLAN**

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

**NOTE:**  
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.



**END DIAPHRAGM PARTIAL ELEVATION**

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

**NOTE:**  
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.

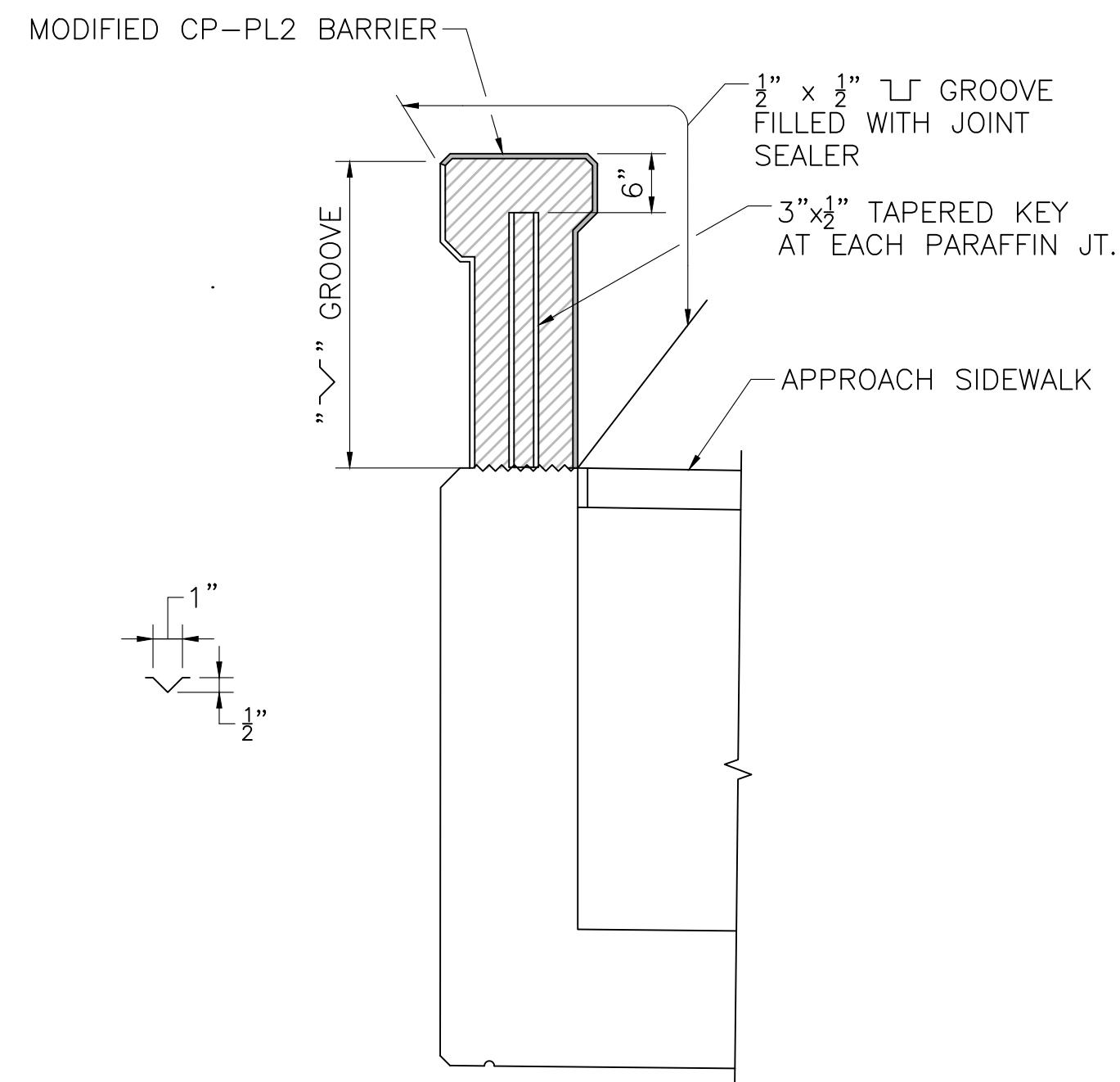
PROVIDE EXPANDED POLYSTYRENE FILLER UNDER CLOSURE POURS AND PRECAST END DIAPHRAGMS (TYP.)

AUG. 03, 2024	ISSUED FOR CONSTRUCTION
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THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
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**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	75	90
PROJECT FILE NO.		606902	

**DECK DETAILS**

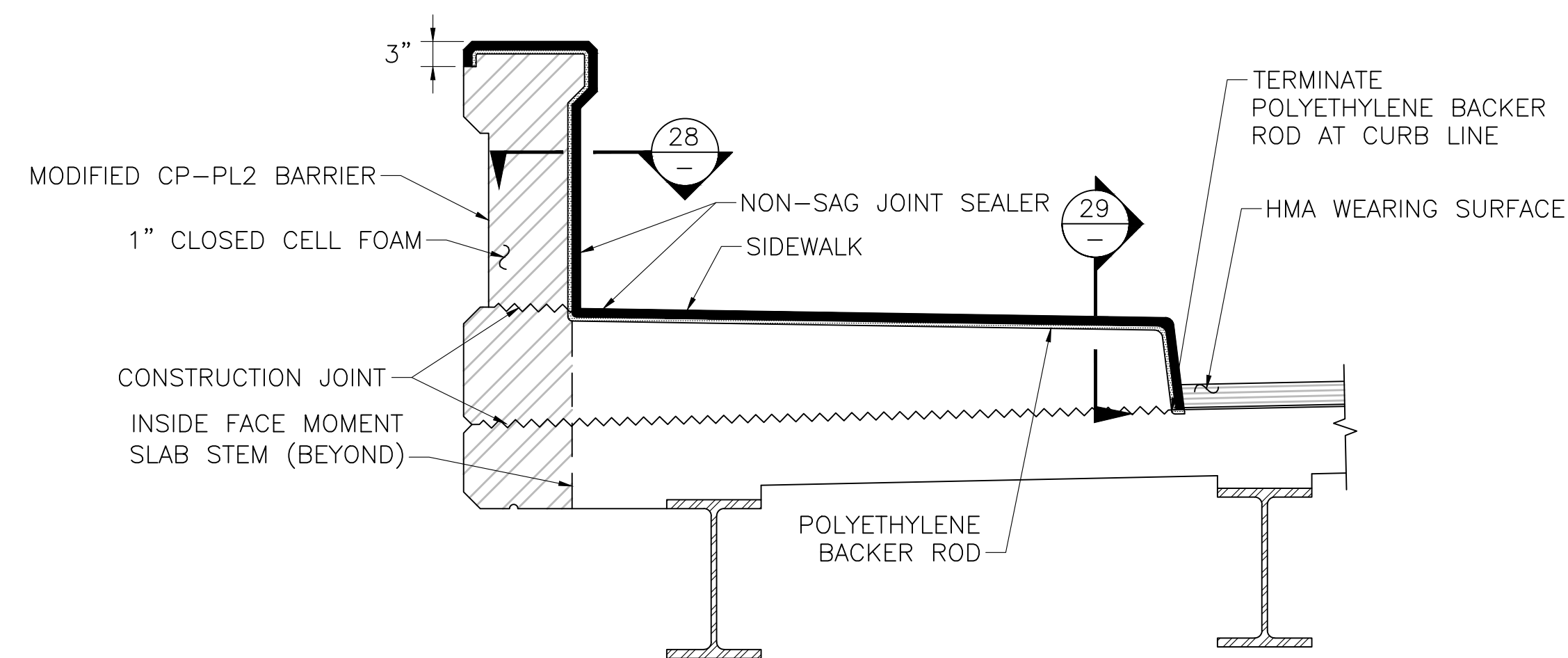


**NOTES:**

1. ALL CONCRETE ABOVE MOMENT SLAB STEM SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO FACE OF CURB (OR COPING).

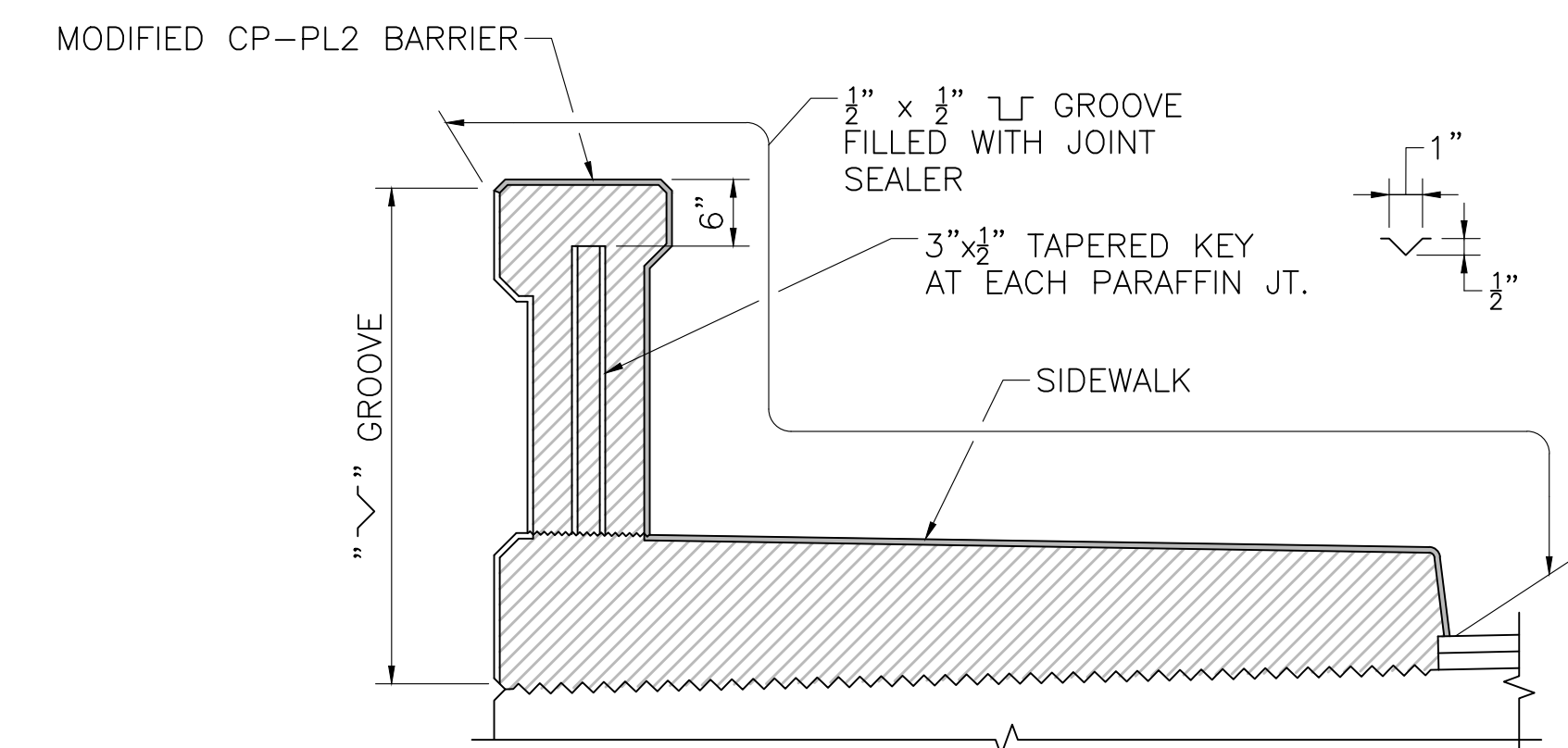
**PARAFFIN JOINT AT MOMENT SLAB DETAILS**

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



**EXPANSION JOINT DETAIL AT BACK OF ABUTMENT**

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

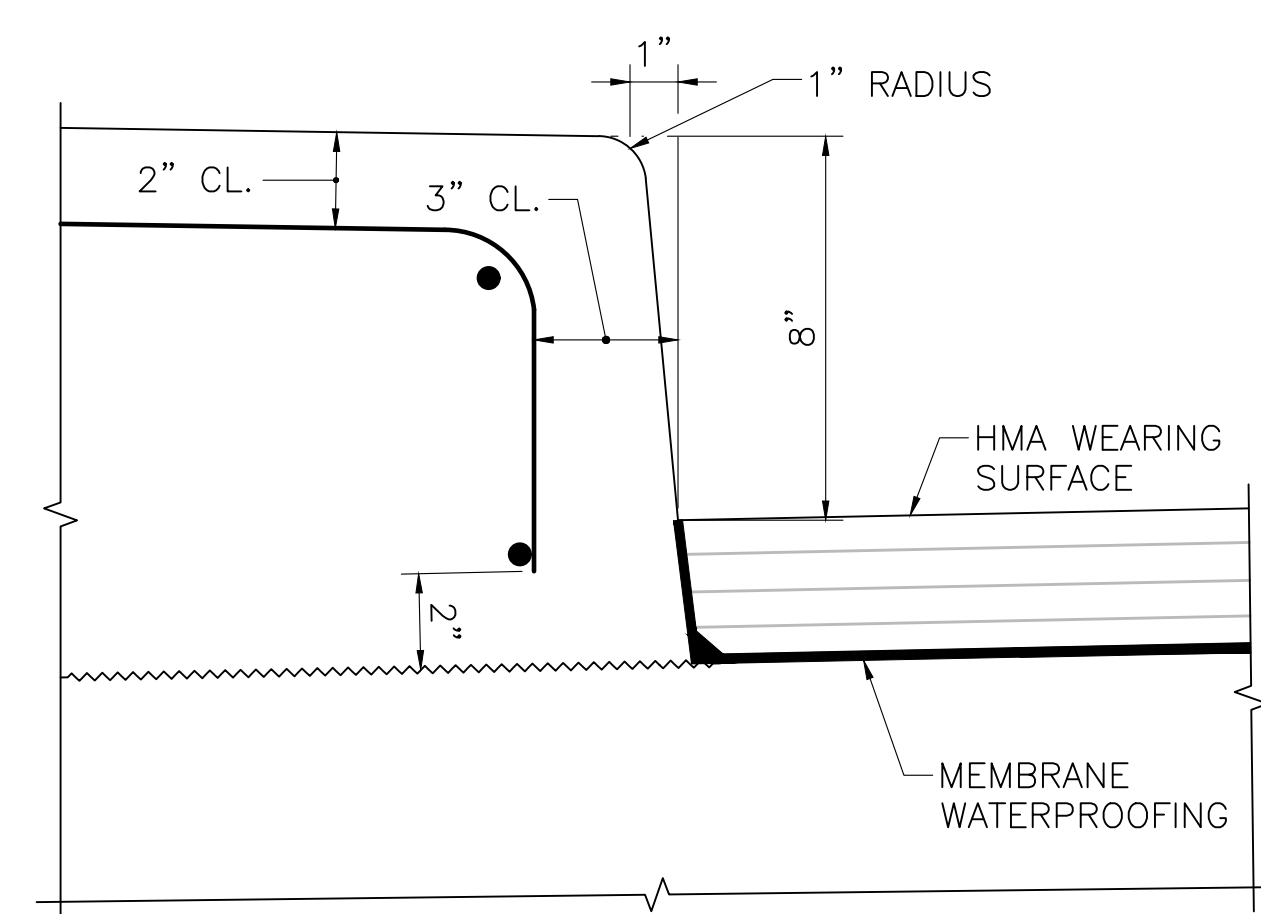


**NOTES:**

1. ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO FACE OF CURB (OR COPING).

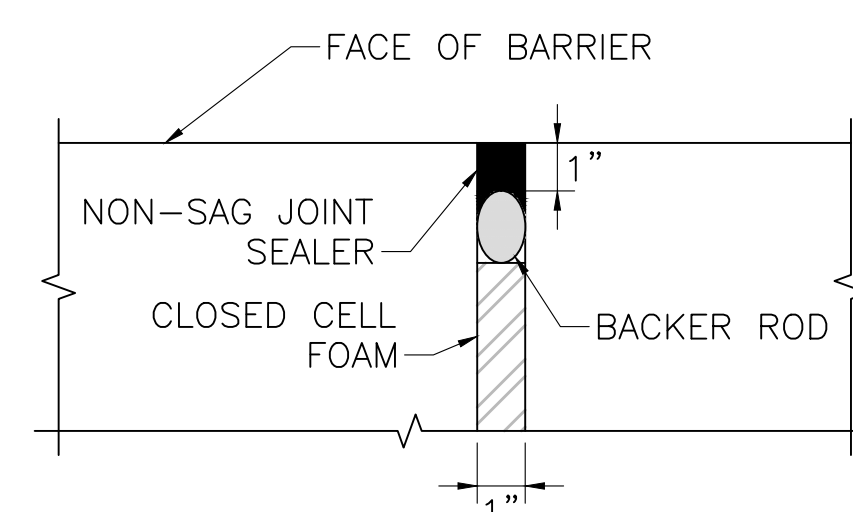
**PARAFFIN JOINT ON BRIDGE DETAILS**

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



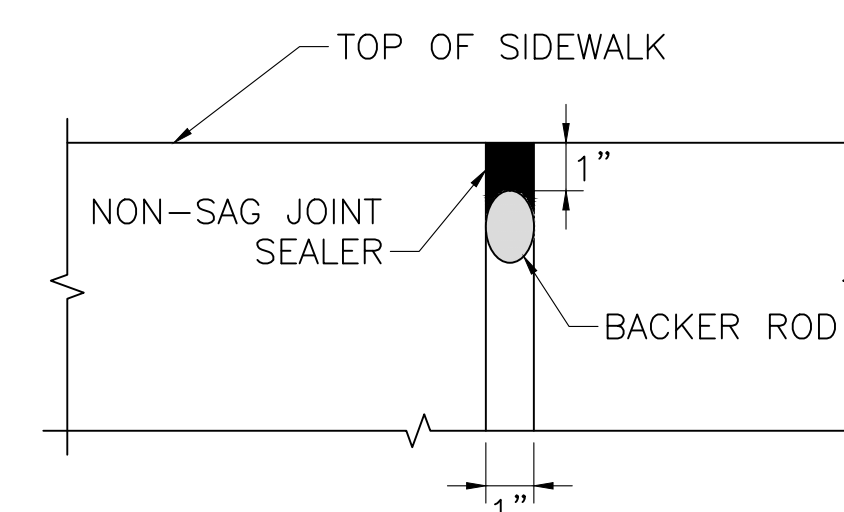
**FACE OF SIDEWALK CURB DETAILS**

SCALE: 3" = 1'-0"



**SECTION 28**

SCALE: 3" = 1'-0"



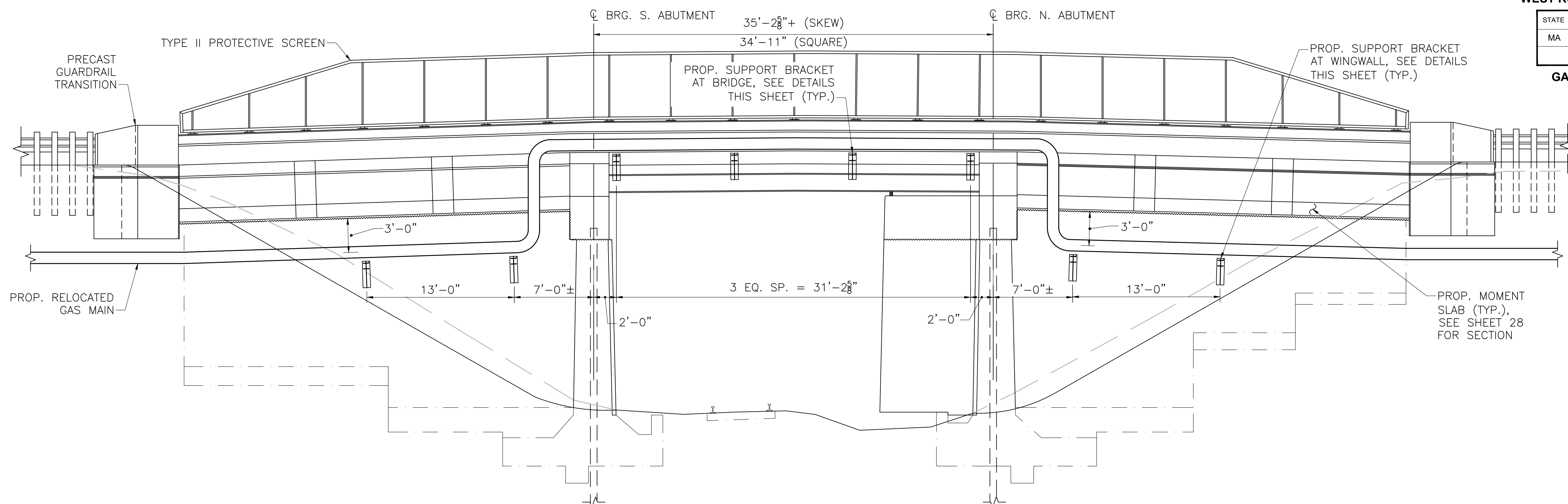
**SECTION 29**

SCALE: 3" = 1'-0"

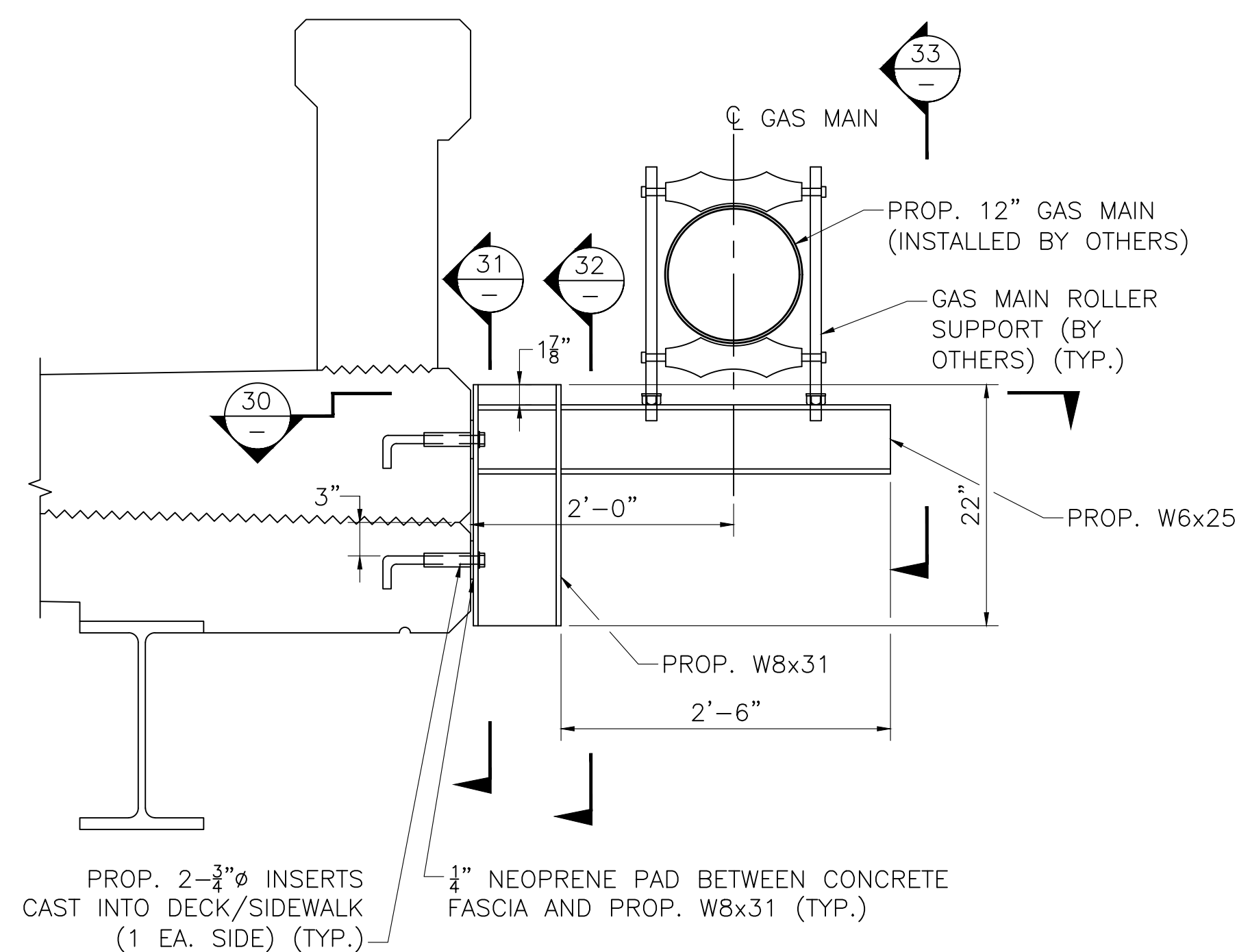
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	76	90
PROJECT FILE NO.		606902	

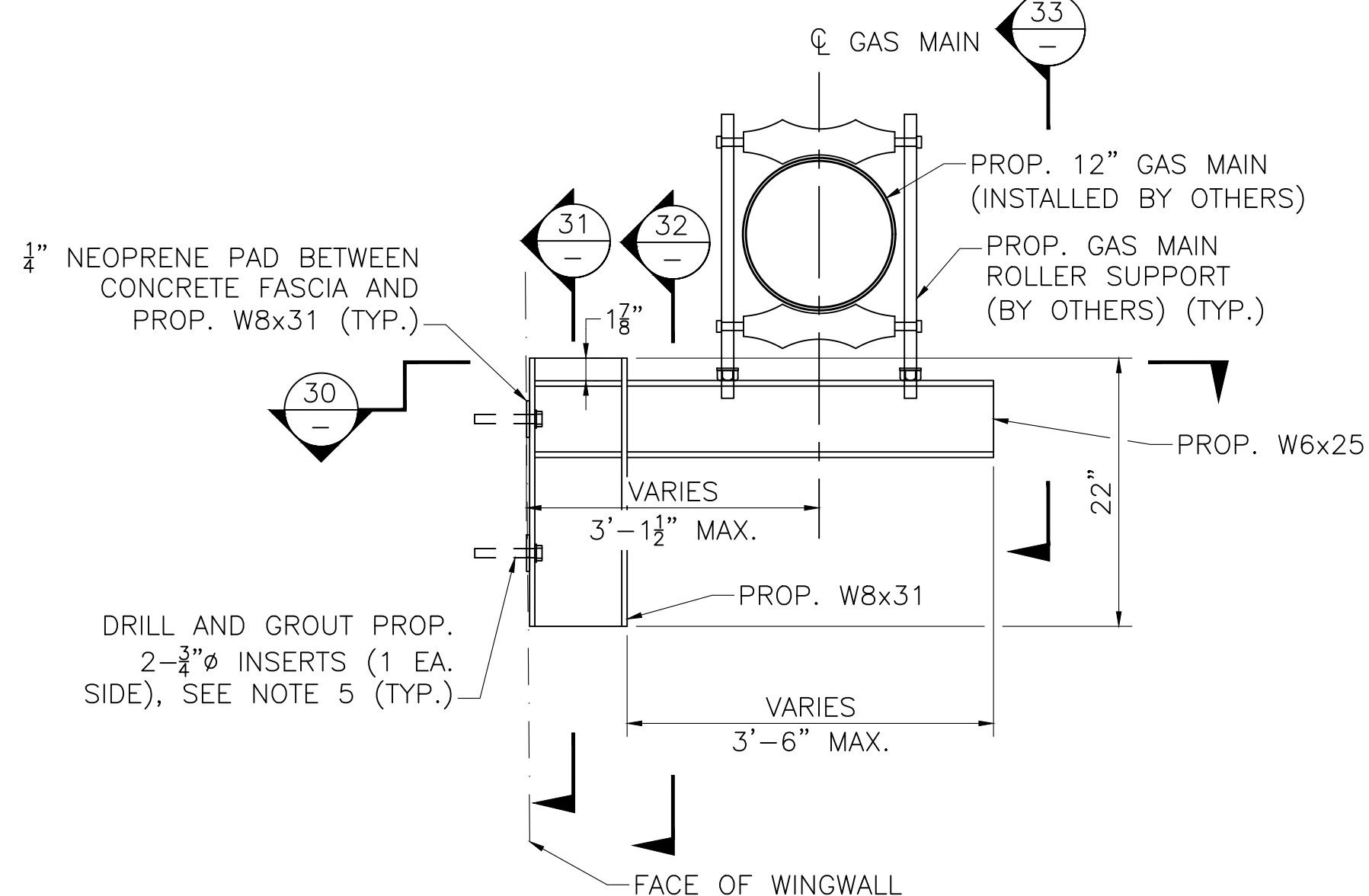
**GAS MAIN SUPPORT DETAILS**



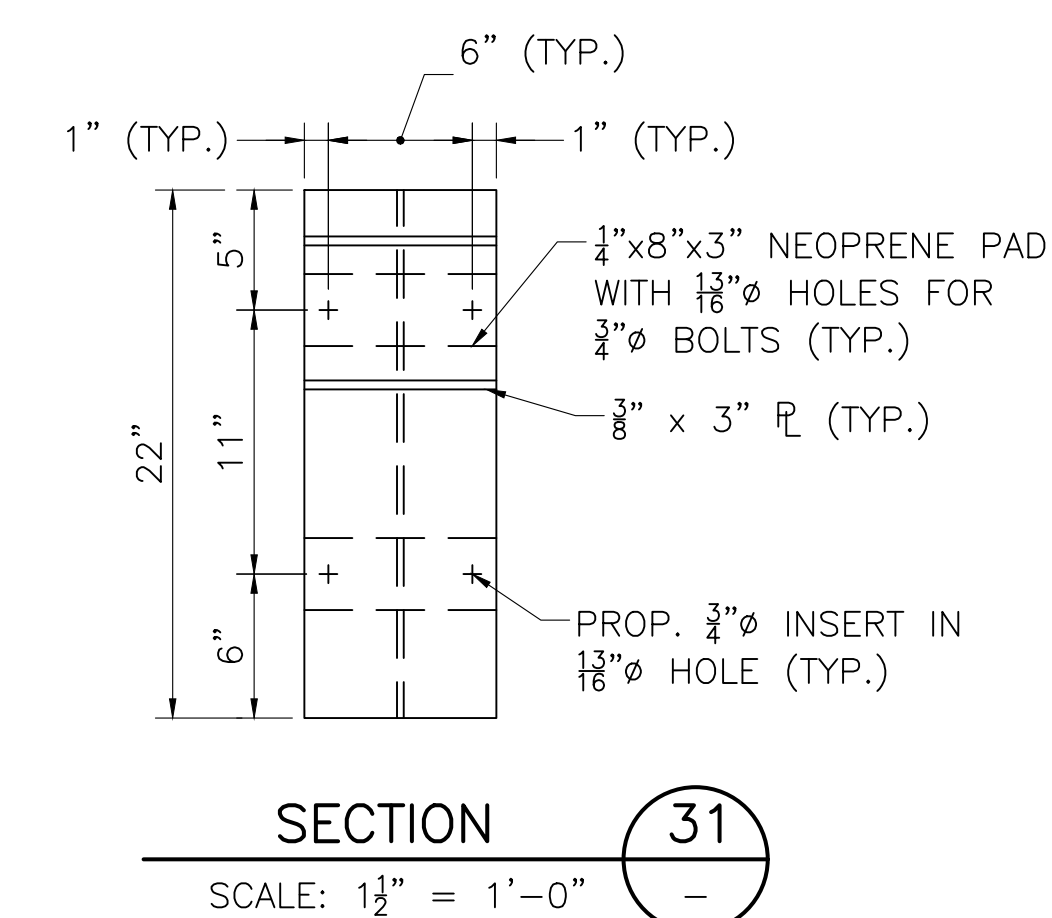
**EAST ELEVATION GAS MAIN SUPPORT LOCATIONS**  
SCALE: 3/16" = 1'-0"



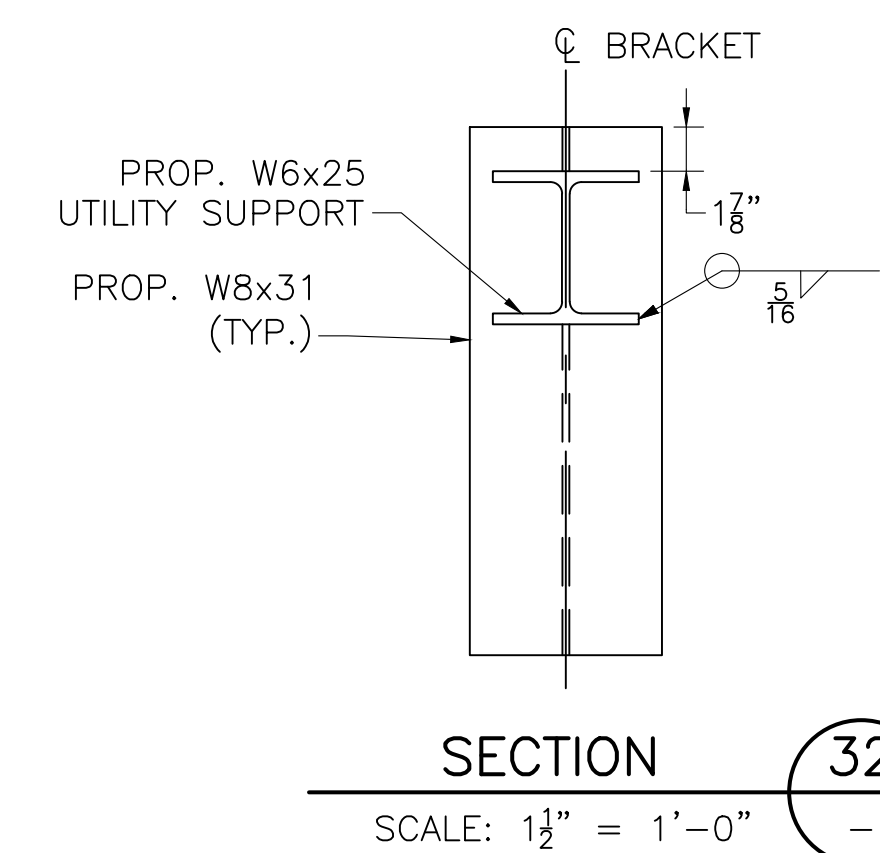
**EAST FASCIA GAS MAIN BRACKET AT BRIDGE**  
SCALE: 1" = 1'-0"



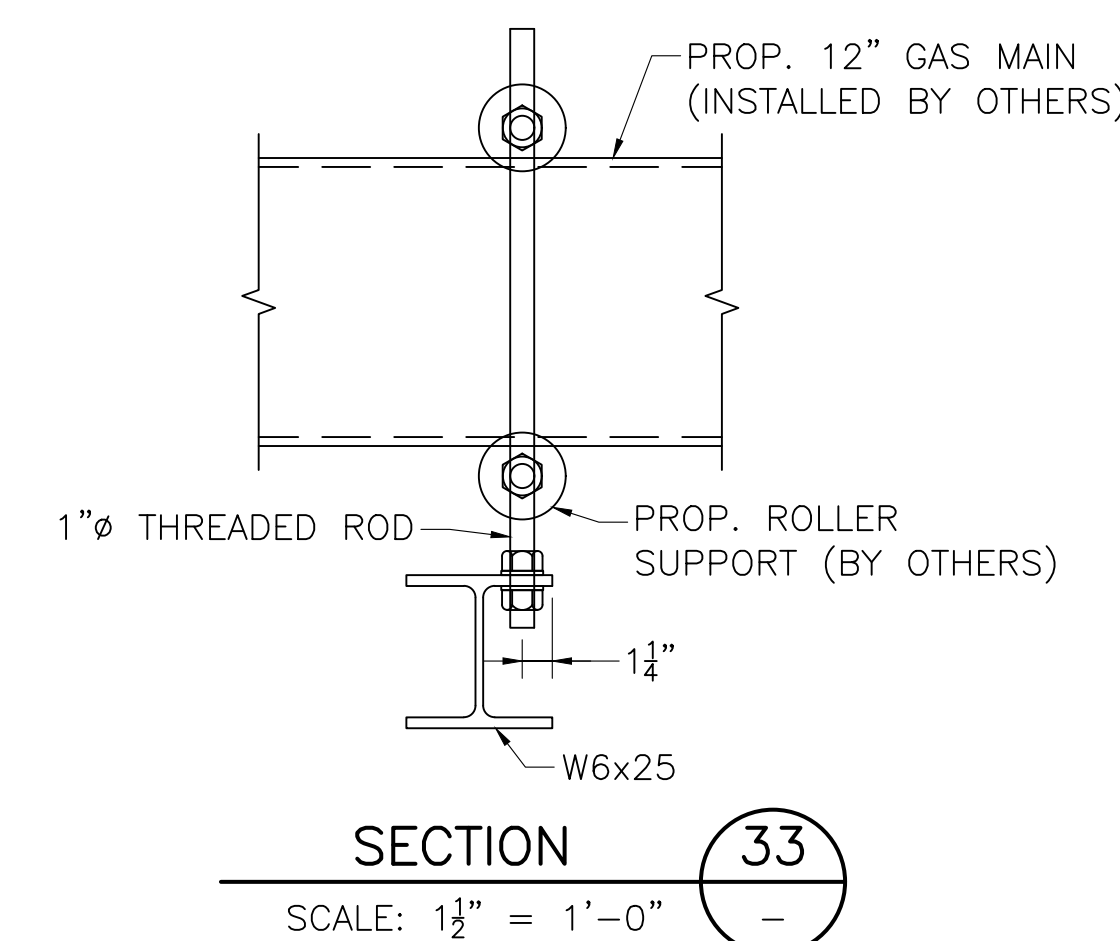
**EAST FASCIA GAS MAIN BRACKET AT WINGWALL**  
SCALE: 1" = 1'-0"



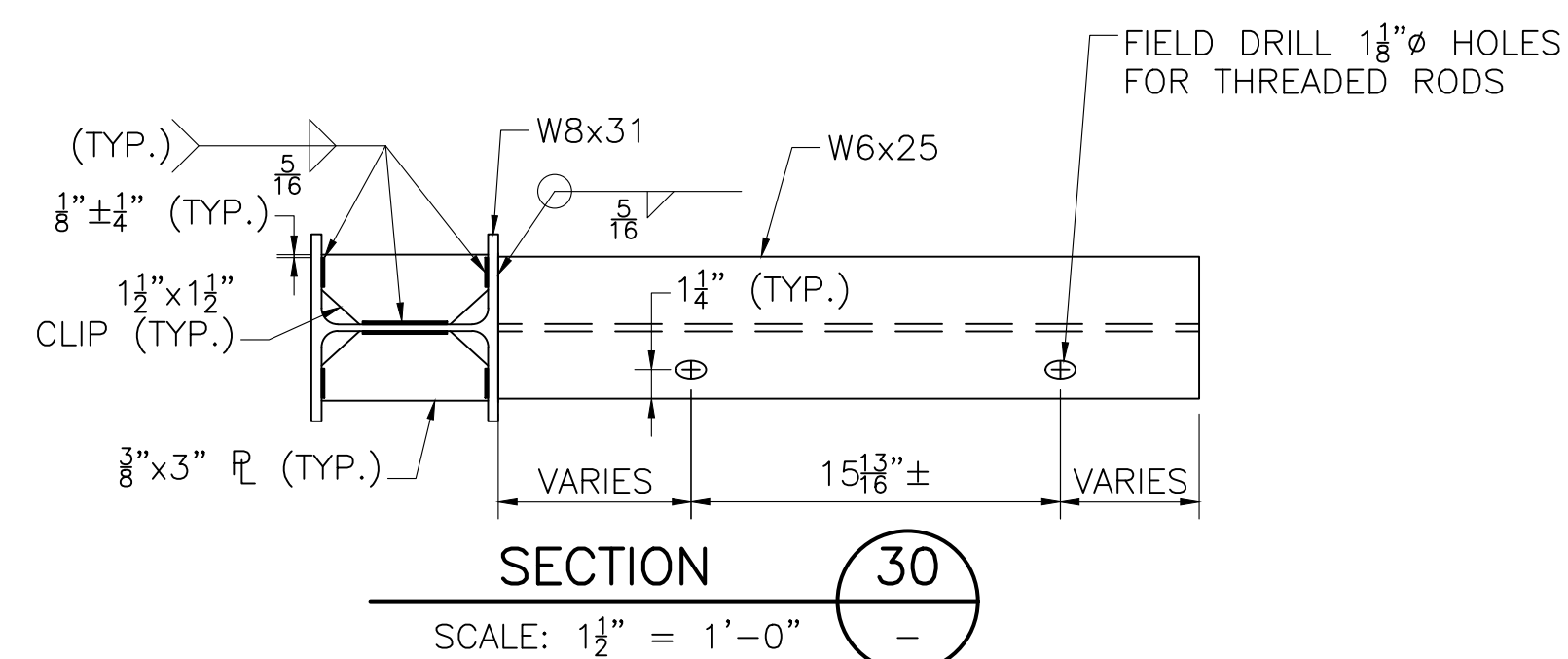
**SECTION 31**  
SCALE: 1 1/2" = 1'-0"



**SECTION 32**  
SCALE: 1 1/2" = 1'-0"



**SECTION 33**  
SCALE: 1 1/2" = 1'-0"



**SECTION 30**  
SCALE: 1 1/2" = 1'-0"

**GAS MAIN SUPPORT NOTES:**

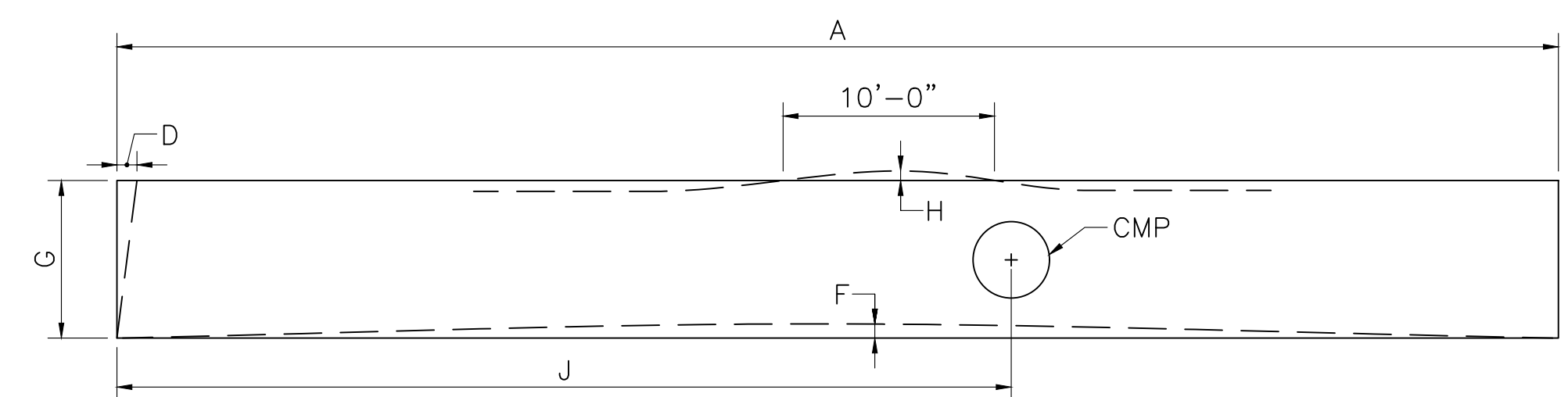
- ALL STRUCTURAL STEEL USED IN UTILITY SUPPORT DETAILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M270 (ASTM A709) GRADE 50 AND SHALL REQUIRE CHARPY V NOTCH TESTING.
- ALL UTILITY SUPPORTS SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STANDARD COLOR 595B, COLOR NO. 10045).
- EACH PROPOSED UTILITY SUPPORT INSERT SHALL BE DESIGNED TO SUPPORT A MINIMUM LOAD OF 4.5 KIPS IN TENSION AND 2 KIPS IN SHEAR.
- CONTRACTOR TO SET GAS PIPE. NATIONAL GRID'S CONTRACTOR TO SET ROLLERS AND ANY COMPONENT THAT INTERFACES WITH GAS PIPE. NATIONAL GRID'S CONTRACTOR TO WELD PIPE.
- DRILL AND GROUT 3/4" DIA. INSERTS AT WINGWALLS WITH A MINIMUM CONCRETE EMBEDMENT OF 8". HOLE SHALL EQUAL TO INSERT DIAMETER PLUS 1" OR AS RECOMMENDED BY THE GROUT MANUFACTURER.

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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
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**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

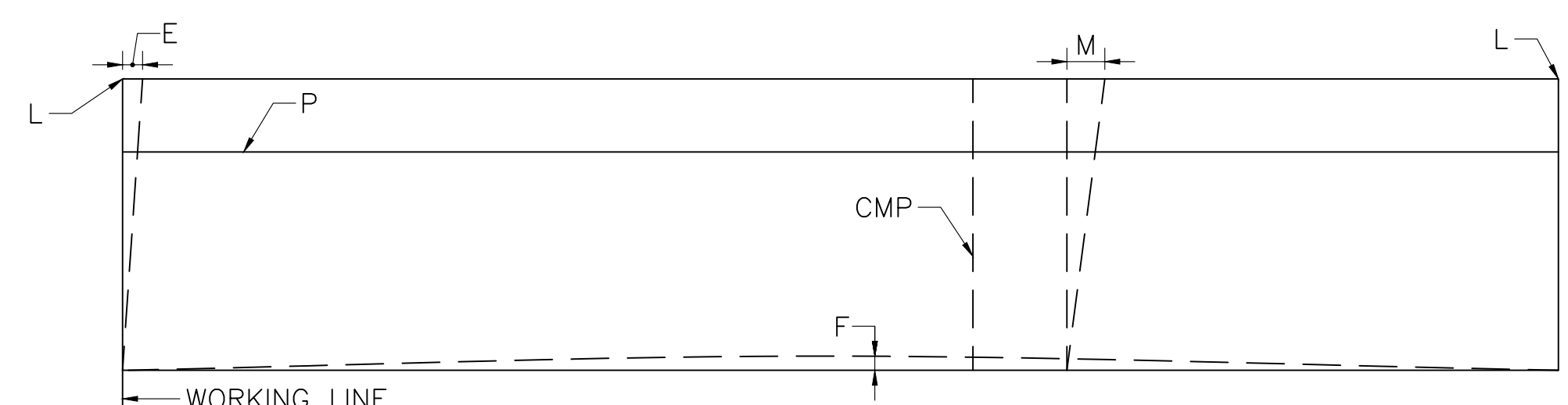
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	77	90
PROJECT FILE NO.		606902	

**CONSTRUCTION TOLERANCES**



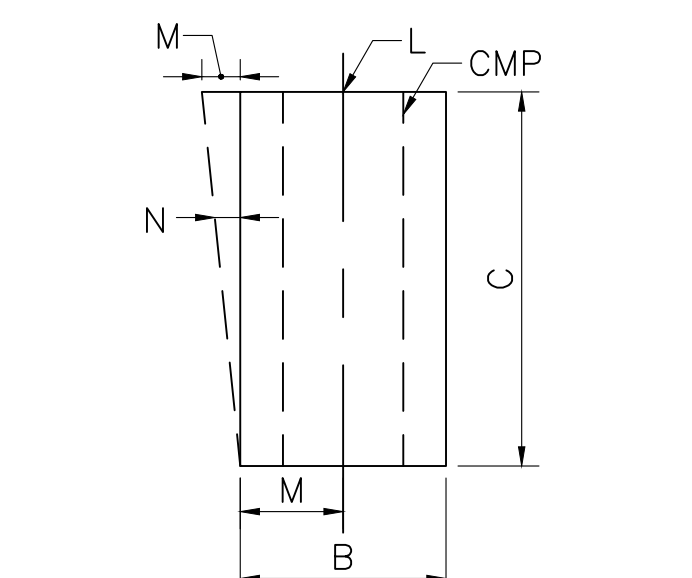
**ABUTMENT CAP TOLERANCES PLAN**

NOT TO SCALE



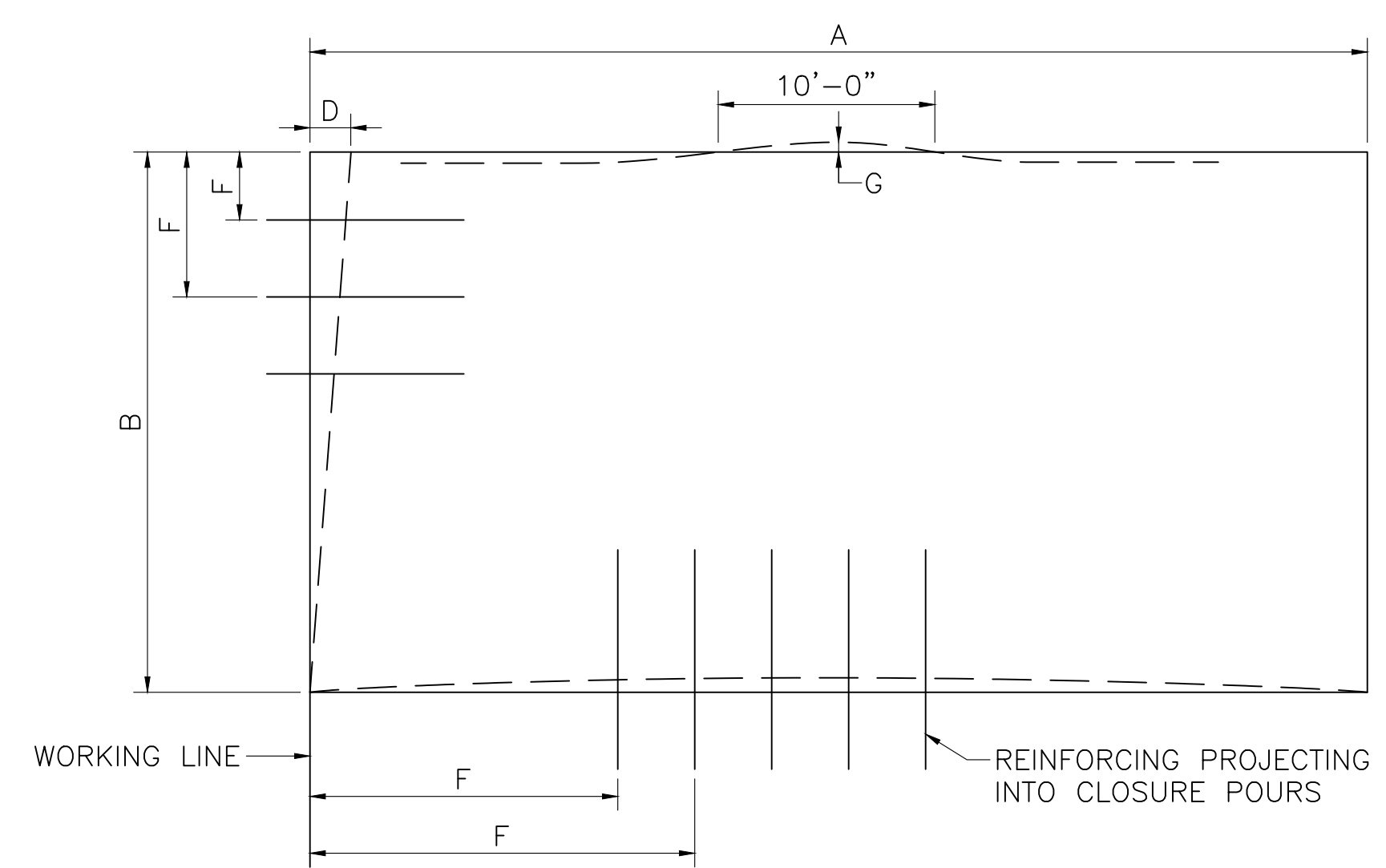
**ABUTMENT CAP TOLERANCES ELEVATION**

NOT TO SCALE



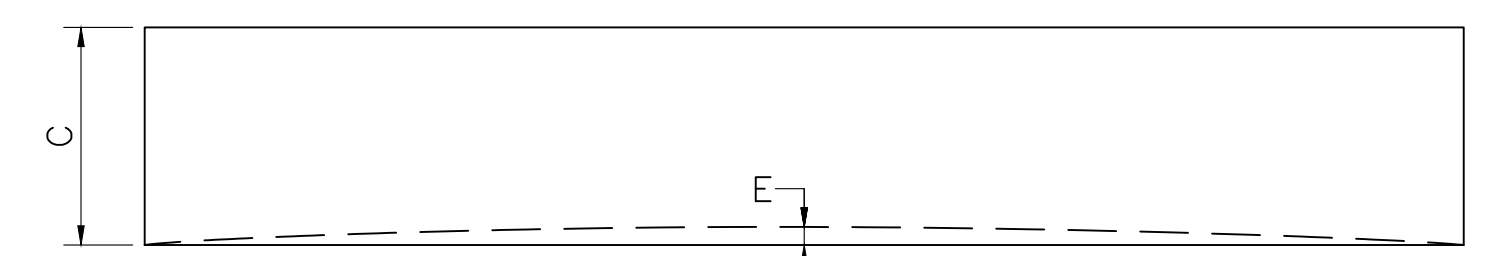
**ABUTMENT CAP SECTION**

NOT TO SCALE



**APPROACH SLAB AND PBU DECK SLAB TOLERANCES PLAN**

NOT TO SCALE



**APPROACH SLAB AND PBU DECK SLAB TOLERANCES ELEVATION**

NOT TO SCALE

**ABUTMENT CAP SEGMENT ELEVATION ERECTION TOLERANCES**

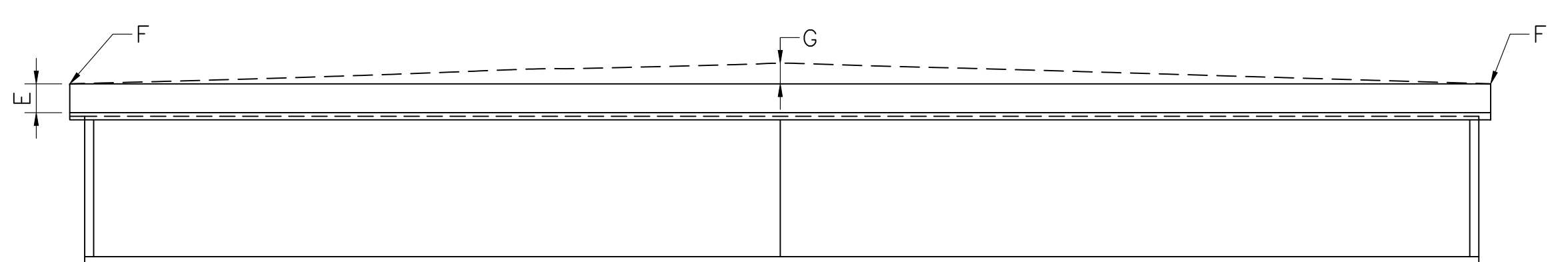
L	TOP ELEVATION FROM NOMINAL TOP ELEVATION	± $\frac{1}{4}$ "
M	MAXIMUM PLUMB VARIATION OVER HEIGHT OF PANEL	± $\frac{1}{2}$ "
N	PLUMB IN ANY 10 FEET OF PANEL HEIGHT	± $\frac{1}{4}$ "
P	BEAM SEAT ELEVATION	± $\frac{1}{4}$ "

**ABUTMENT CAP SEGMENT FABRICATION TOLERANCES**

A	LENGTH	± $\frac{1}{4}$ "
B	WIDTH (OVERALL)	± $\frac{1}{4}$ "
C	DEPTH (OVERALL)	± $\frac{1}{4}$ "
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
F	SWEEP OVER MEMBER LENGTH	± $\frac{3}{8}$ "
G	LOCATION OF GROUDED SPLICE COUPLER MEASURED FROM A WORKING LINE	N/A
H	LOCATION SMOOTHNESS OF ANY SURFACE	± $\frac{1}{4}$ " IN 10 FEET
J	LOCATION OF BLOCKOUT FOR PILES OR VOIDS	± $\frac{1}{2}$ "
K	MAXIMUM PLUMB VARIATION OVER HEIGHT OF CMP VOID	± $\frac{1}{2}$ "

**CONCRETE SLAB FABRICATION TOLERANCES**

A	LENGTH (OVERALL)	± $\frac{1}{4}$ "
B	WIDTH (OVERALL)	± $\frac{1}{4}$ "
C	DEPTH (OVERALL)	± $\frac{1}{4}$ "
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
E	SWEEP OVER MEMBER LENGTH	± $\frac{3}{8}$ "
F	LOCATION OF PROJECTING REINFORCING MEASURED FROM A WORKING LINE	± $\frac{1}{2}$ "
G	LOCATION SMOOTHNESS OF ANY SURFACE	± $\frac{1}{4}$ " IN 10 FEET

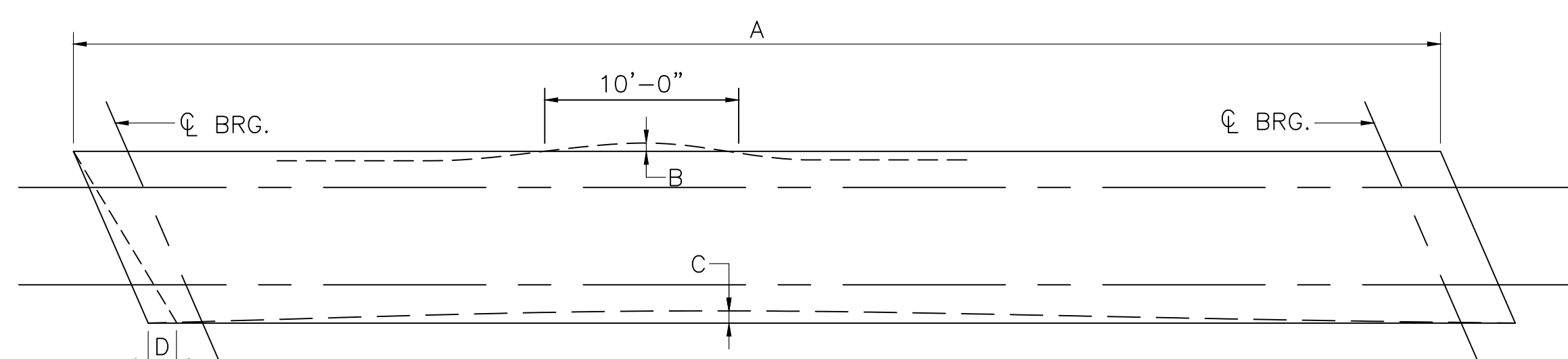


**PBU TOLERANCES - ELEVATION**

NOT TO SCALE

**PBU TOLERANCES**

A	LENGTH (OVERALL)	± $\frac{1}{4}$ "
B	LOCATION SMOOTHNESS OF ANY SURFACE	± $\frac{1}{4}$ " IN 10 FEET
C	SWEEP OVER MEMBER LENGTH	± $\frac{3}{8}$ "
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
E	DEPTH (OVERALL)	± $\frac{1}{4}$ "
F	ERECTION ELEVATION TOLERANCE	± $\frac{1}{8}$ "
G	CAMBER VARIATION FROM DESIGN CENTER	± $\frac{1}{4}$ "



**PBU TOLERANCES - PLAN**

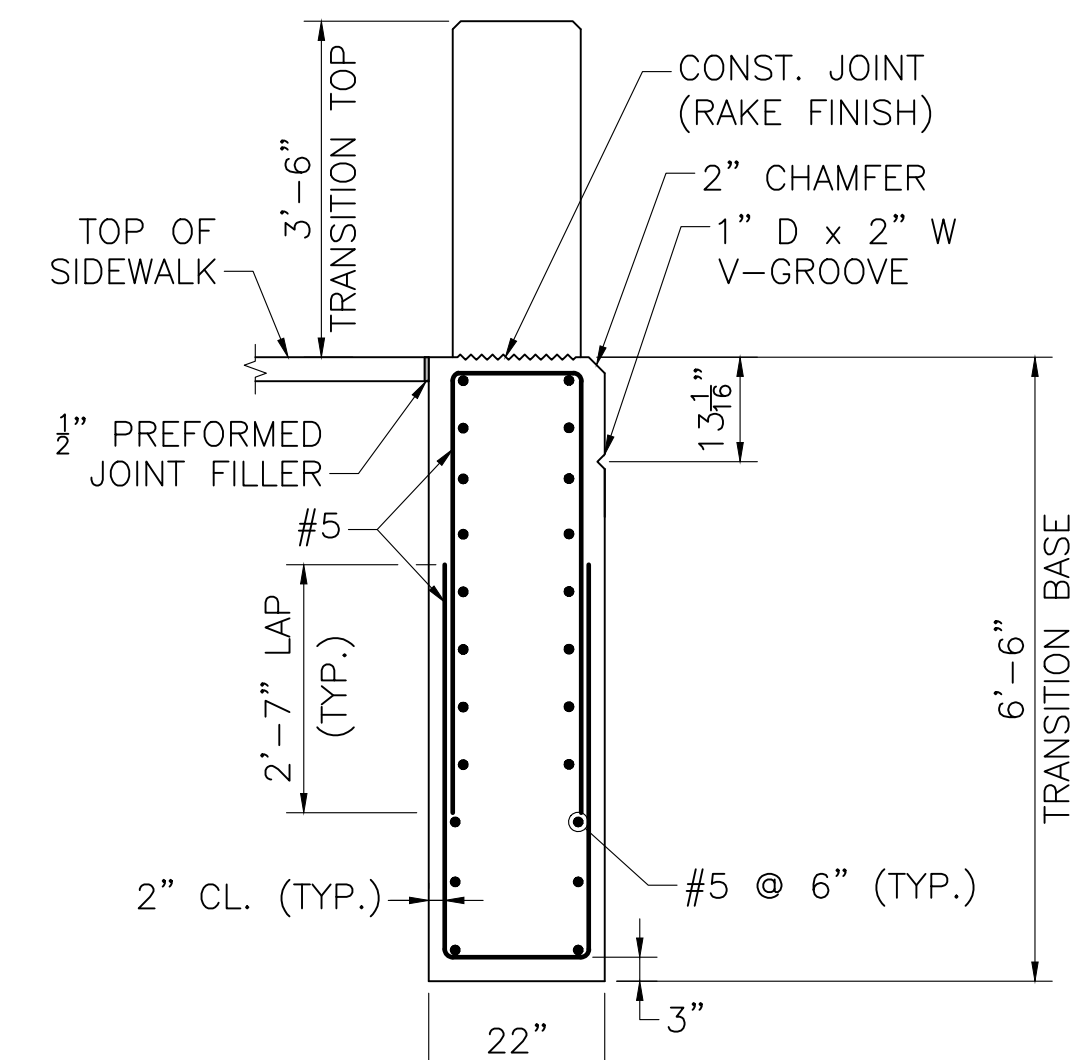
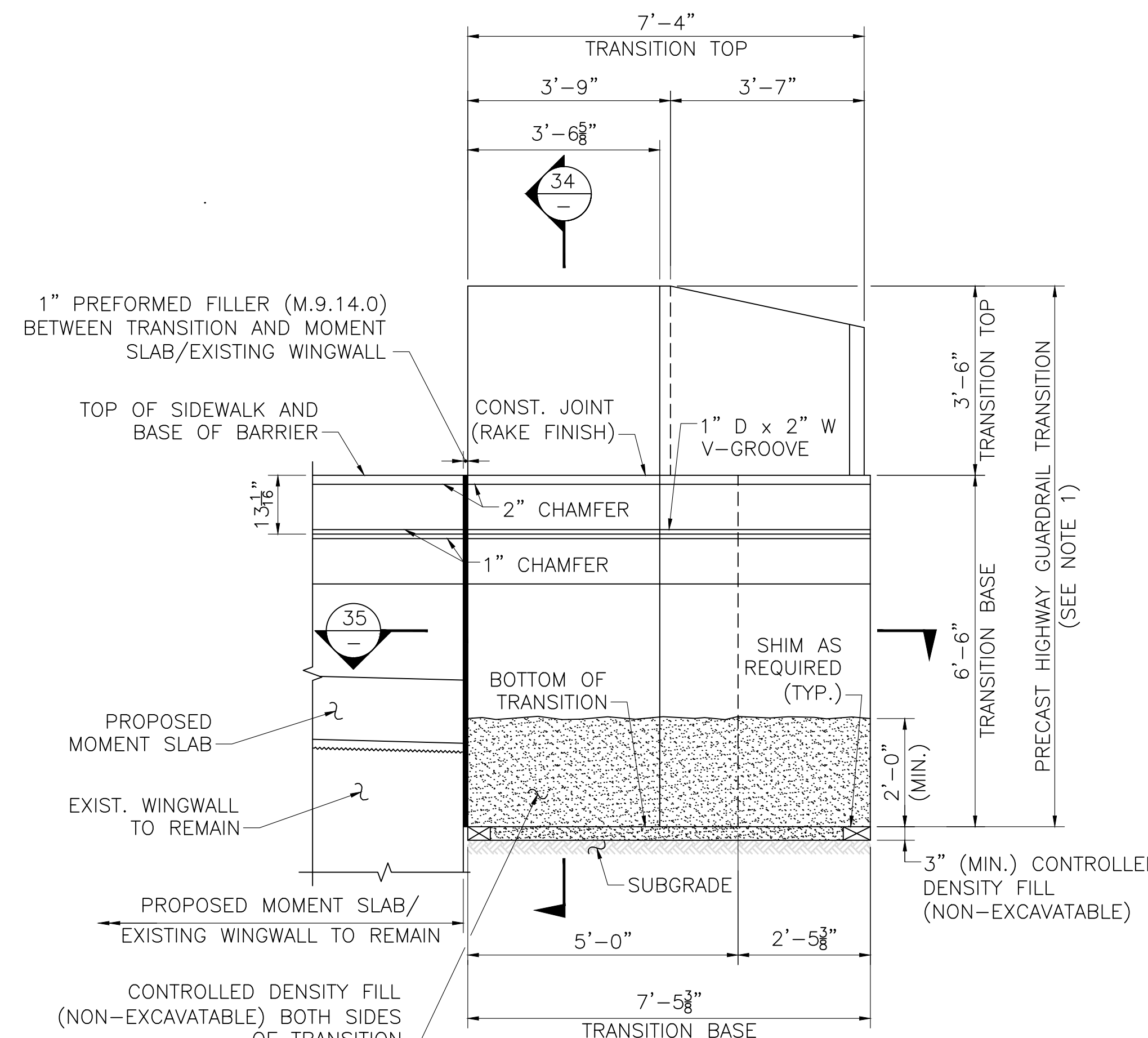
NOT TO SCALE

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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
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**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

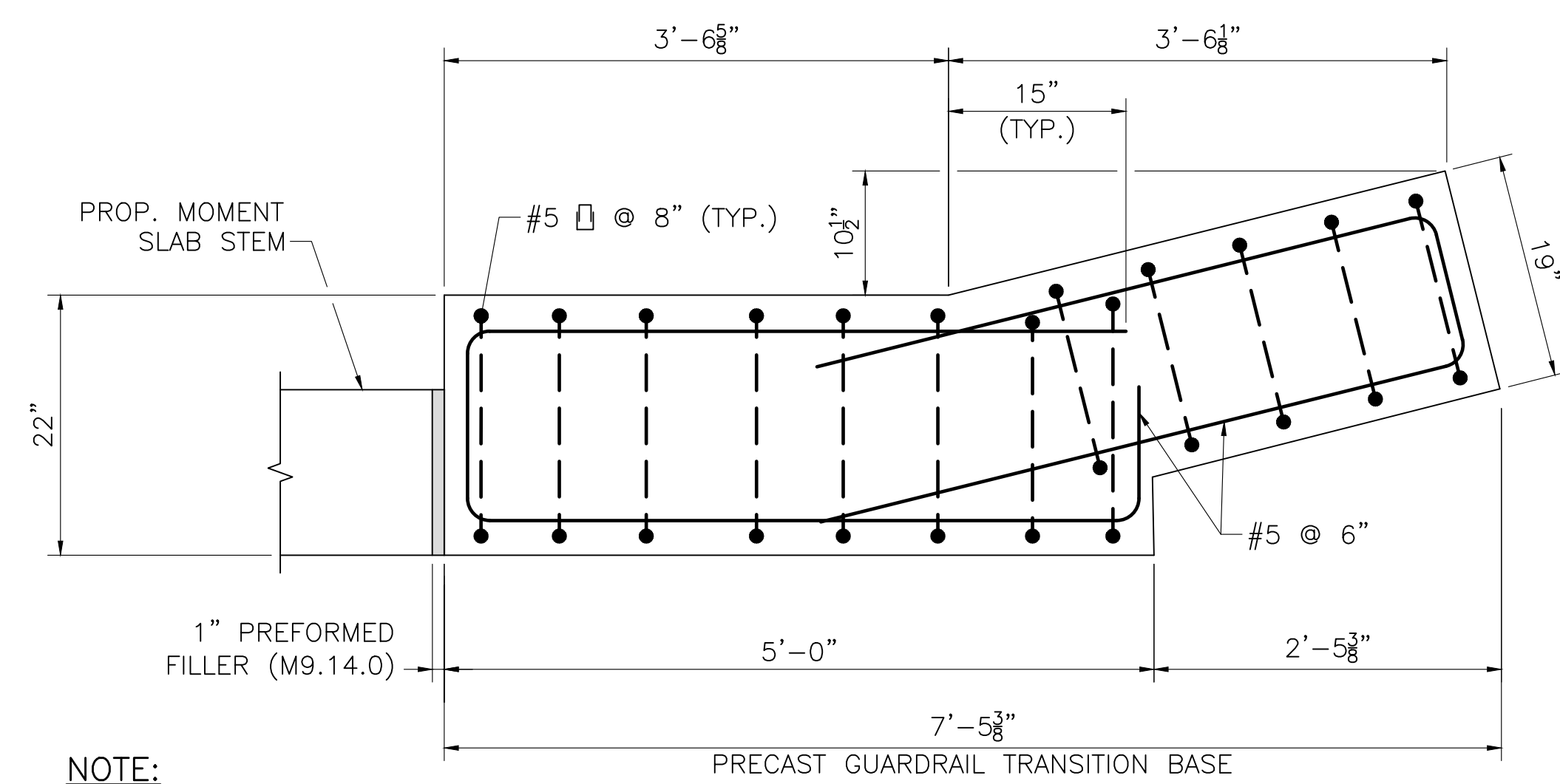
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	78	90
PROJECT FILE NO.		606902	

**HIGHWAY GUARDRAIL TRANSITION I**



**NOTE:**  
REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

**SECTION 34**  
SCALE: 1/2" = 1'-0"



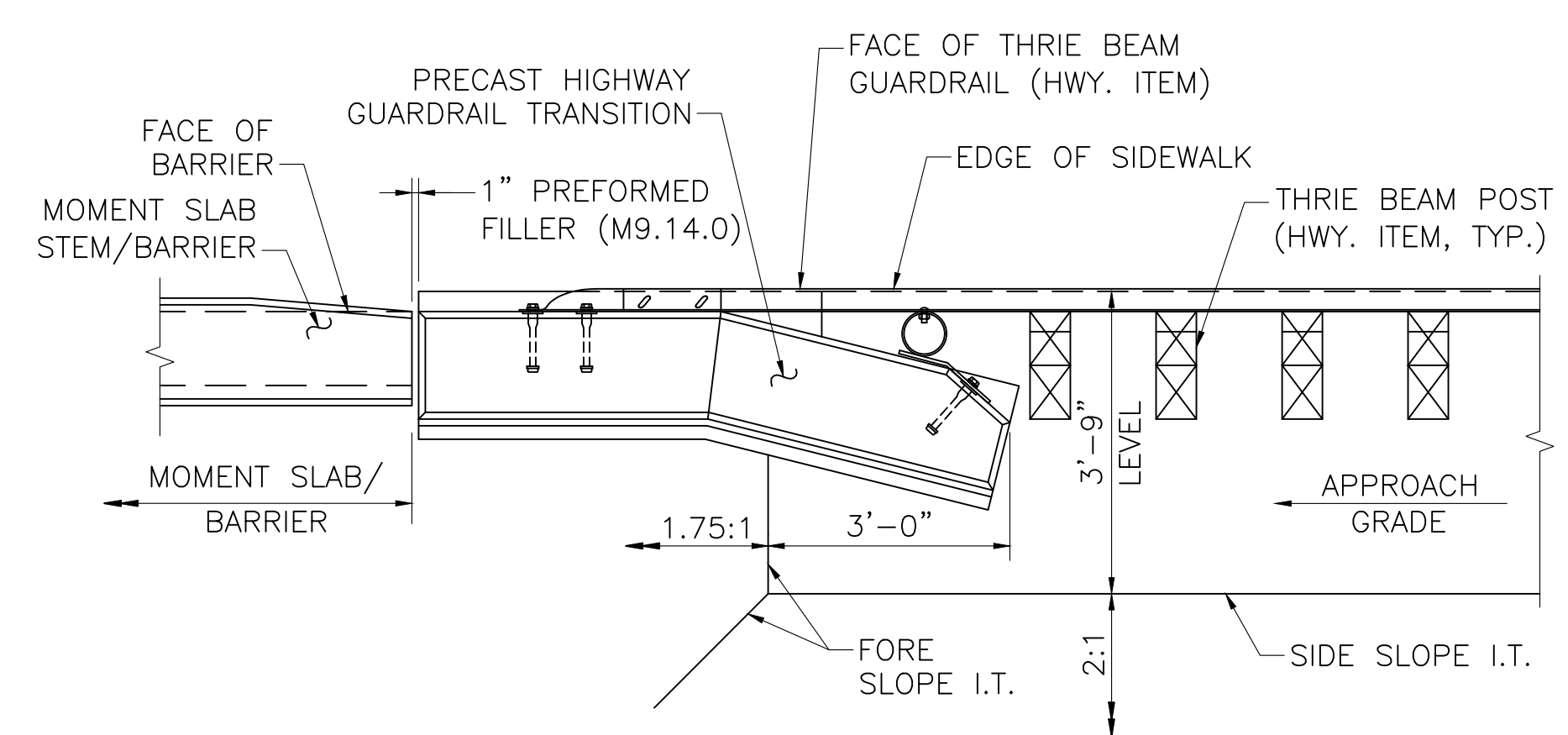
**NOTE:**  
PROP. MOMENT SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 35**  
SCALE: 1" = 1'-0"

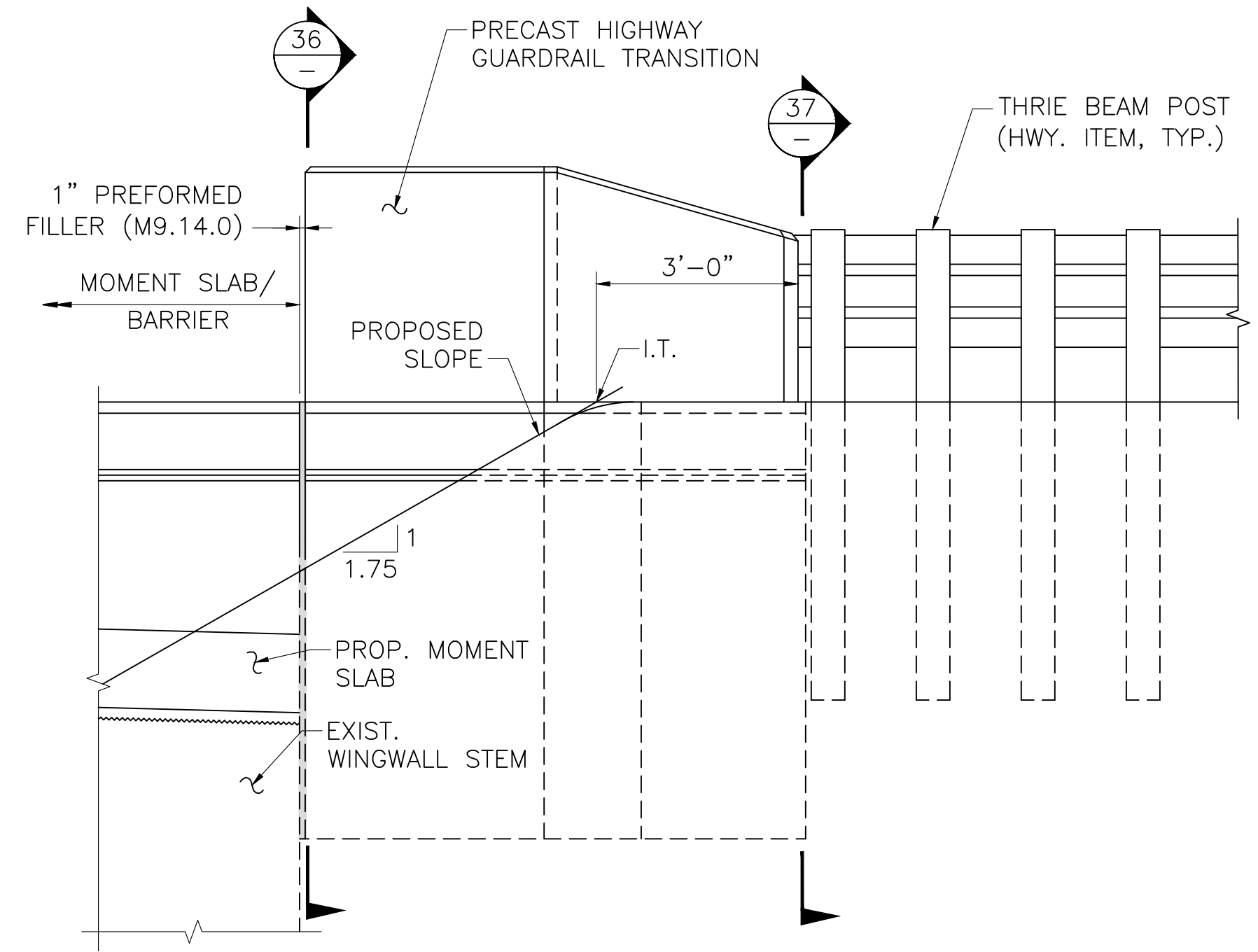
**NOTES:**

1. PRECAST GUARDRAIL TRANSITION SHALL BE 5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE.
2. GRAVEL BORROW SHALL BE PLACE 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.
3. 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.

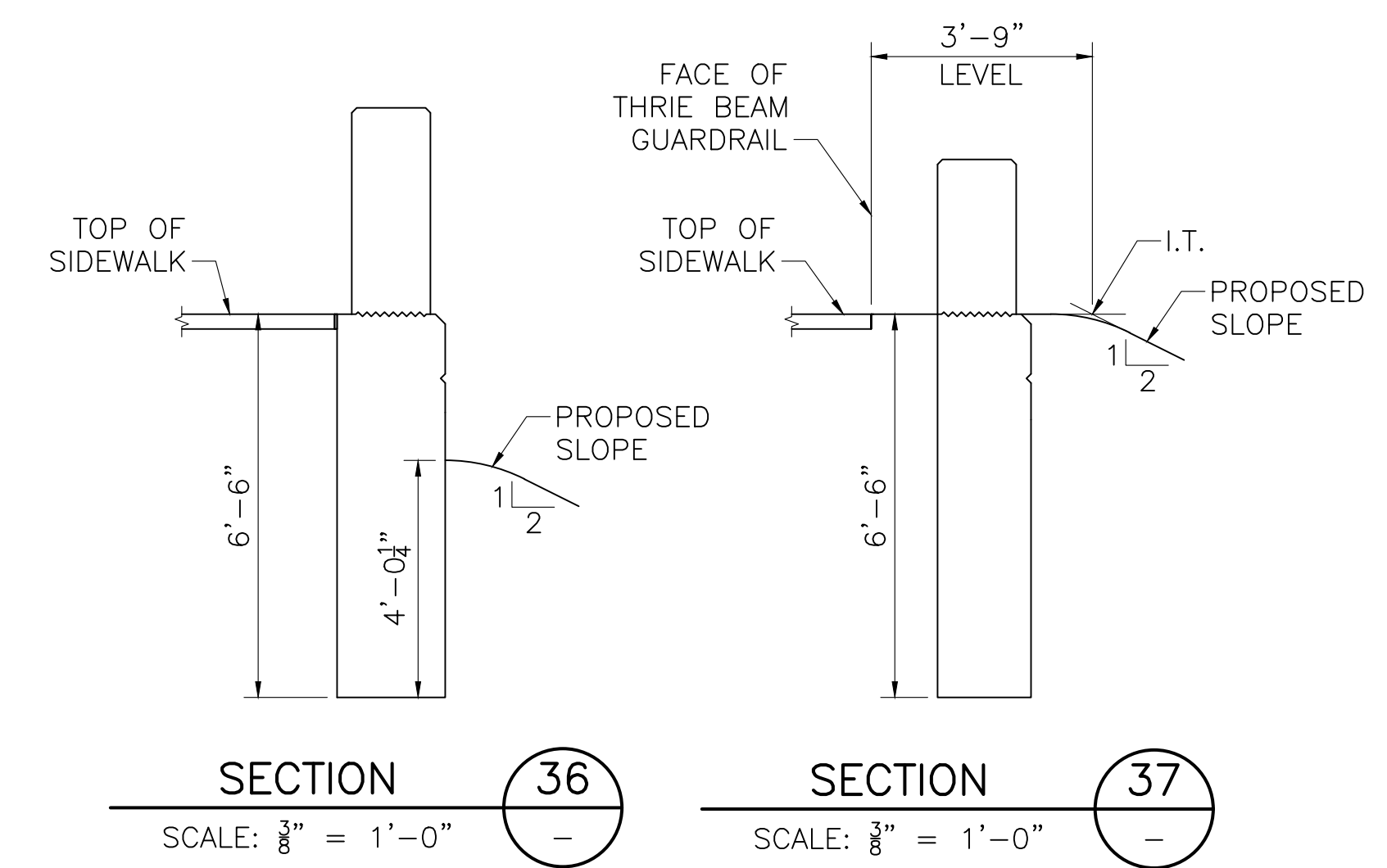
**PRECAST GUARDRAIL TRANSITION ELEVATION AT WINGWALL/MOMENT SLAB**  
SCALE: 1/2" = 1'-0"



**GRADING REQUIREMENTS PLAN**  
SCALE: 1/2" = 1'-0"



**GRADING REQUIREMENTS ELEVATION**  
SCALE: 1/2" = 1'-0"



**SECTION 36**  
SCALE: 3/8" = 1'-0"

**SECTION 37**  
SCALE: 3/8" = 1'-0"

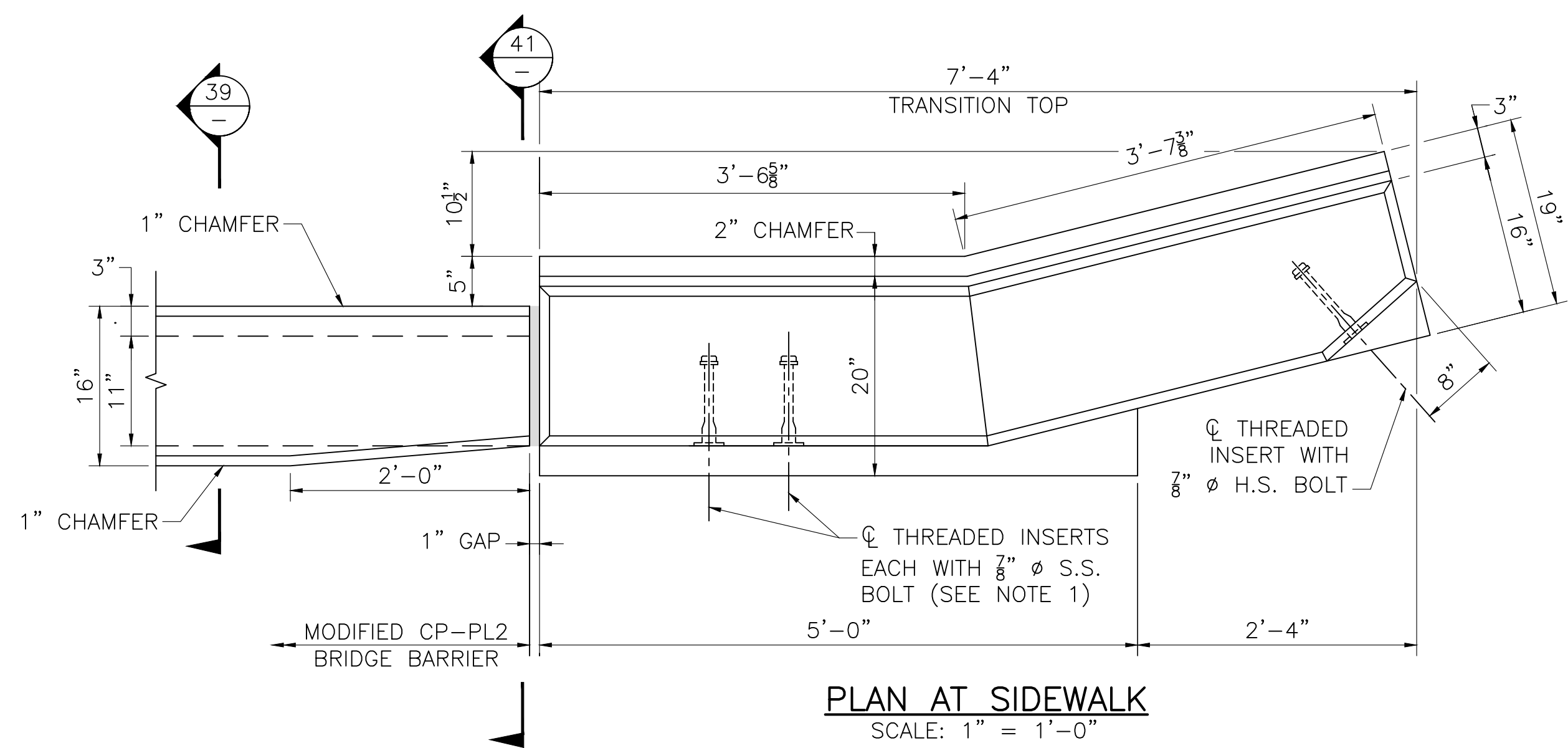
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

606902\_BR34-35(8181)\_HWY GR TRANS.DWG Plotted on 24-Jul-2024 12:04 PM 19-July-2024 Final Structural Submittal (SF)

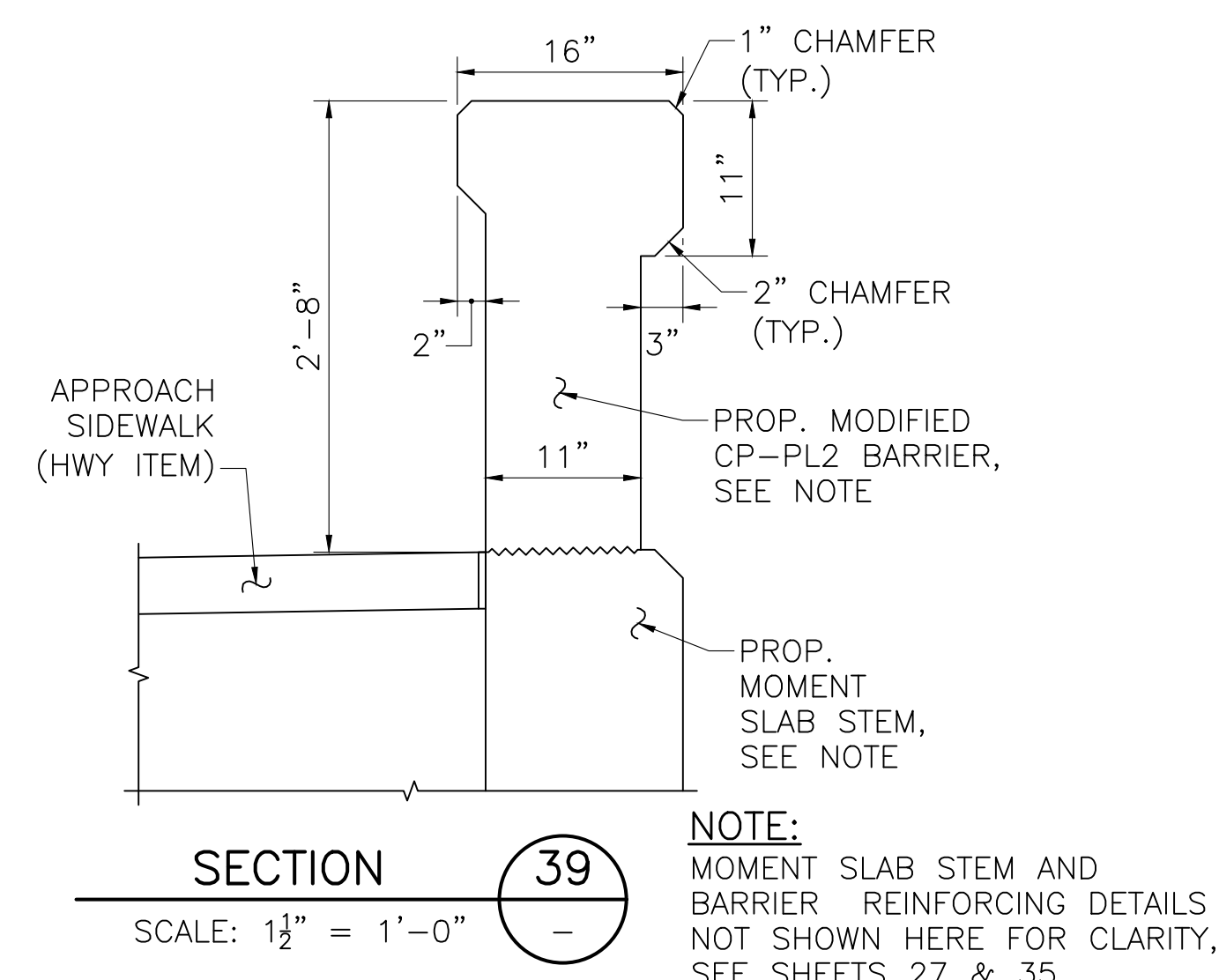
**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	79	90
PROJECT FILE NO.		606902	

**HIGHWAY GUARDRAIL TRANSITION II**

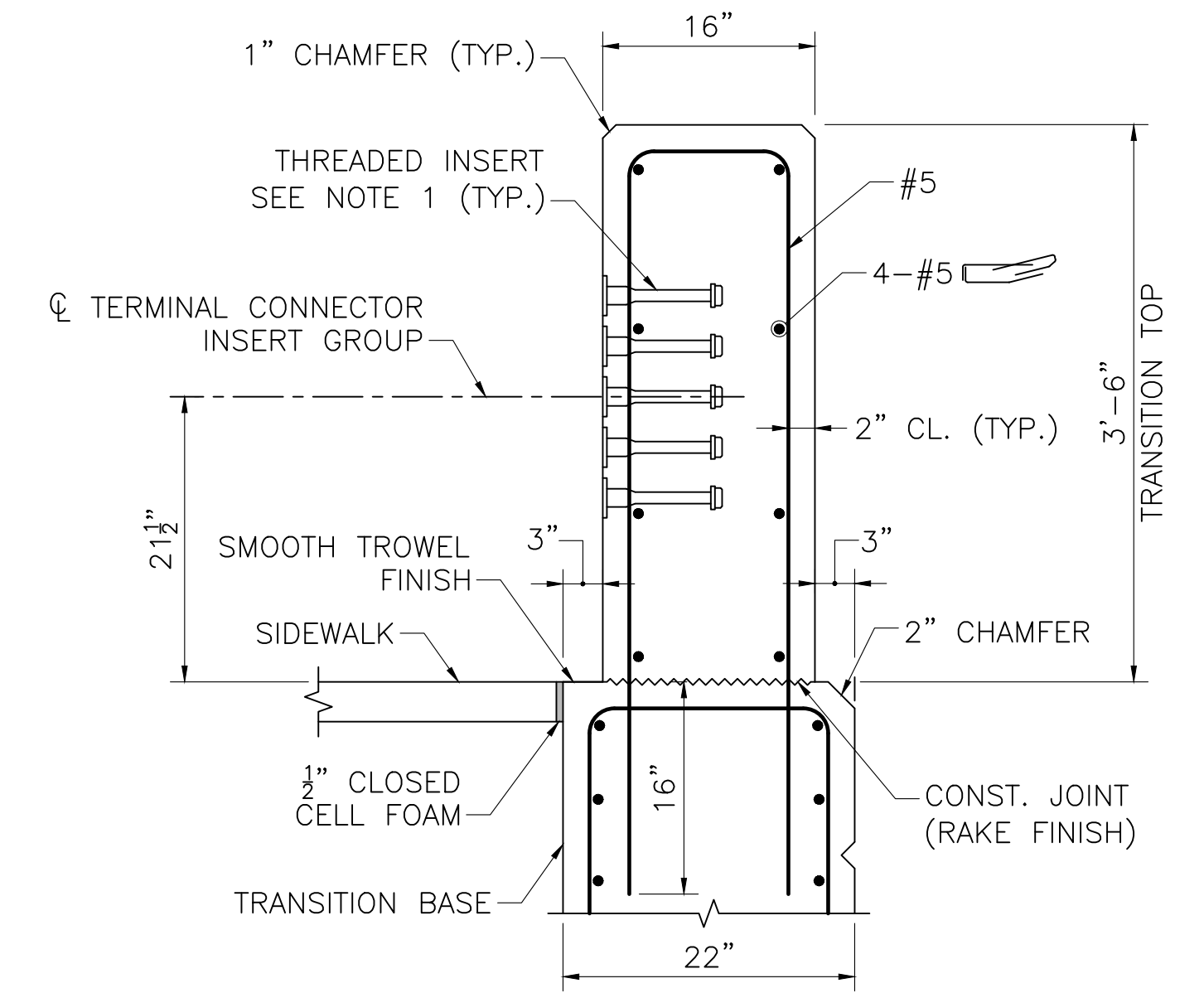


**PLAN AT SIDEWALK**  
SCALE: 1" = 1'-0"

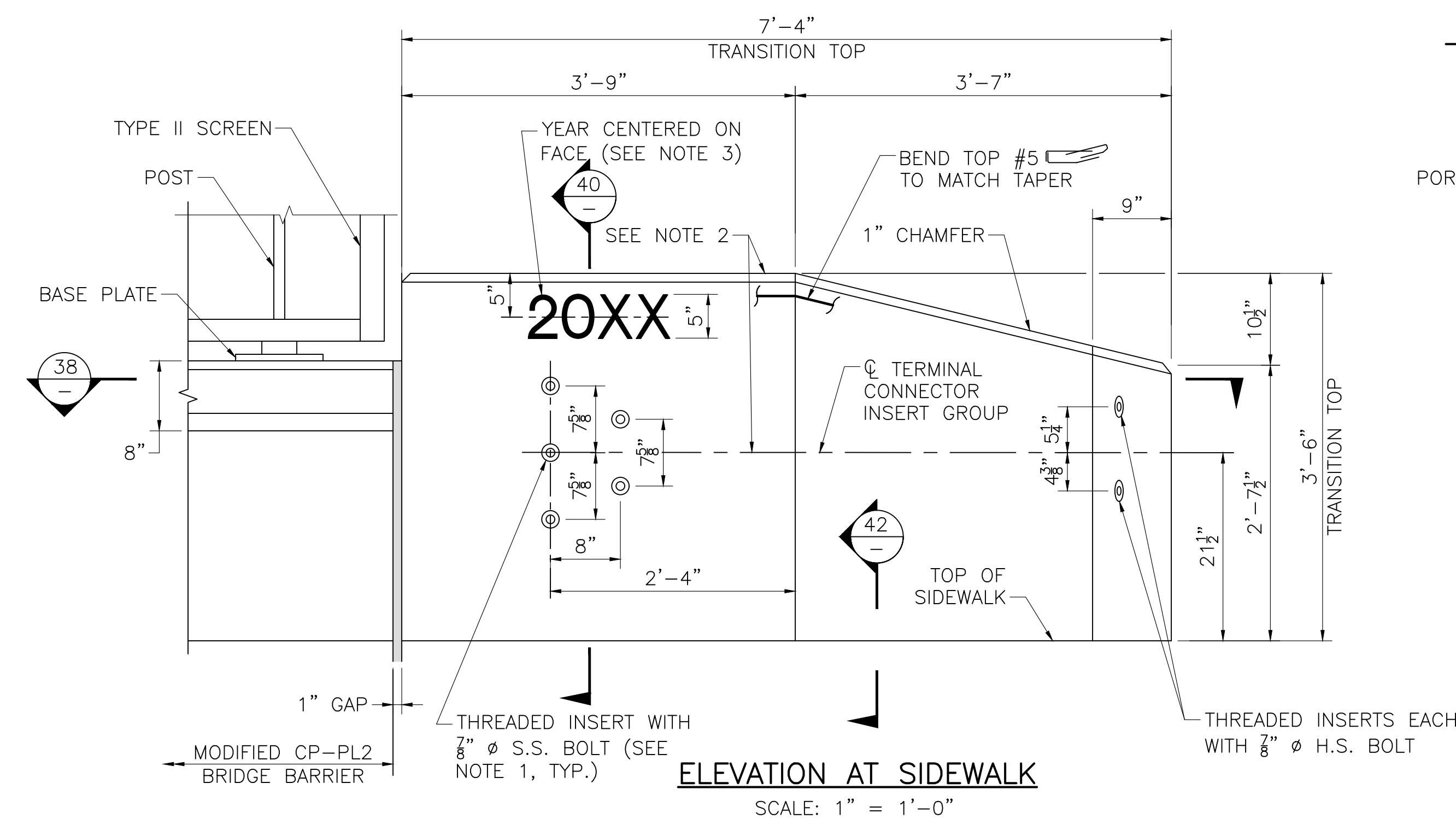


**SECTION 39**  
SCALE: 1 1/2" = 1'-0"

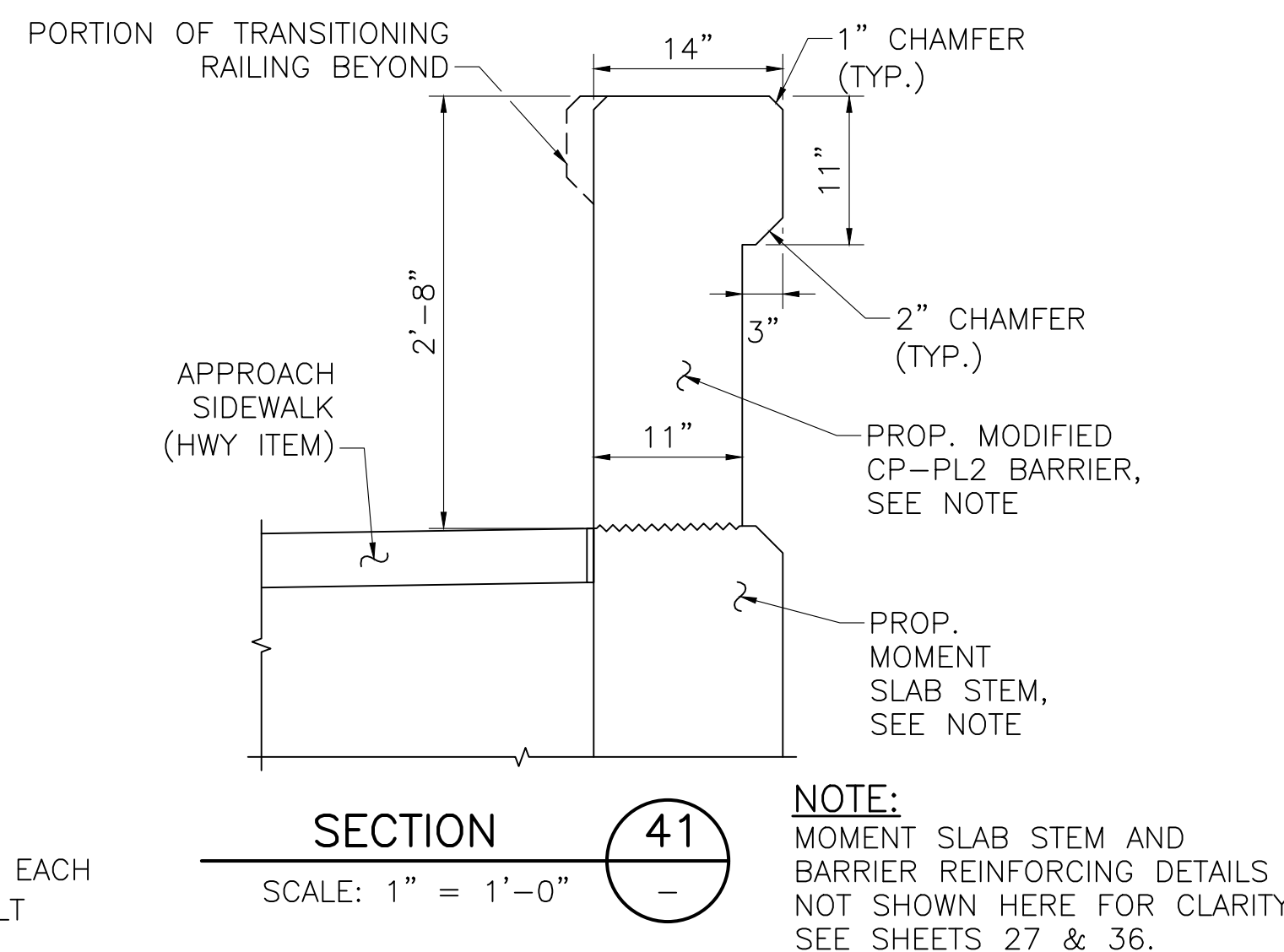
**NOTE:**  
MOMENT SLAB STEM AND BARRIER REINFORCING DETAILS NOT SHOWN HERE FOR CLARITY, SEE SHEETS 27 & 35.



**SECTION 40**  
SCALE: 1" = 1'-0"

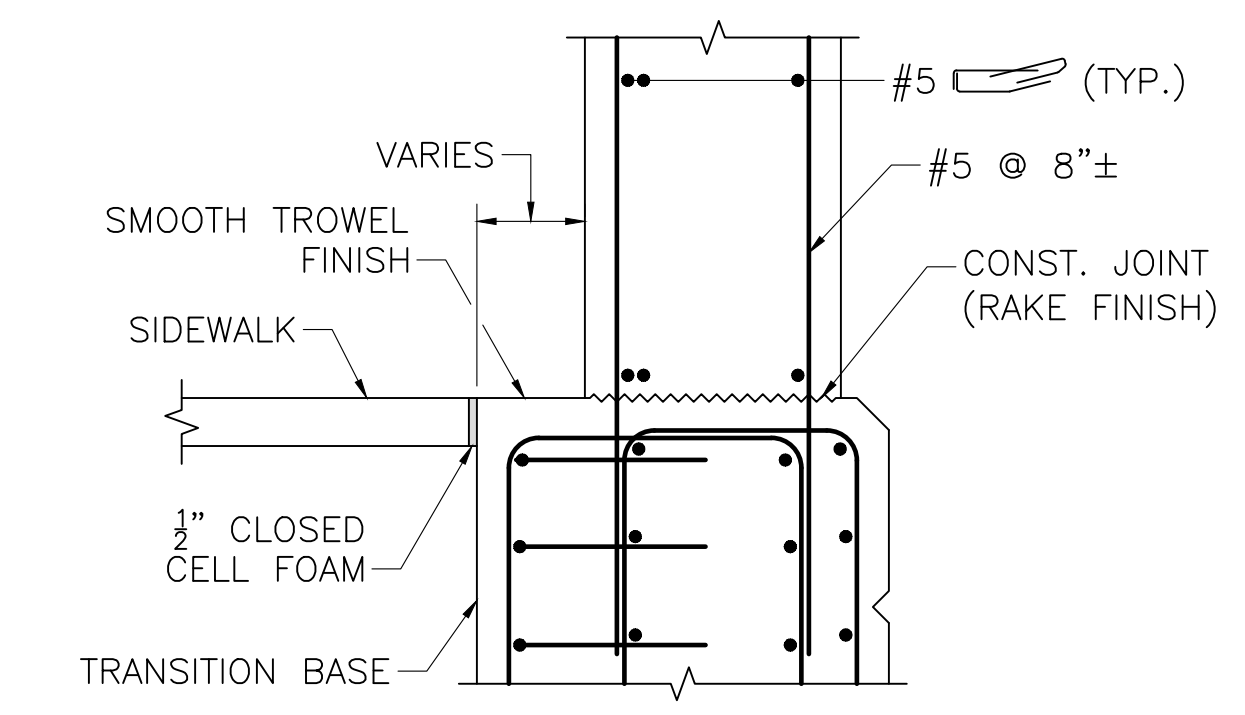


**ELEVATION AT SIDEWALK**  
SCALE: 1" = 1'-0"

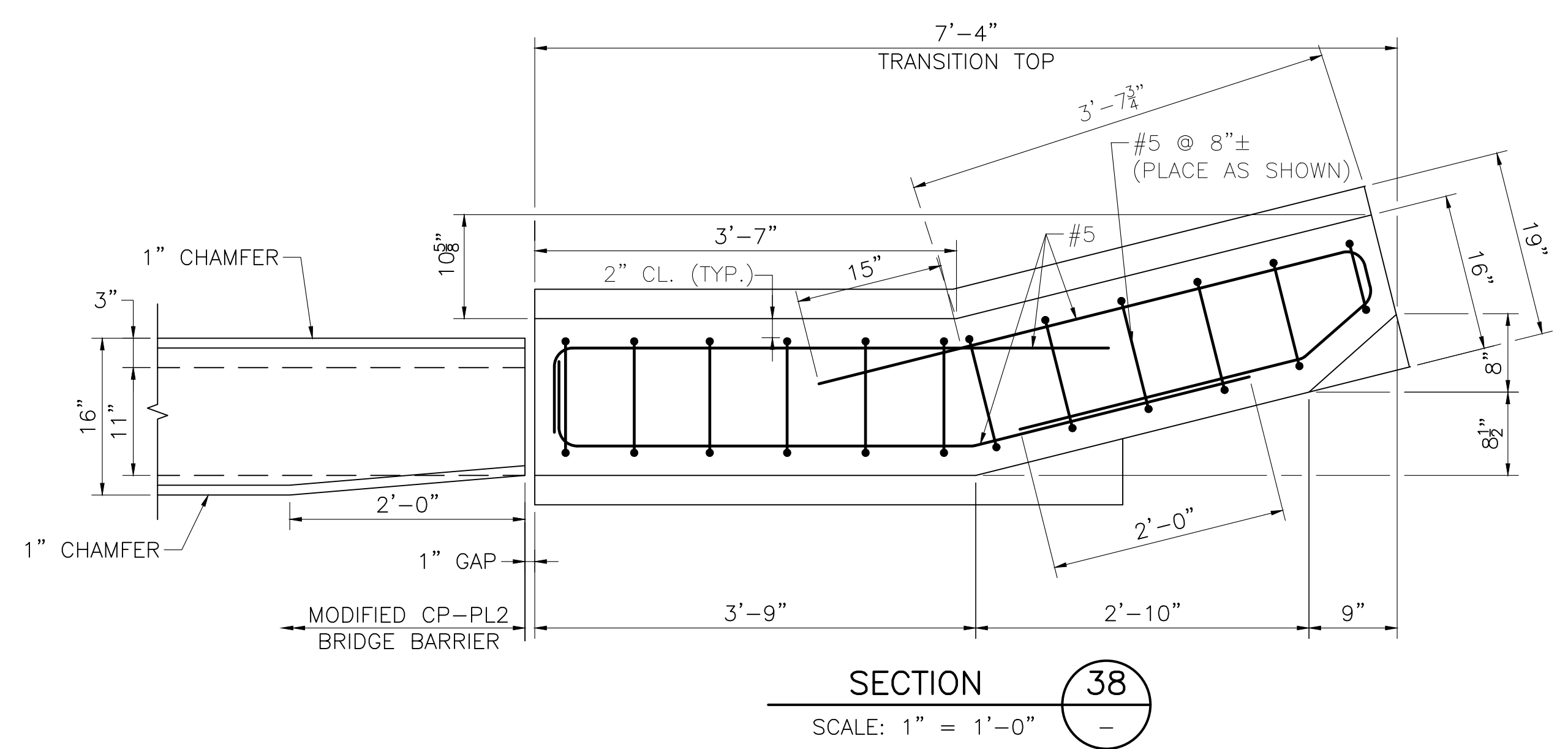


**SECTION 41**  
SCALE: 1" = 1'-0"

**NOTE:**  
MOMENT SLAB STEM AND BARRIER REINFORCING DETAILS NOT SHOWN HERE FOR CLARITY, SEE SHEETS 27 & 36.



**SECTION 42**  
SCALE: 1" = 1'-0"



**SECTION 38**  
SCALE: 1" = 1'-0"

**NOTES:**

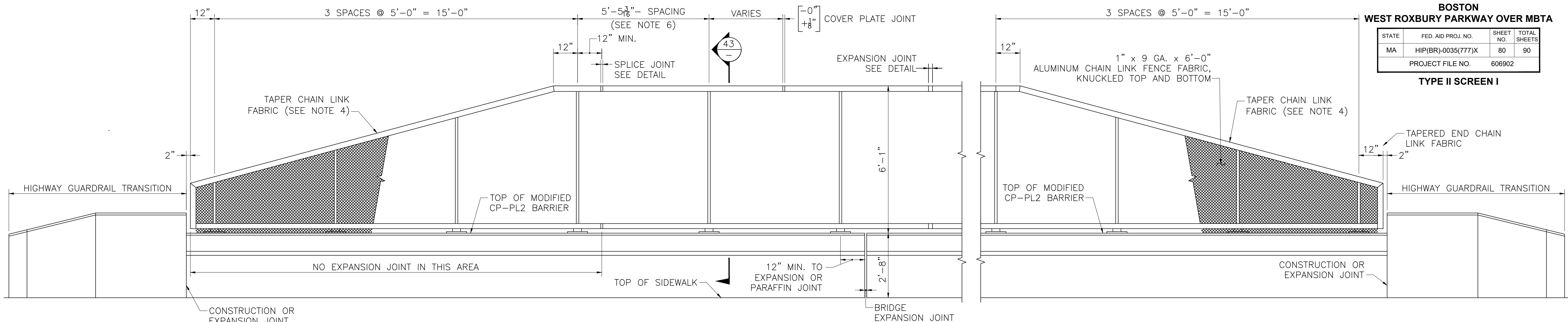
1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER 7/8" Ø S.S. BOLT. S.S. BOLTS SHALL BE 7/8" Ø x 1 1/2" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR 7/8" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO 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 THE BRIDGE BARRIERS 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. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, 3/4", 685 HP CEMENT CONCRETE.
5. 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.

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606902\_BR34-35(8/18/1)\_HWY\_GR\_TRANS.DWG Plotted on 24-Jul-2024 12:04 PM 19-July-2024 Final Structural Submittal (SF)

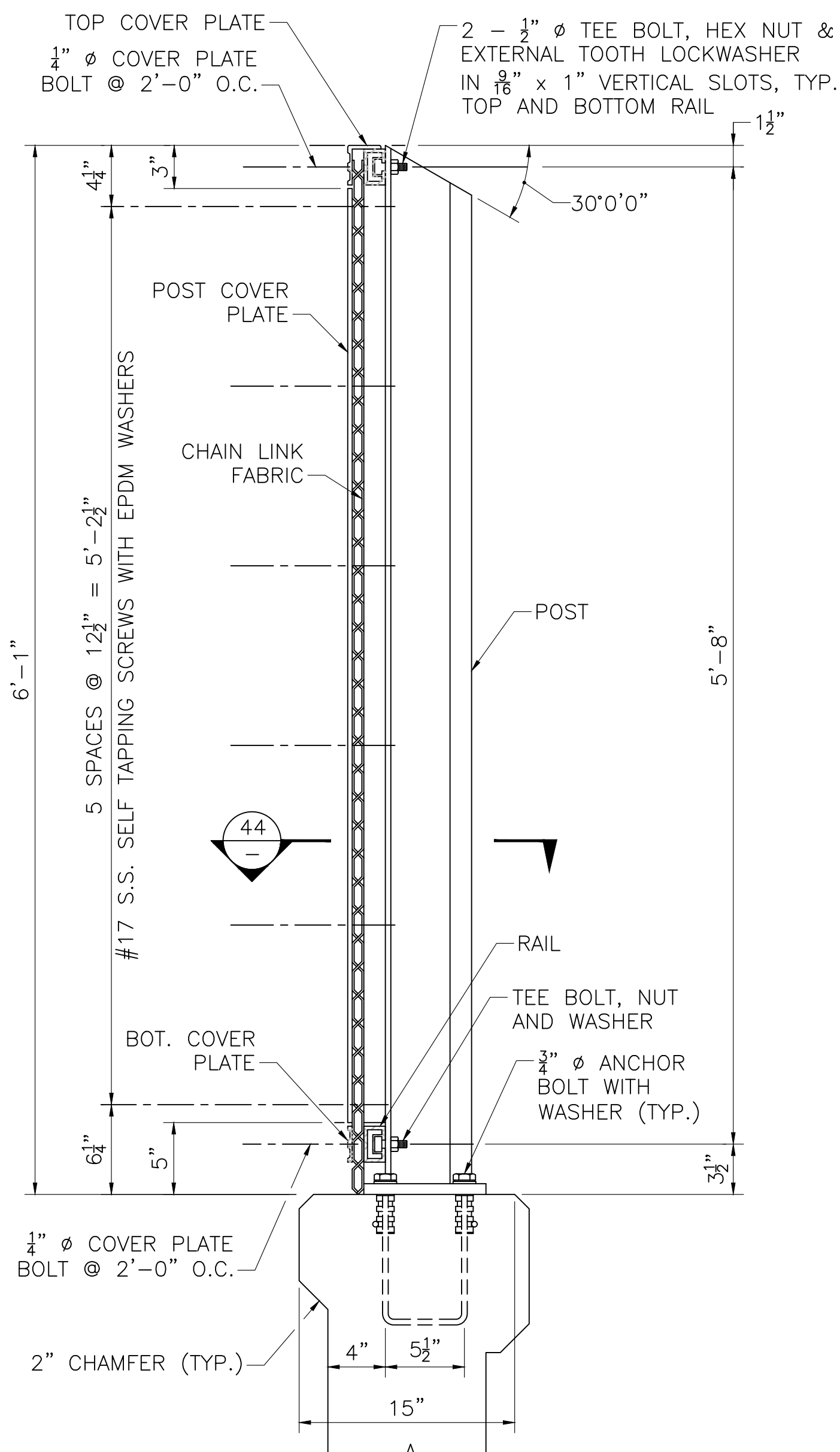
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	80	90
PROJECT FILE NO.		606902	

TYPE II SCREEN I



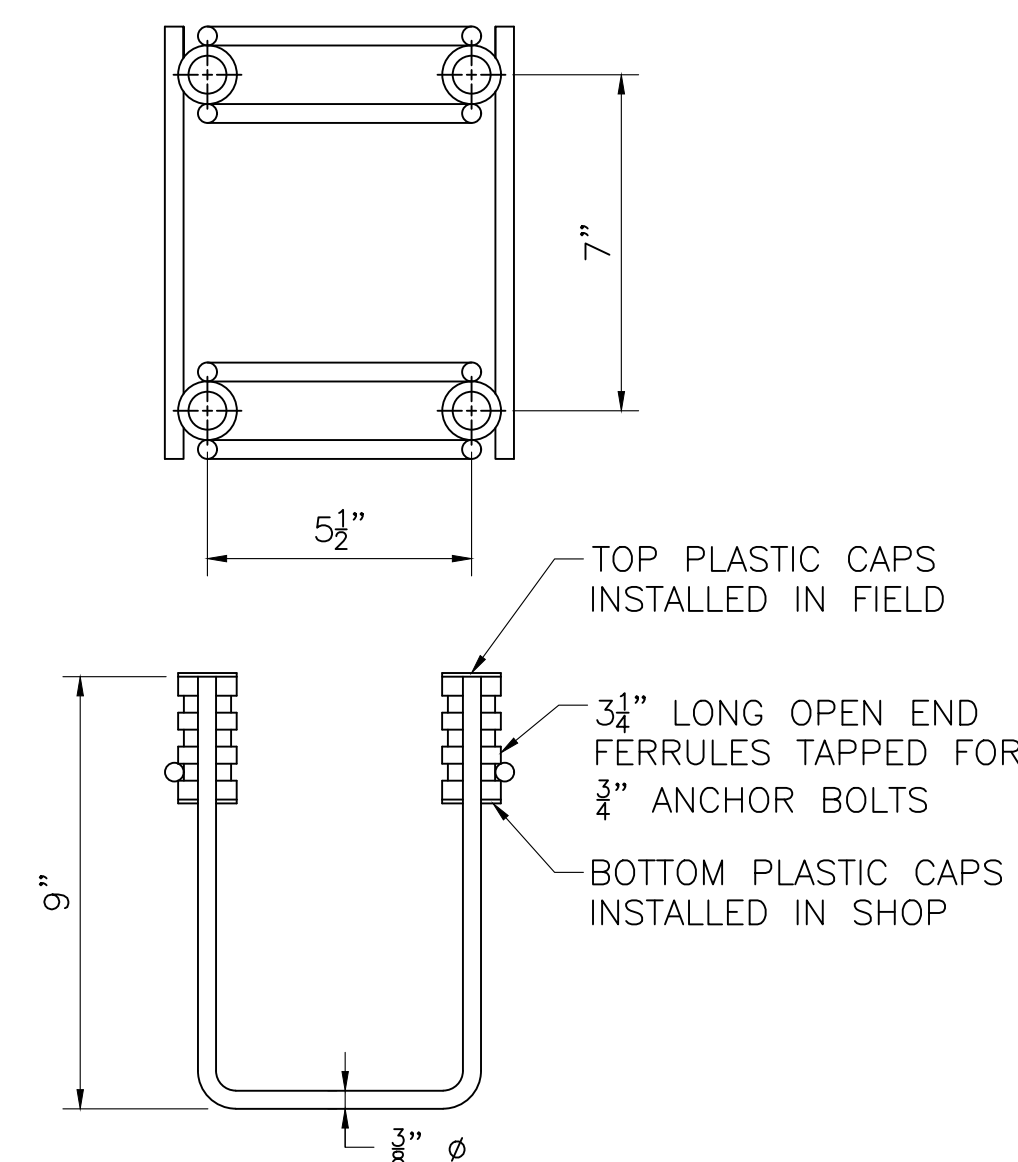
PROTECTIVE SCREEN ELEVATION

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



SECTION 43

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

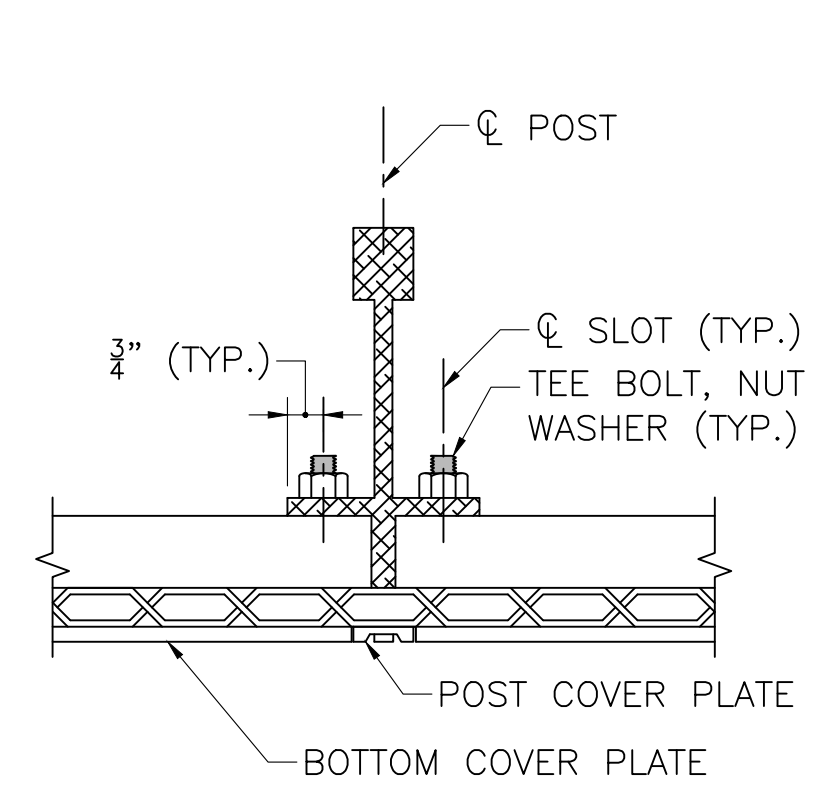


NOTE:

GALVANIZED OR ELECTROPLATE FINISH.

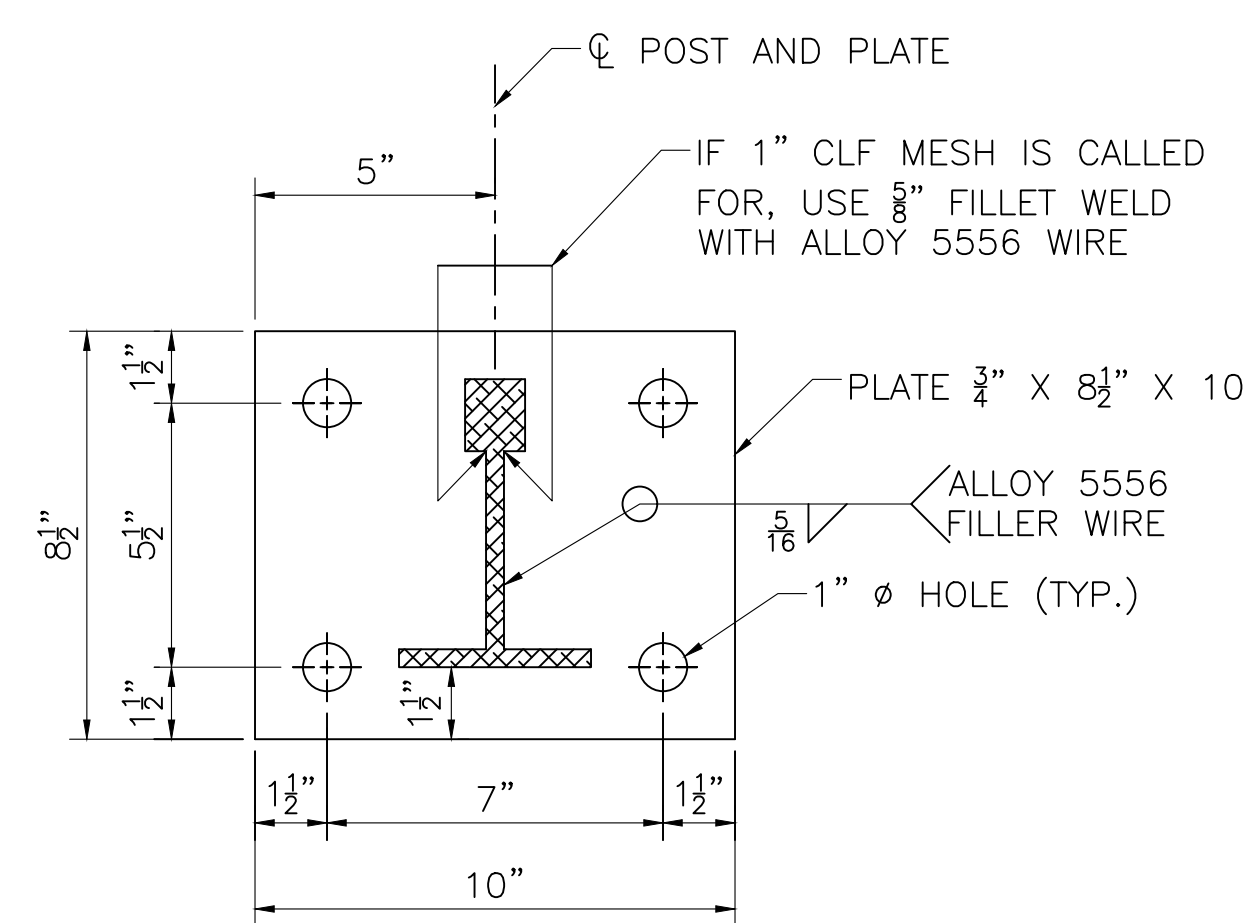
ANCHOR CAGE

SCALE: 3" = 1'-0"



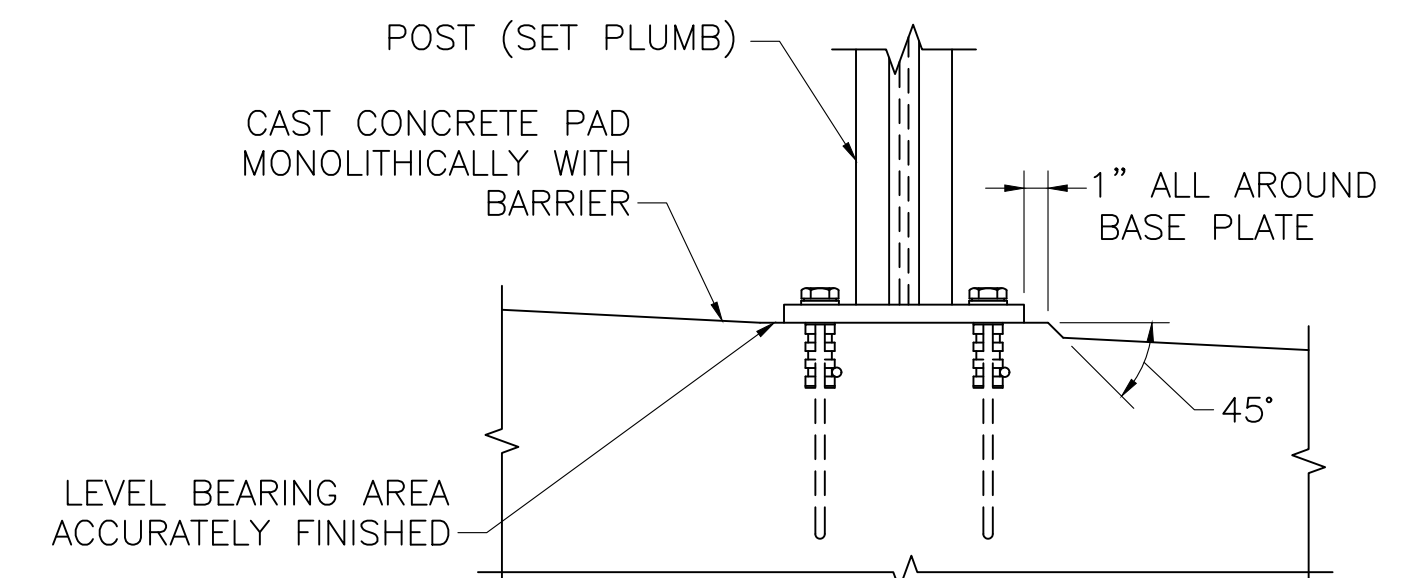
SECTION 44

SCALE: 3" = 1'-0"



BASE PLATE DETAIL

SCALE: 3" = 1'-0"



SETTING OF POSTS  
(PROFILE GRADE OVER 3%)

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

GENERAL NOTES:

- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE. RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
- BOTTOM OF POST BASE PLATE TO BE SET ON A 1/8" MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS OF THE PAD SHALL BE IGNORED BY THE DETAILER.
- THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
- THE SCREEN END TREATMENT TO BE USED SHALL BE TAPERED.
- POST SPACING SHALL BE UNIFORM BETWEEN TAPERED ENDS.
- SET POSTS PERPENDICULAR TO GRADE FOR GRADES UP TO 3%. SET POSTS PLUMB FOR GRADES GREATER THAN 3%.
- USE 1" x 9 GA. ALUMINUM CHAIN LINK FABRIC.

FINISHES:

- POSTS, RAILS, COVER PLATES AND SPLICE PLATES SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.
- CHAIN LINK FABRIC SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE DARK BRONZE TO MATCH COLOR OF ANODIZED ALUMINUM FRAMEWORK.
- #17 SELF TAPPING SCREWS AND 1/4" Ø COVER PLATE BOLTS TO BE COLORED TO MATCH THE ANODIZED EXTRUSIONS.

MATERIALS:

- EXTRUSIONS & PLATES — ASTM B 221, ALLOY 6061-T6
- CHAIN LINK FABRIC — AASHTO M 181 TYPE III (ALLOY 6061-T89 OR T94)
- SELF TAPPING SCREWS — TYPE 304 STAINLESS STEEL WITH 1/4" THICK EPDM (ETHYLENE PROPYLENE DIENE MONOMER) WASHERS
- ANCHOR BOLTS — AASHTO M 164 GALVANIZED (ROTATION CAPACITY TEST NOT REQUIRED)
- TEE BOLTS — ASTM A 307 GALVANIZED OR TYPE 304 STAINLESS STEEL
- COVER PLATE BOLTS — TYPE 304 STAINLESS STEEL WITH OVERSIZED STAINLESS WASHER AND STAINLESS NUT WITH NYLON INSERT

TYPE II PROTECTIVE SCREEN  
(SHEET 1 OF 2)

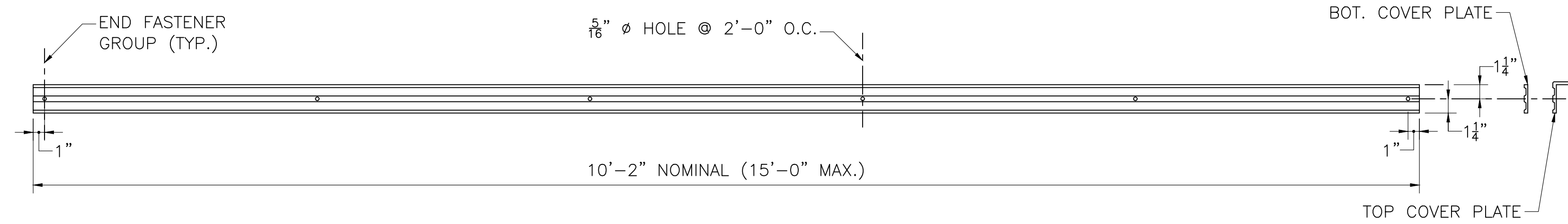
DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

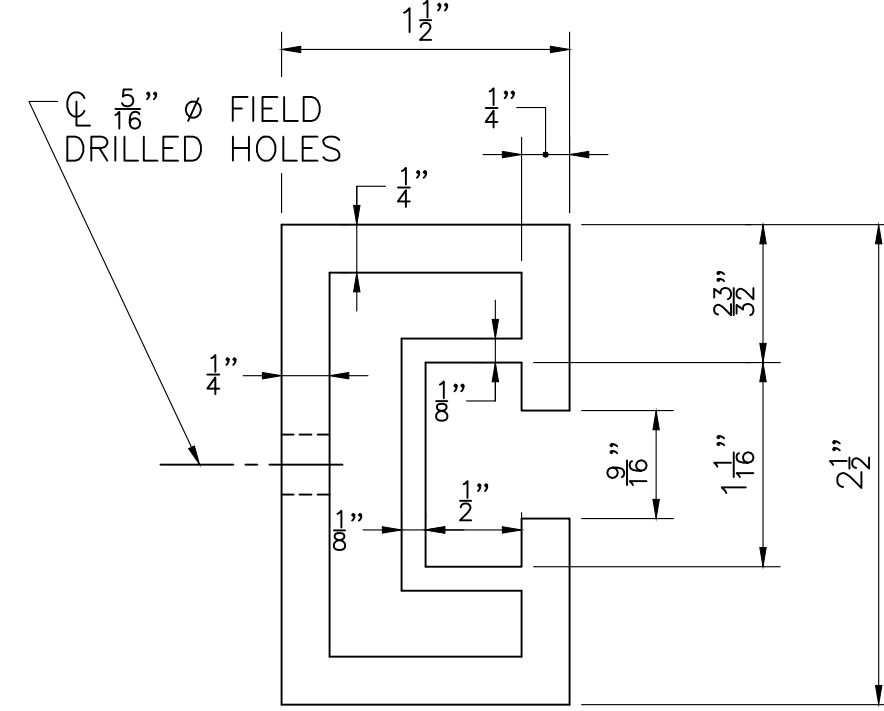
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(777)X	81	90
PROJECT FILE NO.		606902	

**TYPE II SCREEN II**



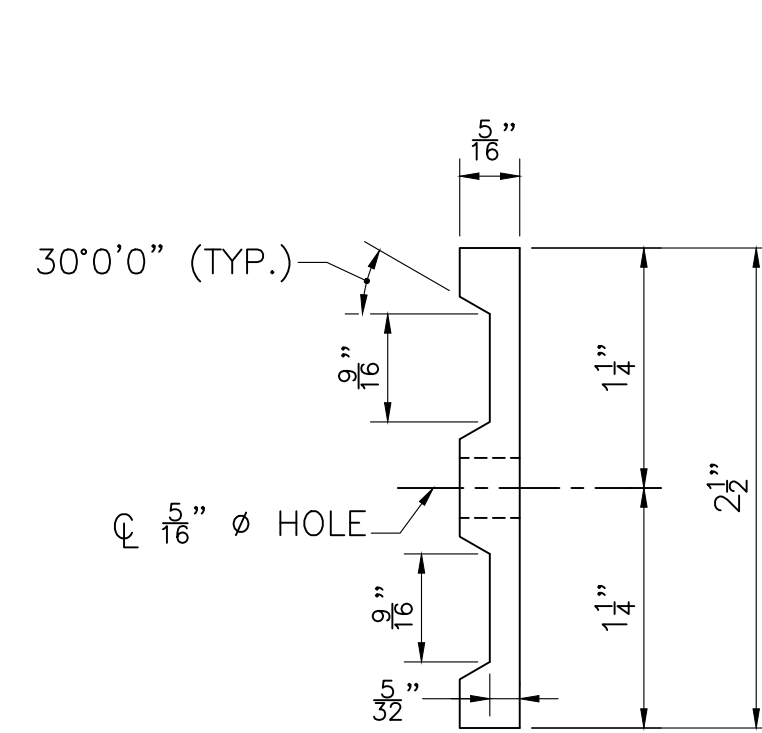
**TOP AND BOTTOM COVER PLATE**

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

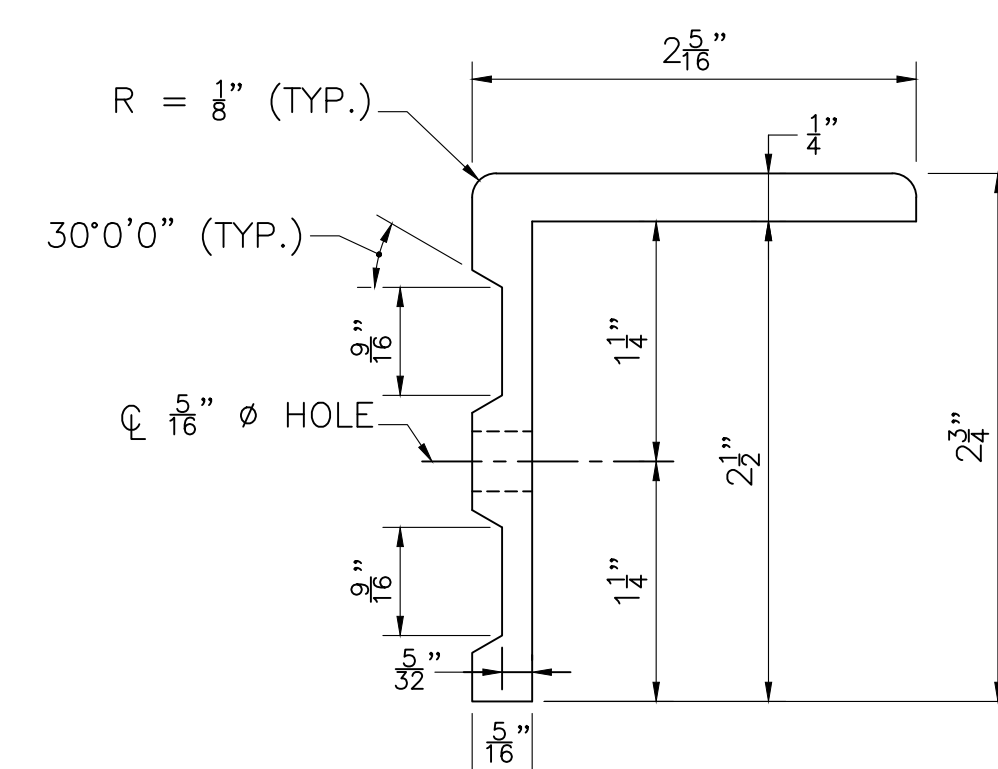


**RAIL EXTRUSION**  
FULL SCALE

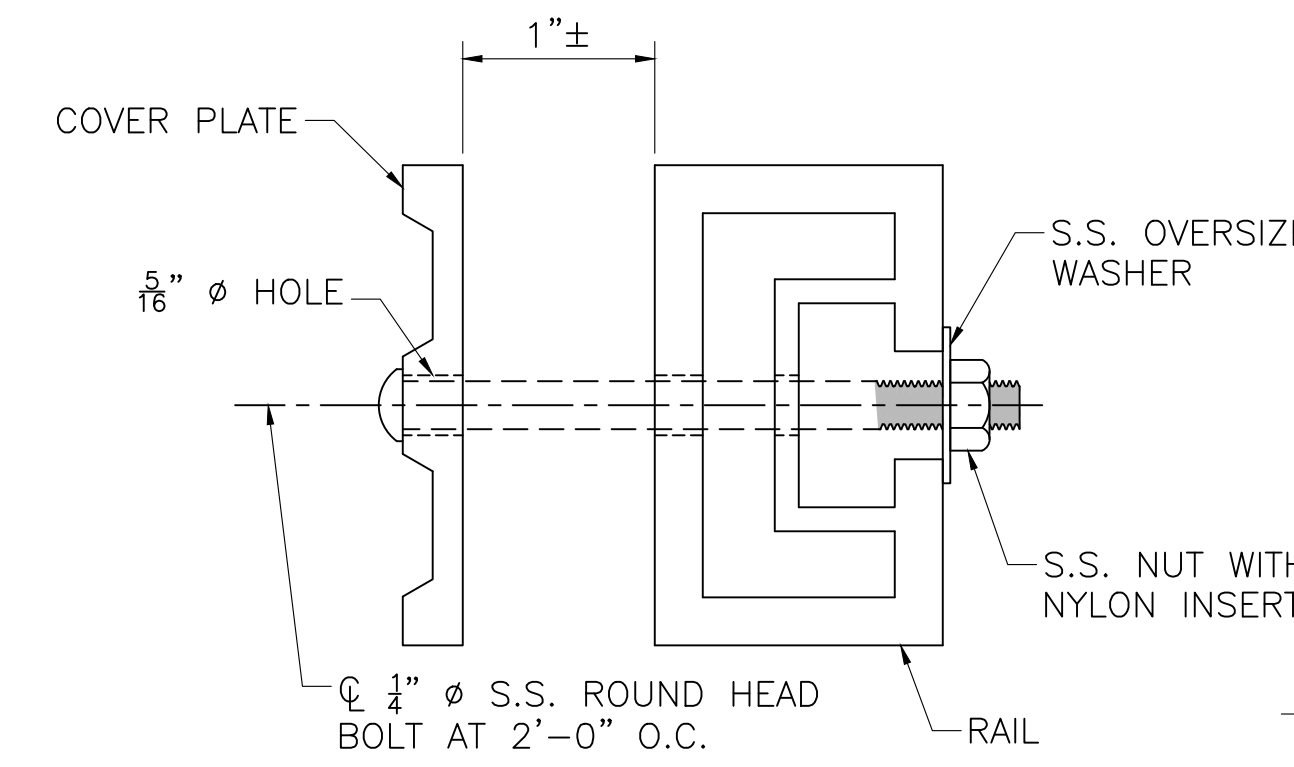
**NOTE:**  
OTHER CONFIGURATIONS OF THE INTERNAL WALLS OF THE RAIL EXTRUSION MAY BE SUBMITTED FOR APPROVAL.



**BOTTOM COVER PLATE EXTRUSION**  
FULL SCALE



**TOP COVER PLATE EXTRUSION**  
FULL SCALE

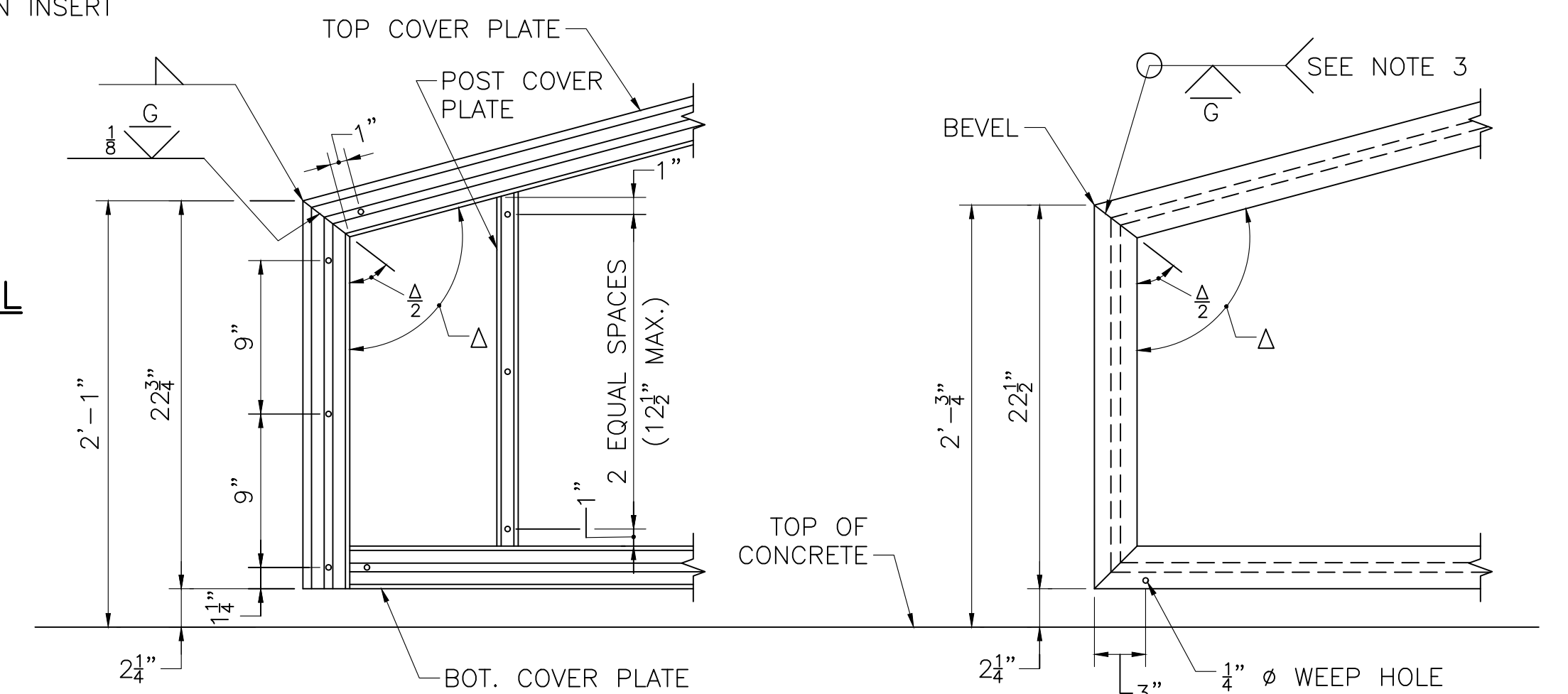


**NOTE:**  
BOLTS SHALL BE TYPE 304 WITH A DRIVE HEAD TO BE COLORED TO MATCH ANODIZING.

**RAIL AND COVER PLATE DETAIL**  
FULL SCALE

**COVER PLATE NOTES:**

- COVER PLATES MAY BE CONTINUOUS OVER A RAIL SPLICE. COVER PLATES SHALL BE FIELD CUT AS REQUIRED TO CLEAR THE EXPANSION JOINT. SEE DETAIL AT EXPANSION JOINT.
- FIELD DRILL 5/8" Ø HOLE 1" FROM THE FIELD CUT END OF A COVER PLATE, UNLESS THERE IS AN EXISTING HOLE WITHIN 6" FROM THE COVER PLATE END.
- FIELD PAINT THE FIELD CUT ENDS OF THE COVER PLATES TO MATCH THE ANODIZED COLOR.



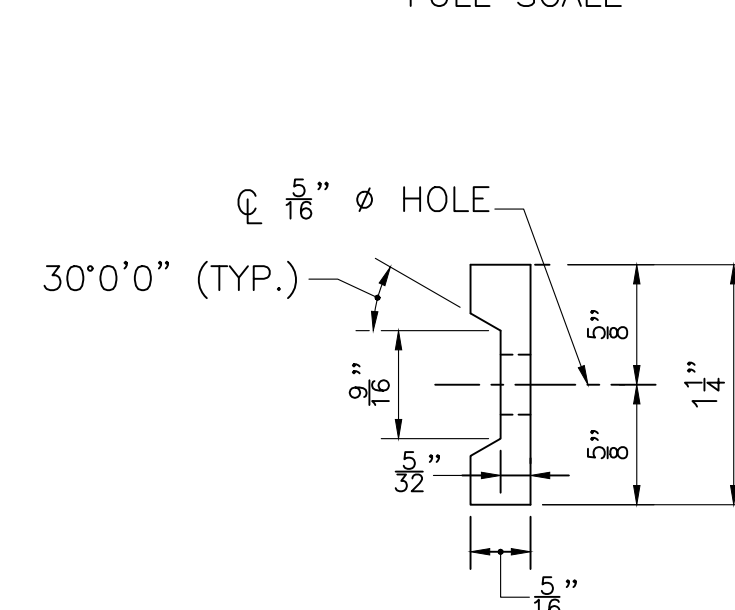
**COVER PLATE DETAILS**

**RAIL DETAILS**

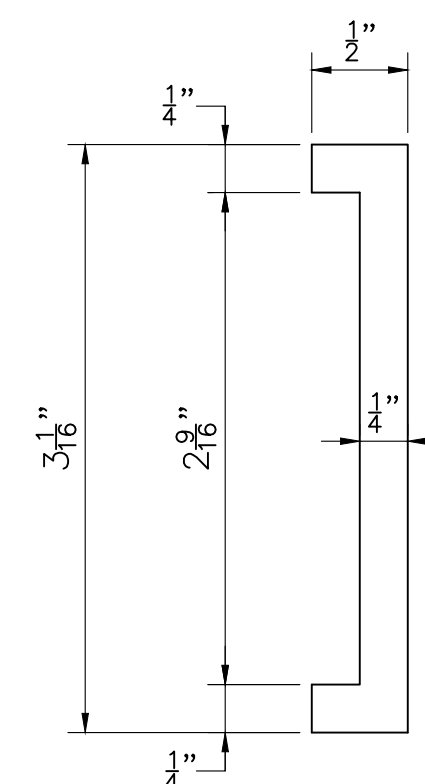
- NOTES:**
- WELDING OF TOP COVER PLATE AND RAILS OF NON-TAPERED END IS SIMILAR.
  - WELDS AND MITERING TYPICAL FOR ALL ANGLED CORNERS.
  - WELD TYPICAL FOR TOP AND BOTTOM END CORNERS OF RAIL. INTERRUPT WELD AT SLOT IN BACK OF RAIL.

**TAPERED END DETAILS**

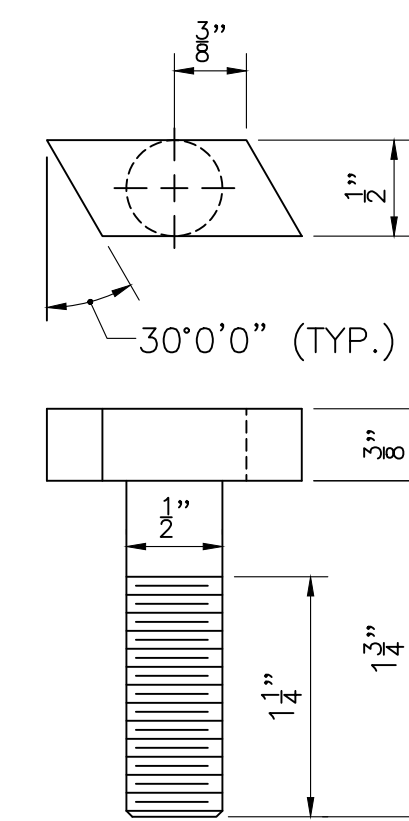
SCALE: 1 1/2" = 1'-0"



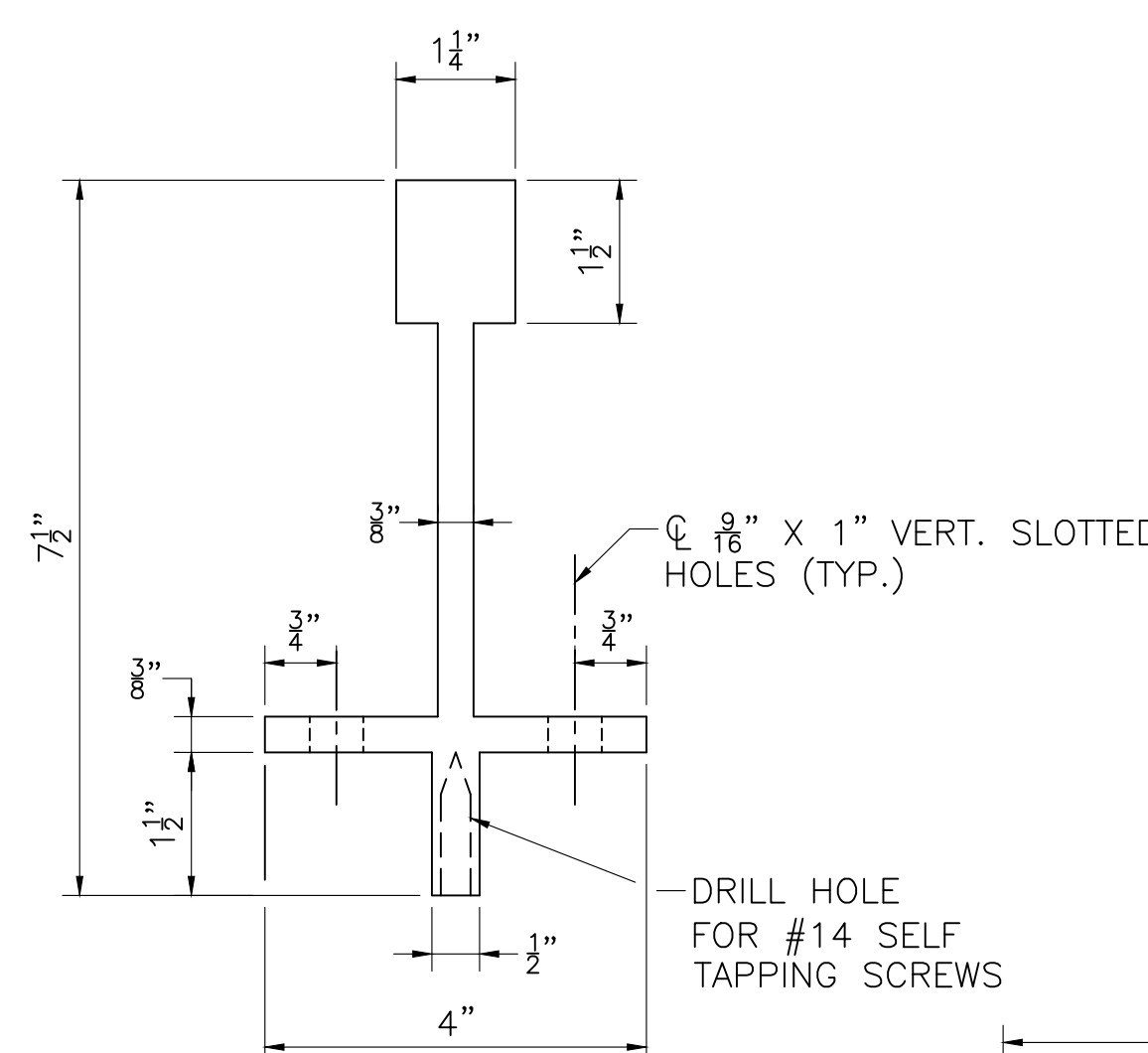
**POST COVER PLATE EXTRUSION**  
FULL SCALE



**SPLICE PLATE EXTRUSION**  
FULL SCALE

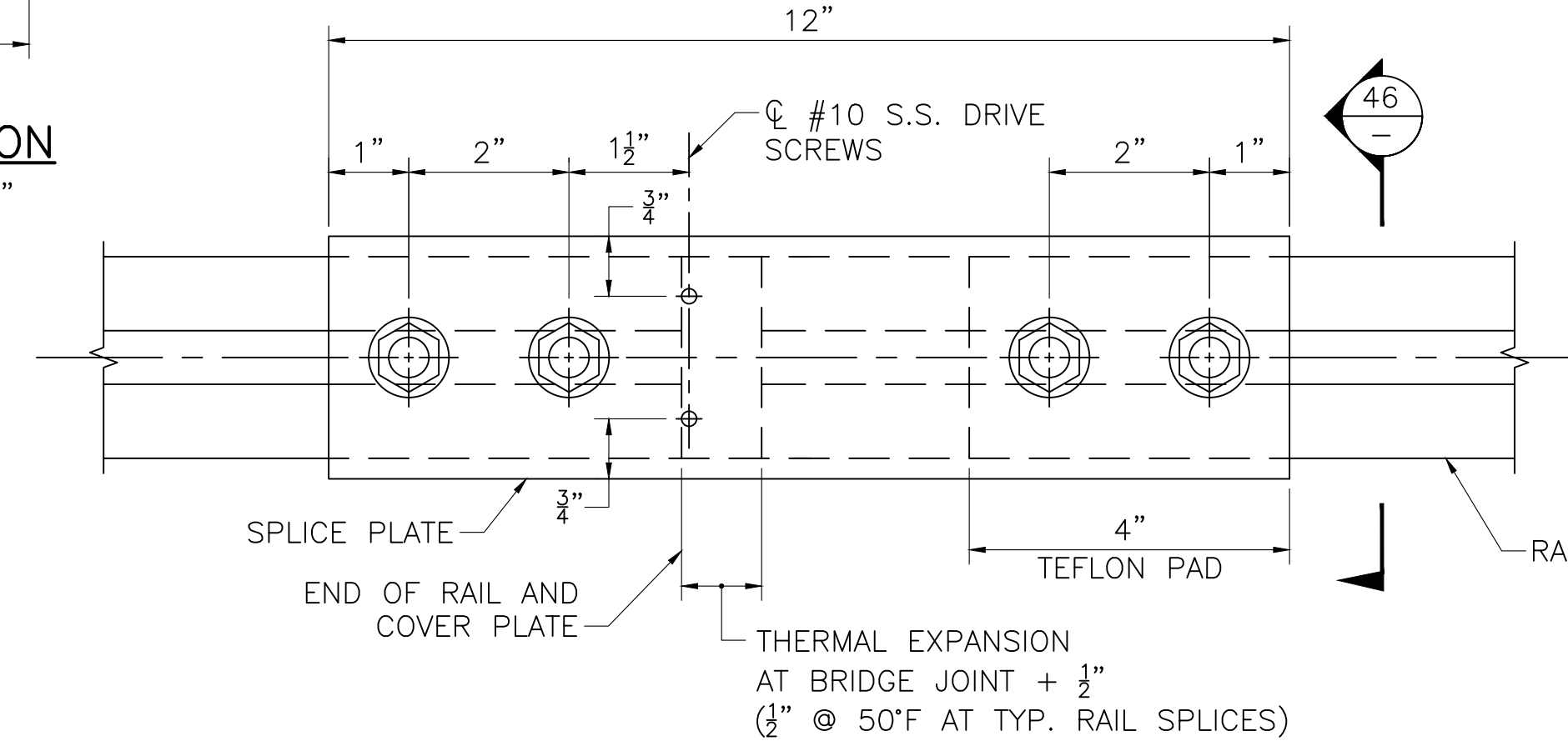


**TEE BOLT**  
FULL SCALE



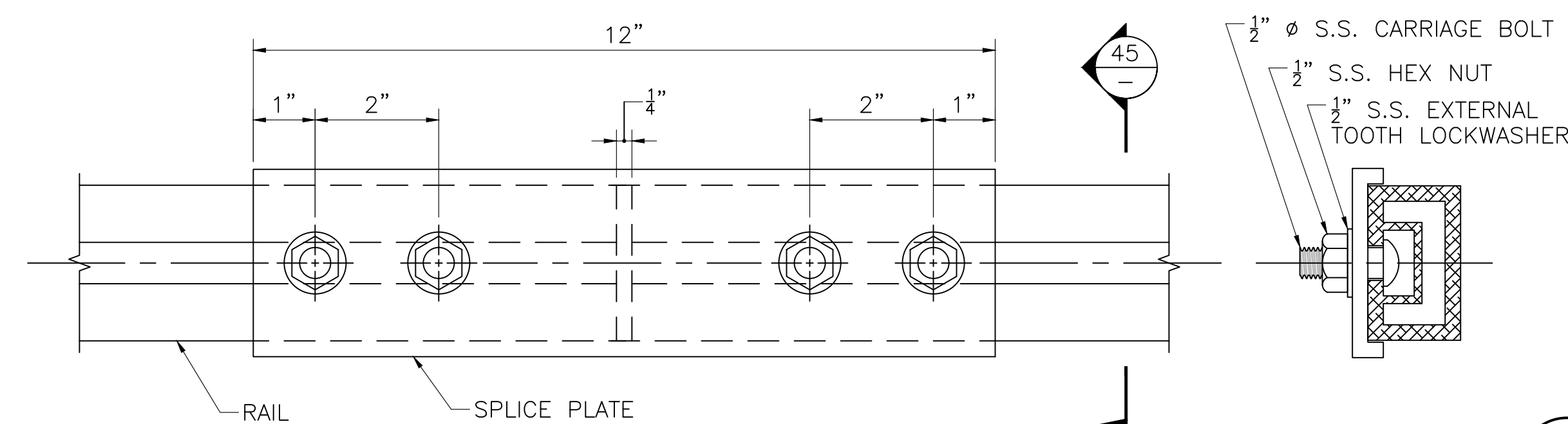
**POST EXTRUSION**

SCALE: 6" = 1'-0"



**DETAIL AT EXPANSION JOINT**

SCALE: 6" = 1'-0"

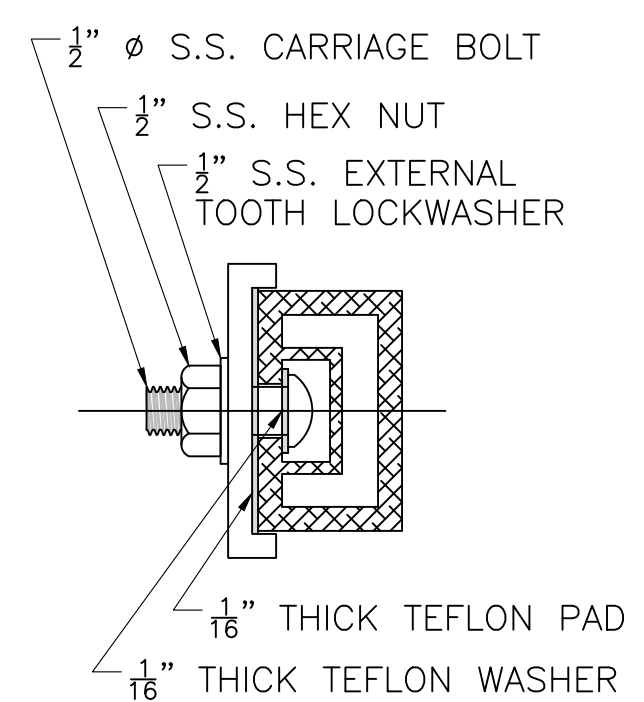


**DETAIL AT SPLICE JOINT**

SCALE: 6" = 1'-0"

**SECTION 45**

SCALE: 6" = 1'-0"



**SECTION 46**

SCALE: 6" = 1'-0"

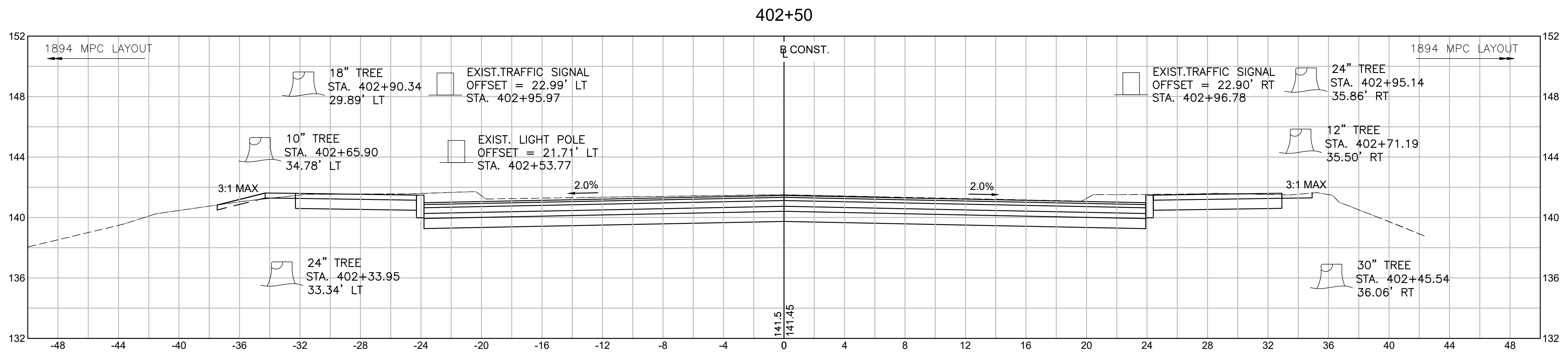
**TYPE II PROTECTIVE SCREEN  
(SHEET 2 OF 2)**

DATE	DESCRIPTION
AUG. 03, 2024	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

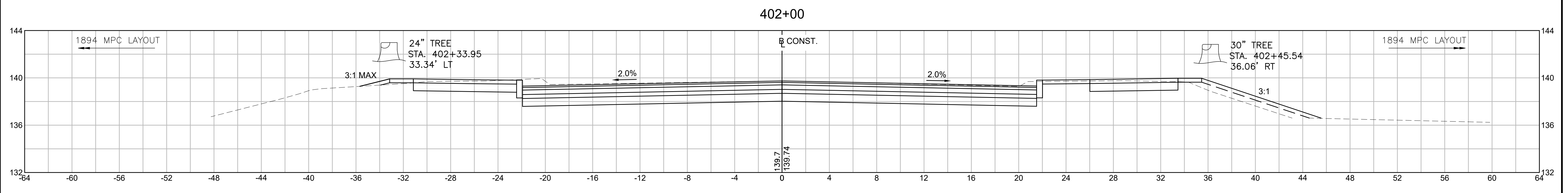
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	82	90
PROJECT FILE NO.		606902	

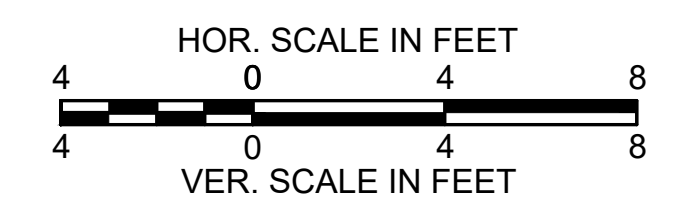
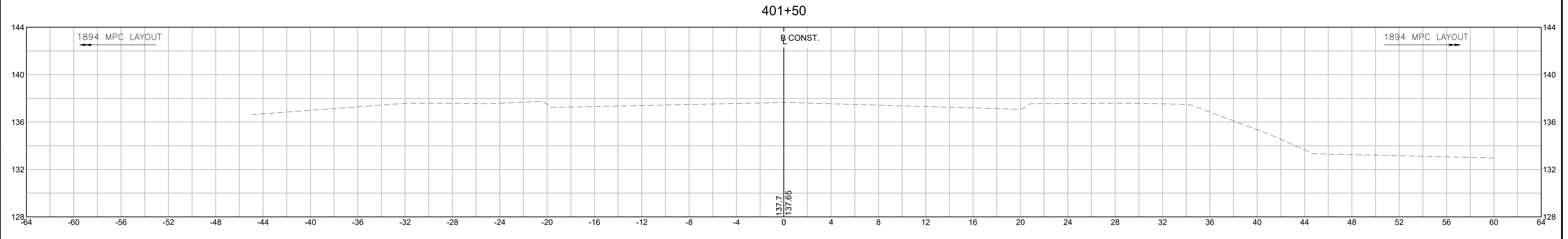
**CROSS SECTIONS 1**



CUT = 107.97 SF  
FILL = 0 SF



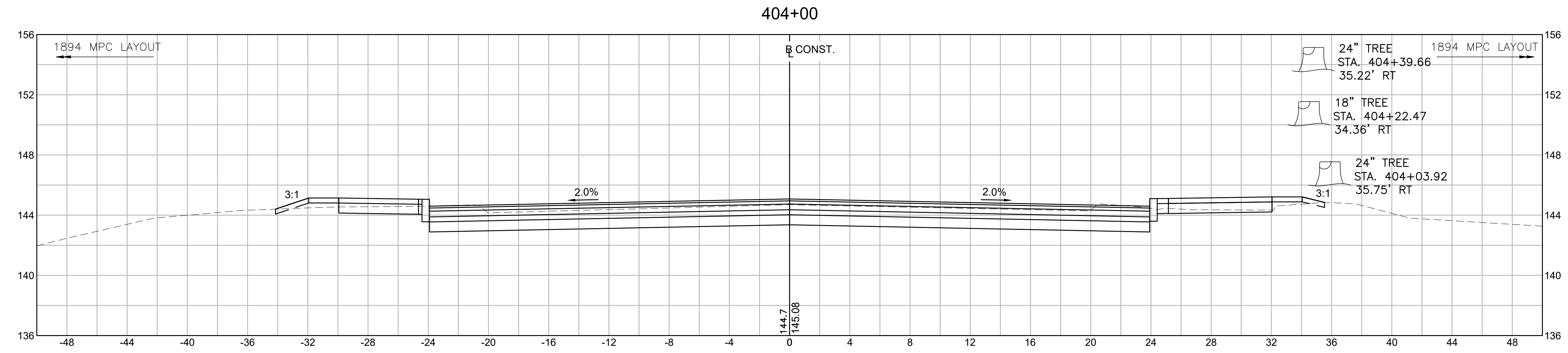
CUT = 92.43 SF  
FILL = 4.66 SF



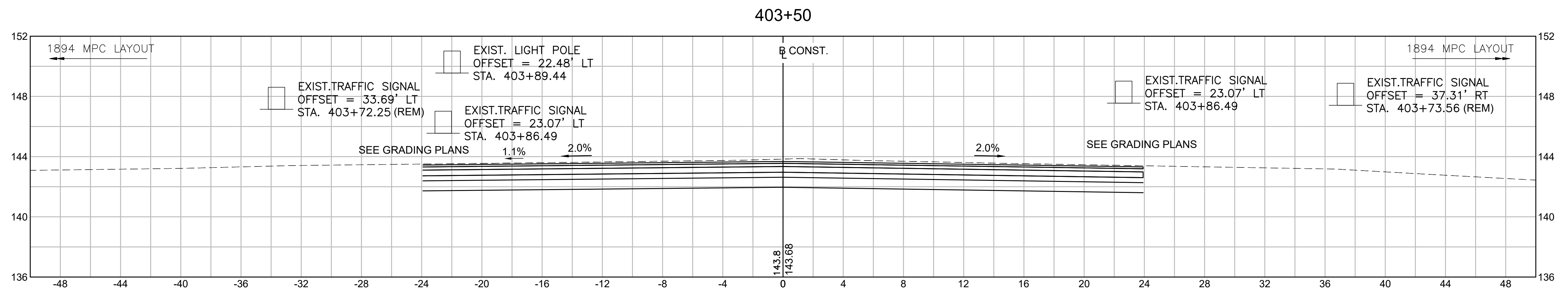
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	83	90
PROJECT FILE NO.		606902	

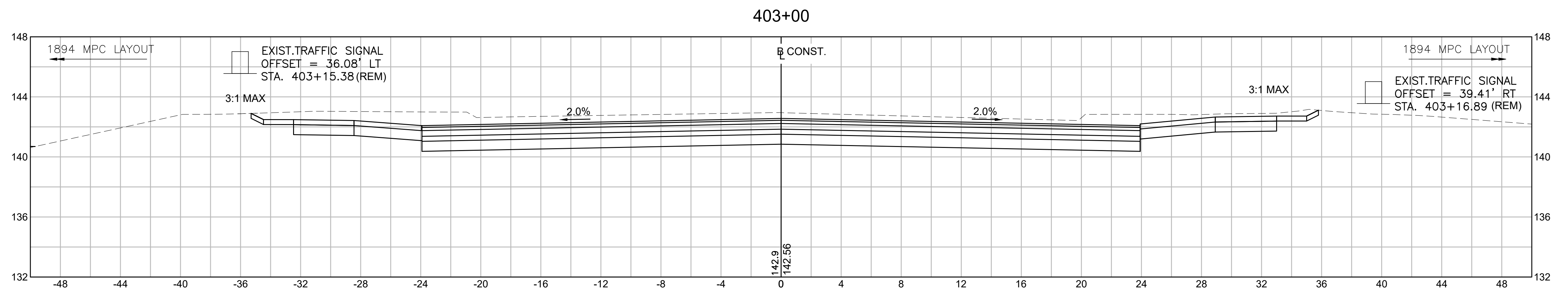
**CROSS SECTIONS 2**



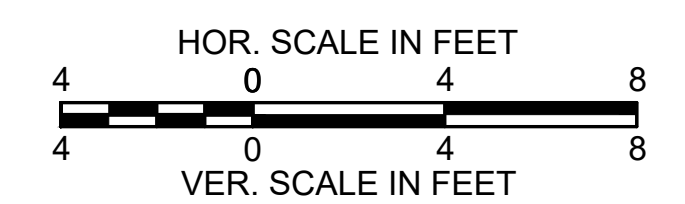
CUT = 64.98 SF  
FILL = 0 SF



CUT = 86.96 SF  
FILL = 0 SF



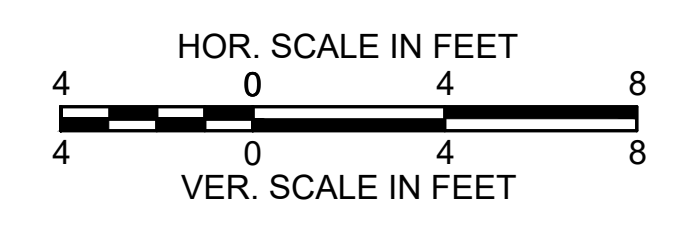
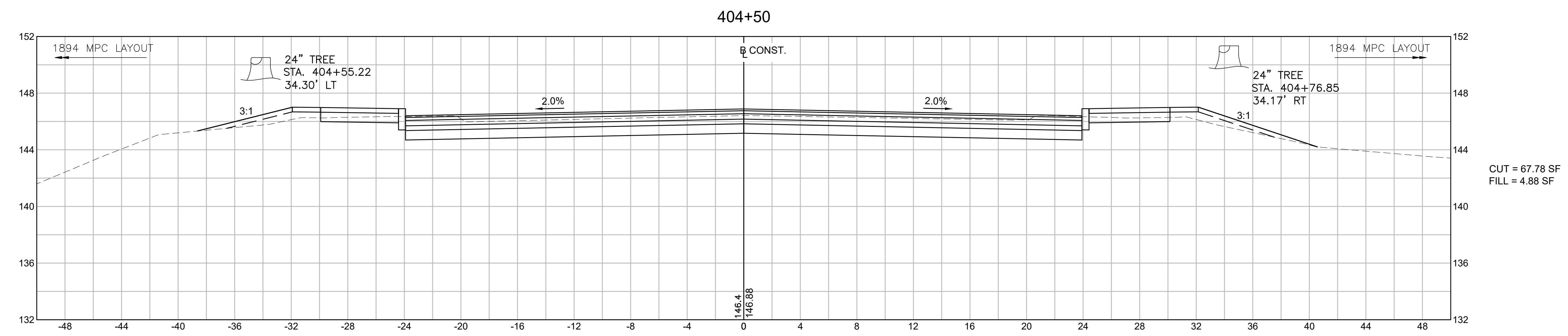
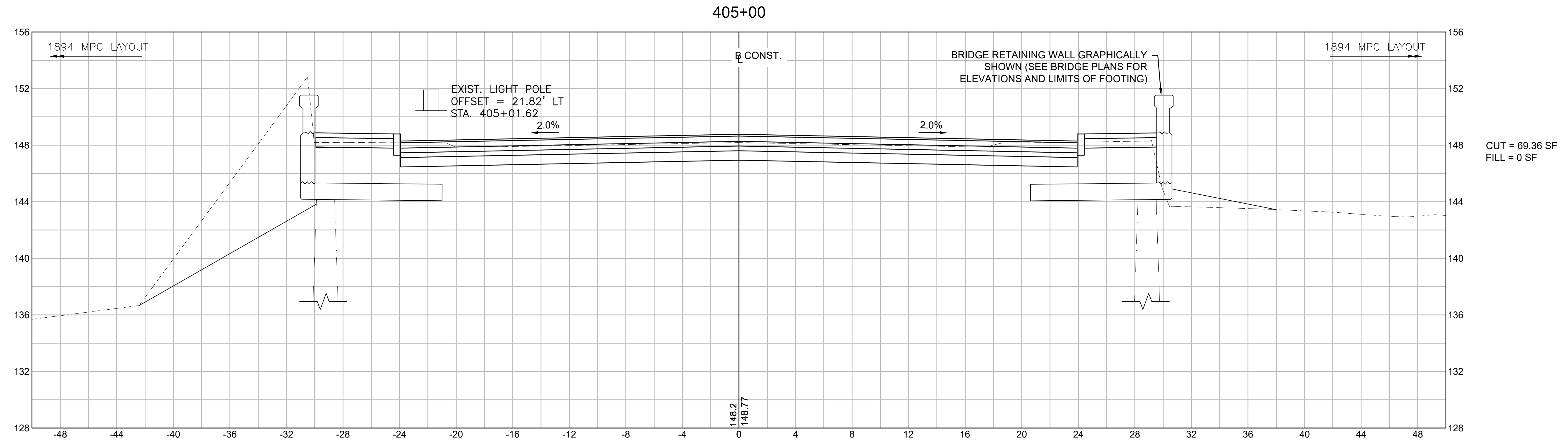
CUT = 122.63 SF  
FILL = 0 SF



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	84	90
PROJECT FILE NO.		606902	

**CROSS SECTIONS 3**



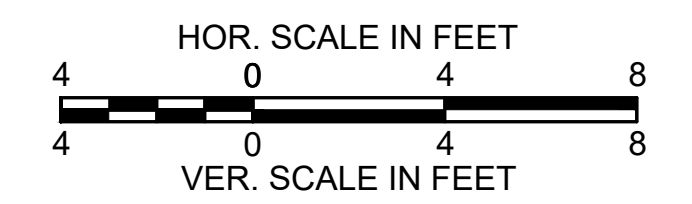
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	85	90
PROJECT FILE NO.		606902	

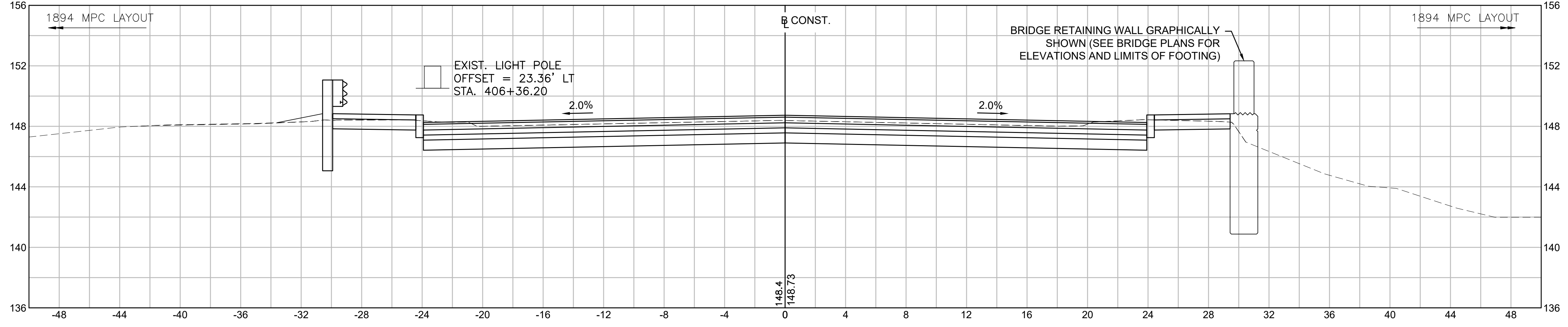
**CROSS SECTIONS 4**

CUT = 82.01 SF  
FILL = 0 SF

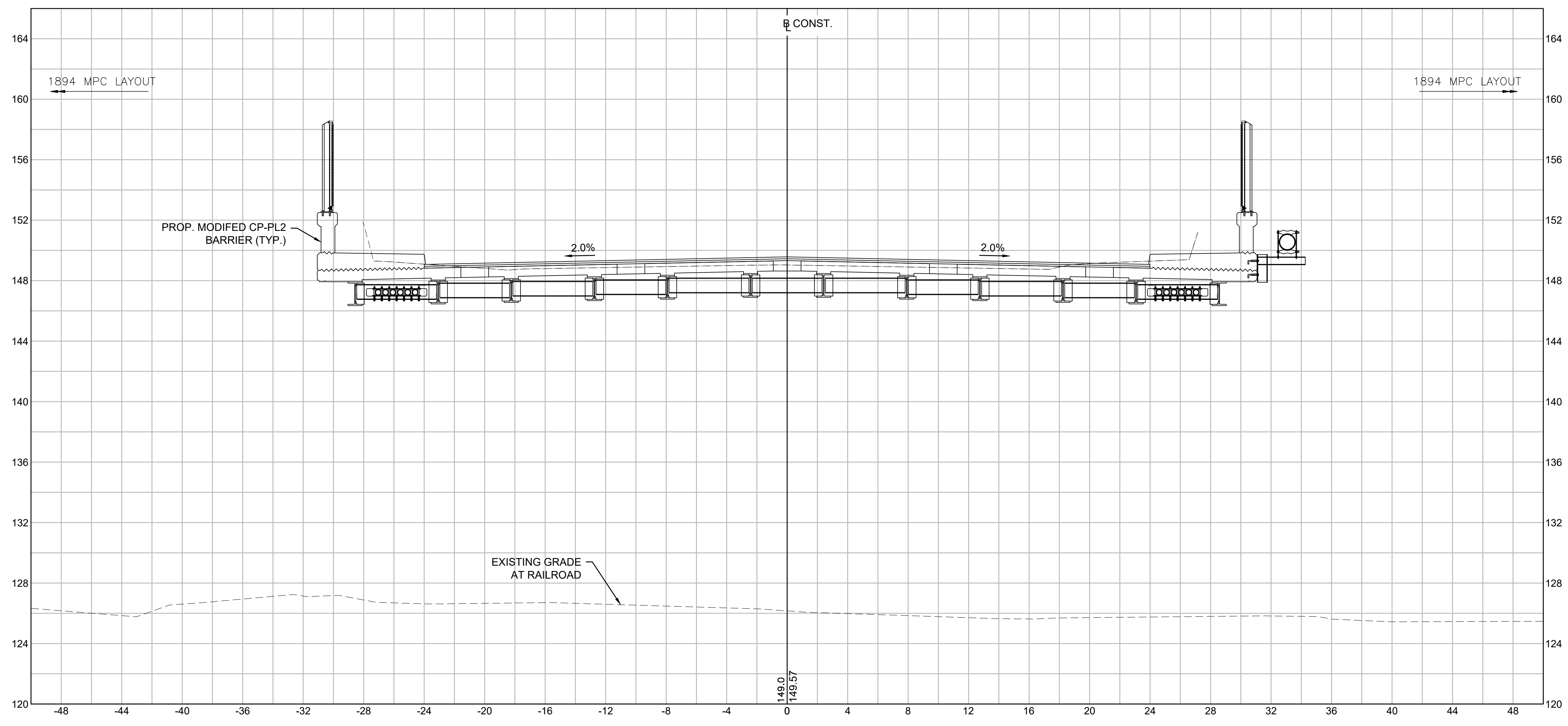
CUT = 100.59 SF  
FILL = 1.44 SF



406+00



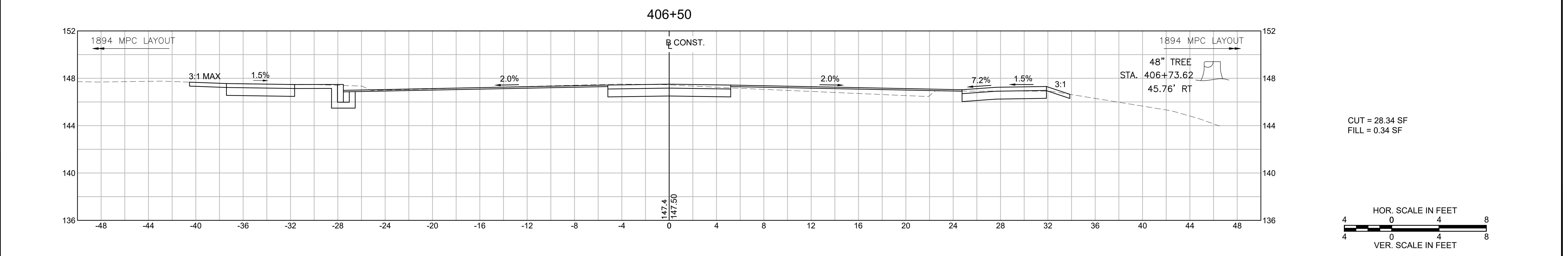
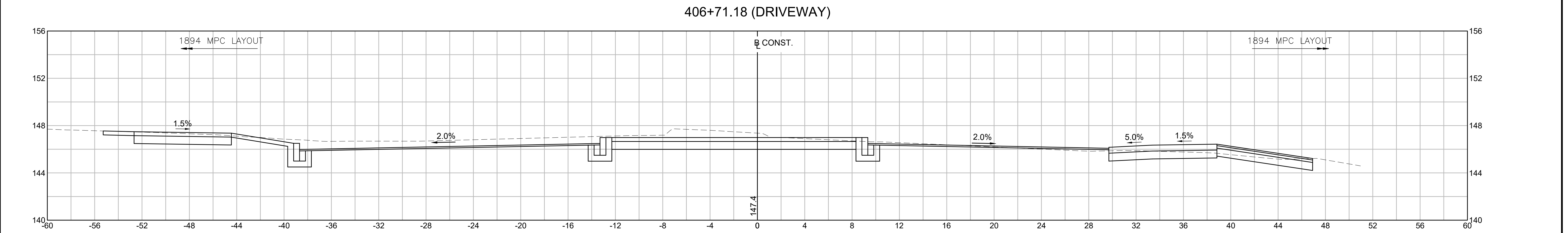
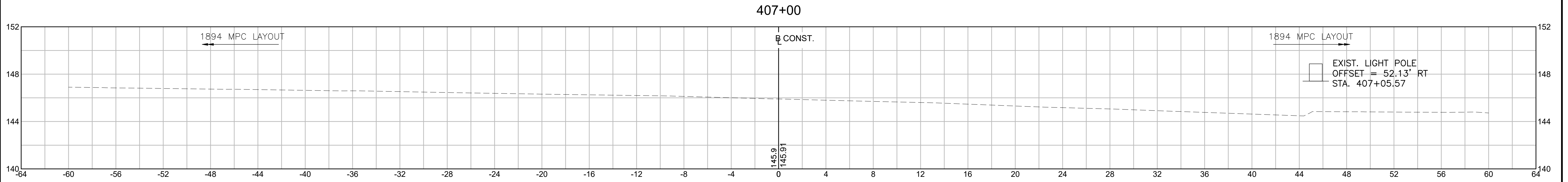
405+50



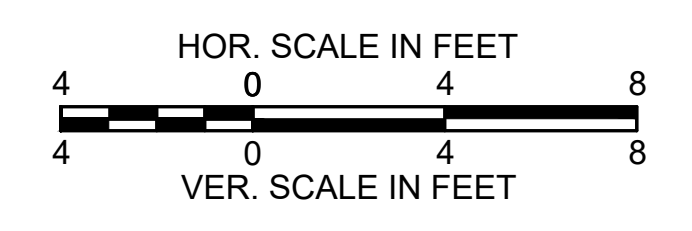
**BOSTON**  
**WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	86	90
PROJECT FILE NO.		606902	

**CROSS SECTIONS 5**



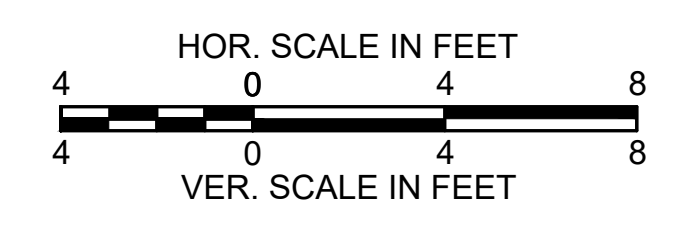
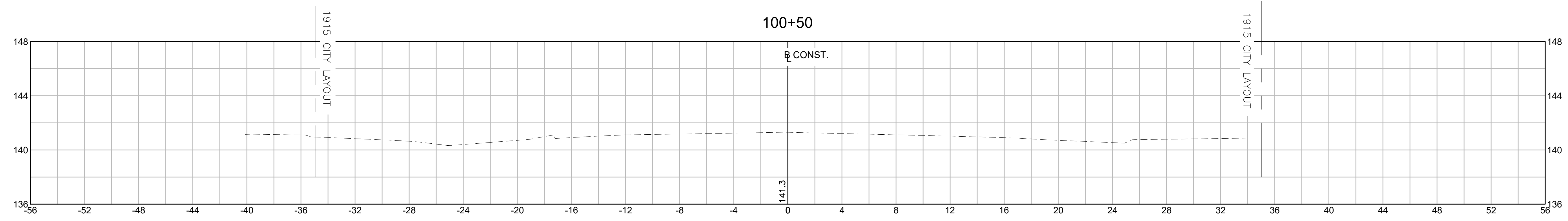
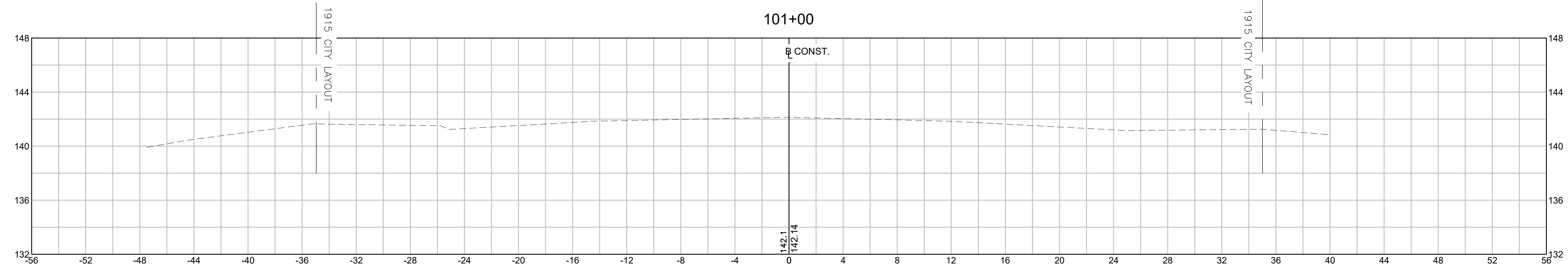
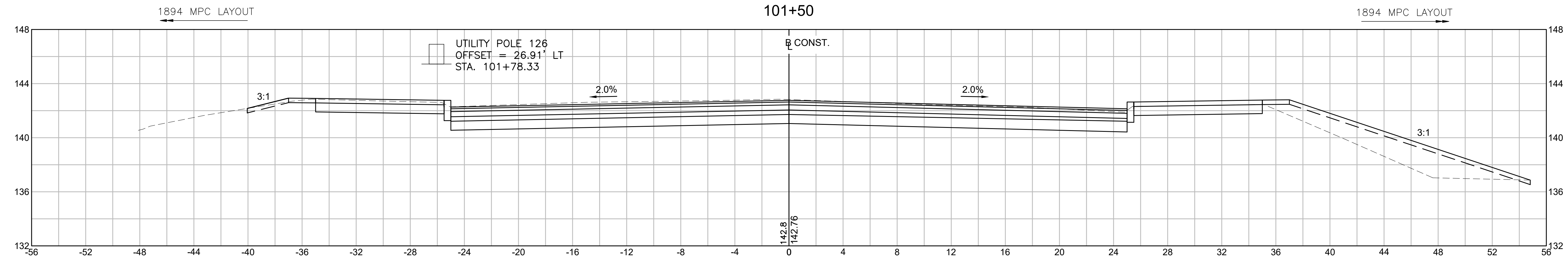
CUT = 28.34 SF  
FILL = 0.34 SF



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	87	90
PROJECT FILE NO.		606902	

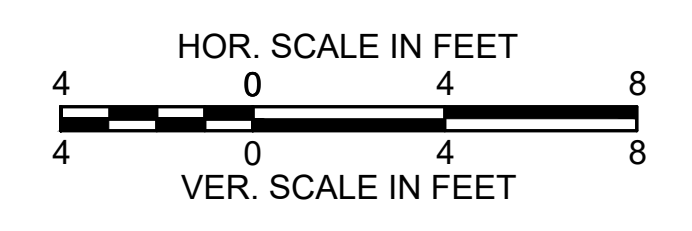
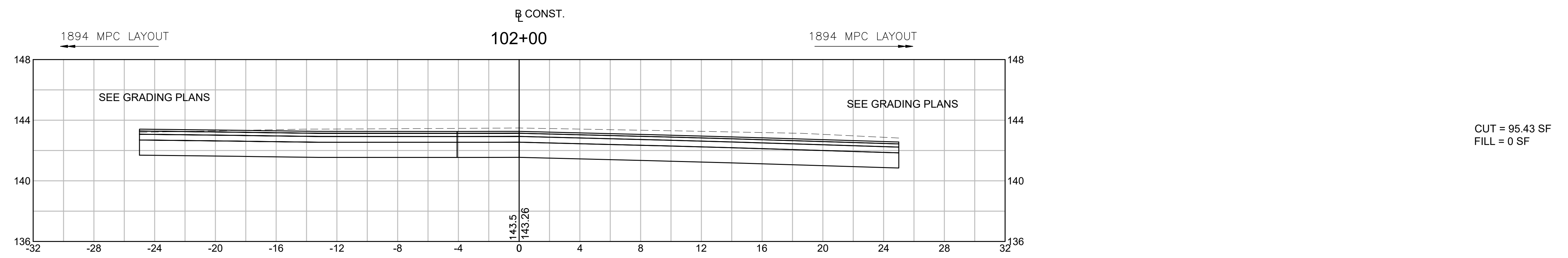
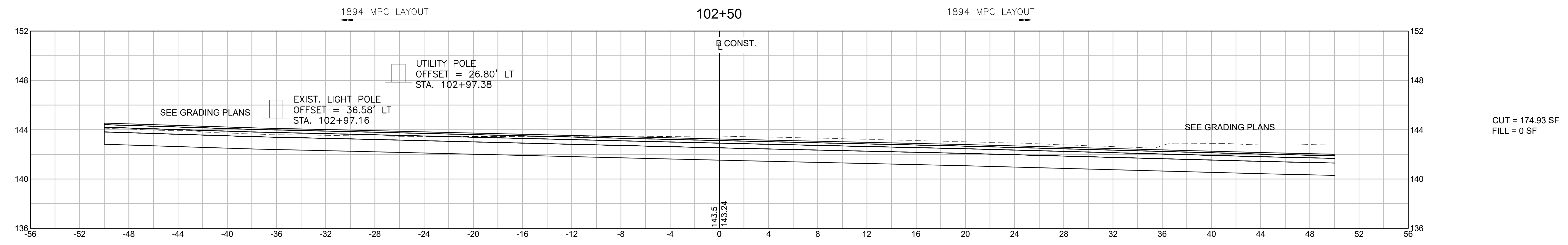
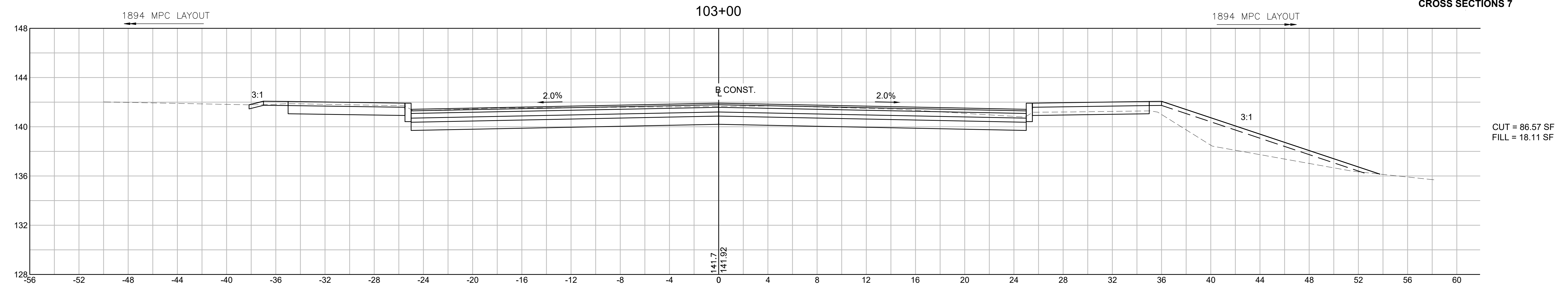
**CROSS SECTIONS 6**



**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	88	90
PROJECT FILE NO.		606902	

**CROSS SECTIONS 7**

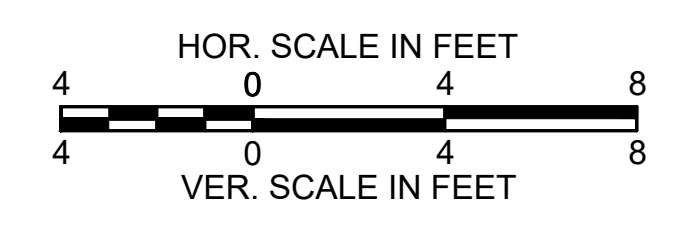
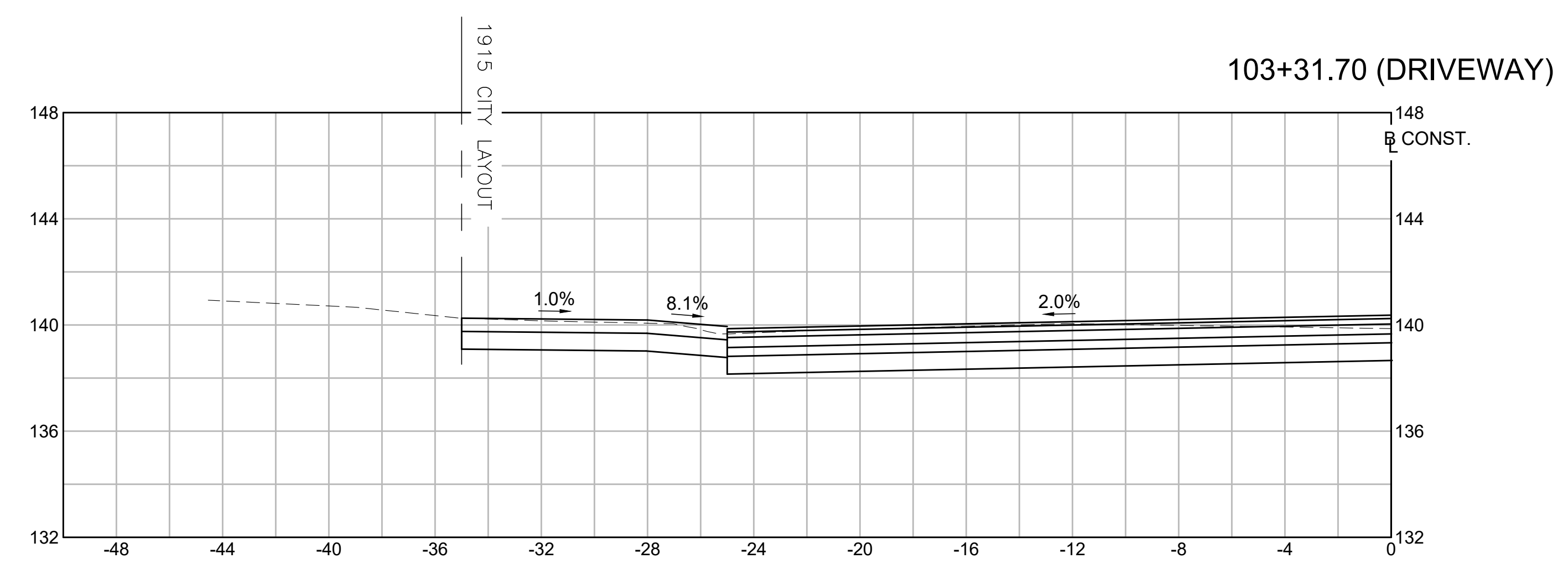




**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	89	90
PROJECT FILE NO.		606902	

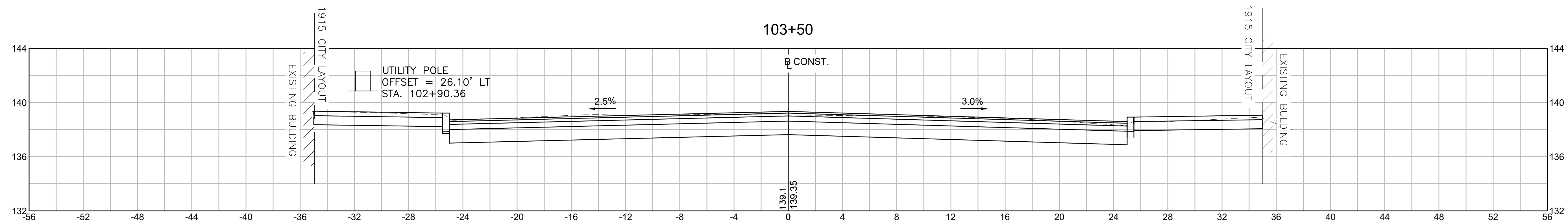
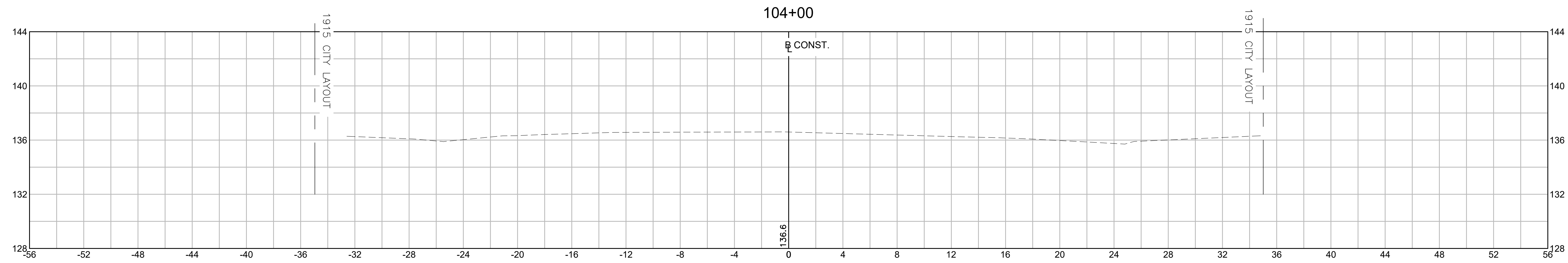
**CROSS SECTIONS 8**



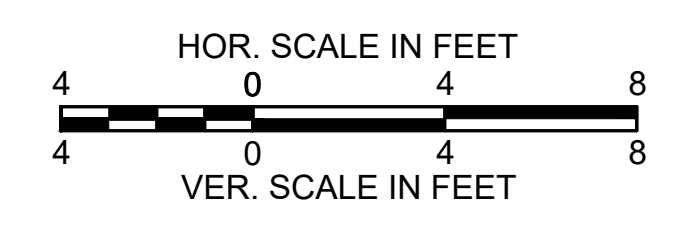
**BOSTON  
WEST ROXBURY PARKWAY OVER MBTA**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(777)X	90	90
PROJECT FILE NO.		606902	

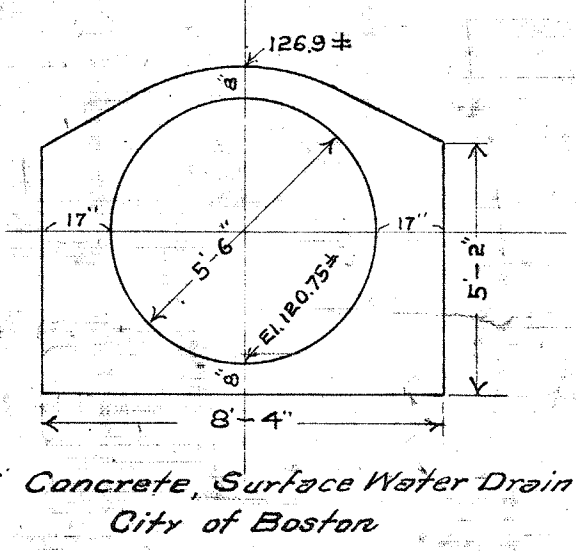
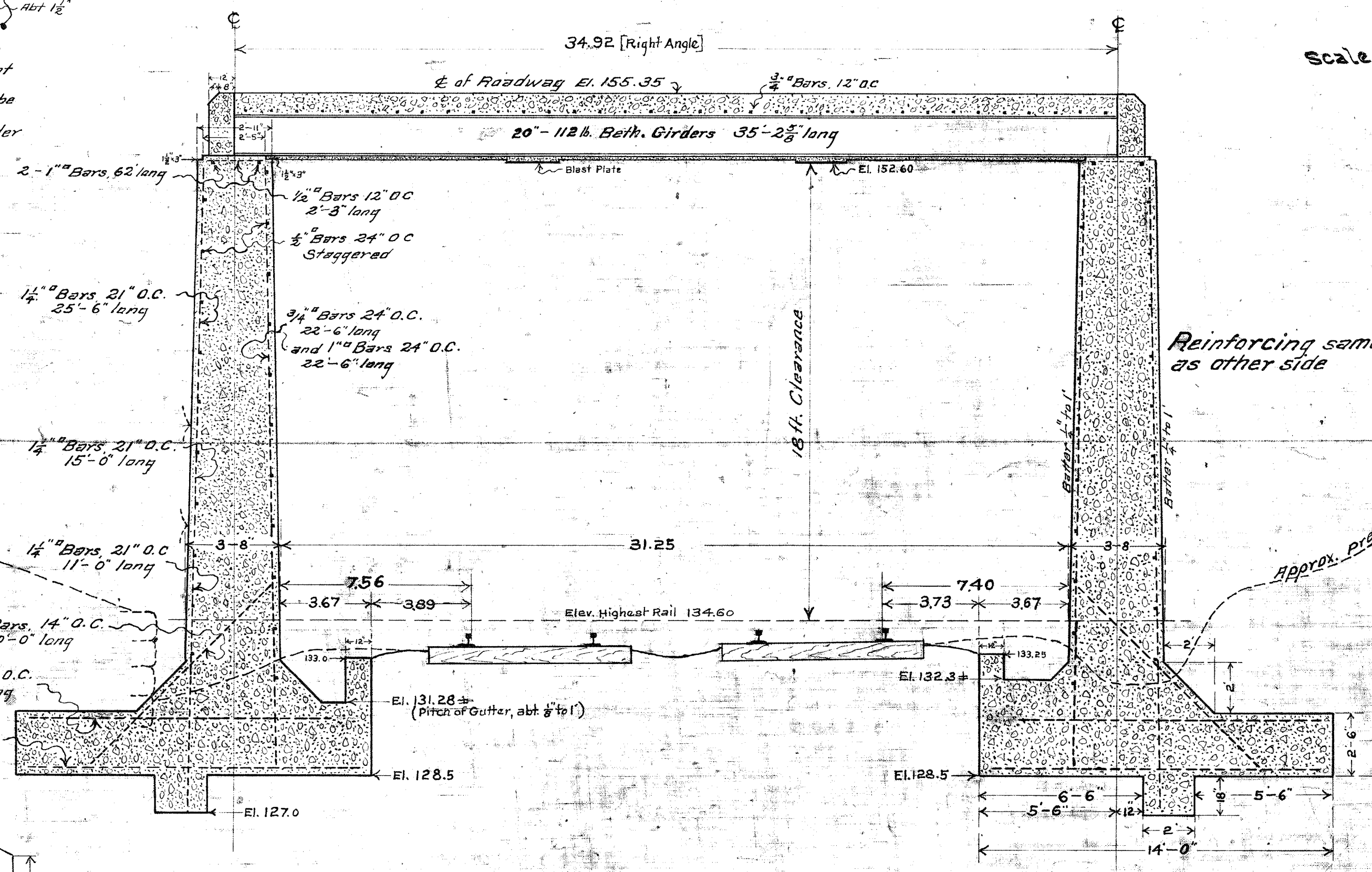
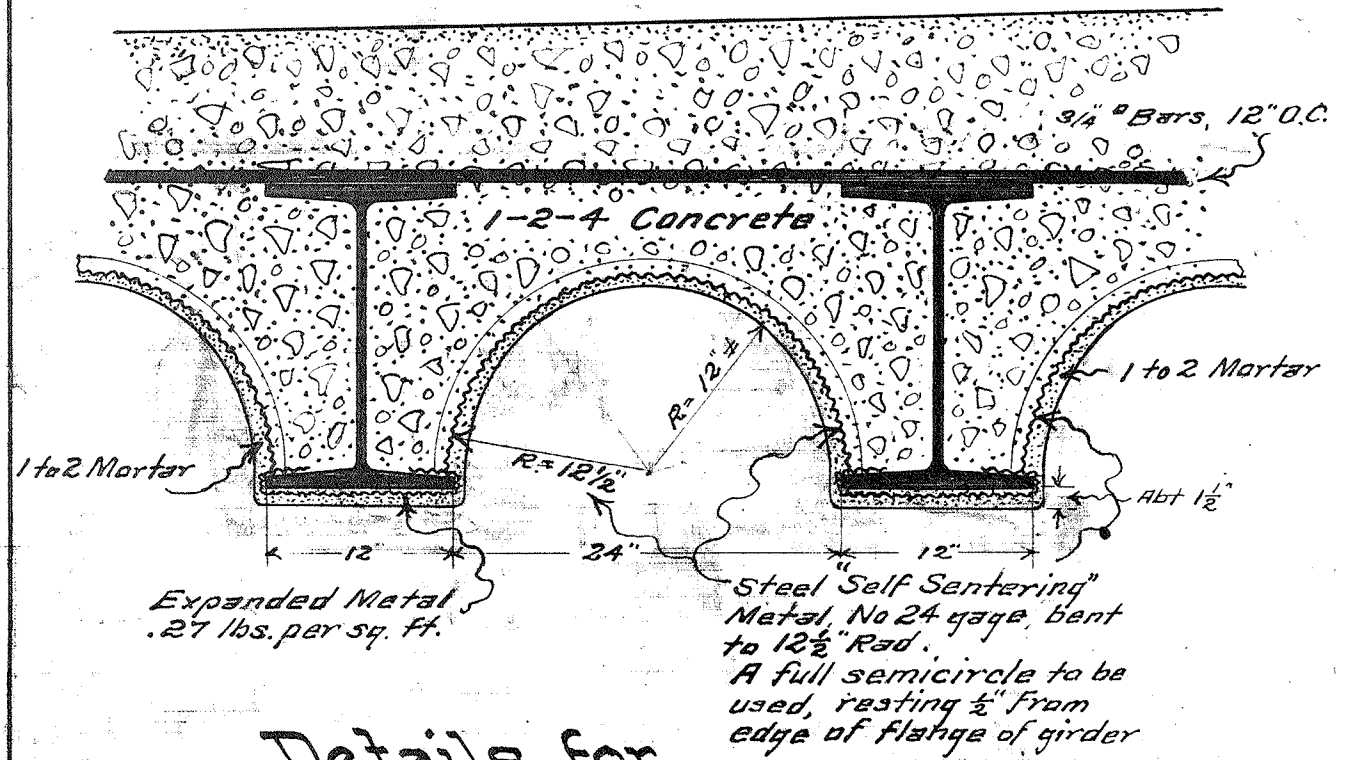
**CROSS SECTIONS 9**



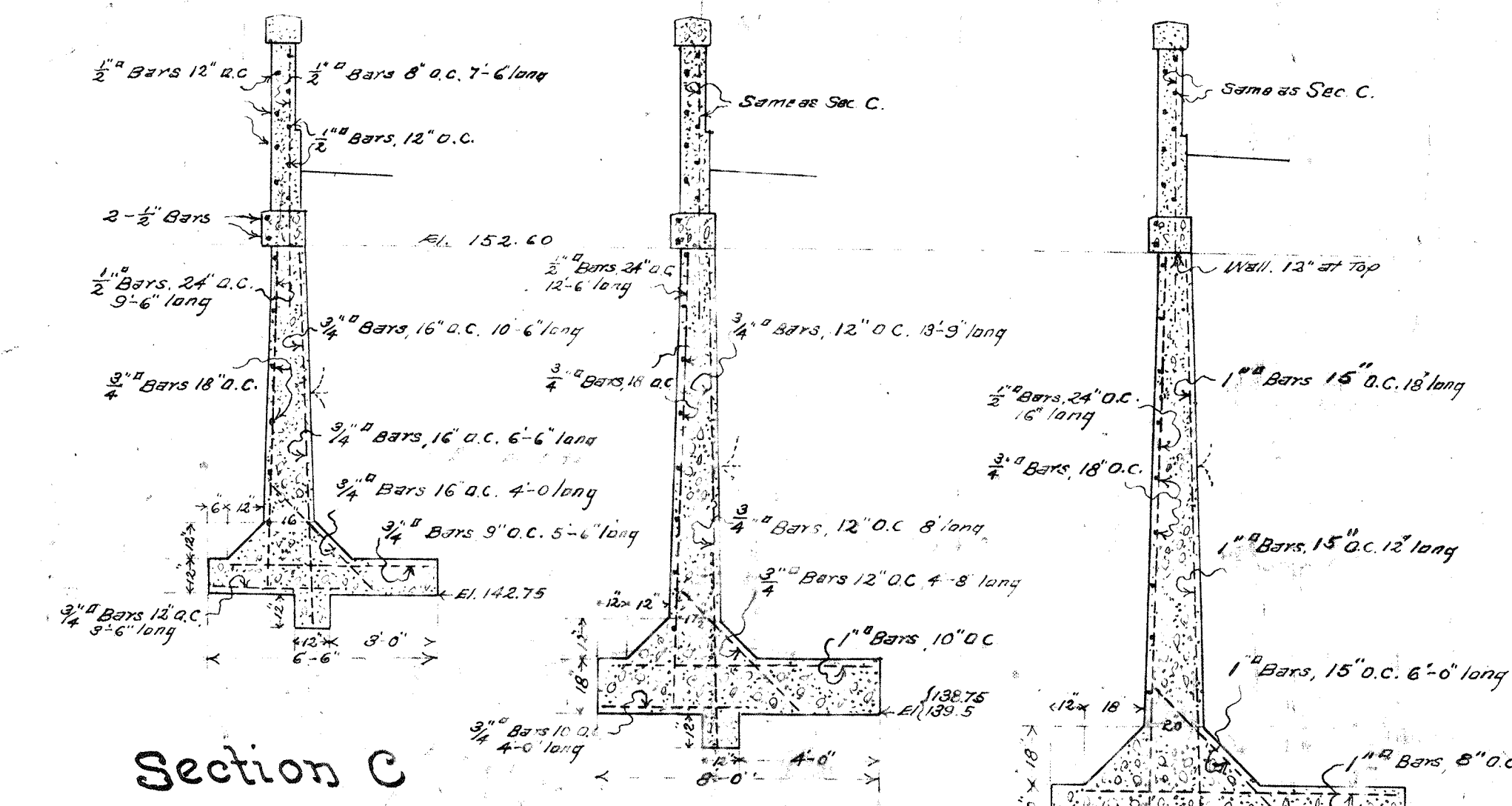
CUT = 89.18 SF  
FILL 3.46 SF



Met. Dist. Com.  
 West Roxbury Parkway  
 Revised Construction Plan  
 — of —  
 West Roxbury Bridge Piers  
 [to accompany sheet 2]  
 scale  $\frac{1}{4}''=1'$  13059 Mar 17 1921  
 John R. Rablin, Engr.



034

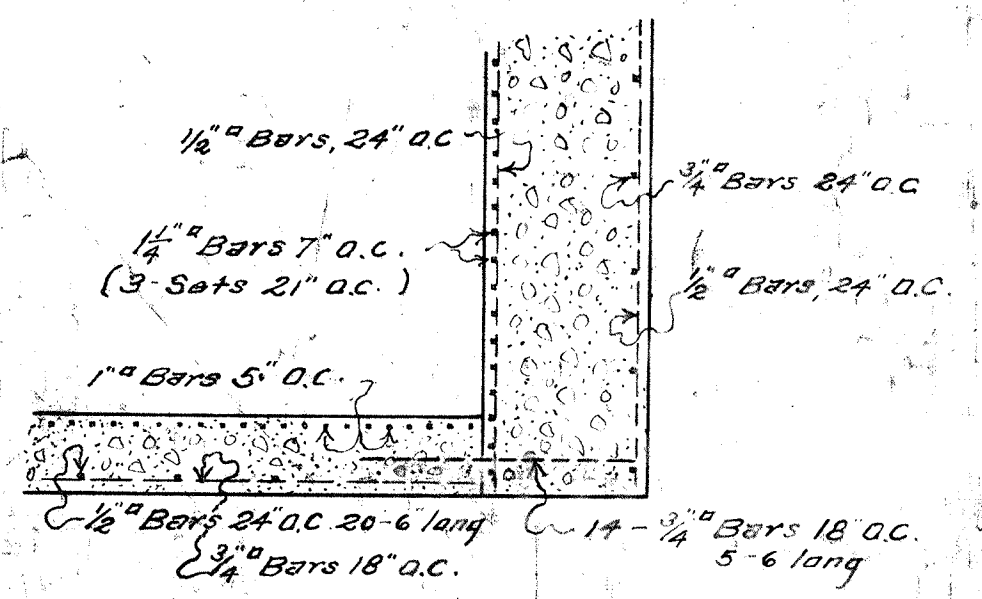


Section C

Section B

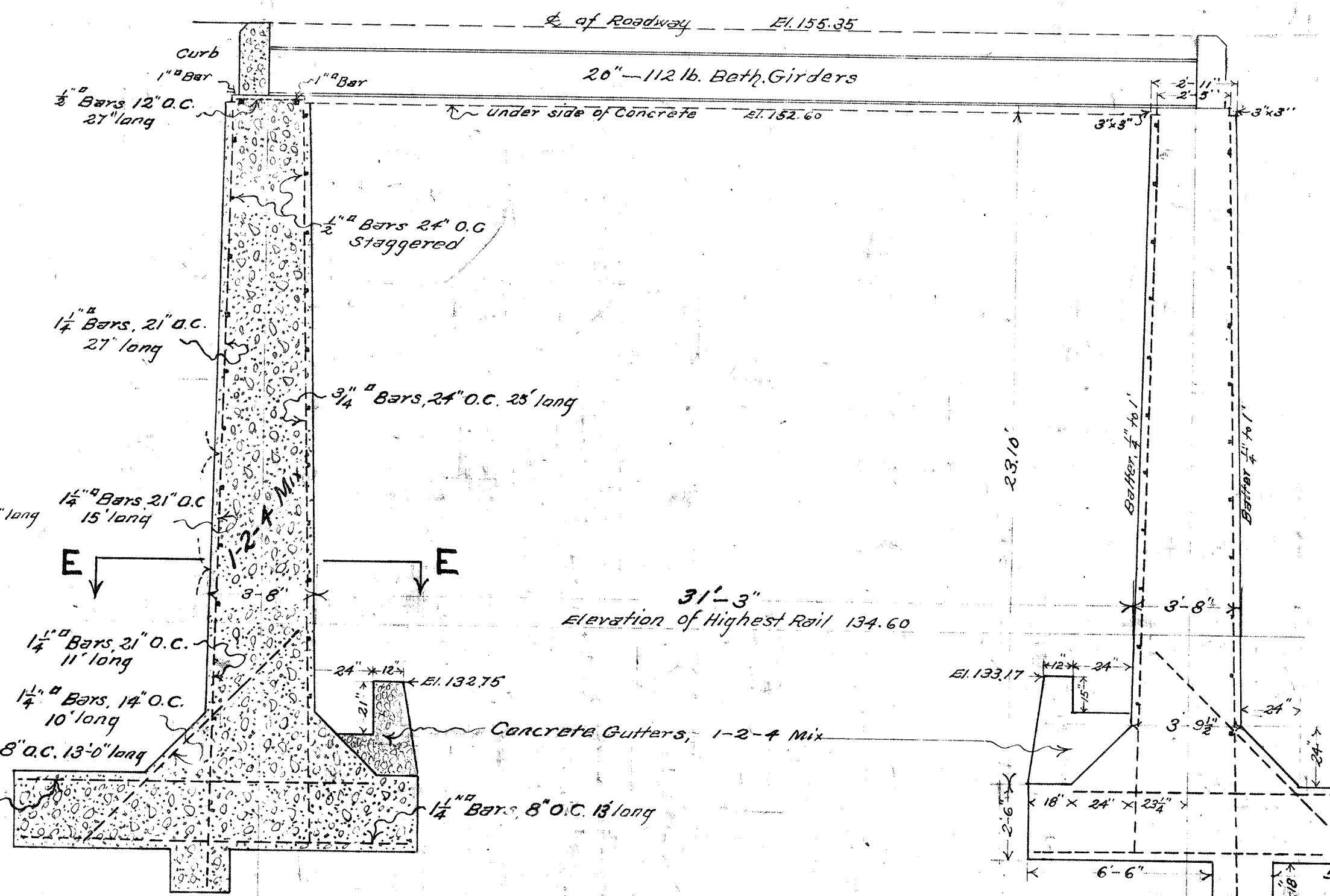
Section D

Butter of Sections 1/4" ±, both sides.

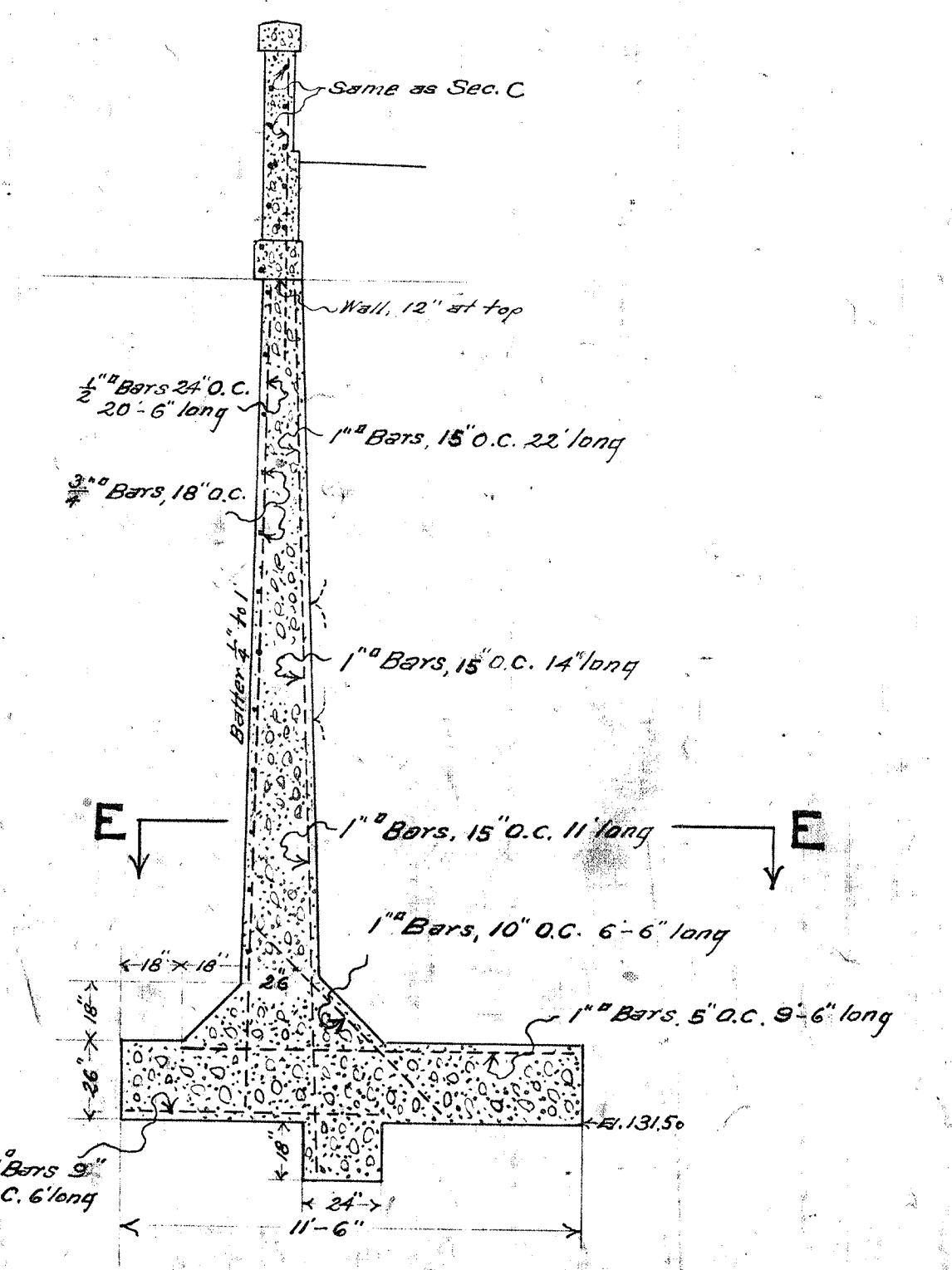


Section EE

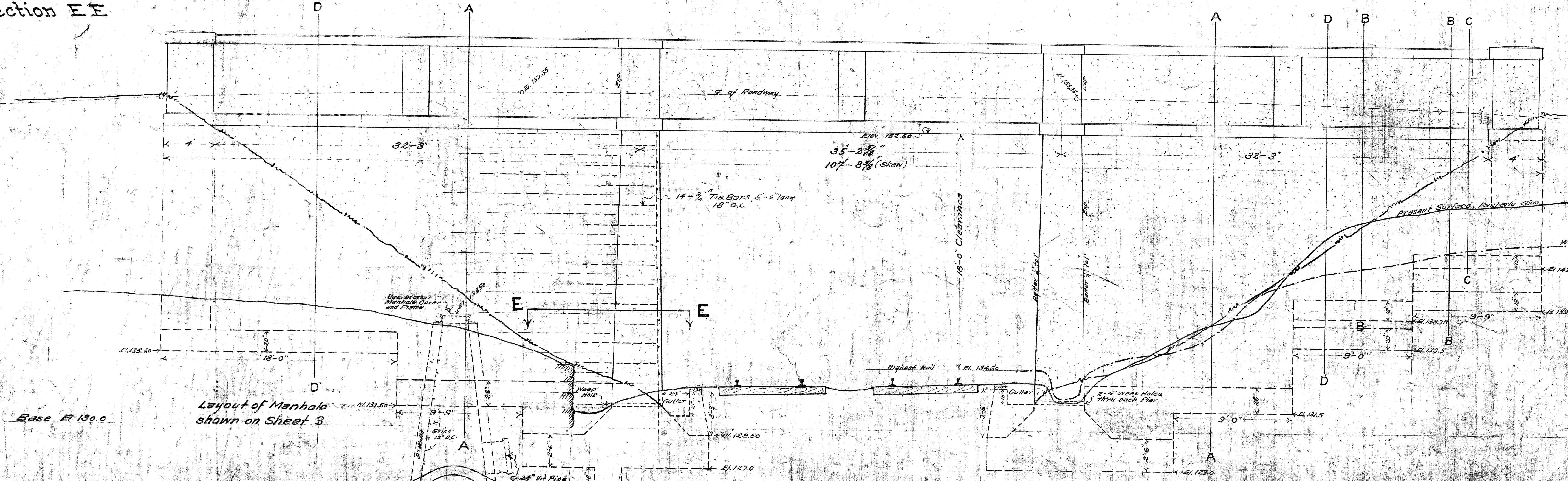
Scale of Sections  
1/4" = 1'



Right angle Section thru span



Section A

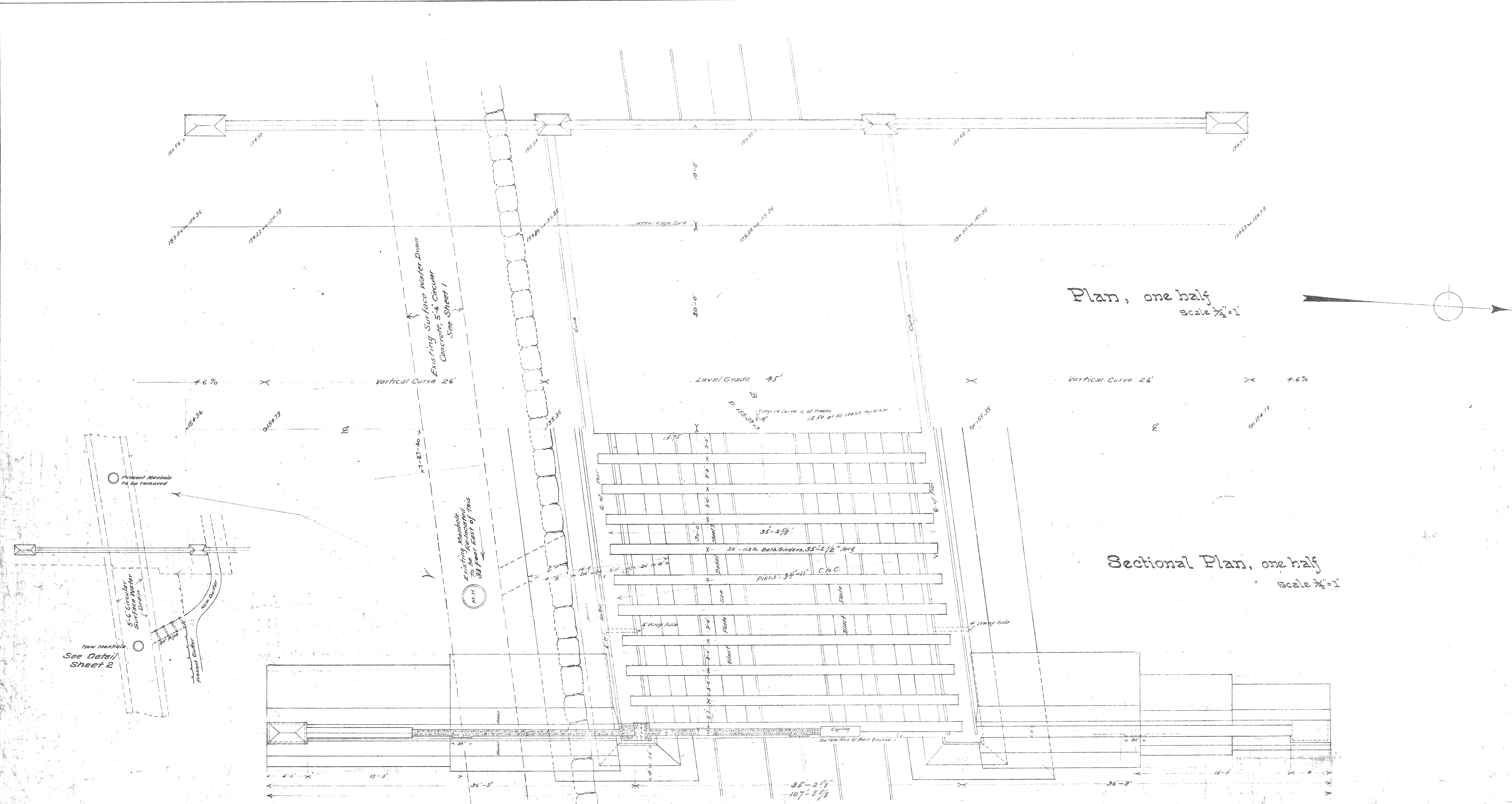


East Elevation

Scale 1/4" = 1'

13059

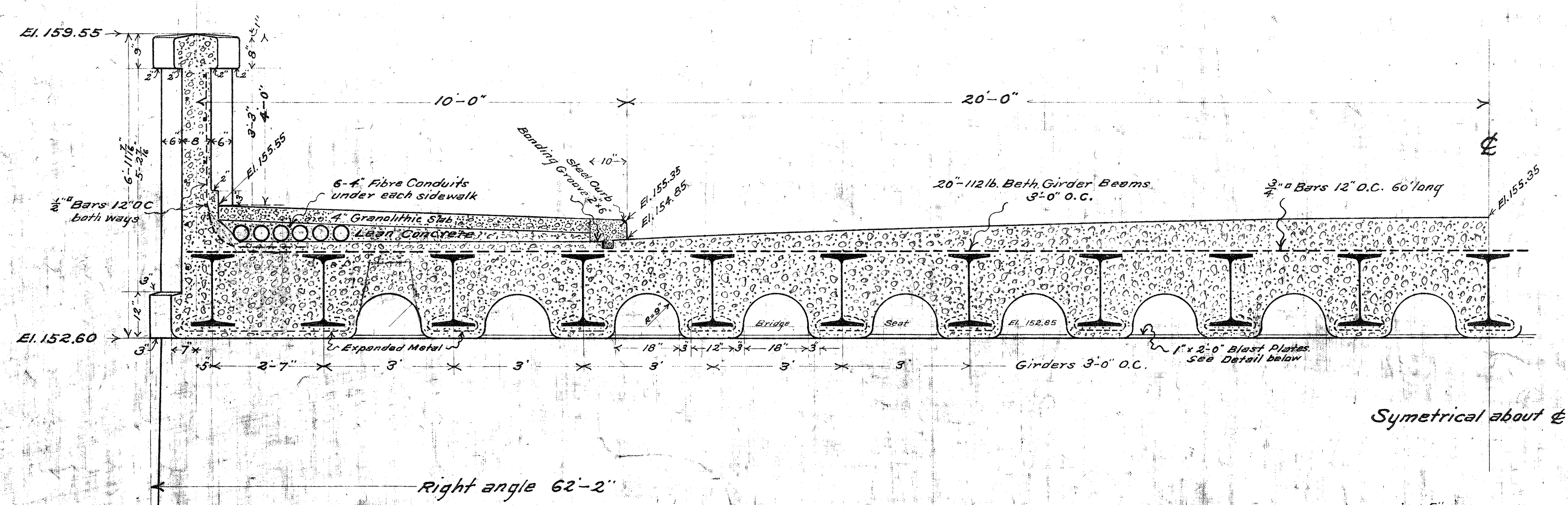
MDC #34  
John R. Rablin Chief  
Sept. 20, 1922



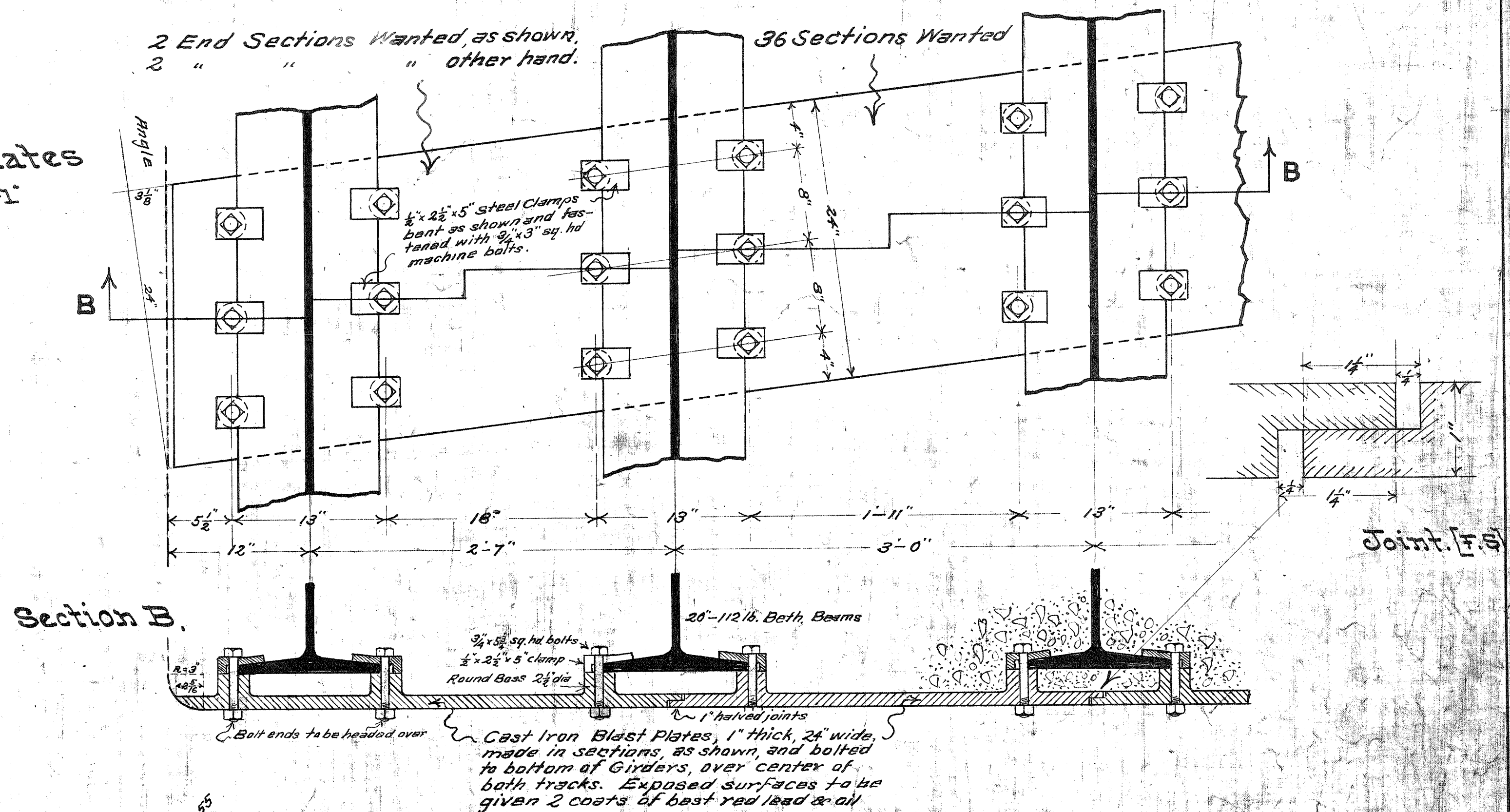
Plan, one half scale 1/4"=1'

Sectional Plan, one half scale 1/4"=1'

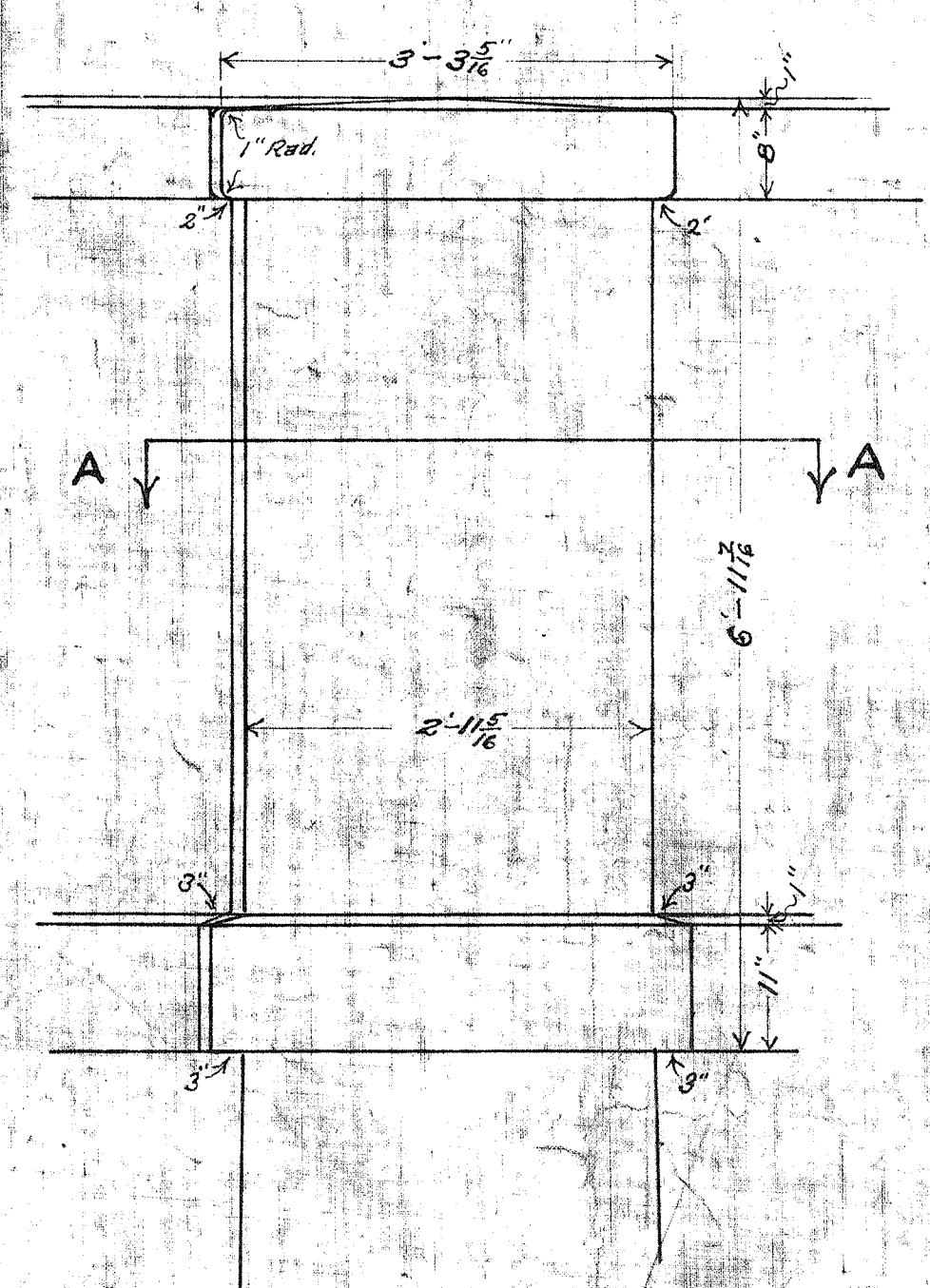
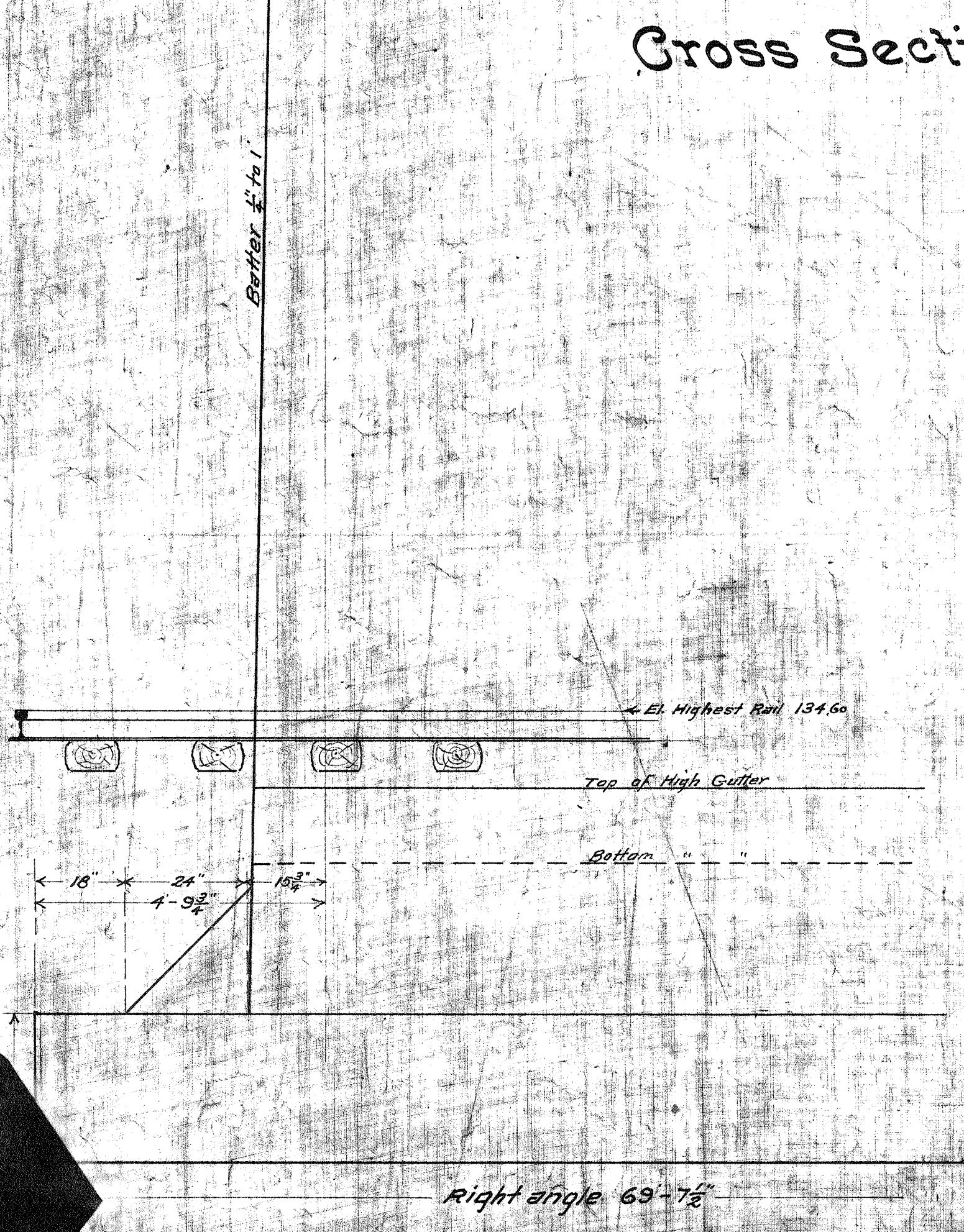
John R. Rubin, Chief Engr.  
Sept. 20, 1920.



Detail of Blast Plates  
Scale 1 1/4" = 1'

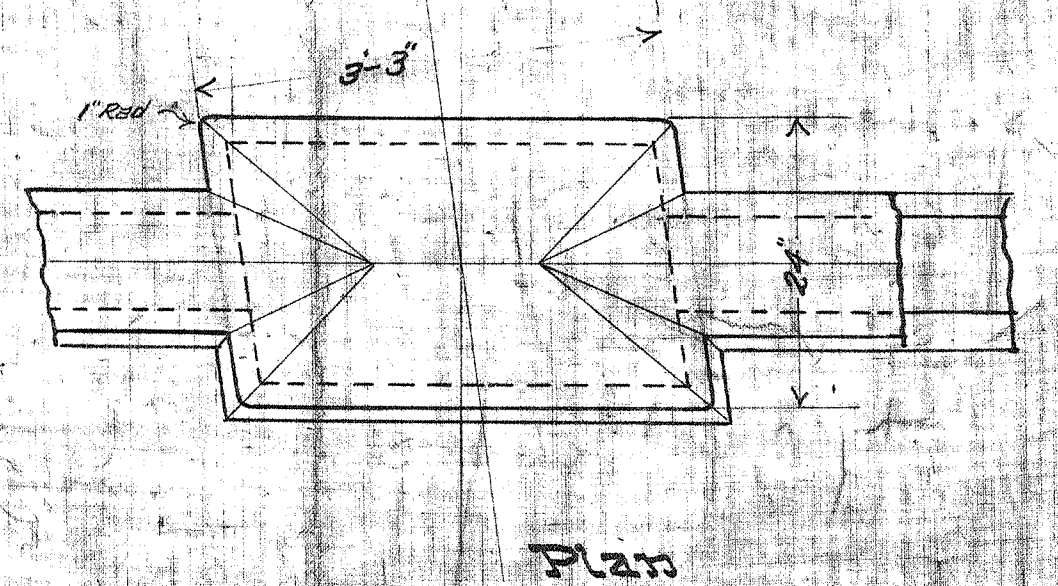


Cross Section  
Scale 1/2" = 1'

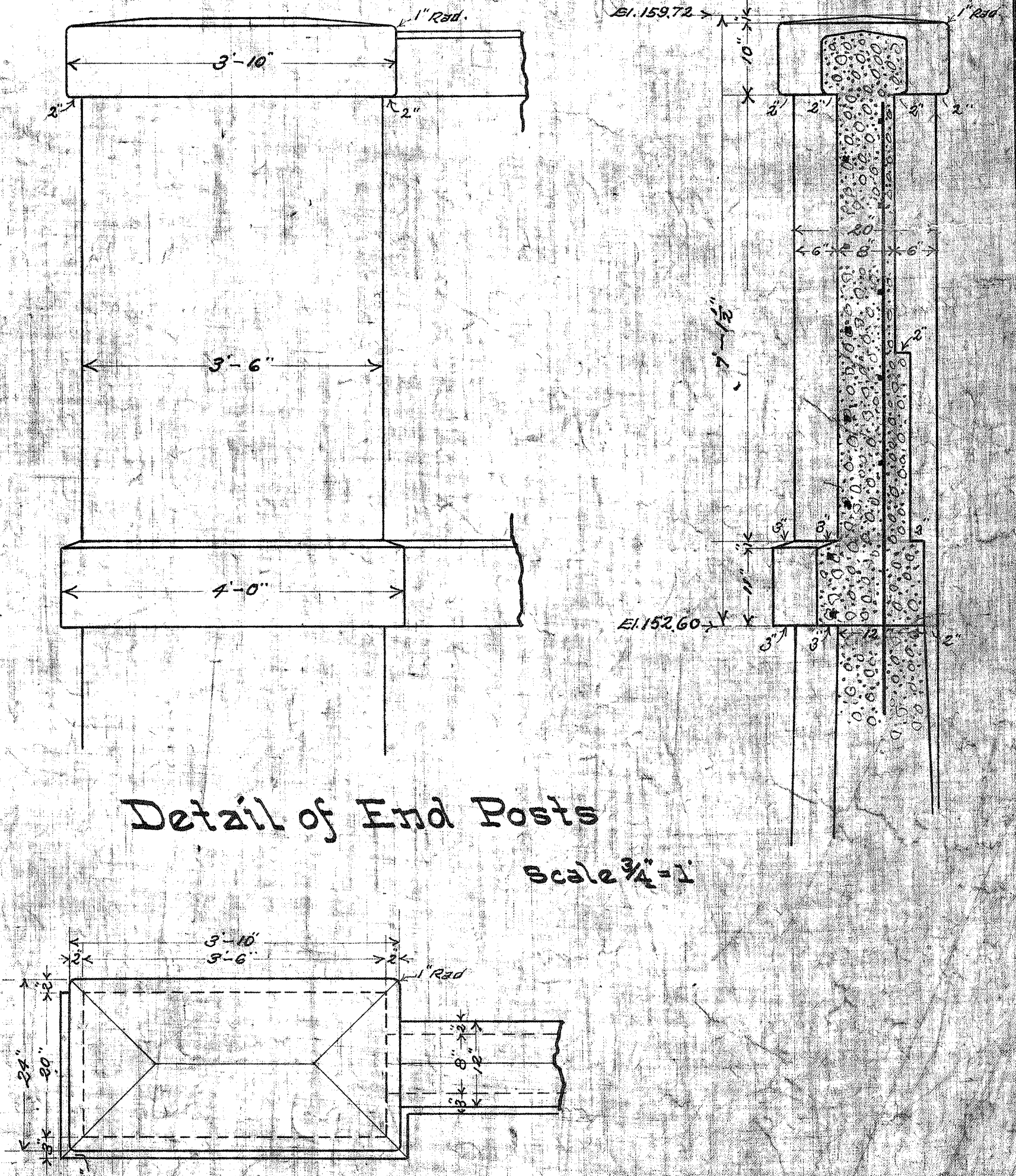


Section A

Detail of Inside Posts  
Scale 3/4" = 1'



Detail of End Posts  
Scale 3/4" = 1'



John R. Rubin, Chief Engr.  
Sept. 20, 1920.