MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

LINCOLN - SUPERSTRUCTURE REPLACEMENT, L-12-002

CONCORD ROAD (ROUTE 126) OVER MBTA/CSX RAILROAD

IN THE TOWN OF

LINCOLN

MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. HIP(NGB)-003S(902)X

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	1	91
PROJECT FILE NO.	86461		

TITLE SHEET & INDEX

THESE PLANS ARE SUPPLEMENTED BY THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS, AS IDENTIFIED IN THE CONTRACT SPECIAL PROVISIONS: THE MASSDOT CONSTRUCTION STANDARD DETAILS, THE MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE MASSDOT OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, AND THE ANSI AMERICAN STANDARD FOR NURSERY STOCK.

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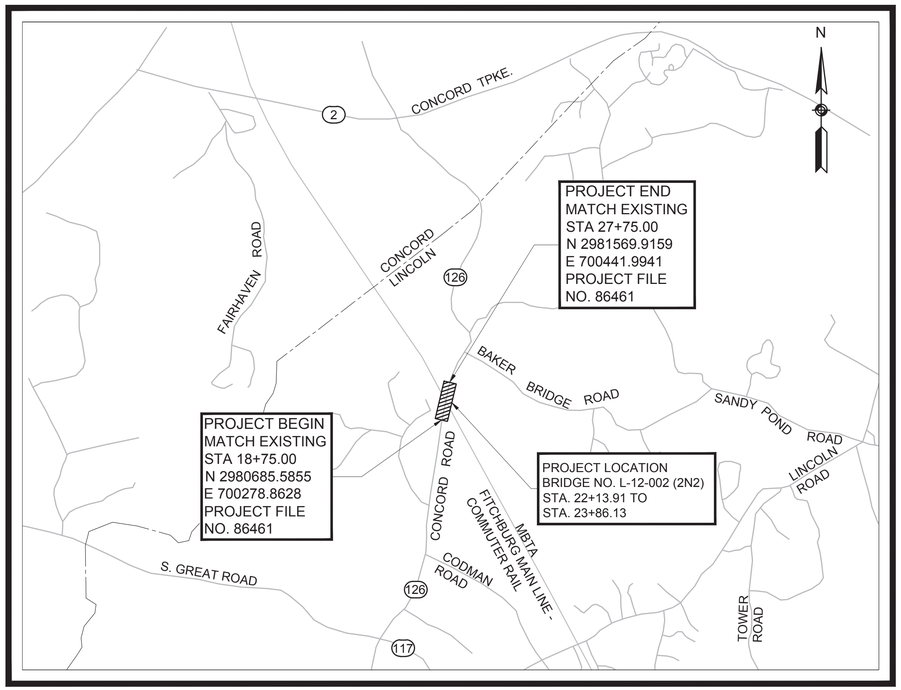

0 1500 3000 4500 6000

SCALE: 1" = 1500'

LENGTH OF PROJECT = 900.00 FEET = 0.170 MILE

DESIGN DESIGNATION CONCORD ROAD (ST 126)

DESIGN SPEED	40 MPH
ADT (2025)	7,560
ADT (2045)	11,240
K	9.5%
D	50%
T (PEAK HOUR)	4.7%
T (AVERAGE DAY)	3.3%
DHV	720
DDHV	523
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL

COMMONWEALTH OF MASSACHUSETTS
EMI R. BARBER
No. 58622
PROFESSIONAL ENGINEER
01-02-2026

Emi Barber Digitally signed by Emi Barber Date: 2026.01.02 10:37:50 -05'00'

COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RI 02908

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Carrie Lavallee, P.E. Digitally signed by Carrie Lavallee, P.E. Date: 2026.01.05 09:22:36 -05'00' 01/05/2026

CHIEF ENGINEER **DATE**

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
△		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
•SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		SEDIMENT CONTROL BARRIER

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
20'		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE
	DYL	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

PROJECT DESCRIPTION:

THE WORK UNDER THIS CONTRACT CONSISTS OF THE REPLACEMENT OF THE EXISTING BRIDGE NO. L-12-002 CARRYING THE TWO TRAFFIC LANES AND SIDEWALK OF CONCORD ROAD OVER THE MBTA/CSX RAILROAD WITH A NEW STEEL STRINGER STRUCTURE, WITH CAST IN PLACE DECK, ALSO CARRYING TWO TRAFFIC LANES AND A SIDEWALK. WORK ALSO INCLUDES RECONSTRUCTING APPROXIMATELY 630 FEET OF CONCORD ROAD (ROUTE 126).

THE WORK INCLUDES FURNISHING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL COSTS REQUIRED FOR THE DEMOLITION, REMOVAL AND DISPOSAL OF THE ENTIRE EXISTING BRIDGE SUPERSTRUCTURE, PARTIAL DEMOLITION OF SUBSTRUCTURE ELEMENTS AND CONSTRUCTION AND REHABILITATION OF THE PROPOSED SUPERSTRUCTURE AND SUBSTRUCTURE AND TEMPORARY UTILITY/PEDESTRIAN BRIDGE.

THE WORK ALSO INCLUDES, BUT IS NOT LIMITED TO, RECONSTRUCTING THE EXISTING ROADWAY APPROACHES, TEMPORARY/PERMANENT UTILITY RELOCATION, TEMPORARY TRAFFIC MANAGEMENT, NECESSARY CLEARING, EXCAVATION, BORROW, GRADING, HIGHWAY GUARDRAIL, PAVEMENT MARKINGS, ROADWAY PAVEMENT, ROADWAY EMBANKMENT, AND OTHER ITEMS AS SHOWN ON THE PLANS OR DESCRIBED HEREIN.

ABBREVIATIONS

GENERAL

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

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	2	91
	PROJECT FILE NO. 86461		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL ABBREVIATIONS

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

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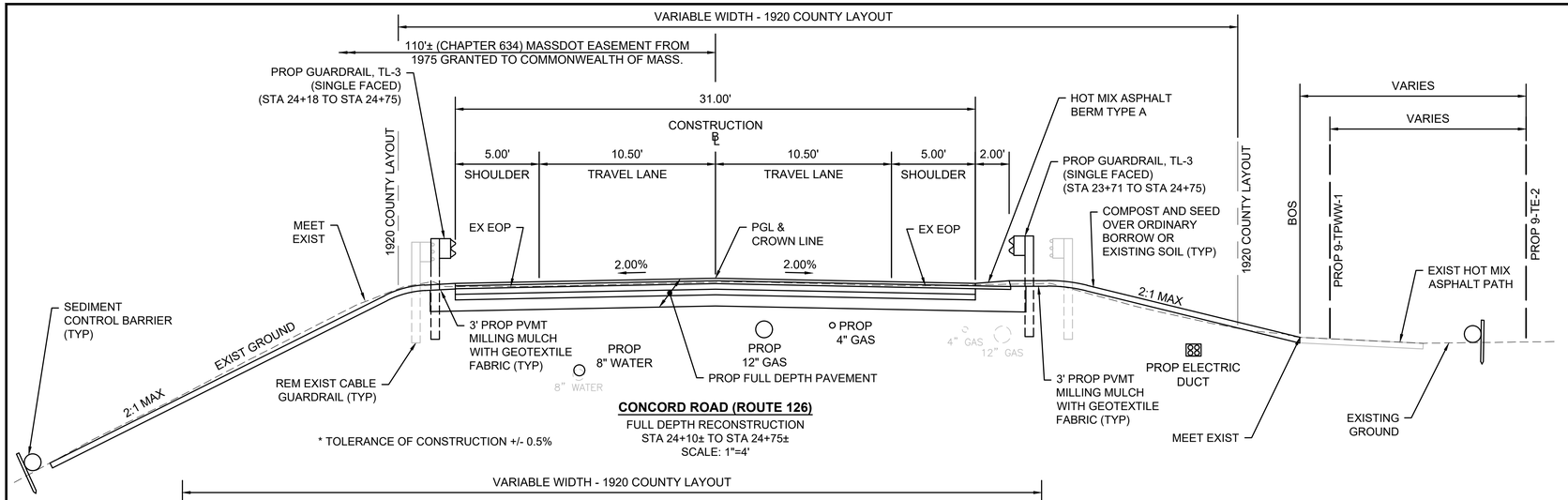
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	3	91
PROJECT FILE NO.	86461		

GENERAL NOTES

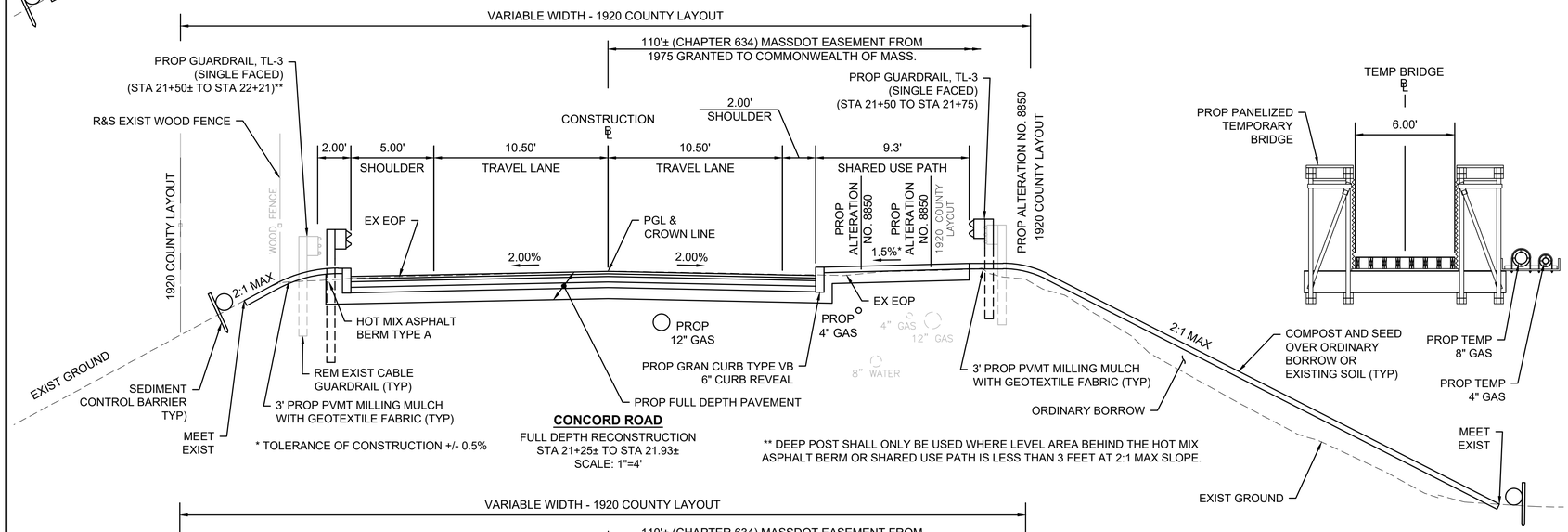
GENERAL NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT FOR REVIEW A SCHEDULE OF OPERATIONS IN ADDITION TO OTHER CONTRACT REQUIREMENTS TO MASSDOT.
2. EXISTING CONDITIONS AND TOPOGRAPHICAL INFORMATION FROM AN ACTUAL FIELD SURVEY CONDUCTED BY CROSSMAN ENGINEERING CONSULTING ENGINEERS & SURVEYORS IN AUGUST, 2018.
3. COORDINATES, IN FEET, ARE REFERENCED TO THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, MAINLAND ZONE, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS, IN FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).PROJECT TRAFFIC MANAGEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE MASSDOT STANDARD TEMPLATES PROVIDED IN THE CONTRACT SPECIFICATIONS.
5. ALL EXISTING STATE, COUNTY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
6. THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AT LEAST 72 BUSINESS HOURS PRIOR TO THE START OF ANY WORK ON THE PROJECT. IN ADDITION, THE CONTRACTOR SHALL SAFELY AND ACCURATELY DETERMINE THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES ON THE SITE PRIOR TO THE START OF WORK. ALL UTILITIES LISTED IN THE PROPOSAL, INCLUDING MASSDOT, MBTA, AND TOWN OF LINCOLN WHO ARE NOT MEMBERS OF DIGSAFE, SHALL ALL BE NOTIFIED SEPARATELY BY MAIL 1 WEEK IN ADVANCE.
7. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL DIG TEST PITS WITH THE LOCATIONS BEING APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK TO EXACTLY LOCATE EXISTING UTILITIES.
8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK. THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
9. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
10. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS.
11. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, WATER, MBTA AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER.
12. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
13. DAMAGE OF PROPERTY BEYOND THE WORK LIMITS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER AND ACCEPTANCE OF THE PROPERTY OWNER.
14. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AT HIS OWN EXPENSE IF NOT OTHERWISE SPECIFIED, OUTSIDE OF THE PROJECT LIMITS.
15. IF THE CONTRACTOR DAMAGES UTILITY SERVICES, HE SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL IMMEDIATELY REPLACE OR REPAIR, UNLESS INDICATED OTHERWISE BY THE RESPECTIVE UTILITY OWNER.
16. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESEEDED PRIOR TO THE END OF THE PROJECT. IF DISTURBED AREAS CANNOT BE SATISFACTORILY ESTABLISHED WITH GRASS BEFORE THE WINTER SEASON, CONTRACTOR SHALL TAKE MEASURES TO STABILIZE SOIL AND THEN SEED IN SPRING SUCH MEASURES MUST BE APPROVED BY THE ENGINEER PRIOR TO FURNISHING AND INSTALLING.
17. THE CONTRACTOR SHALL CONFORM TO TREE AND PLANT PROTECTION REQUIREMENTS CONTAINED WITHIN THE CONTRACT DOCUMENTS.
18. THE LOCATIONS OF PROPOSED PIPELINES, STRUCTURES, AND UTILITY RELOCATIONS MAY BE MODIFIED TO SUIT FIELD CONDITIONS AT THE DISCRETION OF THE ENGINEER. CHANGES IN THE PROPOSED RELOCATED UTILITY POSITIONS MAY REQUIRE ADDITIONAL TIME AND COSTS FOR FORCE ACCOUNTS FOR THE UTILITY TO PREPARE PE STAMPED REVISED DRAWINGS.
19. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS, THE 2009 MUTCD AS AMENDED AND THE SPECIAL PROVISIONS.
20. WHEN A PROPOSED STRUCTURE INTERFERES WITH ANY UNDERGROUND UTILITY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
21. ALL TRENCH BACKFILL SHALL BE MECHANICALLY TAMPED, NO JETTING SHALL BE ALLOWED.
22. TREE TRIMMING CLEAR ZONES: THE CONTRACTOR SHALL TRIM VEGETATION AS REQUIRED FOR THIS PROJECT. AREAS TO BE TRIMMED SHALL BE IDENTIFIED DURING A WALK/DRIVE-THROUGH WITH THE RESIDENT ENGINEER, EVERSOURCE, LINCOLN CONSERVATION DEPARTMENT STAFF, THE LINCOLN TREE WARDEN, DESIGN ENGINEER, AND DOT LANDSCAPE ARCHITECT.
23. INSTALL TREE PROTECTION FOR APPROVAL BY THE ENGINEER AND MASSDOT LANDSCAPE ARCHITECT PRIOR TO THE ONSET OF CONSTRUCTION.
24. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
25. EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
26. THE CONTRACTOR IS HEREBY NOTIFIED THAT ADDITIONAL WORK WITHIN THE PROJECT LIMITS MAY BE PERFORMED BY OTHERS.
27. THE CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH OTHER CONTRACTORS PERFORMING WORK WITHIN AND AT THE PROJECT LIMITS.
28. THE CONTRACTOR MAY BE REQUIRED TO PERFORM ITEMS OF WORK OUT OF NORMAL SEQUENCE AND SCHEDULE, AS DIRECTED BY THE ENGINEER, IN ORDER TO MEET THE OVERALL PROJECT SCHEDULE.
29. THE CONTRACTOR SHALL BE REQUIRED TO PROCURE RELATED ITEMS IMPACTING THE PROJECT SCHEDULE; THEREFORE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT THE APPROPRIATE SHOP DRAWINGS WITH SUFFICIENT LEAD TIME FOR PROCESSING IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.
30. ALL PROPOSED PAVEMENT MARKING SHALL MEET EXISTING MARKINGS AT THE LIMITS OF WORK.
31. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.
32. FOLLOWING REMOVAL OF TEMPORARY BRIDGE AND WALKS, THE CONTRACTOR SHALL REVERT GROUND SURFACE ELEVATIONS TO PRE-CONSTRUCTION CONDITIONS.
33. THE LINCOLN CONSERVATION COMMISSION STAFF SHALL BE NOTIFIED OF AND INCLUDED, IF AVAILABLE, AT THE FOLLOWING MASSDOT MEETINGS:
    - A. EROSION CONTROL/LIMIT OF WORK INSPECTION PRIOR TO COMMENCEMENT OF WORK; SEDIMENT CONTROL METHODS ON ANY CONSERVATION LAND ARE SUBJECT TO THE PRIOR WRITTEN APPROVAL OF LINCOLN CONSERVATION COMMISSION STAFF;
    - B. SITE INSPECTION PRIOR TO TREE REMOVALS;
    - C. NO LESS THAN ONE WEEK PRIOR TO THE COMMENCEMENT OF THE PLANTING ON CONSERVATION LAND THE LINCOLN CONSERVATION COMMISSION STAFF SHALL BE NOTIFIED.
    - D. SITE INSPECTION IF ANY VISITS ARE SCHEDULED RELATED TO INVASIVE SPECIES CONTROL. SUCH WORK SHALL BE SUBJECT TO THE PRIOR WRITTEN APPROVAL OF LINCOLN CONSERVATION COMMISSION STAFF.



CONCORD ROAD (ROUTE 126)
FULL DEPTH RECONSTRUCTION
STA 24+10± TO STA 24+75±
SCALE: 1"=4'

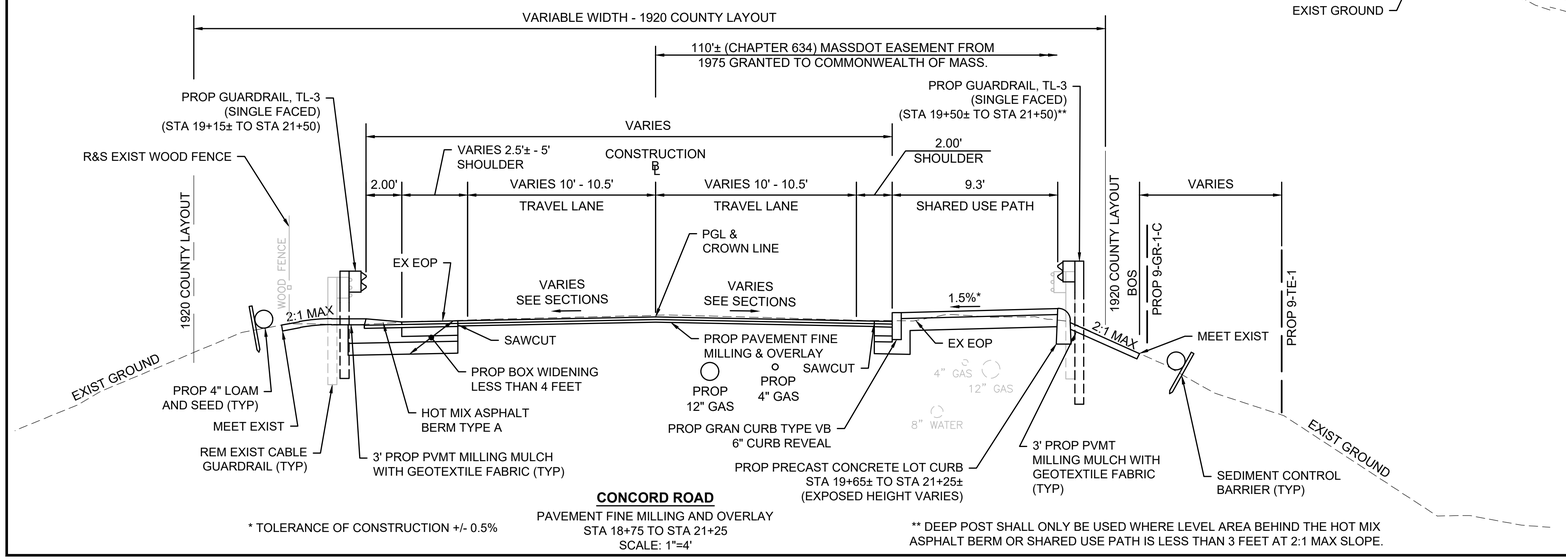
* TOLERANCE OF CONSTRUCTION +/- 0.5%



CONCORD ROAD
FULL DEPTH RECONSTRUCTION
STA 21+25± TO STA 21.93±
SCALE: 1"=4'

* TOLERANCE OF CONSTRUCTION +/- 0.5%

** DEEP POST SHALL ONLY BE USED WHERE LEVEL AREA BEHIND THE HOT MIX ASPHALT BERM OR SHARED USE PATH IS LESS THAN 3 FEET AT 2:1 MAX SLOPE.



CONCORD ROAD
PAVEMENT FINE MILLING AND OVERLAY
STA 18+75 TO STA 21+25
SCALE: 1"=4'

* TOLERANCE OF CONSTRUCTION +/- 0.5%

** DEEP POST SHALL ONLY BE USED WHERE LEVEL AREA BEHIND THE HOT MIX ASPHALT BERM OR SHARED USE PATH IS LESS THAN 3 FEET AT 2:1 MAX SLOPE.

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	4	91
PROJECT FILE NO.	86461		

TYPICAL SECTIONS SHEET 1 OF 2

PAVEMENT NOTES:

PROPOSED FULL DEPTH PAVEMENT:

SURFACE COURSE:	1.75"	SUPERPAVE SURFACE COURSE 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT
INTERMEDIATE COURSE:	2"	SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT
BASE COURSE:	4"	SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
SUB-BASE:	4" 8"	DENSE GRADED CRUSHED STONE FOR SUB-BASE PLACED OVER GRAVEL BORROW TYPE B

PROPOSED PAVEMENT FINE MILLING AND OVERLAY - ROUTE 126 (CONCORD ROAD):

PAVEMENT FINE MILLING:	1.75"	PAVEMENT FINE MILLING
SURFACE COURSE:	1.75"	SUPERPAVE SURFACE COURSE 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT

PROPOSED BOX WIDENING LESS THAN 4 FEET WIDE:

SURFACE COURSE:	1.75"	SUPERPAVE SURFACE COURSE 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT
INTERMEDIATE COURSE:	2"	SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT
BASE COURSE:	6"	HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE
SUB-BASE:	12"	GRAVEL BORROW TYPE B (TWO LIFTS)

PROPOSED BOX WIDENING GREATER THAN 4 FEET WIDE:

SURFACE COURSE:	1.75"	SUPERPAVE SURFACE COURSE 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT
INTERMEDIATE COURSE:	2"	SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT
BASE COURSE:	4"	SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
SUB-BASE:	4" 8"	DENSE GRADED CRUSHED STONE FOR SUB-BASE PLACED OVER GRAVEL BORROW TYPE B

PROPOSED CEMENT CONCRETE SHARED USE PATH:

SURFACE COURSE:	4"	CEMENT CONCRETE (4,000 PSI, 3/4", 610, AIR ENTRAINED) OVER
SUB-BASE:	8"	GRAVEL BORROW TYPE B

TEMPORARY HMA SIDEWALK:

SURFACE COURSE:	1.25"	SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT
INTERMEDIATE COURSE:	1.75"	SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)
SUB-BASE:	8"	GRAVEL BORROW TYPE B

PROPOSED BRIDGE PAVEMENT:

SURFACE COURSE:	1.5"	SUPERPAVE BRIDGE SURFACE COURSE - POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT
PROTECTIVE COURSE:	1.5"	SUPERPAVE BRIDGE PROTECTIVE COURSE - POLYMER (SPC-B-9.5-P) OVER MEMBRANE WATERPROOFING

NOTE:

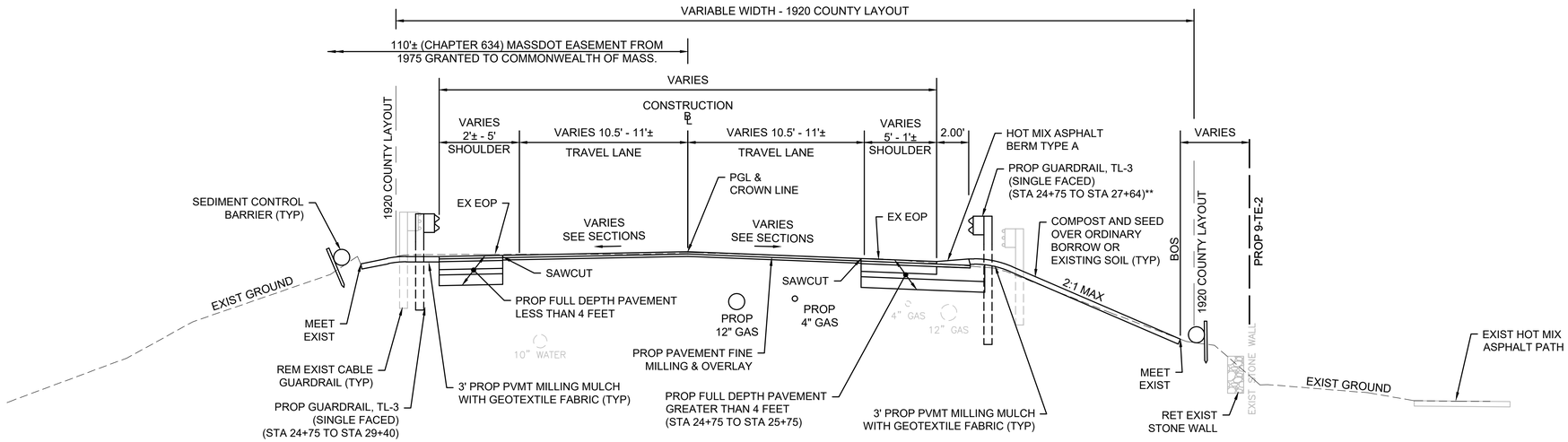
1. ALL HOT MIX ASPHALT PAVEMENT SHALL BE PRODUCED AND CONSTRUCTED IN ACCORDANCE WITH SECTION 450 QUALITY ASSURANCE FOR HMA.
2. PREPARATION OF UNDERLYING SURFACE, ASPHALT EMULSION FOR TACK COAT, HMA FOR PATCHING AND HMA JOINT ADHESIVE SHALL BE IN ACCORDANCE WITH SECTION 450.
3. EXISTING GRAVEL DEEMED SUITABLE FOR SUB-BASE BY THE ENGINEER SHALL BE FINE GRADED AND RETAINED.
4. COMPOST FILTER TUBES (OR SIMILAR BARRIER APPROVED BE THE ENGINEER) SHOWN ON THE LANDSCAPE PLAN SHALL BE LEFT TO DEGRADE OVER TIME AND THEREFOR MUST BE COMPRISED OF 100% BIODEGRADABLE MATERIALS - BURLAP, COTTON, HEMP, ETC.
5. SEDIMENT BARRIER SHALL BE USED WHERE NEEDED AND APPROVED BY THE ENGINEER. PLACEMENT SHALL BE WHERE MOST EFFECTIVE TO REDUCE POTENTIAL EROSION OF SLOPES UNTIL VEGETATION ESTABLISHES.
6. CONTRACTOR SHALL INSTALL THE GEOTEXTILE FABRIC WITH PROP PAVEMENT MILLING MULCH.

86461_HD4(TYPICAL).DWG Plotted on 22-Dec-2025 5:03 PM

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	5	91
PROJECT FILE NO.	86461		

TYPICAL SECTIONS SHEET 2 OF 2



* TOLERANCE OF CONSTRUCTION +/- 0.5%

CONCORD ROAD
PAVEMENT FINE MILLING AND OVERLAY
STA 24+75 TO STA 27+75
SCALE: 1"=4'

** DEEP POST SHALL ONLY BE USED WHERE LEVEL AREA BEHIND THE HOT MIX ASPHALT BERM AND SHARED USE PATH IS LESS THAN 3 FEET AT 2:1 MAX SLOPE.

HIGHWAY GUARD DETAILS

STA 19+15 LT TO STA 19+25 LT (TRAILING ANCHORAGE)
STA 19+25 LT TO STA 21+87 LT (TL-3 POSTS)
STA 21+87 LT TO STA 22+21 LT (TRANSITION TO BRIDGE RAIL)
STA 19+50 RT TO STA 19+65 RT (TANGENT END TREATMENT, TL-3)
STA 19+65 RT TO STA 21+41 RT (TL-3 DEEP POSTS)
STA 21+41 RT TO STA 21+75 RT (TRANSITION TO BRIDGE RAIL)
STA 24+18 LT TO STA 24+52 LT (TRANSITION TO BRIDGE RAIL)
STA 24+52 LT TO STA 29+25 LT (TL-3 POSTS)
STA 29+25 LT TO STA 29+40 LT (TANGENT END TREATMENT, TL-3)
STA 23+71 RT TO STA 24+05 RT (TRANSITION TO BRIDGE RAIL)
STA 24+05 RT TO STA 24+50 RT (TL-3 DEEP POSTS)
STA 24+50 RT TO STA 24+60 RT (TRAILING ANCHORAGE)
STA 24+60 RT TO STA 24+75 RT (TANGENT END TREATMENT, TL-3)
STA 24+75 RT TO STA 27+54 RT (TL-3 DEEP POSTS)
STA 27+54 RT TO STA 27+64 RT (TRAILING ANCHORAGE)

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEETS 35 & 36

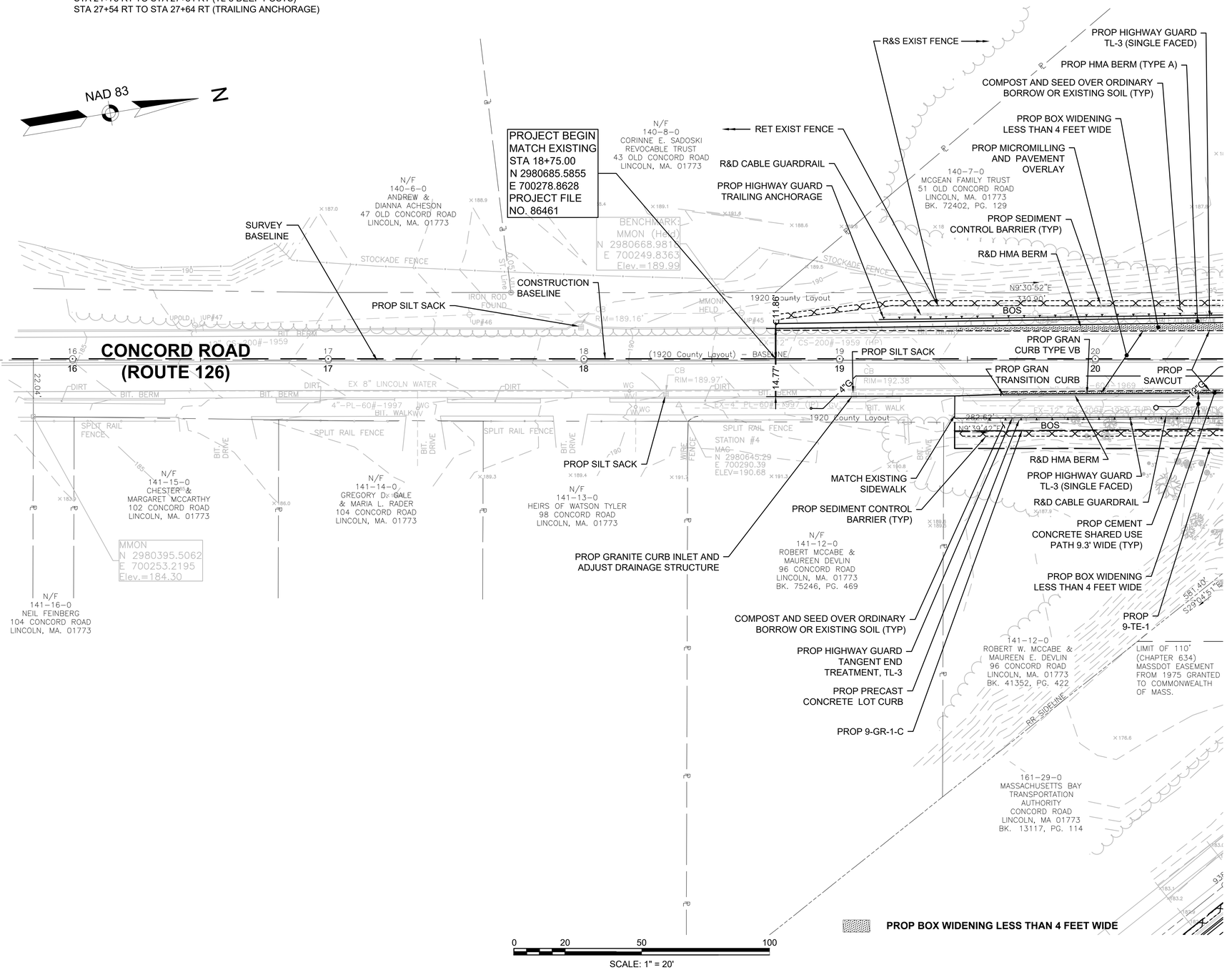
DRAINAGE DETAILS

NONE

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	6	91
PROJECT FILE NO.	86461		

CONSTRUCTION PLAN 1 OF 3



CONTINUED ON SHEET NO. 7

FOR PROFILE PLAN: SEE SHEET NO. 9

86461_HD6(CONST-PLAN).DWG Plotted on 22-Dec-2025 5:05 PM

HIGHWAY GUARD DETAILS

STA 19+15 LT TO STA 19+25 LT (TRAILING ANCHORAGE)
STA 19+25 LT TO STA 21+87 LT (TL-3 POSTS)
STA 21+87 LT TO STA 22+21 LT (TRANSITION TO BRIDGE RAIL)
STA 19+50 RT TO STA 19+65 RT (TANGENT END TREATMENT, TL-3)
STA 19+65 RT TO STA 21+41 RT (TL-3 DEEP POSTS)
STA 21+41 RT TO STA 21+75 RT (TRANSITION TO BRIDGE RAIL)
STA 24+18 LT TO STA 24+52 LT (TRANSITION TO BRIDGE RAIL)
STA 24+52 LT TO STA 29+25 LT (TL-3 POSTS)
STA 29+25 LT TO STA 29+40 LT (TANGENT END TREATMENT, TL-3)
STA 23+71 RT TO STA 24+05 RT (TRANSITION TO BRIDGE RAIL)
STA 24+05 RT TO STA 24+50 RT (TL-3 DEEP POSTS)
STA 24+50 RT TO STA 24+60 RT (TRAILING ANCHORAGE)
STA 24+60 RT TO STA 24+75 RT (TANGENT END TREATMENT, TL-3)
STA 24+75 RT TO STA 27+54 RT (TL-3 DEEP POSTS)
STA 27+54 RT TO STA 27+64 RT (TRAILING ANCHORAGE)

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEETS 35 & 36

DRAINAGE DETAILS

NONE

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	7	91
PROJECT FILE NO.	86461		

CONSTRUCTION PLAN 2 OF 3

CONTINUED ON SHEET NO. 6
CONTINUED ON SHEET NO. 8

NAD 83 N
R&S EXIST FENCE
PROP TRANSITION TO BRIDGE RAIL
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP HMA BERM (TYPE A)
PROP FULL DEPTH PAVEMENT RECONSTRUCTION
PROP BOX WIDENING LESS THAN 4 FEET WIDE
PROP HIGHWAY GUARD TL-3 (SINGLE FACED)
PROP MICROMILLING AND PAVEMENT OVERLAY
R&D CABLE GUARDRAIL
OLD CONCORD ROAD
LIMIT OF WORK
PROP 9-PUE-2-T
PROP GRAN CURB TYPE VB
PROP CLEARING AND GRUBBING
PROP 9-PUE-1
R&D GRAN CURB
PROP SEDIMENT CONTROL BARRIER (TYP)
CONSTRUCTION BASELINE
SURVEY BASELINE
BRIDGE NO. L-12-002
PROP APPROACH SLAB
R&D GRAN CURB
PROP GRAN TRANSITION CURB
PROP TRANSITION TO BRIDGE RAIL
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP HIGHWAY GUARD TL-3 (SINGLE FACED)
PROP CLEARING AND GRUBBING
PROP MICROMILLING AND PAVEMENT OVERLAY
PROP BOX WIDENING LESS THAN 4 FEET WIDE
R&D CABLE GUARDRAIL
CONCORD ROAD (ROUTE 126)
PROP GRAN CURB TYPE VB
PROP SAWCUT
PROP GRAN TRANSITION CURB FOR BRIDGE SIDEWALK TO HIGHWAY CURB
PROP APPROACH SLAB
PROP SAWCUT
PROP BOX WIDENING GREATER THAN 4 FEET WIDE
PROP CEMENT CONCRETE SHARED USE PATH 9.3' WIDE (TYP)
PROP 9-TE-1
R&D CABLE GUARDRAIL
PROP 9-GR-1-C
PROP HIGHWAY GUARD TL-3 (SINGLE FACED)
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP FULL DEPTH PAVEMENT LESS THAN 4 FEET WIDE
PROP PRECAST CONCRETE LOT CURB
PANELIZED TEMPORARY BRIDGE
PROP TRANSITION TO BRIDGE RAIL
TEMPORARY HMA SIDEWALK 6' WIDE WITH HANDRAILS
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP 9-TE-3
PROP UTILITY/PEDESTRIAN BRIDGE
PROP CLEARING AND GRUBBING
PROP 9-TFBU-1
PROP TREE PROTECTION
TEMPORARY HMA SIDEWALK 6' WIDE WITH HANDRAIL
PROP CLEARING AND GRUBBING
SEE LANDSCAPE AND RESTORATION PLANS FOR MORE DETAILS
PROP 9-TPWW-1
PROP TRANSITION TO BRIDGE RAIL
PROP GRAN TRANSITION CURB FOR BRIDGE SIDEWALK TO HIGHWAY CURB
R&D CABLE GUARDRAIL
PROP CEMENT CONCRETE SHARED USE PATH WITH HANDRAIL
PROP HIGHWAY GUARD TANGENT END TREATMENT, TL-3
PROP SEDIMENT CONTROL BARRIER (TYP)
MATCH EXISTING SIDEWALK
PROP FULL DEPTH PAVEMENT RECONSTRUCTION
PROP HIGHWAY GUARD TL-3 (SINGLE FACED)
PROP BOX WIDENING GREATER THAN 4 FEET WIDE
PROP 9-TE-2
R&D CABLE GUARDRAIL
PROP HMA BERM (TYPE A)
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP R&D HMA BERM
PROP GRAN CURB TYPE VB
PROP SAWCUT
PROP HIGHWAY GUARD TL-3 (SINGLE FACED)
PROP CEMENT CONCRETE SHARED USE PATH 9.3' WIDE (TYP)
PROP 9-TE-1
R&D CABLE GUARDRAIL
PROP 9-GR-1-C
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP FULL DEPTH PAVEMENT LESS THAN 4 FEET WIDE
PROP PRECAST CONCRETE LOT CURB
TEMPORARY HMA SIDEWALK 6' WIDE WITH HANDRAILS
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)
PROP 9-TE-3
PROP UTILITY/PEDESTRIAN BRIDGE
PROP CLEARING AND GRUBBING
PROP CLEARING AND GRUBBING
PROP 9-TFBU-1
PROP TREE PROTECTION
TEMPORARY HMA SIDEWALK 6' WIDE WITH HANDRAIL
PROP CLEARING AND GRUBBING
SEE LANDSCAPE AND RESTORATION PLANS FOR MORE DETAILS
PROP 9-TPWW-1
PROP TRANSITION TO BRIDGE RAIL
PROP GRAN TRANSITION CURB FOR BRIDGE SIDEWALK TO HIGHWAY CURB
R&D CABLE GUARDRAIL
PROP CEMENT CONCRETE SHARED USE PATH WITH HANDRAIL
PROP HIGHWAY GUARD TANGENT END TREATMENT, TL-3
PROP SEDIMENT CONTROL BARRIER (TYP)
MATCH EXISTING SIDEWALK
PROP FULL DEPTH PAVEMENT RECONSTRUCTION
PROP HIGHWAY GUARD TL-3 (SINGLE FACED)
PROP BOX WIDENING GREATER THAN 4 FEET WIDE
PROP 9-TE-2
R&D CABLE GUARDRAIL
PROP HMA BERM (TYPE A)
COMPOST AND SEED OVER ORDINARY BORROW OR EXISTING SOIL (TYP)

140-38-0 ASHTON PEERY & KATHERINE A. WOLF 50 OLD CONCORD ROAD LINCOLN, MA 01773 BK. 25084, PG. 138
140-7-0 MCGEAN FAMILY TRUST 51 OLD CONCORD ROAD LINCOLN, MA 01773 BK. 72402, PG. 129
140-39-0 MASSACHUSETTS BAY TRANSPORTATION AUTHORITY CONCORD ROAD LINCOLN, MA 01773 BK. 78086, PG. 34
141-12-0 ROBERT W. MCCABE & MAUREEN E. DEVLIN 96 CONCORD ROAD LINCOLN, MA. 01773 BK. 41352, PG. 422
161-29-0 MASSACHUSETTS BAY TRANSPORTATION AUTHORITY CONCORD ROAD LINCOLN, MA 01773 BK. 13117, PG. 114
141-11-0 TOWN OF LINCOLN, ACTING THROUGH ITS CONSERVATION COMMISSION CONCORD ROAD LINCOLN, MA 01773 BK. 11818, PG. 262 (PARCEL IS SUBJECTED TO ARTICLE 97 RESTRICTION)

LIMIT OF 110' (CHAPTER 634) MASSDOT EASEMENT FROM 1975 GRANTED TO COMMONWEALTH OF MASS.

0 20 50 100
SCALE: 1" = 20'

PROP FULL DEPTH PAVEMENT RECONSTRUCTION
PROP BOX WIDENING LESS THAN 4 FEET WIDE
PROP BOX WIDENING GREATER THAN 4 FEET WIDE

FOR PROFILE PLAN: SEE SHEET NOS. 9 & 10

HIGHWAY GUARD DETAILS

STA 19+15 LT TO STA 19+25 LT (TRAILING ANCHORAGE)
STA 19+25 LT TO STA 21+87 LT (TL-3 POSTS)
STA 21+87 LT TO STA 22+21 LT (TRANSITION TO BRIDGE RAIL)
STA 19+50 RT TO STA 19+65 RT (TANGENT END TREATMENT, TL-3)
STA 19+65 RT TO STA 21+41 RT (TL-3 DEEP POSTS)
STA 21+41 RT TO STA 21+75 RT (TRANSITION TO BRIDGE RAIL)
STA 24+18 LT TO STA 24+52 LT (TRANSITION TO BRIDGE RAIL)
STA 24+52 LT TO STA 29+25 LT (TL-3 POSTS)
STA 29+25 LT TO STA 29+40 LT (TANGENT END TREATMENT, TL-3)
STA 23+71 RT TO STA 24+05 RT (TRANSITION TO BRIDGE RAIL)
STA 24+05 RT TO STA 24+50 RT (TL-3 DEEP POSTS)
STA 24+50 RT TO STA 24+60 RT (TRAILING ANCHORAGE)
STA 24+60 RT TO STA 24+75 RT (TANGENT END TREATMENT, TL-3)
STA 24+75 RT TO STA 27+54 RT (TL-3 DEEP POSTS)
STA 27+54 RT TO STA 27+64 RT (TRAILING ANCHORAGE)

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEETS 35 & 36

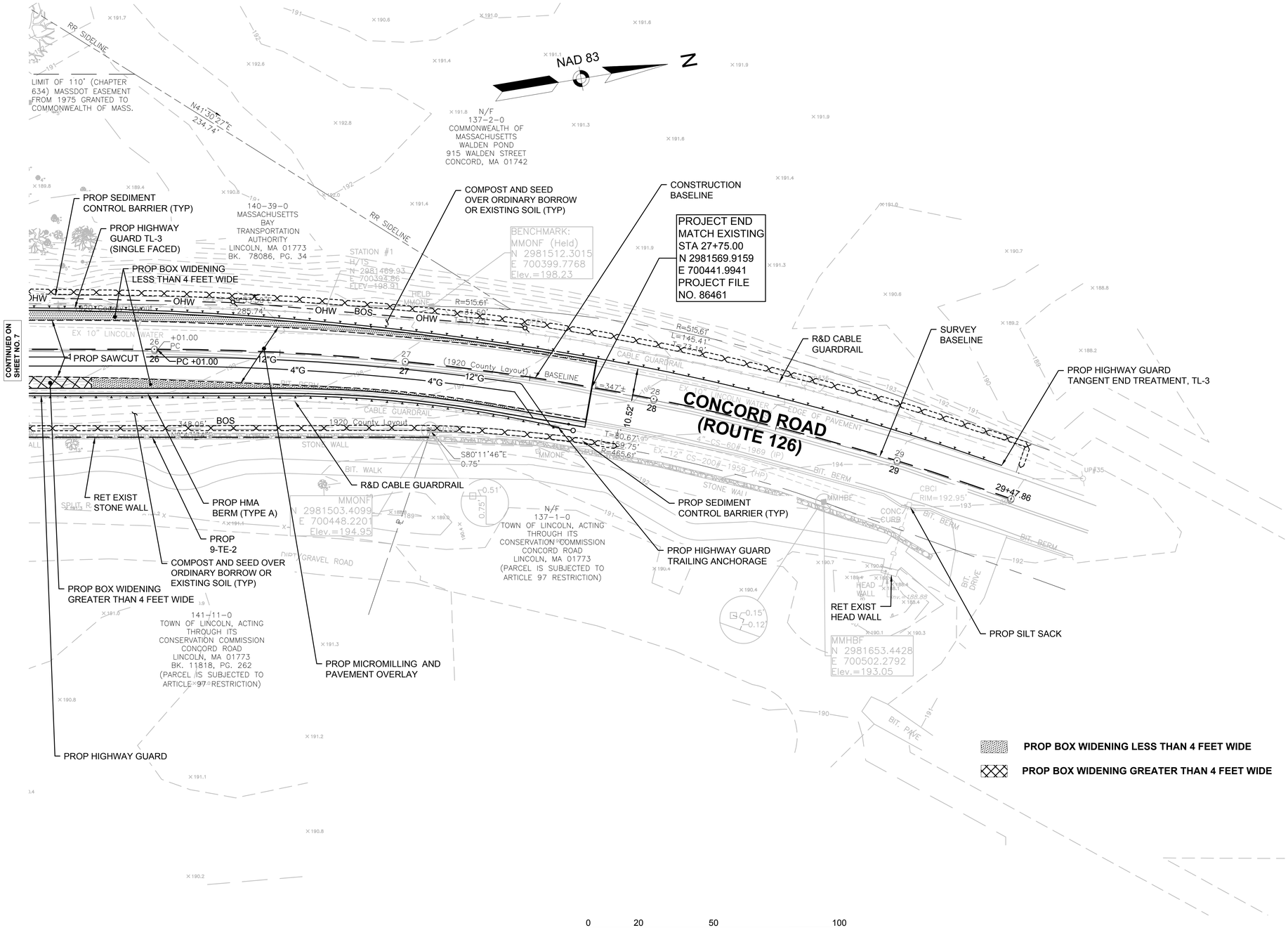
DRAINAGE DETAILS

NONE

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003(902)X	8	91
PROJECT FILE NO.	86461		

CONSTRUCTION PLAN 3 OF 3



0 20 50 100
SCALE: 1" = 20'

FOR PROFILE PLAN:
SEE SHEET NO. 9

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	9	91
PROJECT FILE NO.	86461		

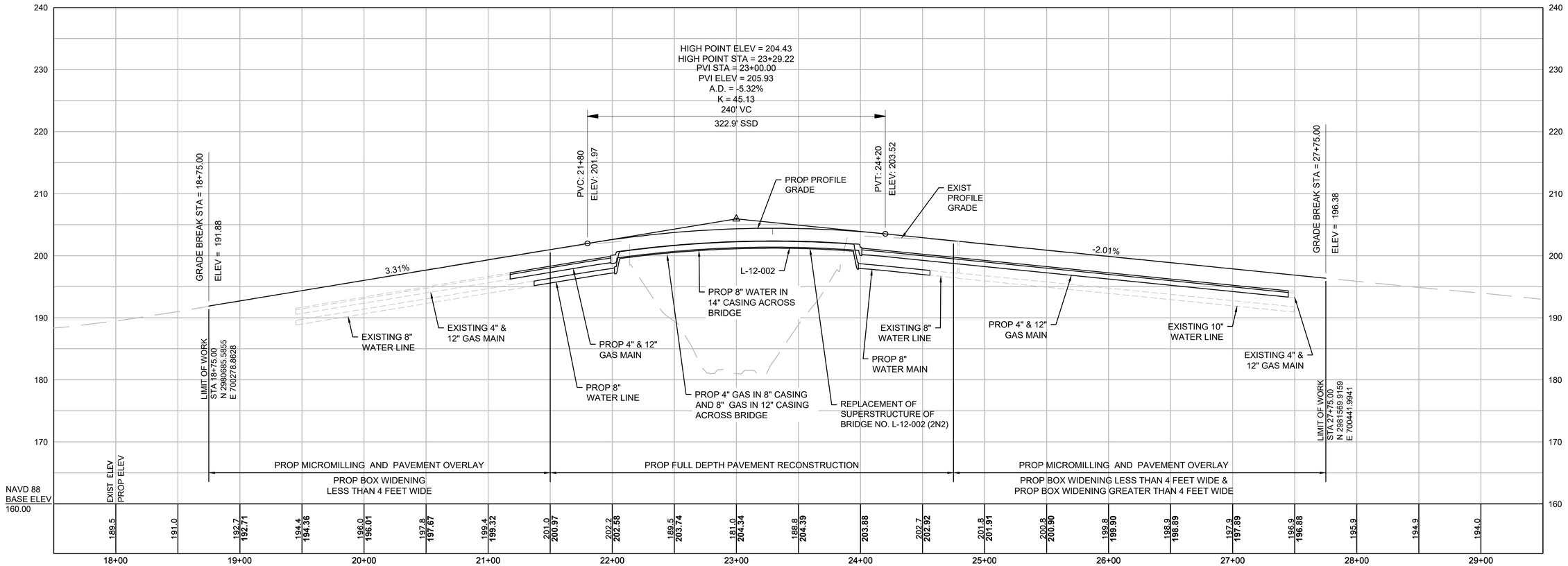
PROFILE 1 OF 2

BENCHMARK:
MMON (HELD)
N 2980668.9818
E 700249.8363
ELEV. = 189.99

BENCHMARK:
MMONF (HELD FOR STREET LINE)
N 2980995.3291
E 700304.5313
ELEV. = 199.01

BENCHMARK:
MMHBF (HELD)
N 2981160.8683
E 700389.5077
ELEV. = 203.58

BENCHMARK:
MMONF (HELD)
N 2981512.3015
E 700399.7768
ELEV. = 198.23



PROFILE - CONCORD ROAD (ST 126)

HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 6-8

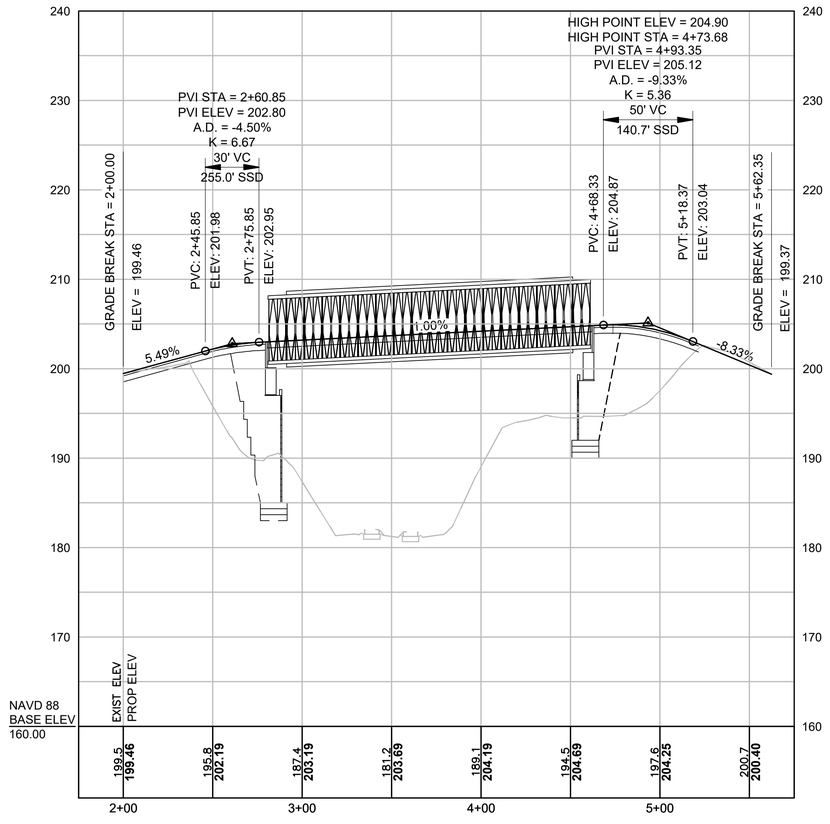
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	10	91
PROJECT FILE NO.	86461		

PROFILE 2 OF 2

BENCHMARK:
MMONF (HELD FOR STREET LINE)
N 2980995.3291
E 700304.5313
ELEV. = 199.01

BENCHMARK:
MMHBF (HELD)
N 2981160.8683
E 700389.5077
ELEV. = 203.58



PROFILE - PANELIZED TEMPORARY BRIDGE

HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

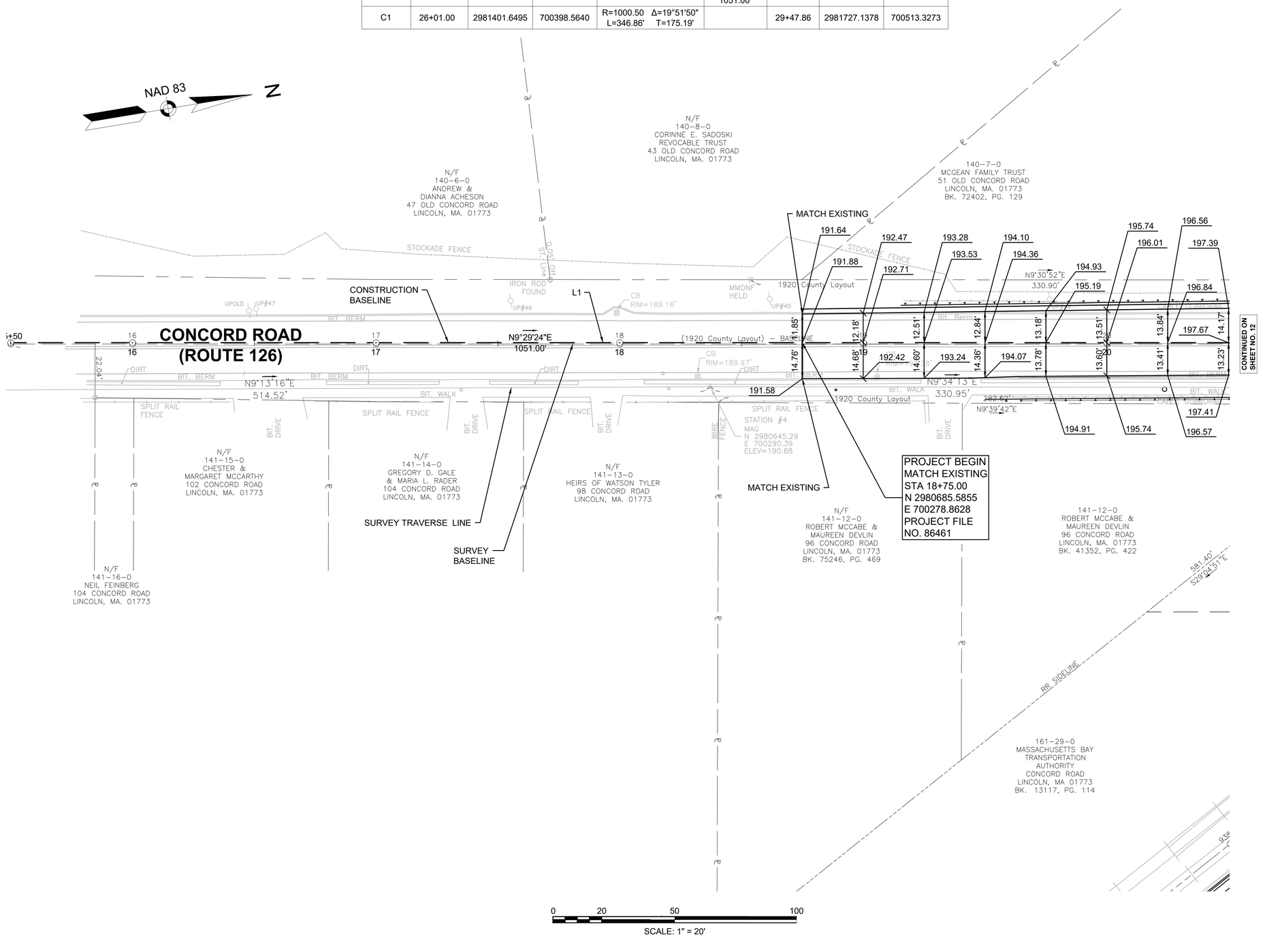
FOR CONSTRUCTION PLAN:
SEE SHEET NO. 7

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	11	91
PROJECT FILE NO.	86461		

CURB TIE & GRADING PLAN 1 OF 3

CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	15+50.00	2980365.0334	700225.2776		N9°29'24"E 1051.00'	26+01.00	2981401.6495	700398.5640
C1	26+01.00	2981401.6495	700398.5640	R=1000.50 Δ=19°51'50" L=346.86' T=175.19'		29+47.86	2981727.1378	700513.3273



LINCOLN
CONCORD ROAD/ST 126

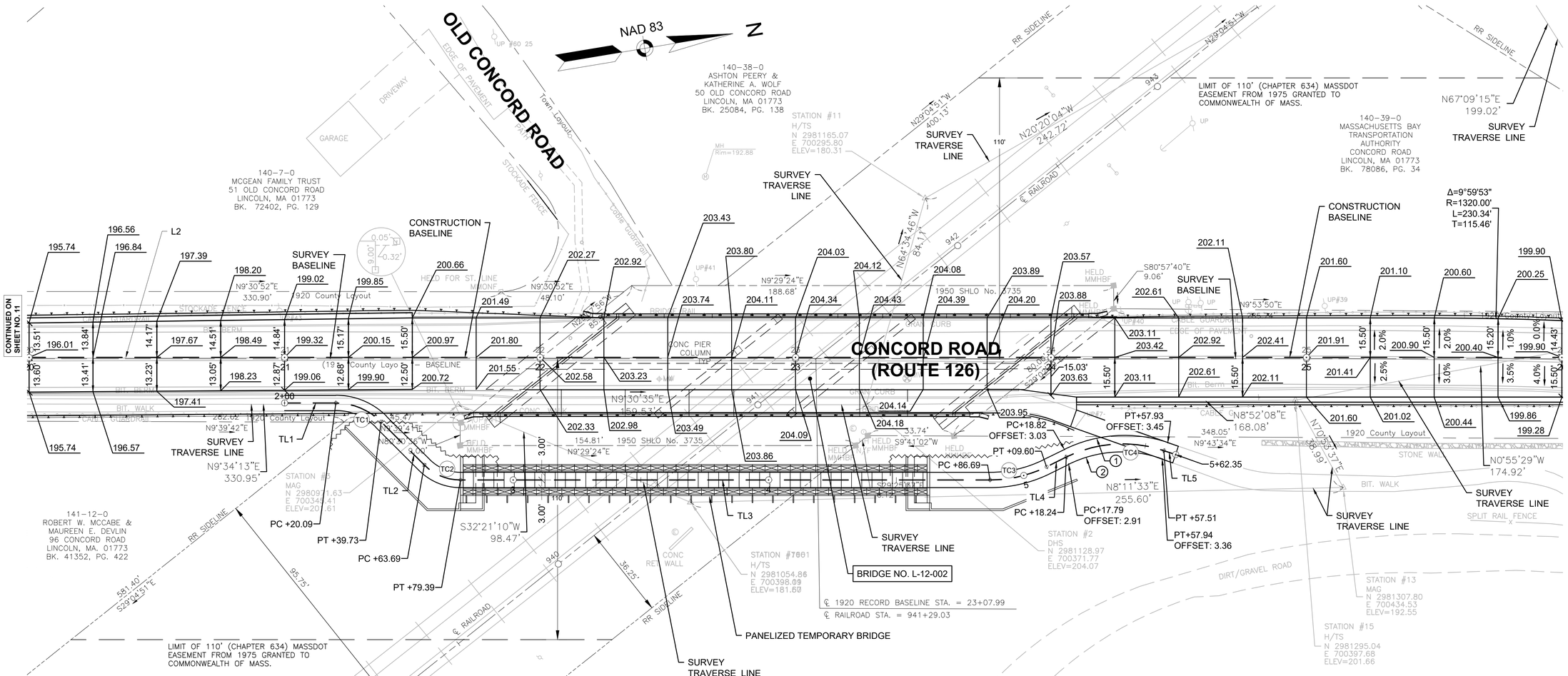
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	12	91
PROJECT FILE NO.	86461		

CURB TIE & GRADING PLAN 2 OF 3

86461_HD12(CURB-TIE).DWG Plotted on 23-Dec-2025 8:43 AM

CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	15+50.00	2980365.0334	700225.2776		N9°29'24"E 1051.00'	26+01.00	2981401.6495	700398.5640
C1	26+01.00	2981401.6495	700398.5640	R=1000.50 Δ=19°51'50" L=346.86' T=175.19'		29+47.86	2981727.1378	700513.3273



TEMPORARY PANELIZED BRIDGE BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
TL1	2+00	2980904.5600	700333.5952		N9°29'24"E 20.09'	2+20.09	2980924.3777	700336.9080
TC1	2+20.09	2980924.3777	700336.9080	R=25.00' Δ=45°0'0" L=19.63' T=10.36'		2+39.73	2980940.6061	700347.0448
T2	2+39.73	2980940.6061	700347.0448		N54°29'24"E 23.96'	2+63.69	2980954.5216	700366.5465
TC2	2+63.69	2980954.5216	700366.5465	R=20.00' Δ=45°0'0" L=15.71' T=8.28'		2+79.39	2980967.5044	700374.6560
TL3	2+79.39	2980967.5044	700374.6560		N9°29'24"E 207.30'	4+86.69	2981171.9642	700408.8346
TC3	4+86.69	2981171.9642	700408.8346	R=50.00' Δ=26°15'25" L=22.91' T=11.66'		5+09.60	2981194.6321	700407.3932
TL4	5+09.60	2981194.6321	700407.3932		N16°46'1"W 8.64'	5+18.24	2981202.9002	700404.9021
TC4	5+18.24	2981202.9002	700404.9021	R=50.00' Δ=45°0'0" L=39.27' T=20.71'		5+57.51	2981240.9771	700408.7249
TL5	5+57.51	2981240.9771	700408.7249		N29°25'1"E 4.84'	5+62.35	2981245.2403	700411.0140

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
1	41.63'	53.00'	45°0'0"	21.95'
2	37.96'	47.00'	46°16'29"	20.08'

LEGEND

Ⓢ CURVE

0 20 50 100

SCALE: 1" = 20'

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	13	91
	PROJECT FILE NO.	86461	

CURB TIE & GRADING PLAN 3 OF 3

Plotted on 28-Jan-2026 4:11 PM
86461_HD13(CURB-TIE).DWG

CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	15+50.00	2980365.0334	700225.2776		N9°29'24"E 1051.00'	26+01.00	2981401.6495	700398.5640
C1	26+01.00	2981401.6495	700398.5640	R=1000.50 Δ=19°51'50" L=346.86' T=175.19'		29+47.86	2981727.1378	700513.3273

SURVEY TRAVERSE DATA

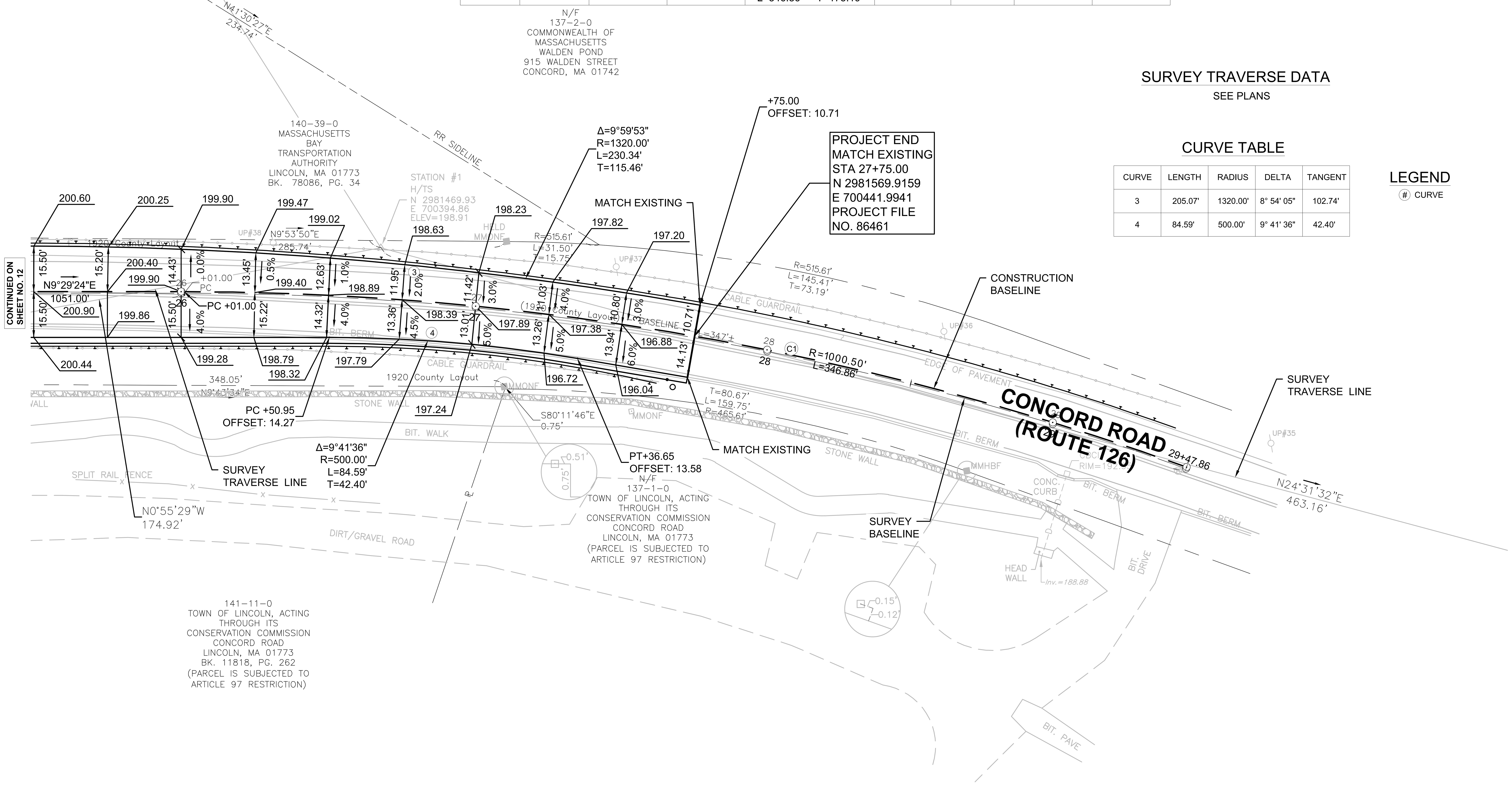
SEE PLANS

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
3	205.07'	1320.00'	8° 54' 05"	102.74'
4	84.59'	500.00'	9° 41' 36"	42.40'

LEGEND

(#) CURVE

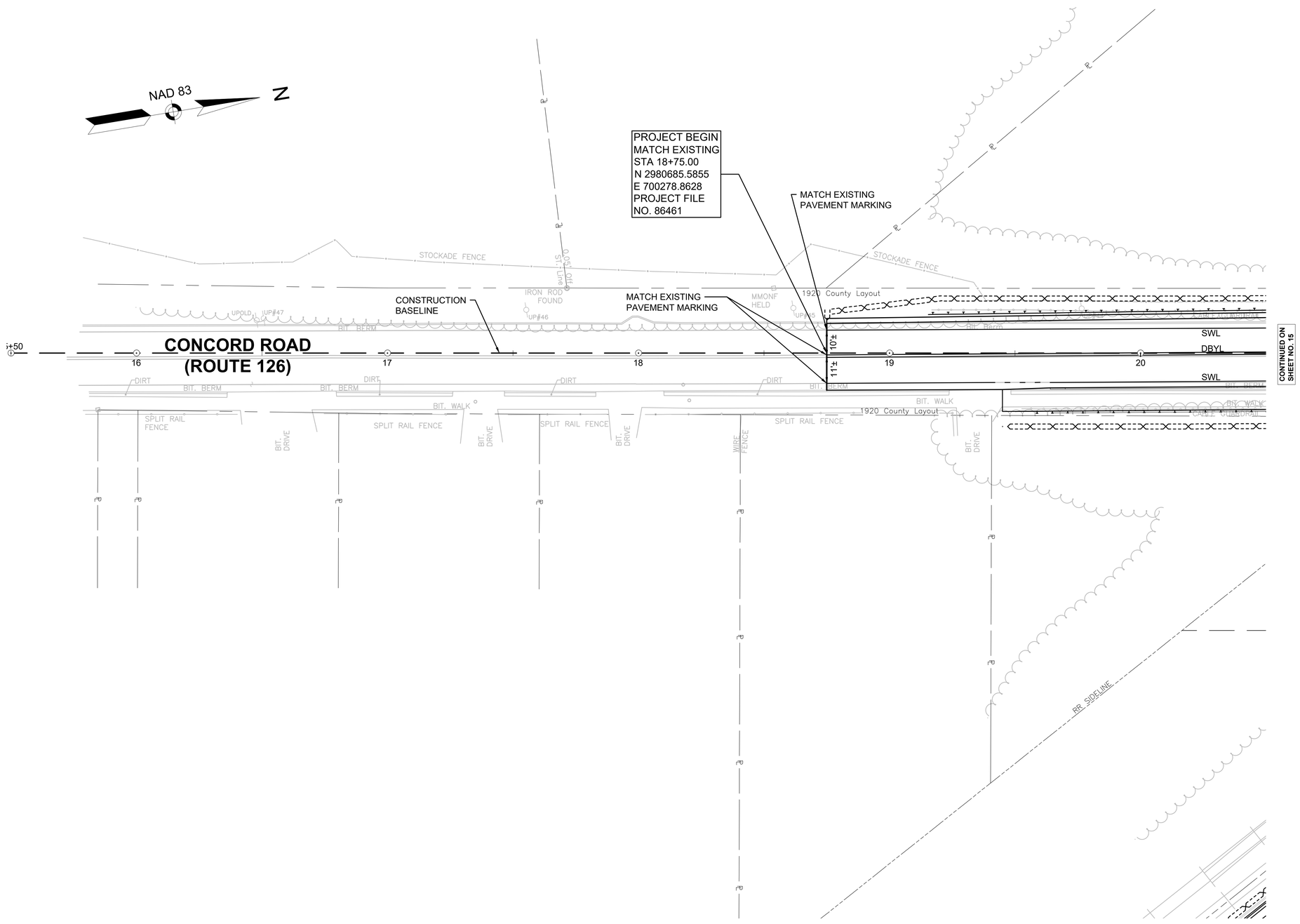

NAD 83
N
SURVEY TRAVERSE LINE
RR SIDELINE
N67°09'15"E 199.02'
N41°30'27"E 234.74'
N/F 137-2-0 COMMONWEALTH OF MASSACHUSETTS WALDEN POND 915 WALDEN STREET CONCORD, MA 01742
140-39-0 MASSACHUSETTS BAY TRANSPORTATION AUTHORITY LINCOLN, MA 01773 BK. 78086, PG. 34
STATION #1 H/TS N 2981469.93 E 700394.86 ELEV=198.91
Δ=9°59'53" R=1320.00' L=230.34' T=115.46'
+75.00 OFFSET: 10.71
PROJECT END MATCH EXISTING STA 27+75.00 N 2981569.9159 E 700441.9941 PROJECT FILE NO. 86461
MATCH EXISTING
CONSTRUCTION BASELINE
CONTINUED ON SHEET NO. 12
N9°29'24"E 1051.00'
PC +01.00
N9°53'50"E 285.74'
R=515.61' L=31.50' T=15.75'
R=515.61' L=145.41' T=73.19'
R=1000.50' L=346.86'
CABLE GUARDRAIL
EDGE OF PAVEMENT
CONCORD ROAD (ROUTE 126)
29+47.86
N24°31'32"E 463.16'
SURVEY TRAVERSE LINE
348.05' N9°43'34"E
1920 County Layout
STONE WALL
BIT. WALK
BIT. BERM
PC +50.95 OFFSET: 14.27
Δ=9°41'36" R=500.00' L=84.59' T=42.40'
S80°11'46"E 0.75'
PT+36.65 OFFSET: 13.58
MATCH EXISTING
T=80.67' L=159.75' R=465.61'
SPLIT RAIL FENCE
N0°55'29"W 174.92'
SURVEY TRAVERSE LINE
DIRT/GRAVEL ROAD
N/F 137-1-0 TOWN OF LINCOLN, ACTING THROUGH ITS CONSERVATION COMMISSION CONCORD ROAD LINCOLN, MA 01773 (PARCEL IS SUBJECTED TO ARTICLE 97 RESTRICTION)
SURVEY BASELINE
HEAD WALL
CONC. CURB
BIT. DRIVE
BIT. PAVE
141-11-0 TOWN OF LINCOLN, ACTING THROUGH ITS CONSERVATION COMMISSION CONCORD ROAD LINCOLN, MA 01773 BK. 11818, PG. 262 (PARCEL IS SUBJECTED TO ARTICLE 97 RESTRICTION)
200.60
200.25
199.90
199.47
199.02
198.63
198.23
197.82
197.20
200.40
199.90
199.40
198.89
198.39
197.89
197.38
196.88
200.90
199.86
200.44
199.28
198.79
198.32
197.79
197.24
196.72
196.04

0 20 50 100
SCALE: 1" = 20'

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	14	91
PROJECT FILE NO.	86461		

TRAFFIC SIGNS & PAVEMENT MARKINGS 1 OF 3



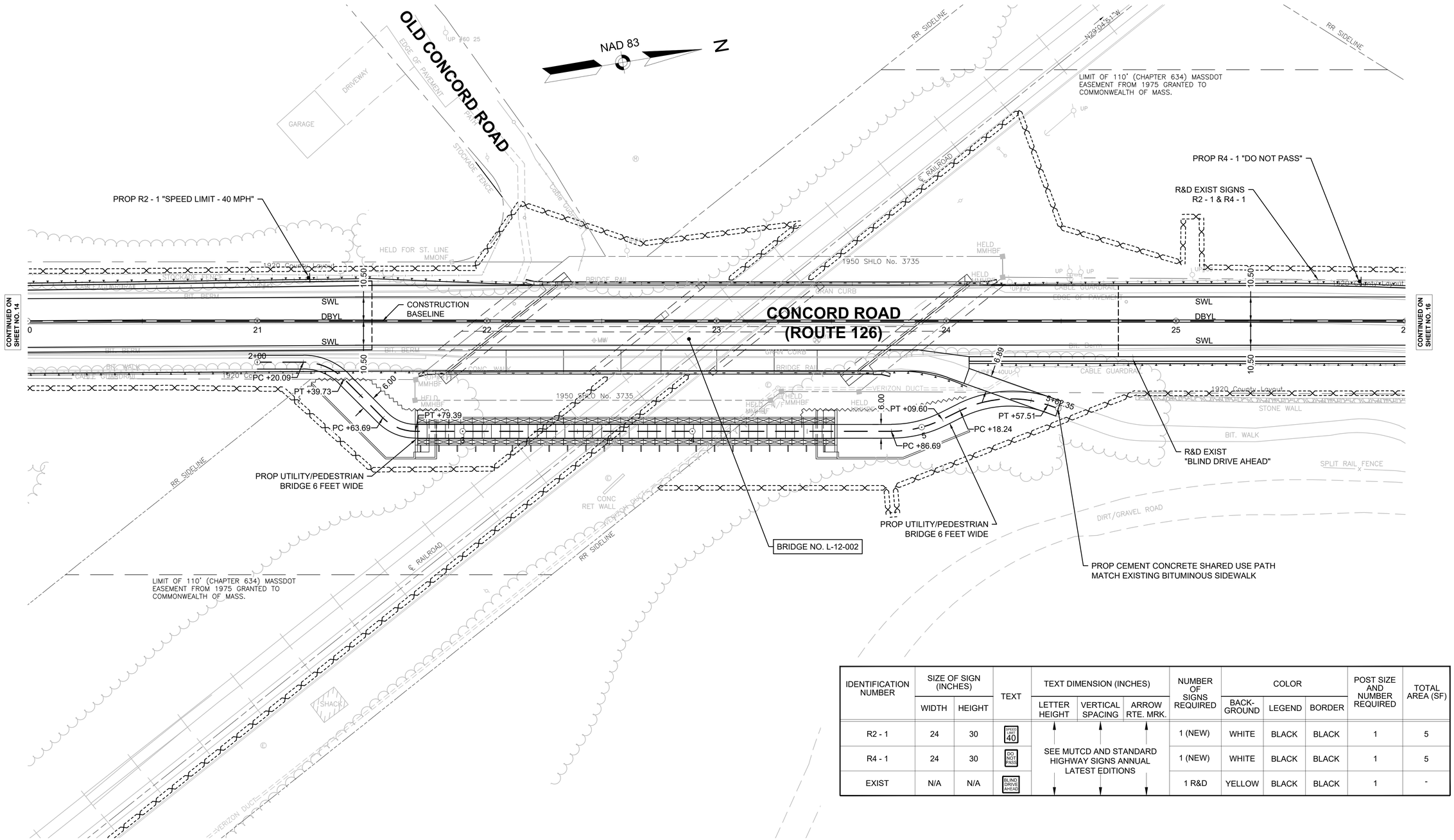
0 20 50 100

SCALE: 1" = 20'

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	15	91
PROJECT FILE NO.	86461		

TRAFFIC SIGNS & PAVEMENT MARKINGS 2 OF 3



IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSION (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	TOTAL AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MRK.		BACK-GROUND	LEGEND	BORDER		
R2 - 1	24	30	SPEED LIMIT 40	SEE MUTCD AND STANDARD HIGHWAY SIGNS ANNUAL LATEST EDITIONS			1 (NEW)	WHITE	BLACK	BLACK	1	5
R4 - 1	24	30	DO NOT PASS				1 (NEW)	WHITE	BLACK	BLACK	1	5
EXIST	N/A	N/A	BLIND DRIVE AHEAD				1 R&D	YELLOW	BLACK	BLACK	1	-

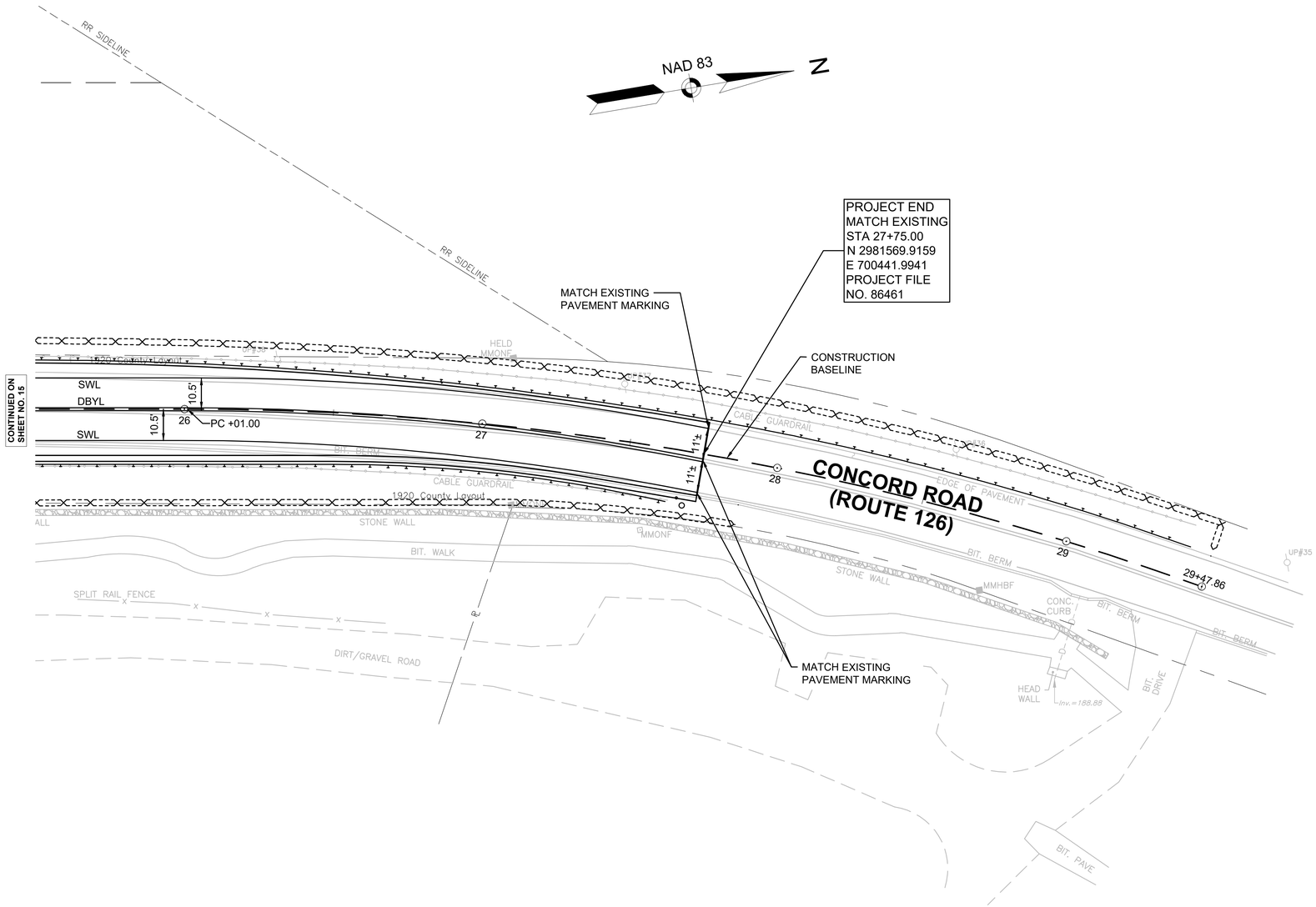
0 20 50 100

SCALE: 1" = 20'

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	16	91
	PROJECT FILE NO. 86461		

TRAFFIC SIGNS & PAVEMENT MARKINGS 3 OF 3



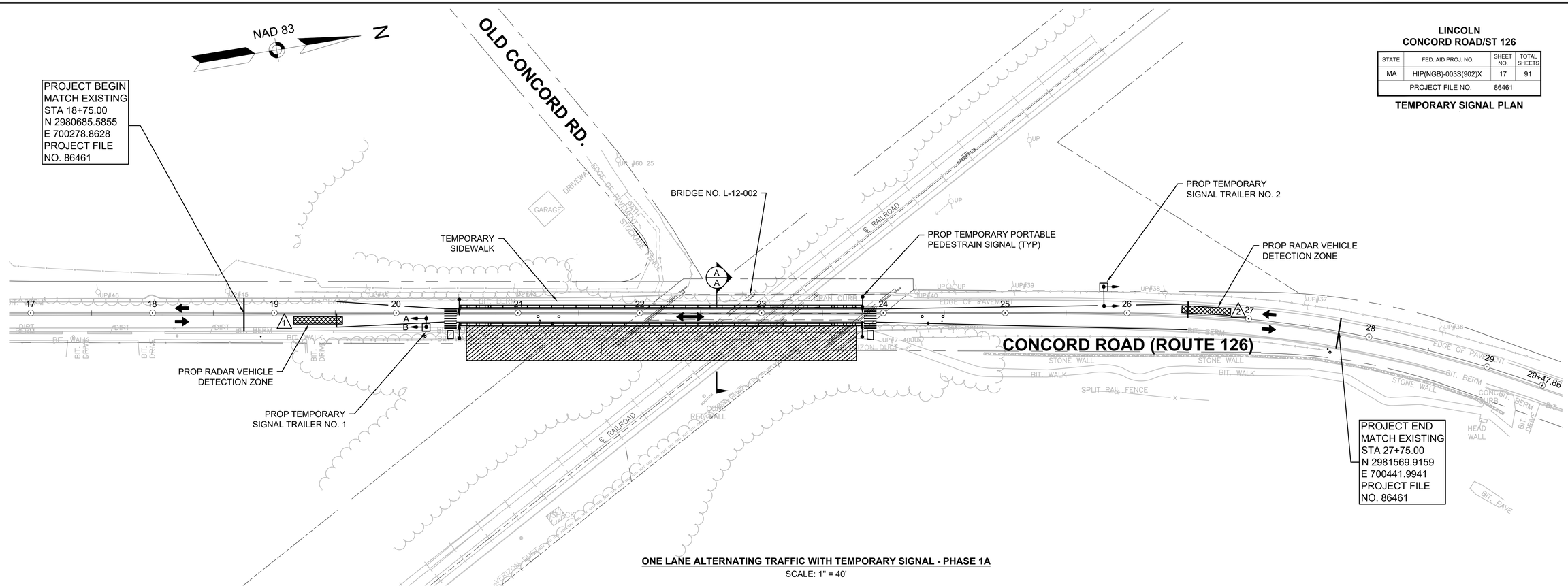
0 20 50 100

SCALE: 1" = 20'

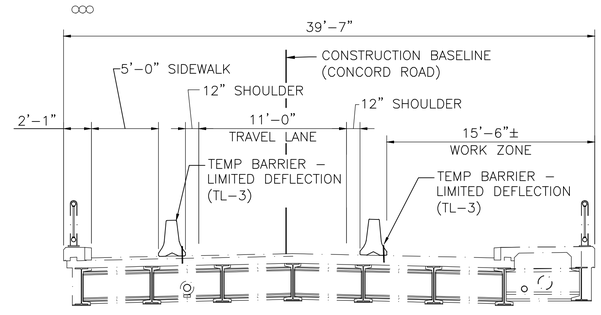
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	17	91
PROJECT FILE NO.	86461		

TEMPORARY SIGNAL PLAN



ONE LANE ALTERNATING TRAFFIC WITH TEMPORARY SIGNAL - PHASE 1A
SCALE: 1" = 40'



SECTION A–A – PHASE 1A
SCALE: $\frac{3}{16}$"=1'–0"

LEGEND:

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

0 40 100 160
SCALE: 1" = 40'

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	18	91
	PROJECT FILE NO. 86461		

TEMPORARY TRAFFIC SIGNAL DATA SHEET

PHASE Ø 1	PHASE Ø 2	PHASE Ø 3	PHASE Ø 4	PHASE Ø 5	PHASE Ø 6	PHASE Ø 7	PHASE Ø 8	PHASE Ø 9	PHASE Ø 10
NOT USED		NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	(PED.)	

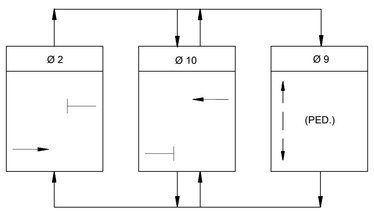
SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	25	26	27	FLASH OPER.
CONCORD ROAD (ROUTE 126)	NB	A,B				G	Y	R																			R	R	R	R	R	R	FR
CONCORD ROAD (ROUTE 126)	SB	C,D				R	R	R																			R	R	R	G	Y	R	FR
PEDESTRIAN X - ING	N - S	P1 - P2				R	R	R																			W/FDW	DW	DW	R	R	R	OUT
TIMING IN SECONDS																																	
MINIMUM GREEN (INITIAL)						10																								10			EMERGENCY ONLY
PASSAGE TIME (VEHICLE)						3.5																								3.5			
MAXIMUM GREEN 1						21																								21			
MAXIMUM GREEN 2						50																								28			
MAXIMUM GREEN 3						28																								50			
YELLOW CLEARANCE							4																								4		
RED CLEARANCE								32																								32	
WALK (W)																											7/7						
PEDESTRIAN CLEARANCE																																	
RECALL						NONE																											
MEMORY																											NONE			NONE			
COORDINATION DATA			COORDINATION PHASE TIMING																														
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			

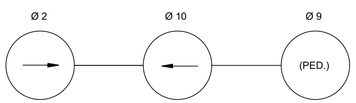
SEQUENCE AND TIMING NOTES:

1. MAXIMUM GREEN 1 = ALL OTHER TIMES
2. MAXIMUM GREEN 2 = MONDAY - FRIDAY 7 AM - 10 AM
3. MAXIMUM GREEN 3 = MONDAY - FRIDAY 3 PM - 7 PM

PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



NOTES:

1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

VIDEO DETECTION DATA

DETECTOR ZONE	APPROACH/LANE	CAMERA	DELAY/EXTENSION	CALL PHASE	DETECTION AREA
1	CONCORD ROAD (ROUTE 126) NB	C1	0	Ø 2	6' X 40'
2	CONCORD ROAD (ROUTE 126) SB	C2	0	Ø 10	6' X 40'

MAJOR ITEMS REQUIRED

PAY ITEM	QUANTITY	DESCRIPTION
816.811	2	TRAILERS WITH AN ATTACHED LEVEL INDICATOR ON EACH AXIS TO ENSURE THE POTABLE TRAFFIC CONTROL SIGNAL SYSTEM (PTCSS) IS LEVEL IN BOTH DIRECTIONS
	2	STRUCTURAL SUPPORT SYSTEM
	2	MAST ARM ASSEMBLY
	2	LIFT MECHANISM
	2	REGULATED POWER SUPPLY
	2	SOLAR POWERED WITH BATTERY BACKUP
	2	12" LED SIGNAL HEADS (ONE ON THE ARM AS WELL AS ONE ON THE POLES). BLACK BACKBOARD WITH YELLOW HEADS
	2	ADJUSTABLE OVERHEAD MAST ARM
	2	PRE-EMPTION SYSTEM
	2	ADVANCE REMOTE MOTINORING
	2	CLEARING TIME EXTENDER
	2	RADIO/GPS COMMUNICATION TO ALLOW UNITS TO WITH ONE ANOTHER
	2	DETECTION CAPABILITY UTILIZING VIDEO DETECTORS
	2	"COUNTDOWN TO GREEN" DISPLAY
	2	LUMINATION KIT TO LIGHT TEMPORARY SIGNAL INTERSECTION AREAS
	2	MUTCD COMPLIANT LED PEDTRIAN SIGNAL DISPLAY WITH COUNTDOWN TIMER

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION, MAINTAINING AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL DURING CONSTRUCTION.

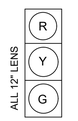
FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND	NONE	NONE
WESTBOUND	NONE	NONE
NORTHBOUND	2	10
SOUTHBOUND	10	9

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MHD PRIOR TO OPERATION.

SIGNAL IDENTIFICATION



A,B,C,D

16" L.E.D
ALL

ONE SECTION
DUAL DISPLAY

NOTE:

1. ALL SIGNALS SHALL HAVE CUT AWAY VISORS.
2. ALL SIGNALS SHALL HAVE BACKPLATES WITH RETRO-REFLECTIVE BORDER PER MASSDOT STANDARDS.
3. THE CONTRACTOR SHALL MONITOR TRAFFIC CONDITIONS AND ADJUST SIGNALS TIMININGS AS NECESSARY AS DIRECTED BY THE ENGINEER.

SEDIMENT BARRIER NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL RULES, REGULATIONS, LAWS AND ORDINANCES OF THE TOWN AND STATE, AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PROJECT SITE.
2. PRIOR TO INITIAL PLACEMENT OF THE SEDIMENT BARRIER, THE CONTRACTOR, ENGINEER, MASSDOT LANDSCAPE ARCHITECT AND LINCOLN CONSERVATION DEPARTMENT STAFF, SHALL REVIEW LOCATIONS SPECIFIED ON THE PLANS AND ADJUST PLACEMENT, IF REQUIRED, TO ENSURE THAT BARRIER POSITIONING AND CONFIGURATION WILL PROVIDE MAXIMUM SEDIMENT CAPTURE.

PLANTING NOTES

1. FOLLOWING REMOVAL OF TEMPORARY PEDESTRIAN BRIDGE, CONTRACTOR SHALL REVERT SURFACE GRADES TO PRE-CONSTRUCTION CONDITIONS.
2. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
3. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE MASSDOT LANDSCAPE ARCHITECT.
4. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, CULTIVAR, & SIZE.
5. IMMEDIATELY AFTER ACCEPTANCE OF PLANTING, TAGS AND RIBBONS SHALL BE REMOVED.
6. ALL PLANTS WILL BE MULCHED PER PLANS AND SPECIFICATIONS.
7. ALL SHRUB BEDS SHALL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
8. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.

PLANT LIST

QTY	KEY	ABBV	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
1		AI	Amelanchier laevis	CUMULUS SERVICEBERRY	1.5" CAL.	PLAN
2		Ar	Acer rubrum	RED MAPLE	1-1/2" CAL.	PLAN
2		Ar1	Acer rubrum	RED MAPLE	8' Ht.	PLAN
5		Qr	Quercus rubra	RED OAK	1-1/2" CAL.	PLAN
3		Qr1	Quercus rubra	RED OAK	8' Ht.	PLAN
2		Qv	Quercus velutina	BLACK OAK	1-1/2" CAL.	PLAN
5		Ps	Pinus Stobus	WHITE PINE	5-6' Ht.	PLAN
3		Am	Aronia melanocarpa	CHOKEBERRY - BLACK	2-3' #3 Cont.	4' oc.
10		Cp	Comptonia peregrina	SWEETFERN	2-3' #3 Cont.	4' oc.
9		Rg	Rhus glabra	SUMAC - SMOOTH	2-3' #3 Cont.	4' oc.
6		Rt	Rhus typhina	SUMAC - STAGHORN	3-4' #3 Cont.	4' oc.
9		Va	Viburnum acerifolium	MAPLELEAF VIBERNUM	3-4' #3 Cont.	4' oc.

SEEDING

KEY	SEED
	765.415 Native Short Grassland Mix
	765.472 Steep Slope Mid-Height Mix

UPLAND NATIVE SEEDING NOTES

1. SEEDING SHALL BE BROADCAST METHOD ONLY (NOT HYDROSEED) UNLESS APPROVED OTHERWISE BY THE MASSDOT LANDSCAPE ARCHITECT.
2. SEEDING AND SUBMITTALS SHALL BE PER THE SPECIAL PROVISIONS.
3. SUBMITTALS FOR SEED MIXES SHALL BE APPROVED BY THE ENGINEER AND MASSDOT LANDSCAPE ARCHITECT PRIOR TO SEED APPLICATION.
4. SITE PREPARATION SHALL BE PER SPECIFICATIONS AND APPROVED BY THE ENGINEER PRIOR TO SEEDING.
5. WHEN SEEDING OUT OF SEASON APPLICATION RATE SHALL BE INCREASED BY 50%.

INVASIVE PLANT MANAGEMENT NOTES

1. NO WORK SHALL BE PERFORMED ON LINCOLN CONSERVATION LAND PRIOR TO APPROVAL OF THE IPMS FROM THE ENGINEER AND ACCEPTANCE FROM THE LINCOLN CONSERVATION DEPARTMENT STAFF AND MASSDOT LANDSCAPE ARCHITECT.
2. HERBICIDE TREATMENT AND SUBMITTALS SHALL BE PER THE SPECIAL PROVISIONS.

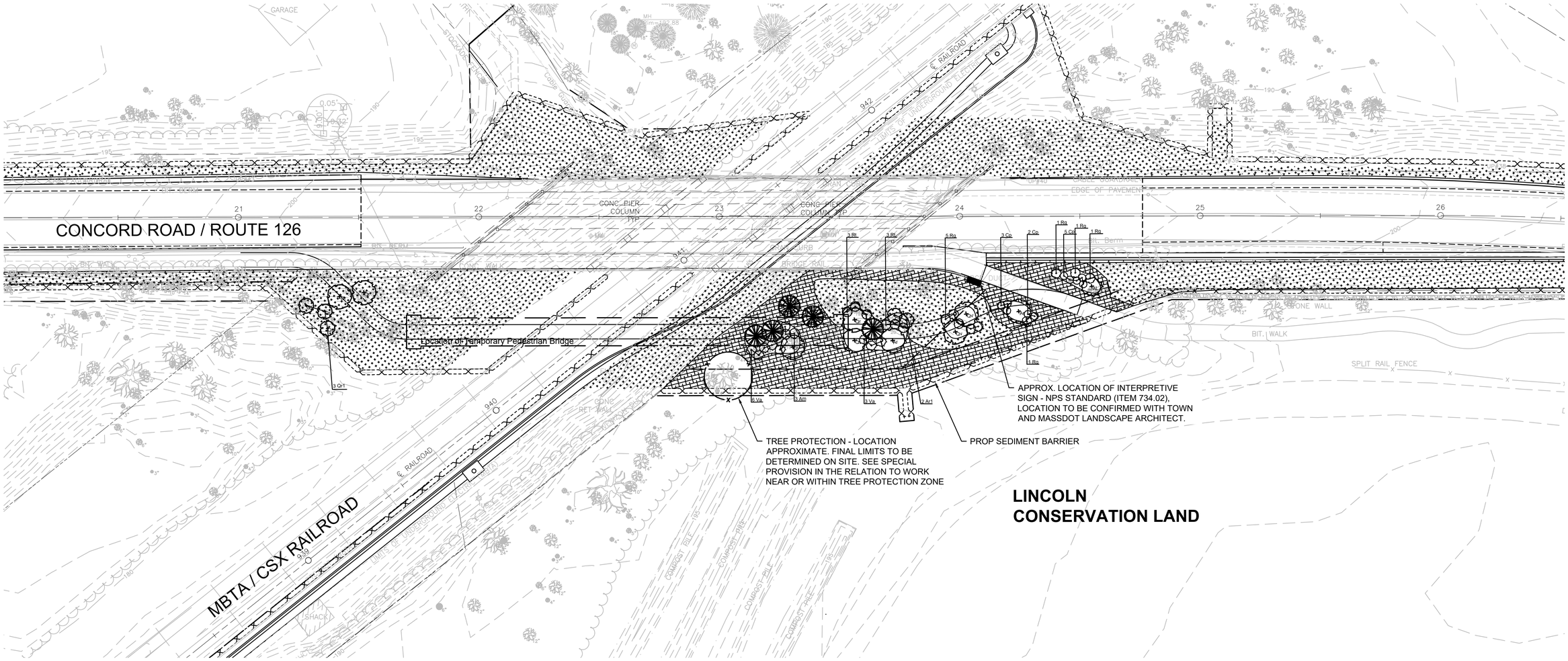
LEGEND

KEY	
	COIR LOG SEDIMENT BARRIER
12"	EXISTING TREE TO REMAIN

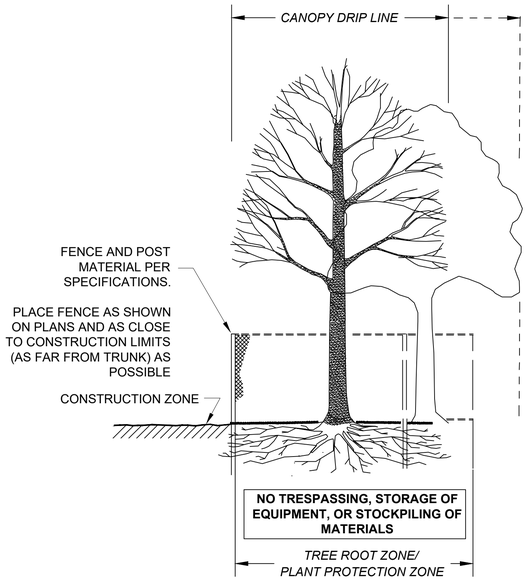
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	19	91
	PROJECT FILE NO. 86461		

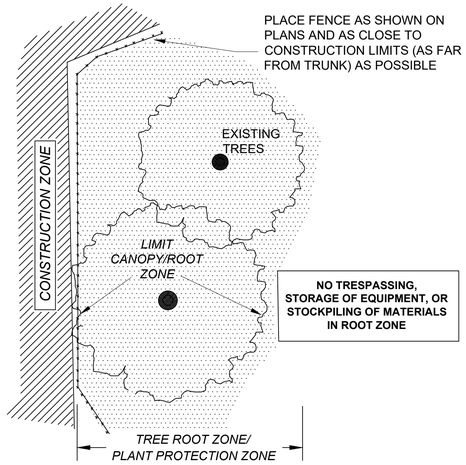
LANDSCAPE RESTORATION



86461_LD19(SITE-RESTORATION).DWG Plotted on 23-Dec-2025 9:45 AM



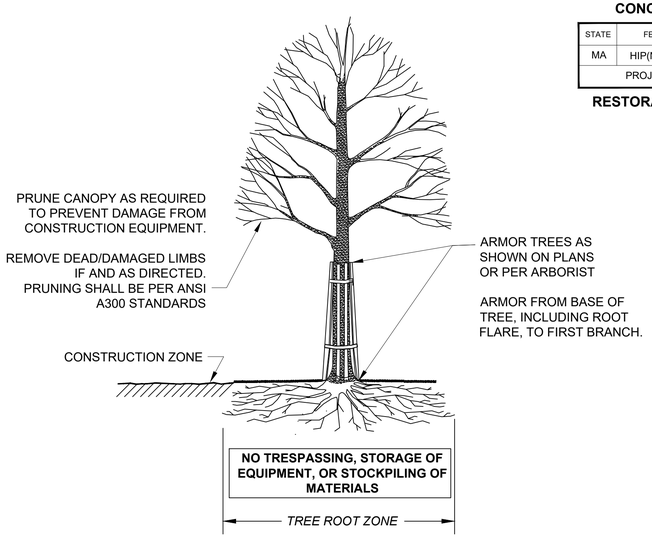
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

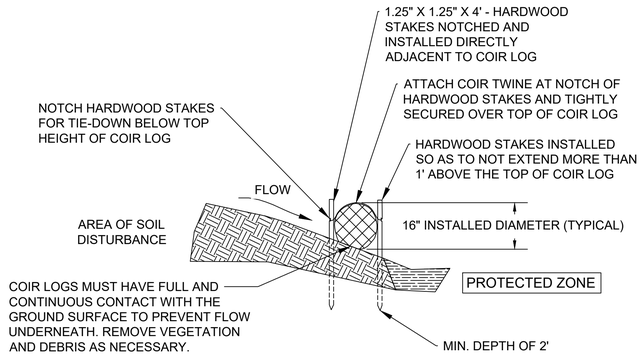
TREE PROTECTION - ROOT ZONE

NOT TO SCALE



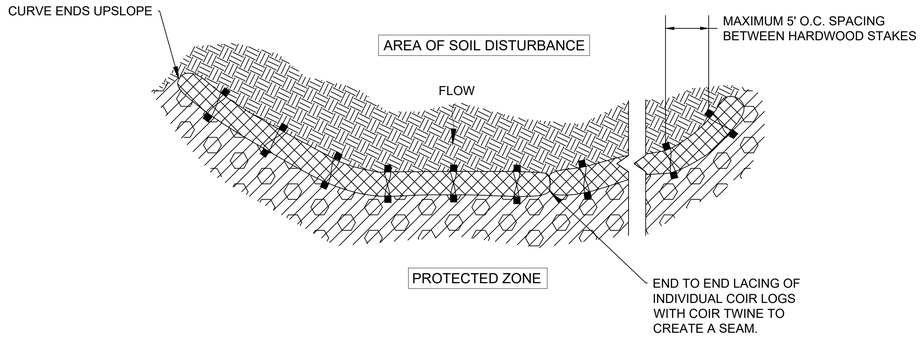
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



*IF, UPON APPROVAL OF THE ENGINEER, COIR WATTLE IS USED IN PLACE OF COIR LOGS FOR REPAIRS DURING CONSTRUCTION, DIAMETER OF COIR WATTLE MAY BE 12 INCHES.

SECTION



PLAN VIEW

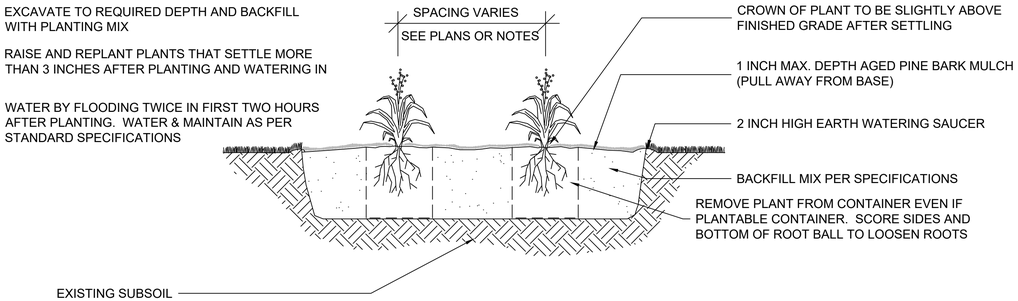
SEDIMENT BARRIER - COIR LOG

NOT TO SCALE

LINCOLN
CONCORD ROAD/ST 126

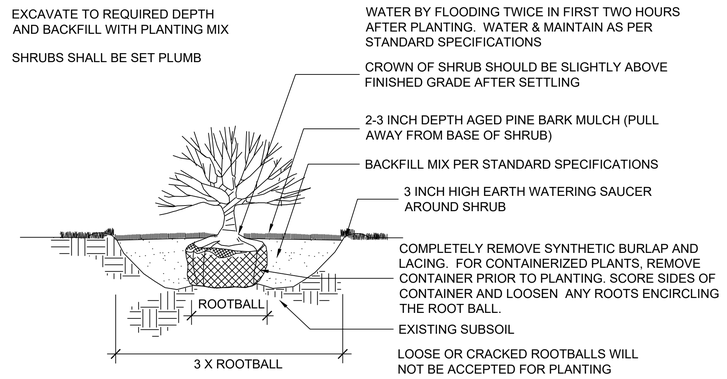
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	21	91
PROJECT FILE NO.	86461		

RESTORATION DETAILS 2 OF 3



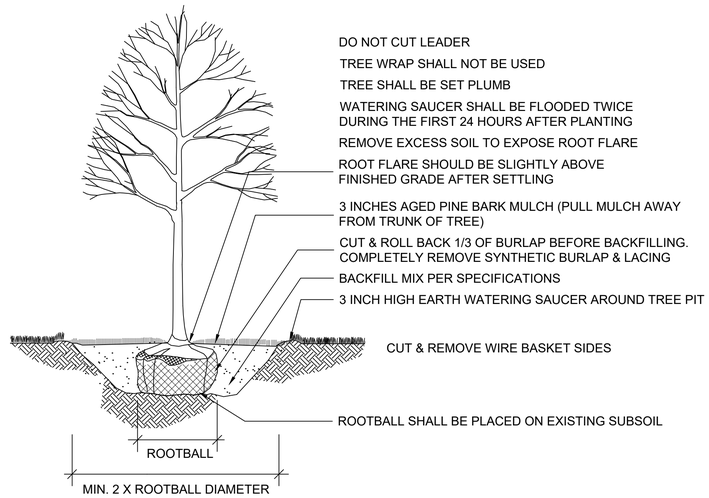
PERENNIAL PLANTING

NOT TO SCALE



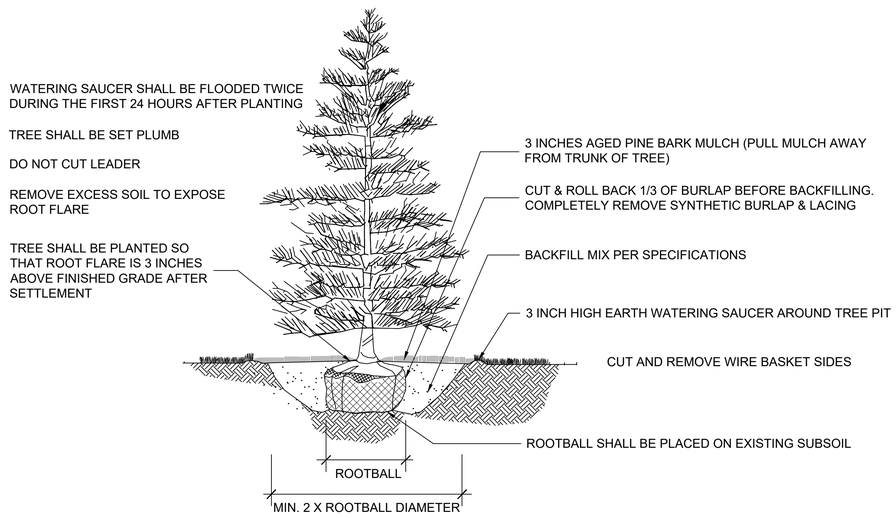
SHRUB PLANTING

NOT TO SCALE



DECIDUOUS TREE PLANTING

NOT TO SCALE



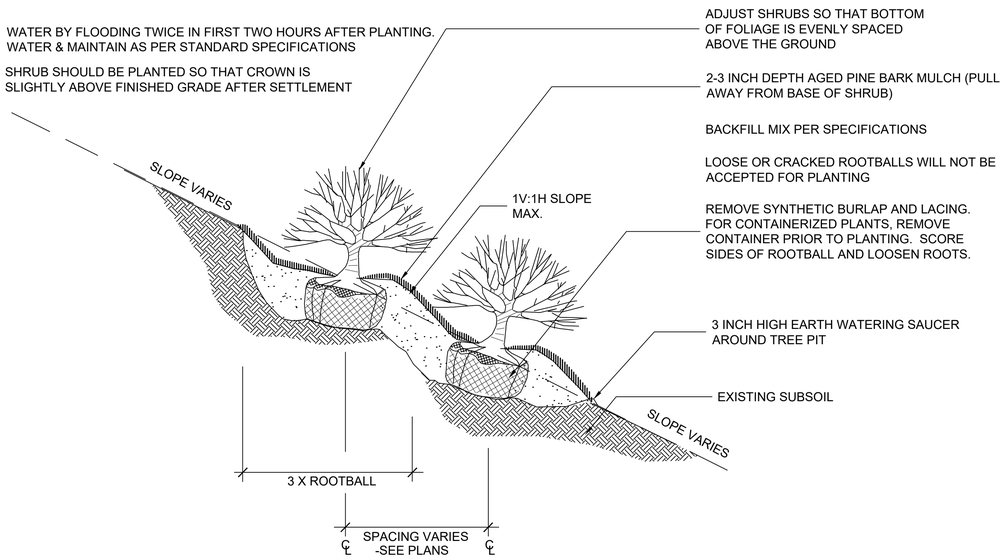
EVERGREEN TREE PLANTING

NOT TO SCALE

LINCOLN
CONCORD ROAD/ST 126

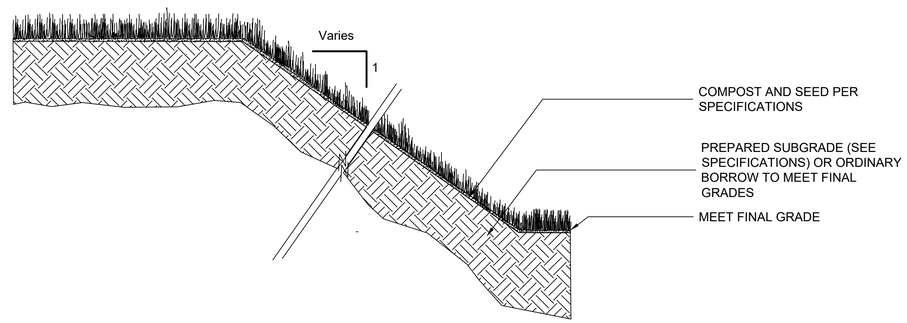
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	22	91
	PROJECT FILE NO. 86461		

RESTORATION DETAILS 3 OF 3



CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL

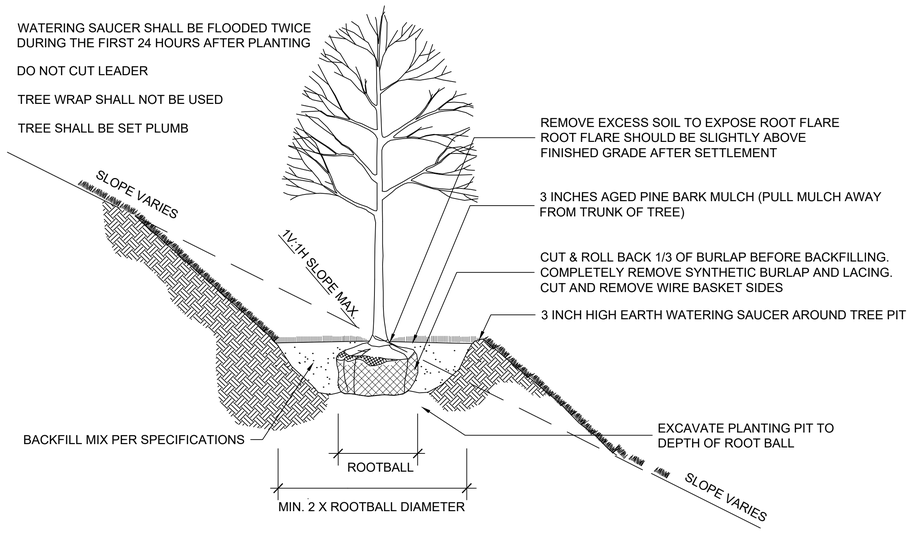
NOT TO SCALE



COMPOST AND SEED AT SLOPE

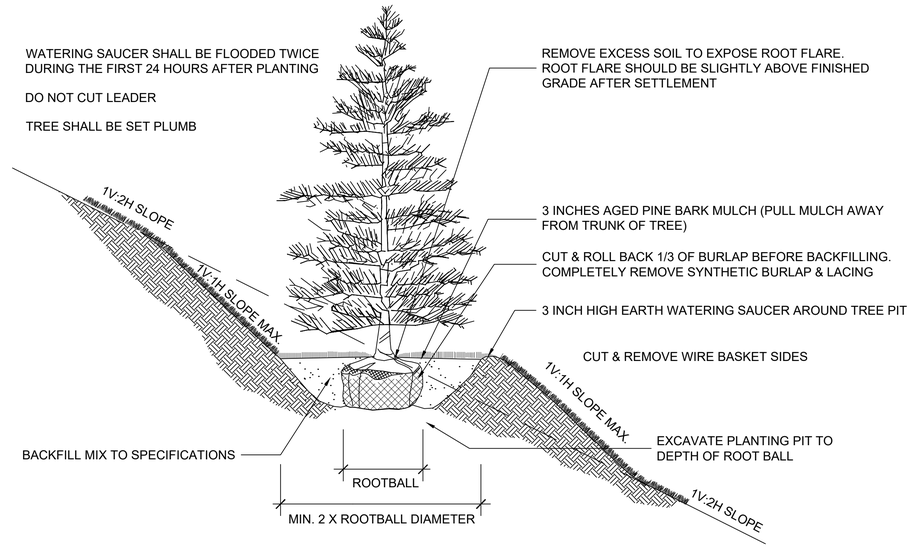
NOT TO SCALE

20240729_MassDOT



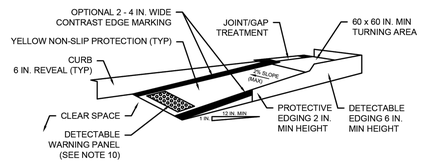
DECIDUOUS TREE PLANTING (SLOPE)

NOT TO SCALE

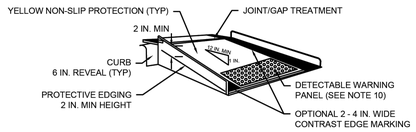


EVERGREEN TREE PLANTING (SLOPE)

NOT TO SCALE



TEMPORARY CURB RAMP-PARALLEL TO CURB

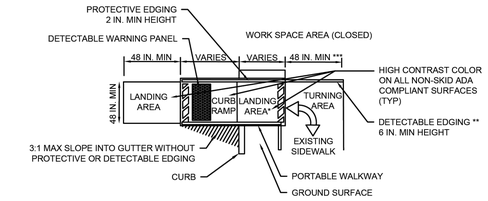


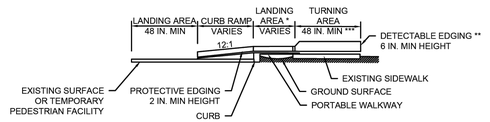
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE 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%) MAXIMUM CROSS-SLOPE.
6. CLEAR SPACE OF 48 x 48 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 PANEL 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 DETECTABLE WARNING PANEL SHALL NOT BE INSTALLED ON THE RAMP.

massDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	TEMPORARY CURB RAMP (1 OF 2)	ISSUE DATE JAN 2025	DRAWING NUMBER 850.1.1

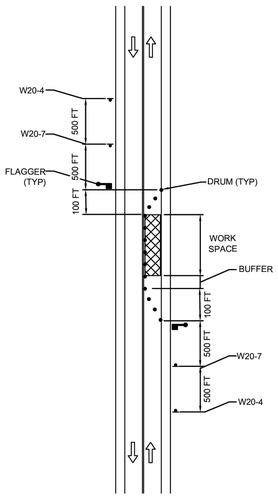




TEMPORARY CURB RAMP

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

massDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	TEMPORARY CURB RAMP (2 OF 2)	ISSUE DATE JAN 2025	DRAWING NUMBER 850.1.2



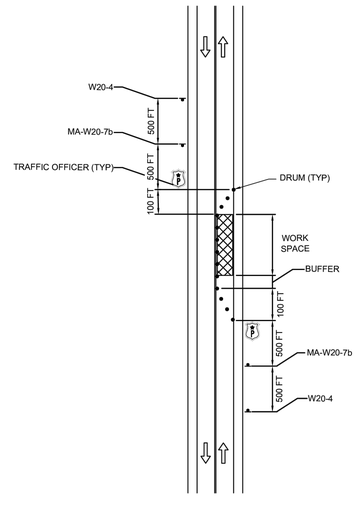
MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

NOTES:

1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
2. DRAWING SHALL NOT BE USED ON ROADS WITH A SPEED LIMIT OF 45 MPH OR GREATER UNLESS ADT IS LESS THAN 4,000 VPD.

massDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	ALTERNATING ONE-WAY (FLAGGER CONTROL)	ISSUE DATE JAN 2025	DRAWING NUMBER 852.4.1



MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

NOTE:

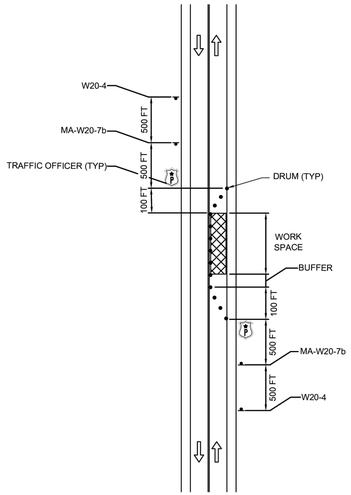
1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

massDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	ALTERNATING ONE-WAY (TRAFFIC OFFICER)	ISSUE DATE JAN 2025	DRAWING NUMBER 852.4.4

THIS SHEET IS NOT TO SCALE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	24	91
	PROJECT FILE NO. 86461		

TEMPORARY TRAFIC CONTROL PLAN 2 OF 7



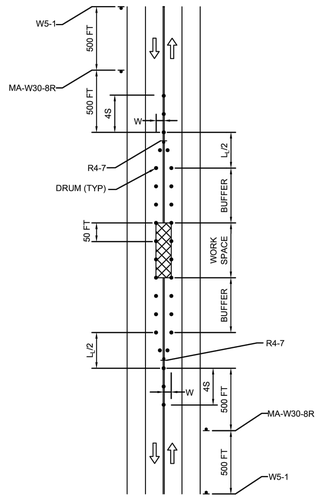
MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

NOTE:

1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

MassDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	**ALTERNATING ONE-WAY (TRAFFIC OFFICER)**	ISSUE DATE **JAN 2025**	DRAWING NUMBER **852.4.4**



TYPICAL TAPER LENGTHS (L_t) IN FEET

SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET* (W) IN FEET						
	6	7	8	9	10	11	12
25	63	73	83	94	104	115	125
30	90	105	120	135	150	165	180
35	123	143	163	184	204	225	245
40	160	187	213	240	267	293	320

* MEASURED FROM CENTERLINE OF ROADWAY TO OUTSIDE EDGE OF DRUM

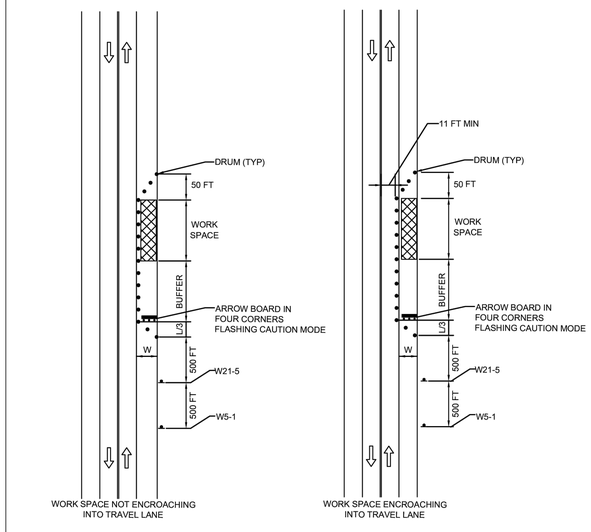
MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

NOTES:

1. MAXIMUM DRUM SPACING IN A TAPER IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
2. MINIMUM LANE WIDTH IS TO BE 11 FEET MEASURED FROM THE EDGE OF DRUMS.

MassDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	**TWO LANE ROAD CENTER OF ROAD CLOSURE**	ISSUE DATE **JAN 2025**	DRAWING NUMBER **852.5.1**



TYPICAL TAPER LENGTHS (L) IN FEET

SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET (W_L OR W_S) IN FEET		
	10	11	12
25	104	115	125
30	150	165	180
35	204	225	245
40	267	293	320

NOTE: FOR SHOULDER WIDTHS NOT LISTED IN TABLE, USE $L=\frac{WS^2/60}{3}$

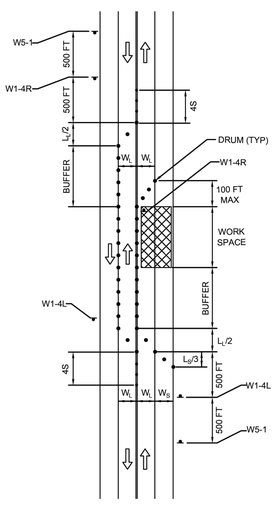
MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

NOTES:

1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
2. MINIMUM LANE WIDTH IS TO BE 11 FEET MEASURED FROM THE EDGE OF DRUMS.

MassDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	**TWO LANE ROAD SHOULDER CLOSURE**	ISSUE DATE **JAN 2025**	DRAWING NUMBER **852.5.3**



TYPICAL TAPER LENGTHS (L_L OR L_S) IN FEET

SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET (W_L OR W_S) IN FEET		
	10	11	12
25	104	115	125
30	150	165	180
35	204	225	245
40	267	293	320

NOTE: FOR SHOULDER WIDTHS NOT LISTED IN TABLE, USE $L_S=WS^2/60$

MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

NOTES:

1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
2. MINIMUM LANE WIDTH IS TO BE 11 FEET MEASURED FROM THE EDGE OF DRUMS.

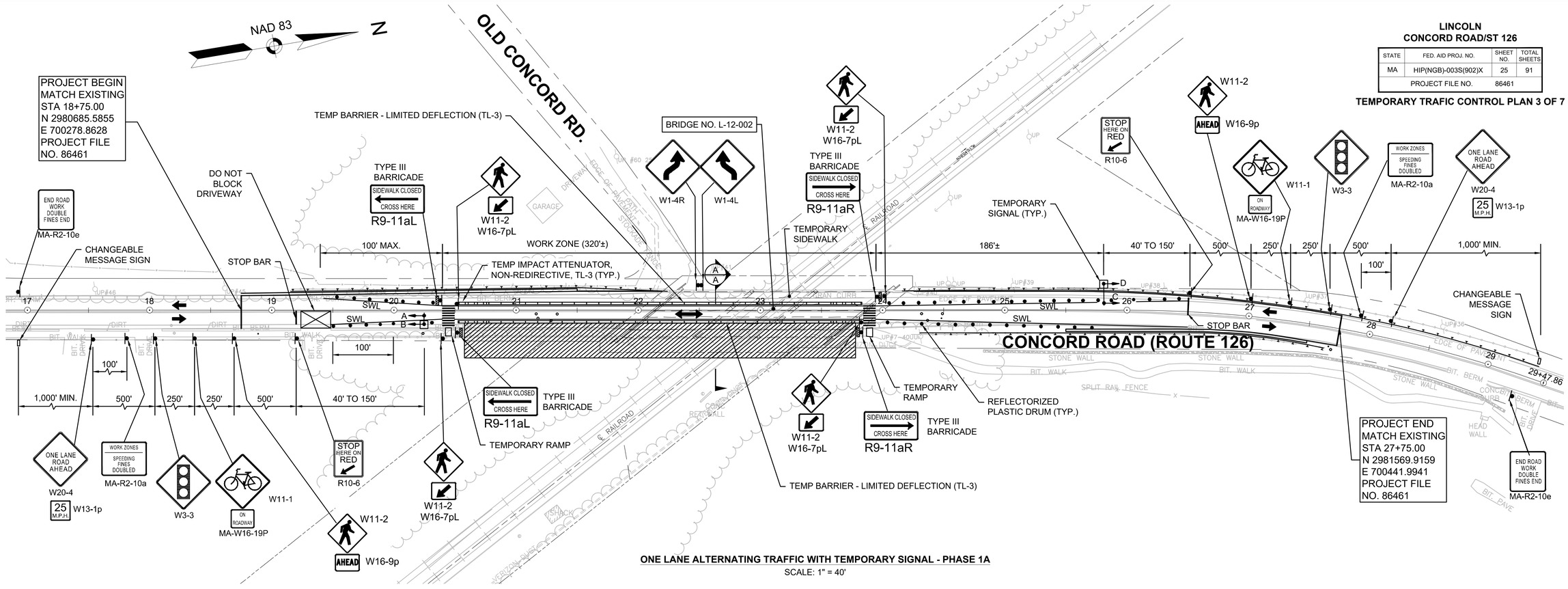
MassDOT Massachusetts Department of Transportation Highway Division	CONSTRUCTION STANDARDS SECTION 800	**TWO LANE ROAD HALF ROAD CLOSURE**	ISSUE DATE **JAN 2025**	DRAWING NUMBER **852.5.4**

THIS SHEET IS NOT TO SCALE

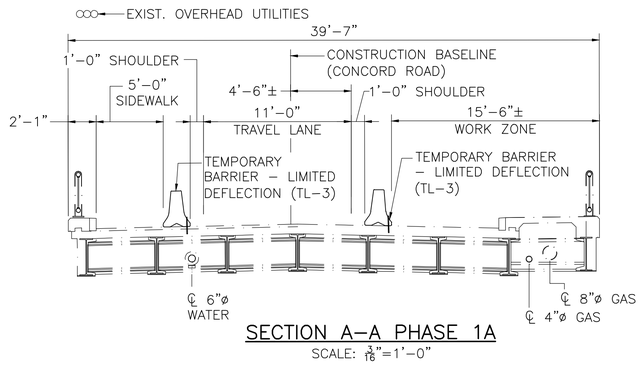
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	25	91
PROJECT FILE NO.	86461		

TEMPORARY TRAFIC CONTROL PLAN 3 OF 7



ONE LANE ALTERNATING TRAFFIC WITH TEMPORARY SIGNAL - PHASE 1A
SCALE: 1" = 40'



SECTION A–A PHASE 1A
SCALE: $\frac{3}{16}$"=1'–0"

PHASE 1A NOTES:

1. CONSTRUCT THE APPROACHES (PAVEMENT WIDENING) EXCEPT SOUTHWEST CORNER OF THE BRIDGE UTILIZING THE TYPICAL TEMPORARY TRAFFIC CONTROL PLANS PRIOR TO IMPLEMENT PHASE 1A SET UP.
2. PORTION OF NEW GAS MAINS ON THE APPROACHES WILL BE INSTALLED PRIOR TO BRIDGE PHASE 1A UTILIZING THE TYPICAL TEMPORARY TRAFFIC CONTROL PLANS.
3. INSTALL NEW WATER MAIN (PHASE 1) ON THE SOUTH APPROACH PRIOR TO BRIDGE PHASE 1A UTILIZING THE TYPICAL TEMPORARY TRAFFIC CONTROL PLANS.
4. CLOSE SIDEWALK (EAST SIDE OF THE BRIDGE) TO PEDESTRIAN TRAFFIC AND DETOUR PEDESTRIAN TRAFFIC TO TEMPORARY SIDEWALK ON THE WEST SIDE.
5. CONSTRUCT TEMPORARY UTILITIES/PEDESTRIAN BRIDGE. SEE BRIDGE PLANS FOR DETAILS.
6. TEMPORARY BARRIER CONFIGURATIONS SHOWN ON THE PLANS ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BASED ON ACTUAL SITE CONDITIONS. ALL FINALIZED BARRIER LOCATIONS TO BE APPROVED BY THE ENGINEER. SEE BRIDGE PLANS FOR DETAILS.
7. THE CONTRACTOR SHALL COORDINATE WITH MBTA BEFORE AND DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL MAINTAIN ADA/AAB-COMPLIANT PEDESTRIAN ACCESS AT ALL TIMES, SPECIALLY INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. ACCESS SHALL BE MAINTAINED ALONG ALL SIDEWALKS AND CROSSWALKS, TO ALL ABUTTERS. ANY PEDESTRIAN DETOURS SHALL INCLUDE A FULLY ADA/AAB-COMPLIANT PEDESTRIAN DETOUR ROUTE WITH PROPER BARRICADES, RAILINGS, RAMPS AND SIGNAGE.
9. THE CONTRACTOR SHALL PROVIDE BICYCLE ACCOMMODATION THROUGHOUT DURATION, INCLUDING USE OF TEMPORARY CHEVRON PAVEMENT MARKINGS AND W11-1 AND MA-W16-19P SIGNS. ACTUAL LOCATIONS OF CHEVRONS AND SIGNS TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.

MA-W16-19P
(SEE NOTE 9)

LEGEND:

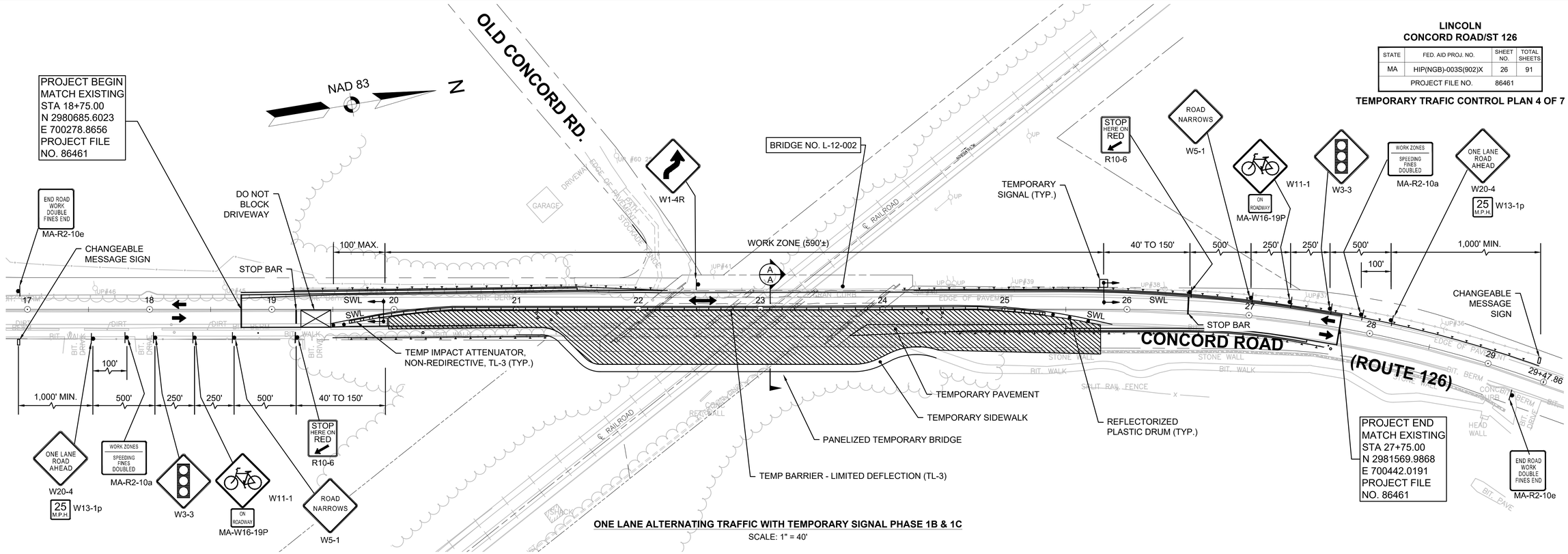
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN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

0 40 100 160
SCALE: 1" = 40'

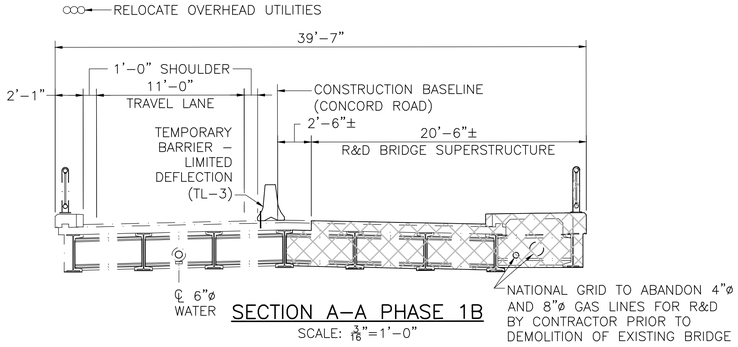
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	26	91
PROJECT FILE NO.	86461		

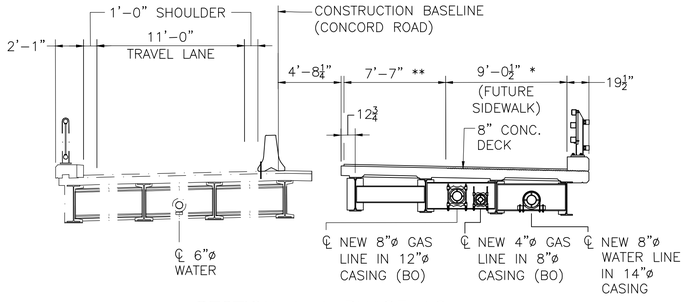
TEMPORARY TRAFIC CONTROL PLAN 4 OF 7



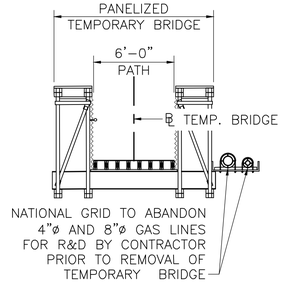
ONE LANE ALTERNATING TRAFFIC WITH TEMPORARY SIGNAL PHASE 1B & 1C
SCALE: 1" = 40'



SECTION A–A PHASE 1B
SCALE: $\frac{3}{16}$"=1'-0"



SECTION A–A PHASE 1C
SCALE: $\frac{3}{16}$"=1'-0"



PHASES 1B & 1C NOTES:

1. RELOCATE TEMPORARY GAS MAINS ONTO TEMPORARY UTILITY/PEDESTRIAN BRIDGE.
2. REMOVE AND DISPOSE EAST SIDE OF EXISTING BRIDGE SUPERSTRUCTURE AND EXISTING GAS MAINS.
3. CONSTRUCT EAST SIDE OF NEW BRIDGE SUPERSTRUCTURE (WITHOUT SIDEWALK), NEW GAS MAINS, AND NEW WATER MAIN.
4. CONSTRUCT TEMPORARY PAVEMENT SOUTHEAST OF THE BRIDGE.
5. TEMPORARY BARRIER APPROACH END FLARE RATES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ASSHTO ROADSIDE DESIGN GUIDE. THE BARRIER CONFIGURATIONS SHOWN ON THE PLANS ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BASED ON ACTUAL SITE CONDITIONS. ALL FINALIZED BARRIER LOCATIONS TO BE APPROVED BY THE ENGINEER. SEE BRIDGE PLANS FOR DETAILS.
6. THE CONTRACTOR SHALL COORDINATE WITH MBTA BEFORE AND DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL MAINTAIN ADA/AAB-COMPLIANT PEDESTRIAN ACCESS AT ALL TIMES, SPECIALLY INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. ACCESS SHALL BE MAINTAINED ALONG ALL SIDEWALKS AND CROSSWALKS, TO ALL ABUTTERS. ANY PEDESTRIAN DETOURS SHALL INCLUDE A FULLY ADA/AAB-COMPLIANT PEDESTRIAN DETOUR ROUTE WITH PROPER BARRICADES, RAILINGS, RAMPS AND SIGNAGE.
8. THE CONTRACTOR SHALL PROVIDE BICYCLE ACCOMMODATION THROUGHOUT DURATION, INCLUDING USE OF TEMPORARY CHEVRON PAVEMENT MARKINGS AND W11-1 AND MA-W16-19P SIGNS. ACTUAL LOCATIONS OF CHEVRONS AND SIGNS TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.

W11-1
ON ROADWAY
MA-W16-19P
(SEE NOTE 8)

LEGEND:

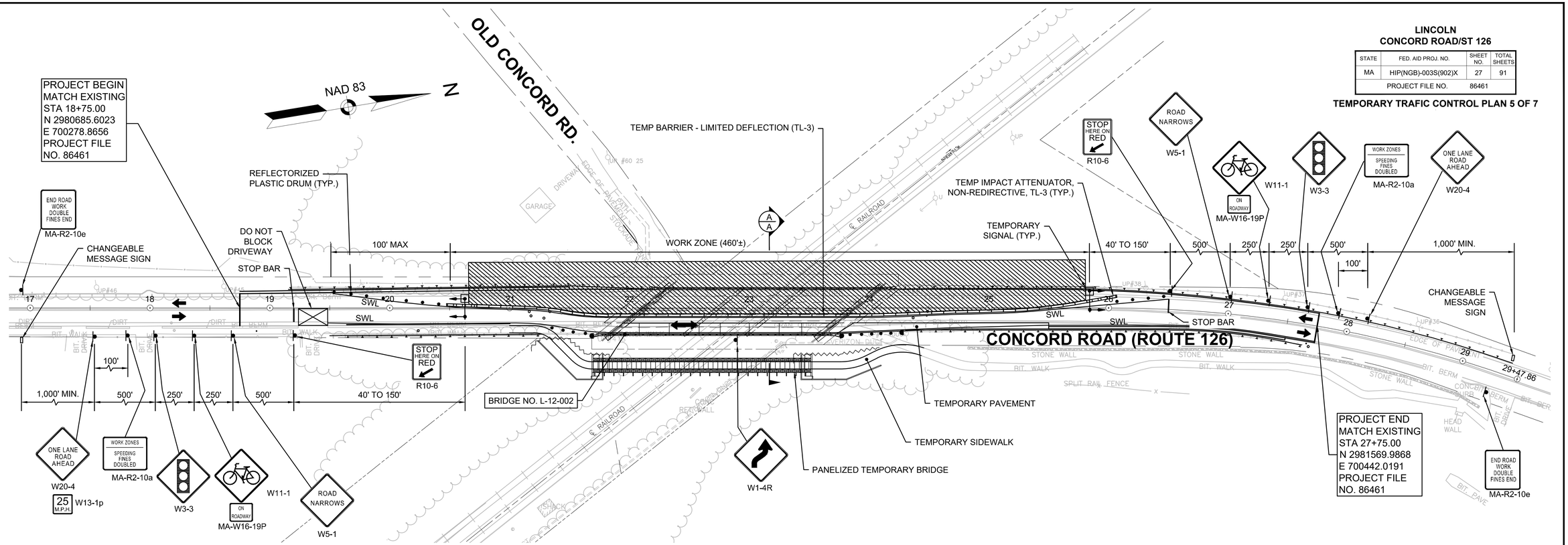
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN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

0 40 100 160
SCALE: 1" = 40'

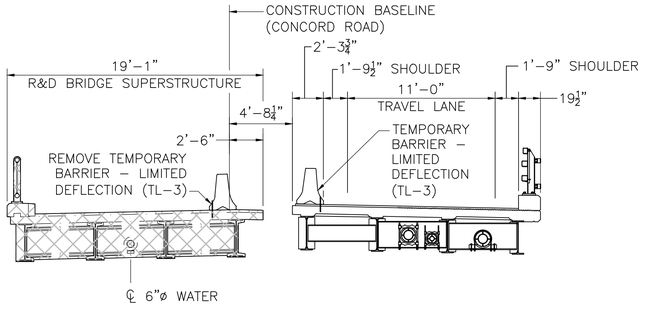
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	27	91
PROJECT FILE NO.	86461		

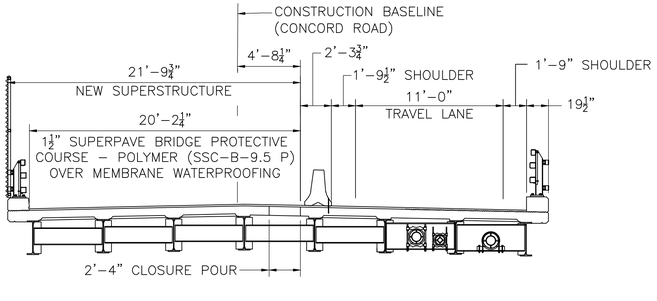
TEMPORARY TRAFIC CONTROL PLAN 5 OF 7



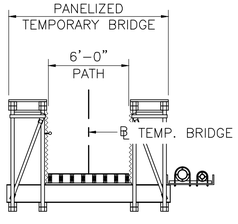
ONE LANE ALTERNATING TRAFFIC WITH TEMPORARY SIGNAL PHASE 2A & 2B
SCALE: 1" = 40'

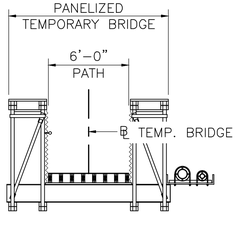


SECTION A–A PHASE 2A
SCALE: $\frac{3}{16}$"=1'–0"



SECTION A–A PHASE 2B
SCALE: $\frac{3}{16}$"=1'–0"





PHASES 2A & 2B NOTES:

1. REMOVE AND DISPOSE WEST SIDE OF EXISTING BRIDGE SUPERSTRUCTURE AND EXISTING WATER MAIN.
2. CONSTRUCT WEST SIDE OF NEW BRIDGE SUPERSTRUCTURE.
3. CONNECT THE NEW WATER MAIN AND NEW GAS MAINS TO THE EXISTING MAIN ON BOTH APPROACHES.
4. TEMPORARY BARRIER CONFIGURATIONS SHOWN ON THE PLANS ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BASED ON ACTUAL SITE CONDITIONS. ALL FINALIZED BARRIER LOCATIONS TO BE APPROVED BY THE ENGINEER. SEE BRIDGE PLANS FOR DETAILS.
5. THE CONTRACTOR SHALL COORDINATE WITH MBTA BEFORE AND DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL MAINTAIN ADA/AAB-COMPLIANT PEDESTRIAN ACCESS AT ALL TIMES, SPECIALLY INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. ACCESS SHALL BE MAINTAINED ALONG ALL SIDEWALKS AND CROSSWALKS, TO ALL ABUTTERS. ANY PEDESTRIAN DETOURS SHALL INCLUDE A FULLY ADA/AAB-COMPLIANT PEDESTRIAN DETOUR ROUTE WITH PROPER BARRICADES, RAILINGS, RAMPS AND SIGNAGE.
7. THE CONTRACTOR SHALL PROVIDE BICYCLE ACCOMMODATION THROUGHOUT DURATION, INCLUDING USE OF TEMPORARY CHEVRON PAVEMENT MARKINGS AND W11-1 AND MA-W16-19P SIGNS. ACTUAL LOCATIONS OF CHEVRONS AND SIGNS TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.

LEGEND:

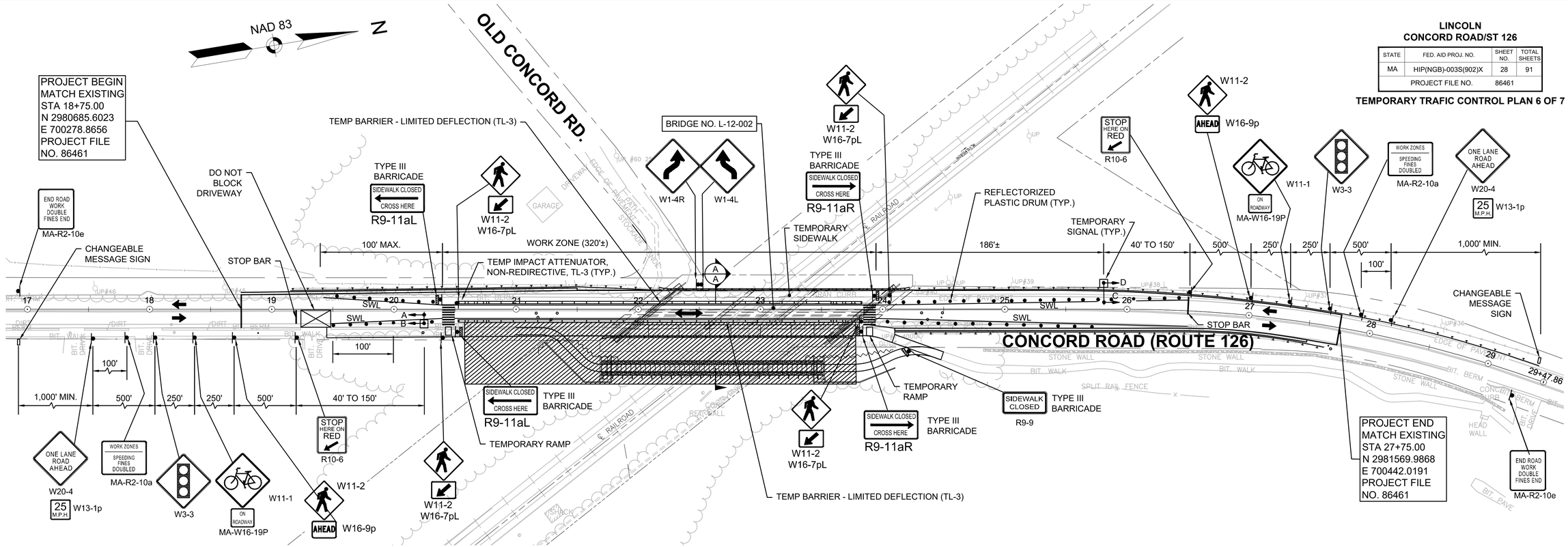
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN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

0 40 100 160
SCALE: 1" = 40'

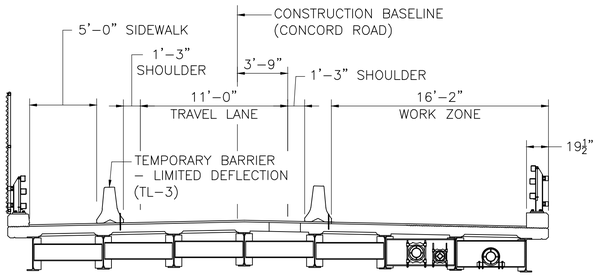
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	28	91
PROJECT FILE NO.	86461		

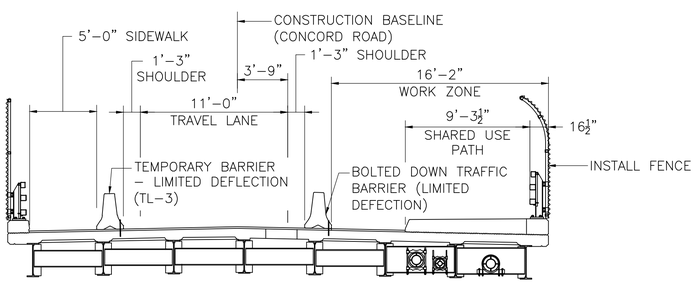
TEMPORARY TRAFIC CONTROL PLAN 6 OF 7



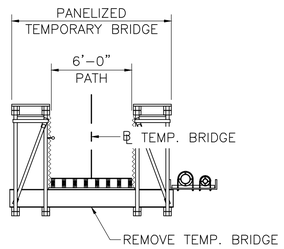
ONE LANE ALTERNATING TRAFFIC WITH TEMPORARY SIGNAL PHASE 3A & 3B
SCALE: 1" = 40'



SECTION A–A PHASE 3A
SCALE: $\frac{3}{16}$"=1'–0"



SECTION A–A PHASE 3B
SCALE: $\frac{3}{16}$"=1'–0"



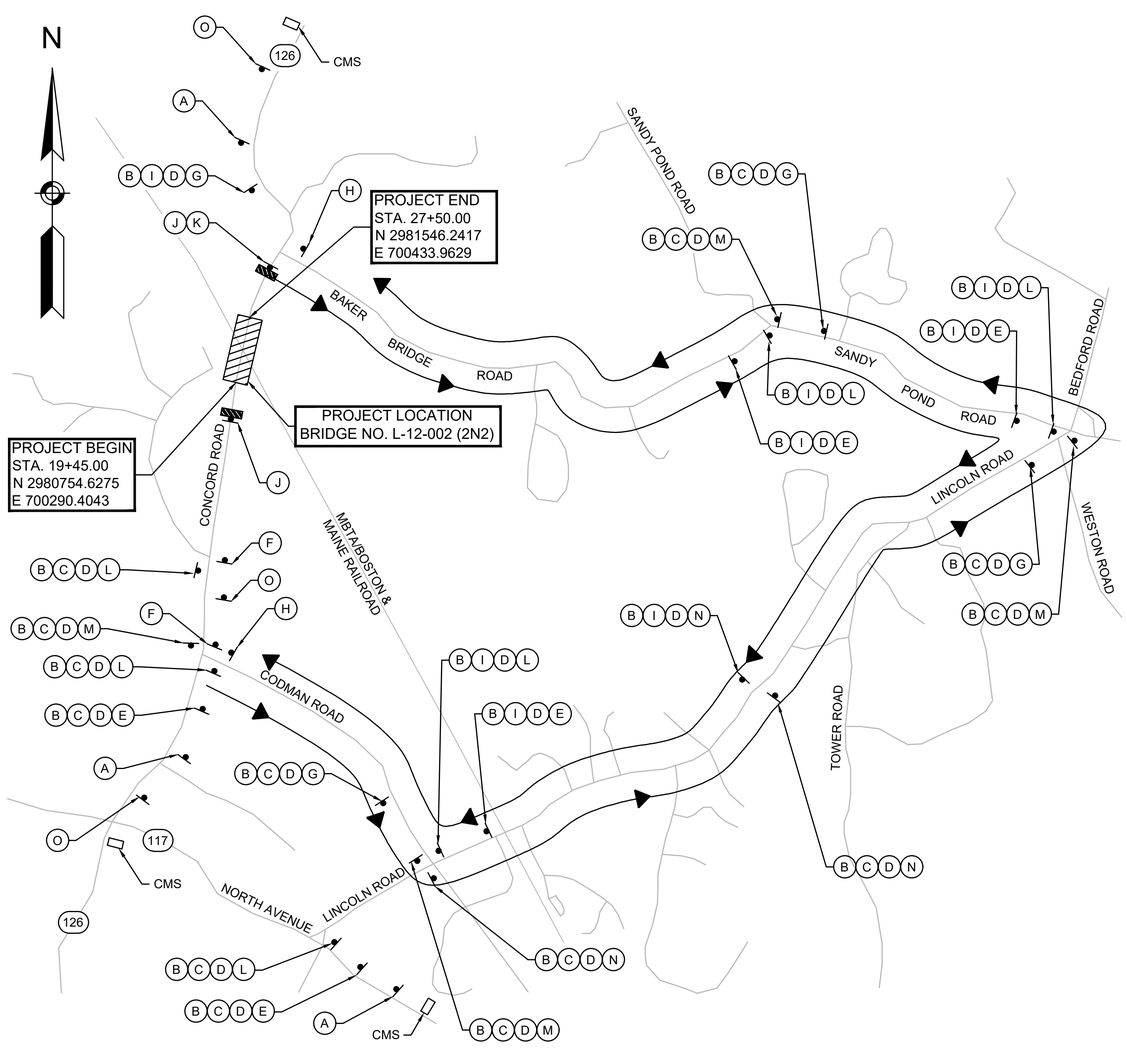
PHASES 3A & 3B NOTES:

1. CLOSE SIDEWALK ON TEMPORARY UTILITY/PEDESTRIAN BRIDGE AND DETOUR PEDESTRIAN TRAFFIC TO TEMPORARY SIDEWALK ON THE WEST SIDE.
2. CONSTRUCT NEW EAST SIDE SIDEWALK. SEE BRIDGE PLANS FOR DETAILS.
3. REMOVE TEMPORARY PAVEMENT AND COMPLETE THE BITUMINOUS BERM AND GUARD RAIL.
4. REMOVE TEMPORARY UTILITY/PEDESTRIAN BRIDGE AND TEMPORARY GAS MAINS.
5. TEMPORARY BARRIER CONFIGURATIONS SHOWN ON THE PLANS ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BASED ON ACTUAL SITE CONDITIONS. ALL FINALIZED BARRIER LOCATIONS TO BE APPROVED BY THE ENGINEER. SEE BRIDGE PLANS FOR DETAILS.
6. THE CONTRACTOR SHALL COORDINATE WITH MBTA BEFORE AND DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL MAINTAIN ADA/AAB-COMPLIANT PEDESTRIAN ACCESS AT ALL TIMES, SPECIALLY INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. ACCESS SHALL BE MAINTAINED ALONG ALL SIDEWALKS AND CROSSWALKS, TO ALL ABUTTERS. ANY PEDESTRIAN DETOURS SHALL INCLUDE A FULLY ADA/AAB-COMPLIANT PEDESTRIAN DETOUR ROUTE WITH PROPER BARRICADES, RAILINGS, RAMPS AND SIGNAGE.
8. THE CONTRACTOR SHALL PROVIDE BICYCLE ACCOMMODATION THROUGHOUT DURATION, INCLUDING USE OF TEMPORARY CHEVRON PAVEMENT MARKINGS AND W11-1 AND MA-W16-19P SIGNS. ACTUAL LOCATIONS OF CHEVRONS AND SIGNS TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.

LEGEND:

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

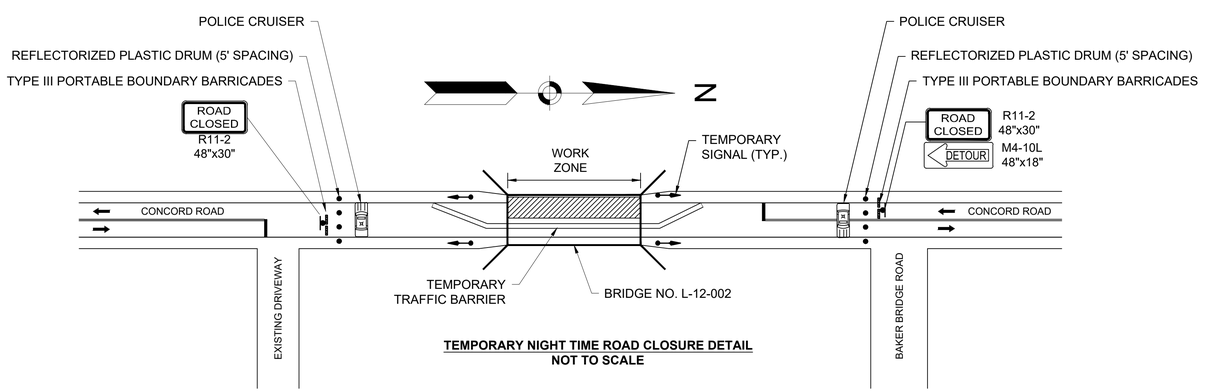
0 40 100 160
SCALE: 1" = 40'



DETOUR PLAN

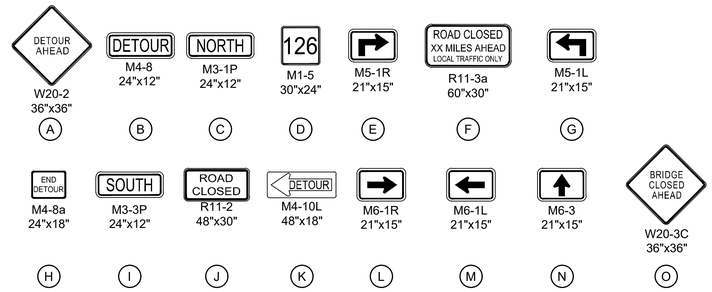
DETOUR LENGTH = 4 MILES

NOT TO SCALE



TEMPORARY NIGHT TIME ROAD CLOSURE DETAIL

NOT TO SCALE



LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	29	91
	PROJECT FILE NO. 86461		

TEMPORARY TRAFIC CONTROL PLAN 7 OF 7

CONSTRUCTION SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	BACKGROUND	COLOR LEGEND	BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
(A) W20-2	36	36	DETOUR AHEAD	(1)	(1)	(1)	3	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2 REQ'D.	9	27
(B) M4-8	24	12	DETOUR				22	FLUORESCENT ORANGE	BLACK	BLACK	-	2	44
(C) M3-1P	24	12	NORTH				14	WHITE	BLACK	BLACK	-	2	28
(D) M1-5	30	24	126				22	WHITE	BLACK	BLACK	-	4	88
(E) M5-1R	21	15					5	WHITE	BLACK	BLACK	-	2.19	10.95
(F) R11-3a	60	30	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY				2	WHITE	BLACK	BLACK	P-5 2 REQ'D.	12.5	25
(G) M5-1L	21	15					4	WHITE	BLACK	BLACK	-	2.19	8.76
(H) M4-8a	24	18	END DETOUR				2	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2 REQ'D.	3	6
(I) M3-3P	24	12	SOUTH				8	WHITE	BLACK	BLACK	-	2	16
(J) R11-2	48	30	ROAD CLOSED				2	WHITE	BLACK	BLACK	-	10	20
(K) M4-10L	48	18	DETOUR				1	FLUORESCENT ORANGE	BLACK	BLACK	-	6	6
(L) M6-1R	21	15					6	WHITE	BLACK	BLACK	-	2.19	13.14
(M) M6-1L	21	15					4	WHITE	BLACK	BLACK	-	2.19	8.76
(N) M6-3	21	15					3	WHITE	BLACK	BLACK	-	2.19	6.57
(O) W20-3C	36	36	BRIDGE CLOSED AHEAD				3	FLUORESCENT ORANGE	BLACK	BLACK	P-5 4 REQ'D.	9	27
SUB-TOTAL AREA OF SIGNS (SQUARE FEET)													335
SUB-TOTAL AREA OF SIGNS (SQUARE FEET) FROM NEXT SHEET													337
TOTAL AREA OF SIGNS (SQUARE FEET)													672

LEGEND

- DIRECTION OF DETOUR TRAFFIC
- DETOUR SIGN
- (A) DETOUR SIGN DESIGNATOR
- TYPE III PORTABLE BOUNDARY BARRICADE
- CHANGEABLE MESSAGE SIGN (CMS)

NOTES:

1. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" 2009 EDITION OR LATEST EDITION AND ALL AMENDMENTS WILL GOVERN.
2. (1) SEE MUTCD 2009 EDITION OR THE LATEST EDITION EDITION OF STANDARD HIGHWAY AND SIGN IS THE 2004 EDITION WITH A 2012 SUPPLEMENT. SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.
3. CONTRACTOR SHALL INSTALL THE DETOUR SIGNS WITHIN THE RIGHT OF WAY.
4. THE DISTANCES BETWEEN THE ADVANCE SIGNAGE SHALL BE 500 FEET OR AS DIRECTED BY THE ENGINEER.
5. BEFORE THE DETOUR IS TO BECOME ACTIVE, MESSAGE #1 "BRIDGE CLOSED AHEAD" & MESSAGE #2 "DETOUR 10PM - 7AM" ON THE CHANGEABLE MESSAGE SIGN. ONCE CONSTRUCTION BEGINS, MESSAGE #1 "BRIDGE CLOSED AHEAD" & MESSAGE #2 "FOLLOW DETOUR AHEAD" ON THE CHANGEABLE MESSAGE SIGNS. THE LOCATION OF THE CHANGEABLE MESSAGE SIGNS SHALL BE ADJUSTED IN THE FIELD BY THE ENGINEER.

CONSTRUCTION SIGN SUMMARY

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	30	91
PROJECT FILE NO.	86461		

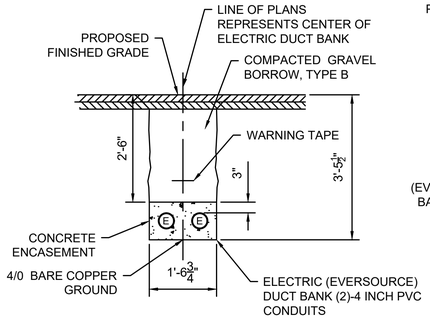
TEMPORARY TRAFFIC CONTROL
TRAFFIC SIGN SUMMARY

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.		BACKGROUND	LEGEND	BORDER			
MA-R2-10e	36"	48"	END ROAD WORK DOUBLE FINES END	MASSDOT STANDARD			2	FLUORESCENT ORANGE/WHITE	BLACK	BLACK	P-5 2 REQ'D.	12	24
MA-R2-10a	48"	36"	WORK ZONES / SPEEDING FINES DOUBLED	MASSDOT STANDARD			2	FLUORESCENT ORANGE/WHITE	BLACK	BLACK	-	12	24
W20-1	36"	36"	ROAD WORK AHEAD	MUTCD STANDARD			2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
W11-2	36"	36"					6	FLUORESCENT YELLOW/GREEN	BLACK	BLACK	-	9	54
W16-9p	30"	18"	AHEAD				2	FLUORESCENT ORANGE	BLACK	BLACK	-	3.75	7.5
W20-4	36"	36"	ONE LANE ROAD AHEAD				2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
W3-3	36"	36"					2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
R10-6	18"	24"	STOP HERE ON RED				2	WHITE	BLACK	BLACK	-	3	6
W16-7pL	24"	12"					4	FLUORESCENT ORANGE	BLACK	BLACK	-	2	8
R9-11aL	24"	12"	SIDEWALK CLOSED CROSS HERE				2	WHITE	BLACK	BLACK	-	2	4
R9-11aR	24"	12"	SIDEWALK CLOSED CROSS HERE				2	WHITE	BLACK	BLACK	-	2	4
W20-7	36"	36"					2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD				2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
W1-4L	36"	36"					2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
W1-4R	36"	36"					2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18
MA-W30-8R	36"	36"	SQUEEZE RIGHT				2	FLUORESCENT ORANGE	BLACK	BLACK	-	9	18

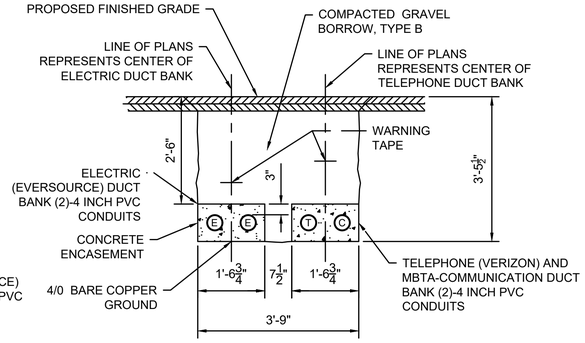
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACKGROUND	LEGEND	BORDER			
R4-7	24"	30"		MUTCD STANDARD			2	WHITE	BLACK	BLACK	-	5	10
W5-1	36"	36"	ROAD NARROWS				2	FLUORESCENT	BLACK	BLACK	-	9	18
W21-5a	36"	36"	RIGHT SHOULDER CLOSED				1	FLUORESCENT	BLACK	BLACK	-	9	9
W11-1	36"	36"					2	FLUORESCENT YELLOW	BLACK	BLACK	-	9	18
MA-W16-19P	24"	18"	ON ROADWAY				2	FLUORESCENT YELLOW	BLACK	BLACK	-	3	6
R9-9	24"	12"	SIDEWALK CLOSED				1	WHITE	BLACK	BLACK	-	2	2
SUB-TOTAL AREA OF SIGNS (SQUARE FEET)													339

UTILITY TRENCH NOTES:

1. ALL CONSTRUCTION OF DUCT BANKS INCLUDING TRENCH, EXCAVATION, AND BACKFILL SHALL CONFORM UTILITY DETAILS AND SPECIFICATIONS
2. FOR ALL DUCTS USE SCHEDULE 40 CONDUITS ENCASED IN 2,500 PSI 3/8 INCH, 520 CEMENT CONCRETE. USE PLASTIC SPACERS TO MAINTAIN CONDUIT SPACING. SPACERS SHALL MEET UTILITY SPECIFICATIONS FOR DESIGN AND SPACING.
3. ALL TRENCH EXCAVATION ACTIVITIES SHALL COMPLY WITH ALL APPROPRIATE OSHA STANDARD.
4. EACH DUCT BANK SHALL HAVE ASSOCIATED WARNING TAPE INSTALLED. ELECTRIC DUCT BANKS WILL HAVE 6 INCH, COLOR RED, DETECTABLE METALLIC WARNING TAPE PLACED 6 INCHES ABOVE CONCRETE ENCASEMENT. ELECTRIC DUCT BANKS WILL HAVE 6 INCH, COLOR ORANGE, DETECTABLE METALLIC WARNING TAPE PLACED 12" ABOVE EACH CONCRETE ENCASEMENT.
5. A UTILITY COMPANY REPRESENTATIVE FROM EVERSOURCE SHALL BE PRESENT FOR ALL ELECTRICAL CONDUIT INSTALLED.
6. A UTILITY COMPANY REPRESENTATIVE FROM VERIZON SHALL BE PRESENT FOR ALL TELEPHONE CONDUIT INSTALLED.
7. A MINIMUM OF 12 INCHES OF SEPARATION IS REQUIRED FOR CROSSINGS WITH GAS, WATER, SEWER AND DRAINAGE.
8. CONDUITS SHALL BE BLOWN CLEAN USING COMPRESSED AIR. RUN MANDREL THRU EACH CONDUIT TO CONFIRM VIABLE PATHWAY.
9. WOVEN POLYESTER MULE TAPE WITH MINIMUM STRENGTH OF 2500 LB TENSILE STRENGTH TO BE INSTALLED WITHIN EACH CONDUIT.



ELECTRIC TRENCH
SCALE: NTS

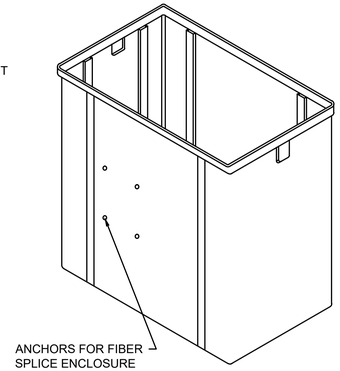


ELECTRIC / TELEPHONE / MBTA COMMUNICATION
SCALE: NTS

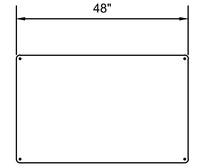
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	31	91
PROJECT FILE NO.	86461		

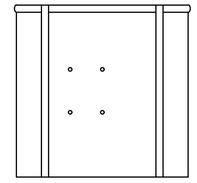
CONSTRUCTION DETAILS



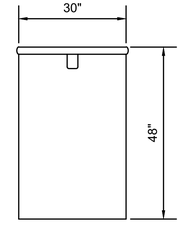
ISOMETRIC VIEW



PLAN VIEW

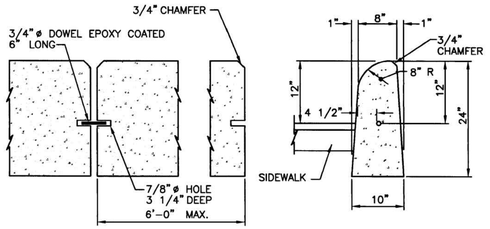


FRONT VIEW



SIDE VIEW

HANDHOLE DETAIL
SCALE: NTS

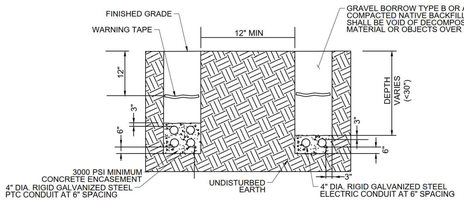


LONGITUDINAL SECTION @ JOINT

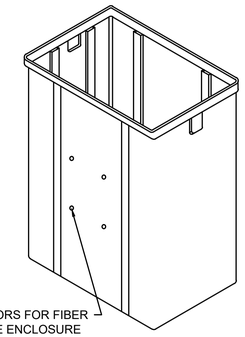
END SECTION

2'-0" LOT CURB

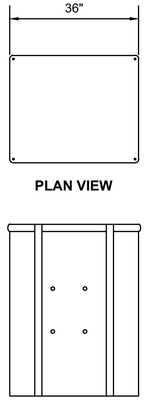
PRECAST CONCRETE LOT CURB
N.T.S



UNDERGROUND CONCRETE ENCASED PERMANENT CONDUIT RELOCATION
NOT TO SCALE



ISOMETRIC VIEW



PLAN VIEW

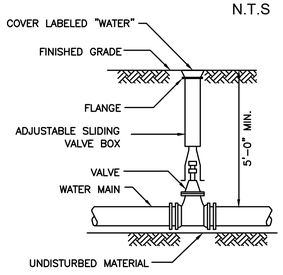
FRONT VIEW

SIDE VIEW

PULL BOX DETAIL
SCALE: NTS

NOTES:

1. SEE DRAWINGS G-3002 AND G-3003 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. PROVIDE END CAPS FOR ALL STEEL CASING PIPES AND SEAL AROUND INNERDUCTS TO PREVENT WATER AND DEBRIS FROM ENTERING THE PIPE.
3. DB ENTITY SHALL RESTORE ALL DISTURBED SURFACES, INCLUDING PUBLIC AND PRIVATE CROSSINGS, PUBLIC ROADS, PEDESTRIAN WALKWAYS AND OTHER RAILROAD CROSSINGS IN ACCORDANCE WITH THE LATEST STANDARDS OF THE APPLICABLE JURISDICTION. THIS INCLUDES BUT IS NOT LIMITED TO BLAST, NONTRACK AREAS, PAVEMENT, SIDEWALKS (BOTH ASPHALT AND CONCRETE), ADA ACCOMMODATIONS, AND PAVEMENT MARKINGS.
4. AT THE SLOPE, WHERE INSTALLATION DEPTH IS LESS THAN 24", INSTALL TAPE AT PRACTICAL ELEVATION ABOVE PIPE, RETURN TO REGULAR INSTALLATION DEPTH AFTER PASSING SHALLOW PIPE INSTALLATION.
5. TRENCH BY TRADITIONAL, NON-PLOW METHODS MAY REQUIRE SITE SPECIFIC SOE OR SOIL STABILIZATION TO MINIMIZE TRACK DISTURBANCE DURING EXCAVATION. REFER TO MBTA RAILROAD OPERATIONS DIRECTORATE AND CONTRACT SPECIFICATIONS FOR REQUIREMENTS.



VALVE AND BOX DETAIL
N.T.S.

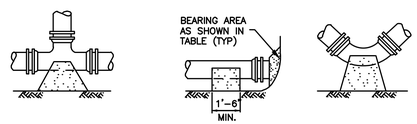
TABLE 1 - DUCTILE IRON PIPE

REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (FEET)

PIPE SIZE	90° BEND	45° BEND OR WYE BRANCH	22 1/2° BEND	11 1/4° BEND	PLUG, CAP OR IN-LINE VALVE	TEE (BRANCH)
6"	25 (30.5)	10.5 (12.5)	5 (6)	2.5 (3)	43 (64)	34 (51)
8"	33 (40)	13.5 (16.5)	6.5 (8)	3 (4)	55 (82)	47 (70)
10"	40 (48.5)	16.5 (20)	8 (9.5)	4 (5)	67 (100)	58 (87)
12"	47 (56.5)	19.5 (23.5)	9.5 (11.5)	4.5 (5.5)	79 (118)	70 (105)
16"	59.5 (72)	24.5 (30)	12 (14.5)	6 (7)	101 (152)	92 (139)
20"	72 (86.5)	30 (36)	14.5 (17)	7 (8.5)	123 (184)	114 (171)
24"	84 (100)	35 (41)	16.5 (20)	8 (10)	144 (216)	134 (202)
30"	100 (120)	41 (50)	20 (24)	10 (12)	174 (261)	165 (247)

NOTES:

1. RESTRAINED LENGTHS LISTED IN PARENTHESES ARE FOR PIPE WRAPPED IN POLYETHYLENE. THE OTHER ASSOCIATED LENGTHS ARE FOR PLAIN UNWRAPPED DUCTILE IRON PIPE.
2. THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE SPECIFICATION SECTION.



TEE DETAIL (PLAN VIEW)

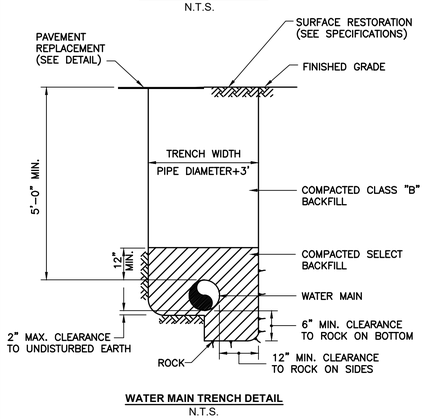
CAP DETAIL (PLUG SIMILAR) (SECTION VIEW)

BEND DETAIL (PLAN VIEW)

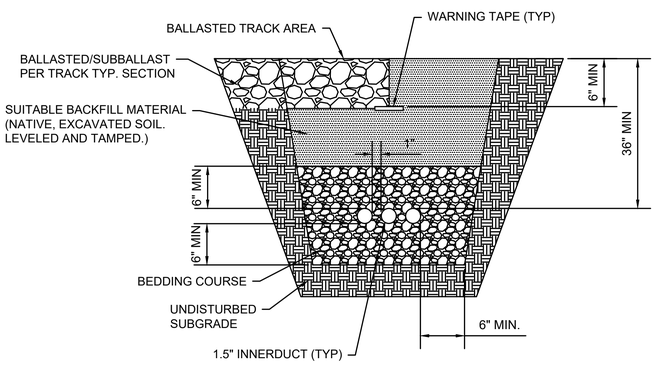
TABLE OF CONCRETE THRUST RESTRAINT MINIMUM BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS				
SIZE OF MAIN	90° BENDS, TEES, CAPS AND PLUGS	45° BENDS AND WYES	22-1/2° BENDS	11-1/4° BENDS
6", 8"	5	4	2	2
10", 12"	12	9	5	2

NOTES:
1. CONCRETE THRUST RESTRAINT SHALL ONLY BE USED WHERE OTHER MEANS OF RESTRAINT ARE NOT FEASIBLE.
2. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF CONCRETE ON THE FITTING JOINTS

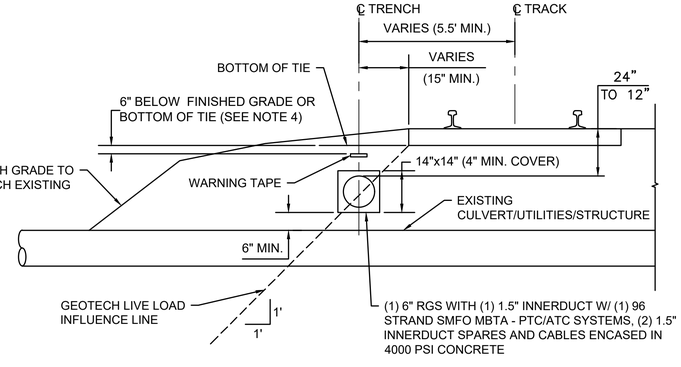
CONCRETE THRUST RESTRAINT FOR FITTINGS
N.T.S.



WATER MAIN TRENCH DETAIL
N.T.S.



TYPICAL TRENCH FOR INNERDUCT INSTALLATION
SCALE: NTS



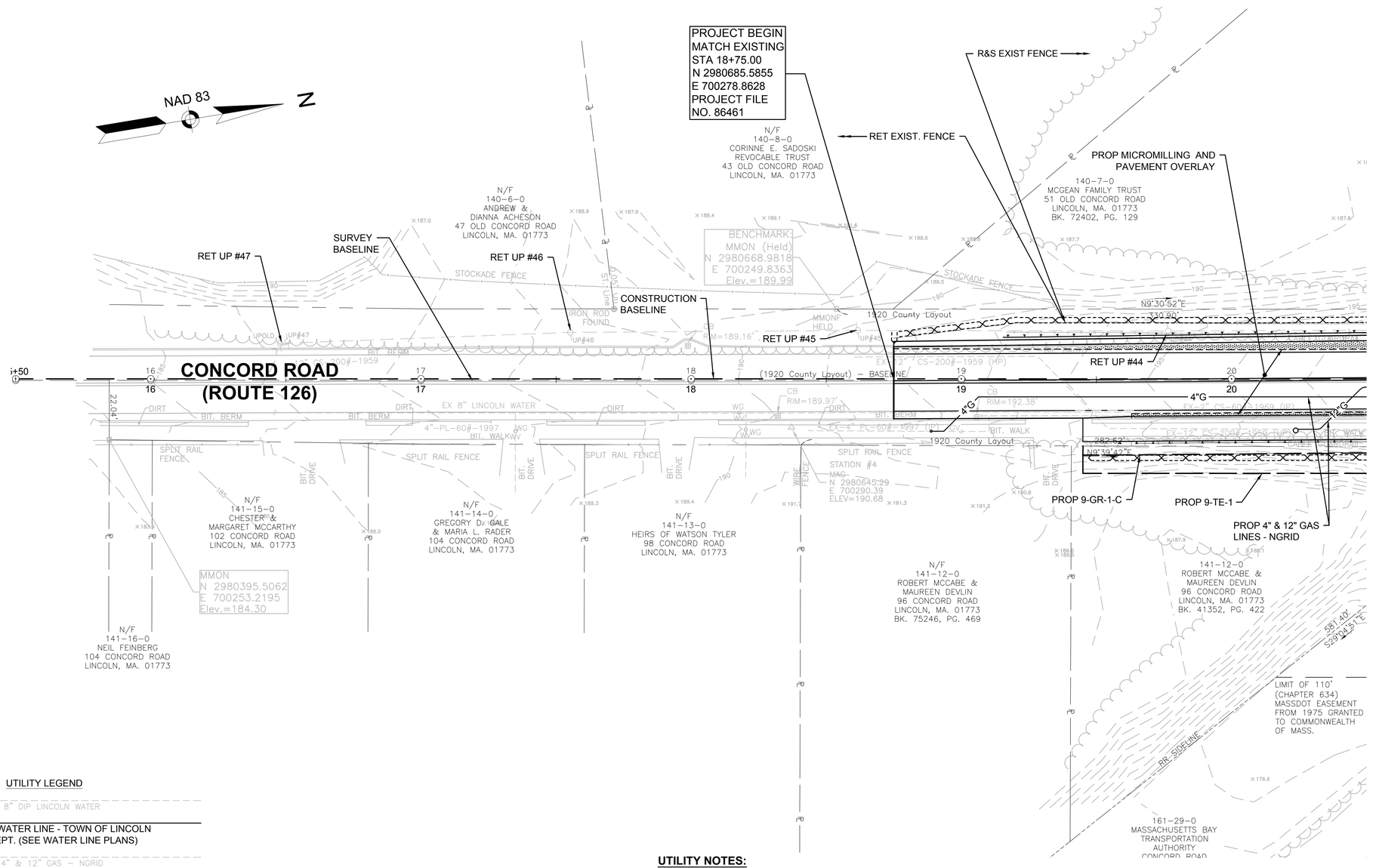
TYPICAL SECTION CONCRETE ENCASED STEEL CASING PIPE SHALLOW UTILITIES/CULVERT (CASING OVER < 24")
SCALE: NTS

86461_HD31(CONSTRUCTION-DETAILS).DWG Plotted on 23-Dec-2025 10:17 AM

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	32	91
PROJECT FILE NO.	86461		

UTILITY PLAN 1 OF 5



UTILITY LEGEND

EX 8" DIP LINCOLN WATER

PROP 8" DIP WATER LINE - TOWN OF LINCOLN WATER DEPT. (SEE WATER LINE PLANS)

EX 4" & 12" GAS – NGRID

PROP 4", 8" & 12" GAS LINES - NGRID

PROP DUCT BANK - EVERSOURCE/VERIZON/COMCAST

EX OVERHEAD WIRES

OHW – PROP RELOCATED OVERHEAD WIRES (PERM)

OHW – PROP RELOCATED OVERHEAD WIRES (TEMP)

PROP PTC/ATC DUCT BANK - MBTA/KEOLIS

PROP ELECTRIC CONDUIT UTILITY DUCT BANK - MBTA

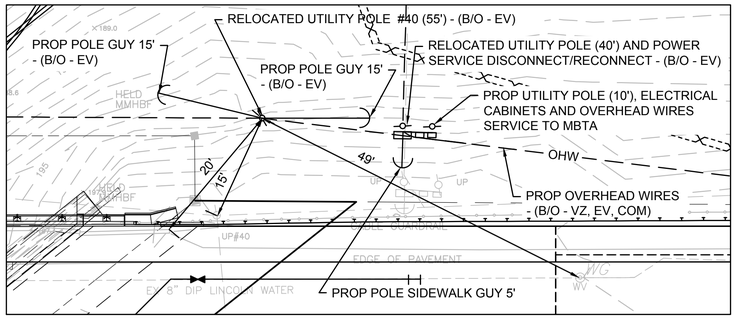
FULL DEPTH PAVEMENT LESS THAN 4 FEET WIDE

0 20 50 100

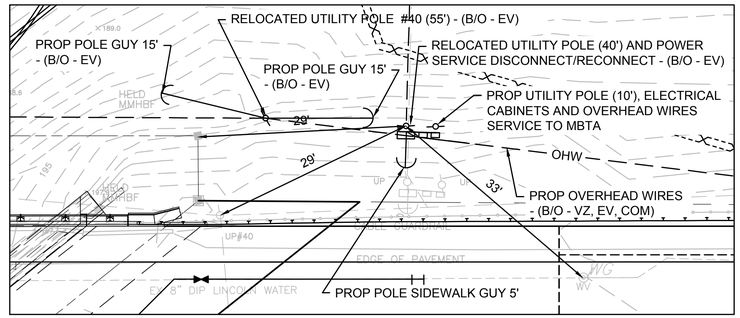
SCALE: 1" = 20'

UTILITY NOTES:

1. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATED AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OF EXCAVATION. ALL UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE "FIELD" PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL TOWN OF LINCOLN WATER DEPARTMENT RULES AND REGULATIONS TO PROPOSED WATER LINE RELOCATION.
3. THE TEMPORARY UTILITY/PEDESTRIAN BRIDGE SUPPORTS THE TEMPORARY 4" AND 8" GAS PIPES. FOR ADDITIONAL INFORMATION AND DETAILS OF THE TEMPORARY UTILITY/PEDESTRIAN BRIDGE SEE BRIDGE PLANS.
4. FOR DETAILS PERTAINING TO UTILITY DISPOSITIONS ON THE BRIDGE THROUGHOUT CONSTRUCTIONS STAGING, SEE BRIDGE "STAGE CONSTRUCTION" , SHEETS 56 - 60.



DETAIL "A"
SCALE: 1"=10'



DETAIL "B"
SCALE: 1"=10'

UTILITY LEGEND

EX 8" DIP LINCOLN WATER

PROP 8" DIP WATER LINE - TOWN OF LINCOLN WATER DEPT. (SEE WATER LINE PLANS)

EX 4" & 12" GAS – NGRID

PROP 4", 8" & 12" GAS LINES - NGRID

PROP DUCT BANK - EVERSOURCE/VERIZON/COMCAST

EX OVERHEAD WIRES

PROP RELOCATED OVERHEAD WIRES (PERM)

PROP RELOCATED OVERHEAD WIRES (TEMP)

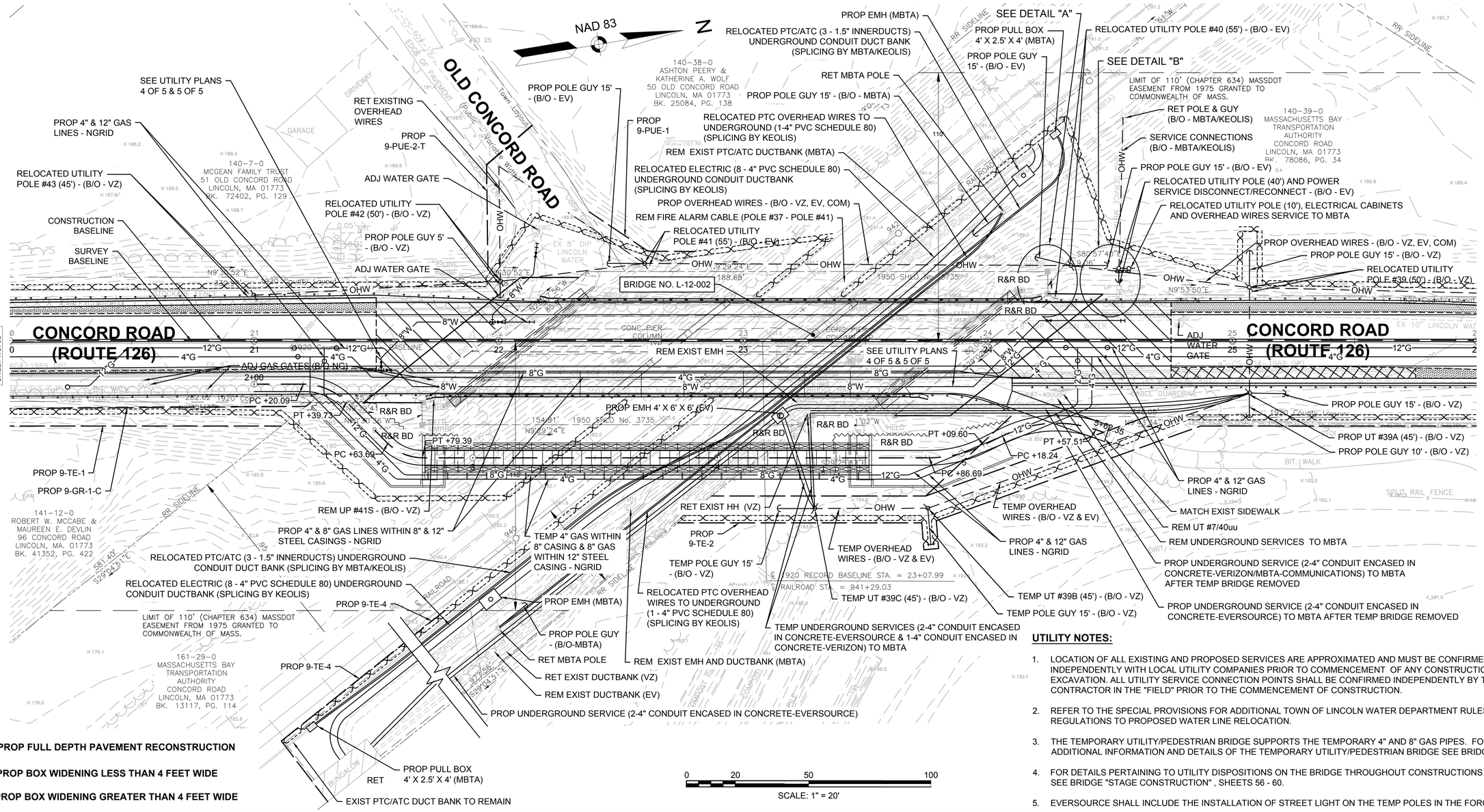
PROP PTC/ATC DUCT BANK - MBTA/KEOLIS

PROP ELECTRIC CONDUIT UTILITY DUCT BANK - MBTA

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	33	91
	PROJECT FILE NO. 86461		

UTILITY PLAN 2 OF 5



PROP FULL DEPTH PAVEMENT RECONSTRUCTION

PROP BOX WIDENING LESS THAN 4 FEET WIDE

PROP BOX WIDENING GREATER THAN 4 FEET WIDE

0 20 50 100
SCALE: 1" = 20'

UTILITY NOTES:

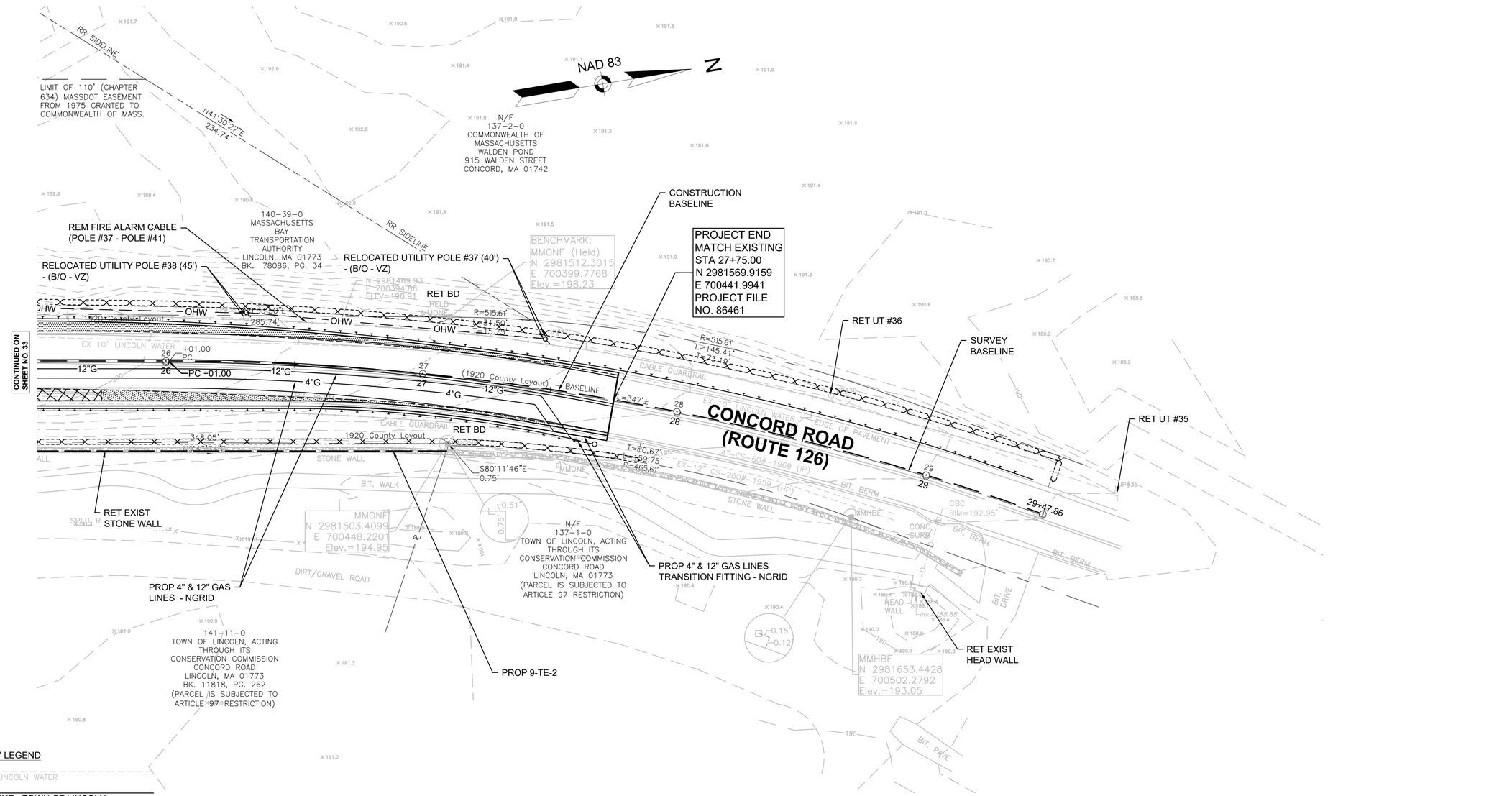
1. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATED AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OF EXCAVATION. ALL UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE "FIELD" PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL TOWN OF LINCOLN WATER DEPARTMENT RULES AND REGULATIONS TO PROPOSED WATER LINE RELOCATION.
3. THE TEMPORARY UTILITY/PEDESTRIAN BRIDGE SUPPORTS THE TEMPORARY 4" AND 8" GAS PIPES. FOR ADDITIONAL INFORMATION AND DETAILS OF THE TEMPORARY UTILITY/PEDESTRIAN BRIDGE SEE BRIDGE PLANS.
4. FOR DETAILS PERTAINING TO UTILITY DISPOSITIONS ON THE BRIDGE THROUGHOUT CONSTRUCTIONS STAGING, SEE BRIDGE "STAGE CONSTRUCTION" , SHEETS 56 - 60.
5. EVERSOURCE SHALL INCLUDE THE INSTALLATION OF STREET LIGHT ON THE TEMP POLES IN THE FORCE ACCOUNT.

86461_UT33(UTIL-PLAN).DWG Plotted on 30-Dec-2025 1:36 PM

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	34	91
PROJECT FILE NO.	86461		

UTILITY PLAN 3 OF 5



UTILITY LEGEND

EX 8" DIP LINCOLN WATER

PROP 8" DIP WATER LINE - TOWN OF LINCOLN WATER DEPT. (SEE WATER LINE PLANS)

EX 4" & 12" GAS – NGRID

PROP 4", 8" & 12" GAS LINES - NGRID

PROP DUCT BANK - EVERSOURCE/VERIZON/COMCAST

EX OVERHEAD WIRES

OHW – PROP RELOCATED OVERHEAD WIRES (PERM) – OHW

OHW – PROP RELOCATED OVERHEAD WIRES (TEMP) – OHW

PROP PTC/ATC DUCT BANK - MBTA/KEOLIS

PROP ELECTRIC CONDUIT UTILITY DUCT BANK - MBTA

PROP BOX WIDENING LESS THAN 4 FEET WIDE

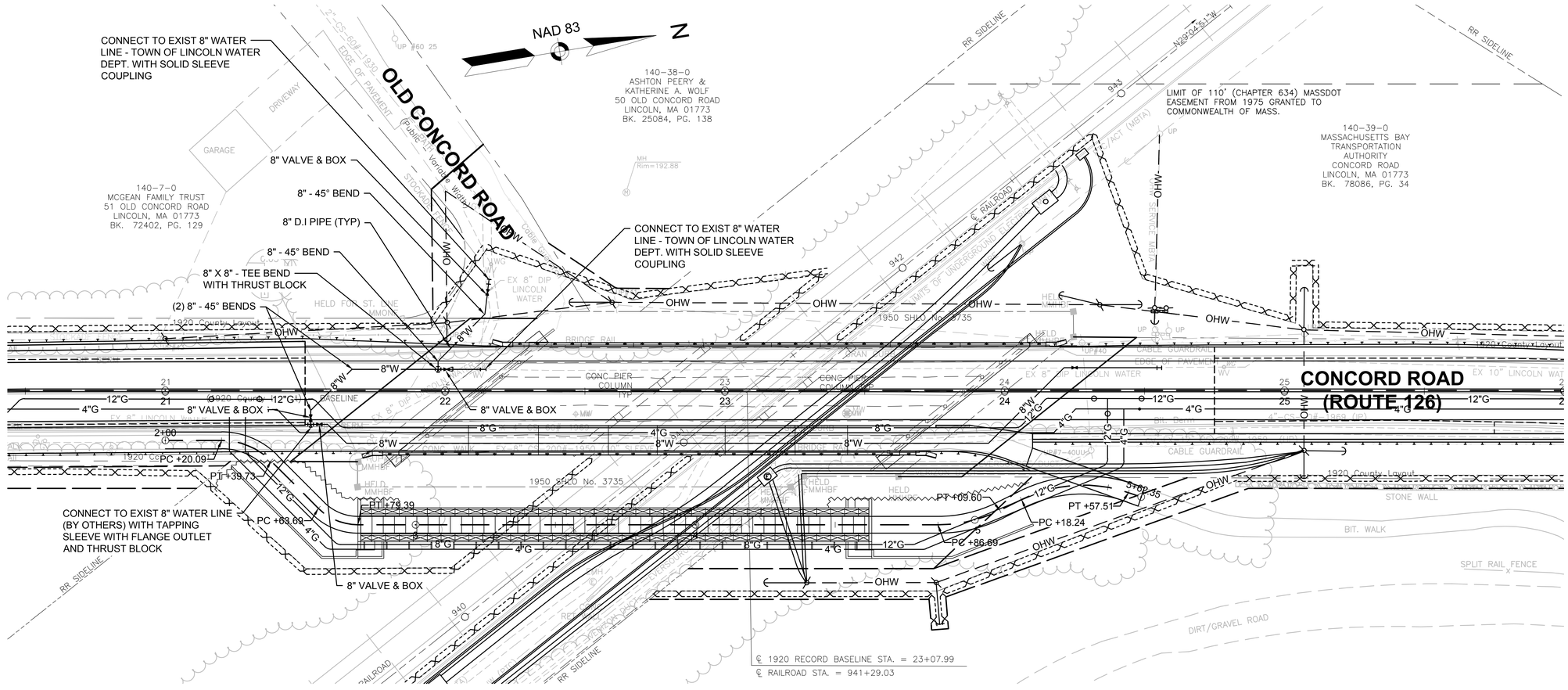
PROP BOX WIDENING GREATER THAN 4 FEET WIDE

0 20 50 100

SCALE: 1" = 20'

UTILITY NOTES:

1. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATED AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OF EXCAVATION. ALL UTILITY SERVICE CONNECTION POINTS SHALL CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE "FIELD" PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. REFER TO THE SPECIAL PROVISIONS (ITEM 309.1) FOR ADDITIONAL TOWN OF LINCOLN WATER DEPARTMENT RULES AND REGULATIONS TO PROPOSED WATER LINE RELOCATION.
3. THE TEMPORARY UTILITY/PEDESTRIAN BRIDGE SUPPORTS THE TEMPORARY 4" AND 8" GAS PIPES. FOR ADDITIONAL INFORMATION AND DETAILS OF THE TEMPORARY UTILITY/PEDESTRIAN BRIDGE SEE BRIDGE PLANS.
4. FOR DETAILS PERTAINING TO UTILITY DISPOSITIONS ON THE BRIDGE THROUGHOUT CONSTRUCTIONS STAGING, SEE BRIDGE "STAGE CONSTRUCTION" , SHEETS 56 - 60.
5. FOR WATER LINE SUPPORT DETAIL ON THE BRIDGE, SEE BRIDGE PLAN SHEETS 66 AND 73.
6. THRUST BLOCKS AND RESTRAINED JOINTS ARE REQUIRED UNTIL OTHERWISE APPROVED BY TOWN OF LINCOLN WATER DEPARTMENT.
7. THE CONTRACTOR SHALL CUT AND CAP WITH THRUST BLOCK FOR THE 8" WATER LINE AT STATION 22+02, 7' LEFT AFTER THE NEW 8" WATER LINE ON THE BRIDGE IS COMPLETED AND ACTIVATED.

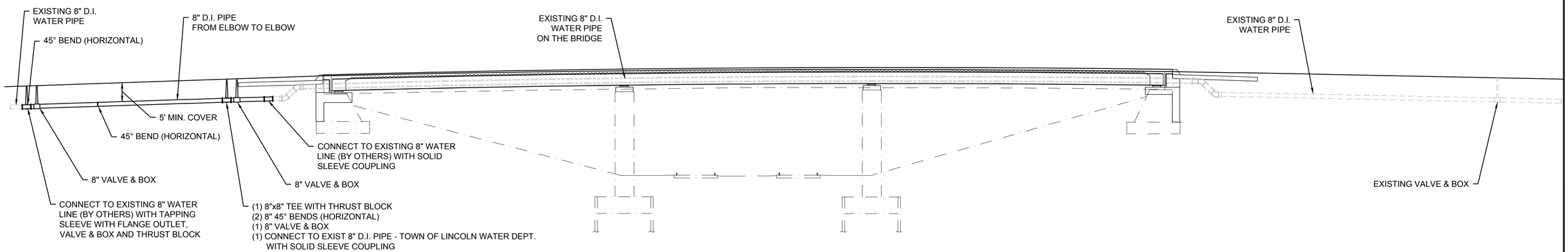


PROPOSED 8" WATER LINE (PHASE - 1)

SCALE:1"=20'

0 20 50 100

SCALE: 1" = 20'



PROPOSED 8" WATER LINE (PHASE - 1)

NOT TO SCALE

UTILITY LEGEND

8"W 8"W 8"W

PROP 8" D.I. PIPE - TOWN OF LINCOLN WATER DEPT.

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	35	91
PROJECT FILE NO.	86461		

UTILITY PLAN 4 OF 5

UTILITY NOTES:

1. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATED AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OF EXCAVATION. ALL UTILITY SERVICE CONNECTION POINTS SHALL CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE "FIELD" PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
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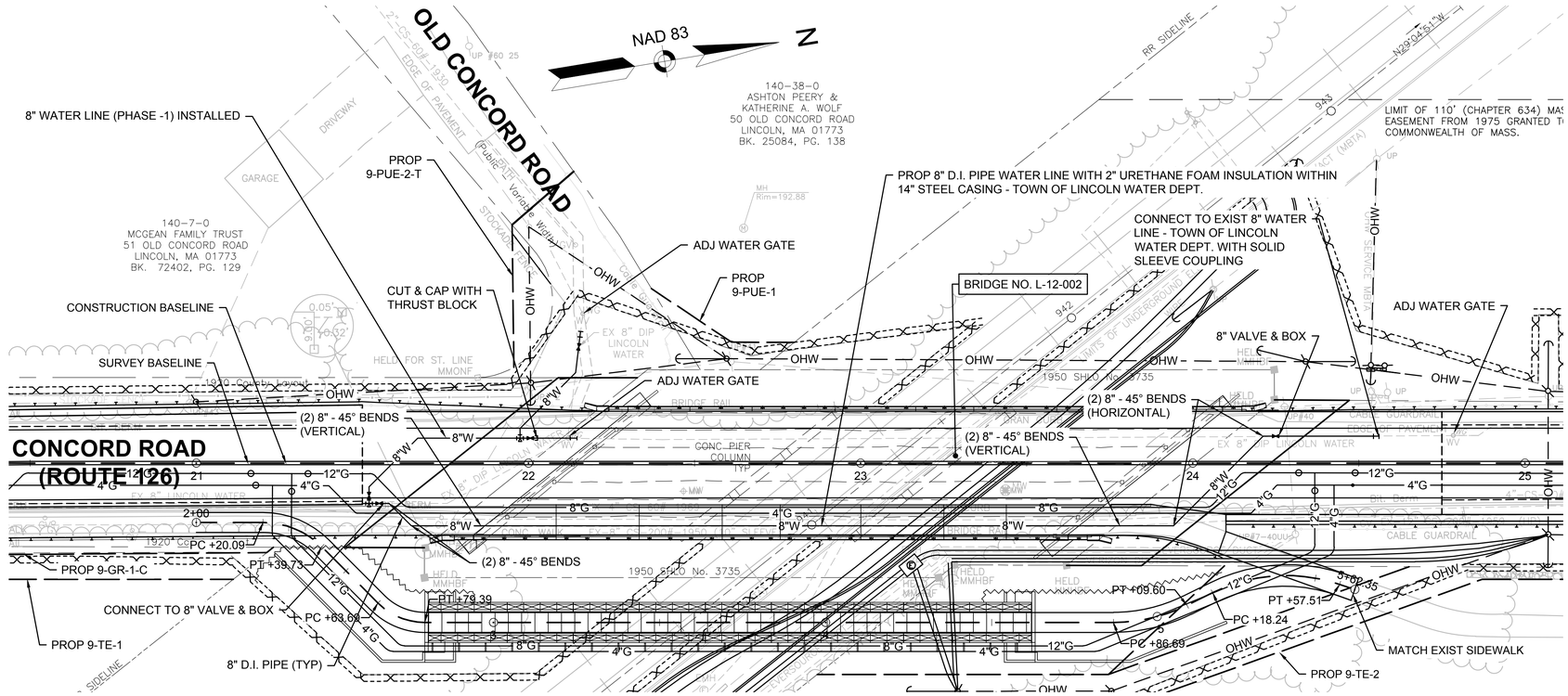
7. THE CONTRACTOR SHALL CUT AND CAP WITH THRUST BLOCK FOR THE 8" WATER LINE AT STATION 22+02, 7' LEFT AFTER THE NEW 8" WATER LINE ON THE BRIDGE IS COMPLETED AND ACTIVATED.

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	36	91
PROJECT FILE NO.	86461		

UTILITY PLAN 5 OF 5



PROPOSED 8" WATER LINE (PHASE - 2)

SCALE:1"=20'

0 20 50 100

SCALE: 1" = 20'

UTILITY NOTES:

1. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATED AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OF EXCAVATION. ALL UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE "FIELD" PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
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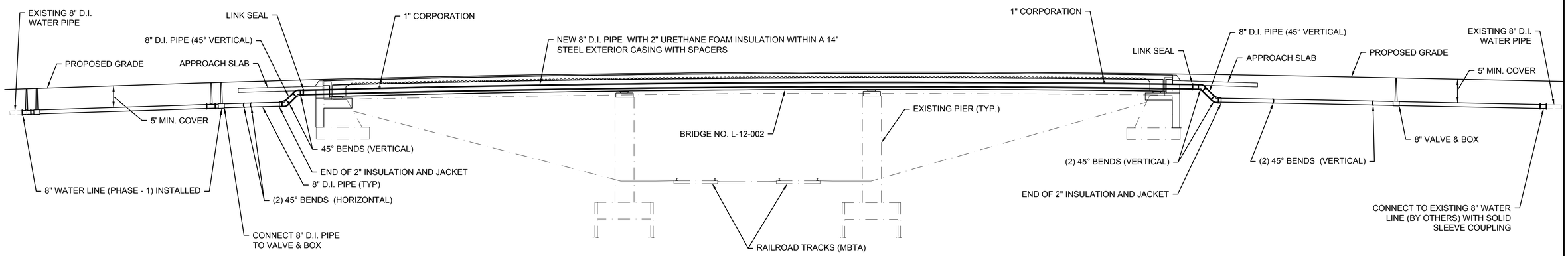
5. FOR WATER LINE SUPPORT DETAIL ON THE BRIDGE, SEE BRIDGE PLAN SHEETS 66 AND 73.
6. THRUST BLOCKS AND RESTRAINED JOINTS ARE REQUIRED UNTIL OTHERWISE APPROVED BY TOWN OF LINCOLN WATER DEPARTMENT.
7. THE CONTRACTOR SHALL CUT AND CAP WITH THRUST BLOCK FOR THE 8" WATER LINE AT STATION 22+02, 7' LEFT AFTER THE NEW 8" WATER LINE ON THE BRIDGE IS COMPLETED AND ACTIVATED.



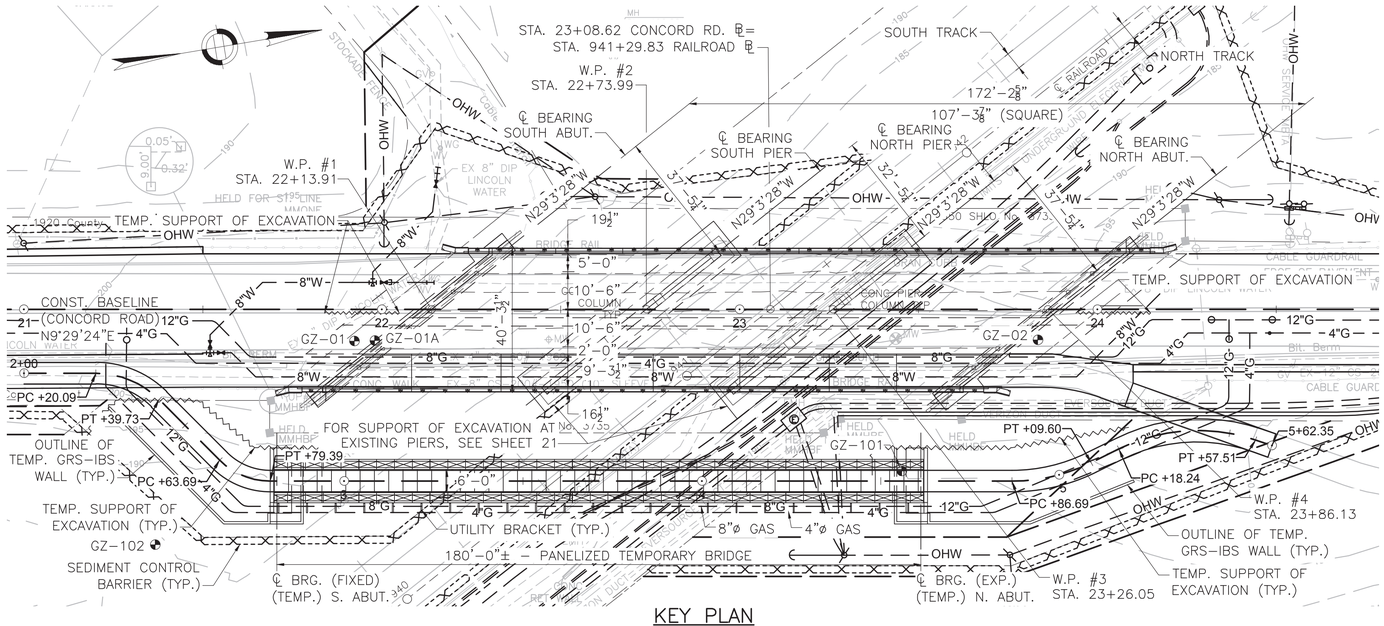
PROPOSED 8" WATER LINE (PHASE - 2)

NOT TO SCALE

UTILITY LEGEND

8"W 8"W 8"W

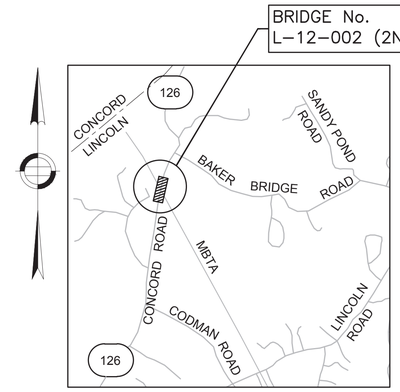
PROP 8" D.I. PIPE - TOWN OF LINCOLN WATER DEPT.



KEY PLAN
SCALE: 1"=20'

PROFILE ALONG CONSTRUCTION BASELINE
SCALE: HORIZ.=1"=40'
VERT.=1"=8'

HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET



LOCUS MAP
SCALE: 1"=2000'

PROFILE ALONG BASELINE OF RAILROAD
SCALE: HORIZ.=1"=40'
VERT.=1"=8'

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	37	91
PROJECT FILE NO. 086461			

KEY PLAN, PROFILE AND INDEX

INDEX OF BRIDGE SHEETS

COMMONWEALTH OF MASSACHUSETTS
JOSEPH J. REILLY
STRUCTURAL
No. 49740
REGISTERED PROFESSIONAL ENGINEER
12-31-25

Joseph J. Reilly Digitally signed by Joseph J. Reilly Date: 2025.12.31 12:40:41 -05'00'

COMMONWEALTH ENGINEERS & CONSULTANTS, INC
400 SMITH STREET
PROVIDENCE, RI 02908

SEPT. 13, 2025 | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

SUPERSTRUCTURE REPLACEMENT
LINCOLN
ST 126 (CONCORD ROAD) OVER MBTA/CSX RAILROAD

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: 2026.01.05 11:07:46 -05'00'
STATE BRIDGE ENGINEER

Carrie Lavallee, P.E. Digitally signed by Carrie Lavallee, P.E. Date: 2026.01.12 08:07:34 -05'00'
CHIEF ENGINEER

SHEET 1 OF 45 SHEETS BRIDGE NO. L-12-002 (2N2)

GENERAL NOTES

DESIGN:

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

MASSDOT BENCH MARK:

MMON (Held)	MMONF (Held)
N 2980668.9818	N 2981512.3015
E 700249.8363	E 700399.7768
ELEV.=189.99	ELEV.=198.23

THE SURVEY BASE PLAN WAS PREPARED BY CROSSMAN ENGINEERING, INC. THE HORIZONTAL DATUM REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD83) (2011 EPOCH 2010.00) ESTABLISHED USING THE SMARTNET GNSS NETWORK ON 8/2/2018, AND THE VERTICAL DATUM REFERENCES (NAVD88) AND IS BASED ON RTK OBSERVATIONS BY CROSSMAN ENGINEERING ON 8/2/2018. ANY SUBSEQUENT SURVEY AND/OR CONSTRUCTION LAYOUT WILL BE REQUIRED TO TIE INTO THE CONTROL SHOWN ON THE CONSTRUCTION PLANS.

DATE:

TO BE PLACED ON THE INSIDE FACE OF THE SOUTHEAST AND NORTHWEST 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. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS:

ALL SURVEY FIELD NOTES ARE CONTAINED IN CROSSMAN ENGINEERING, INC. FIELD BOOKS; #319, PAGES 55-77, #336, PAGE 150 AND #371, PAGES 32-36, COPIES OF WHICH WERE SUPPLIED TO THE DISTRICT 4 SURVEY SECTION IN DECEMBER OF 2023.

SCALES:

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

FOUNDATIONS:

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

UNSUITABLE MATERIAL:

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

CONCRETE:

UNLESS OTHERWISE SPECIFIED, ALL CONCRETE SHALL BE 5000 HP CONCRETE.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS	#6 BARS
1. NONE	16"	17"	21"
2. 12" OF CONCRETE BELOW BAR	18"	22"	27"
3. EPOXY COATED BARS, COVER < $3d_b$, OR CLEAR SPACING < $6d_b$	21"	26"	31"
4. COATED BARS, ALL OTHER CASES	17"	21"	25"
5. CONDITION 2. AND 3.	23"	29"	35"
6. CONDITION 2. AND 4.	21"	27"	32"

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

MEMBRANE WATERPROOFING:

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

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

MONITORING CONSTRUCTION IMPACTS:
GEOTECHNICAL INSTRUMENTATION IS REQUIRED FOR MONITORING GROUND VIBRATIONS AND MOVEMENTS OF EXISTING SITE FEATURES AND STRUCTURES. INSTRUMENTATION SHALL BE INSTALLED AND OPERATIONAL PRIOR TO BEGINNING ANY PILE DRIVING FOR SUPPORT OF EXCAVATION, OR ANY OTHER CONSTRUCTION ACTIVITIES WHICH COULD CAUSE SIGNIFICANT GROUND VIBRATIONS. SPECIFIC REQUIREMENTS ARE PROVIDED IN THE SPECIAL PROVISIONS FOR ITEM 995.019 - GEOTECHNICAL MONITORING INSTRUMENTATION.

STEEL AND WELDING:

ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270, GRADE 50W UNLESS OTHERWISE NOTED ON THE PLANS, OR OTHERWISE SPECIFIED BELOW.

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 BRIDGE, THE BRIDGE WELDING CODE (AASHTO/AWS D1.5), AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO, AS OF THE BID OPENING DATE.

BOLTS:

ALL HIGH STRENGTH BOLTS SHALL BE $\frac{7}{8}$" ø CONFORMING TO THE REQUIREMENTS OF ASTM F3125 GRADE A325 TYPE 3, UNLESS OTHERWISE NOTED. NUTS AND WASHERS SHALL BE LISTED AS SUITABLE IN THE ASTM F3125 SPECIFICATION FOR GRADE A325.

ALL CONNECTIONS HAVE BEEN DESIGNED FOR A CLASS B SURFACE CONDITION, ASSUMING A COEFFICIENT OF FRICTION ON THE FAYING SURFACES EQUAL TO OR GREATER THAN 0.50.

EXISTING CONDITIONS:

ALL DIMENSIONS AND DETAILS SHOWN FOR THE EXISTING STRUCTURE ARE BASE ON THE ORIGINAL DRAWINGS AND FIELD SURVEY, AND ARE NOT GUARANTEED.

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 CONTRACTOR IS NOTIFIED THAT IT IS UNACCEPTABLE FOR ANY MATERIAL(S) TO FALL ONTO THE AREAS BELOW THE BRIDGE OR RAILROAD TRACKS BELOW THE BRIDGE OR BE PROJECTED INTO THE TRAVEL LANES.

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM NO.	ITEM	UNIT	QUANTITY
114.1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. L-12-002 (2N2)	LS	1
127	CONCRETE EXCAVATION	CY	25
127.1	REINFORCED CONCRETE EXCAVATION	CY	25
127.42	REINFORCED CONCRETE DECK EXCAVATION AND REPAIR (FULL DEPTH)	CY	12
127.43	REINFORCED CONCRETE DECK EXCAVATION AND REPAIR (PARTIAL DEPTH)	SY	130
140	BRIDGE EXCAVATION	CY	710
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	CY	675
415.4	BRIDGE PAVEMENT MILLING	SY	185
450.601	SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC - B - 9.5-P)	TON	50
450.701	SUPERPAVE BRIDGE PROTECTIVE COURSE -9.5 POLYMER (SPC - B -9.5-P)	TON	90
909.2	CEMENTITIOUS MORTAR FOR PATCHING	SF	50
912.4	DRILLED AND GROUTED #4 DOWELS	EA	180
912.5	DRILLED AND GROUTED #5 DOWELS	EA	1210
950.11	TEMPORARY SUPPORT OF EXCAVATION	LS	1
950.2	PERMANENT SUPPORT OF EXCAVATION	LS	1
987.3	SPECIAL SLOPE PAVING UNDER BRIDGE - CEMENT CONCRETE	SY	1080
993.31	TEMPORARY PEDESTRIAN / UTILITY BRIDGE	LS	1
994.01	TEMPORARY PROTECTIVE SHIELDING BRIDGE, NO. L-12-002 (2N2)	LS	1
995	BRIDGE SUPERSTRUCTURE, BRIDGE NO L-12-002 (2N2)	LS	1
995.019	GEOTECHNICAL MONITORING INSTRUMENTATION	LS	1
996.401	TEMPORARY GRS-IBS-GEOSYNTHETIC REINFORCED SOIL ABUTMENTS AND WINGWALLS	LS	1

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	38	91
PROJECT FILE NO. 086461			

GENERAL NOTES AND QUANTITIES

TRAFFIC DATA		
	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2043	
AVERAGE DAILY TRAFFIC - PRESENT	7,560	
AVERAGE DAILY TRAFFIC - DESIGN YEAR	11,240	
DESIGN HOURLY VOLUME	720	
DIRECTIONAL DISTRIBUTION	50%	
TRUCK PERCENTAGE - AVERAGE DAY	3.3%	
TRUCK PERCENTAGE - PEAK HOUR	4.7%	
DESIGN SPEED	40 mph	
DIRECTIONAL DESIGN HOURLY VOLUME	523	

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1,000
DESIGN SPECTRA	
As	0.11
SDs	0.24
SD1	0.10
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

86461_BR38(L12002).DWG Plotted on 30-Dec-2025 1:41 PM
11-December-2025 Fifth Structural Submittal (S5)

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	39	91
	PROJECT FILE NO. 086461		

BORING LOGS SHEET 1 OF 5

BOTTOM OF EXISTING SOUTH ABUTMENT FOOTING EL. 190.2±

GROUND WATER EL. 178.0± 4/27/20

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MassDOT Lincoln Bridge Lincoln, MA

EXPLORATION NO.: GZ-01
SHEET: 1 of 2
PROJECT NO: 34514.01
REVIEWED BY: WLL 04/29/2020

Logged By: J Bruso
Drilling Co.: NEB
Foreman: Nick Crowley

Type of Rig: Truck
Rig Model: CME 75
Drilling Method: Drive and Wash
Boring Location: 2980998N 700341E
Ground Surface Elev. (ft.): 202
Final Boring Depth (ft.): 31
Date Start - Finish: 4/27/2020 - 4/27/2020
H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.):

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
4/27/20	13:00	0 mins	24	0

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	16	74 31 20 18	51	S-1: Top 8": Black, fine to coars SAND and ASPHALT Bottom 8": Light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt		0.33	ASPHALT	201.7
5		S-2	4.0-6.0	24	0	5 8 9 6	17	S-2: No Recovery	1		FILL	
10		S-3	9.0-11.0	24	8	6 6 4 3	10	S-3: Medium Dense, brown, fine to medium SAND, trace Silt		10		192.0
		S-4	11.0-13.0	24	8	5 6 5 5	11	S-4: Medium dense, stratified brown to orange brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt			FINE TO MEDIUM SAND	
15		S-5	14.0-16.0	24	14	7 5 5 7	10	S-5: Top 11": Brown, fine to medium SAND, trace Silt Bottom 3": Light brown, fine to coarse SAND, trace Silt				
		S-6	16.0-18.0	24	11	11 9 9 8	18	S-6: Top 5": Light brown, fine to coarse SAND, trace Silt Middle 2" Light brown, fine to coarse SAND, trace Silt Bottom 4": Stratified brown to gray, fine SAND and SILT		17		185.0
20		S-7	19.0-21.0	24	10	12 13 18 14	31	S-7: Dense, light brown, fine to coarse SAND, trace Silt				
		S-8	21.0-23.0	24	10	13 12 14 14	26	S-8: Medium Dense, light brown fine to coarse SAND, trace Silt			FINE TO COARSE SAND	
25		S-9	24.0-26.0	24	7	9 10 9 9	19	S-9: Medium Dense, light brown fine to coarse SAND, trace Silt				

REMARKS
1 - No recovery in initial sample. Second spoon was driven to obtain soil sample.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-01

BOTTOM OF EXISTING SOUTH PIER FOOTING EL. 173.4±

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MassDOT Lincoln Bridge Lincoln, MA

EXPLORATION NO.: GZ-01
SHEET: 2 of 2
PROJECT NO: 34514.01
REVIEWED BY: WLL 04/29/2020

Logged By: J Bruso
Drilling Co.: NEB
Foreman: Nick Crowley

Type of Rig: Truck
Rig Model: CME 75
Drilling Method: Drive and Wash
Boring Location: 2980998N 700341E
Ground Surface Elev. (ft.): 202
Final Boring Depth (ft.): 31
Date Start - Finish: 4/27/2020 - 4/27/2020
H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.):

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
4/27/20	13:00	0 mins	24	0

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
30		S-10	26.0-28.0	24	13	10 8 10 10	18	S-10: Medium Dense, light brown fine to coarse SAND, trace Silt				
		S-11	29.0-31.0	24	7	7 8 9 14	17	S-11: Medium Dense, light brown fine to coarse SAND, trace Silt			FINE TO COARSE SAND	
								End of exploration at 31 feet		31		171.0
35												
40												
45												
50												

REMARKS

See Log Key for exploration of sample description 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.

Exploration No.: GZ-01

BOTTOM OF EXISTING SOUTH ABUTMENT FOOTING EL. 190.2±

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MassDOT Lincoln Bridge Lincoln, MA

EXPLORATION NO.: GZ-01A
SHEET: 1 of 1
PROJECT NO: 34514.01
REVIEWED BY: WLL 04/29/2020

Logged By: J Bruso
Drilling Co.: NEB
Foreman: Nick Crowley

Type of Rig: Truck
Rig Model: CME 75
Drilling Method: Drive and Wash
Boring Location: 2981001N 700342E
Ground Surface Elev. (ft.): 202
Final Boring Depth (ft.): 10
Date Start - Finish: 4/27/2020 - 4/27/2020
H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.):

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	13	100 26 11 11	37	S-1: Top 7": Black, fine to coars SAND and ASPHALT Bottom 6": Light brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt		0.33	ASPHALT	201.7
		S-2	2.0-4.0	24	8	11 9 6 5	15	S-2: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt				
5		S-3	4.0-6.0	24	8	7 9 5 5	14	S-3: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt			FILL	
		S-4	6.0-8.0	24	7	8 5 5 4	10	S-4: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt				
		S-5	8.0-10.0	24	5	4 4 3 5	7	S-5: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt				
10								End of exploration at 10 feet		10		192.0
15												
20												
25												

REMARKS

See Log Key for exploration of sample description 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.

Exploration No.: GZ-01A

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: ◕ GZ–XX
2. 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.
3. 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.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1⅜" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. 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.
6. ALL BORINGS WERE MADE IN APRIL, 2020 AND OCTOBER/NOVEMBER 2024.
7. BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, P.O. BOX 165, DERRY, NH 03038.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. BORING LOGS VERTICAL SCALE: ¼"=1'–0"

DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

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

BOTTOM OF EXISTING NORTH ABUTMENT FOOTING EL. 190.2±

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MassDOT
Lincoln Bridge
Lincoln, MA

EXPLORATION NO.: GZ-02
SHEET: 1 of 2
PROJECT NO: 34514.01
REVIEWED BY: WLL 04/29/2020

Logged By: J Bruso
Drilling Co.: NEB
Foreman: Nick Crowley

Type of Rig: Truck
Rig Model: CME 75
Drilling Method: Drive and Wash

Boring Location: 2981168N 700371E
Ground Surface Elev. (ft.): 203.3
Final Boring Depth (ft.): 50
Date Start - Finish: 4/27/2020 - 4/27/2020

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.):

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
4/28	13:00	10 mins	31	40

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remarks	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	16	41 42 29 22	71	S-1: Top 6": Bottom 10": Gray/brown, fine to coarse SAND and GRAVEL, trace Silt		0.33	ASPHALT	203.0
		S-2	2.0-4.0	24	0	21 10 9 6	19	S-2: No Recovery				
		S-3	4.0-6.0	24	0	15 16 15 18	31	S-3: No Recovery				
5		S-4	6.0-8.0	24	10	5 6 5 6	11	S-4: Top 4": Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt Bottom 6": Brown, fine to coarse SAND, little Silt, trace fine Gravel			FILL	
		S-5	8.0-10.0	24	9	5 4 8 15	12	S-5: Medium Dense, brown/dark brown, fine to coarse SAND, little Silt				
10		S-6	10.0-12.0	24	10	7 4 3 3	7	S-6: Top 4": Brown/dark brown, fine to coarse SAND, little Silt Middle 3": Dark brown, fine to coarse SAND, some Silt, trace Roots Bottom 3": Light brown, fine to coarse SAND, little Silt		11 11.4	192.3 BURIED TOPSOIL/SUBSOIL	191.9
		S-7	12.0-14.0	24	8	5 4 4 6	8	S-7: Loose, brown, fine to medium SAND, trace Silt				
15		S-8	14.0-16.0	24	12	9 12 14 17	26	S-8: Medium dense, brown, fine to medium SAND, trace Silt				
		S-9	16.0-18.0	24	10	13 15 17 15	32	S-9: Medium dense, brown, fine to medium SAND, trace Silt				
		S-10	18.0-20.0	24	11	14 14 16 13	30	S-10: Medium dense, brown, fine to medium SAND, trace Silt	1		FINE TO MEDIUM SAND	
20		S-11	20.0-22.0	24	10	14 10 9 10	19	S-11: Top 3": Gray, fine to medium SAND, little Silt Bottom 7": Brown, fine to coarse SAND, trace Silt				
		S-12	22.0-24.0	24	8	12 11 10 12	21	S-12: Top 7": Brown, fine to coarse SAND, trace Silt Bottom 2": Gray, fine to medium SAND, little Silt				
		S-13	24.0-26.0	24	7	8 11 11 12	22	S-13: Medium dense, stratified gray/brown, fine to medium SAND, trace Silt	2			

remarks
1 - Reddish oxidized color noted in samples S-10 throught S-14
2 - This gray layers of fine sand in samples S-13 and S-14 ±1/4" to 1" in thickness

See Log Key for exploration of sample description 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.

Exploration No.: GZ-02

GZA TEMPLATE: TEST BORING - GZA UNIT DATA TEMPLATE 10-27-20.GDT - 4/24/26 16:55 - J:\GINT PROJECT DATA\86485\34514.01 LINCOLN BRIDGE.GPJ

BOTTOM OF EXISTING NORTH PIER FOOTING EL. 173.4±

GROUND WATER EL. 172.3± 4/28/20

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MassDOT
Lincoln Bridge
Lincoln, MA

EXPLORATION NO.: GZ-02
SHEET: 2 of 2
PROJECT NO: 34514.01
REVIEWED BY: WLL 04/29/2020

Logged By: J Bruso
Drilling Co.: NEB
Foreman: Nick Crowley

Type of Rig: Truck
Rig Model: CME 75
Drilling Method: Drive and Wash

Boring Location: 2981168N 700371E
Ground Surface Elev. (ft.): 203.3
Final Boring Depth (ft.): 50
Date Start - Finish: 4/27/2020 - 4/27/2020

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.):

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size:

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
4/28	13:00	10 mins	31	40

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remarks	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
		S-14	26.0-28.0	24	13	12 13 12 11	25	S-14: Medium dense, stratified gray/brown, fine to medium SAND, trace Silt			FINE TO MEDIUM SAND	
30		S-15	28.0-30.0	24	6	10 8 7 7	15	S-15: Medium dense, brown, fine to coarse SAND, trace Silt		28		175.3
		S-16	33.0-35.0	24	8	10 10 9 13	19	S-16: Medium dense, brown, fine to coarse SAND, trace Silt				
35		S-17	38.0-40.0	24	9	10 8 11 10	19	S-17: Medium dense, light brown, fine to medium SAND, trace Silt			FINE TO COARSE SAND	
40												
45		S-18	43.0-45.0	24	10	12 12 12 10	24	S-18: Medium dense, light brown, fine to coarse SAND, trace Silt				
		S-19	48.0-50.0	24	17	5 6 9 10	15	S-19: Medium dense, fine SAND, trace Silt				
50								End of exploration at 50 feet		50		153.3

remarks

See Log Key for exploration of sample description 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.

Exploration No.: GZ-02

GZA TEMPLATE: TEST BORING - GZA UNIT DATA TEMPLATE 10-27-20.GDT - 4/24/26 16:55 - J:\GINT PROJECT DATA\86485\34514.01 LINCOLN BRIDGE.GPJ

BORING NOTES:
1. BORING LOGS VERTICAL SCALE: $\frac{1}{4}$"=1'-0"
2. REFER TO SHEET 3 FOR ADDITIONAL BORING NOTES.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

86461_BR40(L12002).DWG Plotted on 30-Dec-2025 1:42 PM
11-December-2025
Fifth Structural Submittal (S5)

BOT. OF PROP. REINF. SOIL FOUNDATION AT TEMP. N. ABUT. EL. 190.0

GROUND WATER EL. 179.9± 10/30/24

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-101
SHEET: 1 of 4
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Star
Drilling Method: Drive & Wash

Boring Location: 2981142N 700401E
Ground Surface Elev. (ft.): 196
Final Boring Depth (ft.): 95
Date Start - Finish: 10/28/2024 - 10/28/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/30/24	09:45	30 minutes	16.1	79

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	14	2 4 6 6	10	S-1: Loose, brown, fine SAND, little Silt, little fine Gravel, trace Wood/Leaves/Grass/Roots				
		S-2	2.0-4.0	24	13	6 6 10 10	16	S-2: Medium dense, light brown, fine SAND, little Silt			FILL	
5		S-3	4.0-6.0	24	13	15 12 12 16	24	S-3: Medium dense, light brown, fine SAND, little Silt				
		S-4	6.0-8.0	24	17	16 33 36 25	69	S-4: Top 7": Light brown, fine SAND, little Silt Bottom 10": Light brown, fine to coarse SAND, little fine Gravel, trace Silt	1	6.4		189.6
		S-5	8.0-10.0	24	8	11 15 18 21	33	S-5: Dense, light brown, fine SAND, little Silt	2			
10		S-6	10.0-12.0	24	8	26 24 26 32	50	S-6: Dense, light orange/brown, fine to coarse SAND, little Silt				
		S-7	12.0-14.0	24	5	5 8 8 10	16	S-7: Medium dense, orange/brown, fine to coarse SAND, little Silt				
15		S-8	14.0-16.0	24	3	9 10 8 8	18	S-8: Medium dense, orange/brown, fine to coarse SAND, little Silt				
		S-9	16.0-18.0	24	7	12 14 14 12	28	S-9: Medium dense, light brown/gray, fine to medium SAND, some Silt				
		S-10	18.0-20.0	24	6	7 8 8 9	16	S-10: Medium dense, brown, fine to medium SAND, little Silt			SILTY SAND	
20												
		S-11	24.0-26.0	24	5	5 8 8 11	16	S-11: Medium dense, brown, fine to medium SAND, little Silt				
25												
		S-12	29.0-31.0	24	6	7 11	21	S-12: Medium dense, brown, fine to medium SAND, little Silt				
30												

REMARKS
1 - Mottling observed at approximately 10" from botom of split spoon in S-4, mottling observed throughout sample S-5, mottling observed through middle of sample S-12. Sample S-9 had mottling throughout sample.
2 - Driller swapped to 300 lb weight to drive casing to 8 ft bgs. Driller used 300 lb weight to advance casing (throughout boring).
3 - Drillers started telescoping with 4-inch ID casing (HW) through the 5-inch casing after sampling S-13.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-101

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 4/4/25 15:20 - J:\GINT PROJECT DATA\BASES\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-101
SHEET: 2 of 4
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Star
Drilling Method: Drive & Wash

Boring Location: 2981142N 700401E
Ground Surface Elev. (ft.): 196
Final Boring Depth (ft.): 95
Date Start - Finish: 10/28/2024 - 10/28/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/30/24	09:45	30 minutes	16.1	79

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
						10 11			3			
35		S-13	34.0-36.0	24	7	7 9 11 20	20	S-13: Medium dense, brown, fine to medium SAND, some Silt			SILTY SAND	
										37		159.0
40		S-14	39.0-41.0	24	16	6 4 7 10	12	S-14: Medium dense, brown, fine SAND and SILT			SAND AND SILT	
										42		154.0
45		S-15	44.0-46.0	24	24	8 10 13 17	23	S-15: Top 13": Brown, SILT, some fine Sand Bottom 11": Brown, fine to medium SAND, little Silt			SILT	
										44.5		151.5
50		S-16	49.0-51.0	24	8	* 8 13 17	21	S-16: Medium dense, brown, fine to medium SAND, little Silt	4		SILTY SAND	
55		S-17	54.0-56.0	24	11	11 11 14 13	25	S-17: Medium dense, brown, fine to medium SAND, little Silt				
										57		139.0
60		S-18	59.0-61.0	24	14	11 10	28	S-18: Medium dense, gray, fine to medium SAND and SILT			SAND AND SILT	

REMARKS
4 - Driller accidentally dropped rods down hole prior to sampling S-16, spoon dropped 6" below original sample depth at approximately 49 ft.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-101

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 4/4/25 15:20 - J:\GINT PROJECT DATA\BASES\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

BORING NOTES:
1. BORING LOGS VERTICAL SCALE: $\frac{1}{4}$"=1'–0"
2. REFER TO SHEET 3 FOR ADDITIONAL BORING NOTES.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

86461_BR41(L12002).DWG Plotted on 30-Dec-2025 1:43 PM
11-December-2025
Fifth Structural Submittal (S5)

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-101
SHEET: 3 of 4
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Stik
Drilling Method: Drive & Wash

Boring Location: 2981142N 700401E
Ground Surface Elev. (ft.): 196
Final Boring Depth (ft.): 95
Date Start - Finish: 10/28/2024 - 10/28/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/30/24	09:45	30 minutes	16.1	79

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Depth (ft.)	Stratum Description	Elev. (ft.)
						16 18						
65		S-19	64.0-66.0	24	19	5 9 13 17	22	S-19: Medium dense, gray, fine to medium SAND and SILT			SAND AND SILT	
70		S-20	69.0-71.0	24	17	7 12 14 47	26	S-20: Medium dense, gray, fine SAND and SILT	5	71		125.0
									6	73	BOULDER	123.0
75		S-21	74.0-76.0	24	6	17 12 29 79	41	S-21: Dense, gray, fine to coarse SAND, some Gravel, little Silt			TILL	
										77		119.0
										78	BOULDER	118.0
80		S-22	79.0-81.0	24	12	22 48 55 40	103	S-22: Very dense, gray, fine to coarse SAND and GRAVEL, little Silt			TILL	
										82		114.0
											BOULDER	
		S-23	84.0-84.0	0	0	48 /0"	R	S-23: No penetration, no recovery		84		112.0
85		C-1	85.0-90.0	60	57			C-1: Hard, very slight to slight, moderately fractured, fine to medium grained, gray to dark gray, GRANITE with thin to very thin, moderately dipping to sub-vertical foliation, very close to moderately close, horizontal to sub-vertical fractures (REC=95%; RQD=91%).	7		BEDROCK	
90												

REMARKS
5 - The casing broke at 68 ft bgs. The casing was pulled and replaced.
6 - Rig chatter due to possible boulder encountered at approximately 71.3 ft; rig chatter due to possible boulder encountered at approximately 77 ft; rig chatter due to possible boulder encountered at approximately 82 ft; split spoon hit refusal on possible bedrock at 84 ft.
7 - Driller started coring at approximately 85 ft bgs using NX-sized core barrel with hydraulic pressure of 1000 psi.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-101

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 44/25 15:20 - J:\GINT PROJECT DATABASE\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-101
SHEET: 4 of 4
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Stik
Drilling Method: Drive & Wash

Boring Location: 2981142N 700401E
Ground Surface Elev. (ft.): 196
Final Boring Depth (ft.): 95
Date Start - Finish: 10/28/2024 - 10/28/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/30/24	09:45	30 minutes	16.1	79

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Depth (ft.)	Stratum Description	Elev. (ft.)
		C-2	90.0-95.0	60	60			C-2: Hard, very slight, moderately fractured, fine to medium grained, gray to dark gray, GRANITE with thin to very thin, moderately dipping to sub-vertical foliation, very close to close, horizontal to sub-vertical fractures. White to green quartz veins observed (REC=100%; RQD=100%).	8		BEDROCK	
95										95		101.0
								End of exploration at 95 feet				
100												
105												
110												
115												
120												

REMARKS
8 - Boring terminated and backfilled with drill cuttings and sand.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-101

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 44/25 15:20 - J:\GINT PROJECT DATABASE\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

BORING NOTES:
1. BORING LOGS VERTICAL SCALE: $\frac{1}{4}$"=1'–0"
2. REFER TO SHEET 3 FOR ADDITIONAL BORING NOTES.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

86461_BR42(L12002).DWG Plotted on 30-Dec-2025 1:44 PM
11-December-2025 Fifth Structural Submittal (S5)

BOT. OF PROP. REINF. SOIL FOUNDATION AT TEMP. S. ABUT. EL. 183.0

GROUND WATER EL. 172.3± 10/30/24

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-102
SHEET: 1 of 3
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Sta
Drilling Method: Drive & Wash

Boring Location: 2980933N 700385E
Ground Surface Elev. (ft.): 185
Final Boring Depth (ft.): 85
Date Start - Finish: 10/30/2024 - 11/1/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
11/1/24	07:30	16 hours	12.7	75
11/1/24	10:00	15 minutes	25.1	75

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	15	1 2 2 4	4	S-1: Top 5": Dark brown, fine SAND, little Silt, trace Roots/Wood Bottom 10": Light brown, fine SAND, little Silt		0.5	FOREST MAT	184.5
		S-2	2.0-4.0	24	18	9 10 11 13	21	S-2: Medium dense, light brown to orange, fine to coarse SAND, little Silt	1		FILL	
5		S-3	4.0-6.0	24	15	16 13 12 13	25	S-3: Top 11": Orange/brown, fine to coarse SAND, little Gravel, trace Silt Bottom 4": Orange to light gray-brown, fine SAND and SILT	2	5		180.0
		S-4	6.0-8.0	24	20	12 11 10 13	21	S-4: Medium dense, brown, fine to coarse SAND, little Silt	3			
		S-5	8.0-10.0	24	9	5 8 11 10	19	S-5: Medium dense, brown, fine to medium SAND, some Silt				
10		S-6	10.0-12.0	24	6	11 14 16 17	30	S-6: Medium dense, light brown, fine SAND, some Silt				
		S-7	12.0-14.0	24	9	6 9 10 11	19	S-7: Medium dense, brown, fine to medium SAND, some Silt				
		S-8	14.0-16.0	24	6	9 12 10 12	22	S-8: Medium dense, brown, fine to medium SAND, some Silt				
15		S-9	16.0-18.0	24	7	16 17 18 17	35	S-9: Dense, brown, fine to medium SAND and SILT				
		S-10	18.0-20.0	24	10	7 9 11 14	20	S-10: Medium dense, brown, fine SAND and SILT			SILTY SAND	
20												
		S-11	24.0-26.0	24	7	16 11 12 14	23	S-11: Medium dense, brown, fine to medium SAND, some Silt	4			
25									5			
		S-12	29.0-31.0	24	7	8 8	19	S-12: Medium dense, brown, fine SAND and SILT				
30												

REMARKS
1 - Sample S-2 stratified with orange and dark brown sand seams.
2 - Mottling observed in top 2" of sample S-3B, mottling observed throughout sample S-6, mottling observed throughout sample S-11, mottling observed at 8-9" from bottom of split spoon in S-14.
3 - Sample S-4 has fine to coarse sand seams from 2-4" from bottom of sample.
4 - All casing advanced with 300 lb safety hammer.
5 - Slight rig chatter at approximately 27 ft due to possibles cobbles. Rig chatter at approximately 72 ft due to possible boulders/cobbles.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-102

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 4/4/25 15:20 - J:\GINT PROJECT DATA\BASE\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-102
SHEET: 2 of 3
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Sta
Drilling Method: Drive & Wash

Boring Location: 2980933N 700385E
Ground Surface Elev. (ft.): 185
Final Boring Depth (ft.): 85
Date Start - Finish: 10/30/2024 - 11/1/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
11/1/24	07:30	16 hours	12.7	75
11/1/24	10:00	15 minutes	25.1	75

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
						11 12						
35		S-13	34.0-36.0	24	11	6 9 11 13	20	S-13: Medium dense, brown, fine to medium SAND and SILT			SILTY SAND	
										37		148.0
40		S-14	39.0-41.0	24	12	10 8 13 13	21	S-14: Medium dense, brown, SILT, some fine Sand				
45		S-15	44.0-46.0	24	14	7 8 12 14	20	S-15: Medium dense, gray, SILT, some fine Sand				
		S-16	49.0-51.0	24	12	7 8 12 15	20	S-16: Medium dense, gray, SILT, some fine Sand			SANDY SILT	
50												
55		S-17	54.0-56.0	24	14	14 14 14 17	28	S-17: Medium dense, gray, SILT, some fine Sand				
60		S-18	59.0-61.0	24	16	9 7	17	S-18: Medium dense, gray, SILT, little fine Sand				

REMARKS

See Log Key for exploration of sample description 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.

Exploration No.: GZ-102

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 4/4/25 15:20 - J:\GINT PROJECT DATA\BASE\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Commonwealth Engineers and Consultants
Bridge L-12-002
Lincoln, MA

EXPLORATION NO.: GZ-102
SHEET: 3 of 3
PROJECT NO: 34514.02
REVIEWED BY: WLL 1/14/2025

Logged By: Hayley McLeod
Drilling Co.: New England Boring Contractors
Foreman: Minh Pham

Type of Rig: ATV
Rig Model: Gefco Strata Sta
Drilling Method: Drive & Wash

Boring Location: 2980933N 700385E
Ground Surface Elev. (ft.): 185
Final Boring Depth (ft.): 85
Date Start - Finish: 10/30/2024 - 11/1/2024

H. Datum: NAD83
V. Datum: NGVD29

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 5 and 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NX

Groundwater Depth (ft.)				
Date	Time	Stab. Time	Water	Casing
11/1/24	07:30	16 hours	12.7	75
11/1/24	10:00	15 minutes	25.1	75

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
						10 15						
65		S-19	64.0-66.0	24	16	7 4 10 10	14	S-19: Medium dense, gray, SILT, little fine Sand			SANDY SILT	
70		S-20	69.0-71.0	24	16	4 6 13 20	19	S-20: Medium dense, gray, SILT, little fine to coarse Sand				
75		S-21	74.0-74.7	8	0	14 52	R	S-21: No recovery				
		C-1	75.0-80.0	60	49	/2"		C-1: Hard to moderately hard, moderate to moderately severe weathering, medium grained, light gray, GRANITE, with thin moderately dipping to sub=vertical foliation, rough, moderately spaced, horizontal to vertical fractures (REC=82%; RQD=38%).	6	75		110.0
80		C-2	80.0-85.0	60	35			C-2: Hard, moderate weathering, medium grained, light gray, GRANITE with thin, moderately dipping foliation, rough to smooth, moderately dipping to sub-vertical fractures (REC=58%; RQD=58%).	7		BEDROCK	
85								End of exploration at 85 feet		85		100.0
90												

REMARKS
6 - Driller began coring at aproximately 75 ft using NX-sized core barrel and hydraulic pressure of 1000 psi.
7 - The borehole was terminate and backfilled with cuttings and sand.

See Log Key for exploration of sample description 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.

Exploration No.: GZ-102

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 4/4/25 15:20 - J:\GINT PROJECT DATA\BASE\34514.02_LINCOLN PEDESTRIAN BRIDGE.GPJ

BORING NOTES:
1. BORING LOGS VERTICAL SCALE: $\frac{1}{4}$"=1'–0"
2. REFER TO SHEET 3 FOR ADDITIONAL BORING NOTES.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

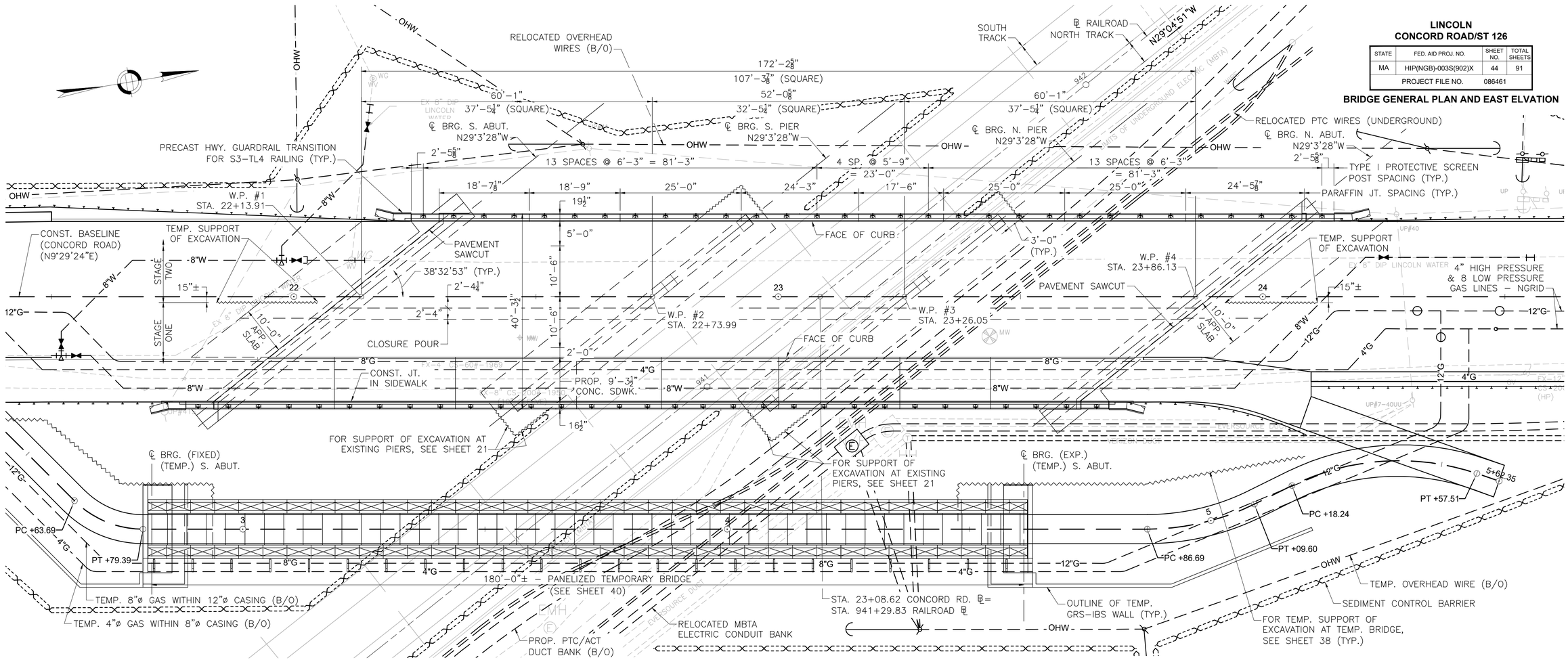
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

86461_BR43(L12002).DWG Plotted on 30-Dec-2025 1:44 PM
Fifth Structural Submittal (SS) 11-December-2025

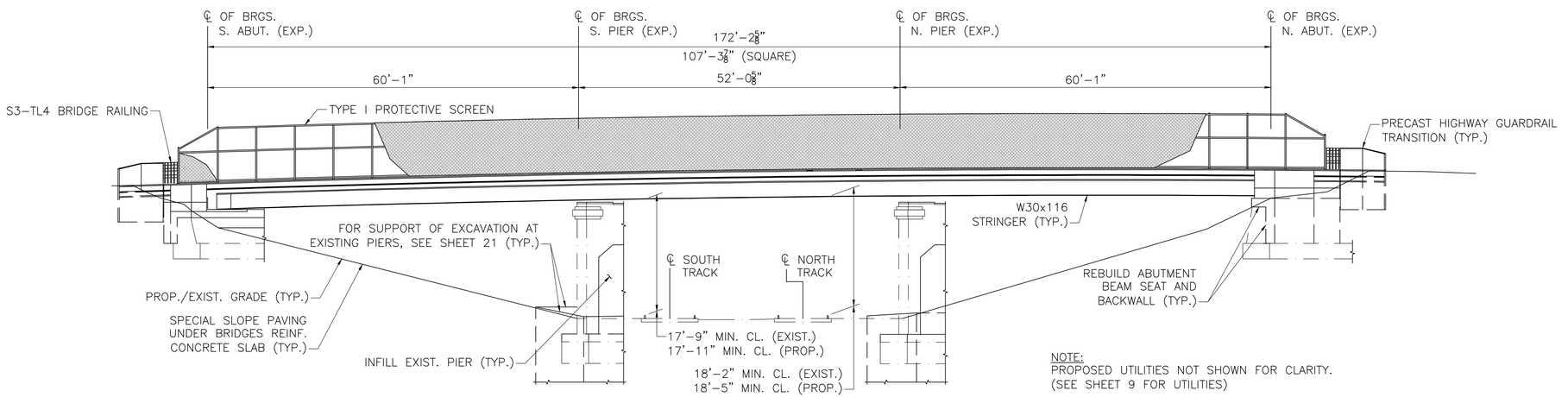
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	44	91
PROJECT FILE NO.	086461		

BRIDGE GENERAL PLAN AND EAST ELVATION



BRIDGE GENERAL PLAN
SCALE: 1"=10'–0"



EAST ELEVATION
SCALE: 1"=10'–0"

NOTE:
PROPOSED UTILITIES NOT SHOWN FOR CLARITY.
(SEE SHEET 9 FOR UTILITIES)

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

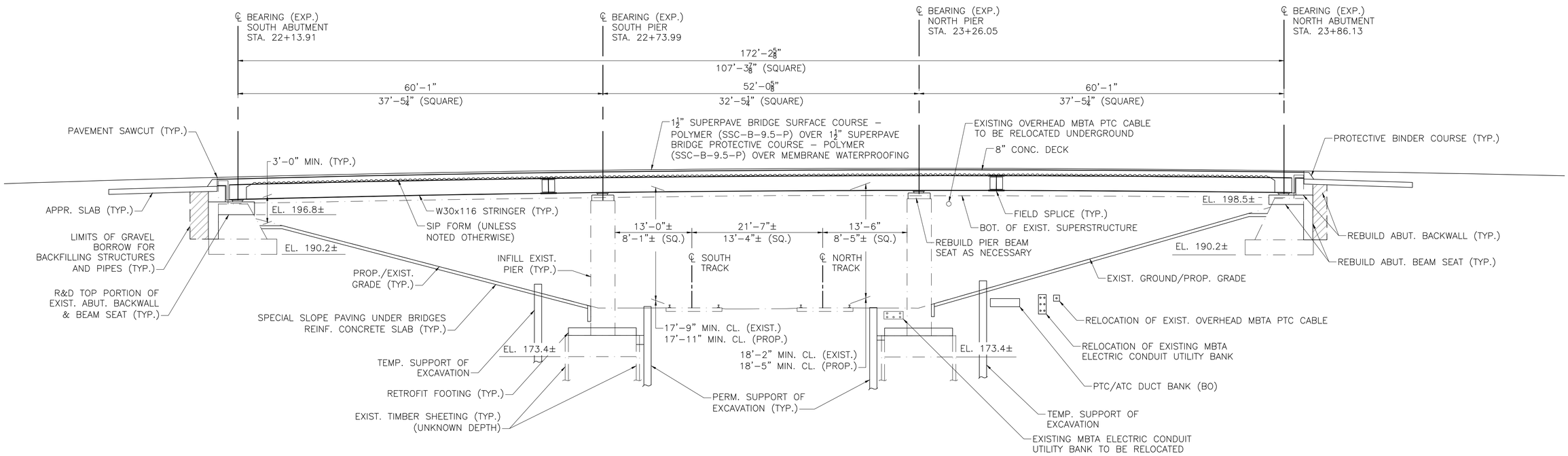
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

86461_BR44(L12002).DWG Plotted on 30-Dec-2025 1:46 PM
Fifth Structural Submittal (S5) 11-December-2025

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	45	91
PROJECT FILE NO.	086461		

LONGITUDINAL SECTION



LONGITUDINAL SECTION

SCALE: 1/8" = 1'–0"

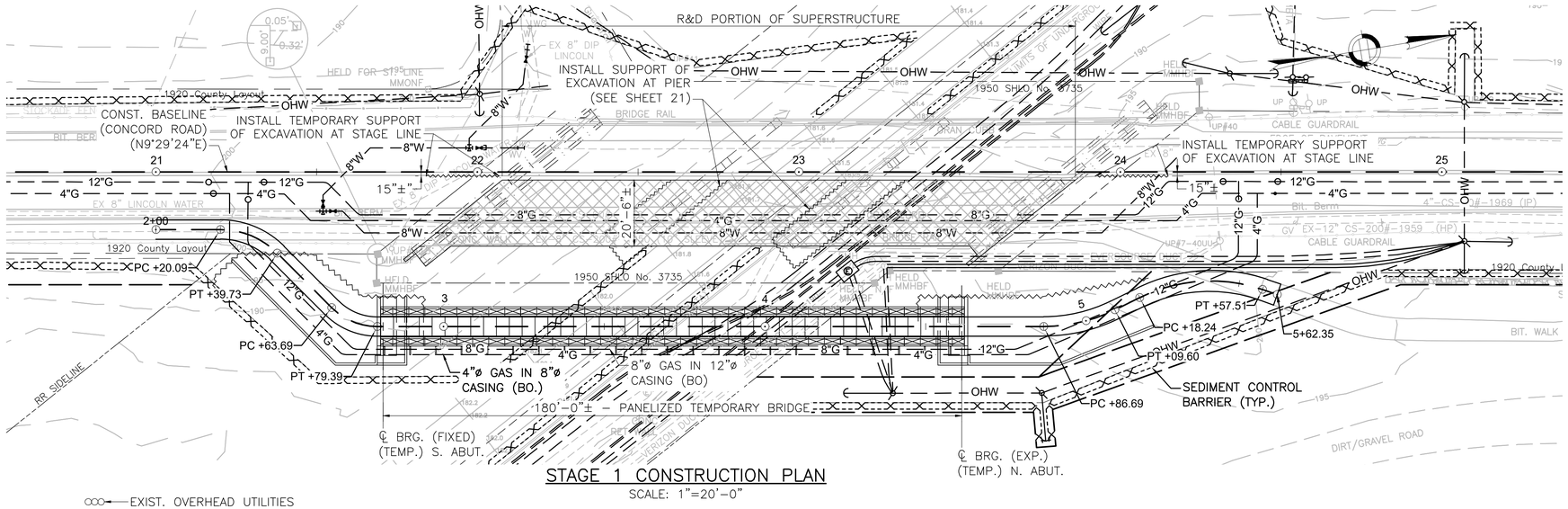
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	46	91
	PROJECT FILE NO. 086461		

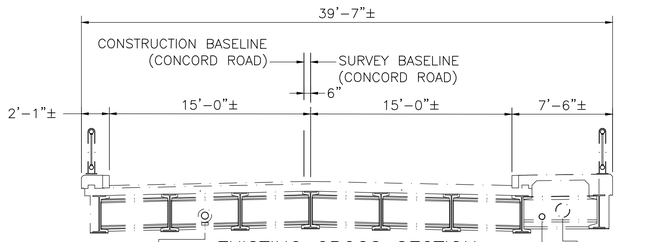
STAGE 1 CONSTRUCTION (1 OF 2)



STAGE 1 CONSTRUCTION PLAN

SCALE: 1"=20'-0"

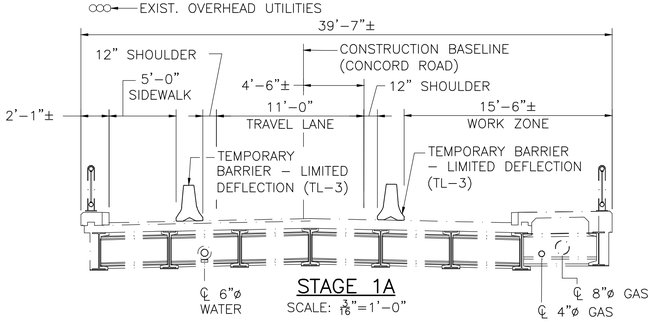
EXIST. OVERHEAD UTILITIES



EXISTING CROSS SECTION

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

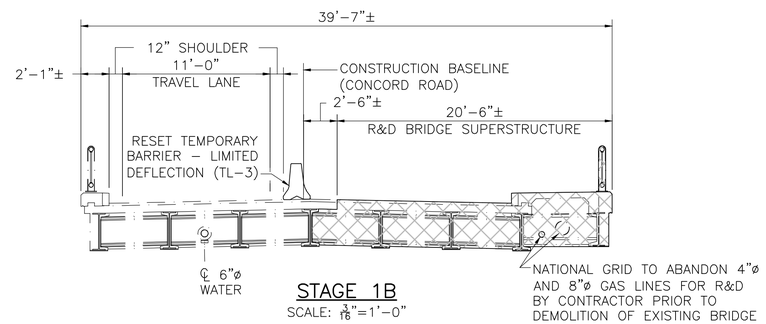
EXIST. OVERHEAD UTILITIES



STAGE 1A

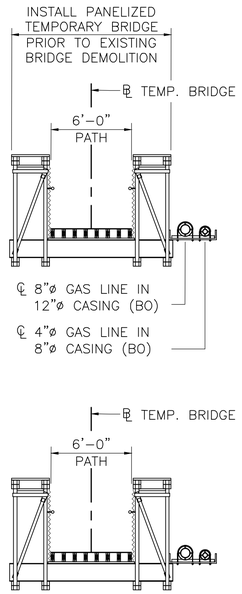
SCALE: 3/16"=1'-0"

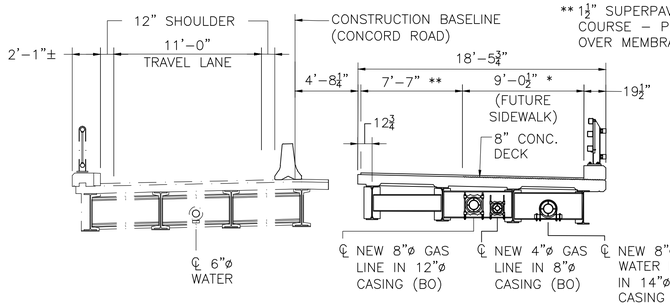
RELOCATE OVERHEAD UTILITIES



STAGE 1B

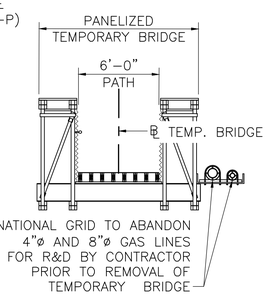
SCALE: 3/16"=1'-0"





STAGE 1C

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



SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 1A

1. INSTALL WATER LINE AT APPROACHES.
2. INSTALL TEMPORARY BARRIERS AND MOVE SIDEWALK TO WEST SIDE OF EXISTING BRIDGE.
3. INSTALL GEOTECHNICAL MONITORING INSTRUMENTATION ON EXISTING SUBSTRUCTURES AND MBTA TRACKS FOR DEMOLITION AND CONSTRUCTION MONITORING AND CONDUCT PRECONSTRUCTION SURVEY, IN ACCORDANCE WITH SPECIAL PROVISION 995.019.
4. INSTALL SUPPORT OF EXCAVATION AT STAGE LINE, PANELIZED TEMPORARY BRIDGE APPROACHES, AND EXISTING PIERS.

STAGE 1B

5. MOVE OVERHEAD UTILITIES.
6. CONSTRUCT TEMPORARY ABUTMENTS AND PANELIZED TEMPORARY BRIDGE.
7. INSTALL 4" AND 8" GAS LINES ON TEMPORARY BRIDGE AND ABANDON EXISTING GAS LINES ON EXISTING BRIDGE.
8. RESET TEMPORARY BARRIERS AND MOVE PEDESTRIAN TRAFFIC ONTO TEMPORARY BRIDGE.
9. INSTALL TEMPORARY PROTECTIVE SHIELDING.
10. R&D PORTION OF EXISTING BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE.

STAGE 1C

11. CONSTRUCT PORTION OF PROPOSED BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE.
12. INSTALL TEMPORARY SUPPORT OF EXCAVATION BELOW APPROACH SLAB FOR STAGE 2.
13. INSTALL PROPOSED UTILITIES ON PROPOSED BRIDGE AND ABANDON GAS LINES ON TEMPORARY PANELIZED BRIDGE.

* 1½" SUPERPAVE BRIDGE PROTECTIVE COURSE – POLYMER (SSC-B-9.5-P) (TEMPORARY PAVEMENT)

** 1½" SUPERPAVE BRIDGE PROTECTIVE COURSE – POLYMER (SSC-B-9.5-P) OVER MEMBRANE WATERPROOFING

NOTES:

1. TEMPORARY PROTECTIVE SHIELDING SHALL BE PROVIDED TO PROTECT THE MBTA/CSX RAILROAD, CONCORD ROAD TRAFFIC, PEDESTRIANS, AND UTILITIES. REFER TO SPECIAL PROVISION ITEM 994.01.
2. ROLLER SUPPORTS FOR GAS LINES SHALL BE PROVIDED BY OTHERS (NATIONAL GRID). CONTRACTOR IS RESPONSIBLE FOR DRILLING HOLES AS REQUIRED TO INSTALL ROLLER SUPPORTS.
3. THE LIMITED DEFLECTION (TL-3) TEMPORARY BARRIERS SHALL HAVE A MAXIMUM DYNAMIC DEFLECTION OF 3 INCHES OR LESS

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

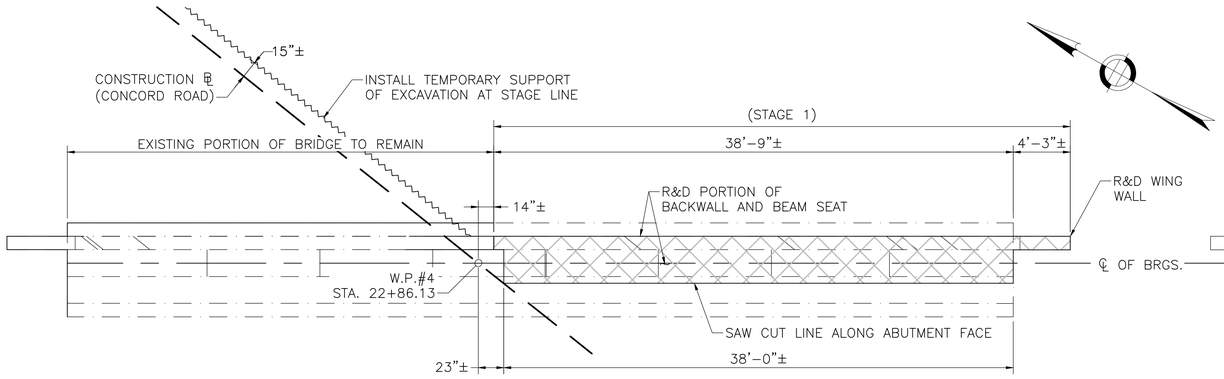
USE ONLY PRINTS OF LATEST DATE

86461_BR46(L12002).DWG Plotted on 30-Dec-2025 1:48 PM
11-December-2025 Fifth Structural Submittal (S5)

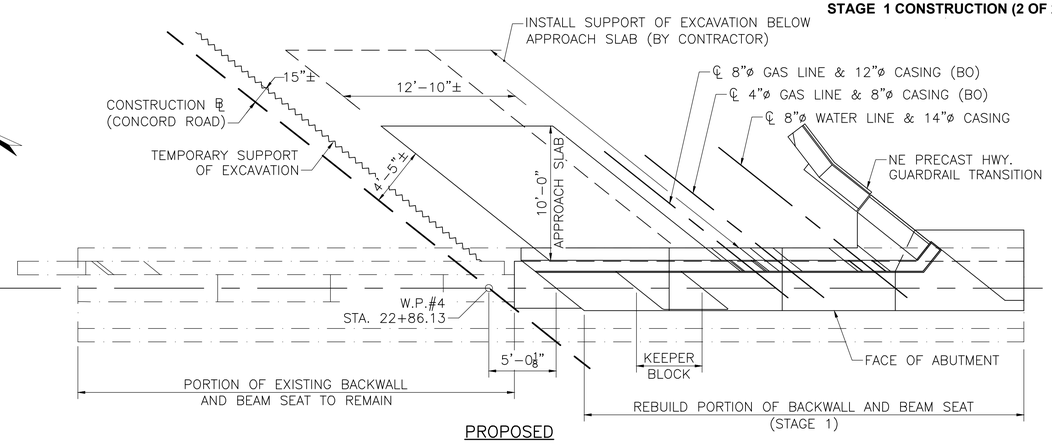
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	47	91
	PROJECT FILE NO. 086461		

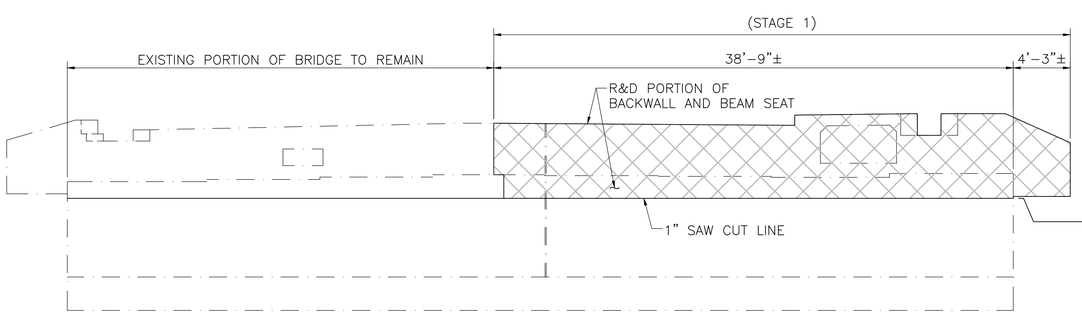
STAGE 1 CONSTRUCTION (2 OF 2)



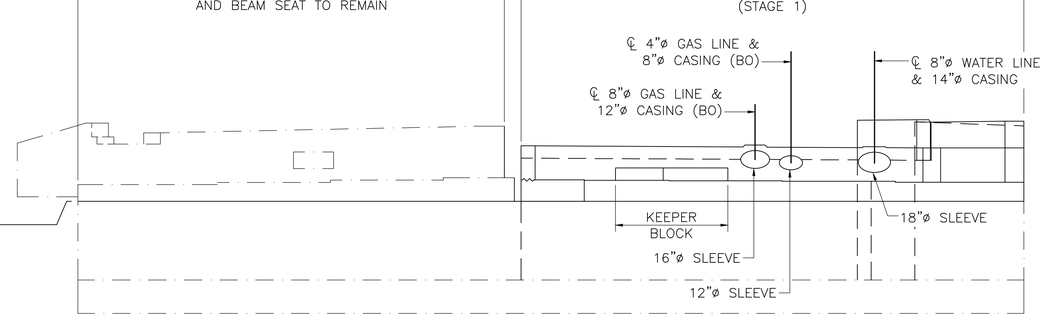
DEMOLITION
NORTH ABUTMENT – PLAN
SCALE: $\frac{3}{16}$"=1'-0"



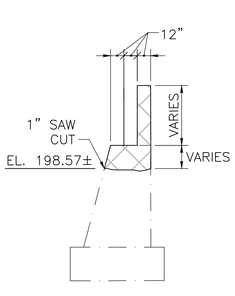
PROPOSED
NORTH ABUTMENT – PLAN
SCALE: $\frac{3}{16}$"=1'-0"



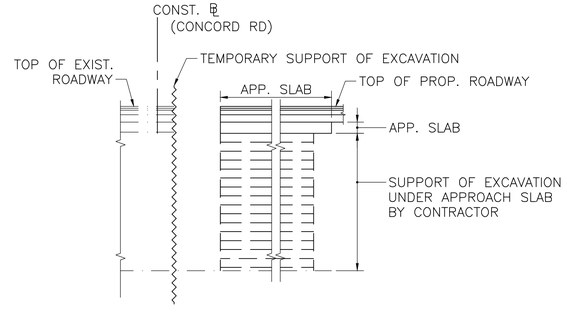
DEMOLITION
NORTH ABUTMENT – ELEVATION
SCALE: $\frac{3}{16}$"=1'-0"



PROPOSED
NORTH ABUTMENT – ELEVATION
SCALE: $\frac{3}{16}$"=1'-0"



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



SECTION THRU PHASE LINE AT APPROACH SLAB
SCALE: $\frac{3}{16}$"=1'-0"

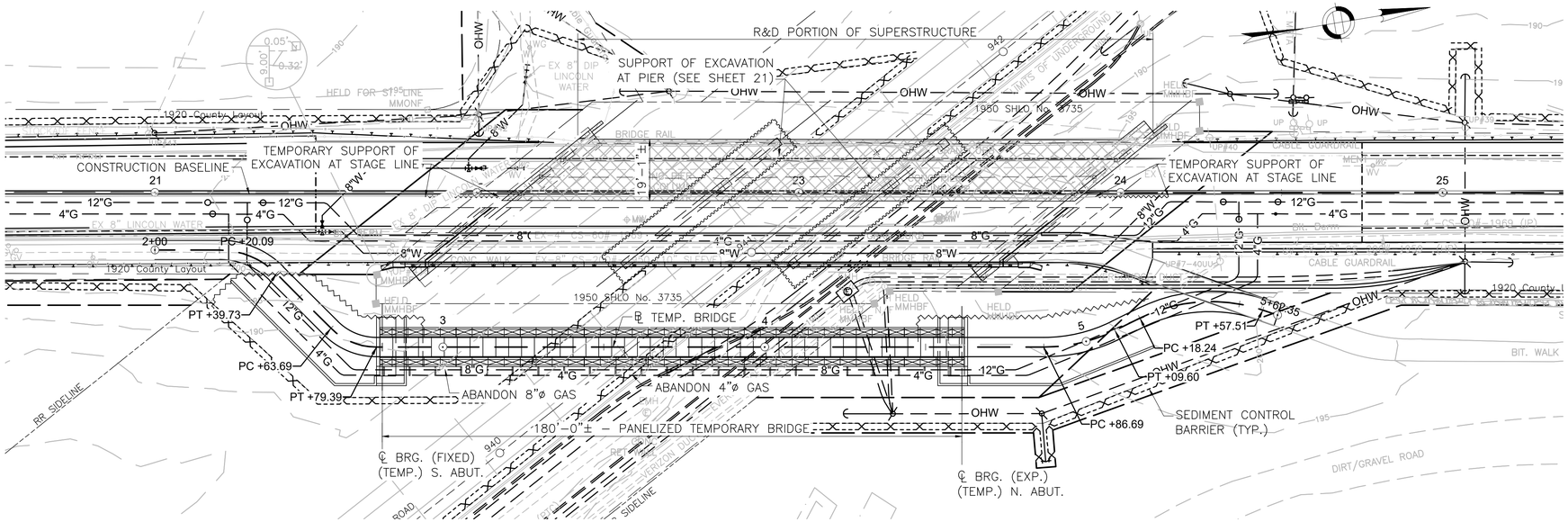
NOTES:

1. NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.
2. BACKWALL SLEEVES FOR GAS LINES SHALL BE PROVIDED BY OTHERS (NATIONAL GRID) AND INSTALLED BY CONTRACTOR.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

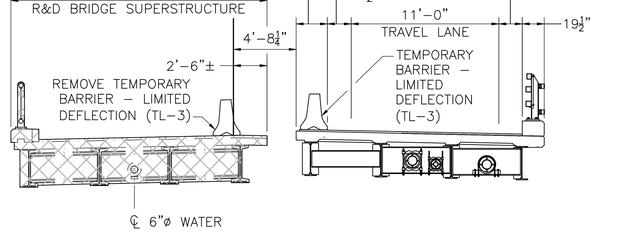
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE



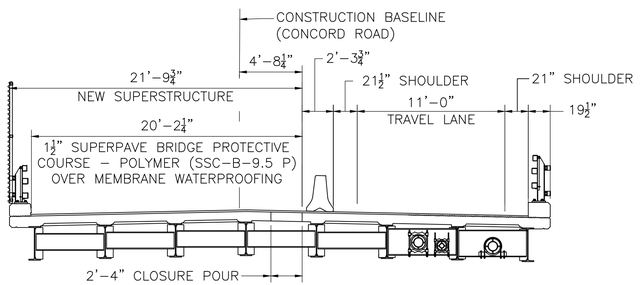
STAGE 2 CONSTRUCTION PLAN

SCALE: 1" = 20'



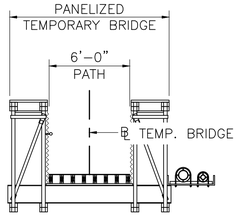
STAGE 2A

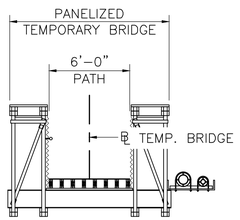
SCALE: $\frac{3}{16}$"=1'-0"

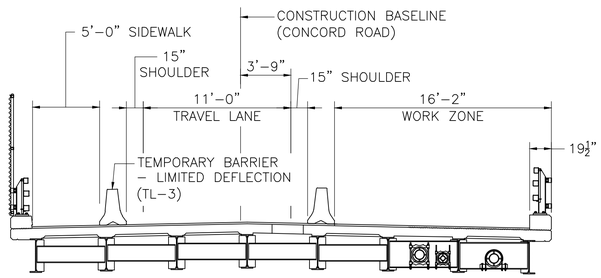


STAGE 2B

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

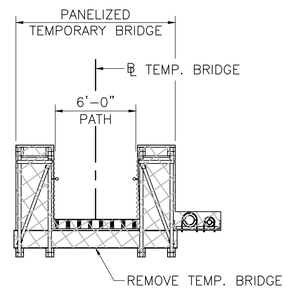






STAGE 2C

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



LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	48	91
	PROJECT FILE NO. 086461		

STAGE 2 CONSTRUCTION (1 OF 2)

SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 2A
1. INSTALL TEMPORARY BARRIERS ON NEW BRIDGE.
2. R&D REMAINING EXISTING BRIDGE SUPERSTRUCTURE AND PORTION OF SUBSTRUCTURE.

STAGE 2B
3. REMOVE TEMPORARY SUPPORT OF EXCAVATION AT STAGE LINE (*).
4. CONSTRUCT REMAINING PORTION OF PROPOSED BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE
5. POUR CLOSURE POUR.

STAGE 2C
6. INSTALL TEMPORARY BARRIER ON BRIDGE AND MOVE PEDESTRIANS TO WEST SIDE OF BRIDGE.
7. REMOVE TEMPORARY ABUTMENTS, PANELIZED TEMPORARY BRIDGE, TEMPORARY SUPPORT OF EXCAVATION AND ABANDONED UTILITIES.
8. PERMANENT AND TEMPORARY SUPPORT OF EXCAVATION AT PIERS SHALL BE CUT OFF BELOW GRADE AND LEFT IN PLACE.
9. RETURN TEMPORARY BRIDGE APPROACHES TO ORIGINAL CONDITIONS.
10. RELOCATE TEMPORARY OVERHEAD WIRES TO PERMANENT LOCATIONS.

(*) TEMPORARY SUPPORT OF EXCAVATION THAT PROTRUDES INTO SOILS SUPPORTING THE BRIDGE FOUNDATIONS SHALL BE CUT OFF 2'-0" BELOW FINISHED GRADE AND LEFT IN PLACE. "SUPPORTING SOILS" SHALL BE AS DEFINED IN SPECIAL PROVISION ITEM 950.11.

NOTES:
1. TEMPORARY PROTECTIVE SHIELDING SHALL BE PROVIDED TO PROTECT THE MBTA/CSX RAILROAD, CONCORD ROAD TRAFFIC, PEDESTRIANS, AND UTILITIES. REFER TO SPECIAL PROVISION ITEM 994.01.
2. THE LIMITED DEFLECTION (TL-3) TEMPORARY BARRIERS SHALL HAVE A MAXIMUM DYNAMIC DEFLECTION OF 3 INCHES OR LESS

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

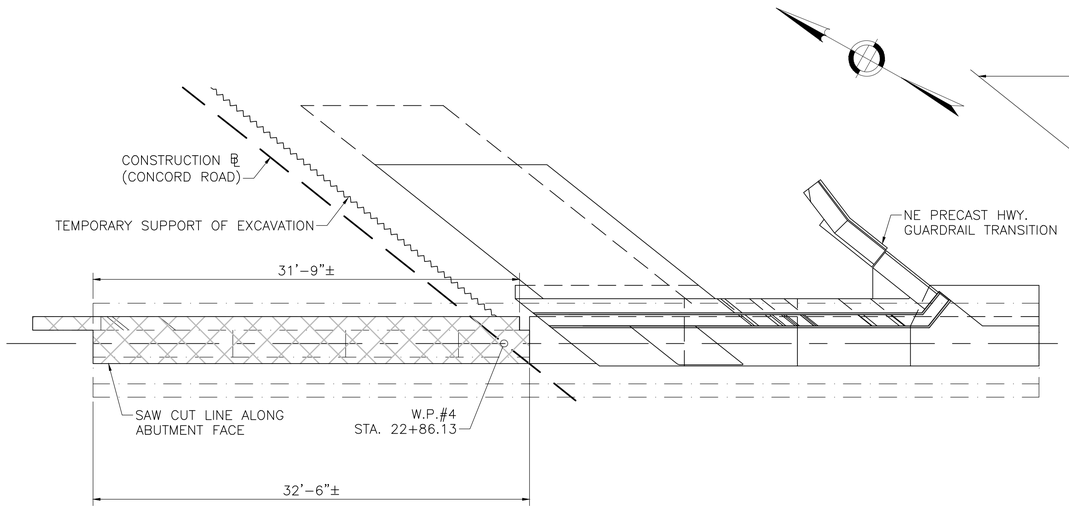
USE ONLY PRINTS OF LATEST DATE

086461_BR48(L12002).DWG Plotted on 30-Dec-2025 1:49 PM
11-December-2025
Fifth Structural Submittal (SS)

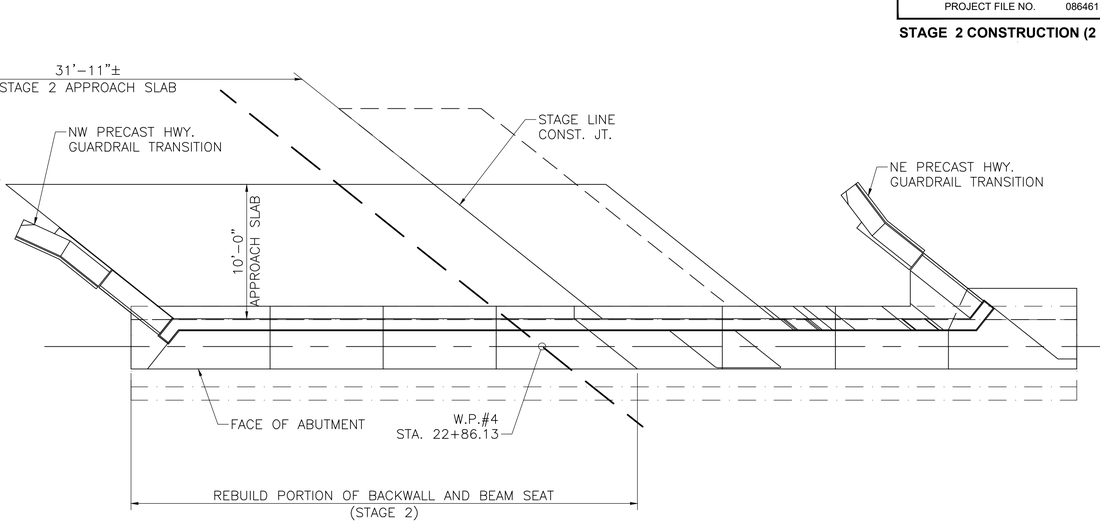
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	49	91
	PROJECT FILE NO. 086461		

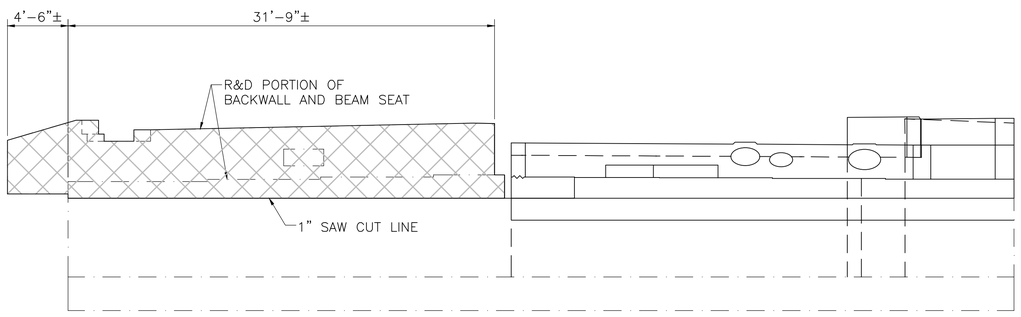
STAGE 2 CONSTRUCTION (2 OF 2)



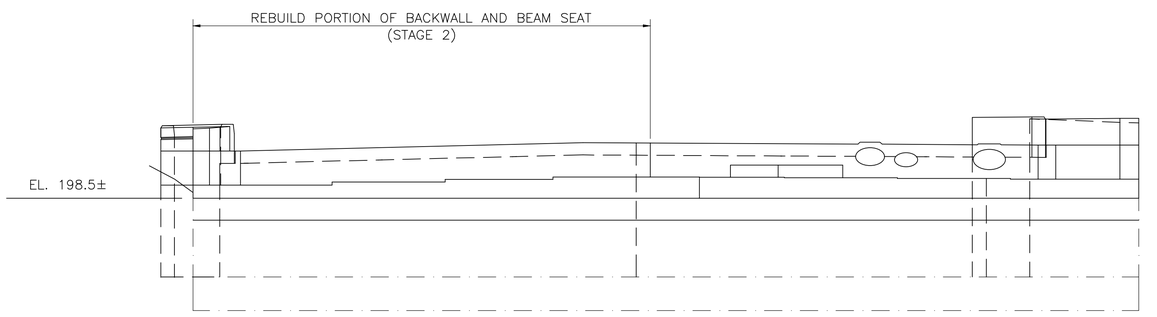
DEMOLITION
NORTH ABUTMENT – PLAN
SCALE: $\frac{3}{16}$"=1'–0"



PROPOSED
NORTH ABUTMENT – PLAN
SCALE: $\frac{3}{16}$"=1'–0"



DEMOLITION
NORTH ABUTMENT – ELEVATION
SCALE: $\frac{3}{16}$"=1'–0"



PROPOSED
NORTH ABUTMENT – ELEVATION
SCALE: $\frac{3}{16}$"=1'–0"

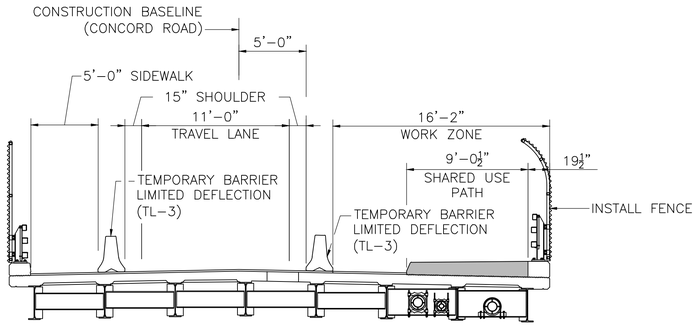
NOTE:
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

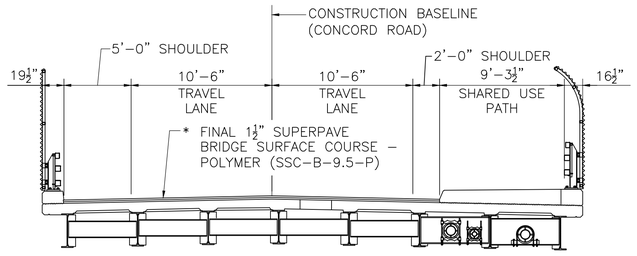
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	50	91
	PROJECT FILE NO. 086461		

STAGE 3 CONSTRUCTION



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



* UPON COMPLETION
OF SIDEWALK

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

SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 3A
1. REMOVE TEMPORARY HMA PAVEMENT UNDER PROPOSED SIDEWALK.
2. CONSTRUCT SIDEWALK.

STAGE 3B
3. REMOVE TEMPORARY BARRIERS AND PLACE FINAL COURSE OF SUPERPAVE SURFACE COURSE.

NOTES:
1. TEMPORARY PROTECTIVE SHIELDING SHALL BE PROVIDED TO PROTECT THE MBTA/CSX RAILROAD, CONCORD ROAD TRAFFIC, PEDESTRIANS, AND UTILITIES. REFER TO SPECIAL PROVISION ITEM 994.01.

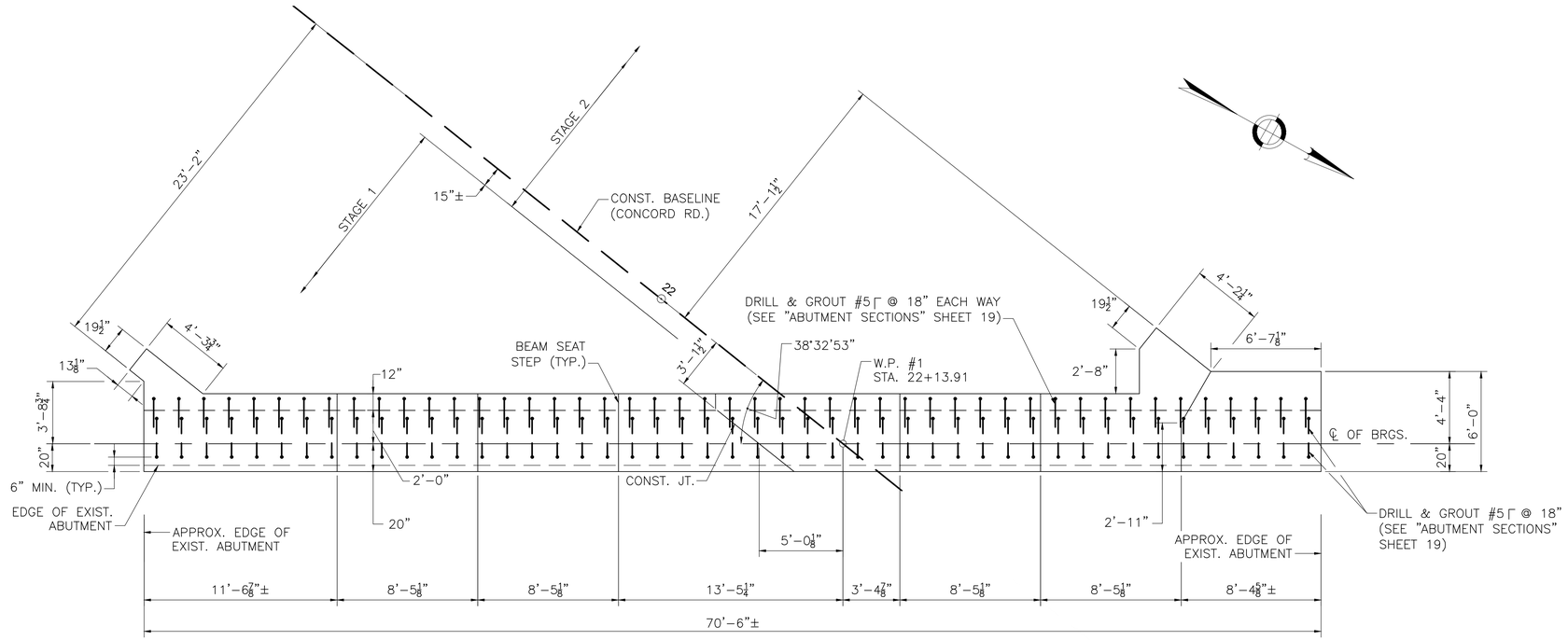
2. THE LIMITED DEFLECTION (TL-3) TEMPORARY BARRIERS SHALL HAVE A MAXIMUM DYNAMIC DEFLECTION OF 3 INCHES OR LESS

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

LINCOLN
CONCORD ROAD/ST 126

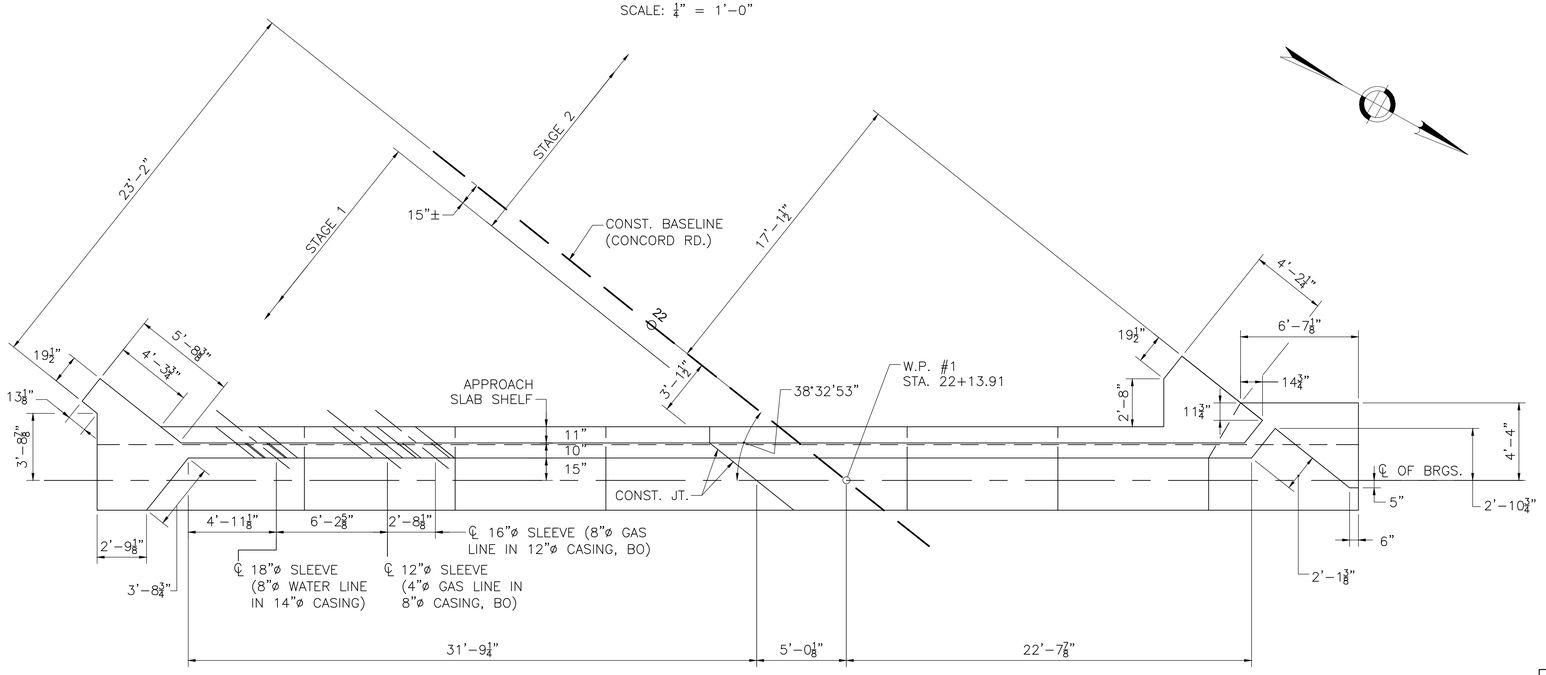
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	51	91
PROJECT FILE NO.	086461		

SOUTH ABUTMENT FOUNDATION



SOUTH ABUTMENT FOUNDATION PLAN

SCALE: ¼" = 1'-0"



SOUTH ABUTMENT BACKWALL PLAN

SCALE: ¼" = 1'-0"

DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

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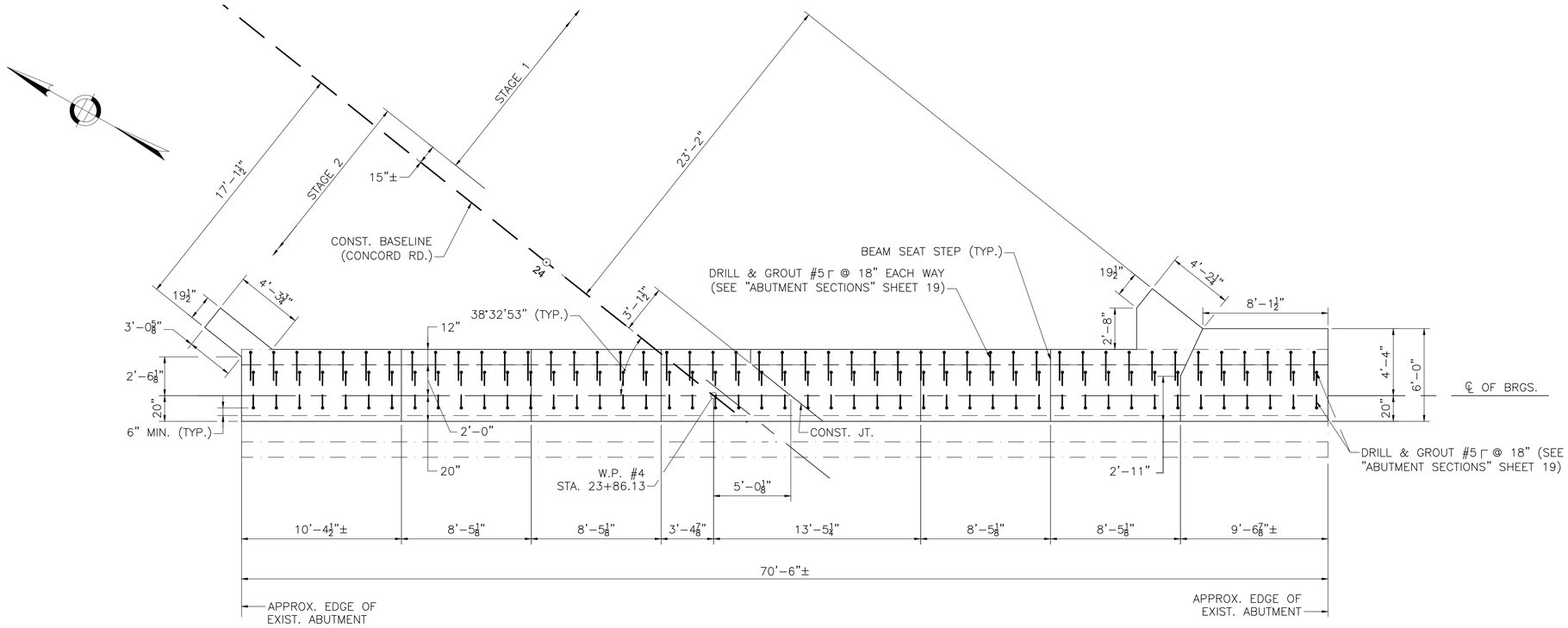
LINCOLN
CONCORD ROAD/ST 126

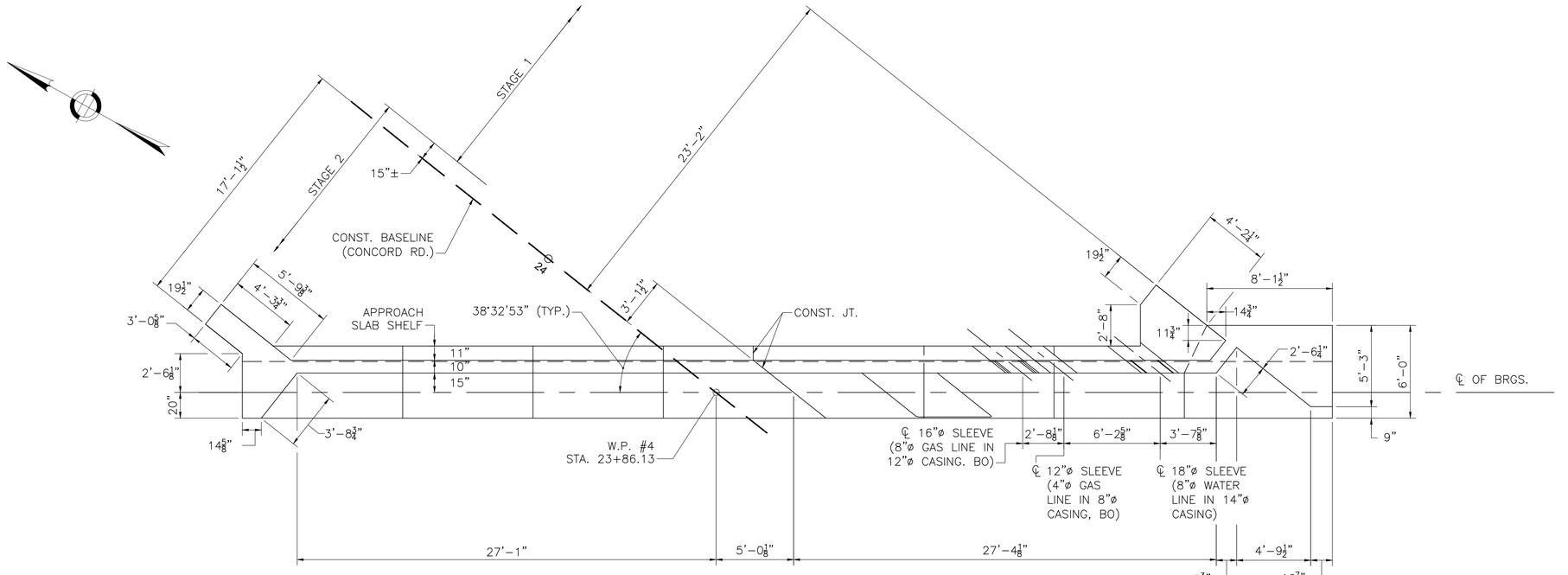
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	52	91
PROJECT FILE NO.	086461		

NORTH ABUTMENT FOUNDATION



NORTH ABUTMENT FOUNDATION PLAN

SCALE: ¼" = 1'-0"



NORTH ABUTMENT BACKWALL PLAN

SCALE: ¼" = 1'-0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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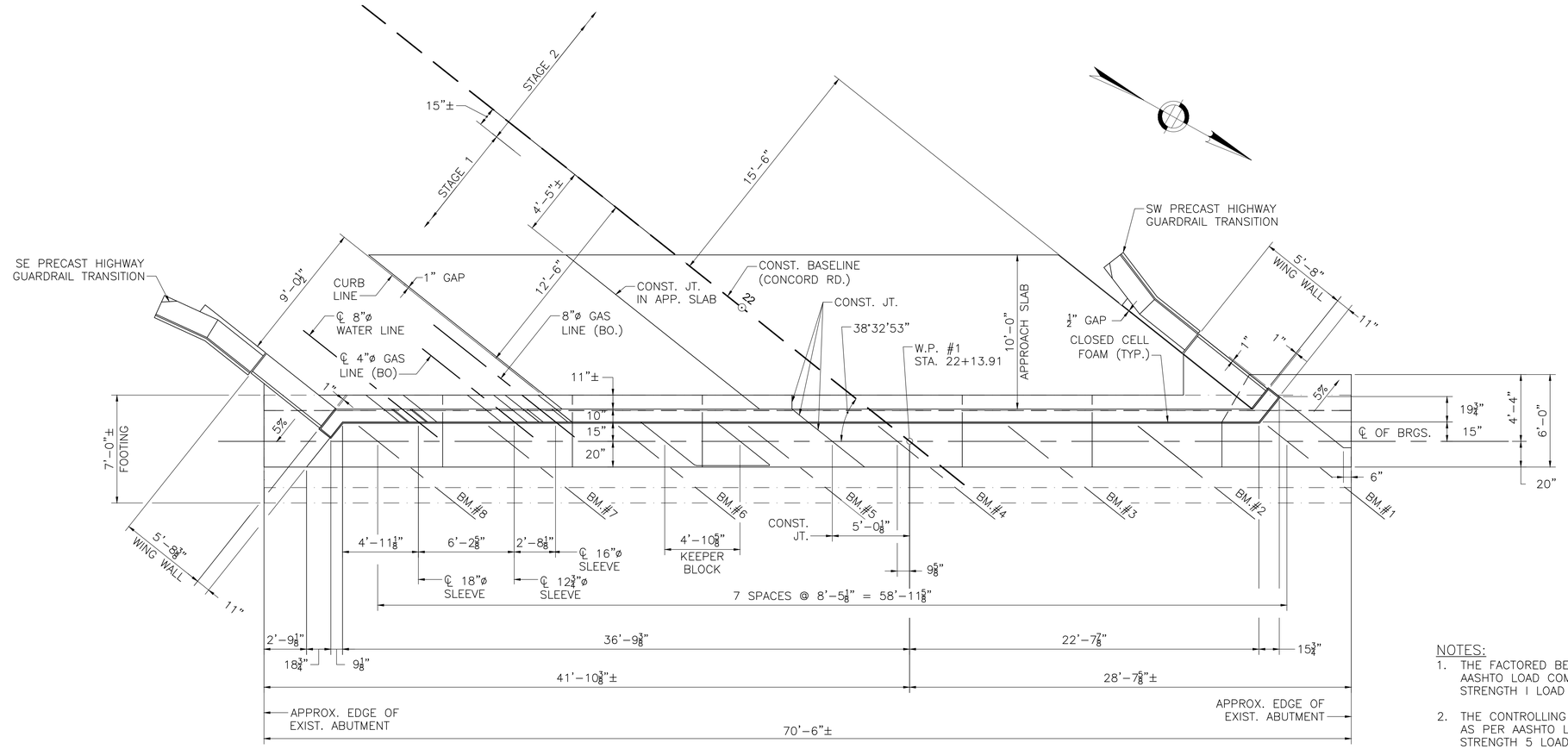
LINCOLN
CONCORD ROAD/ST 126

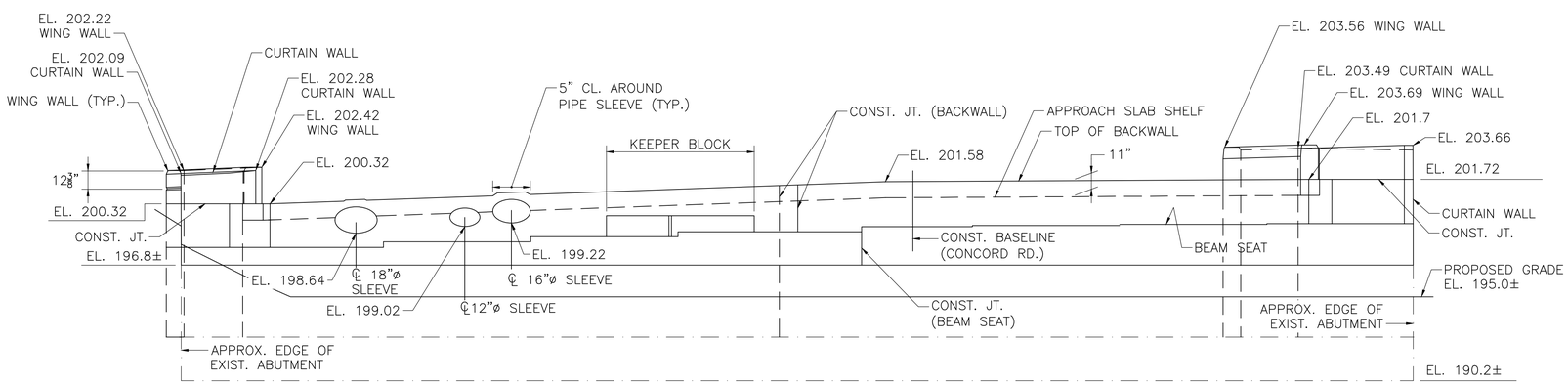
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	53	91
PROJECT FILE NO.	086461		

SOUTH ABUTMENT PLAN AND ELEVATION



SOUTH ABUTMENT PLAN

SCALE: ¼"=1'-0"



SOUTH ABUTMENT ELEVATION

SCALE: ¼"=1'-0"

NOTES:

1. THE FACTORED BEARING PRESSURE = 3.3 KSF AS PER AASHTO LOAD COMBINATION DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
2. THE CONTROLLING FACTORED BEARING PRESSURE = 3.5 KSF AS PER AASHTO LOAD COMBINATION DESIGN SPECIFICATIONS STRENGTH 5 LOAD COMBINATION.
3. FACTORED BEARING RESISTANCE = 4.05 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

BEAM SEAT ELEVATIONS SOUTH ABUTMENT

STRINGER	ELEVATION
BM.#1	199.17
BM.#2	199.13
BM.#3	199.09
BM.#4	199.01
BM.#5	198.73
BM.#6	198.43
BM.#7	198.13
BM.#8	197.82

DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

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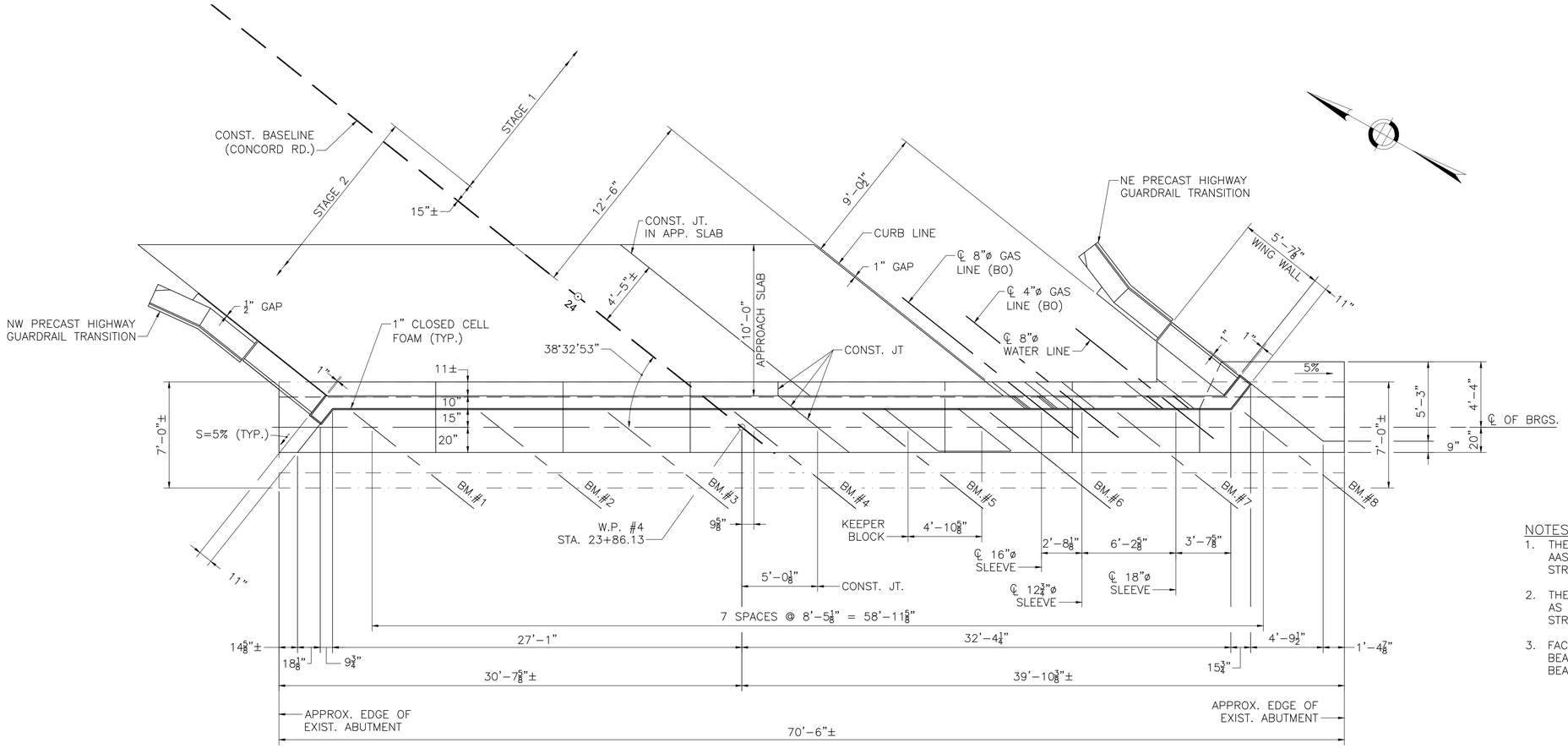
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	54	91
PROJECT FILE NO.	086461		

NORTH ABUTMENT PLAN AND ELEVATION

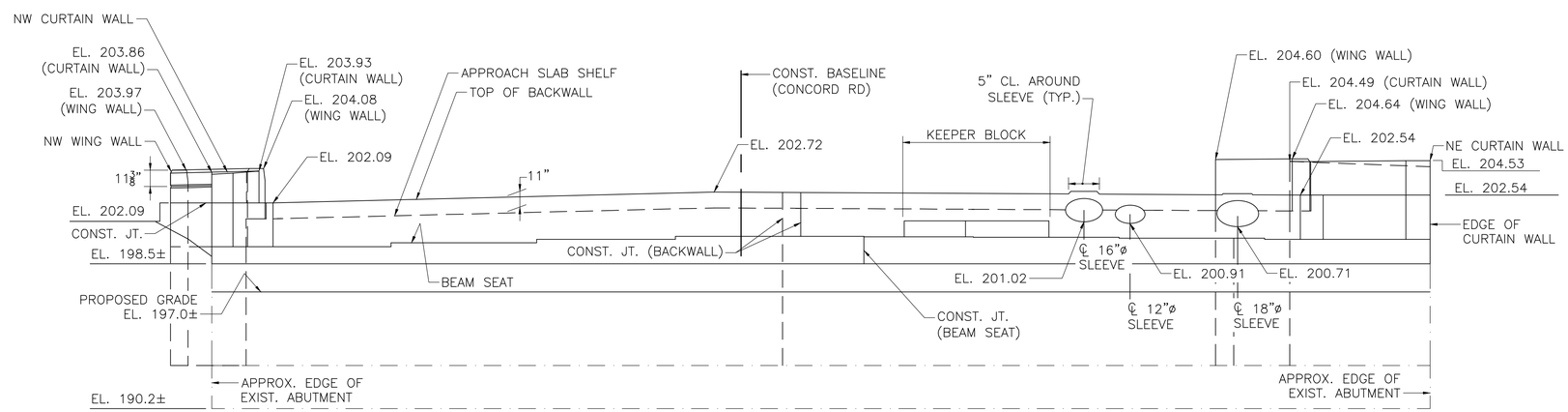


NOTES:

1. THE FACTORED BEARING PRESSURE = 3.3 KSF AS PER AASHTO LOAD COMBINATION DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
2. THE CONTROLLING FACTORED BEARING PRESSURE = 3.5 KSF AS PER AASHTO LOAD COMBINATION DESIGN SPECIFICATIONS STRENGTH 5 LOAD COMBINATION.
3. FACTORED BEARING RESISTANCE = 4.05 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

NORTH ABUTMENT PLAN

SCALE: ¼"=1'-0"



NORTH ABUTMENT ELEVATION

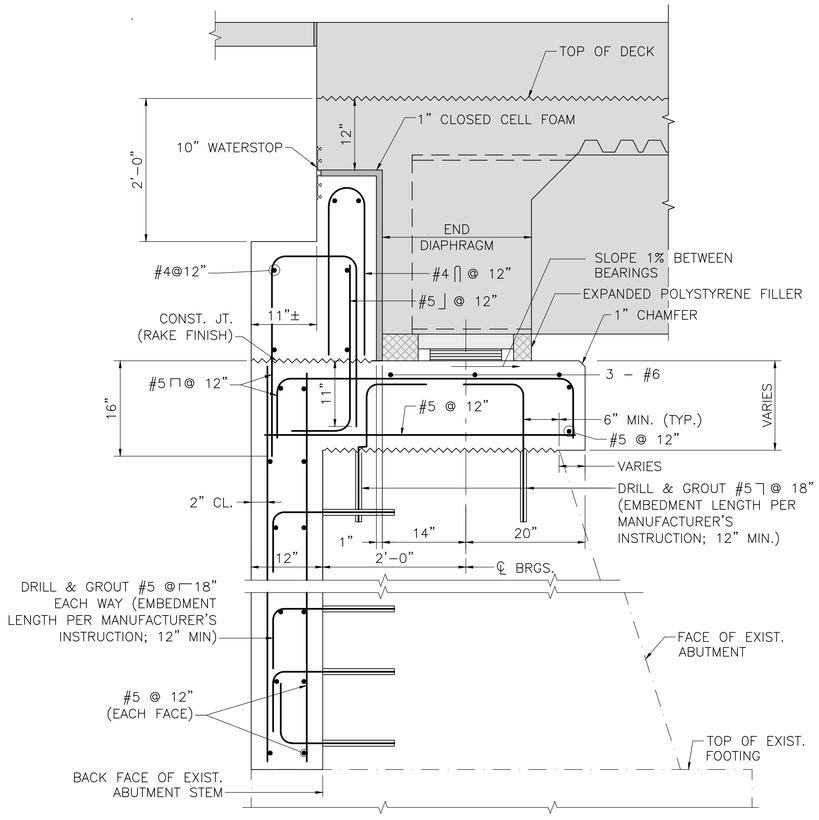
SCALE: ¼"=1'-0"

BEAM SEAT ELEVATIONS NORTH ABUTMENT	
STRINGER	ELEVATION
BM.#1	199.56
BM.#2	199.77
BM.#3	199.98
BM.#4	200.16
BM.#5	200.12
BM.#6	200.08
BM.#7	200.03
BM.#8	199.97

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

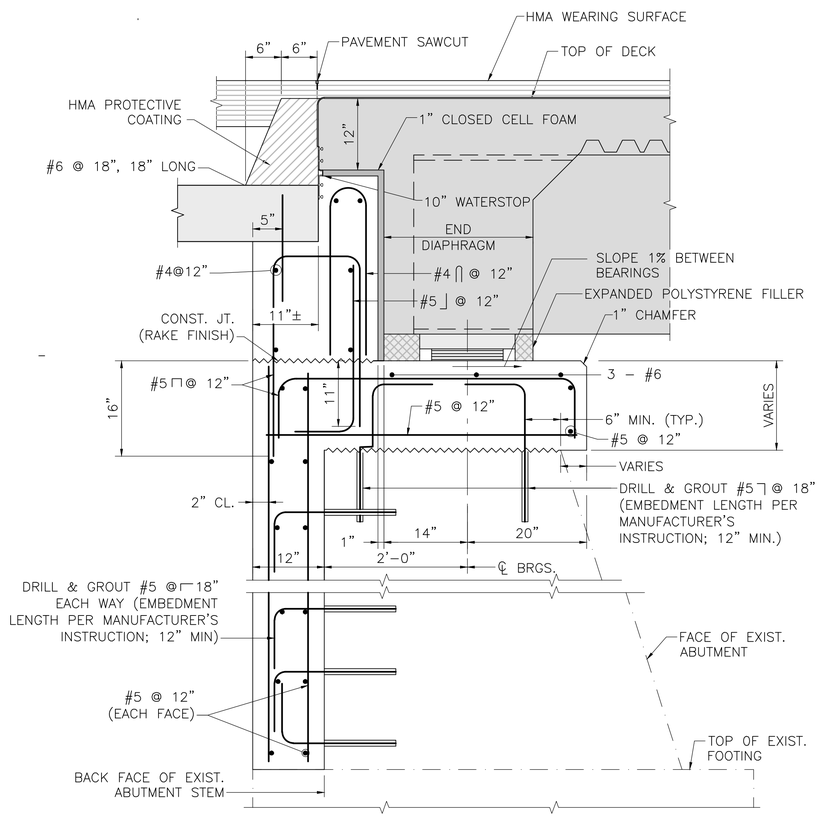
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

86461_BR54(L12002).DWG Plotted on 30-Dec-2025 1:51 PM
11-December-2025
Fifth Structural Submittal (SS)



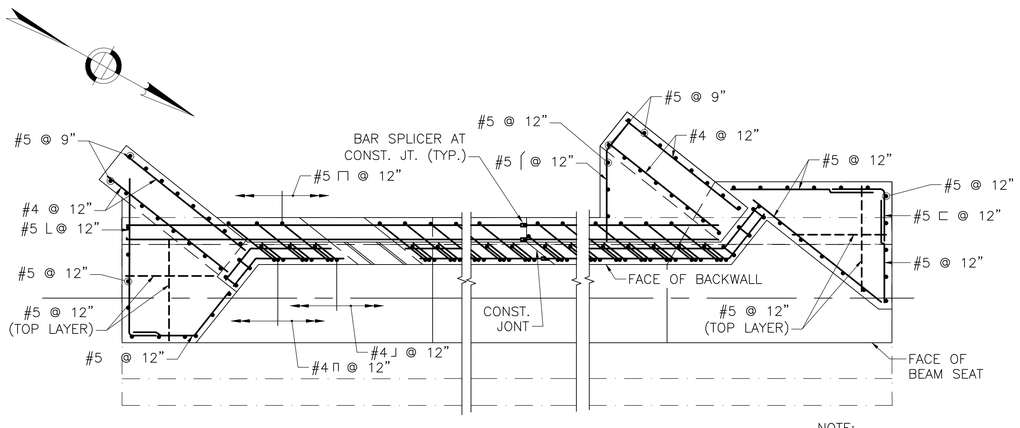
DETAILS AT ABUTMENT – SIDEWALK SECTION

SCALE: 1" = 1'–0"



DETAILS AT ABUTMENT – ROADWAY SECTION

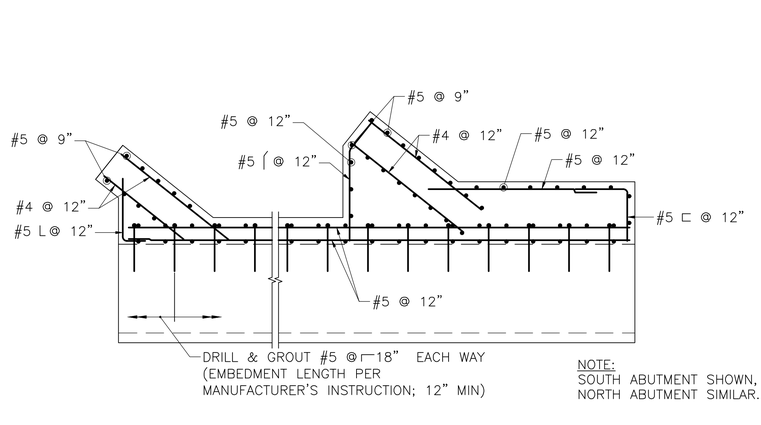
SCALE: 1" = 1'–0"



BACKWALL AND CURTAIN WALL REINFORCING

SCALE: ⅜" = 1'–0"

NOTE:
SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.



ABUTMENT STEM REINFORCING

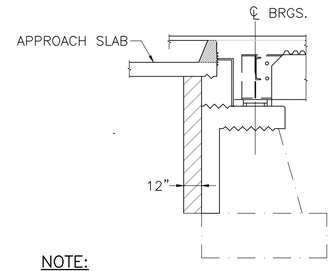
SCALE: ⅜" = 1'–0"

NOTE:
SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	55	91
	PROJECT FILE NO. 086461		

ABUTMENT SECTIONS



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

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

SCALE: ¼" = 1'–0"

ROADWAY/SIDEWALK SECTION NOTES:

1. ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE COATED, EXCEPT FOR THE APPROACH SLAB REINFORCEMENT.
2. TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
3. BACKWALL BELOW CONSTRUCTION JOINT, KEEPER BLOCK AND CURTAIN WALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
4. THE END DIAPHRAGM CONCRETE SHALL BE PLACED MONOLITHICALLY WITH THE DECK.
5. PRIOR TO PLACING THE END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESSES SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCKS, AND CURTAIN WALLS AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT ALL ABUTMENT CONCRETE IS PROPERLY LINED. END DIAPHRAGM CONCRETE MUST NOT COME IN DIRECT CONTACT WITH THE ABUTMENT CONCRETE.
6. AFTER THE END DIAPHRAGM CONCRETE HAS CURED SUFFICIENTLY, PLACE THE APPROACH SLAB CONCRETE AND REMAINDER OF BACKWALL CONCRETE. THE BACKWALL TROUGH WILL BE FORMED WITH CLOSED CELL FOAM AND CARE SHALL BE TAKEN TO INSURE THAT CONCRETE DOES NOT ENTER THE TROUGH SUMP.
7. COVER THE BACKWALL TROUGH OPENING SECURELY TO KEEP DEBRIS OUT UNTIL READY TO INSTALL THE STRIP SEAL JOINT.
8. 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.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

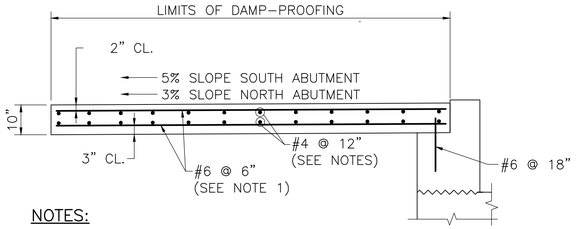
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

86461_BR55(L12002).DWG Plotted on 30-Dec-2025 1:52 PM
11-December-2025 Fifth Structural Submittal (S5)

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	56	91
	PROJECT FILE NO. 086461		

KEEPER BLOCK AND APPROACH SLAB

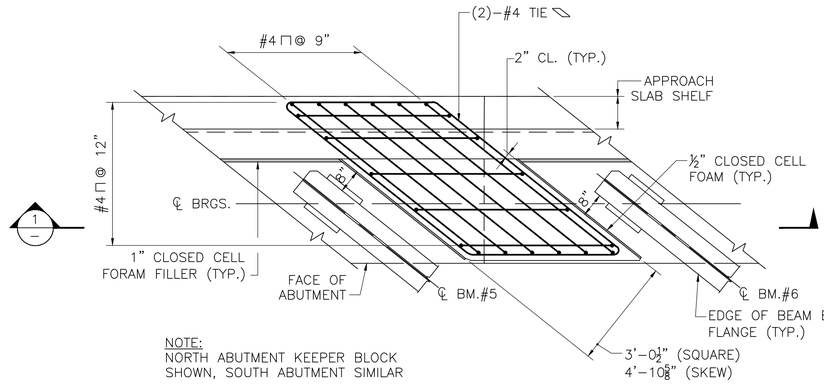


NOTES:

1. PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO ABUTMENT. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
2. CONNECT TRANSVERSE REINFORCEMENT WITH DOWEL BAR SPLICERS AT PHASE LINE CONSTRUCTION JOINT.

APPROACH SLAB DETAILS

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



NOTE:
NORTH ABUTMENT KEEPER BLOCK SHOWN, SOUTH ABUTMENT SIMILAR

INTERMEDIATE ABUTMENT KEEPER BLOCK

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

NOTES:

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

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

NOTE:
REFER TO "ABUTMENT SECTIONS" SHEET FOR ADDITIONAL NOTES AND REINFORCING

SECTION THRU ABUTMENT AT WATER MAIN

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

10" WATERSTOP

NOT TO SCALE

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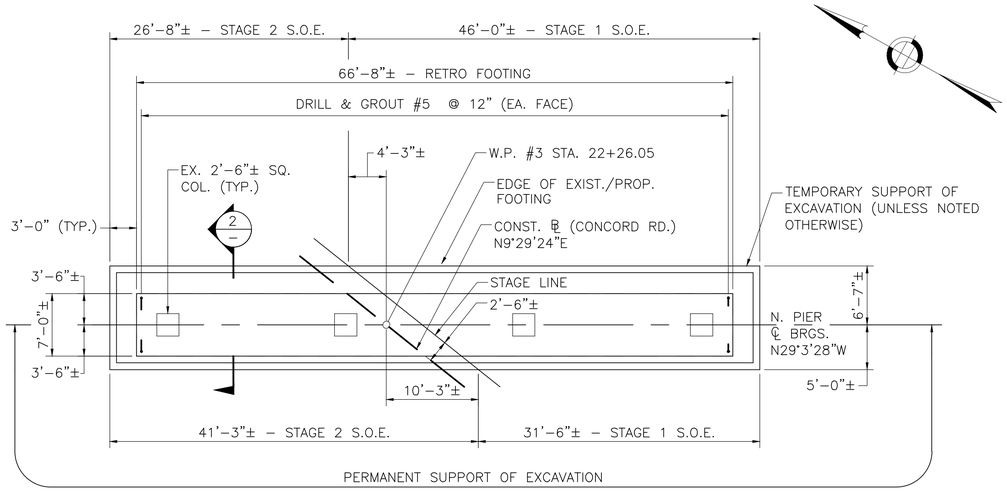
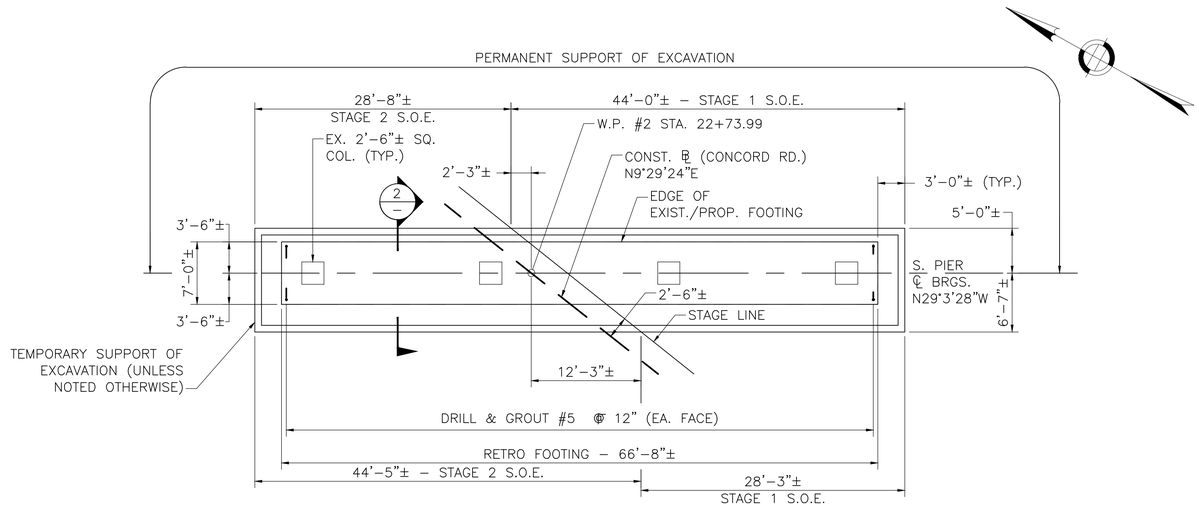
PROJECT FILE NO.	086461		

PIER RETROFIT FOOTING AND DETAILS



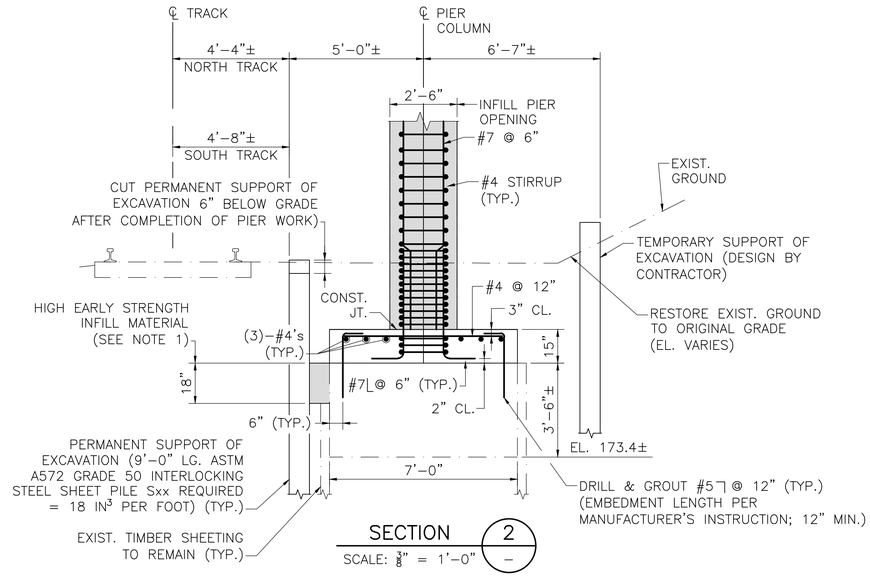
PLAN AT NORTH PIER



PLAN AT SOUTH PIER

PIER RETRO FOOTING

SCALE: $\frac{1}{8}$" = 1'–0"



SECTION 2

SCALE: $\frac{3}{8}$" = 1'–0"

NOTES:

1. DRIVE SHEETING AND PLACE HIGH EARLY STRENGTH INFILL MATERIAL BETWEEN EXISTING FOOTING AND PROPOSED SHEETING DURING NIGHTTIME CLOSURES. INFILL MATERIAL SHALL HAVE GAINED REQUIRED STRENGTH PRIOR TO RESUMPTION OF SCHEDULED RAILROAD OPERATIONS.
2. AFTER CONSTRUCTION AND BACKFILLING IS COMPLETED, THE PERMANENT SUPPORT OF EXCAVATION SHALL BE CUT OFF 6" BELOW FINISHED GRADE. PORTIONS OF TEMPORARY SUPPORT OF EXCAVATION MAY BE LEFT IN PLACE AT THE CONTRACTOR'S OPTION. ANY LEFT IN PLACE MATERIALS SHALL BE CUT OFF AT LEAST 2'–0" BELOW FINISHED GRADE.
3. ANY DETERIORATED AREAS OF EXISTING CONCRETE ALONG THE IN–FILL INTERFACE SHALL BE REMOVED PRIOR TO POURING NEW CONCRETE.

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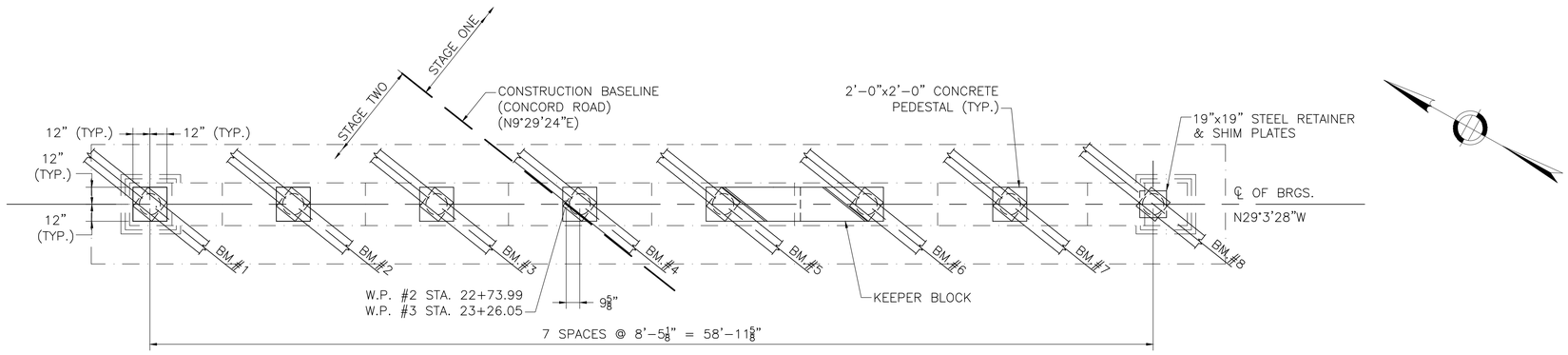
86461_BR57(L12002).DWG Plotted on 30-Dec-2025 1:52 PM
11-December-2025
Fifth Structural Submittal (S5)

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	58	91
PROJECT FILE NO.	086461		

PIER PLAN AND ELEVATION



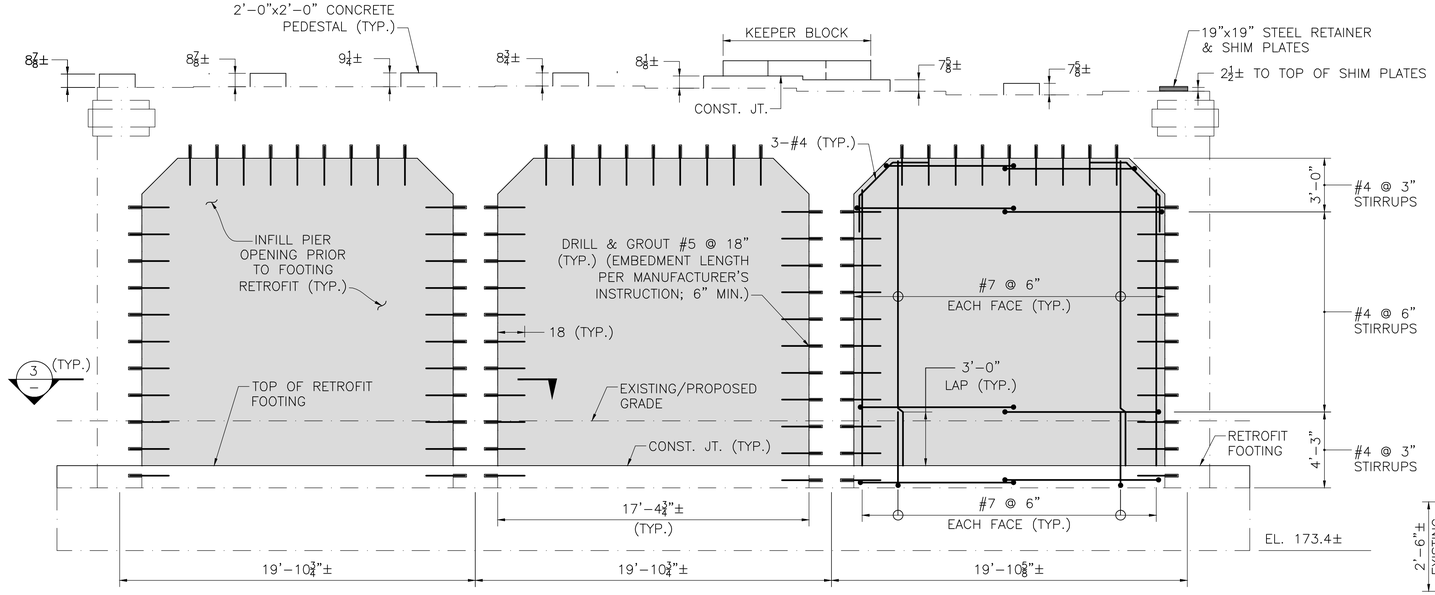
TYPICAL PIER CAP PLAN

SCALE: 1/4" = 1'–0"

BEAM SEAT ELEVATIONS SOUTH PIER	
STRINGER	ELEVATION
BM.#1	200.05
BM.#2	200.10
BM.#3	200.15
BM.#4	200.16
BM.#5	199.96
BM.#6	199.76
BM.#7	199.54
BM.#8	199.32

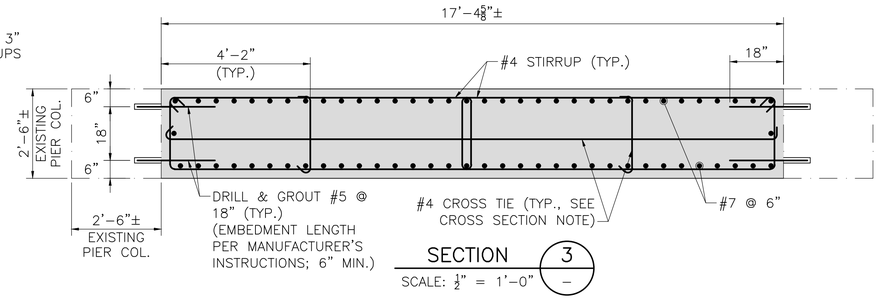
BEAM SEAT ELEVATIONS NORTH PIER	
STRINGER	ELEVATION
BM.#1	200.17
BM.#2	200.30
BM.#3	200.42
BM.#4	200.50
BM.#5	200.38
BM.#6	200.25
BM.#7	200.11
BM.#8	199.97

NOTES:
1. FOR KEEPER BLOCK, CONCRETE PIER PEDESTAL, AND STEEL PIER PEDESTAL SEE SHEET 23.
2. THE FACTORED BEARING PRESSURE = 6.13 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH III LOAD COMBINATION. THE FACTORED BEARING PRESSURE = 8.63 KSF FOR EXTREME I LOAD COMBINATION.
3. FACTORED BEARING RESISTANCE = 13.00 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.



SOUTH PIER – WEST ELEVATION

SCALE: 1/4" = 1'–0"

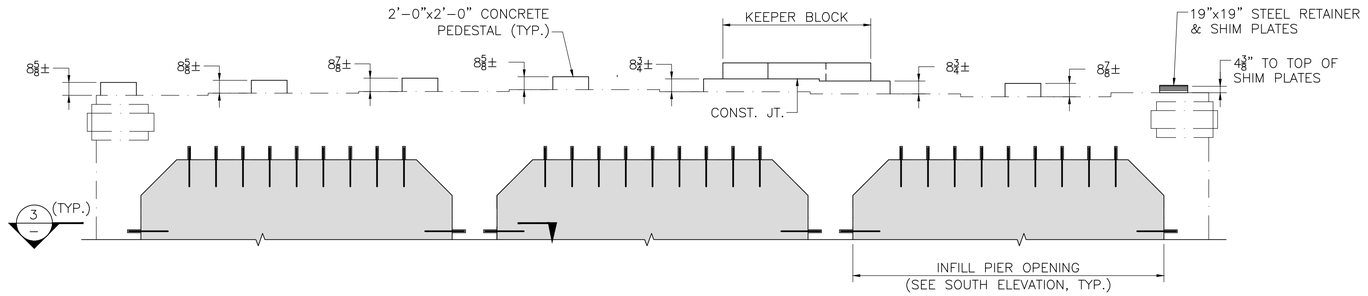


SECTION 3/–

SCALE: 1/2" = 1'–0"

CROSS TIE NOTE:

CROSS TIES SHALL HAVE A HOOK OF NOT LESS THAN 135° WITH AN EXTENSION OF NOT LESS THAN 3" AT ONE END AND A HOOK OF NOT LESS THAN 90° WITH AN EXTENSION OF NOT LESS THAN 3" AT THE OTHER END. THE HOOKS SHALL ENGAGE PERIPHERAL LONGITUDINAL BARS. THE 90° HOOKS OF TWO SUCCESSIVE CROSS TIES ENGAGING THE SAME LONGITUDINAL BARS SHALL BE ALTERED END FOR END.



PARTIAL NORTH PIER – WEST ELEVATION

SCALE: 1/4" = 1'–0"

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LINCOLN
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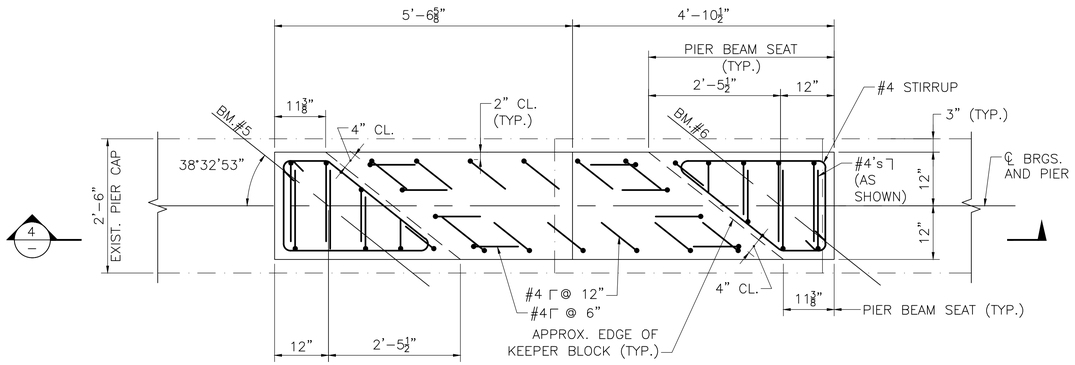
MA	HIP(NGB)-003S(902)X	59	91
	PROJECT FILE NO. 086461		

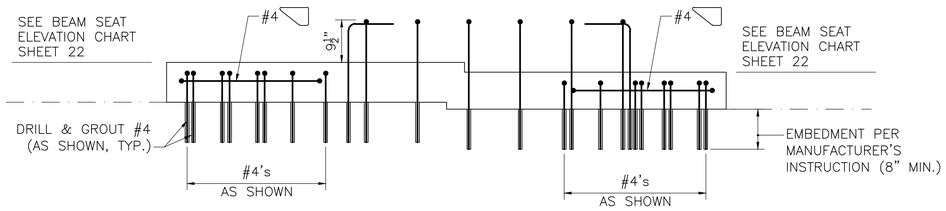
PIER KEEPER BLOCK DETAILS



4 / –

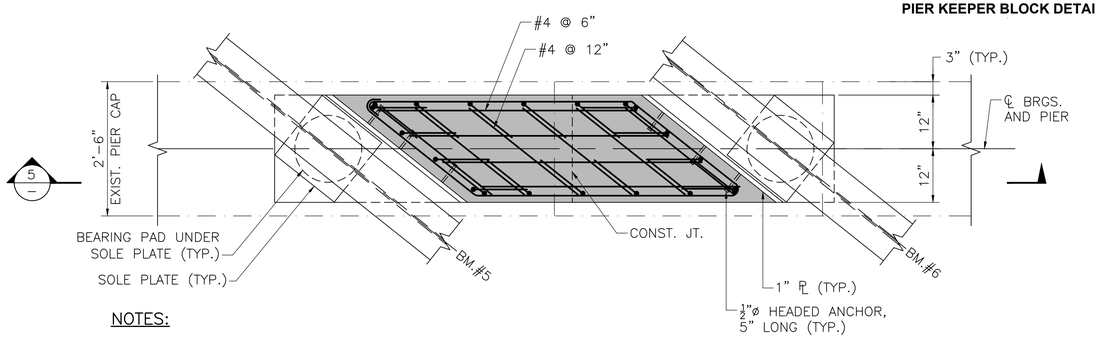
PLAN OF PIER PEDESTAL AT KEEPER BLOCK

SCALE: ¾" = 1'–0"



SECTION 4 / –

SCALE: ¾" = 1'–0"



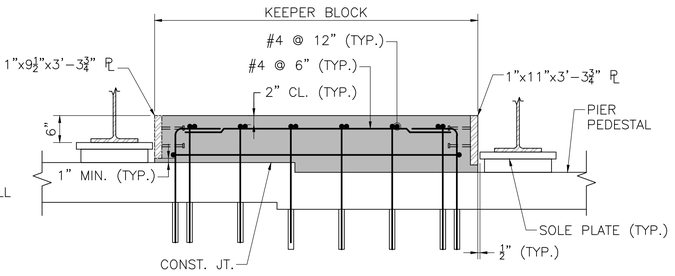
5 / –

NOTES:

1. KEEPER BLOCK SHALL BE CAST BEFORE BEAM #4 IS SET.
2. STEEL PLATES EMBEDDED IN KEEPER BLOCK SHALL BE HOT–DIP GALVANIZED.

PLAN OF KEEPER BLOCK

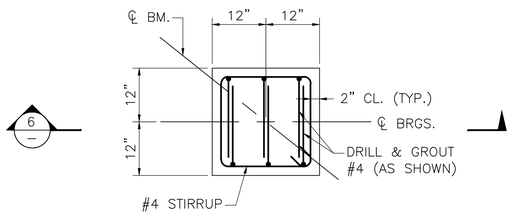
SCALE: ¾" = 1'–0"



NOTES:
1. PIER PEDESTAL REINFORCING NOT SHOWN FOR CLARITY
2. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH.

SECTION 5 / –

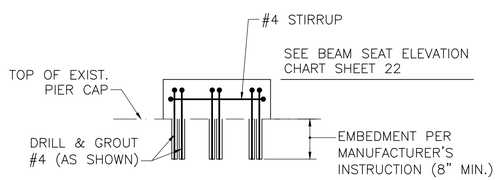
SCALE: ¾" = 1'–0"



6 / –

PLAN OF CONCRETE PIER PEDESTAL

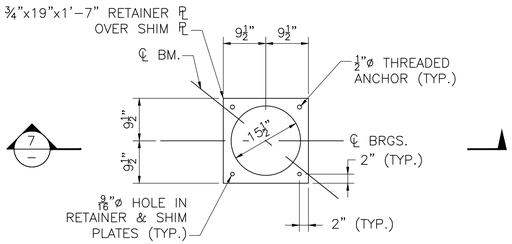
SCALE: ¾" = 1'–0"



SECTION 6 / –

SCALE: ¾" = 1'–0"

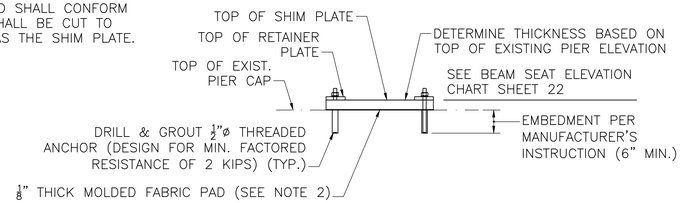
NOTES:
1. STEEL SHIM PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36 AND SHALL BE HOT DIP GALVANIZED.
2. MOLDED FABRIC PAD SHALL CONFORM TO M9.16.2 AND SHALL BE CUT TO THE SAME SHAPE AS THE SHIM PLATE.



7 / –

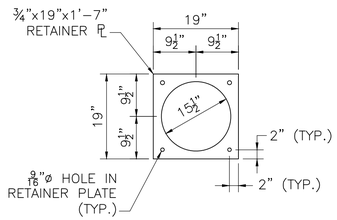
PLAN OF STEEL PIER PEDESTAL

SCALE: ¾" = 1'–0"



SECTION 7 / –

SCALE: ¾" = 1'–0"



PLAN OF RETAINER PLATE

SCALE: ¾" = 1'–0"

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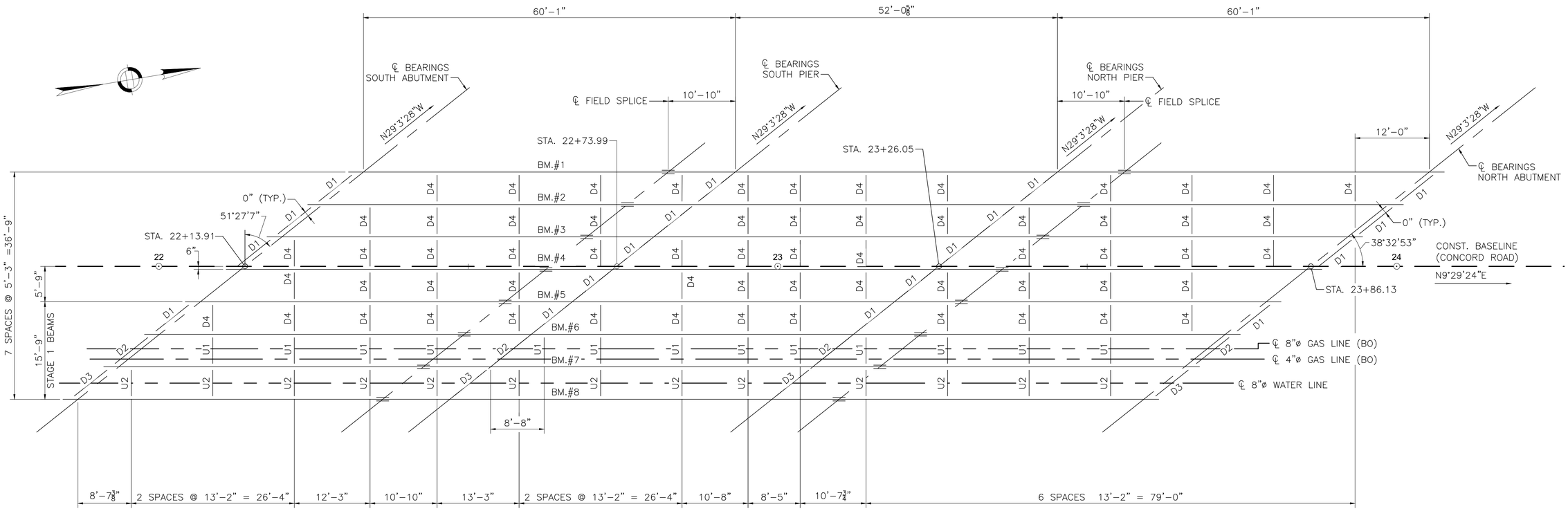
USE ONLY PRINTS OF LATEST DATE

86461_BR59(L12002).DWG Plotted on 30-Dec-2025 1:54 PM
11-December-2025
Fifth Structural Submittal (S5)

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	60	91
PROJECT FILE NO. 086461			

FRAMING PLAN



FRAMING PLAN
SCALE: ⅛"=1'–0"

NOTES:
1. D1 = C15x33.9 (TYP. END DIAPHRAGM)
   D2 = W24x76 (TYP. END DIAPHRAGM AT UTILITY BAY) – 4"ø & 8"ø GAS LINE
   D3 = W24X76 (TYP. END DIAPHRAGM AT UTILITY BAY) – 8"ø WATER LINE
   D4 = C15x33.9 (TYP. INTERMEDIATE DIAPHRAGM)
   U1 = W24x76 (TYP. UTILITY SUPPORT AT DIAPHRAGMS) – 4"ø & 8"ø GAS LINE
   U2 = W24x76 (TYP. UTILITY SUPPORT AT DIAPHRAGMS) – 8"ø WATER LINE
2. SEE SHEETS 26 AND 27 FOR DIAPHRAGM AND UTILITY SUPPORT DETAILS.
3. THE MAIN LOAD CARRYING MEMBERS ARE W30x116 GRADE 50W (BEAMS #1 – #8).
4. ALL STEEL SHALL CONFORM TO AASHTO M 270 GRADE 50W

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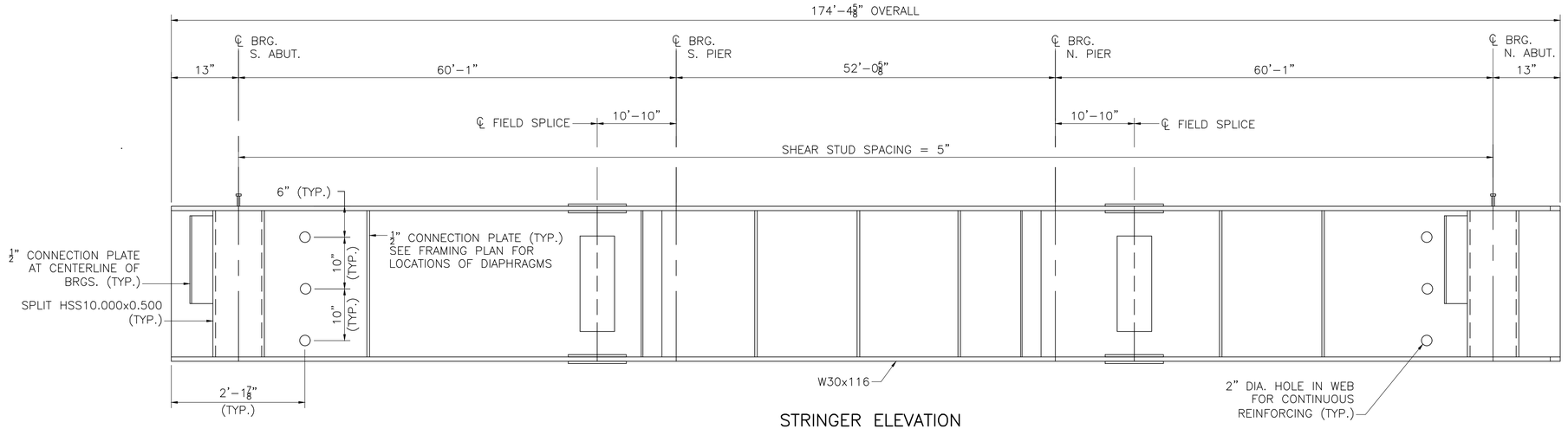
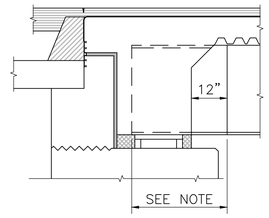
MA	HIP(NGB)-003S(902)X	61	91
PROJECT FILE NO.	086461		

STEEL DETAILS



STRINGER ELEVATION

NOT TO SCALE

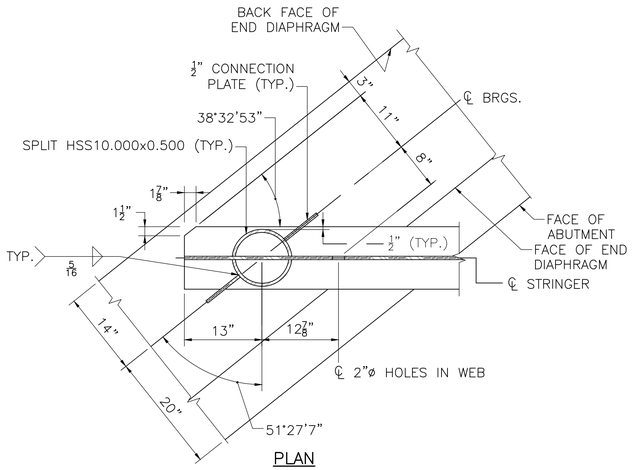


NOTE:

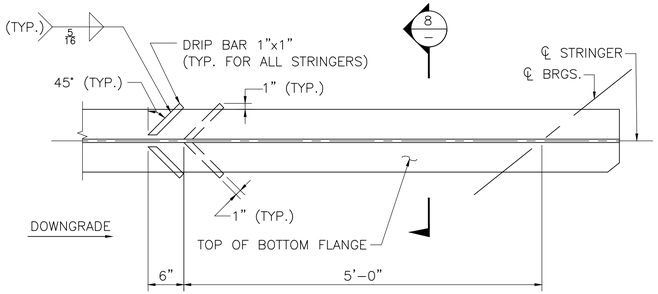
THE UNPAINTED WEATHERING STEEL STRINGER AND ATTACHED PLATES EMBEDDED IN THE CONCRETE END DIAPHRAGM AND WITHIN 12" OF THE FACE OF THE CONCRETE END DIAPHRAGM SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FINISH COAT COLOR SHALL MATCH AMS STANDARD 595A COLOR NUMBER 20045 OF FEDERAL STANDARD 595B. THE STEEL DIAPHRAGM SHALL NOT BE PAINTED.

LIMITS OF PAINTED WEATHERING STEEL

SCALE: ½" = 1'–0"



PLAN

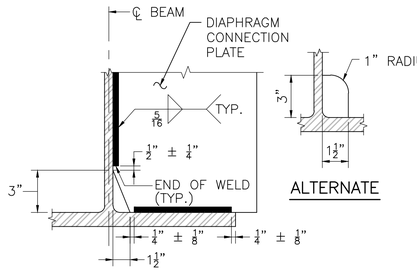


NOTE:

DRIP BARS SHALL BE LOCATED ON THE LOW END OF EACH SPAN FOR ALL STRINGERS.

DRIP BAR DETAIL

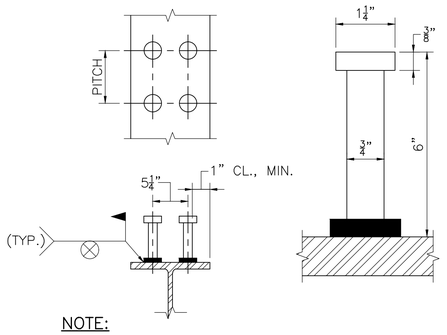
SCALE: 1" = 1'–0"



ALTERNATE

STIFFENER AND CONNECTION PLATE CLIP DETAILS

NOT TO SCALE

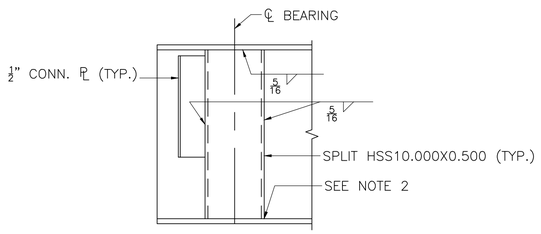


NOTE:

⅞" ø STUDS MAY BE SUBSTITUTED FOR ¾" ø STUDS BY ADJUSTING THE PITCH TO PROVIDE AN EQUIVALENT CROSS–SECTIONAL AREA PER FOOT.

STUD SHEAR CONNECTORS

NOT TO SCALE



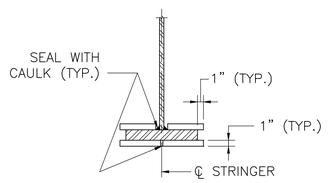
ELEVATION

NOTES:

1. ALL BEARING STIFFENERS SHALL BE PLUMB.
2. BEARING STIFFENERS AT TENSION FLANGE CAN BE WELDED WITH A COMPLETE JOINT PENETRATION WELD (CJP) WITH A REINFORCING FILLET OR FABRICATED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF THE STIFFENER.
3. ROUND HSS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE C.

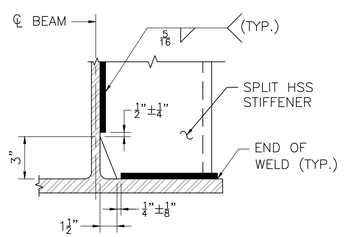
END OF STRINGER DETAIL

SCALE: 1" = 1'–0"



SECTION 8/–

SCALE: 1" = 1'–0"



ROUND BEARING STIFFENER CLIP DETAIL

NOT TO SCALE

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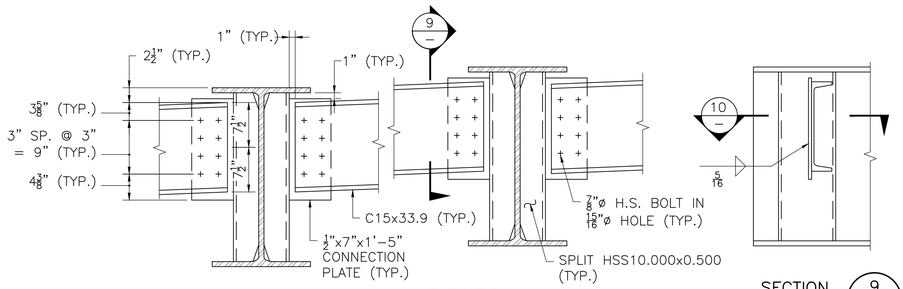
	PROJECT FILE NO. 086461		

DIAPHRAGM DETAILS

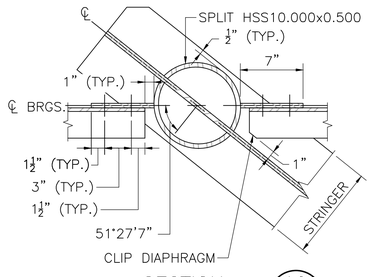


ELEVATION

SECTION 9

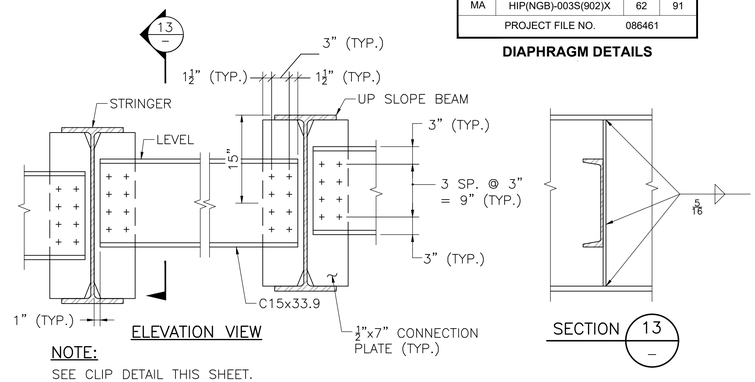
END DIAPHRAGM DETAIL (D-1)

SCALE: 1" = 1'-0"



SECTION 10

SCALE: 1½" = 1'-0"



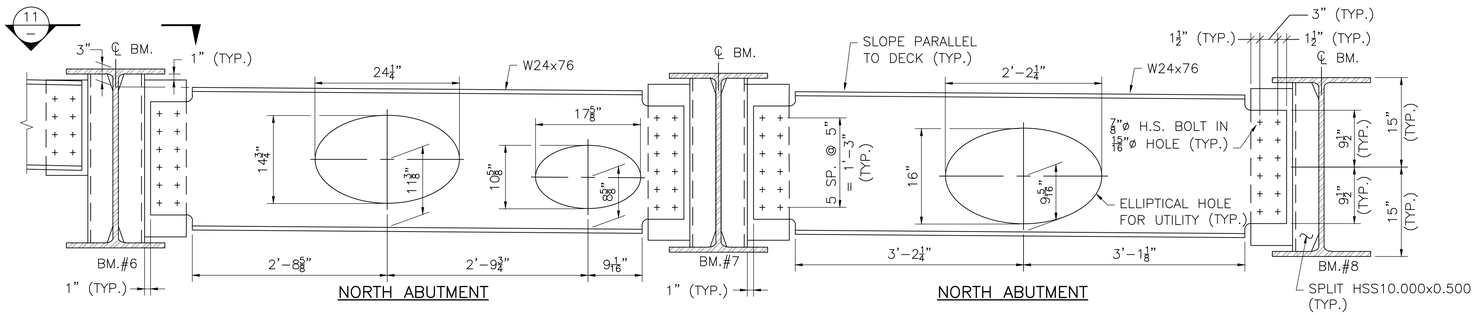
ELEVATION VIEW

SECTION 13

NOTE:
SEE CLIP DETAIL THIS SHEET.

INTERMEDIATE DIAPHRAGM DETAILS (D-4)

SCALE: 1" = 1'-0"



NORTH ABUTMENT

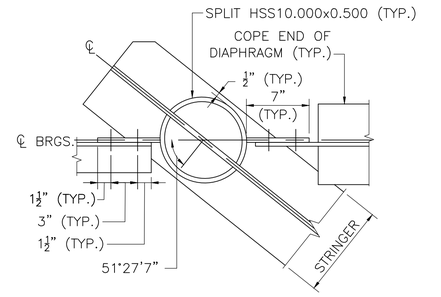
END DIAPHRAGM AT GAS LINE UTILITY BAY (D-2)

SCALE: 1" = 1'-0"

NORTH ABUTMENT

END DIAPHRAGM AT WATER LINE UTILITY BAY (D-3)

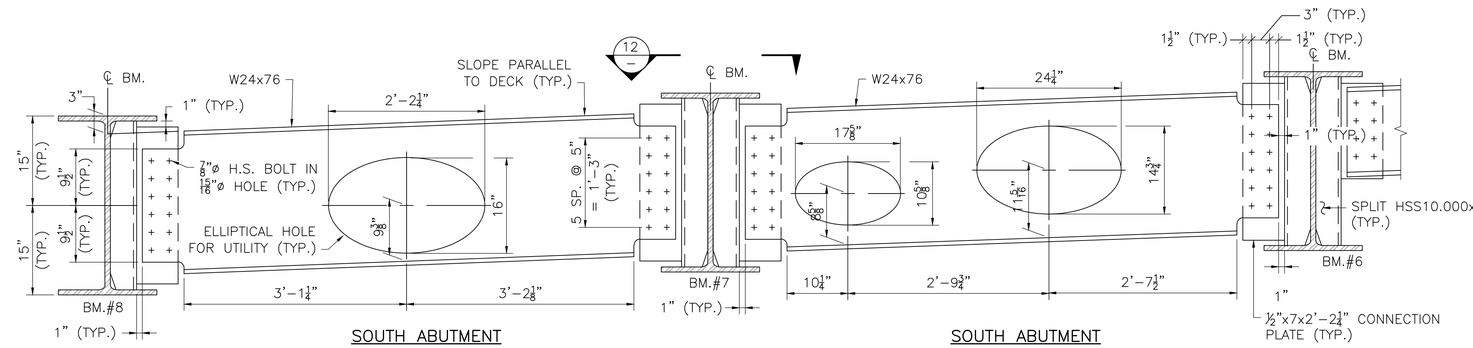
SCALE: 1" = 1'-0"



SECTION 11

SCALE: 1½" = 1'-0"

NOTE:
DIMENSIONS ARE AT FRONT FACE OF DIAPHRAGMS



SOUTH ABUTMENT

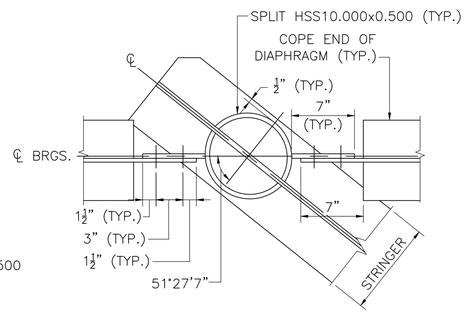
END DIAPHRAGM AT WATER LINE UTILITY BAY (D-3)

SCALE: 1" = 1'-0"

SOUTH ABUTMENT

END DIAPHRAGM AT GAS LINE UTILITY BAY (D-2)

SCALE: 1" = 1'-0"



SECTION 12

SCALE: 1½" = 1'-0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

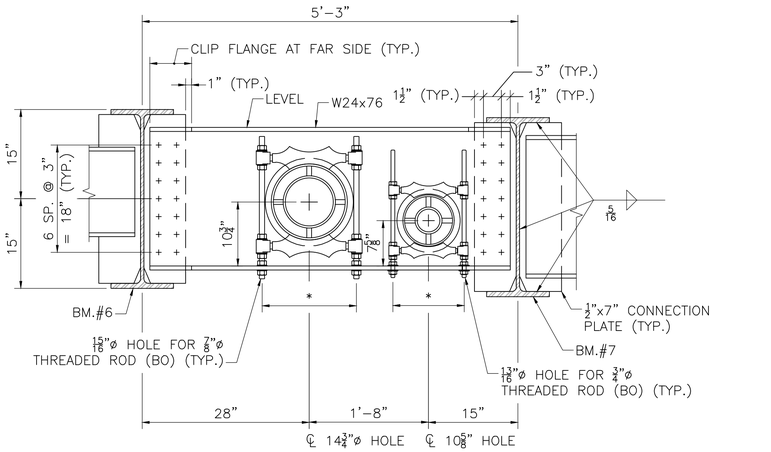
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	63	91
	PROJECT FILE NO. 086461		

UTILITY SUPPORT AND FIELD SPLICE DETAILS

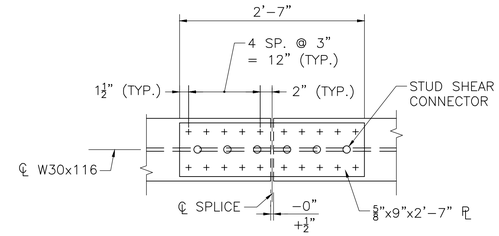


ELEVATION VIEW

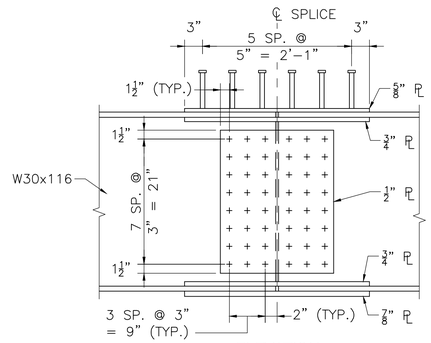
UTILITY SUPPORT DETAIL (U-1)

SCALE: 1" = 1'-0"

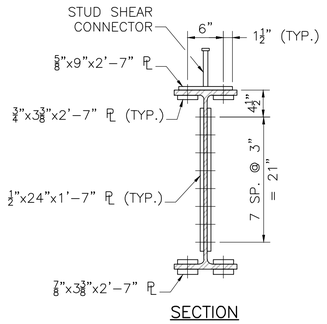
* HOLE SPACING TO BE DETERMINED BY NATIONAL GRID



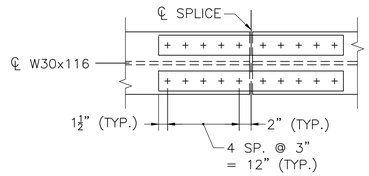
TOP FLANGE



ELEVATION



SECTION

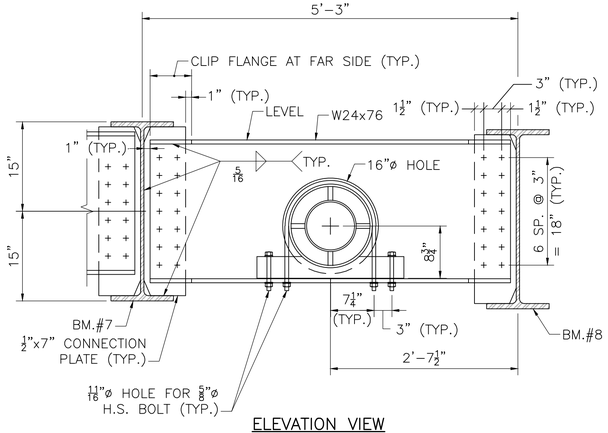


BOTTOM FLANGE

1. BOLTED FIELD SPLICES SHALL BE CONSIDERED SLIP-CRITICAL CONNECTIONS WITH CLASS B FAYING SURFACES.
2. + DENOTES ⅞" ø ASTM A325 HIGH STRENGTH BOLT IN 15/16" ø HOLE.
3. THICKNESS DIFFERENCES OF 1/16" OR LESS DO NOT REQUIRE FILLER PLATES. FILLER PLATES SHALL CONFORM TO AASHTO M 270 GRADE 50W OR ASTM A606.
4. ONE ROW OF STUD SHEAR CONNECTORS SHALL BE PLACED ALONG THE CENTERLINE OF THE TOP FLANGE SPLICE PLATE.

BOLTED FIELD SPLICE DETAILS

SCALE: 1" = 1'-0"



ELEVATION VIEW

UTILITY SUPPORT DETAIL (U-2)

SCALE: 1" = 1'-0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	64	91
PROJECT FILE NO. 086461			

CAMBER TABLE

CAMBER TABLE (INCHES)

BM. NO.		SPAN NO 1											SPAN NO 2										SPAN NO 3									
		℄ BRG. S. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG. S. PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG. N. PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG. N. ABUT.
1	STEEL DL DEFLECTION	0.00	0.05	0.10	0.13	0.15	0.15	0.13	0.10	0.07	0.03	0.00	−0.01	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.01	0.00	0.03	0.07	0.10	0.13	0.15	0.15	0.13	0.10	0.05	0.00
	CONC. DL DEFLECTION	0.00	0.21	0.40	0.54	0.61	0.61	0.55	0.43	0.28	0.13	0.00	−0.06	−0.08	−0.09	−0.09	−0.09	−0.09	−0.09	−0.08	−0.06	0.00	0.13	0.28	0.43	0.55	0.61	0.61	0.54	0.40	0.21	0.00
	S.D.L. DEFLECTION	0.00	0.06	0.11	0.15	0.17	0.17	0.16	0.12	0.08	0.05	0.00	−0.02	−0.03	−0.04	−0.03	−0.03	−0.03	−0.04	−0.03	−0.02	0.00	0.05	0.08	0.12	0.16	0.17	0.17	0.15	0.11	0.06	0.00
	VERT. CURVE CAMBER	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00	0.32	0.56	0.74	0.86	0.90	0.86	0.74	0.56	0.32	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00
	TOTAL CAMBER	0.00	0.75	1.36	1.81	2.07	2.13	1.98	1.65	1.18	0.63	0.00	0.22	0.42	0.59	0.72	0.76	0.72	0.59	0.42	0.22	0.00	0.63	1.18	1.65	1.98	2.13	2.07	1.81	1.36	0.75	0.00
2 TO 5	STEEL DL DEFLECTION	0.00	0.05	0.10	0.13	0.15	0.15	0.13	0.10	0.07	0.03	0.00	−0.01	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.01	0.00	0.03	0.07	0.10	0.13	0.15	0.15	0.13	0.10	0.05	0.00
	CONC. DL DEFLECTION	0.00	0.22	0.42	0.56	0.64	0.64	0.57	0.45	0.30	0.13	0.00	−0.06	−0.09	−0.10	−0.09	−0.09	−0.09	−0.10	−0.09	−0.06	0.00	0.13	0.30	0.45	0.57	0.64	0.64	0.56	0.42	0.22	0.00
	S.D.L. DEFLECTION	0.00	0.08	0.14	0.19	0.22	0.22	0.20	0.15	0.10	0.06	0.00	−0.03	−0.04	−0.05	−0.03	−0.03	−0.03	−0.05	−0.04	−0.03	0.00	0.06	0.10	0.15	0.20	0.22	0.22	0.19	0.14	0.08	0.00
	VERT. CURVE CAMBER	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00	0.32	0.56	0.74	0.86	0.90	0.86	0.74	0.56	0.32	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00
	TOTAL CAMBER	0.00	0.77	1.41	1.87	2.14	2.21	2.04	1.70	1.21	0.65	0.00	0.21	0.41	0.58	0.71	0.75	0.71	0.58	0.41	0.21	0.00	0.65	1.21	1.70	2.04	2.21	2.14	1.87	1.41	0.77	0.00
6	STEEL DL DEFLECTION	0.00	0.05	0.10	0.13	0.15	0.15	0.13	0.10	0.07	0.03	0.00	−0.01	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.01	0.00	0.03	0.07	0.10	0.13	0.15	0.15	0.13	0.10	0.05	0.00
	CONC. DL DEFLECTION	0.00	0.26	0.49	0.65	0.74	0.74	0.67	0.53	0.34	0.15	0.00	−0.07	−0.10	−0.11	−0.11	−0.11	−0.11	−0.11	−0.10	−0.07	0.00	0.15	0.34	0.53	0.67	0.74	0.74	0.65	0.49	0.26	0.00
	S.D.L. DEFLECTION	0.00	0.10	0.19	0.25	0.29	0.29	0.26	0.20	0.13	0.08	0.00	−0.04	−0.06	−0.06	−0.04	−0.04	−0.04	−0.06	−0.06	−0.04	0.00	0.08	0.13	0.20	0.26	0.29	0.29	0.25	0.19	0.10	0.00
	VERT. CURVE CAMBER	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00	0.32	0.56	0.74	0.86	0.90	0.86	0.74	0.56	0.32	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00
	TOTAL CAMBER	0.00	0.84	1.53	2.03	2.32	2.38	2.20	1.83	1.30	0.69	0.00	0.19	0.38	0.55	0.68	0.73	0.68	0.55	0.38	0.19	0.00	0.69	1.30	1.83	2.20	2.38	2.32	2.03	1.53	0.84	0.00
7	STEEL DL DEFLECTION	0.00	0.05	0.10	0.13	0.15	0.15	0.13	0.10	0.07	0.03	0.00	−0.01	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.01	0.00	0.03	0.07	0.10	0.13	0.15	0.15	0.13	0.10	0.05	0.00
	CONC. DL DEFLECTION	0.00	0.29	0.54	0.73	0.82	0.83	0.74	0.59	0.38	0.17	0.00	−0.08	−0.11	−0.12	−0.12	−0.12	−0.12	−0.12	−0.11	−0.08	0.00	0.17	0.38	0.59	0.74	0.83	0.82	0.73	0.54	0.29	0.00
	S.D.L. DEFLECTION	0.00	0.12	0.23	0.31	0.35	0.35	0.32	0.25	0.16	0.10	0.00	−0.05	−0.07	−0.07	−0.05	−0.05	−0.05	−0.07	−0.07	−0.05	0.00	0.10	0.16	0.25	0.32	0.35	0.35	0.31	0.23	0.12	0.00
	VERT. CURVE CAMBER	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00	0.32	0.56	0.74	0.86	0.90	0.86	0.74	0.56	0.32	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00
	TOTAL CAMBER	0.00	0.89	1.62	2.16	2.46	2.53	2.33	1.93	1.36	0.72	0.00	0.17	0.36	0.52	0.66	0.71	0.66	0.52	0.36	0.17	0.00	0.72	1.36	1.93	2.33	2.53	2.46	2.16	1.62	0.89	0.00
8	STEEL DL DEFLECTION	0.00	0.05	0.10	0.13	0.15	0.15	0.13	0.10	0.07	0.03	0.00	−0.01	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.01	0.00	0.03	0.07	0.10	0.13	0.15	0.15	0.13	0.10	0.05	0.00
	CONC. DL DEFLECTION	0.00	0.24	0.44	0.59	0.67	0.67	0.60	0.47	0.31	0.14	0.00	−0.07	−0.09	−0.10	−0.10	−0.10	−0.10	−0.10	−0.09	−0.07	0.00	0.14	0.31	0.47	0.60	0.67	0.67	0.59	0.44	0.24	0.00
	S.D.L. DEFLECTION	0.00	0.16	0.29	0.39	0.44	0.45	0.40	0.32	0.21	0.13	0.00	−0.06	−0.09	−0.09	−0.07	−0.07	−0.07	−0.09	−0.09	−0.06	0.00	0.13	0.21	0.32	0.40	0.45	0.44	0.39	0.29	0.16	0.00
	VERT. CURVE CAMBER	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00	0.32	0.56	0.74	0.86	0.90	0.86	0.74	0.56	0.32	0.00	0.42	0.75	0.99	1.14	1.20	1.14	0.99	0.75	0.42	0.00
	TOTAL CAMBER	0.00	0.86	1.58	2.10	2.40	2.46	2.27	1.88	1.33	0.72	0.00	0.17	0.36	0.53	0.67	0.72	0.67	0.53	0.36	0.17	0.00	0.72	1.33	1.88	2.27	2.46	2.40	2.10	1.58	0.86	0.00

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
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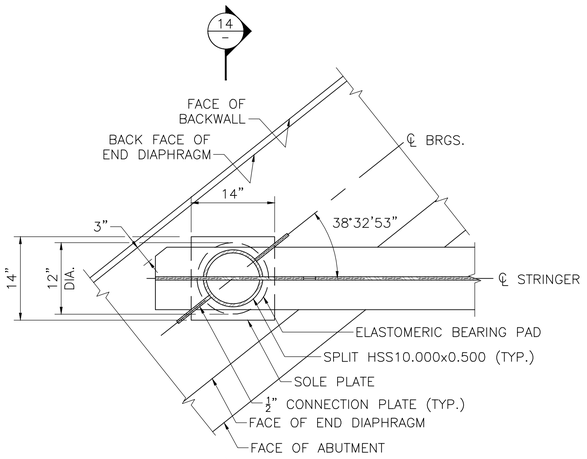
LINCOLN
CONCORD ROAD/ST 126

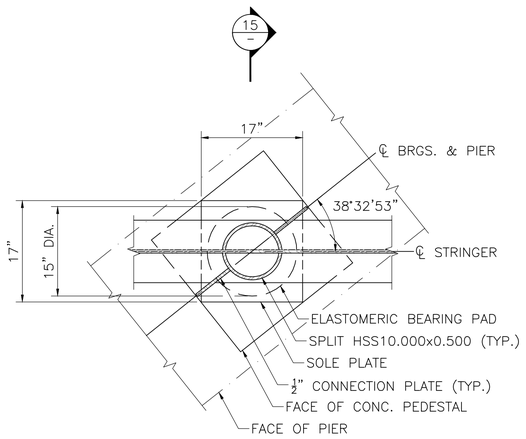
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	65	91
	PROJECT FILE NO. 086461		

BEARING DETAILS



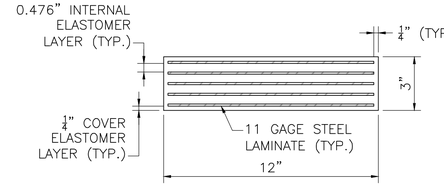
BEARING PLAN AT ABUTMENT

SCALE: 1" = 1'-0"



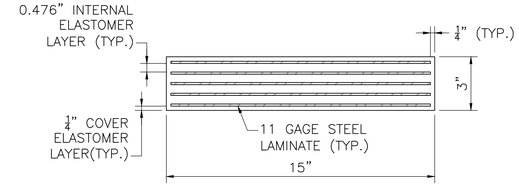
BEARING PLAN AT PIER

SCALE: 1" = 1'-0"



ELASTOMERIC BEARING PAD – ABUTMENT

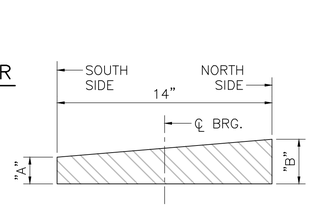
SCALE: 3" = 1'-0"



NOTE:
SEE BELOW FOR BEARING NOTES

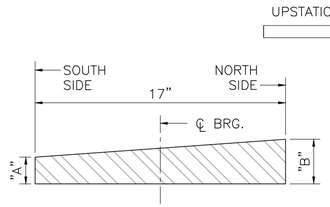
ELASTOMERIC BEARING PAD – PIER

SCALE: 3" = 1'-0"



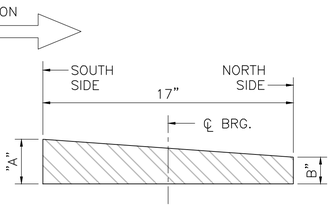
SOLE PLATE AT SOUTH ABUTMENT

NOT TO SCALE



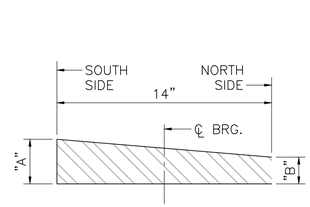
SOLE PLATE AT SOUTH PIER

NOT TO SCALE



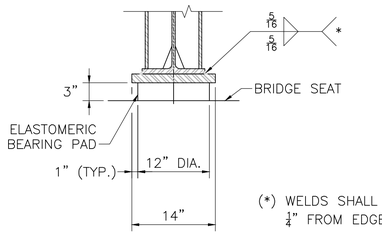
SOLE PLATE AT NORTH PIER

NOT TO SCALE



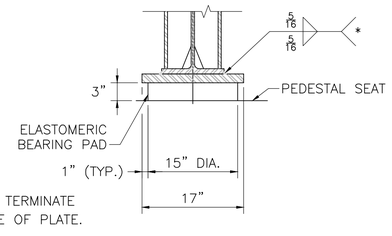
SOLE PLATE AT NORTH ABUTMENT

NOT TO SCALE



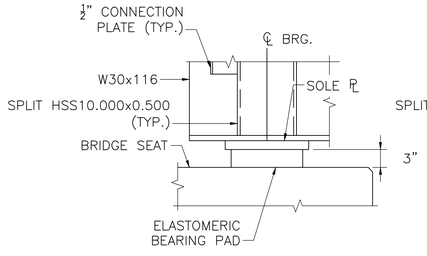
SECTION 14 –

SCALE: 1" = 1'-0"



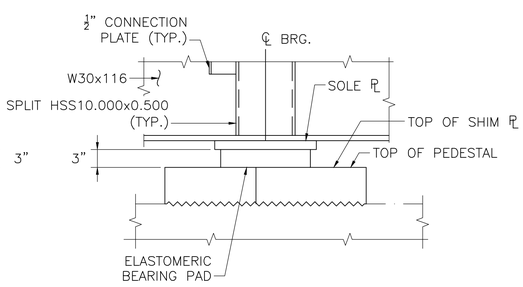
SECTION 15 –

SCALE: 1" = 1'-0"



ELEVATION

SCALE: 1" = 1'-0"



ELEVATION

SCALE: 1" = 1'-0"

NOTES:

1. THIS BEARING IS DESIGNED USING AASHTO METHOD B.
2. ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
3. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER. ALL EDGES OF STEEL LAMINATES SHALL BE GROUND SMOOTH.
4. THE COMPRESSIVE DESIGN LOAD ON THE ABUTMENT BEARING PAD IS 110 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.975 KSI.
5. THE COMPRESSIVE DESIGN LOAD ON THE PIER BEARING PAD IS 185 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 1.050 KSI.
6. THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%.
7. ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.
8. STEEL SOLE PLATE SHALL CONFORM TO AASHTO M 270 GRADE 50 OR 50W AND BE PAINTED.
9. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING BEAM ERECTION.
10. BEAMS SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 30 °F AND 90 °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.

BEAM	SOUTH ABUTMENT		SOUTH PIER		NORTH PIER		NORTH ABUTMENT	
	"A" (IN.)	"B" (IN.)	"A" (IN.)	"B" (IN.)	"A" (IN.)	"B" (IN.)	"A" (IN.)	"B" (IN.)
BM. #1	1 1/2	1 13/16	1 1/2	1 1/2	1 1/2	1 1/2	1 3/4	1 1/2
BM. #2	1 1/2	1 13/16	1 1/2	1 1/2	1 1/2	1 1/2	1 11/16	1 1/2
BM. #3	1 1/2	1 13/16	1 1/2	1 11/16	1 1/2	1 1/2	1 11/16	1 1/2
BM. #4	1 1/2	1 7/8	1 1/2	1 11/16	1 1/2	1 1/2	1 11/16	1 1/2
BM. #5	1 1/2	1 7/8	1 1/2	1 3/4	1 1/2	1 1/2	1 5/8	1 1/2
BM. #6	1 1/2	1 7/8	1 1/2	1 3/4	1 1/2	1 1/2	1 1/2	1 1/2
BM. #7	1 1/2	1 15/16	1 1/2	1 13/16	1 1/2	1 1/2	1 1/2	1 1/2
BM. #8	1 1/2	1 15/16	1 1/2	1 13/16	1 1/2	1 1/2	1 1/2	1 1/2

DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

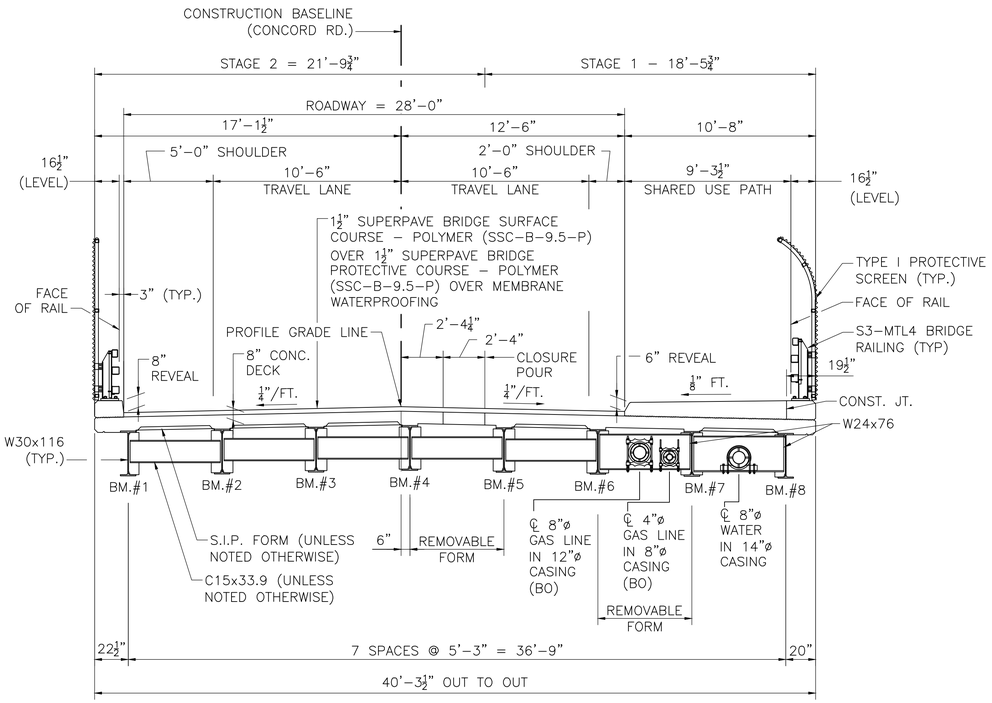
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

LINCOLN
CONCORD ROAD/ST 126

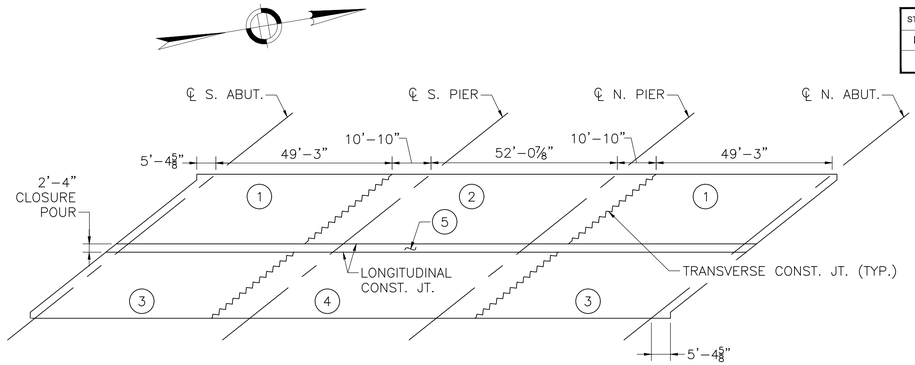
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	66	91
PROJECT FILE NO.	086461		

DECK DETAILS (1 OF 4)



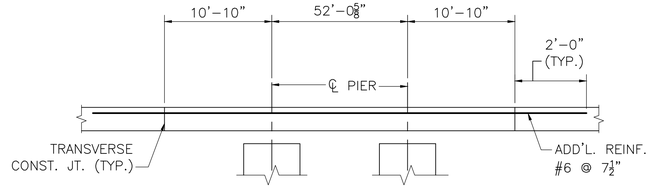
TRANSVERSE SECTION

SCALE: ¼" = 1'-0"



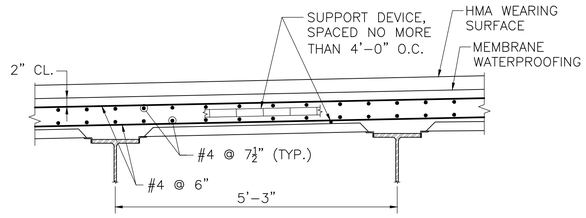
DECK POURING SEQUENCE

SCALE: 1" = 20'



SECTION AT PIER

NOT TO SCALE

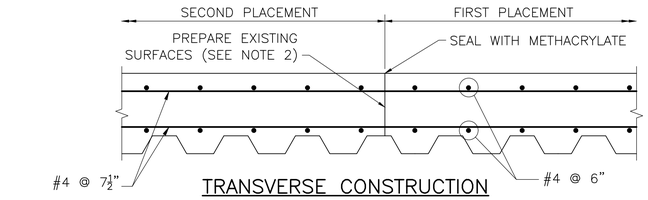


NOTES:

1. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ℄ OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCTION.
2. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.
3. 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.

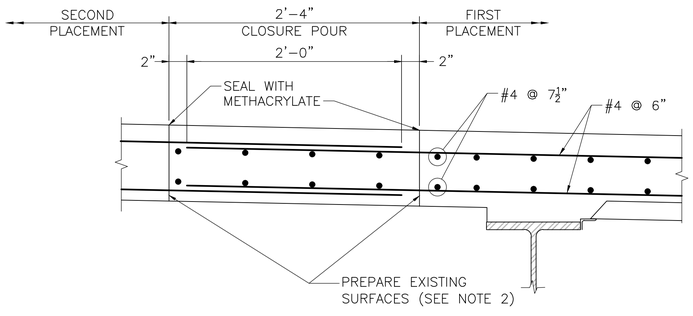
TYPICAL DECK REINFORCEMENT

SCALE: ¾" = 1'-0"



TRANSVERSE CONSTRUCTION JOINT DETAIL IN DECK SLAB

SCALE: 1½" = 1'-0"



LONGITUDINAL CONSTRUCTION JOINT DETAIL IN DECK SLAB

CONSTRUCTION JOINT NOTES:

1. BRIDGE DECK SLAB SHALL BE PLACED IN ACCORDANCE WITH THE PLACEMENT SEQUENCE SHOWN ON THE PLANS. THE CONTRACTOR MAY PLACE THE ENTIRE DECK IN ONE CONTINUOUS OPERATION WITHOUT CONSTRUCTION JOINTS WITH THE APPROVAL OF THE ENGINEER PROVIDED THAT THE INITIAL SET (Fc = 500 PSI) OF ALL CONCRETE DOES NOT OCCUR UNTIL AFTER THE COMPLETION OF THE PLACEMENT. AN APPROVED RETARDER SHALL BE USED, WHEN NECESSARY, TO RETAIN THE WORKABILITY OF THE CONCRETE. IF MULTIPLE PLACEMENTS ARE MADE, POSITIVE MOMENT REGIONS SHALL BE PLACED PRIOR TO NEGATIVE MOMENT REGIONS AND A MINIMUM OF 72 HOURS SHALL PASS BETWEEN PLACEMENTS.
2. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
3. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS MAY BE USED. THE EPOXY ADHESIVE SHALL CONFORM TO AASHTO M 235 TYPE V AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. THE CONTRACTOR MAY SUBMIT A PROPOSAL DETAILING THE ELIMINATION OF THE CLOSURE POUR FOR THE APPROVAL OF THE ENGINEER. THE PROPOSAL SHALL DETAIL THE CONTRACTOR'S MEANS AND METHODS FOR ACCURATELY CONSTRUCTING THE DECK SLAB TO THE LINES, GRADES, AND THICKNESS SHOWN ON THE PLANS WITHOUT LEAKAGE OF CONCRETE.
5. DOWEL BAR SPLICERS SHALL BE USED WHERE USE OF LAP SPLICES IS NOT FEASIBLE.

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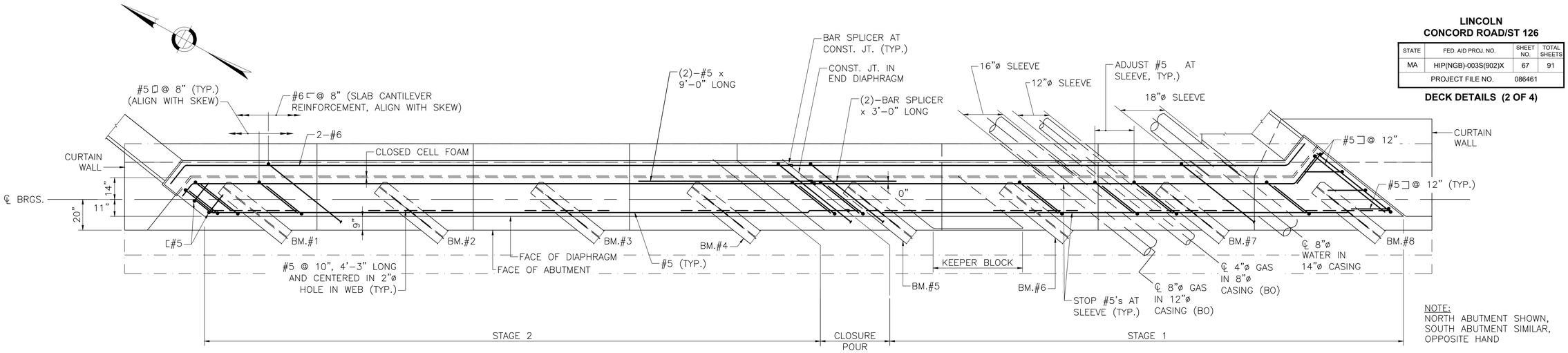
USE ONLY PRINTS OF LATEST DATE	

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	67	91
	PROJECT FILE NO. 086461		

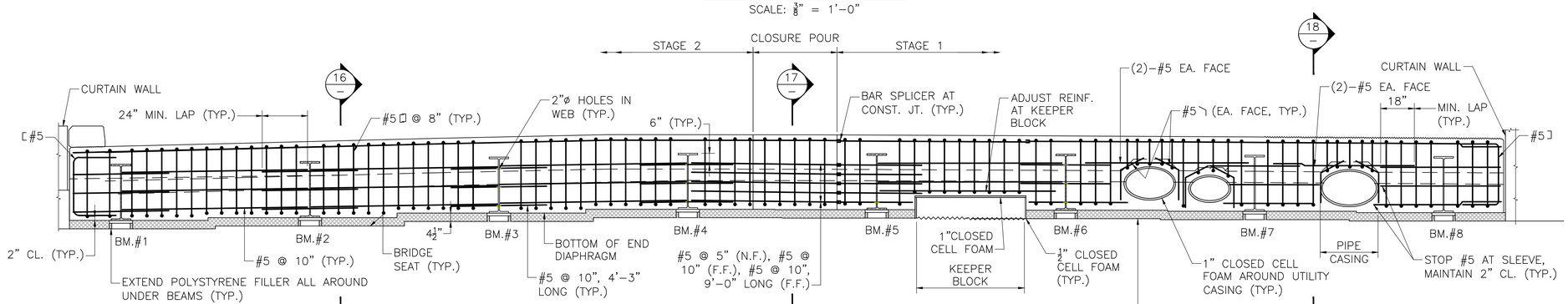
DECK DETAILS (2 OF 4)



NOTE:
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR, OPPOSITE HAND

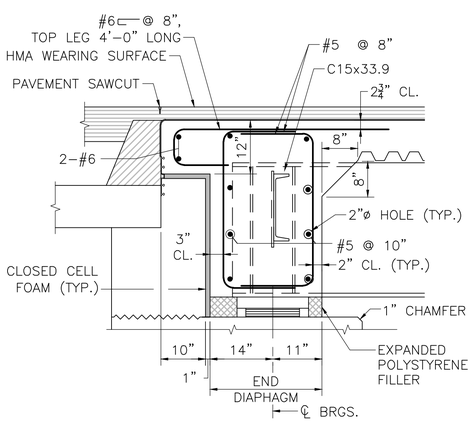
END DIAPHRAGM PLAN

SCALE: $\frac{3}{8}$" = 1'–0"

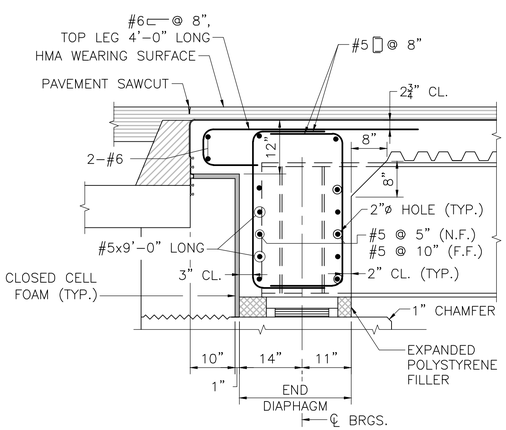


END DIAPHRAGM ELEVATION

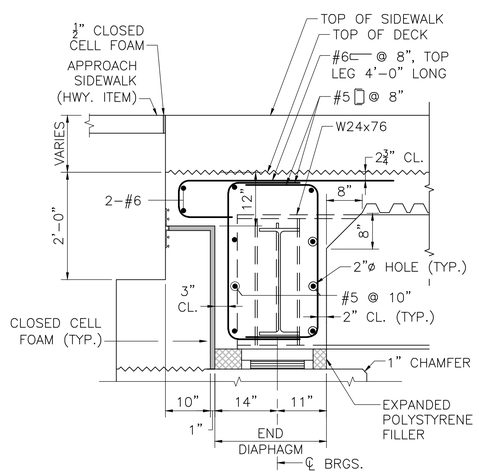
SCALE: $\frac{3}{8}$" = 1'–0"



SECTION 16
SCALE: ¾" = 1'–0"



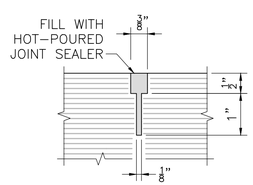
SECTION 17
SCALE: ¾" = 1'–0"



SECTION 18
SCALE: ¾" = 1'–0"

ROADWAY SECTION NOTES:

1. THE END DIAPHRAGM CONCRETE SHALL BE PLACED MONOLITHICALLY WITH THE DECK.
2. PRIOR TO PLACING THE END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESSES SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCKS, AND CURTAIN WALLS AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT ALL ABUTMENT CONCRETE IS PROPERLY LINED. END DIAPHRAGM CONCRETE MUST NOT COME IN DIRECT CONTACT WITH THE ABUTMENT CONCRETE.



PAVEMENT SAWCUT DETAIL

NOT TO SCALE

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
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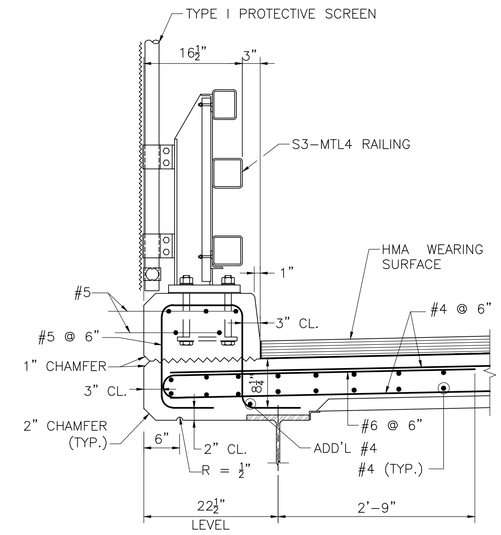
USE ONLY PRINTS OF LATEST DATE	

86461_BR67(L12002).DWG Plotted on 30-Dec-2025 1:57 PM
11-December-2025
Fifth Structural Submittal (SS)

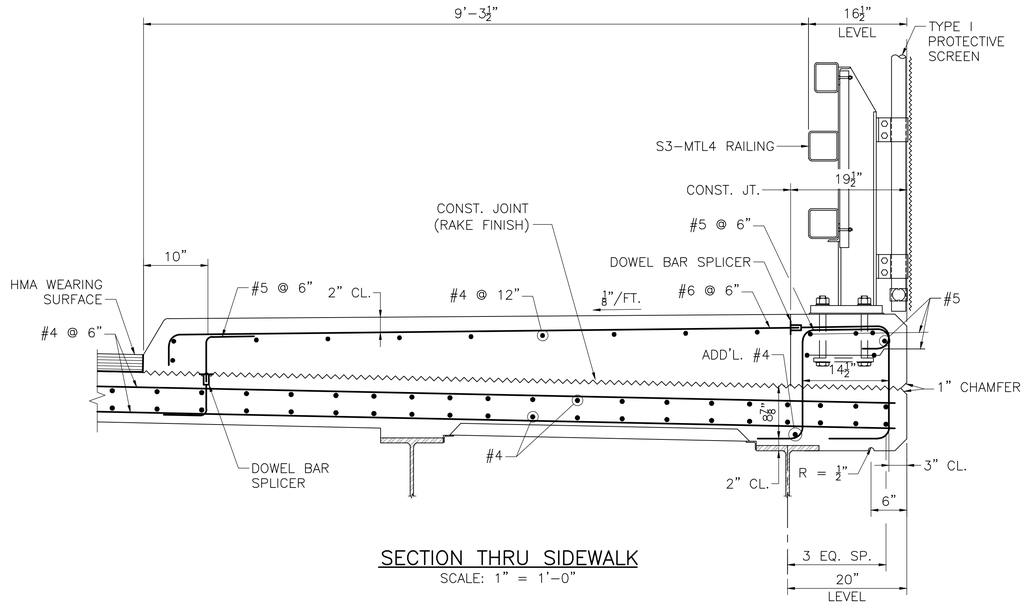
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	68	91
	PROJECT FILE NO. 086461		

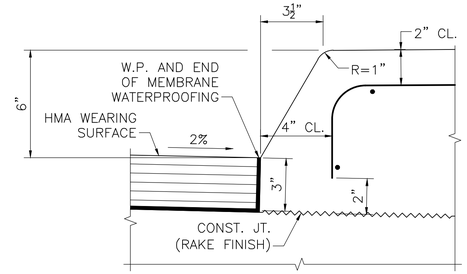
DECK DETAILS (3 OF 4)



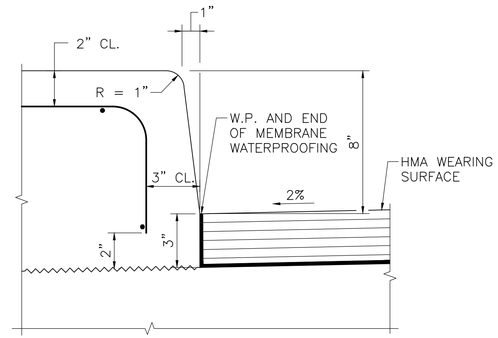
SECTION THRU SAFETY CURB
SCALE: 1" = 1'-0"



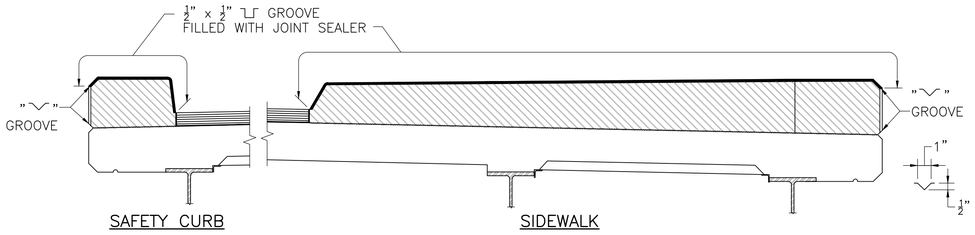
SECTION THRU SIDEWALK
SCALE: 1" = 1'-0"



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



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

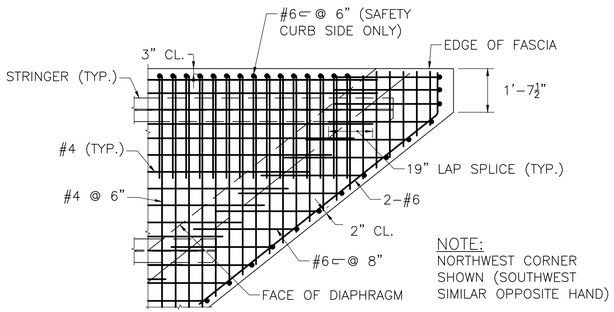


SAFETY CURB SIDEWALK

PARAFFIN JOINT 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

PARAFFIN JOINT DETAILS
SCALE: ¾" = 1'-0"



NOTE:
NORTHWEST CORNER SHOWN (SOUTHWEST SIMILAR OPPOSITE HAND)

DECK REINFORCING AT ACUTE CORNER
SCALE: ⅜" = 1'-0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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086461_BR68(L12002).DWG Plotted on 30-Dec-2025 1:58 PM
11-December-2025
Fifth Structural Submittal (S5)

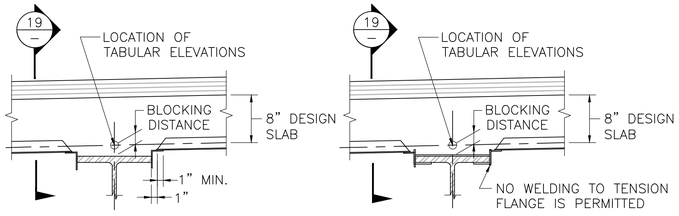
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	69	91
PROJECT FILE NO. 086461			

DECK DETAILS (4 OF 4)

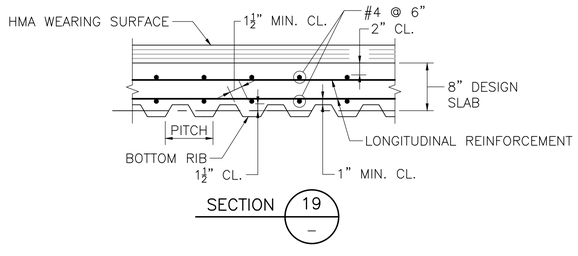
BEAM. NO.	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE																					
	SPAN NO 1 INCREASING STATIONS								SPAN NO 2 INCREASING STATIONS								SPAN NO 3 INCREASING STATIONS								
	℄ BRG. S. ABUT.	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	℄ BRG. S. PIER	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	℄ BRG. N. PIER	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	℄ BRG. N. ABUT.
1	202.17	202.35	202.52	202.66	202.78	202.87	202.94	203.00	203.05	203.09	203.13	203.16	203.18	203.19	203.19	203.18	203.17	203.16	203.13	203.09	203.03	202.95	202.84	202.71	202.56
2	202.13	202.33	202.51	202.66	202.79	202.89	202.98	203.05	203.10	203.15	203.20	203.24	203.27	203.28	203.29	203.30	203.30	203.30	203.28	203.26	203.21	203.13	203.04	202.91	202.77
3	202.09	202.29	202.48	202.65	202.79	202.90	203.00	203.08	203.15	203.20	203.26	203.31	203.35	203.37	203.39	203.41	203.42	203.43	203.42	203.41	203.37	203.31	203.22	203.11	202.98
4	202.01	202.23	202.43	202.60	202.76	202.88	202.99	203.08	203.16	203.22	203.29	203.35	203.39	203.43	203.46	203.48	203.50	203.52	203.53	203.53	203.50	203.45	203.37	203.27	203.16
5	201.73	201.96	202.17	202.35	202.52	202.65	202.77	202.87	202.96	203.04	203.11	203.18	203.24	203.28	203.32	203.35	203.38	203.42	203.44	203.44	203.42	203.38	203.32	203.23	203.12
6	201.43	201.68	201.91	202.11	202.28	202.43	202.55	202.66	202.76	202.84	202.92	203.00	203.07	203.12	203.17	203.21	203.25	203.30	203.34	203.36	203.35	203.32	203.27	203.18	203.08
7	201.13	201.39	201.63	201.85	202.03	202.19	202.32	202.44	202.54	202.63	202.72	202.81	202.89	202.95	203.01	203.06	203.11	203.18	203.23	203.26	203.27	203.25	203.20	203.13	203.03
8	200.82	201.09	201.34	201.56	201.76	201.93	202.07	202.20	202.32	202.42	202.52	202.62	202.70	202.78	202.84	202.91	202.97	203.04	203.10	203.14	203.16	203.15	203.11	203.05	202.97

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 BEAM TO THE BOTTOM OF THE SLAB AT CENTER LINE OF BEAM.



HAUNCH DETAIL AT NON–TENSION FLANGE AREA

HAUNCH DETAIL AT TENSION FLANGE AREA



STAY–IN–PLACE FORM DETAILS
NOT TO SCALE

STAY–IN–PLACE FORM NOTES:

1. FOR 2" S.I.P. FORM, SET BOTTOM OF FORM 1" BELOW ELEVATION GIVEN IN TABLE. FOR 3" S.I.P. FORM, SET BOTTOM OF FORM 1½" BELOW TABLE ELEVATIONS.
2. FORM ENDS SHALL BE CRIMPED CLOSED IN A TAPERED MANNER. SEPARATE END CLOSURE PIECES WILL NOT BE ALLOWED.
3. SUPPORT ANGLES SHALL BE PLACED IN THE "LEG DOWN" POSITION WHERE POSSIBLE. WHERE "LEG UP" POSITION IS NECESSARY, THE UPPER MOST PORTION OF THE ANGLE SHALL NOT PROJECT MORE THAN 1" ABOVE THE TOP FLANGE OR COVER PLATE. THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF ANGLES OF VARIOUS SIZES AVAILABLE ON THE SITE TO CONFORM TO THIS REQUIREMENT.
4. ALL MAIN STEEL REINFORCEMENT IN THE LOWER MAT SHALL BE CENTERED OVER THE VALLEY OF THE S.I.P. FORM.
5. CONTRACTOR SHALL DESIGN AND DETAIL ALL ELEMENTS OF THE FORMING SYSTEM AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL.
6. IN CASES WHERE STANDARD 2" OR 3" DEEP S.I.P. FORMS DO NOT SATISFY DESIGN REQUIREMENTS AN ALTERNATIVE FORMING SYSTEM CONSISTING OF DEEPER S.I.P. FORMS OR REMOVABLE FORMS SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE DESIGN THICKNESS OF THE SLAB SHALL NOT BE REDUCED.

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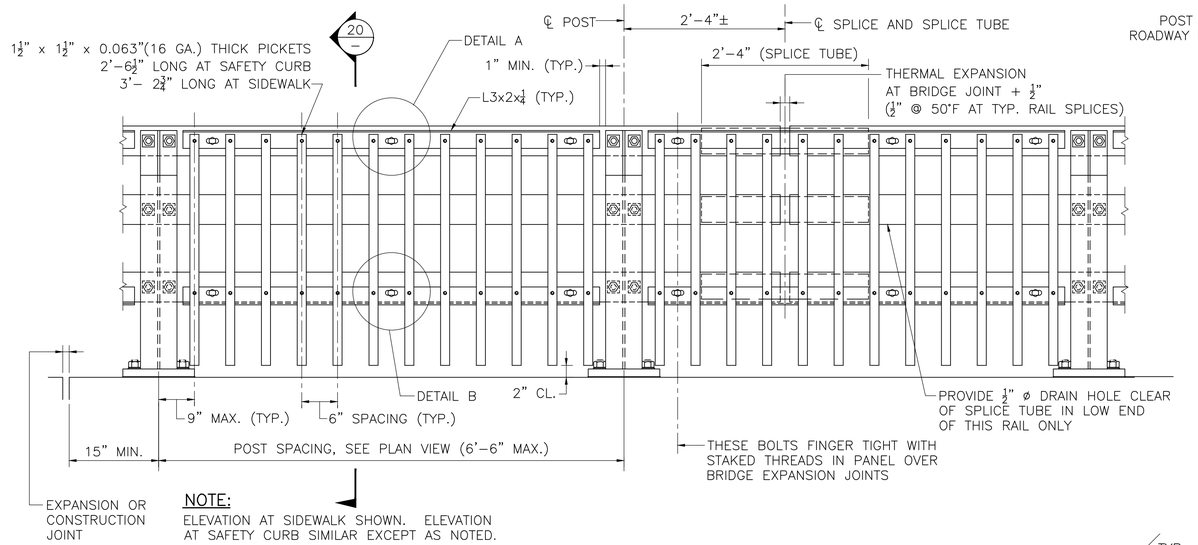
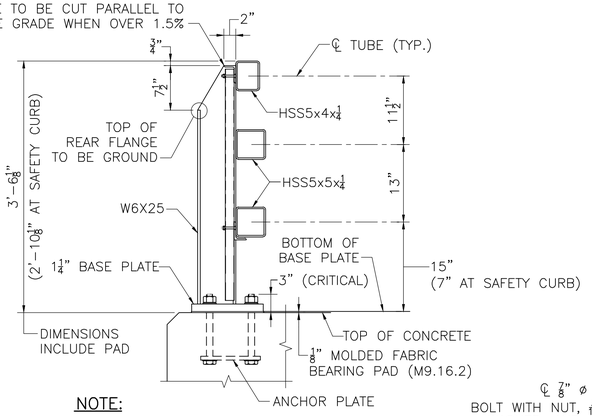


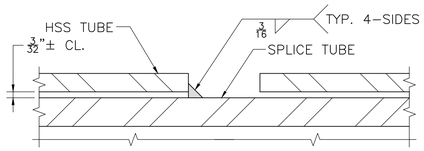
NOTE:
ELEVATION AT SIDEWALK SHOWN. ELEVATION AT SAFETY CURB SIMILAR EXCEPT AS NOTED.

BRIDGE RAILING ELEVATION
SCALE: 1" = 1'–0"

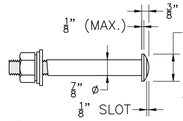


NOTE:
SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

SECTION 20 –
SCALE: 1" = 1'–0"

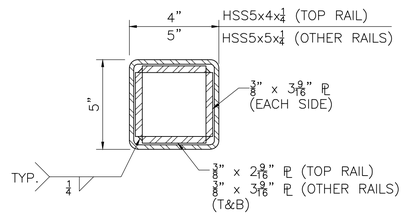


SPLICE DETAIL
FULL SIZE

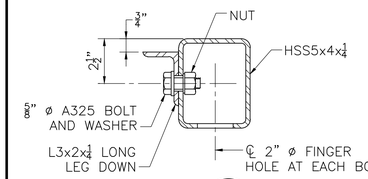


⅞" ø ROUND HEAD BOLT
SCALE: 3" = 1'–0"

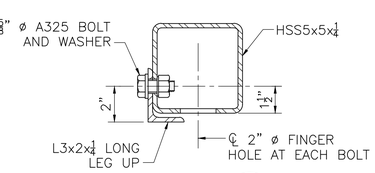
TYPICAL SPLICE
SCALE: 1" = 1'–0"



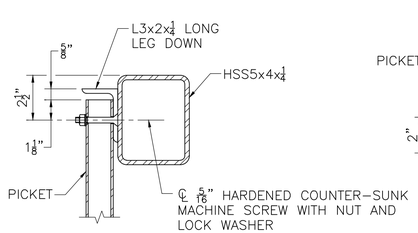
SPLICE TUBE DETAILS
SCALE: 3" = 1'–0"



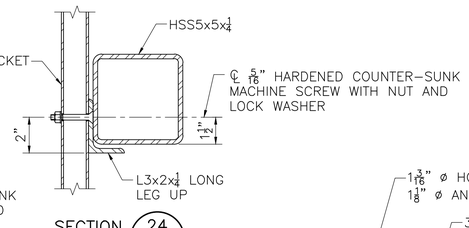
SECTION 21 –



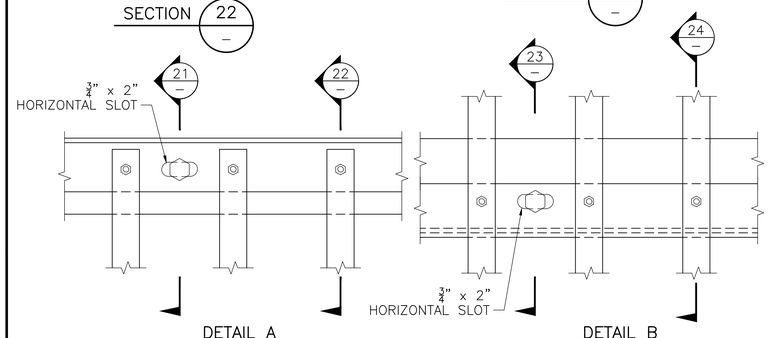
SECTION 23 –



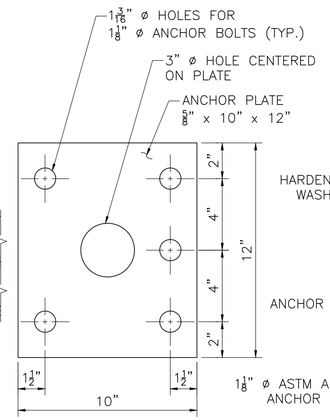
SECTION 22 –



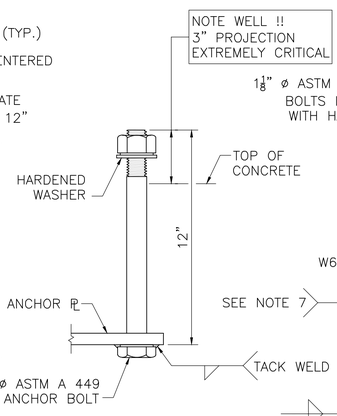
SECTION 24 –



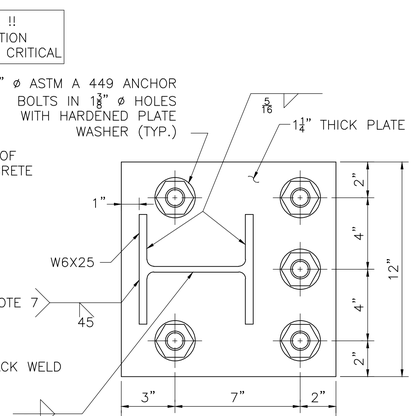
TYPICAL PICKET TO RAIL DETAILS
SCALE: 3" = 1'–0"



ANCHOR PLATE
SCALE: 3" = 1'–0"



ANCHOR BOLT
SCALE: 3" = 1'–0"

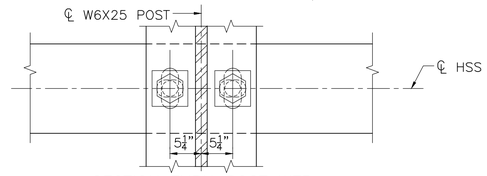


BASE PLATE
SCALE: 3" = 1'–0"

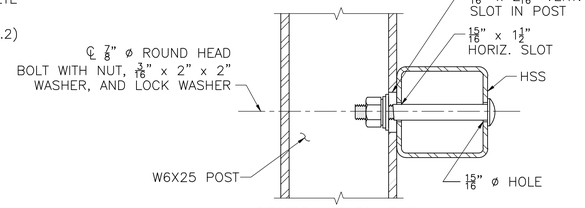
LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	70	91
	PROJECT FILE NO. 086461		

S3-MTL4 BRIDGE RAILING



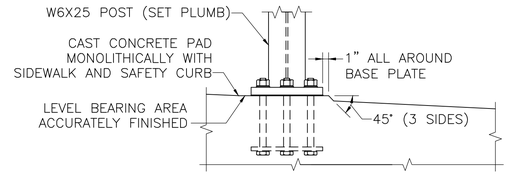
SECTION THRU POST WEB



SECTION THRU RAIL

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

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



SETTING OF POSTS (PROFILE GRADE OVER 1.5%)
SCALE: 1" = 1'–0"

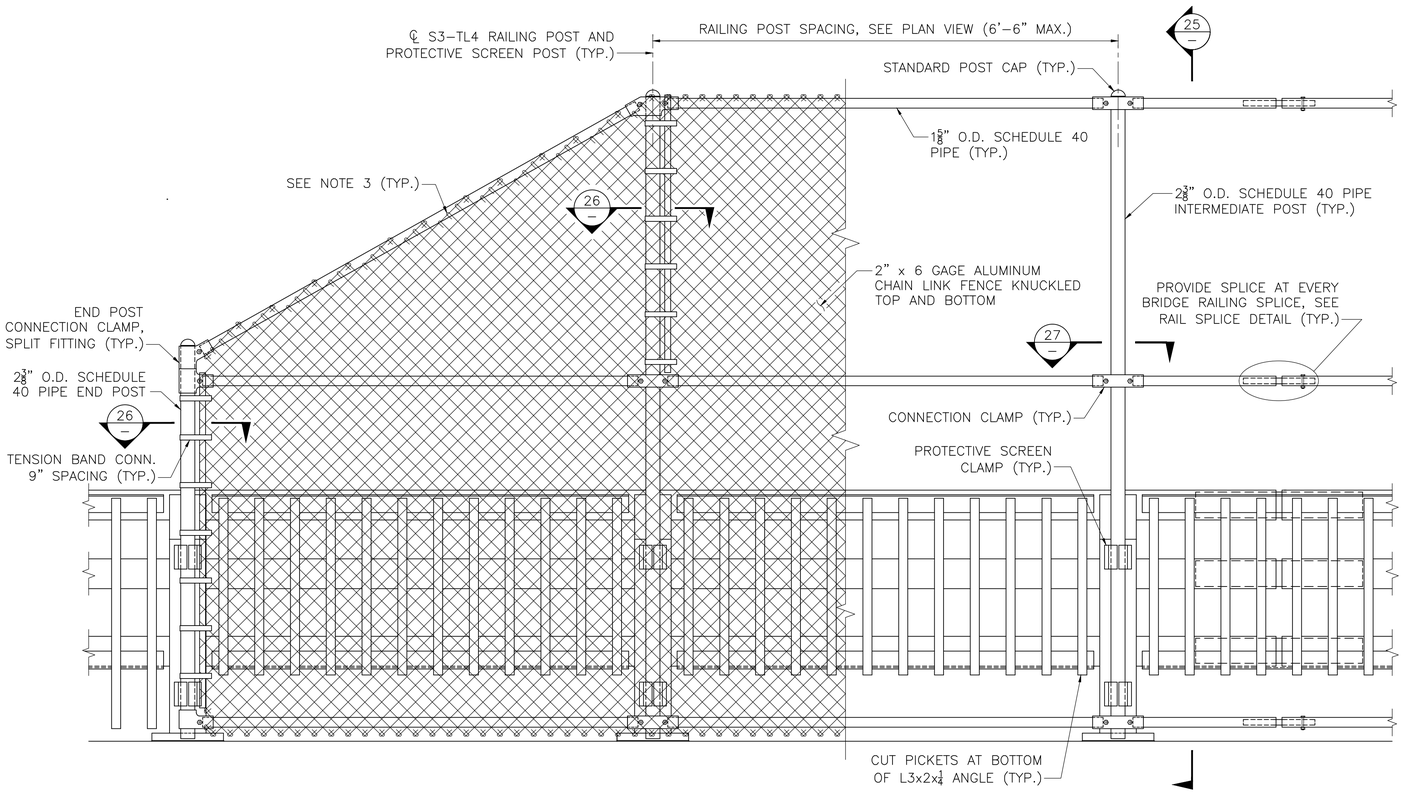
RAILING NOTES:

1. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH Fy = 36 KSI MIN. OR A 500 GRADE B.
2. ALL STEEL (EXCEPT THE ⅝" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF ⅞" ø ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN THE PANELS OVER EXPANSION JOINT.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
7. POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK–GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
8. ⅞" ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

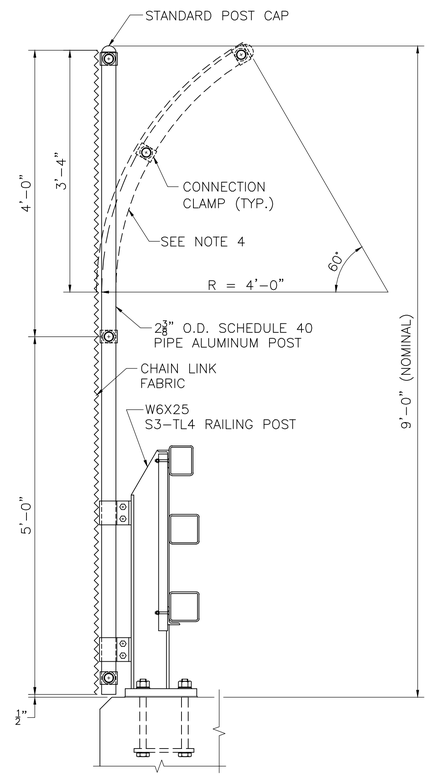
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

S3–MTL4 BRIDGE RAILING

86461_BR70(L12002).DWG Plotted on 30-Dec-2025 1:58 PM
Fifth Structural Submittal (S5) 11-December-2025



ELEVATION
SCALE: 1" = 1'–0"

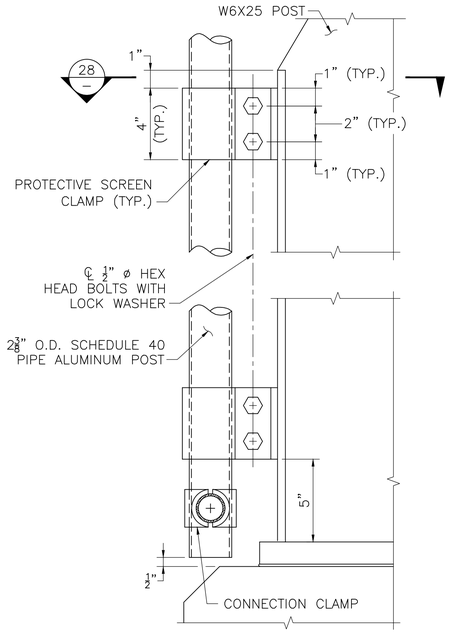


SECTION 25
SCALE: 1" = 1'–0"

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	71	91
	PROJECT FILE NO. 086461		

TYPE I PROTECTIVE SCREEN



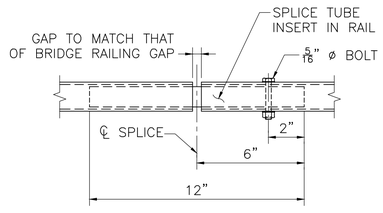
ELEVATION – PROTECTIVE SCREEN CLAMPS
SCALE: 3" = 1'–0"

GENERAL NOTES:

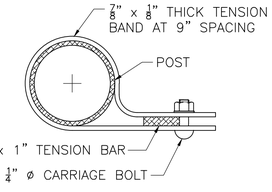
1. USE 6 GAGE TIES AT 12" O.C. TO ALL POSTS AND TOP 2 RAILS OR 3 RAILS (CURVED TOP). SPACE TIES TO BOTTOM RAIL AT 6" O.C.
2. ALL ALUMINUM, INCLUDING HARDWARE AND FABRIC, SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE BLACK (FEDERAL STD. 595B COLOR NO. 17038.
3. THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
4. THE SCREEN TREATMENT TO BE USED (CURVED OR STRAIGHT TOP) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
5. PICKETS ARE REQUIRED FOR CRASH SAFETY.

MATERIALS:

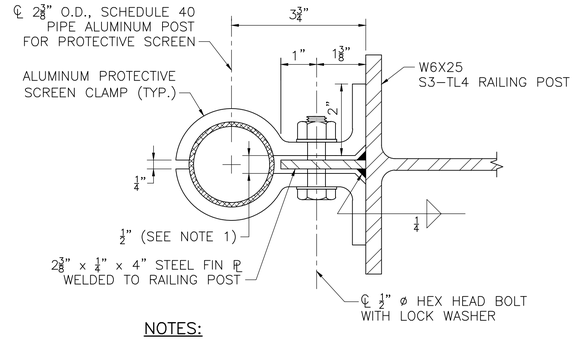
POST AND RAILS	ASTM B 221, ALLOY 6061–T6, SCHEDULE 40 PIPE
TENSION BARS, RAIL SPLICES, WASHERS, AND POST CONN. CLAMPS	ASTM B 221, ALLOY 6061–T6
FABRIC AND TIES	AASHTO M 181 TYPE III, ALLOY 6061–T89 OR T94; 6 GAGE
TENSION BANDS	ASTM B 221, ALLOY 6063–T5
BOLTS	ASTM B 316, ALLOY 2024–T4
NUTS	ASTM B 316, ALLOY 6061–T6
PROTECTIVE SCREEN CLAMPS	ASTM B 221, ALLOY 6061–T6



RAIL SPLICE
SCALE: 3" = 1'–0"



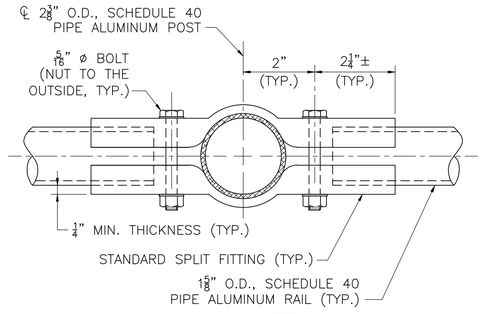
SECTION 26
TENSION BAND CONNECTION
SCALE: 6" = 1'–0"



NOTES:

1. DRAW FOR FABRICATION TO ENSURE CLAMPING ACTION.
2. SLIGHT VARIATIONS IN EXTRUSION DIMENSIONS MAY BE SUBMITTED FOR APPROVAL.

SECTION 28
SCALE: 6" = 1'–0"

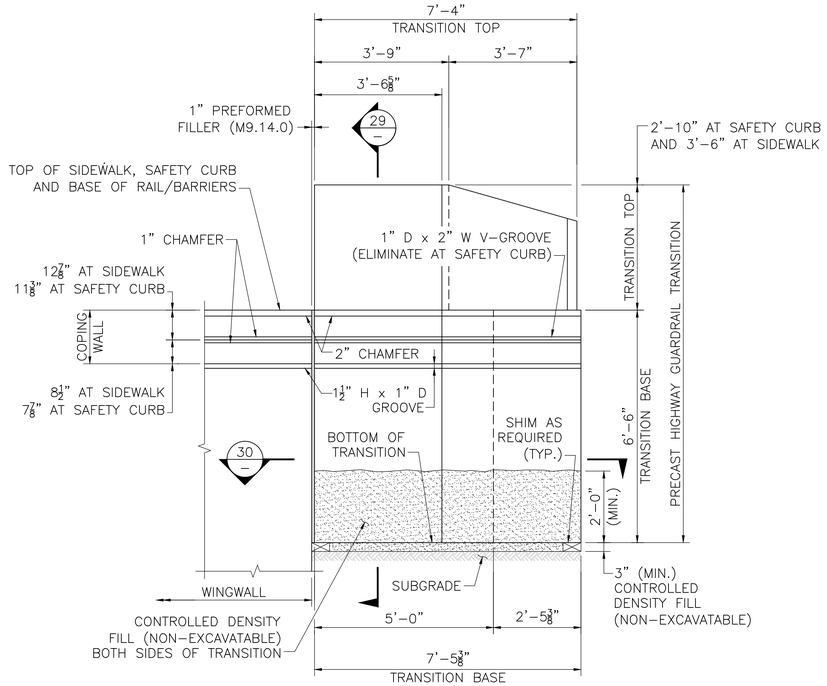


SECTION 27
POST CONNECTION CLAMP
SCALE: 6" = 1'–0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

TYPE I PROTECTIVE SCREEN

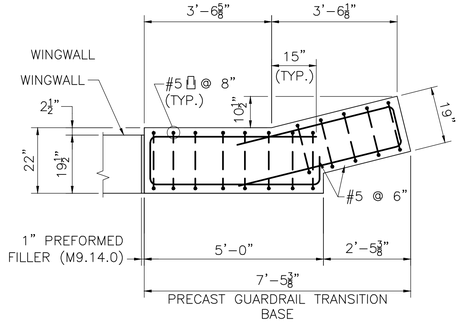


PRECAST GUARDRAIL TRANSITION ELEVATION AT U-WINGWALL

SCALE: ½" = 1'-0"

NOTES:

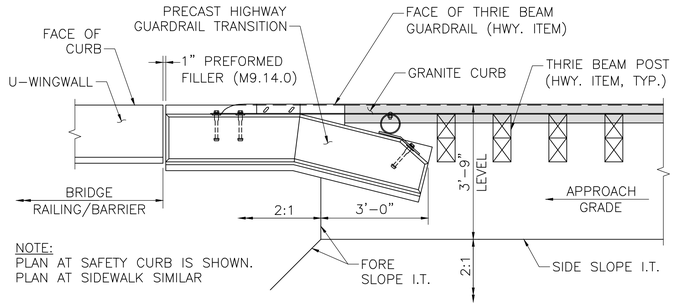
1. PRECAST GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾ IN, 685 HP CEMENT CONCRETE.
2. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
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.



NOTE:

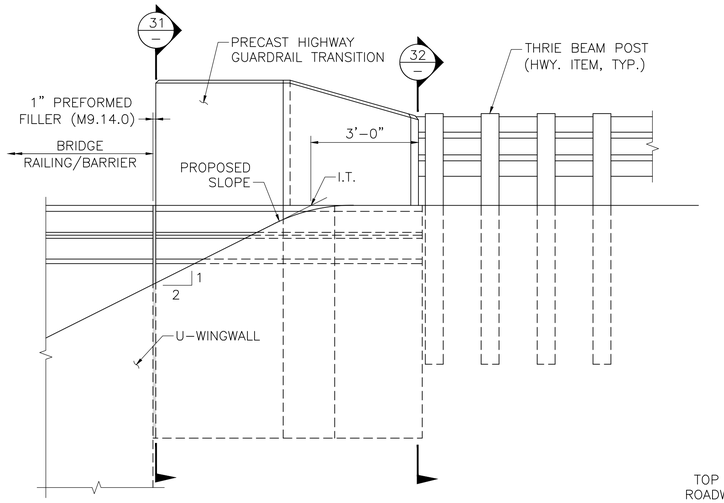
WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

SECTION 30 — SCALE: ½" = 1'-0"



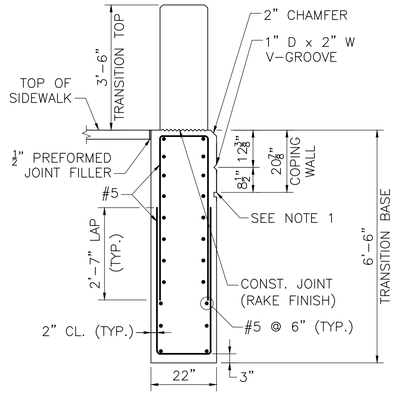
GRADING REQUIREMENTS PLAN

SCALE: ½" = 1'-0"

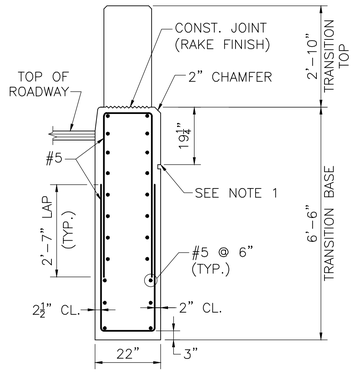


GRADING REQUIREMENTS ELEVATION

SCALE: ½" = 1'-0"



WINGWALL WITH SIDEWALK



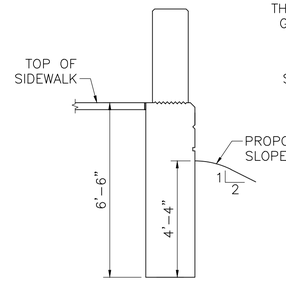
WINGWALL WITH SAFETY CURB

NOTES:

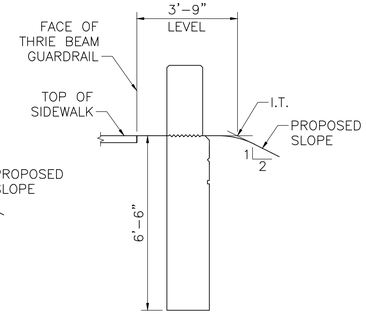
1. 1½" H x 1" D GROOVE. ALIGN WITH GROOVE OF WINGWALL.
2. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

SECTION 29 — SCALE: ½" = 1'-0"

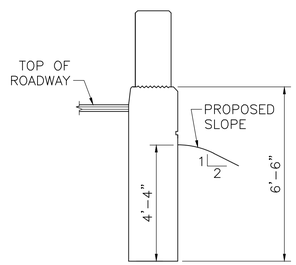
SECTION 29 — SCALE: ½" = 1'-0"



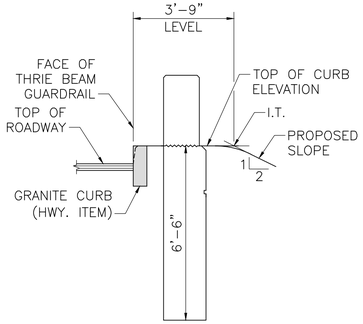
SECTION 31 — SCALE: ⅜" = 1'-0"



SECTION 31 — SCALE: ⅜" = 1'-0"



SECTION 32 — SCALE: ⅜" = 1'-0"



SECTION 32 — SCALE: ⅜" = 1'-0"

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	72	91
	PROJECT FILE NO. 086461		

HIGHWAY GUARDRAIL TRANSTION (1 OF 2)

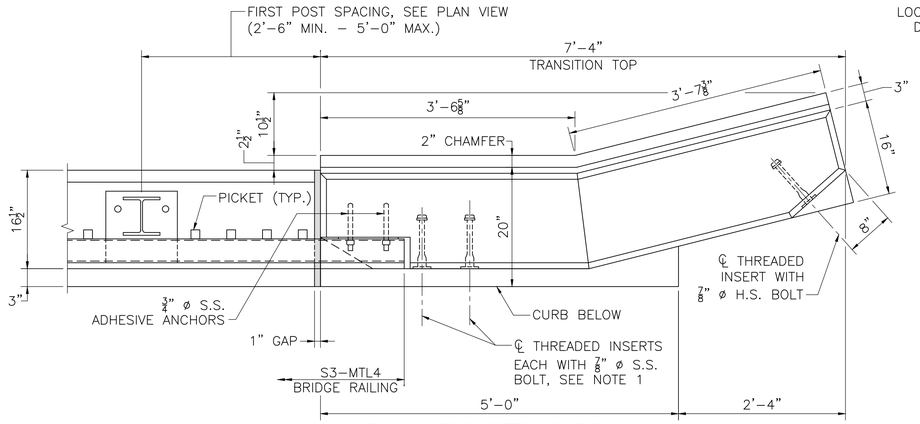
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

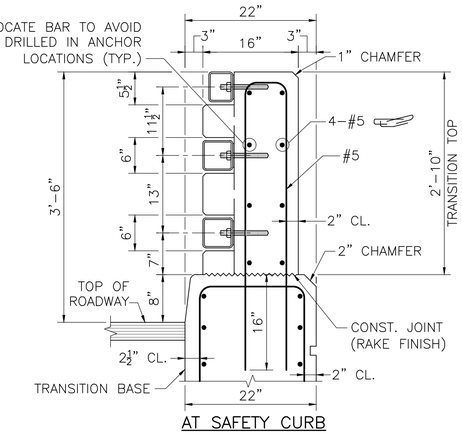
SHEET 36 OF 45 SHEETS BRIDGE NO. L-12-002 (2N2)

86461_BR72(L12002).DWG Plotted on 30-Dec-2025 1:59 PM

Fifth Structural Submittal (SS) 11-December-2025

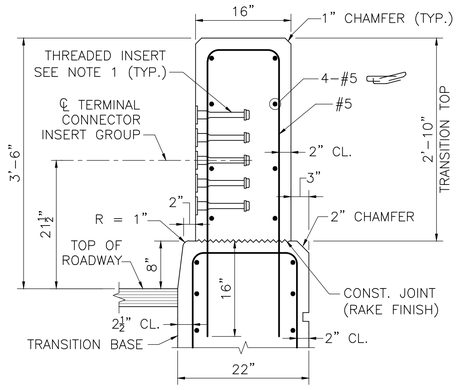


PLAN AT SAFETY CURB
SCALE: 1" = 1'-0"



AT SAFETY CURB

SECTION 34
SCALE: 1" = 1'-0"



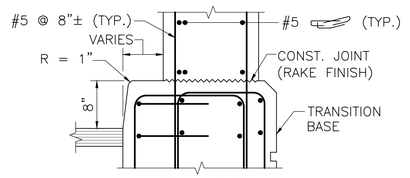
AT SAFETY CURB

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

LINCOLN
CONCORD ROAD/ST 126

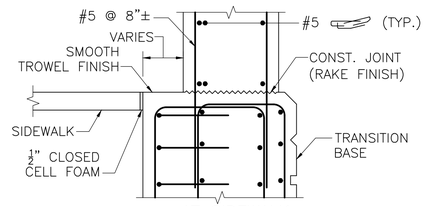
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	73	91
	PROJECT FILE NO. 086461		

HIGHWAY GUARDRAIL TRANSITION (2 OF 2)



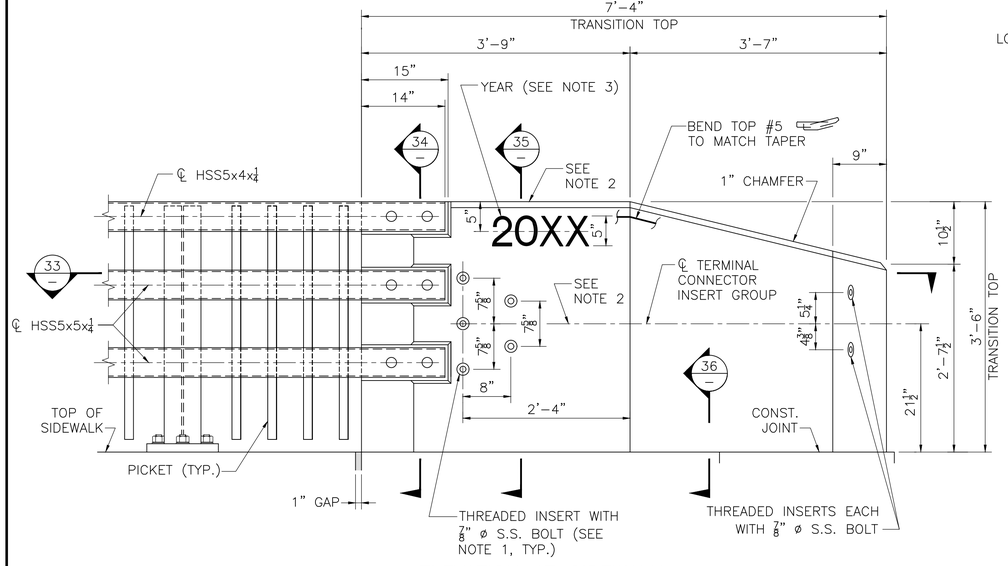
AT SAFETY CURB

SECTION 36
SCALE: 1" = 1'-0"

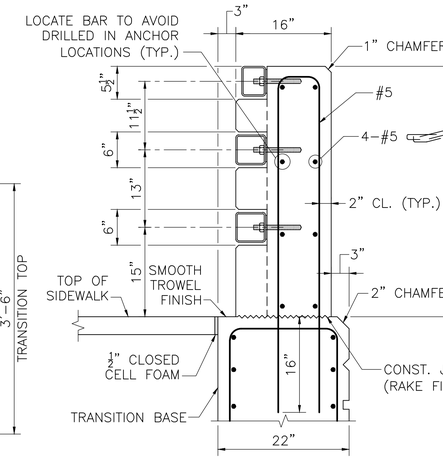


AT SIDEWALK

SECTION 36
SCALE: 1" = 1'-0"

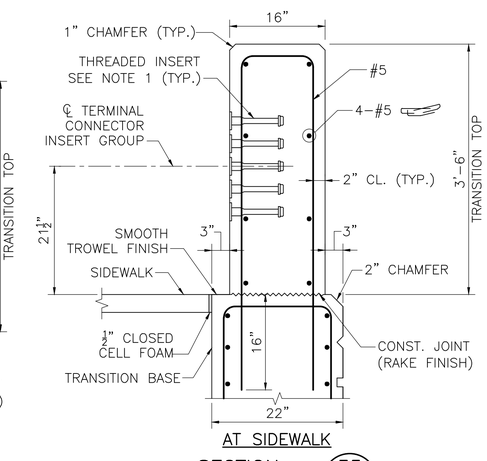


ELEVATION AT SIDEWALK
SCALE: 1" = 1'-0"



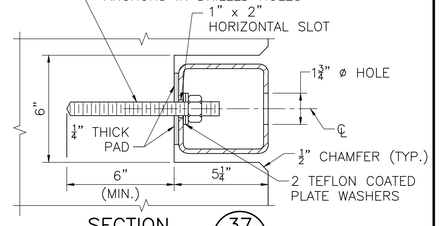
AT SIDEWALK

SECTION 34
SCALE: 1" = 1'-0"

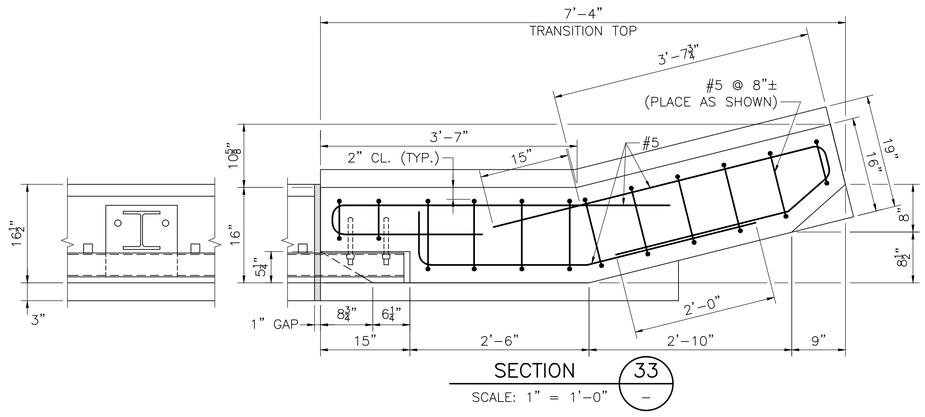


AT SIDEWALK

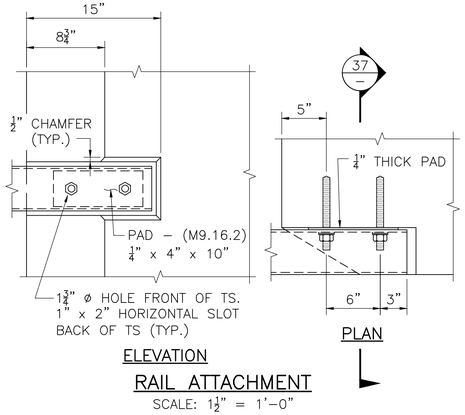
SECTION 35
SCALE: 1" = 1'-0"



SECTION 37
SCALE: 1" = 1'-0"



SECTION 33
SCALE: 1" = 1'-0"



ELEVATION

PLAN

RAIL ATTACHMENT
SCALE: 1½" = 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 ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF CURB SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 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 1½" 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.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

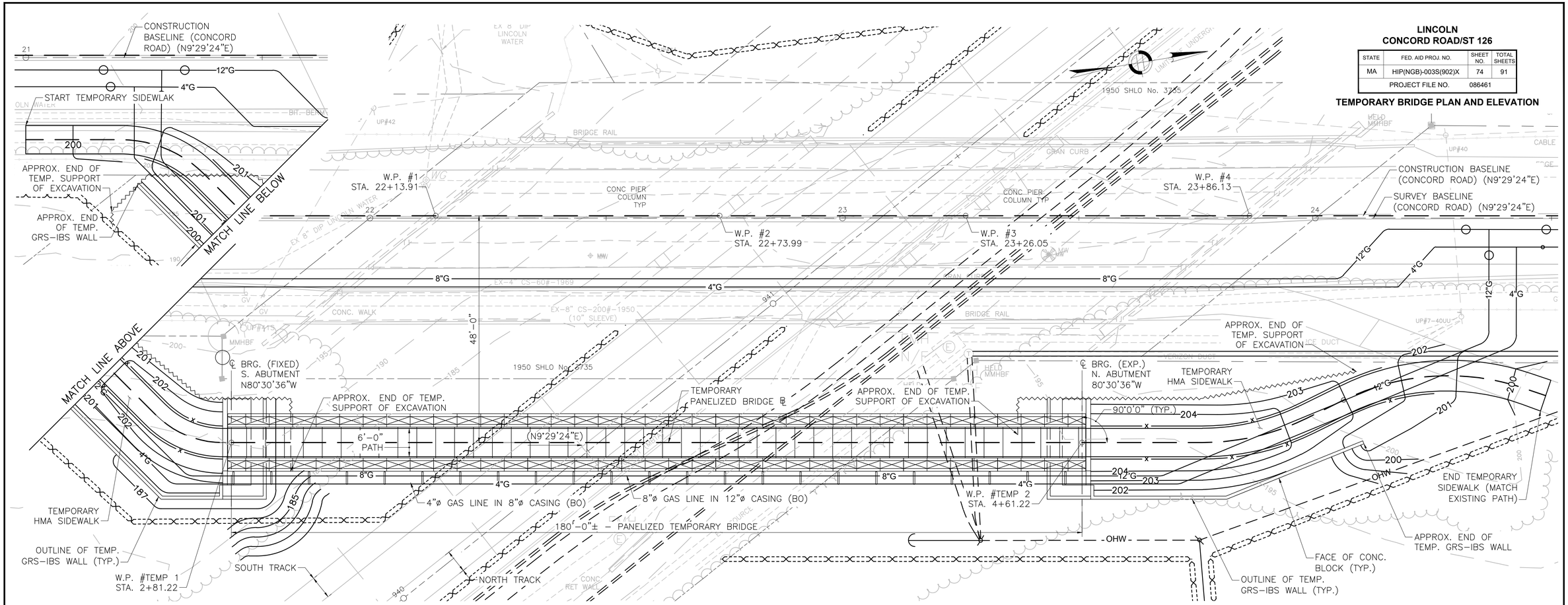
TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR S3-MTL4 RAILING

86461_BR73(L12002).DWG Plotted on 30-Dec-2025 1:59 PM
11-December-2025
Fifth Structural Submittal (SS)

LINCOLN
CONCORD ROAD/ST 126

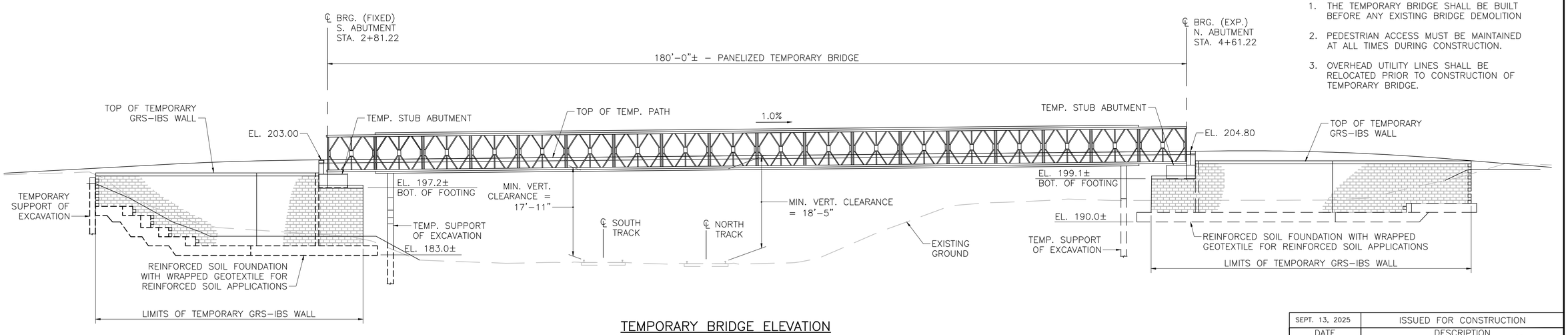
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	74	91
	PROJECT FILE NO. 086461		

TEMPORARY BRIDGE PLAN AND ELEVATION



* REFER TO KEY PLAN FOR BORING LOCATIONS

TEMPORARY BRIDGE PLAN
SCALE: 1"=10'-0"



TEMPORARY BRIDGE ELEVATION
SCALE: 1"=10'-0"

NOTES:
1. THE TEMPORARY BRIDGE SHALL BE BUILT BEFORE ANY EXISTING BRIDGE DEMOLITION
2. PEDESTRIAN ACCESS MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
3. OVERHEAD UTILITY LINES SHALL BE RELOCATED PRIOR TO CONSTRUCTION OF TEMPORARY BRIDGE.

DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

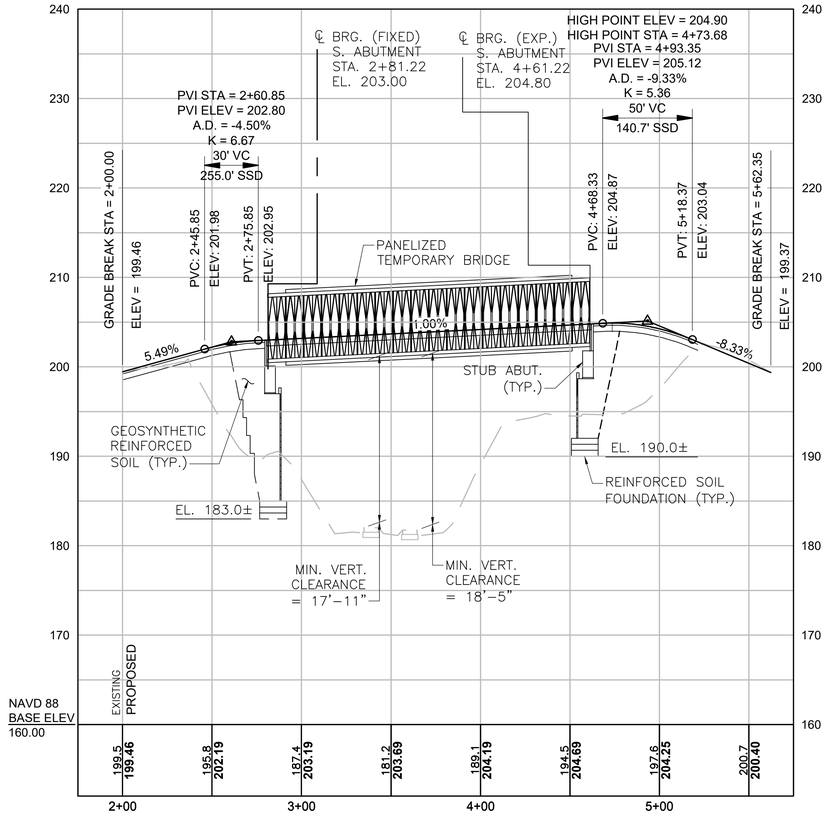
USE ONLY PRINTS OF LATEST DATE

86461_BR74(L12002).DWG Plotted on 30-Dec-2025 2:00 PM
11-December-2025
Fifth Structural Submittal (S5)

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	75	91
	PROJECT FILE NO. 086461		

TEMPORARY BRIDGE PROFILE



PROFILE ALONG TEMPORARY BRIDGE
CONSTRUCTION BASELINE
SCALE: HORIZ.=1"=40'
VERT.=1"=8'

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

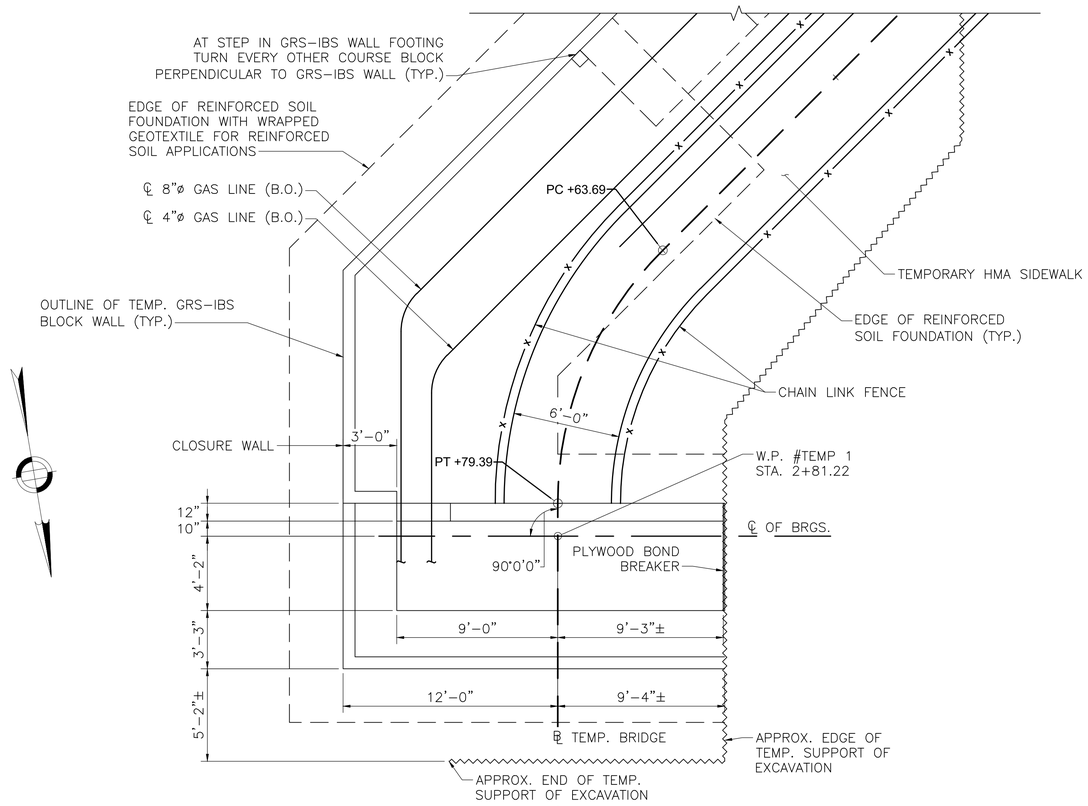
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

LINCOLN
CONCORD ROAD/ST 126

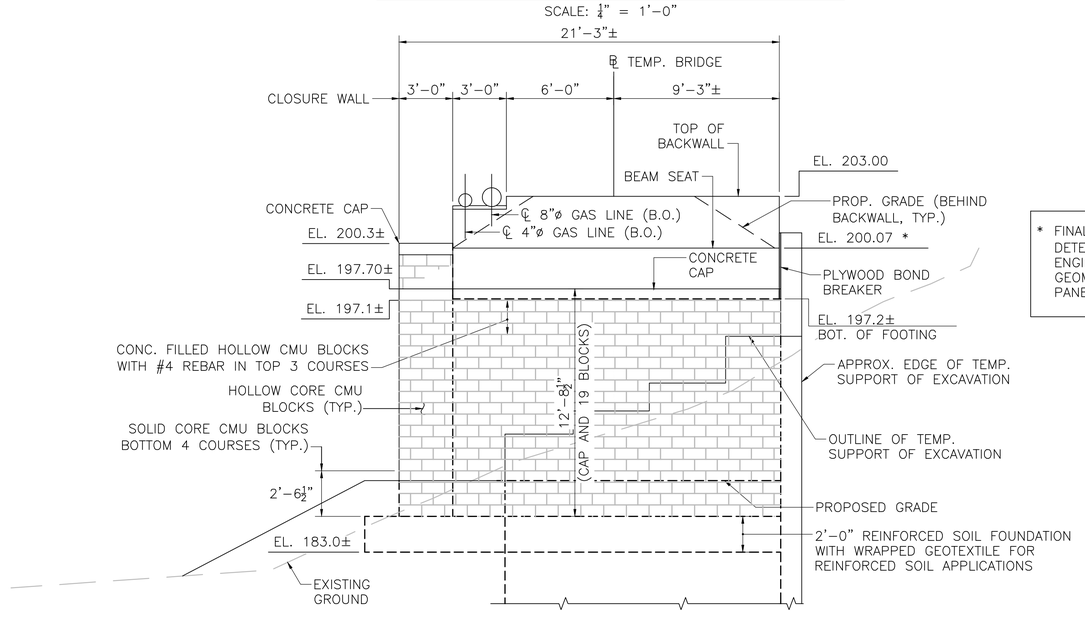
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	76	91
PROJECT FILE NO.	086461		

TEMPORARY BRIDGE SOUTH ABUTMENT PLAN AND ELEVATION



TEMPORARY BRIDGE SOUTH ABUTMENT PLAN

SCALE: ¼" = 1'-0"



* FINAL ELEVATION TO BE DETERMINED BY CONTRACTOR'S ENGINEER BASED UPON ACTUAL GEOMETRY OF TEMPORARY PANELIZED BRIDGE SELECTED

TEMPORARY BRIDGE SOUTH ABUTMENT ELEVATION

SCALE: ¼" = 1'-0"

DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

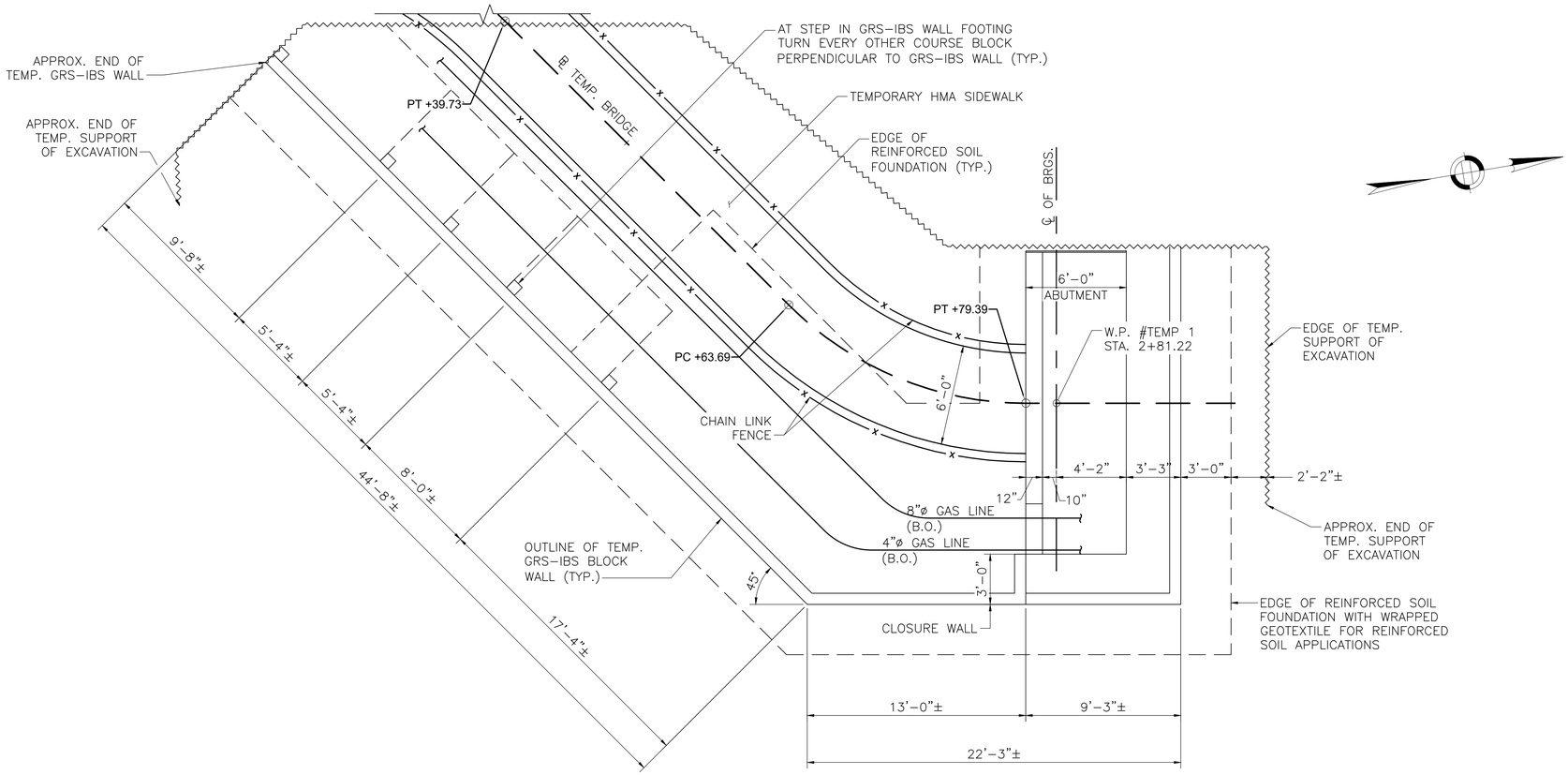
USE ONLY PRINTS OF LATEST DATE

86461_BR76(L12002).DWG Plotted on 30-Dec-2025 2:01 PM
11-December-2025
Fifth Structural Submittal (SS)

LINCOLN
CONCORD ROAD/ST 126

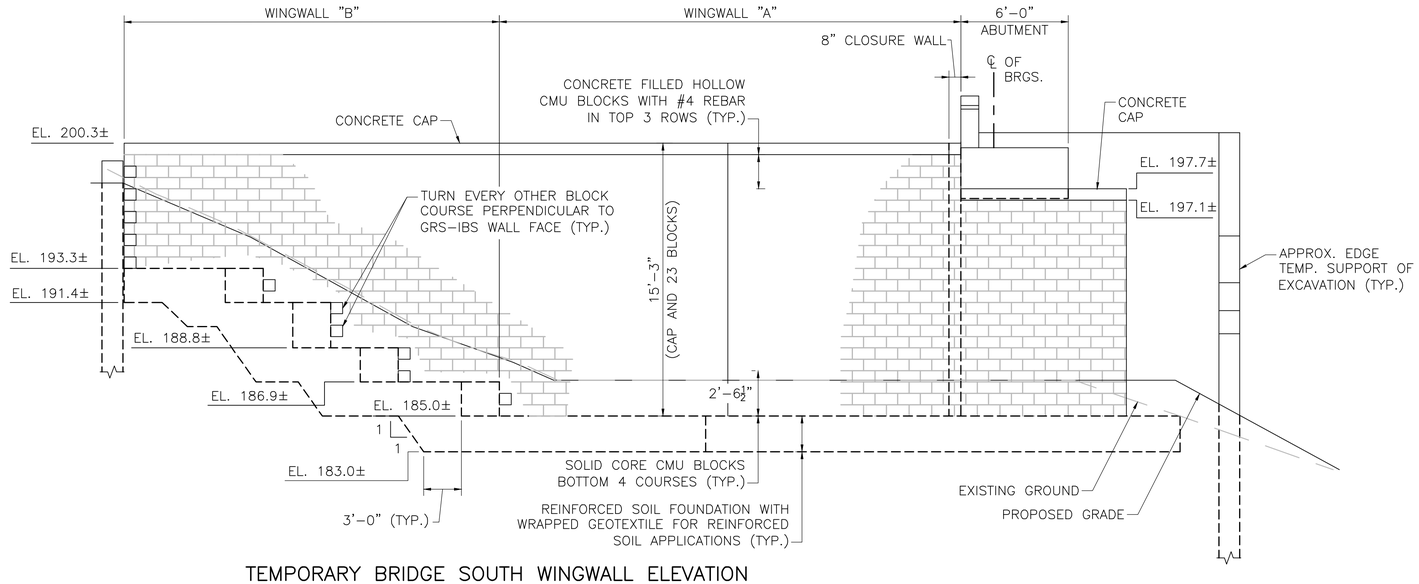
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	77	91
PROJECT FILE NO.	086461		

TEMPORARY BRIDGE SOUTH WINGWALL PLAN AND ELEVATION



TEMPORARY BRIDGE SOUTH WINGWALL PLAN

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



TEMPORARY BRIDGE SOUTH WINGWALL ELEVATION

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

NOTE:
FOR GRS-IBS WINGWALL "A" AND "B" SEE SHEET 45.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

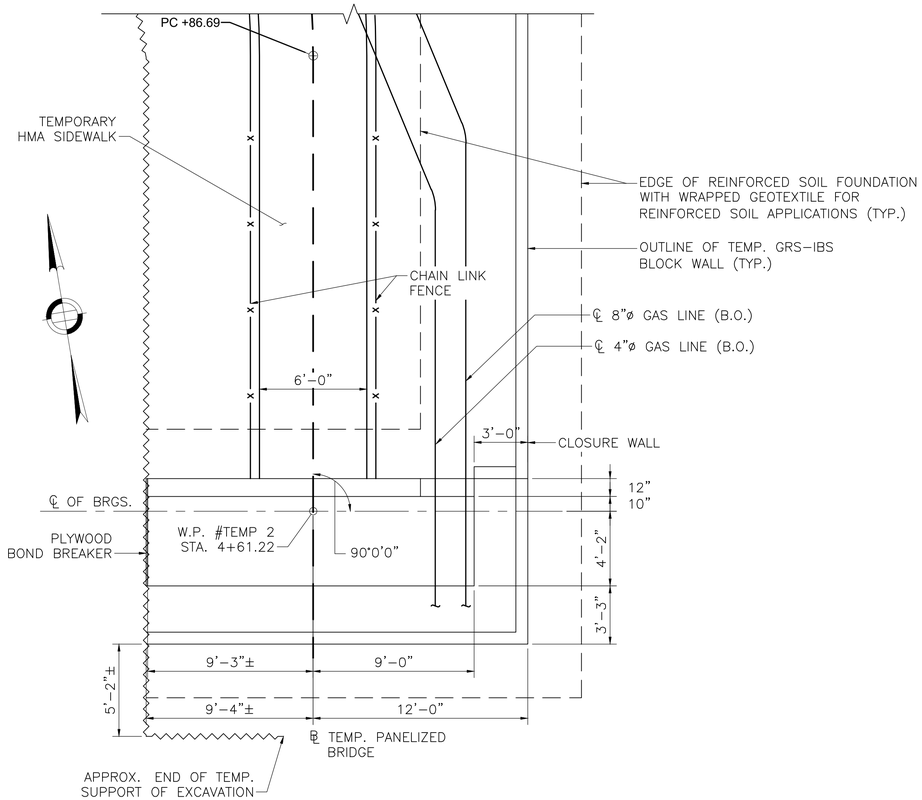
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	78	91
	PROJECT FILE NO. 086461		

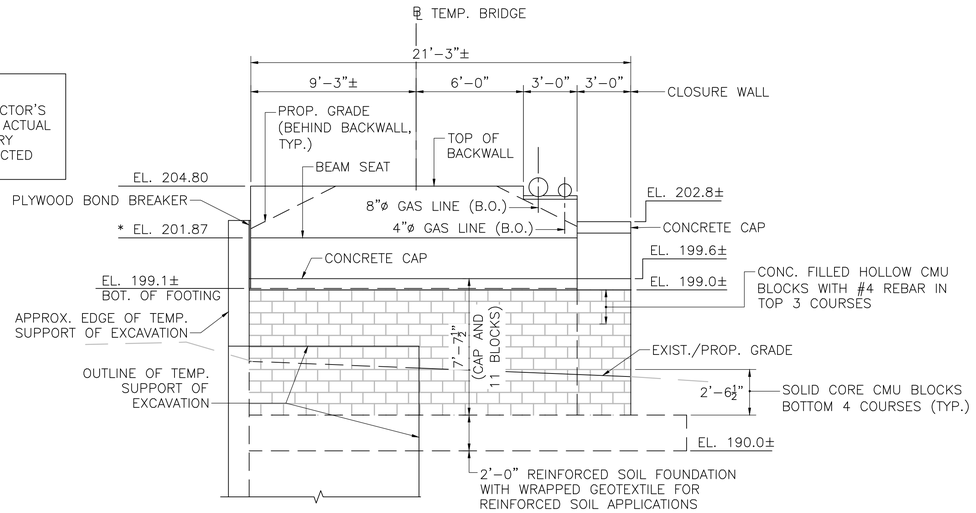
TEMPORARY BRIDGE NORTH ABUTMENT PLAN AND ELEVATION



TEMPORARY BRIDGE NORTH ABUTMENT PLAN

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

* FINAL ELEVATION TO BE DETERMINED BY CONTRACTOR'S ENGINEER BASED UPON ACTUAL GEOMETRY OF TEMPORARY PANELIZED BRIDGE SELECTED



TEMPORARY BRIDGE NORTH ABUTMENT ELEVATION

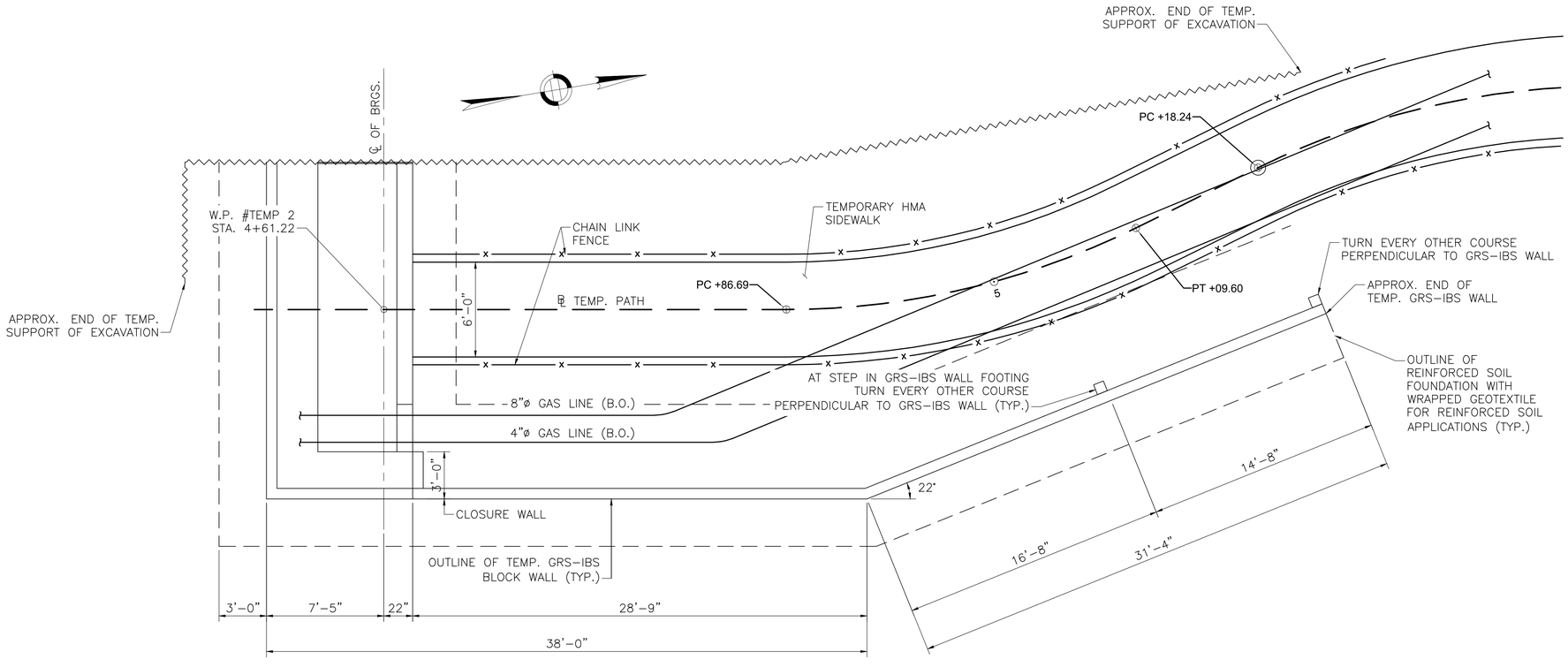
SCALE: $\frac{1}{4}$" = 1'-0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

LINCOLN
CONCORD ROAD/ST 126

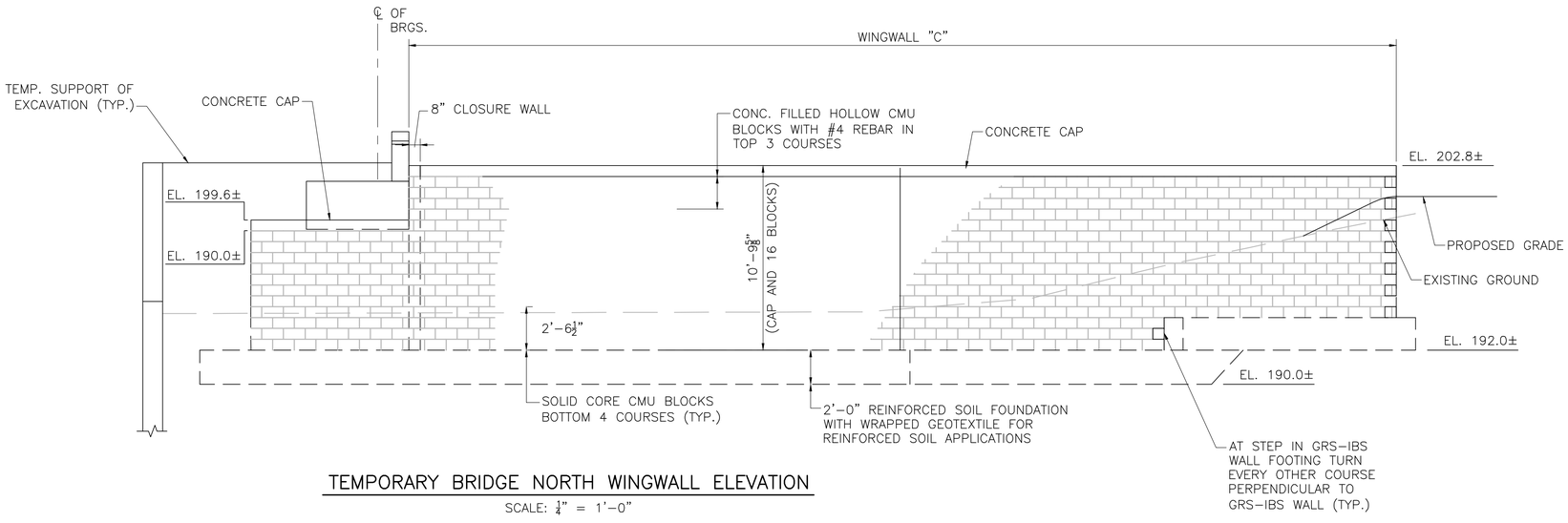
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	79	91
	PROJECT FILE NO. 086461		

TEMPORARY BRIDGE NORTH WINGWALL PLAN AND ELEVATION



TEMPORARY BRIDGE NORTH WINGWALL PLAN

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



TEMPORARY BRIDGE NORTH WINGWALL ELEVATION

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

NOTE:
FOR GRS-IBS WINGWALL "C" SEE SHEET 45.

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

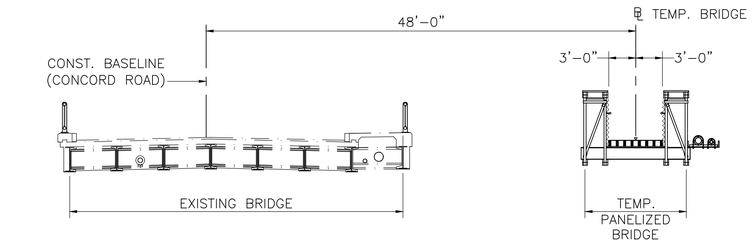
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

LINCOLN
CONCORD ROAD/ST 126

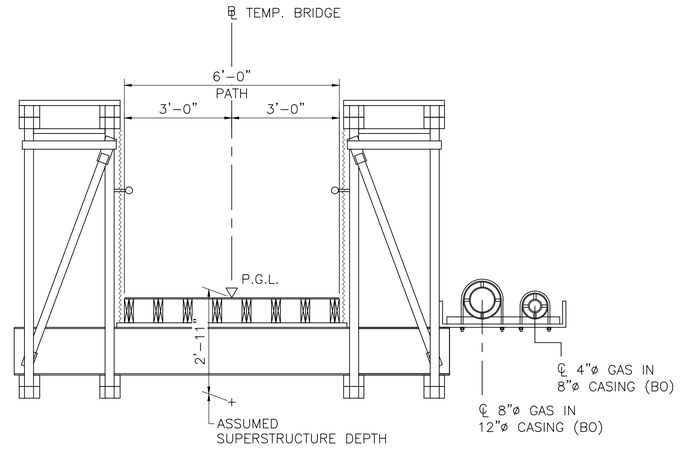
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	80	91
	PROJECT FILE NO. 086461		

TEMPORARY BRIDGE DETAILS



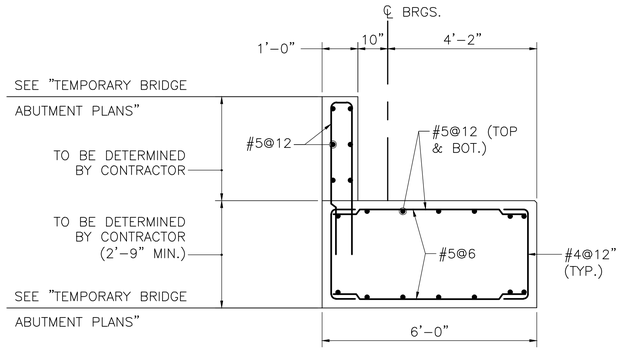
SECTION THRU EXISTING AND TEMPORARY BRIDGE

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



TRANSVERSE SECTION THRU TEMPORARY BRIDGE

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



SECTION THRU TEMPORARY STUB ABUTMENT

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

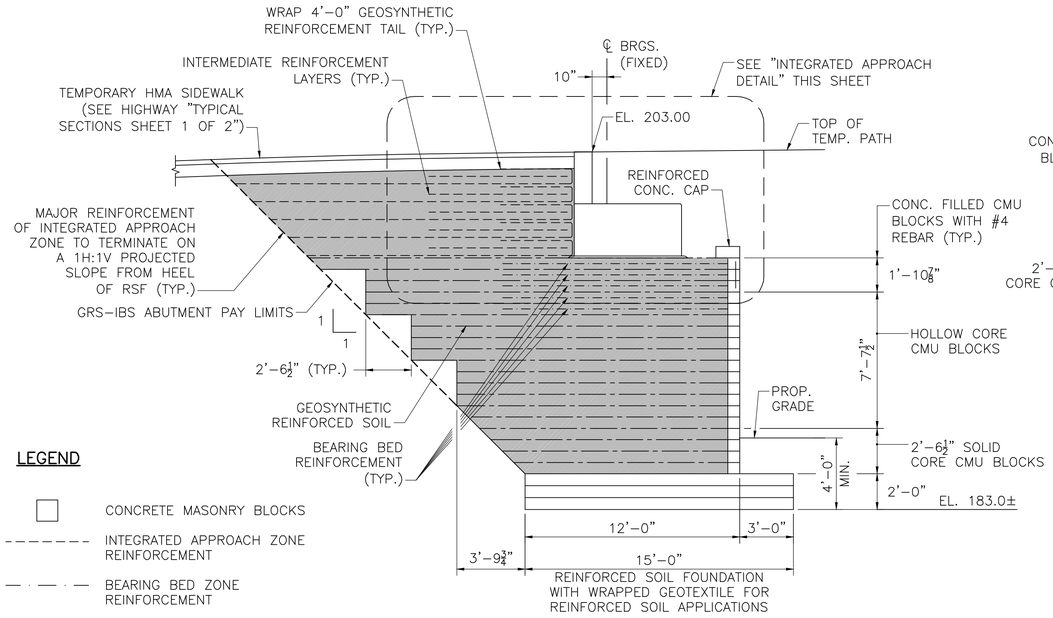
NOTE:
THE FOLLOWING TABLE SUMMARIZES THE ASSUMED TOTAL SUPPORT REACTIONS AT EACH END OF THE TEMPORARY BRIDGE. REACTIONS ARE UNFACTORED. IN ACCORDANCE WITH SPECIAL PROVISION 993.1, PROPOSED LOADS AND REACTIONS IN EXCESS OF THOSE SHOWN BELOW WILL REQUIRE THE CONTRACTOR TO REDESIGN THE TEMPORARY ABUTMENTS ACCORDINGLY.

LOAD DESCRIPTION	TOTAL SUPPORT REACTION AT EACH END OF BRIDGE, UNFACTORED (KIPS)
BRIDGE DEAD LOAD	76
TIMBER DECK, HANDRAIL, FENCE, UTILITIES AND OTHER ATTACHMENTS	24
PEDESTRIAN LIVE LOAD	54

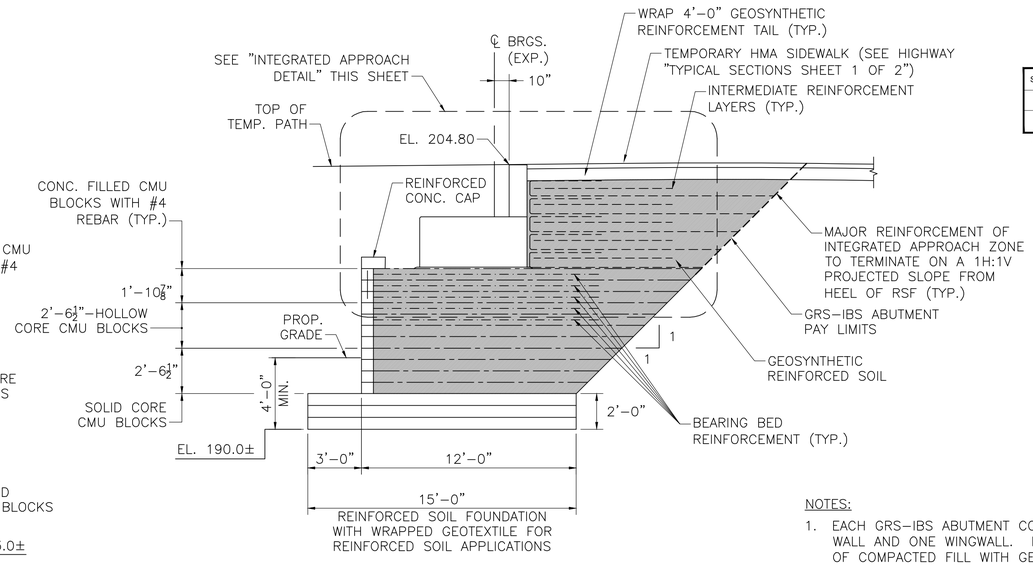
DATE	DESCRIPTION
SEPT. 13, 2025	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE



TEMPORARY BRIDGE SOUTH ABUTMENT

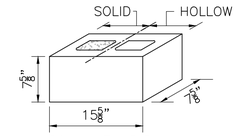


TEMPORARY BRIDGE NORTH ABUTMENT

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	81	91
PROJECT FILE NO. 086461			

TEMPORARY BRIDE ABUTMENT AND WINGWALL DETAILS



CMU BLOCK

SCALE: 1" = 1'–0"

LEGEND

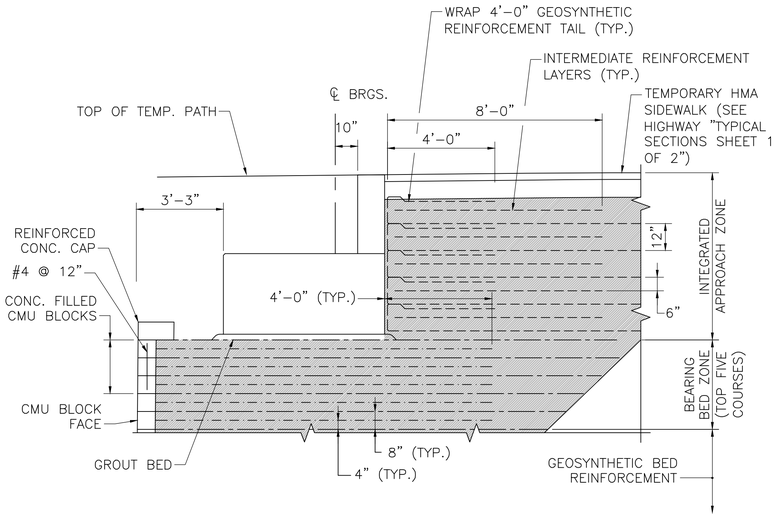
- CONCRETE MASONRY BLOCKS
- INTEGRATED APPROACH ZONE REINFORCEMENT
- BEARING BED ZONE REINFORCEMENT
- GRS–IBS REINFORCEMENT
- GRS–IBS FILL

TEMPORARY BRIDGE ABUTMENT SECTIONS

SCALE: ¼" = 1'–0"

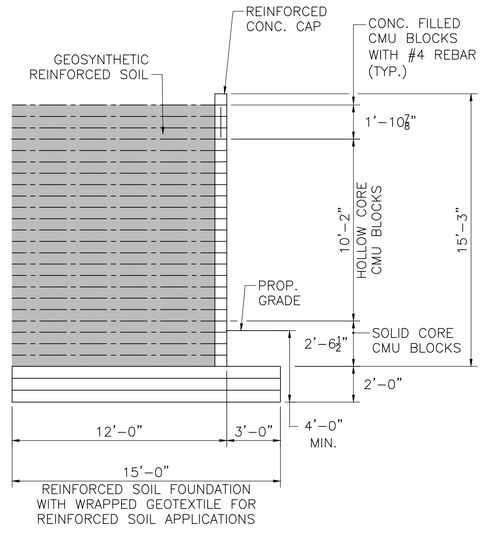
NOTES:

1. EACH GRS–IBS ABUTMENT CONSISTS OF TWO SIDES: ABUTMENT FACE WALL AND ONE WINGWALL. IT IS COMPOSED OF ALTERNATIVE LAYERS OF COMPACTED FILL WITH GEOSYNTHETIC REINFORCEMENT, AND IS PROTECTED BY CONCRETE MASONRY BLOCKS (CMU'S).
2. THE BEARING BED REINFORCEMENT ZONE SERVES AS AN EMBEDDED BRIDGE SEAT FOOTING WITHIN THE GRS–IBS ABUTMENT TO SUPPORT AND DISPERSE THE SUPERSTRUCTURE LOADING INTO THE GRS–IBS ABUTMENT INTERNAL MASS.
3. THE REINFORCED SOIL FOUNDATION (R.S.F.) IS COMPOSED OF CRUSHED STONE MATERIAL THAT IS COMPACTED AND ENCAPSULATED WITHIN A GEOTEXTILE FABRIC. IT PROVIDES EMBEDMENT INTO THE EXISTING MATERIAL WHILE INCREASING THE BEARING WIDTH AND CAPACITY OF THE GRS–IBS ABUTMENT.
4. THE INTEGRATED APPROACH ZONE IS CONSTRUCTED TO TRANSITION FROM THE TEMPORARY HMA SIDEWALK TO THE SUPERSTRUCTURE.
5. THE FACTORED BEARING PRESSURE = 3.2 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
6. FACTORED BEARING RESISTANCE = 5.0 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND RESISTANCE FACTOR OF 0.65.
7. ALL GEOTEXTILE REINFORCEMENT SHALL BE PULLED TAUGHT TO REMOVE ALL WRINKLES PRIOR TO PLACING THE STRUCTURAL BACKFILL.
8. GEOSYNTHETIC REINFORCEMENT SHALL EXTEND BETWEEN LAYERS OF CMU BLOCKS.
9. PLACEMENT OF FILL SHALL START FROM THE FACE OF CMU AND WORK BACK.
10. SPLICES IN GEOTEXTILE REINFORCEMENT CAN OCCUR WITHOUT OVERLAP. SPLICE SEAMS SHALL BE STAGGERED TO PREVENT A CONTINUOUS BREAK IN REINFORCEMENT. ALL SPLICE SEAMS SHALL RUN PERPENDICULAR TO WALL FACE.
11. THE TOP SURFACE OF THE CMU BLOCKS SHALL BE SWEPT OF ANY DEBRIS BEFORE PLACEMENT OF THE NEXT COURSE OF BLOCKS.
12. BEFORE PLACEMENT OF BACKFILL, EVERY OTHER COURSE OF BLOCK ALIGNMENT SHALL BE CHECKED WITH A STRING LINE REFERENCED OFF THE BACK OF THE FACING BLOCK FROM WALL CORNER TO CORNER.
13. THE ULTIMATE STRENGTH OF THE GEOSYNTHETIC SHALL BE 4800 PLF.
14. CMU WALL FILL SHALL BE 4000 PSI, 3/8" 660 CEMENT CONCRETE.
15. CONCRETE FILLED HOLLOW CORE CMU SHALL BE USED FOR THE TOP 3 COURSES BELOW THE BRIDGE SEAT/TOP OF BLOCK WALL FACE. SOLID CORE CMU BLOCKS SHALL BE USED FOR COURSES AT OR BELOW PROPOSED GRADE AS SHOWN ON THE TEMPORARY BRIDGE ABUTMENT SECTIONS AND WINGWALL SECTIONS. ALL OTHER BLOCKS SHALL BE HOLLOW CORE.
16. ALL GEOSYNTHETIC REINFORCEMENT SHALL BE BIAXIAL GEOTEXTILE FABRIC FOR REINFORCED SOIL APPLICATIONS

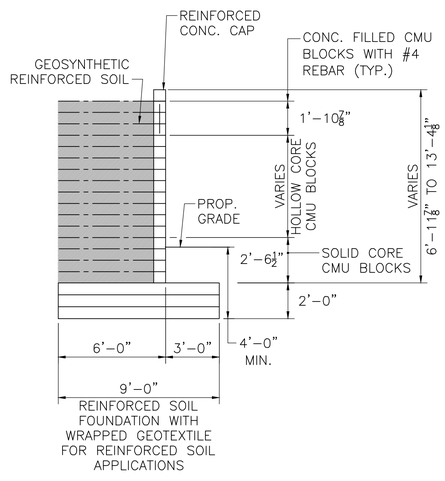


INTEGRATED APPROACH DETAIL

SCALE: ⅜" = 1'–0"



WINGWALL "A"



WINGWALL "B" & "C"

GRS–IBS WINGWALL SECTIONS

SCALE: ¼" = 1'–0"

SEPT. 13, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

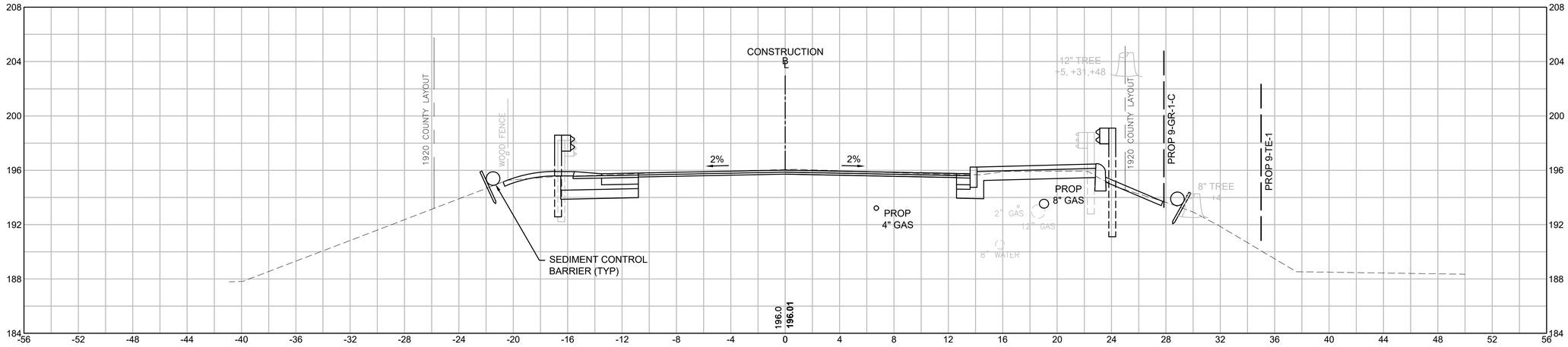
86461_BR81(L12002).DWG Plotted on 30-Dec-2025 2:03 PM
11-December-2025
Fifth Structural Submittal (S5)

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	82	91
	PROJECT FILE NO. 86461		

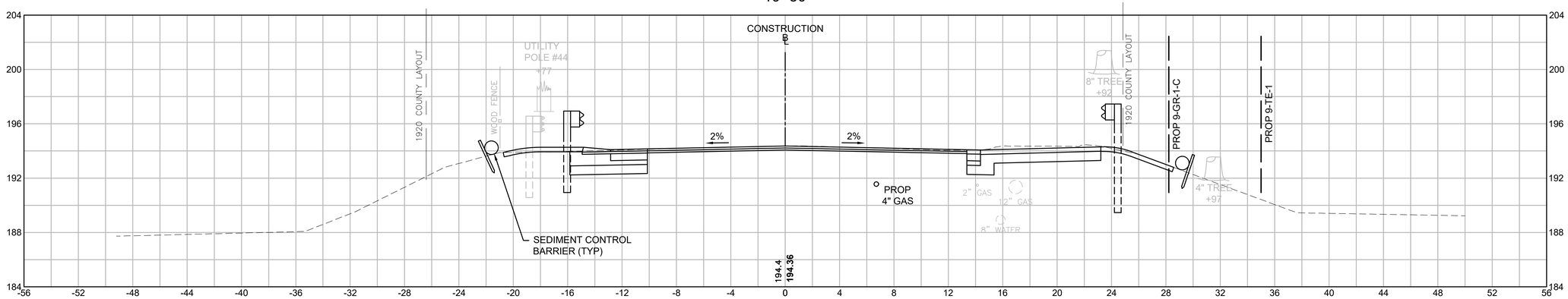
CROSS SECTIONS 1 OF 10 - CONCORD RD

20+00



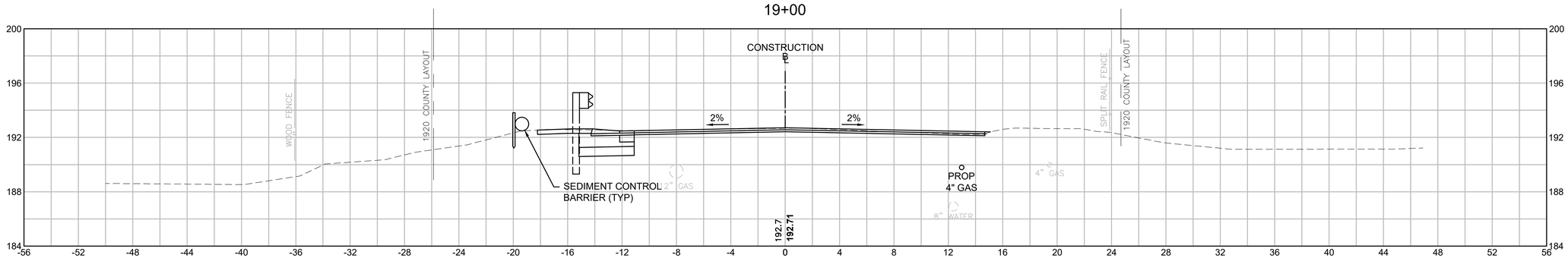
CUT: 27 SF
FILL: 0 SF

19+50



CUT: 32 SF
FILL: 0 SF

19+00



CUT: 15 SF
FILL: 0 SF

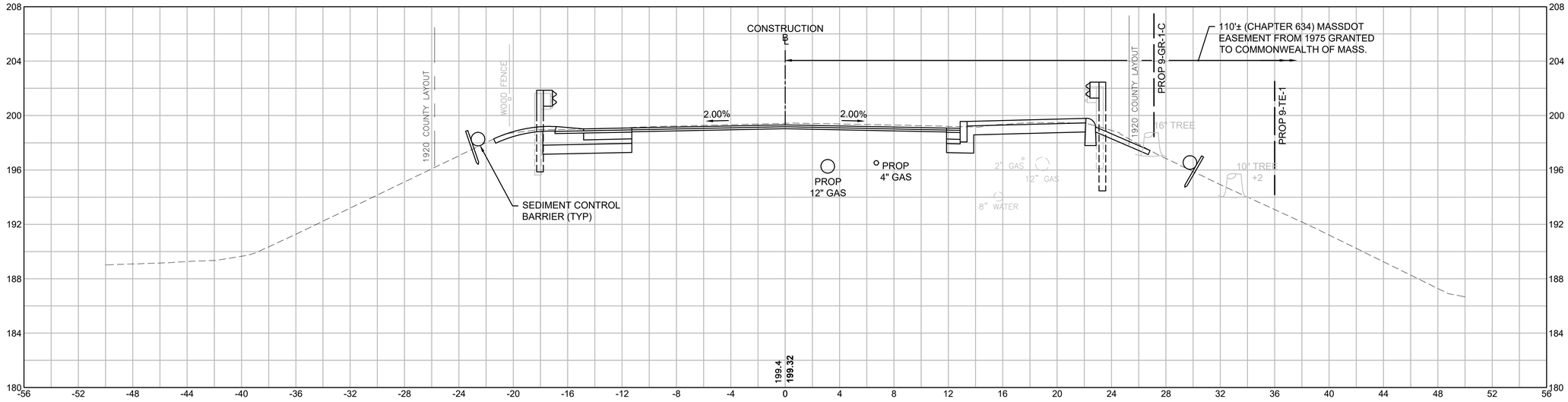
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	83	91
PROJECT FILE NO.	86461		

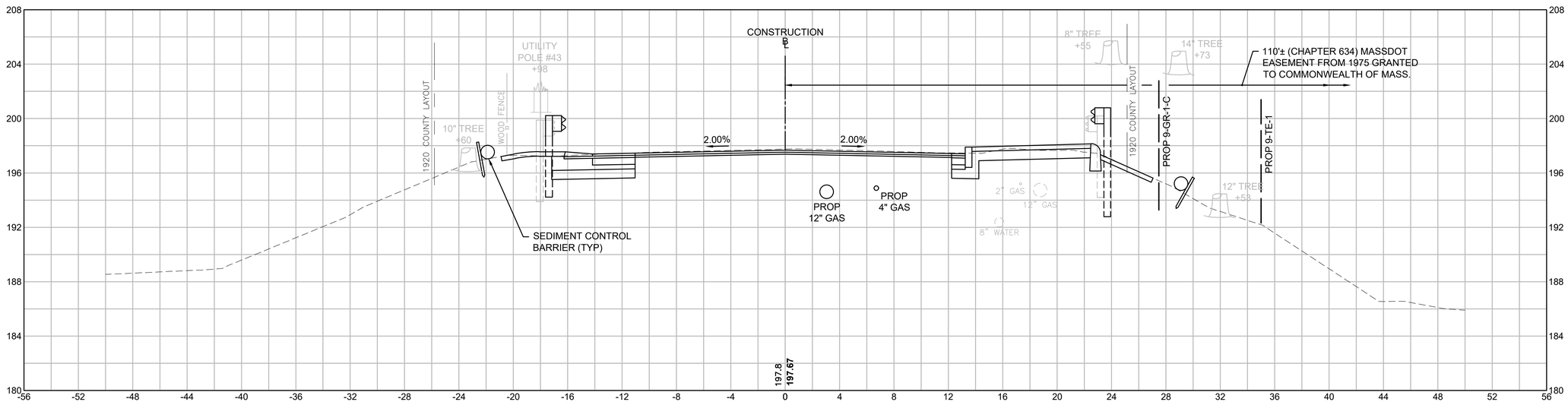
CROSS SECTIONS 2 OF 10 - CONCORD RD

21+00



CUT: 35 SF
FILL: 0 SF

20+50



CUT: 31 SF
FILL: 0 SF

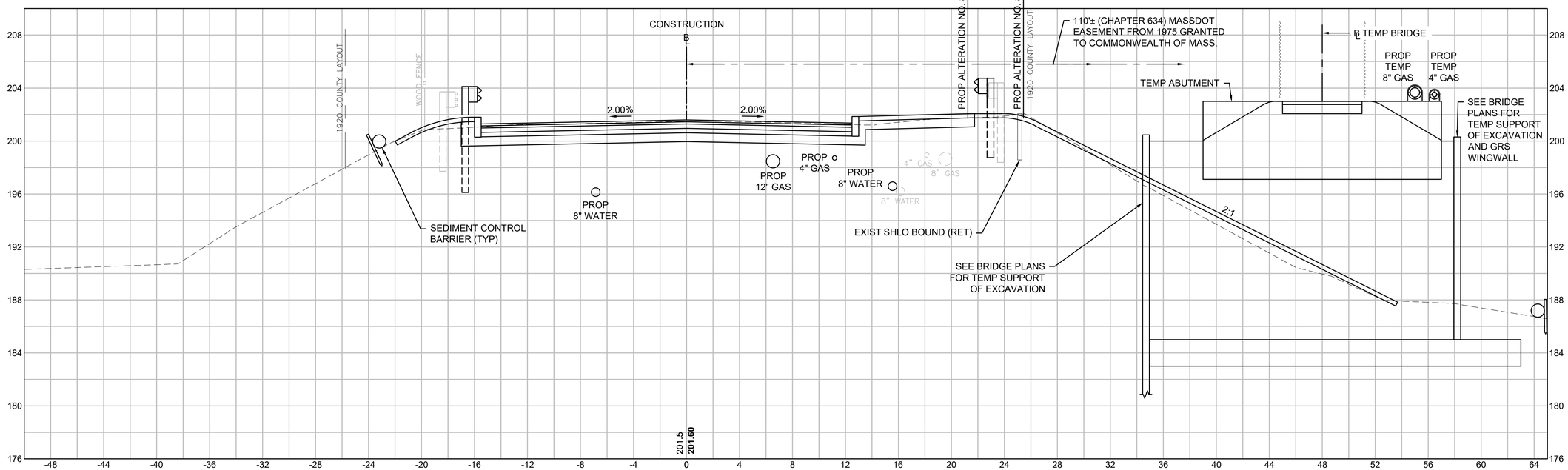
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

LINCOLN
CONCORD ROAD/ST 126

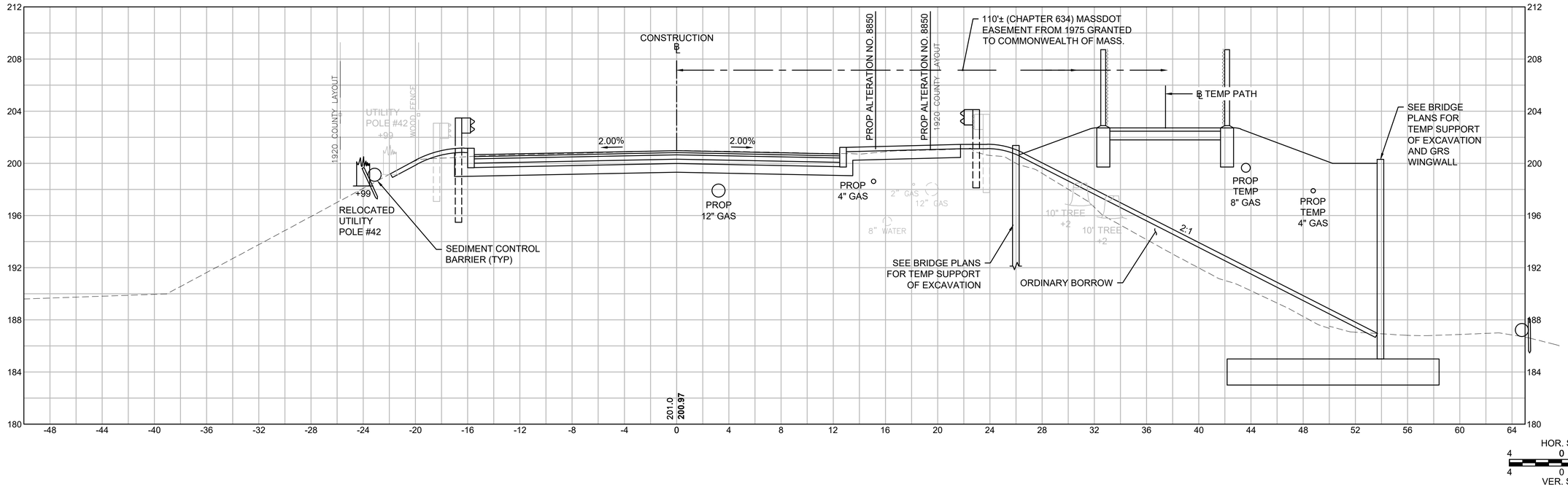
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	84	91
	PROJECT FILE NO. 86461		

CROSS SECTIONS 3 OF 10 - CONCORD RD

21+69



21+50



CUT: 56 SF
FILL: 33 SF
ORDINARY BORROW: 32 SF

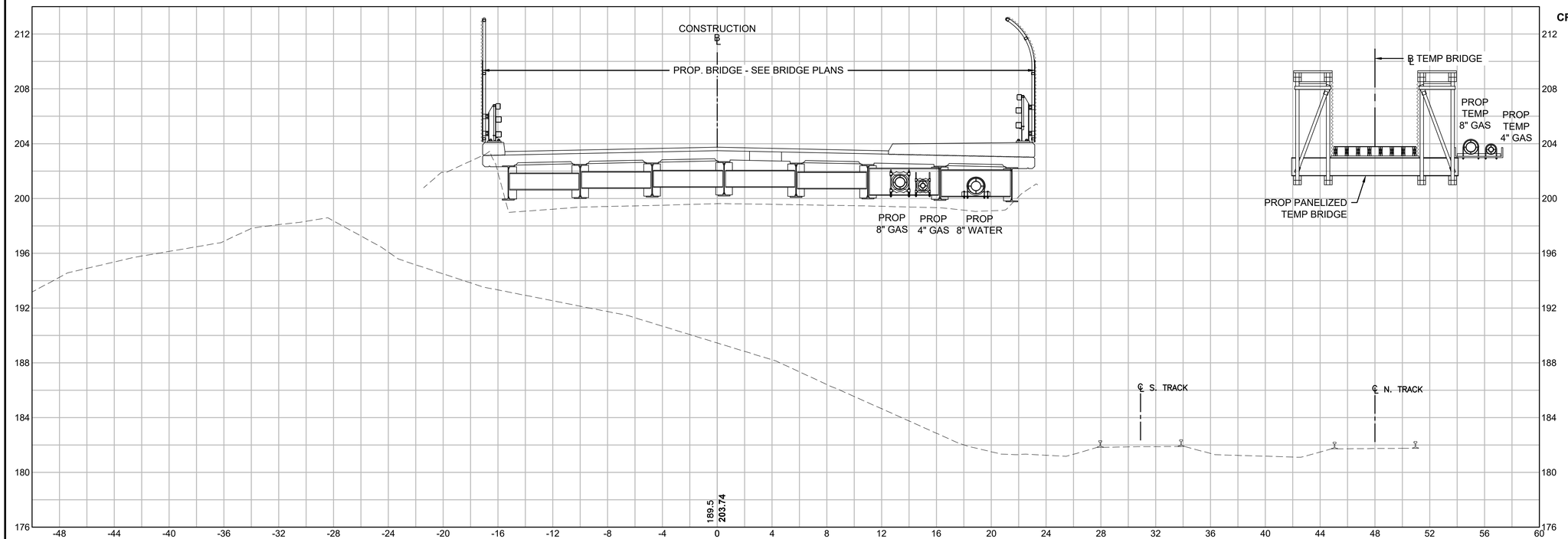
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

LINCOLN
CONCORD ROAD/ST 126

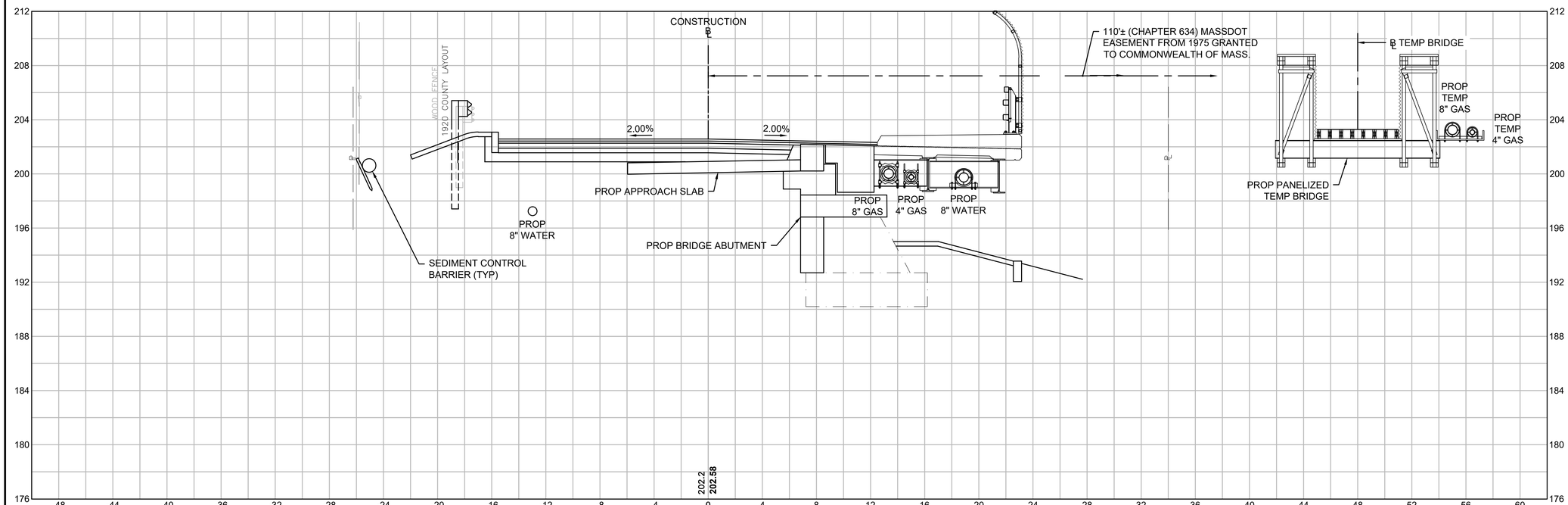
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	85	91
	PROJECT FILE NO. 86461		

CROSS SECTIONS 4 OF 10 - CONCORD RD

22+50



22+00

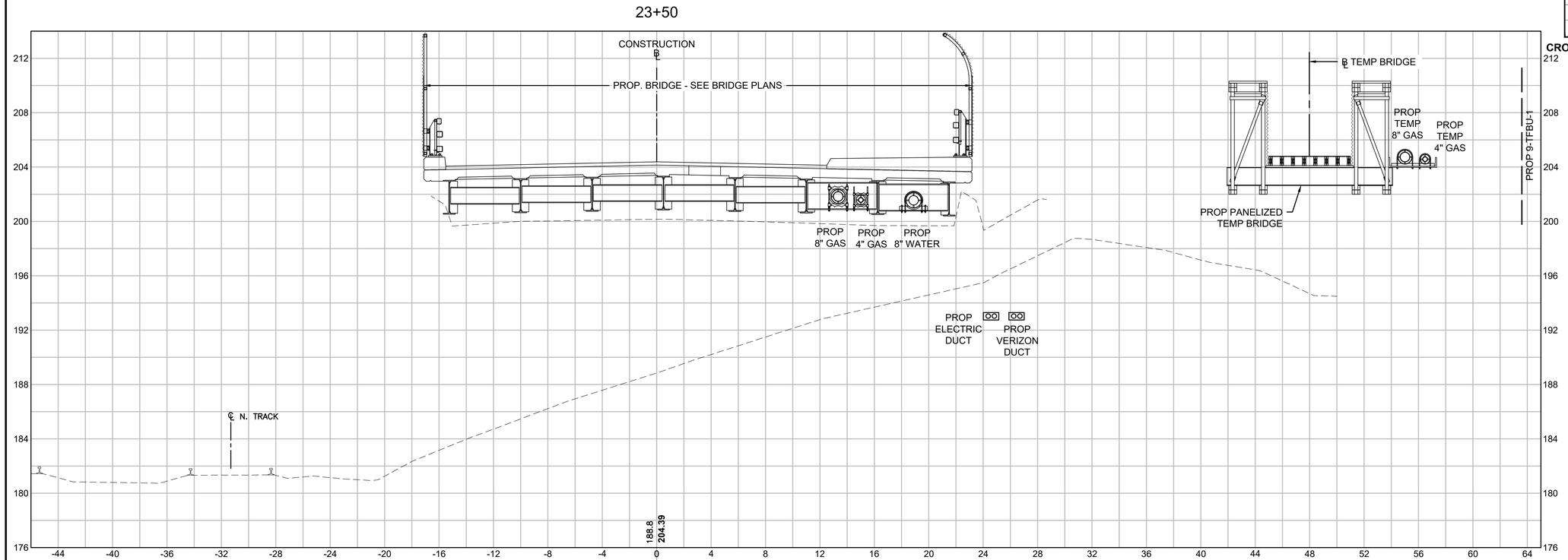


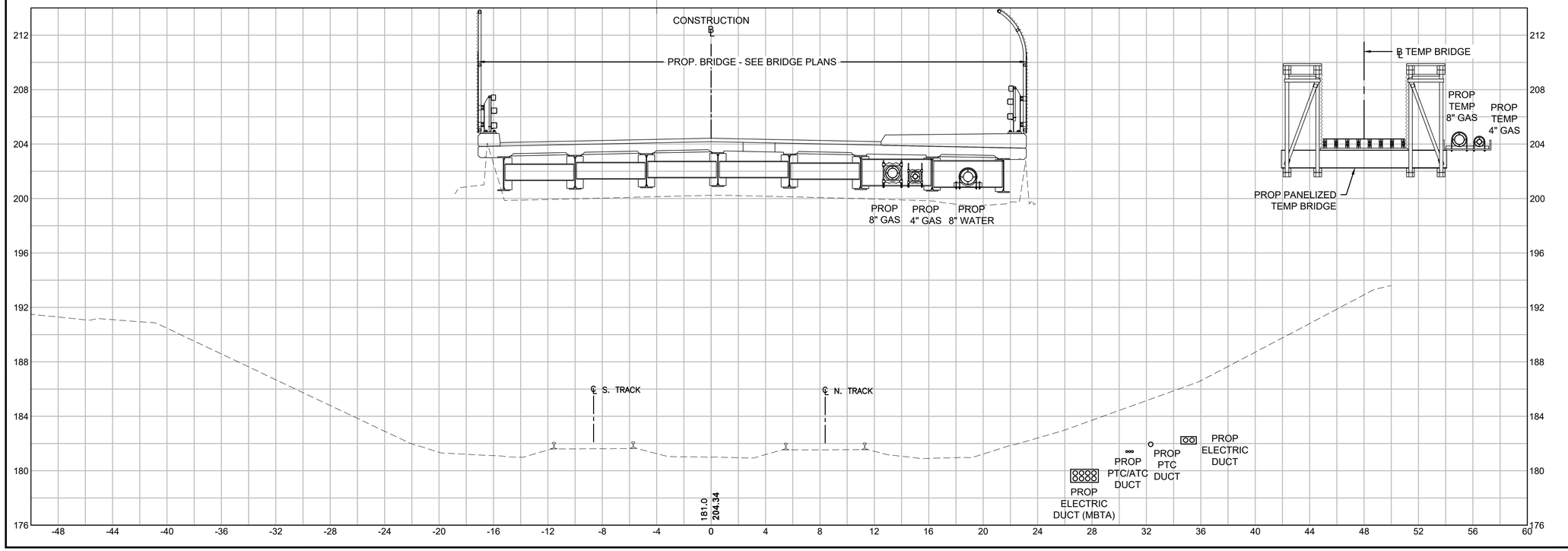
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	86	91
PROJECT FILE NO.	86461		

CROSS SECTIONS 5 OF 10 - CONCORD RD



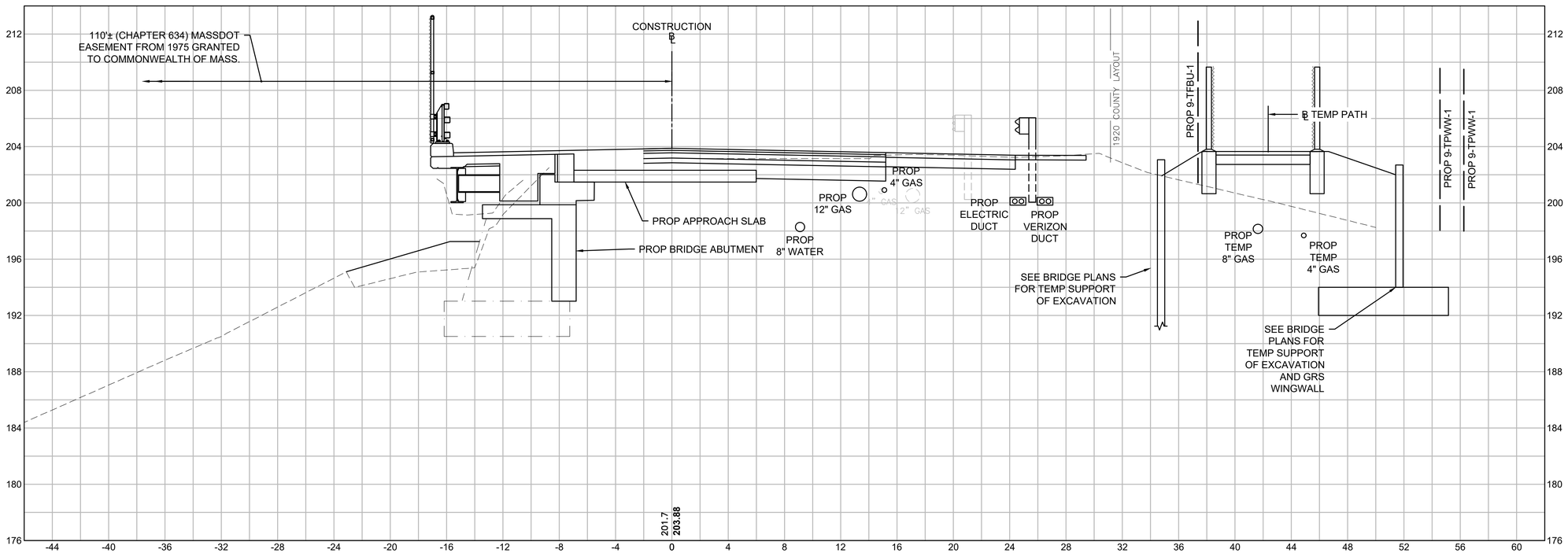


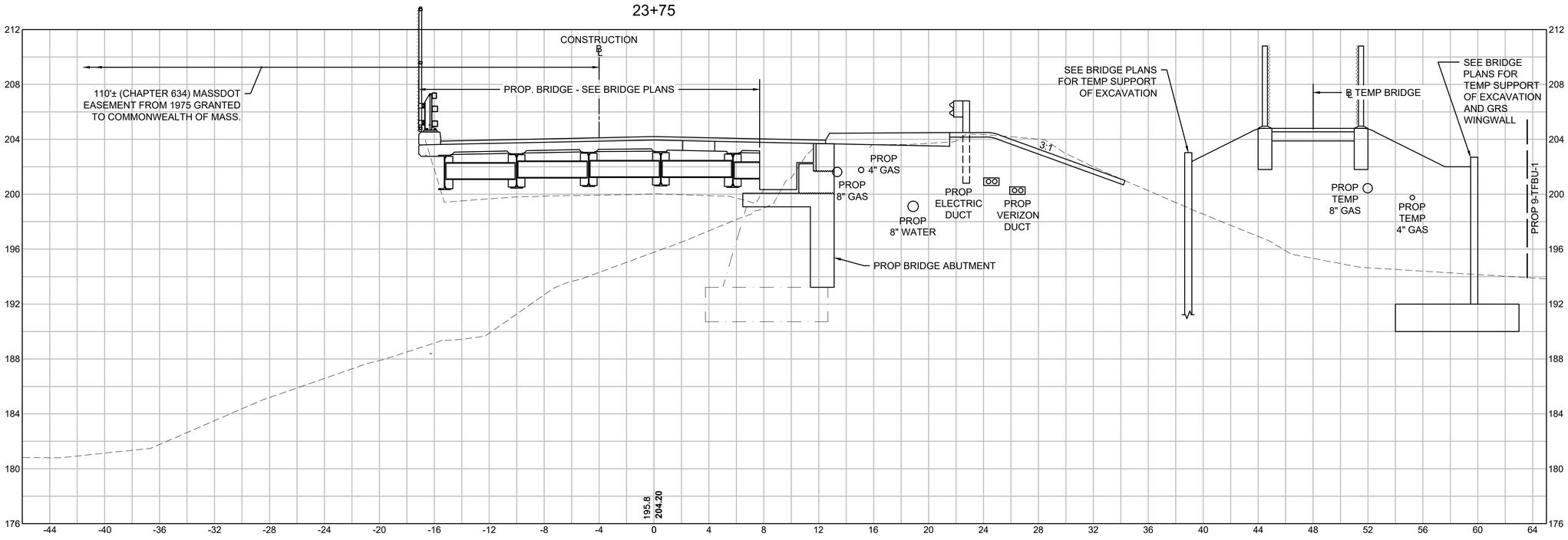
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	87	91
PROJECT FILE NO.	86461		

CROSS SECTIONS 6 OF 10 - CONCORD RD





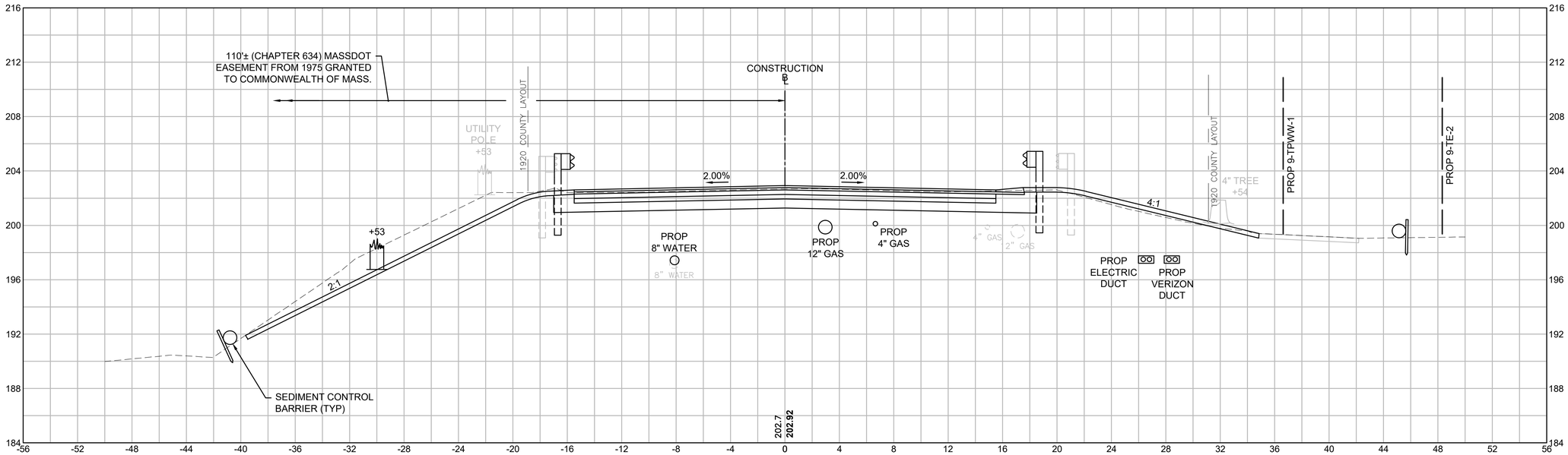
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	88	91
PROJECT FILE NO.	86461		

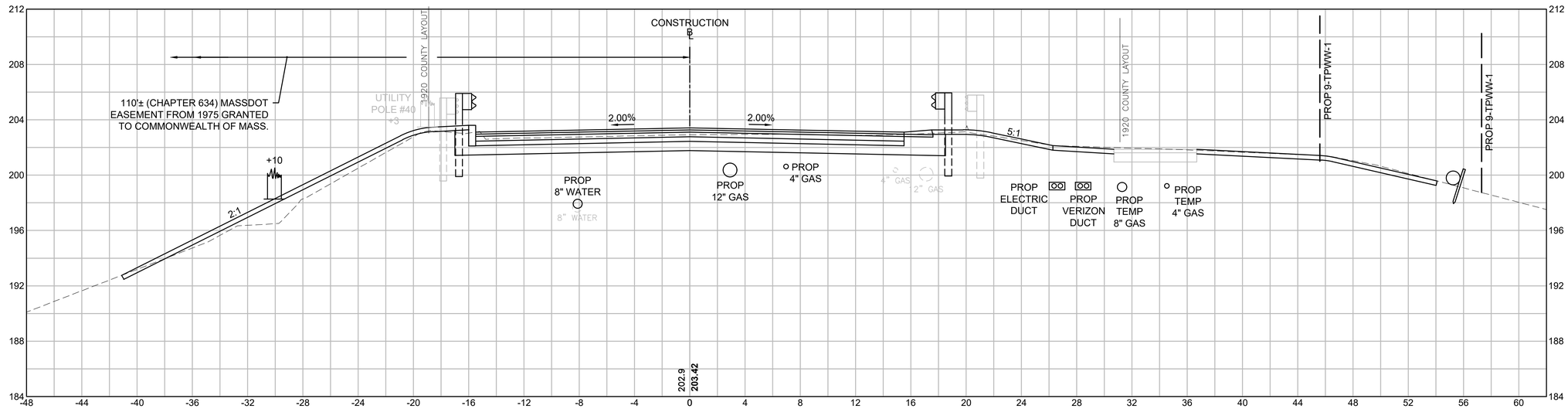
CROSS SECTIONS 7 OF 10 - CONCORD RD

24+50



CUT: 90 SF
FILL: 2 SF

24+25



CUT: 61 SF
FILL: 24 SF

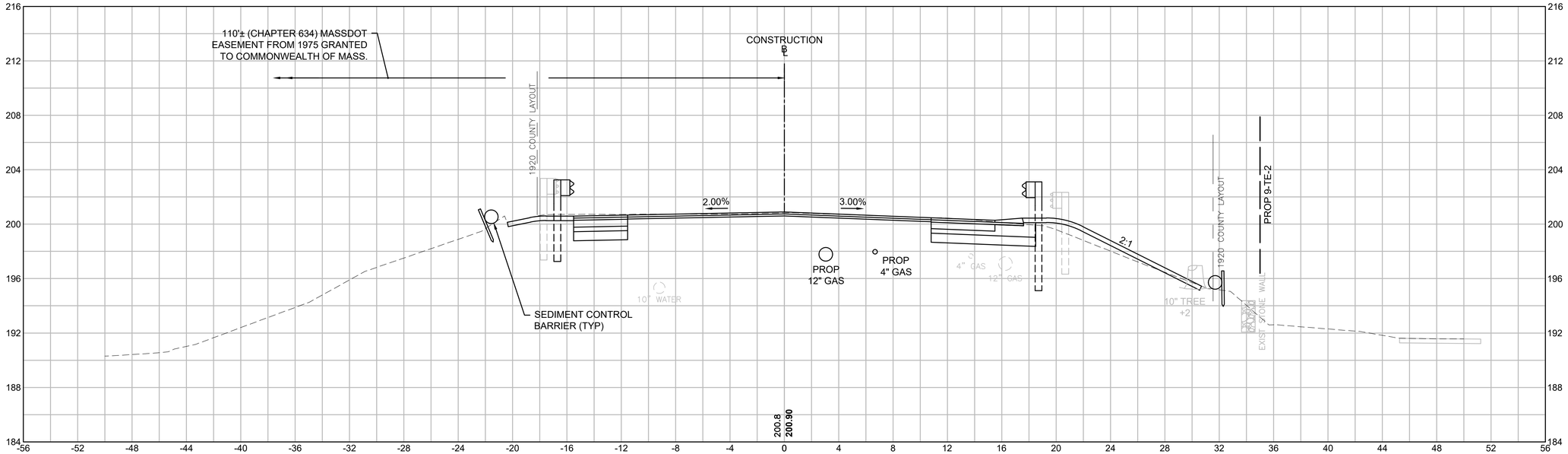
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	89	91
PROJECT FILE NO.	86461		

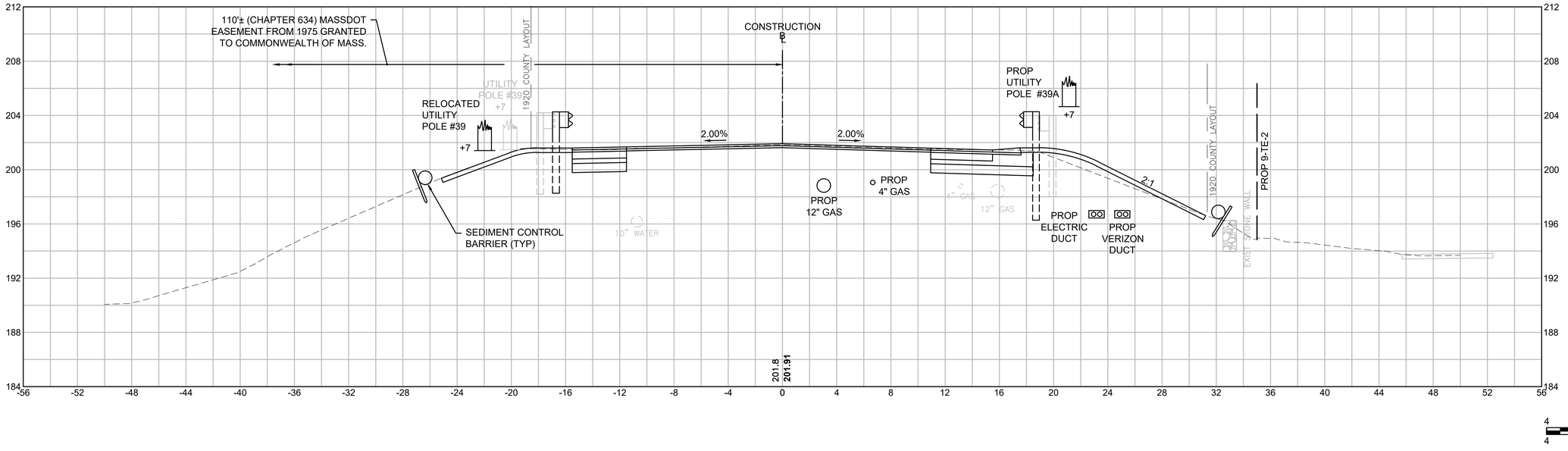
CROSS SECTIONS 8 OF 10 - CONCORD RD

25+50



CUT: 30 SF
FILL: 1 SF
ORDINARY BORROW: 1 SF

25+00



CUT: 29 SF
FILL: 4 SF
ORDINARY BORROW: 4 SF

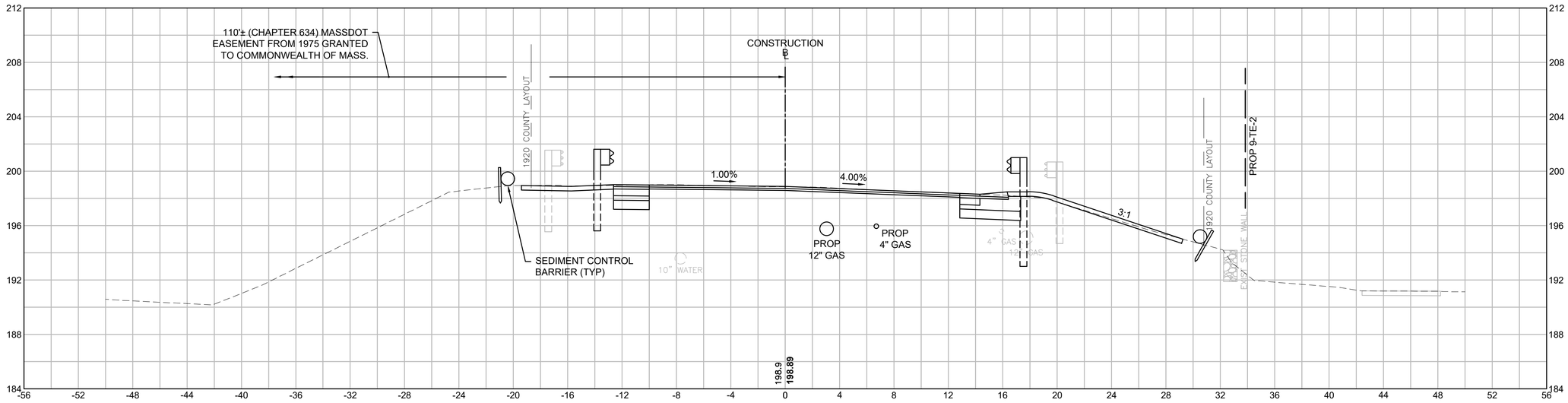
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	90	91
PROJECT FILE NO.	86461		

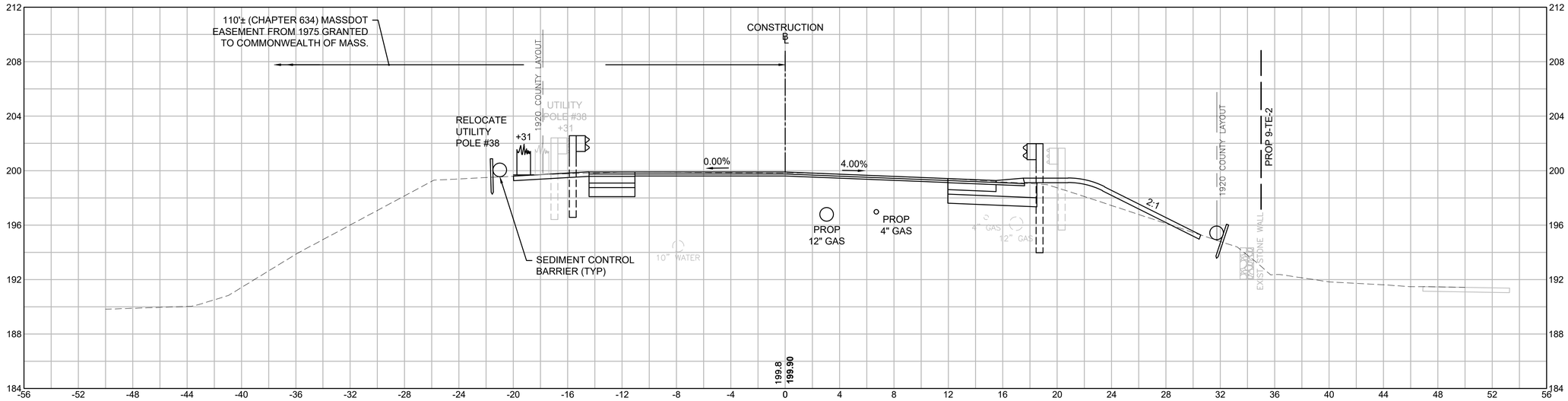
CROSS SECTIONS 9 OF 10 - CONCORD RD

26+50



CUT: 23 SF
FILL: 1 SF
ORDINARY BORROW: 1 SF

26+00



CUT: 27 SF
FILL: 1 SF
ORDINARY BORROW: 1 SF

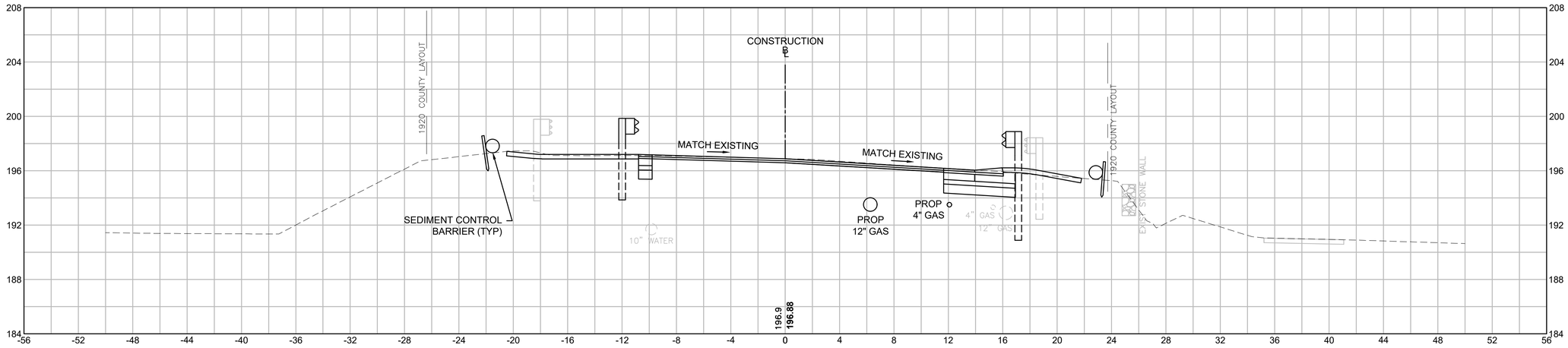
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

LINCOLN
CONCORD ROAD/ST 126

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(902)X	91	91
	PROJECT FILE NO. 86461		

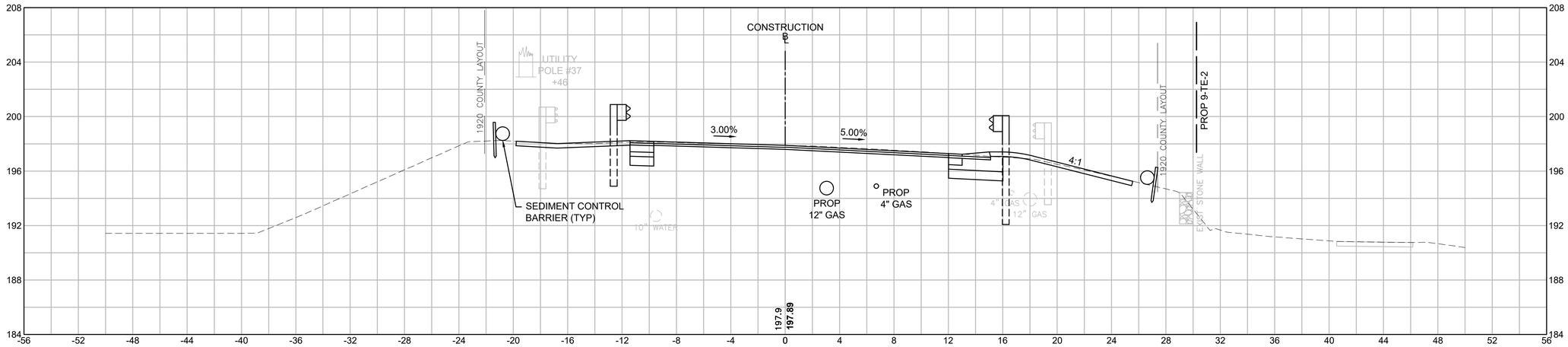
CROSS SECTIONS 10 OF 10 - CONCORD RD

27+50



CUT: 23 SF
FILL: 1 SF

27+00



CUT: 23 SF
FILL: 1 SF

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